

**APPLICATION FOR  
URBAN DESIGN COMMISSION  
REVIEW AND APPROVAL**

**AGENDA ITEM #** \_\_\_\_\_  
**Project #** \_\_\_\_\_  
**Legistar #** \_\_\_\_\_

**PLEASE PRINT!**

DATE SUBMITTED: _____	<b>Action Requested</b>
UDC MEETING DATE: _____	<input type="checkbox"/> Informational Presentation
	<input type="checkbox"/> Initial Approval and/or Recommendation
	<input type="checkbox"/> Final Approval and/or Recommendation

PROJECT ADDRESS: 1862 Beld St, Madison WI

ALDERMANIC DISTRICT: District 13 Julia Kerr

OWNER/DEVELOPER (Partners and/or Principals)	ARCHITECT/DESIGNER/OR AGENT:
<u>Roman Catholic Diocese</u>	<u>Edge Consulting Engineers, Inc</u>
<u>1862 Beld</u>	<u>624 Water St</u>
<u>Madison WI 53713</u>	<u>Pravie Du Sac WI 53578</u>

CONTACT PERSON: Fran Seidl - Wireless Planning Consultants  
 Address: 2310 Mill St  
New Londo, WI 54961  
 Phone: 920-450-0816  
 Fax: 920-982-3485  
 E-mail address: franseidl@wirelessplanning.com

**TYPE OF PROJECT:**  
(See Section A for:)

- Planned Unit Development (PUD)
  - General Development Plan (GDP)
  - Specific Implementation Plan (SIP)
- Planned Community Development (PCD)
  - General Development Plan (GDP)
  - Specific Implementation Plan (SIP)
- Planned Residential Development (PRD)
- New Construction or Exterior Remodeling in an Urban Design District \* (A public hearing is required as well as a fee)
- School, Public Building or Space (Fee may be required)
- New Construction or Addition to or Remodeling of a Retail, Hotel or Motel Building Exceeding 40,000 Sq. Ft.
- Planned Commercial Site

(See Section B for:)

- New Construction or Exterior Remodeling in C4 District (Fee required)

(See Section C for:)

- R.P.S.M. Parking Variance (Fee required)

(See Section D for:)

- Comprehensive Design Review\* (Fee required)
- Street Graphics Variance\* (Fee required)
- Other \_\_\_\_\_

\*Public Hearing Required (Submission Deadline 3 Weeks in Advance of Meeting Date)

Where fees are required (as noted above) they apply with the first submittal for either initial or final approval of a project.



PHOTO SIMULATION NOTES:

-THESE PHOTO SIMULATIONS ARE AN INTERPRETATION OF THE GENERAL APPEARANCE OF THE PROPOSED INSTALLATION. EACH PHOTO SIMULATION IS BASED ON THE SCALING CRITERIA OR ASSUMPTIONS IDENTIFIED

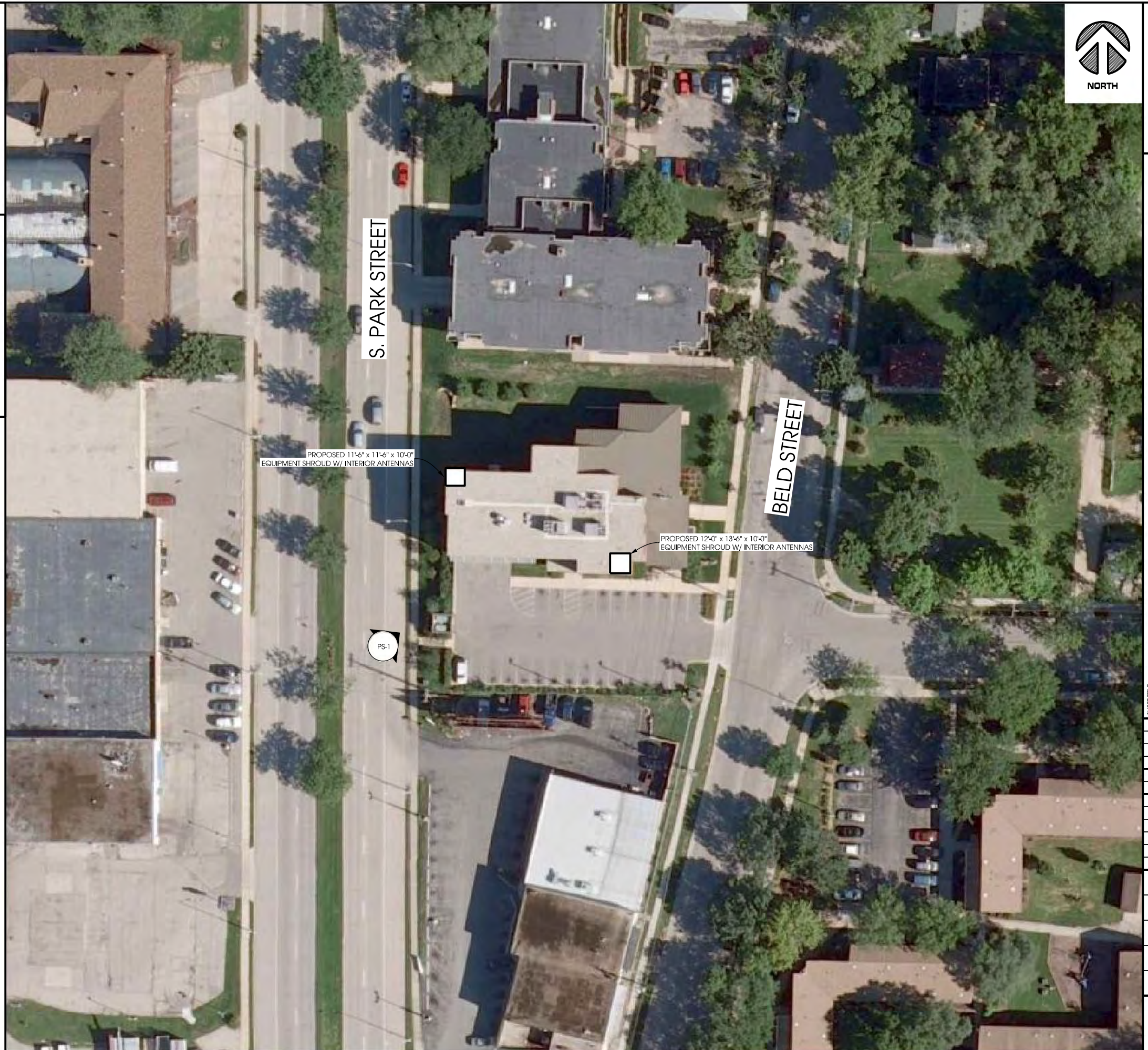
-PHOTO SIMULATION SCALED BY USING (18) BRICKS HORIZONTAL ON EXISTING BUILDING WHICH EQUALS 4'-0"

-PHOTO SIMULATION SCALED BY USING (4 1/2) BRICKS VERTICAL ON EXISTING BUILDING WHICH EQUALS 3'-0"

-ARTISTIC INTERPRETATIONS UTILIZED TO ESTIMATE THE APPROXIMATE SHROUD SIZE AND APPEARANCE

PHOTO LOCATION DESCRIPTION:

PHOTO SIM 1  
 - TAKEN FROM SOUTH PARK STREET  
 - GROUND ELEVATION: 873'



**Edge Consulting Engineers, Inc.**  
 624 Water Street  
 Profile du Soc, WI 53578  
 608.644.1449 vo/ce  
 608.644.1519 fax  
 www.edgeconsulting.com

**AERIAL PHOTO LOCATION**  
**WINGRA & PARK (#782512)**  
**MADISON, WISCONSIN**

SHEET TITLE:	
ISSUE DATE:	PHOTO SIMS - 05/18/09
REVISIONS:	PHOTO SIMS - 03/11/10
DRAWN BY:	JAH
CHECKED BY:	ABB
PLOT DATE:	3/11/2010
PROJECT NUMBER:	4169
FILE NAME:	AS-1a.dgn
SHEET NUMBER:	<b>A6-1</b>

K:\1000\_4169\Photo Sims\AS-1a.dgn





PROPOSED 11'-6" x 11'-6" x 10'-0"  
 EQUIPMENT SHROUD W/ ANTENNAS

PROPOSED 12'-0" x 13'-6" x 10'-0"  
 EQUIPMENT SHROUD W/ ANTENNAS

**PHOTO SIMULATION**  
**WINGRA & PARK (#782512)**  
**MADISON, WISCONSIN**

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ABB

PLOT DATE:

3/11/2010

PROJECT NUMBER:

4169

FILE NAME:

PS-1a.dgn

SHEET NUMBER:

**PS-1**



**ACTUAL PHOTO**  
**BEFORE PHOTO SIMULATION**

PHOTO SIMULATION DESCRIPTION:  
 FOLLOWING UTILIZED FOR PHOTO SIMULATION  
 -(18) BRICKS HORIZONTAL ON EXISTING BUILDING  
 EQUALS 4'-0"  
 -(4 1/2) BRICKS VERTICAL ON EXISTING BUILDING  
 EQUALS 3'-0"

K:\4100\4169\Photo Sim\PS-1a.dgn



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-WINDOW HEIGHT ASSUMED TO BE 8'-0", USED TO DETERMINE HEIGHT OF SHROUD

-ARTISTIC INTERPRETATIONS UTILIZED TO ESTIMATE THE APPROXIMATE TOWER SIZE AND APPEARANCE

PHOTO LOCATION DESCRIPTION:

PHOTO SIM 1

- TAKEN FROM GRASS NORTH OF SITE  
- GROUND ELEVATION: 873'

PHOTO SIM 2

- TAKEN FROM SOUTH PARK STREET LOOKING SOUTHEAST  
- GROUND ELEVATION: 873'

PHOTO SIM 3

- TAKEN FROM SOUTH PARK STREET LOOKING NORTHEAST  
- GROUND ELEVATION: 875'

PHOTO SIM 4

- TAKEN FROM PARKING LOT NEAR BELD STREET  
- GROUND ELEVATION: 890'



**Edge**  
Consulting Engineers, Inc.  
624 Weber Street  
Poulsbo, WA 98260  
360.644.1449 voice  
360.644.1449 fax  
www.edgeconsulting.com

**AERIAL PHOTO LOCATION**  
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**A6-1**

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**PHOTO SIMULATION  
 WINGRA & PARK [#782512]  
 MADISON, WISCONSIN**

SHEET TITLE:

ISSUE DATE:  
 PHOTO SIMS - 05/18/09

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 4169  
 FILE NAME:  
 PS-1.dgn

SHEET NUMBER:  
**PS-1**

PHOTO SIMULATION DESCRIPTION:  
 FOLLOWING UTILIZED FOR PHOTO SIMULATION  
 -WINDOW HEIGHT ASSUMED TO BE  
 8'-0", USED TO DETERMINE HEIGHT OF SHROUD

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PROPOSED 8'-0" x 8'-0" x 2'-6"  
SHROUD WITH INTERIOR ANTENNAS

PROPOSED  
COAX SHROUD

**PHOTO SIMULATION DESCRIPTION:**

FOLLOWING UTILIZED FOR PHOTO SIMULATION  
-WINDOW HEIGHT ASSUMED TO BE  
8'-0", USED TO DETERMINE HEIGHT OF SHROUD

I:\1000\1169\photo sim\PS-2.dgn

**PHOTO SIMULATION**  
**WINGRA & PARK (#782512)**  
**MADISON, WISCONSIN**

SHEET TITLE:

ISSUE DATE:  
PHOTO SIMS - 05/18/09

REVISIONS:

DRAWN BY:  
JAH  
CHECKED BY:  
ABB  
PLOT DATE:  
5/18/2009  
PROJECT NUMBER:  
4169  
FILE NAME:  
PS-2.dgn

SHEET NUMBER:

**PS-2**





PROPOSED 8'-0" x 8'-0" x 2'-6"  
SHROUD WITH INTERIOR ANTENNAS

PHOTO SIMULATION DESCRIPTION:  
 FOLLOWING UTILIZED FOR PHOTO SIMULATION  
 -WINDOW HEIGHT ASSUMED TO BE  
 8'-0", USED TO DETERMINE HEIGHT OF SHROUD

**PHOTO SIMULATION**  
**WINGRA & PARK (#782512)**  
**MADISON, WISCONSIN**

SHEET TITLE:

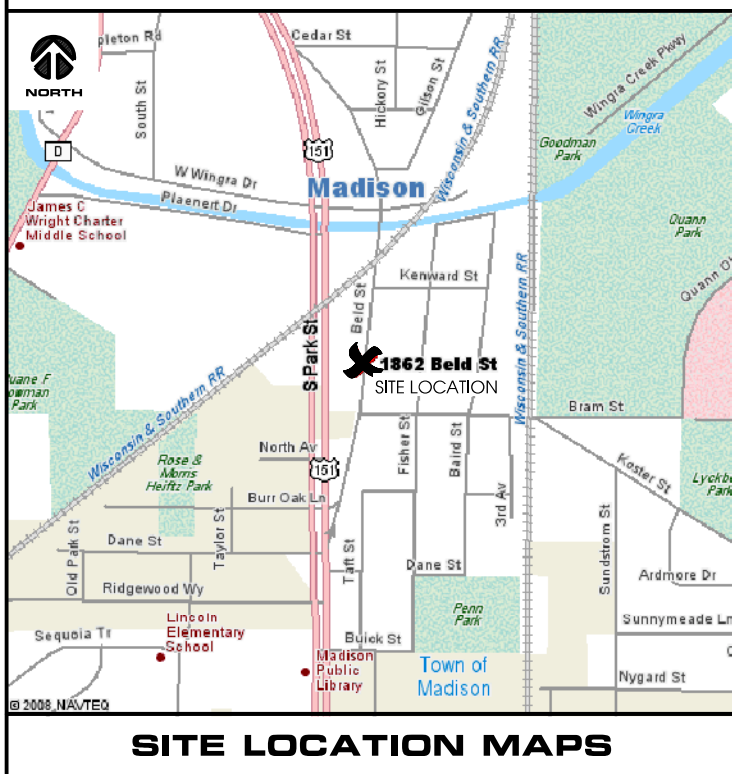
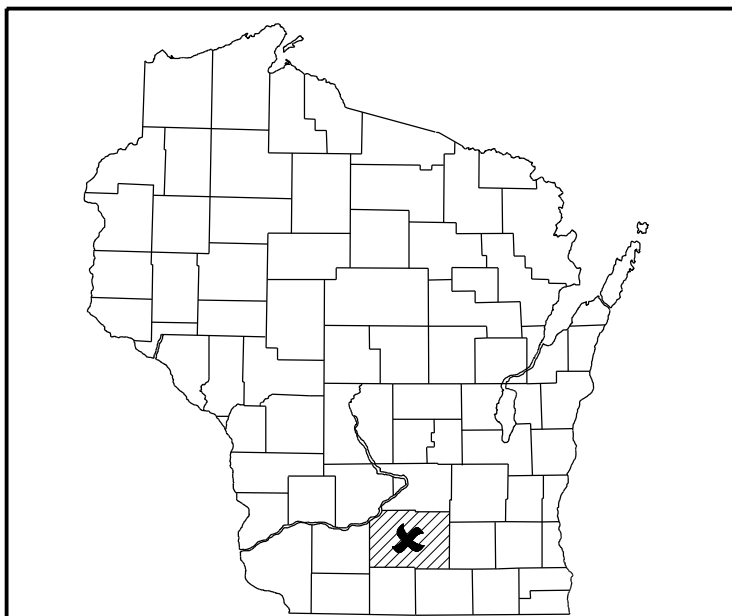
ISSUE DATE:	
PHOTO SIMS - 05/18/09	
REVISIONS:	
DRAWN BY:	JAH
CHECKED BY:	ABB
PLOT DATE:	5/18/2009
PROJECT NUMBER:	4169
FILE NAME:	PS-3.dgn





# WINGRA & PARK (#782512) MADISON, WISCONSIN CONSTRUCTION DRAWINGS ROOFTOP MARCH 2010

**TITLE SHEET**  
**WINGRA & PARK (#782512)**  
**MADISON, WISCONSIN**



**SITE LOCATION MAPS**

**FROM MADISON AREA:**

On W TERRACE DR go toward EASTPARK BLVD, go < 0.1 mi  
 Turn RIGHT at EASTPARK BLVD, go 0.4 mi  
 Turn RIGHT at AMERICAN PKWY, go 0.1 mi  
 Take the ramp onto US-151 S, go 0.9 mi  
 Take exit 97A for I-39/I-90 toward MILWAUKEE, go 0.4 mi  
 Keep LEFT at fork, continue to follow I-39 S/I-90 E, go 5.9 mi  
 Take exit 142A to merge onto US-12 W/US-18 W, go 5.9 mi  
 Take exit 261 A-B for US-151/PARK ST, go 0.2 mi  
 Keep RIGHT follows slgns for US-151, go < 0.1 mi  
 Turn RIGHT at S PARK ST/US-151, go 0.4 mi  
 Turn RIGHT at BELD ST, go 0.2 mi

TRIP DISTANCE:  
 14.6 miles, Time: 18 mins

DISTANCE TO NEAREST INTERSECTION :  
 APPROX. 1500 SOUTH AT US-151

**DRIVING DIRECTIONS**

**SHEET INDEX:**

NO.:	PAGE TITLE:
T-1	TITLE SHEET
T-3	SITE SURVEY *
SP-1	SPECIFICATIONS
SP-2	SPECIFICATIONS
C-1	SITE PLAN
C-2	BASEMENT PLAN
C-3	EQUIPMENT ROOM PLAN
C-4	INSTALLATION DETAILS
S-1	EQUIPMENT ROOM ELEVATIONS
S-2	EQUIPMENT ROOM SPECIFICATIONS
A-1	BUILDING ELEVATION
A-2	ANTENNA SHROUD DETAILS
A-5	COAX ROUTE DETAILS
A-6	ANTENNA INSTALLATION NOTES
G-1	GROUNDING PLAN
G-2	GROUNDING DETAILS
G-3	GROUNDING NOTES
E-1	ELECTRICAL NOTES
P-1	SITE PHOTOGRAPHS

**STRUCTURAL REVIEW NOTE**

\* PREPARED BY OTHERS  
 \*\* STRUCTURAL DETAILS ON THESE PAGES PREPARED AND REVIEWED BY STRUCTURAL ENGINEER. REFER TO STRUCTURAL ANALYSIS BY: NAME: EDGE CONSULTING ENGINEERS, INC. REPORT #: 4169-F-03/2009  
 CONTRACTOR TO REVIEW STRUCTURAL REPORT IN IT'S ENTIRETY, ANY DISCREPANCIES OR DISAGREEMENTS BETWEEN THE REPORT AND THESE PAGES SHOULD BE RESOLVED PRIOR TO CONSTRUCTION.

**PROJECT DIRECTORY:**

ENGINEERING COMPANY:  
 EDGE CONSULTING ENGINEERS, INC.  
 624 WATER STREET  
 PRAIRIE DU SAC, WI 53578  
 CONTACT: ANDREW BRADLEY  
 PHONE: 608.644.1449

CLIENT:  
 U.S. CELLULAR - MADISON  
 5117 WEST TERRACE DRIVE  
 MADISON, WI 53718  
 CONTACT: MIKE STAFFORD  
 PHONE: 608.235.9904

SITE ACQUISITION:  
 WIRELESS PLANNING CONSULTANTS  
 CONTACT: FRAN SEIDL  
 PHONE: 920.450.0816  
 FAX: 920.982.3485

SURVEYOR:  
 MERIDIAN SURVEYING, LLC  
 N8774 FIRELANE 1  
 MENASHA, WI 54952  
 CONTACT: CRAIG KEACH  
 PHONE: 920.993.0881

**PROJECT INFO:**

SITE LOCATION:  
 1862 BELD STREET  
 MADISON, WI 53713

SITE #: 782512

PROPERTY OWNER:  
 ROMAN CATHOLIC DIOCESE OF MADISON  
 1862 BELD STREET  
 MADISON, WI 53713  
 CONTACT: ANDY RUSSELL  
 PHONE: 608.661.3512 x106

2C INFORMATION (NAD 1983/91)  
 -CENTER OF BUILDING- (PER SURVEY)  
 LAT: 43°-02'-45.40"  
 LONG: 89°-23'-36.88"  
 GROUND ELEVATION (NGVD 29): 888.4'  
 ROOFTOP ELEVATION: 915.2'

PLSS INFORMATION:  
 PART OF SW 1/4 OF THE SE 1/4,  
 SECTION 26, T.7N., R.9E.,  
 CITY OF MADISON,  
 DANE COUNTY, WISCONSIN

PARCEL NUMBER: 0709-264-1101-1

**UTILITY INFORMATION**

ELECTRIC SERVICE PROVIDER: MADISON GAS & ELECTRIC  
 PHONE: 608.252.7000

TELEPHONE SERVICE PROVIDER: AT&T  
 PHONE: 1.800.205.6268

TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN, CALL DIGGER'S HOTLINE  
 TOLL FREE 1-800-242-8511  
 FAX A LOCATE 1-800-338-3860  
 WIS. STATUTE 182.0175 (1974) REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE.

ENGINEER SEAL:

**PRELIMINARY - NOT FOR CONSTRUCTION**

I HEREBY CERTIFY THAT THIS PLAN SET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION OTHER THAN THE APPLICABLE STRUCTURAL DETAILED NOTES PROVIDED BY OTHERS AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

SHEET TITLE:

ISSUE DATE:
ZD's - 05/08/09
PRELIM CD's - 06/16/09
FINAL CD's - 09/17/09

REVISIONS:
ANTENNA SHROUDS - 07/15/09
ANTENNA SHROUDS - 08/17/09
ADDITIONAL ANTENNAS - 11/23/09
PROPOSED SHROUDS - 03/10/10

DRAWN BY:
ADS
CHECKED BY:
ABB
PLOT DATE:
3/11/2010
PROJECT NUMBER:
4169
FILE NAME:
T-1.dgn

SHEET NUMBER:

**T-1**



PROJECT- WINGRA AND PARK #782512

SURVEYED FOR:  
U.S. CELLULAR  
5117 W. TERRACE DRIVE  
MADISON, WI 53718  
AND

SURVEYED FOR:  
EDGE CONSULTING ENGINEERS, INC.  
624 WATER STREET  
PRAIRIE DU SAC, WI 53578

PROPERTY OWNER:  
ROMAN CATHOLIC DIOCESE OF MADISON  
1862 BELD STREET  
MADISON, WI 53713

PARCEL NO.: 0709-264-1101-1

ZONED: R5

DEED: VOLUME: 742 PAGES: 63-64

BEARINGS REFERENCED TO THE  
WISCONSIN STATE PLANE COORDINATE  
SYSTEM (NAD83/91) - SOUTH ZONE



- LEGEND-**
- = 1" IRON PIPE FOUND
  - ⊕ = COUNTY MONUMENT FOUND
  - = EXISTING 3" ROOF VENT
  - ⊙ = EXISTING 5" ROOF VENT
  - ⊕ = EXISTING ROOF DRAIN
  - ⊞ = STORM INLET
  - ⊙ = TEST WELL
  - ⊙ = GAS VALVE
  - ⊙ = METAL POST
  - ◇ = TRAFFIC SIGN
  - ∟ = DOOR
  - = EXISTING GUY ANCHOR
  - ⊕ = EXISTING POWER POLE
  - ⊞ = ELECTRIC TRANSFORMER
  - ⊞ = TELEPHONE PEDESTAL
  - ⊞ = LIGHT POLE
  - - - = PROPERTY LINE
  - OPL- = OVERHEAD ELECTRIC
  - ⊙ = DECORATIVE TREE
  - ⊙ = EXISTING SHRUB

**-VICINITY MAP-**

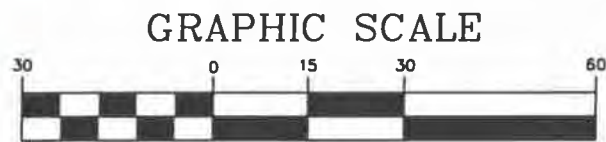


**SURVEYOR'S CERTIFICATE**

I, Craig A. Keach, Wisconsin Registered Land Surveyor of Meridian Surveying, LLC., certify that I have surveyed the described property and that the map shown is a true and accurate representation thereof to the best of my knowledge and belief.

Dated this 13th day of AUGUST, 2009

*Craig A. Keach*  
WISCONSIN REGISTERED LAND SURVEYOR  
Craig A. Keach, S-333



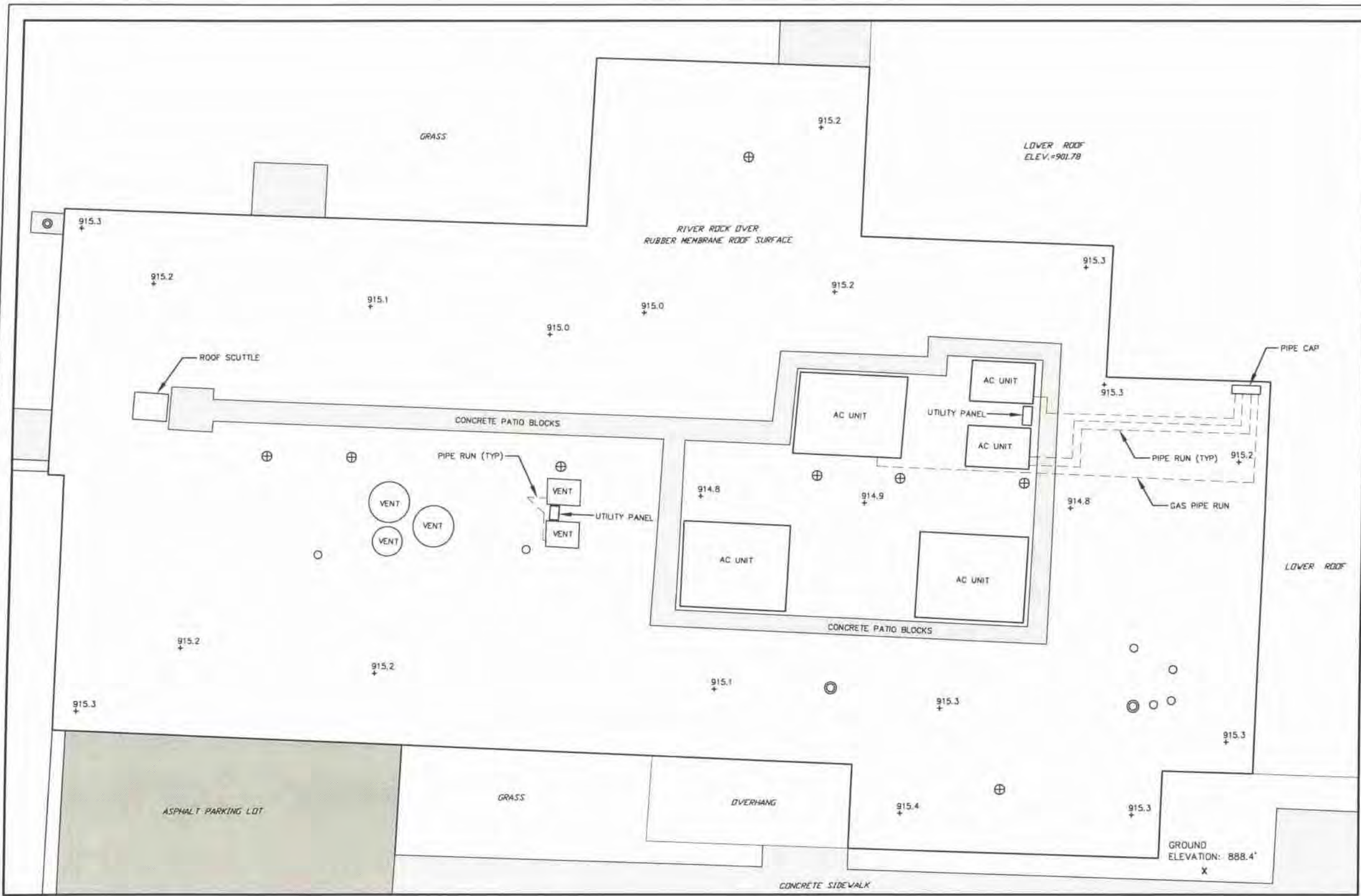
11" x 17" - 1" = 30'  
22" x 34" - 1" = 15'

SITE NAME: WINGRA AND PARK		SITE ADDRESS: 1862 BELD STREET MADISON, WI 53713	
SITE NUMBER: 782512			
<b>MERIDIAN</b> SURVEYING, LLC			
N8774 Firelane 1 Menasha, WI 54952		Office: 920-993-0881 Fax: 920-273-6037	

**SITE SURVEY**  
FOR  
**US CELLULAR**  
BEING A PART OF THE SW1/4 OF THE  
SE1/4, SECTION 26, T.7N., R.9E., CITY  
OF MADISON, DANE COUNTY, WISCONSIN

NO.	DATE	DESCRIPTION	BY
DRAWN BY:	J.B.	DATE:	5-4-09
CHECKED BY:	C.A.K.	FIELD BOOK:	M-15, P. 3
JOB NO.:	5771-B506	SHEET	1 of 3





**CENTER OF BUILDING**  
 LATITUDE: 43°-02'-45.40"  
 LONGITUDE: 89°-23'-36.88"  
 (Per North American Datum of 83/91)  
 Top of Building Elevation: 915.2'  
 Ground Elevation: 888.4'  
 (Per National Geodetic Vertical Datum of 1929)

- LEGEND-**
- = 1" IRON PIPE FOUND
  - ⊕ = COUNTY MONUMENT FOUND
  - = EXISTING 3" ROOF VENT
  - ⊙ = EXISTING 5" ROOF VENT
  - ⊕ = EXISTING ROOF DRAIN
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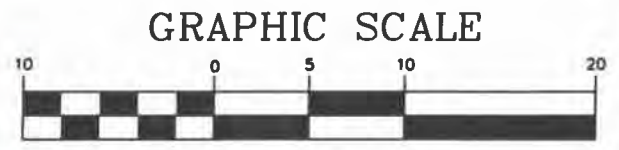
BEARINGS REFERENCED TO THE  
 WISCONSIN STATE PLANE COORDINATE  
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**SURVEYOR'S CERTIFICATE**

I, Craig A. Keach, Wisconsin Registered Land Surveyor of Meridian Surveying, LLC., certify that I have surveyed the described property and that the map shown is a true and accurate representation thereof to the best of my knowledge and belief.

Dated this 13th day of AUGUST, 2009.

*Craig A. Keach*  
 WISCONSIN REGISTERED LAND SURVEYOR  
 Craig A. Keach, S-2333



11" x 17" - 1" = 10'  
 22" x 34" - 1" = 5'

SITE NAME: WINGRA AND PARK		SITE ADDRESS: 1862 BELD STREET	
SITE NUMBER: 782512		MADISON, WI 53713	
<b>MERIDIAN</b>			
SURVEYING, LLC			
N8774 Firelane 1 Menasha, WI 54952		Office: 920-993-0881 Fax: 920-273-6037	

**SITE SURVEY FOR US CELLULAR**  
 BEING A PART OF THE SW1/4 OF THE SE1/4, SECTION 26, T.7N., R.9E., CITY OF MADISON, DANE COUNTY, WISCONSIN

NO.	DATE	DESCRIPTION	BY
DRAWN BY:	J.B.	DATE:	5-4-09
CHECKED BY:	C.A.K.	FIELD BOOK:	M-15, P. 3
JOB NO.:	5771-B506	SHEET	2 OF 3



**PARENT PARCEL LEGAL DESCRIPTION**  
(Roman Catholic of Diocese of Madison property)  
(1862 Beld Street, Madison, WI 53713)

Lot one (1) of Certified Survey Map No. 10382, recorded in Volume 61, Page 136 of Dane County Certified Survey Maps, as Document No. 3482970 and being located in the Southwest Quarter (SW1/4) of the Southeast Quarter (SE1/4) of Section Twenty-Six (26), Town Seven (7) North, Range Nine (9) East, City of Madison, Dane County, Wisconsin.

A non-exclusive right and easement on the Roman Catholic Diocese of Madison property for the purpose of installing and maintaining antennas and antenna cables. This easement is to include the entire rooftop of the building at 1862 Beld Street, Madison, WI. and shall include ground space for locating telecommunications equipment at said address.

Together with a non-exclusive right and easement for ingress and egress at all times, on foot or by motor vehicle, including trucks and for the installation and maintenance of utility wires, cables, conduits, pipes and equipment, over, under or along the existing entrance(s), driveway(s), parking area(s), roof, elevator(s), landscaped area(s) and open area(s) located on the aforementioned property extending to and from the adjoining public right-of-way, which is known as Beld Street.

**SURVEYOR'S CERTIFICATE**

I, Craig A. Keach, Wisconsin Registered Land Surveyor of Meridian Surveying, LLC., certify that I have surveyed the described property and that the map shown is a true and accurate representation thereof to the best of my knowledge and belief.

Dated this 13th day of AUGUST, 2009.

*Craig A. Keach*  
WISCONSIN REGISTERED LAND SURVEYOR  
Craig A. Keach, S-2333



<b>SITE NAME:</b> WINGRA AND PARK <b>SITE NUMBER:</b> 782512		<b>SITE ADDRESS:</b> 1862 BELD STREET MADISON, WI 53713		<b>SITE SURVEY</b> FOR <b>US CELLULAR</b> BEING A PART OF THE SW1/4 OF THE SE1/4, SECTION 26, T.7N., R.9E., CITY OF MADISON, DANE COUNTY, WISCONSIN					
<b>MERIDIAN</b> SURVEYING, LLC		N8774 Firelane 1    Office: 920-993-0881 Menasha, WI 54952    Fax: 920-273-6037				<b>NO.</b>	<b>DATE</b>	<b>DESCRIPTION</b>	<b>BY</b>
				<b>DRAWN BY:</b> J.B.	<b>DATE:</b> 5-4-09				
				<b>CHECKED BY:</b> C.A.K.	<b>FIELD BOOK:</b> M-15, P. 3				
				<b>JOB NO.:</b> 5771-B506	<b>SHEET</b> 3 <i>of</i> 3				



## GENERAL REQUIREMENTS

1. SITE WORK SHALL BE COMPLETED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS (US CELLULAR STANDARD PLANS AND SPECIFICATIONS) AND THE REFERENCED STANDARDS.
  - A. ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES AND REGULATIONS.
  - B. UNIFORM BUILDING CODE (UBC) BUILDING OFFICIALS & CODE ADMINISTRATORS (BOCA) AS APPLICABLE.
  - C. AMERICAN CONCRETE INSTITUTE (ACI).
  - D. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM).
  - E. ELECTRONICS INDUSTRIES ASSOCIATION STANDARDS (EIA/TIA-222-E) MOST CURRENT VERSION ADOPTED BY SUBJECT STATE.
  - F. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)
2. WHERE A CONFLICT OCCURS BETWEEN REFERENCED STANDARDS AND US CELLULAR STANDARD PLANS AND SPECIFICATIONS, THE MORE STRINGENT STANDARD SHALL APPLY.
3. THE FACILITY IS AN UNOCCUPIED SPECIALIZED MOBILE RADIO FACILITY.
4. PLANS ARE NOT TO BE SCALED AND ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY, UNLESS NOTED OTHERWISE THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
5. PRIOR TO THE SUBMISSIONS OF THE BIDS, THE CONTRACTOR SHALL VISIT THE JOB SITE AND BECOME FAMILIAR WITH THE FIELD CONDITIONS. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE.
6. THE CONTRACTOR SHALL RECEIVE IN WRITING, AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEM NOT CLEARLY IDENTIFIED BY THE CONTRACT DOCUMENTS.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY OTHERWISE NOTED.
8. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING BEST SKILLED PERSONNEL. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT INCLUDING CONTACT AND COORDINATION WITH THE LANDLORDS AUTHORIZED REPRESENTATIVE.
9. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS OF THE SITE AND NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES BEFORE STARTING ANY WORK.
10. WHEN CONTRACTOR'S ACTIVITIES IMPEDE OR OBSTRUCT TRAFFIC FLOW, CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL DEVICES, SIGNS, AND FLAGMEN IN ACCORDANCE WITH PART VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AS PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
11. THE CONTRACTOR SHALL COORDINATE SITE ACCESS AND SECURITY WITH THE PROPERTY OWNER AND US CELLULAR PRIOR TO CONSTRUCTION.
12. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, PAVING, CURBS, GALVANIZED SURFACES, ETC. AND UPON COMPLETION OF WORK REPAIR ANY DAMAGE THAT OCCURRED DURING CONSTRUCTION.
13. THE LOCATIONS OF UTILITIES SHOWN ON THE PLAN ARE BASED ON EXISTING RECORDS. FIELD LOCATIONS OR OWNER SUPPLIED INFORMATION AND MAY NOT BE ACCURATE. THE CONTRACTOR SHALL MARK ALL PUBLIC & PRIVATE UTILITIES. THE CONTRACTOR SHALL CALL THE LOCAL "ONE CALL" PROVIDER A MINIMUM OF THREE BUSINESS DAYS PRIOR TO EXCAVATING TO ALLOW MEMBER UTILITIES TO LOCATE THEIR FACILITIES. THE PROPERTY OWNER SHALL BE NOTIFIED IN A SIMILAR FASHION TO ALLOW HIM TO LOCATE HIS PRIVATE UTILITIES.
14. WHEN EXCAVATING AROUND UTILITIES, THE CONTRACTOR SHALL USE REASONABLE CARE IN LOCATING AND PROTECTING UTILITIES. US CELLULAR SHALL BE NOTIFIED IMMEDIATELY OF ANY CONFLICTS BETWEEN EXISTING UTILITIES AND PROPOSED CONSTRUCTION.
15. DAMAGE TO PUBLIC OR PRIVATE UTILITIES SHALL BE REPORTED TO US CELLULAR AND THE OWNER OF THE UTILITY IMMEDIATELY. ANY DAMAGE RESULTING FROM CONTRACTORS NEGLIGENCE OR FAILURE TO ACT WITH DUE REGARD SHALL BE REPAIRED AT CONTRACTORS EXPENSE.
16. UNLESS OTHERWISE NOTED ON THE PLANS, CONTRACTOR SHALL ASSUME ALL SURFACE FEATURES SUCH AS BUILDINGS, PAVEMENTS, LANDSCAPING FEATURES AND PLANTS ARE TO BE SAVED AND PROTECTED FROM DAMAGE.
17. KEEP THE CONSTRUCTION SITE CLEAN, HAZARD FREE, AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. LEAVE PREMISES IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
18. THE CONTRACTOR SHALL PROVIDE ON-SITE TRASH RECEPTACLES FOR COLLECTION OF NON-TOXIC DEBRIS. ALL TRASH SHALL BE COLLECTED ON A DAILY BASIS.
19. ALL TOXIC AND ENVIRONMENTALLY HAZARDOUS SUBSTANCES SHALL BE USED AND DISPOSED OF IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS. UNDER NO CIRCUMSTANCES SHALL RINSING OR DUMPING OF THESE SUBSTANCES OCCUR ON-SITE.
20. THE CONTRACTOR SHALL MAINTAIN AND SUPPLY US CELLULAR WITH AS-BUILT PLANS UPON COMPLETION OF THE PROJECT.
21. MEANS AND METHODS OF CONSTRUCTION INCLUDING, BUT NOT LIMITED TO, THE DESIGN AND PLACEMENT OF FORMS AND SHORING ARE THE RESPONSIBILITY OF THE CONTRACTOR.
22. THE CONTRACTOR SHALL COORDINATE/ASSIST DIFFERENT TRADE CONTRACTORS IN TERMS OF COORDINATION AND SITE ACCESS.
23. ALL ARCHITECTURAL, MECHANICAL & ELECTRICAL SYSTEM AND COMPONENTS IN THIS FACILITY SHALL BE INSTALLED TO RESIST WIND, ICE AND SNOW FORCES AS PER NATIONAL STANDARDS AND BUILDING CODES (LATEST ADOPTED EDITION).

24. US CELLULAR WILL OBTAIN NECESSARY PERMITS AND LICENSES FROM THE FEDERAL COMMUNICATIONS COMMISSION (FCC) AND THE FEDERAL AVIATION ADMINISTRATION (FAA). UNLESS OTHERWISE NOTED IN THE PLANS OR SPECIAL PROVISIONS, CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL OTHER PERMITS NECESSARY FOR CONSTRUCTION.
25. US CELLULAR WILL ORDER AND PAY FOR ANY NECESSARY ELECTRIC AND TELEPHONE UTILITY INSTALLATIONS TO THE POINT OF TERMINATION AS SHOWN ON THE PROJECT PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH UTILITIES.
26. US CELLULAR WILL PROVIDE PRIMARY HORIZONTAL AND VERTICAL CONTROL FOR CONSTRUCTION. CONTRACTOR WILL BE RESPONSIBLE TO CORRECTLY TRANSFER LINE AND GRADE. THE CONTRACTOR SHALL PROVIDE ANY ADDITIONAL STAKING OR RE-STAKING.
27. US CELLULAR MAY RETAIN THE SERVICES OF A TESTING LABORATORY TO PERFORM QUALITY ASSURANCE TESTING ON VARIOUS PORTIONS OF THE CONTRACTORS WORK. WHEN REQUESTED, THE CONTRACTOR SHALL INFORM THE TESTING LABORATORY AND ASSIST THEM IN COMPLETING TESTS.
28. THE CONTRACTOR SHALL PROVIDE ANY TEMPORARY UTILITIES OR FACILITIES IT DEEMS NECESSARY TO COMPLETE ITS WORK. THIS INCLUDES, BUT IS NOT LIMITED TO WATER, SEWER, POWER, TELEPHONE, HEAT, LIGHTING OR SECURITY.
29. NOTIFY ENGINEER 2 DAYS IN ADVANCE OF INITIATING SITE CONSTRUCTION ACTIVITIES.

## DEMOLITION

1. PERFORM DEMOLITION AND REMOVAL OF EXISTING MATERIALS OR STRUCTURES AS SHOWN ON THE PLANS AND AS SPECIFIED IN SPECIAL CONDITIONS. PROTECT EXISTING FACILITIES OR STRUCTURES THAT ARE TO REMAIN.
2. COMPLETE DEMOLITION IN A SYSTEMATIC MANNER BEGINNING AT THE HIGHEST LEVEL.
3. NEATLY SAW OR CUT JOINTS AT THE LIMITS OF REMOVAL; WHENEVER POSSIBLE LOCATE CUTS AT EXISTING JOINTS.
4. PATCH AND REPAIR ANY DAMAGED SURFACES OR STRUCTURAL MEMBERS AT THE LIMITS OF REMOVAL.
5. REMOVAL DEMOLITION DEBRIS FROM THE SITE ON A REGULAR BASIS. DISPOSE ALL DEBRIS OFFSITE IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS. BURNING OF MATERIAL SHALL NOT BE ALLOWED UNLESS OTHERWISE NOTED IN THE PLANS OR SPECIAL PROVISIONS.

## CLEARING AND GRUBBING

1. REMOVE TREES, STUMPS, SHRUBS, GRASS AND OTHER VEGETATION AS SHOWN ON THE PLANS TO ALLOW FOR CONSTRUCTION OF NEW CELLULAR FACILITIES.
2. WHEN POSSIBLE, NEATLY TRIM OR CUT BACK EXISTING TREES OR VEGETATION TO ALLOW FOR CONSTRUCTION OF NEW CELLULAR FACILITIES.
3. WHEN CLEARING TREES, PROTECT ALL SURROUNDING STRUCTURES, PAVEMENTS AND LANDSCAPING BY TOPPING, TRIMMING AND USING GUY LINES.
4. COMPLETELY REMOVE ALL STUMPS AND ROOTS. STUMPS AND ROOTS MAY BE REMOVED BY GRUBBING, CHIPPING OR GRINDING.
5. DISPOSE OF ALL DEBRIS OFFSITE IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS. BURNING OF MATERIAL SHALL NOT BE ALLOWED UNLESS OTHERWISE NOTED IN THE PLANS OR SPECIAL PROVISIONS.

## EARTHWORK

1. REMOVE TOPSOIL FROM BENEATH ALL PROPOSED ROADS, PARKING AREAS, BUILDINGS AND AREAS TO RECEIVE MORE THAN 6" OF FILL. STOCKPILE TOPSOIL FOR USE DURING RESTORATION.
2. ALL TREES DESIGNATED TO REMAIN SHALL BE PROTECTED DURING CONSTRUCTION BY A 5 FOOT HIGH TREE BARRIER UTILIZING WIRE FENCING, OR PROTECTIVE SAFETY NETTING. SEE DETAIL 1/L-1.
3. GRADE AREAS IN ACCORDANCE WITH ELEVATIONS AND GRADES SHOWN ON THE PLANS OR AS NECESSARY IN GRADING TO PROVIDE DRAINAGE.
4. FILL MATERIAL USED IN GRADING OPERATIONS SHALL CONSIST OF EARTH WHICH IS FREE OF DEBRIS, BOULDERS OR ORGANIC MATERIAL. FILL SHALL BE PLACED IN 12" LIFTS AND COMPACTED TO 90% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY.
5. ALL FILL SHALL BE TESTED FOR FIELD DENSITY. TESTS SHALL BE TAKEN IN EACH LIFT OF FILL AT LOCATIONS DESIGNATED BY THE OWNER'S REPRESENTATIVE.
6. SELECT GRANULAR FILL SHALL BE USED WHEN FILLING OR BACKFILLING BENEATH AND/OR AROUND ANY STRUCTURES, ROADS OR PARKING AREAS. SELECT FILL SHALL BE PLACED IN 9" LIFTS AND COMPACTED TO 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY. SELECT GRANULAR FILL SHALL CONSIST OF SAND, GRAVEL OR MIXTURE OF SAND AND GRAVEL FREE OF ORGANIC MATERIAL. THE MATERIAL SHALL HAVE A 2" MAXIMUM SIZE, LESS THAN 10% PASSING NO. 200 SIEVE, A PLASTICITY INDEX OF 6 OR LESS, AND A UNIFORMITY COEFFICIENT OF 5 OR GREATER.
7. ALL DISTURBED AREAS SHALL BE RESTORED AS SOON AS POSSIBLE WITH 4" TOPSOIL, SEED, FERTILIZER AND MULCH. GRASS SEED SHALL BE A SUITABLE MIX CONTAINING BOTH ANNUAL AND PERENNIAL VARIETIES OF FESCUE, RYE AND BLUEGRASS. FERTILIZER SHALL CONTAIN A MINIMUM OF 10% EACH OF NITROGEN, PHOSPHORIC ACID AND POTASH. MULCH SHALL BE A STRAW OR HAY MIXTURE FREE OF NOXIOUS WEED SEEDS. APPLY SEED AND FERTILIZER AS RECOMMENDED BY MANUFACTURER. MULCH SHALL BE CRIMPED AFTER APPLICATION.

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9. THE CONTRACTOR SHALL VERIFY, UPON COMPLETION OF DEVELOPMENT, THE SITE IS PROPERLY STABILIZED AND ALL INDICATED SWALES & STORMWATER FACILITIES ARE CONSTRUCTED AS INDICATED ON THE PLANS.
10. TOWER, TOWER FOUNDATIONS, SLABS, MODULAR BUILDINGS, AND ELECTRICAL AND MECHANICAL FEATURES ARE TO BE DESIGNED AND SPECIFIED BY OTHERS.
11. EROSION CONTROL - ALL MEASURES SHALL BE INSPECTED DAILY AND IMMEDIATELY FOLLOWING ALL RAIN FALL EVENTS. ALL DEFICIENCIES SHALL BE NOTED AND REPAIRED IMMEDIATELY.
12. SEDIMENTATION CONTROL - SEDIMENTATION CONTROL SHALL BE ACCOMPLISHED DURING CONSTRUCTION THROUGH THE USE OF SILT FENCING PLACED AS SHOWN ON THE ATTACHED PLAN. THE CONTROL DEVICES SHALL BE SET AT THE ONSET OF SITE GRADING TO PREVENT SILTING OF THE EXISTING STORMWATER FACILITIES.

#### EROSION CONTROL

1. CONTRACTOR SHALL PROVIDE EROSION CONTROL MEASURES IN ACCORDANCE WITH THE MOST STRINGENT OF: PROJECT PLANS, SPECIAL PROVISIONS, THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES "WISCONSIN CONSTRUCTION SITE BEST MANAGEMENT PRACTICE HANDBOOK", OR LOCAL ORDINANCES.
2. ESTABLISH EROSION CONTROL MEASURES PRIOR TO STARTING CONSTRUCTION AND MAINTAIN THROUGHOUT CONSTRUCTION. INSPECT EROSION CONTROL MEASURES FOLLOWING EACH RAINFALL EVENT AND REPAIR AS NECESSARY.

#### ROAD AND PARKING AREA CONSTRUCTION

1. PREPARE SUBGRADE FOR ROADS AND PARKING AREAS IN ACCORDANCE WITH "EARTHWORK" SECTION.
2. PROOF ROLL ROAD TO IDENTIFY UNSUITABLE MATERIALS. EXCAVATE UNSUITABLE MATERIAL AND DISPOSE OFFSITE. BACKFILL UNDERCUT EXCAVATION USING 3" BREAKER RUN MATERIAL. BREAKER RUN MATERIAL SHALL BE CRUSHED STONE MEETING THE FOLLOWING GRADATION:

SIEVE SIZE	% WEIGHT PASSING
3"	100
1 1/2"	0-50
3/4"	0-20
#200	0-10

3. PLACE CRUSHED AGGREGATE BASE COURSE IN MAXIMUM OF 6" THICK LIFTS IN ACCORDANCE WITH DETAIL DRAWINGS. MOISTURE CONDITION BASE COURSE AS NECESSARY TO ACHIEVE COMPACTION. BASE COURSE SHALL BE COMPACTED TO 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY. BASE COURSE MATERIAL SHALL MEET THE FOLLOWING REQUIREMENTS:

##### 3" BASE COURSE

SIEVE SIZE	% WEIGHT PASSING
3"	100
2 1/2"	25-60
3/4"	0-20
3/8"	0-5

##### 1 1/2" BASE COURSE

SIEVE SIZE	% WEIGHT PASSING
1 1/2"	100
1"	70-100
3/4"	55-95
3/8"	30-65
#4	25-55
#10	15-40
#200	0-10

4. PLACE BASE COURSE WITH CROWN OR UNIFORM SLOPE AS NECESSARY TO PROVIDE DRAINAGE FROM THE SITE.
5. GEOTEXTILE FABRIC SHALL BE USED IN THE EVENT OF UNSTABLE SOIL CONDITIONS. VERIFICATION OF SUCH CONDITIONS IS THE RESPONSIBILITY OF THE CONTRACTOR.

#### CONCRETE AND STEEL REINFORCEMENT

1. CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH ASTM C94. CONCRETE SHALL BE 6 BAG MIX HAVING A 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI, MAXIMUM AGGREGATE SIZE OF 1", MAXIMUM WATER CEMENT RATIO OF 0.45, AIR ENTRAINMENT OF 6% +/- 1%, AND SLUMP OF 3" +/- 1". DEVIATIONS FROM THE MIX MUST BE APPROVED BY US CELLULAR PRIOR TO USE.
2. CONCRETE CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH THE MOST STRINGENT OF: PROJECT PLANS, SPECIAL PROVISIONS, OR THE AMERICAN CONCRETE INSTITUTE (ACI) PUBLICATIONS. CONCRETE WORK FOR TOWER FOUNDATIONS SHALL BE COMPLETED IN ACCORDANCE WITH PLANS AND SPECIFICATIONS PROVIDED BY THE TOWER VENDOR.
3. FORM MATERIALS WILL COMPLY WITH ACI 301. PLYWOOD FORMS SHALL BE APA B-8 PLYFORM CLASS I SOUND SHEETS. LUMBER SHALL BE SPRUCE-PINE-FIR SPECIES #2 OR BETTER GRADE. TUBULAR COLUMN FORMS MAY BE SPIRALLY WOUND LAMINATED FIBER MATERIAL. FORM TIES SHALL BE REMOVABLE OR SNAP-OFF METAL TYPE.
4. CONCRETE SHALL BE MADE OF CEMENT MEETING THE REQUIREMENTS OF ASTM C150, NORMAL, TYPE I PORTLAND. FINE AND COARSE AGGREGATES FOR CONCRETE SHALL MEET THE REQUIREMENTS OF ASTM C33.
5. PLACE, SUPPORT AND SECURE REINFORCEMENT STEEL AT LOCATIONS SHOWN ON PLANS. REINFORCING STEEL SHALL BE PLACED IN ACCORDANCE WITH ACI 315. REBAR YIELD STRENGTH = 60,000PSI
6. AIR ENTRAINING ADMIXTURES SHALL MEET THE REQUIREMENTS OF ASTM C260; WATER REDUCING ADMIXTURES SHALL MEET THE REQUIREMENTS OF ASTM C494, TYPE A. ALL OTHER ADMIXTURES ARE PROHIBITED WITHOUT PRIOR APPROVAL BY US CELLULAR.
7. VAPOR BARRIER SHALL BE 6 MIL THICK POLYETHYLENE, MEETING THE REQUIREMENTS OF ASTM D2103.
8. CURING COMPOUND SHALL MEET THE REQUIREMENTS OF ASTM C309.
9. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
10. ALL CONSTRUCTION AND EXPANSION JOINTS SHALL BE INSTALLED PER THE DRAWINGS.
12. ALL EXPOSED CORNERS OF CONCRETE WORK SHALL BE CHAMFERED 3/4" UNLESS NOTED OTHERWISE.
13. PLACE, SUPPORT AND SECURE REINFORCEMENT STEEL AT LOCATIONS SHOWN ON PLANS. REINFORCING STEEL SHALL BE PLACED IN ACCORDANCE WITH ACI 315.
14. ALL FORM WORK SHALL BE RIGID, TIGHT, LEVEL, PLUMB AND SUFFICIENTLY SHORED TO RESIST CONSTRUCTION LOAD CONDITIONS. COAT FORMS WITH RELEASE AGENT PRIOR TO PLACING REINFORCING STEEL.
15. PREPARE SUBGRADE FOR CONCRETE IN ACCORDANCE WITH PROJECT PLANS AND SPECIAL PROVISION. DO NOT PLACE CONCRETE ON FROZEN SUBGRADE.
16. PROVIDE US CELLULAR A MINIMUM OF 24 HRS. NOTICE PRIOR TO PLACING CONCRETE TO ALLOW FOR INSPECTION AND SCHEDULING OF TESTING.
17. UTILIZE CHUTES, TROUGHS OR CONVEYORS TO PLACE CONCRETE SO THAT HANDLING OF CONCRETE IS MINIMIZED. AVOID SEGREGATION OF THE AGGREGATE AND DISTURBING REINFORCING STEEL.
18. UNIFORMLY CONSOLIDATE CONCRETE USING HAND TOOLS OR MECHANICAL VIBRATORS. THOROUGHLY CONSOLIDATE EACH LAYER PRIOR TO PLACING SUBSEQUENT LAYERS.
19. WHEN PLACING OPERATIONS ARE TEMPORARILY SUSPENDED, THE UNFINISHED FACE OF THE POUR SHALL BE COVERED WITH WET BURLAP UNTIL PLACING OPERATIONS ARE RESUMED. WHEN PLACING OPERATIONS ARE SUSPENDED FOR MORE THAN 30 MINUTES, PROVIDE AN UNBONDED CONSTRUCTION JOINT.
20. TROWEL FINISH SURFACES UNLESS OTHERWISE DIRECTED ON THE PLANS.
21. AFTER FINAL FINISHING, PROVIDE POLYETHYLENE VAPOR BARRIER OR CURING COMPOUND TO MAINTAIN MOISTURE AND TEMPERATURE OF CONCRETE.
22. IN EXTREME WEATHER PLACE AND CURE CONCRETE IN ACCORDANCE WITH EITHER ACI 306R-89 FOR COLD WEATHER OR ACI 305R-89 FOR HOT WEATHER.
23. WELDING OF REINFORCING STEEL ARE PROHIBITED.
24. REMOVE FORMS IN A MANNER THAT DOES NOT DAMAGE THE CONCRETE. FILL AND PATCH AND POCKETS OR HOLES ON EXPOSED SURFACES USING MORTAR MIXTURE.
25. PROVIDE TEST CYLINDERS AS FOLLOWS:
  - A. EQUIPMENT ENCLOSURE:
    - 1 CYLINDER AT 7 DAYS.
    - 1 CYLINDER AT 14 DAYS.
    - 2 CYLINDER AT 28 DAYS.
26. NOTIFY ENGINEER 48 HOURS IN ADVANCE OF TOWER FOUNDATION INSTALLATION.
27. REFER TO TOWER MANUFACTURER SPECIFICATIONS REGARDING FOUNDATION REQUIREMENTS.

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ADS

CHECKED BY:

ABB

PLOT DATE:

3/11/2010

PROJECT NUMBER:

4169

FILE NAME:

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SHEET NUMBER:

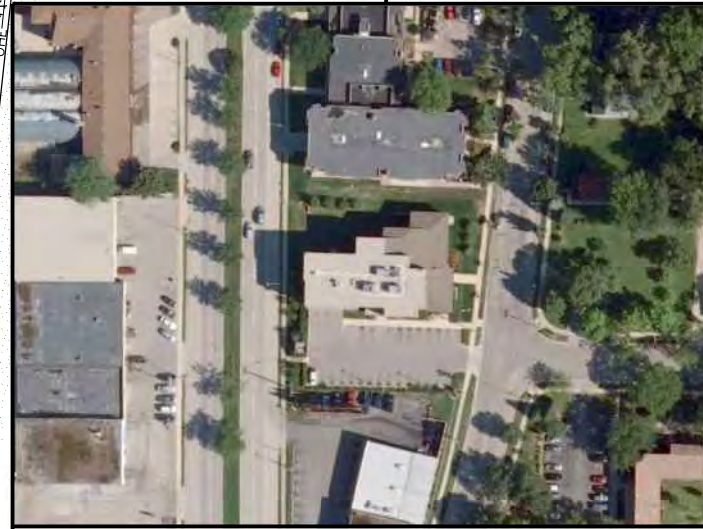
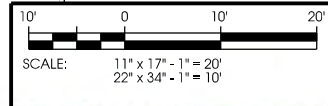
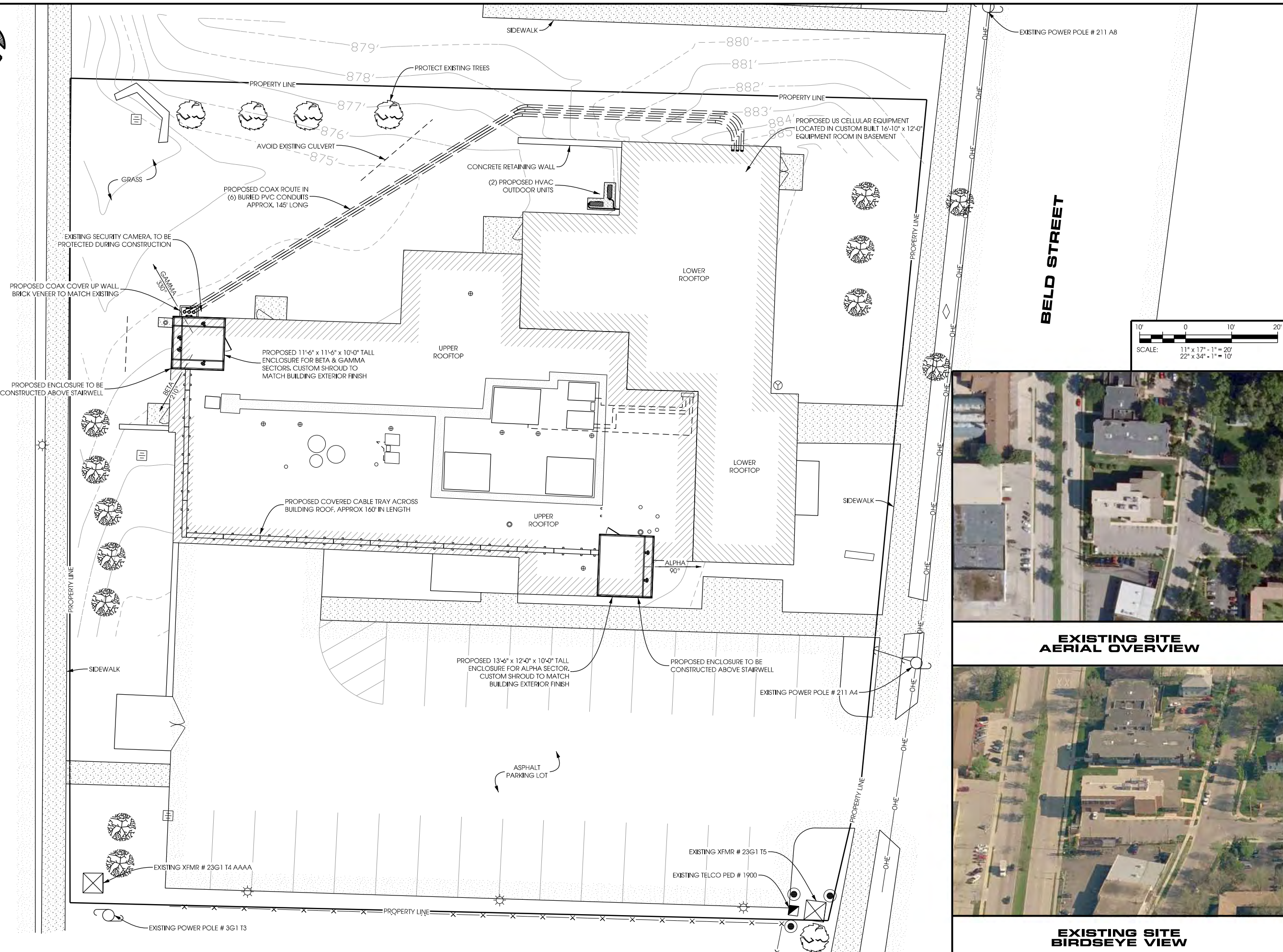
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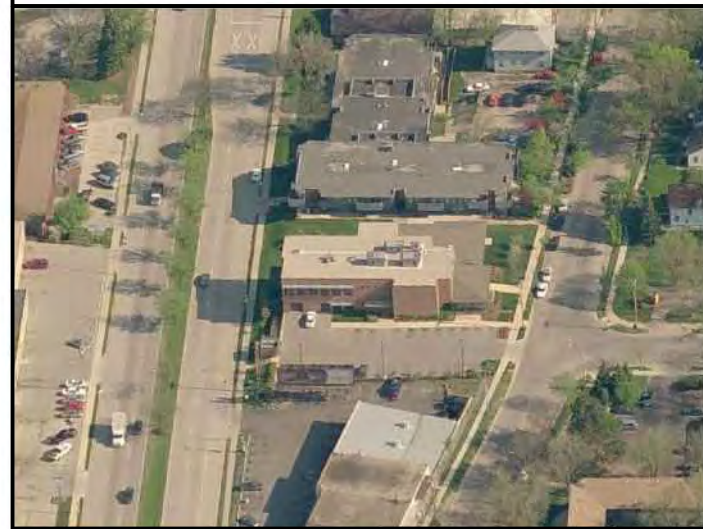


S. PARK STREET

BELD STREET



EXISTING SITE AERIAL OVERVIEW



EXISTING SITE BIRDSEYE VIEW

**Edge Consulting Engineers, Inc.**  
 624 Water Street  
 Profile du Soc, WI 53578  
 608.644.1449 voice  
 608.644.1549 fax  
 www.edgeconsul.com

**SITE PLAN**  
**WINGRA & PARK (#782512)**  
**MADISON, WISCONSIN**

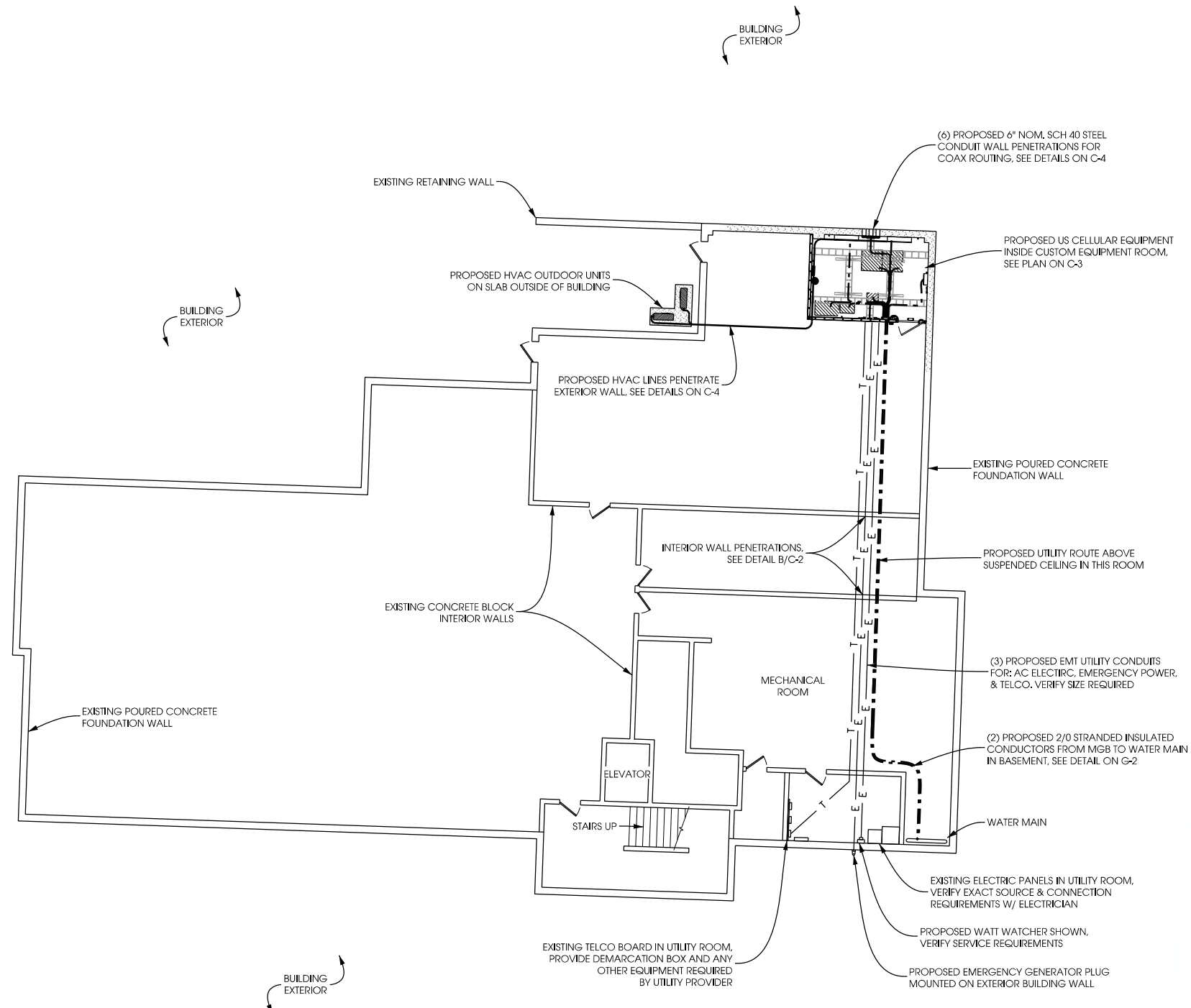
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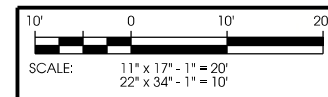
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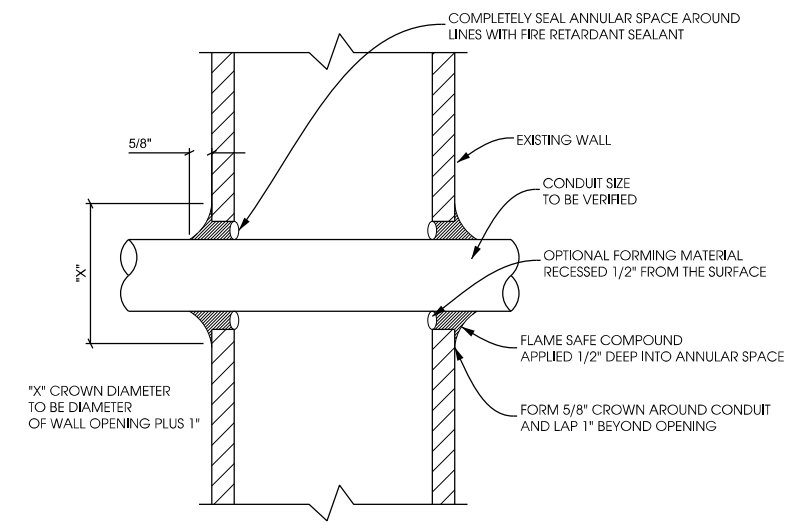




**BASEMENT FLOOR PLAN**



NOTES:  
 VERIFY REQUIRED SIZES FOR UTILITIES.  
 AVOID ALL EXISTING REINFORCING IN LOAD BEARING WALLS.



**B** INTERIOR UTILITY PENETRATIONS  
**C-2** NTS



**PROPOSED EQUIPMENT ROOM LOCATION**

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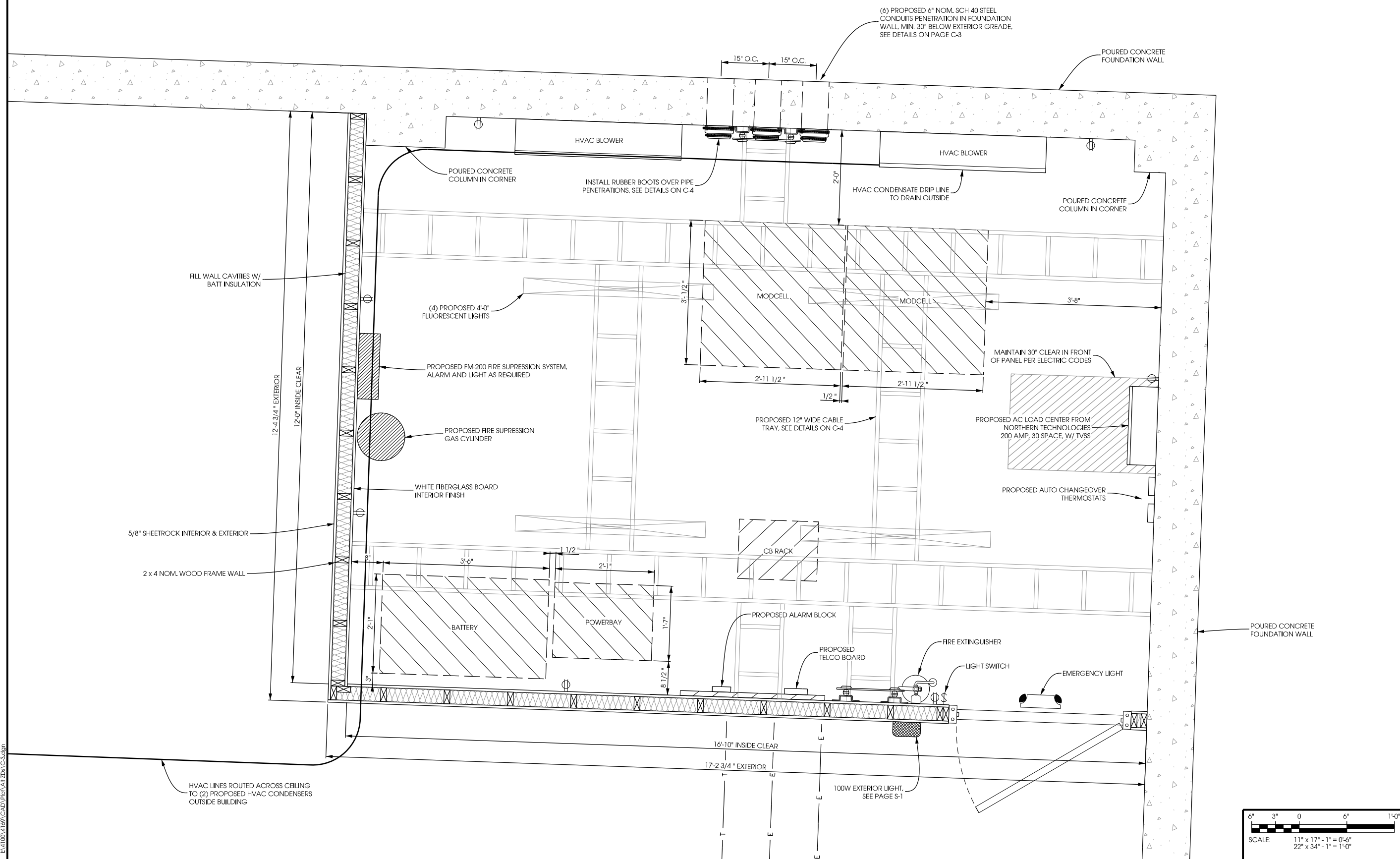
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**EQUIPMENT ROOM PLAN**  
**WINGRA & PARK [#782512]**  
**MADISON, WISCONSIN**



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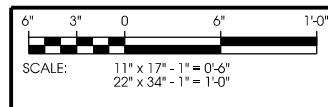
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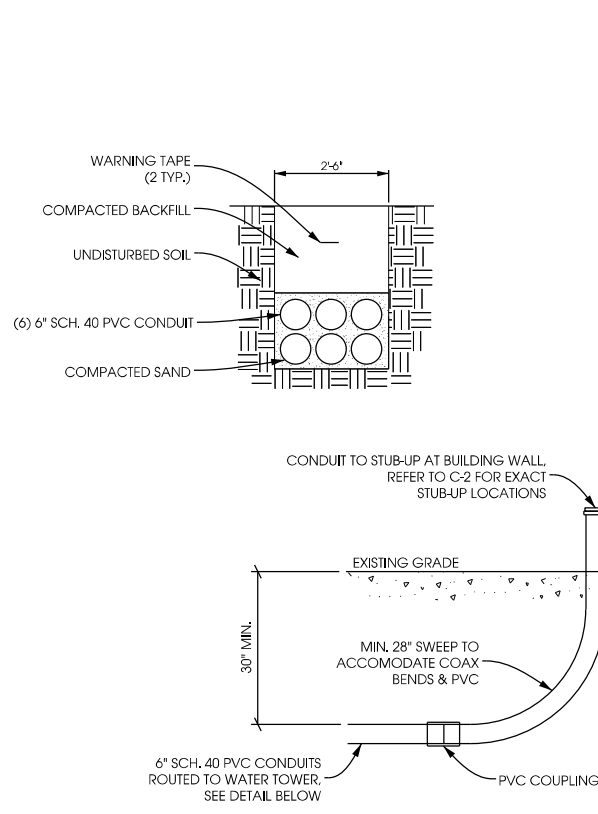
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PLOT DATE:	3/11/2010
PROJECT NUMBER:	4169
FILE NAME:	C-3.dgn

SHEET NUMBER:	<b>C-3</b>
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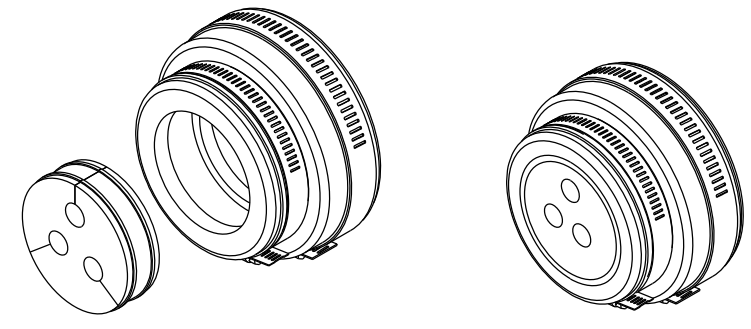




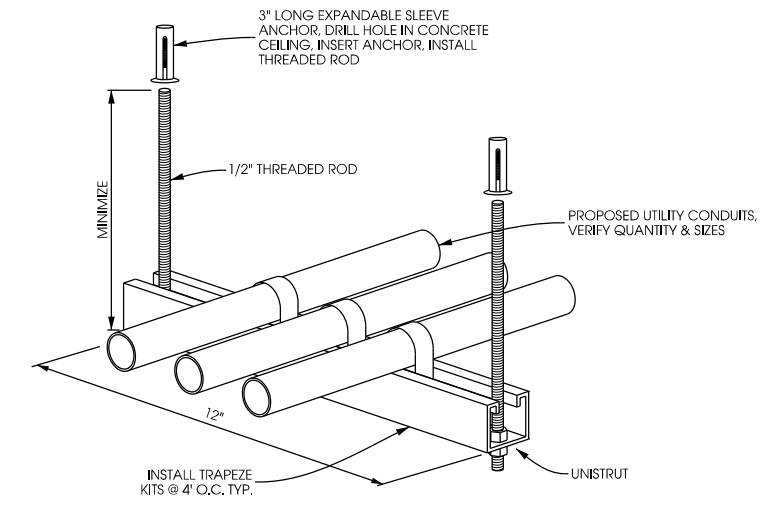


NOTE:  
 -SCH 40, 90° ELBOW W/ SPECIAL RADIUS, CARLON PART # UA9HT www.carlon.com  
 -MINIMUM ALLOWABLE SWEEP - 28"  
 -CUT OFF TOP OF CONDUIT AT 6" AGL

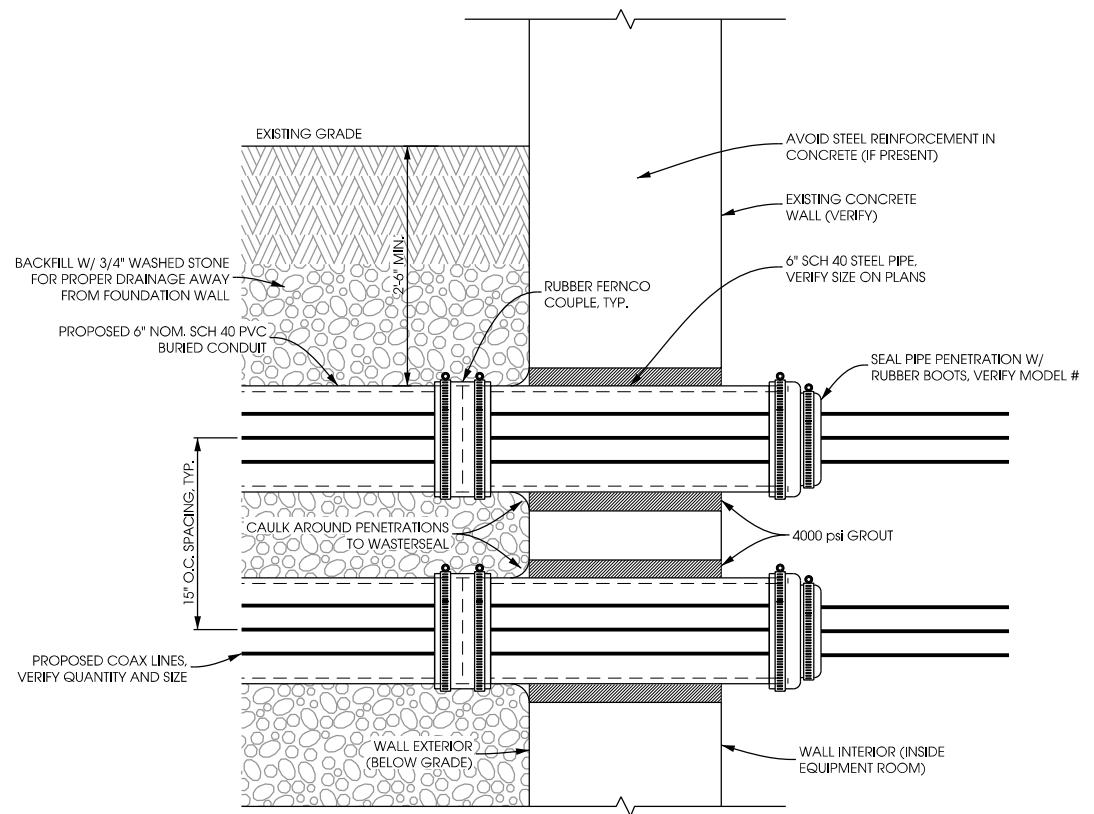
**A COAX TRENCH DETAIL**  
 C-4 SCALE: NTS



**C 6" BOOT ASSEMBLY KIT**  
 C-4 VALMONT P/N: #B1465F, 6-5/8" BOOT ASSEMBLY KIT W/ (3) 1-5/8" HOLES

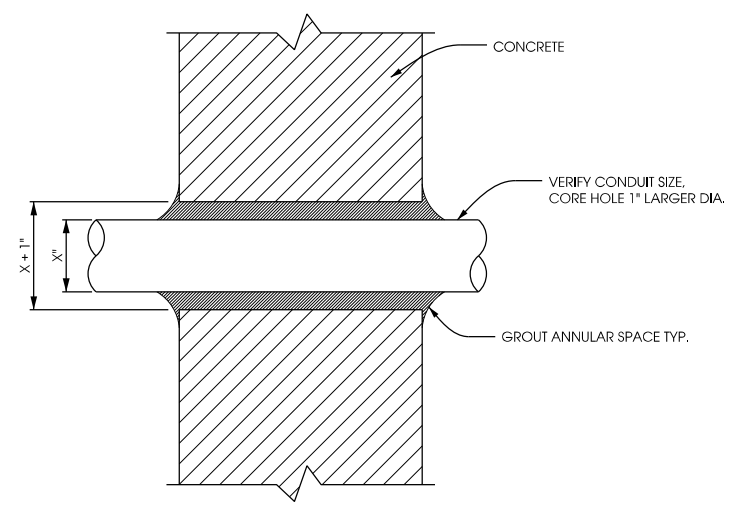


**D UTILITY TRAPEZE DETAIL**  
 C-4 SCALE: NTS

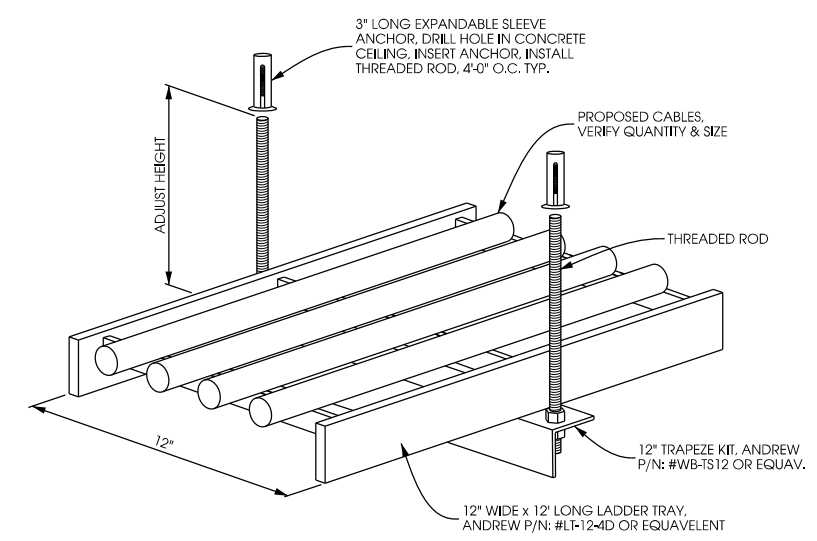


**B COAX WALL PENETRATION DETAIL**  
 C-4 SCALE: 11 X 17 - 1/2" = 1'-0"  
 22 X 34 - 1" = 1'-0"

NOTES:  
 VERIFY REQUIRED SIZES FOR UTILITIES.  
 AVOID ALL EXISTING REINFORCING IN LOAD BEARING WALLS.



**E EXTERIOR UTILITY PENETRATIONS**  
 C-4 NTS



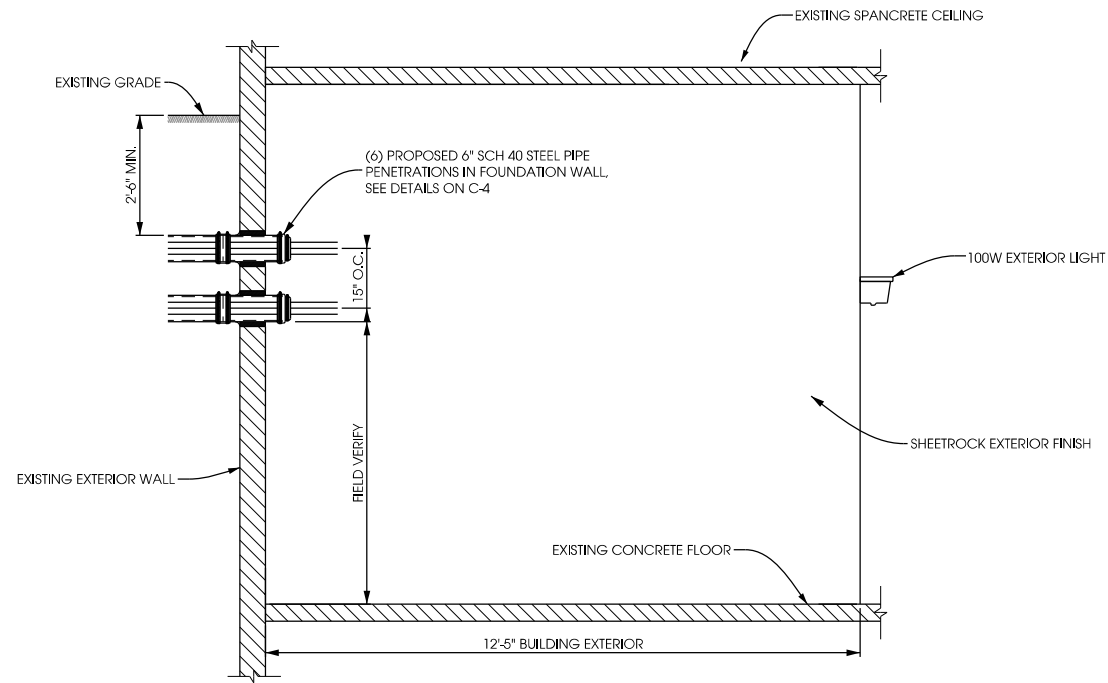
**F EQUIPMENT ROOM CABLE TRAY DETAIL**  
 C-4 ANDREW P/N: #WB-TS12 12" TRAPEZE KIT, ANDREW P/N: #LT-12-4D 12" WIDE x 12" LONG LADDER TRAY

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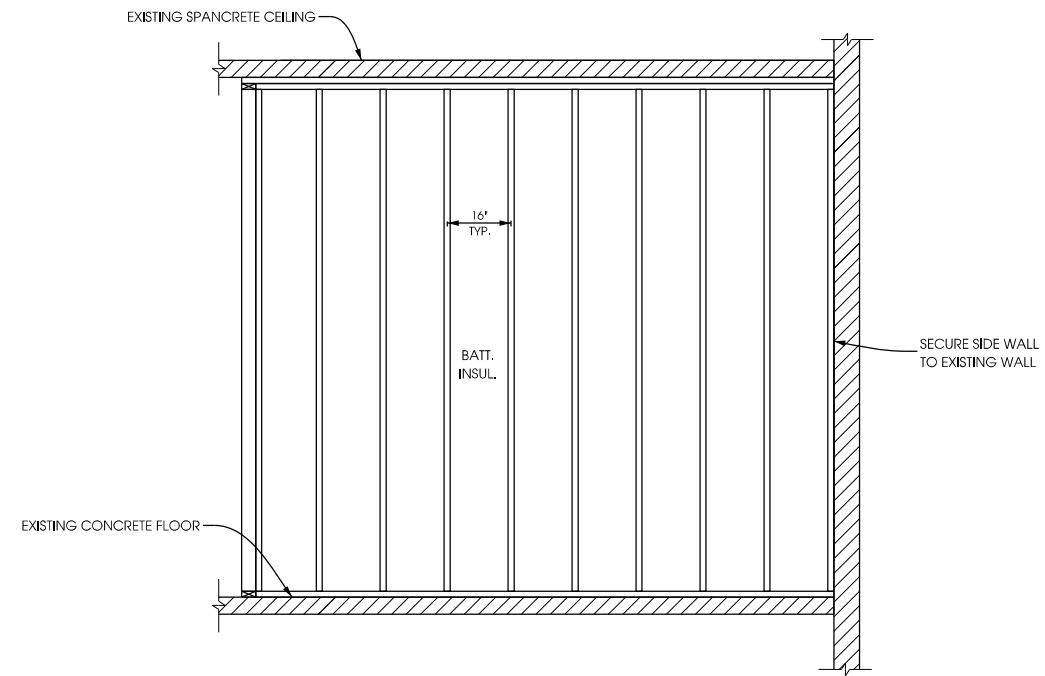
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FINAL CD's - 09/17/09
REVISIONS:
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ANTENNA SHROUDS - 08/17/09
ADDITIONAL ANTENNAS - 11/23/09
PROPOSED SHROUDS - 03/10/10
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FILE NAME:
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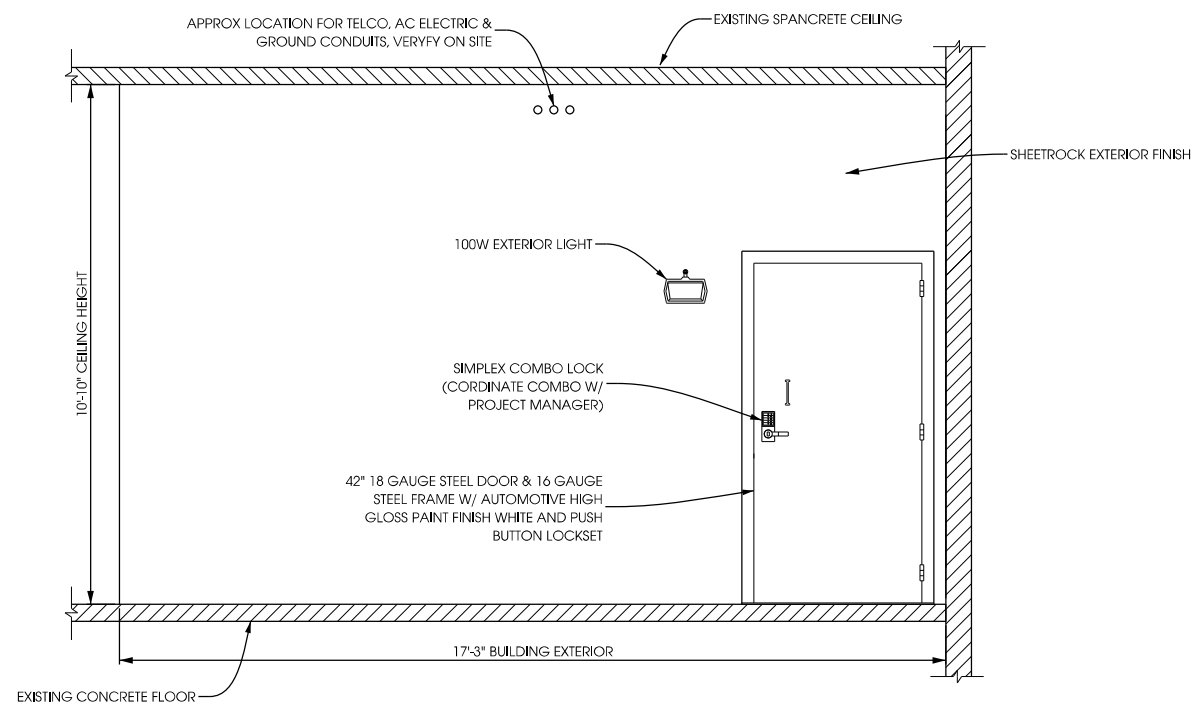
**NOTE:**  
 CONTRACTOR TO BE FAMILIAR W/ AND FOLLOW AMERICAN WOOD COUNCIL STANDARDS & GUIDELINES FOR WOOD FRAME CONSTRUCTION



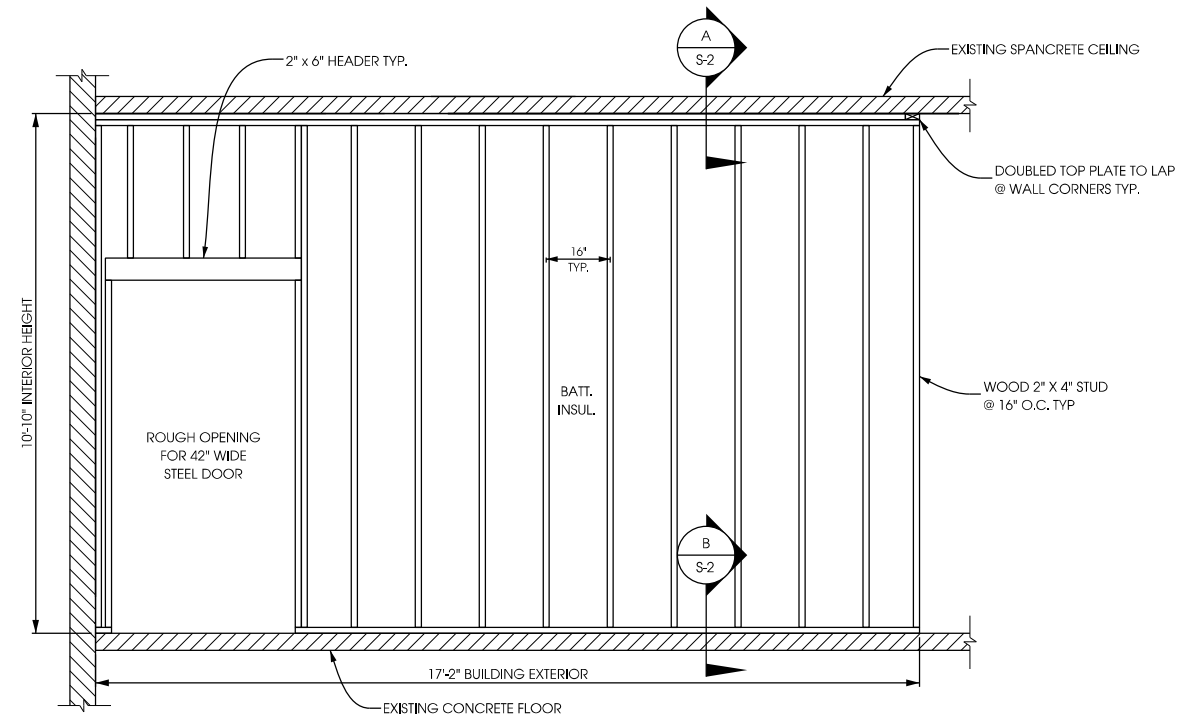
**A WEST EXTERIOR ELEVATION**  
 S-1 SCALE: 11" x 17" - 1/4" = 1'-0"  
 22" x 34" - 1/2" = 1'-0"



**C FRAMING DETAILS (INTERIOR VIEW)**  
 S-1 SCALE: 11" x 17" - 1/4" = 1'-0"  
 22" x 34" - 1/2" = 1'-0"



**B SOUTH EXTERIOR ELEVATION**  
 S-1 SCALE: 11" x 17" - 1/4" = 1'-0"  
 22" x 34" - 1/2" = 1'-0"



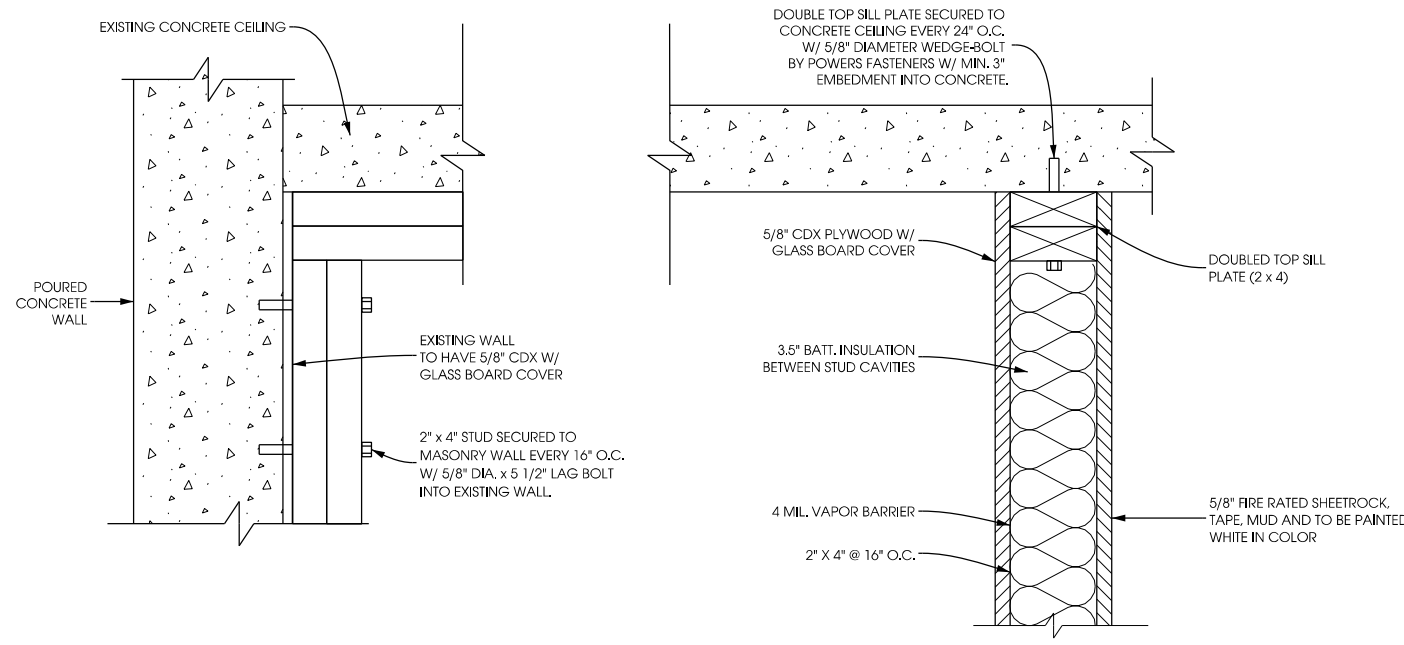
**D FRAMING DETAILS (INTERIOR VIEW)**  
 S-1 SCALE: 11" x 17" - 1/4" = 1'-0"  
 22" x 34" - 1/2" = 1'-0"

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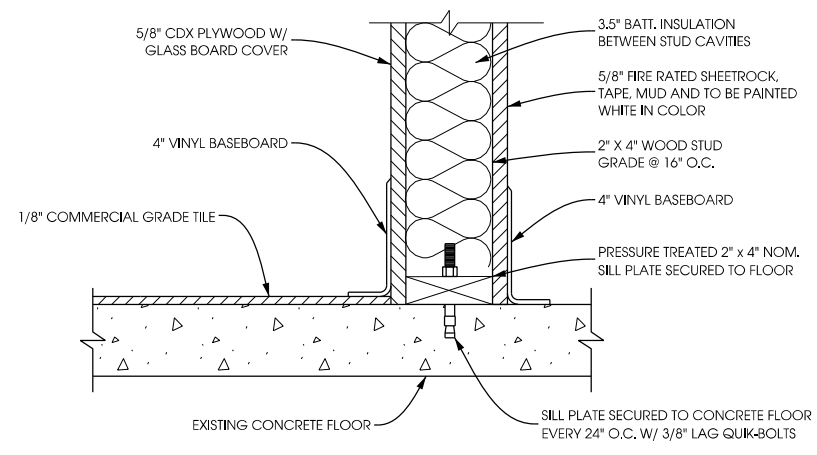
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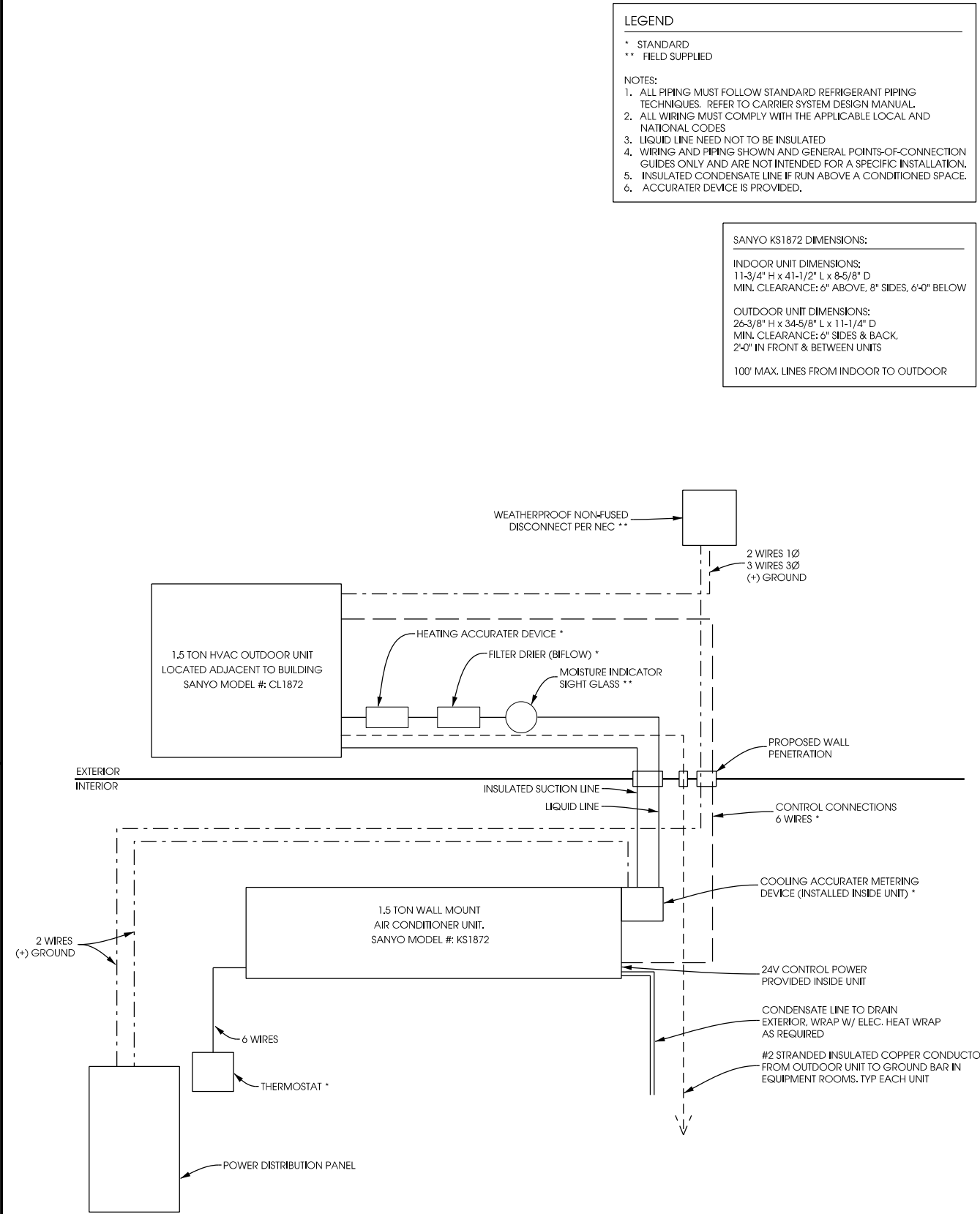


**A** **FRAMING DETAILS**  
S-2 SCALE: NTS



**B** **FRAMING DETAILS**  
S-2 SCALE: NTS

- WOOD CONSTRUCTION NOTES:**
- CONTRACTOR TO FOLLOW AMERICAN WOOD COUNCIL (AWC) WOOD FRAME CONSTRUCTION MANUAL.
1. TIMBER DESIGN & INSTALLATION SHALL CONFORM TO THE LATEST EDITION OF THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION.
  2. ALL CONNECTIONS SHALL HAVE A CORROSION RESISTANT COATING APPLIED.
  3. ALL SIZES SHOWN FOR TIMBER MEMBERS ARE STANDARD NOMINAL DIMENSIONS.
  4. ALL 2x12 AND LARGER TIMBER MEMBERS SHALL BE SOUTHERN PINE No. 2 OR BETTER. ALL OTHER MEMBERS MAY BE SPRUCE-PINE-FIR No. 2 OR BETTER, IF SPECIFIC SPECIES AND GRADE OF LUMBER IS UNAVAILABLE, CONTACT STRUCTURAL ENGINEER FOR SUITABLE SUBSTITUTIONS.
  5. PLYWOOD SHEATHING TO BE GRADED APA STRUCTURAL 1.
  6. ALL EXTERIOR EXPOSED TIMBER MEMBERS AND INTERIOR MEMBERS IN CONTACT W/ CONCRETE OR OTHERWISE NOTED TO BE PRESSURE TREATED WITH A NON-ARSENATE COMPOUND.
  7. ALL BOLTS, LAG SCREWS, AND NAILS SHALL HAVE A HOT DIP GALVANIZED FINISH.
  8. ALL SIMPSON CONNECTORS SHALL BE ZMAX (G185) OR HOT-DIP GALVANIZED (HDG).
  9. ROOF TRUSSES TO BE DESIGNED BY THE TRUSS MANUFACTURER PER THE REQUIREMENTS OF THE STATE ENROLLED BUILDING CODE AND THE BUILDING PLANS. SUPPLIER TO PROVIDE CONSTRUCTION DOCUMENTS IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE SECTION 2303.4.1.
  10. THE CONTRACTOR SHALL SUBMIT FOR REVIEW PRIOR TO CONSTRUCTION (1) ONE SET OF CONSTRUCTION PLANS PROVIDED BY THE ROOF TRUSS PROVIDER.
  11. THE INSTALLATION OF BOLTS IN TIMBER MEMBERS SHALL MEET THE REQUIREMENTS OF ANSI/ASME STANDARD B18.2.1.
  12. BOLT HOLES IN TIMBER MEMBERS SHALL BE A MIN. OF 1/32" TO A MAX. OF 1/16" LARGER THAN THE BOLT DIAMETER. HOLES SHALL BE ACCURATELY ALIGNED IN MAIN AND SIDE MEMBERS. BOLTS SHALL NOT BE FORCIBLY DRIVEN.
  13. A STANDARD CUT WASHER, METAL PLATE OR STAMPED STEEL STRAP OR PLATE, OF SIZE NOT LESS THAN THE STANDARD CUT WASHER, SHALL BE BETWEEN THE WOOD AND THE BOLT HEAD AND BETWEEN THE WOOD AND THE NUT.



**C** **TYP. PIPING & WIRING HVAC SCHEMATIC**  
S-2 SCALE: NTS

- LEGEND**
- \* STANDARD
  - \*\* FIELD SUPPLIED
- NOTES:**
1. ALL PIPING MUST FOLLOW STANDARD REFRIGERANT PIPING TECHNIQUES. REFER TO CARRIER SYSTEM DESIGN MANUAL.
  2. ALL WIRING MUST COMPLY WITH THE APPLICABLE LOCAL AND NATIONAL CODES.
  3. LIQUID LINE NEED NOT TO BE INSULATED.
  4. WIRING AND PIPING SHOWN AND GENERAL POINTS-OF-CONNECTION GUIDES ONLY AND ARE NOT INTENDED FOR A SPECIFIC INSTALLATION.
  5. INSULATED CONDENSATE LINE IF RUN ABOVE A CONDITIONED SPACE.
  6. ACCURATER DEVICE IS PROVIDED.

**SANYO KS1872 DIMENSIONS:**

**INDOOR UNIT DIMENSIONS:**  
11-3/4" H x 41-1/2" L x 8-5/8" D  
MIN. CLEARANCE: 6" ABOVE, 8" SIDES, 6-0" BELOW

**OUTDOOR UNIT DIMENSIONS:**  
26-3/8" H x 34-5/8" L x 11-1/4" D  
MIN. CLEARANCE: 6" SIDES & BACK,  
2'-0" IN FRONT & BETWEEN UNITS

100' MAX. LINES FROM INDOOR TO OUTDOOR

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**BUILDING ELEVATION**  
**WINGRA & PARK (#782512)**  
**MADISON, WISCONSIN**

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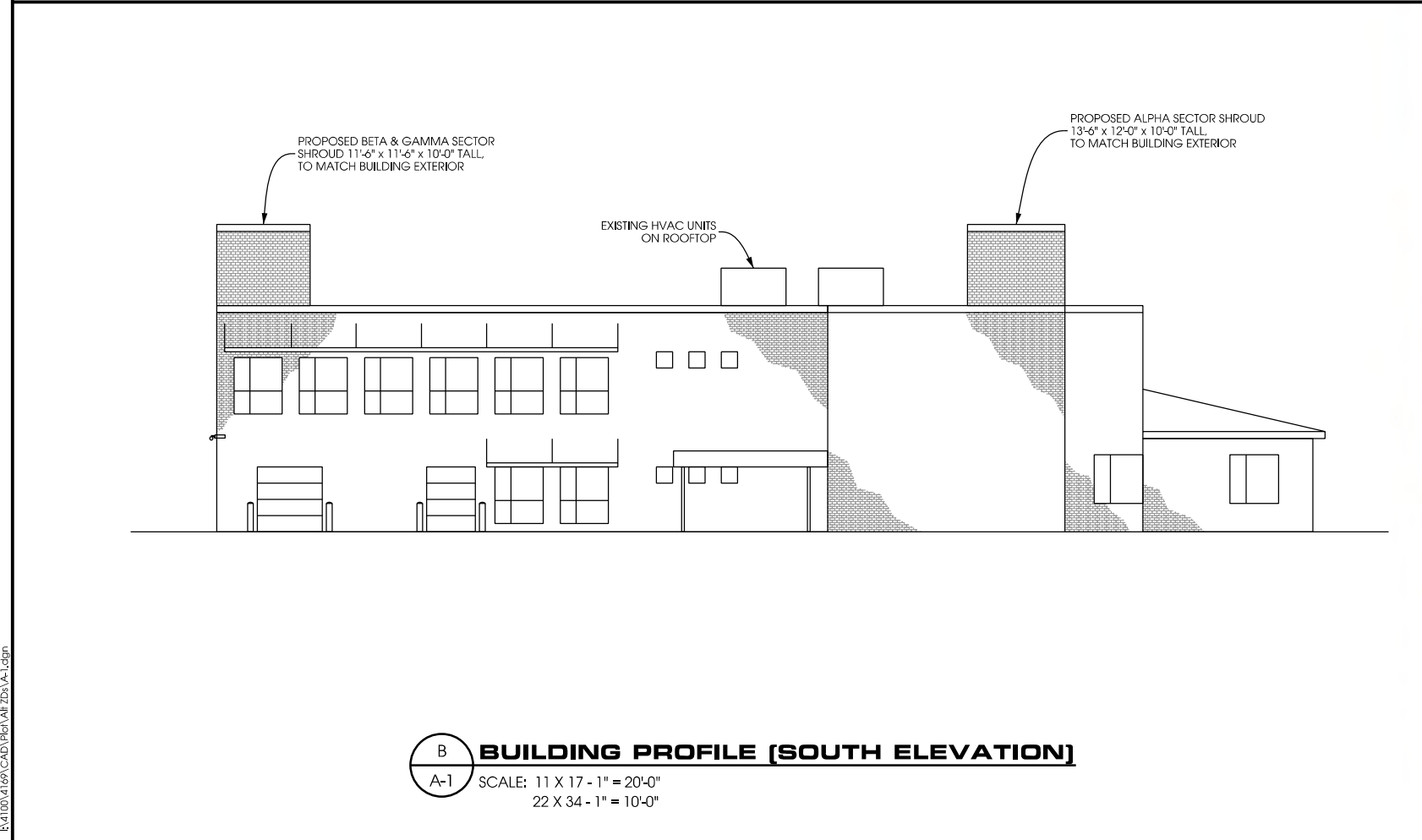
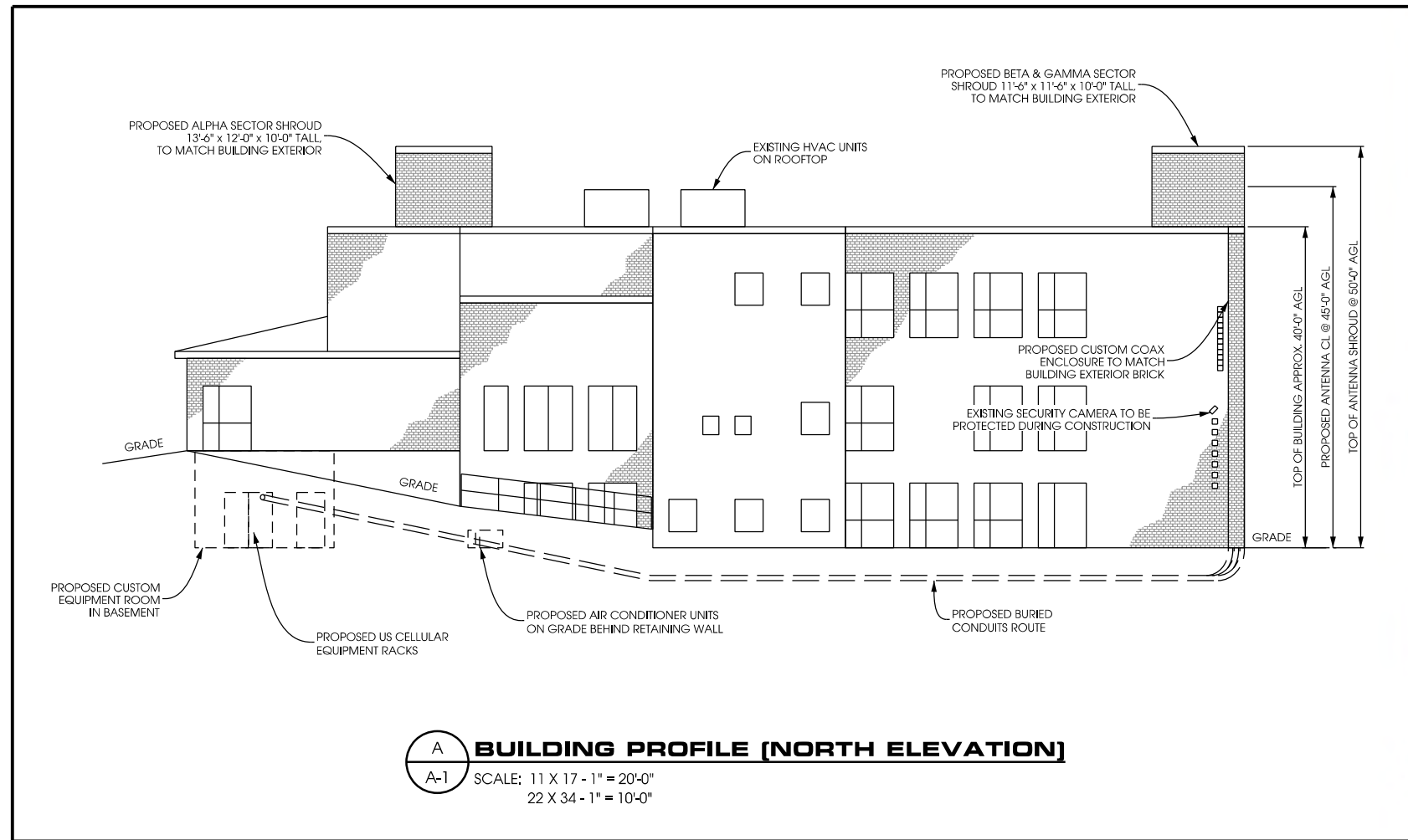
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**BUILDING PROFILE**



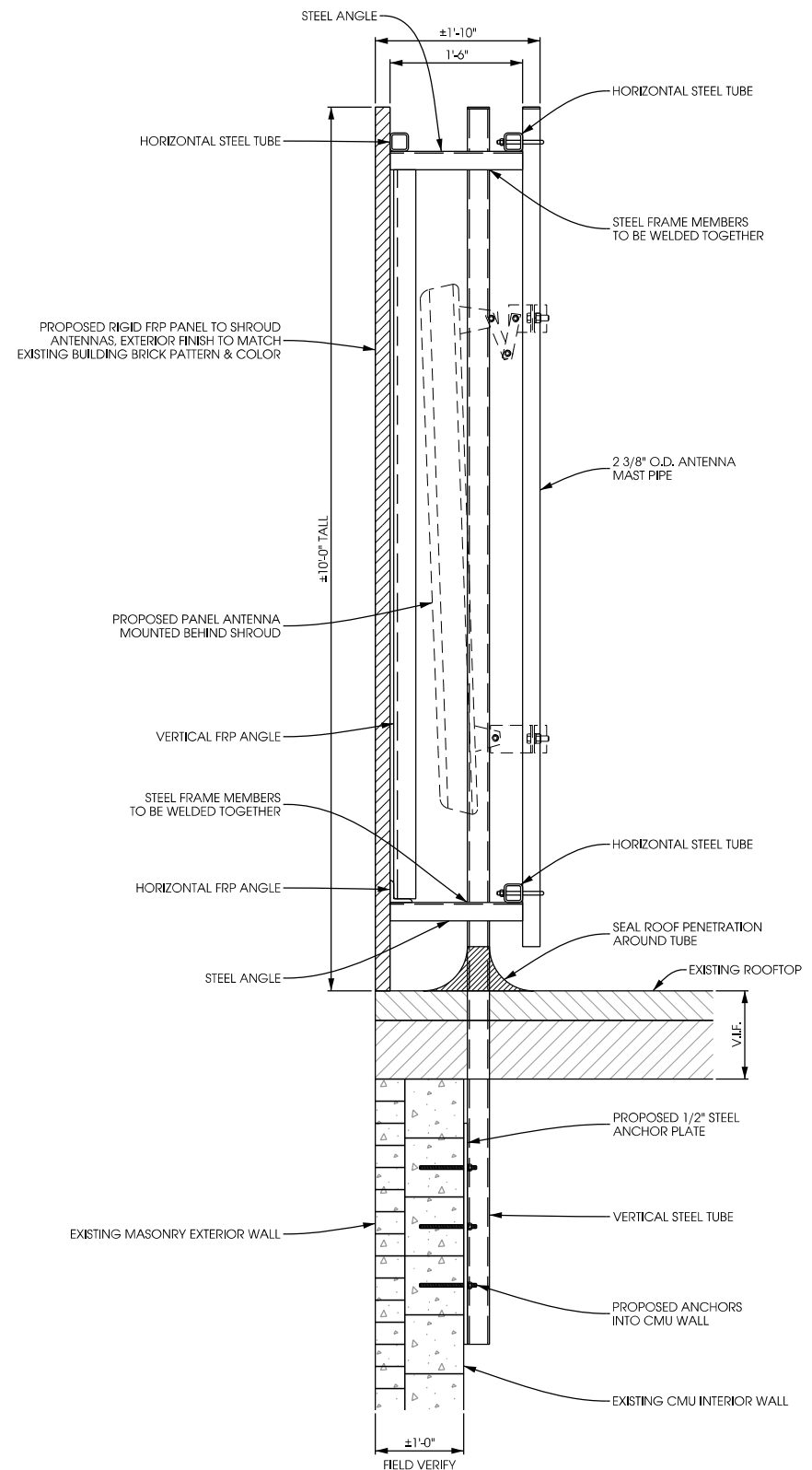
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NOTE:  
FINAL SHROUD DESIGN & MOUNTING  
METHOD TO BE VERIFIED W/  
STRUCTURAL ANALYSIS



**A ANTENNA SHROUD (SECTION VIEW)**  
SCALE: 11 x 17 - 1/2" = 1'-0"  
22 x 34 - 1" = 1'-0"



**PANEL CROSS-SECTION**



**SAMPLE BRICK PATTERN**

**B ANTENNA SHROUD DETAILS**  
SCALE: NTS

**ANTENNA SHROUD DETAILS**  
**WINGRA & PARK (#782512)**  
**MADISON, WISCONSIN**

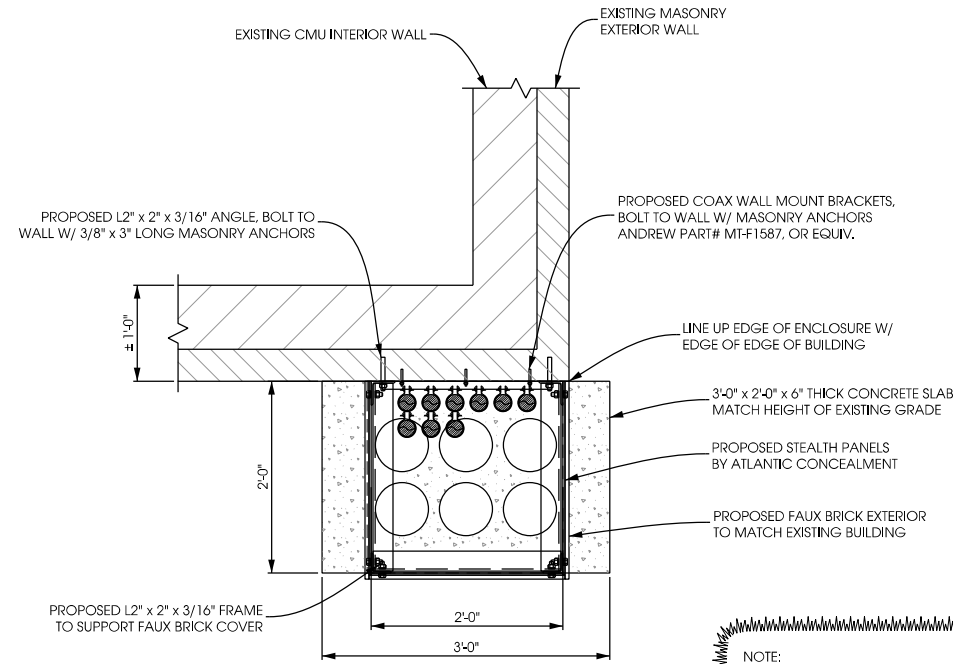
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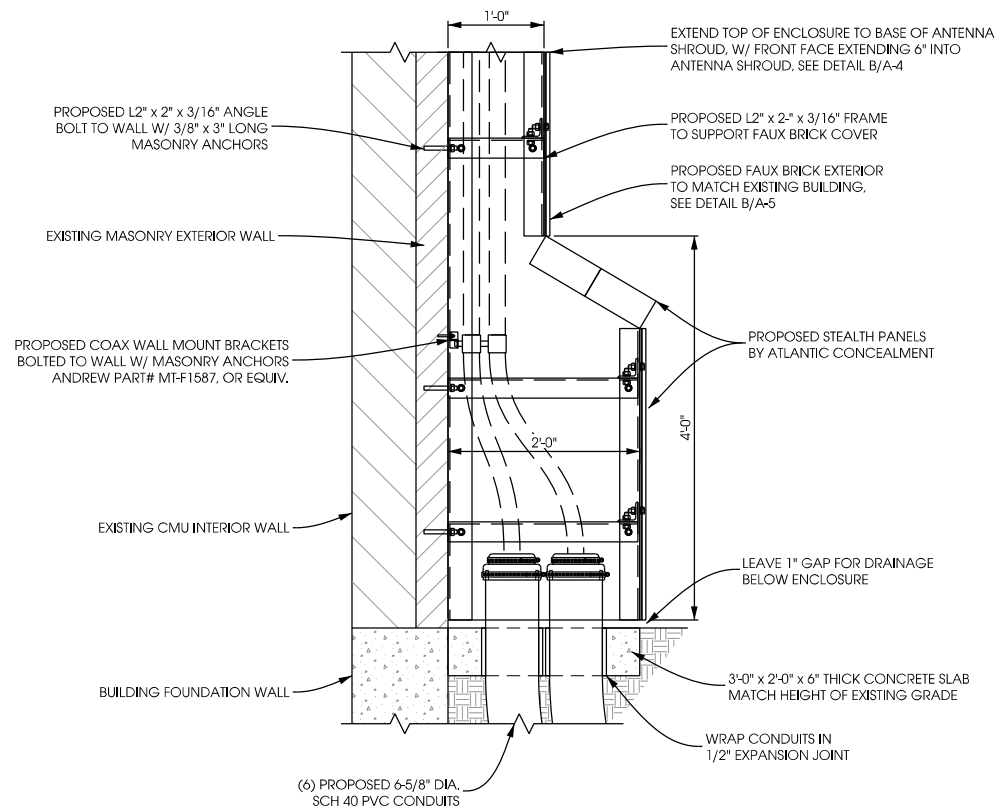
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**PLAN VIEW**

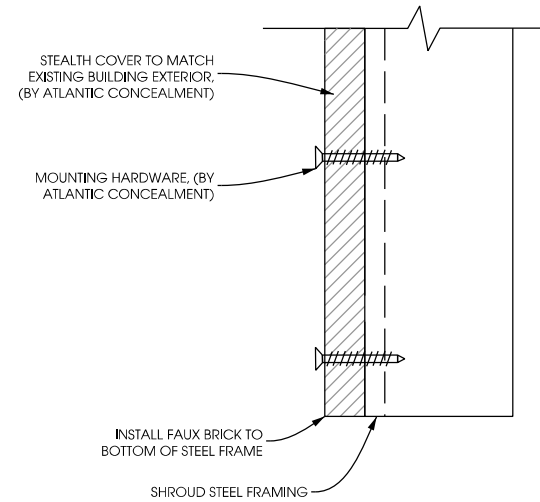
NOTE:  
FINAL ENCLOSURE DESIGN BY ATLANTIC CONCEALMENT. CONTRACTOR TO VERIFY REQUIRED MOUNTING METHOD AND SUPPORT FRAME. THIS DESIGN IS A GUIDE ONLY. USE SHOP DRAWINGS FROM ATLANTIC CONCEALMENT FOR CONSTRUCTION & INSTALLATION



**SIDE VIEW**

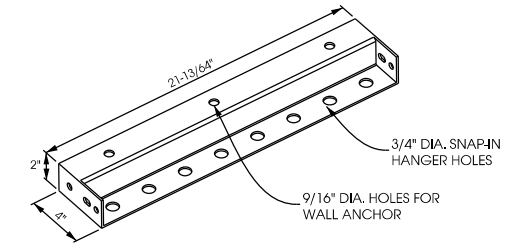
**A COAX ENCLOSURE**  
A-5 SCALE: 11 X 17 - 1/2" = 1'-0"  
22 X 34 - 1" = 1'-0"

PANEL SUPPLIER CONTACT INFO:  
PANEL DESIGN AND MOUNTING METHOD BY ATLANTIC CONCEALMENT, PANEL AND FRAME INSTALLATION BY G.C.  
ATLANTIC CONCEALMENT, LLC  
201 US ROUTE ONE - BOX 162  
SCARBOROUGH, ME 04074  
CONTACT: SALES REP - BILL BAHR  
PHONE: 630.307.3634  
EMAIL: wbahr@lbcxsystems.com



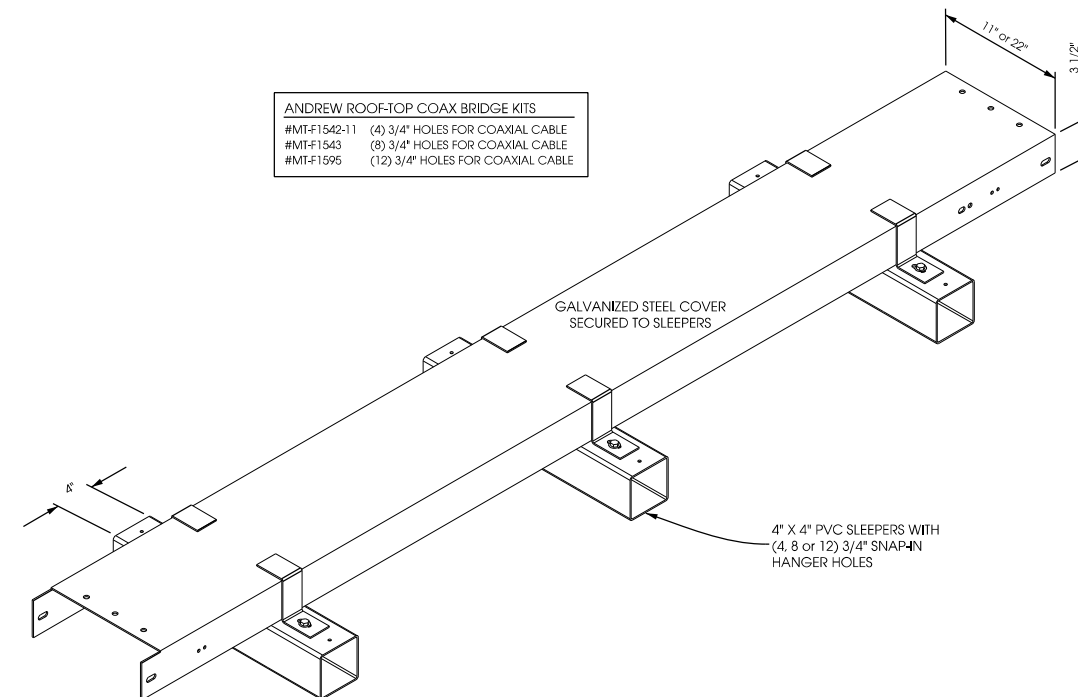
**B STEALTH COVER INSTALLATION DETAIL**  
A-5 SCALE: NTS

ANDREW WALL-MOUNT BRACKETS  
#MT-F1587 (8) 3/4" HOLES FOR COAXIAL CABLE



**C WALL-MOUNT BRACKET DETAIL**  
A-5 NTS

ANDREW ROOF-TOP COAX BRIDGE KITS  
#MT-F1542-11 (4) 3/4" HOLES FOR COAXIAL CABLE  
#MT-F1543 (8) 3/4" HOLES FOR COAXIAL CABLE  
#MT-F1595 (12) 3/4" HOLES FOR COAXIAL CABLE



**D ROOF-TOP COAX BRIDGE KIT DETAIL**  
A-5 NTS

**COAX ROUTE DETAILS**  
**WINGRA & PARK (#782512)**  
**MADISON, WISCONSIN**

**Edge Consulting Engineers, Inc.**  
624 Water Street  
Profile du Soc, WI 53578  
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www.edgeconsulting.com

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**A-5**



ANTENNA & COAXIAL CABLE INSTALLATION

I. SCOPE:

THIS SECTION COVERS THE SPECIFICATIONS FOR ANTENNA AND COAXIAL CABLE INSTALLATION. THE AREAS OF FOCUS ARE THE INSTALLATION OF: ANTENNAS, COAXIAL, CONNECTIONS, AND ICE BRIDGE.

II. ANTENNAS:

- A: ANTENNAS SHALL BE PLUMB AND INSTALLED SO THAT ENTIRE WHIP EXTENDS ABOVE VERTICAL PIPE MOUNT. DIRECTIONAL ANTENNAS SHALL BE ORIENTED TO PROPER AZIMUTH, PROVIDED ON THE RF SPECIFICATION SHEET. NOTE: THE ANTENNA MAY BE ORIENTED USING THE REFLECTOR AS THE REFERENCE, ADJUSTING ITS AZIMUTH 180 DEGREES FROM MAXIMUM ANTENNA RADIATION.
- B: MICROWAVE ANTENNAS (DISHES) SHALL BE ASSEMBLED PER MANUFACTURER'S DRAWINGS. STIFF ARMS AND RADOMES SHALL BE INSTALLED WITH POLARIZATION PROVIDED BY RF SPECIFICATION SHEET. IF PATH IS NOT READY TO ALIGN, DISH SHOULD BE POINTED TOWARD CALCULATED AZIMUTH, OR DIRECTION OF FIELD STAKE DENOTING OPPOSITE END. 2 STIFF ARMS SHALL BE PROVIDED FOR MICROWAVE DISHES 6'-0" IN DIAMETER AND GREATER.
- C: A TRANSIT SHALL BE USED TO PROPERLY ALIGN CELLULAR AND MICROWAVE ANTENNAS.

III. COAXIAL CABLE:

- A: COAXIAL CABLE SHALL BE SUPPORTED WITH SNAP IN HANGERS. SNAP IN HANGERS SHOULD BE USED EVERY 3 FEET THE ENTIRE HEIGHT OF TOWER. ANGLE ADAPTERS OR ROUND MEMBER ADAPTERS WITH BUTTERFLY CLAMPS SHALL BE USED ELSEWHERE. I.E. SIDEARMS, PLATFORMS, AND MICROWAVE MOUNTS.
- B: COAXIAL CABLE SHALL ALSO BE SUPPORTED WITH HOISTING GRIPS, INSTALLED AT MAXIMUM INTERVALS OF 200 FEET. HOISTING GRIPS SHALL BE ATTACHED WITH SHACKLES, BOLTED IN THE 7/16" HOLE OF WAVEGUIDE LADDER.
- C: ALL JUMPERS USED BETWEEN COAXIAL CABLE AND ANTENNA SHALL BE SUPPORTED WITHIN 18 INCHES OF ANTENNA, USING BUTTERFLY CLAMPS WITH ANGLE ADAPTERS OR ROUND MEMBER ADAPTERS AROUND PIPES. CELLULAR ANTENNAS TYPICALLY USE 6' JUMPERS; MICROWAVE DISHES USE 3' JUMPERS.
- D: COAXIAL CABLE SHALL BE NEATLY BENT WHEN REQUIRED, USING A MINIMUM BENDING RADIUS OF 10 TIMES THE DIAMETER OF THE COAXIAL CABLE. DRIP LOOPS SHOULD BEGIN AT THE ICE BRIDGE. THE BEND IN THE COAXIAL CABLE SHOULD BE AT A LOWER HEIGHT THAN THE ENTRY PORT.
- E: COAXIAL CABLE SHALL BE SUPPORTED WITH SNAP IN HANGERS ON THE WAVEGUIDE LADDER UNDER ICE BRIDGE. COAXIAL CABLE SHOULD BE NEATLY CUT 1/8" INSIDE BUILDING AND TERMINATED AT THE QUARTER WAVE SHORTS.
- F: CONNECTORS WILL NORMALLY BE PROVIDED FIRST OFF REEL FROM FACTORY. CONNECTORS TERMINATED IN BUILDING SHALL BE NEATLY INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
- G: OPENINGS #1, #2, AND #3 SHOULD BE USED FOR THE X SECTOR; OPENINGS #5, #6, AND #7 SHOULD BE USED FOR THE Y SECTOR; OPENINGS #9, #10, AND #11 SHOULD BE USED FOR THE Z SECTOR. OPENINGS #4, #8, AND #12 SHOULD BE RESERVED FOR MICROWAVE WAVEGUIDE.
- H: COAXIAL CABLES SHOULD BE LABELED WITH TAGS INSIDE THE BUILDING.

SECTOR INDICATOR - PRIMARY COLORS  
USE 2" WIDE COLORED TAPE TO INDICATE SECTORS  
X SECTOR FOR SECTORED SITE: BROWN  
Y SECTOR FOR SECTORED SITE: VIOLET  
Z SECTOR FOR SECTORED SITE: ORANGE  
FUNCTION INDICATOR - SECONDARY COLORS  
USE 1" WIDE COLORED TAPE TO INDICATE FUNCTION.  
RX1: YELLOW RX2: GREEN TX1: RED TX2: WHITE TX3: BLUE

- I: ALL EXCEPTIONS NEED TO BE VERIFIED WITH THE PROJECT MANAGER.

IV. CONNECTORS:

- A: ALL CONNECTIONS, AND GROUNDING KITS SHALL BE WEATHER PROOFED USING COLD SHRINK OR ANDREW APPROVED WEATHER STRIPPING.  
NOTE: NO PORTION OF CONNECTOR SHALL BE EXPOSED TO THE ELEMENTS.
- B: COAXIAL CABLE SHALL BE GROUNDED USING GROUNDING KITS AT THE TOP, BELOW THE BEND; BOTTOM, ABOVE THE BEND ON TOWER GROUND BAR; AND ON BUILDING GROUND BAR BEFORE ENTRY INTO WAVEGUIDE PORTS. 4" CABLE BOOTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
- C: GROUNDING KITS SHALL BE NEATLY INSTALLED SO THAT THE JUMPER RUNS IN THE SAME DIRECTION AS THE COAXIAL AND GROUND BAR. JUMPER WIRE SHOULD RUN IN A DIRECT PATH TO THE GROUND BAR/TOWER LADDER, BUT HAVE ADEQUATE SLACK FOR EXPANSION, CONTRACTION, AND REPAIR. NON-OXID GREASE SHOULD BE APPLIED BETWEEN LUG AND BAR/TOWER.
- D: TOWER GROUND BAR SHALL BE INSTALLED ON THE ANGLE BEHIND THE FIRST DIAGONAL WAVEGUIDE LADDER RUNG, ABOVE 8'6".

V. ICE BRIDGE:

- A: ICE BRIDGE SHALL BE ATTACHED AT ONE END WITH BOLTS, TO THE ANGLE ON THE BUILDING, ABOVE THE WAVEGUIDE PORTS. SINCE THE ANGLE (28") IS TYPICALLY WIDER THAN THE ICE BRIDGE (24"), THE BRIDGE SHOULD BE CENTERED SO THAT IT COVERS THE WAVEGUIDE PORT ENTRY WHICH IS 24" WIDE. THE OPPOSITE END OF BRIDGE SHOULD BE 6" FROM TOWER FACE. IF FIELD CUT, IT SHOULD BE FILED SMOOTH AND COLD GALVANIZED.
- B: IF BRIDGE IS SUPPORTED BY VERTICAL PIPES, THEY SHOULD BE CUT EVENLY AND CAPPED, APPROXIMATELY 18" ABOVE ICE BRIDGE.
- C: 2 TIER WAVEGUIDE LADDER SHALL BE INSTALLED UNDER ICE BRIDGE PROPERLY SUPPORTED PER TOWER MANUFACTURER'S DRAWINGS.

**ANTENNA COLOR CODING**

1ST TAPE - FOR SECTOR IDENTIFICATION

SECTOR X BROWN  
SECTOR Y PURPLE  
SECTOR Z ORANGE

2ND TAPE - FOR ANTENNA IDENTIFICATION

RX-2, RX-4 GREEN  
TX RED  
RX-1, RX-3 YELLOW

3RD TAPE - FOR TECHNOLOGY IDENTIFICATION

TDMA/AMPS WHITE  
CDMA 800 GRAY  
PCS 1900 BLUE

USE SCOTCH VINYL TAPE 35, AVAILABLE AT GRAYBAR OR LOCAL 3M DISTRIBUTOR.

NOTES:

1. IF ANTENNA IS DUPLEXED, WRAP LINE AS TX
2. IF SECTOR HAS MORE THAN ONE TX, DOUBLE WRAP LINE FOR SECOND TX.
3. IF SECTOR IS SHARED BETWEEN CDMA AND TDMA WRAP WITH BOTH WHITE AND GRAY.

**ANTENNA INSTALLATION NOTES**  
**WINGRA & PARK (#782512)**  
**MADISON, WISCONSIN**

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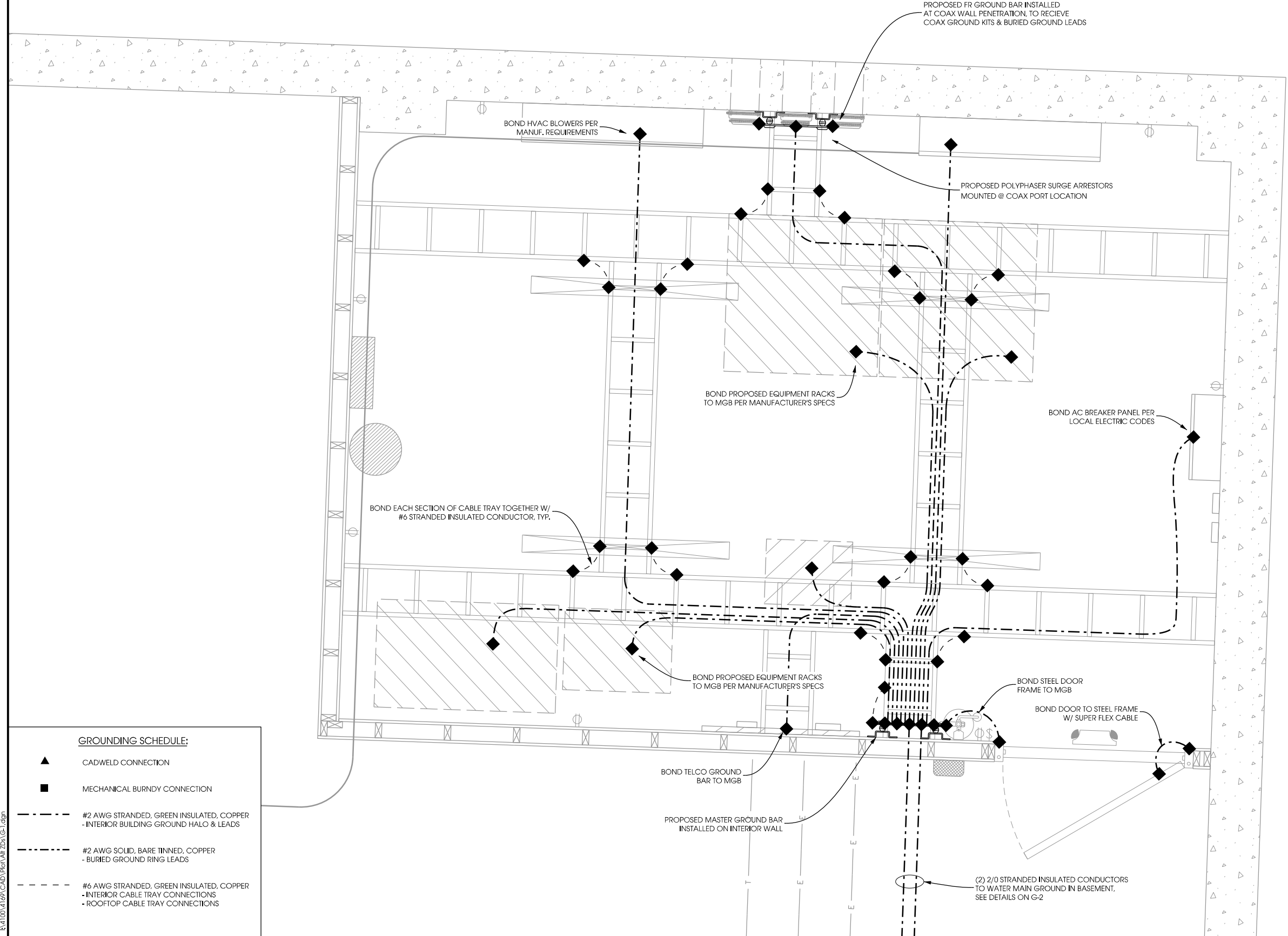
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**GROUNDING PLAN**  
**WINGRA & PARK (#782512)**  
**MADISON, WISCONSIN**



**GROUNDING SCHEDULE:**

- ▲ CADWELD CONNECTION
- MECHANICAL BURNDY CONNECTION
- - - #2 AWG STRANDED, GREEN INSULATED, COPPER  
- INTERIOR BUILDING GROUND HALO & LEADS
- - - #2 AWG SOLID, BARE TINNED, COPPER  
- BURIED GROUND RING LEADS
- - - #6 AWG STRANDED, GREEN INSULATED, COPPER  
- INTERIOR CABLE TRAY CONNECTIONS  
- ROOFTOP CABLE TRAY CONNECTIONS

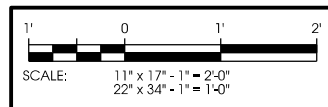
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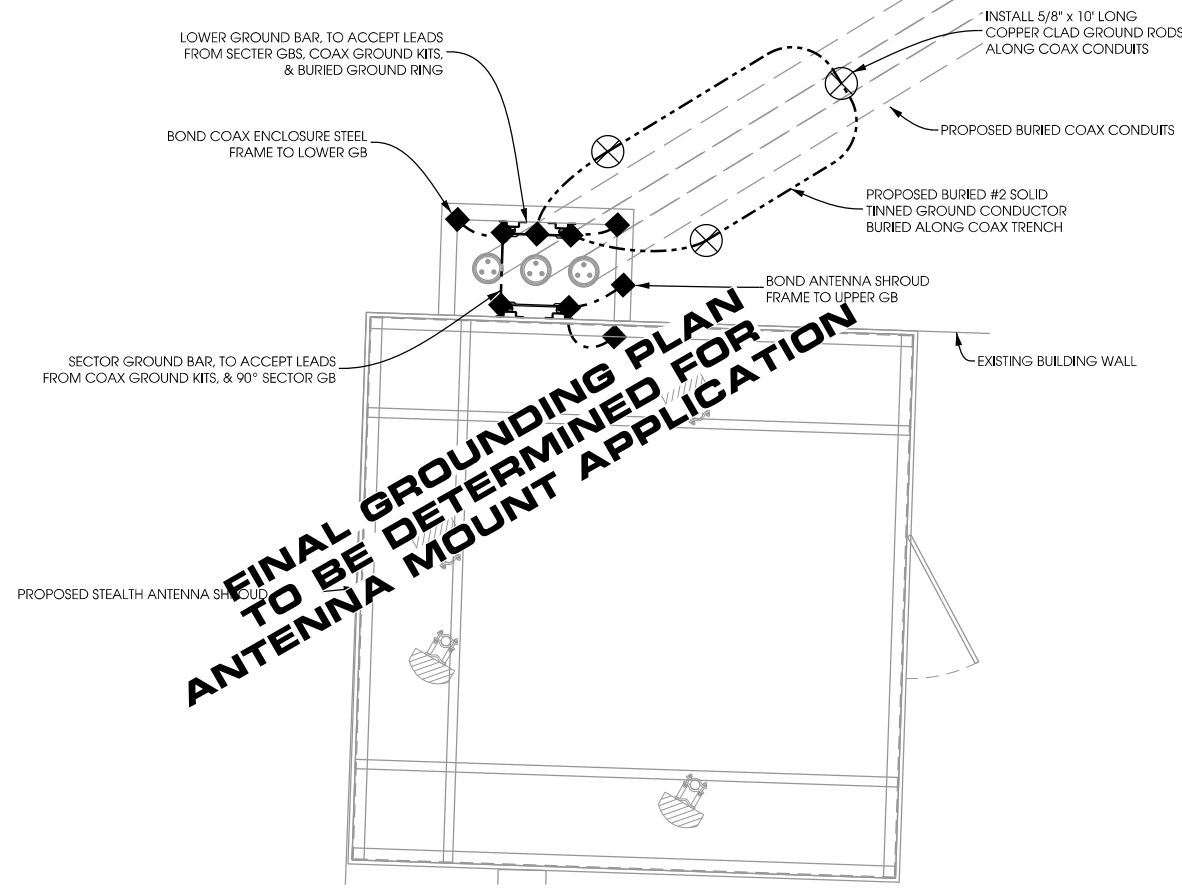
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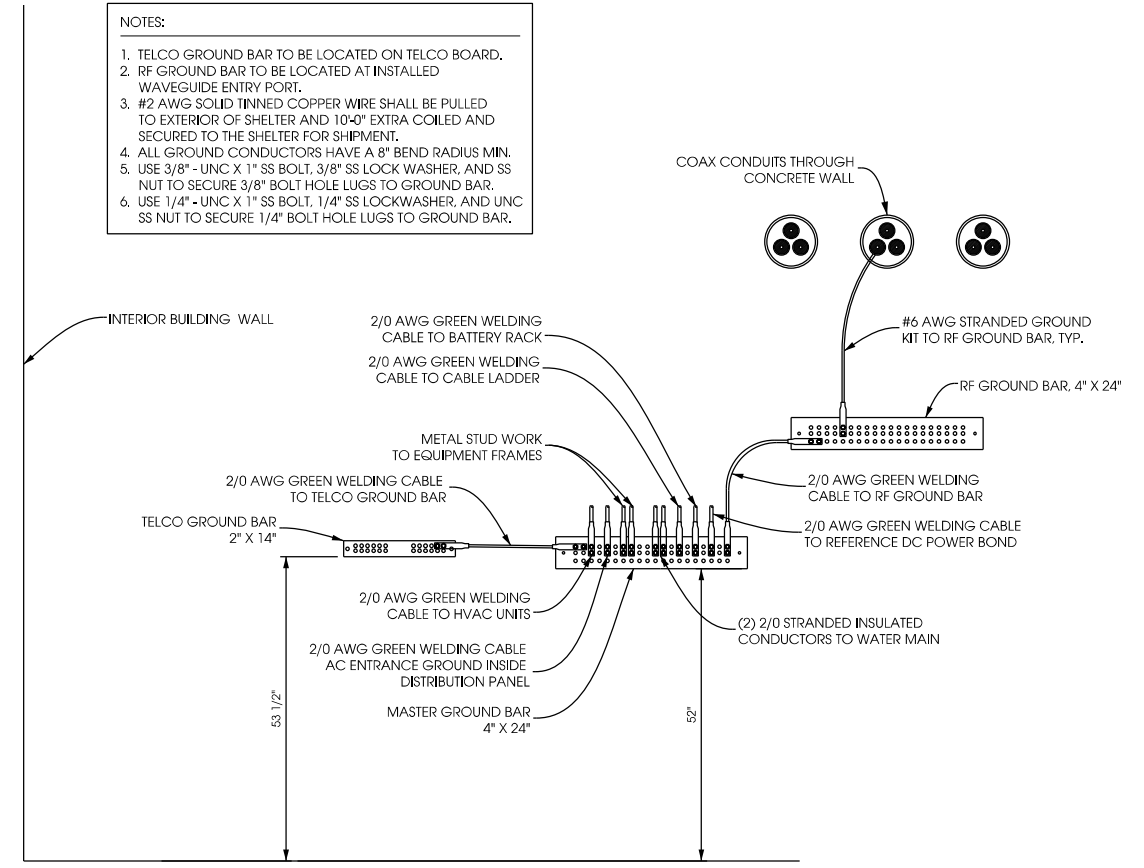


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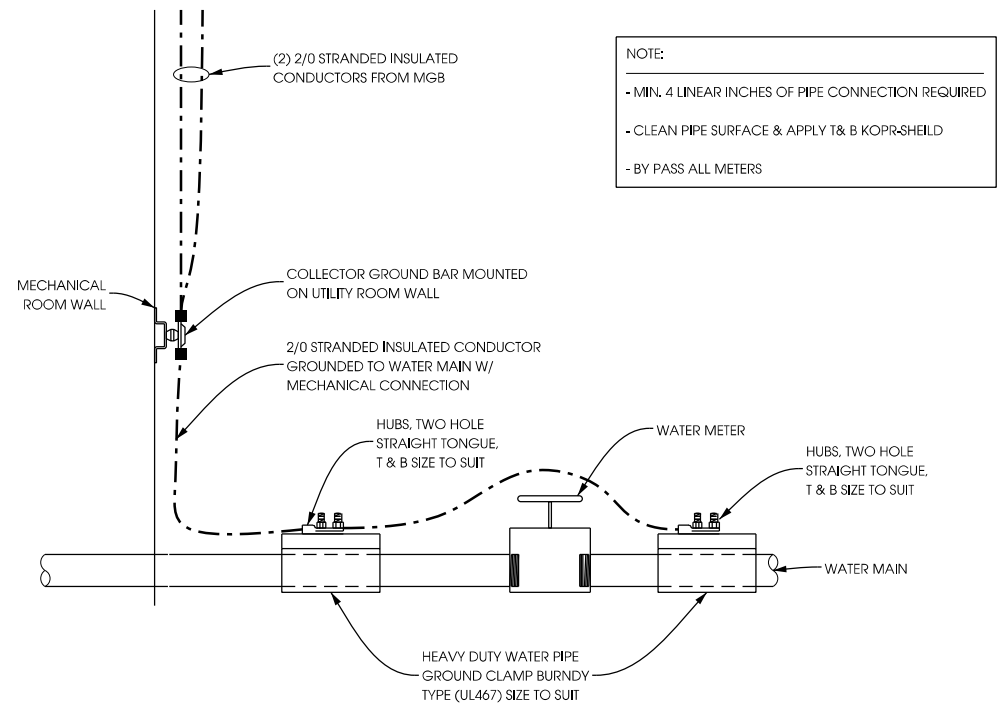




**A**  
G-2 **SECTOR GROUNDING DETAIL**  
SCALE: NTS



**C**  
G-2 **INTERNAL SHELTER GROUNDING SCHEME**  
SCALE: NTS



**B**  
G-2 **WATER MAIN GROUND DETAIL**  
SCALE: NTS



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**GROUNDING SYSTEM NOTES**

**1. SCOPE:**

THIS SECTION COVERS THE SPECIFICATIONS FOR CELL SITE GROUNDING. THE AREAS OF FOCUS ARE: TOWER, BUILDING, AND INSTALLATION METHODS.

**2. GENERAL:**

- 2.1 ALL GROUND RODS SHALL BE 3/4" COPPER CLAD STEEL 10 FT. LONG. GROUND RODS SHALL BE EQUALLY SPACED AT 10 FT. INTERVALS. REFER TO SITE GROUNDING PLAN FOR DETAILS AND PLACEMENT WITH GROUNDING.
- 2.2 GROUNDING A SYSTEM SHALL BE MEGGAR TESTED TO ASSURE SATISFYING 5 OHMS OR LESS RESISTANCE.
- 2.3 ALL CADWELD CONNECTIONS TO GALVANIZED MATERIAL SHALL BE PROPERLY PREPARED TO ASSURE A SATISFACTORY CADWELD. THE CADWELD CONNECTION SHALL BE COATED WITH A COLD GALVANIZING SPRAY TO PREVENT CORROSION.
- 2.4 CONTRACTOR SHALL PROVIDE PHOTO DOCUMENTATION OF THE GROUND SYSTEM BY PROVIDING A CD TO US CELLULAR. REQUIRED PHOTOS SHALL INCLUDE:
  - \* ALL BSS BARS AND COAX GROUND CONNECTIONS.
  - \* TOWER COUNTERPOISE
  - \* BUILDING COUNTERPOISE
  - \* CONNECTIONS TO POWER, TELCO, A.C., FENCING AND ICE BRIDGE.
- 2.5 CONTRACTOR SHALL PROVIDE AS-BUILT PLANS SHOWING LOCATION AND DIMENSIONS OF BELOW GRADE GROUNDING FEATURES.

**3. INSTALLATION:**

- 3.1 ALL EXTERIOR ABOVE AND BELOW GROUND CONNECTIONS SHALL BE CADWELD. NO ALUMINUM CONNECTORS SHALL BE USED. UNLESS SPECIFIED OTHERWISE ON PLANS
- 3.2 NO RIGHT-ANGLE CADWELD CONNECTION (OTHER THAN GROUND RODS TO GROUND RING CONNECTION) SHALL BE USED. ALL WIRE-TO-WIRE CONNECTIONS SHALL UTILIZE "Y-TYPE" CONNECTIONS.
- 3.3 ALL VERTICAL JUMPERS SHALL NOT BE WELDED WITHIN TWO (2) FT. OF THE GROUND ROD.
- 3.4 KOPR SHIELD REQUIRED FOR ALL MECHANICAL CONNECTIONS
- 3.5 ALL CADWELDS FINISHED WITH COLD GALVANIZED SHIELD

**4. TOWER:**

- 4.1 A #2 SOLID BARE COPPER WIRE SHALL BE BURIED A MINIMUM FOUR (4) FT. UNDERGROUND AND ENIRCLE TOWER FOUNDATION TWO (2) FT. FROM THE FOUNDATION. THIS GROUNDING SYSTEM SHALL BE CONNECTED TO THE BUILDING GROUND RING IN TWO (2) PLACES USING CADWELD CONNECTIONS. SUCH CONNECTIONS SHALL BE "Y-TYPE" CADWELD CONNECTIONS.
- 4.2 THREE (3) #2 SOLID BARE COPPER WIRES SHALL BE RUN FROM THE TOWER GROUND RING TO THE TOWER. THESE WIRES SHALL BE CONNECTED TO THE TOWER USING A CADWELD CONNECTION. NO SHARP BENDS SHALL BE PLACED IN THESE GROUND LEADS.
- 4.3 GROUND SYSTEM SHALL INCLUDE THE INSTALLATION OF AN ISOLATED LIGHTNING ROD AT THE TOP OF THE TOWER ABOVE THE HIGHEST ANTENNA. A #2 INSULATED COPPER WIRE SHALL BE CONNECTED TO THE TOWER LIGHTNING ROD USING AN APPROVED MECHANICAL CONNECTOR, OR CADWELDED, TO TOWER STEEL

**5. BUILDING:**

- 5.1 A #2 SOLID BARE COPPER WIRE SHALL BE BURIED A MINIMUM OF FOUR (4) FT. UNDERGROUND AND ENIRCLE BUILDING FOUNDATION TWO (2) FEET FROM THE FOUNDATION. GROUND RING CORNERS SHALL BE INSTALLED WITH A MINIMUM TWO FOOT RADIUS (NO SHARP RIGHT ANGLE BENDS).
- 5.2 A #2 SOLID BARE COPPER WIRE SHALL BE INSTALLED FROM THE BUILDING GROUND RING AND CONNECTED TO THE COPPER BUS BAR LOCATED ON THE OUTSIDE OF BUILDING UNDER THE WAVEGUIDE PORT WITH A MINIMUM NINE (9) INCHES RADIUS. A "Y-TYPE" OR "PARALLEL-TYPE" CADWELD CONNECTION SHALL BE USED FOR ALL CONNECTIONS TO THE GROUND RING.
- 5.3 ONE (1) ADDITIONAL #2 SOLID BARE GROUND WIRE LEAD SHALL BE INSTALLED DIRECTLY BELOW THE ELECTRICAL SERVICE ENTRANCE PORT (GROUND LUG ON THE MAIN DISCONNECT INSIDE THE BUILDING). THIS WIRE SHALL BE CONNECTED TO THE BUILDING GROUND RING USING "Y-TYPE" CADWELD CONNECTION.
- 5.4 ONE (1) ADDITIONAL #2 SOLID BARE COPPER GROUND WIRE LEAD SHALL BE INSTALLED DIRECTLY BELOW EACH HVAC UNIT.

**6. FENCING:**

- 6.1 A #2 SOLID BARE COPPER GROUND WIRE SHALL BE INSTALLED FROM THE FENCE CORNER POSTS TO THE GROUND RING AND SHALL BE BURIED A MINIMUM FOUR (4) FT. UNDERGROUND. THESE RUNS SHALL INCLUDE GROUND RODS EQUALLY SPACED AT 10 FT. INTERVALS. THESE RUNS SHALL BE BROUGHT ABOVE GROUND LEVEL AND SUPPORTED ABOVE GROUND WITH TEMPORARY POSTS UNTIL PERMANENT FENCING IS INSTALLED. GROUND WIRE SHALL BE CONNECTED TO THE FENCE POSTS USING CADWELD TYPE CONNECTIONS.

**7. EXISTING GROUND SYSTEMS**

- 7.1 CONTRACTOR SHALL PROVIDE CONNECTIONS TO ALL EXISTING GROUND SYSTEMS AT THE SITE (SCADA, TELEMETRY, ETC.)

**8. TESTING**

- 8.1 THE CONTRACTOR SHALL TEST THE DRIVEN ELECTRODE SYSTEM PRIOR TO CONNECTING THE GROUND LEADS FROM THE OTHER GROUNDING SYSTEMS. TRENCHES SHALL BE BACK FILLED IN ORDER TO ACHIEVE ACCURATE TEST RESULTS. TRENCHES SHALL NOT BE BACK FILLED AND COMPACTED TO FINAL DENSITY PRIOR TO TESTING. THE DRIVEN ELECTRODE SYSTEM IS COMPOSED OF THE GROUND RODS, THE INTERCONNECTION GROUND WIRE, AND THE CADWELD CONNECTIONS. ALL OTHER BONDS TO THE SYSTEM SHALL BE REMOVED.
- 8.2 THE GROUND FIELD RESISTANCE SHALL MEASURE 5 OHMS OR LESS TO GROUND. IF RESISTANCE IS NOT MET, CONTRACTOR SHALL PAY FOR NECESSARY ADDITIONS TO MEET CRITERIA.
- 8.3 TEST RESULTS SHALL BE DOCUMENTED & PROVIDED TO ENGINEER.

**9. COMPLIANCE**

- 9.1 ELECTRICAL CODE COMPLIANCE  
COMPLY WITH APPLICABLE LOCAL ELECTRICAL CODES REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION, AND NEC AS APPLICABLE TO ELECTRICAL GROUNDING AND BONDING, PERTAINING TO SYSTEMS, CIRCUITS AND EQUIPMENT
- 9.2 UL COMPLIANCE  
COMPLY WITH APPLICABLE REQUIREMENTS OF UL467, 486A AND 869 PERTAINING TO GROUNDING AND BONDING OF SYSTEMS, CIRCUITS AND EQUIPMENT. USE GROUNDING AND BONDING PRODUCTS WHICH ARE UL-LISTED AND LABELED FOR THEIR INTENDED USAGE.
- 9.3 IEEE COMPLIANCE  
COMPLY WITH APPLICABLE REQUIREMENTS OF RECOMMENDED INSTALLATION PRACTICES OF IEEE STANDARDS 80, 81, 141 AND 142 PERTAINING TO GROUNDING AND BONDING OF SYSTEMS, CIRCUITS AND EQUIPMENT.

**MASTER GROUND BAR NOTES:**

THE MASTER GROUND BAR (MGB) IS THE EXTENSION OF THE BUILDING GROUNDING SYSTEM AND SERVES AS THE MAIN POINT OF BONDING WITHIN THE FACILITY. THE MGB WILL BE THE COMMON GROUND POINT WHERE ALL GROUND POINTS FOR THE FACILITY WILL CONNECT.

THE MGB SHOULD BE LOCATED SO THAT THE BONDING CONDUCTOR IS AS SHORT AND STRAIGHT AS POSSIBLE TO THE FACILITY GROUND RING.

THE MGB WILL BE LOCATED NEAREST THE PRIMARY GROUND WHILE MAINTAINING HEIGHT AND DISTANCE CLEARANCES REQUIRED BY APPLICABLE ELECTRICAL CODES.

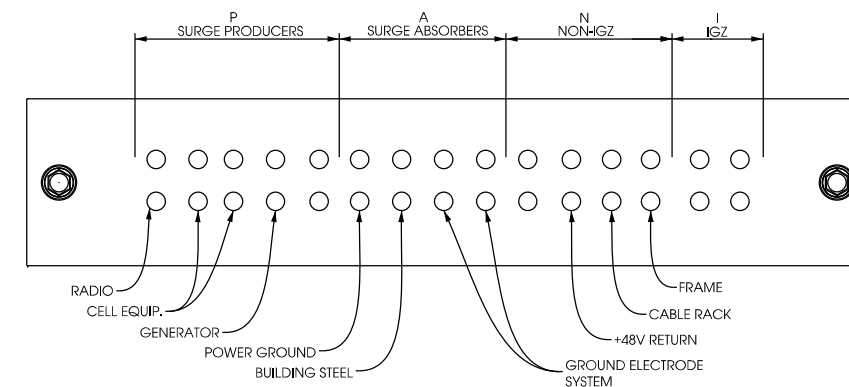
THE MGB WILL BE PREDRILLED COPPER ELECTRO TIN-PLATED BUS BAR WITH STANDARD NEMA BOLT SIZING AND SPACING WITH MINIMUM DIMENSIONS OF 1/4" THICK BY 4" WIDE AND 24" IN LENGTH. THE LENGTH MAY BE LONGER TO MEET FUTURE GROWTH PROJECTIONS.

THE MGB WILL BE INSULATED FROM ITS SUPPORT WITH MINIMUM 2" SEPARATION REQUIREMENT ON ISOLATED STANDOFFS.

THE MGB WILL BE PERMANENTLY AND APPROPRIATELY LABELED AND IDENTIFIED WITH THE "P", "A", "N" AND "I" SECTION OF THE MGB CLEARLY AND PERMANENTLY IDENTIFIED.

P = PRODUCERS, A = ABSORBERS, N = NON-PRODUCERS, I = ISOLATED (SWITCH, DCS)

ALL CONNECTIONS MADE TO MGB WILL BE STANDARD 2-HOLE LUG.



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ELECTRICAL NOTES

GENERAL

- A. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, CONSTRUCTION TOOLS, TRANSPORTATION, ETC. FOR A COMPLETE AND PROPERLY OPERATING SYSTEM ENERGIZED THROUGHOUT AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.
- B. CONTRACTOR IS TO COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOKUP COSTS TO BE PAID BY CONTRACTOR.
- C. CONTRACTOR SHALL OBTAIN ALL NECESSARY BUILDING PERMITS, INSPECTIONS AND APPROVALS, AND PAY ALL REQUIRED FEES PURSUANT TO THE WORK.
- D. ALL WORK SHALL BE IN STRICT ACCORDANCE WITH THE LATEST VERSION OF THE NATIONAL ELECTRICAL CODE AND ANY APPLICABLE NATIONAL, STATE AND LOCAL CODES. ALL COMPONENTS SHALL BE U.L. APPROVED.
- E. CONTRACTOR SHALL BEFORE SUBMITTING HIS BID, VISIT THE SITE OF THE PROJECT AND BECOME FAMILIAR WITH THE CONDITIONS. NO ALLOWANCE WILL BE MADE FOR EXISTING CONDITIONS OR FAILURE OF THE CONTRACTOR TO OBSERVE THEM.
- F. EXACT LOCATION OF ALL EQUIPMENT SHALL BE COORDINATED WITH OWNER AND OTHER TRADES.
- G. CONTRACTOR SHALL PROVIDE ALL VERIFICATION OBSERVATION TESTS AND EXAMINE ALL WORK PRIOR TO ORDERING THE ELECTRICAL EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE ARCHITECT/ENGINEER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.
- H. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN SAFE CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT (SEE NOTE G, FOR EXCEPTIONS). MATERIALS SHALL MEET WITH APPROVAL OF THE DIVISION OF INDUSTRIAL SAFETY AND ALL GOVERNING BODIES HAVING JURISDICTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, NBFU AND "UL" LISTED.
- I. WHERE EQUIPMENT IS SPECIFIED BY MANUFACTURER AND TYPE, SUBSTITUTION SHALL ONLY BE MADE WITH THE APPROVAL OF THE ENGINEER. THE CONTRACTOR SHALL SUBMIT DETAILS OF PROPOSED MATERIALS, REASON FOR CHANGE AND CHANGE IN CONTRACT AMOUNT.
- J. EACH CONDUCTOR OF EVERY SYSTEM SHALL BE PERMANENTLY LABELED WITH ENGRAVED PLASTIC LABELS FOR EACH PANELBOARD, PULL BOX, J-BOX, SWITCH BOX, ETC. IN COMPLIANCE WITH OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
- K. THESE PLANS ARE DIAGRAMMATIC ONLY AND ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE.
- L. THE NEUTRAL IS TO BE GROUNDED AT THE METER MAIN PEDESTAL ONLY. AT ALL OTHER POINTS IN THE DISTRIBUTION SYSTEM, IT IS TO REMAIN INSULATED FROM ALL OTHER GROUNDS UNLESS OTHERWISE INDICATED ON DRAWING.
- M. THE TEMPERATURE RATING ASSOCIATED WITH THE AMPACITY OF A CONDUCTOR SHALL BE SO SELECTED AND COORDINATED AS TO NOT EXCEED THE LOWEST TEMPERATURE RATING OF ANY CONNECTED TERMINATION, CONDUCTOR, OR DEVICE. REFER TO TABLE A.
- N. ALL ENCLOSURES CONTAINING THE SERVICE CONDUCTORS-SERVICE RACEWAY, CABLE ARMOR, BOXES, FITTINGS, CABINETS MUST BE EFFECTIVELY BONDED TOGETHER.
- O. ALL UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40 UNLESS OTHERWISE SPECIFIED. WITH UV PROTECTION (UNLESS NOTED OTHERWISE) AT A MINIMUM DEPTH SPECIFIED BY NATIONAL STATE AND LOCAL CODES. IT IS REQUIRED AND WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO NOTIFY THE DIGGER HOTLINE OR OTHER SUCH NOTIFYING AGENCY FORTY EIGHT (48) HOURS PRIOR TO THE START OF DIGGING, TRENCHING, EXCAVATION, OR OTHER SUCH EARTH REMOVAL.
- P. THE UNDERGROUND SERVICE ENTRANCE WORK MUST BE CONSTRUCTED ACCORDING TO THE LOCAL BUILDING CODE, NEC & UTILITY STANDARDS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL UTILITY BEFORE QUOTING AND DURING THE CONSTRUCTION.

MATERIALS, ELECTRICAL WIRING AND RACEWAYS

- A. ALL CIRCUIT BREAKERS, FUSES, CONDUCTORS AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING SHORT CIRCUIT TO WHICH THEY MAY BE SUBJECTED AND A MINIMUM OF 10,000 AIC RATING UNLESS SPECIFIED OTHERWISE.
  - B. PLASTIC PLATES FOR ALL SWITCHES, RECEPTACLES, TELEPHONE AND BLANKED OUTLETS SHALL HAVE ENGRAVED LETTERING WHERE INDICATED ON THE DRAWINGS. WEATHERPROOF RECEPTACLES SHALL HAVE SIERRA "WPD 8" LIFT COVER PLATES.
  - C. METER SOCKET AMPERAGE, VOLTAGE AND NUMBER OF PHASES SHALL BE AS NOTED ON THE DRAWINGS AND MANUFACTURED BY SQUARE "D" COMPANY OR AN APPROVED EQUAL.
  - D. INSTALLATION OF RIGID METAL CONDUIT SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF ARTICLES 300 & 346-NEC. SHALL BE UL APPROVED
  - E. INSTALLATION OF ELECTRICAL METALLIC TUBING (EMT) SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF ARTICLES 300 & 348-NEC. SHALL BE U.L. APPROVED.
  - F. INSTALLATION OF INTERMEDIATE METAL CONDUIT (IMC) SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF ARTICLES 300 & 348-NEC. SHALL BE UL APPROVED.
  - G. PLASTIC CONDUIT SHALL BE SCHEDULE 40, HIGH IMPACT, POLYVINYL CHLORIDE AND SHALL BE USED WITH UNTHREADED SOLVENT CEMENT PLASTIC CONDUIT FITTINGS. COUPLINGS SHALL HAVE A CENTER STOP TO TYPE ENSURE PROPER SEATING. CONDUIT SHALL BE MANUFACTURED BY CARLON OR ACCEPTABLE EQUAL SHALL BE IN COMPLIANCE WITH ART 300 & 347-NEC, UL APPROVED.
  - H. ALL WIRING OF ALL KINDS MUST BE INSTALLED IN CONDUIT, UNLESS OTHERWISE NOTED OR APPROVED BY THE ELECTRICAL ENGINEER.
  - I. ALL WIRING SHALL BE COPPER TYPE TINNED AND IN ACCORDANCE WITH THE (NEC) NATIONAL ELECTRICAL CODE OR AS INDICATED ON PLANS.
  - J. RACEWAYS SHALL BE STEEL GALVANIZED, WITH SIZE AS SPECIFIED AND IN ACCORDANCE WITH THE (NEC) NATIONAL ELECTRICAL CODE UNLESS OTHERWISE NOTED ON PLANS. ALL RACEWAYS SHALL BE APPROVED PRIOR TO INSTALLATION.
  - K. JUNCTION BOXES OR PULL BOXES SHALL MEET (NEC) NATIONAL ELECTRICAL CODE STANDARDS AND AS APPROVED FOR INSTALLATION OF RACEWAYS AND WIRING.
  - L. THE RACEWAY AND WIRING INSTALLATION SHALL BE GROUNDED PERMANENTLY AND EFFECTIVELY IN ACCORDANCE WITH ARTICLE 250 OF THE (NEC) NATIONAL ELECTRICAL CODE.
  - M. THE CONTRACTOR SHALL BE AWARE THAT ALL STATE AND LOCAL CODES SHALL APPLY TO THIS INSTALLATION AND MUST BE ADHERED TO.
- GENERATOR**
- A. CONTRACTOR SHALL COORDINATE ALL WORK WITH GENERATOR SET SUPPLIER TO PROVIDE A COMPLETE OPERATING EMERGENCY BACK-UP SYSTEM.
  - B. A SURGE PROTECTOR IS TO BE INSTALLED ON THE LOAD SIDE OF THE GENERATOR TRANSFER SWITCH.
  - C. IF THE GENERATOR IS A "SEPARATELY DERIVED SYSTEM" ITS NEUTRAL MUST BE BONDED TO THE GENERATOR METAL CASE AND ITS GROUNDING ELECTRODE CONDUCTOR MUST BE TIED INTO THE CELLULAR EXTERIOR GROUNDING SYSTEM. (NEC 250-26)
  - D. IF THE GENERATOR IS NOT A "SEPARATELY DERIVED SYSTEM" BONDING AND GROUNDING OF GENERATOR NEUTRAL IS NOT REQUIRED.

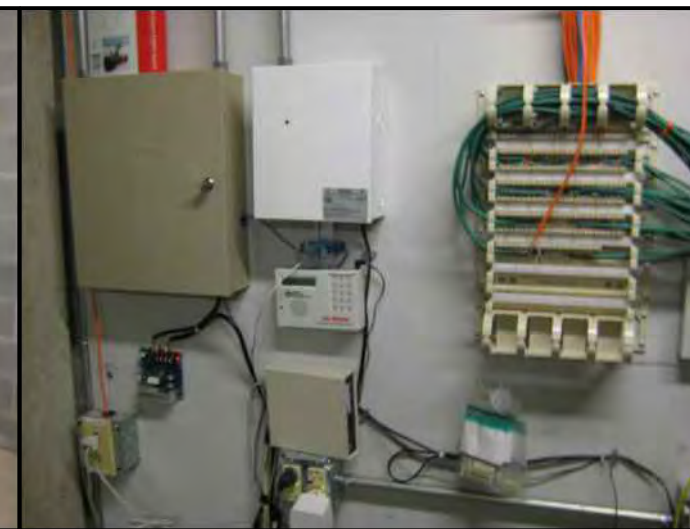
SCOPE OF WORK

- A. THE CONTRACTOR SHALL PROVIDE ALL ELECTRICAL WIRING AND EQUIPMENT UNLESS OTHERWISE INDICATED. MAIN COMPONENTS ARE AS FOLLOWS:
  - 1. PROVIDE ELECTRICAL SERVICE AS INDICATED ON THE DRAWINGS.
  - 2. PROVIDE TELEPHONE CONDUIT WITH PULL WIRE AS INDICATED HEREIN AND ON DRAWINGS.
  - 3. COORDINATE ELECTRICAL SERVICE WITH LOCAL POWER COMPANY.
  - 4. COORDINATE TELEPHONE SERVICE WITH LOCAL TELEPHONE COMPANY.
  - 5. INSTALL WIRE AND CONDUIT AS INDICATED. PROVIDE CABLE SUPPORTS AS INDICATED.
  - 6. PROVIDE GROUNDING AS INDICATED.
- B. ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" OR "AS-BUILT" DRAWINGS AT THE COMPLETION OF THE JOB SHOWING ACTUAL DIMENSIONS, ROUTINGS AND CIRCUITS SHALL BE PROVIDED TO CLIENT. ALL BROCHURES, OPERATING MANUALS, CATALOGS, SHOP DRAWINGS, ETC. SHALL BE TURNED OVER TO CLIENT AT JOB COMPLETION.
- C. PATCH, REPAIR AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF ELECTRICAL WORK.
- D. UPON COMPLETION OF WORK, CONDUIT CONTINUITY, SHORT CIRCUIT, AND GROUNDING FALL POTENTIAL TEST WILL BE MADE FOR APPROVAL. SUBMIT TEST REPORTS TO CLIENT. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE IN A COMPLETE AND UNDAMAGED CONDITION.
- E. THE COMPLETE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF SITE ACCEPTANCE BY CLIENT. ANY WORK MATERIAL OR EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED AT ONCE, UPON WRITTEN NOTIFICATION, AND AT THE EXPENSE OF THE CONTRACTOR.
- F. THE ELECTRICAL CONTRACTOR SHALL VERIFY THE ELECTRICAL EQUIPMENT PROVIDED BY CLIENT'S SUPPLIERS.

TERMINATION RATING	CONDUCTOR INSULATION RATING		
	60 DEGREES C	75 DEGREES C	90 DEGREES C
60 DEGREES C	OK	OK AT 60 DEGREES C AMPACITY	OK AT 60 DEGREES C AMPACITY
75 DEGREES C	NO	OK	OK AT 75 DEGREES C AMPACITY
60/75 DEGREES C	OK	OK AT 60 DEGREES C OR 75 DEGREES C AMPACITY	OK AT 60 DEGREES C OR 75 DEGREES C AMPACITY
90 DEGREES C	NO	NO	OK 90 DEGREES C RATING ONLY IF EQUIPMENT HAS



EXISTING AC ELECTRIC PANELS IN UTILITY ROOM



EXISTING TELCO BOARD IN UTILITY ROOM

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**E-1**



**SITE PHOTOGRAPHS**  
**WINGRA & PARK (#782512)**  
**MADISON, WISCONSIN**



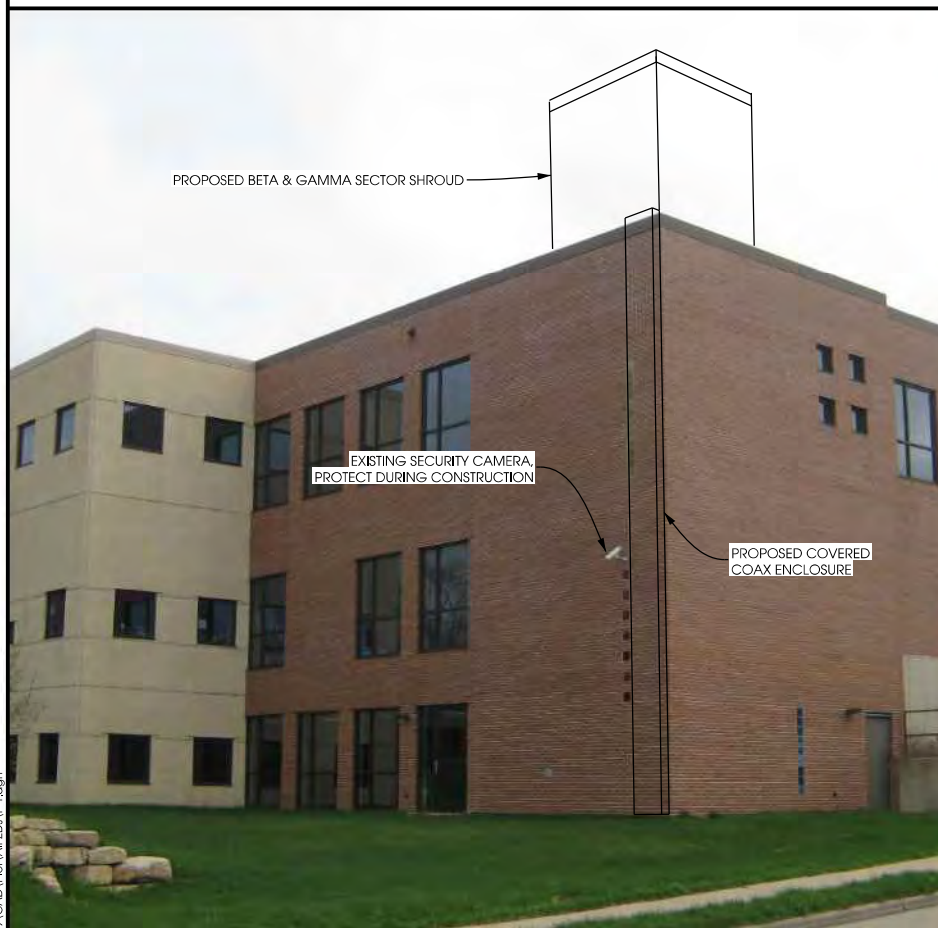
**PROPOSED EQUIPEMENT ROOM LOCATION**



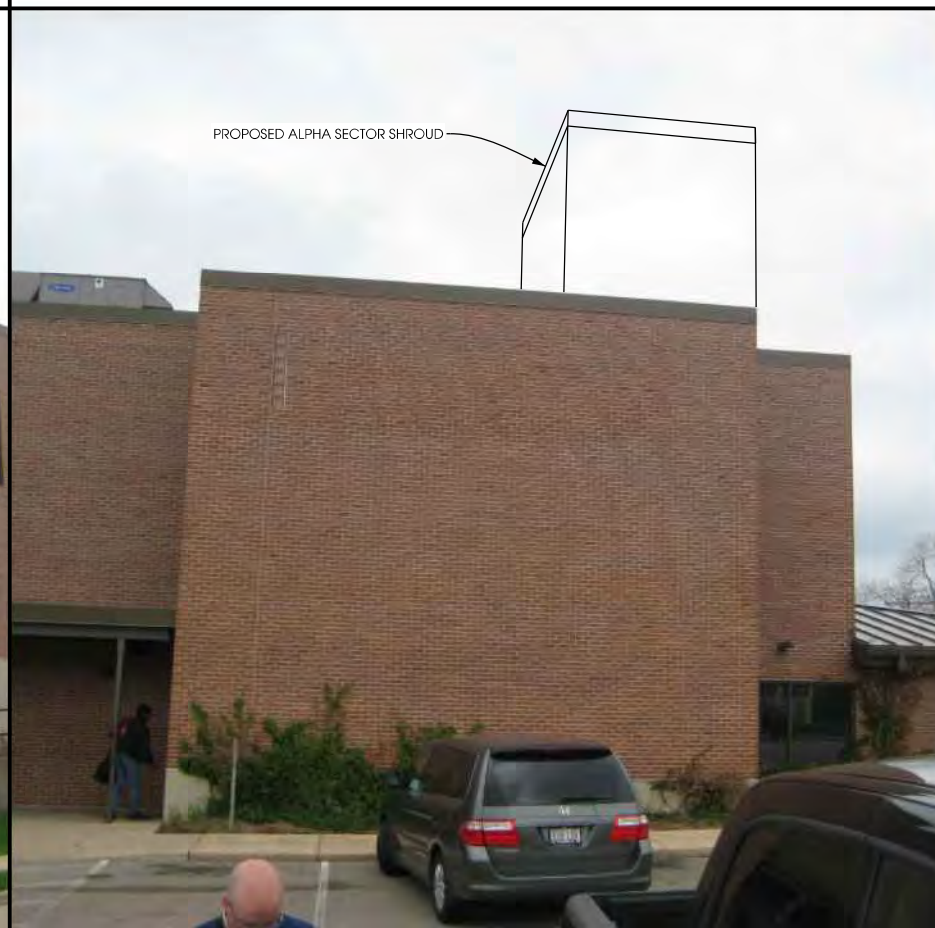
**EXISTING CONDUITS ON CEILING**



**OUTSIDE EQUIPMENT ROOM**



**PROPOSED STEALTH FRAME**



**PROPOSED STEALTH FRAME**



**EXISTING BUILDING ROOFTOP**

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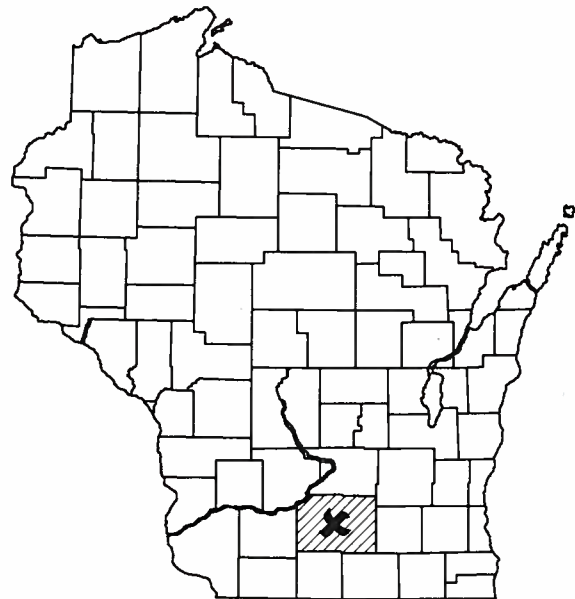
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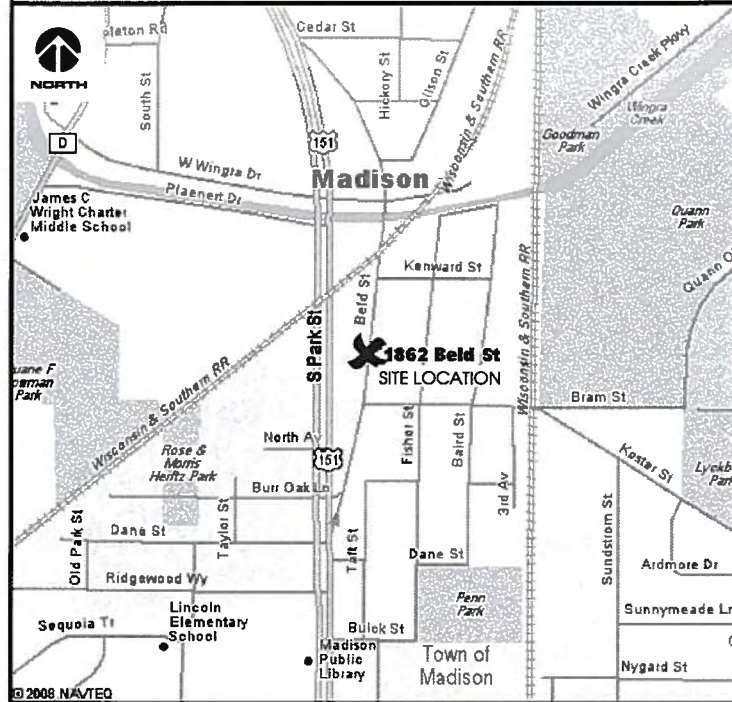


# U.S. Cellular

## WINGRA & PARK [#782512] MADISON, WISCONSIN CONSTRUCTION DRAWINGS ROOFTOP NOVEMBER 2009

**Edge**  
Consulting Engineers, Inc.  
624 Water Street  
Prairie du Sac, WI 53576  
608.644.1449 voice  
608.644.1549 fax  
www.edgeconsult.com

**TITLE SHEET**  
**WINGRA & PARK [#782512]**  
**MADISON, WISCONSIN**



**SITE LOCATION MAPS**

**FROM MADISON AREA:**

On W TERRACE DR go toward EASTPARK BLVD, go < 0.1 mi  
Turn RIGHT at EASTPARK BLVD, go 0.4 mi  
Turn RIGHT at AMERICAN PKWY, go 0.1 mi  
Take the ramp onto US-151 S, go 0.9 mi  
Take exit 97A for I-39/I-90 toward MILWAUKEE, go 0.4 mi  
Keep LEFT at fork, continue to follow I-39 S/I-90 E, go 5.9 mi  
Take exit 142A to merge onto US-12 W/US-18 W, go 5.9 mi  
Take exit 261 A-B for US-151/PARK ST, go 0.2 mi  
Keep RIGHT follows signs for US-151, go < 0.1 mi  
Turn RIGHT at S PARK ST/US-151, go 0.4 mi  
Turn RIGHT at BELD ST, go 0.2 mi

**TRIP DISTANCE:**

14.6 miles, Time: 18 mins

**DISTANCE TO NEAREST INTERSECTION :**  
APPROX. 1500 SOUTH AT US-151

**DRIVING DIRECTIONS**

**SHEET INDEX:**

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SP-2	SPECIFICATIONS
C-1	SITE PLAN
C-2	BASEMENT PLAN
C-3	EQUIPMENT ROOM PLAN
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A-4	BETA & GAMMA SHROUD DETAILS
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**STRUCTURAL REVIEW NOTE**

\* PREPARED BY OTHERS  
\*\* STRUCTURAL DETAILS ON THESE PAGES PREPARED AND REVIEWED BY STRUCTURAL ENGINEER. REFER TO STRUCTURAL ANALYSIS BY: NAME: EDGE CONSULTING ENGINEERS, INC. REPORT #: 4169, DATED: 09/08/2009  
CONTRACTOR TO REVIEW STRUCTURAL REPORT IN ITS ENTIRETY. ANY DISCREPANCIES OR DISAGREEMENTS BETWEEN THE REPORT AND THESE PLANS SHOULD BE RESOLVED PRIOR TO CONSTRUCTION.

**PROJECT DIRECTORY:**

ENGINEERING COMPANY:  
EDGE CONSULTING ENGINEERS, INC.  
624 WATER STREET  
PRAIRIE DU SAC, WI 53576  
CONTACT: ANDREW BRADLEY  
PHONE: 608.644.1449

CLIENT:  
U.S. CELLULAR - MADISON  
5117 WEST TERRACE DRIVE  
MADISON, WI 53718  
CONTACT: MIKE STAFFORD  
PHONE: 608.235.9904

SITE ACQUISITION:  
WIRELESS PLANNING CONSULTANTS  
CONTACT: FRAN SEIDL  
PHONE: 920.450.0816  
FAX: 920.982.3485

SURVEYOR:  
MERIDIAN SURVEYING, LLC  
N8774 FIRELANE 1  
MENASHA, WI 54952  
CONTACT: CRAIG KEACH  
PHONE: 920.993.0881

**PROJECT INFO:**

SITE LOCATION:  
1862 BELD STREET  
MADISON, WI 53713

SITE #: 782512

PROPERTY OWNER:  
ROMAN CATHOLIC DIOCESE OF MADISON  
1862 BELD STREET  
MADISON, WI 53713  
CONTACT: ANDY RUSSELL  
PHONE: 608.661.3512 x106

2C INFORMATION (NAD 1983/91)  
-CENTER OF BUILDING- (PER SURVEY)  
LAT: 43°-02'-45.40"  
LONG: 89°-23'-36.88"  
GROUND ELEVATION (NGVD 29): 888.4'  
ROOFTOP ELEVATION: 915.2'

PLSS INFORMATION:  
PART OF SW 1/4 OF THE SE 1/4,  
SECTION 26, T.7N., R.9E.,  
CITY OF MADISON,  
DANE COUNTY, WISCONSIN

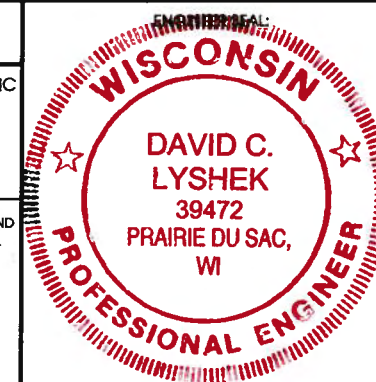
PARCEL NUMBER: 0709-264-1101-1

**UTILITY INFORMATION**

ELECTRIC SERVICE PROVIDER: MADISON GAS & ELECTRIC  
PHONE: 608.252.7000

TELEPHONE SERVICE PROVIDER: AT&T  
PHONE: 1.800.205.6268

TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN, CALL DIGGER'S HOTLINE  
TOLL FREE 1-800-242-8511  
FAX A LOCATE 1-800-338-3860  
WIS. STATUTE 182.0175 (1974) REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE.



I HEREBY CERTIFY THAT THIS PLAN SET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION OTHER THAN THE APPLICABLE STRUCTURAL DETAILED NOTES PROVIDED BY OTHERS AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.

Signature:

Date: 11/23/09

SHEET TITLE:

ISSUE DATE:
ZD's - 05/08/09
PRELIM CD's - 06/16/09
FINAL CD's - 09/17/09

REVISIONS:

ANTENNA SHROUDS - 07/15/09
ANTENNA SHROUDS - 08/17/09
ADDITIONAL ANTENNAS - 11/20/09

DRAWN BY:	ADS
CHECKED BY:	ABB
PLOT DATE:	11/23/2009
PROJECT NUMBER:	4169
FILE NAME:	T-1.dgn

SHEET NUMBER:  
**T-1**



PROJECT- WINGRA AND PARK #782512

SURVEYED FOR:  
U.S. CELLULAR  
5117 W. TERRACE DRIVE  
MADISON, WI 53718  
AND

SURVEYED FOR:  
EDGE CONSULTING ENGINEERS, INC.  
624 WATER STREET  
PRAIRIE DU SAC, WI 53578

PROPERTY OWNER:  
ROMAN CATHOLIC DIOCESE OF MADISON  
1862 BELD STREET  
MADISON, WI 53713

PARCEL NO.: 0709-264-1101-1

ZONED: R5

DEED: VOLUME: 742 PAGES: 63-64

BEARINGS REFERENCED TO THE  
WISCONSIN STATE PLANE COORDINATE  
SYSTEM (NAD83/91) - SOUTH ZONE



- LEGEND-
- = 1" IRON PIPE FOUND
  - ⊕ = COUNTY MONUMENT FOUND
  - = EXISTING 3" ROOF VENT
  - ⊙ = EXISTING 5" ROOF VENT
  - ⊕ = EXISTING ROOF DRAIN
  - ⊠ = STORM INLET
  - ⊙ = TEST WELL
  - ⊙ = GAS VALVE
  - ⊙ = METAL POST
  - ◇ = TRAFFIC SIGN
  - ↗ = DOOR
  - ↗ = EXISTING GUY ANCHOR
  - ⊙ = EXISTING POWER POLE
  - ⊠ = ELECTRIC TRANSFORMER
  - ⊠ = TELEPHONE PEDESTAL
  - ⊠ = LIGHT POLE
  - = PROPERTY LINE
  - OPL- = OVERHEAD ELECTRIC
  - ⊙ = DECORATIVE TREE
  - ⊙ = EXISTING SHRUB

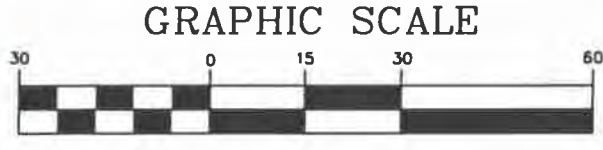
-VICINITY MAP-



SURVEYOR'S CERTIFICATE  
I, Craig A. Keach, Wisconsin Registered Land Surveyor  
of Meridian Surveying, LLC., certify that I have surveyed the  
described property and that the map shown is a true and accurate  
representation thereof to the best of my knowledge and belief.

Dated this 13th day of AUGUST, 2009

*Craig A. Keach*  
WISCONSIN REGISTERED LAND SURVEYOR  
Craig A. Keach, S-333



11" x 17" - 1" = 30'  
22" x 34" - 1" = 15'

SITE NAME: WINGRA AND PARK	SITE ADDRESS: 1862 BELD STREET MADISON, WI 53713
SITE NUMBER: 782512	
<b>MERIDIAN SURVEYING, LLC</b>	
N8774 Firelane 1 Menasha, WI 54952	Office: 920-993-0881 Fax: 920-273-6037

**SITE SURVEY**  
FOR  
**US CELLULAR**

BEING A PART OF THE SW1/4 OF THE  
SE1/4, SECTION 26, T.7N., R.9E., CITY  
OF MADISON, DANE COUNTY, WISCONSIN

NO.	DATE	DESCRIPTION	BY
DRAWN BY:	J.B.	DATE:	5-4-09
CHECKED BY:	C.A.K.	FIELD BOOK:	M-15, P. 3
JOB NO.:	5771-B506	SHEET	1 of 3





**CENTER OF BUILDING**  
 LATITUDE: 43°-02'-45.40"  
 LONGITUDE: 89°-23'-36.88"  
 (Per North American Datum of 83/91)  
 Top of Building Elevation: 915.2'  
 Ground Elevation: 888.4'  
 (Per National Geodetic Vertical Datum of 1929)

- LEGEND-**
- = 1" IRON PIPE FOUND
  - ⊕ = COUNTY MONUMENT FOUND
  - = EXISTING 3" ROOF VENT
  - ⊙ = EXISTING 5" ROOF VENT
  - ⊕ = EXISTING ROOF DRAIN
  - ⊞ = STORM INLET
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  - ⊙ = GAS VALVE
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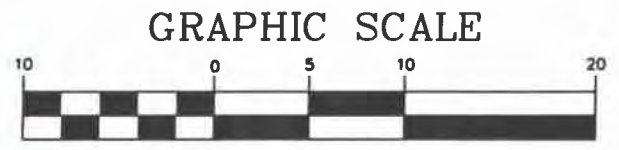
BEARINGS REFERENCED TO THE  
 WISCONSIN STATE PLANE COORDINATE  
 SYSTEM (NAD83/91) - SOUTH ZONE

**SURVEYOR'S CERTIFICATE**

I, Craig A. Keach, Wisconsin Registered Land Surveyor of Meridian Surveying, LLC., certify that I have surveyed the described property and that the map shown is a true and accurate representation thereof to the best of my knowledge and belief.

Dated this 13th day of AUGUST, 2009.

*Craig A. Keach*  
 WISCONSIN REGISTERED LAND SURVEYOR  
 Craig A. Keach, S-2333



11" x 17" - 1" = 10'  
 22" x 34" - 1" = 5'

SITE NAME: WINGRA AND PARK		SITE ADDRESS: 1862 BELD STREET	
SITE NUMBER: 782512		MADISON, WI 53713	
<b>MERIDIAN</b>			
SURVEYING, LLC			
N8774 Firelane 1 Menasha, WI 54952		Office: 920-993-0881 Fax: 920-273-6037	

**SITE SURVEY FOR US CELLULAR**  
 BEING A PART OF THE SW1/4 OF THE SE1/4, SECTION 26, T.7N., R.9E., CITY OF MADISON, DANE COUNTY, WISCONSIN

NO.	DATE	DESCRIPTION	BY
DRAWN BY: J.B.		DATE: 5-4-09	
CHECKED BY: C.A.K.		FIELD BOOK: M-15, P. 3	
JOB NO.: 5771-B506		SHEET 2 OF 3	



**PARENT PARCEL LEGAL DESCRIPTION**  
 (Roman Catholic of Diocese of Madison property)  
 (1862 Beld Street, Madison, WI 53713)

Lot one (1) of Certified Survey Map No. 10382, recorded in Volume 61, Page 136 of Dane County Certified Survey Maps, as Document No. 3482970 and being located in the Southwest Quarter (SW1/4) of the Southeast Quarter (SE1/4) of Section Twenty-Six (26), Town Seven (7) North, Range Nine (9) East, City of Madison, Dane County, Wisconsin.

A non-exclusive right and easement on the Roman Catholic Diocese of Madison property for the purpose of installing and maintaining antennas and antenna cables. This easement is to include the entire rooftop of the building at 1862 Beld Street, Madison, WI. and shall include ground space for locating telecommunications equipment at said address.

Together with a non-exclusive right and easement for ingress and egress at all times, on foot or by motor vehicle, including trucks and for the installation and maintenance of utility wires, cables, conduits, pipes and equipment, over, under or along the existing entrance(s), driveway(s), parking area(s), roof, elevator(s), landscaped area(s) and open area(s) located on the aforementioned property extending to and from the adjoining public right-of-way, which is known as Beld Street.

**SURVEYOR'S CERTIFICATE**

I, Craig A. Keach, Wisconsin Registered Land Surveyor of Meridian Surveying, LLC., certify that I have surveyed the described property and that the map shown is a true and accurate representation thereof to the best of my knowledge and belief.

Dated this 13th day of AUGUST, 2009.

*Craig A. Keach*  
 WISCONSIN REGISTERED LAND SURVEYOR  
 Craig A. Keach, S-2333



SITE NAME: WINGRA AND PARK SITE NUMBER: 782512		SITE ADDRESS: 1862 BELD STREET MADISON, WI 53713		SITE SURVEY FOR US CELLULAR BEING A PART OF THE SW1/4 OF THE SE1/4, SECTION 26, T.7N., R.9E., CITY OF MADISON, DANE COUNTY, WISCONSIN				
<b>MERIDIAN</b> SURVEYING, LLC					NO. DATE DESCRIPTION BY			
N8774 Firelane 1 Office: 920-993-0881 Menasha, WI 54952 Fax: 920-273-6037				DRAWN BY: J.B. DATE: 5-4-09				
				CHECKED BY: C.A.K. FIELD BOOK: M-15, P. 3				
				JOB NO.: 5771-B506 SHEET 3 of 3				



**GENERAL REQUIREMENTS**

1. SITE WORK SHALL BE COMPLETED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS (US CELLULAR STANDARD PLANS AND SPECIFICATIONS) AND THE REFERENCED STANDARDS.
  - A. ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES AND REGULATIONS.
  - B. UNIFORM BUILDING CODE (UBC) BUILDING OFFICIALS & CODE ADMINISTRATORS (BOCA) AS APPLICABLE.
  - C. AMERICAN CONCRETE INSTITUTE (ACI)
  - D. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM).
  - E. ELECTRONICS INDUSTRIES ASSOCIATION STANDARDS (EIA/TIA-222-E) MOST CURRENT VERSION ADOPTED BY SUBJECT STATE.
  - F. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)
2. WHERE A CONFLICT OCCURS BETWEEN REFERENCED STANDARDS AND US CELLULAR STANDARD PLANS AND SPECIFICATIONS, THE MORE STRINGENT STANDARD SHALL APPLY.
3. THE FACILITY IS AN UNOCCUPIED SPECIALIZED MOBILE RADIO FACILITY.
4. PLANS ARE NOT TO BE SCALED AND ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY, UNLESS NOTED OTHERWISE THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
5. PRIOR TO THE SUBMISSIONS OF THE BIDS, THE CONTRACTOR SHALL VISIT THE JOB SITE AND BECOME FAMILIAR WITH THE FIELD CONDITIONS. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE.
6. THE CONTRACTOR SHALL RECEIVE IN WRITING, AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEM NOT CLEARLY IDENTIFIED BY THE CONTRACT DOCUMENTS.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY OTHERWISE NOTED.
8. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING BEST SKILLED PERSONNEL. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT INCLUDING CONTACT AND COORDINATION WITH THE LANDLORDS AUTHORIZED REPRESENTATIVE.
9. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS OF THE SITE AND NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES BEFORE STARTING ANY WORK.
10. WHEN CONTRACTOR'S ACTIVITIES IMPEDE OR OBSTRUCT TRAFFIC FLOW, CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL DEVICES, SIGNS, AND FLAGMEN IN ACCORDANCE WITH PART VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AS PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
11. THE CONTRACTOR SHALL COORDINATE SITE ACCESS AND SECURITY WITH THE PROPERTY OWNER AND US CELLULAR PRIOR TO CONSTRUCTION.
12. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, PAVING, CURBS, GALVANIZED SURFACES, ETC. AND UPON COMPLETION OF WORK REPAIR ANY DAMAGE THAT OCCURRED DURING CONSTRUCTION.
13. THE LOCATIONS OF UTILITIES SHOWN ON THE PLAN ARE BASED ON EXISTING RECORDS. FIELD LOCATIONS OR OWNER SUPPLIED INFORMATION AND MAY NOT BE ACCURATE. THE CONTRACTOR SHALL MARK ALL PUBLIC & PRIVATE UTILITIES. THE CONTRACTOR SHALL CALL THE LOCAL "ONE CALL" PROVIDER A MINIMUM OF THREE BUSINESS DAYS PRIOR TO EXCAVATING TO ALLOW MEMBER UTILITIES TO LOCATE THEIR FACILITIES. THE PROPERTY OWNER SHALL BE NOTIFIED IN A SIMILAR FASHION TO ALLOW HIM TO LOCATE HIS PRIVATE UTILITIES.
14. WHEN EXCAVATING AROUND UTILITIES, THE CONTRACTOR SHALL USE REASONABLE CARE IN LOCATING AND PROTECTING UTILITIES. US CELLULAR SHALL BE NOTIFIED IMMEDIATELY OF ANY CONFLICTS BETWEEN EXISTING UTILITIES AND PROPOSED CONSTRUCTION.
15. DAMAGE TO PUBLIC OR PRIVATE UTILITIES SHALL BE REPORTED TO US CELLULAR AND THE OWNER OF THE UTILITY IMMEDIATELY. ANY DAMAGE RESULTING FROM CONTRACTORS NEGLIGENCE OR FAILURE TO ACT WITH DUE REGARD SHALL BE REPAIRED AT CONTRACTORS EXPENSE.
16. UNLESS OTHERWISE NOTED ON THE PLANS, CONTRACTOR SHALL ASSUME ALL SURFACE FEATURES SUCH AS BUILDINGS, PAVEMENTS, LANDSCAPING FEATURES AND PLANTS ARE TO BE SAVED AND PROTECTED FROM DAMAGE.
17. KEEP THE CONSTRUCTION SITE CLEAN, HAZARD FREE, AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. LEAVE PREMISES IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
18. THE CONTRACTOR SHALL PROVIDE ON-SITE TRASH RECEPTACLES FOR COLLECTION OF NON-TOXIC DEBRIS. ALL TRASH SHALL BE COLLECTED ON A DAILY BASIS.
19. ALL TOXIC AND ENVIRONMENTALLY HAZARDOUS SUBSTANCES SHALL BE USED AND DISPOSED OF IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS. UNDER NO CIRCUMSTANCES SHALL RINSING OR DUMPING OF THESE SUBSTANCES OCCUR ON-SITE.
20. THE CONTRACTOR SHALL MAINTAIN AND SUPPLY US CELLULAR WITH AS-BUILT PLANS UPON COMPLETION OF THE PROJECT.
21. MEANS AND METHODS OF CONSTRUCTION INCLUDING, BUT NOT LIMITED TO, THE DESIGN AND PLACEMENT OF FORMS AND SHORING ARE THE RESPONSIBILITY OF THE CONTRACTOR.
22. THE CONTRACTOR SHALL COORDINATE/ASSIST DIFFERENT TRADE CONTRACTORS IN TERMS OF COORDINATION AND SITE ACCESS.
23. ALL ARCHITECTURAL, MECHANICAL & ELECTRICAL SYSTEM AND COMPONENTS IN THIS FACILITY SHALL BE INSTALLED TO RESIST WIND, ICE AND SNOW FORCES AS PER NATIONAL STANDARDS AND BUILDING CODES (LATEST ADOPTED EDITION).

24. US CELLULAR WILL OBTAIN NECESSARY PERMITS AND LICENSES FROM THE FEDERAL COMMUNICATIONS COMMISSION (FCC) AND THE FEDERAL AVIATION ADMINISTRATION (FAA) UNLESS OTHERWISE NOTED IN THE PLANS OR SPECIAL PROVISIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL OTHER PERMITS NECESSARY FOR CONSTRUCTION.
25. US CELLULAR WILL ORDER AND PAY FOR ANY NECESSARY ELECTRIC AND TELEPHONE UTILITY INSTALLATIONS TO THE POINT OF TERMINATION AS SHOWN ON THE PROJECT PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH UTILITIES.
26. US CELLULAR WILL PROVIDE PRIMARY HORIZONTAL AND VERTICAL CONTROL FOR CONSTRUCTION. CONTRACTOR WILL BE RESPONSIBLE TO CORRECTLY TRANSFER LINE AND GRADE. THE CONTRACTOR SHALL PROVIDE ANY ADDITIONAL STAKING OR RE-STAKING.
27. US CELLULAR MAY RETAIN THE SERVICES OF A TESTING LABORATORY TO PERFORM QUALITY ASSURANCE TESTING ON VARIOUS PORTIONS OF THE CONTRACTORS WORK. WHEN REQUESTED, THE CONTRACTOR SHALL INFORM THE TESTING LABORATORY AND ASSIST THEM IN COMPLETING TESTS.
28. THE CONTRACTOR SHALL PROVIDE ANY TEMPORARY UTILITIES OR FACILITIES IT DEEMS NECESSARY TO COMPLETE ITS WORK. THIS INCLUDES, BUT IS NOT LIMITED TO WATER, SEWER, POWER, TELEPHONE, HEAT, LIGHTING OR SECURITY.
29. NOTIFY ENGINEER 2 DAYS IN ADVANCE OF INITIATING SITE CONSTRUCTION ACTIVITIES.

**DEMOLITION**

1. PERFORM DEMOLITION AND REMOVAL OF EXISTING MATERIALS OR STRUCTURES AS SHOWN ON THE PLANS AND AS SPECIFIED IN SPECIAL CONDITIONS. PROTECT EXISTING FACILITIES OR STRUCTURES THAT ARE TO REMAIN.
2. COMPLETE DEMOLITION IN A SYSTEMATIC MANNER BEGINNING AT THE HIGHEST LEVEL.
3. NEATLY SAW OR CUT JOINTS AT THE LIMITS OF REMOVAL; WHENEVER POSSIBLE LOCATE CUTS AT EXISTING JOINTS.
4. PATCH AND REPAIR ANY DAMAGED SURFACES OR STRUCTURAL MEMBERS AT THE LIMITS OF REMOVAL.
5. REMOVAL DEMOLITION DEBRIS FROM THE SITE ON A REGULAR BASIS. DISPOSE ALL DEBRIS OFFSITE IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS. BURNING OF MATERIAL SHALL NOT BE ALLOWED UNLESS OTHERWISE NOTED IN THE PLANS OR SPECIAL PROVISIONS.

**CLEARING AND GRUBBING**

1. REMOVE TREES, STUMPS, SHRUBS, GRASS AND OTHER VEGETATION AS SHOWN ON THE PLANS TO ALLOW FOR CONSTRUCTION OF NEW CELLULAR FACILITIES.
2. WHEN POSSIBLE, NEATLY TRIM OR CUT BACK EXISTING TREES OR VEGETATION TO ALLOW FOR CONSTRUCTION OF NEW CELLULAR FACILITIES.
3. WHEN CLEARING TREES, PROTECT ALL SURROUNDING STRUCTURES, PAVEMENTS AND LANDSCAPING BY TOPPING, TRIMMING AND USING GUY LINES.
4. COMPLETELY REMOVE ALL STUMPS AND ROOTS. STUMPS AND ROOTS MAY BE REMOVED BY GRUBBING, CHIPPING OR GRINDING.
5. DISPOSE OF ALL DEBRIS OFFSITE IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS. BURNING OF MATERIAL SHALL NOT BE ALLOWED UNLESS OTHERWISE NOTED IN THE PLANS OR SPECIAL PROVISIONS.

**EARTHWORK**

1. REMOVE TOPSOIL FROM BENEATH ALL PROPOSED ROADS, PARKING AREAS, BUILDINGS AND AREAS TO RECEIVE MORE THAN 6" OF FILL. STOCKPILE TOPSOIL FOR USE DURING RESTORATION.
2. ALL TREES DESIGNATED TO REMAIN SHALL BE PROTECTED DURING CONSTRUCTION BY A 5 FOOT HIGH TREE BARRIER UTILIZING WIRE FENCING, OR PROTECTIVE SAFETY NETTING. SEE DETAIL 1/L-1.
3. GRADE AREAS IN ACCORDANCE WITH ELEVATIONS AND GRADES SHOWN ON THE PLANS OR AS NECESSARY IN GRADING TO PROVIDE DRAINAGE.
4. FILL MATERIAL USED IN GRADING OPERATIONS SHALL CONSIST OF EARTH WHICH IS FREE OF DEBRIS, BOULDERS OR ORGANIC MATERIAL. FILL SHALL BE PLACED IN 12" LIFTS AND COMPACTED TO 90% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY.
5. ALL FILL SHALL BE TESTED FOR FIELD DENSITY. TESTS SHALL BE TAKEN IN EACH LIFT OF FILL AT LOCATIONS DESIGNATED BY THE OWNER'S REPRESENTATIVE.
6. SELECT GRANULAR FILL SHALL BE USED WHEN FILLING OR BACKFILLING BENEATH AND/OR AROUND ANY STRUCTURES, ROADS OR PARKING AREAS. SELECT FILL SHALL BE PLACED IN 9" LIFTS AND COMPACTED TO 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY. SELECT GRANULAR FILL SHALL CONSIST OF SAND, GRAVEL OR MIXTURE OF SAND AND GRAVEL FREE OF ORGANIC MATERIAL. THE MATERIAL SHALL HAVE A 2" MAXIMUM SIZE, LESS THAN 10% PASSING NO. 200 SIEVE, A PLASTICITY INDEX OF 6 OR LESS, AND A UNIFORMITY COEFFICIENT OF 5 OR GREATER.
7. ALL DISTURBED AREAS SHALL BE RESTORED AS SOON AS POSSIBLE WITH 4" TOPSOIL, SEED, FERTILIZER AND MULCH. GRASS SEED SHALL BE A SUITABLE MIX CONTAINING BOTH ANNUAL AND PERENNIAL VARIETIES OF FESCUE, RYE AND BLUEGRASS. FERTILIZER SHALL CONTAIN A MINIMUM OF 10% EACH OF NITROGEN, PHOSPHORIC ACID AND POTASH. MULCH SHALL BE A STRAW OR HAY MIXTURE FREE OF NOXIOUS WEED SEEDS. APPLY SEED AND FERTILIZER AS RECOMMENDED BY MANUFACTURER. MULCH SHALL BE CRIMPED AFTER APPLICATION.

SHEET TITLE:

ISSUE DATE
ZDs - 06/08/09
PRELIM CD's - 06/16/09
FINAL CD's - 09/17/09

REVISIONS
ANTENNA SHROUDS - 07/15/09
ANTENNA SHROUDS - 08/17/09
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SHEET NUMBER
<b>SP-1</b>



9. THE CONTRACTOR SHALL VERIFY, UPON COMPLETION OF DEVELOPMENT, THE SITE IS PROPERLY STABILIZED AND ALL INDICATED SWALES & STORMWATER FACILITIES ARE CONSTRUCTED AS INDICATED ON THE PLANS
10. TOWER, TOWER FOUNDATIONS, SLABS, MODULAR BUILDINGS, AND ELECTRICAL AND MECHANICAL FEATURES ARE TO BE DESIGNED AND SPECIFIED BY OTHERS
11. EROSION CONTROL - ALL MEASURES SHALL BE INSPECTED DAILY AND IMMEDIATELY FOLLOWING ALL RAIN FALL EVENTS. ALL DEFICIENCIES SHALL BE NOTED AND REPAIRED IMMEDIATELY.
12. SEDIMENTATION CONTROL - SEDIMENTATION CONTROL SHALL BE ACCOMPLISHED DURING CONSTRUCTION THROUGH THE USE OF SILT FENCING PLACED AS SHOWN ON THE ATTACHED PLAN. THE CONTROL DEVICES SHALL BE SET AT THE ONSET OF SITE GRADING TO PREVENT SILTING OF THE EXISTING STORMWATER FACILITIES

#### EROSION CONTROL

1. CONTRACTOR SHALL PROVIDE EROSION CONTROL MEASURES IN ACCORDANCE WITH THE MOST STRINGENT OF: PROJECT PLANS, SPECIAL PROVISIONS, THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES "WISCONSIN CONSTRUCTION SITE BEST MANAGEMENT PRACTICE HANDBOOK", OR LOCAL ORDINANCES
2. ESTABLISH EROSION CONTROL MEASURES PRIOR TO STARTING CONSTRUCTION AND MAINTAIN THROUGHOUT CONSTRUCTION. INSPECT EROSION CONTROL MEASURES FOLLOWING EACH RAINFALL EVENT AND REPAIR AS NECESSARY.

#### ROAD AND PARKING AREA CONSTRUCTION

1. PREPARE SUBGRADE FOR ROADS AND PARKING AREAS IN ACCORDANCE WITH "EARTHWORK" SECTION
2. PROOF ROLL ROAD TO IDENTIFY UNSUITABLE MATERIALS. EXCAVATE UNSUITABLE MATERIAL AND DISPOSE OFFSITE. BACKFILL UNDERCUT EXCAVATION USING 3" BREAKER RUN MATERIAL. BREAKER RUN MATERIAL SHALL BE CRUSHED STONE MEETING THE FOLLOWING GRADATION:

SIEVE SIZE	% WEIGHT PASSING
3"	100
1 1/2"	0-50
3/4"	0-20
#200	0-10

3. PLACE CRUSHED AGGREGATE BASE COURSE IN MAXIMUM OF 6" THICK LIFTS IN ACCORDANCE WITH DETAIL DRAWINGS. MOISTURE CONDITION BASE COURSE AS NECESSARY TO ACHIEVE COMPACTION. BASE COURSE SHALL BE COMPACTED TO 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY. BASE COURSE MATERIAL SHALL MEET THE FOLLOWING REQUIREMENTS:

##### 3" BASE COURSE

SIEVE SIZE	% WEIGHT PASSING
3"	100
2 1/2"	25-60
3/4"	0-20
3/8"	0-5

##### 1 1/2" BASE COURSE

SIEVE SIZE	% WEIGHT PASSING
1 1/2"	100
1"	70-100
3/4"	55-95
3/8"	30-65
#4	25-55
#10	15-40
#200	0-10

4. PLACE BASE COURSE WITH CROWN OR UNIFORM SLOPE AS NECESSARY TO PROVIDE DRAINAGE FROM THE SITE
5. GEOTEXTILE FABRIC SHALL BE USED IN THE EVENT OF UNSTABLE SOIL CONDITIONS. VERIFICATION OF SUCH CONDITIONS IS THE RESPONSIBILITY OF THE CONTRACTOR.

#### CONCRETE AND STEEL REINFORCEMENT

1. CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH ASTM C94. CONCRETE SHALL BE 6 BAG MIX HAVING A 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI, MAXIMUM AGGREGATE SIZE OF 1", MAXIMUM WATER CEMENT RATIO OF 0.45, AIR ENTRAINMENT OF 6% +/- 1%, AND SLUMP OF 3" +/- 1". DEVIATIONS FROM THE MIX MUST BE APPROVED BY US CELLULAR PRIOR TO USE.
2. CONCRETE CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH THE MOST STRINGENT OF: PROJECT PLANS, SPECIAL PROVISIONS, OR THE AMERICAN CONCRETE INSTITUTE (ACI) PUBLICATIONS. CONCRETE WORK FOR TOWER FOUNDATIONS SHALL BE COMPLETED IN ACCORDANCE WITH PLANS AND SPECIFICATIONS PROVIDED BY THE TOWER VENDOR.
3. FORM MATERIALS WILL COMPLY WITH ACI 301. PLYWOOD FORMS SHALL BE APA B-B PLYFORM CLASS I SOUND SHEETS. LUMBER SHALL BE SPRUCE-PINE-FIR SPECIES #2 OR BETTER GRADE. TUBULAR COLUMN FORMS MAY BE SPIRALLY WOUND LAMINATED FIBER MATERIAL. FORM TIES SHALL BE REMOVABLE OR SNAP-OFF METAL TYPE.
4. CONCRETE SHALL BE MADE OF CEMENT MEETING THE REQUIREMENTS OF ASTM C150, NORMAL, TYPE I PORTLAND. FINE AND COARSE AGGREGATES FOR CONCRETE SHALL MEET THE REQUIREMENTS OF ASTM C33.
5. PLACE, SUPPORT AND SECURE REINFORCEMENT STEEL AT LOCATIONS SHOWN ON PLANS. REINFORCING STEEL SHALL BE PLACED IN ACCORDANCE WITH ACI 315. REBAR YIELD STRENGTH = 60,000PSI
6. AIR ENTRAINING ADMIXTURES SHALL MEET THE REQUIREMENTS OF ASTM C260. WATER REDUCING ADMIXTURES SHALL MEET THE REQUIREMENTS OF ASTM C494, TYPE A. ALL OTHER ADMIXTURES ARE PROHIBITED WITHOUT PRIOR APPROVAL BY US CELLULAR.
7. VAPOR BARRIER SHALL BE 6 MIL THICK POLYETHYLENE, MEETING THE REQUIREMENTS OF ASTM D2103.
8. CURING COMPOUND SHALL MEET THE REQUIREMENTS OF ASTM C309.
9. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
10. ALL CONSTRUCTION AND EXPANSION JOINTS SHALL BE INSTALLED PER THE DRAWINGS
12. ALL EXPOSED CORNERS OF CONCRETE WORK SHALL BE CHAMFERED 3/4" UNLESS NOTED OTHERWISE.
13. PLACE, SUPPORT AND SECURE REINFORCEMENT STEEL AT LOCATIONS SHOWN ON PLANS. REINFORCING STEEL SHALL BE PLACED IN ACCORDANCE WITH ACI 315.
14. ALL FORM WORK SHALL BE RIGID, TIGHT, LEVEL, PLUMB AND SUFFICIENTLY SHORED TO RESIST CONSTRUCTION LOAD CONDITIONS. COAT FORMS WITH RELEASE AGENT PRIOR TO PLACING REINFORCING STEEL.
15. PREPARE SUBGRADE FOR CONCRETE IN ACCORDANCE WITH PROJECT PLANS AND SPECIAL PROVISION. DO NOT PLACE CONCRETE ON FROZEN SUBGRADE.
16. PROVIDE US CELLULAR A MINIMUM OF 24 HRS. NOTICE PRIOR TO PLACING CONCRETE TO ALLOW FOR INSPECTION AND SCHEDULING OF TESTING
17. UTILIZE CHUTES, TROUGHES OR CONVEYORS TO PLACE CONCRETE SO THAT HANDLING OF CONCRETE IS MINIMIZED. AVOID SEGREGATION OF THE AGGREGATE AND DISTURBING REINFORCING STEEL.
18. UNIFORMLY CONSOLIDATE CONCRETE USING HAND TOOLS OR MECHANICAL VIBRATORS. THOROUGHLY CONSOLIDATE EACH LAYER PRIOR TO PLACING SUBSEQUENT LAYERS.
19. WHEN PLACING OPERATIONS ARE TEMPORARILY SUSPENDED, THE UNFINISHED FACE OF THE POUR SHALL BE COVERED WITH WET BURLAP UNTIL PLACING OPERATIONS ARE RESUMED. WHEN PLACING OPERATIONS ARE SUSPENDED FOR MORE THAN 30 MINUTES, PROVIDE AN UNBONDED CONSTRUCTION JOINT.
20. TROWEL FINISH SURFACES UNLESS OTHERWISE DIRECTED ON THE PLANS.
21. AFTER FINAL FINISHING, PROVIDE POLYETHYLENE VAPOR BARRIER OR CURING COMPOUND TO MAINTAIN MOISTURE AND TEMPERATURE OF CONCRETE
22. IN EXTREME WEATHER PLACE AND CURE CONCRETE IN ACCORDANCE WITH EITHER ACI 306R-89 FOR COLD WEATHER OR ACI 305R-89 FOR HOT WEATHER.
23. WELDING OF REINFORCING STEEL ARE PROHIBITED.
24. REMOVE FORMS IN A MANNER THAT DOES NOT DAMAGE THE CONCRETE. FILL AND PATCH AND POCKETS OR HOLES ON EXPOSED SURFACES USING MORTAR MIXTURE.
25. PROVIDE TEST CYLINDERS AS FOLLOWS:
  - A. EQUIPMENT ENCLOSURE
    - 1 CYLINDER AT 7 DAYS.
    - 1 CYLINDER AT 14 DAYS.
    - 2 CYLINDER AT 28 DAYS.
26. NOTIFY ENGINEER 48 HOURS IN ADVANCE OF TOWER FOUNDATION INSTALLATION.
27. REFER TO TOWER MANUFACTURER SPECIFICATIONS REGARDING FOUNDATION REQUIREMENTS.

SHEET TITLE:

ISSUE DATE:

ZDs - 06/08/09

PRELIM CD's - 06/16/09

FINAL CD's - 09/17/09

REVISIONS

ANTENNA SHROUDS - 07/15/09

ANTENNA SHROUDS - 08/17/09

ADDITIONAL ANTENNAS - 11/23/09

DRAWN BY:

ADS

CHECKED BY:

ABB

PLOT DATE:

11/23/2009

PROJECT NUMBER:

4169

FILE NAME:

SP-2.dgn

SHEET NUMBER

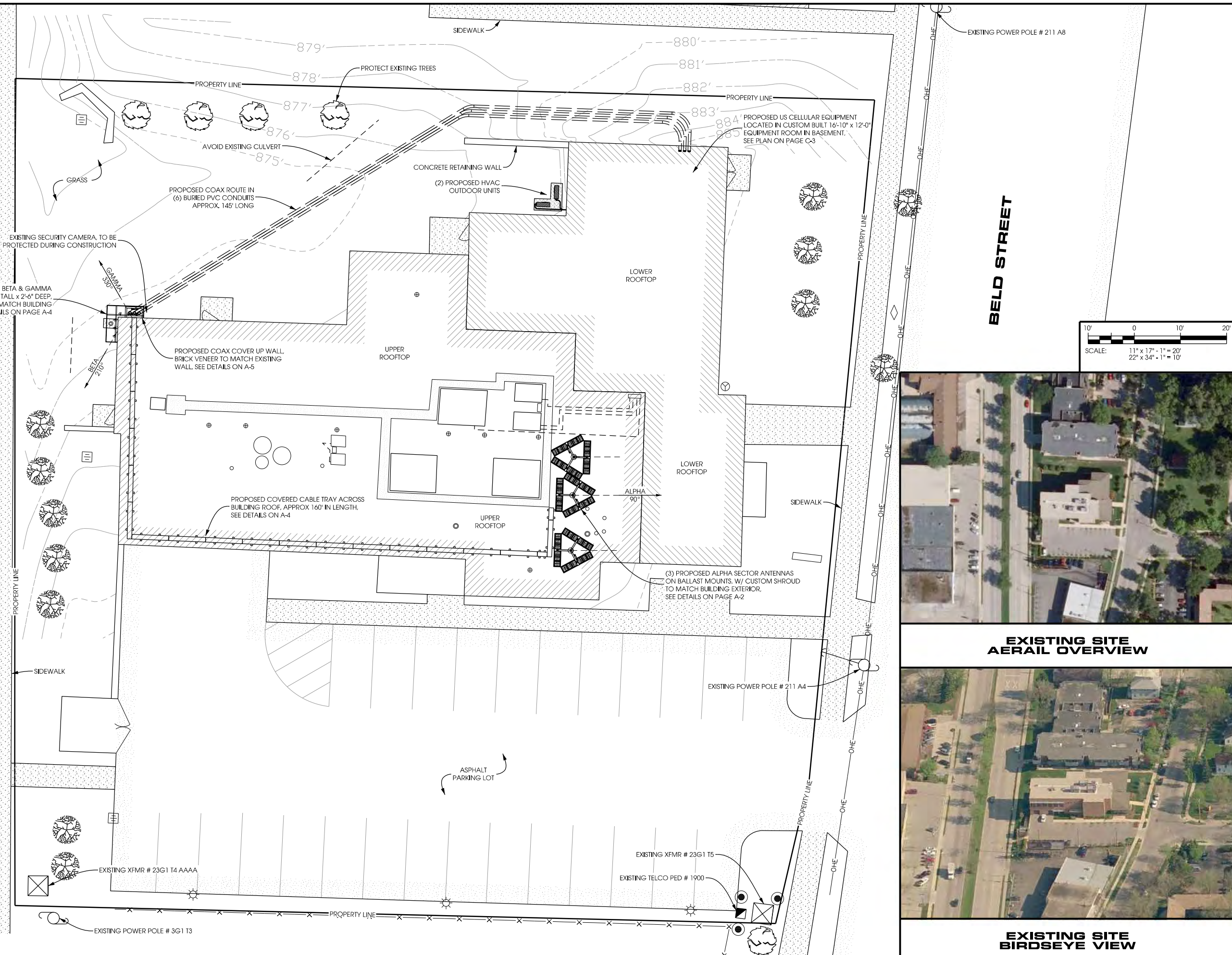
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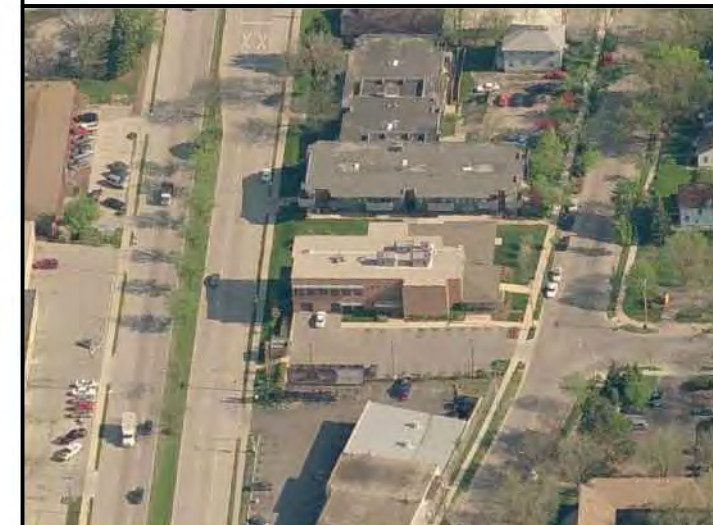


S. PARK STREET

BELD STREET



EXISTING SITE AERIAL OVERVIEW



EXISTING SITE BIRDSEYE VIEW

**Edge Consulting Engineers, Inc.**  
 624 Water Street  
 Profile du Soc, WI 53578  
 608.644.1449 voice  
 608.644.1549 fax  
 www.edgeconsulting.com

**SITE PLAN**  
**WINGRA & PARK (#782512)**  
**MADISON, WISCONSIN**

SHEET TITLE:

ISSUE DATE:
ZD's - 05/08/09
PRELIM CD's - 06/16/09
FINAL CD's - 09/17/09

REVISIONS:

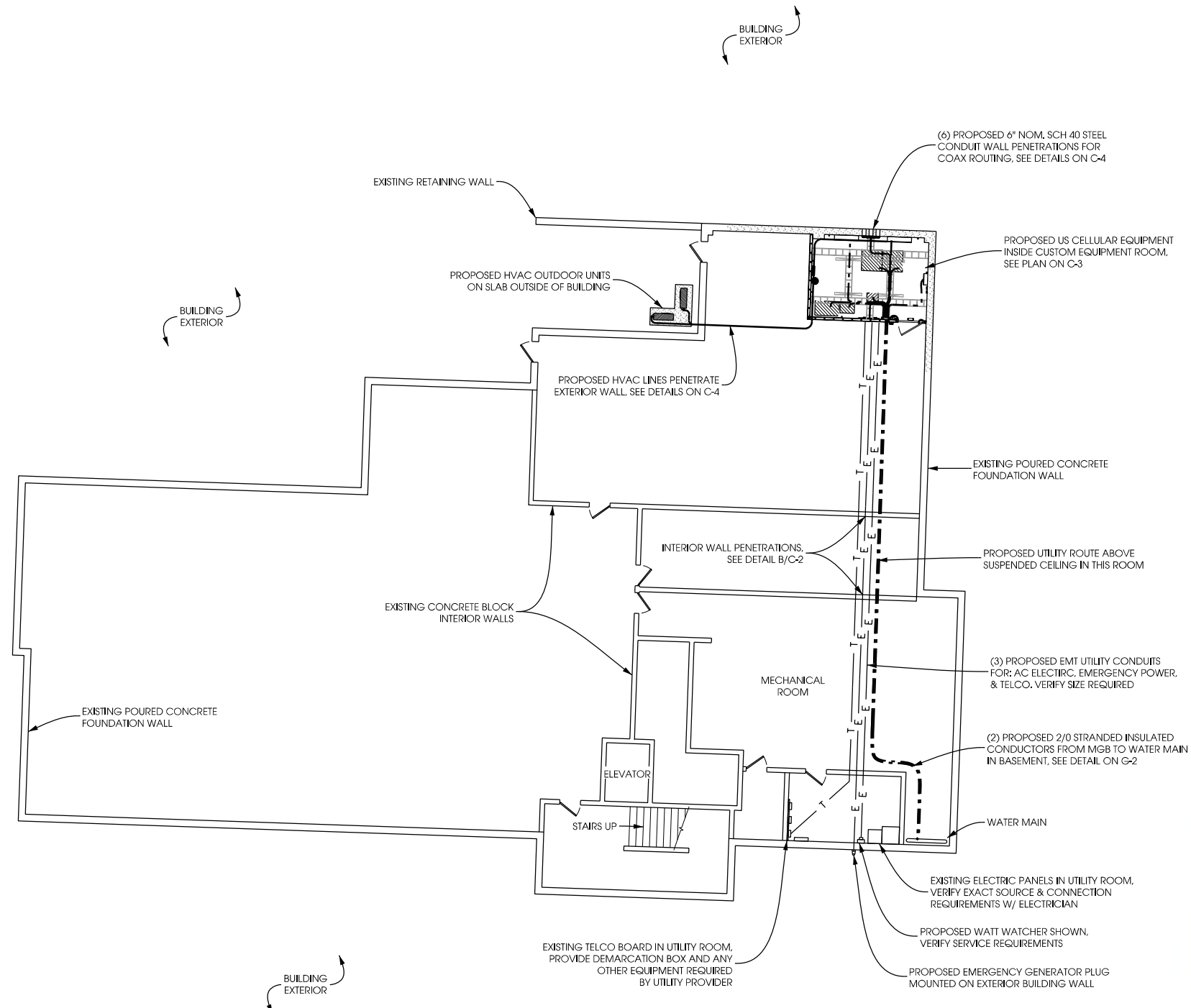
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ANTENNA SHROUDS - 08/17/09
ADDITIONAL ANTENNAS - 11/23/09

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PROJECT NUMBER:	4169
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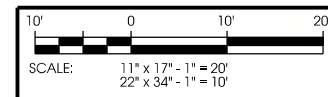
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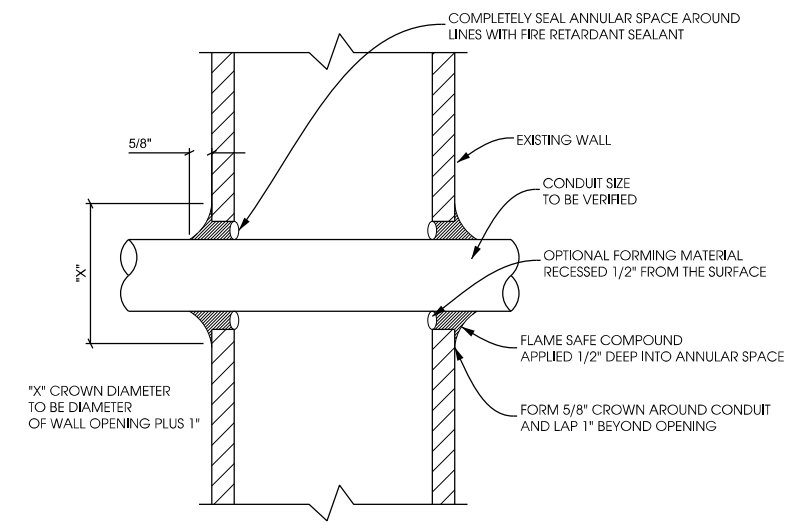




**BASEMENT FLOOR PLAN**



NOTES:  
 VERIFY REQUIRED SIZES FOR UTILITIES.  
 AVOID ALL EXISTING REINFORCING IN LOAD BEARING WALLS.



**B** INTERIOR UTILITY PENETRATIONS  
**C-2** NTS



**PROPOSED EQUIPMENT ROOM LOCATION**

**BASEMENT PLAN**  
**WINGRA & PARK (#782512)**  
**MADISON, WISCONSIN**

SHEET TITLE:

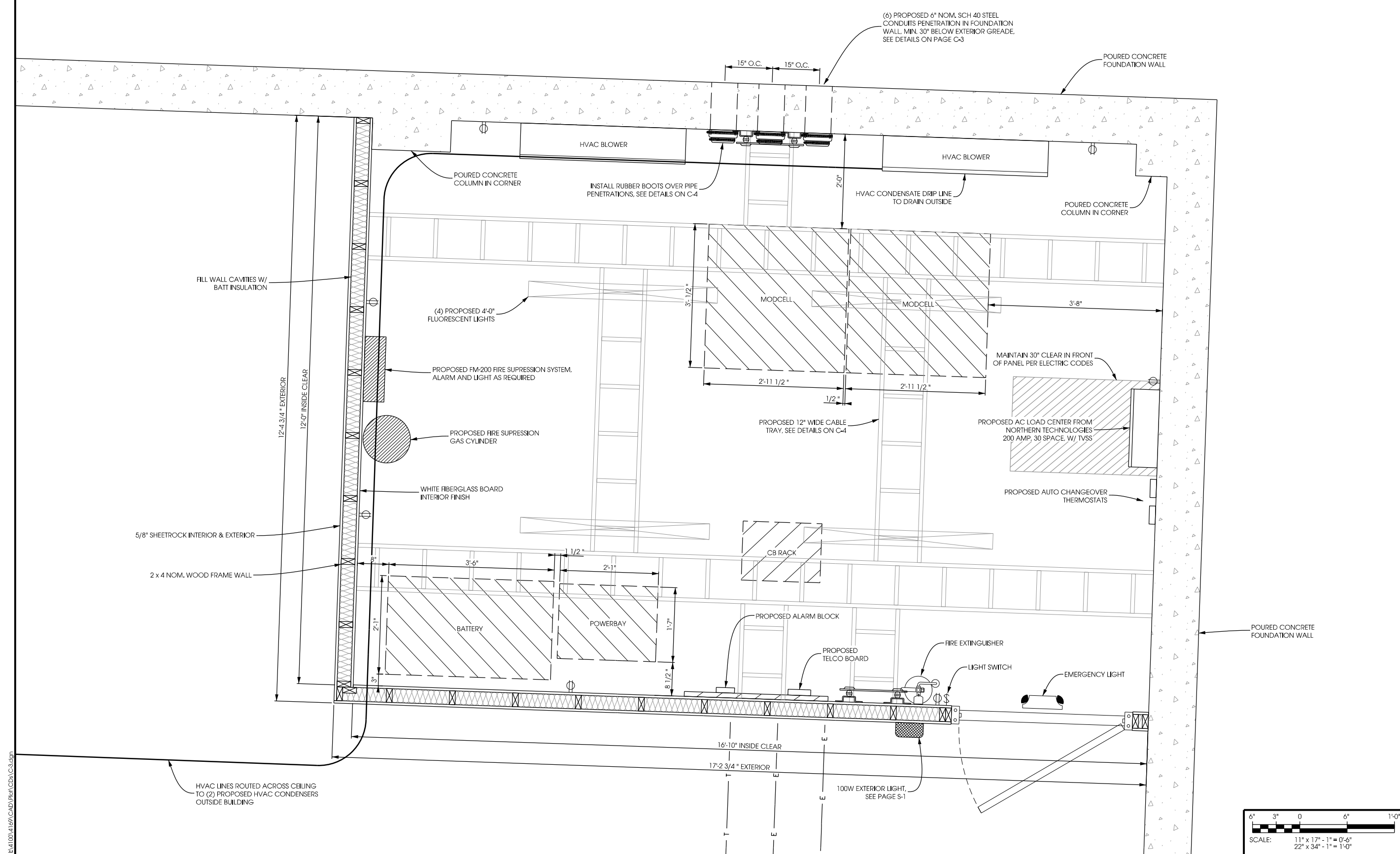
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	ANTENNA SHROUDS - 08/17/09
	ADDITIONAL ANTENNAS - 11/23/09
DRAWN BY:	ADS
CHECKED BY:	ABB
PLOT DATE:	11/23/2009
PROJECT NUMBER:	4169
FILE NAME:	C-2.dgn

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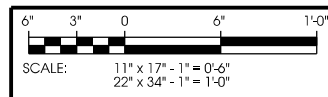


**EQUIPMENT ROOM PLAN**  
**WINGRA & PARK [#782512]**  
**MADISON, WISCONSIN**



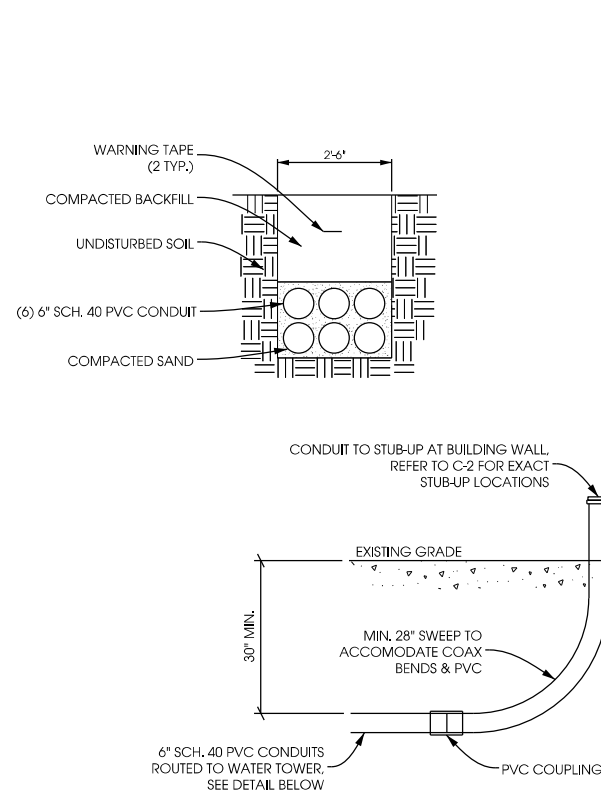
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	ADDITIONAL ANTENNAS - 11/23/09
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CHECKED BY:	ABB
PLOT DATE:	11/23/2009
PROJECT NUMBER:	4169
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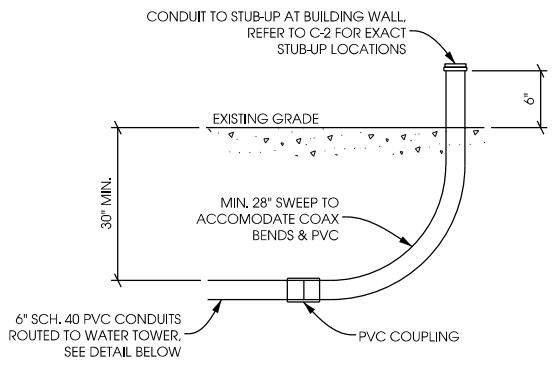


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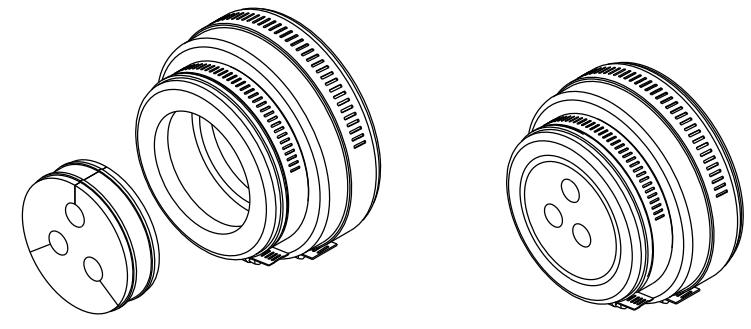




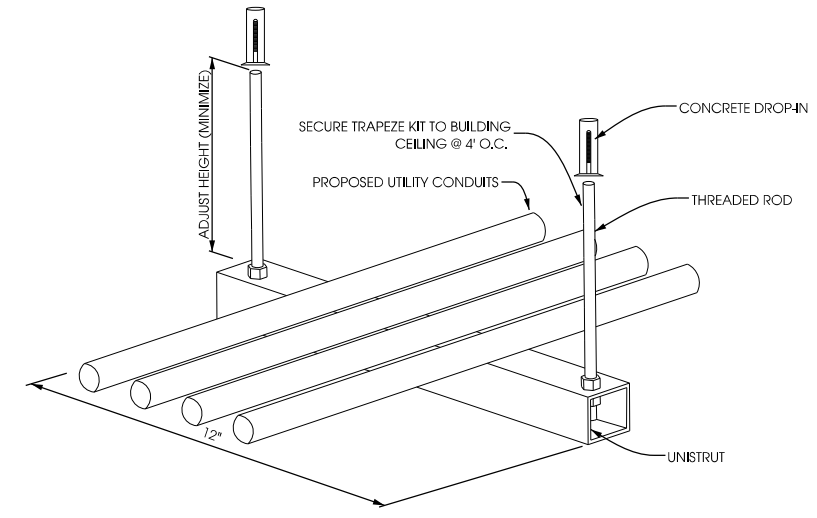
NOTE:  
 -SCH 40, 90° ELBOW W/ SPECIAL RADIUS, CARLON PART # UA9HT www.carlon.com  
 -MINIMUM ALLOWABLE SWEEP - 28"  
 -CUT OFF TOP OF CONDUIT AT 6" AGL



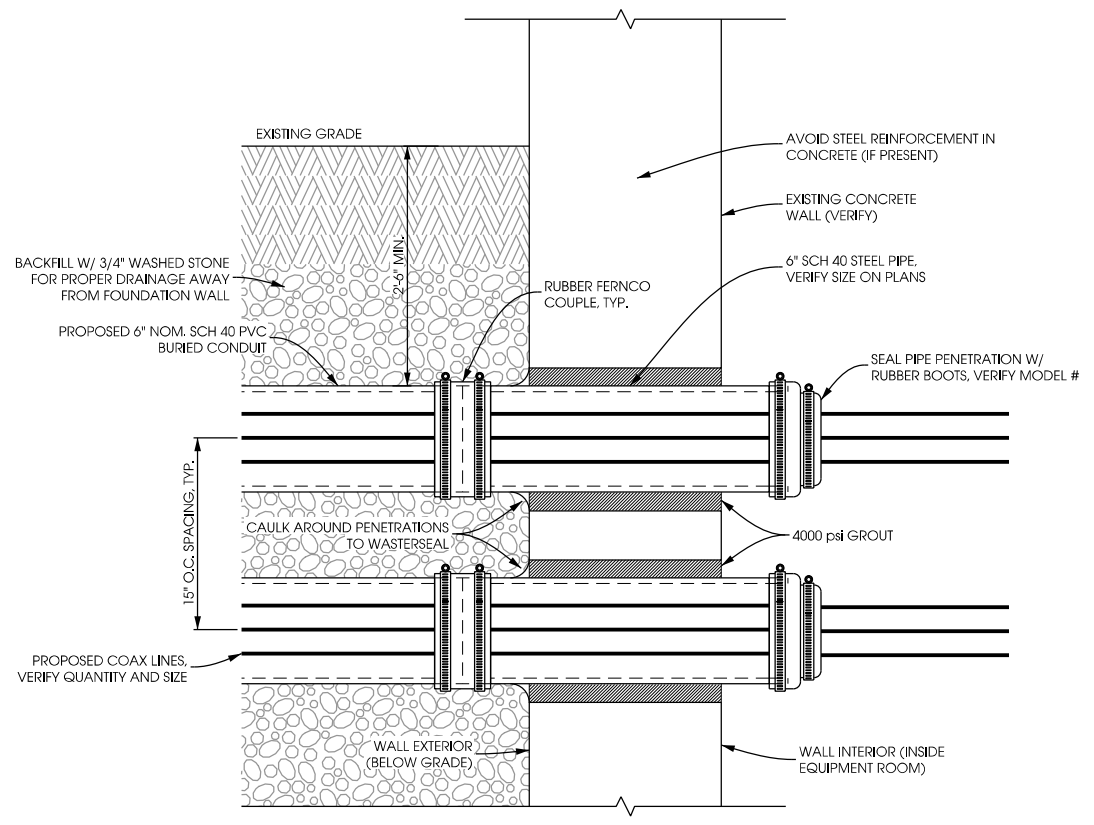
**A COAX TRENCH DETAIL**  
 C-4 SCALE: NTS



**C 6\"/>**

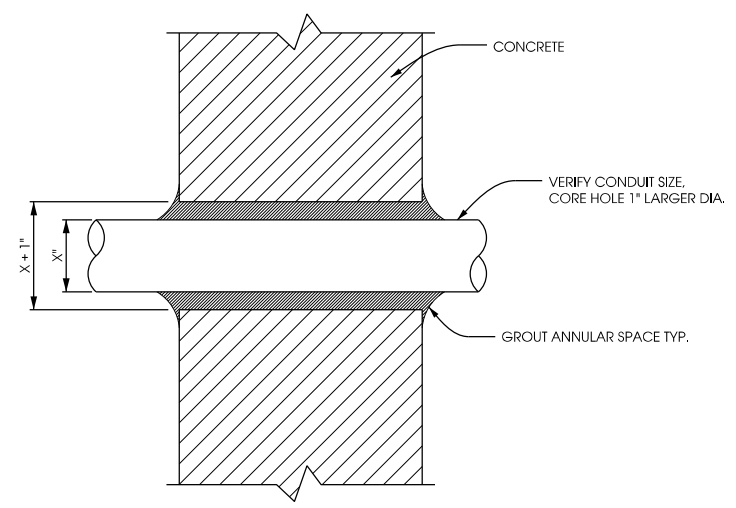


**D UTILITY ROOM INTERIOR ROUTING TRAPEZE DETAIL**  
 C-4 SCALE: NTS

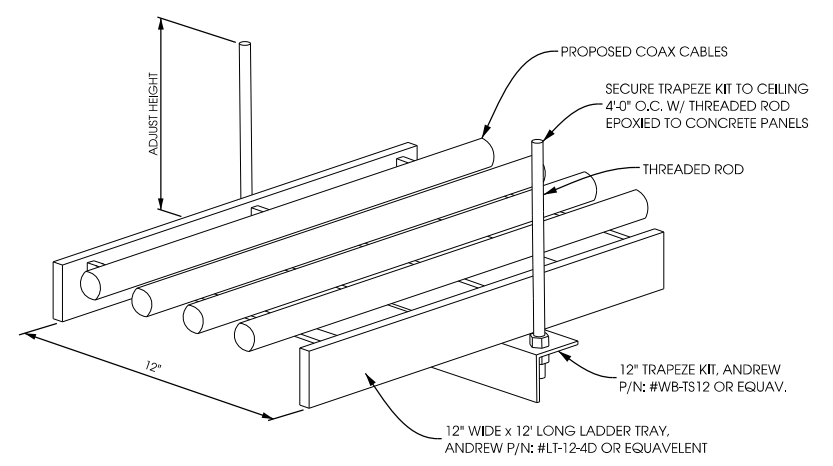


**B COAX WALL PENETRATION DETAIL**  
 C-4 SCALE: 11 X 17 - 1/2\"/>

NOTES:  
 VERIFY REQUIRED SIZES FOR UTILITIES.  
 AVOID ALL EXISTING REINFORCING IN LOAD BEARING WALLS.



**E EXTERIOR UTILITY PENETRATIONS**  
 C-4 NTS

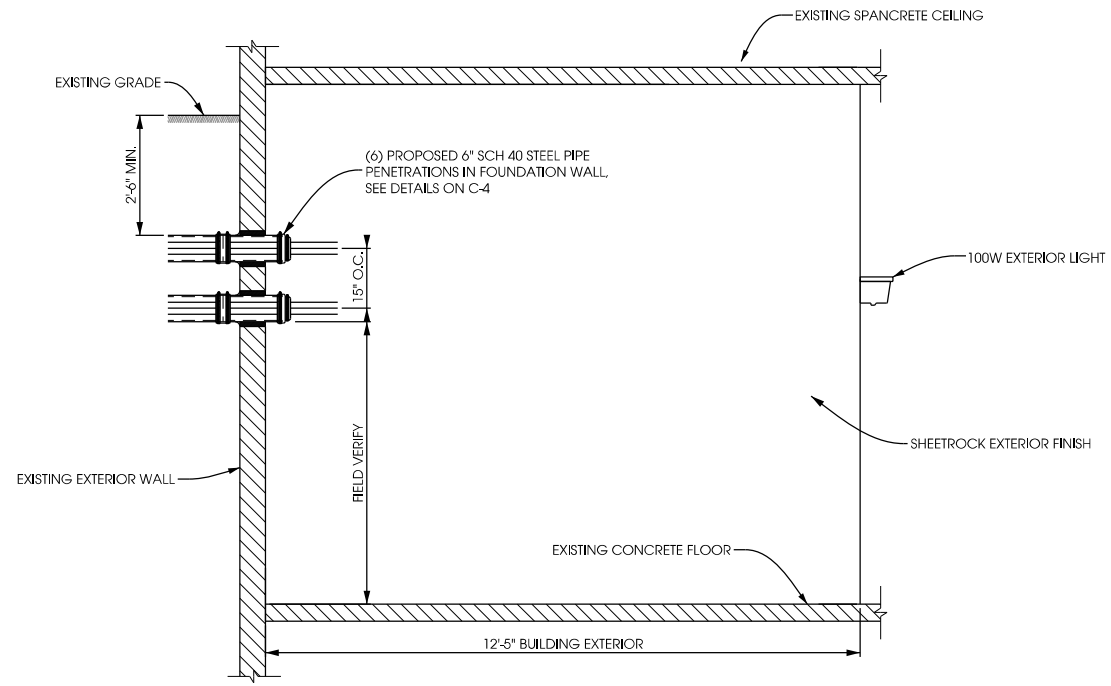


**F COAX CABLE TRAY DETAIL**  
 C-4 ANDREW P/N: #WB-TS12 12\"/>

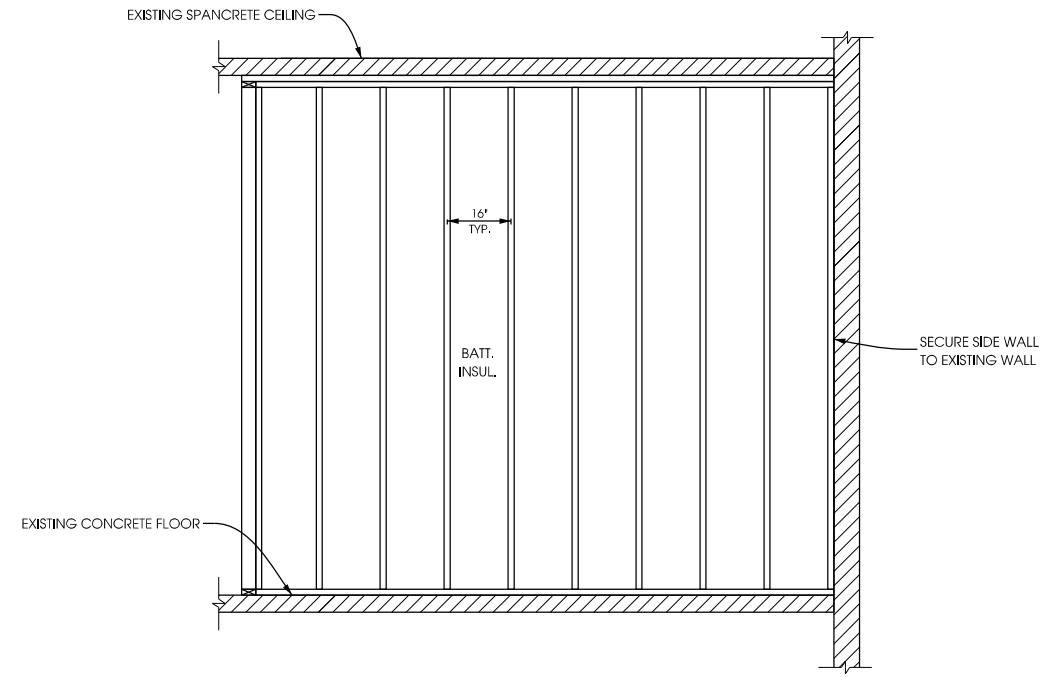
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FINAL CD's - 09/17/09	
REVISIONS:	
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ANTENNA SHROUDS - 08/17/09	
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PLOT DATE:	11/23/2009
PROJECT NUMBER:	4169
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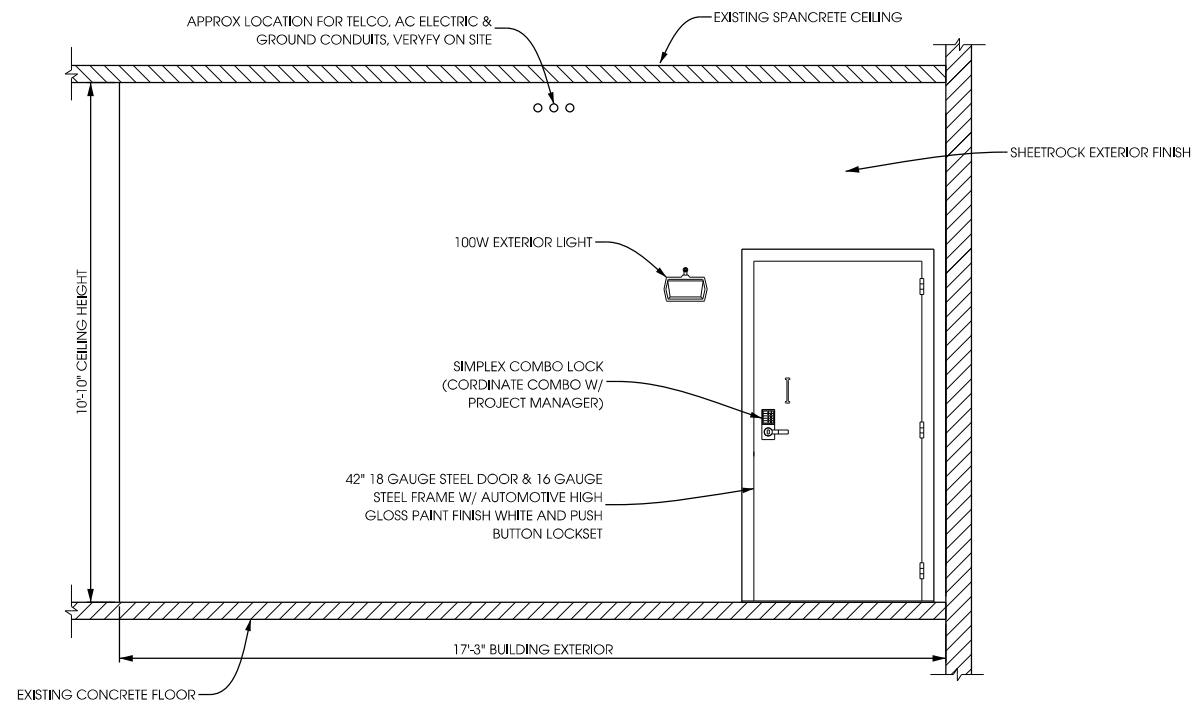
**NOTE:**  
 CONTRACTOR TO BE FAMILIAR W/ AND FOLLOW AMERICAN WOOD COUNCIL STANDARDS & GUIDELINES FOR WOOD FRAME CONSTRUCTION



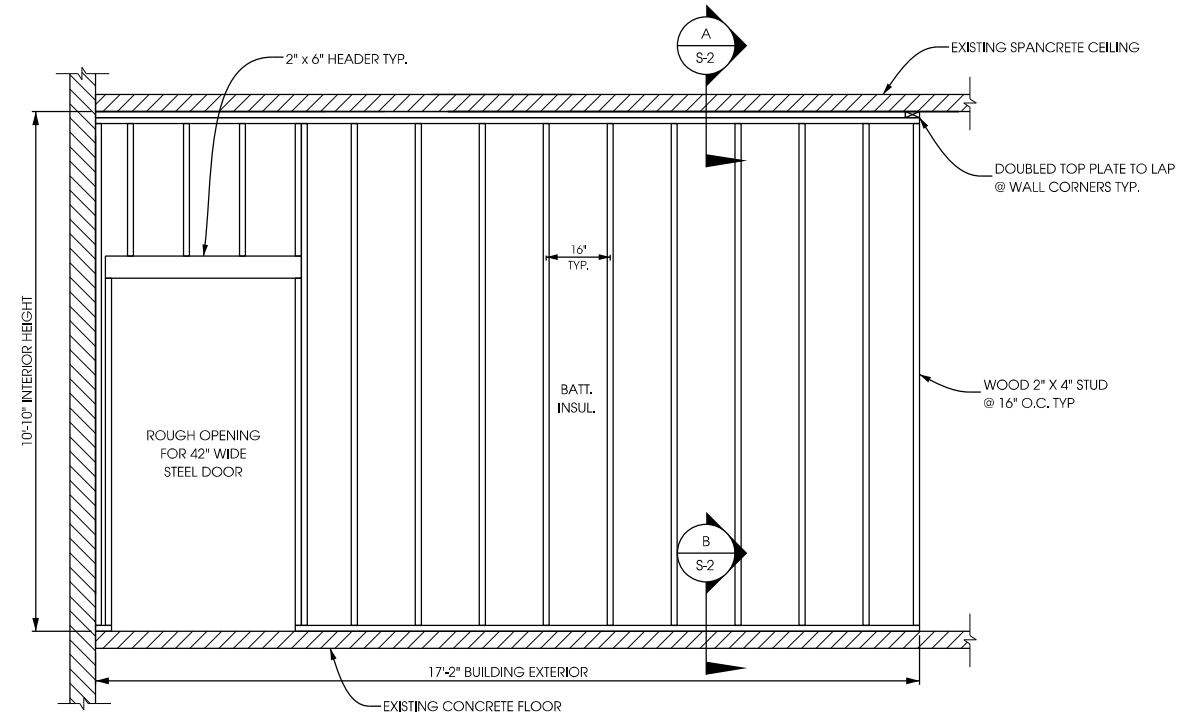
**A WEST EXTERIOR ELEVATION**  
 S-1 SCALE: 11" x 17" - 1/4" = 1'-0"  
 22" x 34" - 1/2" = 1'-0"



**C FRAMING DETAILS (INTERIOR VIEW)**  
 S-1 SCALE: 11" x 17" - 1/4" = 1'-0"  
 22" x 34" - 1/2" = 1'-0"



**B SOUTH EXTERIOR ELEVATION**  
 S-1 SCALE: 11" x 17" - 1/4" = 1'-0"  
 22" x 34" - 1/2" = 1'-0"



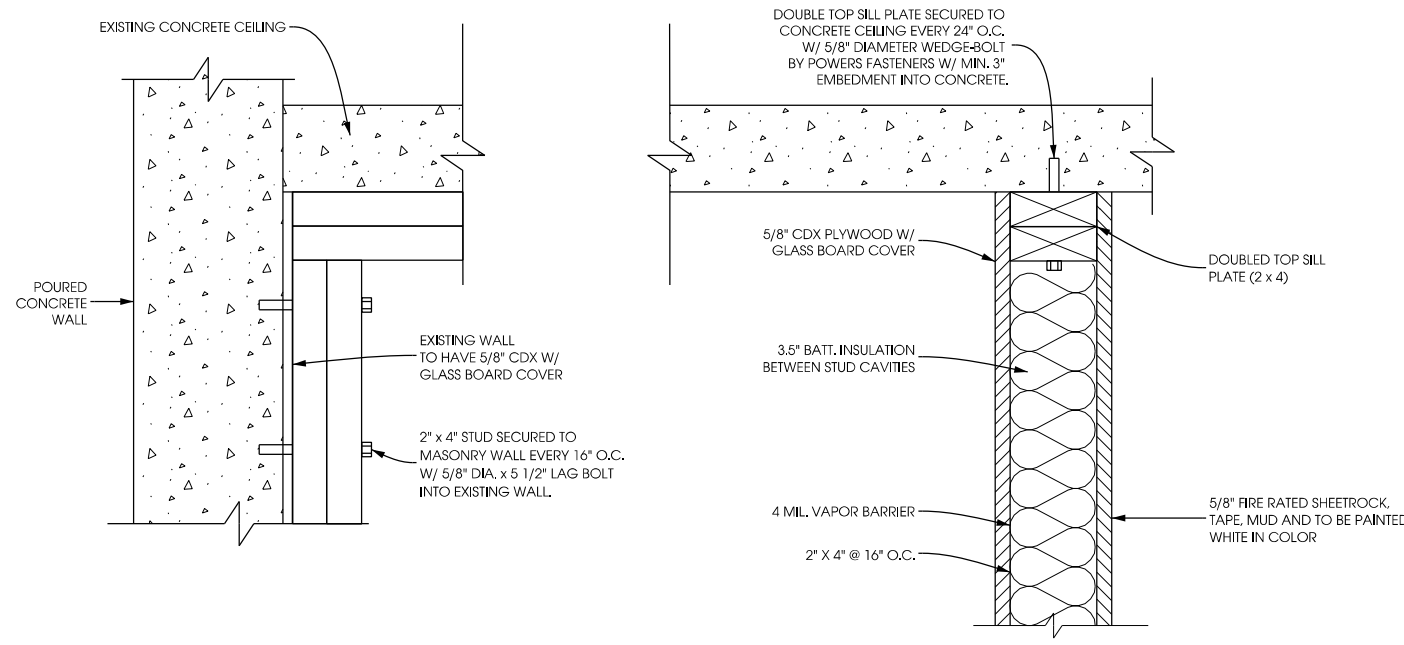
**D FRAMING DETAILS (INTERIOR VIEW)**  
 S-1 SCALE: 11" x 17" - 1/4" = 1'-0"  
 22" x 34" - 1/2" = 1'-0"

**EQUIPMENT ROOM ELEVATIONS**  
**WINGRA & PARK (#782512)**  
**MADISON, WISCONSIN**

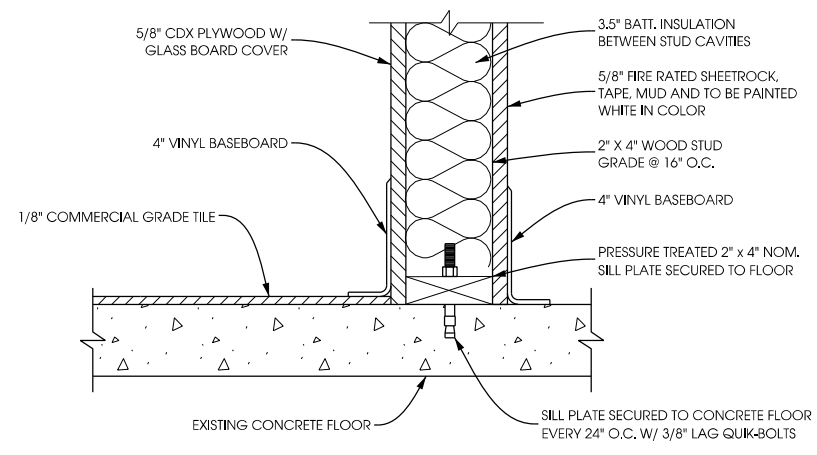
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FINAL CD's - 09/17/09	
REVISIONS:	
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ANTENNA SHROUDS - 08/17/09	
ADDITIONAL ANTENNAS - 11/23/09	
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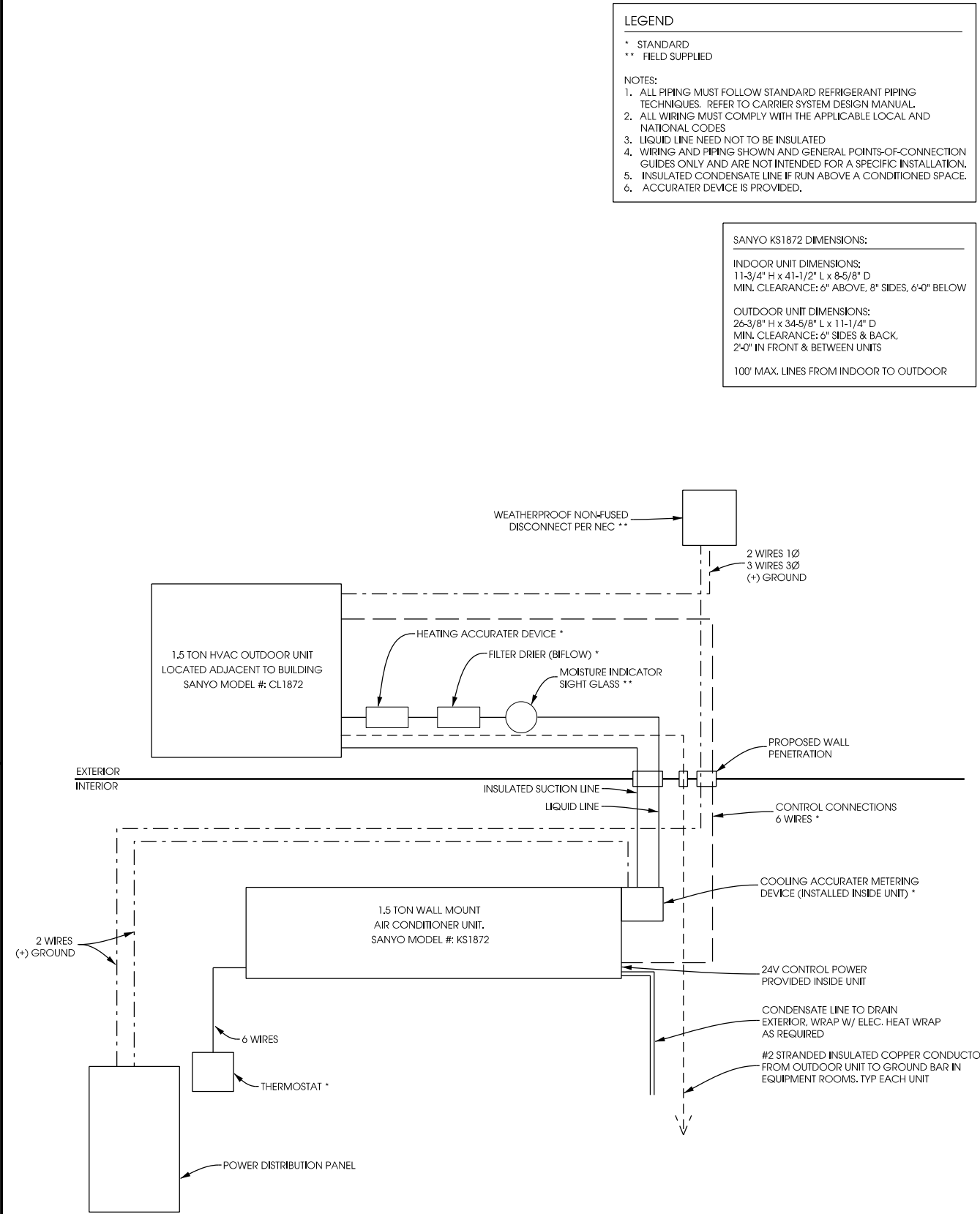


**A**  
S-2  
**FRAMING DETAILS**  
SCALE: NTS



**B**  
S-2  
**FRAMING DETAILS**  
SCALE: NTS

- WOOD CONSTRUCTION NOTES:**
- CONTRACTOR TO FOLLOW AMERICAN WOOD COUNCIL (AWC) WOOD FRAME CONSTRUCTION MANUAL.
1. TIMBER DESIGN & INSTALLATION SHALL CONFORM TO THE LATEST EDITION OF THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION.
  2. ALL CONNECTIONS SHALL HAVE A CORROSION RESISTANT COATING APPLIED.
  3. ALL SIZES SHOWN FOR TIMBER MEMBERS ARE STANDARD NOMINAL DIMENSIONS.
  4. ALL 2x12 AND LARGER TIMBER MEMBERS SHALL BE SOUTHERN PINE No. 2 OR BETTER. ALL OTHER MEMBERS MAY BE SPRUCE-PINE-FIR No. 2 OR BETTER, IF SPECIFIC SPECIES AND GRADE OF LUMBER IS UNAVAILABLE, CONTACT STRUCTURAL ENGINEER FOR SUITABLE SUBSTITUTIONS.
  5. PLYWOOD SHEATHING TO BE GRADED APA STRUCTURAL 1.
  6. ALL EXTERIOR EXPOSED TIMBER MEMBERS AND INTERIOR MEMBERS IN CONTACT W/ CONCRETE OR OTHERWISE NOTED TO BE PRESSURE TREATED WITH A NON-ARSENATE COMPOUND.
  7. ALL BOLTS, LAG SCREWS, AND NAILS SHALL HAVE A HOT DIP GALVANIZED FINISH.
  8. ALL SIMPSON CONNECTORS SHALL BE ZMAX (G185) OR HOT-DIP GALVANIZED (HDG).
  9. ROOF TRUSSES TO BE DESIGNED BY THE TRUSS MANUFACTURER PER THE REQUIREMENTS OF THE STATE ENROLLED BUILDING CODE AND THE BUILDING PLANS. SUPPLIER TO PROVIDE CONSTRUCTION DOCUMENTS IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE SECTION 2303.4.1.
  10. THE CONTRACTOR SHALL SUBMIT FOR REVIEW PRIOR TO CONSTRUCTION (1) ONE SET OF CONSTRUCTION PLANS PROVIDED BY THE ROOF TRUSS PROVIDER.
  11. THE INSTALLATION OF BOLTS IN TIMBER MEMBERS SHALL MEET THE REQUIREMENTS OF ANSI/ASME STANDARD B18.2.1.
  12. BOLT HOLES IN TIMBER MEMBERS SHALL BE A MIN. OF 1/32" TO A MAX. OF 1/16" LARGER THAN THE BOLT DIAMETER. HOLES SHALL BE ACCURATELY ALIGNED IN MAIN AND SIDE MEMBERS. BOLTS SHALL NOT BE FORCIBLY DRIVEN.
  13. A STANDARD CUT WASHER, METAL PLATE OR STAMPED STEEL STRAP OR PLATE, OF SIZE NOT LESS THAN THE STANDARD CUT WASHER, SHALL BE BETWEEN THE WOOD AND THE BOLT HEAD AND BETWEEN THE WOOD AND THE NUT.



**C**  
S-2  
**TYP. PIPING & WIRING HVAC SCHEMATIC**  
SCALE: NTS

**LEGEND**

\* STANDARD  
\*\* FIELD SUPPLIED

**NOTES:**

1. ALL PIPING MUST FOLLOW STANDARD REFRIGERANT PIPING TECHNIQUES. REFER TO CARRIER SYSTEM DESIGN MANUAL.
2. ALL WIRING MUST COMPLY WITH THE APPLICABLE LOCAL AND NATIONAL CODES.
3. LIQUID LINE NEED NOT TO BE INSULATED.
4. WIRING AND PIPING SHOWN AND GENERAL POINTS-OF-CONNECTION GUIDES ONLY AND ARE NOT INTENDED FOR A SPECIFIC INSTALLATION.
5. INSULATED CONDENSATE LINE IF RUN ABOVE A CONDITIONED SPACE.
6. ACCURATER DEVICE IS PROVIDED.

**SANYO KS1872 DIMENSIONS:**

**INDOOR UNIT DIMENSIONS:**  
11-3/4" H x 41-1/2" L x 8-5/8" D  
MIN. CLEARANCE: 6" ABOVE, 8" SIDES, 6-0" BELOW

**OUTDOOR UNIT DIMENSIONS:**  
26-3/8" H x 34-5/8" L x 11-1/4" D  
MIN. CLEARANCE: 6" SIDES & BACK,  
2'-0" IN FRONT & BETWEEN UNITS

100' MAX. LINES FROM INDOOR TO OUTDOOR

SHEET TITLE:

ISSUE DATE:	ZD's - 05/08/09
PRELIM CD's - 06/16/09	
FINAL CD's - 09/17/09	
REVISIONS:	
ANTENNA SHROUDS - 07/15/09	
ANTENNA SHROUDS - 08/17/09	
ADDITIONAL ANTENNAS - 11/23/09	
DRAWN BY:	ADS
CHECKED BY:	ABB
PLOT DATE:	11/23/2009
PROJECT NUMBER:	4169
FILE NAME:	S2.dgn
SHEET NUMBER:	<b>S-2</b>

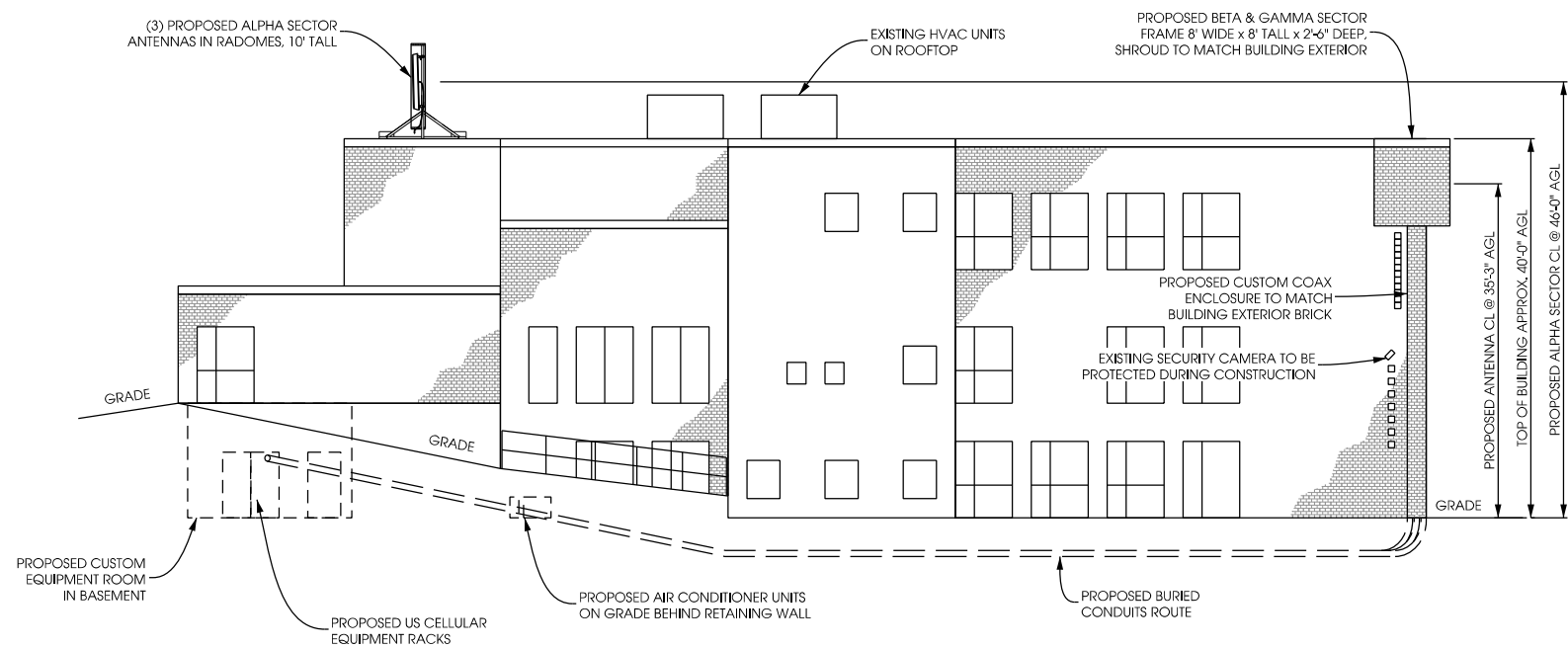


**BUILDING PROFILE**

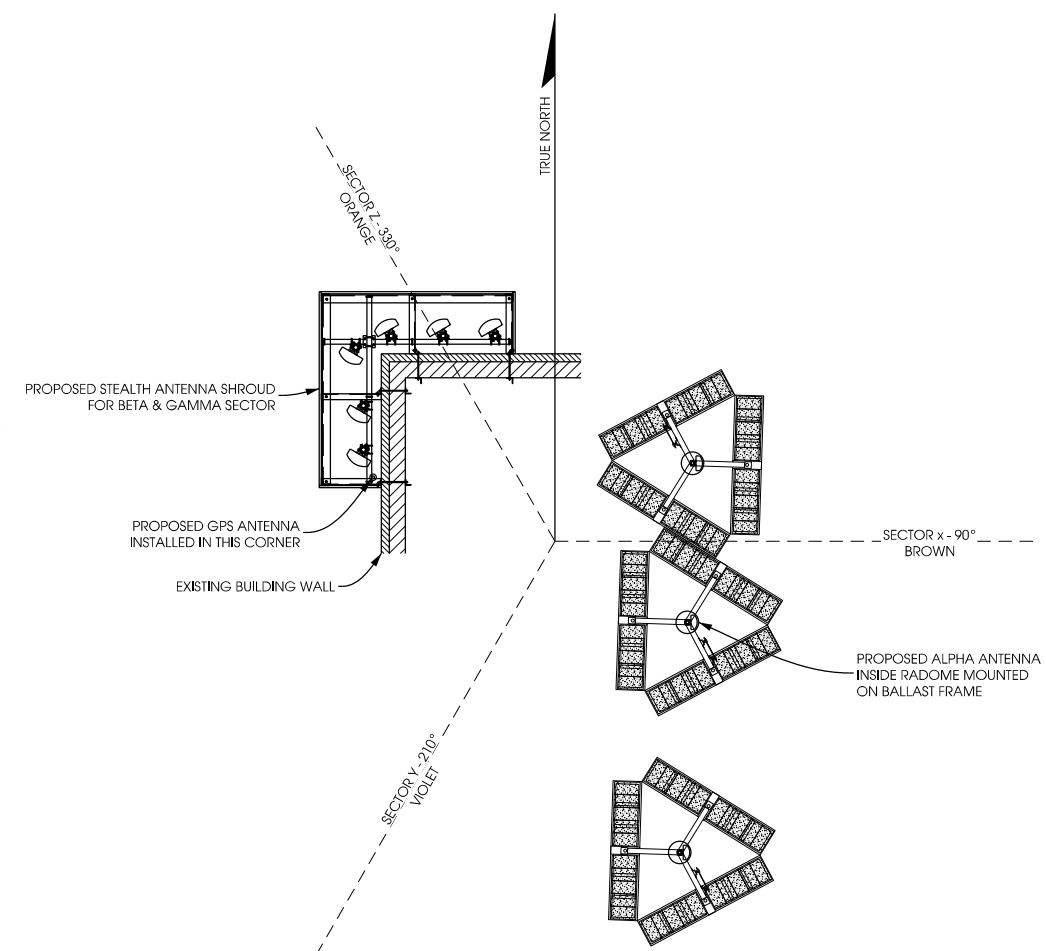


**BUILDING PROFILE**

NOTES:  
 CONTRACTOR TO VERIFY HEIGHT AND DIRECTION OF ANTENNA WITH PROJECT MANAGER  
 ALL ANTENNA AZIMUTHS TO BE FROM TRUE NORTH



**A BUILDING PROFILE [NORTH ELEVATION]**  
 SCALE: 11 X 17 - 1" = 20'-0"  
 22 X 34 - 1" = 10'-0"



CELL NAME: Wingra & Park Switch ID: 782512  
 ENGINEER: Ken Drake

POS #	ANTENNA ID	MAKE & MODEL	DIMENSIONS (L' x W' x D')	GAIN	MECH. DT	ANT. HEIGHT	AZIMUTH	CABLE LENGTH	CABLE DIA.	TOP 1/2" JUMPER LENGTH (FT)
1										
2										
3										
4										
5										
6										
7										
8										
9										
10	TX1 / RX1-X	BXA-80063/4CF	72" x 12" x 4"	-	0°	35'-3"	90°	360'	1-5/8"	10'
11										
12										
13	RX2-X	BXA-80063/4CF	72" x 12" x 4"	-	0°	46'-0"	90°	360'	1-5/8"	10'
14	TX1 / RX1-Y	BXA-80063/4CF	72" x 12" x 4"	-	0°	35'-3"	210°	200'	1-5/8"	10'
15										
16										
17	RX2-Y	BXA-80063/4CF	72" x 12" x 4"	-	0°	35'-3"	210°	200'	1-5/8"	10'
18	TX1 / RX1-Z	BXA-80063/4CF	72" x 12" x 4"	-	0°	35'-3"	330°	200'	1-5/8"	10'
19										
20										
21	RX2-Z	BXA-80063/4CF	72" x 12" x 4"	-	0°	35'-3"	330°	200'	1-5/8"	10'

**US CELLULAR TO VERIFY & PROVIDE RF INFORMATION**

- ANTENNAS TYP. EQUIPMENT W/ELECTRICAL DOWNTILT. INSTALL ALL ASSOCIATED REMOTE LINES AS NEEDED.  
 - TYP. JUMPER LENGTH @ ANTENNA 10'

**B ANTENNA PLATFORM ASSIGNMENT**  
 SCALE: NTS

**BUILDING ELEVATION  
 WINGRA & PARK (#782512)  
 MADISON, WISCONSIN**

SHEET TITLE:  
 ISSUE DATE:  
 ZD's - 05/08/09  
 PRELIM CD's - 06/16/09  
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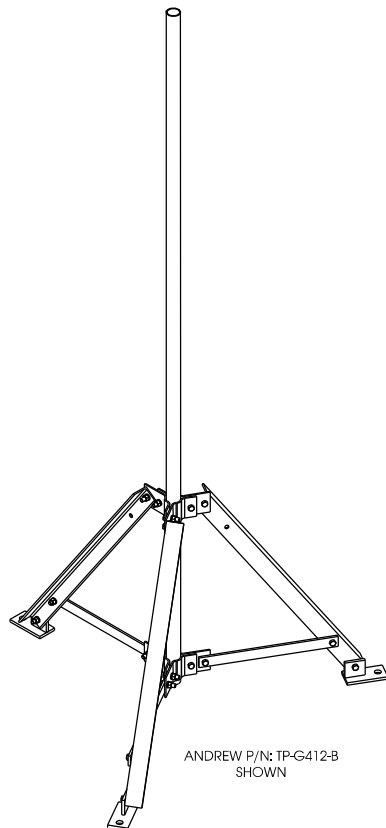
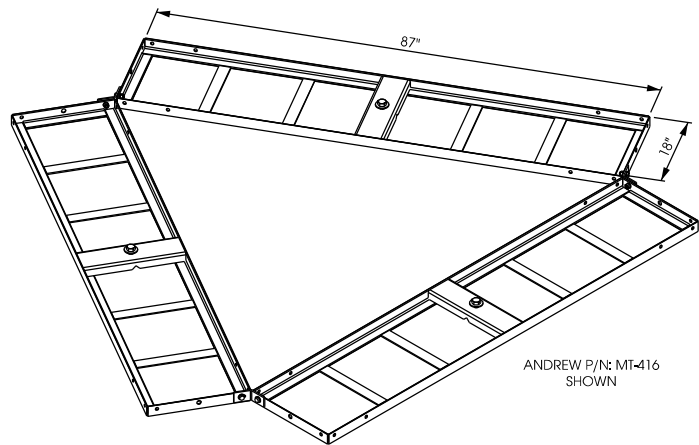
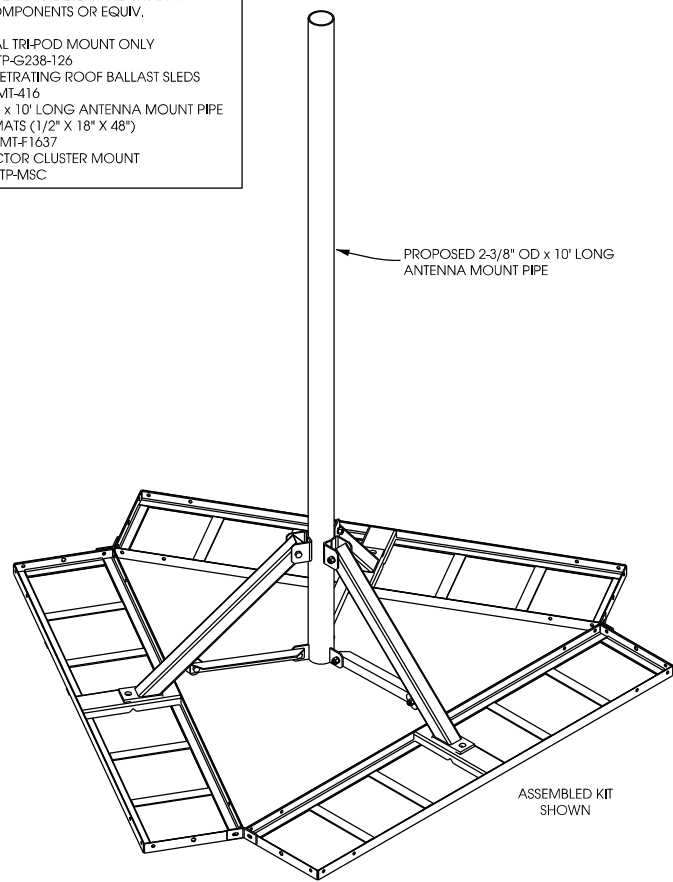
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 ANTENNA SHROUDS - 07/15/09  
 ANTENNA SHROUDS - 08/17/09  
 ADDITIONAL ANTENNAS - 11/23/09

DRAWN BY:  
 ADS  
 CHECKED BY:  
 ABB  
 PLOT DATE:  
 11/23/2009  
 PROJECT NUMBER:  
 4169  
 FILE NAME:  
 A-1.dgn

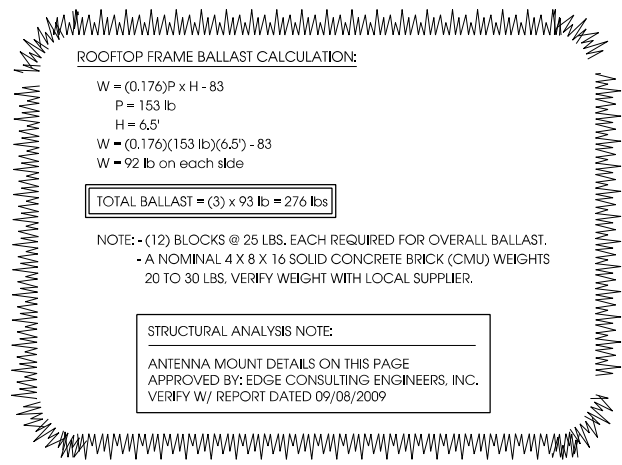
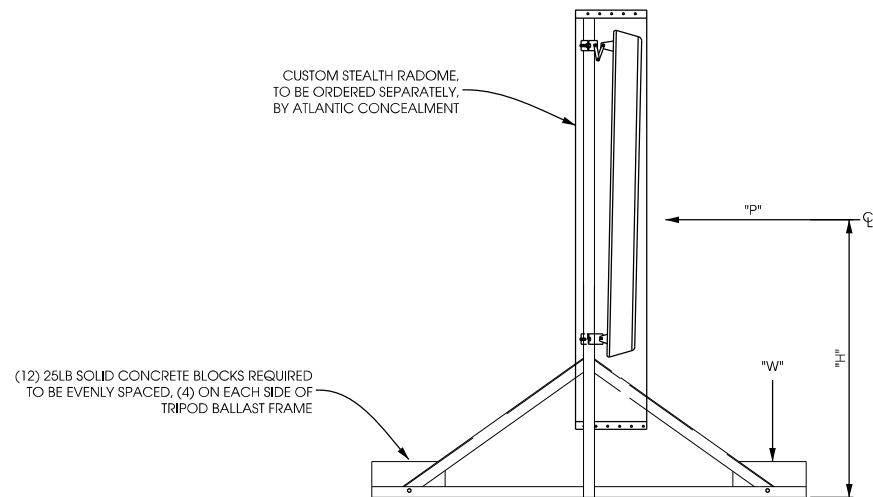
SHEET NUMBER:  
**A-1**



- ANTENNA MOUNT PARTS LIST:**
- ORDER THE FOLLOWING PARTS SEPARATELY TO CONSTRUCT A SINGLE TRIPOD MOUNTING KIT. VERIFY SITE PLAN TO DETERMINE QUANTITY. - ANDREW COMPONENTS OR EQUIV.
  - (1) UNIVERSAL TRIPOD MOUNT ONLY  
MTS P/N: TP-G238-126
  - (3) NON-PENETRATING ROOF BALLAST SLEDS  
MTS P/N: MT-416
  - (1) 2-3/8" OD x 10' LONG ANTENNA MOUNT PIPE  
MTS P/N: TP-G412-B
  - (6) RUBBER MATS (1/2" X 18" X 48")  
MTS P/N: MT-F1637
  - (1) MULTI-SECTOR CLUSTER MOUNT  
MTS P/N: TP-MSC



**A ANTENNA MOUNTS DETAILS**  
SCALE: 11X17 - 1" = NTS  
22X34 - 1" = NTS



**B BALLAST CALCULATION**  
SCALE: 11X17 - 1" = NTS  
22X34 - 1" = NTS

**ALPHA SECTOR MOUNT  
 WINGRA & PARK (#782512)  
 MADISON, WISCONSIN**

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CHECKED BY:	ABB
PLOT DATE:	11/23/2009
PROJECT NUMBER:	4169
FILE NAME:	A-2.dgn
SHEET NUMBER:	

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**PAINTING NOTE:**

- PAINT ALL HARDWARE TO MATCH BUILDING
- ALL GALV. PARTS TO BE ETCHED & COATED W/ SPECIAL PRIMER PRIOR TO PAINTING

**STRUCTURAL ANALYSIS NOTE:**

ANTENNA MOUNT DETAILS ON THIS PAGE APPROVED BY: EDGE CONSULTING ENGINEERS, INC. VERIFY W/ REPORT DATED 09/08/2009

**RADOME COLOR SPECIFICATION:**

RADOMES SHALL MATCH COLOR OF EXISTING BUILDING TRIM OR EXISTING ROOF OBJECTS.

FINAL COLOR SHOULD BE APPROVED BY BUILDING OWNER PRIOR TO ORDERING FROM ATLANTIC CONCEALMENT.

ATLANTIC CONCEALMENT WILL PROVIDE RADOMES W/ APPROVED OUTER COLOR

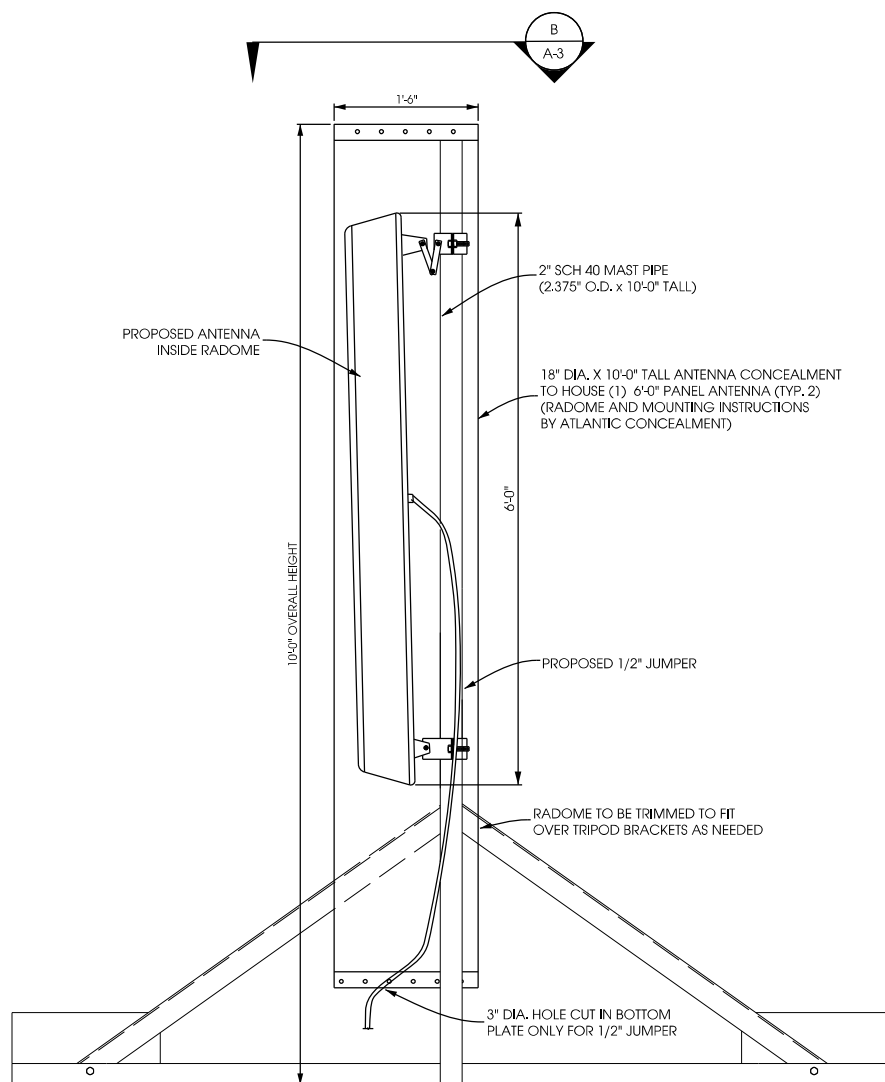
**NOTE:**

CONTRACTOR RESPONSIBLE FOR ORDERING TYPICAL ANDREW TRIPOD MOUNT MODEL # TP-G238-B

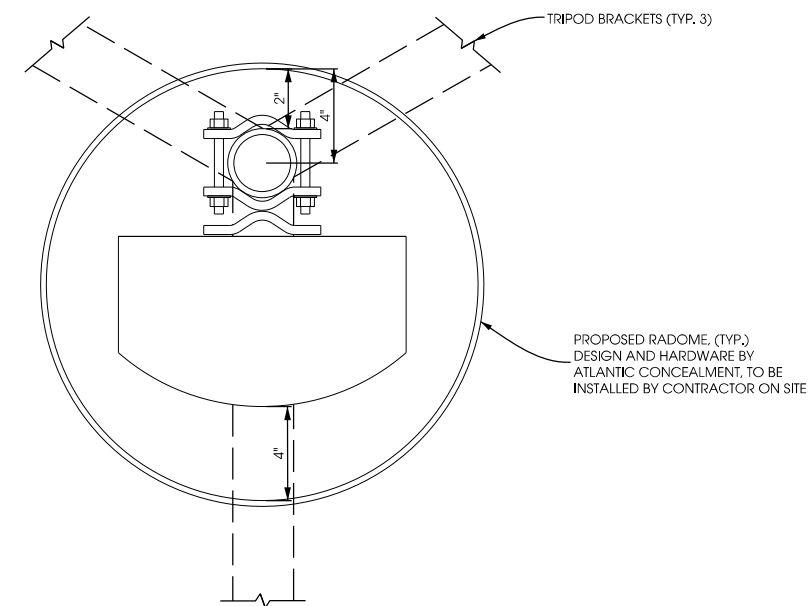
CONTRACTOR RESPONSIBLE FOR ORDERING RADOME FROM ATLANTIC CONCEALMENT

**RADOME SUPPLIER CONTACT INFO:**

ATLANTIC CONCEALMENT, LLC  
201 US ROUTE ONE - BOX 162  
SCARBOROUGH, ME 04074  
CONTACT: SALES REP - BILL BAHR  
PHONE: 630.307.3634  
EMAIL: wbahr@tbxsystems.com



**A ANTENNA MOUNTING DETAILS**  
A-3 NTS



**B RADOME SUPPORT DETAIL**  
A-3 NTS

**ALPHA SHROUD DETAILS**  
**WINGRA & PARK (#782512)**  
**MADISON, WISCONSIN**

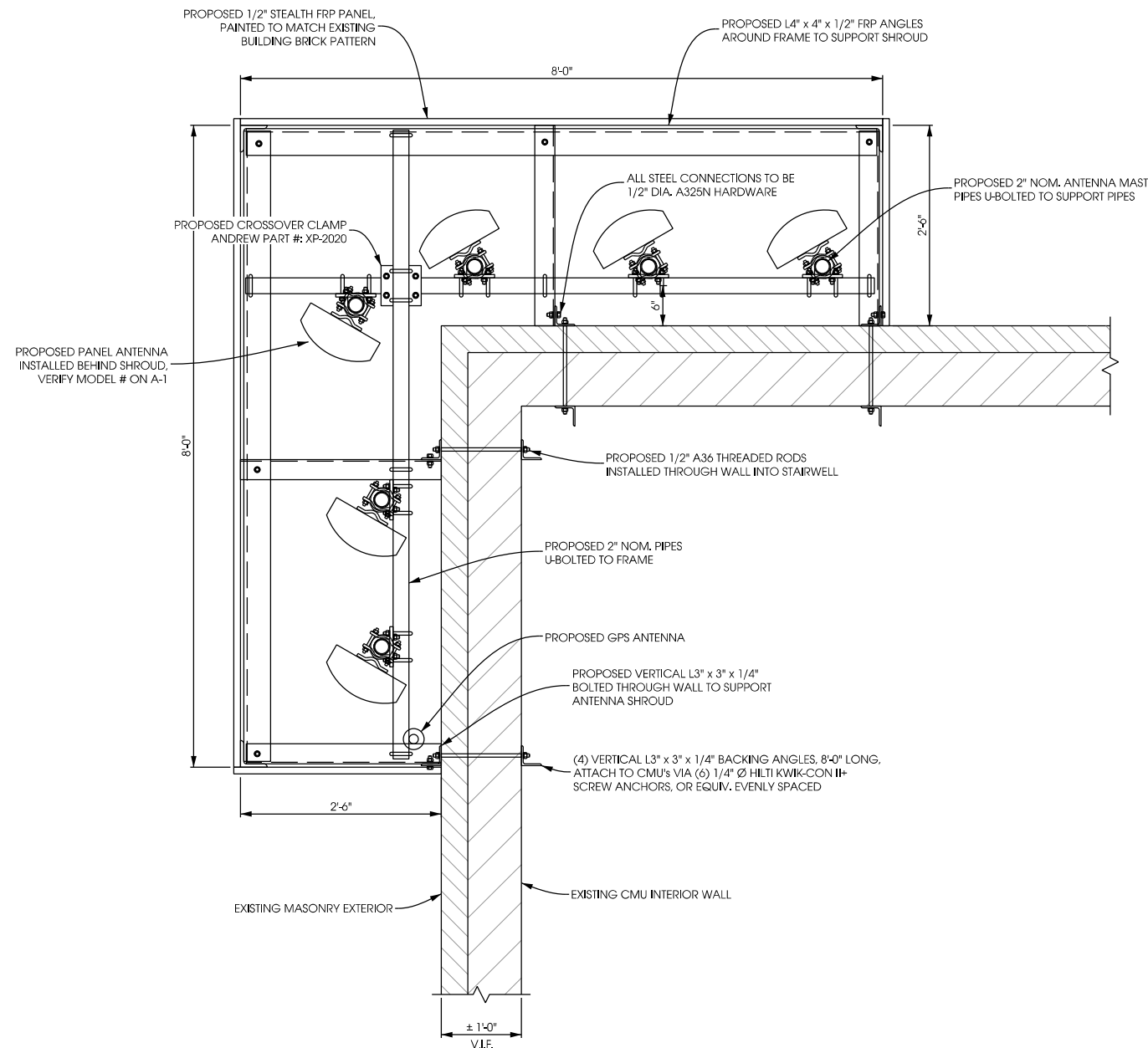
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SHEET NUMBER:

**A-3**

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**A BETA & GAMMA SHROUD [PLAN VIEW]**  
 SCALE: 11 X 17 - 1/2" = 1'-0"  
 22 X 34 - 1" = 1'-0"

**ANTENNA SHROUD NOTES:**

ANTENNA FRAME DESIGNED BY: EDGE CONSULTING ENGINEERS, INC. SEE STRUCTURAL REPORT FOR DETAILS, ALL STEEL CONNECTIONS TO BE A325N 1/2" DIA. HARDWARE

VERIFY CONSTRUCTION OF EXISTING BUILDING. CONSULT STRUCTURAL ENGINEER W/ ANY DISCREPANCIES FROM THIS DESIGN.

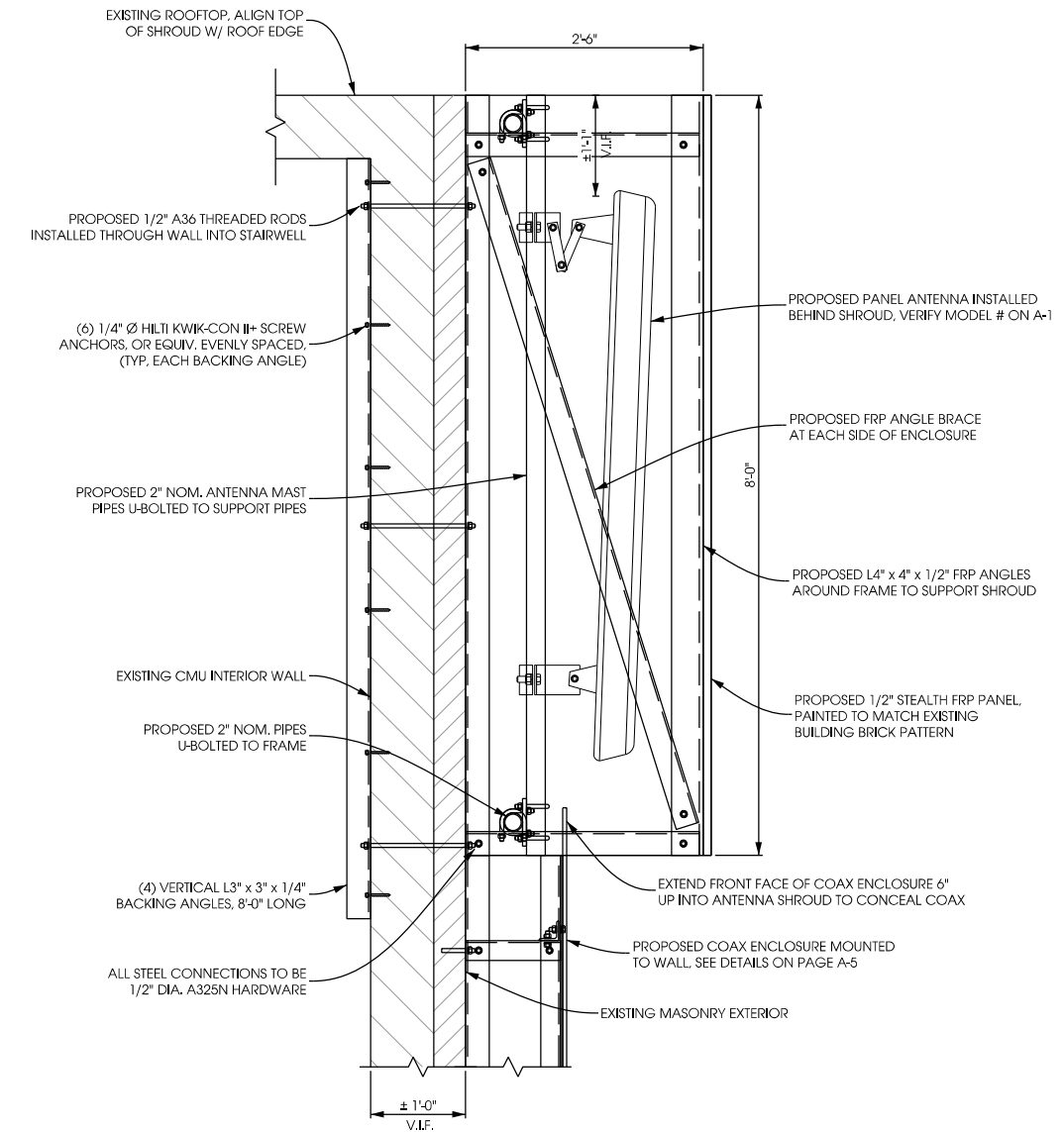
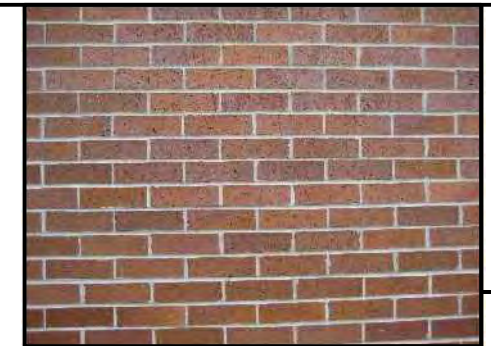
STEALTH RF PANELS TO BE PAINTED TO MATCH COLOR AND PATTERN OF EXTERIOR BRICKS

**CONTRACTOR TO ORDER:**

RF TRANSPARENT PANELS DESIGNED & FABRICATED BY ATLANTIC CONCEALMENT, LLC. GENERAL CONTRACTOR TO VERIFY THICKNESS, MOUNTING PROCEDURE AND MOUNTING HARDWARE W/ MANUFACTURER

**STEALTH PANEL SUPPLIER CONTACT INFO:**

ATLANTIC CONCEALMENT, LLC  
 201 US ROUTE ONE - BOX 162  
 SCARBOROUGH, ME 04074  
 CONTACT: SALES REP - BILL BAHR  
 PHONE: 630.307.3634  
 EMAIL: wbahr@lbexsystems.com

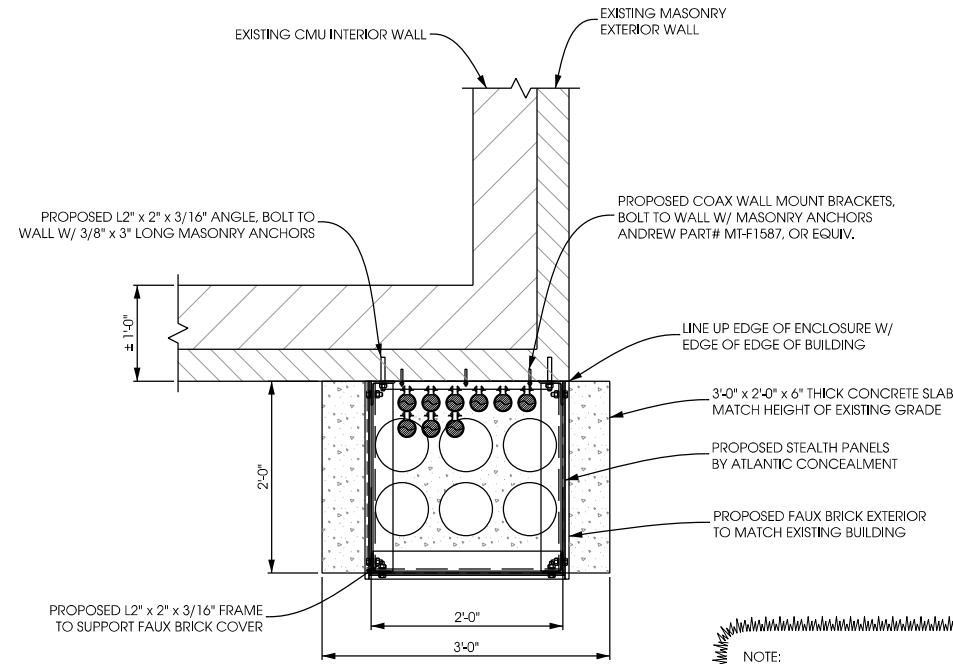


**B BETA & GAMMA SHROUD SECTION**  
 SCALE: 11 X 17 - 1/2" = 1'-0"  
 22 X 34 - 1" = 1'-0"

**BTEA & GAMMA SHROUD**  
**WINGRA & PARK (#782512)**  
**MADISON, WISCONSIN**

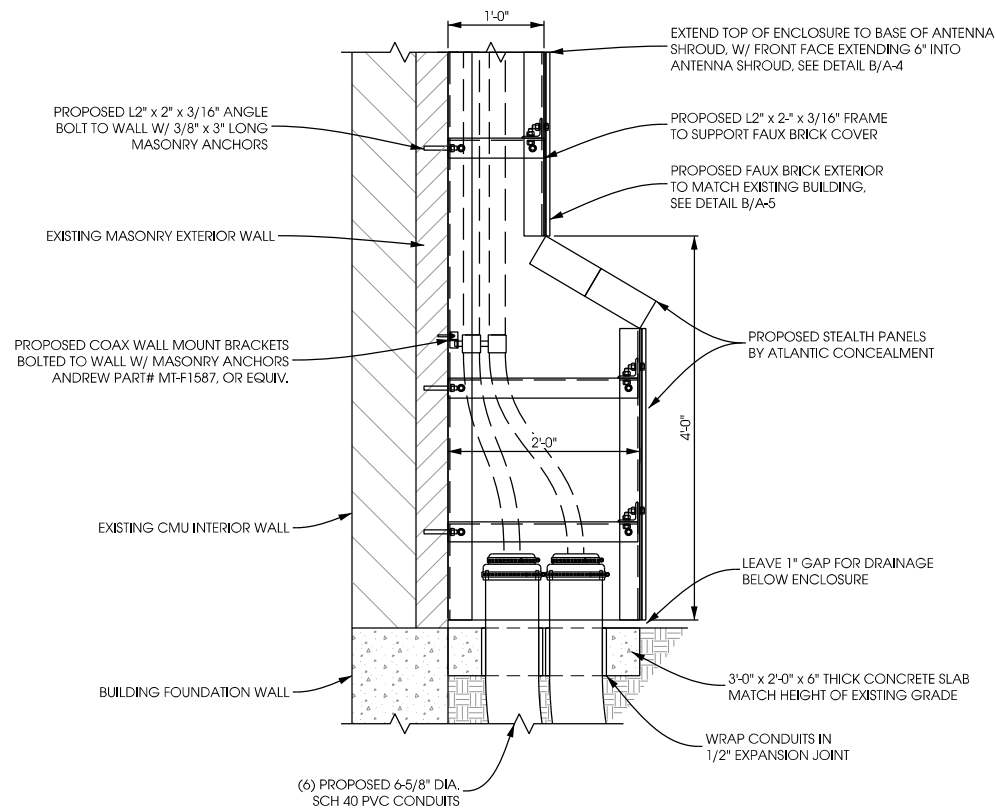
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**PLAN VIEW**

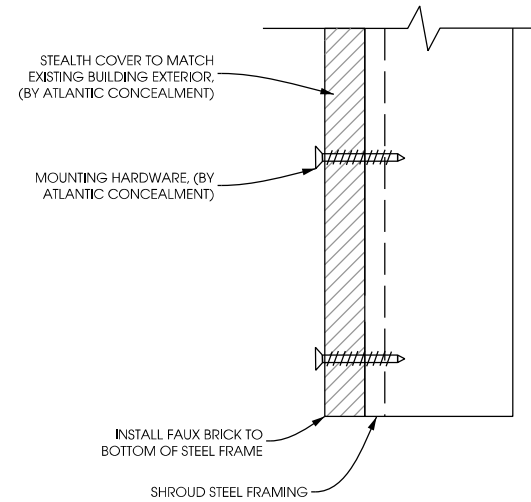
NOTE:  
FINAL ENCLOSURE DESIGN BY ATLANTIC CONCEALMENT. CONTRACTOR TO VERIFY REQUIRED MOUNTING METHOD AND SUPPORT FRAME. THIS DESIGN IS A GUIDE ONLY. USE SHOP DRAWINGS FROM ATLANTIC CONCEALMENT FOR CONSTRUCTION & INSTALLATION



**SIDE VIEW**

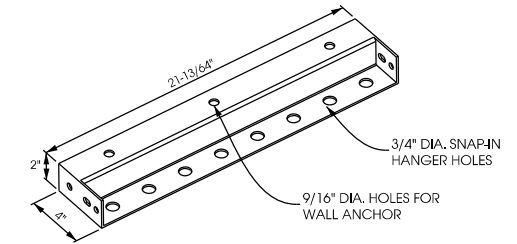
**A COAX ENCLOSURE**  
A-5 SCALE: 11 X 17 - 1/2" = 1'-0"  
22 X 34 - 1" = 1'-0"

PANEL SUPPLIER CONTACT INFO:  
PANEL DESIGN AND MOUNTING METHOD BY ATLANTIC CONCEALMENT, PANEL AND FRAME INSTALLATION BY G.C.  
ATLANTIC CONCEALMENT, LLC  
201 US ROUTE ONE - BOX 162  
SCARBOROUGH, ME 04074  
CONTACT: SALES REP - BILL BAHR  
PHONE: 630.307.3634  
EMAIL: wbahr@lbcxsystems.com



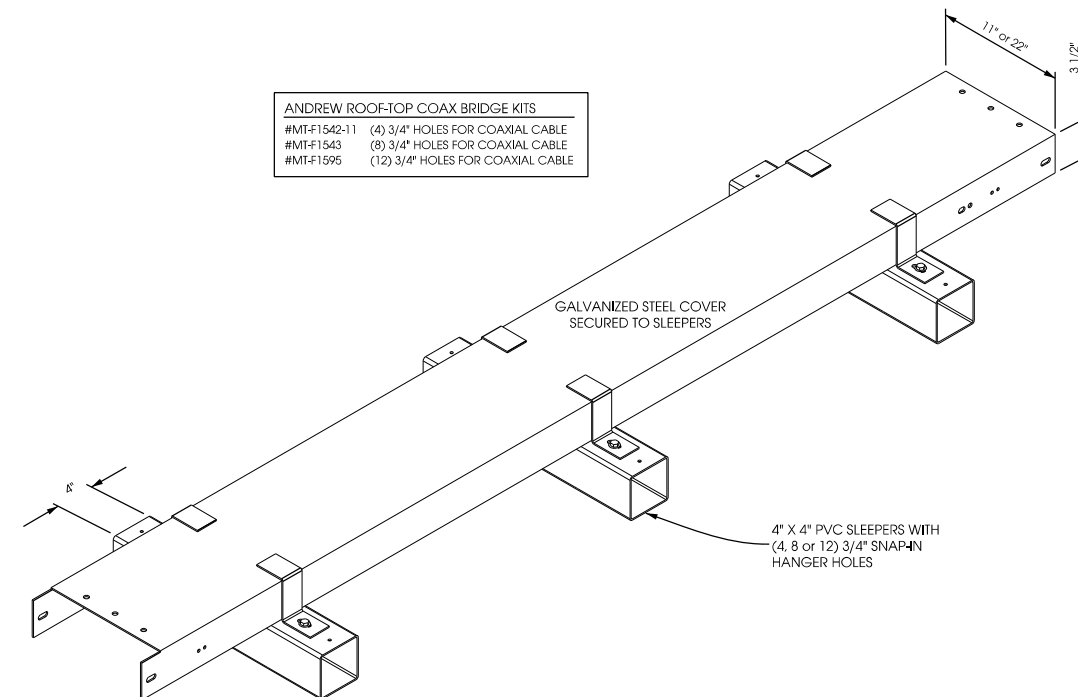
**B STEALTH COVER INSTALLATION DETAIL**  
A-5 SCALE: NTS

ANDREW WALL-MOUNT BRACKETS  
#MT-F1587 (8) 3/4" HOLES FOR COAXIAL CABLE



**C WALL-MOUNT BRACKET DETAIL**  
A-5 NTS

ANDREW ROOF-TOP COAX BRIDGE KITS  
#MT-F1542-11 (4) 3/4" HOLES FOR COAXIAL CABLE  
#MT-F1543 (8) 3/4" HOLES FOR COAXIAL CABLE  
#MT-F1595 (12) 3/4" HOLES FOR COAXIAL CABLE



**D ROOF-TOP COAX BRIDGE KIT DETAIL**  
A-5 NTS

**COAX ROUTE DETAILS**  
**WINGRA & PARK (#782512)**  
**MADISON, WISCONSIN**

**Edge Consulting Engineers, Inc.**  
624 Water Street  
Profile du Soc, WI 53578  
608.644.1449 voice  
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www.edgeconsulting.com

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**A-5**



**ANTENNA & COAXIAL CABLE INSTALLATION**

**I. SCOPE:**

THIS SECTION COVERS THE SPECIFICATIONS FOR ANTENNA AND COAXIAL CABLE INSTALLATION. THE AREAS OF FOCUS ARE THE INSTALLATION OF: ANTENNAS, COAXIAL CONNECTIONS, AND ICE BRIDGE.

**II. ANTENNAS:**

- A: ANTENNAS SHALL BE PLUMB AND INSTALLED SO THAT ENTIRE WHIP EXTENDS ABOVE VERTICAL PIPE MOUNT. DIRECTIONAL ANTENNAS SHALL BE ORIENTED TO PROPER AZIMUTH, PROVIDED ON THE RF SPECIFICATION SHEET. NOTE: THE ANTENNA MAY BE ORIENTED USING THE REFLECTOR AS THE REFERENCE, ADJUSTING ITS AZIMUTH 180 DEGREES FROM MAXIMUM ANTENNA RADIATION
- B: MICROWAVE ANTENNAS (DISHES) SHALL BE ASSEMBLED PER MANUFACTURER'S DRAWINGS. STIFF ARMS AND RADOMES SHALL BE INSTALLED WITH POLARIZATION PROVIDED BY RF SPECIFICATION SHEET. IF PATH IS NOT READY TO ALIGN, DISH SHOULD BE POINTED TOWARD CALCULATED AZIMUTH, OR DIRECTION OF FIELD STAKE DENOTING OPPOSITE END. 2 STIFF ARMS SHALL BE PROVIDED FOR MICROWAVE DISHES 6'-0" IN DIAMETER AND GREATER.
- C: A TRANSIT SHALL BE USED TO PROPERLY ALIGN CELLULAR AND MICROWAVE ANTENNAS

**III. COAXIAL CABLE:**

- A: COAXIAL CABLE SHALL BE SUPPORTED WITH SNAP IN HANGERS. SNAP IN HANGERS SHOULD BE USED EVERY 3 FEET THE ENTIRE HEIGHT OF TOWER. ANGLE ADAPTERS OR ROUND MEMBER ADAPTERS WITH BUTTERFLY CLAMPS SHALL BE USED ELSEWHERE, I.E. SIDEARMS, PLATFORMS, AND MICROWAVE MOUNTS.
- B: COAXIAL CABLE SHALL ALSO BE SUPPORTED WITH HOISTING GRIPS, INSTALLED AT MAXIMUM INTERVALS OF 200 FEET. HOISTING GRIPS SHALL BE ATTACHED WITH SHACKLES, BOLTED IN THE 7/16" HOLE OF WAVEGUIDE LADDER.
- C: ALL JUMPERS USED BETWEEN COAXIAL CABLE AND ANTENNA SHALL BE SUPPORTED WITHIN 18 INCHES OF ANTENNA, USING BUTTERFLY CLAMPS WITH ANGLE ADAPTERS OR ROUND MEMBER ADAPTERS AROUND PIPES. CELLULAR ANTENNAS TYPICALLY USE 6' JUMPERS; MICROWAVE DISHES USE 3' JUMPERS.
- D: COAXIAL CABLE SHALL BE NEATLY BENT WHEN REQUIRED, USING A MINIMUM BENDING RADIUS OF 10 TIMES THE DIAMETER OF THE COAXIAL CABLE. DRIP LOOPS SHOULD BEGIN AT THE ICE BRIDGE. THE BEND IN THE COAXIAL CABLE SHOULD BE AT A LOWER HEIGHT THAN THE ENTRY PORT.
- E: COAXIAL CABLE SHALL BE SUPPORTED WITH SNAP IN HANGERS ON THE WAVEGUIDE LADDER UNDER ICE BRIDGE. COAXIAL CABLE SHOULD BE NEATLY CUT 16" INSIDE BUILDING AND TERMINATED AT THE QUARTER WAVE SHORTS.
- F: CONNECTORS WILL NORMALLY BE PROVIDED FIRST OFF REEL FROM FACTORY. CONNECTORS TERMINATED IN BUILDING SHALL BE NEATLY INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
- G: OPENINGS #1, #2, AND #3 SHOULD BE USED FOR THE X SECTOR; OPENINGS #5, #6, AND #7 SHOULD BE USED FOR THE Y SECTOR; OPENINGS #9, #10, AND #11 SHOULD BE USED FOR THE Z SECTOR. OPENINGS #4, #8, AND #12 SHOULD BE RESERVED FOR MICROWAVE WAVEGUIDE.
- H: COAXIAL CABLES SHOULD BE LABELED WITH TAGS INSIDE THE BUILDING.

SECTOR INDICATOR - PRIMARY COLORS  
 USE 2" WIDE COLORED TAPE TO INDICATE SECTORS  
 X SECTOR FOR SECTORED SITE: BROWN  
 Y SECTOR FOR SECTORED SITE: VIOLET  
 Z SECTOR FOR SECTORED SITE: ORANGE  
 FUNCTION INDICATOR - SECONDARY COLORS  
 USE 1" WIDE COLORED TAPE TO INDICATE FUNCTION  
 RX1: YELLOW RX2: GREEN TX1: RED TX2: WHITE TX3: BLUE

I: ALL EXCEPTIONS NEED TO BE VERIFIED WITH THE PROJECT MANAGER.

**IV. CONNECTORS:**

- A: ALL CONNECTIONS, AND GROUNDING KITS SHALL BE WEATHER PROOFED USING COLD SHRINK OR ANDREW APPROVED WEATHER STRIPPING.  
 NOTE: NO PORTION OF CONNECTOR SHALL BE EXPOSED TO THE ELEMENTS.
- B: COAXIAL CABLE SHALL BE GROUNDED USING GROUNDING KITS AT THE TOP, BELOW THE BEND; BOTTOM, ABOVE THE BEND ON TOWER GROUND BAR; AND ON BUILDING GROUND BAR BEFORE ENTRY INTO WAVEGUIDE PORTS. 4" CABLE BOOTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
- C: GROUNDING KITS SHALL BE NEATLY INSTALLED SO THAT THE JUMPER RUNS IN THE SAME DIRECTION AS THE COAXIAL AND GROUND BAR. JUMPER WIRE SHOULD RUN IN A DIRECT PATH TO THE GROUND BAR/TOWER LADDER, BUT HAVE ADEQUATE SLACK FOR EXPANSION, CONTRACTION, AND REPAIR. NON-OXID GREASE SHOULD BE APPLIED BETWEEN LUG AND BAR/TOWER.
- D: TOWER GROUND BAR SHALL BE INSTALLED ON THE ANGLE BEHIND THE FIRST DIAGONAL WAVEGUIDE LADDER RUNG, ABOVE 8'.

**V. ICE BRIDGE:**

- A: ICE BRIDGE SHALL BE ATTACHED AT ONE END WITH BOLTS, TO THE ANGLE ON THE BUILDING, ABOVE THE WAVEGUIDE PORTS. SINCE THE ANGLE (28") IS TYPICALLY WIDER THAN THE ICE BRIDGE (24"), THE BRIDGE SHOULD BE CENTERED SO THAT IT COVERS THE WAVEGUIDE PORT ENTRY WHICH IS 24" WIDE. THE OPPOSITE END OF BRIDGE SHOULD BE 6" FROM TOWER FACE. IF FIELD CUT, IT SHOULD BE FILED SMOOTH AND COLD GALVANIZED.
- B: IF BRIDGE IS SUPPORTED BY VERTICAL PIPES, THEY SHOULD BE CUT EVENLY AND CAPPED, APPROXIMATELY 18" ABOVE ICE BRIDGE.
- C: 2 TIER WAVEGUIDE LADDER SHALL BE INSTALLED UNDER ICE BRIDGE PROPERLY SUPPORTED PER TOWER MANUFACTURER'S DRAWINGS.

**ANTENNA COLOR CODING**

**1ST TAPE - FOR SECTOR IDENTIFICATION**

SECTOR X BROWN  
 SECTOR Y PURPLE  
 SECTOR Z ORANGE

**2ND TAPE - FOR ANTENNA IDENTIFICATION**

RX-2, RX-4 GREEN  
 TX RED  
 RX-1, RX-3 YELLOW

**3RD TAPE - FOR TECHNOLOGY IDENTIFICATION**

TDMA/AMPS WHITE  
 CDMA 800 GRAY  
 PCS 1900 BLUE

USE SCOTCH VINYL TAPE 36, AVAILABLE AT GRAYBAR OR LOCAL 3M DISTRIBUTOR.

**NOTES:**

1. IF ANTENNA IS DUPLEXED, WRAP LINE AS TX
2. IF SECTOR HAS MORE THAN ONE TX, DOUBLE WRAP LINE FOR SECOND TX.
3. IF SECTOR IS SHARED BETWEEN CDMA AND TDMA WRAP WITH BOTH WHITE AND GRAY.

**ANTENNA INSTALLATION NOTES**  
**WINGRA & PARK (#782512)**  
**MADISON, WISCONSIN**

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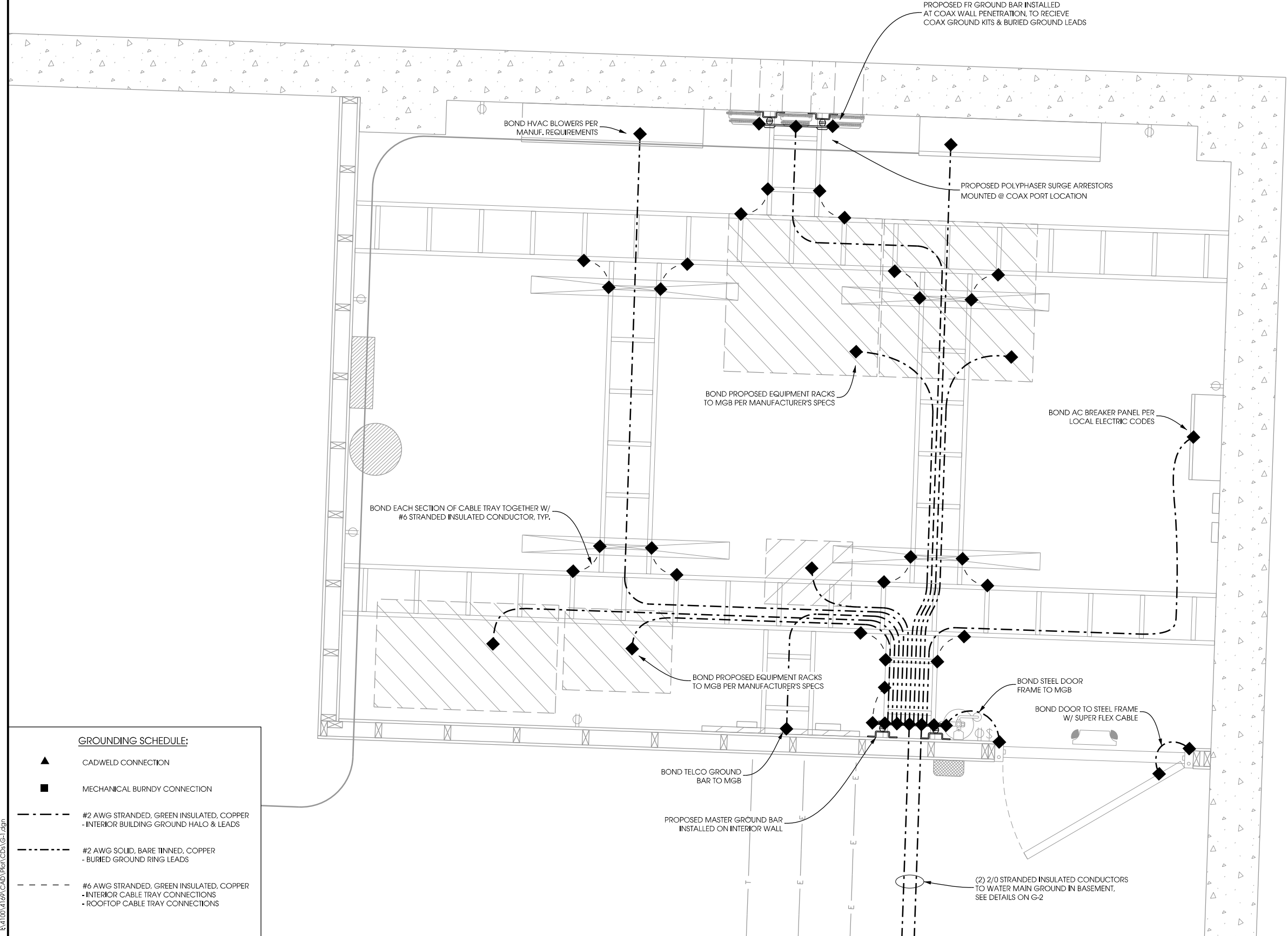
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**GROUNDING PLAN**  
**WINGRA & PARK (#782512)**  
**MADISON, WISCONSIN**



**GROUNDING SCHEDULE:**

- ▲ CADWELD CONNECTION
- MECHANICAL BURNDY CONNECTION
- - - #2 AWG STRANDED, GREEN INSULATED, COPPER  
- INTERIOR BUILDING GROUND HALO & LEADS
- - - #2 AWG SOLID, BARE TINNED, COPPER  
- BURIED GROUND RING LEADS
- - - #6 AWG STRANDED, GREEN INSULATED, COPPER  
- INTERIOR CABLE TRAY CONNECTIONS  
- ROOFTOP CABLE TRAY CONNECTIONS

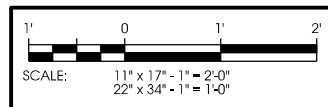
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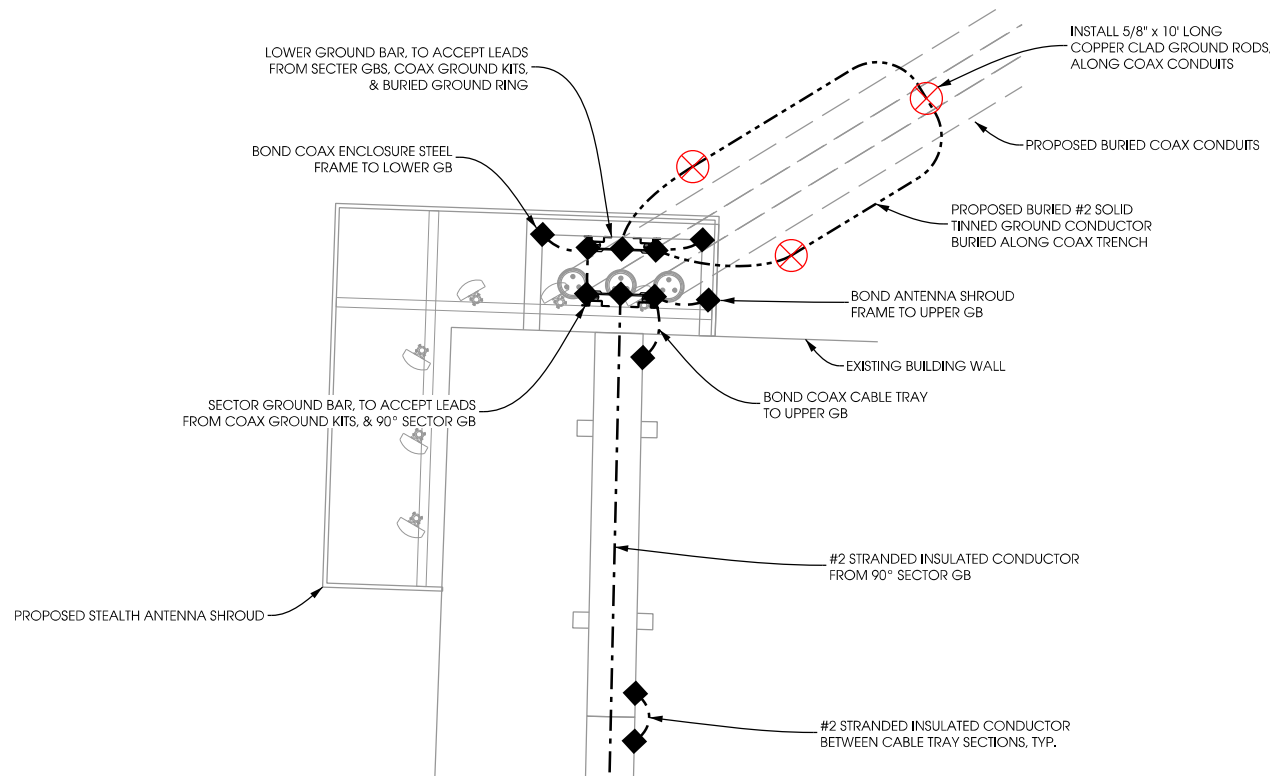
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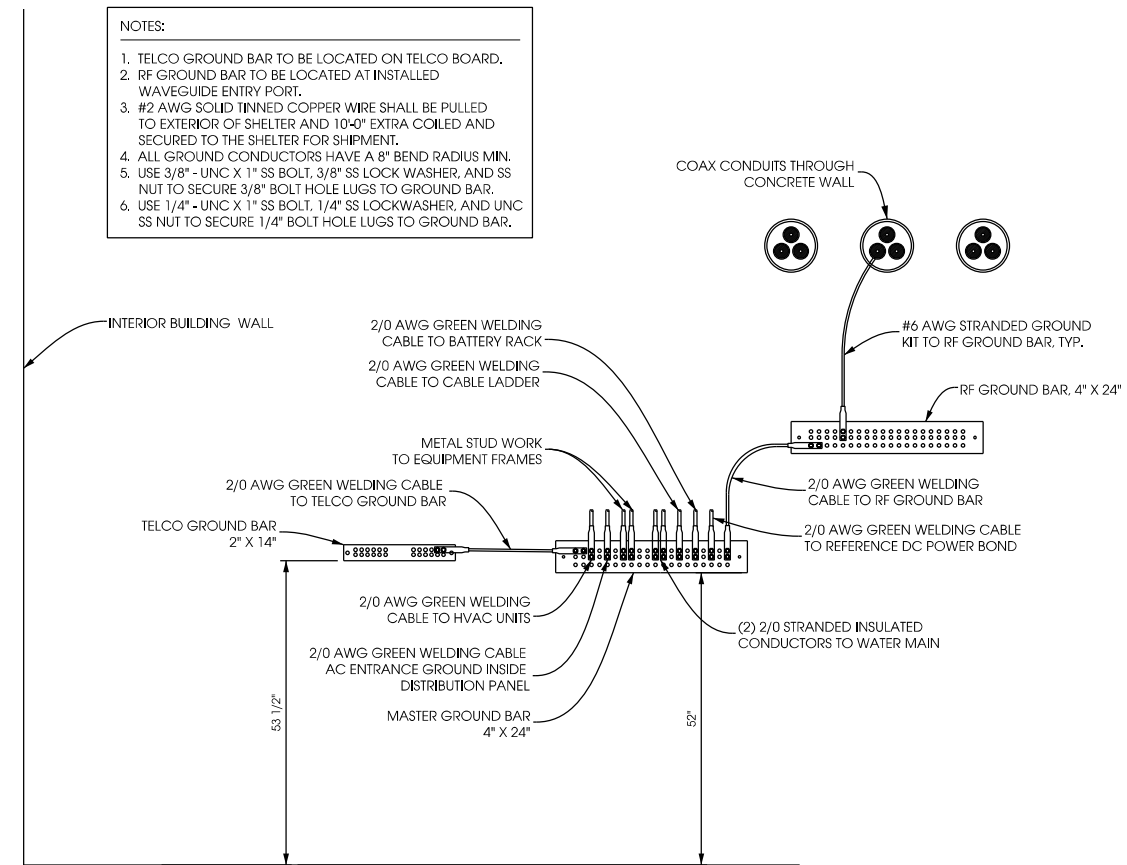


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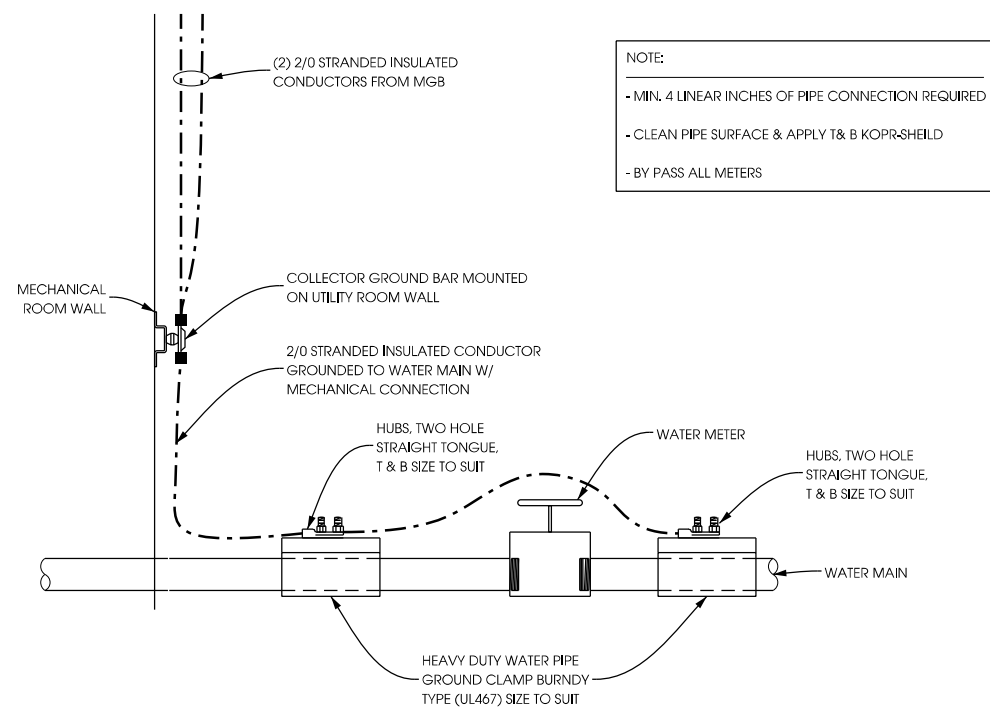




**A** **SECTOR GROUNDING DETAIL**  
G-2 SCALE: NTS



**C** **INTERNAL SHELTER GROUNDING SCHEME**  
G-2 SCALE: NTS



**B** **WATER MAIN GROUND DETAIL**  
G-2 SCALE: NTS



- NOTES:
1. TELCO GROUND BAR TO BE LOCATED ON TELCO BOARD.
  2. RF GROUND BAR TO BE LOCATED AT INSTALLED WAVEGUIDE ENTRY PORT.
  3. #2 AWG SOLID TINNED COPPER WIRE SHALL BE PULLED TO EXTERIOR OF SHELTER AND 10'-0" EXTRA COILED AND SECURED TO THE SHELTER FOR SHIPMENT.
  4. ALL GROUND CONDUCTORS HAVE A 8" BEND RADIUS MIN.
  5. USE 3/8" - UNC X 1" SS BOLT, 3/8" SS LOCK WASHER, AND SS NUT TO SECURE 3/8" BOLT HOLE LUGS TO GROUND BAR.
  6. USE 1/4" - UNC X 1" SS BOLT, 1/4" SS LOCKWASHER, AND UNC SS NUT TO SECURE 1/4" BOLT HOLE LUGS TO GROUND BAR.

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SHEET NUMBER:	<b>G-2</b>

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**GROUNDING SYSTEM NOTES**

**1. SCOPE:**

THIS SECTION COVERS THE SPECIFICATIONS FOR CELL SITE GROUNDING. THE AREAS OF FOCUS ARE TOWER, BUILDING, AND INSTALLATION METHODS.

**2. GENERAL:**

- 2.1 ALL GROUND RODS SHALL BE 3/4" COPPER CLAD STEEL 10 FT. LONG. GROUND RODS SHALL BE EQUALLY SPACED AT 10 FT. INTERVALS. REFER TO SITE GROUNDING PLAN FOR DETAILS AND PLACEMENT WITH GROUNDING.
- 2.2 GROUNDING A SYSTEM SHALL BE MEGGAR TESTED TO ASSURE SATISFYING 5 OHMS OR LESS RESISTANCE.
- 2.3 ALL CADWELD CONNECTIONS TO GALVANIZED MATERIAL SHALL BE PROPERLY PREPARED TO ASSURE A SATISFACTORY CADWELD. THE CADWELD CONNECTION SHALL BE COATED WITH A COLD GALVANIZING SPRAY TO PREVENT CORROSION.
- 2.4 CONTRACTOR SHALL PROVIDE PHOTO DOCUMENTATION OF THE GROUND SYSTEM BY PROVIDING A CD TO US CELLULAR. REQUIRED PHOTOS SHALL INCLUDE:
  - \* ALL BUSS BARS AND COAX GROUND CONNECTIONS.
  - \* TOWER COUNTERPOISE
  - \* BUILDING COUNTERPOISE
  - \* CONNECTIONS TO POWER, TELCO, A.C., FENCING AND ICE BRIDGE.
- 2.5 CONTRACTOR SHALL PROVIDE AS-BUILT PLANS SHOWING LOCATION AND DIMENSIONS OF BELOW GRADE GROUNDING FEATURES.

**3. INSTALLATION:**

- 3.1 ALL EXTERIOR ABOVE AND BELOW GROUND CONNECTIONS SHALL BE CADWELD. NO ALUMINUM CONNECTORS SHALL BE USED. UNLESS SPECIFIED OTHERWISE ON PLANS.
- 3.2 NO RIGHT-ANGLE CADWELD CONNECTION (OTHER THAN GROUND RODS TO GROUND RING CONNECTION) SHALL BE USED. ALL WIRE-TO-WIRE CONNECTIONS SHALL UTILIZE "Y-TYPE" CONNECTIONS.
- 3.3 ALL VERTICAL JUMPERS SHALL NOT BE WELDED WITHIN TWO (2) FT. OF THE GROUND ROD.
- 3.4 KOPR SHIELD REQUIRED FOR ALL MECHANICAL CONNECTIONS
- 3.5 ALL CADWELDS FINISHED WITH COLD GALVANIZED SHIELD

**4. TOWER:**

- 4.1 A #2 SOLID BARE COPPER WIRE SHALL BE BURIED A MINIMUM FOUR (4) FT. UNDERGROUND AND ENIRCLE TOWER FOUNDATION TWO (2) FT. FROM THE FOUNDATION. THIS GROUNDING SYSTEM SHALL BE CONNECTED TO THE BUILDING GROUND RING IN TWO (2) PLACES USING CADWELD CONNECTIONS. SUCH CONNECTIONS SHALL BE "Y-TYPE" CADWELD CONNECTIONS.
- 4.2 THREE (3) #2 SOLID BARE COPPER WIRES SHALL BE RUN FROM THE TOWER GROUND RING TO THE TOWER. THESE WIRES SHALL BE CONNECTED TO THE TOWER USING A CADWELD CONNECTION. NO SHARP BENDS SHALL BE PLACED IN THESE GROUND LEADS.
- 4.3 GROUND SYSTEM SHALL INCLUDE THE INSTALLATION OF AN ISOLATED LIGHTNING ROD AT THE TOP OF THE TOWER ABOVE THE HIGHEST ANTENNA. A #2 INSULATED COPPER WIRE SHALL BE CONNECTED TO THE TOWER LIGHTNING ROD USING AN APPROVED MECHANICAL CONNECTOR, OR CADWELDED, TO TOWER STEEL.

**5. BUILDING:**

- 5.1 A #2 SOLID BARE COPPER WIRE SHALL BE BURIED A MINIMUM OF FOUR (4) FT. UNDERGROUND AND ENIRCLE BUILDING FOUNDATION TWO (2) FEET FROM THE FOUNDATION. GROUND RING CORNERS SHALL BE INSTALLED WITH A MINIMUM TWO FOOT RADIUS (NO SHARP RIGHT ANGLE BENDS).
- 5.2 A #2 SOLID BARE COPPER WIRE SHALL BE INSTALLED FROM THE BUILDING GROUND RING AND CONNECTED TO THE COPPER BUS BAR LOCATED ON THE OUTSIDE OF BUILDING UNDER THE WAVEGUIDE PORT WITH A MINIMUM NINE (9) INCHES RADIUS. A "Y-TYPE" OR "PARALLEL-TYPE" CADWELD CONNECTION SHALL BE USED FOR ALL CONNECTIONS TO THE GROUND RING.
- 5.3 ONE (1) ADDITIONAL #2 SOLID BARE GROUND WIRE LEAD SHALL BE INSTALLED DIRECTLY BELOW THE ELECTRICAL SERVICE ENTRANCE PORT (GROUND LUG ON THE MAIN DISCONNECT INSIDE THE BUILDING). THIS WIRE SHALL BE CONNECTED TO THE BUILDING GROUND RING USING "Y-TYPE" CADWELD CONNECTION.
- 5.4 ONE (1) ADDITIONAL #2 SOLID BARE COPPER GROUND WIRE LEAD SHALL BE INSTALLED DIRECTLY BELOW EACH HVAC UNIT.

**6. FENCING:**

- 6.1 A #2 SOLID BARE COPPER GROUND WIRE SHALL BE INSTALLED FROM THE FENCE CORNER POSTS TO THE GROUND RING AND SHALL BE BURIED A MINIMUM FOUR (4) FT. UNDERGROUND. THESE RUNS SHALL INCLUDE GROUND RODS EQUALLY SPACED AT 10 FT. INTERVALS. THESE RUNS SHALL BE BROUGHT ABOVE GROUND LEVEL AND SUPPORTED ABOVE GROUND WITH TEMPORARY POSTS UNTIL PERMANENT FENCING IS INSTALLED. GROUND WIRE SHALL BE CONNECTED TO THE FENCE POSTS USING CADWELD TYPE CONNECTIONS.

**7. EXISTING GROUND SYSTEMS**

- 7.1 CONTRACTOR SHALL PROVIDE CONNECTIONS TO ALL EXISTING GROUND SYSTEMS AT THE SITE (SCADA, TELEMETRY, ETC.)

**8. TESTING**

- 8.1 THE CONTRACTOR SHALL TEST THE DRIVEN ELECTRODE SYSTEM PRIOR TO CONNECTING THE GROUND LEADS FROM THE OTHER GROUNDING SYSTEMS. TRENCHES SHALL BE BACK FILLED IN ORDER TO ACHIEVE ACCURATE TEST RESULTS. TRENCHES SHALL NOT BE BACK FILLED AND COMPACTED TO FINAL DENSITY PRIOR TO TESTING. THE DRIVEN ELECTRODE SYSTEM IS COMPOSED OF THE GROUND RODS, THE INTERCONNECTION GROUND WIRE, AND THE CADWELD CONNECTIONS. ALL OTHER BONDS TO THE SYSTEM SHALL BE REMOVED.
- 8.2 THE GROUND FIELD RESISTANCE SHALL MEASURE 5 OHMS OR LESS TO GROUND. IF RESISTANCE IS NOT MET, CONTRACTOR SHALL PAY FOR NECESSARY ADDITIONS TO MEET CRITERIA.
- 8.3 TEST RESULTS SHALL BE DOCUMENTED & PROVIDED TO ENGINEER.

**9. COMPLIANCE**

**9.1 ELECTRICAL CODE COMPLIANCE**

COMPLY WITH APPLICABLE LOCAL ELECTRICAL CODES REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION, AND NEC AS APPLICABLE TO ELECTRICAL GROUNDING AND BONDING, PERTAINING TO SYSTEMS, CIRCUITS AND EQUIPMENT.

**9.2 UL COMPLIANCE**

COMPLY WITH APPLICABLE REQUIREMENTS OF UL467, 486A AND 869 PERTAINING TO GROUNDING AND BONDING OF SYSTEMS, CIRCUITS AND EQUIPMENT. USE GROUNDING AND BONDING PRODUCTS WHICH ARE UL-LISTED AND LABELED FOR THEIR INTENDED USAGE.

**9.3 IEEE COMPLIANCE**

COMPLY WITH APPLICABLE REQUIREMENTS OF RECOMMENDED INSTALLATION PRACTICES OF IEEE STANDARDS 80, 81, 141 AND 142 PERTAINING TO GROUNDING AND BONDING OF SYSTEMS, CIRCUITS AND EQUIPMENT.

**MASTER GROUND BAR NOTES:**

THE MASTER GROUND BAR (MGB) IS THE EXTENSION OF THE BUILDING GROUNDING SYSTEM AND SERVES AS THE MAIN POINT OF BONDING WITHIN THE FACILITY. THE MGB WILL BE THE COMMON GROUND POINT WHERE ALL GROUND POINTS FOR THE FACILITY WILL CONNECT.

THE MGB SHOULD BE LOCATED SO THAT THE BONDING CONDUCTOR IS AS SHORT AND STRAIGHT AS POSSIBLE TO THE FACILITY GROUND RING.

THE MGB WILL BE LOCATED NEAREST THE PRIMARY GROUND WHILE MAINTAINING HEIGHT AND DISTANCE CLEARANCES REQUIRED BY APPLICABLE ELECTRICAL CODES.

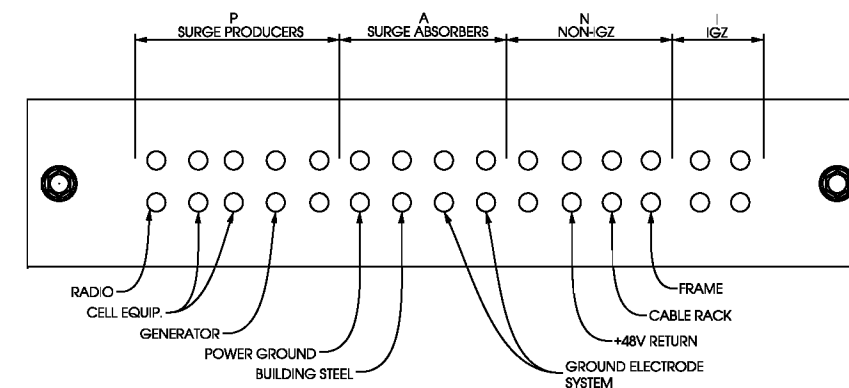
THE MGB WILL BE PREDRILLED COPPER ELECTRO TIN-PLATED BUS BAR WITH STANDARD NEMA BOLT SIZING AND SPACING WITH MINIMUM DIMENSIONS OF 1/4" THICK BY 4" WIDE AND 24" IN LENGTH. THE LENGTH MAY BE LONGER TO MEET FUTURE GROWTH PROJECTIONS.

THE MGB WILL BE INSULATED FROM ITS SUPPORT WITH MINIMUM 2" SEPARATION REQUIREMENT ON ISOLATED STANDOFFS.

THE MGB WILL BE PERMANENTLY AND APPROPRIATELY LABELED AND IDENTIFIED WITH THE "P", "A", "N" AND "I" SECTION OF THE MGB CLEARLY AND PERMANENTLY IDENTIFIED.

P = PRODUCERS, A = ABSORBERS, N = NON-PRODUCERS, I = ISOLATED (SWITCH, DC'S)

ALL CONNECTIONS MADE TO MGB WILL BE STANDARD 2-HOLE LUG.



SHEET TITLE:

ISSUE DATE
ZD's - 06/08/09
PRELIM CD's - 06/16/09
FINAL CD's - 09/17/09

REVISIONS
ANTENNA SHROUDS - 07/15/09
ANTENNA SHROUDS - 08/17/09
ADDITIONAL ANTENNAS - 11/23/09

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PROJECT NUMBER:	4169
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SHEET NUMBER
<b>G-3</b>



ELECTRICAL NOTES

GENERAL

- A. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, CONSTRUCTION TOOLS, TRANSPORTATION, ETC. FOR A COMPLETE AND PROPERLY OPERATING SYSTEM ENERGIZED THROUGHOUT AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.
- B. CONTRACTOR IS TO COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOKUP COSTS TO BE PAID BY CONTRACTOR.
- C. CONTRACTOR SHALL OBTAIN ALL NECESSARY BUILDING PERMITS, INSPECTIONS AND APPROVALS, AND PAY ALL REQUIRED FEES PURSUANT TO THE WORK.
- D. ALL WORK SHALL BE IN STRICT ACCORDANCE WITH THE LATEST VERSION OF THE NATIONAL ELECTRICAL CODE AND ANY APPLICABLE NATIONAL, STATE AND LOCAL CODES. ALL COMPONENTS SHALL BE U.L. APPROVED.
- E. CONTRACTOR SHALL BEFORE SUBMITTING HIS BID, VISIT THE SITE OF THE PROJECT AND BECOME FAMILIAR WITH THE CONDITIONS. NO ALLOWANCE WILL BE MADE FOR EXISTING CONDITIONS OR FAILURE OF THE CONTRACTOR TO OBSERVE THEM.
- F. EXACT LOCATION OF ALL EQUIPMENT SHALL BE COORDINATED WITH OWNER AND OTHER TRADES.
- G. CONTRACTOR SHALL PROVIDE ALL VERIFICATION OBSERVATION TESTS AND EXAMINE ALL WORK PRIOR TO ORDERING THE ELECTRICAL EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE ARCHITECT/ENGINEER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.
- H. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN SAFE CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT (SEE NOTE G. FOR EXCEPTIONS). MATERIALS SHALL MEET WITH APPROVAL OF THE DIVISION OF INDUSTRIAL SAFETY AND ALL GOVERNING BODIES HAVING JURISDICTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, NBRU AND "UL" LISTED.
- I. WHERE EQUIPMENT IS SPECIFIED BY MANUFACTURER AND TYPE, SUBSTITUTION SHALL ONLY BE MADE WITH THE APPROVAL OF THE ENGINEER. THE CONTRACTOR SHALL SUBMIT DETAILS OF PROPOSED MATERIALS, REASON FOR CHANGE AND CHANGE IN CONTRACT AMOUNT.
- J. EACH CONDUCTOR OF EVERY SYSTEM SHALL BE PERMANENTLY LABELED WITH ENGRAVED PLASTIC LABELS FOR EACH PANELBOARD, PULL BOX, J-BOX, SWITCH BOX, ETC. IN COMPLIANCE WITH OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
- K. THESE PLANS ARE DIAGRAMMATIC ONLY AND ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE.
- L. THE NEUTRAL IS TO BE GROUNDED AT THE METER MAIN PEDESTAL ONLY. AT ALL OTHER POINTS IN THE DISTRIBUTION SYSTEM, IT IS TO REMAIN INSULATED FROM ALL OTHER GROUNDS UNLESS OTHERWISE INDICATED ON DRAWING.
- M. THE TEMPERATURE RATING ASSOCIATED WITH THE AMPACITY OF A CONDUCTOR SHALL BE SO SELECTED AND COORDINATED AS TO NOT EXCEED THE LOWEST TEMPERATURE RATING OF ANY CONNECTED TERMINATION, CONDUCTOR, OR DEVICE, REFER TO TABLE A.
- N. ALL ENCLOSURES CONTAINING THE SERVICE CONDUCTORS SERVICE RACEWAY, CABLE ARMOR, BOXES, FITTINGS, CABINETS MUST BE EFFECTIVELY BONDED TOGETHER.
- O. ALL UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40 UNLESS OTHERWISE SPECIFIED, WITH UV PROTECTION (UNLESS NOTED OTHERWISE) AT A MINIMUM DEPTH SPECIFIED BY NATIONAL STATE AND LOCAL CODES. IT IS REQUIRED AND WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO NOTIFY THE DIGGER HOTLINE OR OTHER SUCH NOTIFYING AGENCY FORTY EIGHT (48) HOURS PRIOR TO THE START OF DIGGING, TRENCHING, EXCAVATION, OR OTHER SUCH EARTH REMOVAL.
- P. THE UNDERGROUND SERVICE ENTRANCE WORK MUST BE CONSTRUCTED ACCORDING TO THE LOCAL BUILDING CODE, NEC & UTILITY STANDARDS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL UTILITY BEFORE QUOTING AND DURING THE CONSTRUCTION.

MATERIALS, ELECTRICAL WIRING AND RACEWAYS

- A. ALL CIRCUIT BREAKERS, FUSES, CONDUCTORS AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING SHORT CIRCUIT TO WHICH THEY MAY BE SUBJECTED AND A MINIMUM OF 10,000 AIC RATING UNLESS SPECIFIED OTHERWISE.
  - B. PLASTIC PLATES FOR ALL SWITCHES, RECEPTACLES, TELEPHONE AND BLANKED OUTLETS SHALL HAVE ENGRAVED LETTERING WHERE INDICATED ON THE DRAWINGS. WEATHERPROOF RECEPTACLES SHALL HAVE SIERRA "MPD" 8" LIFT COVER PLATES.
  - C. METER SOCKET AMPERAGE, VOLTAGE AND NUMBER OF PHASES SHALL BE AS NOTED ON THE DRAWINGS AND MANUFACTURED BY SQUARE "D" COMPANY OR AN APPROVED EQUAL.
  - D. INSTALLATION OF RIGID METAL CONDUIT SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF ARTICLES 300 & 348-NEC. SHALL BE U.L. APPROVED
  - E. INSTALLATION OF ELECTRICAL METALLIC TUBING (EMT) SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF ARTICLES 300 & 348-NEC. SHALL BE U.L. APPROVED.
  - F. INSTALLATION OF INTERMEDIATE METAL CONDUIT (IMC) SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF ARTICLES 300 & 348-NEC. SHALL BE U.L. APPROVED.
  - G. PLASTIC CONDUIT SHALL BE SCHEDULE 40, HIGH IMPACT, POLYVINYL CHLORIDE AND SHALL BE USED WITH UNTHREADED SOLVENT CEMENT PLASTIC CONDUIT FITTINGS. COUPLINGS SHALL HAVE A CENTER STOP TO TYPE ENSURE PROPER SEATING. CONDUIT SHALL BE MANUFACTURED BY CARLON OR ACCEPTABLE EQUAL SHALL BE IN COMPLIANCE WITH ART 300 & 347-NEC, U.L. APPROVED.
  - H. ALL WIRING OF ALL KINDS MUST BE INSTALLED IN CONDUIT, UNLESS OTHERWISE NOTED OR APPROVED BY THE ELECTRICAL ENGINEER.
  - I. ALL WIRING SHALL BE COPPER TYPE TINNED AND IN ACCORDANCE WITH THE (NEC) NATIONAL ELECTRICAL CODE OR AS INDICATED ON PLANS.
  - J. RACEWAYS SHALL BE STEEL GALVANIZED, WITH SIZE AS SPECIFIED AND IN ACCORDANCE WITH THE (NEC) NATIONAL ELECTRICAL CODE UNLESS OTHERWISE NOTED ON PLANS. ALL RACEWAYS SHALL BE APPROVED PRIOR TO INSTALLATION.
  - K. JUNCTION BOXES OR PULL BOXES SHALL MEET (NEC) NATIONAL ELECTRICAL CODE STANDARDS AND AS APPROVED FOR INSTALLATION OF RACEWAYS AND WIRING.
  - L. THE RACEWAY AND WIRING INSTALLATION SHALL BE GROUNDED PERMANENTLY AND EFFECTIVELY IN ACCORDANCE WITH ARTICLE 250 OF THE (NEC) NATIONAL ELECTRICAL CODE.
  - M. THE CONTRACTOR SHALL BE AWARE THAT ALL STATE AND LOCAL CODES SHALL APPLY TO THIS INSTALLATION AND MUST BE ADHERED TO.
- GENERATOR**
- A. CONTRACTOR SHALL COORDINATE ALL WORK WITH GENERATOR SET SUPPLIER TO PROVIDE A COMPLETE OPERATING EMERGENCY BACKUP SYSTEM.
  - B. A SURGE PROTECTOR IS TO BE INSTALLED ON THE LOAD SIDE OF THE GENERATOR TRANSFER SWITCH.
  - C. IF THE GENERATOR IS A "SEPARATELY DERIVED SYSTEM" ITS NEUTRAL MUST BE BONDED TO THE GENERATOR METAL CASE AND ITS GROUNDING ELECTRODE CONDUCTOR MUST BE TIED INTO THE CELLULAR EXTERIOR GROUNDING SYSTEM. (NEC 280-26)
  - D. IF THE GENERATOR IS NOT A "SEPARATELY DERIVED SYSTEM" BONDING AND GROUNDING OF GENERATOR NEUTRAL IS NOT REQUIRED.

SCOPE OF WORK

- A. THE CONTRACTOR SHALL PROVIDE ALL ELECTRICAL WIRING AND EQUIPMENT UNLESS OTHERWISE INDICATED. MAIN COMPONENTS ARE AS FOLLOWS:
  - 1. PROVIDE ELECTRICAL SERVICE AS INDICATED ON THE DRAWINGS.
  - 2. PROVIDE TELEPHONE CONDUIT WITH PULL WIRE AS INDICATED HEREIN AND ON DRAWINGS.
  - 3. COORDINATE ELECTRICAL SERVICE WITH LOCAL POWER COMPANY.
  - 4. COORDINATE TELEPHONE SERVICE WITH LOCAL TELEPHONE COMPANY.
  - 5. INSTALL WIRE AND CONDUIT AS INDICATED. PROVIDE CABLE SUPPORTS AS INDICATED.
  - 6. PROVIDE GROUNDING AS INDICATED.
- B. ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" OR "AS-BUILT" DRAWINGS AT THE COMPLETION OF THE JOB SHOWING ACTUAL DIMENSIONS, ROUTINGS AND CIRCUITS SHALL BE PROVIDED TO CLIENT. ALL BROCHURES, OPERATING MANUALS, CATALOGS, SHOP DRAWINGS, ETC. SHALL BE TURNED OVER TO CLIENT AT JOB COMPLETION.
- C. PATCH, REPAIR AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF ELECTRICAL WORK.
- D. UPON COMPLETION OF WORK, CONDUIT CONTINUITY, SHORT CIRCUIT, AND GROUNDING FALL POTENTIAL TEST WILL BE MADE FOR APPROVAL. SUBMIT TEST REPORTS TO CLIENT. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE IN A COMPLETE AND UNDAMAGED CONDITION.
- E. THE COMPLETE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF SITE ACCEPTANCE BY CLIENT. ANY WORK MATERIAL OR EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED AT ONCE UPON WRITTEN NOTIFICATION, AND AT THE EXPENSE OF THE CONTRACTOR.
- F. THE ELECTRICAL CONTRACTOR SHALL VERIFY THE ELECTRICAL EQUIPMENT PROVIDED BY CLIENT'S SUPPLIERS.

TERMINATION RATING	CONDUCTOR INSULATION RATING		
	60 DEGREES C	75 DEGREES C	90 DEGREES C
60 DEGREES C	OK	OK AT 60 DEGREES C AMPACITY	OK AT 60 DEGREES C AMPACITY
75 DEGREES C	NO	OK	OK AT 75 DEGREES C AMPACITY
60/75 DEGREES C	OK	OK AT 60 DEGREES C OR 75 DEGREES C AMPACITY	OK AT 60 DEGREES C OR 75 DEGREES C AMPACITY
90 DEGREES C	NO	NO	OK 90 DEGREES C RATING ONLY IF EQUIPMENT HAS



EXISTING AC ELECTRIC PANELS IN UTILITY ROOM



EXISTING TELCO BOARD IN UTILITY ROOM

SHEET TITLE

ISSUE DATE	2/21 - 06/08/09
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ANTENNA SHROUDS - 08/17/09	
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**E-1**



**SITE PHOTOGRAPHS**  
**WINGRA & PARK (#782512)**  
**MADISON, WISCONSIN**



**PROPOSED EQUIPEMENT ROOM LOCATION**



**EXISTING CONDUITS ON CEILING**



**OUTSIDE EQUIPMENT ROOM**



**PROPOSED STEALTH FRAME**



**PROPOSED STEALTH FRAME**



**EXISTING BUILDING ROOFTOP**

SHEET TITLE:

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SHEET NUMBER:



# Memo

**To:** Madison Urban Design Committee  
**From:** Fran Seidl  
**CC:**  
**Date:** 5/19/2010  
**Re:** US Cellular proposed telecommunications facility application

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To whom it may concern,

Please accept the following memo, photo simulations, and drawings for review and consideration of Rooftop Antennas and related telecommunications facility for United State Cellular Operating Company, Inc. The proposed site is located in the City of Madison at 1862 Beld St. The purpose of the memo below is to provide information to the Urban Design Committee.

## **Background Information**

US Cellular is an FCC licensed provider of telecommunication and wireless internet services in the City of Madison. Locating antennas on the rooftop of the CMCC building will provide additional service and improve coverage in the surrounding area.

## **Proposal**

US Cellular is proposing a rooftop installation on the Catholic Multi Cultural Center Building at 1862 Beld St.

## **Attachments**

There are two sets of Drawings for the proposed facility attached.

The first set of Drawings labeled November 2009, is the original plan that was proposed to the City of Madison for internal review, this shows a stealth type frame mounted to the side of the building facing Park St with shroud installations on the rooftop facing Beld St.

The second set of Drawings labeled March 2010, is the alternate plan, which shows the antenna shroud being placed on the rooftop creating a penthouse addition, again facing both Park and Beld Street.

Both sets of plans are accompanied by photo simulations.

- A. The tower will comply with all FCC and FAA regulations.
- B. Design and installation will comply with manufacturer's specifications, all applicable standards, and shall be approved and stamped by an engineer licensed in the State of Wisconsin.
- C. The tower will comply with all applicable state and local building and electrical codes.
- D. Written authorization is provided by the landowner's signature on the application form and lease agreement. Further documentation will be provided upon request of the UDC.

If you have any questions or need any additional information please do not hesitate to contact me at 920-450-0816 (mobile).

Regards,

Fran Seidl

Agent for Cellcom





# Edge

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PROJECT: WINGRA & PARK

SUBJECT: TRIPOD MOUNT BALLAST REQUIREMENTS

SHEET #: \_\_\_\_\_ OF \_\_\_\_\_

CALCULATED BY: READER DATE: 12/09

CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

\* CHANGED BALLAST FRAMES

☒ FROM PREVIOUS ANALYSIS:

•  $P_{ANTENNA} = 153 \#$

• BALLAST REQUIRED = 92# PER RACK / 276# PER ASSEMBLY

• SELF WEIGHT = 57# PER RACK

⇒ TOTAL FOR 2 RACKS = 298#

→ ROOF PRESSURE DUE TO MOUNT:

$$\frac{298 \#}{21.8 \text{ FT}^2} = \underline{\underline{13.6 \text{ PSF}}} \text{ DEAD LOAD}$$

\* 13.6 PSF IS SIGNIFICANTLY LESS THAN THE DESIGN LOAD AND APPROXIMATELY EQUIVALENT TO THE CURRENT BALLAST CONSIDERED.

⇒ ROOF LOADING IS O.K. ✓



12/01/09