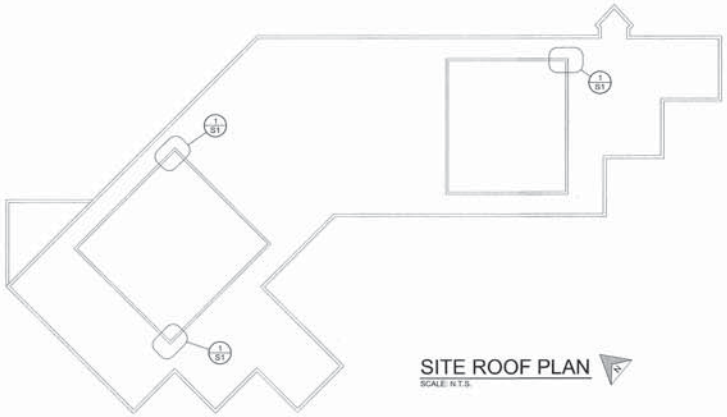
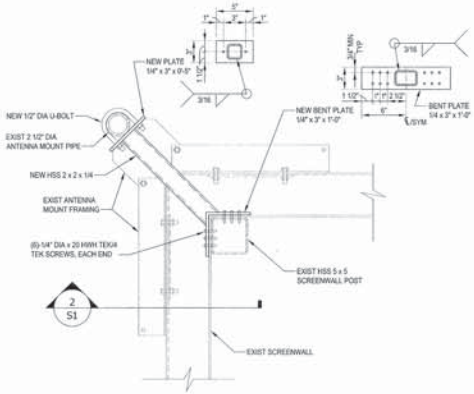
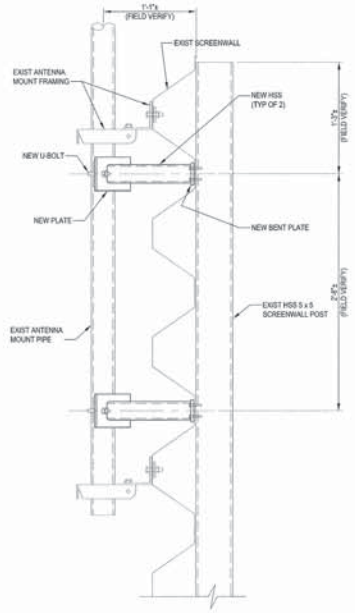


SITE ROOF PLAN
SCALE: N.T.S.



DETAIL 1/S1
SCALE: 1 1/2" = 1'-0"



DETAIL 2/S1
SCALE: 1 1/2" = 1'-0"

GENERAL STRUCTURAL NOTES:

A. GENERAL CONDITIONS

1. UNLESS SHOWN OR NOTED OTHERWISE ON THE CONTRACT DRAWINGS, THE FOLLOWING NOTES SHALL APPLY TO THE MATERIALS LISTED HEREINAFTER FOR USE ON THIS PROJECT.

2. IF MATERIALS, QUANTITIES, STRENGTHS OR SIZES INDICATED BY THE DRAWINGS OR THESE NOTES ARE NOT IN AGREEMENT, THE BETTER QUALITY AND/OR GREATER QUANTITY, STRENGTH OR SIZE INDICATED, SPECIFIED OR NOTED SHALL BE PROVIDED.

3. THE CONTRACTOR SHALL SUPPORT, BRACE AND SECURE THE EXISTING STRUCTURE AS REQUIRED. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE SAFETY OF THE EXISTING BUILDING DURING CONSTRUCTION.

4. THE STRUCTURAL CONTRACT DOCUMENTS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE ENGINEER SHALL NOT INCLUDE INSPECTIONS OF THE PROTECTIVE MEASURES OR THE CONSTRUCTION PROCEDURES.

5. ANY SUPPORT SERVICES PERFORMED BY THE ENGINEER DURING CONSTRUCTION SHALL BE DISTINGUISHED FROM CONTINUOUS AND DETAILED INSPECTION SERVICES, WHICH ARE FURNISHED BY OTHERS. THESE SUPPORT SERVICES PERFORMED BY THE ENGINEER ARE SOLELY FOR THE PURPOSE OF ASSISTING IN QUALITY CONTROL AND IN ACHIEVING CONFORMANCE WITH CONTRACT DOCUMENTS. THEY DO NOT GUARANTEE CONTRACTOR'S PERFORMANCE AND SHALL NOT BE CONSTRUED AS SUPERVISION OF CONSTRUCTION.

6. THE STRUCTURE IS DESIGNED TO BE STABLE AND SELF-SUPPORTING AT THE COMPLETION OF CONSTRUCTION. IT IS THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINATION OF THE ERECTION PROCEDURE AND SEQUENCE TO INSURE THE STABILITY AND SAFETY OF THE BUILDING AND ITS COMPONENT PARTS, AND THE ADEQUACY OF TEMPORARY OR INCOMPLETE CONNECTIONS DURING CONSTRUCTION. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS OR TIEDOWNS THAT MAY BE NECESSARY. SUCH MATERIAL IS NOT INDICATED ON THE DRAWINGS AND, IF PROVIDED, SHALL BE REMOVED AND REMAIN THE PROPERTY OF THE CONTRACTOR AS CONDITIONS PERMIT.

7. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS BEFORE PROCEEDING WITH THE WORK. ANY DISCREPANCIES BETWEEN THE CONTRACT DOCUMENTS AND THE ACTUAL FIELD CONDITIONS MUST BE REPORTED IMMEDIATELY TO THE ARCHITECT & ENGINEER.

8. ALL MATERIALS AND EQUIPMENT FURNISHED WILL BE NEW AND OF GOOD QUALITY, FREE FROM FAULTS AND DEFECTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ALL SUBSTITUTIONS MUST BE PROPERLY APPROVED AND AUTHORIZED PRIOR TO INSTALLATION. THE CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF MATERIALS AND EQUIPMENT BEING SUBSTITUTED.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.

B. GOVERNING BUILDING CODE: 2011 OHIO BUILDING CODE, WITH LOCAL AMENDMENTS

C. DESIGN LOADS:

1. ROOF SNOW LOADS:
   - GROUND SNOW LOAD ..... Pg = 20 PSF
   - FLAT ROOF SNOW LOAD ..... Pf = 20 PSF
   - SNOW EXPOSURE FACTOR ..... Ce = 1.0
   - SNOW LOAD IMPORTANCE FACTOR ..... I = 1.0
   - THERMAL FACTOR ..... Ct = 1.0
2. ROOF LIVE LOADS:
   - MINIMUM ROOF LIVE LOAD ..... Lr = 20 PSF
   - PLATFORM LIVE LOAD ..... Lp = 40 PSF
3. WIND LOADS:
   - BASIC WIND SPEED (3 SEC GUST) ..... V = 90 MPH
   - OCCUPANCY CATEGORY II
   - WIND LOAD IMPORTANCE FACTOR ..... I = 1.0
   - WIND EXPOSURE CATEGORY C
   - ENCLOSURE CATEGORY ..... OPEN
   - WIND DESIGN PRESSURE ..... q = 25.84 PSF

D. STEEL

1. STRUCTURAL STEEL SHALL CONFORM TO THE AISC STEEL CONSTRUCTION MANUAL, 14th EDITION, INCLUDING CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES, APRIL 14, 2010.

2. FIELD CONNECTIONS TO BE BOLTED, SHOP CONNECTIONS TO BE WELDED OR BOLTED. FOLLOW INSTRUCTIONS ON DRAWINGS FOR GENERAL ARRANGEMENT OR PARTICULAR DETAILS.

3. WELDED CONNECTIONS SHALL CONFORM TO THE LATEST REVISED CODE OF THE AMERICAN WELDING SOCIETY, AWS D1.1.

4. ALL U-BOLTS SHALL CONFORM TO ASTM A36 MATERIAL.

5. UNLESS OTHERWISE NOTED, BOLTED CONNECTIONS SHALL BE TIGHTENED TO A SNUG TIGHT CONDITION IN ACCORDANCE WITH "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS".

6. STEEL ANGLES, PLATES, ETC. SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36, F_y = 36 KSI. HSS MEMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GR B.

7. ALL STRUCTURAL STEEL AND BOLTS EXPOSED TO THE WEATHER SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION. PROVIDE A MINIMUM ZINC COATING OF 1.25 oz/sf. CONFORMING TO THE FOLLOWING ASTM STANDARDS.
   - a. STRUCTURAL STEEL SHAPES, PLATES ,ETC: ASTM A123
   - b. BOLTS AND NUTS: ASTM A153
   - c. ASSEMBLED STEEL PRODUCTS: ASTM A386 TOUCH-UP PAINT WELDS, CONNECTIONS AND ABRASIONS IN THE GALVANIZING USING TWO, 3-MIL COATS OF ZINC COLD GALVANIZING COMPOUND.

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STATE OF OHIO
JUAN WAYNE STARRETT
S-70183
REGISTERED
PROFESSIONAL ENGINEER
07-19-13

TERRA CONSULTING GROUP
SITE # CLMB097
5078 TUTTLE CROSSING
DUBLIN, OH 43016

MARK	DATE	DESCRIPTION

PROJECT No:	A45713-0046
DRAWN BY:	A.A.G.
CHECKED BY:	J.T.M.
APPROVED BY:	B.W.S.
DATE:	07/19/2013

EXISTING ROOF PLAN AND DETAILS

S1

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STRUCTURAL ENGINEERS
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STRUCTURAL ANALYSIS REPORT

Rooftop Antenna and Mounts

PJF Project No.: **48713-0046 MOD**

Structure: Existing 52-ft Building
Location: 5078 Tuttle Crossing
Dublin, Ohio 43016
Site Number: CLMB097
Latitude: N 40° 4′ 38.3″
Longitude: W -83° 7′ 39.8″

Prepared For:

TERRA CONSULTING GROUP

600 Busse Highway
Park Ridge, IL 60068
Attn: Mike Stevens

July 16, 2013

STATE OF OHIO
BRIAN WAYNE STARRETT
E-70183
REGISTERED
PROFESSIONAL ENGINEER
07-16-13

Analyzed by:
Jonathan T. Miller, P.E.
Project Engineer
jmiller@pjfweb.com

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STRUCTURAL ANALYSIS REPORT

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Attn: Mike Stevens

July 16, 2013

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Jonathan T. Miller, P.E.
Project Engineer
jmiller@pjfweb.com

Design Standard:
Paul J. Ford and Company has been asked to perform a structural analysis of the proposed antennas mounted on the existing screen wall. The structural analysis is in accordance with the 2011 Ohio Building Code (IBC 2009) for the following design loads:

90 mph 3-second gust of wind without ice
40 mph 3-second gust of wind with 0.75″ radial ice
Occupancy Category II
Importance Factor (Wind) = 1.00
Importance Factor (Snow) = 1.00
Topographic Category 1
Exposure Category "C"
Minimum Roof Live Load = 20 psf
Ground Snow Load = 20 psf

Antenna Loads:
The proposed antennas will be supported by existing mounts attached to the outside of the existing rooftop screen wall. The antennas are to be divided equally on each of the 3 sectors.

TABLE 1 – ANTENNA INFORMATION

ANTENNA CENTERLINE ELEVATION	STATUS	NUMBER	ANTENNA MODEL
67′-0″	PROPOSED	3	CSS XDUO4-65-40I (41 LBS.)
	EXISTING	12	LDF5 COAX LINES
63′-0″	PROPOSED	3	CSS XCAP-465-40 (37 LBS.)
	PROPOSED	3	ALCATEL-LUCENT RRH2X40AWS (44 LBS.)
	PROPOSED	3	7/8″ HYBRID CABLES
	PROPOSED	2	RXXDC-1064-PF-48
	PROPOSED	1	RXXDC-4750-PF-48
	EXISTING - TO BE REMOVED	3	CSS X7-465 (41 LBS.)

Antenna Mounts:
The existing rooftop antenna mounts are attached at the corner of the screenwall to the screenwall panel at three separate corners. The screenwall consists of 4″ deep ribbed metal panel siding spanning 12′ horizontally between vertical TS5x5 framing. The vertical mast pipe is a 2.875″ diameter pipe, approximately 8′-0″ tall. The pipes are supported by L5x3 steel angles fastened directly to the ribbed metal panel siding. The proposed antennas will be attached to the existing pipes with the upper most attennas centered at an elevation of 67′ above ground grade. The existing antennas on these pipes will be removed.

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Results:
The existing attachment to the screenwall panel **does NOT have sufficient capacity** to support the proposed antennas. It is recommended that the mounts be connected directly to the existing TS5x5 columns.

The existing TS5x5 screenwall framing **is adequate** to support the proposed antennas.

With the addition of 2 new antenna pipe mounting brackets at each antenna pipe mount, as shown on the S-1 modification drawing, the screenwall **will have sufficient capacity** to support the existing and proposed equipment in the interim configuration.

We at Paul J. Ford and Company appreciate the opportunity of providing our continuing professional services to you and Terra Consulting. If you have any questions or need further assistance on this or any other projects, please give us a call.

Sincerely,
PAUL J. FORD AND COMPANY

Jonathan T. Miller, P.E.
Project Engineer

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STANDARD CONDITIONS FOR FURNISHING OF PROFESSIONAL ENGINEERING SERVICES ON EXISTING STRUCTURES BY PAUL J. FORD AND COMPANY

1) If the existing conditions are not as represented in this report, we should be contacted immediately to evaluate the significance of the deviation.

2) No allowance was made for any damaged, missing, or rusted members. The analysis of this structure assumes that no physical deterioration has occurred in any of the structural components of the structure and that all the members have the same load carrying capacity as the day the structure was erected. This analysis assumes that all bolts have been torqued to the snug-tight condition as defined by AISC.

3) The evaluation of the existing building structure was limited to the structural components directly supporting the antennas and equipment.