



City of Richmond

Report to Committee

To: Parks, Recreation and Cultural Services Committee
From: Dave Semple
Director of Parks Operations
Re: Microcell Solutions Incorporated Sports Field Lighting Partnership Proposal

to Parks, Rec, Culture - May 26, 2004
Date: May 13, 2004

File: 2345-01

Staff Recommendation

1. That the proposal from Microcell Solutions Incorporated for the installation of telecommunications apparatus on City sports field lighting at the Hugh Boyd Athletic Park be approved as per the terms of the licence agreement (Attachment 1) and;
2. That the City advertise its intent to lease a portion of the Hugh Boyd Park site to support the Microcell proposal and;
3. That the revenue from the Microcell proposal be directed to the Sports Field Reserve Fund account for future sports field improvements in Richmond.

Dave Semple
Director of Parks Operations
(3350)

Att. 2

FOR ORIGINATING DIVISION USE ONLY			
ROUTED TO:		CONCURRENCE	
Law		Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
REVIEWED BY TAG		REVIEWED BY CAO	
YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	

Staff Report

Origin

Staff have received several proposals from various telecommunication companies for the installation of a wireless communication tower at the Hugh Boyd Athletic Park Site. It was determined by these companies that there existed a gap between existing cellular towers and one was required at the west side of Richmond to accommodate increasing cellular transmission usage. With the potential installation of a cell tower on this side of the city, it would potentially improve their services and enhance communication availability for their clients. Hugh Boyd Park presented a logical central location for this application.

Subsequently, after the down turn of the telecommunication/technology sector as a whole during the latter months of 2000 and into early 2001, all of the previous proposals were retracted from these respected companies. The companies included Telus Mobility and WDS Wireless, proposed fees to the City were in the total amount of \$110,000.00 for a 10-year licence agreement.

The City has now received an innovative new proposal from a company called Microcell Solutions, which is a subsidiary of Microcell Telecommunications Inc. Their proposal to the City is for the installation of a single wireless communication pole at the southwest corner of Boyd 1 senior soccer field. The installation of this pole could be integrated as part of the City's new lighting system that is planned for construction during this summer and be of mutual benefit to the City.

The purpose of this report is to present Microcell's proposal (Attachment 1) for Council consideration.

Analysis

Microcell's Proposal

The installation would consist of one high mast telecommunication pole approximately 100 feet in height and designed in accordance with the City of Richmond's overall lighting plan and subjected to the necessary approvals, bylaws, permits, and design standards.

The proposed pole will also serve as a component to the sports field lighting system at Hugh Boyd Park (field 1) when the City completes the installation of a new lighting system this summer. In addition, their service kiosk for the pole will be integrated into a bleacher structure that will provide additional seating capacity for users and spectators of the sports fields.

Installation and Expiration of Agreement

Microcell will be responsible for all costs associated with the design, supply, construction, and maintenance of this cellular transmission pole and all of its equipment. Upon the expiry of the license agreement term, Microcell will remove all components that are associated with their communication equipment; however, the pole and all of the lighting system components associated with it will remain the property of the City.

License and Initial Term

Microcell will sign a license agreement with the City of Richmond for an initial tenancy spanning 10 years from the completion of the installation of their equipment. Extension of the license agreement and renewal rent and may be discussed at the final year of the term.

Proposed Fees

Microcell will pay the City of Richmond a lump sum payment in the amount of \$145,000 plus applicable G.S.T.

Legal Considerations

Over the term of the license agreement, the City of Richmond would grant Microcell a statutory right-of-way over a portion of the lands at Hugh Boyd Park, which would be necessary for the operation, and maintenance of the transmission tower. Boyd park is currently zoned for School and Public Use (SPU) which supports the installation of the proposed facility at this site.

The Community Charter has changed the requirements for disposing of land by lease. The only requirement now is that the City advertise its intent to dispose of (lease) land. It is suggested that this step be carried out prior to finalising the proposed lease with Microcell.

As part of insurance requirements for the proposed lease, Microcell must hold a minimum of five million dollars insurance. In addition, all issues of confidentiality referred to in the proposed lease must be changed to reflect that the City is bound by the Freedom of Information and Privacy Act.

There is the potential that Microcell may be purchased by or merged with another telecom carrier in the future; or the potential for the company to go out of business (based on the past history from the telecom industry). If either scenario were to happen, there may be complications with the licence agreement and the collection of the annual rent from Microcell if that option was to be selected.

Impact to Hugh Boyd Park

In 1993, a park master plan and public process was completed and approved by Council to develop Hugh Boyd Park as a multi-use sports complex with sports field lighting amenities. This summer, the City will complete one more phase of the lighting plan by installing lights to the senior soccer field (Boyd 1).

By integrating the installation of Microcell's proposed telecommunication pole with the City's installation of the lighting system, this would result in having minimal impact to the park. The service kiosk and power source for Microcell's tower would be integrated into a bleacher stand built by the proponent for spectators and players during sporting events and games (Attachment 2). The one field light pole would stand approx. 20 feet higher than the other conventional lighting poles at the site.

On March 17, 2004, staff along with representatives from Richmond's field sports community and the Richmond Sports Council held an open house regarding the upcoming field lighting project scheduled for Boyd Park this summer. Over 50 letters were sent to adjacent property owners, no negative feedback regarding the lighting proposal was received. At this open house, staff also indicated that there was an active proposal for a private partner who was interested in constructing a field bleacher and adding a cellular apparatus to the top of one of the field light poles.

Financial Impact

The City would collect from Microcell the lump sum payment of \$145,000 for the 10-year license agreement. The annual payment option would present the City with a potential annual revenue source to the City. The lump sum payment would present the City with a single payment option towards the sports reserve fund contingency for sports field developments.

Discounting the present value of the up-front payment option at the time of installation, the greatest financial benefit, and payment option with the greatest certainty over time would be the lump-sum option.

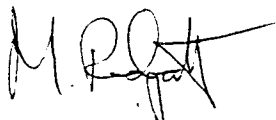
Since the transmission tower can be utilized as a light pole as well, the City would realise an additional cost-savings of approximately \$30,000 by saving the cost of only having to purchase two additional light poles rather than the three planned to complete the approved 2004 field lighting system installation at Boyd 1 field.

In addition to the cost savings with the provision of the field light pole, the City would also receive a concrete spectator bleacher valued at approximately \$30,000 as part of this proposal.

The City would not have to contribute any funding towards the installation of Microcell's proposal and would receive an up from net benefit of \$205,000.

Conclusion

The proposal from Microcell presents the City with an opportunity to realise direct cost savings to the approved Parks Capital project underway at the Hugh Boyd Park Athletic site. Staff have had the opportunity to work with Microcell in the development of a proposal that would be of mutual benefit, and also contribute to the potential future enhancement of sports field improvements in Richmond with a combined benefit to the City totalling \$205,000.



Mike Redpath
Manager, Parks - Programs, Planning & Design
(1275)

LAND TITLE ACT
FORM C
 (Section 219.81)

Province of
 British Columbia

GENERAL INSTRUMENT - PART 1

(This area for Land Title Office use)

Ref. # : van628

Page 1 of 11 pages

1. APPLICATION: (Name, address, phone number and signature of applicant, applicant's solicitor or agent)

Mark A. Schmidt
Davis & Company, Barristers & Solicitors
2800 Park Place, 666 Burrard Street
Vancouver, BC, V6C 2Z7
Telephone No. (604) 687-9444
Client No. 10371 File Ref. MAS/mpy

 Signature of Solicitor

2. PARCEL IDENTIFIER(S) AND LEGAL DESCRIPTION(S) OF LAND:*

(PID)

(LEGAL DESCRIPTION)

009-298-371

LOT 4 SECTION 26 BLOCK 4 NORTH RANGE 7 WEST
NEW WESTMINSTER DISTRICT PLAN 24055

3. NATURE OF INTEREST:*

DESCRIPTION

DOCUMENT REFERENCE
 (page and paragraph)

PERSON ENTITLED TO INTEREST

Statutory Right of Way over part
 in Reference Plan No. _____

Entire Instrument

Transferee

4. TERMS: Part 2 of this Instrument consists of (select one only)

(a) Filed Standard Charge Terms

(b) Express Charge Terms

(c) Release

<input type="checkbox"/>
<input checked="" type="checkbox"/>
<input type="checkbox"/>

D.F. No.

Annexed as Part 2

There is no Part 2 of this Instrument

A selection of (a) includes any additional or modified terms referred to in Item 7 or in a schedule annexed to this instrument. If (c) is selected, the charge described in Item 3 is released or discharged as a charge on the land described in Item 2.

5. TRANSFEROR(S):*

THE CITY OF RICHMOND of 6911 No. 3 Road, Richmond, BC V6Y 2C1

6. TRANSFEREE(S): (including postal address(es) and postal code(s))*

MICROCELL SOLUTIONS INC., (Inc. No. A59765) of 540 - 815 West Hastings Street, Vancouver,
BC V6C 1B4

7. ADDITIONAL OR MODIFIED TERMS:*

N/A

8. EXECUTION(S): This Instrument creates, assigns, modifies, enlarges, discharges or governs the priority of the interest(s) described in Item 3 and the Transferor(s) and every other signatory agree to be bound by this Instrument, and acknowledge(s) receipt of a true copy of the filed standard charge terms, if any.

Officer Signature(s)

Execution Date

Y	M	D

Party(ies) Signature(s)
**(ALL SIGNATURES TO
BE IN BLACK INK)**

THE CITY OF RICHMOND by its
authorized signatory(s)

(Signature)

(Print Name)

(Address)

(Professional Capacity)
(as to all signatures)

Print Name:

Officer Signature(s)

Execution Date

Y	M	D

Party(ies) Signature(s)
**(ALL SIGNATURES TO
BE IN BLACK INK)**

MICROCELL SOLUTIONS INC. by
its authorized signatory

(Signature)

(Print Name)

(Address)

(Professional Capacity)

Print name -

OFFICER CERTIFICATION:

Your signature constitutes a representation that you are a solicitor, notary public or other person authorized by the *Evidence Act*, R.S.B.C. 1979, c. 116, to take affidavits for use in British Columbia and certifies the matters set out in Part 5 of the *Land Title Act* as they pertain to the execution of this instrument.

* If space insufficient, enter "SEE SCHEDULE" and attach schedule in Form E.

** If space insufficient, continue on additional page(s) in Form D.

TERMS OF INSTRUMENT - PART 2

STATUTORY RIGHT-OF-WAY

(Section 218(1) - *Land Title Act*)

This Agreement made effective this ____ day of _____, 2004 is between:

THE CITY OF RICHMOND

Address: 6911 No. 3 Road, Richmond, B.C. V6Y 2C1

Attention:

Tel/Fax No.:

("City")

AND:

MICROCELL SOLUTIONS INC. , (Inc. No. A59765)

Address: Place Bonaventure, Suite 4000, 800, de La Gauchetiere Street West, Montreal,
Quebec, H5A 1K3

Attention: Property Management

Tel/Fax No.: 1-888-357-2507 / (514) 846-7491

("Microcell")

BACKGROUND

A. The City is the registered and beneficial owner in fee simple of the lands and the premises situate thereon civically described as Hugh Boyd Park, 4040 Francis Road, Richmond and legally described as:

Parcel Identifier: 009-298-371

Legal Description: LOT 4 SECTION 26 BLOCK 4 NORTH RANGE 7 WEST

NEW WESTMINSTER DISTRICT PLAN 24055

(collectively the "Lands");

B. The City has agreed to grant to Microcell a statutory right-of-way over a portion of the Lands on the terms and conditions of this Agreement which statutory right-of-way is necessary for the operation and maintenance of Microcell's undertaking.

AGREEMENTS

ARTICLE 1 - DESCRIPTION OF THE STATUTORY RIGHT-OF-WAY

1. Statutory Right-of-Way. The City hereby grants to Microcell the full, free, uninterrupted, unobstructed and right, privilege, easement and right-of-way on the terms and conditions hereinafter set out, in, over, under, along, through, or across that part of the Lands as shown outlined in heavy black on the Reference Plan prepared by _____, BCLS and certified correct on _____, 2004, a photo reduced copy of which is attached hereto as Schedule "A", and if no such Reference Plan is presently available, that part of the Lands shown in heavy black on the sketch plan attached hereto as Schedule "A" pending final survey as contemplated by paragraph 1.3 (the "Right-of-Way Area"), for the following purposes:

- (a) to install, according to plans submitted by Microcell and approved by the City, which approval shall not be unreasonably withheld, and to operate, maintain and replace all equipment, equipment enclosures, antennas, antenna mounts, antenna support structures, apparatus, fixtures, attachments, and connections for the transmission, emission or reception of signals as set out in Schedule "B" (collectively, the "Equipment"). Microcell must have the City's prior written approval before installing any equipment which is substantially different from that set out in Schedule "B" or that would change the physical appearance of the installation;
- (b) for access over the Right-of-Way Area at all times and for any other purposes incidental to the above purposes.

2. Final Survey. The City authorizes Microcell to enter onto the Right-of-Way Area prior to the Commencement Date and to proceed with any test, inspection or examination which Microcell judges to be necessary for the objectives of this Agreement, all at Microcell's expense. If Schedule "A" constitutes a sketch plan, the City authorizes Microcell to replace the sketch plan forming Schedule "A" with the Reference Plan prepared in the final survey of the Right-of-Way Area and to incorporate the particulars of the reference plan in the definition of "Right-of-Way Area".

ARTICLE 2 - TERM

1. Initial term. Subject to paragraph 2.2 and Article 9, this Agreement shall be for a term of 10 years (the "Initial Term") commencing on the date (the "Commencement Date") being the earlier of the date on which Microcell commences installation of the Equipment on the Right-of-Way Area and **TBD**.

2. Right to Renew. The City will review Microcell's tenancy term during the last year of the initial license agreement and the City may, at its option, negotiate renewal terms with Microcell.

ARTICLE 3 - FEE

1. Fee. During the Initial Term, Microcell shall pay to the City a fee of either \$14,500 per year for 10 years or a lump sum of \$145,000 (the "Fee"), as directed by Richmond City Council, plus applicable Goods and Services Tax (the "G.S.T."), to be paid in advance commencing on the Commencement Date and, with respect to the annual fee, thereafter on each anniversary date thereof.
2. G.S.T. The City's registration G.S.T. number is _____.

ARTICLE 4 - LICENSE

1. License. The City grants to Microcell, its servants, agents, contractors, and suppliers, a license for:
 - (a) ingress to and egress over the Lands, with or without equipment, at any time and from time to time for all purposes necessary or incidental to the exercise and enjoyment of the rights granted herein; and
 - (b) installing, operating, and maintaining such equipment, exterior grounding, electric power and communications lines over the Lands, as may be necessary for the exercise and enjoyment of the rights granted herein and to transmit over the lines or conduits all forms of telecommunications and electric energy.

ARTICLE 5 - MICROCELL'S OBLIGATIONS

1. Microcell's Obligations. Microcell shall:
 - (a) pay, as they become due and payable, the Fee and all taxes that are levied by any governmental authority applicable to the Fee and the business carried on by Microcell on the Right-of-Way Area;
 - (b) obtain any permits required under applicable City bylaws and observe all laws, orders, decrees and regulations applicable to Microcell's operations on the Right of Way Area, including the installation of the Equipment;
 - (c) maintain an insurance policy covering all of its undertaking and in particular, general liability insurance coverage in an amount not less than \$2,000,000.00 per occurrence and showing the City as an additional named insured, and provide the City with a certificate of insurance confirming coverage on an annual basis.
 - (d) save for the negligence or wilful acts of the City, its employees, agents, servants, invitees, contractors, and those persons authorized by the City to be on the Right-of-Way Area, indemnify and save harmless the City against all actions, suits, claims, direct damages, costs and liabilities, including solicitor's fees, arising from any breach, violation or non-performance of the terms and obligations on the part of Microcell set

out in this Agreement and any damage to the Right-of-Way Area, or any injury to or death of any person occasioned by the use of the Right-of-Way Area by Microcell, its servants, agents, employees or contractors.

- (e) provide the City with 'as-built' drawings of the Equipment installed on the Lands within 90 days of completion of construction;
- (f) take sole responsibility for the maintenance, repair, and security of the Equipment and ensure that all Equipment is kept in good repair and condition during the term of the ROW agreement;
- (g) indemnify the City against the escape of any substances harmful to the environment caused by Microcell's equipment and/or installation;
- (h) not utilize the Right-of-Way area or any part of the installation for the purpose of advertising;
- (i) except during emergency situations, provide the City with 24 hours written notice for access to the Right-of-Way area, so as not to negatively impact scheduled games and school use of the park facilities; and
- (j) provide the City with access the tower for the installation, maintenance, and replacement of the sports field lighting components installed on the tower.

ARTICLE 6 - CITY'S OBLIGATIONS

1. City's Obligations. The City will:

- (a) use its best efforts not to do or permit to be done any act or thing which might interfere with, injure, impair the operating efficiency of Microcell's equipment, or obstruct Microcell's access to or the use of the Right-of-Way Area or the Equipment; however if such interference can be shown to exist by Microcell acting reasonably, and such interference can not be eliminated within 15 days, Microcell at its option, may elect to cancel this agreement without penalty and any prepaid rent shall be pro-rated for the period of Microcell's usage of the Right-of-Way Area and the balance returned to Microcell;
- (b) provide to Microcell access keys and any required information in regard to access to the Right-of-Way Area and the Lands, including, permitting Microcell to install a lock-box for the purpose of access to the Right-of-Way Area;
- (c) the City acting reasonably shall provide Microcell with 30 days' prior written notice before doing any necessary repair, maintenance, alteration or improvements to the Lands that may temporarily interfere with Microcell's Equipment and shall use its best

efforts to carry out the activities with a minimum amount of interference with Microcell's operations;

- (d) cooperate with Microcell, at Microcell's expense, including executing all necessary and reasonable authorizations in order for Microcell to obtain all necessary authorizations from all governmental authorities for the construction, operation, and maintenance of the Equipment; and
- (e) execute all further documents and perform all reasonable acts to better ensure Microcell's peaceable right to enjoy the statutory right-of-way granted by this Agreement including for the purposes of registration of this Agreement.

ARTICLE 7 - NON - INTERFERENCE

1. Non-interference. During the Initial Term or any renewal thereof, the City shall have the right to lease, license or permit anyone to use any part of the Lands for the purposes of the transmission, emission or reception of signals by wire, radio, visual or other systems and any other purpose incidental thereto or to install any structure or equipment thereon to the extent that such leasing, licensing or permission to use will not provide for additional telecommunications equipment to be placed on the same lighting pole as Microcell occupies with its antennas, except with the prior written consent of Microcell. In the event that Microcell's operations are proven to measurably interfere with reception or transmission of other parties in the area, it will use its best efforts to remedy such interference and the City agrees to include similar language, as set out here, in any future agreements with other telecommunication carriers wishing to occupy the Lands.

ARTICLE 8 - ELECTRICITY

1. Payment by Microcell. The cost of Microcell's electrical consumption is to be in addition to the Fee and shall be paid in advance concurrent with the Fee. The advance payment for the first year of the Initial Term shall be \$900.00, plus taxes. Microcell shall install a meter at its cost to record its actual consumption, and the cost of Microcell's electrical consumption shall be adjusted between the parties annually based upon a reading of the meter.

ARTICLE 9 - TERMINATION

1. Termination by Microcell. Microcell may terminate this Agreement by giving 30 days prior written notice to the City, if, for any reason whatsoever, Microcell concludes, in its sole discretion, that the Right-of-Way Area, including the operation of the Equipment, is of Microcell's network commercially or technologically impossible, impractical, or no longer meets Microcell's criteria for the efficient operation.

2. Termination by the City. The City may terminate this Agreement, if and whenever the Fee or any part thereof shall be unpaid after it shall have become due and payable as herein provided and such default shall continue for 60 days following receipt of a written notice from the City. Upon expiration of such 60 days the City may terminate this Agreement and re-enter the Right-

of-Way Area or any part thereof. The City may also terminate this agreement by providing Microcell with 180 days written notice for any reason where it, acting reasonably, has determined that it is required to do so and shall cover reasonable costs associated with the cost of relocation of Microcell's installation.

3. Equipment and Removal. The Equipment, with the exception of the tower pole and the sports field lighting system and components, which will remain the property of the City, shall at all times remain the property of Microcell notwithstanding that such items may be annexed or affixed to the Lands and shall at any time and from time to time be removable in whole or in part by Microcell. Upon termination of this Statutory Right-of-Way, Microcell shall remove all the Equipment, at its own expense, and return the Right-of-Way Area to a condition of good and substantial repair, save and except for reasonable wear and tear.

ARTICLE 10 - OTHER PROVISIONS

1. Entire agreement. This Agreement including Schedules "A" and "B" hereto and any other documents referred to in this Agreement constitute the entire agreement of the parties and may not be amended or modified except by a written instrument executed by both parties. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, personal representatives, successors and permitted assigns. If the City constitutes more than one person, every representation, covenant and agreement on the part of the City will be a joint and several representation, covenant, and agreement of the persons constituting the City. City shall execute and deliver this Agreement in a registrable form, and Microcell shall bear all costs associated with the registration of this Agreement.

2. Prior Consent. Microcell shall not assign this Agreement nor grant any licences pertaining to the Right-of-Way Area without the prior written consent of the City, which consent shall not be unreasonably withheld.

3. Notice. Any notice required or permitted to be given hereunder or any tender or delivery of documents may be sufficiently given by personal delivery or, if other than the delivery of an original document, by facsimile transmission, to Microcell to the address set out on the title block of this Agreement.

4. Confidentiality. The City hereby recognizes the confidential nature of the information contained herein as it relates to Microcell competition and the City hereby undertakes not to disclose any such information to any third party, except to mortgagees, prospective purchasers, banks, real estate appraisers, auditors and accountants or other consultants which reasonably need to know such information, provided the same have undertaken to maintain the confidential nature of the information contained herein or except if legally compelled to do so.

5. Burden of Statutory Right-of-Way. The Statutory Right-of-Way shall be construed as running with and binding upon the Lands and all parts thereof. Provided however, neither the City nor any successor in title to the Lands will be liable under any of the covenants contained herein where liability arises after the City or such successor in title ceases to have any further

interest in the Lands.

6. Transfer of Lands. The City agrees not to sell, convey, dispose or otherwise transfer the Lands or any part thereof, unless the purchaser, transferee or other acquiring party, as the case may be, executes an agreement with Microcell to observe and perform the obligations of the City hereunder

7. Detailed Plan Approval. Prior to construction, Microcell shall supply two copies of the detailed design drawings to the City for its approval that shall not be unreasonably withheld, and Microcell shall pay reasonable costs associated with engineers or other professionals required for such approvals.

IN WITNESS WHEREOF the parties hereto have executed this Agreement on the date set out below.

MICROCELL SOLUTIONS INC.

By: _____
Authorized signatory

Date: _____

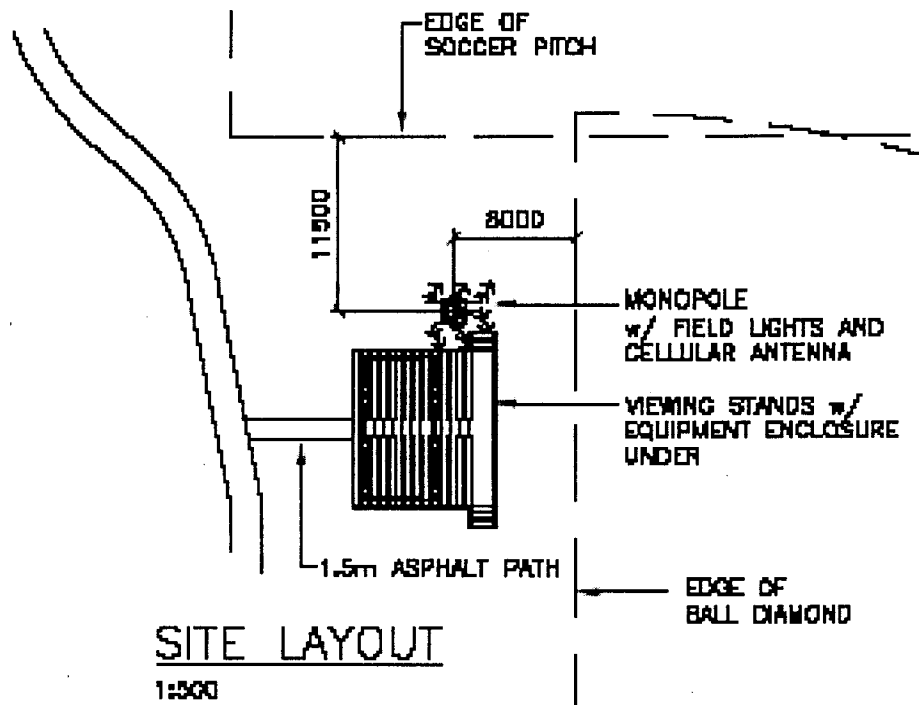
THE CITY OF RICHMOND

By: _____
Authorized signatory

Date: _____

SCHEDULE "A"

[SKETCH PLAN OR CAD DRAWING SHOWING THE RIGHT-OF-WAY AREA TO BE SUBSEQUENTLY REPLACED WITH A REDUCED COPY OF REFERENCE PLAN SHOWING THE RIGHT-OF-WAY AREA HERE AS SCHEDULE "A" IN PLACE OF THIS PAGE. SCHEDULE "A" AND PAGE 9 TO BE INSERTED ON COPY OF DRAWING/PLAN]



SCHEDULE 'B' (List of Equipment)

Antennas

Antennas deliver the radio frequency signal over an area to communicate with a PCS mobile phone. A typical antenna used is a **Wireless Panel Antenna**. Dimensions are approximately (H x W x D) 1372mm x 305mm x 102mm (54 inches x 12 inches x 4 inches) and weighs approximately 11 kg. (24 lbs.). The outer enclosure is comprised of fiberglass construction. The antenna is secured with specialized mounting hardware. Six to Nine antennas are usually required on each site. The antennas are installed at an engineered height for the most effective coverage.

Lightning Protection

Antennas are protected from lightning strikes with two wire runs that connect the antennas to earth ground. Wire routes that run down the side of buildings are secured and hidden from view wherever possible.

Indoor PCS Electronics Equipment

The electronics of the site PCS equipment is comprised of radio transceivers (transmitter-receiver) operating in the 1.9 GHz frequency range. These circuit packs are mounted on racks, interconnected by an array of wires. All of this equipment is housed in a steel cabinet measuring approximately (H x W x D) 195cm x 91cm x 45cm (77 inches x 36 inches x 17.7 inches) and weighs approximately 415 kg (915 lbs.). The cabinet is secured onto the floor at the base and wall brackets at the top. All installations meets Zone 4 earthquake specifications. One PCS site is comprised up to six (6) cabinets requiring an area in the vicinity of 10-15m². The PCS equipment electrical requirements are -48 volts DC, 50 amps. This is supplied by the adjoining power plant.

Power Plant

For the indoor PCS electronics equipment, it will be powered by the indoor power plant. The power plant is comprised of rectifiers that convert AC power from the AC panel to DC power for supply to the electronics equipment. Batteries supply DC power in case of main power outages. All of this equipment is housed in a steel cabinet measuring (H x W x D) 213cm x 58.4cm x 38.1cm (84 inches x 23 inches x 15 inches).

Battery Unit

For the PCS electronics equipment, backup power is provided by battery unit(s). The battery unit is comprised of rectifiers that convert AC power from the AC panel to DC power for supply to the electronics equipment. Batteries supply DC power in case of main power outages. All of this equipment is housed in a steel, environmentally self contained cabinet measuring approx. (H x W x D) 152cm x 81cm x 89 cm The weight is approximately 909.1 kg (2,000 lbs.). Electrical requirements are 208 volts AC.

Indoor CCI equipment

CCI equipment is electronic equipment used as a second stage amplification of the RF radio signal. It is usually mounted into an equipment rack, the rack itself is 2.13m high X 53cm wide (7' X 21") and the equipment occupies a superfcy of 0.18 meter square (2.2 sq. ft) approx. RF cabling runs between the CCI equipment and the main radio equipment (S8000 Indoor) before going to the antenna. The equipment is fed by the DC power plant.

Cables

Each antenna is connected to the electronics via RF (radio frequency) coaxial cable for a total of up to twenty four (24) runs. A typical coaxial cable is the **ANDREW HELIAX LDF5** series Coaxial cable, connectors and anchoring hardware. Heliac coaxial cable is solid copper in a polyethylene jacket that is weather-proof and corrosion resistant. This coaxial cable is typically installed in a enclosed tray and if required, painted to match the building or tower material.

Cross-Connect Area

Various connections used for testing are installed on a 1.2m x 1.2m (4 ft x 4 ft) painted plywood board mounted on an interior wall close to the PCS electronics. Items include connection blocks and locked wall cabinets. Below the board, an AC receptacle and grounding bar will be installed. In addition, the incoming transmission line equipment will terminate on another plywood board up to 1.2m x 1.2m (4 ft x 4 ft) size. This board could be located in a telephone room or in a room adjacent to the PCS electronic equipment, or in a special outdoor enclosure or inside of a shelter. If required, additional lighting will be added to ensure the area is well lit.

Note: Next to 1.2m x 1.2m (4 ft x 4 ft) plywood board will be an AC panel (handling 100A, single phase). In certain cases, a connection to an emergency generator will be made.

Security

PCS sites that require security from public access can be secured by the installation of a chain link fence or wall.

Monopole Tower

The monopole tower allows for the installation of the antennas at an engineered height for the most effective coverage. This height ranges from 20m to 40m (65 ft to 130 ft). Its construction is typically a tapered, tubular pole structure constructed from galvanized, steel plate and painted. The base ranges in diameter of 0.7m to 1.0m (2.28 ft to 3.25 ft) and is secured to a poured concrete foundation depth of 10m - 20m (33 ft to 65 ft) with bolts. Towers are designed to withstand high wind velocities.

Numerous safety and protective devices are mounted on the tower. Lightning protection is comprised of lightning rods at the top connected to a ground wire running the full height of the

tower. The Department of Transport requires that beacons be placed on the tower. These will be made of cast aluminum with red Fresnel lenses.

Microwave Dishes

Microwave dishes are used to communicate to the main PCS network. The dishes are parabolic in shape with diameters of 0.5m to 1.0m. Construction are typically aluminum and secured with specialized mounting brackets onto the existing structure.

Shelters

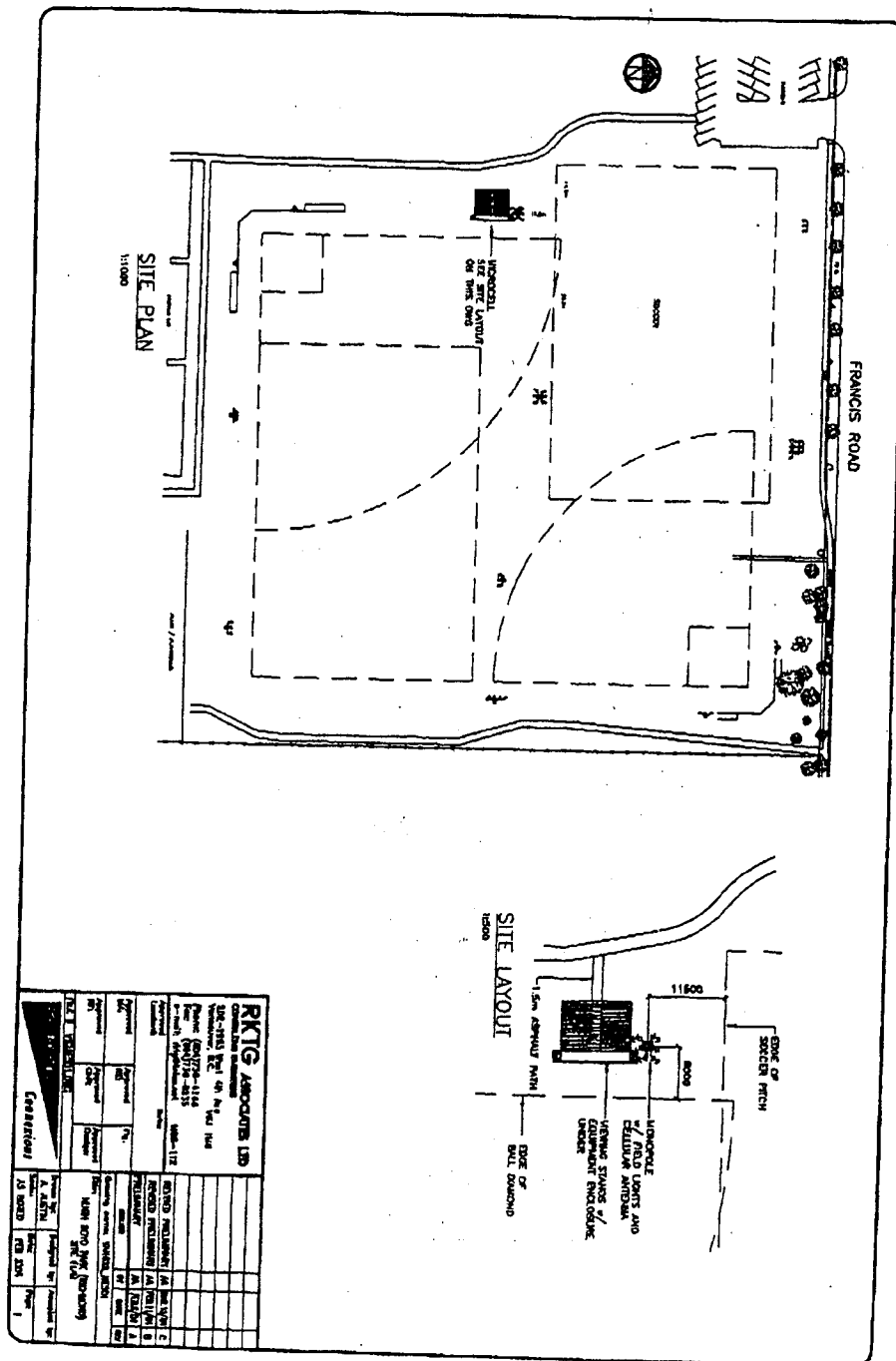
Metal modular shelters contain all the required equipment for a PCS site. Shelters range in area from 5 m² x 20m² (50 sq. ft to 200 sq. ft. Exceptional cases will have shelters up to 40m² (400 sq. ft).

HVAC

A heating/air conditioning unit may be required to cool the room where the indoor PCS electronics is installed.

PAGE.02 604 684 8270
MAR-11-2004 13:39 MICROCELL SOLUTIONS

604 688 1713 P.02

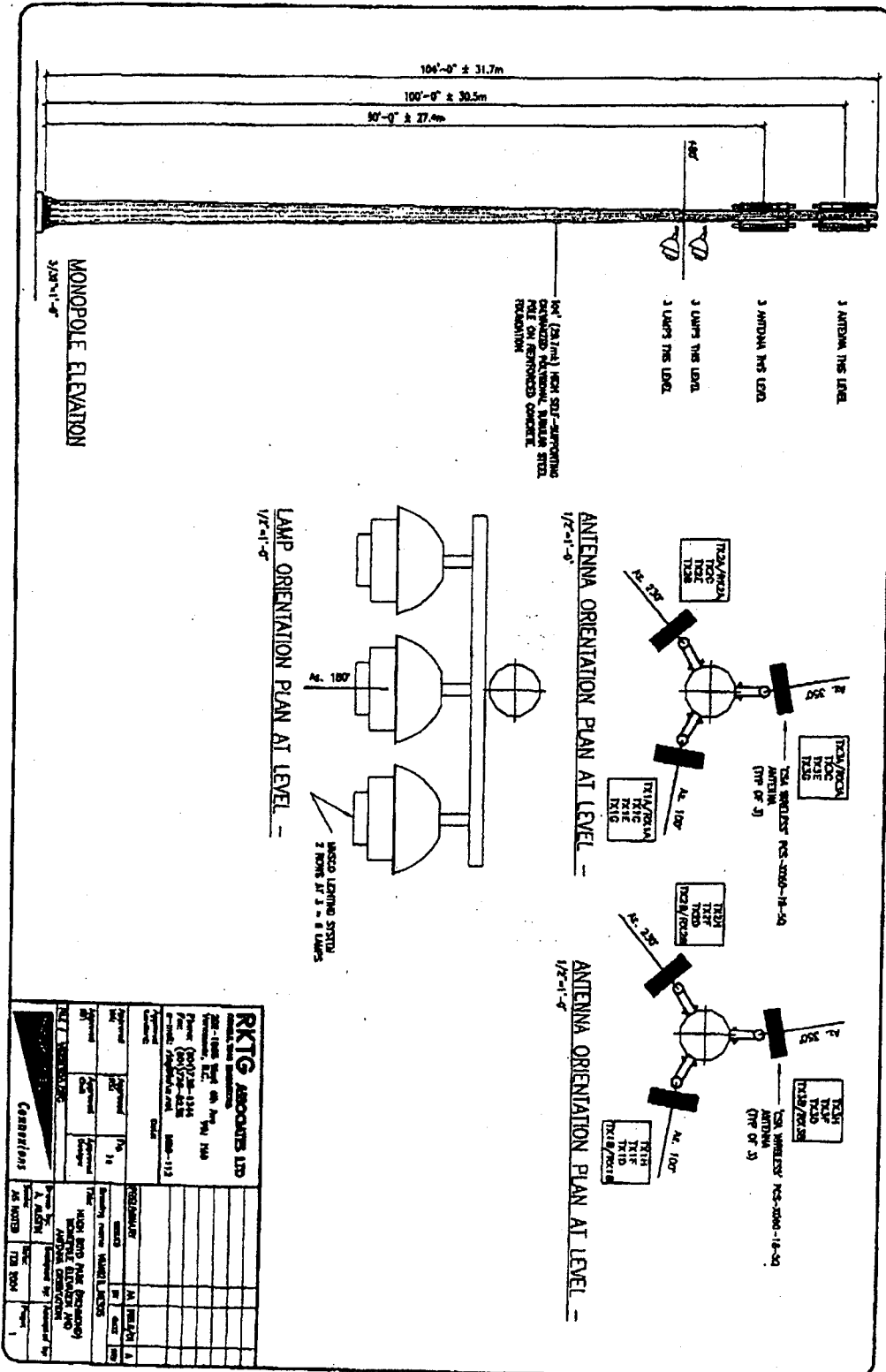


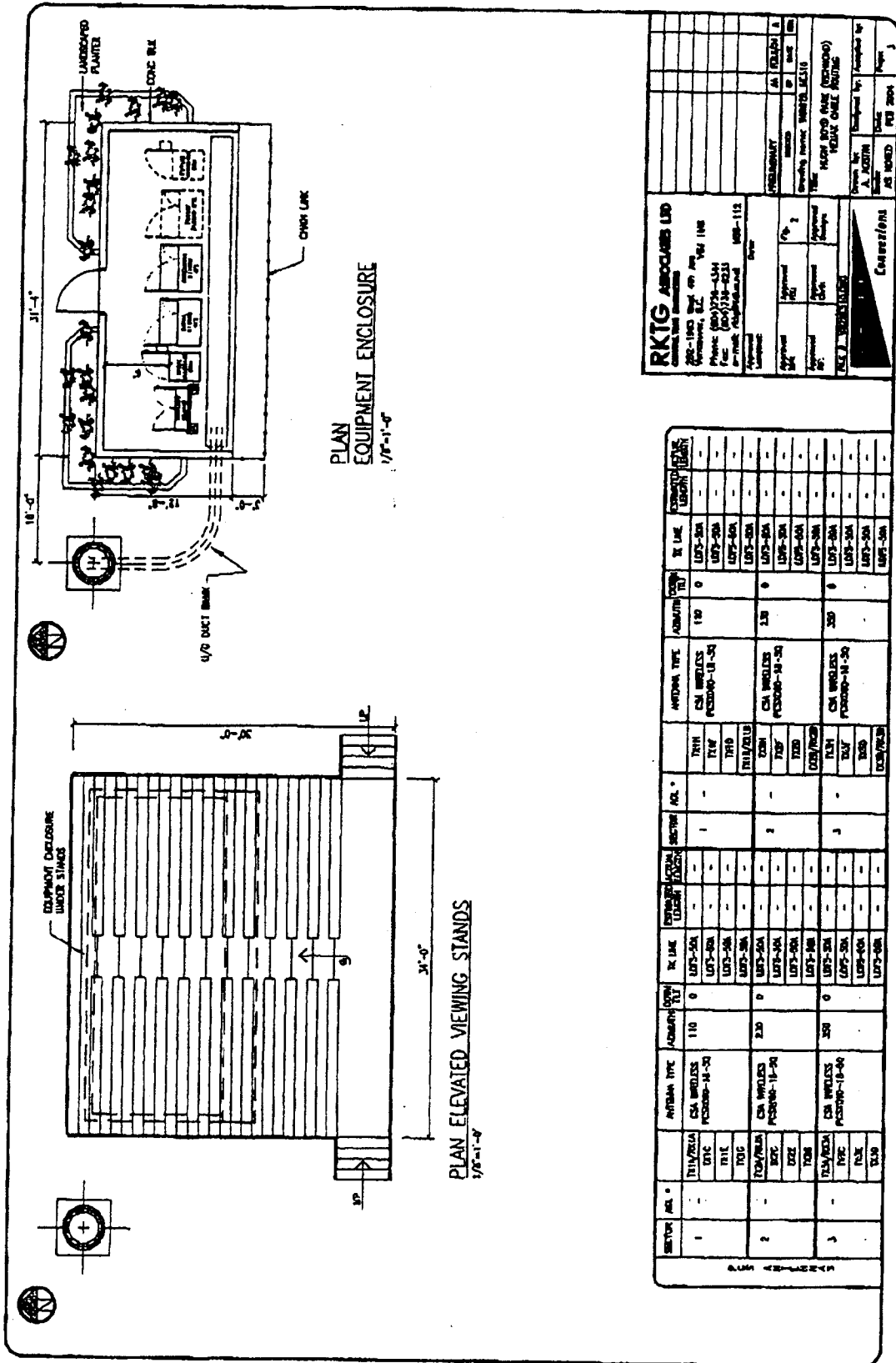
PAGE 02

CBT ACADEMY INC.

504-684-8270

TOTAL P.02
SZ:9T 000Z/21/EB





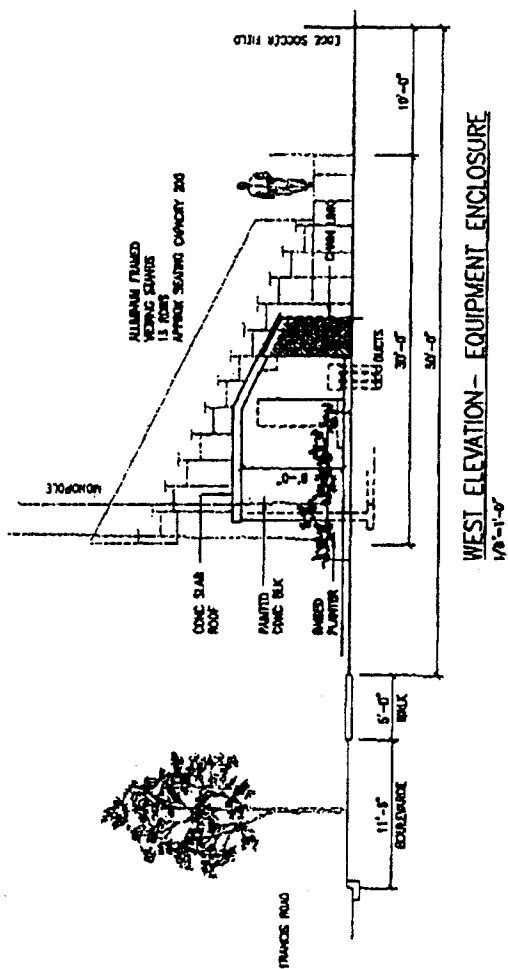
RKTG ASSOCIATES LTD
COMMERCIAL BUILDINGS
200-1000 1st St. N. W. 1st Fl. NW
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PROJECT
Name: RKTG ASSOCIATES LTD
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State: DC
Country: USA
Project No.: RKTG-001
Drawing No.: RKTG-001-01
Scale: 1/8"=1'-0"

REVISIONS

NO.	DESCRIPTION	DATE
1	ISSUED FOR PERMIT	10/1/00

SECTION	REL.	ANTENNA TYPE	ADJ. HGT.	TX LNK	EXT. LNK	REL.	SECTION	ANTENNA TYPE	ADJ. HGT.	TX LNK	EXT. LNK	REL.
1	-	TR11/RELA DTC TR11 TR11	110	LO7-20A LO7-20B LO7-20C LO7-20D	-	-	1	TR11/RELA DTC TR11 TR11	110	LO7-20A LO7-20B LO7-20C LO7-20D	-	-
2	-	TR11/RELA DTC TR11 TR11	230	LO7-20A LO7-20B LO7-20C LO7-20D	-	-	2	TR11/RELA DTC TR11 TR11	230	LO7-20A LO7-20B LO7-20C LO7-20D	-	-
3	-	TR11/RELA DTC TR11 TR11	350	LO7-20A LO7-20B LO7-20C LO7-20D	-	-	3	TR11/RELA DTC TR11 TR11	350	LO7-20A LO7-20B LO7-20C LO7-20D	-	-

[illegible]