



NE FERNDAL
2601 THORNTON RD
FERNDAL, WA 98248
BE0124 (WA322)

PROPRIETARY INFORMATION

THE INFORMATION CONTAINED IN THIS SET OF CONSTRUCTION DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO CINGULAR WIRELESS, LLC. SERVICES IS STRICTLY PROHIBITED.

Reviewed by
Doug Usser
08/30/2005
P.O.D. No. 1 of Whatcom Co.

FINAL
CONSTRUCTION DOCUMENTS
08/30/2005
NOT FOR
CINGULAR ROUTING

cingular
WIRELESS

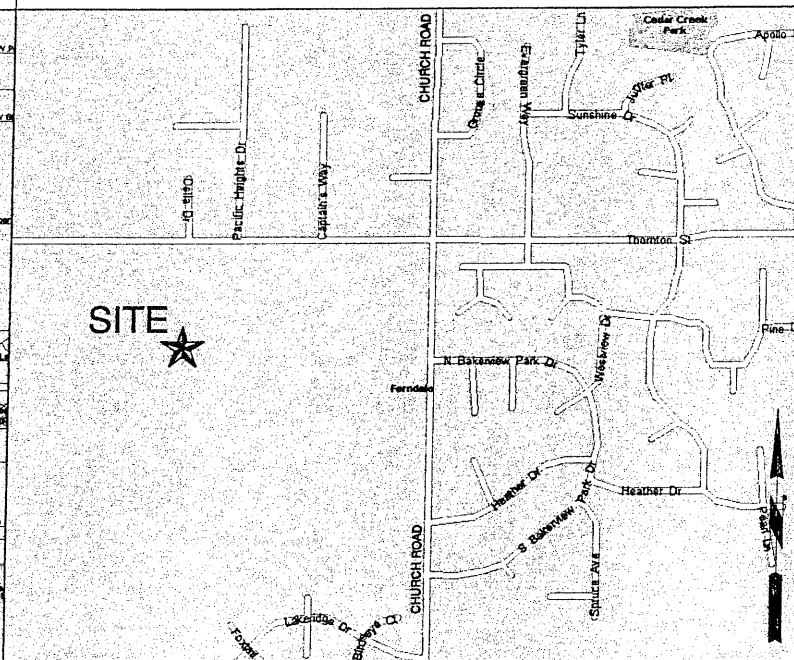
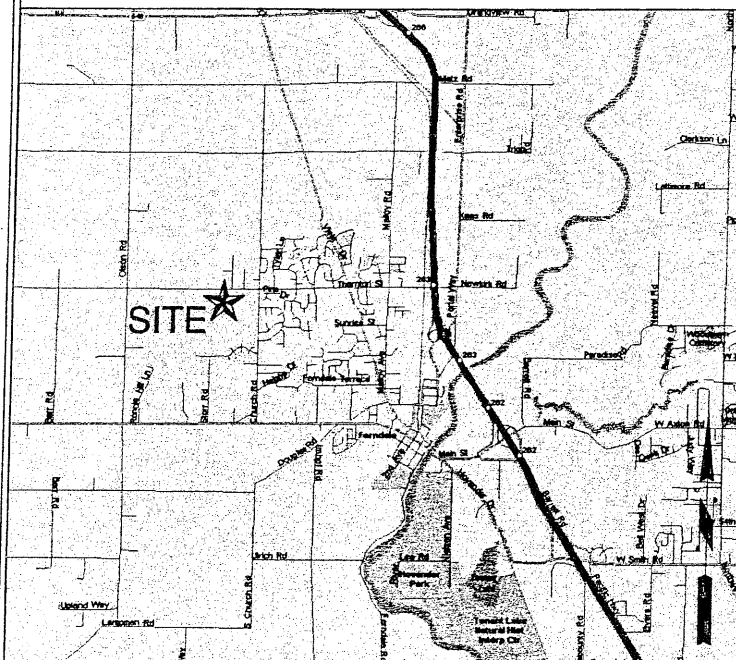
00346.00 7-11-07 100-9700

VICINITY MAP

GENERAL LOCATION MAP

PROJECT INFORMATION

SHEET INDEX



APPLICANT:
CINGULAR WIRELESS, LLC.
ON BEHALF OF PACIFIC BELL
WIRELESS, NORTHWEST, LLC.
7277 164TH AVE NE
REDMOND, WA 98052

LAND OWNER:
CITY OF FERNDAL
PUBLIC WORKS DEPT:
PO BOX 936
FERNDAL, WA 98248
PH: 360-384-4006
ATTN: BOB CECIL

PROJECT ARCHITECT:
KDC ARCHITECTS ENGINEERS P.C.
4720 200TH STREET SW, SUITE 200
LYNNWOOD, WA 98036
PH: (425) 670-8651
CONTACT: ERIC CAMP

TOWER OWNER:
PUD #1 WHATCOM COUNTY
1705 TRIGG RD
FERNDAL, WA 98248
PH: 360-384-4288 EXT. 17
CONTACT: DOUG USSER

PROJECT CONSULTANTS:
GENERAL DYNAMICS
WIRELESS SERVICES
7530 164TH AVE NE RTC A210
REDMOND, WA 98052

CODE INFORMATION:

ZONING CLASSIFICATION: RS 10.5
BUILDING CODE: INTERNATIONAL BUILDING
CODE 2003

CONSTRUCTION TYPE: N/A
OCCUPANCY: B
JURISDICTION: CITY OF FERNDAL
PROPOSED BUILDING USE: TELECOMMUNICATIONS

ZONING AGENT:
WFI
575 ANDOVER PARK, SUITE 201
TUKWILA, WA

SITE LOCATION: (BASED ON NAD 83)
LATITUDE: 48°51'39.1" N
LONGITUDE: 122°37'22.09" W
TOP OF STRUCTURE AGL: 80'-0"
BASE OF STRUCTURE AMSL: 372'

CONSTRUCTION COORDINATOR:
JAMES GRAY
PH: (425) 736-4026

PROJECT AREA:

WITHIN EXISTING CINGULAR LEASE AREA

GENERAL INFORMATION:

1. PARKING REQUIREMENTS ARE UNCHANGED.
2. TRAFFIC IS UNAFFECTED.
3. SIGNAGE IS PROPOSED.

PROJECT DESCRIPTION:

THIS PROPOSAL IS FOR THE MODIFICATION OF AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY, CONSISTING OF REMOVING/REPLACING (3) EXISTING ANTENNAS, WITH (3) NEW TDD ANTENNAS. ALSO THE ADDITION OF (3) NEW EQUIPMENT CABINET WITHIN EXISTING CINGULAR LEASE AREA.
EXISTING 100A POWER SERVICE TO BE UPGRADED TO 200A SERVICE.

T-1	TITLE SHEET
G-1	GENERAL NOTES, SYMBOLS & ABBREVIATIONS
A-1	OVERALL SITE PLAN
A-1.1	NEW AND EXISTING EQUIPMENT LAYOUT
A-2	NEW AND EXISTING ELEVATION
A-3	DETAILS
A-4	DETAILS
RF-1	RF DATA SHEET
RF-2	COAX COLOR CODING
RF-3	TYPICAL SECTOR PLUMBING DIAGRAM
E-1	PANEL SCHEDULE, ONE-LINE DIAGRAM AND DETAILS
E-2	GROUNDING DETAILS
Q-1	QUALITY CONTROL CHECKLIST

LEGAL DESCRIPTION

A SUBDIVISION OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 24, TOWNSHIP 39 NORTH, RANGE 1 EAST OF W.M., DESCRIBED AS FOLLOWS:
COMMENCING AT THE NORTHEAST CORNER OF SAID SECTION 24; THENCE SOUTH 89°29'11" WEST ALONG THE NORTH LINE OF SAID SECTION A DISTANCE OF 1325.07 FEET TO THE NORTHEAST CORNER OF THIS SUBDIVISION; THENCE SOUTH 00°02'37" WEST ALONG THE EAST LINE OF SAID SUBDIVISION A DISTANCE OF 20.00 FEET TO THE TRUE POINT OF BEGINNING ON THE SOUTH LINE OF THORNTON ROAD (COUNTY ROAD NO. 239); THENCE CONTINUE SOUTH 00°02'37" WEST ALONG THE SOUTH LINE A DISTANCE 1288.51 FEET TO THE SOUTHEAST CORNER OF SAID SUBDIVISION; THENCE SOUTH 89°50'10" WEST ALONG THE SOUTH LINE OF SAID SUBDIVISION A DISTANCE OF 331.48 FEET TO THE SOUTHWEST CORNER OF THE EAST HALF OF THE SOUTHEAST QUARTER OF SAID SUBDIVISION A DISTANCE OF 753.72 FEET; THENCE NORTH 89°44'41" EAST PARALLEL WITH THE NORTH LINE OF THE SOUTHEAST QUARTER OF SAID SUBDIVISION A DISTANCE OF 301.36 FEET; THENCE NORTH 00°02'37" EAST; PARALLEL WITH THE EAST LINE OF SAID SUBDIVISION A DISTANCE OF 534.20 FEET TO THE SOUTH LINE OF SAID COUNTY ROAD; THENCE NORTH 89°39'11" EAST ALONG THE SOUTH LINE OF SAID COUNTY ROAD A DISTANCE OF 30.00 FEET TO THE TRUE POINT OF BEGINNING. EXCEPT THAT RIGHT-OF-WAY LYING ALONG THE NORTHERLY LINE THEREOF, COMMONLY REFERRED TO AS THORNTON ROAD.

SITUATED IN WHATCOM COUNTY, WASHINGTON

APPROVAL/SIGN OFF OF CONSTRUCTION DRAWINGS

CONSULTANT GROUP SIGN OFF	DATE	SIGNATURE	CINGULAR SIGN OFF	DATE	SIGNATURE
CONSTRUCTION COORDINATOR	08/30/05	Doug Usser	COMPLIANCE		
LANDLORD'S REPRESENTATIVE		P.O.D. No. 1 of Whatcom Co.	CONSTRUCTION MANAGER		
PROJECT MANAGER			DEPLOYMENT MANAGER		
SITE ACQUISITION			E-911 ENGINEER:	Y N	INITIAL:
ZONING			EQUIPMENT ENGINEER		
			INTERCONNECT		
			OPERATIONS		
			RF ENGINEER		
			RF ENGINEER MANAGER		
			SITE ACQUISITION MANAGER		

REVIEWERS SHALL CLEARLY PLACE INITIALS ADJACENT TO EACH REDLINE NOTE AS DRAWINGS ARE BEING REVIEWED

or ✓

KDC
Architects - Engineers, P.C.
4720 200TH STREET SW, SUITE 200
LYNNWOOD, WA 98036
PHONE: (425) 670-8651

DATE: 08/30/2005

DRAWN BY: JDM

CHECKED BY: EJC

REVISIONS

DATE	DESCRIPTION	BY
06/11/2005	ISSUED FOR 90% CD REVIEW	JDM
07/09/2005	ISSUED FOR CONSTRUCTION	CJC
08/05/2005	ISSUED FOR FINAL CONSTRUCTION	CRW
08/25/2005	ISSUED FOR REV CONSTRUCTION	JDM
08/30/2005	ISSUED FOR REV CONSTRUCTION	JDM

SITE NUMBER

BE0124 (WA322)
NE FERNDAL
2601 THORNTON RD
FERNDAL, WA 98248

T-1

GENERAL NOTES:

1. DRAWINGS ARE NOT TO BE SCALED, WRITTEN DIMENSIONS TAKE PRECEDENCE. THIS SET OF DOCUMENTS IS INTENDED TO BE USED FOR DIAGRAMMATIC PURPOSES ONLY, UNLESS NOTED OTHERWISE. THE GENERAL CONTRACTOR'S SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR, AND ANY REQUIREMENTS DEEMED NECESSARY TO COMPLETE PROJECT AS DESCRIBED IN THE DRAWINGS AND OWNER'S PROJECT MANUAL.
2. PRIOR TO THE SUBMISSION OF BIDS, CONTRACTORS INVOLVED SHALL VISIT THE JOB SITE TO FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THE PROPOSED PROJECT. CONTRACTORS SHALL VISIT THE CONSTRUCTION SITE WITH THE CONSTRUCTION/CONTRACT DOCUMENTS TO VERIFY FIELD CONDITIONS AND CONFIRM THAT THE PROJECT WILL BE ACCOMPLISHED AS SHOWN. PRIOR TO PROCEEDING WITH CONSTRUCTION, ANY ERRORS, OMISSIONS, OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER VERBALLY AND IN WRITING.
3. THE ARCHITECTS/ENGINEERS HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. CONTRACTORS BIDDING THE JOB ARE NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS. THE BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE ARCHITECT/ENGINEER OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO SUBMISSION OF CONTRACTOR'S PROPOSAL. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED OTHERWISE.
4. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
5. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
6. ALL WORK PERFORMED ON THE PROJECT AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK.
7. GENERAL CONTRACTOR SHALL PROVIDE, AT THE PROJECT SITE, A FULL SET OF CONSTRUCTION DOCUMENTS UPDATED WITH THE LATEST REVISIONS AND ADDENDA OR CLARIFICATIONS FOR USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT. THIS SET IS A VALID CONTRACT DOCUMENT ONLY IF THE TITLE SHEET IS STAMPED "FOR CONSTRUCTION" AND EACH SUCCESSIVE SHEET BEARS THE ARCHITECT'S SIGNED WET STAMP.
8. THE STRUCTURAL COMPONENTS OF ADJACENT CONSTRUCTION OR FACILITIES ARE NOT TO BE ALTERED BY THIS CONSTRUCTION PROJECT UNLESS NOTED OTHERWISE.
9. SEAL ALL PENETRATIONS THROUGH FIRE-RATED AREAS WITH U.L. LISTED OR FIRE MARSHALL APPROVED MATERIALS IF APPLICABLE TO THIS FACILITY AND OR PROJECT SITE.
10. CONTRACTOR TO PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2-A OR 2-A10BC WITHIN 75 FEET TRAVEL DISTANCE TO ALL PORTIONS OF PROJECT AREA DURING CONSTRUCTION.
11. CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
12. CONTRACTOR SHALL KEEP GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, AND RUBBISH. CONTRACTOR SHALL REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY OR PREMISES. SITE SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
13. THE GENERAL CONTRACTOR SHALL RECEIVE WRITTEN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
14. THE CONTRACTOR SHALL PERFORM WORK DURING OWNER'S PREFERRED HOURS TO AVOID DISTURBING NORMAL BUSINESS.
15. THE CONTRACTOR SHALL PROVIDE CINGULAR WIRELESS, LLC. AND P.U.D. NO. 1 OF WHATCOM CO. PROPER INSURANCE CERTIFICATES NAMING CINGULAR WIRELESS, LLC. AS ADDITIONAL INSURED, AND CINGULAR WIRELESS, LLC. PROOF OF LICENSE(S) AND PE & PD INSURANCE.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING AND COORDINATING ALL INSPECTIONS.
17. CAUTION! CALL BEFORE YOU DIG! BURIED UTILITIES EXIST IN THE AREA AND UTILITY INFORMATION SHOWN MAY NOT BE COMPLETE. CONTACT THE ONE-CALL UTILITY LOCATE SERVICE A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION. 1-800-424-5555
18. CONTRACTOR TO DOCUMENT ALL WORK PERFORMED WITH PHOTOGRAPHS AND SUBMIT TO CINGULAR WIRELESS, LLC. ALONG WITH REDLINED CONSTRUCTION SET.
19. CONTRACTOR TO DOCUMENT ALL CHANGES MADE IN THE FIELD BY MARKING UP (REDLINING) THE APPROVED CONSTRUCTION SET AND SUBMITTING THE REDLINED SET TO CINGULAR WIRELESS, LLC. AND P.U.D. NO. 1 OF WHATCOM CO. UPON COMPLETION.
20. FOR COLLOCATION SITES: CONTACT TOWER OWNER REPRESENTATIVE FOR PARTICIPATION IN BID WALK. (SEE SHEET T-1 FOR CONTACT INFO.)
21. GENERAL CONTRACTOR IS TO COORDINATE ALL POWER INSTALLATION WITH POWER COMPANY AS REQUIRED. CONTRACTOR TO REPORT POWER INSTALLATION COORDINATION SOLUTION(S) TO NETWORK CARRIER REPRESENTATIVE, PROJECT CONSTRUCTION MANAGER AND ARCHITECT.
22. ANY SUBSTITUTIONS OF MATERIALS AND/OR EQUIPMENT, MUST BE APPROVED BY CINGULAR CONSTRUCTION MANAGER.
23. IN THE CASE OF ROOFTOP SOLUTIONS FOR EQUIPMENT AND/OR ANTENNA FRAMES WHERE PENETRATION OF EXISTING ROOFING MATERIALS OCCUR, THE GENERAL CONTRACTOR SHALL COORDINATE WITH BUILDING OWNER AND BUILDING ROOFING CONTRACTOR OF RECORD FOR INSTALLATION, PATCH, REPAIR OR ANY AUGMENTATION TO THE ROOF, AND HAVE THE WORK GUARANTEED UNDER THE ROOFING CONTRACTOR'S WARRANTY FOR MOISTURE PENETRATION OR OTHER FUTURE BREACH OF ROOFING INTEGRITY.

GENERAL NOTES (CONT'D):

24. IN THE CASE OF ROOFTOP SOLUTIONS WITH THE INSTALLATION OF ANTENNAS WITHIN CONCEALED (SHROUDED) SUPPORT FRAMES OR TRIPODS, THE GENERAL CONTRACTOR SHALL COORDINATE WITH THE FRP DESIGNER/FABRICATOR TO ENSURE THAT THE FINAL FRP SHROUD IS SIMULATING (IN APPEARANCE) DESIGNATED EXISTING EXTERIOR BUILDING FACADE MATERIALS, TEXTURES, AND COLORS. THE CONTRACTOR SHALL FURTHERMORE ENSURE THE USE OF COUNTERSUNK FASTENERS IN ALL FRP CONSTRUCTION. WHEN PHOTOSIMULATIONS ARE PROVIDED, THE CONTRACTOR SHALL ENSURE THAT FINAL CONSTRUCTION REPRESENTS WHAT IS INDICATED IN PHOTOSIMULATION. SHOP DRAWINGS SHALL BE PROVIDED TO THE GENERAL CONTRACTOR, CONSTRUCTION COORDINATOR, AND ARCHITECT PRIOR TO FABRICATION AND CONSTRUCTION.
25. IN THE CASE OF ROOFTOP SOLUTIONS FOR EQUIPMENT AND/OR ANTENNA FRAMES WHERE ANCHORING TO A CONCRETE ROOF SLAB IS REQUIRED, CONTRACTORS SHALL CONFIRM (PRIOR TO SUBMITTING BID) WITH CONSULTING CONSTRUCTION COORDINATOR AND ARCHITECT THE PRESENCE OF POST TENSION TENDONS WITHIN THE ROOF SLAB - RESULTING FROM AN UNDOCUMENTED DESIGN CHANGE IN THE EXISTING BUILDING "AS-BUILT DRAWING SET" - HAVING INDICATED AN ORIGINAL DESIGN SOLUTION OF REINFORCED CONCRETE W/ EMBEDDED STEEL REBAR. IN THE EVENT POST TENSION SLAB SOLUTION IS PRESENT, CONTRACTOR SHALL INCLUDE PROVISIONS FOR X-RAY PROCEDURES (INCLUDED IN BID) FOR ALL PENETRATION AREAS WHERE ANCHORING OCCURS.
26. GENERAL & SUB CONTRACTORS SHALL USE STAINLESS STEEL METAL LOCKING TIES FOR ALL CABLE TRAY TIE DOWNS AND ALL OTHER GENERAL TIE DOWNS (WHERE APPLICABLE). PLASTIC ZIP TIES SHALL NOT BE PERMITTED FOR USE ON CINGULAR PROJECTS. RECOMMENDED MANUFACTURE SHALL BE: PANDUIT CORP. METAL LOCKING TIES MODEL NO. MLT4S-CP UNDER SERIES-304 (OR EQUAL). PANDUIT PRODUCT DISTRIBUTED BY TRIARC OF TACOMA, WA.

DESIGN CRITERIA:

1. THE DESIGN OF THIS PROJECT IS IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE 2003 WITH WASHINGTON STATE BUILDING CODE AMENDMENTS (2003 IBC/2002 NEC)

GENERAL CONCRETE NOTES:

1. ALL CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI-318.
2. CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED AND PLACED IN ACCORDANCE WITH CHAPTER 19 OF THE 2003 IBC. STRENGTHS AT 28 DAYS AND MIX CRITERIA SHALL BE AS FOLLOWS.

TYPE OF CONSTRUCTION	28 DAY STRENGTHS (f'c)	W/C RATIO	MINIMUM CEMENT CONTENT PER CUBIC YARD
A. SLABS ON GRADE TOPPING SLABS CONCRETE PIERS	2,400 PSI	≤ .45	5 1/2 SACKS
B. ALL STRUCTURAL CONCRETE EXCEPT WALLS	4,000 PSI	≤ .45	6 1/2 SACKS
C. CONCRETE WALLS	4,000 PSI	≤ .45	6 1/2 SACKS

CEMENT SHALL BE ASTM C150, PORTLAND CEMENT TYPE II U.N.O.

3. THE GENERAL CONTRACTOR SHALL SUPERVISE AND BE RESPONSIBLE FOR THE METHODS AND PROCEDURES OF CONCRETE PLACEMENT.
4. ALL CONCRETE WITH SURFACES EXPOSED TO STANDING WATER SHALL BE AIR-ENTRAINED WITH AN AIR-ENTRAINING AGENT CONFORMING TO ASTM C260, C494, C618, C989 AND C1017. TOTAL AIR CONTENT SHALL BE IN ACCORDANCE WITH TABLE 1904.2.1 OF THE 2003 IBC.
5. REINFORCING STEEL SHALL CONFORM TO ASTM A615 (INCLUDING SUPPLEMENT S1), GRADE 60, fy=60,000 PSI. EXCEPTIONS: ANY BARS SPECIFICALLY SO NOTED ON THE DRAWINGS SHALL BE GRADE 40, fy=40,000 PSI. GRADE 60 REINFORCING BARS INDICATED ON DRAWINGS TO BE WELDED SHALL CONFORM TO ASTM A706. REINFORCING COMPLYING WITH ASTM A615(S1) MAY BE WELDED ONLY IF MATERIAL PROPERTY REPORTS INDICATING CONFORMANCE WITH WELDING PROCEDURES SPECIFIED IN A.W.S. D14 ARE SUBMITTED.
6. REINFORCING STEEL SHALL BE DETAILED (INCLUDING HOOKS AND BENDS) IN ACCORDANCE WITH ACI 315 AND 318. LAP ALL CONTINUOUS REINFORCEMENT AT LEAST 30 BAR DIAMETERS OR A MINIMUM OF 2'-0". PROVIDE CORNER BARS AT ALL WALL AND FOOTING INTERSECTIONS. LAP CORNER BARS AT LEAST 30 BAR DIAMETERS OR A MINIMUM OF 2'-0". LAP ADJACENT MATS OF WELDED WIRE FABRIC A MINIMUM OF 8" AT SIDES AND ENDS.
7. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185.
8. SPIRAL REINFORCEMENT SHALL BE PLAIN WIRE CONFORMING TO ASTM A615, GRADE 60, fy=60,000 PSI.
9. NO BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE SHALL BE FIELD BENT UNLESS SPECIFICALLY SO DETAILED OR APPROVED BY THE CONSULTANT.

CONCRETE NOTES (CONT'D):

10. CONCRETE PROTECTION (COVER) FOR REINFORCING STEEL SHALL BE AS FOLLOWS:
- | | |
|--|--------------|
| - FOOTINGS AND OTHER UNFORMED SURFACES, EARTH FACE | 3" |
| - FORMED SURFACES EXPOSED TO EARTH OR WEATHER (#6 BARS OR LARGER) (#5 BARS OR SMALLER) | 2"
1 1/2" |
| - SLABS AND WALLS (INTERIOR FACE) | 3/4" |
11. BARS SHALL BE SUPPORTED ON CHAIRS OR DOBBIE BRICKS.
12. ANCHOR BOLTS TO CONFORM TO ASTM A307.
13. NON-SHRINK GROUT SHALL BE FURNISHED BY AN APPROVED MANUFACTURER AND SHALL BE MIXED AND PLACED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED RECOMMENDATIONS. GROUT STRENGTH SHALL BE AT LEAST EQUAL TO THE MATERIAL ON WHICH IT IS PLACED (3,000 PSI MINIMUM).
14. ALL EXPANSION ANCHORS TO BE HILTI BRAND. ADHESIVE ANCHORS REQUIRE TESTING TO CONFIRM CAPACITY UNLESS WAIVED BY ENGINEER.

STRUCTURAL STEEL NOTES:

1. SHOP DRAWINGS FOR STRUCTURAL STEEL SHALL BE SUBMITTED TO THE CONSULTANT FOR REVIEW PRIOR TO FABRICATION.
2. STRUCTURAL STEEL DESIGN, FABRICATION AND ERECTION (INCLUDING FIELD WELDING, HIGH STRENGTH FIELD BOLTING, EXPANSION BOLTS, AND THREADED EXPANSION ANCHORS) SHALL BE BASED ON THE A.I.S.C. "SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" LATEST EDITION. SUPERVISION SHALL BE IN ACCORDANCE WITH 2003 IBC CHAPTER 22, BY A QUALIFIED TESTING AGENCY DESIGNATED BY THE CONSULTANT. THE CONSULTANT SHALL BE FURNISHED WITH A COPY OF ALL INSPECTION REPORTS AND TEST RESULTS.
3. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
- | TYPE OF MEMBER | |
|-------------------------------------|--------------------------|
| A. PLATES, SHAPES, ANGLES, AND RODS | ASTM A36, Fy 36 KSI |
| B. SPECIAL SHAPES AND PLATES | ASTM A572, Fy 50 KSI |
| C. PIPE COLUMNS | ASTM A53, Fy 35 KSI |
| D. STRUCTURAL TUBING | ASTM A500, Fy 46 KSI |
| E. ANCHOR BOLTS | ASTM A307 |
| F. CONNECTION BOLTS | ASTM A325 TWIST-OFF-TYPE |
4. ALL MATERIAL TO BE HOT DIPPED GALVANIZED AFTER FABRICATION PER A123/A123M-00.
5. ALL WELDING SHALL BE IN CONFORMANCE WITH A.I.S.C. AND AWS STANDARDS AND SHALL BE PERFORMED BY W.A.B.O. CERTIFIED WELDERS USING E70 XX ELECTRODES. ONLY PREQUALIFIED WELDS (AS DEFINED BY AWS) SHALL BE USED. WELDING OF GRADE 60 REINFORCING BARS (IF REQUIRED) SHALL BE PERFORMED USING LOW HYDROGEN ELECTRODES. WELDING OF GRADE 40 REINFORCING BARS (IF REQUIRED) SHALL BE PERFORMED USING E70 XX ELECTRODES. WELDING WITHIN 4" OF COLD BENDS IN REINFORCING STEEL IS NOT PERMITTED. SEE REINFORCING NOTE FOR MATERIAL REQUIREMENTS OF WELDED BARS.
6. COLD-FORMED STEEL FRAMING MEMBERS SHALL BE OF THE SHAPE, SIZE, AND GAGE SHOWN ON THE PLANS. PROVIDE MINIMUM SECTION PROPERTIES INDICATED. ALL COLD-FORMED STEEL FRAMING SHALL CONFORM TO THE A.I.S.S. "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS."
7. BOLTED CONNECTIONS SHALL USE BEARING TYPE ASTM A325 BOLTS (3/4" DIA.) AND SHALL HAVE A MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
8. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. ASTM A307 BOLTS UNLESS NOTED OTHERWISE.
9. ALL STEEL WORK SHALL BE PAINTED IN ACCORDANCE WITH THE DESIGN & CONSTRUCTION SPECIFICATION AND IN ACCORDANCE WITH ASTM A36 UNLESS NOTED OTHERWISE.
10. ALL WELDS TO BE 1/4" FILLET UNLESS NOTED OTHERWISE.
11. TOUCH UP ALL FIELD DRILLING AND WELDING WITH 2 COATS OF GALVACON (ZINC RICH PAINT) OR APPROVED EQUAL.

TOWER/POLE NOTES:

1. VERIFICATION THAT THE EXISTING TOWER/POLE CAN SUPPORT THE PROPOSED ANTENNA LOADING IS TO BE DONE BY OTHERS.
2. PROVIDE SUPPORTS FOR THE ANTENNA COAX CABLES TO THE ELEVATION OF ALL INITIAL AND FUTURE ANTENNAS. ANTENNA COAX CABLES ARE TO BE SUPPORTED AND RESTRAINED AT THE CENTERS SUITABLE TO THE MANUFACTURER'S REQUIREMENTS.
3. FIELD INSTALLED TOWER/POLE PENETRATIONS (CUTTING AND WELDING) SHALL NOT BE CONSIDERED BY THE CONTRACTOR. CUTTING AND WELDING SHALL NOT BE AUTHORIZED BY P.U.D. NO. 1 OF WHATCOM COUNTY UNDER ANY CIRCUMSTANCES.

ABBREVIATED TOWER SAFETY PROCEDURES (WHEN APPLICABLE):

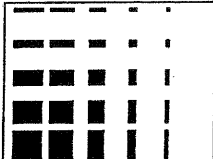
1. SAFETY LINE SHALL BE MINIMUM 1/4" DIAMETER NYLON, WITH A NOMINAL TENSILE STRENGTH OF 5400 LBS.
2. SAFETY LINE SHALL BE ATTACHED TO A SUBSTANTIAL MEMBER OF THE STRUCTURE.
3. SAFETY BELTS SHALL BE WORN BY ALL CONSTRUCTION WORKERS.
4. MONTHLY SAFETY INSPECTION AND MAINTENANCE OF THE FALL PROTECTION EQUIPMENT SHALL OCCUR BY THE SAFETY COMMITTEE REPRESENTATIVES, INCLUDING:
- INSPECTION OF CONSTRUCTION AREA FOR HAZARDS
USE OF AN INSPECTION CHECKLIST
INTERVIEWING COWORKERS REGARDING SAFETY CONCERNS
REPORTING AND DOCUMENTING ANY HAZARDS
REPORTING HAZARDS TO THE SAFETY COMMITTEE FOR CONSIDERATION
POSTING RESULTS OF INSPECTION AND ANY ACTION TAKEN
RECEIVING AN UNBIASED REVIEW OF ONE'S OWN WORK AREA BY ANOTHER COWORKER SAFETY REPRESENTATIVE

SYMBOLS AND ABBREVIATIONS

A/C AGL APPROX	AIR CONDITIONING ABOVE FINISH GRADE APPROXIMATELY	HORZ HR HT HVAC	HORIZONTAL HOUR HEIGHT HEATING VENTILATION AIR CONDITIONING	SHT SIM SPEC SF SS STL STRUCT STD SUSP	SHEET SIMILAR SPECIFICATION SQUARE FOOT STAINLESS STEEL STEEL STRUCTURAL STUD SUSPENDED
BLDG BLK	BUILDING BLOCKING	ID IN INFO INSUL INT IBC	INSIDE DIAMETER INCH INFORMATION INSULATION INTERIOR INTERNATIONAL BUILDING CODE	THRU TNNG TYP	THROUGH TINNED TYPICAL
CLG CLR CONC CONST CONT	CEILING CLEAR CONCRETE CONSTRUCTION CONTINUOUS	LBS MAX MECH MTL MFR MOR MIN MISC	POUNDS MAXIMUM MECHANICAL METAL MANUFACTURE MANAGER MINIMUM MISCELLANEOUS	UNO VERT VIF	UNLESS NOTED OTHERWISE VERTICAL VERIFY IN FIELD
DBL DIA DIAG DN DET DWG	DOUBLE DIAMETER DIAGONAL DOWN DETAIL DRAWING	EA ELEV ELEC EQ EQUIP EXT	EACH ELEVATION ELECTRICAL EQUAL EQUIPMENT EXTERIOR	W/ W/O WP	WITH WITHOUT WATER PROOF
FIN FLOR FLR FT	FINISH FLOURESCENT FLOOR FOOT	NA NIC NTS	NOT APPLICABLE NOT IN CONTRACT NOT TO SCALE		
GA GALV GC GRND GYP BD	GAUGE GALVANIZED GENERAL CONTRACTOR GROUND GYPSUM WALL BOARD	OC OD PLYWD PROJ PROP PT REQ RM RO	ON CENTER OUTSIDE DIAMETER PLYWOOD PROJECT PROPERTY PRESSURE TREATED REQUIRED ROOM ROUGH OPENING		
— T — — E — — G — — COAX —	TELEPHONE POWER GROUND WIRE COAXIAL CABLE				
⬢	ANTENNA				
Ⓢ [E] [N] ⓧ Ⓢ	CENTERLINE EXISTING NEW DETAIL NUMBER SHEET NUMBER				

x cingularSM WIRELESS

on ✓



KDC
Architects - Engineers, P.C.
4720 200TH STREET SW, SUITE 200
LYNNWOOD, WA 98036
PHONE: (425) 670-8551

DATE: 08/30/2005

DRAWN BY: JDM

CHECKED BY: EJC

REVISIONS

DATE	DESCRIPTION	BY
06/11/2005	ISSUED FOR 2005 90% CD REVIEW	JDM
07/09/2005	ISSUED FOR 2005 CONSTRUCTION	CJC
08/05/2005	ISSUED FOR FINAL 2005 CONSTRUCTION	CRW
08/25/2005	ISSUED FOR REV 2005 CONSTRUCTION	JDM
08/30/2005	ISSUED FOR REV 2005 CONSTRUCTION	JDM

SITE NUMBER
BE0124 (WA322)
NE FERNDAL
2601 THORNTON RD
FERNDAL, WA 98248

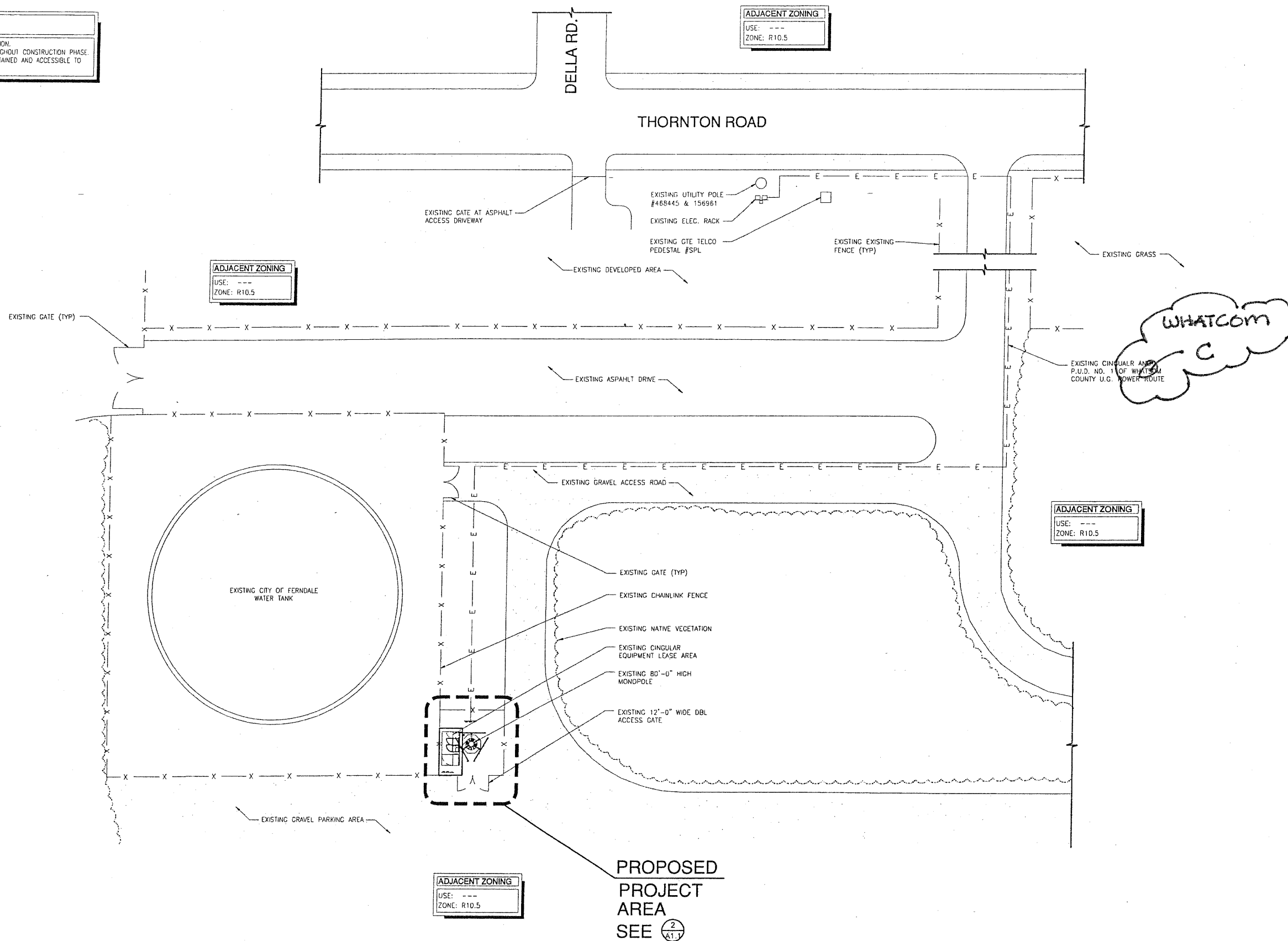
G-1

THIS IS NOT A SITE SURVEY

ALL PROPERTY BOUNDARIES, ORIENTATION OF TRUE NORTH AND STREET HALF-WIDTHS HAVE BEEN OBTAINED FROM PARCEL MAPS / AERIAL PHOTOS AND ARE APPROXIMATE.

ZONING NOTES

1. NO PARKING IS AFFECTED BY THIS INSTALLATION.
2. EROSION CONTROL TO BE MAINTAINED THROUGHOUT CONSTRUCTION PHASE.
3. EQUIPMENT CABINETS ARE LOCKED, SELF-CONTAINED AND ACCESSIBLE TO AUTHORIZED PERSONNEL ONLY.



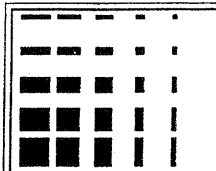
1 OVERALL SITE PLAN

0 10' 20' 40' 24"x36" SCALE: 1"=20'-0" 11"x17" SCALE: 1"=40'-0"

x cingularSM
WIRELESS

00346.003 7.17.07 RL

OK ✓



KDC
Architects - Engineers, P.C.
4720 200TH STREET SW, SUITE 200
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DATE: 08/30/2005

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A-1

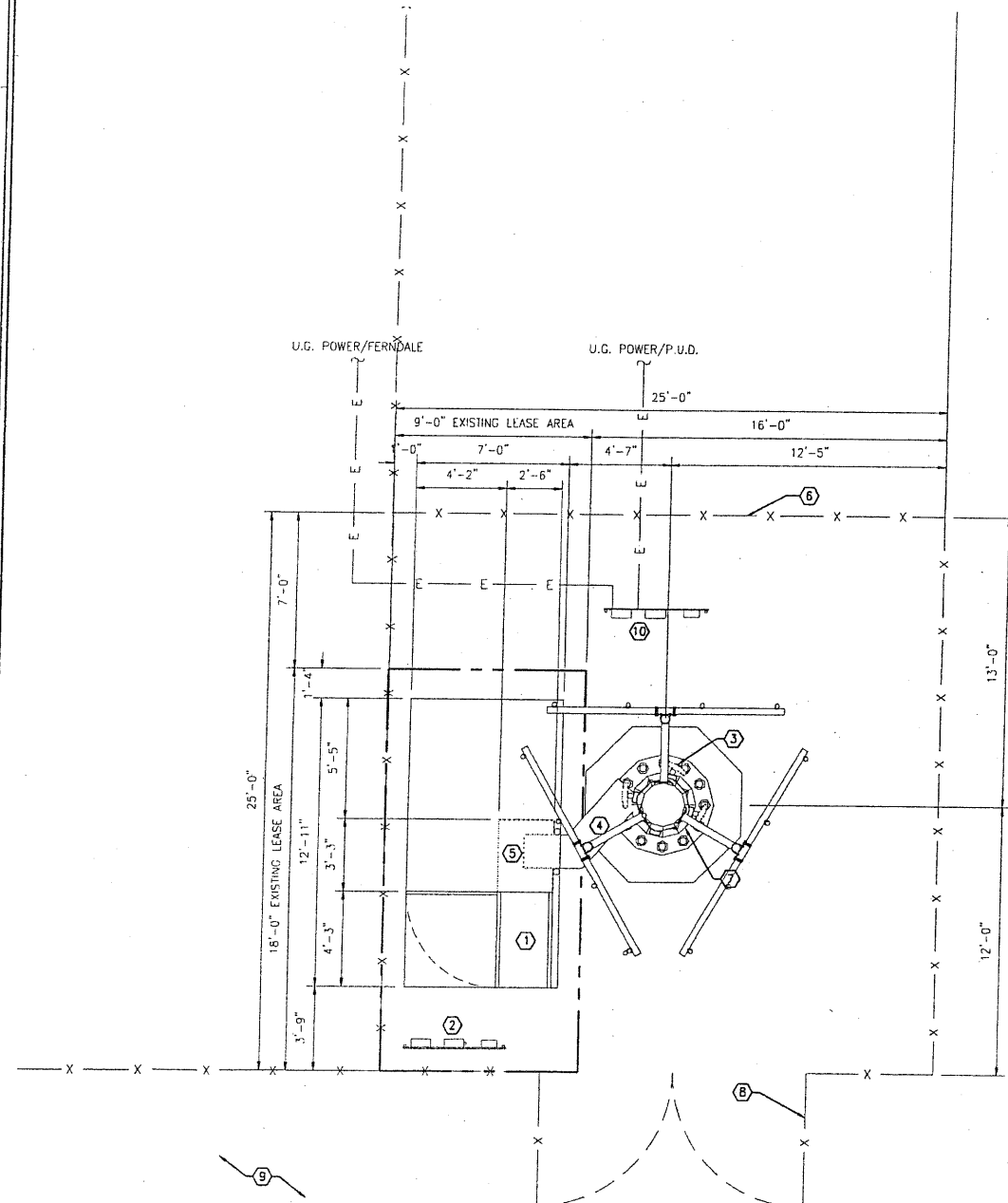
- ① EXISTING CINGULAR ERICSSON GSM 1900 CABINET TO BE REMOVED/REPLACE WITH FUTURE NOKIA CABINET AT FUTURE DATE
- ② EXISTING CINGULAR UTILITY RACK
- ③ EXISTING CINGULAR ANTENNAS TO BE REMOVED/REPLACED (TYP OF 3, 1 PER SECTOR) (SEE DETAIL 4/A-4)
- ④ EXISTING CINGULAR 9'-0" HIGH ICEBRIDGE
- ⑤ EXISTING DIPLEXOR RACK AND CABLE TRAY TO BE REMOVED/RELOCATED AS NEEDED
- ⑥ EXISTING 6'-0" HIGH CHAIN LINK FENCE
- ⑦ EXISTING 80'-0" HIGH MONOPOLE
- ⑧ EXISTING 12'-0" DBL ACCESS GATE
- ⑨ EXISTING GRAVEL ACCESS
- ⑩ EXISTING P.U.D. NO. 1 OF WHATCOMB COUNTY UTILITY RACK

ALL PROPERTY BOUNDARIES, ORIENTATION OF TRUE NORTH AND STREET HALF-WIDTHS HAVE BEEN OBTAINED FROM A TAX PARCEL MAP AND EXISTING DRAWINGS AND ARE APPROXIMATE.

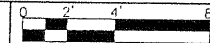
1. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
2. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
3. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY CONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
4. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY REPAIRS. WORKERS COULD EXPOSE TO WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
5. CONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF COAXIAL POWER AND 11 CABLES, GROUNDING CABLES. CONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. CONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE ARCHITECT/ENGINEER.
6. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

ALL PROPERTY BOUNDARIES, ORIENTATION OF TRUE NORTH AND STREET HALF-WIDTHS HAVE BEEN OBTAINED FROM A TAX PARCEL MAP AND EXISTING DRAWINGS AND ARE APPROXIMATE.

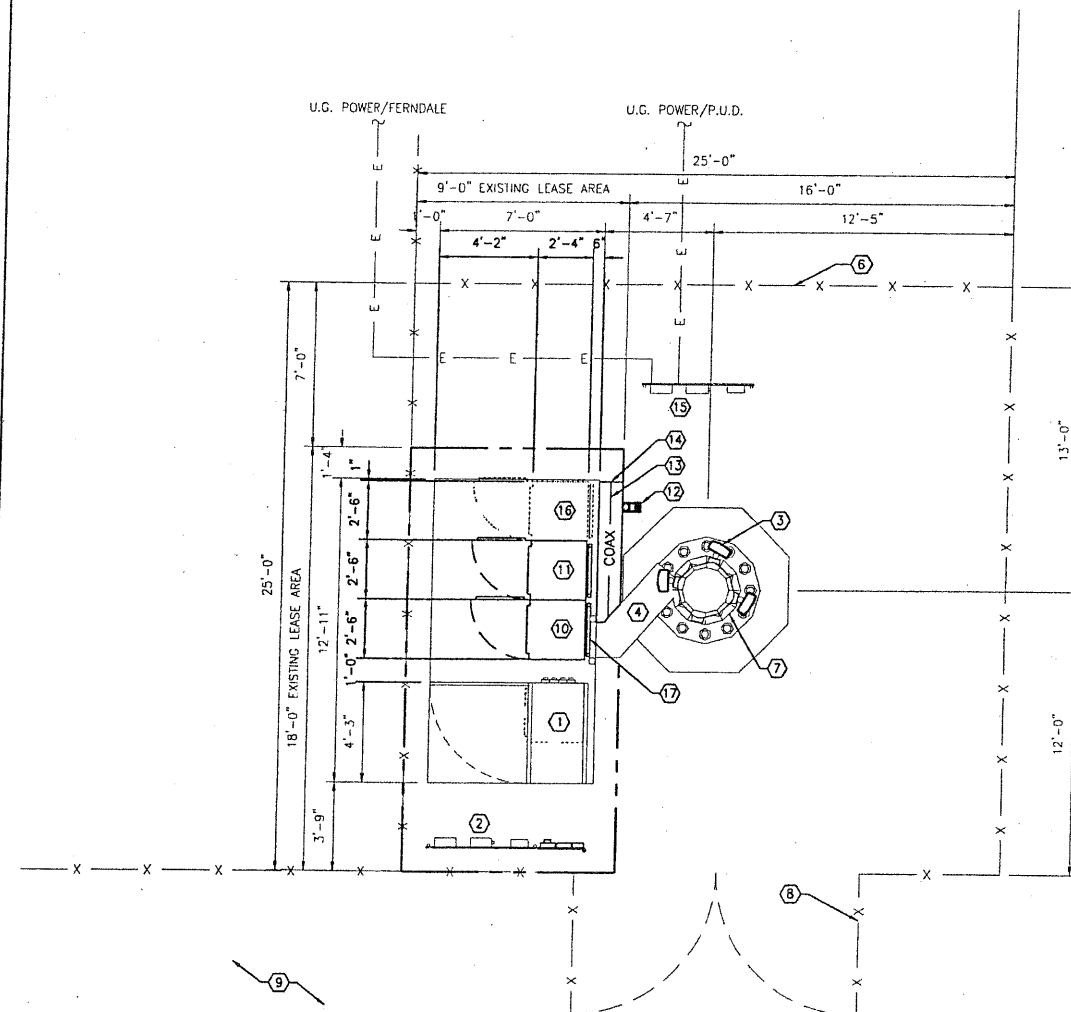
- ① EXISTING CINGULAR ERICSSON GSM 1900 CABINET TO BE REMOVED\REPLACE WITH UTILITY NOKIA CABINET AT FUTURE DATE
- ② EXISTING CINGULAR UTILITY RACK (TO BE UPGRADED FROM 100A TO 200A & TO BE EXTENDED) (SEE DETAIL 4/E-2)
- ③ REPLACEMENT CINGULAR ANTENNAS TO REPLACE EXISTING ANTENNA (TYP OF 3, 1 PER SECTOR) (SEE DETAIL 1.2,3/A-4)
- ④ EXISTING CINGULAR 9'-0" HIGH ICEBARRIER
- ⑤ NOT USED
- ⑥ EXISTING 6'-0" HIGH CHAIN LINK FENCE
- ⑦ EXISTING 80'-0" HIGH MONOPOLE
- ⑧ EXISTING 12'-0" DBL ACCESS GATE
- ⑨ EXISTING GRAVEL ACCESS
- ⑩ NEW CINGULAR ARGUS Te20 POWER ENCLOSURE (SEE DETAILS 7,10/A-3)
- ⑪ NEW CINGULAR NOKIA 48V ULTRASITE CABINET (SEE DETAILS 5,6,8,10/A-3)
- ⑫ NEW CINGULAR GPS ANTENNA (SEE DETAIL 1/A-3)
- ⑬ NEW CINGULAR (6) 7/8" COAX W/ (12) DIPLEXERS (COAX ROUTED WITHIN POLE)
- ⑭ NEW CINGULAR 9'-0" HIGH ICEBARRIER (SEE DETAIL 9/A-3)
- ⑮ EXISTING P.U.D. NO. 1 OF WHATCOM COUNTY UTILITY RACK
- ⑯ FUTURE CINGULAR NOKIA 48V ULTRASITE CABINET (SEE DETAILS 5,6,8,10/A-3)
- ⑰ NEW CINGULAR COAX SUPPORT RACK (SEE DETAIL 6/E-2)



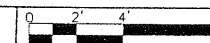
1	EXISTING EQUIPMENT LAYOUT
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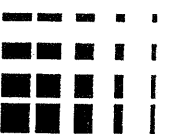
24"x36" SCALE:	1/4"=1'-0"
11"x17" SCALE:	1/8"=1'-0"



2	NEW EQUIPMENT LAYOUT
---	----------------------



24"x36" SCALE: 1/4"=1'-0"
11"x17" SCALE: 1/8"=1'-0"



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CHECKED BY: EJC

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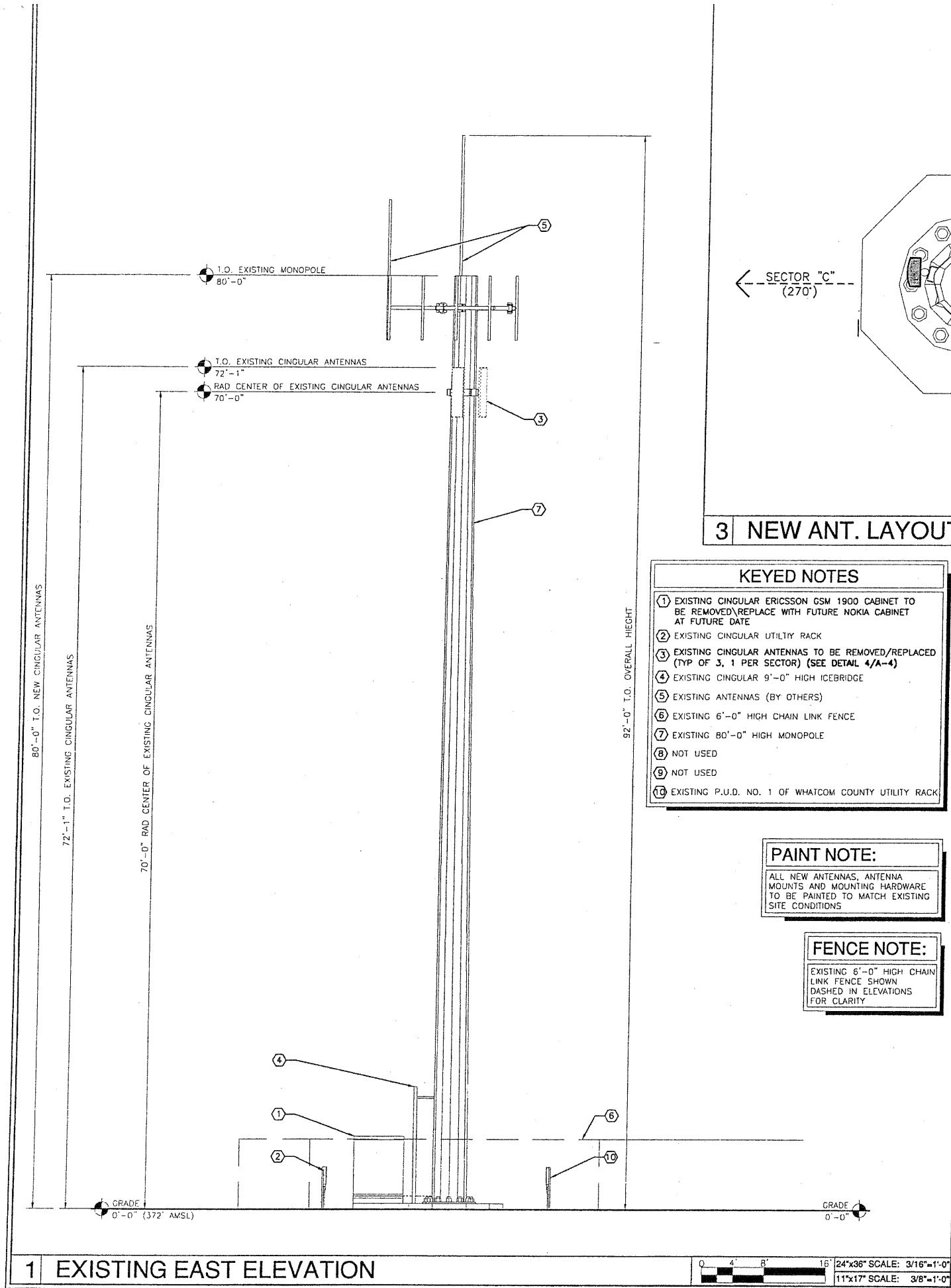
NE FERNDAL

2601 THORNTON RD

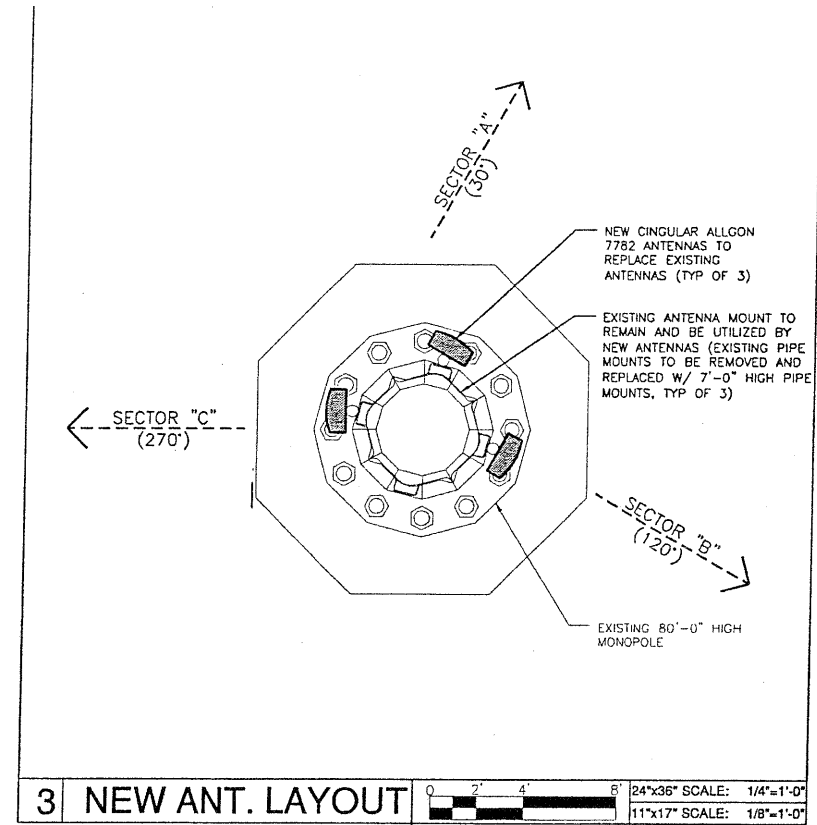
FERNDAL, WA 98248

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1 EXISTING EAST ELEVATION



3 NEW ANT. LAYOUT

- KEYED NOTES**
- EXISTING CINGULAR ERICSSON GSM 1900 CABINET TO BE REMOVED/REPLACE WITH FUTURE NOKIA CABINET AT FUTURE DATE
 - EXISTING CINGULAR UTILITY RACK
 - EXISTING CINGULAR ANTENNAS TO BE REMOVED/REPLACED (TYP OF 3, 1 PER SECTOR) (SEE DETAIL 4/A-4)
 - EXISTING CINGULAR 9'-0" HIGH ICEBRIDGE
 - EXISTING ANTENNAS (BY OTHERS)
 - EXISTING 6'-0" HIGH CHAIN LINK FENCE
 - EXISTING 80'-0" HIGH MONOPOLE
 - NOT USED
 - NOT USED
 - EXISTING P.U.D. NO. 1 OF WHATCOM COUNTY UTILITY RACK

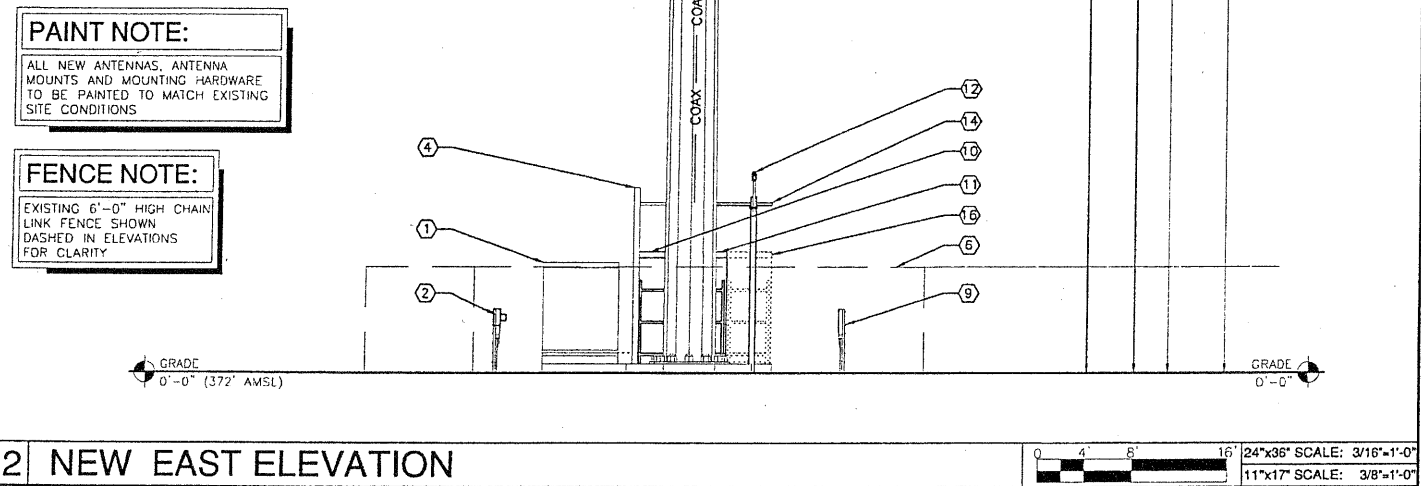
PAINT NOTE:
ALL NEW ANTENNAS, ANTENNA MOUNTS AND MOUNTING HARDWARE TO BE PAINTED TO MATCH EXISTING SITE CONDITIONS

FENCE NOTE:
EXISTING 6'-0" HIGH CHAIN LINK FENCE SHOWN DASHED IN ELEVATIONS FOR CLARITY

- KEYED NOTES**
- EXISTING CINGULAR ERICSSON GSM 1900 CABINET TO BE REMOVED/REPLACE WITH FUTURE NOKIA CABINET AT FUTURE DATE
 - EXISTING CINGULAR UTILITY RACK (TO BE UPGRADED FROM 100A TO 200A & TO BE EXTENDED) (SEE DETAIL 4/E-2)
 - REPLACEMENT CINGULAR ANTENNAS TO REPLACE EXISTING ANTENNA (TYP OF 3, 1 PER SECTOR) (SEE DETAIL 1,2,3/A-4)
 - EXISTING CINGULAR 9'-0" HIGH ICEBRIDGE
 - EXISTING ANTENNAS (BY OTHERS)
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 - EXISTING 80'-0" HIGH MONOPOLE
 - NOT USED
 - EXISTING P.U.D. NO. 1 OF WHATCOM COUNTY UTILITY RACK
 - NEW CINGULAR ARGUS T620 POWER ENCLOSURE (SEE DETAILS 7,10/A-3)
 - NEW CINGULAR NOKIA 48V ULTRASITE CABINET (SEE DETAILS 5,6,8,10/A-3)
 - NEW CINGULAR GPS ANTENNA (SEE DETAIL 1/A-3)
 - NEW CINGULAR (6) 7/8" COAX W/ (12) DIPLEXERS (COAX ROUTED WITHIN POLE)
 - NEW CINGULAR 9'-0" HIGH ICEBRIDGE (SEE DETAIL 9/A-3)
 - NOT USED
 - FUTURE CINGULAR NOKIA 48V ULTRASITE CABINET (SEE DETAILS 5,6,8,10/A-3)

PAINT NOTE:
ALL NEW ANTENNAS, ANTENNA MOUNTS AND MOUNTING HARDWARE TO BE PAINTED TO MATCH EXISTING SITE CONDITIONS

FENCE NOTE:
EXISTING 6'-0" HIGH CHAIN LINK FENCE SHOWN DASHED IN ELEVATIONS FOR CLARITY



2 NEW EAST ELEVATION

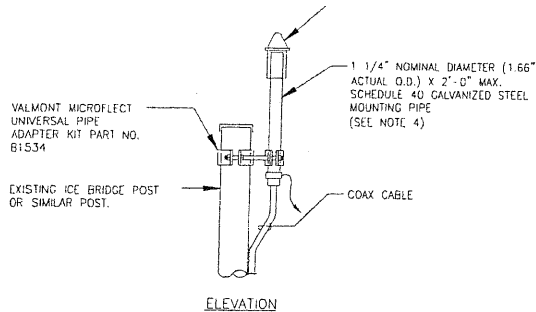
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LYNNWOOD, WA 98036
PHONE: (425) 670-8851

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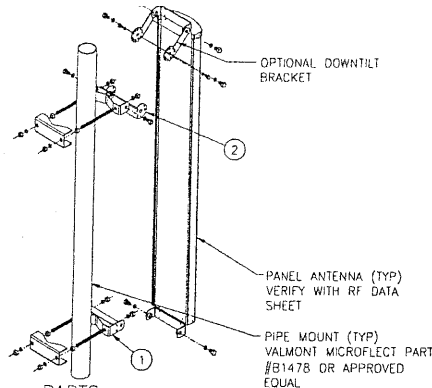
A-2



NOTES:

1. LOCATION OF ANTENNA MUST HAVE CLEAR VIEW OF SOUTHERN SKY AND CANNOT HAVE ANY BLOCKAGES EXCEEDING 25% OF THE SURFACE AREA OF A HEMISPHERE AROUND THE GPS ANTENNA.
2. ALL GPS ANTENNA LOCATIONS MUST BE ABLE TO RECEIVE CLEAR SIGNALS FROM A MINIMUM OF FOUR (4) SATELLITES. VERIFY WITH HANDHELD GPS BEFORE FINAL LOCATION OF GPS ANTENNA.
3. THE WEIGHT OF THE ANTENNA MOUNT IS 6.5 LBS.
4. IF ICE BRIDGE OR SIMILAR POST IS NOT GROUNDED, GROUND WITH #2 AWG TINNED BARE COPPER WIRE EXOTHERMICALLY BONDED TO POST AND CONNECTED TO GROUND RING.

E911-GPS ANTENNA PIPE MOUNT



NOTES:

1. THE NUMBER OF CONNECTORS WILL VARY BASED ON ANTENNA TYPE.

PARTS:

ITEM	QTY	DESCRIPTION
①	1	STANDARD MOUNTING BRACKET
②	1	DOWNTILT BRACKET PER MANUFACTURER SPECS

CONTRACTOR TO VERIFY EXACT PARTS LIST AND ANTENNA INSTALLATION WITH MANUFACTURER'S SPECIFICATIONS AND CONSTRUCTION MANAGER

CONCRETE CONSTRUCTION:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH A.C.I. 301, A.C.I. 318 AND THE SPECIFICATION CAST-IN-PLACE CONCRETE.
2. UNLESS NOTED OTHERWISE, ALL CAST-IN-PLACE CONCRETE SHALL BE NORMAL WEIGHT, AIR-ENTRAINED CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 2500 POUNDS PER SQUARE INCH AT 28 DAYS. TYPE V PORTLAND CEMENT WILL BE USED WITH A MAXIMUM AGGREGATE SIZE OF 3/4" AND 6% ± 1% AIR ENTRAINMENT. ALL CONCRETE WILL HAVE A MAXIMUM WATER/CEMENT (W/C) RATIO OF 0.48.
3. ALL CONCRETE FLATWORK SHALL HAVE A STIFF BROOM FINISH AND HAVE A SLOPE OF 1/8" PER FOOT UNLESS NOTED OTHERWISE.
4. REINFORCING BARS SHALL BE NEW BILLET STEEL CONFORMING TO A.S.T.M. A615, GRADE 60, DEFORMED.
5. DETAIL, FABRICATE AND ERECT REINFORCEMENT BARS, INCLUDING BAR SUPPORTS, SPACERS, ETC. IN ACCORDANCE WITH "DETAILING OF CONCRETE REINFORCEMENT" (A.C.I. 315-80, REV. 1986).
6. UNLESS OTHERWISE NOTED, ALL LAP SPLICES SHALL BE CLASS-B CONFORMING TO ACI 318-95.
7. A CHAMFER OF 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE IN ACCORDANCE WITH A.C.I. 301 SECTION 4.2.4 UNLESS OTHERWISE NOTED.
8. CONCRETE WORK SHALL BE COORDINATED WITH THE MECHANICAL, EQUIPMENT, AND ELECTRICAL WORK TO ASSURE THAT ALL APPROVED PIPES, CONDUITS, INSERTS, ETC. ARE IN PLACE AND VERIFIED BEFORE PLACING CONCRETE.
9. CONCRETE COVER FOR REINFORCING BARS SHALL CONFORM TO THE FOLLOWING UNLESS INDICATED OTHERWISE ON THE DRAWINGS:
 - CONCRETE EXPOSED TO WEATHER OR IN CONTACT WITH GROUND 2 INCHES
 - CONCRETE CAST AGAINST SLAB 3 INCHES
10. COORDINATE LOCATION OF STEEL ANCHOR BOLTS WITH STEEL FABRICATOR PRIOR TO INSTALLATION IN FIELD.
11. CONTRACTOR SHALL PROVIDE SLEEVES FOR ALL WALL/SLAB PENETRATIONS (PIPING, CONDUIT, ETC.)

1 GPS ANTENNA DETAIL

SCALE:
N.T.S.

2 ANTENNA MOUNTING DETAIL

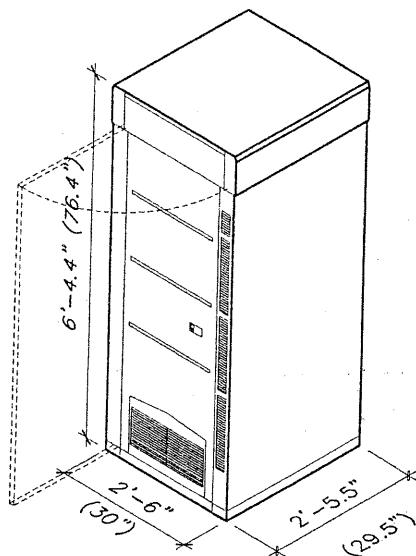
SCALE:
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3 CONCRETE NOTES

SCALE:
N.T.S.

4 NOT USED

SCALE:
N.T.S.

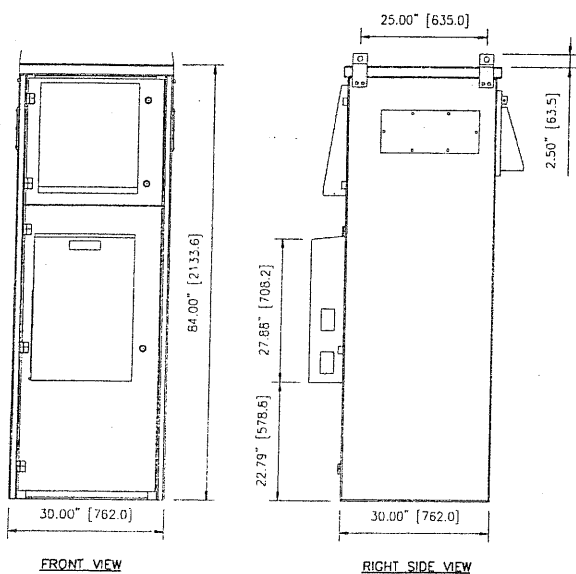


5 ULTRASITE PERSPECTIVE

SCALE:
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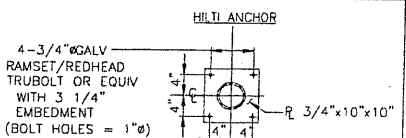
6 ULTRASITE FRONT ELEV.

SCALE:
N.T.S.



NOKIA OUTDOOR DIMENSIONS		
CABINET	DEPTH x WIDTH x HEIGHT	
OUTDOOR ULTRASITE BTS / ARGUS Te20 POWER ENCLOSURE	29.5"x30.3"x76.4"--NOTE 1 (750mm x 770mm x 1940mm)	
NOKIA OUTDOOR WEIGHT & SLAB LOADING		
CABINET	APPROX. MAX. WT.	MAX. SLAB LOADING
OUTDOOR ULTRASITE BTS	844.8 LBS (384 KG)	136 LBS/FT² (671 KG/M²)
ARGUS Te20 POWER ENCLOSURE		
NOKIA OUTDOOR MINIMUM CLEARANCES		
DIRECTION	MINIMUM CLEARANCE	
CABINET REAR AND WALL	0" (0mm)	
CABINET RIGHT/LEFT SIDE AND WALL	0" (0mm)	
ABOVE THE CABINET	30" (762mm)	
IN FRONT OF THE CABINET	36" 40"(NOTE 1) 48"(NOTE 2)	

OPTIONAL



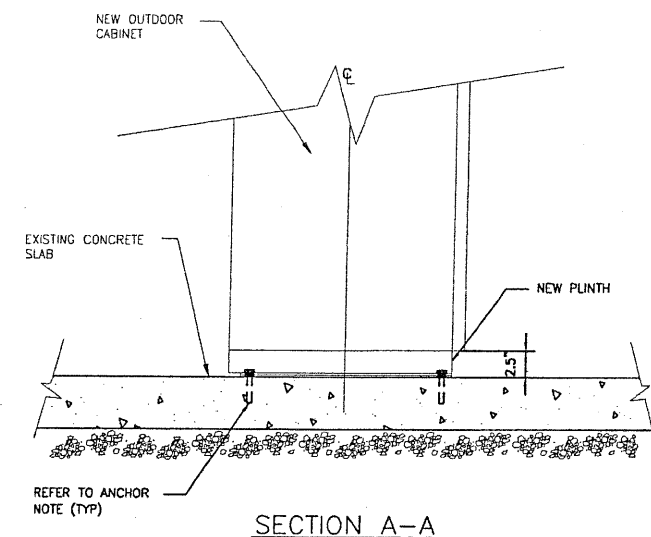
INSTALL DRIP LOOP ON ANTENNA CABLES AT BOTTOM OF TOWER/MONOPOLE. BENDING RADIUS PER MANUFACTURER'S STANDARDS

NOTES:

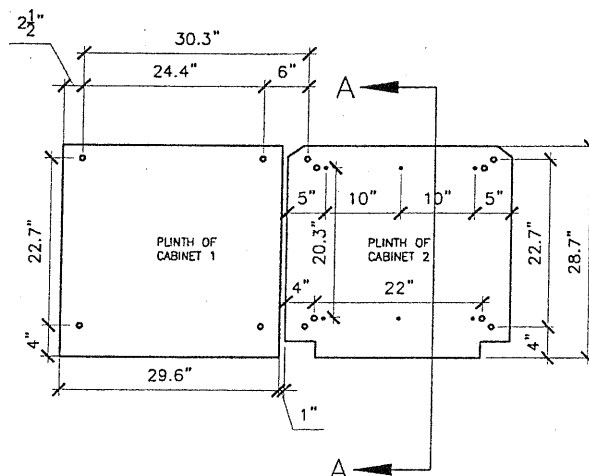
1. WHEN USING COMPONENTS AS SHOWN IN STANDARD DETAILS, MAXIMUM ALLOWABLE SPAN BETWEEN SUPPORTS ON A CONTINUOUS SINGLE SECTION OF BRIDGE CHANNEL SHALL BE 9 FEET FOR 10 FEET BRIDGE CHANNEL.
2. WHEN USING COMPONENTS FOR SPLICING BRIDGE CHANNEL SECTIONS, THE SPLICE SHOULD BE PROVIDED AT THE SUPPORT, IF POSSIBLE, OR AT A MAXIMUM OF 2 FEET FROM THE SUPPORT.
3. WHEN USING COMPONENTS, SUPPORT SHOULD BE PROVIDED AS CLOSE AS POSSIBLE TO THE ENDS OF ICE BRIDGES, WITH A MAXIMUM CANTILEVER DISTANCE OF 2 FEET FROM THE SUPPORT TO THE FREE END OF THE ICE BRIDGE.
4. CUT BRIDGE CHANNEL SECTIONS SHALL HAVE RAW EDGES TREATED WITH A MATERIAL TO RESTORE THESE EDGES TO THE ORIGINAL CHANNEL, OR EQUIVALENT, FINISH.
5. ICE BRIDGES MAY BE CONSTRUCTED WITH COMPONENTS FROM OTHER MANUFACTURERS, PROVIDED THE MANUFACTURER'S INSTALLATION GUIDELINES ARE FOLLOWED.
6. DEVIATIONS FROM STANDARDS FOR COMPONENT INSTALLATIONS ARE PERMITTED WITH THE RESPECTIVE MANUFACTURER'S APPROVAL.
7. DEVIATIONS FROM ICE BRIDGE FOUNDATIONS REQUIRE ENGINEERING APPROVAL.

9 ICEBRIDGE DETAIL

SCALE:
N.T.S.



ANCHOR NOTE:
3/8" Ø THREADED RODS EMBEDDED 3" (MIN.) INTO CONCRETE
SLAB SECURED WITH HILTI HY150 INJECTION ADHESIVE ANCHOR



EQUIPMENT ANCHOR PLAN

7 ARGUS Te20 CABINET DETAIL

8 NOKIA CABINET DETAIL

SCALE:
N.T.S.

9 ICEBRIDGE DETAIL

10 CABINET ANCHORING DETAIL

SCALE:
N.T.S.

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00346-006 7-17-07

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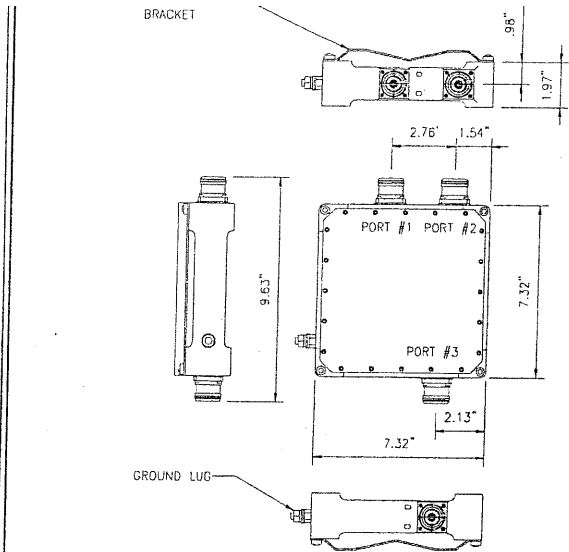
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A-3



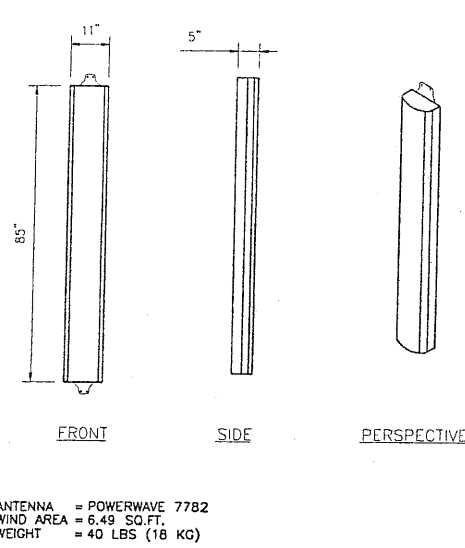
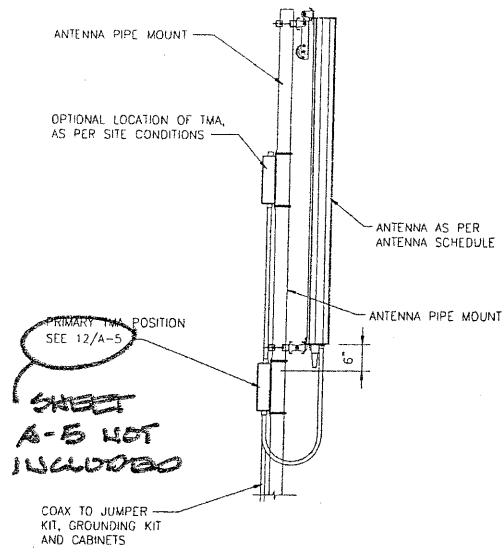
NOTE:
DIPLEXER MODEL - "ANDREW" 641280-DF

1 ANDREW DIPLEXER DETAIL

SCALE:
N.T.S.

2 EXISTING ERICSSON TMA DETAIL

SCALE:
N.T.S.

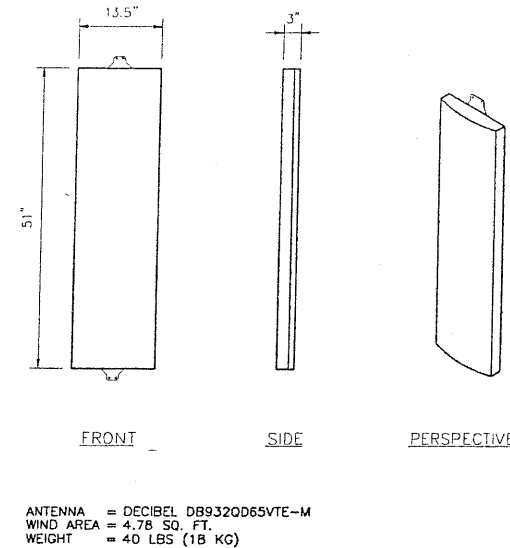


3 NEW ANTENNA DETAIL

SCALE:
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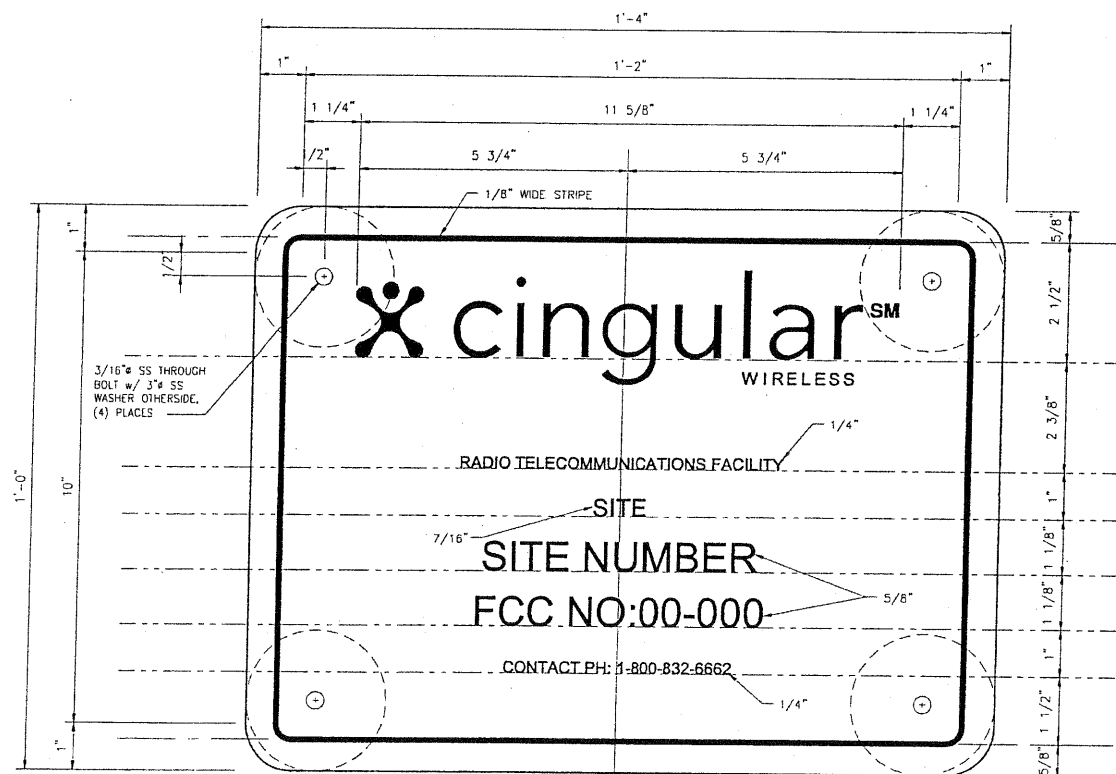
4 EXISTING ANTENNA DETAIL

SCALE:
N.T.S.



NOTE

- FOR CINGULAR LOGO SEE CINGULAR LOGO DESIGN SPECIFICATIONS (PROVIDED BY CINGULAR)
- ALL TEXT FONT IS ARIAL U.N.O.
- CONTRACTOR TO PROCURE FCC NO. FROM KENN GEORGE (CINGULAR COMPLIANCE SPECIALIST) PH: (425) 895-6938



9 CINGULAR SIGNAGE DETAIL

SCALE:
N.T.S.

11 RF WARNING SIGN

SCALE:
N.T.S.

1. SIGNS & PLACEMENT

- A. LOW LEVEL (BLUE) WARNING SIGNS - PLACE AT SITE ENTRY/ACCESS POINTS ONLY:

ROOF TOPS: PLACE SIGNS ON THE INSIDE OF ROOF HATCH; PLACE ON ACCESS DOOR UNLESS DOOR IS USED BY GENERAL PUBLIC OR BUILDING TENANTS REGULARLY FOR ACCESS - IN THESE CASES CONSULT CONSTRUCTION MANAGER OR QC SUPERVISOR

WATER TANKS: PLACE SIGNS ON COMPOUND GATE

CINGULAR-OWNED SITES: PLACE ONE SIGN ON SITE GATE

- B. HIGH LEVEL (RED) WARNING SIGNS - PLACE AT ALL ANTENNA SECTORS WHERE ACCESS BY THE GENERAL PUBLIC TO THE ANTENNAS IS POSSIBLE:

ALL SIGNS WILL BE SECURED WITH EITHER STAINLESS STEEL ZIP TIES OR STAINLESS TECH SCREWS

2. CC PARTICIPATION IN SIGN LOCATION

CC WILL MEET WITH ALL CC'S TO OUTLINE CRITERIA FOR SIGN PLACEMENT; EMPHASIS WILL BE ON 'GRAY AREA' SITES, WHERE SIGN PLACEMENT IS PARTICULARLY CHALLENGING - WE WILL GIVE CC'S AS MUCH GUIDANCE ON SPECIFIC SITUATIONS AS WE CAN FORESEE, BUT CC'S WILL BE ENCOURAGED TO PARTNER CC OR QC IN DECIDING PLACEMENT OF DIFFICULT SITES. A JOINT SITE VISIT MAY BE REQUIRED TO FULFILL REQUIREMENTS

CC WILL CALL OUT SIGN LOCATION(S) AT THE A&E WALK FOR EACH SITE AS THOSE OCCUR

ON SITES WITH EXISTING A&E BUT NOT YET CONSTRUCTED, CC WILL BE ASKED TO PROVIDE (WITHIN A REASONABLE TIME FRAME TBD) A DETAIL FOR SIGN PLACEMENT THAT WILL BE SLIP-SHEETED INTO EXISTING SETS

3. SIGN DISBURSEMENT FROM WAREHOUSE

SIGNS WILL BE IN STACK AT KENT WAREHOUSE TO BE DISBURSED AS PART OF THE GC BOM AS CALLED OUT IN A&E DRAWINGS FOR EACH SITE

NOTICE



Beyond this point you are entering an area where RF Emissions may exceed the FCC General Population Exposure Limits
Follow all posted signs and site guidelines for working in on RF environment

Ref: FCC47CFR 1.137(b)

Cingular Wireless

WARNING



Beyond this point you are entering a controlled area where RF Emissions exceed the FCC Controlled Exposure Limits

Failure to obey all posted signs and site guidelines could result in serious injury

Ref: FCC 47CFR 1.137(b)

Cingular Wireless

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00346-007 7-17-07

KDC
Architects - Engineers, P.C.
4720 200TH STREET SW, SUITE 200
LYNNWOOD, WA 98036
PHONE: (425) 670-8851

DATE: 08/30/2005

DRAWN BY: JDM

CHECKED BY: EJC

REVISIONS

DATE	DESCRIPTION	BY
06/11/2005	ISSUED FOR 90% CD REVIEW	JDM
07/09/2005	ISSUED FOR CONSTRUCTION	CJC
08/05/2005	ISSUED FOR FINAL CONSTRUCTION	CRW
08/25/2005	ISSUED FOR REV CONSTRUCTION	JDM
08/30/2005	ISSUED FOR REV CONSTRUCTION	JDM

SITE NUMBER

BE0124 (WA322)

NE FERNDAL

2601 THORNTON RD

FERNDAL, WA 98248

A-4

x cingular		RF Data Sheet	
Site Information		Release Information	
Market	Washington	Date Issued	05/20/05
Zone ID		Revision Level	2.0
Site Name	NE Ferndale	Contact Details	
TDMA Site Name		Cingular RF Engineer	Jeff Riecke
GSM Site ID	WA322	Phone	206 696-6658
USID		Cingular RF Manager	Mark Loarie
Structure Type	Monopole	Phone	206-696-6004
Latitude (dd, mm, ss)	48	Technology Information	
Longitude (dd, mm, ss)	722	Project Type	Network Consolidation
Latitude (decimal)	48.86088889	Technology	
Longitude (decimal)	122.6228028	E-911 Information	
County	WHATCOM		
Street Address	2601 THORNTON RD		
City	FERNDALE	State	WA
Zip Code	98248		

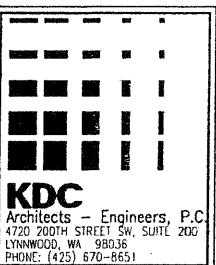
BE0124

Existing Configuration	Sector A			Sector B			Sector C		
	ERP (dBm)	SSM (dB)	CSM (dB)	ERP (dBm)	SSM (dB)	CSM (dB)	ERP (dBm)	SSM (dB)	CSM (dB)
Number of Antennas	1			1			1		
Antenna Port Number	1b+1b+1c+1d			7a+7b+7c+7d			13a+13b+13c+13d		
Antenna Vendor	Decibel			Decibel			Decibel		
Antenna Model	932QDG65VTE-M			932QDG65VTE-M			932QDG65VTE-M		
Antenna (Band / Pol)	SBQP			SBQP			SBQP		
Antenna HBW	65			65			65		
Azimuth	30			120			270		
Electrical Tilt	0			0			0		
Mechanical Tilt	0			0			0		
RET	No			No			No		
Antenna Dimensions (inches) (W,L,H)	51.5 x 14 x 3			51.5 x 14 x 3			51.5 x 14 x 3		
Antenna Weight (lbs)	24			24			24		
Rad Center (ft)	70			70			70		
Number of Feeders	2			2			2		
Feeder Type	LDF5 7/8"			LDF5 7/8"			LDF5 7/8"		
Feeder Length	90			90			90		
Number of TMA	2			2			2		
TMA Type	Ericsson			Ericsson			Ericsson		
TMA DIM (Weight(lb),length,height)									
Diplexed	No			No			No		
Antenna (Sharing / Type)	No			No			No		
MCPA	No			No			No		
TRX Count	2			2			1		
ERP (dBm / Watts)	/			/			/		

Planned Configuration	Sector A			Sector B			Sector C		
	ERP (dBm)	SSM (dB)	CSM (dB)	ERP (dBm)	SSM (dB)	CSM (dB)	ERP (dBm)	SSM (dB)	CSM (dB)
Number of Antennas	1			1			1		
Antenna Port Number	1a+1b	1e+1f	1c+1d	7a+7b	7e+7f	7c+7d	13a+13b	13e+13f	13c+13d
Antenna Vendor	PowerWave			PowerWave			PowerWave		
Antenna Model	7782			7782			7782		
Antenna (Band / Pol)	Tn DBDP			Tn DBDP			Tn DBDP		
Antenna HBW	65			65			65		
Azimuth	30			120			270		
Electrical Tilt	3	3	3	3	3	3	3	3	3
Mechanical Tilt	0			0			0		
RET	No			No			No		
Antenna Dimensions (inches) (W,L,H)	80.03 x 11.02 x 4.92			80.03 x 11.02 x 4.92			80.03 x 11.02 x 4.92		
Antenna Weight (lbs)	40			40			40		
Rad Center (ft)	70			70			70		
Number of Feeders	2	2		2	2		2	2	
Feeder Type	LDF5 7/8"	LDF5 7/8"		LDF5 7/8"	LDF5 7/8"		LDF5 7/8"	LDF5 7/8"	
Feeder Length	90	90		90	90		90	90	
Number of TMA	2	0	0	2	0	0	2	0	0
TMA Type	Ericsson	None	None	Ericsson	None	None	Ericsson	None	None
TMA DIM (Weight(lb),length,height)									
Diplexed	No	Yes		No	Yes		No	Yes	
Antenna (Sharing / Type)	No	No	No	No	No	No	No	No	No
MCPA	No	No	No	No	No	No	No	No	No
TRX Count	2	2	2	2	2	2	1	2	2
ERP (dBm / Watts)	/	/	/	/	/	/	/	/	/

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DATE: 08/30/2005

DRAWN BY: JDM

CHECKED BY: EJC

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SITE NUMBER

BE0124 (WA322)
NE FERNDAL
2601 THORNTON RD
FERNDAL, WA 98248

RF-1

SWEEP TEST REQUIREMENTS:

A) REQUIRED EQUIPMENT.

- 1 ANRITSU SITE MASTER S331B/C/D OR EQUIVALENT.
- 1 OPEN, SHORT, LOAD.
- 1 DIN FEMALE TO N TYPE MALE ADAPTER (LOW LOSS).
- 1 DIN MALE TO N TYPE MALE ADAPTER (LOW LOSS).
- 2 DIN FEMALE TO DIN FEMALE ADAPTER (LOW LOSS).
- 1 PHASE STABLE CABLE.
- 1 TRUE-RMS MULTI-METER.

B) TRANSMISSION LINE AND ANTENNA SYSTEM TEST

- (1) TRANSMISSION LINE DISTANCE TO FAULT LOAD (RL)
- (2) INSERTION LOST SHORT (RL)
- (3) TRANSMISSION LINE CONTINUITY TEST (MULTI METER)
- (4) ANTENNA SYSTEM (RL)
- (5) ANTENNA SYSTEM WITH TMA/ANTENNA (RL)

C) CALIBRATE SITE MASTER

D) TEST FREQUENCIES:

PCS BAND F1= 1850 F2= 1990 850 BAND F1= 824 F2= 894
TX FREQ F1= 1930 F2= 1990 TX FREQ F1= 869 F2 894
RX FREQ F1= 1850 F2= 1910 RX FREQ F1= 824 F2 849
G8= GSM 850 T8= TDMA 850 G9= 1900 GSM U9= 1900 UMTS

- 1. PRESS MODE AND HIGHLIGHT RETURN LOSS.
- 2. ENTER FREQUENCY VALUES FOR F1 AND F2. SEE TEST FREQUENCIES FOR VALUES
- 3. PRESS SWEEP, RESOLUTION THEN SELECT 517
- 4. PRESS START CAL AND FOLLOW INSTRUCTIONS FOR OPEN/SHORT/LOAD
- 5. ONCE SITE MASTER HAS FINISHED CALIBRATING DO NOT REMOVE LOAD. VERIFY THE TRACE IS FLAT (A FEW SPIKES ARE OK) AND MEASURES AROUND -54 DB. IF NOT RETIGHTEN ALL CONNECTORS AND RECALIBRATE. IF IT IS NOT FAIRLY FLAT AND MEASURING -54 DB EITHER THE LOAD IS BAD OR THE SITE MASTER HAS A PROBLEM.
- 6. ONCE CALIBRATION IS COMPLETED SAVE CAL/SET SETUP

E) TRANSMISSION LINE/LOAD DISTANCE TO FAULT (RL)

THIS TEST IS A PERFORMANCE VERIFICATION AND FAILURE ANALYSIS TOOL FOR THE TRANSMISSION LINES AND CONNECTORS.

TEST FREQUENCIES: 1900 F1=1850 F2=1990/850 F1= 824 F2= 894

F) INSERTION LOSS

THIS TEST WILL MEASURE THE CABLE LOSS OF THE TRANSMISSION LINE AND JUMPERS BETWEEN THE CABINET AND ANTENNA.

	ANDREWS	EUPEN	COMMSCOPE
1 5/8	IL	IL	IL
150'	-2.93	-3.24	-2.7
200'	-3.5	-3.8	-3.27
250'	-4.1	-4.5	-3.8
300'	-4.62	-5	-4.32
7/8			
135'	-3.6	-4.2	-3.32

TEST FREQUENCIES: 1900 F1=1850 F2=1990/850 F1= 824 F2= 894

- 1. ENTER TEST FREQUENCIES AND PERFORM CALIBRATION PROCEDURE LISTED ABOVE.
- 2. STARTING WITH TX/RX 1. USE THE DIN (F) TO DIN (F) CONNECTOR TO BYPASS THE TMA SHOWN IN FIGURE 1.
- 3. CONNECT A SHORT AT THE END OF THE ANTENNA JUMPER SHOWN IN FIGURE 1
- 4. PERFORM INSERTION LOSS MEASUREMENT.
- 5. MARK MAX RL WITH M1 AND MIN RL WITH M2. ADD M1 TO M2 THEN DIVIDE BY 2. M1+M2/2=IL AVERAGE SHOULD NOT BE >-4 DB. IF NOT USE TABLE 1 AS A REFERENCE, M1+M2/4 =SHOULD NOT EXCEED THE CALCULATED VALUE MORE THEN 1 DB.
- 6. LABEL SWEEP AS SITE ID_SECTOR_CABLE LABEL_TYPE OF SWEEP THEN SAVE SWEEP
- 7. REPEAT INSERTION LOSS TEST FOR THE REMAINING TRANSMISSION LINES.

EXAMPLE: TA3135_A_1AG9_DTF-LOAD

G) TRANSMISSION LINE CONTINUITY TEST

THIS TEST WILL VERIFY THE CONTINUITY OF THE RX PATH BETWEEN THE BTS AND THE TMA FOR THE 15 VDC NETWORK.

- 1. CONTINUITY TEST SHOULD BE PERFORMED RIGHT AFTER THE INSERTION LOSS TEST WHILE THE SHORT IS STILL CONNECTED. IF NOT; CONNECT A SHORT ON THE END OF THE TMA JUMPER SHOWN IN FIGURE 1
- 2. CONNECT THE METER TO THE LAST CONNECTOR RED LEAD TO CENTER PIN BLACK LEAD TO CONNECTOR BODY
- 3. VERIFY METER READS A SHORT
- 4. REMOVE SHORT AND VERIFY METER READS OPEN.
- 5. IF STEPS 3 OR 4 FAIL CLEAN THE GLUE OFF THE CENTER CONDUCTOR ON THE JUMPERS
- 6. REPEAT STEPS 1 THROUGH 6 FOR THE REMAINING RECEIVE PATHS.

EXAMPLE: TA3135_A_1AG9_IL-SHORT

H) ANTENNA SYSTEM RETURN LOSS

THIS TEST MEASURES THE RL OF THE TRANSMISSION LINE TERMINATING INTO THE ANTENNA WITHOUT THE TMA AND DUPLEXER.

TEST FREQUENCIES: 1900 F1=1850 F2=1990/850 F1= 824 F2= 89

- 1. PRESS MODE, THEN SELECT HIGHLIGHT RETURN LOSS ON SITE MASTER
- 2. VERIFY CAL ON IS STILL LIGHT IN TOP LEFT CORNER OF SITE MATER; IF NOT RE-CALIBRATE SITE MASTER.
- 3. PRESS LIMIT TO SET THE HORIZONTAL MARKER; SET LIMIT LEVEL TO -17 DB
- 4. STARTING WITH TX/RX 1. USE THE DIN (F) TO DIN (F) CONNECTORS TO BYPASS THE TMA AS SHOWN IN FIGURE 2.
- 5. PERFORM RETURN LOSS MEASUREMENT
- 6. PRESS MARKERS SELECT M1 THEN MARK PEAK
- 7. VERIFY MARKER M1 IS > -17 DB
- 8. LABEL SWEEP AS SITE ID_SECTOR_CABLE LABEL_TYPE OF SWEEP THEN SAVE SWEEP
- 9. REPEAT RETURN LOSS TEST FOR THE REMAINING TRANSMISSION LINES

EXAMPLE: TA3135_A_1AG9_RL-ANT

I) ANTENNA SYSTEM WITH DIPLEXER/TMA RETURN LOSS

THIS TEST MEASURES THE RL OF THE COMPLETE ANTENNA NETWORK ON THE TX AND RX PATH.

TX TEST FREQUENCIES: F1=1930 F2=1990

- 1. ENTER TEST FREQUENCIES AND PERFORM CALIBRATION PROCEDURE LISTED ABOVE.
- 2. PRESS LIMIT TO SET THE HORIZONTAL MARKER; SET LIMIT LEVEL TO -15 DB
- 3. STARTING WITH TX/RX 1. REMOVE THE DIN (F) TO DIN (F) CONNECTOR AND RECONNECT THE TMA SHOWN IN FIGURE 1 AND DIPLEXER IF PROVIDED.
- 4. PERFORM RETURN LOSS MEASUREMENT.
- 5. PRESS MARKERS SELECT M1 THEN MARK PEAK
- 6. VERIFY MARKER M1 IS > -15 DB
- 7. LABEL SWEEP AS SITE ID_SECTOR_CABLE LABEL_TYPE OF SWEEP THEN SAVE SWEEP
- 8. DISCONNECT SWEEP GEAR FROM TX/RX 1.
- 9. REPEAT RETURN LOSS TEST FOR THE REMAINING TRANSMISSION LINES

EXAMPLE: TA3135_A_1AG9_RL-TX

RX TEST FREQUENCIES: F1=1850 F2=1910

- 1. ENTER TEST FREQUENCIES AND PERFORM CALIBRATION PROCEDURE LISTED ABOVE.
- 2. PRESS LIMIT TO SET THE HORIZONTAL MARKER; SET LIMIT LEVEL TO -15 DB
- 3. STARTING WITH TX/RX 1. REMOVE THE DIN (F) TO DIN (F) CONNECTORS AND RECONNECT THE TMA SHOWN IN FIGURE 1 AND CONNECT DIPLEXER IF PROVIDED.
- 4. PERFORM RETURN LOSS MEASUREMENT.
- 5. PRESS MARKERS SELECT M1 THEN MARK PEAK
- 6. VERIFY MARKER M1 IS > -15 DB
- 7. LABEL SWEEP AS SITE ID_SECTOR_CABLE LABEL_TYPE OF SWEEP THEN SAVE SWEEP
- 8. DISCONNECT SWEEP GEAR FROM TX/RX 1.
- 9. REPEAT RETURN LOSS TEST FOR THE REMAINING TRANSMISSIONS LINES

EXAMPLE: TA3135_A_1AG9_RL-RX

TX/RX TEST FREQUENCIES: F1= 824 F2= 894

- 1. ENTER TEST FREQUENCIES AND PERFORM CALIBRATION PROCEDURE LISTED ABOVE.
- 2. PRESS LIMIT TO SET THE HORIZONTAL MARKER; SET LIMIT LEVEL TO -15 DB
- 3. STARTING WITH TX/RX 1. CONNECT THE DIPLEXERS IF PROVIDED.
- 4. PERFORM RETURN LOSS MEASUREMENT.
- 5. PRESS MARKERS SELECT M1 THEN MARK PEAK
- 6. VERIFY MARKER M1 IS > -15 DB
- 7. LABEL SWEEP AS SITE ID_SECTOR_CABLE LABEL_TYPE OF SWEEP THEN SAVE SWEEP.
- 8. DISCONNECT SWEEP GEAR FROM TX/RX 1.
- 9. REPEAT RETURN LOSS TEST FOR THE REMAINING TRANSMISSION LINES.

EXAMPLE: TA3135_A_1AG8_RL-SYS

NOTE: FOR SITE MODIFICATION PERFORM THE ANTENNA SYSTEM WITH DIPLEXER AND TMA RL

EMAIL SWEEPS TO:PIERO.ROVANI@CINGULAR.COM & ERIC.JOHNSON@CINGULAR.COM

QUESTIONS CONTACT: JAMES FUGATE @ 206-240-9006

CABLE MARKING TAGS

TO PROVIDE ADDITIONAL IDENTIFICATION EACH RF CABLE SHALL BE IDENTIFIED WITH A METAL TAG MADE OF STAINLESS STEEL OR BRASS AND STAMPED AS SHOWN. THE ID MARKING LOCATIONS SHOULD BE AS PER "CABLE MARKING LOCATIONS TABLE". THE TAG SHOULD BE ATTACHED WITH CORROSION PROOF WIRE AROUND THE CABLE.

THE FOLLOWING ARE 3 DIFFERENT FORMATS TO BE USED FOR THE BRASS TAGS.

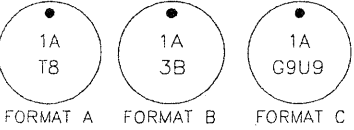
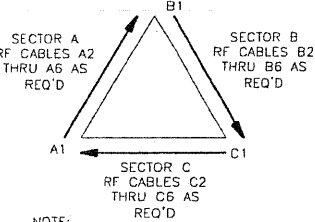


DIAGRAM OF BRASS TAG FORMATS

FORMAT A IS USED WHEN THERE IS ONLY ONE TECHNOLOGY BEING CARRIED ON A CABLE. FORMAT B IS USED WHEN TWO TECHNOLOGIES HAVE BEEN DIPLEXED ONTO ONE CABLE AND WILL BE BROKEN OUT THROUGH A DIPLEXOR AT THE TOP OF THE TOWER. FORMAT C IS USED WHEN TWO TECHNOLOGIES HAVE BEEN QUADRAPLEXED ONTO ONE CABLE FOR ANTENNA PORT SHARING AT THE TOP OF THE TOWER.

THE FIRST NUMBER DESIGNATES THE ANTENNA POSITION, THE SECOND CHARACTER DESIGNATES THE PORT ON THE ANTENNA, THE THIRD CHARACTER DESIGNATES THE TECHNOLOGY TYPE, AND THE LAST NUMBER DESIGNATES THE FREQUENCY BAND OF THE TECHNOLOGY.



ALL RF CABLE SHALL BE MARKED AS PER CABLE MARKING LOCATIONS TABLE BELOW:

CABLE MARKING LOCATIONS		
NO.	TAG	LOCATIONS
1.	X	END OF THE MAIN COAX RUN WHERE THE COAXIAL CABLE AND JUMPER TO THE ANTENNA ARE CONNECTED.
2.	X	CABLE ENTRY PORT ON THE INTERIOR OF THE SHELTER (AS APPLICABLE).
3.	X	END OF JUMPER AT BTS CABINET

CABLE COLOR MARKING

IN ADDITION TO THE IMPLEMENTATION OF BRASS TAGS, CONTRACTORS SHALL USE ONE BAND OF COLOR TAPE PER CABLE FOR SECTOR DESIGNATION LABELING.

THE COLORS SHALL BE AS FOLLOWS:

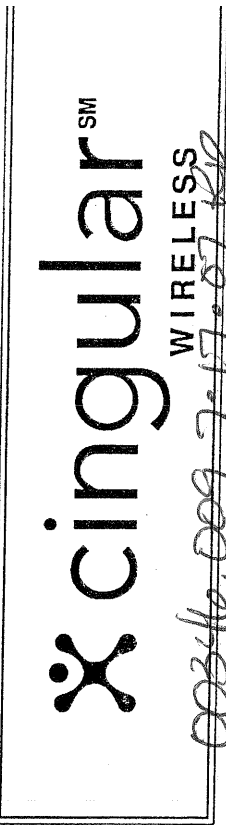
SECTOR A: RED
SECTOR B: BLUE
SECTOR C: GREEN

THE SECTOR DESIGNATIONS SHALL BE MARKED AS DESCRIBED ON THE CURRENT RF DATASHEET (RFDS) AT TIME OF INSTALLATION. RF DATASHEET IS TO REMAIN POSTED AT EVERY SITE.

COAX BOOT SPECIFICATION

ENTRY BOOTS TO SEAL COAX WITHIN 6" CONDUITS SHALL BE: ROXTEC H SEAL
H3-150/3X(28-54)/20 SEE COAX CONDUIT EXIT SEAL DETAIL (WHEN APPLICABLE)

CONTRACTOR SHALL USE THE ABOVE PRODUCTS OR APPROVED EQUAL.



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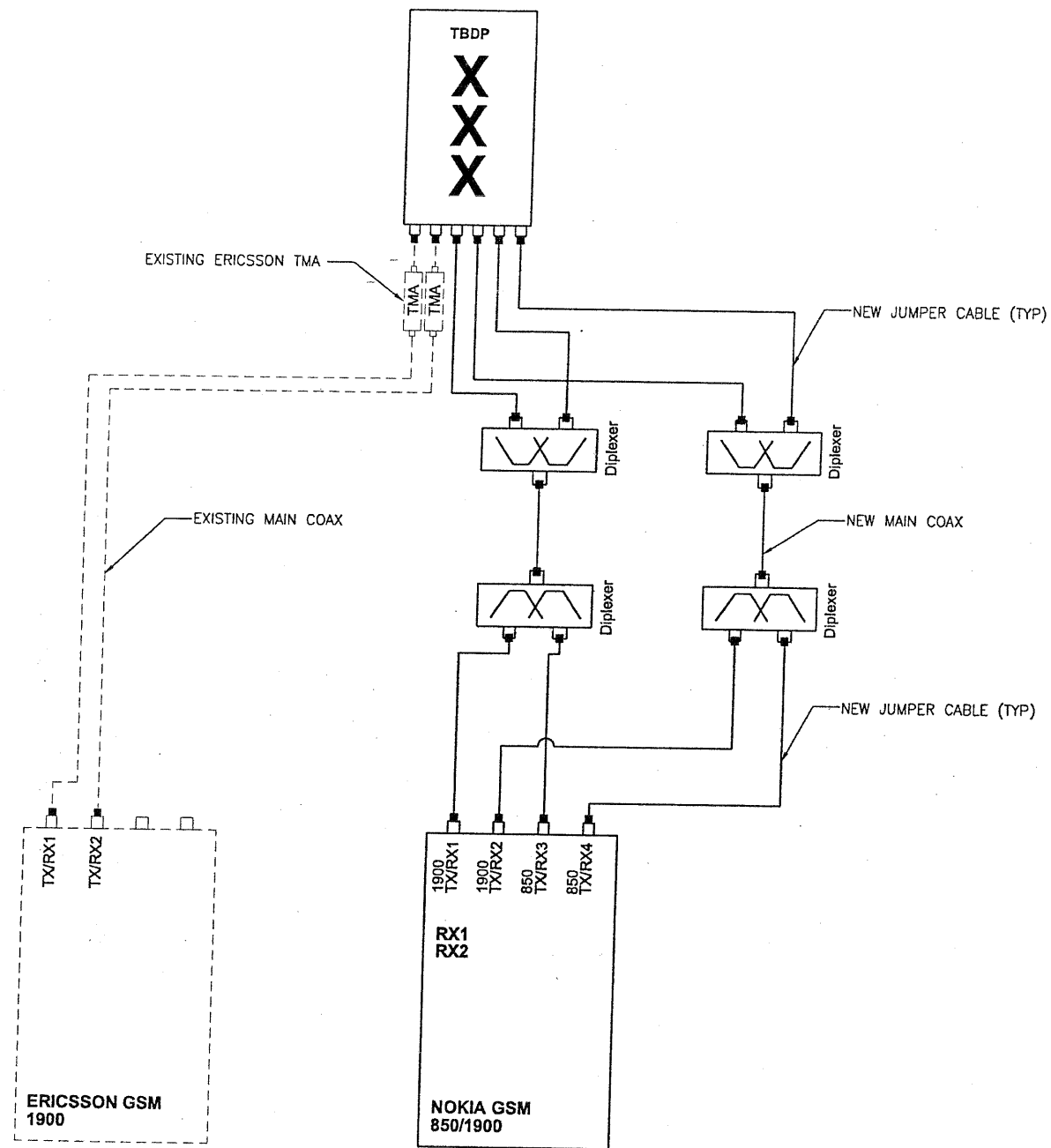
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SITE NUMBER
BE0124 (WA322)
NE FERNDALE
2601 THORNTON RD
FERNDALE, WA 98248

RF2



SECTORS A, B & C

COAX LENGTH SCHEDULE					
SECTOR	LENGTH	DIAMETER	EXISTING COAX	NEW COAX	TOTAL COAX
SECTOR "A"	90'-0"	7/8"	2	2	4
SECTOR "B"	90'-0"	7/8"	2	2	4
SECTOR "C"	90'-0"	7/8"	2	2	4

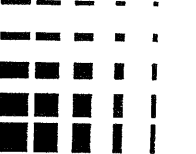
NOTE:
DIPLEXER MODEL IS "ANDREW" 641280-DF

1 TYPICAL SECTOR PLUMBING DIAGRAM

SCALE:
N.T.S.

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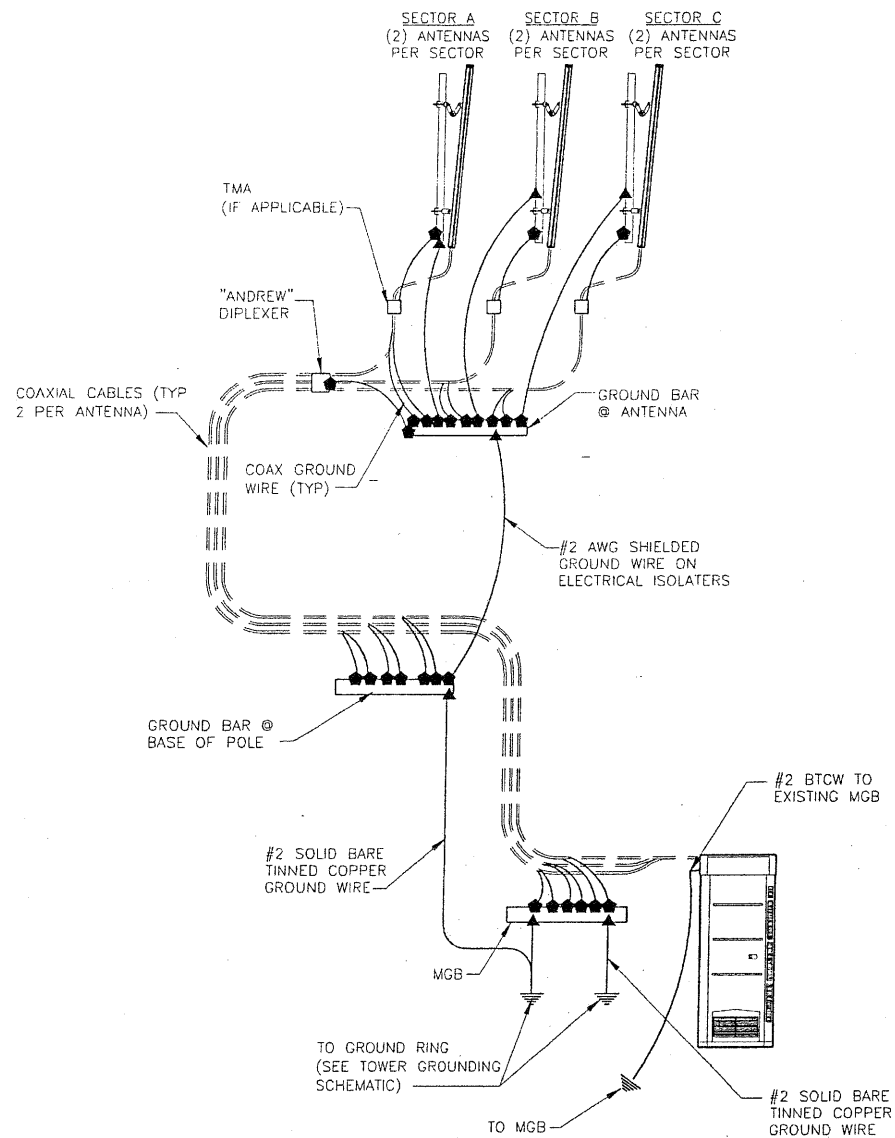
BE0124 (WA322)
NE FERNDAL
2601 THORNTON RD
FERNDAL, WA 98248

RF-3

ELECTRICAL SPECIFICATION:

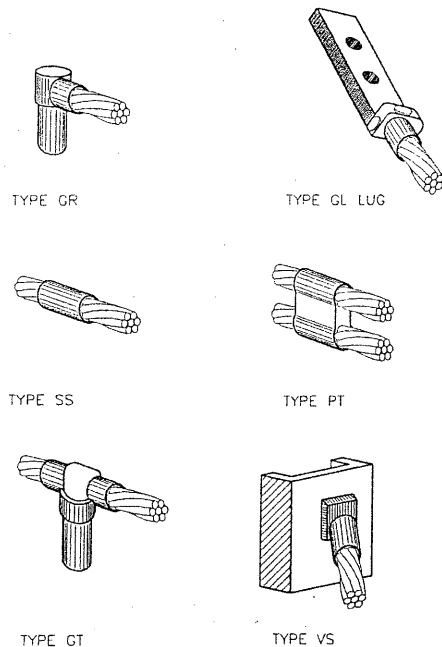
1. ALL ELECTRICAL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE.
2. COMPLY WITH THE LATEST EDITION OF THE UNIFORM BUILDING CODE, THE REQUIREMENTS OF ALL APPLICABLE MUNICIPAL AND STATE CODES AND REGULATIONS, AND UTILITY GUIDELINES.
3. PERFORM ALL VERIFICATION, OBSERVATIONS, TESTING AND EXAMINATION OF WORK PRIOR TO THE ORDERING OF ELECTRICAL EQUIPMENT AND THE ACTUAL CONSTRUCTION. ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE CONSTRUCTION MANAGER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.
4. UNDERGROUND CONDUIT SHALL BE RIGID POLYVINYL CHLORIDE CONDUIT: SCHEDULE 40, TYPE " CONFORMING TO UL ARTICLE 651: WESTERN PLASTICS OR CARBON MANUFACTURER. COUPLINGS SHALL BE SLIP-ON SOLVENT SEALED T PIPE: SOLVENT, WESTERN TYPE COMPATIBLE WITH PVC DUCT. ALL BENDS SHALL BE 30" MINIMUM RADIUS.
5. ALL WIRING SHALL BE STRANDED COPPER WITH MINIMUM 600V INSULATION (UNLESS OTHERWISE NOTED).
6. NEUTRAL SHALL BE COLOR CODED, INSULATION SHALL BE CROSS-LINKED POLYETHYLENE.
7. CONTRACTOR TO CONTACT ALL UTILITIES FOR LOCATION OF UNDERGROUND SERVICES. SERVICE LOCATIONS TO BE CONFIRMED PRIOR TO CONSTRUCTION.
8. THE CONTRACTOR IS RESPONSIBLE FOR ALL PERMITTING, FLUNG, AND FEES IN CONJUNCTION WITH THE PROJECT.
9. THE CONTRACTOR SHALL SCHEDULE ALL NECESSARY INSPECTIONS WITH THE PROPER AUTHORITIES AND INFORM CINGULAR 24-HOURS IN ADVANCE. ALL TICKETS AND INSPECTION VERIFICATIONS WILL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE WITHIN 24-HOURS AFTER THE INSPECTION HAS TAKEN PLACE.
10. ALL EQUIPMENT, WIRING, AND MATERIALS MUST HAVE A UL LABEL
11. ALL WORK SHALL BE DONE BY QUALIFIED AND EXPERIENCED JOURNEYMEN AND PERFORMED IN A WORKMANLIKE MANNER AND SHALL PROCEED IN AN ORDERLY MANNER SO AS NOT TO HOLD UP THE PROGRESS OF THE PROJECT.
12. THOROUGHLY TEST ALL LINES FEEDERS, EQUIPMENT, AND DEVICES WITH MAXIMUM LOADS TO ASSURE PROPER OPERATION
13. CONDUCTOR LENGTHS SHALL BE CONTINUOUS FROM TERMINATION TO TERMINATION WITHOUT SPLICES
14. PROVIDE PULL BOXES WHERE SHOWN AND/OR WHERE REQUIRED BY CODES AND/OR UTILITY COMPANIES.
15. ALL CONDUIT ROUGH IN SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION CONFLICTS CONTRACTOR SHALL VERIFY ALL LOCATIONS
16. ALL WIRES SHALL BE TAGGED AT ALL PULL BOXES, J-BOXES, EQUIPMENT BOXES, AND CABINETS WITH APPROVED PLASTIC TAGS.
17. ALL BREAKERS IN PANEL BOXES SHALL BE IDENTIFIED WITH TYPE WRITTEN LABELS NEATLY PLACED ALONG SIDE OF THE BREAKER.
18. ALL FIRE RATED WALL AND FLOOR PENETRATIONS ARE TO BE CAULKED AND SEALED WITH A FIRE RESISTANT CAULKING TO MAINTAIN THE INTEGRITY OF THE FIRE SEPARATION.
19. UTILIZE SONNEBORN TYPE NP-1 CAULKING FOR SEALING ALL EXTERIOR WALL PENETRATIONS

A											
225 A. BUS 200 A. MAIN CIRCUIT BREAKER FULL NEUTRAL BUS AND FULL GROUND BUS											
240 / 120 VOLT, 1 PHASE, 3 WIRE											
10000 AMPERE PANEL SHORT CIRCUIT RATING											
PANEL TYPE: CYCLANDER PANEL MOUNTING: SURFACE											
NOTE: PANELBOARD PROVIDED WITH INTERLOCKED MAIN BREAKER FOR ALTERNATE POWER SOURCE											
DESCRIPTION	TOTAL (VA)	BREAKER A / P	CCT	PH	CCT	BREAKER A / P	TOTAL (VA)	DESCRIPTION			
RECTIFIER	1980	30 / 2	1	A	2	30 / 2	1980	RECTIFIER			
RECTIFIER	1980	30 / 2	3	B	4	30 / 2	1980	RECTIFIER			
RECTIFIER	1980	30 / 2	5	A	6	30 / 2	1980	RECTIFIER			
RECTIFIER	1980	30 / 2	7	B	8	30 / 2	1980	RECTIFIER			
RECTIFIER	1980	30 / 2	9	A	10	30 / 2	1980	RECTIFIER			
RECTIFIER	1980	30 / 2	11	B	12	30 / 2	1980	RECTIFIER			
SURGE ARRESTOR	1800	60 / 2	13	A	14	30 / 1	1800	TE20 CABINET LTC AND RECEPTACLES EXIST PANEL			
SPACE	7200		15	B	16	20 /	7200				
SPACE	7200		17	A	18	100 /	7200				
SPACE	7200		19	B	20	2 /	7200				
SPACE	7200		21	A	22		7200				
SPACE	7200		23	B	24		7200				
SPACE	7200		25	A	26		7200				
SPACE	7200		27	B	28		7200				
SPACE	7200		29	A	30		7200				
SPACE	7200		31	B	32		7200				
SPACE	7200		33	A	34		7200				
SPACE	7200		35	B	36		7200				
SPACE	7200		37	A	38		7200				
SPACE	7200		39	B	40		7200				
SPACE	7200		41	A	42		7200				
SPACE	7200		43	B	44		7200				
SPACE	7200		45	A	46		7200				
SPACE	7200		47	B	48		7200				
SPACE	7200		49	A	50		7200				
SPACE	7200		51	B	52		7200				
SPACE	7200		53	A	54		7200				
SPACE	7200		55	B	56		7200				
SPACE	7200		57	A	58		7200				
SPACE	7200		59	B	60		7200				
SPACE	7200		61	A	62		7200				
SPACE	7200		63	B	64		7200				
SPACE	7200		65	A	66		7200				
SPACE	7200		67	B	68		7200				
SPACE	7200		69	A	70		7200				
SPACE	7200		71	B	72		7200				
SPACE	7200		73	A	74		7200				
SPACE	7200		75	B	76		7200				
SPACE	7200		77	A	78		7200				
SPACE	7200		79	B	80		7200				
SPACE	7200		81	A	82		7200				
SPACE	7200		83	B	84		7200				
SPACE	7200		85	A	86		7200				
SPACE	7200		87	B	88		7200				
SPACE	7200		89	A	90		7200				
SPACE	7200		91	B	92		7200				
SPACE	7200		93	A	94		7200				
SPACE	7200		95	B	96		7200				
SPACE	7200		97	A	98		7200				
SPACE	7200		99	B	100		7200				
SPACE	7200		101	A	102		7200				
SPACE	7200		103	B	104		7200				
SPACE	7200		105	A	106		7200				
SPACE	7200		107	B	108		7200				
SPACE	7200		109	A	110		7200				
SPACE	7200		111	B	112		7200				
SPACE	7200		113	A	114		7200				
SPACE	7200		115	B	116		7200				
SPACE	7200		117	A	118		7200				
SPACE	7200		119	B	120		7200				
SPACE	7200		121	A	122		7200				
SPACE	7200		123	B	124		7200				
SPACE	7200		125	A	126		7200				
SPACE	7200		127	B	128		7200				
SPACE	7200		129	A	130		7200				
SPACE	7200		131	B	132		7200				
SPACE	7200		133	A	134		7200				
SPACE	7200		135	B	136		7200				
SPACE	7200		137	A	138		7200				
SPACE	7200		139	B	140		7200				
SPACE	7200		141	A	142		7200				
SPACE	7200		143	B	144		7200				
SPACE	7200		145	A	146		7200				
SPACE	7200		147	B	148		7200				
SPACE	7200		149	A	150		7200				
SPACE	7200		151	B	152		7200				
SPACE	7200		153	A	154		7200				
SPACE	7200		155	B	156		7200				
SPACE	7200		157	A	158		7200				
SPACE	7200		159	B	160		7200				
SPACE	7200		161	A	162		7200				
SPACE	7200		163	B	164		7200				
SPACE	7200		165	A	166		7200				
SPACE	7200		167	B	168		7200				
SPACE	7200		169	A	170		7200				
SPACE	7200		171	B	172		7200				
SPACE	7200		173	A	174		7200				
SPACE	7200		175	B	176		7200				
SPACE	7200		177	A	178		7200				
SPACE	7200		179	B	180		7200				
SPACE	7200		181	A	182		7200				
SPACE	7200		183	B	184		7200				
SPACE	7200		185	A	186		7200				
SPACE	7200		187	B	188		7200				
SPACE	7200		189	A	190		7200				
SPACE	7200		191	B	192		7200				
SPACE	7200		193	A	194		7200				
SPACE	7200		195	B	196		7200				
SPACE	7200		197	A	198		7200				
SPACE	7200		199	B	200		7200				
SPACE	7200		201	A	202		7200				
SPACE	7200		203	B	204		7200				
SPACE	7200		205	A	206		7200				
SPACE	7200		207	B	208		7200				
SPACE	7200		209	A	210		7200				
SPACE	7200		211	B	212		7200				
SPACE	7200		213	A	214		7200				
SPACE	7200		215	B	216		7200				
SPACE	7200		217	A	218		7200				
SPACE	7200		219	B	220		7200				
SPACE	7200		221	A	222		7200				



1 ANTENNA GROUNDING DIAGRAM

SCALE:
N.T.S.

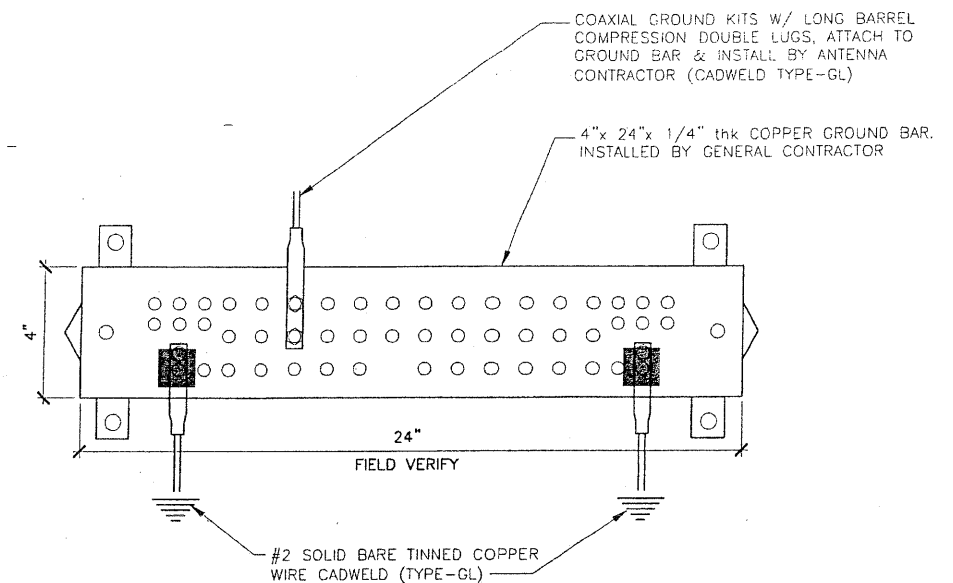


NOTE: CADWELD "TYPES" SHOWN ABOVE ARE EXAMPLES - CONSULT WITH PROJECT MANAGER FOR SPECIFIC TYPES OF CADWELDS TO BE USED FOR THIS PROJECT.

2 CADWELD DETAILS

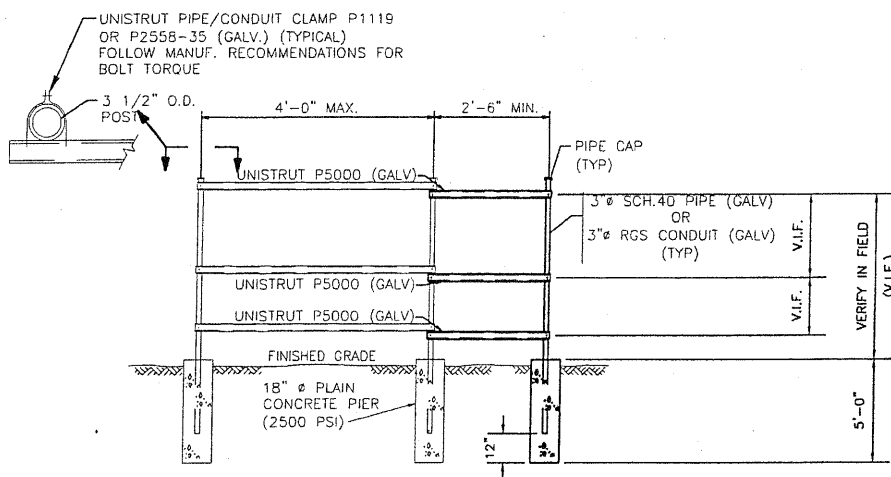
SCALE:
N.T.S.

NOTE: COAT ALL MECHANICAL CONNECTIONS WITH "NOOX" OR APPROVED EQUAL



3 GROUND BAR DETAIL

SCALE:
N.T.S.



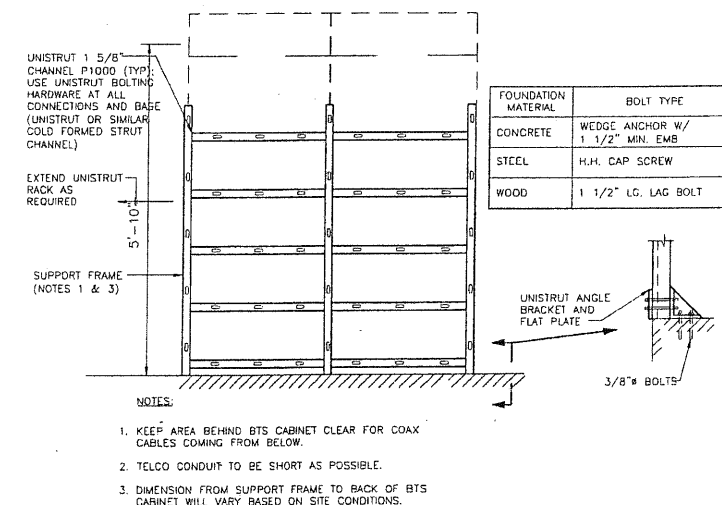
4 UTILITY RACK DETAIL

- ALL DETAILS ARE SHOWN IN GENERAL TERMS. ACTUAL INSTALLATION AND CONSTRUCTION MAY VARY DUE TO SITE SPECIFIC CONDITIONS.
- GROUND ALL ANTENNA BASES, FRAMES, CABLE RUNS, AND OTHER METALLIC COMPONENTS USING GROUND WIRES AND CONNECT TO SURFACE MOUNTED BUS BARS. FOLLOW ANTENNA AND BTS MANUFACTURERS PRACTICES FOR GROUNDING REQUIREMENTS. GROUND COAX SHIELD AT BOTH ENDS AND EXIT FROM TOWER OR POLE USING MFR'S PRACTICES.
- ALL GROUND CONNECTIONS SHALL BE CADWELD. ALL WIRES SHALL BE COPPER THHN/THWN. ALL GROUND WIRE SHALL BE GREEN INSULATED WIRE ABOVE GROUND.
- CONTRACTOR TO VERIFY AND TEST GROUND TO SOURCE. GROUNDING AND OTHER OPERATIONAL TESTING WILL BE WITNESSED BY CINGULAR WIRELESS, LLC. REPRESENTATIVE.
- REFER TO DIVISION 16 GENERAL ELECTRIC; GENERAL ELECTRICAL PROVISION AND COMPLY WITH ALL REQUIREMENTS OF GROUNDING STANDARDS.
- ELECTRICAL CONTRACTOR TO PROVIDE DETAILED DESIGN OF GROUNDING SYSTEM, AND RECEIVE APPROVAL OF DESIGN BY AUTHORIZED CINGULAR WIRELESS, LLC. REPRESENTATIVE, PRIOR TO INSTALLATION OF GROUNDING SYSTEM. PHOTO DOCUMENT ALL CADWELDS AND GROUND RING
- NOTIFY CONSTRUCTION MANAGER IF THERE ARE ANY DIFFICULTIES INSTALLING GROUNDING SYSTEM DUE TO SITE SOIL CONDITIONS.

5 GROUNDING NOTES

6 COAX SUPPORT RACK DETAIL

SCALE:
N.T.S.

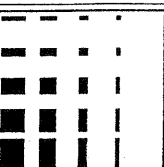


- NOTES:
- KEEP AREA BEHIND BTS CABINET CLEAR FOR COAX CABLES COMING FROM BELOW.
 - TELCO CONDUIT TO BE SHORT AS POSSIBLE.
 - DIMENSION FROM SUPPORT FRAME TO BACK OF BTS CABINET WILL VARY BASED ON SITE CONDITIONS.

cingularSM
WIRELESS

00246-012 7-17-07

92



KDC
Architects - Engineers, P.C.
4720 200TH STREET SW, SUITE 200
LYNNWOOD, WA 98036
PHONE: (425) 670-6551

DATE: 08/30/2005

DRAWN BY: JDM

CHECKED BY: EJC

REVISIONS

DATE	DESCRIPTION	BY
06/11/2005	ISSUED FOR 90% CD REVIEW	JDM
07/09/2005	ISSUED FOR 2005 CONSTRUCTION	CJC
08/05/2005	ISSUED FOR FINAL 2005 CONSTRUCTION	CRW
08/25/2005	ISSUED FOR REV 2005 CONSTRUCTION	JDM
08/30/2005	ISSUED FOR REV 2005 CONSTRUCTION	JDM

SITE NUMBER

BE0124 (WA322)
NE FERDALE
2601 THORNTON RD
FERDALE, WA 98248

E-2

CINGULAR CONSTRUCTION QUALITY CONTROL CHECKLIST

C = Complete
NC = Not Complete
NA = Not Applicable

ADMINISTRATION

Redlined Construction Drawings
Warranties
Ground Resistivity Test Report (5 OHMS or less)
Concrete Cylinder Tests Report
Certificate of Occupancy (or equivalency)
Inspection Signoff Card
Final Release of Lien (conditional)
Building Permit (original)
Other:

SITE WORK

Access Road
Site Grading & drainage
Finish Grade
Vegetation Control
Landscaping
Irrigation System

Fencing:
Gate, Stile & Padlock
Gate Hardware Vandal Resistant
Fencing & Barbed Wire
Fence Grounding
Gate Ground Strap
Mushroom Type Latch

Utilities:
Commercial Power Entrance Facility
Commercial Power Meter Installed
Ground Rod For Commercial Power
Padlock All Exterior Disconnect Panels
Telco Entrance Facility
Building Penetrations Weather Sealed
Weather Heads (Proper Height)

Grounding:
Ground Ring
Bond Wire From Comm Power Grnd To Grnd Ring
XIT Ground Rod (When Required)
MGB Connection to Bldg. Ground
Ground Test Well (one test well w/ test loop)

TOWER / ANTENNA MOUNTS

Foundation
Base Plate Grouting / Drain Hole
Anchor Bolt Projection / Lock Nuts
Erection
Height
Antenna Mounting Structure
Orientation
Step Bolts
Safety Climbs
Coax Ladder
Paint
FAA Tower Lighting
Grounding - Bend Radius / Locations
Bus Bars
Cadweld Quality

Antenna Mounts:
Antennas Located per Drawings
Hot Dip Galvanization
Orientation
Pitch Pocket / Flashing
Roof Leak Tested
Grounding - Bend Radius / Locations
Cadweld (mounts / bus bar)
Hardware Secure

Exterior Cable Tray:
Installation
Cover
Horizontal / Vertical Protection
Hot Dip Galvanization
Grounded to Ground Bus

Coax Bridge / Ladder:
Bridge Protectects Coax Adequately
Hot Dip Galvanization (all Materials)
Grounding / Cadweld Quality
Weather Seal Where Attatched to Building

Grounding:
Materials
Bend Radius
Tight Connections
Double Lug Mechanical Connections
Cadweld Quality
Coldgalv. Cadwelds
No OX Grease Bus Bar Connections

C / NC / NA

COMMENTS

C / NC / NA

COMMENTS

C / NC / NA

COMMENTS

Roofing/Daghouse:
Galvanized
Grounded
Weatherproof / Flashing

ANTENNA & HELIAX

Antennas:
Installation
Make / Model #
Quantity
Azimuth
Same Horizontal Plane (per sector)
Plumbness of Mount
Downtilt Bracket (confirm ea. panel antenna has one)
Measure of Downtilt (if applicable)

Coax:
Size
Support @ 3'-0" Max.
Bend Radius (20")
Jumper Flows Directly into Antenna
Hangers @ 3'-0" O.C. (no plastic devices)
Weatherproofing (Connectors & Grounding Kits)
Color Coding (3 Places Minimum)
Drip Loop
Grounding (3 Ground Kits)
Tight Connection (At Bus Bars)
Antenna Specification Sheet (Filled in)

Antenna Ground Bus (AGB):
Installation: Below coax port & as shown on dwgs.
Size (4" x 20" x 1/4" with (27)-7/16" holes)
Insulated Standoffs
Bonding Jumpers
Bend Radius
Tight Connections (two bolt lugs except ground kits)
Cadweld Downlead
No OX Grease all Connections

EQUIPMENT ROOM

Main Disconnect:
Rating (200 Amp)
Interior Cleanliness

Distribution Panel:
Make / Model # (Square D)
Rating Capacity (200 Amp)
Panel Labeling (Phenolic/Lamicaid)
Ciricuit Labeling (Typed Card)
Breaker Size (Matches Drawings)
Interior Cleanliness
Wiring Quality

Portable Generator Receptacle Plug:
Make Model #
Mates with Female
Weather Sealed / Caulked

Master Ground Bus (MGB):
Installation
Size (4" x 20" x 1/4" x with (27)-7/16" holes)
Insulated Standoffs
Bonding Jumpers
Bend Radius
Tight Connections (two bolt connections)
Down Lead (two bolt through or cadweld)
Down Lead through wall properly sealed

Telco:
Backboard
Conduit Grounded (Bushing)
Painted White

Cable Ladder:
Installation Quality
Bonding Jumpers (two bolt connections)
Touch-up Paint
All Threads Capped
Cable Ladder End Caps
Height (7'-6" above finish floor to bottom of tray)

Cleanliness:
Building Interior
Interior Walls
Electrical Boxes and Panels
Base Board
CLEan, Wax (Anti-Static) & Buff Floors
Construction Debris Removed

Other:

ADDITIONAL COMMENTS:

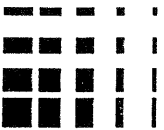
C / NC / NA

COMMENTS

C / NC / NA

COMMENTS

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WIRELESS



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Q-1