

October 25, 2019

Melanie A. Bachman, Esq.  
Executive Director/Staff Attorney  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 06051

**Re: Docket No. 477 – Application of Celco Partnership d/b/a Verizon Wireless for a Certificate of Environmental Compatibility and Public Need for the Construction, Maintenance and Operation of a Wireless Telecommunications Facility Located at, 46 Cemetery Road, Canterbury, Connecticut**

**Development and Management Plan Submission**

Dear Ms. Bachman:

Enclosed please find fifteen (15) copies of the following:

1. Final Development and Management (“D&M”) Plans prepared by On-Air Engineering for the approved telecommunications facility at 46 Cemetery Road in Canterbury, Connecticut incorporating the Council’s conditions of approval. Also enclosed are three (3) full size (24” x 36”) sets of D&M plans.
2. Structural Design Report prepared by Sabre Industries dated August 22, 2019.
3. Geotechnical Engineering Report prepared by Atlantic Consulting & Engineering, LLC, dated July 29, 2019.

Together, this information constitutes the final D&M Plan submission for the approved telecommunications facility at 46 Cemetery Road in Canterbury, Connecticut.

# Robinson+Cole

Melanie A. Bachman, Esq.  
October 25, 2019  
Page 2

We respectfully request that this information be reviewed and this matter be placed on the next available Siting Council agenda for approval. Please feel free to contact me if you have any questions or require additional information. Thank you.

Sincerely,



Kenneth C. Baldwin

KCB/kmd  
Enclosures  
Copy to:

Christopher Lippke, Canterbury First Selectman  
Andy Candiello  
Anne McGuinness  
Tim Burks



# WIRELESS COMMUNICATIONS FACILITY

## DEVELOPMENT AND MANAGEMENT PLAN

### DOCKET NO. 477

SITE NAME: CANTERBURY SOUTH CT

46 CEMETERY RD.  
CANTERBURY, CT 06331

Cellco Partnership  
d/b/a Verizon Wireless



WIRELESS COMMUNICATIONS FACILITY  
20 ALEXANDER DRIVE  
WALLINGFORD, CT 06492

On Air Engineering, LLC

88 Foundry Pond Road  
Cold Spring, NY 10516  
onair@optonline.net  
201-456-4624

LICENSURE



DAVID WEINPAHL, P.E.  
CT LIC. NO. 22144

NO. DATE SUBMISSIONS

|   |          |                              |
|---|----------|------------------------------|
| 0 | 05.10.18 | D&M DRAFT                    |
| 1 | 06.12.18 | D&M FINAL                    |
| 2 | 09.14.19 | REVISED FOR TOWER FOUNDATION |
| 3 | 10.15.19 | REVISED FOR D&M SUBMISSION   |

DRAWN BY: MF  
CHECKED BY: DW

PROJECT TYPE:  
**NEW BUILD MACRO**

SITE NAME:  
**CANTERBURY SOUTH CT**

PROJECT INFORMATION:  
**46 CEMETERY RD.  
CANTERBURY, CT 06331**

DRAWING TITLE:  
**TITLE SHEET**

SHEET NUMBER:  
**T-1**

### PROJECT DESCRIPTION

- INSTALLATION OF A 160 FT. MONOPOLE/TOWER AND FENCED-IN COMPOUND AT GRADE
- INSTALLATION OF AN OUTDOOR EQUIPMENT CABINET AND DIESEL FUELED GENERATOR LOCATED ON NEW 16'x10' CONCRETE PAD WITHIN THE COMPOUND
- INSTALLATION OF (6) PANEL ANTENNAS AND ASSOCIATED DEVICES ON THE MONOPOLE
- INSTALLATION OF CABLING FROM EQUIP. CABINETS TO ANTENNAS
- ELECTRICAL, TELEPHONE & GROUNDING CONNECTIONS TO EXISTING UTILITIES

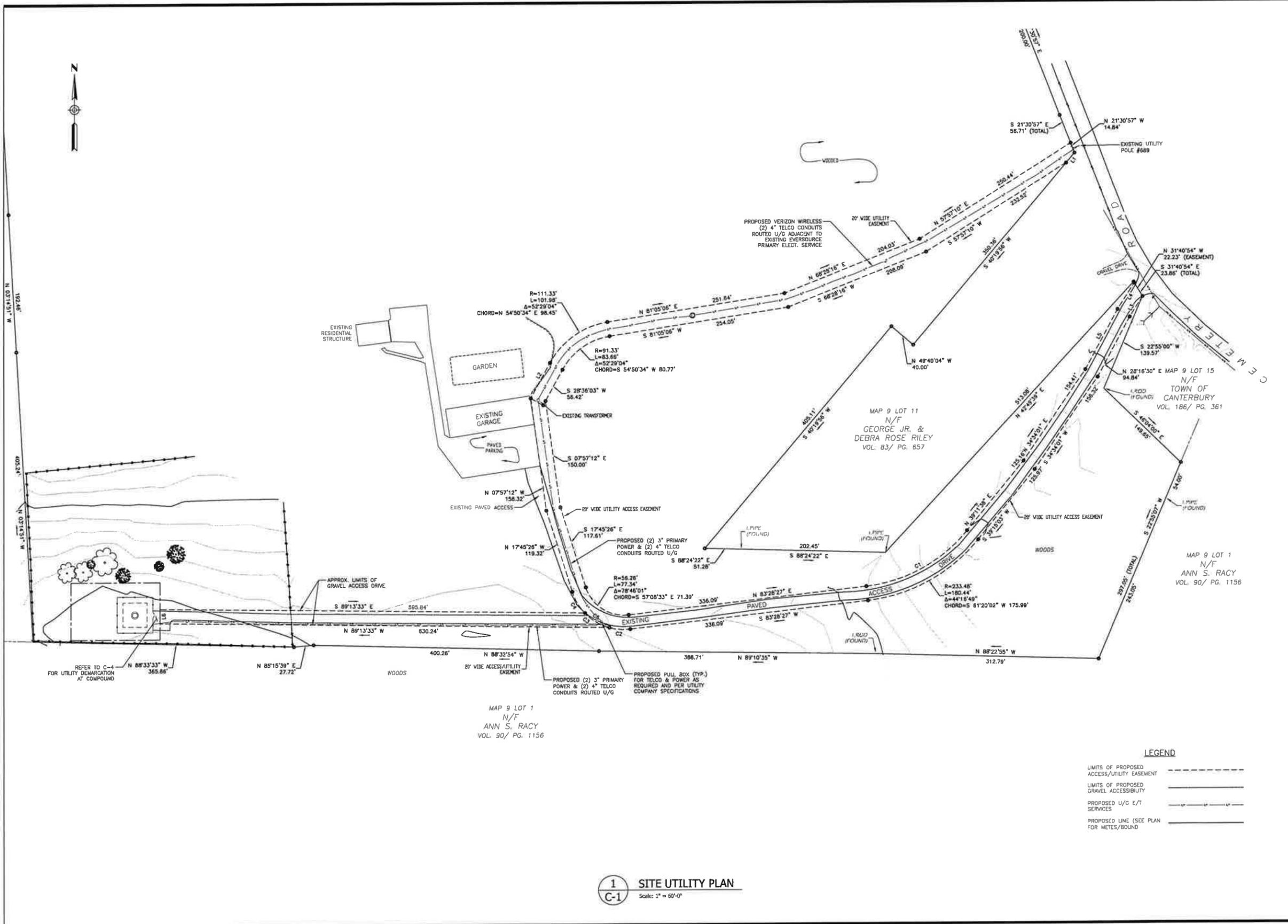


### PROJECT SUMMARY

|                                |  |
|--------------------------------|--|
| SITE NAME:                     | CANTERBURY SOUTH CT  |
| SITE ADDRESS:                  | 46 CEMETERY RD.<br>CANTERBURY, CT 06331  |
| PROPERTY OWNER:                | HOLOWATY NICHOLAS II<br>46 CEMETERY RD.<br>CANTERBURY, CT 06331                            |
| PARCEL ID:                     | 09-2   |
| TOWER COORDINATES:             | 41° 40' 21.45" N 72° 01' 58.87" W  |
| APPLICANT:                     | CELLCO PARTNERSHIP<br>d.b.a. VERIZON WIRELESS<br>20 ALEXANDER DR.<br>WALLINGFORD, CT 06492 |
| VERIZON WIRELESS CONSTRUCTION: | MIKE HUMPHREYS - CONSTRUCTION<br>STRUCTURE CONSULTING GROUP                                |
| LEGAL/REGULATORY COUNSEL:      | KENNETH C. BALDWIN, ESQ.<br>ROBINSON & COLE, LLP<br>(860) 275-8345                         |

### DRAWING SCHEDULE

| SHEET NO. | SHEET DESCRIPTION                                    |
|-----------|--|
| T-1       | TITLE SHEET  |
| C-1       | SITE UTILITY PLAN                                    |
| C-2       | SITE PLAN  |
| C-3       | ENLARGED SITE PLAN                                   |
| C-4       | COMPOUND PLAN, NORTH ELEVATION & ANTENNA PLAN        |
| C-5       | WETLAND PROTECTION & EROSION CONTROL NOTES & DETAILS |
| C-6       | SITE DETAILS & CSC REPORTING NOTES                   |
| C-7       | EQUIPMENT PLAN, ELEVATION & DETAILS                  |
| C-8       | STRUCTURAL DETAILS                                   |



**1** SITE UTILITY PLAN  
 Scale: 1" = 60'-0"

**LEGEND**

|  |     |
|--|-----|
| LIMITS OF PROPOSED ACCESS/UTILITY EASEMENT | --- |
| LIMITS OF PROPOSED GRAVEL ACCESSIBILITY    | --- |
| PROPOSED U/G E/T SERVICES                  | --- |
| PROPOSED LINE (SEE PLAN FOR METES/BOUND)   | --- |

Cellco Partnership  
 d/b/a Verizon Wireless

**verizon**

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 WALLINGFORD, CT 06492

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 Cold Spring, NY 10516  
 onair@optonline.net  
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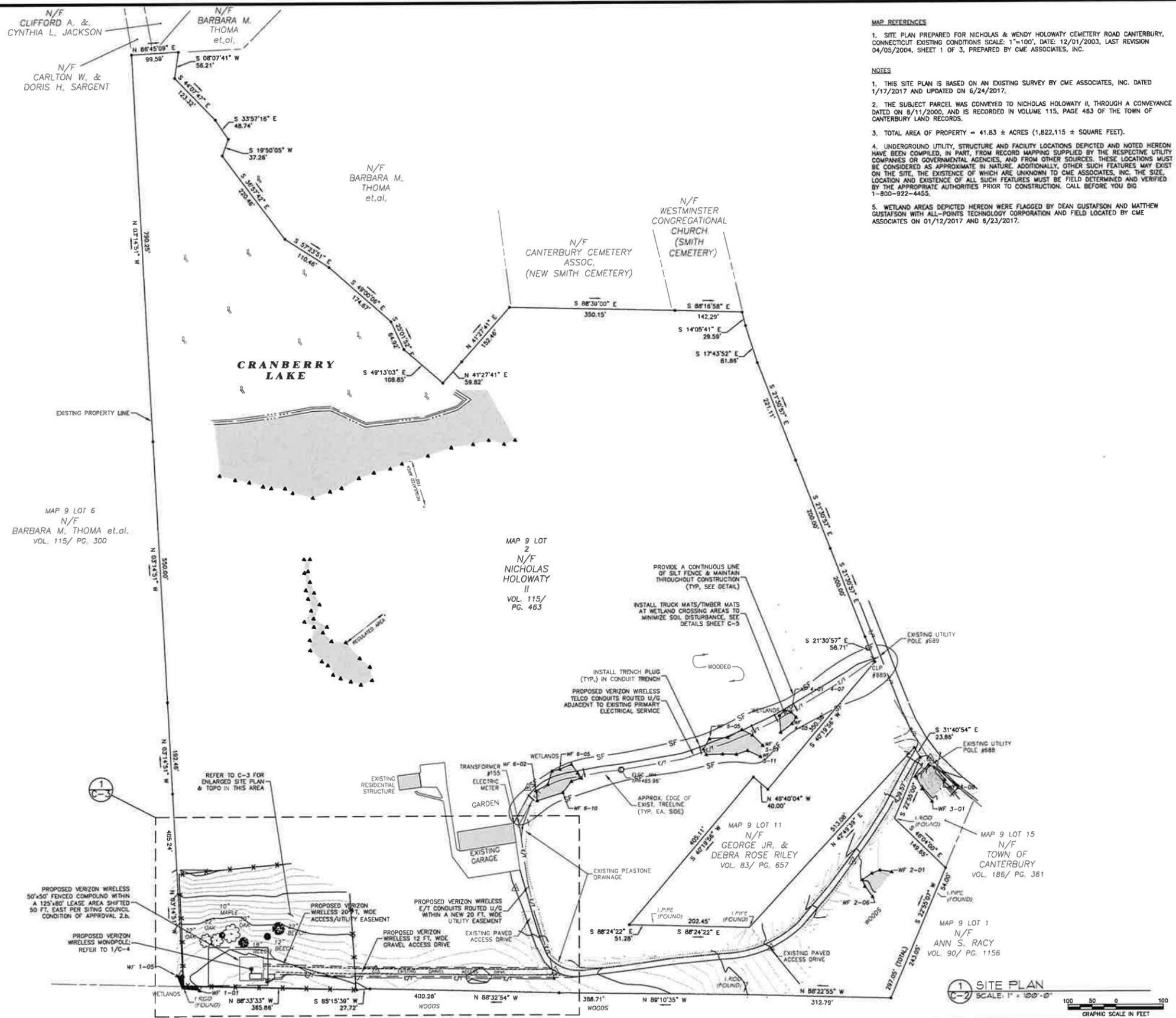
PROJECT TYPE:  
**NEW BUILD MACRO**

SITE NAME:  
**CANTERBURY SOUTH CT**

PROJECT INFORMATION:  
**46 CEMETERY RD.  
 CANTERBURY, CT 06331**

DRAWING TITLE:  
**SITE UTILITY PLAN**

SHEET NUMBER:  
**C-1**



**MAP REFERENCES**  
 1. SITE PLAN PREPARED FOR NICHOLAS & WENDY HOLOWATY CEMETERY ROAD CANTERBURY, CONNECTICUT EXISTING CONDITIONS SCALE: 1"=100', DATE: 12/01/2003, LAST REVISION 04/05/2004, SHEET 1 OF 3, PREPARED BY CME ASSOCIATES, INC.

- NOTES**
1. THIS SITE PLAN IS BASED ON AN EXISTING SURVEY BY CME ASSOCIATES, INC. DATED 1/17/2017 AND UPDATED ON 6/24/2017.
  2. THE SUBJECT PARCEL WAS CONVEYED TO NICHOLAS HOLOWATY II, THROUGH A CONVEYANCE DATED ON 8/11/2000, AND IS RECORDED IN VOLUME 115, PAGE 463 OF THE TOWN OF CANTERBURY LAND RECORDS.
  3. TOTAL AREA OF PROPERTY = 41.83 ± ACRES (1,822,115 ± SQUARE FEET).
  4. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES OR GOVERNMENTAL AGENCIES, AND FROM OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO CME ASSOCIATES, INC. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION. CALL BEFORE YOU DIG 1-800-922-4455.
  5. WETLAND AREAS DEPICTED HEREON WERE FLAGGED BY DEAN GUSTAFSON AND MATTHEW GUSTAFSON WITH ALL-POINTS TECHNOLOGY CORPORATION AND FIELD LOCATED BY CME ASSOCIATES ON 01/12/2017 AND 6/23/2017.

Cellco Partnership  
 d/b/a Verizon Wireless

**verizon**  
 WIRELESS COMMUNICATIONS FACILITY  
 20 ALEXANDER DRIVE  
 WALLINGFORD, CT 06492

**On Air Engineering, LLC**  
 88 Foundry Pond Road  
 Cold Spring, NY 10516  
 onair@optonline.net  
 201-456-4624

**CME**  
 CME ASSOCIATES, INC.  
 33 Water Court Hwy, Wallingford, CT 06492  
 388 East Main Street, East Hartford, CT 06108  
 50 Elm Street, Southington, CT 06488  
 866-251-2277 | www.cmeassoc.com

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|     |          |                              |
|     |          |                              |
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DRAWN BY: MF  
 CHECKED BY: DW

PROJECT TYPE:  
**NEW BUILD MACRO**

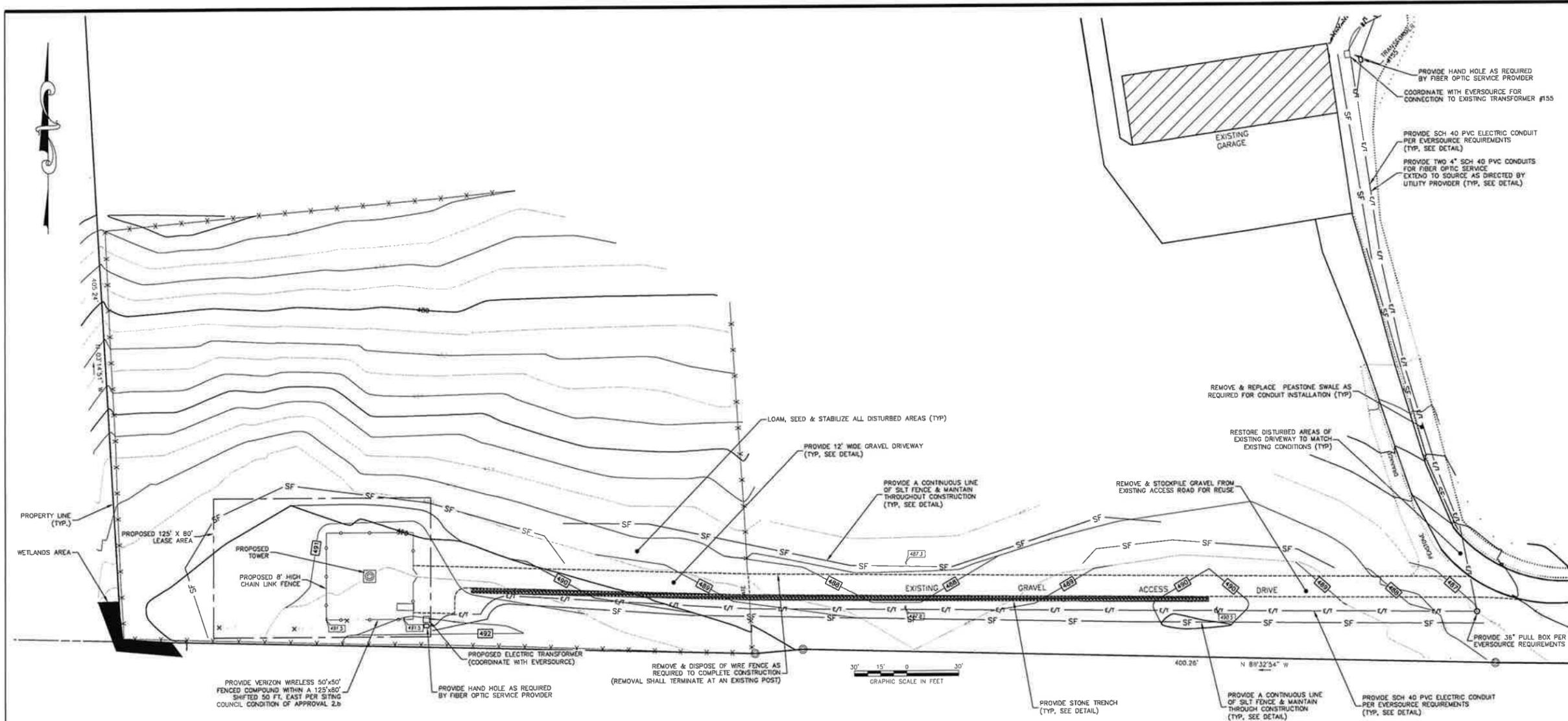
SITE NAME:  
**CANTERBURY SOUTH CT**

PROJECT INFORMATION:  
**46 CEMETERY RD.  
 CANTERBURY, CT 06331**

DRAWING TITLE:  
**SITE PLAN**

SHEET NUMBER:  
**C-2**

**1 SITE PLAN**  
 SCALE: 1" = 100'-0"  
 GRAPHIC SCALE IN FEET



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**NOTES**

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2. THE SUBJECT PARCEL WAS CONVEYED TO NICHOLAS HOLOWATY II, THROUGH A CONVEYANCE DATED ON 8/11/2000, AND IS RECORDED IN VOLUME 115, PAGE 463 OF THE TOWN OF CANTERBURY LAND RECORDS.
3. TOTAL AREA OF PROPERTY = 41.83 ± ACRES (1,822,115 ± SQUARE FEET).
4. THE SESC PLAN IS CONSISTENT WITH THE 2002 CT GUIDELINES FOR SOIL EROSION AND SEDIMENTATION CONTROL.
5. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES OR GOVERNMENTAL AGENCIES, AND FROM OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO CME ASSOCIATES, INC. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION. CALL BEFORE YOU DIG 1-800-922-4455.
6. HORIZONTAL DATUM BASED ON NAD 83.
7. VERTICAL DATUM BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988. (NAVD 88)
8. WETLAND AREAS DEPICTED HEREON WERE FLAGGED BY DEAN GUSTAFSON AND MATTHEW GUSTAFSON WITH ALL-POINTS TECHNOLOGY CORPORATION AND FIELD LOCATED BY CME ASSOCIATES ON 01/12/2017 AND 6/23/2017.
9. PURSUANT TO FEMA FLOOD INSURANCE RATE MAP, COMMUNITY PANEL 090183 0015A, THE PROPOSED TOWER LOCATION IS LOCATED IN ZONE C, AREAS OF MINIMAL FLOODING.
10. ALL UTILITIES SHALL BE APPROVED BY LOCAL UTILITY COMPANIES PRIOR TO CONSTRUCTION; ALL UTILITIES SHALL BE CONSTRUCTED TO UTILITY COMPANY SPECIFICATIONS.
11. NO CHANGES CAN BE MADE TO THESE PLANS WITHOUT THE ENGINEER'S APPROVAL.
12. CONTRACTOR SHALL OBTAIN ALL REQUIRED LOCAL & STATE PERMITS PRIOR TO BEGINNING ANY CONSTRUCTION.
13. FIELD CHANGES SHALL HAVE PRIOR APPROVAL OF THE ENGINEER.

HOURS OF CONSTRUCTION:  
7AM-7PM MON-SAT

**SITE INFORMATION**

| PARAMETER                                | MEASUREMENT |
|--|-------------|
| NEAREST OFF-SITE RESIDENCE               | ±1,050 FEET |
| NEAREST MUNICIPAL BOUNDARY               | >3,000 FEET |
| ACCESS FROM CEMETERY ROAD                | ±1,670 FEET |
| RESIDENTIAL STRUCTURES WITHIN 1,000 FEET | 1           |
| NEAREST PROPERTY LINE                    | 40 FEET     |
| TREES TO BE REMOVED                      | 0           |

**LEGEND**

- PROPERTY LINE
- ABUTTERS LINE
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- EXISTING CONTOUR
- STONE WALL
- RETAINING WALL
- LIMITS OF INLAND WETLANDS
- FENCE
- TREE LINE
- OVERHEAD WIRES
- SILT FENCE
- NOW OR FORMERLY UTILITY POLE
- BOUNDARY POINT
- DRILL HOLE
- IRON MONUMENT
- CONNECTICUT HIGHWAY DEPARTMENT MONUMENT(CHD)
- IRON PIPE
- IRON ROD
- RAIL ROAD SPIKE
- WELL
- WATER VALVE

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860-291-3221 | www.cmeassoc.com

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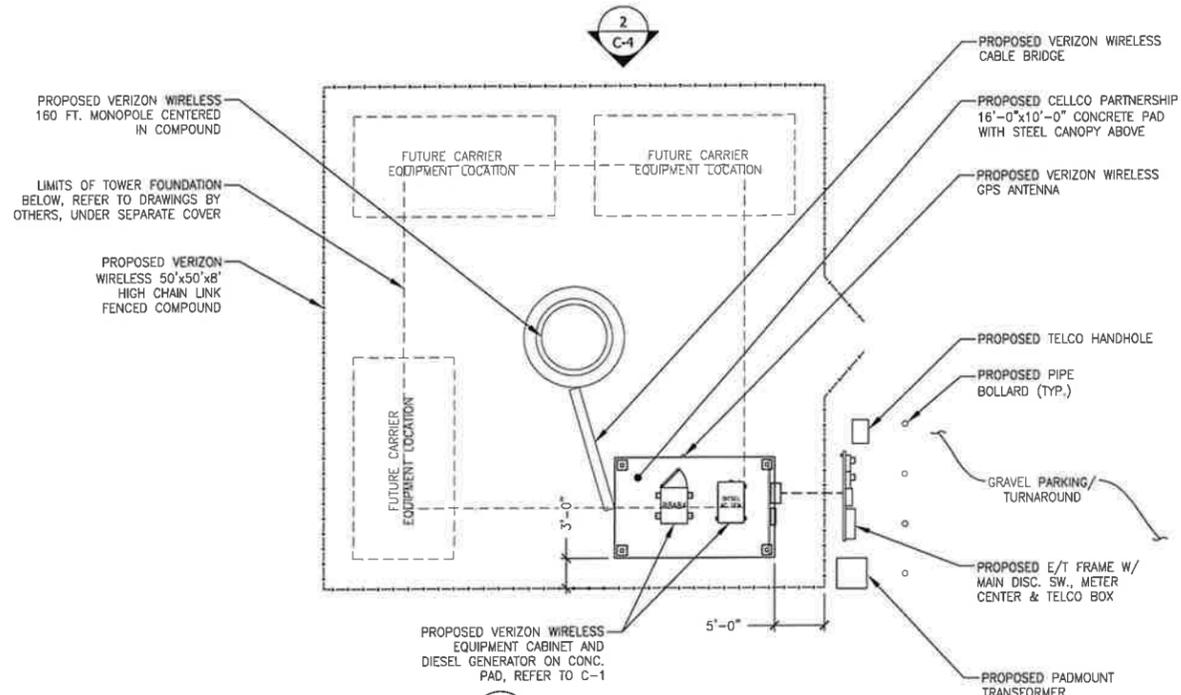
PROJECT TYPE:  
**NEW BUILD MACRO**

SITE NAME:  
**CANTERBURY SOUTH CT**

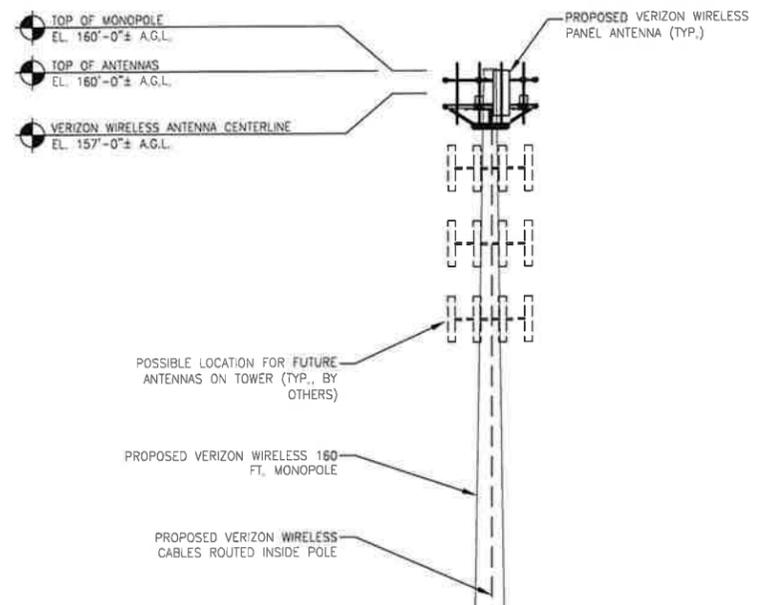
PROJECT INFORMATION:  
**46 CEMETERY RD.  
CANTERBURY, CT 06331**

DRAWING TITLE:  
**ENLARGED SITE PLAN**

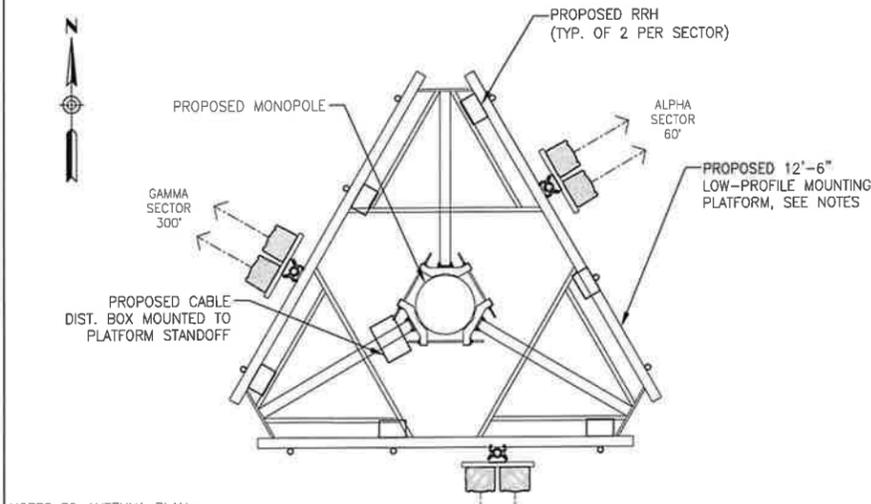
SHEET NUMBER:  
**C-3**



**1**  
C-4  
**COMPOUND PLAN**  
Scale: 3/32" = 1'-0"



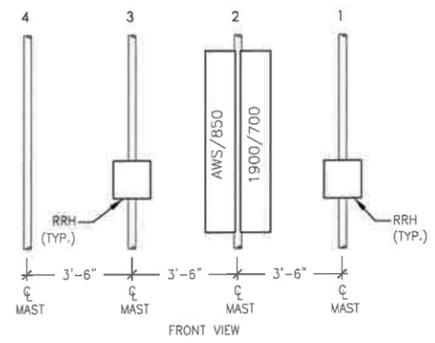
**2**  
C-4  
**NORTH ELEVATION**  
Scale: 3/32" = 1'-0"



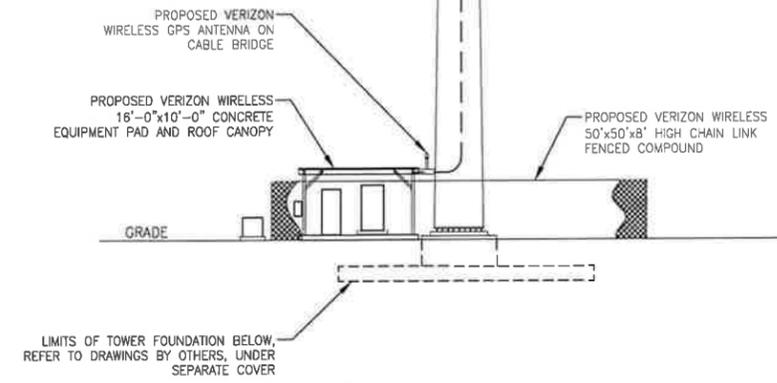
NOTES TO ANTENNA PLAN:  
1. ANTENNA PLATFORM SHALL BE LOW-PROFILE WITH HANDRAIL AND DESIGNED TO SUPPORT UP TO (12) PANEL ANTENNAS AND (12) RRH'S; SITE PRO MODEL RMQP-496-HK OR EQUAL.  
2. SET ALPHA PLATFORM FACE AT 60° AZIMUTH.

**3**  
C-4  
**ANTENNA PLAN @ 157 FT. A.G.L.**  
Scale: 3/8" = 1'-0"

| ANTENNA SPECIFICATIONS (TYP. AT 3 SECTORS) |                     |                 |   |                           |
|--|---------------------|-----------------|---|---------------------------|
| POS.                                       | BAND                | ANTENNA MODEL # | ACCESSORY EQUIPMENT                     | SPECIFICATIONS            |
| 1  | AWS/1900            | -               | SAMSUNG (B66/B2)                        | 15"Hx15"Wx10.0"D; 70 LBS. |
| 2  | AWS/850<br>1900/700 | (2) QS6656-5D   | DUAL MOUNT BRACKET<br>QUINTEL AS-005245 | 72"Hx12"Wx9.6"D; 88 LBS.  |
| 3  | 700/850             | -               | SAMSUNG (B13/B5)                        | 15"Hx15"Wx8.1"D; 70 LBS.  |
| 4  | B50-CDMA            | RESERVED/FUTURE | -                                       | -                         |



**4**  
C-4  
**TYPICAL ANTENNA ELEVATION**  
Scale: 3/8" = 1'-0"



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| MF        | DW          |

PROJECT TYPE:  
**NEW BUILD MACRO**

SITE NAME:  
**CANTERBURY SOUTH CT**

PROJECT INFORMATION:  
**46 CEMETERY RD.  
CANTERBURY, CT 06331**

DRAWING TITLE:  
**COMPOUND PLAN,  
NORTH ELEVATION &  
ANTENNA PLAN**

SHEET NUMBER:  
**C-4**

**WETLAND PROTECTION AND RESTORATION PROGRAM**

A portion of the proposed underground utility route is located within wetlands that was previously disturbed by an existing underground utility route that serves the subject property. As a result, temporary disturbance to wetlands will result from trenching activities to install the proposed underground utilities. The following protective measures and restoration activities shall be followed to help avoid degradation of and properly restore these wetlands.

It is of the utmost importance that the Contractor complies with the requirement for the installation of protective measures, restoration of affected wetlands and the education of its employees and subcontractors performing work on the project site. These measures will also provide protection to and properly restore wetland areas temporarily affected by the proposed underground utility trenching work. All-Points Technology Corporation, P.C. wetland protection and restoration measures are implemented properly. The Contractor shall contact Dean Gustafson, Senior Wetland Scientist at least 5 business days prior to the pre-construction meeting. Mr. Gustafson can be reached by phone at (860) 984-9515 or via email at dgustafson@allpointstech.com.

The wetland protection program consists of several components: use of appropriate erosion control measures to control and contain erosion while avoiding/minimizing wildlife entanglement, periodic inspection and maintenance of isolation structures and erosion control measures, education of all contractors and sub-contractors prior to initiation of work on the site; wetland protective measures; wetland restoration measures, and, reporting.

**1. Erosion and Sedimentation Controls**

- a. All erosion and sedimentation controls shall conform to the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, DEP Bulletin 34.
- b. Plastic netting used in a variety of erosion control products (i.e., erosion control blankets, fiber rolls [netting], reinforced silt fence) has been found to entangle wildlife, including reptiles, amphibians, birds and small mammals. No permanent erosion control products or reinforced silt fence will be used on the project. Temporary erosion control products will use either erosion control blankets and fiber rolls composed of processed fibers mechanically bound together to form a continuous matrix (net less) or netting composed of planar woven natural biodegradable fiber to avoid/minimize wildlife entanglement.
- c. Installation of silt fencing and/or other erosion control devices (i.e., straw wattles, compost fiber socks, etc.) shall be performed by the Contractor prior to any earthwork. APT will inspect the work area prior to and following erosion control installation to ensure devices are properly installed.
- d. Silt fencing shall consist of non-reinforced conventional erosion control woven fabric, installed approximately six inches below surface grade and staked at seven to ten-foot intervals using four-foot oak stakes or approved equivalent. The Contractor is responsible for daily inspections of the sedimentation and erosion controls for tears or breaches and accumulation levels of sediment, particularly following storm events that generate a discharge. The Environmental Monitor will provide periodic inspections of the sedimentation and erosion controls throughout the duration of construction activities only as it pertains to protection of rare species and nearby wetlands.
- e. The extent of erosion controls will be as shown on the site plans. The Contractor shall have additional sedimentation and erosion controls stockpiled on site should field or construction conditions warrant extending devices. In addition to the Contractor making these determinations, requests for additional controls will also be at the discretion of the Environmental Monitor.
- f. No equipment, vehicles or construction materials shall be stored outside of the exclusionary fencing or within 50 feet of wetlands or watercourses.
- g. All silt fencing and other erosion control devices shall be removed within 30 days of completion of work and permanent stabilization of site soils so that roots and amphibian movement between uplands and wetlands is not restricted. If fiber rolls/wattles, straw bales, or other natural material erosion control products are used, such devices will not be left in place to biodegrade and shall be promptly removed after soils are stable so as not to create a barrier to migrating wildlife. Seed from seeding of soils should not spread over fiber rolls/wattles as it makes them harder to remove once soils are stabilized by vegetation.

**2. Wetland Restoration Measures**

- a. Flag or fence project limits of disturbance within all wetland areas and areas within 100 feet of wetlands prior to any work in wetland areas.
- b. Locate staging areas and access points. Staging areas should be located at least 50 feet from the edge of the wetland. Install sediment barriers down slope of any staging areas or access points.
- c. Swamp mats, timber mats, truck mats or similar devices shall be used during the crossings of wetlands. Such devices shall be installed prior to clearing, grubbing or excavation activities.
- d. Clearing, grubbing and utility trenching activities may not commence in any stage or phase of the project until the erosion and sedimentation controls specified by this protection plan and as detailed on the project site plans have been installed and have been reviewed and approved by the Environmental Monitor to ensure erosion controls are properly installed.
- e. Soil excavated from wetland areas shall be carefully removed with the roots intact. This soil should be placed in a separate stockpile to be reused during the wetland restoration work. Both wetland topsoil and subsoil shall be segregated into separate stockpiles.
- f. Soil excavated from the utilities trench located within or adjacent to wetlands shall be temporarily placed on geotextile fabric.
- g. Dewatering of the utility trench excavation shall be pumped to a sediment filter bag or temporary sediment basin, following requirements as noted in the Section 1.
- h. Install pipe and trench plugs in wetland areas, as necessary, to prevent the trench from draining the wetland or changing its hydrology, as determined by the Environmental Monitor.
- i. Backfill pipe trench. Backfill first with stockpiled wetland subsoil with the top 12-inches of the excavated trench filled with the stockpiled wetland topsoil to match original surface grades.
- j. No soil amendments such as agricultural lime, fertilizer, etc. will be used within wetland areas.
- k. Compact backfill and grade the surface of the trench area to allow for positive drainage to soil erosion and sediment controls and to prepare disturbed areas for permanent trench restoration.
- l. Original grades through wetlands must be restored after trenching and backfilling. Any excess fill materials must be removed from the wetland and not spread on-site.
- m. Seed disturbed wetland areas with a New England Wet Seed Mix (New England Wetland Plants, Inc. or approved equivalent) at the manufacturer's recommended seed rate. Much disturbed wetland areas with non-woven natural fiber erosion control blanket or 2 to 3 inches of clean straw mulch.
- n. Seed disturbed upland areas with a New England Semi-Shade Grass and Forbs Mix (New England Wetland Plants, Inc. or approved equivalent) at the manufacturer's recommended seed rate. Much disturbed areas with non-woven natural fiber erosion control blanket or 2 to 3 inches of clean straw mulch.
- o. Maintain all erosion and sedimentation control devices until site work is complete and a uniform 70% perennial vegetative cover is established as confirmed by the Environmental Monitor.
- p. Remove all soil and erosion sediment control measures within 30 days upon establishment of a uniform 70% vegetative cover over the disturbed area. Re-grade and revegetate areas disturbed during the removal of the soil erosion and sediment controls.

**WETLAND PROTECTION AND RESTORATION PROGRAM-CONTINUED**

**3. Contractor Education**

a. Prior to work on site, the Contractor shall attend an educational session at the pre-construction meeting with APT. This orientation and educational session will consist of an introductory meeting with APT to understand the environmentally sensitive nature of the development site and the need to follow Protective Measures and Restoration Measures as described in Section 3 below.

**4. Petroleum Materials Storage and Spill Prevention**

- a. Certain precautions are necessary to store petroleum materials, fuel and contain and properly clean up any inadvertent fuel or petroleum (i.e., oil, hydraulic fluid, etc.) spill due to the project's location within and proximity to sensitive wetlands.
- b. A spill containment kit consisting of a sufficient supply of absorbent pads and absorbent material will be maintained by the Contractor at the construction site throughout the duration of the project. In addition, a waste drum will be kept on site to contain any used absorbent pads/material for proper and timely disposal off site in accordance with applicable local, state and federal laws.
- c. The following petroleum and hazardous materials storage and refueling restrictions and spill response procedures will be adhered to by the Contractor.

**i. Petroleum and Hazardous Materials Storage and Refueling**

- 1. Refueling of vehicles or machinery shall occur a minimum of 100 feet from wetlands or watercourses and shall take place on an impervious pad with secondary containment designed to contain leaks.
- 2. Any fuel or hazardous materials that must be kept on site shall be stored on an impervious surface utilizing secondary containment a minimum of 100 feet from wetlands or watercourses.
- ii. Initial Spill Response Procedures
- 1. Stop operations and shut off equipment.
- 2. Remove any sources of spark or flame.
- 3. Contain the source of the spill.
- 4. Determine the approximate volume of the spill.
- 5. Identify the location of natural flow paths to prevent the release of the spill to sensitive nearby waterways or wetlands.
- 6. Ensure that fellow workers are notified of the spill.

**iii. Spill Clean Up & Containment**

- 1. Obtain spill response materials from the on-site spill response kit. Place absorbent materials directly on the release area.
- 2. Limit the spread of the spill by placing absorbent materials around the perimeter of the spill.
- 3. Isolate and eliminate the spill source.
- 4. Contact the Connecticut Siting Council along with other appropriate local, state and/or federal agencies, as necessary.
- 5. Contact a disposal company to properly dispose of contaminated materials.
- iv. Reporting
- 1. Complete an incident report.
- 2. Submit a completed incident report to the Connecticut Siting Council, along with other appropriate local, state and/or federal agencies, as necessary.
- 5. Herbicide and Pesticide Restrictions

a. The use of herbicides and pesticides at the proposed wireless telecommunications facility is strictly prohibited.

**6. Reporting**

a. Daily Compliance Monitoring Reports (brief narrative and applicable photos) will be submitted by the Environmental Monitor to Verizon Wireless for compliance verification for each inspection performed.

b. Following completion of the construction project, the Environmental Monitor will provide a Compliance Monitoring Summary Report to Verizon Wireless documenting implementation of the wetland protection and restoration program. Verizon Wireless will provide a copy of the Compliance Monitoring Summary Report to the Connecticut Siting Council for compliance verification.

**SEEDING SPECIFICATIONS (NON-WETLAND AREAS)**

- A. IF GROUND HAS BEEN PREVIOUSLY MULCHED, MULCH MUST BE REMOVED OR ADDITIONAL NITROGEN MUST BE ADDED.
- B. REMOVE ALL SURFACE STONES 2" OR LARGER AS WELL AS ALL DEBRIS SUCH AS WIRE, CABLE, TREE ROOTS, PIECES OF CONCRETE, CLODS, CLUMPS, OR OTHER UNSUITABLE MATERIAL.
- C. APPLY FERTILIZER AT 7.5 POUNDS PER 1,000 SQUARE FEET AND LIME AT 200 POUNDS PER 1,000 SQUARE FEET UNLESS SOIL TESTING FOR REQUIREMENTS IS PERFORMED.
- D. NO MOWING IS TO BE UNDERTAKEN UNTIL THE MAJORITY OF THE VEGETATION IS AT LEAST 6" HIGH. MOWING SHOULD CUT THE TOP 1/3 OF VEGETATION. DO NOT UNDER ANY CIRCUMSTANCES CUT VEGETATION BELOW 3".
- E. DO NOT APPLY ANY FORM OF WEED CONTROL UNTIL GRASS HAS BEEN MOWED AT LEAST 4 TIMES.
- F. THESE SEEDING MEASURES ARE NOT TO BE USED ON SLOPES IN EXCESS OF 2:1 GRADING.
- G. PERMANENT SEEDING MEASURES ARE TO BE USED INSTEAD OF TEMPORARY SEEDING MEASURES WHERE WORK IS TO BE SUSPENDED FOR A PERIOD OF TIME LONGER THAN 1 YEAR.
- H. IF THERE IS NO EROSION, BUT SEED SURVIVAL IS LESS THAN 100 PLANTS PER SQUARE FOOT AFTER 4 WEEKS OF GROWTH, RE-SEED AS PLANTING SEASON ALLOWS.
- I. ALL DISTURBED AREAS OUTSIDE THE PAVEMENT AREA SHALL BE LOADED AND SEEDED IN ACCORDANCE WITH THE SUGGESTED SEEDING MIXTURES TABLE.

**SUGGESTED SEEDING MIXTURES AND PRACTICES (NON-WETLAND AREAS)**

| AREAS WHERE SEED MIX APPLIES                             | SEEDING MIXTURES BY WEIGHT | RATE PER 1,000 SQ. FT. | SEEDING DATES                               |
|--|----------------------------|------------------------|---|
| ALL LAWN AREAS   | RED FESCUES 45%            | 1 LBS.                 | APRIL 1 - JUNE 15<br>OR<br>AUG. 15 - OCT. 1 |
|  | KENTUCKY BLUEGRASS 45%     |                        |   |
|  | PERENNIAL RYEGRASS 10%     |                        |   |
| ROAD CUTS, FILLS, DIVERSION DITCHES, & STORMWATER BASINS | KENTUCKY TALL FESCUE 47%   | 0.95 LBS.              | APRIL 1 - JUNE 15<br>OR<br>AUG. 15 - OCT. 1 |
|  | REDTOP 6%                  |                        |   |
|  | CREeping RED FESCUE 47%    |                        |   |

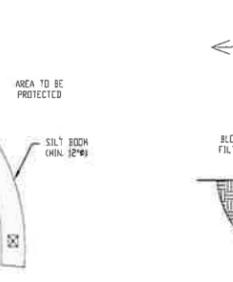
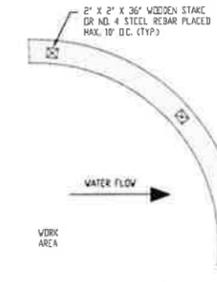
WHERE TREES ARE TO BE RETAINED, THE SEED MIXTURE SHOULD BE ADAPTED FOR SHADY CONDITIONS.

| TEMPORARY SEEDING | ANNUAL RYEGRASS OR PERENNIAL RYEGRASS | 1-1/2 LBS. | WITHIN 7 DAYS AFTER SUSPENSION OF GRADING WORK |
|-------------------|---------------------------------------|------------|--|
|-------------------|---------------------------------------|------------|--|

**SILT FENCE SPECIFICATIONS**

- A. SYNTHETIC FILTER FABRIC SHALL BE A PERVIOUS SHEET OF PROPYLENE, NYLON, POLYESTER, ETHYLENE, OR SIMILAR FILAMENTS AND SHALL BE CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE FOLLOWING MINIMUM REQUIREMENTS:
  - 1. FILTERING EFFICIENCY 75 PERCENT (MIN)
  - 2. GRAB TENSILE STRENGTH 100 POUNDS
  - 3. ELONGATION AT FAILURE 15 PERCENT
  - 4. MULLEN BURST STRENGTH 250 POUNDS PER SQUARE INCH
  - 5. PUNCTURE STRENGTH 50 POUNDS
  - 6. APPARENT OPENING SIZE 0.85mm x 0.90mm
  - 7. FLOW RATE 0.2 GALLONS PER SQUARE FOOT PER MINUTE
  - 8. PERMITTIVITY 0.05 PER SECOND (MIN)
  - 9. ULTRAVIOLET RADIATION STABILITY 70 PERCENT AFTER 500 HOURS OF EXPOSURE (MIN)

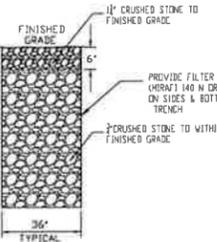
- B. STAKES ARE TO BE MADE OUT OF HARDWOOD WITH A MINIMUM CROSS SECTIONAL AREA OF 1.5 SQUARE INCHES OR STEEL POSTS WITH A MINIMUM WEIGHT OF 0.5 POUNDS PER LINEAR FOOT.
- C. TORN OR PUNCTURED GEOTEXTILES SHALL NOT BE USED.
- D. ON SLOPES WHERE SURFACE FLOW FOLLOWS THE SILT FENCE LINE, PERPENDICULAR SILT FENCE CHECKS SHALL BE INSTALLED AT 50 FOOT INTERVALS.
- E. LINES OF SILT FENCE SHOULD FOLLOW CONTOUR LINES 5-10 FEET DOWN GRADIENT FROM THE SLOPE, WHERE CONTOUR LINES CAN NOT BE FOLLOWED PERPENDICULAR LINES SHOULD BE PLACED AT 50 FOOT INTERVALS.



**TYPICAL SILT SOCK**

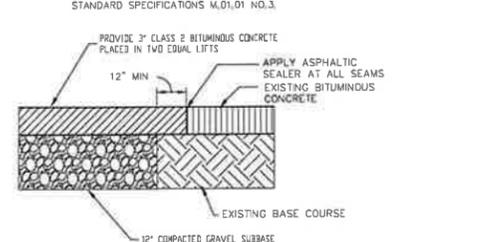
NTS

| SILT BOOM DIAMETER | EFFECTIVE HEIGHT | HALF OF EFFECTIVE HEIGHT |
|--------------------|------------------|--------------------------|
| 12 INCHES          | 9.5 INCHES       | 4.8 INCHES               |
| 18 INCHES          | 14.5 INCHES      | 7.3 INCHES               |
| 24 INCHES          | 19 INCHES        | 9.5 INCHES               |



**STONE TRENCH CROSS SECTION**

NOT TO SCALE

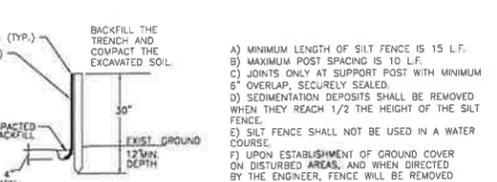


**DRIVEWAY PAVEMENT REPAIR DETAIL**

NTS

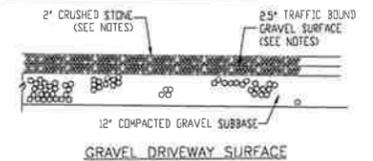
NOTE: 1. ALL SEAMS SHALL BE SAW CUT & STRAIGHT.

A) MINIMUM LENGTH OF SILT FENCE IS 15 L.F.  
B) MAXIMUM POST SPACING IS 10 L.F.  
C) JOINTS ONLY AT SUPPORT POST WITH MINIMUM 6" OVERLAP, SECURELY SEALED.  
D) SEDIMENTATION DEPOSITS SHALL BE REMOVED WHEN THEY REACH 1/2 THE HEIGHT OF THE SILT FENCE.  
E) SILT FENCE SHALL NOT BE USED IN A WATER COURSE.  
F) UPON ESTABLISHMENT OF GROUND COVER ON DISTURBED AREAS, AND WHEN DIRECTED BY THE ENGINEER, FENCE WILL BE REMOVED AND ANY SEDIMENTATION WILL BE THINLY SPREAD UPON EXISTING GROUND COVER.



**PLACEMENT AND CONSTRUCTION OF A SILT FENCE**

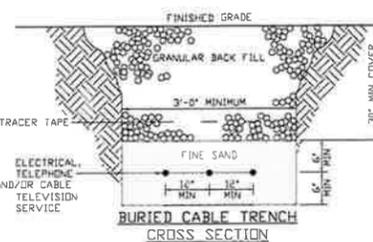
NOT TO SCALE



**GRAVEL DRIVEWAY SURFACE**

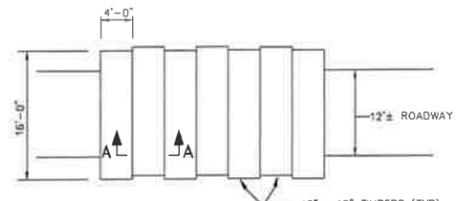
NOT TO SCALE

NOTE: 1. TRAFFIC BOUND GRAVEL SURFACE SHALL MEET CT DOT STANDARD SPECIFICATIONS M.02.06 GRADATION, GRADING "C".  
2. CRUSHED STONE SHALL MEET CT DOT STANDARD SPECIFICATIONS M.01.01 NO.3.



**BURIED CABLE TRENCH CROSS SECTION**

NOT TO SCALE



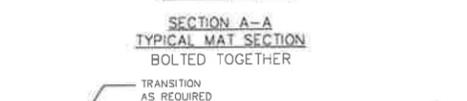
**GRAVEL COMPOUND SURFACE**

NOT TO SCALE

NOTE: 1. TO BE INSTALLED AS NECESSARY TO ACCESS POLES AND CLEAR VEGETATION.  
2. PREPARATION FOR INSTALLATION OF SWAMP MATS WILL CONSIST OF CUTTING TALL WOODY SPECIES AND MOWING SHRUBS IF CONDITIONS REQUIRE. VEGETATION ROOT MASS WILL REMAIN UNDISTURBED.

SWAMP MAT DETAIL

NOT TO SCALE



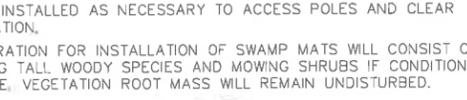
**SWAMP MAT DETAIL**

NOT TO SCALE

NOTE: 1. TO BE INSTALLED AS NECESSARY TO ACCESS POLES AND CLEAR VEGETATION.  
2. PREPARATION FOR INSTALLATION OF SWAMP MATS WILL CONSIST OF CUTTING TALL WOODY SPECIES AND MOWING SHRUBS IF CONDITIONS REQUIRE. VEGETATION ROOT MASS WILL REMAIN UNDISTURBED.

SWAMP MAT DETAIL

NOT TO SCALE



**TRENCH PLUG DETAIL**

NTS

CONSTRUCTION NOTES:  
1. TRENCH PLUGS ARE REQUIRED AT ALL STREAM, RIVER, WETLAND, OR OTHER WATER BODY CROSSINGS REGARDLESS OF TRENCH SLOPE. TOPSOIL MAY NOT BE USED TO FILL SACKS.  
2. TRENCH PLUG LOCATION AND SPACING SHALL BE IN ACCORDANCE WITH CONSTRUCTION ALIGNMENT SHEETS, OR AS OTHERWISE DIRECTED BY THE E.I.

TRENCH PLUG DETAIL

NTS

Cellco Partnership  
d/b/a Verizon Wireless

WIRELESS COMMUNICATIONS FACILITY  
20 ALEXANDER DRIVE  
WALLINGFORD, CT 06492

On Air Engineering, LLC  
88 Foundry Pond Road  
Cold Spring, NY 10516  
onair@optonline.net  
201-456-4624

LICENSURE

DAVID WEIDPAHL, P.E.  
CT LIC. NO. 22144

| NO. | DATE     | SUBMISSIONS                  |
|-----|----------|------------------------------|
| 0   | 05.10.18 | D&M DRAFT                    |
| 1   | 06.12.18 | D&M FINAL                    |
| 2   | 09.14.19 | REVISED FOR TOWER FOUNDATION |
| 3   | 10.15.19 | REVISED FOR D&M SUBMISSION   |

DRAWN BY: MF  
CHECKED BY: DW

PROJECT TYPE:

**NEW BUILD MACRO**

SITE NAME:

**CANTERBURY SOUTH CT**

PROJECT INFORMATION:

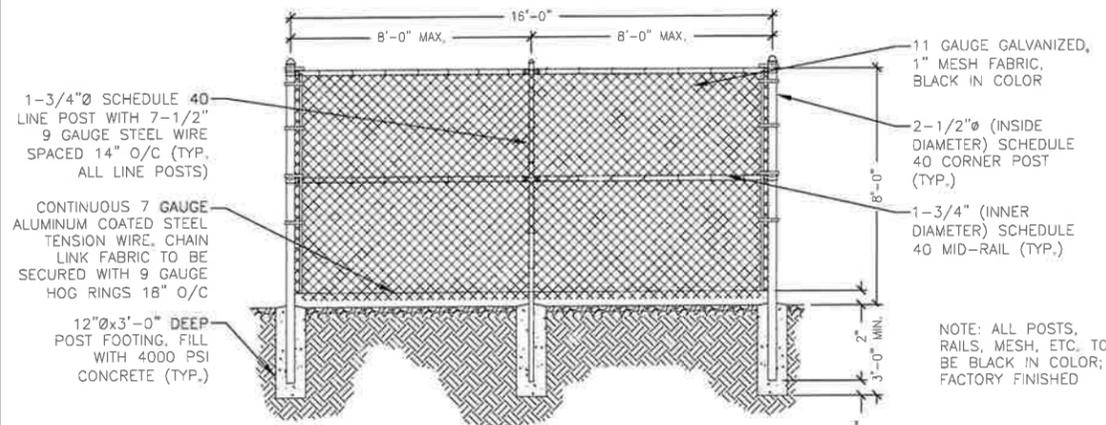
46 CEMETERY RD.  
CANTERBURY, CT 06331

DRAWING TITLE:

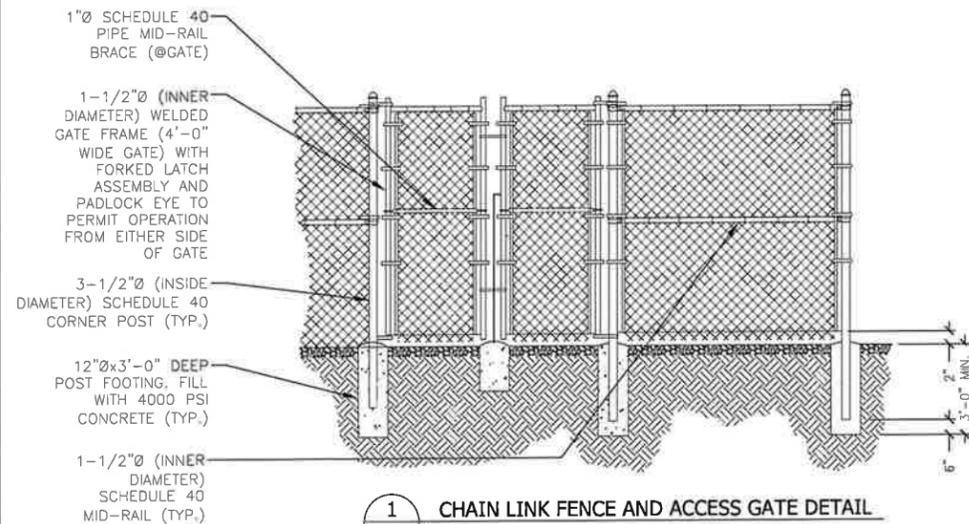
**WETLAND PROTECTION & EROSION CONTROL NOTES & DETAILS**

SHEET NUMBER:

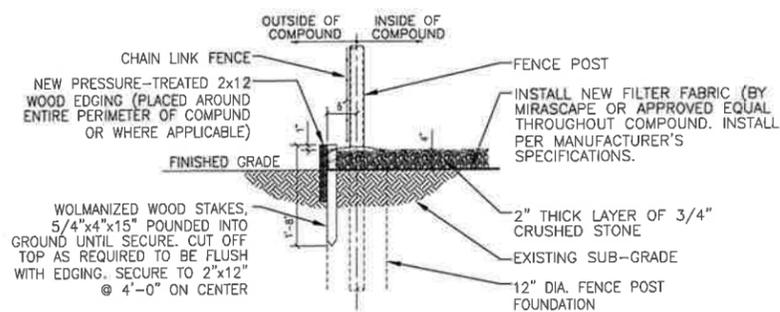
**C-5**



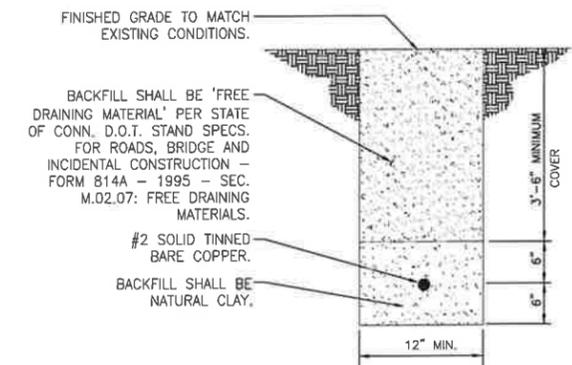
**1 CHAIN LINK FENCE AND ACCESS GATE DETAIL**  
Scale: N.T.S.



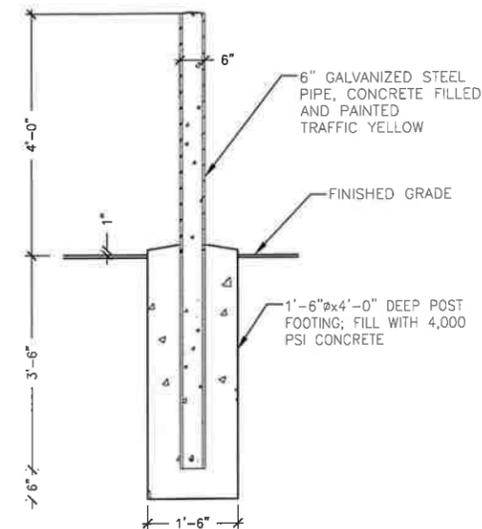
**2 GRADE DETAIL**  
Scale: N.T.S.



**3 EGR TRENCH/BACKFILL DETAIL**  
Scale: N.T.S.



**4 TYPICAL ELECTRICAL TRENCH DETAIL**  
Scale: N.T.S.



**5 PIPE BOLLARD DETAIL**  
Scale: N.T.S.

SEC. 16-50J-77. REPORTING REQUIREMENTS  
(a) **SUPERVISORY PERSONNEL.** THE CERTIFICATE HOLDER, OR FACILITY OWNER OR OPERATOR, SHALL SUBMIT TO THE COUNCIL CONTACT INFORMATION FOR THE PERSONNEL OF THE CONTRACTOR ASSIGNED TO THE PROJECT.  
(b) **NOTICE.**  
(1) THE CERTIFICATE HOLDER, OR FACILITY OWNER OR OPERATOR, SHALL PROVIDE THE COUNCIL, IN WRITING, WITH A MINIMUM OF TWO WEEKS ADVANCE NOTICE OF THE BEGINNING OF:  
(A) CLEARING AND ACCESS WORK, AND  
(B) CONSTRUCTION OF THE TOWER AND ASSOCIATED EQUIPMENT.  
(2) THE CERTIFICATE HOLDER, OR FACILITY OWNER OR OPERATOR, SHALL PROVIDE THE COUNCIL WITH ADVANCE WRITTEN NOTICE WHENEVER A SIGNIFICANT MODIFICATION OF THE APPROVED D&M PLAN IN NECESSARY INCLUDING, BUT NOT LIMITED TO, A CHANGE IN THE LOCATION OF THE TOWER, ASSOCIATED EQUIPMENT, GUY WIRES, OR ACCESS ROAD, THE COUNCIL, OR ITS DESIGNEE SHALL PROMPTLY REVIEW THE CHANGES, AND THE COUNCIL SHALL APPROVE, MODIFY, OR DISAPPROVE THE CHANGES IN ACCORDANCE WITH SUBSECTION (d) OF SECTION 16-50J-75 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES.  
(3) THE CERTIFICATE HOLDER, OR FACILITY OWNER OR OPERATOR, SHALL PROVIDE THE COUNCIL WITH A MONTHLY CONSTRUCTION PROGRESS REPORT, OR A CONSTRUCTION PROGRESS REPORT AT THE TIME INTERVALS DETERMINED BY THE COUNCIL, INDICATING CHANGES AND DEVIATIONS FROM THE APPROVED D&M PLAN, THE COUNCIL MAY APPROVE THE CHANGES AND DEVIATIONS OR REQUEST CORRECTIONS OR MITIGATING MEASURES.  
(4) THE CERTIFICATE HOLDER, OR FACILITY OWNER OR OPERATOR, SHALL PROVIDE THE COUNCIL WITH WRITTEN NOTICE OF COMPLETION OF CONSTRUCTION AND SITE REHABILITATION.  
(c) **FINAL REPORT.** THE CERTIFICATE HOLDER, OR FACILITY OWNER OR OPERATOR, SHALL PROVIDE THE COUNCIL WITH A FINAL REPORT NOT LATER THAN 180 DAYS AFTER COMPLETION OF ALL SITE CONSTRUCTION AND SITE REHABILITATION. THIS FINAL REPORT SHALL IDENTIFY:  
(1) ALL AGREEMENTS WITH ABUTTERS OR OTHER PROPERTY OWNERS REGARDING SPECIAL MAINTENANCE PRECAUTIONS;  
(2) SIGNIFICANT MODIFICATIONS OF THE D&M PLAN THAT WERE REQUIRED BECAUSE OF THE PROPERTY RIGHTS OF UNDERLYING AND ADJOINING OWNERS OR FOR OTHER REASONS;  
(3) THE LOCATION OF CONSTRUCTION MATERIALS WHICH HAVE BEEN LEFT IN PLACE IN THE FORM OF CULVERTS, EROSION CONTROL STRUCTURES ALONG WATERCOURSES AND STEEP SLOPES, AND CORDUROY ROADS IN REGULATED WETLANDS;  
(4) THE LOCATION OF SPECIAL AREAS WHERE SPECIAL PLANTING AND RESEEDING HAVE BEEN DONE; AND  
(5) AGREEMENTS BETWEEN THE CERTIFICATE HOLDER AND PUBLIC AGENCIES AUTHORIZING PUBLIC RECREATIONAL USE OF THE SITE TO THE EXTENT OF THE CERTIFICATE HOLDER'S PROPERTY RIGHTS THERETO.  
(d) THE FINAL REPORT SHALL INCLUDE THE ACTUAL CONSTRUCTION COST OF THE TOWER AND ASSOCIATED EQUIPMENT, INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING COSTS:  
(1) CONSTRUCTION OF THE TOWER AND ASSOCIATED EQUIPMENT;  
(2) SITE REHABILITATION; AND  
(3) PROPERTY ACQUISITION FOR SITE OR ACCESS TO SITE.

Cellco Partnership  
d/b/a Verizon Wireless



WIRELESS COMMUNICATIONS FACILITY  
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| DRAWN BY: | CHECKED BY: |
|-----------|-------------|
| MF        | DW          |

PROJECT TYPE:  
**NEW BUILD MACRO**

SITE NAME:  
**CANTERBURY SOUTH CT**

PROJECT INFORMATION:  
**46 CEMETERY RD.  
CANTERBURY, CT 06331**

DRAWING TITLE:  
**SITE DETAILS & CSC  
REPORTING NOTES**

SHEET NUMBER:  
**C-6**

**GENERAL STRUCTURAL NOTES:**

1. ALL EQUIPMENT SHALL BE INSTALLED PLUMB AND LEVEL.
2. ALL WIDE FLANGE STRUCTURAL STEEL SHALL CONFORM WITH A992 SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST AISC CODE AND ASTM SPECIFICATION. STEEL SHALL CONFORM TO ASTM A-36. PIPE SHALL CONFORM TO ASTM A-501 OR ASTM TYPE EOR S A-53 (GRADE B).
3. ALL CONNECTIONS OF STRUCTURAL STEEL MEMBERS SHALL BE MADE USING SPECIFIED WELDS WITH WELDING ELECTRODES E-70XX OR SPECIFIED HIGH STRENGTH BOLTS TO BE ASTM A325, THREAD EXCLUDED FROM SHEAR PLANE.
4. ALL STEEL EXPOSED TO MOISTURE SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION PER ASTM A-123. ALL DAMAGED SURFACES, WELDED AREAS AND AUTHORIZED NON-GALVANIZED MEMBERS OR PARTS (EXISTING OR NEW) SHALL BE PAINTED WITH 2 COATS OF ZRC COLD GALVANIZING COMPOUND MANUFACTURED BY ZRC CHEMICAL PRODUCTS CO. QUINCY, MA. OR USE THERMAL SPRAYING WITH PLATZINC 85/15 AS MANUFACTURED BY PLATT BROTHERS & COMPANY, WATERBURY, CT 1-800-752-8276.
5. ALL SHOP AND FIELD WELDING SHALL BE DONE BY WELDERS QUALIFIED AS DESCRIBED IN THE "AMERICAN WELDING SOCIETY'S STANDARD QUALIFICATION PROCEDURE" TO PERFORM THE TYPE OF WORK REQUIRED.
6. ALL PIPE SIZES ARE NOMINAL DIAMETER (INSIDE DIAMETER).

**CAST-IN-PLACE CONCRETE:**

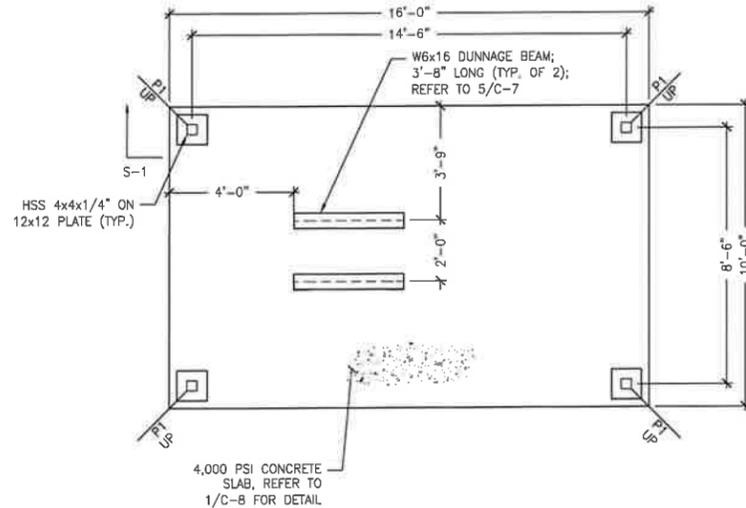
1. ALL CONCRETE WORK SHALL CONFORM TO THE LATEST EDITION OF THE ACI BUILDING CODE.
2. ALL CONCRETE SHALL ATTAIN 4000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
3. READY MIX: COMPLY WITH ACI-301 AND ASTM C-94. ALL CONCRETE EXPOSED TO THE GROUND OR WEATHER SHALL BE AIR ENTRAINED.
4. COLD WEATHER CONCRETE POURING SHALL BE IN ACCORDANCE WITH ACI-306.
5. THROUGHOUT CONSTRUCTION THE CONCRETE WORK SHALL BE ADEQUATELY PROTECTED AGAINST DAMAGE DUE TO EXCESSIVE LOADING, CONSTRUCTION EQUIPMENT, MATERIALS OR THODS, ICE, RAIN, SNOW, EXCESSIVE HEAT AND FREEZING TEMPERATURES.
6. EARLY DRYING OUT OF CONCRETE, ESPECIALLY DURING THE FIRST 24 HOURS, SHALL BE CAREFULLY GUARDED AGAINST. ALL SURFACES SHALL BE PROTECTED USING MOIST CURING OR A MEMBRANE CURING AGENT APPLIED AS SOON AS FORMS ARE REMOVED OR FINISHING OPERATIONS ARE COMPLETE. CARE SHALL BE EXERCISED SO AS NOT TO DAMAGE COATING.
7. APPLY NON-SLIP BROOM FINISH IMMEDIATELY AFTER TROWEL FINISHING.
8. CONTRACTOR TO COORDINATE REQUIREMENTS OF STRUCTURAL, CIVIL, MECHANICAL AND ELECTRICAL DRAWINGS INCLUDING ANY AND ALL PENETRATIONS SPECIFIED PRIOR TO POURING CONCRETE.
9. CONTRACTOR SHALL PROVIDE A 3/4" CHAMFER ON ALL CONCRETE SLABS.

**REINFORCING:**

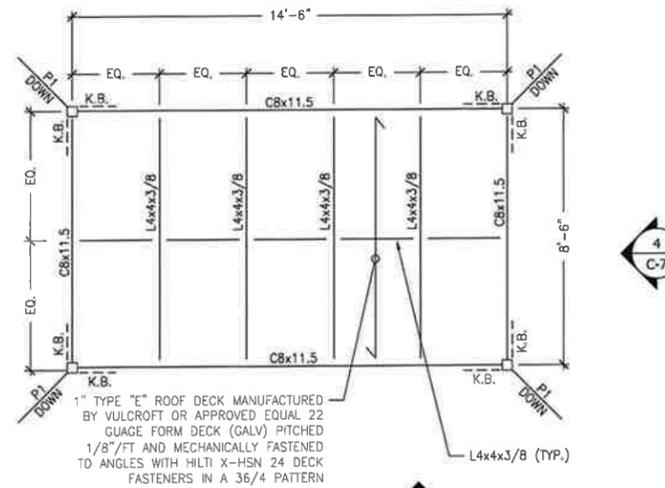
1. ALL REINFORCING BAR SHALL CONFORM TO THE LATEST ACI CODE AND DETAILING MANUAL.
2. WHERE REINFORCING IS CALLED OUT IN THE CONSTRUCTION DOCUMENTS IT SHALL BE 3" CLEAR COVER (MINIMUM UNLESS OTHERWISE NOTED).
3. ALL BARS SHALL BE ASTM A-615, GRADE 60.
4. WELDED WIRE FABRIC SHALL BE ASTM A-185.
5. WHERE CONTINUOUS BARS ARE CALLED FOR, THEY SHALL BE RUN CONTINUOUSLY AROUND CORNERS AND LAPPED AT NECESSARY SPLICES OR HOOKED AT DISCONTINUOUS ENDS. LAP SHALL BE 40 BAR DIAMETERS.

**FOUNDATIOIN**

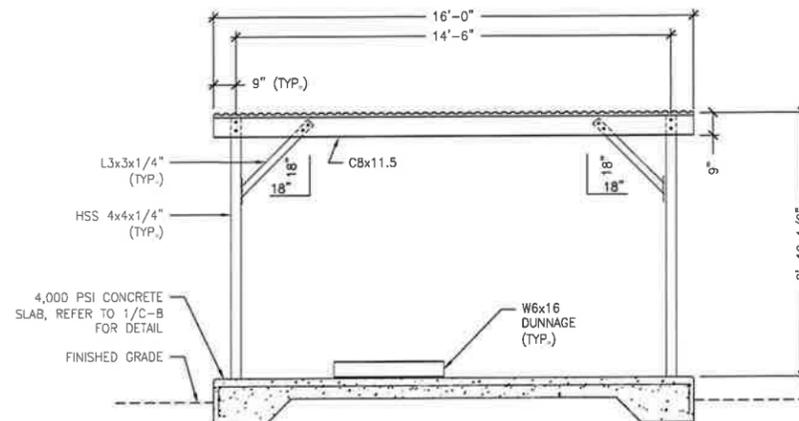
FOOTINGS SHALL BEAR ON UNDISTURBED SOIL AND /OR SUPERVISED COMPACTED FILL, FREE OF FROST, HAVING A MINIMUM ALLOWABLE BEARING CAPACITY OF 1 1/2 TONS PER SQUARE FOOT



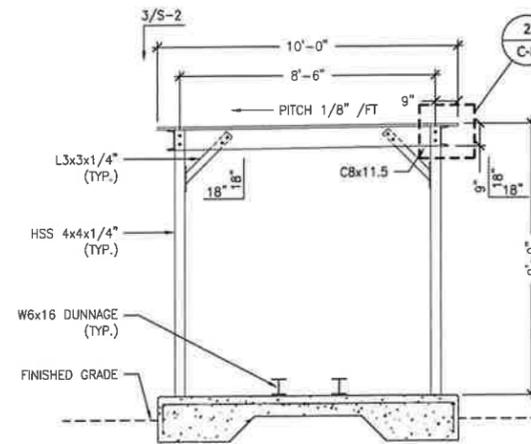
**1 EQUIPMENT PAD PLAN**  
Scale: 1/4" = 1'-0"



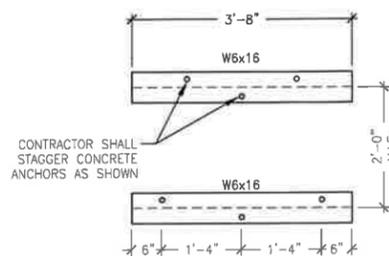
**2 EQUIPMENT CANOPY ROOF FRAMING PLAN**  
Scale: 3/8" = 1'-0"



**3 EQUIPMENT PAD AND CANOPY \"LONG\" ELEVATION**  
Scale: 3/8" = 1'-0"



**4 EQUIPMENT PAD AND CANOPY \"SHORT\" ELEVATION**  
Scale: 3/8" = 1'-0"



**5 EQUIPMENT DUNNAGE PLAN**  
Scale: 3/4" = 1'-0"

- NOTES:**
1. COORDINATE ALL BOLT HOLE LOCATIONS AND DUNNAGE RAIL SPACING BASED ON CABINET REQUIREMENTS.
  2. USE 1/2"Ø HILTI HIT-HY 200 ANCHORS WITH 3" MIN. EMBEDMENT.

**PLAN NOTES**

1. VERIFY ALL DIMENSIONS, ELEVATIONS, EXISTING FRAMING MEMBER SIZES AND GENERAL CONDITIONS PRIOR TO COMMENCEMENT OF WORK. NOTIFY ENGINEER OF RECORD OF ANY DISCREPANCIES BETWEEN THESE DRAWINGS AND EXISTING CONDITIONS.

**LEGEND**

| SYMBOL | DESCRIPTION   |
|--------|---|
|        | INDICATES HSS4x4x1/4 ASTM A500 GR. B (Fy=48ksi) STEEL POST. |
|        | INDICATES SPAN DIRECTION                                    |
| K.B.   | INDICATES L3x3x1/4 ASTM A36 (Fy=36ksi) STEEL ANGLE          |

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LICENSURE



DAVID WEPFAHL, P.E.  
CT LIC. NO. 22144

| NO. | DATE     | SUBMISSIONS                  |
|-----|----------|------------------------------|
| 0   | 05.10.18 | D&M DRAFT                    |
| 1   | 06.12.18 | D&M FINAL                    |
| 2   | 09.14.19 | REVISED FOR TOWER FOUNDATION |
| 3   | 10.15.19 | REVISED FOR D&M SUBMISSION   |

|           |             |
|-----------|-------------|
| DRAWN BY: | CHECKED BY: |
| MF        | DW          |

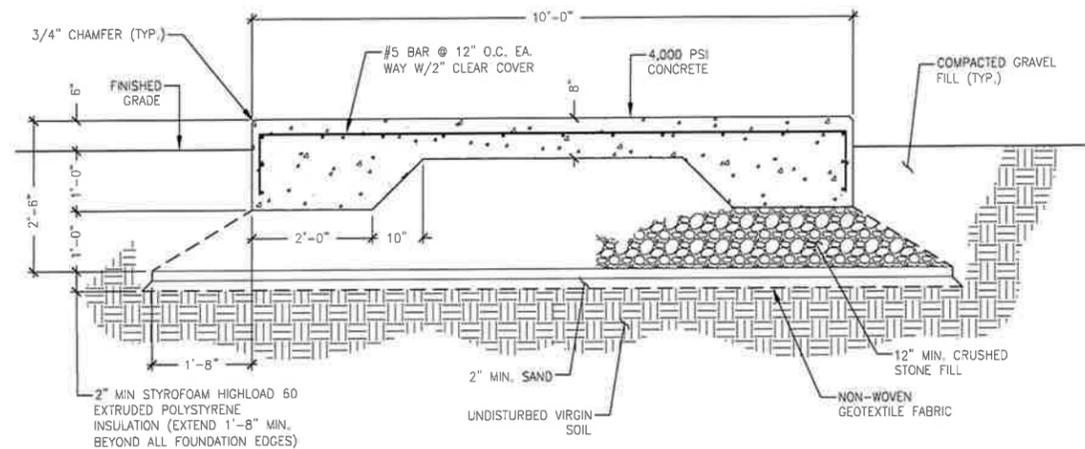
PROJECT TYPE:  
**NEW BUILD MACRO**

SITE NAME:  
**CANTERBURY SOUTH CT**

PROJECT INFORMATION:  
**46 CEMETERY RD.  
CANTERBURY, CT 06331**

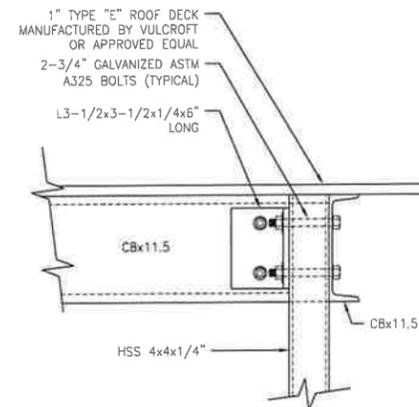
DRAWING TITLE:  
**EQUIPMENT PLAN  
ELEVATION & DETAILS**

SHEET NUMBER:  
**C-7**

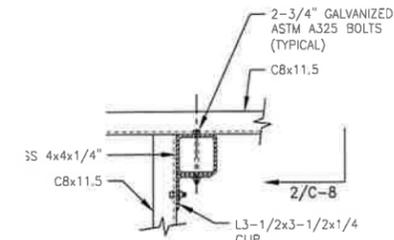


NOTE: MINIMUM SAFE ALLOWABLE BEARING CAPACITY ON VIRGIN SOIL OR ENGINEER CONTROLLED COMPACTED FILL TO BE 3000 PSF.

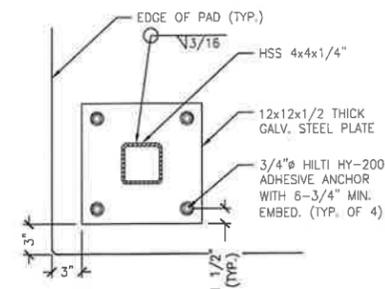
**1 CONCRETE SLAB SECTION**  
Scale: 3/4" = 1'-0"



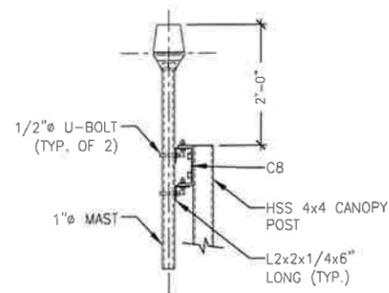
**2 CANOPY CONNECTION SECTION**  
Scale: 1-1/2" = 1'-0"



**3 CANOPY CONNECTION PLAN**  
Scale: 1-1/2" = 1'-0"



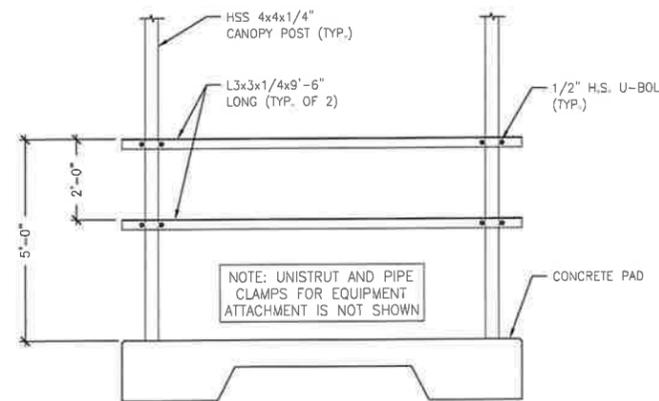
**4 CANOPY POST PLAN DETAIL**  
Scale: 1-1/2" = 1'-0"



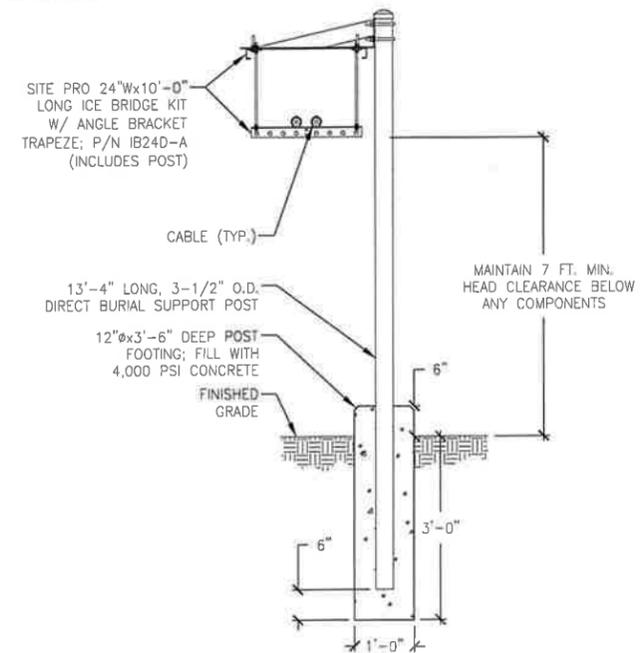
**NOTES:**

1. THE GPS ANTENNA MOUNT IS DESIGNED TO FASTEN TO A STANDARD 2-1/2" DIAMETER, SCHEDULE 40, GALVANIZED STEEL OR STAINLESS STEEL PIPE. THE PIPE MUST NOT BE THREADED AT THE ANTENNA MOUNT END. THE PIPE SHALL BE CUT TO THE REQUIRED LENGTH (MINIMUM OF 24 INCHES) USING A HAND OR ROTARY PIPE CUTTER TO ASSURE A SMOOTH AND PERPENDICULAR CUT. A HACK SAW SHALL NOT BE USED. THE CUT PIPE END SHALL BE DEBURRED AND SMOOTH IN ORDER TO SEAL AGAINST THE NEOPRENE GASKET ATTACHED TO THE ANTENNA MOUNT.
2. ATTACH TO POST NEAREST EQUIPMENT WITH CLEAN VIEW OF SKY.
3. PRIOR TO INSTALLATION CONTRACTOR SHALL TEST GPS LOCATION WITH HAND HELD AND MOVE GPS ANTENNA TO OTHER ICE BRIDGE POSTS AS REQUIRED TO ACHIEVE ADEQUATE SIGNAL. FAILURE TO ACHIEVE ADEQUATE SIGNAL WITH A HAND HELD GPS SHALL BE REPORTED TO CONSTRUCTION MANAGER AND ENGINEER TO DETERMINE ALTERNATE INSTALLATION LOCATION FOR GPS ANTENNA.

**5 GPS GROUNDING/MOUNTING BRACKET DETAIL**  
Scale: N.T.S.



**6 E/T FRAME DETAIL**  
Scale: 1/2" = 1'-0"



**7 CABLE BRIDGE DETAIL**  
Scale: N.T.S.

Cellco Partnership  
d/b/a Verizon Wireless



WIRELESS COMMUNICATIONS FACILITY  
20 ALEXANDER DRIVE  
WALLINGFORD, CT 06492

**On Air Engineering, LLC**

88 Foundry Pond Road  
Cold Spring, NY 10516  
onair@optonline.net  
201-456-4624

LICENSURE



DAVID WENPAHL, P.E.  
CT LIC. NO. 22144

NO. DATE SUBMISSIONS

| NO. | DATE     | SUBMISSIONS                  |
|-----|----------|------------------------------|
| 0   | 05.10.18 | D&M DRAFT                    |
| 1   | 06.12.18 | D&M FINAL                    |
| 2   | 09.14.19 | REVISED FOR TOWER FOUNDATION |
| 3   | 10.15.19 | REVISED FOR D&M SUBMISSION   |
|     |          |                              |
|     |          |                              |
|     |          |                              |
|     |          |                              |

DRAWN BY: MF  
CHECKED BY: DW

PROJECT TYPE:  
**NEW BUILD MACRO**

SITE NAME:  
**CANTERBURY SOUTH CT**

PROJECT INFORMATION:  
46 CEMETERY RD.  
CANTERBURY, CT 06331

DRAWING TITLE:  
**STRUCTURAL DETAILS**

SHEET NUMBER:  
**C-8**





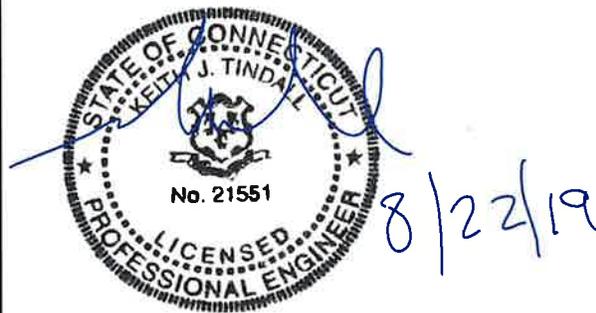
**Structural Design Report**  
160' Extendible to 180' Monopole  
Site: Canterbury South, CT

Prepared for: VERIZON WIRELESS  
by: Sabre Towers & Poles™

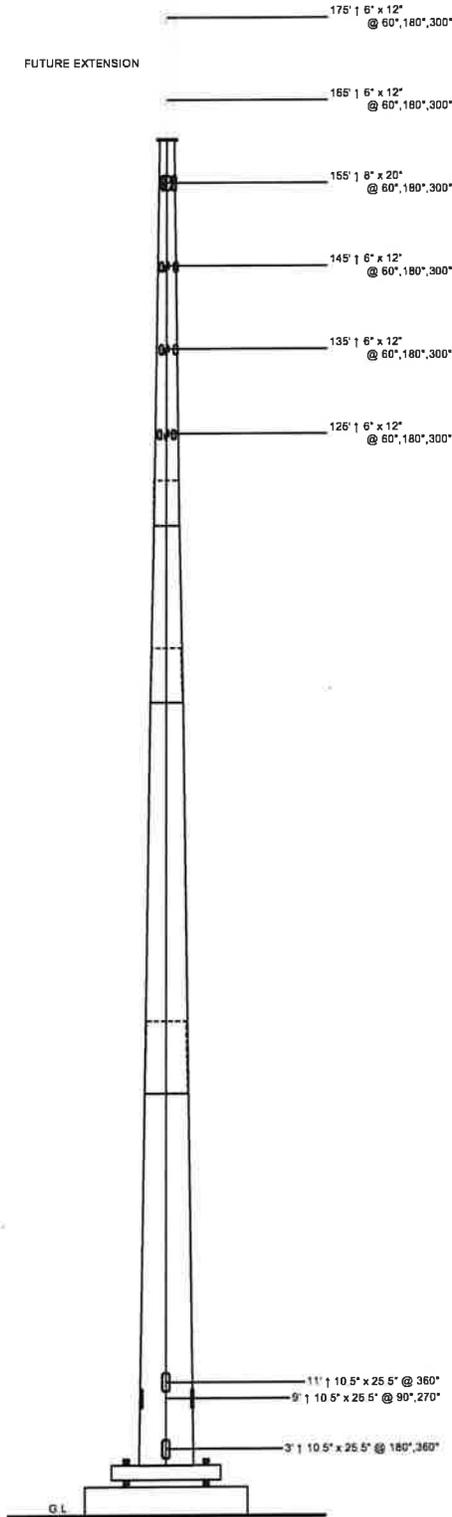
Job Number: 20-2374-RAM

**August 22, 2019**

|                                       |              |
|---------------------------------------|--------------|
| <b>Monopole Profile.....</b>          | <b>1</b>     |
| <b>Foundation Design Summary.....</b> | <b>2</b>     |
| <b>Pole Calculations.....</b>         | <b>3-14</b>  |
| <b>Foundation Calculations.....</b>   | <b>15-16</b> |



|                           |        |         |         |        |                |
|---------------------------|--------|---------|---------|--------|----------------|
| Length (ft)               | 53'-3" | 53'-6"  | 26'-9"  | 46'-3" | 20'-0"         |
| Number Of Sides           | 18     |         |         |        |                |
| Thickness (in)            | 1 1/2" | 8" - 9" | 5" - 6" | 7 1/8" | 1 1/4"         |
| Lap Splice (ft)           |        |         | 6" - 6" |        |                |
| Top Diameter (in)         | 58.37" | 42.46"  | 35.8"   | 21.28" | 20.5"          |
| Bottom Diameter (in)      | 78.5"  | 62.68"  | 45.92"  | 36.76" | 20.5"          |
| Taper (in/ft)             |        | 0.378   |         |        | 0              |
| Grade                     |        | A572-85 |         |        |                |
| Weight (lbs)              | 23339  | 15938   | 6178    | 7428   | 1539           |
| Overall Steel Height (ft) |        | 159     |         |        | 20 (Extension) |



### Designed Appurtenance Loading

| Elev   | Description                            | Tx-Line     |
|--------|--|-------------|
| 177*** | (1) 200 sq ft (no ice) 225 sq ft (ice) | (12) 1 5/8" |
| 167*** | (1) 200 sq ft (no ice) 225 sq ft (ice) | (12) 1 5/8" |
| 157    | (1) 250 Sq Ft EPA (3000 lbs)           | (18) 1 5/8" |
| 147    | (1) 200 sq ft (no ice) 225 sq ft (ice) | (12) 1 5/8" |
| 137    | (1) 200 sq ft (no ice) 225 sq ft (ice) | (12) 1 5/8" |

### Design Criteria - ANSI/TIA-222-G

|  |         |
|--|---------|
| ASCE 7-16 Ultimate Wind Speed (No Ice) | 130 mph |
| Wind Speed (Ice)                       | 50 mph  |
| Design Ice Thickness                   | 1.00 in |
| Structure Class                        | II      |
| Risk Category                          | II      |
| Exposure Category                      | C       |
| Topographic Category                   | 1       |

### Load Case Reactions

| Description             | Axial (kips) | Shear (kips) | Moment (ft-k) | Deflection (ft) | Sway (deg) |
|-------------------------|--------------|--------------|---------------|-----------------|------------|
| 3s Gusted Wind          | 89.01        | 86.91        | 12156.89      | 14.14           | 9.67       |
| 3s Gusted Wind 0.9 Dead | 66.77        | 86.92        | 12044.97      | 13.96           | 9.53       |
| 3s Gusted Wind/Ice      | 114.78       | 21.49        | 2993.43       | 3.54            | 2.37       |
| Service Loads           | 74.14        | 17.18        | 2403.29       | 2.85            | 1.93       |

### Base Plate Dimensions

| Shape | Diameter | Thickness | Bolt Circle | Bolt Qty | Bolt Diameter |
|-------|----------|-----------|-------------|----------|---------------|
| Round | 91.75"   | 2.5"      | 86"         | 28       | 2.25"         |

### Anchor Bolt Dimensions

| Length | Diameter | Hole Diameter | Weight | Type    | Finish |
|--------|----------|---------------|--------|---------|--------|
| 84"    | 2.25"    | 2.625"        | 3390.8 | A615-75 | Galv   |

### Notes

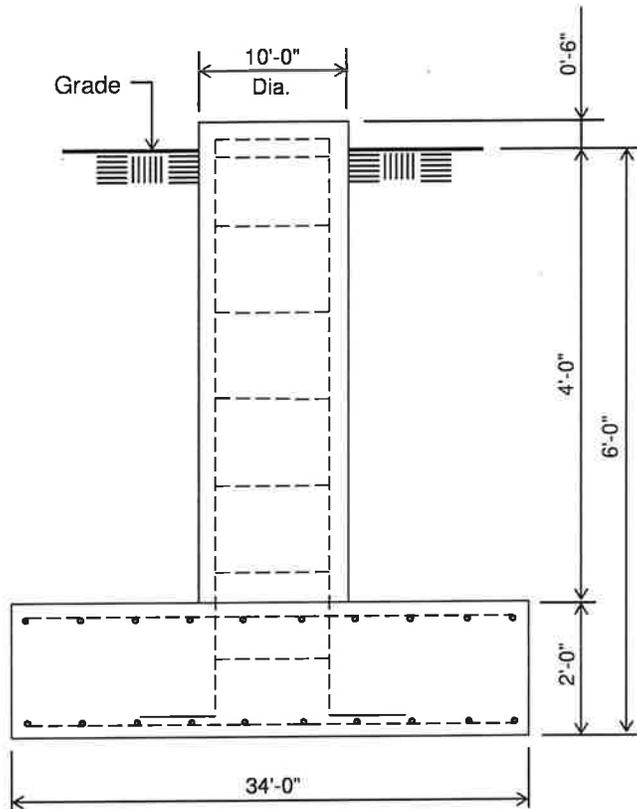
- 1) Antenna Feed Lines Run Inside Pole
  - 2) All dimensions are above ground level, unless otherwise specified.
  - 3) Weights shown are estimates. Final weights may vary.
  - 4) Full Height Step Bolts
  - 5) This tower design and, if applicable, the foundation design(s) shown on the following page(s) also meet or exceed the requirements of the 2018 Connecticut Building Code.
  - 6) Tower Rating: 99.5%
- \*\*\* These Appurtenances cannot be installed until the Monopole has been extended.

|  |  |   |
|--|--|---|
|  | <b>Sabre Communications Corporation</b><br>7101 Southbridge Drive<br>P.O. Box 658<br>Sioux City, IA 51102-0658<br>Phone: (712) 258 6860<br>Fax: (712) 279 0814   | Job: <b>20-2374-RAM</b><br>Customer: <b>VERIZON WIRELESS</b><br>Site Name: <b>Canterbury South, CT</b><br>Description: <b>160' ext. 180' Monopole</b><br>Date: <b>8/22/2019</b> |
|  | Information contained herein is the sole property of Sabre Communications Corporation, constitutes a trade secret as defined by Iowa Code Ch. 550 and shall not be reproduced, copied or used in whole or part for any purpose whatsoever without the prior written consent of Sabre Communications Corporation. | By: <b>KJT</b>  |

**Customer: VERIZON WIRELESS**

**Site: Canterbury South, CT**

160' Monopole Extendible to 180'



**ELEVATION VIEW**

(98.72 Cu. Yds.)

(1 REQUIRED; NOT TO SCALE)

**Notes:**

- 1) Concrete shall have a minimum 28-day compressive strength of 4,500 psi, in accordance with ACI 318-11.
- 2) Rebar to conform to ASTM specification A615 Grade 60.
- 3) All rebar to have a minimum of 3" concrete cover.
- 4) All exposed concrete corners to be chamfered 3/4".
- 5) The foundation design is based on the geotechnical report by Atlantic Consulting & Engineering, LLC; project# G119-1309-19; dated July 29, 2019.
- 6) See the geotechnical report for compaction requirements, if specified.
- 7) 4 ft of soil cover is required over the entire area of the foundation slab.
- 8) The foundation is based on the following factored loads:  
 Moment = 12,156.89 k-ft  
 Axial = 89.01 k  
 Shear = 86.91 k

| Rebar Schedule for Pad and Pier |   |
|---------------------------------|---|
| Pier                            | (58) #9 vertical rebar w/ hooks at bottom w/ #5 ties, (2) within top 5" of pier, then 12" C/C |
| Pad                             | (65) #10 horizontal rebar evenly spaced each way top and bottom (260 total)                   |

Information contained herein is the sole property of Sabre Towers & Poles, constitutes a trade secret as defined by Iowa Code Ch. 550 and shall not be reproduced, copied or used in whole or part for any purpose whatsoever without the prior written consent of Sabre Towers & Poles.

160' ext. 180' Monopole / Canterbury South, CT

\* All pole diameters shown on the following pages are across corners.  
 See profile drawing for widths across flats.

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POLE GEOMETRY

=====

| ELEV<br>ft | SECTION<br>NAME | No.<br>SIDE | OUTSIDE<br>DIAM<br>in | THICK<br>-NESS<br>in | RESISTANCES<br>♦*Pn<br>kip | ♦*Mn<br>ft-kip | SPLICE<br>TYPE | ...OVERLAP...<br>LENGTH<br>ft | RATIO | w/t  |
|------------|-----------------|-------------|-----------------------|----------------------|----------------------------|----------------|----------------|-------------------------------|-------|------|
| 179.0      | A               | 18          | 21.22                 | 0.250                | 1217.4                     | 514.9          |                |                               |       | 13.0 |
| 159.0      | B               | 18          | 21.60                 | 0.438                | 2149.7                     | 909.9          |                |                               |       | 6.8  |
| 118.2      | B/C             | 18          | 37.23                 | 0.438                | 3737.5                     | 2773.7         | SLIP           | 5.50                          | 1.74  |      |
| 112.7      | C               | 18          | 38.48                 | 0.500                | 4409.1                     | 3373.4         |                |                               |       | 11.6 |
| 98.0       | C/D             | 18          | 44.11                 | 0.500                | 5063.2                     | 4455.9         | SLIP           | 6.50                          | 1.74  |      |
| 91.5       | D               | 18          | 45.62                 | 0.500                | 5238.5                     | 4771.6         |                |                               |       | 14.1 |
| 53.2       | D/E             | 18          | 60.27                 | 0.500                | 6628.9                     | 8020.4         | SLIP           | 8.75                          | 1.70  |      |
| 44.5       | E               | 18          | 62.65                 | 0.500                | 6807.5                     | 8566.3         |                |                               |       | 20.0 |
| 0.0        |                 |             | 79.71                 | 0.500                | 7900.3                     | 12693.5        |                |                               |       |      |

=====

POLE ASSEMBLY

=====

| SECTION<br>NAME | BASE<br>ELEV<br>ft | BOLTS<br>NUMBER | AT<br>TYPE | BASE<br>DIAM<br>in | OF SECTION<br>STRENGTH<br>ksi | THREADS IN<br>SHEAR PLANE | CALC<br>BASE<br>ELEV<br>ft |
|-----------------|--------------------|-----------------|------------|--------------------|-------------------------------|---------------------------|----------------------------|
| A               | 159.000            | 0               | A325       | 0.00               | 92.0                          | 0                         | 159.000                    |
| B               | 112.750            | 0               | A325       | 0.00               | 92.0                          | 0                         | 112.750                    |
| C               | 91.500             | 0               | A325       | 0.00               | 92.0                          | 0                         | 91.500                     |
| D               | 44.500             | 0               | A325       | 0.00               | 92.0                          | 0                         | 44.500                     |
| E               | 0.000              | 0               | A325       | 0.00               | 92.0                          | 0                         | 0.000                      |

=====

POLE SECTIONS

=====

| SECTION<br>NAME | No. of<br>SIDES | LENGTH<br>ft | OUTSIDE<br>DIAMETER<br>BOT<br>*<br>in | TOP<br>*<br>in | BEND<br>RAD<br>in | MAT-<br>ERIAL<br>ID | FLANGE ID<br>BOT | TOP | FLANGE WELD<br>GROUP ID...<br>BOT | TOP |
|-----------------|-----------------|--------------|---------------------------------------|----------------|-------------------|---------------------|------------------|-----|-----------------------------------|-----|
| A               | 18              | 20.00        | 21.22                                 | 21.22          | 0.000             | 1                   | 0                | 0   | 0                                 | 0   |
| B               | 18              | 46.25        | 39.35                                 | 21.60          | 0.000             | 2                   | 0                | 0   | 0                                 | 0   |
| C               | 18              | 26.75        | 46.62                                 | 36.36          | 0.000             | 3                   | 0                | 0   | 0                                 | 0   |
| D               | 18              | 53.50        | 63.65                                 | 43.11          | 0.000             | 4                   | 0                | 0   | 0                                 | 0   |
| E               | 18              | 53.25        | 79.71                                 | 59.27          | 0.000             | 5                   | 0                | 0   | 0                                 | 0   |

\* - Diameter of circumscribed circle

=====

MATERIAL TYPES

=====

| TYPE OF<br>SHAPE | TYPE<br>NO | NO OF<br>ELEM. | ORIENT<br>& deg | HEIGHT<br>in | WIDTH<br>in | .THICKNESS.<br>WEB<br>in | FLANGE<br>in | IRREGULARITY<br>PROJECTION.<br>% OF ORIENT<br>AREA | deg |
|------------------|------------|----------------|-----------------|--------------|-------------|--------------------------|--------------|--|-----|
|------------------|------------|----------------|-----------------|--------------|-------------|--------------------------|--------------|--|-----|

|    |   |   |     |       |      |       |       |      |     |
|----|---|---|-----|-------|------|-------|-------|------|-----|
| PL | 1 | 1 | 0.0 | 21.22 | 0.25 | 0.250 | 0.250 | 0.00 | 0.0 |
| PL | 2 | 1 | 0.0 | 39.36 | 0.44 | 0.438 | 0.438 | 0.00 | 0.0 |
| PL | 3 | 1 | 0.0 | 46.62 | 0.50 | 0.500 | 0.500 | 0.00 | 0.0 |
| PL | 4 | 1 | 0.0 | 63.65 | 0.50 | 0.500 | 0.500 | 0.00 | 0.0 |
| PL | 5 | 1 | 0.0 | 79.71 | 0.50 | 0.500 | 0.500 | 0.00 | 0.0 |

& - with respect to vertical

MATERIAL PROPERTIES

| MATERIAL<br>TYPE NO. | ELASTIC<br>MODULUS<br>ksi | UNIT<br>WEIGHT<br>pcf | STRENGTH  |           | THERMAL<br>COEFFICIENT<br>/deg |
|----------------------|---------------------------|-----------------------|-----------|-----------|--------------------------------|
|                      |                           |                       | Fu<br>ksi | Fy<br>ksi |                                |
| 1                    | 29000.0                   | 490.0                 | 80.0      | 65.0      | 0.00001170                     |
| 2                    | 29000.0                   | 490.0                 | 80.0      | 65.0      | 0.00001170                     |
| 3                    | 29000.0                   | 490.0                 | 80.0      | 65.0      | 0.00001170                     |
| 4                    | 29000.0                   | 490.0                 | 80.0      | 65.0      | 0.00001170                     |
| 5                    | 29000.0                   | 490.0                 | 80.0      | 65.0      | 0.00001170                     |

\* Only 3 condition(s) shown in full

\* Some concentrated wind loads may have been derived from full-scale wind tunnel testing

LOADING CONDITION A

130 mph Ultimate wind with no ice. wind Azimuth: 0°

LOADS ON POLE

| LOAD<br>TYPE | ELEV<br>ft | APPLY.<br>RADIUS<br>ft | LOAD<br>AZI | LOAD<br>AZI | FORCES       |             | MOMENTS            |                   |
|--------------|------------|------------------------|-------------|-------------|--------------|-------------|--------------------|-------------------|
|              |            |                        |             |             | HORIZ<br>kip | DOWN<br>kip | VERTICAL<br>ft-kip | TORSNAL<br>ft-kip |
| C            | 176.000    | 0.00                   | 0.0         | 0.0         | 0.0000       | 2.6358      | 0.0000             | 0.0000            |
| C            | 176.000    | 0.00                   | 0.0         | 0.0         | 12.4640      | 3.7200      | 0.0000             | 0.0000            |
| C            | 166.000    | 0.00                   | 0.0         | 0.0         | 0.0000       | 2.4860      | 0.0000             | 0.0000            |
| C            | 166.000    | 0.00                   | 0.0         | 0.0         | 12.3123      | 3.7200      | 0.0000             | 0.0000            |
| C            | 156.000    | 0.00                   | 0.0         | 0.0         | 0.0000       | 3.5044      | 0.0000             | 0.0000            |
| C            | 156.000    | 0.00                   | 0.0         | 0.0         | 15.2638      | 3.6366      | 0.0000             | 0.0000            |
| C            | 146.000    | 0.00                   | 0.0         | 0.0         | 0.0000       | 2.1865      | 0.0000             | 0.0000            |
| C            | 146.000    | 0.00                   | 0.0         | 0.0         | 11.9861      | 3.7200      | 0.0000             | 0.0000            |
| C            | 136.000    | 0.00                   | 0.0         | 0.0         | 0.0000       | 2.0367      | 0.0000             | 0.0000            |
| C            | 136.000    | 0.00                   | 0.0         | 0.0         | 11.8096      | 3.7200      | 0.0000             | 0.0000            |
| D            | 179.000    | 0.00                   | 180.0       | 0.0         | 0.0717       | 0.0669      | 0.0000             | 0.0000            |
| D            | 159.000    | 0.00                   | 180.0       | 0.0         | 0.0704       | 0.0669      | 0.0000             | 0.0000            |
| D            | 159.000    | 0.00                   | 180.0       | 0.0         | 0.0793       | 0.1332      | 0.0000             | 0.0000            |
| D            | 145.417    | 0.00                   | 180.0       | 0.0         | 0.0793       | 0.1332      | 0.0000             | 0.0000            |
| D            | 145.417    | 0.00                   | 180.0       | 0.0         | 0.0945       | 0.1619      | 0.0000             | 0.0000            |
| D            | 131.833    | 0.00                   | 180.0       | 0.0         | 0.0945       | 0.1619      | 0.0000             | 0.0000            |
| D            | 131.833    | 0.00                   | 180.0       | 0.0         | 0.1089       | 0.1906      | 0.0000             | 0.0000            |
| D            | 118.250    | 0.00                   | 180.0       | 0.0         | 0.1089       | 0.1906      | 0.0000             | 0.0000            |
| D            | 118.250    | 0.00                   | 180.0       | 0.0         | 0.1184       | 0.4467      | 0.0000             | 0.0000            |
| D            | 112.750    | 0.00                   | 180.0       | 0.0         | 0.1184       | 0.4467      | 0.0000             | 0.0000            |
| D            | 112.750    | 0.00                   | 180.0       | 0.0         | 0.1207       | 0.2485      | 0.0000             | 0.0000            |
| D            | 98.000     | 0.00                   | 180.0       | 0.0         | 0.1297       | 0.2723      | 0.0000             | 0.0000            |
| D            | 98.000     | 0.00                   | 180.0       | 0.0         | 0.1346       | 0.5665      | 0.0000             | 0.0000            |
| D            | 91.500     | 0.00                   | 180.0       | 0.0         | 0.1346       | 0.5665      | 0.0000             | 0.0000            |
| D            | 91.500     | 0.00                   | 180.0       | 0.0         | 0.1394       | 0.3038      | 0.0000             | 0.0000            |
| D            | 78.750     | 0.00                   | 180.0       | 0.0         | 0.1394       | 0.3038      | 0.0000             | 0.0000            |
| D            | 78.750     | 0.00                   | 180.0       | 0.0         | 0.1485       | 0.3347      | 0.0000             | 0.0000            |
| D            | 66.000     | 0.00                   | 180.0       | 0.0         | 0.1485       | 0.3347      | 0.0000             | 0.0000            |
| D            | 66.000     | 0.00                   | 180.0       | 0.0         | 0.1558       | 0.3657      | 0.0000             | 0.0000            |
| D            | 53.250     | 0.00                   | 180.0       | 0.0         | 0.1558       | 0.3657      | 0.0000             | 0.0000            |
| D            | 53.250     | 0.00                   | 180.0       | 0.0         | 0.1602       | 0.7779      | 0.0000             | 0.0000            |
| D            | 44.500     | 0.00                   | 180.0       | 0.0         | 0.1602       | 0.7779      | 0.0000             | 0.0000            |
| D            | 44.500     | 0.00                   | 180.0       | 0.0         | 0.1598       | 0.4103      | 0.0000             | 0.0000            |
| D            | 33.375     | 0.00                   | 180.0       | 0.0         | 0.1598       | 0.4103      | 0.0000             | 0.0000            |
| D            | 33.375     | 0.00                   | 180.0       | 0.0         | 0.1590       | 0.4374      | 0.0000             | 0.0000            |
| D            | 22.250     | 0.00                   | 180.0       | 0.0         | 0.1590       | 0.4374      | 0.0000             | 0.0000            |
| D            | 22.250     | 0.00                   | 180.0       | 0.0         | 0.1524       | 0.4645      | 0.0000             | 0.0000            |
| D            | 11.125     | 0.00                   | 180.0       | 0.0         | 0.1524       | 0.4645      | 0.0000             | 0.0000            |
| D            | 11.125     | 0.00                   | 180.0       | 0.0         | 0.1560       | 0.4915      | 0.0000             | 0.0000            |
| D            | 0.000      | 0.00                   | 180.0       | 0.0         | 0.1560       | 0.4915      | 0.0000             | 0.0000            |

LOADING CONDITION M

130 mph Ultimate wind with no ice. wind Azimuth: 0°

LOADS ON POLE

| LOAD<br>TYPE | ELEV | APPLY.<br>RADIUS | LOAD<br>AZI | LOAD<br>AZI | FORCES |      | MOMENTS  |         |
|--------------|------|------------------|-------------|-------------|--------|------|----------|---------|
|              |      |                  |             |             | HORIZ  | DOWN | VERTICAL | TORSNAL |

|   | ft      | ft   |       | kip | kip     | ft-kip | ft-kip |
|---|---------|------|-------|-----|---------|--------|--------|
| C | 176.000 | 0.00 | 0.0   | 0.0 | 0.0000  | 1.9768 | 0.0000 |
| C | 176.000 | 0.00 | 0.0   | 0.0 | 12.4640 | 2.7900 | 0.0000 |
| C | 166.000 | 0.00 | 0.0   | 0.0 | 0.0000  | 1.8645 | 0.0000 |
| C | 166.000 | 0.00 | 0.0   | 0.0 | 12.3123 | 2.7900 | 0.0000 |
| C | 156.000 | 0.00 | 0.0   | 0.0 | 0.0000  | 2.6283 | 0.0000 |
| C | 156.000 | 0.00 | 0.0   | 0.0 | 15.2638 | 2.7274 | 0.0000 |
| C | 146.000 | 0.00 | 0.0   | 0.0 | 0.0000  | 1.6399 | 0.0000 |
| C | 146.000 | 0.00 | 0.0   | 0.0 | 11.9861 | 2.7900 | 0.0000 |
| C | 136.000 | 0.00 | 0.0   | 0.0 | 0.0000  | 1.5276 | 0.0000 |
| C | 136.000 | 0.00 | 0.0   | 0.0 | 11.8096 | 2.7900 | 0.0000 |
| D | 179.000 | 0.00 | 180.0 | 0.0 | 0.0717  | 0.0502 | 0.0000 |
| D | 159.000 | 0.00 | 180.0 | 0.0 | 0.0704  | 0.0502 | 0.0000 |
| D | 159.000 | 0.00 | 180.0 | 0.0 | 0.0793  | 0.0999 | 0.0000 |
| D | 145.417 | 0.00 | 180.0 | 0.0 | 0.0793  | 0.0999 | 0.0000 |
| D | 145.417 | 0.00 | 180.0 | 0.0 | 0.0945  | 0.1215 | 0.0000 |
| D | 131.833 | 0.00 | 180.0 | 0.0 | 0.0945  | 0.1215 | 0.0000 |
| D | 131.833 | 0.00 | 180.0 | 0.0 | 0.1089  | 0.1430 | 0.0000 |
| D | 118.250 | 0.00 | 180.0 | 0.0 | 0.1089  | 0.1430 | 0.0000 |
| D | 118.250 | 0.00 | 180.0 | 0.0 | 0.1184  | 0.3350 | 0.0000 |
| D | 112.750 | 0.00 | 180.0 | 0.0 | 0.1184  | 0.3350 | 0.0000 |
| D | 112.750 | 0.00 | 180.0 | 0.0 | 0.1207  | 0.1864 | 0.0000 |
| D | 98.000  | 0.00 | 180.0 | 0.0 | 0.1297  | 0.2042 | 0.0000 |
| D | 98.000  | 0.00 | 180.0 | 0.0 | 0.1346  | 0.4249 | 0.0000 |
| D | 91.500  | 0.00 | 180.0 | 0.0 | 0.1346  | 0.4249 | 0.0000 |
| D | 91.500  | 0.00 | 180.0 | 0.0 | 0.1394  | 0.2278 | 0.0000 |
| D | 78.750  | 0.00 | 180.0 | 0.0 | 0.1394  | 0.2278 | 0.0000 |
| D | 78.750  | 0.00 | 180.0 | 0.0 | 0.1485  | 0.2510 | 0.0000 |
| D | 66.000  | 0.00 | 180.0 | 0.0 | 0.1485  | 0.2510 | 0.0000 |
| D | 66.000  | 0.00 | 180.0 | 0.0 | 0.1558  | 0.2743 | 0.0000 |
| D | 53.250  | 0.00 | 180.0 | 0.0 | 0.1558  | 0.2743 | 0.0000 |
| D | 53.250  | 0.00 | 180.0 | 0.0 | 0.1602  | 0.5834 | 0.0000 |
| D | 44.500  | 0.00 | 180.0 | 0.0 | 0.1602  | 0.5834 | 0.0000 |
| D | 44.500  | 0.00 | 180.0 | 0.0 | 0.1598  | 0.3078 | 0.0000 |
| D | 33.375  | 0.00 | 180.0 | 0.0 | 0.1598  | 0.3078 | 0.0000 |
| D | 33.375  | 0.00 | 180.0 | 0.0 | 0.1590  | 0.3280 | 0.0000 |
| D | 22.250  | 0.00 | 180.0 | 0.0 | 0.1590  | 0.3280 | 0.0000 |
| D | 22.250  | 0.00 | 180.0 | 0.0 | 0.1524  | 0.3483 | 0.0000 |
| D | 11.125  | 0.00 | 180.0 | 0.0 | 0.1524  | 0.3483 | 0.0000 |
| D | 11.125  | 0.00 | 180.0 | 0.0 | 0.1560  | 0.3686 | 0.0000 |
| D | 0.000   | 0.00 | 180.0 | 0.0 | 0.1560  | 0.3686 | 0.0000 |

LOADING CONDITION Y

50 mph wind with 1 ice. Wind Azimuth: 0°

LOADS ON POLE

| LOAD TYPE | ELEV ft | APPLY RADIUS ft | LOAD AT AZI | LOAD AT AZI | FORCES    |          | MOMENTS         |                |
|-----------|---------|-----------------|-------------|-------------|-----------|----------|-----------------|----------------|
|           |         |                 |             |             | HORIZ kip | DOWN kip | VERTICAL ft-kip | TORSNAL ft-kip |
| C         | 176.000 | 0.00            | 0.0         | 0.0         | 0.0000    | 2.6358   | 0.0000          | 0.0000         |
| C         | 176.000 | 0.00            | 0.0         | 0.0         | 2.4737    | 6.5589   | 0.0000          | 0.0000         |
| C         | 166.000 | 0.00            | 0.0         | 0.0         | 0.0000    | 2.4860   | 0.0000          | 0.0000         |
| C         | 166.000 | 0.00            | 0.0         | 0.0         | 2.4404    | 6.5425   | 0.0000          | 0.0000         |
| C         | 156.000 | 0.00            | 0.0         | 0.0         | 0.0000    | 3.5044   | 0.0000          | 0.0000         |
| C         | 156.000 | 0.00            | 0.0         | 0.0         | 5.0690    | 7.1430   | 0.0000          | 0.0000         |
| C         | 146.000 | 0.00            | 0.0         | 0.0         | 0.0000    | 2.1865   | 0.0000          | 0.0000         |
| C         | 146.000 | 0.00            | 0.0         | 0.0         | 2.3689    | 6.5067   | 0.0000          | 0.0000         |
| C         | 136.000 | 0.00            | 0.0         | 0.0         | 0.0000    | 2.0367   | 0.0000          | 0.0000         |
| C         | 136.000 | 0.00            | 0.0         | 0.0         | 2.3303    | 6.4871   | 0.0000          | 0.0000         |
| D         | 179.000 | 0.00            | 180.0       | 0.0         | 0.0225    | 0.0993   | 0.0000          | 0.0000         |
| D         | 159.000 | 0.00            | 180.0       | 0.0         | 0.0221    | 0.0990   | 0.0000          | 0.0000         |
| D         | 159.000 | 0.00            | 180.0       | 0.0         | 0.0246    | 0.1694   | 0.0000          | 0.0000         |
| D         | 145.417 | 0.00            | 180.0       | 0.0         | 0.0246    | 0.1694   | 0.0000          | 0.0000         |
| D         | 145.417 | 0.00            | 180.0       | 0.0         | 0.0288    | 0.2051   | 0.0000          | 0.0000         |
| D         | 131.833 | 0.00            | 180.0       | 0.0         | 0.0288    | 0.2051   | 0.0000          | 0.0000         |
| D         | 131.833 | 0.00            | 180.0       | 0.0         | 0.0328    | 0.2406   | 0.0000          | 0.0000         |
| D         | 118.250 | 0.00            | 180.0       | 0.0         | 0.0328    | 0.2406   | 0.0000          | 0.0000         |
| D         | 118.250 | 0.00            | 180.0       | 0.0         | 0.0355    | 0.5013   | 0.0000          | 0.0000         |
| D         | 112.750 | 0.00            | 180.0       | 0.0         | 0.0355    | 0.5013   | 0.0000          | 0.0000         |
| D         | 112.750 | 0.00            | 180.0       | 0.0         | 0.0361    | 0.3044   | 0.0000          | 0.0000         |
| D         | 98.000  | 0.00            | 180.0       | 0.0         | 0.0386    | 0.3328   | 0.0000          | 0.0000         |
| D         | 98.000  | 0.00            | 180.0       | 0.0         | 0.0399    | 0.6297   | 0.0000          | 0.0000         |
| D         | 91.500  | 0.00            | 180.0       | 0.0         | 0.0399    | 0.6297   | 0.0000          | 0.0000         |
| D         | 91.500  | 0.00            | 180.0       | 0.0         | 0.0412    | 0.3699   | 0.0000          | 0.0000         |
| D         | 78.750  | 0.00            | 180.0       | 0.0         | 0.0412    | 0.3699   | 0.0000          | 0.0000         |
| D         | 78.750  | 0.00            | 180.0       | 0.0         | 0.0437    | 0.4062   | 0.0000          | 0.0000         |
| D         | 66.000  | 0.00            | 180.0       | 0.0         | 0.0437    | 0.4062   | 0.0000          | 0.0000         |
| D         | 66.000  | 0.00            | 180.0       | 0.0         | 0.0457    | 0.4421   | 0.0000          | 0.0000         |
| D         | 53.250  | 0.00            | 180.0       | 0.0         | 0.0457    | 0.4421   | 0.0000          | 0.0000         |
| D         | 53.250  | 0.00            | 180.0       | 0.0         | 0.0468    | 0.8582   | 0.0000          | 0.0000         |
| D         | 44.500  | 0.00            | 180.0       | 0.0         | 0.0468    | 0.8582   | 0.0000          | 0.0000         |
| D         | 44.500  | 0.00            | 180.0       | 0.0         | 0.0466    | 0.4923   | 0.0000          | 0.0000         |
| D         | 33.375  | 0.00            | 180.0       | 0.0         | 0.0466    | 0.4923   | 0.0000          | 0.0000         |
| D         | 33.375  | 0.00            | 180.0       | 0.0         | 0.0463    | 0.5218   | 0.0000          | 0.0000         |
| D         | 22.250  | 0.00            | 180.0       | 0.0         | 0.0463    | 0.5218   | 0.0000          | 0.0000         |
| D         | 22.250  | 0.00            | 180.0       | 0.0         | 0.0442    | 0.5497   | 0.0000          | 0.0000         |
| D         | 0.000   | 0.00            | 180.0       | 0.0         | 0.0451    | 0.5730   | 0.0000          | 0.0000         |

Processed under license at:

Sabre Towers and Poles on: 22 aug 2019 at: 12:41:58

160' ext. 180' Monopole / Canterbury South, CT

MAXIMUM POLE DEFORMATIONS CALCULATED(w.r.t. wind direction)

| MAST<br>ELEV<br>ft | DEFLECTIONS (ft)    |        |       | ROTATIONS (deg) |        | TWIST |
|--------------------|---------------------|--------|-------|-----------------|--------|-------|
|                    | HORIZONTAL<br>ALONG | ACROSS | DOWN  | TILT<br>ALONG   | ACROSS |       |
| 179.0              | 14.14E              | -0.040 | 1.64A | 9.67E           | -0.020 | 0.00C |
| 174.0              | 13.32E              | -0.040 | 1.50A | 9.66E           | -0.020 | 0.00C |
| 169.0              | 12.50E              | -0.030 | 1.37A | 9.57E           | -0.020 | 0.00C |
| 164.0              | 11.70E              | -0.030 | 1.23A | 9.35E           | -0.020 | 0.00C |
| 159.0              | 10.92E              | -0.030 | 1.11A | 8.93E           | -0.020 | 0.00C |
| 145.4              | 8.92E               | -0.030 | 0.81A | 8.20E           | -0.020 | 0.00C |
| 131.8              | 7.11E               | -0.020 | 0.56A | 7.26E           | -0.020 | 0.00C |
| 118.2              | 5.52L               | -0.020 | 0.37A | 6.24E           | -0.020 | 0.00C |
| 112.7              | 4.95L               | -0.020 | 0.31A | 5.84E           | -0.020 | 0.00C |
| 107.8              | 4.47L               | -0.010 | 0.27A | 5.46E           | -0.010 | 0.000 |
| 102.9              | 4.02L               | -0.010 | 0.23A | 5.10E           | -0.010 | 0.000 |
| 98.0               | 3.60L               | -0.010 | 0.19A | 4.74E           | -0.010 | 0.000 |
| 91.5               | 3.09L               | -0.010 | 0.15A | 4.31E           | -0.010 | 0.000 |
| 78.7               | 2.22L               | -0.010 | 0.09A | 3.52L           | -0.010 | 0.000 |
| 66.0               | 1.51L               | -0.010 | 0.05A | 2.82L           | -0.010 | 0.000 |
| 53.2               | 0.95L               | 0.000  | 0.02A | 2.18L           | -0.010 | 0.000 |
| 44.5               | 0.65L               | 0.000  | 0.01A | 1.77L           | -0.010 | 0.000 |
| 33.4               | 0.36L               | 0.000  | 0.01A | 1.27L           | 0.000  | 0.000 |
| 22.2               | 0.16L               | 0.000  | 0.00A | 0.81L           | 0.000  | 0.000 |
| 11.1               | 0.04L               | 0.000  | 0.00A | 0.39L           | 0.000  | 0.000 |
| 0.0                | 0.00A               | 0.00A  | 0.00A | 0.00A           | 0.00A  | 0.00A |

MAXIMUM POLE FORCES CALCULATED(w.r.t. to wind direction)

| MAST<br>ELEV<br>ft | TOTAL<br>AXIAL<br>kip | SHEAR.w.r.t.WIND.DIR |               | MOMENT.w.r.t.WIND.DIR |                  | TORSION<br>ft-kip |
|--------------------|-----------------------|----------------------|---------------|-----------------------|------------------|-------------------|
|                    |                       | ALONG<br>kip         | ACROSS<br>kip | ALONG<br>ft-kip       | ACROSS<br>ft-kip |                   |
| 179.0              | -0.02 K               | 0.03 E               | -0.01 N       | 0.09 E                | -0.03 N          | 0.00 N            |
| 174.0              | 9.69 AC               | 12.85 E              | -0.01 N       | -27.37 I              | 0.03 N           | 0.01 K            |
| 169.0              | 9.70 AG               | 12.90 N              | 0.06 L        | -27.51 I              | 0.10 R           | 0.02 O            |
| 164.0              | 10.19 AG              | 13.25 N              | 0.06 L        | -96.15 F              | -0.27 L          | 0.06 L            |
| 159.0              | 10.19 AG              | 13.25 W              | 0.06 L        | -96.18 L              | 0.25 Q           | 0.06 L            |
| 164.0              | 19.72 AG              | 25.91 W              | 0.06 L        | -193.02 F             | -0.53 L          | 0.12 L            |
| 159.0              | 19.71 AG              | 25.95 N              | 0.07 R        | -192.94 H             | -0.52 L          | -0.13 C           |
| 145.4              | 20.21 AG              | 26.30 N              | 0.07 R        | -330.50 E             | -0.70 L          | -0.20 C           |
| 141.5              | 20.21 AB              | 26.36 N              | -0.08 O       | -330.56 E             | -0.69 L          | -0.21 C           |
| 141.5              | 41.85 AB              | 54.68 N              | -0.08 O       | -892.23 E             | -1.57 R          | -0.45 C           |
| 141.5              | 41.85 AB              | 54.69 N              | -0.08 O       | -892.21 E             | -1.55 R          | -0.44 C           |

|               |           |          |         |             |          |         |
|---------------|-----------|----------|---------|-------------|----------|---------|
| 131.8         | 53.16 AB  | 67.77 N  | -0.08 O | -1734.68 E  | 2.50 O   | -0.70 C |
|               | 53.16 AG  | 67.77 N  | -0.09 O | -1734.71 E  | 2.49 O   | -0.70 C |
| 118.2         | 56.42 AG  | 69.24 N  | -0.09 O | -2711.57 E  | 3.64 O   | -0.98 C |
|               | 56.42 AB  | 69.28 O  | -0.18 I | -2711.51 E  | 3.57 O   | -0.96 C |
| 112.7         | 59.18 AB  | 69.93 O  | -0.18 I | -3112.54 E  | 4.10 I   | -1.07 C |
|               | 59.18 AB  | 70.04 N  | -0.20 K | -3112.35 E  | 4.23 O   | -1.02 C |
| 107.8         | 60.70 AB  | 70.64 N  | -0.20 K | -3473.17 E  | 4.31 I   | -1.16 C |
|               | 60.70 AB  | 70.78 W  | 0.31 U  | -3473.58 E  | 4.10 I   | -1.24 C |
| 102.9         | 62.27 AB  | 71.39 W  | 0.31 U  | -3836.77 E  | 4.08 I   | -1.30 C |
|               | 62.27 AB  | 71.40 Q  | 0.28 U  | -3837.05 E  | 4.09 I   | -1.29 C |
| 98.0          | 63.88 AB  | 72.03 Q  | 0.28 U  | -4203.97 E  | -4.89 R  | -1.29 C |
|               | 63.88 AB  | 72.06 L  | -0.54 O | -4203.60 E  | -4.85 R  | -1.32 C |
| 91.5          | 67.97 AB  | 72.93 L  | -0.54 O | -4694.11 E  | 8.13 O   | -1.44 C |
|               | 67.97 AB  | 72.81 L  | -0.45 K | -4694.21 E  | 8.13 O   | -1.45 C |
| 78.7          | 72.69 AB  | 74.58 L  | -0.45 K | -5671.65 E  | 13.49 O  | -1.59 C |
|               | 72.69 AB  | 74.63 L  | -0.48 K | -5671.67 E  | 13.50 O  | -1.59 C |
| 66.0          | 77.87 AB  | 76.52 L  | -0.48 K | -6668.01 E  | 18.81 O  | -1.88 O |
|               | 77.87 AB  | 76.52 L  | -0.50 K | -6668.01 E  | 18.77 O  | -1.87 O |
| 53.2          | 83.50 AB  | 78.50 L  | -0.50 K | -7684.49 E  | 24.27 O  | -2.17 O |
|               | 83.50 AB  | 78.56 O  | -0.48 O | -7684.49 E  | 24.29 O  | -2.18 O |
| 44.5          | 91.01 AB  | 79.97 O  | -0.48 O | -8396.52 L  | 28.48 O  | -2.36 O |
|               | 91.01 AB  | 79.96 O  | -0.48 O | -8396.45 L  | 28.53 O  | -2.36 O |
| 33.4          | 96.49 AB  | 81.73 O  | -0.48 O | -9315.65 L  | 33.79 O  | -2.54 O |
|               | 96.49 AB  | 81.73 O  | -0.49 O | -9315.63 L  | 33.81 O  | -2.54 O |
| 22.2          | 102.29 AB | 83.50 O  | -0.49 O | -10249.22 L | 39.26 O  | -2.67 O |
|               | 102.29 AB | 83.48 O  | -0.48 O | -10249.22 L | 39.26 O  | -2.67 O |
| 11.1          | 108.47 AB | 85.17 O  | -0.48 O | -11196.50 L | 44.60 O  | -2.74 O |
|               | 108.47 AB | 85.18 O  | -0.48 O | -11196.48 L | 44.61 O  | -2.74 O |
|               | 114.78 AB | 86.92 O  | -0.48 O | -12156.89 L | 49.92 O  | -2.77 O |
| base reaction | 114.78 AB | -86.92 O | 0.48 O  | 12156.89 L  | -49.92 O | 2.77 O  |

COMPLIANCE WITH 4.8.2 & 4.5.4

| ELEV<br>ft | AXIAL  | BENDING | SHEAR +<br>TORSIONAL | TOTAL | SATISFIED | D/t(w/t) | MAX<br>ALLOWED |
|------------|--------|---------|----------------------|-------|-----------|----------|----------------|
| 179.00     | 0.00K  | 0.00E   | 0.00E                | 0.00E | YES       | 12.98A   | 45.2           |
| 174.00     | 0.01AC | 0.05I   | 0.02E                | 0.06E | YES       | 12.98A   | 45.2           |
|            | 0.01AG | 0.05I   | 0.02N                | 0.06I | YES       | 12.98A   | 45.2           |
| 169.00     | 0.01AG | 0.19F   | 0.02N                | 0.19F | YES       | 12.98A   | 45.2           |
|            | 0.01AG | 0.19L   | 0.02W                | 0.19L | YES       | 12.98A   | 45.2           |
| 164.00     | 0.02AG | 0.37F   | 0.04W                | 0.39F | YES       | 12.98A   | 45.2           |
|            | 0.02AG | 0.37H   | 0.04N                | 0.39F | YES       | 12.98A   | 45.2           |
| 159.00     | 0.02AG | 0.64E   | 0.04N                | 0.66E | YES       | 12.98A   | 45.2           |
|            | 0.01AB | 0.36E   | 0.02N                | 0.37E | YES       | 6.81A    | 45.2           |
|            | 0.02AB | 0.63E   | 0.04N                | 0.64E | YES       | 8.88A    | 45.2           |
| 145.42     | 0.02AB | 0.63E   | 0.04N                | 0.64E | YES       | 8.88A    | 45.2           |
|            | 0.02AB | 0.85E   | 0.04N                | 0.86E | YES       | 10.95A   | 45.2           |
| 131.83     | 0.02AG | 0.85E   | 0.04N                | 0.86E | YES       | 10.95A   | 45.2           |

|        |        |       |       |       |     |        |      |
|--------|--------|-------|-------|-------|-----|--------|------|
| 118.25 | 0.02AG | 0.98E | 0.04N | 0.99E | YES | 13.02A | 45.2 |
|        | 0.01AB | 0.86E | 0.03O | 0.87E | YES | 11.17A | 45.2 |
| 112.75 | 0.01AB | 0.88E | 0.03O | 0.89E | YES | 11.90A | 45.2 |
|        | 0.01AB | 0.92E | 0.03N | 0.93E | YES | 11.60A | 45.2 |
| 107.83 | 0.01AB | 0.93E | 0.03N | 0.94E | YES | 12.25A | 45.2 |
|        | 0.01AB | 0.93E | 0.03W | 0.94E | YES | 12.25A | 45.2 |
| 102.92 | 0.01AB | 0.94E | 0.03W | 0.95E | YES | 12.91A | 45.2 |
|        | 0.01AB | 0.94E | 0.03O | 0.95E | YES | 12.91A | 45.2 |
| 98.00  | 0.01AB | 0.94E | 0.03O | 0.95E | YES | 13.56A | 45.2 |
|        | 0.01AB | 0.94E | 0.03L | 0.95E | YES | 13.56A | 45.2 |
| 91.50  | 0.01AB | 0.94E | 0.03L | 0.95E | YES | 14.43A | 45.2 |
|        | 0.01AB | 0.98E | 0.03L | 0.99E | YES | 14.08A | 45.2 |
| 78.75  | 0.01AB | 0.97E | 0.03L | 0.98E | YES | 15.78A | 45.2 |
|        | 0.01AB | 0.97E | 0.03L | 0.98E | YES | 15.78A | 45.2 |
| 66.00  | 0.01AB | 0.96E | 0.02O | 0.97E | YES | 17.48A | 45.2 |
|        | 0.01AB | 0.96E | 0.02O | 0.97E | YES | 17.48A | 45.2 |
| 53.25  | 0.01AB | 0.96E | 0.02O | 0.97E | YES | 19.18A | 45.2 |
|        | 0.01AB | 0.96E | 0.02O | 0.97L | YES | 19.18A | 45.2 |
| 44.50  | 0.01AB | 0.95L | 0.02O | 0.96L | YES | 20.34A | 45.2 |
|        | 0.01AB | 0.98L | 0.02O | 0.99L | YES | 19.99A | 45.2 |
| 33.37  | 0.01AB | 0.97L | 0.02O | 0.98L | YES | 21.47A | 45.2 |
|        | 0.01AB | 0.97L | 0.02O | 0.98L | YES | 21.47A | 45.2 |
| 22.25  | 0.01AB | 0.97L | 0.02O | 0.98L | YES | 22.96A | 45.2 |
|        | 0.01AB | 0.97L | 0.02O | 0.98L | YES | 22.96A | 45.2 |
| 11.12  | 0.01AB | 0.96L | 0.02O | 0.97L | YES | 24.44A | 45.2 |
|        | 0.01AB | 0.96L | 0.02O | 0.97L | YES | 24.44A | 45.2 |
| 0.00   | 0.01AB | 0.96L | 0.02O | 0.97L | YES | 25.92A | 45.2 |

MAXIMUM LOADS ONTO FOUNDATION(w.r.t. wind direction)

| DOWN   | SHEAR.w.r.t.WIND.DIR | MOMENT.w.r.t.WIND.DIR  | TORSION |
|--------|----------------------|------------------------|---------|
| kip    | ALONG ACROSS<br>kip  | ALONG ACROSS<br>ft-kip | ft-kip  |
| 114.78 | 86.92                | -0.48                  | -2.77   |
| AB     | O                    | O                      | O       |

(USA 222-G) - Monopole Spatial Analysis (c)2015 Guymast Inc.

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Sabre Towers and Poles on: 22 aug 2019 at: 12:42:19

160' ext. 180' Monopole / Canterbury South, CT

\*\*\*\*\*  
 \*\*\*\*\* Service Load Condition \*\*\*\*\*  
 \*\*\*\*\*

\* Only 1 condition(s) shown in full  
 \* Some concentrated wind loads may have been derived from full-scale wind tunnel testing

LOADING CONDITION A

60 mph wind with no ice. Wind Azimuth: 0°

LOADS ON POLE

| LOAD TYPE | ELEV<br>ft | APPLY. RADIUS<br>ft | LOAD AT AZI | LOAD AZI | FORCES    |          | MOMENTS         |                |
|-----------|------------|---------------------|-------------|----------|-----------|----------|-----------------|----------------|
|           |            |                     |             |          | HORIZ kip | DOWN kip | VERTICAL ft-kip | TORSNAL ft-kip |
| C         | 176.000    | 0.00                | 0.0         | 0.0      | 0.0000    | 2.1965   | 0.0000          | 0.0000         |
| C         | 176.000    | 0.00                | 0.0         | 0.0      | 2.4598    | 3.1000   | 0.0000          | 0.0000         |
| C         | 166.000    | 0.00                | 0.0         | 0.0      | 0.0000    | 2.0717   | 0.0000          | 0.0000         |
| C         | 166.000    | 0.00                | 0.0         | 0.0      | 2.4298    | 3.1000   | 0.0000          | 0.0000         |
| C         | 156.000    | 0.00                | 0.0         | 0.0      | 0.0000    | 2.9203   | 0.0000          | 0.0000         |
| C         | 156.000    | 0.00                | 0.0         | 0.0      | 3.0123    | 3.0305   | 0.0000          | 0.0000         |
| C         | 146.000    | 0.00                | 0.0         | 0.0      | 0.0000    | 1.8221   | 0.0000          | 0.0000         |
| C         | 146.000    | 0.00                | 0.0         | 0.0      | 2.3654    | 3.1000   | 0.0000          | 0.0000         |
| C         | 136.000    | 0.00                | 0.0         | 0.0      | 0.0000    | 1.6973   | 0.0000          | 0.0000         |
| C         | 136.000    | 0.00                | 0.0         | 0.0      | 2.3306    | 3.1000   | 0.0000          | 0.0000         |
| D         | 179.000    | 0.00                | 180.0       | 0.0      | 0.0141    | 0.0558   | 0.0000          | 0.0000         |
| D         | 159.000    | 0.00                | 180.0       | 0.0      | 0.0139    | 0.0558   | 0.0000          | 0.0000         |
| D         | 159.000    | 0.00                | 180.0       | 0.0      | 0.0156    | 0.1110   | 0.0000          | 0.0000         |
| D         | 145.417    | 0.00                | 180.0       | 0.0      | 0.0156    | 0.1110   | 0.0000          | 0.0000         |
| D         | 145.417    | 0.00                | 180.0       | 0.0      | 0.0186    | 0.1350   | 0.0000          | 0.0000         |
| D         | 131.833    | 0.00                | 180.0       | 0.0      | 0.0186    | 0.1350   | 0.0000          | 0.0000         |
| D         | 131.833    | 0.00                | 180.0       | 0.0      | 0.0215    | 0.1589   | 0.0000          | 0.0000         |
| D         | 118.250    | 0.00                | 180.0       | 0.0      | 0.0215    | 0.1589   | 0.0000          | 0.0000         |
| D         | 118.250    | 0.00                | 180.0       | 0.0      | 0.0234    | 0.3722   | 0.0000          | 0.0000         |
| D         | 112.750    | 0.00                | 180.0       | 0.0      | 0.0234    | 0.3722   | 0.0000          | 0.0000         |
| D         | 112.750    | 0.00                | 180.0       | 0.0      | 0.0238    | 0.2071   | 0.0000          | 0.0000         |
| D         | 98.000     | 0.00                | 180.0       | 0.0      | 0.0256    | 0.2269   | 0.0000          | 0.0000         |
| D         | 98.000     | 0.00                | 180.0       | 0.0      | 0.0266    | 0.4721   | 0.0000          | 0.0000         |
| D         | 91.500     | 0.00                | 180.0       | 0.0      | 0.0266    | 0.4721   | 0.0000          | 0.0000         |
| D         | 91.500     | 0.00                | 180.0       | 0.0      | 0.0275    | 0.2532   | 0.0000          | 0.0000         |
| D         | 78.750     | 0.00                | 180.0       | 0.0      | 0.0275    | 0.2532   | 0.0000          | 0.0000         |
| D         | 78.750     | 0.00                | 180.0       | 0.0      | 0.0293    | 0.2789   | 0.0000          | 0.0000         |
| D         | 66.000     | 0.00                | 180.0       | 0.0      | 0.0293    | 0.2789   | 0.0000          | 0.0000         |
| D         | 66.000     | 0.00                | 180.0       | 0.0      | 0.0308    | 0.3047   | 0.0000          | 0.0000         |
| D         | 53.250     | 0.00                | 180.0       | 0.0      | 0.0308    | 0.3047   | 0.0000          | 0.0000         |
| D         | 53.250     | 0.00                | 180.0       | 0.0      | 0.0316    | 0.6483   | 0.0000          | 0.0000         |
| D         | 44.500     | 0.00                | 180.0       | 0.0      | 0.0316    | 0.6483   | 0.0000          | 0.0000         |
| D         | 44.500     | 0.00                | 180.0       | 0.0      | 0.0315    | 0.3420   | 0.0000          | 0.0000         |
| D         | 33.375     | 0.00                | 180.0       | 0.0      | 0.0315    | 0.3420   | 0.0000          | 0.0000         |
| D         | 33.375     | 0.00                | 180.0       | 0.0      | 0.0314    | 0.3645   | 0.0000          | 0.0000         |
| D         | 22.250     | 0.00                | 180.0       | 0.0      | 0.0314    | 0.3645   | 0.0000          | 0.0000         |
| D         | 22.250     | 0.00                | 180.0       | 0.0      | 0.0301    | 0.3870   | 0.0000          | 0.0000         |
| D         | 11.125     | 0.00                | 180.0       | 0.0      | 0.0301    | 0.3870   | 0.0000          | 0.0000         |
| D         | 11.125     | 0.00                | 180.0       | 0.0      | 0.0308    | 0.4096   | 0.0000          | 0.0000         |
| D         | 0.000      | 0.00                | 180.0       | 0.0      | 0.0308    | 0.4096   | 0.0000          | 0.0000         |

MAXIMUM POLE DEFORMATIONS CALCULATED(w.r.t. wind direction)

| MAST ELEV<br>ft | DEFLECTIONS (ft) |        |       | ROTATIONS (deg) |        |       |
|-----------------|------------------|--------|-------|-----------------|--------|-------|
|                 | HORIZONTAL ALONG | ACROSS | DOWN  | TILT ALONG      | ACROSS | TWIST |
| 179.0           | 2.85F            | 0.01B  | 0.07F | 1.93F           | 0.00B  | 0.00I |
| 174.0           | 2.68F            | 0.01B  | 0.06F | 1.93F           | 0.00B  | 0.00I |
| 169.0           | 2.52F            | 0.01B  | 0.06F | 1.91F           | 0.00B  | 0.00I |
| 164.0           | 2.35F            | 0.01B  | 0.05F | 1.86F           | 0.00B  | 0.00I |
| 159.0           | 2.19F            | 0.01B  | 0.05F | 1.78F           | 0.00B  | 0.00B |
| 145.4           | 1.79F            | 0.01B  | 0.03F | 1.63F           | 0.00B  | 0.00B |
| 131.8           | 1.42F            | 0.00B  | 0.02F | 1.44F           | 0.00B  | 0.00B |
| 118.2           | 1.10F            | 0.00B  | 0.02F | 1.24F           | 0.00B  | 0.00B |
| 112.7           | 0.98F            | 0.00B  | 0.01F | 1.16F           | 0.00B  | 0.00B |
| 107.8           | 0.89F            | 0.00B  | 0.01F | 1.08F           | 0.00B  | 0.00B |
| 102.9           | 0.80F            | 0.00B  | 0.01F | 1.01F           | 0.00B  | 0.00B |
| 98.0            | 0.71F            | 0.00B  | 0.01F | 0.94F           | 0.00B  | 0.00B |
| 91.5            | 0.61F            | 0.00B  | 0.01F | 0.85F           | 0.00B  | 0.00B |
| 78.7            | 0.44F            | 0.00B  | 0.00F | 0.70F           | 0.00B  | 0.00B |
| 66.0            | 0.30F            | 0.00B  | 0.00F | 0.56F           | 0.00B  | 0.00B |
| 53.2            | 0.19F            | 0.00B  | 0.00F | 0.43F           | 0.00B  | 0.00B |
| 44.5            | 0.13F            | 0.00B  | 0.00F | 0.35F           | 0.00B  | 0.00B |
| 33.4            | 0.07F            | 0.00B  | 0.00F | 0.25F           | 0.00B  | 0.00B |
| 22.2            | 0.03F            | 0.00B  | 0.00F | 0.16F           | 0.00B  | 0.00B |
| 11.1            | 0.01F            | 0.00B  | 0.00B | 0.08F           | 0.00B  | 0.00B |

| MAST ELEV<br>ft  | TOTAL AXIAL<br>kip | SHEAR.w.r.t.<br>ALONG<br>kip | WIND.DIR<br>ACROSS<br>kip | MOMENT.w.r.t.<br>ALONG<br>ft-kip | WIND.DIR<br>ACROSS<br>ft-kip | TORSION<br>ft-kip |
|--|--------------------|------------------------------|---------------------------|----------------------------------|------------------------------|-------------------|
| 0.0  | 0.00A              | 0.00A                        | 0.00A                     | 0.00A                            | 0.00A                        | 0.00A             |
| MAXIMUM POLE FORCES CALCULATED(w.r.t. to wind direction) |                    |                              |                           |                                  |                              |                   |
| 179.0  | 0.00 F             | 0.01 C                       | 0.00 C                    | 0.02 C                           | -0.01 L                      | 0.00 L            |
|  | 5.58 L             | 2.54 C                       | 0.00 C                    | -5.49 C                          | -0.01 C                      | 0.00 B            |
| 174.0  | 5.58 B             | 2.54 I                       | -0.01 I                   | -5.48 I                          | -0.01 C                      | 0.00 B            |
|  | 5.86 B             | 2.61 I                       | -0.01 I                   | -19.31 I                         | 0.05 F                       | 0.00 I            |
| 169.0  | 5.86 B             | 2.61 I                       | 0.02 L                    | -19.35 I                         | 0.05 F                       | 0.00 I            |
|  | 11.31 B            | 5.11 I                       | 0.02 L                    | -38.73 I                         | -0.10 L                      | -0.01 I           |
| 164.0  | 11.31 B            | 5.12 A                       | -0.02 E                   | -38.72 I                         | 0.11 I                       | -0.01 I           |
|  | 11.59 B            | 5.19 A                       | -0.02 E                   | -66.26 I                         | -0.16 L                      | -0.01 I           |
| 159.0  | 11.59 B            | 5.19 A                       | -0.02 E                   | -66.26 I                         | -0.16 L                      | -0.01 I           |
|  | 23.97 B            | 10.78 A                      | -0.02 E                   | -178.26 A                        | 0.38 E                       | -0.02 I           |
| 145.4  | 23.97 B            | 10.78 A                      | -0.02 E                   | -178.26 A                        | 0.37 E                       | -0.02 I           |
|  | 30.60 B            | 13.36 A                      | -0.02 E                   | -345.63 A                        | 0.65 E                       | -0.03 I           |
| 131.8  | 30.60 B            | 13.36 A                      | -0.02 E                   | -345.63 A                        | 0.65 E                       | -0.03 I           |
|  | 32.76 B            | 13.65 A                      | -0.02 E                   | -539.09 A                        | 0.92 E                       | -0.04 B           |
| 118.2  | 32.76 B            | 13.67 B                      | 0.03 B                    | -539.05 A                        | 0.91 E                       | -0.04 B           |
|  | 34.81 B            | 13.80 B                      | 0.03 B                    | -618.40 A                        | 1.05 E                       | -0.04 B           |
| 112.7  | 34.81 B            | 13.80 K                      | 0.03 B                    | -618.35 A                        | 1.07 E                       | -0.04 B           |
|  | 35.84 B            | 13.92 K                      | 0.03 B                    | -689.76 A                        | -1.23 B                      | -0.04 B           |
| 107.8  | 35.85 B            | 13.94 F                      | 0.06 B                    | -689.80 A                        | -1.22 B                      | -0.04 B           |
|  | 36.91 B            | 14.06 F                      | 0.06 B                    | -761.39 F                        | -1.53 B                      | -0.04 B           |
| 102.9  | 36.91 B            | 14.14 F                      | 0.08 B                    | -761.28 A                        | -1.51 B                      | -0.04 B           |
|  | 38.01 B            | 14.26 F                      | 0.08 B                    | -834.17 F                        | -1.91 B                      | -0.05 I           |
| 98.0   | 38.01 B            | 14.22 F                      | 0.07 E                    | -834.15 F                        | -1.91 B                      | -0.05 I           |
|  | 41.08 B            | 14.39 F                      | 0.07 E                    | -931.16 F                        | -2.27 B                      | -0.05 I           |
| 91.5   | 41.08 B            | 14.40 E                      | -0.09 C                   | -931.11 F                        | -2.27 B                      | -0.05 I           |
|  | 44.31 B            | 14.75 E                      | -0.09 C                   | -1123.96 F                       | -3.12 B                      | -0.05 I           |
| 78.7   | 44.31 B            | 14.75 E                      | -0.09 C                   | -1123.95 F                       | -3.12 B                      | -0.05 I           |
|  | 47.86 B            | 15.12 E                      | -0.09 C                   | -1320.41 F                       | -3.99 B                      | -0.05 B           |
| 66.0   | 47.86 B            | 15.12 E                      | -0.09 C                   | -1320.42 F                       | -3.99 B                      | -0.05 B           |
|  | 51.75 B            | 15.51 E                      | -0.09 C                   | -1520.86 F                       | 5.05 C                       | -0.06 B           |
| 53.2   | 51.75 B            | 15.53 F                      | 0.08 B                    | -1520.87 F                       | 5.04 C                       | -0.06 B           |
|  | 57.42 B            | 15.81 F                      | 0.08 B                    | -1661.23 F                       | -5.62 B                      | -0.06 B           |
| 44.5   | 57.42 B            | 15.80 F                      | 0.08 B                    | -1661.22 F                       | -5.62 B                      | -0.06 B           |
|  | 61.22 B            | 16.15 F                      | 0.08 B                    | -1842.45 F                       | -6.49 B                      | -0.06 C           |
| 33.4   | 61.22 B            | 16.15 F                      | 0.08 B                    | -1842.44 F                       | -6.49 B                      | -0.06 C           |
|  | 65.28 B            | 16.50 F                      | 0.08 B                    | -2026.59 F                       | -7.36 B                      | -0.06 C           |
| 22.2   | 65.28 B            | 16.50 F                      | 0.08 B                    | -2026.59 F                       | -7.36 B                      | -0.06 C           |
|  | 69.58 B            | 16.83 F                      | 0.08 B                    | -2213.56 F                       | -8.26 B                      | -0.06 C           |
| 11.1   | 69.58 B            | 16.83 F                      | 0.08 B                    | -2213.56 F                       | -8.26 B                      | -0.06 C           |
|  | 74.14 B            | 17.18 F                      | 0.08 B                    | -2403.29 F                       | -9.14 B                      | -0.06 C           |
| base<br>reaction   | 74.14 B            | -17.18 F                     | -0.08 B                   | 2403.29 F                        | 9.14 B                       | 0.06 C            |

COMPLIANCE WITH 4.8.2 & 4.5.4

| ELEV<br>ft | AXIAL | BENDING | SHEAR +<br>TORSIONAL | TOTAL | SATISFIED | D/t(w/t) | MAX<br>ALLOWED |
|------------|-------|---------|----------------------|-------|-----------|----------|----------------|
| 179.00     | 0.00F | 0.00C   | 0.00C                | 0.00C | YES       | 12.98A   | 45.2           |
|            | 0.00L | 0.01C   | 0.00C                | 0.02C | YES       | 12.98A   | 45.2           |
| 174.00     | 0.00B | 0.01I   | 0.00I                | 0.02I | YES       | 12.98A   | 45.2           |
|            | 0.00B | 0.04I   | 0.00I                | 0.04I | YES       | 12.98A   | 45.2           |
| 169.00     | 0.00B | 0.04I   | 0.00I                | 0.04I | YES       | 12.98A   | 45.2           |
|            | 0.01B | 0.08I   | 0.01I                | 0.08I | YES       | 12.98A   | 45.2           |
| 164.00     | 0.01B | 0.08I   | 0.01A                | 0.08I | YES       | 12.98A   | 45.2           |
|            | 0.01B | 0.13I   | 0.01A                | 0.14I | YES       | 12.98A   | 45.2           |
| 159.00     | 0.01B | 0.07I   | 0.00A                | 0.08I | YES       | 6.81A    | 45.2           |
|            | 0.01B | 0.13A   | 0.01A                | 0.13A | YES       | 8.88A    | 45.2           |
| 145.42     | 0.01B | 0.13A   | 0.01A                | 0.13A | YES       | 8.88A    | 45.2           |
|            | 0.01B | 0.17A   | 0.01A                | 0.18A | YES       | 10.95A   | 45.2           |
| 131.83     | 0.01B | 0.17A   | 0.01A                | 0.18A | YES       | 10.95A   | 45.2           |
|            | 0.01B | 0.19A   | 0.01A                | 0.20A | YES       | 13.02A   | 45.2           |
| 118.25     | 0.01B | 0.17A   | 0.01B                | 0.18A | YES       | 11.17A   | 45.2           |
|            | 0.01B | 0.18A   | 0.01B                | 0.18A | YES       | 11.90A   | 45.2           |
| 112.75     | 0.01B | 0.18A   | 0.01K                | 0.19A | YES       | 11.60A   | 45.2           |
|            | 0.01B | 0.19A   | 0.01K                | 0.19A | YES       | 12.25A   | 45.2           |
| 107.83     | 0.01B | 0.19A   | 0.01F                | 0.19A | YES       | 12.25A   | 45.2           |
|            | 0.01B | 0.19F   | 0.01F                | 0.19F | YES       | 12.91A   | 45.2           |
| 102.92     | 0.01B | 0.19A   | 0.01F                | 0.19A | YES       | 12.91A   | 45.2           |
|            | 0.01B | 0.19F   | 0.01F                | 0.19F | YES       | 13.56A   | 45.2           |
| 98.00      | 0.01B | 0.19F   | 0.01F                | 0.19F | YES       | 13.56A   | 45.2           |
|            | 0.01B | 0.19F   | 0.01F                | 0.19F | YES       | 14.43A   | 45.2           |
| 91.50      | 0.01B | 0.20F   | 0.01E                | 0.20F | YES       | 14.08A   | 45.2           |
|            | 0.01B | 0.19F   | 0.01E                | 0.20F | YES       | 15.78A   | 45.2           |
| 78.75      | 0.01B | 0.19F   | 0.01E                | 0.20F | YES       | 15.78A   | 45.2           |
|            | 0.01B | 0.19F   | 0.00E                | 0.20F | YES       | 17.48A   | 45.2           |
| 66.00      | 0.01B | 0.19F   | 0.00E                | 0.20F | YES       | 17.48A   | 45.2           |
|            | 0.01B | 0.19F   | 0.00E                | 0.20F | YES       | 19.18A   | 45.2           |
| 53.25      | 0.01B | 0.19F   | 0.00F                | 0.20F | YES       | 19.18A   | 45.2           |
|            | 0.01B | 0.19F   | 0.00F                | 0.20F | YES       | 20.34A   | 45.2           |
| 44.50      | 0.01B | 0.19F   | 0.00F                | 0.20F | YES       | 19.99A   | 45.2           |
|            | 0.01B | 0.19F   | 0.00F                | 0.20F | YES       | 21.47A   | 45.2           |
| 33.37      | 0.01B | 0.19F   | 0.00F                | 0.20F | YES       | 21.47A   | 45.2           |
|            | 0.01B | 0.19F   | 0.00F                | 0.20F | YES       | 22.96A   | 45.2           |
| 22.25      | 0.01B | 0.19F   | 0.00F                | 0.20F | YES       | 22.96A   | 45.2           |
|            | 0.01B | 0.19F   | 0.00F                | 0.20F | YES       | 24.44A   | 45.2           |
| 11.12      | 0.01B | 0.19F   | 0.00F                | 0.20F | YES       | 24.44A   | 45.2           |
|            | 0.01B | 0.19F   | 0.00F                | 0.20F | YES       | 25.92A   | 45.2           |
| 0.00       |       |         |                      |       |           |          |                |

MAXIMUM LOADS ONTO FOUNDATION(w.r.t. wind direction)

| DOWN<br>kip | SHEAR.w.r.t.<br>ALONG<br>kip | WIND.DIR<br>ACROSS<br>kip | MOMENT.w.r.t.<br>ALONG<br>ft-kip | WIND.DIR<br>ACROSS<br>ft-kip | TORSION<br>ft-kip |
|-------------|------------------------------|---------------------------|----------------------------------|------------------------------|-------------------|
| 74.14<br>B  | 17.18<br>F                   | 0.08<br>B                 | -2403.29<br>F                    | -9.14<br>B                   | -0.06<br>C        |

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**Round Flange Plate and Bolts per ANSI/TIA 222-G**  
Elevation = 159 feet

**Pole Data**

Diameter: 20.9 in  
Thickness: 0.25 in  
Yield (Fy): 65 ksi  
# of Sides: 18 "0" IF Round  
Strength (Fu): 80 ksi

**Reactions**

Moment, Mu: 330.56 ft-kips  
Axial, Pu: 13.96 kips  
Shear, Vu: 26.26 kips

**Bolt Data**

Quantity: 12  
Diameter: 1 in  
Bolt Material: A325  
Strength (Fu): 120 ksi  
Yield (Fy): 92 ksi  
BC Diam. (in): 24.25 BC Override:

**Flange Bolt Results**

Allowable  $\Phi$ \*Rnt: 54.54 kips  
Adjusted  $\Phi$ \*Rnt (due to shear): 54.45 kips  
Maximum Bolt Tension: 53.36 kips  
Bolt Interaction Ratio: **98.0% Pass**

**Plate Data**

Diameter (in): 26.75 Dia. Override:  
Thickness: 1.5 in  
Center Hole Diam.: 14 in  
Yield (Fy): 50 ksi  
Single-Rod B-eff: 5.53 in  
Drain Hole: 1 in. diameter  
Drain Location: 9.25 in. center of pole to center of drain hole

**Flange Plate Results**

Compression Side Plate (Mu/Z): 19.6 ksi  
Allowable  $\Phi$ \*Fy: 45.0 ksi  
Compr. Plate Interaction Ratio: **43.6% Pass**

## Round Base Plate and Anchor Rods, per ANSI/TIA 222-G

### Pole Data

Diameter: 78.500 in (flat to flat)  
Thickness: 0.5 in  
Yield (Fy): 65 ksi  
# of Sides: 18 "0" IF Round  
Strength (Fu): 80 ksi

### Reactions

Moment, Mu: 12156.89 ft-kips  
Axial, Pu: 89.01 kips  
Shear, Vu: 86.91 kips

### Anchor Rod Data

Quantity: 28  
Diameter: 2.25 in  
Rod Material: A615  
Strength (Fu): 100 ksi  
Yield (Fy): 75 ksi  
BC Diam. (in): 86 BC Override:

### Anchor Rod Results

Maximum Rod (Pu+ Vu/η): 251.7 Kips  
Allowable  $\Phi^*R_{nt}$ : 260.0 Kips (per 4.9.9)  
Anchor Rod Interaction Ratio: **96.8% Pass**

### Plate Data

Diameter (in): 91.75 Dia. Override:  
Thickness: 2.5 in  
Yield (Fy): 50 ksi  
Eff Width/Rod: 8.90 in  
Drain Hole: 2.625 in. diameter  
Drain Location: 37.25 in. center of pole to center of drain hole  
Center Hole: 66.5 in. diameter

### Base Plate Results

Base Plate (Mu/Z): 42.2 ksi  
Allowable  $\Phi^*F_y$ : 45.0 ksi (per AISC)  
Base Plate Interaction Ratio: **93.9% Pass**

**MAT FOUNDATION DESIGN BY SABRE TOWERS & POLES**

180' Monopole VERIZON WIRELESS Canterbury South, CT (20-2374-RAM) 08/22/19 KJT

**Overall Loads:**

|   |          |
|---|----------|
| Factored Moment (ft-kips)                     | 12156.89 |
| Factored Axial (kips)                         | 89.01    |
| Factored Shear (kips)                         | 86.91    |
| Bearing Design Strength (ksf)                 | 9        |
| Water Table Below Grade (ft)                  | 10       |
| Width of Mat (ft)                             | 34       |
| Thickness of Mat (ft)                         | 2        |
| Depth to Bottom of Slab (ft)                  | 6        |
| Quantity of Bolts in Bolt Circle              | 28       |
| Bolt Circle Diameter (in)                     | 86       |
| Top of Concrete to Top of Bottom Threads (in) | 60       |
| Diameter of Pier (ft)                         | 10.00    |
| Ht. of Pier Above Ground (ft)                 | 0.5      |
| Ht. of Pier Below Ground (ft)                 | 4        |
| Quantity of Bars in Mat                       | 65       |
| Bar Diameter in Mat (in)                      | 1.27     |
| Area of Bars in Mat (in <sup>2</sup> )        | 82.34    |
| Spacing of Bars in Mat (in)                   | 6.26     |
| Quantity of Bars Pier                         | 58       |
| Bar Diameter in Pier (in)                     | 1.128    |
| Tie Bar Diameter in Pier (in)                 | 0.625    |
| Spacing of Ties (in)                          | 12       |
| Area of Bars in Pier (in <sup>2</sup> )       | 57.96    |
| Spacing of Bars in Pier (in)                  | 6.05     |
| f'c (ksi)                                     | 4.5      |
| fy (ksi)                                      | 60       |
| Unit Wt. of Soil (kcf)                        | 0.11     |
| Unit Wt. of Concrete (kcf)                    | 0.15     |

|                                  |       |
|----------------------------------|-------|
| Max. Net Bearing Press. (ksf)    | 6.94  |
| Allowable Bearing Pressure (ksf) | 6.00  |
| Safety Factor                    | 2.00  |
| Ultimate Bearing Pressure (ksf)  | 12.00 |
| Bearing $\Phi_s$                 | 0.75  |

|                            |      |
|----------------------------|------|
| Minimum Pier Diameter (ft) | 8.50 |
| Equivalent Square b (ft)   | 8.86 |
| Square Pier? (Y/N)         | N    |

|                          |         |
|--------------------------|---------|
| Recommended Spacing (in) | 5 to 12 |
|--------------------------|---------|

|  |         |
|--|---------|
| Minimum Pier A <sub>s</sub> (in <sup>2</sup> ) | 56.55   |
| Recommended Spacing (in)                       | 5 to 12 |

Volume of Concrete (yd<sup>3</sup>) 98.72

**Two-Way Shear Action:**

|  |        |
|--|--------|
| Average d (in)   | 19.73  |
| $\phi v_c$ (ksi)   | 0.217  |
| $\phi v_c = \phi(2 + 4/\beta_c)f'_c$ <sup>1/2</sup>      | 0.342  |
| $\phi v_c = \phi(\alpha_s d/b_o + 2)f'_c$ <sup>1/2</sup> | 0.217  |
| $\phi v_c = \phi 4f'_c$ <sup>1/2</sup>                   | 0.228  |
| Shear perimeter, b <sub>o</sub> (in)                     | 438.97 |
| $\beta_c$  | 1      |

|                      |       |
|----------------------|-------|
| v <sub>u</sub> (ksi) | 0.208 |
|----------------------|-------|

**One-Way Shear:**

|                   |       |
|-------------------|-------|
| $\phi V_c$ (kips) | 918.0 |
|-------------------|-------|

|                       |       |
|-----------------------|-------|
| V <sub>u</sub> (kips) | 630.1 |
|-----------------------|-------|

**Stability:**

|                                    |         |
|------------------------------------|---------|
| Overturning Design Strength (ft-k) | 14505.5 |
|------------------------------------|---------|

|                        |         |
|------------------------|---------|
| Total Applied M (ft-k) | 12721.8 |
|------------------------|---------|

**Pier Design:**

|  |        |   |        |
|--|--------|---|--------|
| $\phi V_n$ (kips)  | 1318.9 | $V_u$ (kips)  | 86.9   |
| $\phi V_c = \phi 2(1 + N_u / (2000 A_g)) f'_c{}^{1/2} b_w d$ | 1318.9 |   |        |
| $V_s$ (kips)   | 0.0    | *** $V_s \text{ max} = 4 f'_c{}^{1/2} b_w d$ (kips) | 3091.1 |
| Maximum Spacing (in)   | 6.10   | (Only if Shear Ties are Required)                   |        |
| Actual Hook Development (in)                                 | 18.46  | Req'd Hook Development $l_{dh}$ (in)                | 14.12  |

\*\*\* Ref. To Spacing Requirements ACI 11.5.4.3

**Flexure in Slab:**

|                                  |         |                                  |        |
|----------------------------------|---------|----------------------------------|--------|
| $\phi M_n$ (ft-kips)             | 6724.1  | $M_u$ (ft-kips)                  | 6678.0 |
| $a$ (in)                         | 3.17    |                                  |        |
| Steel Ratio                      | 0.01023 |                                  |        |
| $\beta_1$                        | 0.825   |                                  |        |
| Maximum Steel Ratio ( $\rho_t$ ) | 0.0197  |                                  |        |
| Minimum Steel Ratio              | 0.0018  |                                  |        |
| Rebar Development in Pad (in)    | 147.83  | Required Development in Pad (in) | 34.56  |

| Condition                     | 1 is OK, 0 Fails |
|-------------------------------|------------------|
| Maximum Soil Bearing Pressure | 1                |
| Pier Area of Steel            | 1                |
| Pier Shear                    | 1                |
| Interaction Diagram           | 1                |
| Two-Way Shear Action          | 1                |
| One-Way Shear Action          | 1                |
| Overtuning                    | 1                |
| Flexure                       | 1                |
| Steel Ratio                   | 1                |
| Length of Development in Pad  | 1                |
| Hook Development              | 1                |



**Geotechnical Engineering Report  
For:**

**Proposed Verizon Tower  
46 Cemetery Road  
Canterbury, CT**

**Prepared for:  
David Weinpahl, PE  
On Air Engineering, LLC**



**Prepared by:  
Atlantic Consulting & Engineering, LLC  
525 John Street  
Bridgeport, CT 06604**

**July 29, 2019**



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## 1.00 GENERAL SUMMARY

Based on the studies performed as discussed herein, we have prepared the following conclusions and recommendations.

- 1.) Variable density naturally deposited inorganic GLACIAL TILL deposits overlying ROCK are present in the portions of the proposed construction area that were investigated. Liquefaction potential is negligible based on density and gradation of soils, depth of water table and rock depth.
- 2.) The work is proposed in the southeastern portion of the site.
- 3.) The existing naturally deposited inorganic silt, sand and gravel materials can be used to support the bottom of footings and also may meet gradation requirements for re-use as structural fill.
- 4.) If required, raises in grade materials beneath the footings, slabs and pavement should consist of structural fill.
- 3.) Replacement fills for footing, slab and pavement support as required should consist of “structural fill” as defined in paragraph 7.30 and be placed and compacted to 95 percent of the optimum dry density per ASTM D-1557.
- 4.) **Groundwater is NOT expected to impact portions the excavation** or cut areas of the proposed project, however the water table is approximately 24 inches below the bottom of basement elevation, so precautions must be taken.
- 5.) Footings shall be excavated to naturally deposited inorganic materials as defined herein and the grade can be raised using structural fill since the acceptable bearing material is below the frost line. Bearing surfaces within the proposed footing areas are to be at least 3.5 feet below the existing grade.
- 6.) Provided bearing surfaces are prepared as described herein, an allowable soil bearing capacity of 6,000 pounds per square foot may be used for design purposes in sizing the footings and foundations. If structural fill is used to raise the bearing grade, 6,000 pounds per square foot can be used in the design.
- 7.) If footings are constructed on rock, the bearing capacity can be up to 20 tons per square foot, depending on rock type and hardness, to be determined in the field by the geotechnical engineer.
- 8.) All work to prepare in-place materials and to construct foundation systems should be performed under the observation of the geotechnical engineer. Specific important details of our geotechnical engineering study and recommendations are enclosed herein.

## 2.00 INTRODUCTION

This report presents the results of an engineering study performed by Atlantic Consulting & Engineering (ACE), at the site of the proposed Verizon Tower on 46 Cemetery Road in Canterbury, CT. Included in this report are a summary of subsurface conditions observed and the implications of these conditions with respect to the design and construction of the proposed structure. Please note that this report is subject to the limitations contained in Section 8.00.

## **2.10 OBJECTIVE OF STUDY**

The objective of our scope of services was to explore subsurface conditions within the proposed structure and develop geotechnical recommendations for the design of the foundation support for the proposed structure. Included are design criteria for proposed slab on grade and pavement sections.

## **2.20 GEOTECHNICAL SCOPE OF SERVICES**

The scope of services performed by ACE to meet the above stated objectives for geotechnical services included the following:

- Inspection of the test borings conducted by Soiltesting, Inc., on July 22, 2019.
- Evaluation of the soil samples and the rock core that were taken on site.
- Recommendations were prepared for foundation support for the proposed structure.
- Recommendations for slab and pavement section design have been prepared.
- General recommendations have been made as to earthwork and foundation construction procedures to be followed during the construction phase of this project.

## **2.30 SITE AND PROJECT DESCRIPTION**

The subject site is located on the western side of Cemetery Road to the east of Water Street. Residential site is to the east of the proposed tower. The road/driveway enters from the east. Borings and probes were drilled to the southwest corner of the site where the new Verizon Tower is proposed (see plan)

## **3.00 SUBSURFACE EXPLORATIONS**

Subsurface explorations performed for this project consisted of hollow stem augured borings. Borings were terminated in rock deposits.

Test borings were located and drilled by Soiltesting, Inc. Approximate locations of borings are shown on the Boring Location Plan. Two (2) test borings and four (4) probes were advanced throughout the site. Copies of the test boring logs are included in Appendix A, along with a boring location plan. Test boring locations should be considered accurate only to the degree implied by measuring method used to determine them. The test borings were conducted using a truck mounted drill rig. Soil samples from the test borings and rock were classified both on site and in the lab.

## **4.00 SUBSURFACE CONDITIONS**

All explorations revealed GLACIAL TILL and ROCK beneath the topsoil and pavement. Loose to Medium dense sand and gravel with mixed silt along with deeper rock was predominant throughout the exploratory effort. The material is compact and stable to work on and is desirable as bearing material and should be prepared as outlined below. Since the material is a GLACIAL TILL DEPOSIT, if prepared properly, the soil can be assigned 3 tons per square foot bearing capacity. Groundwater will probably not affect the excavation work and stability of in situ soils if the excavation proceeds with caution.

## **5.00 IMPLICATIONS OF SUBSURFACE CONDITIONS**

### **5.10 GLACIAL TILL DEPOSITS (3a)**

Throughout the site beginning immediately beneath the surface, a naturally deposited GLACIAL TILL was encountered. The material is a medium compact brown sand and gravel mix. This material ranges in depth from the surface to a depth of 11 feet below grade. The characteristics of this material make it suitable for footing support, and this can be the design bearing material for the project. Some of this material **may** meet the structural fill requirements outlined in section 7.30 and therefore could be reused as structural fill for raises in grade beneath footings and slabs, furthermore it appears to be suitable to raise the grade in paved areas and below slabs provided the final 8 inches area prepared in accordance with Paragraph 7.30 below.

### **5.20 ROCK**

Rock and/or boulders were encountered below the glacial till the refusal was encountered as shallow as 5 feet and as deep as 11 feet. The RQD was low based on the 5-foot core that was taken. The proposed foundation can also be set on the rock and a bearing capacity of 20 tons per square foot can be used for design.

### **5.30 GROUNDWATER**

Groundwater was encountered 10 feet below grade in Boring B-1. The water table appears to be perched over the rock formation. The water table most likely fluctuates with the highest elevation being in the early spring, therefore possibly affecting footing excavation.

## **6.00 DESIGN OBSERVATIONS**

It is our recommendation that excavation extend to a depth of 3.5 feet below grade. If the foundation is on rock, the minimum excavation is 12 inches below grade. Footings shall be pinned into the rock. If the pad is designed to bear on rock and soil, then precautions should be taken for the rock-to-soil interface. If unsuitable materials are encountered at that elevation, then they must be removed followed by replacement with suitable compacted structural fill beneath the bottom of strip and pier footings (if necessary) or construction of the footings directly on the GLACIAL TILL Stratum.

If the in-place material is determined by the Geotechnical Engineer to be acceptable after visual observations, then areas beneath the slabs can be prepared as described in Section 7.10. Where bearing surfaces require a raise in grade, structural fill can be placed above the existing alluvial deposits as described in Section 7.30.

### **6.10 SPREAD FOOTINGS, PAD or PIERS**

Excavation to naturally deposited inorganic materials is an effective approach for this project due to the relatively shallow depth of the unsuitable materials in the major portion of the construction area. Spread footings, PIERS or PAD can bear directly on TILL deposits, ROCK or structural fill can be used to raise the grade to a minimum of 42 inches below finish grade if raising the grade is required. There could possibly be an excavation below grade to remove the unsuitable soils. When structural fill is used to raise the grade to the bottom of footing, the compacted area shall extend 12 inches beyond the edge of the footing for every 12 inches of structural fill placed, for example if 2 feet of fill were used to raise the grade for a 4x4 footing, the actual area of structural fill should be 8x8 (2 feet along each side).

## 6.20 SLAB ON GRADE

It is recommended that a 4 to 6 inch slab on grade be used to support minor floor loads if required. The slab should over-lie 8 inches of free draining sand and gravel. Which can also be accomplished by the following: excavate 8 inches below bottom of slab having the Geotechnical Engineer observe proof rolling prior to placement of and compaction testing of the structural fill or free draining sand.

## 6.30 PAVED AREAS

The subgrade soil for pavement will consist of varying depths of the existing glacial till and rock. Our proposed pavement cross section consists of the following:

### Roadways and Auto Parking Areas

|          |  |
|----------|--|
| 4 - inch | Two 2" Bituminous Concrete Courses (Class 1 and 2)   |
| 4 - inch | Processed Aggregate Base   |
| 8 - inch | Structural fill placed on compacted subgrade proofrolled prior to lift placement with a 12 ton vibratory roller with vibrator if proofrolling the bearing stratum. |

The above cross section is considered acceptable provided the existing materials are proofrolled and approved by the engineer. All subsequent replacement fills required beneath the sub-base should consist of compacted structural fill. Areas where weaving is observed should be locally excavated and the grade raised using structural fill. Given the fact that some paved areas may be within the loose fill, the depth of excavation depth may need to be increased to attain stable supporting soils. Proof-rolling in the presence of the engineer will enable determination of the stability of that soil.

## 6.40 SEISMIC CHARACTERISTICS and LIQUEFACTION POTENTIAL

For structural design, the IBC Seismic Site Soil Classification is considered to be "B". The mapped spectral response acceleration for 1 second period is  $S_1=0.061$  and for short periods  $S_s=0.171$ . For transfer of ground shear into the naturally deposited inorganic sands, a factor of 0.35 can be assumed. See Seismic Summary in Appendix B. If the pad is designed on rock then the seismic coefficients change.

Based on the results of the borings and the Standard Penetration Testing and soil sampling, the subsurface conditions at the site should be considered as having NEGLIGIBLE potential for liquefaction due to the density and gradation of the silt and sand coupled with the shallow depth of the rock.

## 6.50 SOIL LATERAL LOADS

Foundation walls and retaining walls should be designed to resist lateral loading. At optimum densities and in moist conditions, the design lateral loads in pounds per square foot per foot of depth shall be 40. Submerged or saturated soil pressure used in design shall include the weight of buoyant soil plus hydrostatic loading.

## 7.00 CONSTRUCTION AND EARTHWORK CONSIDERATIONS

Development of the proposed site may entail some soil and foundation oriented problems especially with respect to the existing fill and potential groundwater within the footprint of the proposed building areas. Grading problems may also occur if the work is carried out in wet weather due to the silt content of some of the onsite materials. The recommendations presented in this report are predicated upon site preparations, foundation wall construction, floor slabs and pavement construction monitored under controlled conditions and the direction of the geotechnical consultant.

It is recommended that placement of the concrete for piers and footings take place shortly following the preparation of the design bearing surface, since the introduction of water may adversely affect its structural characteristics. **Dewatering should take place throughout the operation if excavation near the water table takes place.** To insure minimum disturbance to bearing surfaces, the water table should be 24 inches below all working areas.

### 7.10 FLOOR SLABS

Prior to placement of new structural fill, or free-draining sand, gravel base course materials, all deleterious materials, including topsoil and fill should be removed from within the limits of the building to the minimum depth below finish floor as determined by the structural engineer. The exposed subgrade materials should then be proofrolled with a minimum of 4 passes of a 10-ton roller in the presence of the undersigned. Any observed soft or weaving areas should be locally excavated and replaced with compacted structural fill. The final 8 inches of free draining sand and gravel shall be placed as defined in section 7.30. A 4 to 6 inch slab on grade is recommended for the use described herein, depending on the proposed loading.

### 7.20 PAVEMENTS

Prior to placement of new pavement section materials, the in-place materials should be removed to a **minimum depth of 8 inches** below the bottom of finish pavement grades unless the alluvial stratum is encountered at which point it may remain in place. Existing bearing surfaces should be proofrolled and subgrade should then be prepared as outlined under Section 7.10 and 7.30. Raises in grade below pavement section materials should be performed using structural fill, acceptable on site material and processed base as described in section 6.30

### 7.30 MATERIALS, PLACEMENT AND COMPACTION

Structural fill to be used in backfilling within the building areas below footings and pavements, below the recommended 8 inch sand-gravel floor slab base course, and beneath the recommended pavement section, should be free from ice, snow, roots, stumps, and other deleterious materials. Structural fill should consist of a sandy GRAVEL or gravely SAND material having a liquid limit and plasticity limit not exceeding 40 and 15, respectively, and conform to the following gradation requirements:

| <u>Sieve Size</u> | <u>Percent Finer by Weight</u> |
|-------------------|--------------------------------|
| 3.5 inch          | 100                            |
| No. 4             | 30 - 65                        |
| No. 10            | 20 - 50                        |
| No. 40            | 5 - 30                         |
| No. 100           | 0 - 10                         |

**Free draining sand and gravel** for the pavement base course, whether existing or to be placed, should be free of ice, snow, roots, stumps, rubbish, and other deleterious materials and should consist of hard durable sand and gravel conforming to the following gradation requirements:

| <u>Sieve Size</u> | <u>Percent Finer by Weight</u> |
|-------------------|--------------------------------|
| 2 inch            | 100                            |
| 1/2 inch          | 50 - 85                        |
| No. 4             | 40 - 75                        |
| No. 50            | 8 - 28                         |
| No. 100           | 0 - 10                         |

All building areas, structural fill base course free draining sand-gravel fill, pavement base course and pavement sub-base material, should be placed in lifts not exceeding 8 inches in loose lift thickness and should be compacted to at least 95 percent of maximum dry density per ASTM D-1557. New structural fill required exterior to structural element (footings, foundation or retaining walls and pavements) zone of bearing should be compacted to at least 93 percent of the maximum dry density per ASTM D-1557.

If it is necessary to re-use existing acceptable on-site materials, compaction can be carried out by placing the material in lifts not exceeding 6 inches and should be compacted to a minimum of 95 percent of maximum dry density per ASTM D-1557. This cannot be conducted in wet weather, nor if the moisture content of the material is at a level where the desired compaction cannot be physically achieved. Modified Proctor testing, ASTM D-1557, will have to be conducted on samples of any fill desired to be reused. All reused material shall be free of roots, stumps, ice, snow, organic and any other deleterious materials.

#### **7.40 CONSTRUCTION MONITORING SERVICES**

It is recommended that Atlantic Consulting & Engineering and Fairfield Testing Laboratory be retained to provide geotechnical engineering and construction monitoring services during the excavation, foundation, and construction phases of the project. The purpose of these services is to observe compliance with the design concepts, contract documents, and geotechnical recommendations and to allow orderly design changes during construction in the event that subsurface conditions differ from those anticipated prior to the start of construction.

During construction, the Atlantic Consulting & Engineering and Fairfield Testing Laboratories field representatives are recommended to be engaged to provide controlled inspections including with the following:

1. Observe the general progress of site work.
2. Perform the required field control tests for earthwork, including proof-rolling sub-grades and placement of structural fill.
3. Observe earthwork operations to ensure that the minimum compactive effort and maximum lift height restrictions are enforced. Certify rock anchoring and provide pull out testing, if required.
4. Observe, evaluate, and judge the suitability of prepared bearing surfaces as well as any possibility of using existing fill materials below slabs.

July 29, 2019

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5. Observe and evaluate unanticipated subsurface conditions, when and where encountered and alternate procedures, which are proposed to address those unanticipated subsurface conditions.
6. Provide site monitoring for temporary stormwater runoff, if necessary.

#### **8.00 FINAL COMMENTS**

This report has been prepared for specific application to the subject project in accordance with generally accepted soil and foundation engineering practices. No other warranty, expressed or implied, is made. In the event that any changes in the nature, design or location of structures are planned, the conclusions and recommendations contained in the report should not be considered valid, unless the changes are reviewed and conclusions of this report modified or verified in writing.

The analyses and recommendations submitted in this report are based in part upon the data obtained from the referenced test borings. The nature and extent of variations between explorations may not become evident until construction. In order to take full responsibility for information generated in this report, this geotechnical engineer shall be present to certify all bearing surfaces, acceptable bearing elevations and test the compaction of structural fill. If variations then appear evident, it will be necessary to re-evaluate the recommendation of this report.

Atlantic Consulting & Engineering should perform a general review of final design and specifications in order to determine that earthwork and foundation recommendations have been properly interpreted and implemented in the design specifications.

Submitted by

*James E. Quill, PE*

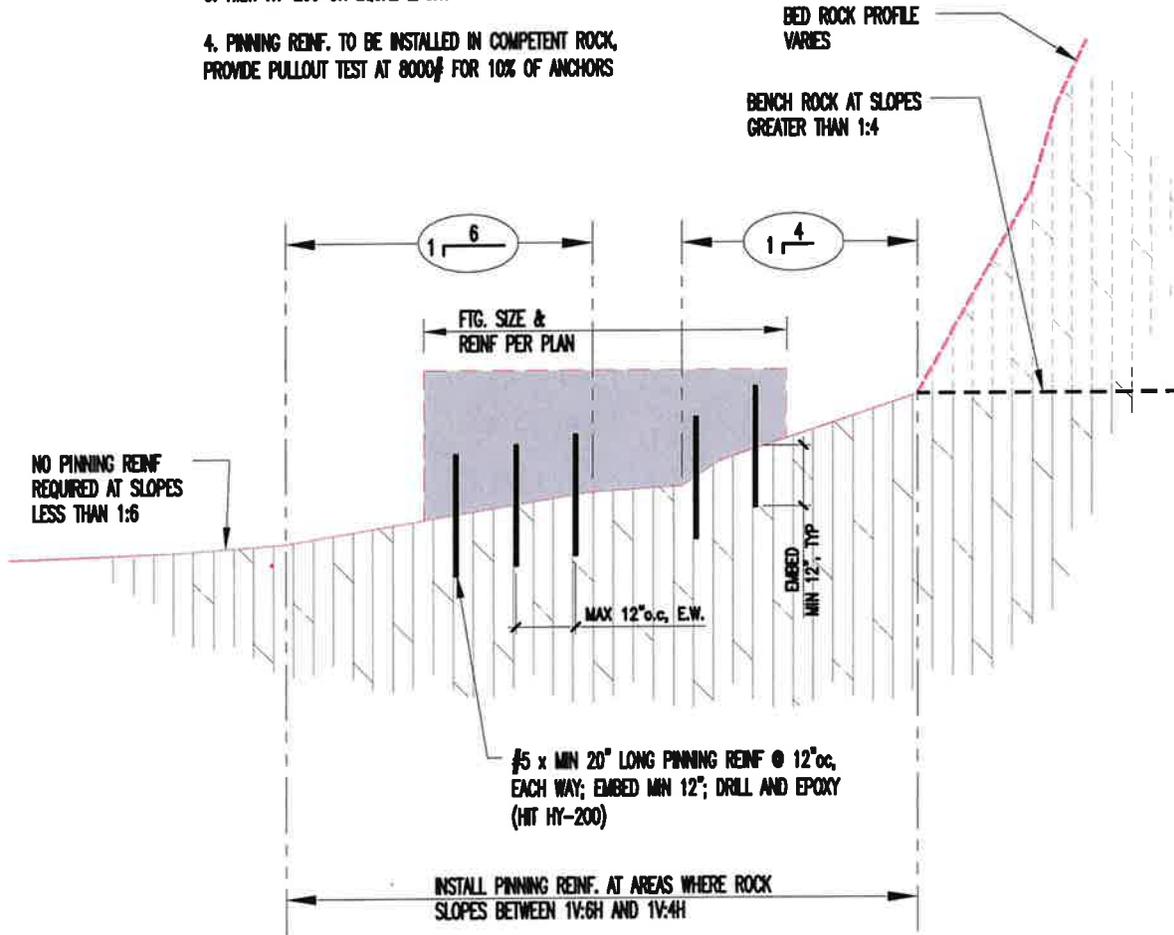
James E. Quill,  
CT PE# 14358

Figure 1

**Rock Pinning Plan**

**NOTES:**

1. GRADE 60 DEFORMED REINFORCEMENT PER ASTM A615
2. INSTALL PINNING REINF. AT 12" oc E.W.
3. HILTI HY-200 OR EQUAL EPOXY
4. PINNING REINF. TO BE INSTALLED IN COMPETENT ROCK, PROVIDE PULLOUT TEST AT 8000# FOR 10% OF ANCHORS



## ROCK PINNING DETAIL

NOT TO SCALE



525 JOHN STREET  
BRIDGEPORT, CT  
06604-3826  
(203) 336-4472  
(203) 336-1799 - FAX  
E-MAIL:  
jqull@atlantic-eng.com

**VERIZON TOWER  
46 CEMETERY ROAD  
CANTERBURY, CT**

**ROCK PINNING DETAIL**

**DATE: 07/31/19**

**Fig-1**

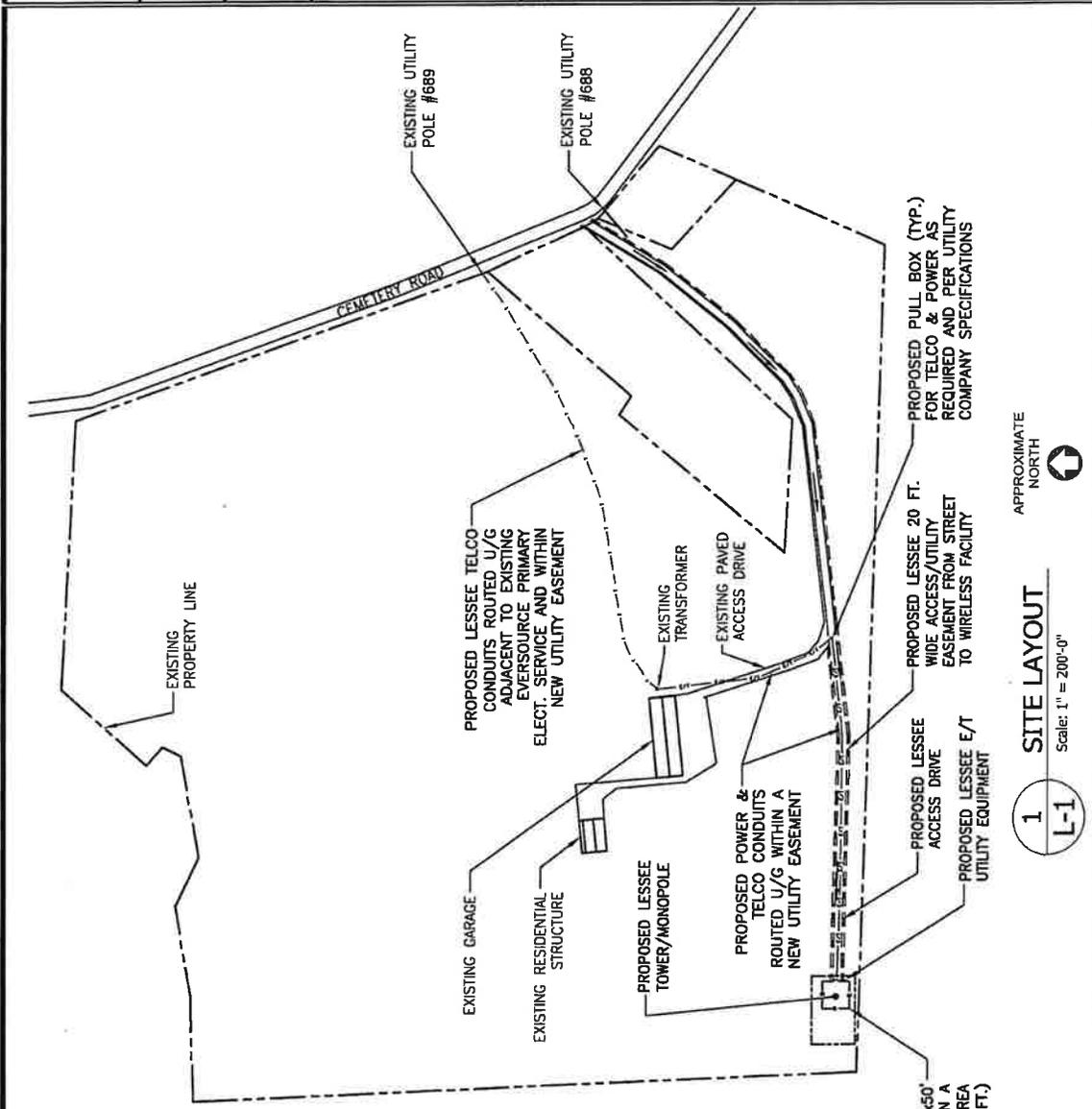
## Figure 2

### **Boring Location Plan**

**LEASE EXHIBIT**

THIS LEASE PLAN IS DIAGRAMMATIC IN NATURE AND IS INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION AND SIZE OF THE PROPOSED WIRELESS COMMUNICATION FACILITY. THE SITE LAYOUT WILL BE FINALIZED UPON COMPLETION OF SITE SURVEY AND FACILITY DESIGN.

**SITE COORDINATES:**  
 (BASED ON 1A SURVEY)  
 LAT.: 41° 40' 21.45" N  
 LNG.: 72° 01' 58.87" W  
**GROUND ELEVATION:**  
 (BASED ON 1A SURVEY)  
 481± A.M.S.L.



APPROXIMATE NORTH

1 SITE LAYOUT  
 L-1  
 Scale: 1" = 200'-0"

| WIRELESS COMMUNICATIONS FACILITY  |      |                     |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
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| 20 ALEXANDER DRIVE<br>WALLINGFORD, CT 06492   |      |                     |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| On Air Engineering LLC<br>88 Pawcatuck Road<br>Cold Spring, NY 10516<br>(201) 456-1624<br>onair@onairllc.net  |      |                     |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| DRAWING SHALL BE REFERRED FOR "LIMIT" AND "NOT TO SCALE" DIMENSIONS. UNLIMITED DIMENSIONS ARE INDICATED "NOT TO SCALE".   |      |                     |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
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FOR PERMITS | 55 |  | REVISED FOR PERMITS | 56 |  | REVISED FOR PERMITS | 57 |  | REVISED FOR PERMITS | 58 |  | REVISED FOR PERMITS | 59 |  | REVISED FOR PERMITS | 60 |  | REVISED FOR PERMITS | 61 |  | REVISED FOR PERMITS | 62 |  | REVISED FOR PERMITS | 63 |  | REVISED FOR PERMITS | 64 |  | REVISED FOR PERMITS | 65 |  | REVISED FOR PERMITS | 66 |  | REVISED FOR PERMITS | 67 |  | REVISED FOR PERMITS | 68 |  | REVISED FOR PERMITS | 69 |  | REVISED FOR PERMITS | 70 |  | REVISED FOR PERMITS | 71 |  | REVISED FOR PERMITS | 72 |  | REVISED FOR PERMITS | 73 |  | REVISED FOR PERMITS | 74 |  | REVISED FOR PERMITS | 75 |  | REVISED FOR PERMITS | 76 |  | REVISED FOR PERMITS | 77 |  | REVISED FOR PERMITS | 78 |  | REVISED FOR PERMITS | 79 |  | REVISED FOR PERMITS | 80 |  | REVISED FOR PERMITS | 81 |  | REVISED FOR PERMITS | 82 |  | REVISED FOR PERMITS | 83 |  | REVISED FOR PERMITS | 84 |  | REVISED FOR PERMITS | 85 |  | REVISED FOR PERMITS | 86 |  | REVISED FOR PERMITS | 87 |  | REVISED FOR PERMITS | 88 |  | REVISED FOR PERMITS | 89 |  | REVISED FOR PERMITS | 90 |  | REVISED FOR PERMITS | 91 |  | REVISED FOR PERMITS | 92 |  | REVISED FOR PERMITS | 93 |  | REVISED FOR PERMITS | 94 |  | REVISED FOR PERMITS | 95 |  | REVISED FOR PERMITS | 96 |  | REVISED FOR PERMITS | 97 |  | REVISED FOR PERMITS | 98 |  | REVISED FOR PERMITS | 99 |  | REVISED FOR PERMITS | 100 |  | REVISED FOR PERMITS |
| NO.   | DATE | REVISION            |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 1   |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 2   |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 3   |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 4   |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 5   |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 6   |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 7   |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 8   |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 9   |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 10  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 11  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 12  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 13  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 14  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 15  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 16  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 17  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 18  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 19  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 20  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 21  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 22  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 23  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 24  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 25  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 26  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 27  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 28  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 29  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 30  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 31  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 32  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 33  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 34  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 35  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 36  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 37  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 38  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 39  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 40  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 41  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 42  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 43  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 44  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 45  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 46  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 47  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 48  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 49  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 50  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 51  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 52  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 53  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 54  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 55  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 56  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 57  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 58  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 59  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 60  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 61  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 62  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 63  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 64  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 65  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 66  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 67  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 68  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 69  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 70  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 71  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 72  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 73  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 74  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 75  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 76  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 77  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 78  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 79  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 80  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 81  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 82  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 83  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 84  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 85  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 86  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 87  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 88  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 89  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 90  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 91  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 92  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 93  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 94  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 95  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 96  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 97  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 98  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 99  |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| 100   |      | REVISED FOR PERMITS |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| SITE ADDRESS:<br>HOLOWAY PROPERTY<br>46 CEMETERY RD.<br>CANTERBURY, CT 06331  |      |                     |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| SHEET TITLE<br>SITE LAYOUT  |      |                     |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |
| SHEET NUMBER<br>L-1   |      |                     |      |          |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |   |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |    |  |                     |     |  |                     |

## APPENDIX A

**Boring Logs B-1 and 1A**

**Probes P-1 through P-4**

Conducted on July 22, 2019



525 JOHN STREET  
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## BORING LOGS

### SUMMARY OF THE BURMISTER SOIL CLASSIFICATION SYSTEM (MODIFIED)

#### RELATIVE DENSITY (of nonplastic soils) OR CONSISTENCY (of plastic soils)

| <p style="text-align: center;"><b>STANDARD PENETRATION TEST (SPT)</b></p> <p><b>Method:</b> Samples were collected in accordance with ASTM D1586-99, using a 2" diameter split spoon sampler driven 24 inches. If samples were collected using direct push methodology (geoprobe), SPTs were not performed and relative density/consistency were not reported.</p> <p><b>N-Value:</b> The number of blows with a 140 lb. hammer required to drive the sampler the middle 12 inches.</p> <p><b>WOR:</b> Weight Of Rod (depth dependent)</p> <p><b>WOH:</b> Weight Of Hammer (140 lbs.)</p> | <p style="text-align: center;"><b>COHESIONLESS SOILS</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>BLOWS/FOOT (SPT N-Value)</th> <th>RELATIVE DENSITY</th> </tr> </thead> <tbody> <tr> <td>0-4</td> <td>Very loose</td> </tr> <tr> <td>4-10</td> <td>Loose</td> </tr> <tr> <td>10-30</td> <td>Medium dense</td> </tr> <tr> <td>30-50</td> <td>Dense</td> </tr> <tr> <td>&gt;50</td> <td>Very dense</td> </tr> <tr> <td colspan="2">*Based upon uncorrected field N-values</td> </tr> </tbody> </table> | BLOWS/FOOT (SPT N-Value) | RELATIVE DENSITY | 0-4 | Very loose | 4-10 | Loose | 10-30 | Medium dense | 30-50 | Dense | >50 | Very dense | *Based upon uncorrected field N-values |  | <p style="text-align: center;"><b>COHESIVE SOILS</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>BLOWS/FOOT (SPT N-Value)</th> <th>CONSISTENCY</th> </tr> </thead> <tbody> <tr> <td>&lt;2</td> <td>Very soft</td> </tr> <tr> <td>2-4</td> <td>Soft</td> </tr> <tr> <td>4-8</td> <td>Medium</td> </tr> <tr> <td>8-15</td> <td>Stiff</td> </tr> <tr> <td>15-30</td> <td>Very stiff</td> </tr> <tr> <td>&gt;30</td> <td>Hard</td> </tr> </tbody> </table> | BLOWS/FOOT (SPT N-Value) | CONSISTENCY | <2 | Very soft | 2-4 | Soft | 4-8 | Medium | 8-15 | Stiff | 15-30 | Very stiff | >30 | Hard |
|---|--|--------------------------|------------------|-----|------------|------|-------|-------|--------------|-------|-------|-----|------------|--|--|--|--------------------------|-------------|----|-----------|-----|------|-----|--------|------|-------|-------|------------|-----|------|
| BLOWS/FOOT (SPT N-Value)  | RELATIVE DENSITY   |                          |                  |     |            |      |       |       |              |       |       |     |            |  |  |  |                          |             |    |           |     |      |     |        |      |       |       |            |     |      |
| 0-4   | Very loose   |                          |                  |     |            |      |       |       |              |       |       |     |            |  |  |  |                          |             |    |           |     |      |     |        |      |       |       |            |     |      |
| 4-10  | Loose  |                          |                  |     |            |      |       |       |              |       |       |     |            |  |  |  |                          |             |    |           |     |      |     |        |      |       |       |            |     |      |
| 10-30   | Medium dense   |                          |                  |     |            |      |       |       |              |       |       |     |            |  |  |  |                          |             |    |           |     |      |     |        |      |       |       |            |     |      |
| 30-50   | Dense  |                          |                  |     |            |      |       |       |              |       |       |     |            |  |  |  |                          |             |    |           |     |      |     |        |      |       |       |            |     |      |
| >50   | Very dense   |                          |                  |     |            |      |       |       |              |       |       |     |            |  |  |  |                          |             |    |           |     |      |     |        |      |       |       |            |     |      |
| *Based upon uncorrected field N-values  |  |                          |                  |     |            |      |       |       |              |       |       |     |            |  |  |  |                          |             |    |           |     |      |     |        |      |       |       |            |     |      |
| BLOWS/FOOT (SPT N-Value)  | CONSISTENCY  |                          |                  |     |            |      |       |       |              |       |       |     |            |  |  |  |                          |             |    |           |     |      |     |        |      |       |       |            |     |      |
| <2  | Very soft  |                          |                  |     |            |      |       |       |              |       |       |     |            |  |  |  |                          |             |    |           |     |      |     |        |      |       |       |            |     |      |
| 2-4   | Soft   |                          |                  |     |            |      |       |       |              |       |       |     |            |  |  |  |                          |             |    |           |     |      |     |        |      |       |       |            |     |      |
| 4-8   | Medium   |                          |                  |     |            |      |       |       |              |       |       |     |            |  |  |  |                          |             |    |           |     |      |     |        |      |       |       |            |     |      |
| 8-15  | Stiff  |                          |                  |     |            |      |       |       |              |       |       |     |            |  |  |  |                          |             |    |           |     |      |     |        |      |       |       |            |     |      |
| 15-30   | Very stiff   |                          |                  |     |            |      |       |       |              |       |       |     |            |  |  |  |                          |             |    |           |     |      |     |        |      |       |       |            |     |      |
| >30   | Hard   |                          |                  |     |            |      |       |       |              |       |       |     |            |  |  |  |                          |             |    |           |     |      |     |        |      |       |       |            |     |      |

#### MATERIAL: (major constituent identified in CAPITAL letters)

| COHESIONLESS SOILS |                    |  | COHESIVE SOILS  |            |                        |
|--------------------|--------------------|--|---|------------|------------------------|
| MATERIAL           | FRACTION           | GRAIN SIZE RANGE                           | SMALLEST DIAMETER   | PLASTICITY | IDENTITY               |
| <b>GRAVEL</b>      | Coarse             | 3/4" to 3"                                 | None  | Nonplastic | <b>SILT</b>            |
|                    | Fine               | 1/4" to 3/4"                               | 1/4" (pencil)   | Slight     | <b>Clayey SILT</b>     |
| <b>SAND</b>        | Coarse             | 1/16" to 1/4"                              | 1/8"  | Low        | <b>SILT &amp; CLAY</b> |
|                    | Medium             | 1/64" to 1/16"                             | 1/16"   | Medium     | <b>CLAY &amp; SILT</b> |
|                    | Fine               | Finest visible & distinguishable particles | 1/32"   | High       | <b>Silty CLAY</b>      |
| <b>SILT/CLAY</b>   | see adjacent table | Cannot distinguish individual particles    | 1/64"   | Very High  | <b>CLAY</b>            |
| <b>COBBLES</b>     |                    | 3" to 6" in diameter                       | Wetted sample is rolled in hands to smallest possible diameter before breaking. |            |                        |
| <b>BOULDERS</b>    |                    | > 6" in diameter                           |   |            |                        |

**ORGANIC SILT:** Typically gray to dark gray, often has strong H<sub>2</sub>S odor. May contain shells or shell fragments. Light weight.

**Fibrous PEAT:** Light weight, spongy, mostly visible organic matter, water squeezed readily from sample. Typically near top of layer.

**Fine grained PEAT:** Light weight, spongy, little visible organic matter, water squeezed from sample. Typically below fibrous peat.

**DEBRIS:** Detailed contents described in parentheses (wood, glass, ash, crushed brick, metal, etc.)

**BEDROCK:** Underlying rock beneath loose soil, can be weathered (easily crushed) or competent (difficult to crush).

#### ADDITIONAL CONSTITUENTS

| TERM   | % OF TOTAL |
|--------|------------|
| and    | 35-50%     |
| some   | 20-35%     |
| little | 10-20%     |
| trace  | 1-10%      |

#### COMMON TERMS

**Glacial till:** Very dense/hard, heterogeneous mixture of sand, silt, clay, sub-angular gravel. Deposited at base of glaciers, which covered all of New England.

**Varved clay:** Fine-grained, post-glacial lake sediments characterized by alternating layers (or varves) of silt, sand and clay.

**Fill:** Material used to raise ground, can be engineered or non-engineered.

#### COMMON FIELD MEASUREMENTS

**Torvane:** Undrained shear strength is estimated using an E285 Pocket Torvane (TV). Values in tons/ft<sup>2</sup>.

**Penetrometer:** Unconfined compressive strength is estimated using a Pocket Penetrometer (PP). Values in tons/ft<sup>2</sup>.

**RQD:** Rock Quality Designation is determined by measuring total length of pieces of core 4" or greater and dividing by the total length of the run, expressed as %. 100-90% excellent; 90-75% good; 75-50% fair; 50-25% poor; 25-0% very poor.

**PID:** Soil screened for volatile organic compounds (VOCs) using a photoionization detector (PID) referenced to benzene in air. Readings in parts per million by volume.

|   |  |  |
|---|--|--|
| <b>SOILTESTING, INC.</b><br>90 DONOVAN RD.<br>OXFORD, CT 06478<br>CT (203) 262-9328<br>NY (914) 946-4850    | CLIENT: <u>Atlantic Consulting &amp; Engineering</u> | SHEET <u>1</u> OF <u>1</u>   |
|   | PROJECT NO. <b>G119-1309-19</b>                      | HOLE NO. <b>B-1 / B-1A</b>   |
| FOREMAN - DRILLER<br><b>MK/ao</b>   | PROJECT NAME<br><b>Proposed Verizon Tower</b>        | BORING LOCATIONS<br>per Plan   |
| INSPECTOR   | LOCATION<br><b>Canterbury CT</b>                     | OFFSET   |
| GROUND WATER OBSERVATIONS<br>AT <u>10'</u> FT AFTER <u>0</u> HOURS<br>AT <u>  </u> FT AFTER <u>  </u> HOURS | TYPE<br>SIZE I.D.<br>HAMMER WT.<br>HAMMER FALL       | CASING<br>HSA<br>4 1/4"<br>SAMPLER<br>SS<br>1 3/8"<br>CORE BAR<br>NQ2<br>BIT<br>30"            |
|   |  | DATE START <b>7/22/19</b><br>DATE FINISH <b>7/22/19</b><br>SURFACE ELEV.<br>GROUND WATER ELEV. |

| DEPTH | CASING BLOWS PER FOOT | SAMPLE |      |     |       |             | BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) |        | CORE TIME PER FT (MIN) | DENSITY OR CONSIST | STRATA CHANGE DEPTH  | FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC. |
|-------|-----------------------|--------|------|-----|-------|-------------|---|--------|------------------------|--------------------|--|---|
|       |                       | NO     | Type | PEN | REC.  | DEPTH @ BOT | 0 - 6                                     | 6 - 12 |                        |                    |  |   |
| 5     | 1                     | ss     | 24"  | 20" | 2'0"  | 3           | 7   |        | dry compact            |                    | 6" Topsoil<br>Brn FM SAND, lit FC gravel                   |   |
|       | 2                     | ss     | 8"   | 4"  | 5'8"  | 24          | 50/2"                                     |        | dry                    |                    | Grey F SAND, sm FC gravel, cobbles, boulders               |   |
| 10    | 3                     | ss     | 2"   | 2"  | 10'2" | 50/2"       |   |        | wet                    | 11'0"              | Cobbles, boulders, &/or fractured BEDROCK<br>Auger refusal |   |
|       | 1                     | nq     | 60"  | 58" | 16'0" | RQD= 18%    |   | 2      |                        |                    |  | BEDROCK   |
| 15    |                       |        |      |     |       |             |   | 2      |                        |                    |  |   |
|       |                       |        |      |     |       |             |   | 3      |                        |                    |  |   |
| 20    |                       |        |      |     |       |             |   | 2      |                        | 16'0"              |  |   |
|       |                       |        |      |     |       |             |   |        |                        |                    |  | <b>E.O.B 16'0"</b>  |
| 5     | <b>B-1A</b>           |        |      |     |       |             |   |        |                        |                    |  | <b>Offset 5' to B-1A</b>  |
|       |                       |        |      |     |       |             |   |        |                        |                    |  |   |
| 10    |                       |        |      |     |       |             |   |        |                        | 11'0"              | Auger refusal  |   |
|       |                       |        |      |     |       |             |   |        |                        |                    |  | BEDROCK   |
| 15    |                       |        |      |     |       |             |   |        |                        |                    |  |   |
|       |                       |        |      |     |       |             |   |        |                        |                    |  |   |
| 20    |                       |        |      |     |       |             |   |        |                        |                    |  |   |
|       |                       |        |      |     |       |             |   |        |                        |                    |  |   |

**NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.**

GROUND SURFACE TO \_\_\_\_\_ FT. USED \_\_\_\_\_ CASING THEN \_\_\_\_\_ CASING TO \_\_\_\_\_ FT. **HOLE NO. B-1 / B-1A**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST  
 WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE  
 SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM  
 PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND = 35 - 50% F = FINE

|  |  |  |
|--|--|--|
| <b>SOILTESTING, INC.</b><br>90 DONOVAN RD.<br>OXFORD, CT 06478<br>CT (203) 262-9328<br>NY (914) 946-4850     | CLIENT: <b>Atlantic Consulting &amp; Engineering</b> | SHEET <u>1</u> OF <u>1</u>   |
|  | PROJECT NO. <b>G119-1309-19</b>                      | HOLE NO.<br><b>P-1/ P-2/ P-2A/ P-3/ P-4</b>  |
| FOREMAN - DRILLER<br><b>MK/ao</b>  | PROJECT NAME<br><b>Proposed Verizon Tower</b>        | BORING LOCATIONS<br>per Plan   |
| INSPECTOR  | LOCATION<br><b>Canterbury CT</b>                     | OFFSET   |
| GROUND WATER OBSERVATIONS<br>AT <u>none</u> FT AFTER <u>0</u> HOURS<br>AT <u>  </u> FT AFTER <u>  </u> HOURS | TYPE<br>SIZE I.D.<br>HAMMER WT.<br>HAMMER FALL       | CASING<br>HSA<br>4 1/4"<br>SAMPLER<br>SS<br>1 3/8"<br>CORE BAR<br>140# BIT<br>30"              |
|  |  | DATE START <b>7/22/19</b><br>DATE FINISH <b>7/22/19</b><br>SURFACE ELEV.<br>GROUND WATER ELEV. |

| DEPTH | CASING BLOWS PER FOOT | SAMPLE |      |     |     |             | BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE)<br>0 - 6 6 - 12 12 - 18 | CORE TIME PER FT (MIN) | DENSITY OR CONSIST | STRATA CHANGE DEPTH                                | FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC. |
|-------|-----------------------|--------|------|-----|-----|-------------|---|------------------------|--------------------|--|---|
|       |                       | NO     | Type | PEN | REC | DEPTH @ BOT |   |                        |                    |  |   |
| 0-5   | P-1                   |        |      |     |     |             |   |                        |                    | Bm F SAND & FC GRAVEL                              |   |
| 5-10  |                       |        |      |     |     |             |   |                        |                    | cobbles to 8'                                      |   |
| 10-15 |                       |        |      |     |     |             |   |                        | 8'0"               | Auger refusal                                      |   |
| 0-5   | P-2                   |        |      |     |     |             |   |                        |                    | Bm F SAND & FC GRAVEL                              |   |
| 5-10  |                       |        |      |     |     |             |   |                        | 5'0"               | Auger refusal                                      |   |
| 0-5   | P-2A                  |        |      |     |     |             |   |                        |                    | P-2A (offset 5' from P-2)<br>Bm F SAND & FC GRAVEL |   |
| 5-10  |                       |        |      |     |     |             |   |                        | 6'0"               | Auger refusal                                      |   |
| 0-5   | P-3                   |        |      |     |     |             |   |                        |                    | Bm F SAND & FC GRAVEL                              |   |
| 5-10  |                       |        |      |     |     |             |   |                        | 10'0"              | Auger refusal                                      |   |
| 0-5   | P-4                   |        |      |     |     |             |   |                        |                    | Bm F SAND & FC GRAVEL                              |   |
| 5-10  |                       |        |      |     |     |             |   |                        | 9'0"               | Auger refusal                                      |   |

**NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.**

|  |   |
|--|---|
| GROUND SURFACE TO _____ FT. USED _____ CASING THEN _____ CASING TO _____ FT.       | HOLE NO.<br><b>P-1/ P-2/ P-2A/ P-3/ P-4</b> |
| A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST                       | C = COARSE                                  |
| WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS                                 | M = MEDIUM                                  |
| SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER                                 | F = FINE                                    |
| PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND = 35 - 50% |   |

## APPENDIX B

### Seismic Summary



### VERIZON TOWER

**46 Cemetery Rd, Canterbury, CT 06331, USA**

Latitude, Longitude: 41.674259, -72.03092570000001



Map data ©2019

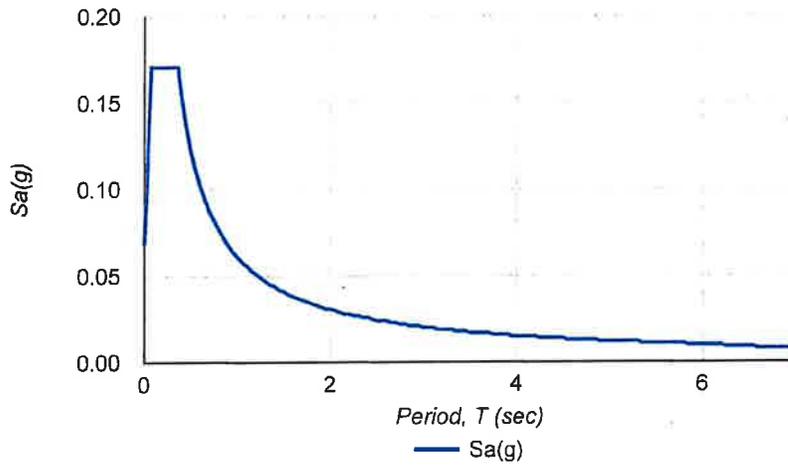
|                                       |                       |
|---------------------------------------|-----------------------|
| <b>Date</b>                           | 7/30/2019, 8:50:02 AM |
| <b>Design Code Reference Document</b> | ASCE7-10              |
| <b>Risk Category</b>                  | II                    |
| <b>Site Class</b>                     | B - Rock              |

| Type            | Value | Description   |
|-----------------|-------|---|
| S <sub>S</sub>  | 0.171 | MCE <sub>R</sub> ground motion. (for 0.2 second period) |
| S <sub>1</sub>  | 0.061 | MCE <sub>R</sub> ground motion. (for 1.0s period)       |
| S <sub>MS</sub> | 0.171 | Site-modified spectral acceleration value               |
| S <sub>M1</sub> | 0.061 | Site-modified spectral acceleration value               |
| S <sub>DS</sub> | 0.114 | Numeric seismic design value at 0.2 second SA           |
| S <sub>D1</sub> | 0.041 | Numeric seismic design value at 1.0 second SA           |

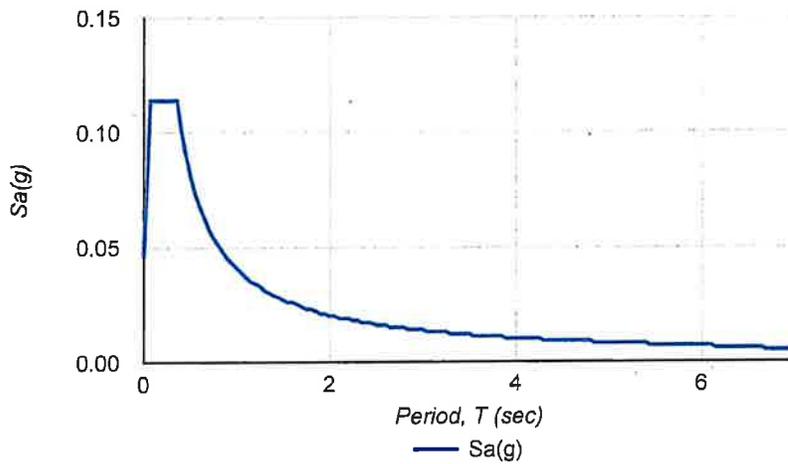
| Type             | Value | Description   |
|------------------|-------|---|
| SDC              | A     | Seismic design category   |
| F <sub>a</sub>   | 1     | Site amplification factor at 0.2 second   |
| F <sub>v</sub>   | 1     | Site amplification factor at 1.0 second   |
| PGA              | 0.085 | MCE <sub>G</sub> peak ground acceleration   |
| F <sub>PGA</sub> | 1     | Site amplification factor at PGA  |
| PGAM             | 0.085 | Site modified peak ground acceleration  |
| T <sub>L</sub>   | 6     | Long-period transition period in seconds  |
| SsRT             | 0.171 | Probabilistic risk-targeted ground motion. (0.2 second)                                   |
| SsUH             | 0.19  | Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration  |
| SsD              | 1.5   | Factored deterministic acceleration value. (0.2 second)                                   |
| S1RT             | 0.061 | Probabilistic risk-targeted ground motion. (1.0 second)                                   |
| S1UH             | 0.068 | Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration. |
| S1D              | 0.6   | Factored deterministic acceleration value. (1.0 second)                                   |

| Type            | Value | Description   |
|-----------------|-------|---|
| PGAd            | 0.5   | Factored deterministic acceleration value. (Peak Ground Acceleration) |
| C <sub>RS</sub> | 0.9   | Mapped value of the risk coefficient at short periods                 |
| C <sub>R1</sub> | 0.898 | Mapped value of the risk coefficient at a period of 1 s               |

**MCER Response Spectrum**



**Design Response Spectrum**



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