# Memorandum

MIAMI-DADE COUNTY

**Date:** July 24, 2007

Agenda Item No. 14(A)(20)

**To:** Honorable Chairman Bruno A. Barreiro
and Members, Board of County Commissioners

**From:** George M. Burgess
County Manager

**Subject:** Resolution Authorizing Mayor or Designee to Advertise for Competitive Bids on an expedited basis and to Award a Contract, Subject to Ratification by the Board, to the lowest Responsive and Responsible Bidder for Maintenance of the Satellite Transit Shuttle at Miami International Airport in an amount not-to-exceed $15 million

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## Recommendation

It is recommended that the Board authorize the Mayor or his designee to advertise for competitive bids on an expedited basis and award a contract to the lowest responsive and responsible bidder for the maintenance of the Satellite Transit Shuttle at Miami International Airport (MIA). It is further recommended that the Mayor or his designee be authorized to execute the contract for and on behalf of Miami-Dade County and to exercise renewal and termination provisions thereof.

## Scope

| | |
|---|---|
| **PROJECT NAME::** | Satellite Transit Shuttle Operation & Maintenance (O/M) Contract |
| **PROJECT NUMBER:** | N093A |
| **PROJECT DESCRIPTION:** | The successful bidder shall provide all necessary supervision, labor and parts to maintain the Satellite Transit Shuttle System at Miami International Airport in a condition acceptable to the Miami-Dade Aviation Department |
| **PROJECT LOCATION:** | Miami International Airport |
| **PRIMARY COMMISSION DISTRICT:** | Miami International Airport (MIA) is located within Commission District Six; however, the impact of this agenda item is countywide as MIA is a regional asset. |
| **APPROVAL PATH:** | Board of County Commissioners |
| **USING DEPARTMENT:** | Miami-Dade Aviation Department |
| **MANAGING DEPARTMENT:** | Miami-Dade Aviation Department |

**Fiscal Impact/Funding Source**

| | |
|---|---|
| **FUNDING SOURCE:** | Maintenance Operational Budget |
| **PTP FUNDING:** | No |
| **GOB FUNDING:** | No |
| **CONTRACT PERIOD:** | Three years with one (1) additional option year |
| **IG FEE:** | Yes |
| **ESTIMATED CONTRACT AMOUNT:** | The cost to provide these services is not to exceed $15 million including the provision of two additional technicians to provide maintenance service and continual repairs to various components. |

**Track Record/Monitor**

| | |
|---|---|
| **MINIMUM QUALIFICATIONS EXCEED LEGAL REQUIREMENTS:** | No |
| **REVIEW COMMITTEE:** | July 18, 2007 |
| **LIVING WAGES:** | Yes |
| **REVIEW COMMITTEE ASSIGNED CONTRACT MEASURES:** | SBE Bid Preference |
| **CONTACT/PROJECT MANAGER:** | Arthur Buck<br>305 876-7278<br>abuck@miami-airport.com |

**BACKGROUND**

The current contract for the maintenance and repair of the Satellite Transit Shuttle (STS) will expire on July 31, 2007. A companion item on today's agenda awards an interim agreement to Bombardier for the continued maintenance of the Satellite Transit Shuttle for a term of six months to avoid service interruptions while conducting this competitive bid process.

MDAD recently learned that there are two (2) companies, other than Bombardier - Washington Group Inc. (WGI) and Johnson Controls, Inc. - that are qualified to do this work and interested in this opportunity. MTA is also qualified to do this work, but may not have sufficient staff. Therefore, it is in the County's best interest to competitively bid this work. The cost for a contractor to provide this service for three (3) years and any exercised extension, including the provision of two (2) additional technicians

to execute maintenance service and continual repairs to various components is not-to-exceed $15 million.

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The STS system is critical to the efficient operation of the airport. Service interruptions cause great disruption to the airlines and inconvenience passengers utilizing the Satellite terminal. In the coming years, until North Terminal is constructed and inaugurated into service, this system will actually become even more critical due to the closure of Concourse A and the relocation of additional American Airlines flights to Satellite E, which this system solely serves. Since June 1, 2007, American Airlines has already moved 12 flights to the Concourse E/Satellite area with more expected by November. A continuous busing operation for the volume of passengers carried by American and other airlines using the Satellite Building is not feasible due to the size limitations of the current bus stations. Moreover, busing is a major inconvenience to the traveling public. Busing is only used in case of train failure and with the projected increase in passengers; this will no longer be a viable option.

Assistant County Manager

# MEMORANDUM

(Revised)

TO: Honorable Chairman Bruno A. Barreiro and Members, Board of County Commissioners

DATE: July 24, 2007

FROM: R.A. Cuevas, Jr. Acting County Attorney

SUBJECT: Agenda Item No. 14(A)(20)

Please note any items checked.

✓ "4-Day Rule" ("3-Day Rule" for committees) applicable if raised

_____ 6 weeks required between first reading and public hearing

_____ 4 weeks notification to municipal officials required prior to public hearing

_____ Decreases revenues or increases expenditures without balancing budget

_____ Budget required

_____ Statement of fiscal impact required

_____ Bid waiver requiring County Manager's written recommendation

_____ Ordinance creating a new board requires detailed County Manager's report for public hearing

_____ Housekeeping item (no policy decision required)

_____ No committee review

Approved _____ Mayor

Veto _____

Override _____

Agenda Item No. 14(A)(20)

07-24-07

**RESOLUTION NO. _____**

**RESOLUTION AUTHORIZING COUNTY MAYOR OR DESIGNEE TO ADVERTISE FOR BIDS AND TO AWARD A CONTRACT FOR MAINTENANCE OF E-SATELLITE TRANSIT SHUTTLE AT MIAMI INTERNATIONAL AIRPORT IN AN AMOUNT NOT TO EXCEED $15 MILLION DOLLARS TO LOWEST RESPONSIVE AND RESPONSIBLE BIDDER, SUBJECT TO RATIFICATION BY BOARD; TO EXECUTE SAME, AND TO EXERCISE RENEWAL AND TERMINATION PROVISIONS THEREOF**

**WHEREAS**, this Board desires to accomplish the purposes outlined in the accompanying memorandum, a copy of which is incorporated herein by reference,

**NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF MIAMI-DADE COUNTY, FLORIDA,** that this Board hereby authorizes the County Mayor or his designee to advertise for bids and to award a contract for Maintenance of E-Satellite Transit Shuttle at Miami International Airport, in substantially the form attached hereto and made a part hereof, in an amount not to exceed $15 million dollars to lowest responsive and responsible bidder, subject to ratification by this Board; to execute same for and on behalf of Miami-Dade County and to exercise renewal and termination provisions thereof.

The foregoing resolution was offered by Commissioner , who moved its adoption. The motion was seconded by Commissioner and upon being put to a vote, the vote was as follows:

Bruno A. Barreiro, Chairman
Barbara J. Jordan, Vice-Chairwoman

| | |
|---|---|
| Jose "Pepe" Diaz | Audrey M. Edmonson |
| Carlos A. Gimenez | Sally A. Heyman |
| Joe A. Martinez | Dennis C. Moss |
| Dorrin D. Rolle | Natacha Seijas |
| Katy Sorenson | Rebeca Sosa |
| Sen. Javier D. Souto | |

The Chairperson thereupon declared the resolution duly passed and adopted this 24th day of July, 2007. This resolution shall become effective ten (10) days after the date of its adoption unless vetoed by the Mayor, and if vetoed, shall become effective only upon an override by this Board.

MIAMI-DADE COUNTY, FLORIDA
BY ITS BOARD OF COUNTY
COMMISSIONERS

HARVEY RUVIN, CLERK

By:_____
Deputy Clerk

**Approved by County Attorney as to form and legal sufficiency.** DBM

**Deborah Bovarnick Mastin**

# MIAMI-DADE AVIATION DEPARTMENT

# MIAMI-DADE COUNTY

Carlos Alvarez
**Mayor**

**Board of County Commissioners**

Bruno A. Barreiro
*Chairman*

Barbara J. Jordan
*Vice-Chairman*

Barbara J Jordan
*DISTRICT 1*
Dorrin D. Rolle
*DISTRICT 2*
Audrey Edmonson
*DISTRICT 3*
Sally A. Heyman
*DISTRICT 4*
Bruno A. Barreiro
*DISTRICT 5*

Rebeca Sosa
*DISTRICT 6*
Carlos A. Gimenez
*DISTRICT 7*
Katy Sorenson
*DISTRICT 8*
Dennis C. Moss
*DISTRICT 9*

Sen. Javier D. Souto
*DISTRICT 10*
Joe A. Martinez
*DISTRICT 11*
Jose "Pepe" Diaz
*DISTRICT 12*
Natacha Seijas
*DISTRICT 13*

George M. Burgess
*County Manager*
Murray A. Greenberg
*County Attorney*
José Abreu, P.E.
*Aviation Director*

# Project No. N093A

# MAINTENANCE OF SATELLITE TRANSIT SHULTTLE AT MIA

06/07 CSBE

## BID SUBMITTAL CHECKLIST

All Bidders must submit the following, where applicable, Bidding Documents, properly and completely executed as part of their Bid. It is the responsibility of each Bidder to verify that all required Bidding Documents were included in these envelopes. Any missing documents are to be obtained from Volume I of the Project Manual.

**REQUIRED TO BE SUBMITTED WITH THE BID**

ENVELOPE A

☐ SMALL BUSINESS AFFAIRS/DEPARTMENT OF PROCUREMENT MANAGEMENT (SBA/DPM) (formerly the DEPARTMENT OF BUSINESS DEVELOPMENT (DBD)) AFFIDAVIT(S) (Special Provision 1)
- SCHEDULE OF INTENT AFFIDAVIT – DBD 400
- UNAVAILABILITY CERTIFICATE (if applicable) – DBD 303
- UNAVAILABILITY OF CSBE DUE TO COMPETITIVENESS (if applicable) – DBD 305A
- SCHEDULE OF INTENT FORM FOR NON-CSBEs – DBD 305B

ENVELOPE B

☐ BID FORM (BF-1 THROUGH END)

☐ SINGLE EXECUTION AFFIDAVITS
- PUBLIC ENTITY CRIMES AFFIDAVIT
- DEBARMENT DISCLOSURE AFFIDAVIT
- CRIMINAL RECORD AFFIDAVIT
- DISCLOSURE OF OWNERSHIP AFFIDAVIT
- AFFIRMATIVE ACTION PLAN/PROCUREMENT POLICY AFFIDAVIT
- COMPLIANCE WITH FLORIDA TRENCH SAFETY ACT AFFIDAVIT
- RESPONSIBLE WAGE AFFIDAVIT
- SINGLE EXECUTION AFFIDAVITS SIGNATURE PAGE

☐ CLAIM OF BID PREFERENCE BASED ON PARTICIPATION IN CSBE MENTOR-PROTÉGÉ OR WORKER TRAINING PROGRAM (if applicable).

☐ CLAIM OF LOCAL BUSINESS PREFERENCE (See Instructions To Bidder, 14.03). AFFIRMATION OF COMPLIANCE THAT THE VENDOR'S BID, OR PROPOSAL, IS ELIGIBLE FOR CONSIDERATION AS A "LOCAL BUSINESS" (if applicable).

☐ BID BOND (or other authorized Bid Guaranty)

**MAY BE SUBMITTED WITH THE BID (Envelope B) BUT MUST BE SUBMITTED PRIOR TO AWARD**

☐ SINGLE EXECUTION CONDITION OF AWARD AFFIDAVITS AND CERTIFICATIONS
- CONTRACTOR'S DISCLOSURE AFFIDAVIT
- DRUG-FREE WORKPLACE CERTIFICATION
- DISABILITY NON-DISCRIMINATION CERTIFICATION
- DELINQUENT AND CURRENTLY DUE TAXES, ETC
- CODE OF BUSINESS ETHICS
- CURRENT IN THEIR OBLIGATIONS TO MIAMI-DADE COUNTY
- FAMILY LEAVE PLAN CERTIFICATION
- DOMESTIC LEAVE CERTIFICATION
- SINGLE EXECUTION CONDITION OF AWARD SIGNATURE PAGE

- [ ] AFFIRMATIVE ACTION PLAN/PROCUREMENT POLICY AFFIDAVIT, AFFIRMATIVE ACTION PLAN EXEMPTION AFFIDAVIT OR VERIFICATION THAT THE FIRM'S ANNUAL GROSS REVENUE DOES NOT EXCEED $5,000,000

- [ ] ADDITIONAL CONDITION OF AWARD REQUIREMENTS
  SUBCONTRACTOR/SUPPLIER LISTING
  MIAMI-DADE COUNTY CLEARINGHOUSE PROCEDURES

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**ADVERTISEMENT**
**FOR INVITATION TO BIDDERS**
**FOR MAINTENANCE OF SATELLITE TRANSIT SHUTTLE AT MIA**
**FOR THE MIAMI DADE AVIATION DEPARTMENT**
**ITB No. MDAD_01-07**

1. The County seeks to enter into a non-exclusive contract for the maintenance of the satellite transit shuttle.

   It is the policy of Miami-Dade County to comply with all the requirements of the Americans with Disabilities Act (ADA). For sign language, interpreter services, material in accessible format, other special accommodations, or airport-related ADA concerns, please contact the MDAD Office of ADA Coordination at (305) 876-0856.

2. **SCOPE OF SERVICES:**

3. Bids for the Miami-Dade County Invitation to Bid (ITB) No. MDAD-_____, entitled "Maintenance of Satellite Transit Shuttle at MIA" for the Miami-Dade Aviation Department, will be received by the Board of County Commissioners of Miami-Dade County, Florida, Office of the Clerk of the Board, Stephen P. Clark Center, 111 N.W. 1st Street, 17th floor, Suite 202, Miami, Florida 33128 until **2:00 P.M.**, _____, **2007** or as modified by addendum. The County will receive Bids from qualified, interested parties based upon the terms, covenants and provisions of the Advertisement and the ITB. The Department reserves the right to postpone or cancel the Bid opening at any time prior to the scheduled opening of the Bids. Respondents are invited to be present. Bids received after the time and date specified are late and may not be considered or received by the Clerk's office, and if sent by mail, will be returned unopened.

4. ITB documents may be obtained at MDAD's Contracts Administration Division, 4200 N.W. 36th Street, Building 5A, Suite 400, Miami, Florida, telephone (305) 876-8065, on or after **Wednesday_____, 2007**. The package may also be requested in writing, addressed to the Contracting Office delineated herein at MDAD Contracts Administration Division, P.O. Box 025504, Miami, FL 33102-5504. Each respondent shall furnish an address, telephone and fax number for the purpose of contact during the process.

5. A Pre-bid Briefing will be held held for this project on , 2007. Also, prospective bidders are encouraged to submit requests for interpretation or correction in writing. Every request for interpretation or correction shall be addressed to the Contracting Officer identified below, and must be received at least seven (7) calendar days prior to the opening of Bids in order to be given consideration.

6. Contract Measure is a "SBE Bid Preference".

7. This project is subject to the Miami-Dade County Living Wages.

8. Each Bid must be accompanied by a Guaranty or Bid Bond prepared on the form attached to the ITB, duly executed by the Bidder as Principal and having a Surety thereon meeting the requirements set forth in the Bid Documents. Failure to

include the Bid Bond shall render the Bid non-responsive. The amount of the bid bond or guaranty is $25,000.00. Bid Bonds will not be returned to any Bidder.

9. This solicitation is subject to Miami-Dade County's Cone of Silence pursuant to Section 2-11.1(t) of the Miami-Dade County Code, as amended. Please review Miami-Dade County Administrative Order 3-27 for a complete and thorough description of the Cone of Silence.

**The Contracting Officer for this RFQ is:**

| | |
|---|---|
| Name: | Lenora Allen-Johnson |
| Title: | Aviation Senior Procurement Contract Officer |
| Agency: | MDAD – Contracts Administration Division |
| Physical Address: | 4200 NW 36th St. Bldg. 5A, 4th Floor,<br>Miami, FL 33122 |
| Mailing Address: | P.O. Box 025504,<br>Miami, FL 33102-5504 |
| E-mail Address: | *lallen-johnson@miami-airport.com* |
| Telephone No.: | (305) 876-8065 |
| Facsimile No.: | (305) 876-8068 |

MIAMI-DADE COUNTY, FLORIDA
HARVEY RUVIN, CLERK

BY: _____
DEPUTY CLERK

## INSTRUCTIONS TO BIDDERS

### 1. PREPARATION AND SUBMISSION OF BIDS

**1.01** Sealed Bids for this project will be received for and in behalf of Miami-Dade County, by the Office of the Clerk, in the Stephen P. Clark Center, Suite 17- 202, 111 N.W. lst Street, Miami, Florida, 33128 on the time and date stipulated in the Advertisement For Bids or as modified by Addendum. Bids received after the time and date specified in the advertisement will not be considered. Bids will be publicly opened, and the names of the Bidders read aloud. Bidders are invited to be present at each opening. The County reserves the right to postpone or cancel the bid opening at any time prior to the scheduled opening of bids.

If the bid is forwarded by mail, the envelope should be marked as directed below, and addressed to Miami-Dade, Florida, Clerk of the Board, Stephen P. Clark Center, 111 N.W. 1st St. Suite 17-202, Miami, Florida 33128.

**1.02** All Bids must be submitted bearing on the outside the envelope, the name of the bidder, its address, the name of the project and the project number for which the bid is submitted, the qualifier's name and certificate number, and the date advertised for opening of Bids.

**1.03** All bids shall be submitted on the forms provided by the County. All applicable blank spaces in the Bidding Documents must be filled in legibly. The Bidder must submit the original and three duplicate copies of the completed and executed forms listed below. Copies of all required forms for the submission of Bids are also included in the Project Manual.

**1.04** Pursuant to Chapter 119.071 subsection (3)(b) of the Florida Statutes and, where applicable, Chapters 281.301 and 331.22 of the Florida Statutes, the plans and technical specifications that form a part of this bid solicitation are exempt from the provisions of subsection (1) of Chapter 119.07 and s. 24(a), Article I of the State Constitution. Access to these plans and technical specifications shall be governed by Special Provisions 5 of the Contract Documents. Purchase of the Bid Documents shall require a refundable deposit of $1,000 per each set. After the Bid Due Date, all Bid Documents, including any copies made, shall be returned to the same location where they were purchased. All Bidders that timely return the Bid Document will have their deposit returned. Those Bidders that purchase Bid Documents, but elect not to participate in the bidding process are also required to return all copies of the Bid Documents to the location of purchase. Failure to return the Bid Documents and copies made to the location of purchase within five (5) working days after the Bid Due Date may be reported to a Law Enforcement Investigating Authority and will forfeit the deposit. Furthermore, Bidders that fail to return Bid Documents shall not be allowed to participate in future Confidential solicitations until such time that the firm has taken corrective actions that are satisfactory to Miami Dade County.

**1.5 Contract Measures:** This solicitation includes contract measures for Miami-Dade County Certified Small Business Enterprises (SBE's) as follows:

**SBE bid preference**:

Refer to to Special Provisions SP-1 regarding Miami-Dade County Small Business Enterprise Participation Provisions for definitions, explanations and instructions. The participating SBE Firms (or joint ventures) must have a valid Miami-Dade County SBE certification by the submittal due date and meet all other requirements as stipulated in the participation provisions.

For questions regarding Miami-Dade County's SBE, Contract Measure Requirements, please contact Ms. Betty Alexander of the Small Business Affairs department, formerly known as Department of Business Development at (305) 375-3111 or facsimile at (305) 375-3160.

**1.6 Telephone Logs:** Pursuant to Miami-Dade County Code Section 11A-43(4) each Bidder must maintain telephone logs of all phone calls to and from Subcontractors and suppliers. These logs shall contain the name of the Subcontractor or supplier, the time and date of the call, the names of the persons contacted, a description of the work to be subcontracted or of the material to be furnished, and the dollar amount of the quotation. Such logs shall be made available to Owner personnel.

**1.7 Subcontracting Policies:** All successful bidders/respondents on this Contract if Subcontractors may be used shall be subject to and comply with Miami-Dade County Code Section 2-8.8(4), requiring bidders/respondents to provide a detailed statement of their policies and procedures for awarding Subcontracts which:

a) notifies the broadest number of local Subcontractors of the opportunity to be awarded a Subcontract;
b) invites local Subcontractors to submit bids in a practical, expedient way;
c) provides local Subcontractors access to information necessary to prepare and formulate a subcontracting bid;
d) allows local Subcontractors to meet with appropriate personnel of the bidder to discuss the bidders requirements; and
e) awards Subcontracts based on full and complete consideration of all submitted proposals and in accordance with the bidders stated objectives.

All bidders/respondents seeking to contract with the County shall, as a condition of award, provide a statement of their subcontracting policies and procedures. Bidders/Respondents who fail to provide the required statement shall preclude the bidder/respondent from receiving the Contract.

**1.8 Subcontractor Listing:** In accordance with Miami-Dade County Code Section 10-34 all successful bidders and proposers on County construction Contracts which involve the expenditure of $100,000 or more and all bidders or proposers on County or Public Health Trust construction Contracts which involve the expenditure of $100,000 or more shall provide, as a condition of award, a listing which identifies all first tier Subcontractors who will perform any part of the contract work and describes the portion of the work such Subcontractor will perform, and all suppliers who will supply materials for the Contract work direct to the bidder or proposer and describes the materials to be so supplied. Failure to comply with this policy may result in debarment.

A bidder or proposer who is awarded the Contract shall not change or substitute first tier Subcontractors or direct suppliers or the portions of the work to be performed or materials to be supplied from those identified in the listing provided except upon written approval by the County.

**1.9 Living Wage:** This permit, contract, or lease agreement is subject to Miami-Dade County's Living Wage under County Code section 2-8.9 hereafter referred to as Code and see Special Provision SP-2 for deatails. By entering into this permit, contract or lease agreement you agree to pay the applicable living wage rate in effect at the time of your permit, contract or lease agreement to all covered employees performing a covered service and any increases to that rate which becomes effective October 1st of each year, throughout the duration of your permit, contract or lease agreement. The current living wage rate effective October 1, 2006 through September 30, 2007 with a qualifying Health Benefit Plan (HBP) is $10.27/hour valued at $1.49/hour or $11.76/hour without a qualifying HBP. Additional requirements for compliance with the Living Wage is outlined in the Living Wage Supplemental Conditions attached and

is part of this permit, contract or lease agreement. All service contractors providing a covered service must comply with the Code in its entirety to include the respective Administrative Order and Supplemental General Conditions to include any and all amendments. If there are any errors, omissions or discrepancies between the legislation governing living wages the Code shall prevail. Failure to comply with the Living Wage requirements will result in the applicable penalties and sanctions.

**1.10 Affirmative Action:** Miami-Dade County Code Section 2-8.1.5 requires certain entities, as a condition of receiving a County Contract, to demonstrate that their employment and procurement practices do not discriminate against minorities and women. Unless waived by the County Commission upon written recommendation by the County Manager that it is in the best interests of the County to do so, no Contract will be awarded to a bidder unless and until the Affirmative Action Plan/Procurement Policy Affidavit is provided by the Bidder or the Bidder claims an exemption. Unless verification that the firm's annual gross revenue does not exceed $5,000,000 is submitted, either (i) the Affirmative Action Plan/Procurement Policy Affidavit or (ii) Affirmative Action Plan/Procurement Exemption Affidavit shall be submitted.

**1.11 Not Applicable**

**1.12 Conflict of Interest:** Pursuant to Miami-Dade County Code Section 2.11.1, no County employee or his or her immediate family shall be prevented from entering into any Contract, individually or through a firm, corporation, partnership or business entity in which the employee or any member of his or her immediate family has a controlling financial interest, with Miami-Dade County or any person or agency acting for Miami-Dade County, as long as (1) entering into the Contract would not interfere with the full and faithful discharge by the employee of his or her duties to the County, (2) the employee has not participated in determining the subject Contract requirements or awarding the Contract, and (3) the employee's job responsibilities and job description will not require him or her to be involved with the Contract in any way, including, but not limited to, its enforcement, oversight, administration, amendment, extension, termination or forbearance. However, this limited exclusion shall not be construed to authorize an employee or his or her immediate family member to enter into a Contract with Miami-Dade County or any person or agency acting for Miami-Dade County, if the employee works in the county department that will enforce, oversee or administer the subject Contract.

Any autonomous personnel, quasi-judicial personnel, advisory personnel, or County employee, all as more particularly defined in the code of Miami-Dade County, Florida Section 2.11.1(b), shall seek a conflict of interest opinion from the Miami-Dade County Commission on Ethics and Public Trust ("the Ethics Commission") prior to submittal of a bid, response, or application of any type to Contract with the County by the person or his or her immediate family. A request for a conflict of interest opinion shall be made in writing and shall set forth and include all pertinent facts and relevant documents.

If any such person or his or her immediate family member chooses to respond to a solicitation to Contract with the County, such person shall file with the Clerk a statement in a form satisfactory to the Clerk disclosing the person's interest or the interest of his or her immediate family in the proposed Contract and the nature of the intended Contract at the same time as or before submitting a bid, response, or application of any type to Contract with the County. Along with the disclosure form, the affected person shall file with the Clerk a copy of his or her request for an Ethics Commission opinion and an opinion or waiver from the Board. Also, a copy of the request for a conflict of interest opinion from the Ethics Commission and any opinion or waiver must be submitted with the response to the solicitation to Contract with the County.

**1.13 False Claim Ordinance:** Pursuant to Miami-Dade County Code Section 21-265, the successful bidder shall maintain a final bid takeoff; that is, the final estimate, tabulation, or worksheet prepared by

the bidder in anticipation of the bid submitted and which shall reflect the final bid price. The final bid takeoff shall contain a line item for allocation of overhead costs. The final bid takeoff is a condition precedent to submitting a claim under the Contract. Any violation of Miami-Dade County Code Article XV, False Claims Ordinance, may result in the sanctions provided for in the ordinance.

**1.14 Americans With Disabilities Act:** Pursuant to County Resolution No. R-182-00 amending Resolution No. R-385-95, successful bidders/respondents shall, as a condition of award, provide written certification that the firm is not in violation of the Americans with Disabilities Act of 1990, the Rehabilitation Act of 1973, the Federal Transit Act as amended, the Fair Housing Act as amended, and other laws prohibiting discrimination on the basis of disability. Any post award violation of these Acts may result in the Contract being declared void. If any certifying firm or affiliate is found in violation of the acts, the County will conduct no further business with such attesting firm. Any violation of this Resolution may result in debarment.

**1.15 Family Leave:** Pursuant to County Resolution No. R-183-00 amending Resolution No. R-1499-91, successful bidders/respondents shall, as a condition of award, provide written certification that the firm provides family leave to their employees as required by the County Family Leave Ordinance. Bidders/Respondents who fail to provide the required certification shall preclude the bidder/respondent from receiving the Contract. Any violation of this ordinance may result in debarment.

**1.16 Domestic Leave:** Pursuant to County Resolution No. R-185-00, successful bidders/respondents shall, as a condition of award, provide written certification that the firm is in compliance with the Domestic Leave Policy, Miami-Dade County Code Sections 11A-60 through 11A-67,. Bidders/Respondents who fail to provide the required certification shall preclude the bidder/respondent from receiving the Contract. Failure to comply with the requirements of this Resolution as well as Miami-Dade County Code Sections 11A-60 through 11A-67 may result in the Contract being declared void, the Contract being terminated, and/or the firm being debarred.

**1.17 Currently Due Fees and Taxes:** Pursuant to Miami-Dade County Code Section 2-8.1(c), it shall be a condition of award that the successful bidder shall verify that all delinquent and currently due fees or taxes - including but not limited to real and property taxes, utility taxes and occupational licenses - collected in the normal course by the Miami-Dade County Tax Collector, as well as Miami-Dade County issued parking tickets for vehicles registered in the name of the successful bidder, have been paid. Failure to comply with this policy may result in debarment.

**1.18 Felony Convictions:** Pursuant to Miami-Dade County Code Section 2-8.6, any individual who has been convicted of a felony during the past ten (10) years, and any corporation, partnership, joint venture, or other legal entity having an officer, director or executive who has been convicted of a felony during the past ten (10) years shall disclose this information at the time of bid or proposal submission in Affidavit No. 2 of the Miami-Dade Aviation Department Single Execution Affidavits. Failure to disclose such conviction may result in debarment for those persons or entities that knowingly fail to make the required disclosure or falsify information

**1.19 Drug Free Workplace:** No person or entity shall be awarded or receive a County Contract for public improvements unless such person or entity make it a condition of award that it will provide a drug free workplace and comply with Sec. 2-8.1.2 of the Code of Miami-Dade County. Failure to comply with this policy may result in debarment for those persons or entities that knowingly violate this policy or falsify information.

**1.20 Current in County Obligations:** Pursuant to Miami-Dade County Code Section 2-8.1(h), Affidavit No. 6, contained in the Miami-Dade Aviation Department Single Execution Condition of Award Affidavits and Certifications Section, is verification that the individual or entity submitting a bid is

current in its obligations to the County and is not otherwise in default of any County Contract. Any Contract or transaction entered into in violation of this Ordinance shall be voidable. The failure to meet the terms and conditions of any repayment schedule shall constitute a default of the subject Contract and may be cause for suspension, termination, and debarment, in accordance with the terms of the Contract and the debarment procedures of the County.

**1.21 Code of Business Ethics:** Each person or entity that seeks to do business with the County shall adopt a Code of Business Ethics ("Code") and shall, prior to the execution of any Contract between the Contractor and the County., submit Affidavit No. 5, contained in the Miami Dade Aviation Department Single Execution Condition of Award Affidavits and Certifications Section, stating that the Contractor has adopted a Code that complies with the requirements of Miami-Dade County Code Section 2-8.1(i). A Contractor failing to submit the Miami Dade Aviation Department Single Execution Condition of Award Affidavits and Certifications shall be ineligible for Contract award.

**1.22 Not Used**

**1.23 Public Entity Crime:** Pursuant to Section 287.133 (2) (a) Florida Statutes a person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on this Contract.

**1.24 Lobbyist:** In accordance with Section 2-11.1(s) of the Miami-Dade County Code, prior to conducting any lobbying, all principals must file a form with the Clerk of the Board of County Commissioners, signed by the principal or the principal's representative, stating that the lobbyist is authorized to represent the principal. Failure of a principal to file the form required by the preceding sentence may be considered in the evaluation of a bid as evidence that a bidder is not a responsible Bidder. Refer to Special Provisions 4 for Lobbyist Rules.

**1.25 Not Used**

## 2. REQUIRED BIDDING DOCUMENTS

**2.01** All Bidders must submit the following Bidding Documents, properly and completely executed as part of their Bid. It is the responsibility of each Bidder to verify that all required Bidding Documents were included in the envelopes received pursuant to paragraph 1.03 above. Any missing document is to be obtained from the Miami-Dade County Aviation Department Project Manager.

Acknowledgement of Addenda
Bidders Single Execution Affidavits
Bidders Affidavit on Public Entity Crimes (Affidavit No. 1)
Criminal Record Affidavit (Affidavit No. 2)
Miami- Dade County Debarment Disclosure Affidavit (Affidavit No. 3)
Fair Wage Affidavit (Affidavit No. 4)
Bid Bond or Guaranty Check (BB-1)

**2.02** The submittal of all the items under this article plus the following Sections which are also part of the Contract shall bind the Bidder to all the Provisions of the entire Contract:

A. Table of Contents
B. Bid Advertisement
C. Instructions to Bidders
D. Contract
E. General Conditions

F. Technical Specifications
G. Special Provisions
H. All Addenda

## 3. EXAMINATION OF CONTRACT DOCUMENTS AND SITE

**3.01** It shall be the responsibility of the Bidder to examine all the Contract Documents and Project site, to become fully informed of the conditions to be encountered, of the character, quality and quantities of work to be performed and materials to be furnished, and of the operational activities of the Airport, which activities must be maintained without interference from this work.

**3.02** For interested bidders, the Department will schedule a site visit following the pre-bid conference. Arrangements must be made forty-eight (48) hours prior to the conference. To make arrangements to attend the meeting, contact the Contracting Officer delineated in the advertisement.

**3.03** The submission of a bid shall be prima facie evidence that the Bidder has examined the Contract Documents and is satisfied as to the conditions to be encountered in performing the work and as to the requirements of the proposed Contract, Plans and Specifications.

## 4. REQUIRED BIDDER'S MINIMUM QUALIFICATIONS

**4.01 Minimum Qualifications:** A Bidder must present evidence of, at the time of submission, (and maintain same throughout the duration of the Contract) the following:

A Bidder must have a minimum of three (3) years experience with the maintenance of at least one Automated People Mover System or one rapid/light rail system or an equivalent transit system. Bidders proposed key personnel must have direct experience with the maintenance of Automated People Mover Systems and direct experience with Bombardier C-100 or CX-100 technology

Failure to meet the minimum qualifications will result in a rejection of the bid without discussion.

**4.02 Bid Requirements:**

a) If Bidder is a joint venture, the joint venture entity, of whatever nature or qualifications, must be qualified as a separate and distinct entity.
b) Each Bidder may submit only one bid. Multiple bids from same Bidder shall result in rejection of all bids from the Bidder
c) Each joint venture shall be jointly and severally responsible and liable to the County for all the obligations of the joint venture under the contract. Where a Bidder is a joint venture, a copy of the Bidder's joint venture agreement shall be submitted with the proposal, which said agreement shall identify the lead member.
d) Bidder shall be a partnership, corporation or other legal entity that is authorized to conduct business in the State of Florida. Include evidence of this authorization with the bid.

**4.03 Bid Bond/Bid Guaranty:** Each Bid must be accompanied by a bid guaranty in the form of a Cashier's or certified check on any national or state bank, made payable to Miami-Dade County, Florida in the amount of $25,000.00, or a Bid Bond prepared on the form attached hereto, duly executed by the Bidder as Principal and having a Surety thereon meeting the requirements set forth in the Bid Documents. Proceeds of bid guaranty checks will be held by the County without interest to the Bidder. Failure to include the specified Bid Guaranty or Bid Bond shall render the Bid non-responsive.

A Performance and Payment Bond in the amount of $1,500,000.00 will be required for the Bidder who is awarded the contract. Bid Bonds will not be returned to any Bidder.

The proceeds of the Performance and Payment Bond will be throughout the full term of the Contract and returned after the completion of all work authorized under the contract. Failure to maintain a performance and payment bond throughout the full term of the Contract will result in default. In the event the Contract is not awarded, the County will return the proceeds of all checks submitted as bid guaranty. No interest will be paid on bonds or guaranties.

Proceeds of checks submitted, as guaranty, will be returned to all unsuccessful Bidders after execution of the Contracts issued as a result of this ITB. Bid Bonds will not be returned to any Bidder.

**4.04** The County reserves the right, before awarding the Contract to require a Bidder to submit further evidence of qualifications to perform the work as the County may deem necessary and may consider any evidence available concerning the financial, technical and other qualifications and abilities of a Bidder to perform the work.

## 5. ADDENDA - CHANGES WHILE BIDDING

**5.01** It is the Bidder's obligation to notify the County prior to the submittal of Bids of any conflicts, ambiguities or discrepancies it finds in the Contract Documents, in order to allow County to issue appropriate addenda.

**5.02** The County reserves the right to make changes to the Contract Documents, as it finds necessary or in its best interest, at any time prior to the opening of Bids.

**5.03** All questions shall be in writing and shall be directed to the Contracting Officer and must be received at least seven (7) calendar days prior to the submittal of Bids in order to be given consideration.. Bidders must file a copy of the questions (as well as any other communications) with the Clerk of the Board (email: clerkbcc@miamidade.gov; fax: 305-375-2484).

Each submittal of a question or questions shall also contain the following information: Project name and number, name of company as well as the name of the company representative submitting the question(s), and the email address, fax number and mailing address where responses to the question(s) can be delivered. All interpretations and supplemental instructions will be issued as a written Addendum to the Contract Documents which, if issued, will be sent byemail, certified or registered mail, express mail, hand-delivered or by facsimile to all prospective Bidders (at the respective mailing addresses, email addresses or facsimile number furnished for such purposes) prior to the opening of Bids. If any Bidder fails to acknowledge the receipt of any Addendum in the space provided in the Bid Form, its Bid will be construed as though receipt of the Addendum had been acknowledged.

**5.04** Only the interpretations or corrections of the Bid Documents given by addenda shall be binding, and prospective Bidders are warned that no other source is authorized to give information concerning, explaining or interpreting the Bid Documents. Bidders shall not rely on any oral interpretation, nor correction of any apparent ambiguity, inconsistency or error offered by any person.

**6.. Cone of Silence**

Pursuant to Section 2-11.1(t) of the County Code and Administrative Order 3-27 ("Cone of Silence Provisions"), as amended, a "Cone of Silence" is imposed upon RFPs, RFQs, or bids after advertisement and terminates at the time the County Manager issues a written recommendation to the Board of County Commissioners. The Cone of Silence prohibits communication regarding RFPs, RFQs, or bids between: A) potential vendors, service providers, bidders, lobbyists or consultants and the County's professional staff including, but not limited to, the County Manager and the County Manager's staff; B) a potential vendor, service provider, bidder, lobbyist, or consultant and the Mayor, County Commissioners or their respective staffs; C) the Mayor, County Commissioners or their respective staffs and any member of the County's professional staff including, but not limited to, the County Manager and the County Manager's staff; D) a potential vendor, service provider, bidder, lobbyist, or consultant and any member of the selection committee assigned to this Solicitation; E) the Mayor, County Commissioners or their respective staffs and member of the selection committee assigned to this Solicitation; F) any member of the County's professional staff and any member of the selection committee therefor.

Section 2.11.1(t) of the County Code and Administrative Order 3-27, as amended, permits oral communications regarding a particular RFP, RFQ or bid for solicitation of goods or services between any person and the procurement officer responsible for administering the procurement process for such RFP, RFQ, or bid, provided that the communication is limited strictly to matters of process or procedure already contained in the corresponding solicitation document.

The Cone of Silence Provisions do not apply to oral communications at pre-proposal conferences, oral presentations before selection committees, contract negotiations during any duly noticed public meetings, public presentations made to the Board of County Commissioners during any duly noticed public meeting, or communications in writing at any time unless specifically prohibited by the applicable RFP, RFQ, or bid document. Proposers must file a copy of any written communications with the Clerk of the Board, which shall be made available to any person upon request. Written communications may be submitted via e-mail to the Clerk of the Board at CLERKBCC@MIAMIDADE.GOV. The Contracting Officer shall respond in writing and file a copy with the Clerk of the Board, which shall be made available to any person upon request.

In addition to any other penalties provided by law, violation of the Cone of Silence Provisions by any proposer and bidder shall render any RFP award, RFQ award, or bid award voidable. Any person having personal knowledge of a violation of the Cone of Silence provisions shall report such violation to the State Attorney and/ or may file a complaint with the Ethics Commission. Bidders should reference the actual Cone of Silence Provisions for further clarification.
All Bidders will be notified in writing when the County Manager makes an award recommendation to the Board of County Commissioners.

The Contracting Officer for this RFP is:

| | |
|---|---|
| Name: | Lenora Allen-Johnson |
| Title: | Aviation Senior Procurement Contract Officer |
| Agency: | MDAD – Contracts Administration Division |

| | |
|---|---|
| Physical Location: | 4200 NW 36th St. Bldg. 5A, 4th Floor, Miami, FL 33122 |
| Mailing Address: | P.O. Box 592075, Miami, FL 33159 |
| Telephone: | (305) 876-8065 |
| Fax: | (305) 876-8068 |

## 7. FLORIDA SALES TAX

All work under this Contract is subject to the provisions of Chapter 212, Florida Statutes, Tax on Sales, Use and Other Transactions, as amended, and the Bidder shall be responsible for determining its liability thereunder, shall make payment therefore, and the cost therefore shall be deemed included in the bid price.

## 8. FAILURE TO COMPLY

Failure to comply with any of the following conditions will results in the Bidder being deemed non-responsive and its Bid rejected without discussion:

a) Submit required Bid Bond
b) Comply with the SBE participation provisions
c) Be authorized to conduct business in the State of Florida

## 9. GUARANTY OF FAITHFUL PERFORMANCE AND PAYMENT/INSURANCE SUBMISSION

Within fifteen (15) calendar days from the date of Notice of Award presented to the successful Bidder, the Bidder shall deliver to the County, a performance and payment bond in the amount of $1,500,000.00 (One Million Five Hundred Thousand Dollars).

In the event the Successful Bidders fails to provide the required payments, security, and evidence of insurance within fifteen (15) calendar days after notice of award, or fails to begin operation as required by the Contract, the Bid bond/Bid Guaranty will be forfeited to the County as penalties and award rescinded.

## 10. POWER OF ATTORNEY AND COUNTERSIGNATURE

**10.01** Attorneys-in-fact, who sign the Bid Bond, and Performance and Payment Bond, must file with such Bonds, certified copies of their current power of attorney to sign such Bonds. All Bonds must be countersigned by a Florida Resident agent of the Surety, with a copy of the agent's current identification card, as issued by the State of Florida Insurance Commissioner, attached thereto.

## 11. WITHDRAWAL OF BIDS

**11.01** No Bid can be withdrawn by a Bidder after it is filed with the Clerk, during the period stipulated in the advertisement for Bids, unless the Bidder makes the request in writing to the Clerk of the Board of County Commissioners and the request is received prior to the time set for the opening of Bids.

**12.** Not used

## 13. REJECTION OF BIDS

**13.01** Bids which do not contain completed and properly executed forms and affidavits, as required and included in these Bid Documents, may be rejected by the County.

**13.02** Bids which are not responsive to the Bid Documents shall be rejected by the County.

**13.03** Bids will be considered irregular and may be rejected if they contain omissions, alterations of form, additions not called for, unauthorized alternate bids, or other irregularities.

**13.04** Until the Contract is awarded by the Board of County Commissioners, the County reserves the right to waive informalities and irregularities contained in the Bid, or to reject any or all Bids, or to re-advertise for Bids, whichever is in the County's best interests.

**13.05** Any of the following additional factors may be considered sufficient cause for the rejection of the Bid.

A. Bid submitted on a form other than that furnished by the County.
B. Submission of more than one Bid for the same work by an individual, firm, partnership or corporation under the same or different names;
C. Evidence of collusion among Bidders;
D. Previous participation in collusive bidding on work for the County;
E. Lack of Competency of Bidder. The Contract will be awarded only to a Bidder considered to be capable of performing the Work as required by the Contract Documents. The County may declare any Bidder ineligible at any time during the process of receiving bids or awarding the Contract where developments arise which, in the opinion of the County, adversely affect the Bidder's competency to perform the work and to discharge its responsibilities under the Contract;
F. Lack of capability as shown by past performance of Bidder's work for the County, judged from the standpoint of workmanship and progress;
G. Unfinished work for which the Bidder is committed by Contract, which, in the judgment of the County, might hinder or prevent the prompt completion of work under this Contract if awarded to such Bidder;
H. Being in arrears on any existing Contract, or having been sued to enforce the County's rights on a construction Contract, or having failed to complete the Work, the punch list, or warranty items, or having defaulted on a previous Contract with the County.
K. If the Bid is not accompanied by the Bid Bond or guaranty check.

## 14. AWARD OF CONTRACT

**14.01** The Contract will be awarded by the County, to a qualified responsive and responsible Bidder with the lowest Bid price who has met the Conditions of Award requirements. The lowest bid price shall be determined as the Price obtained from the Bidder Bid Form,– Total Bid Price

Prior to the filing of the County Manager award recommendation with the Clerk of the Board, the Successful Bidders must execute the Contract.

**14.02** The Contract Award, if any, shall be made to the Bidders by the Board of County Commissioners (Board), and the Board's decision shall be final.

**14.03** The County reserves the right to cancel the award without liability to the Bidder, except return of the Bid Guaranty, at any time before the Contract is fully executed.

## 15. FURNISH BOND AND INSURANCE

**15.01** Within fifteen (15) calendar days from the effective date of Contract award presented to the successful Bidder, the Bidder shall deliver to the County, satisfactory evidence of all required insurance coverage and performance and payment bond in the amount of $1,500,000.00 (One Million Five Hundred Thousand Dollars). Such insurance coverage and the payment and performance bond shall be maintained annually throughout the life of the Contract.

Attorneys-in-fact, who sign the Performance and Payment Bond, must file with such Bonds, certified copies of their current power of attorney to sign such Bonds. All Bonds must be countersigned by a Florida Resident agent of the Surety, with a copy of the agent's current identification card, as issued by the State of Florida Insurance Commissioner, attached thereto.

**15.02** The Contract shall not be binding upon the County until it has been executed by the County and a copy of the fully executed Contract is delivered to the Contractor.

## 16. FAILURE TO FURNISH BOND AND INSURANCE

Failure by the Bidder to deliver the other applicable forms, to furnish **and maintain annually** the Performance and Payment Bond, and to furnish satisfactory evidence of timely insurance coverage will result in forfeiture of the bid and the County may re-procure.

## 17. DEBARMENT OF CONTRACTORS

**17.01** The Bidder shall comply with Miami Dade County Code Section 10-38, which prevents Contractors, Subcontractors, their officers, their principals, stockholders, and their affiliates who have been debarred by the County, from entering into Contracts with the County during the period for which they have been debarred. Debarment may also constitute grounds for termination of any existing County Contract.

**17.02** It is the bidder's responsibility to ascertain that none of the Subcontractors, their officers, principals or affiliates, as defined in the ordinance, is debarred by the County pursuant to Miami Dade County Code Section 10-38 and Administrative Order 3-2 before submitting a bid.

**17.03** The Disclosure Affidavit pursuant to Miami Dade County Code Section 10-38 requires the bidder to affirm, under oath, that neither the bidder, its Subcontractors, or their officers, principals, nor affiliates, as defined in the ordinance, is debarred by the County at the time of the bid.

**17.04** Any Bidder who fails to complete the Disclosure Affidavit pursuant to Miami Dade County Code Section 10-38 shall not be awarded a Contract with the County. Any Contract or transaction entered into in violation of Miami Dade County Code Section 10-38 is void, and any person who willfully fails to disclose the required information or who knowingly discloses false information can be punished by civil or criminal penalties, or both, as provided for in the law.

**17.05** The Bidders and Contractors shall also comply with Miami Dade County Code providing contractual penalties and debarment for any Contractor attempting to meet contractual obligations and compliance with the Small Business Enterprise Program through fraud, misrepresentation, or material misstatement.

## 18. BID PROTESTS

A recommendation for contract award or rejection of award may be protested by a bidder or proposer in accordance with the procedures contained in Sections 2-8.3 and 2-8.4 of the Code, and as established in A.O. No. 3-21.

As a condition of initiating any protest, the protester shall present to the Clerk of the Board a non-refundable filing fee payable to the Clerk of the Board in accordance with the schedule provided

below.

| **Award Amount** | **Filing Fee** |
|---|---|
| $ 25,001- $100,000 | $ 500 |
| $100,001- $500,000 | $1,000 |
| $500,001- $5 million | $3,000 |
| over $5 million | $5,000 |

Any question, issue, objection or disagreement concerning, generated by, or arising from the published requirements, terms, conditions or processes contained or described in the solicitation document shall be deemed waived by the protester and shall be rejected as a basis for protest unless it was brought by that bidder or proposer to the attention, in writing, of the procurement agent, buyer, contracting officer or other contact person in the County department that issued the solicitation document, at least two (2) working days (not less than forty-eight (48) hours) prior to the hour of bid opening or proposals submission.

A protest hereunder may not challenge the relative weight of the evaluation criteria or the formula specified for assigning points therefore contained in bids, request for proposals or request for qualifications specifications which have been approved by the Commission.

Award Recommendations Over $100,000

Award recommendations for contracts and purchases involving the expenditure of over $100,000 will be in writing, signed by the issuing department to each competing bidder or proposer announcing the proposed award, and a copy shall be deposited with the Clerk of the Board on the same day it is mailed. The bidder or proposer must file a written intent to protest with the Clerk of the Board and shall mail it to all participants in the competitive process and to the County Attorney's Office within three (3) working days of the filing of the Manager's recommendation with the Clerk. Within three (3) working days after the filing of a written intent to protest, the protester shall then file with the Clerk of the Board all pertinent documents, stating with particularity the specific facts and grounds on which the protest is based and shall include supporting evidence, as well as the corresponding filing fee, and shall mail copies to all participants in the competitive process and to the Office of the County Attorney. Other facts, grounds, documentation or evidence not contained in the protester's submission to the Clerk of the Board at the time of filing the protest shall not be permitted in the consideration of the protest, except for such additional evidence as is allowed during the course of the protest proceedings. A hearing examiner shall be appointed to hear the protest and submit a written report and recommendation to the County Manager within twenty (20) working days of the filing of the protest (maximum 25 working days if hearing examiner consents to an extension request). Failure to timely file the written protest shall constitute a waiver of the right to protest the award recommendation.

# BID FORM

**MIAMI-DADE COUNTY, FLORIDA** **DATE:** _____

**BIDDER** _____

**ADDRESS** _____

**TELEPHONE No.** _____

**PROJECT TITLE** _____

**PROJECT NUMBER** _____

**THE UNDERSIGNED, AS BIDDER, HEREBY DECLARES THAT:**

The only person or persons interested in this Bid as Principal, or Principals, is or are named herein and that no person other than herein mentioned has any interest in this Bid or in the Contract to be entered into; that this Bid is made without connection with any other person, company or parties making a Bid; and that it is in all respects fair and made in good faith without collusion or fraud.

The Bidder further declares that it has examined the Bid Documents and the site of the Work and is fully informed in regard to the Work to be performed and accepts all conditions pertaining to the place where the Work is to be done.

**THE BIDDER ACKNOWLE`DGES RECEIPT OF THE FOLLOWING ADDENDA:**

Addendum No. ___ Addendum No. ___ Addendum No. ___ Addendum No.___

Addendum No. ___ Addendum No. ___ Addendum No. ___ Addendum No.___

Failure to acknowledge addenda shall not relieve such bidder from its obligation under this bid.

**THE BIDDER FURTHER AGREES THAT:**

**BID ACCEPTANCE**: If this Bid is accepted, to Contract with Miami-Dade County, Florida, in the form of Contract attached, in strict accordance with the Bid Documents and to furnish the prescribed Performance and Payment Bond, for not less than the amounts specified stipulated in the Advertisement for Bids exclusive of the amount of the Inspector General audit account, and to furnish the required evidence of the specified insurance, all within the applicable time.

**BID GUARANTY**: Each Bid must be accompanied by a Bid Guaranty in the amount and manner stipulated in the Advertisement for Bids and specified in the Instructions to Bidders. The Bidder shall not withdraw this Bid after bid opening for the Period stipulated as the bid guaranty period in the Advertisement for Bids.

**SMALL BUSINESS ENTERPRISE PROGRAM:** The Bidder/Proposer must comply with the Small Business Enterprise requirements for this Contract as specified in the Special Provisions SP-1. The Bidder, when applicable, shall comply with the following Contract Measures. Contract Measures are based on the

Contract Amount, exclusive of the amount of the Inspector General audit account.

**THE CONTRACT MEASURE(S) APPLICABLE TO THIS PROJECT:**

SBE Bid Preference. See Special Provision SP-1.

**CONTRACT TIME**: Completion of the Work within the Contract Time is of the essence. The Contract Time for this Work is ___1,096_____ calendar days from the effective date established in the Notice To Proceed.

**LIVING WAGE:** The Contractor must comply with the Living Wage requirements for this Contract as specified in the Special Provisions SP-2.

**OPTION TO RENEW SERVICES:** The Owner may extend the services and the term of this Contract for a one year period by written notice to the Contractor within one hundred and eighty (180) days before the Contract expires. Prior to exercise of this option the Contractor shall be required to provide a Performance and Payment Bond in an amount equal to the line item being exercised within the Schedule of Prices of the Bid Form that shall remain valid for the term of the exercised period. In addition, the Contractor shall maintain insurance coverage, as required elsewhere within the Contract, for the term of the exercised period, and shall provide prove of insurance prior to the expiration of the current coverage. The total duration of this Contract, including the exercise of any options under this section, shall not exceed four (4) years.

**COMPENSATION FOR RENEWAL OF SERVICES**: The Owner hereby is provided the authority, and at its sole option may extend the Contract beyond the initial term, as provided for herein. The compensation for any single Service Renewal shall be the value as bid within the Schedule of Prices Bid for the Service Renewal item. The exercise of any Service Renewal shall be by Work Order. Any funds not expended remain the property of the Owner.

**MINIMUM QUALIFIACTIONS:** A Bidder must present evidence of, at the time of submission, (and maintain same throughout the duration of the Contract) the following:

A Bidder must have a minimum of three (3) years experience with the maintenance of at least one Automated People Mover System or one rapid/light rail system or an equivalent transit system. Bidders proposed key personnel must have direct experience with the maintenance of Automated People Mover Systems and direct experience with Bombardier C-100 or CX-100 technology

Failure to meet the minimum qualifications will result in a rejection of the bid without discussion

# SCHEDULE OF PRICES BID

[All Prices shall be in U.S. Dollars]

**PROJECT : SATELLITIE TRANSIT SHUTTLE AT MIAMI INTERNATIONAL AIRPORT**

**PROJECT No.:**

**BIDDER NAME:** _____

## 1.0 BASIC SERVICES

1.A MAINTENANCE OF THE SATELLITE TRANSIT SHUTTLE (STS) *(Reference Section 3)*
Furnish all labor, supervision, routine maintenance, consumables, expendables, equipment, and tools to adequately operate and maintain the Satellite Transit, at Miami International Airport, per the Contractual requirements, for a lump sum to paid out in 36 equal payments:

YEARS 1-3...$_____
_*(Write the 3 year total amount in words)*

1.B OPTION YEAR STS SERVICES
Lump sum for same services as in 1.A to paid out in 12 equal payments

OPTION YEAR 4.... $_____
_*(Write the 3 year total amount in words)*

2.A Dedicated Allowance Account for Additional Services as defined in Section 3.13
$ Two million, one hundred sixty-six thousand, eight hundred forty-nine

2.B General Allowance Account *(Reference Section 3.16 & 3.18)*
$ Nine hundred thousand dollars

3 Inspector General Audit Account *(One quarter percent (0.25%) of the sum of Items1.A+1.B+2.A+2.B*
$_____
_*(Write the total amount in words)*

**TOTAL BID PRICE**.....

$_____

*(The sum of Item Nos. 1 through 3)*

_____

*(Write Total Bid amount in words)*

## BID SIGNATURE PAGE FOR CORPORATION

Attached is a [Bid Bond on the standard form as provided herein] [Certified Check] [Cashier's Check], for the sum of

_____

($_____), in accordance with the Instructions to Bidders.

The Officers of the Corporation are as follows:

| | Name | Address |
|---|---|---|
| President | _____ | _____ |
| V. President | _____ | _____ |
| Secretary | _____ | _____ |
| Treasurer | _____ | _____ |

**STATE OF FLORIDA CERTIFICATE OF CERTIFICATION FOR CORPORATION:**

_____ _____

Name of Holder (Qualifier) Certificate No.

**BID SIGNATURE PAGE FOR PARTNERSHIP OR JOINT VENTURE**

Attached is a [Bid Bond on the standard form as provided herein] [Certified Check] [Cashier's Check], for the sum of

_____

($_____), in accordance with the Instructions to Bidders.

The Partnership of Joint Venture Bidder, _____,
consists of the following entities: *(Attach additional sheets if necessary.)*

(a) _____, a _____ corporation,
(Corporate Name)
authorized to do business in the State of Florida.

(b) _____, a _____ corporation,
(Corporate Name)
authorized to do business in the State of Florida.

(c) _____, (d) _____
(Name) (Name)

_____ _____
(Partner) (Partner)

The Managing or the General Partner of the Partnership of Joint Venture

_____, who is the _____ of _____
(Name) (Title) (Name of Entity)

**STATE OF FLORIDA CERTIFICATE OF CERTIFICATION FOR PARTNERSHIP OR JOINT VENTURE:**

_____ _____
Name of Holder (Qualifier) Certificate No.

## CLAIM OF LOCAL BUSINESS PREFERENCE

**IN ADDITION TO THE BID FORM, THE FOLLOWING DOCUMENTS ARE REQUIRED TO BE SUBMITTED AS A PART OF THE BID/PROPOSAL**

The Bidder/Proposer is required to execute and submit the following documents as a part of their bid. Failure to submit the following document may be cause to reject the Bid/Proposal.

| DOCUMENT TITLE | PAGE |
|---|---|
| • **Miami-Dade Aviation Department Single Execution Affidavit** | **BF-8 – BF-18** |

Consisting of the following affidavits:

1. Public Entity Crimes Affidavit
2. Debarment Disclosure Affidavit
3. Criminal Record Affidavit
4. Disclosure of Ownership Affidavit
5. Affirmative Action Plan/Procurement Policy Affidavit

- **Claim of Local Business Preference (if applicable)** ..... **BF-18**
- **BID BOND (BB-1)** (or other authorized Bid Guaranty) ..... **BB-1**

**CLAIM OF LOCAL BUSINESS PREFERENCE**

MIAMI-DADE COUNTY

**MIAMI-DADE AVIATION DEPARTMENT SINGLE EXECUTION AFFIDAVITS**

This sworn statement is submitted for:

PROJECT TITLE_____

PROJECT NUMBER _____

COUNTY OF _____

STATE OF _____

Before me the undersigned authority appeared _____(Print Name), who is personally known to me or who has provided as identification and who (did or did not) take an oath, and who stated:

That he/she is the duly authorized representative of

_____

(Name of Entity)

_____

(Address of Entity)

____/____-____/____/____/____/____/____/
Federal Employment Identification Number

hereinafter referred to as the Entity being its

_____

(Sole Proprietor)(Partner)(President or Other Authorized Officer)

and as such has full authority to make these affidavits and say as follows.

## CLAIM OF LOCAL BUSINESS PREFERENCE

## AFFIDAVIT No. 1
## PUBLIC ENTITY CRIMES
## SWORN STATEMENT UNDER SECTION 287.133(3)(a), FLORIDA STATUTES

1. I understand that a "public entity crime" as defined in Paragraph 287.133(1) (g), **Florida Statutes**, means "a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or with the United States, including, but not limited to any bid, proposal, reply, or contract for goods or services, any lease for real property, or any contract for the construction or repair of a public building or public work, involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation."

2. I understand that "convicted" or "conviction" as defined in Paragraph 287.133 (1)(b), **Florida Statutes**, means "a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere."

3. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), **Florida Statutes**, means:

   A. A predecessor or successor of a person convicted of a public entity crime; or

   B. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate."

4. I understand that a "person" as defined in Paragraph 287.133(1)(e), **Florida Statutes**, means "any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members and agents who are active in management of an entity."

5. The statement which is marked below is true in relation to the Entity submitting this sworn statement. **[Please indicate which statement applies.]**

## CLAIM OF LOCAL BUSINESS PREFERENCE

## AFFIDAVIT No. 1
## PUBLIC ENTITY CRIMES
## SWORN STATEMENT UNDER SECTION 287.133(3)(a), FLORIDA STATUTES (Cont'd)

_____Neither the Entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the Entity, nor any affiliate of the Entity have been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_____The Entity submitting this sworn statement, or one or more of the officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the Entity, or an affiliate of the Entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989. **[Please indicate which additional statement applies.]**

_____There has been a proceeding concerning the conviction before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer did not place the person or affiliate on the convicted vendor list. **[Please attach a copy of the final order.]**

_____The person or affiliate was placed on the convicted vendor list. There has been a subsequent proceeding before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer determined that it was in the public interest to remove the person or affiliate from the convicted vendor list. **[Please attach a copy of the final order.]**

_____The person or affiliate has been placed on the convicted vendor list. **[Please describe any action taken by or pending with the Florida Department of General Services.]**

_____

## AFFIDAVIT No. 2
## DEBARMENT DISCLOSURE AFFIDAVIT
## PURSUANT TO SECTION 10-38 AND 2-8.4.1
## OF THE MIAMI-DADE COUNTY CODE

Section 10-38 of the Code relates to the debarment of any individual or other legal entity from County work. The Debarment Disclosure Affidavit requires the Entity to affirm, under oath, that neither the Entity its officers, principals, directors, shareholders owning or controlling more than ten percent (10%) or more of the stock, partners, affiliates, as defined in the Code, nor its Subcontractors/Subconsultants, have been debarred by the Count. Any individual or Entity listed above that has been debarred by the County is prohibited from entering into any contract with the County during the period for which they have been debarred. Debarment may also constitute grounds for termination of any existing contract. It is the Entity's responsibility to ascertain this information before submitting the Qualification Statement.

_____ The Entity affirms under oath that neither the Entity, its officers, principals, directors, shareholders owning or controlling ten percent (10%) or more of the stock, or affiliates, nor its Subcontractors/Subconsultants have been debarred by the County.

---

## AFFIDAVIT No. 3
## CRIMINAL RECORD AFFIDAVIT
## PURSUANT TO SECTION 2-8.6 OF THE
## MIAMI-DADE COUNTY CODE

Pursuant to Section 2-8.6 of the Code, the Entity must disclose, at the time the submission, if the Entity or any of its officers, directors, or executives have been convicted of a felony during the past (10) years. Failure to disclose such conviction may result in the debarment of the Entity who knowingly fails to make the required disclosure or to falsify information.

Indicate below if the above named Entity, as of the date of submission:

_____ has not been convicted of a felony during the past ten (10) years, nor does it, as of the date of submission, have an officer, director or executive who has been convicted of a felony during the past ten (10) years.

_____ has been convicted of a felony during the past ten (10) years, or as of the date of submission, has an officer, director or executive who has been convicted of a felony during the past ten (10) years.

---

## CLAIM OF LOCAL BUSINESS PREFERENCE

## AFFIDAVIT No. 4
## DISCLOSURE OF OWNERSHIP AFFIDAVIT
## PURSUANT TO SECTION 2-8.1
## OF THE MIAMI-DADE COUNTY CODE

I hereby declare that the information given herein and in the documents attached hereto are true and correct.

### PART I

1. The full legal name and business address* of the person or Entity transacting business with the County is:

_____

_____

_____

2. If the transaction is with a Corporation**, provide the full legal name and business address* and title for each officer. This disclosure requirement does not apply to publicly traded corporations, however please indicate here whether the Entity is a publicly traded corporation.

_____

_____

_____

3. If the transaction is with a Corporation**, provide the full legal name and business address* for each director. This disclosure requirement does not apply to publicly traded corporations.

_____

_____

_____

**CLAIM OF LOCAL BUSINESS PREFERENCE**

**AFFIDAVIT No. 4**
**DISCLOSURE OF OWNERSHIP AFFIDAVIT**
**PART I (cont'd)**

4. If the transaction is with a Corporation**, provide the full legal name and business address* for each stockholder who holds directly or indirectly five percent (5%) or more of the corporation's stock and state the percentage. This disclosure requirement does not apply to publicly traded corporations.

_____

_____

_____

5. If the transaction is with a Partnership or joint venture, provide the full legal name and address for each partner or joint venture member.

_____

_____

_____

6. If the transaction is with a trust, provide the full legal name and address for each trustee and each beneficiary of the trust.

_____

_____

_____

7. The full legal name and business addresses* of any other individuals (other than stockholders owning less than five percent (5%) of the stock, subcontractors, materialmen, suppliers, laborers, or lenders) who have, or will have, any interest (legal, equitable, beneficial or otherwise) in the transaction with the County are:

_____

_____

_____

## CLAIM OF LOCAL BUSINESS PREFERENCE

## AFFIDAVIT No. 4
## DISCLOSURE OF OWNERSHIP AFFIDAVIT
## PART I (cont'd)

1. Does your firm have a collective bargaining agreement with its employees?

☐ Yes ☐ No

2. Does your firm provide paid health care benefits for its employees?

☐ Yes ☐ No

3. Provide a current breakdown (number of persons) of your firm's work force and ownership as to race, national origin and gender:

| | | |
|---|---|---|
| White: | _____ Males | _____ Females |
| Asian: | _____ Males | _____ Females |
| Black: | _____ Males | _____ Females |
| Native American: | _____ Males | _____ Females |
| Hispanics: | _____ Males | _____ Females |
| Alaskan Natives: | _____ Males | _____ Females |
| _____: | _____ Males | _____ Females |
| _____: | _____ Males | _____ Females |

(ADD EXTRA SHEETS IF NEEDED)

* **Post Office Box addresses not acceptable.**
** **If a Joint Venture, list this information for each member of the Joint Venture**

## CLAIM OF LOCAL BUSINESS PREFERENCE

## AFFIDAVIT No. 4
## DISCLOSURE OF OWNERSHIP AFFIDAVIT
## PART II

**List all contracts in effect with Miami-Dade County during the last five (5) years:**

| CONTRACT DATE | DOLLAR AMOUNT ORIG. CONTRACT | FINAL AMT. OF CONTRACT | PERCENTAGE DIFFERENTIAL |
|---|---|---|---|
| (1) | | | |
| _____ | $_____ | $_____ | _____% |

Name of Dept. & Summary of Services Performed _____

_____

_____

Litigation Arising out of Contract _____

_____

_____

| | | | |
|---|---|---|---|
| (2) | | | |
| _____ | $_____ | $_____ | _____% |

Name of Dept. & Summary of Services Performed _____

_____

_____

Litigation Arising out of Contract _____

_____

_____

**CLAIM OF LOCAL BUSINESS PREFERENCE**

**AFFIDAVIT No. 4**
**DISCLOSURE OF OWNERSHIP AFFIDAVIT**
**PART II** (Cont'd)

| CONTRACT DATE | DOLLAR AMOUNT ORIG. CONTRACT | FINAL AMT. OF CONTRACT | PERCENTAGE DIFFERENTIAL |
|---|---|---|---|
| (3) | | | |
| _____ | $_____ | $_____ | _____% |

Name of Dept. & Summary of Services Performed _____

_____

_____

Litigation Arising out of Contract _____

_____

_____

| | | | |
|---|---|---|---|
| (4) | | | |
| _____ | $_____ | $_____ | _____% |

Name of Dept. & Summary of Services Performed _____

_____

_____

Litigation Arising out of Contract _____

_____

_____

(ADD EXTRA SHEET(S) IF NEEDED.)

## CLAIM OF LOCAL BUSINESS PREFERENCE

### AFFIDAVIT No. 4
### DISCLOSURE OF OWNERSHIP AFFIDAVIT
### PART III

A. How long has Entity been in business? _____

B. Has the Entity or the principals of the Entity ever done business under another name or with another firm? _____

If yes, attach separate sheet(s) listing same information as in parts I, II and III of this affidavit.

---

### AFFIDAVIT No. 5
### AFFIRMATIVE ACTION PLAN/PROCUREMENT POLICY AFFIDAVIT PURSUANT TO SECTION 2-8.1.5 OF THE MIAMI-DADE COUNTY CODE

I, being duly first sworn, hereby state that the Respondent for this contract:

☐ has a current Affirmative Action Plan and Procurement Policy, as required by Section 2-8.1.5 of the Code , processed and approved for filing with the Miami-Dade County Department of Business Development (DBD) under the file No._____ and the expiration date of _____.

☐ had annual gross revenues in excess of $5,000,000 for the previous year and does not have a current Affirmative Action Plan and Procurement Policy as required by Section 2-8.1.5 of the Code, processed and approved for filing with the County DBD. I will contact DBD at 305-375-3111 regarding this condition of award requirement.

☐ had annual gross revenues less than $5,000,000.00 for the previous year; therefore Section 2-8.1.5 of the Code is not applicable.

☐ has a Board of Directors which is representative of the population make-up of the nation and are exempt from the requirements of Section 2-8.1.5 of the Code. I will contact DBD at 305-375-3111 in order to submit the required exemption request.

## CLAIM OF LOCAL BUSINESS PREFERENCE

The evaluation of competitive solicitations is subject to Section 2-8.5 of the Miami-Dade County Code, which, except where contrary to federal or state law, or any other funding source requirements, provides that preference be given to local businesses. A local business, for the purposes of receiving the aforementioned preference above, shall be defined as a Bidder/Proposer which meets all of the following:

1. Bidder/Proposer has a valid occupational license, issued by Miami-Dade County or Broward County at least one year prior to Bid/Proposal submission due date to do business within Miami-Dade County or Broward County that authorizes the business to provide the goods, services or construction to be purchased.

   **Bidder/Proposer shall attach hereto a copy of said occupational license(s). (Note: Current and past year licenses shall be submitted as proof that Bidder/Proposer has had the license at least one year prior to the Bid/Proposal submission due date.)**

2. Bidder/Proposer has a physical business address located within the limits of Miami-Dade County or Broward County from which the Bidder/Proposer operates or performs business. (Post Office Boxes are not verifiable and shall not be used for the purpose of establishing said physical address.)

   **Bidder/Proposer shall state its Miami-Dade County or Broward County physical business address:**

   _____

   **and shall submit proof of occupancy for this address. If Bidder/Proposer is leasing space from another company, a copy of the lease or an affidavit from the lessor must be submitted.**

3. Bidder/Proposer contributes to the economic development and well-being of Miami-Dade County or Broward County in a verifiable and measurable way. This may include but not be limited to the retention and expansion of employment opportunities and the support and increase in the County's tax base. To satisfy this requirement, the Bidder/Proposer shall affirm in writing its compliance with any of the following objective criteria as of the Bid/Proposal submission due date:

   Check box, if applicable:

   a. ☐ Bidder/Proposer has at least ten (10) permanent full time employees, or part time employees equivalent to 10 FTE ("full-time equivalent" employees working 40 hours per week) that live in Miami-Dade County or Broward County, or at least 25% of its employees live in Miami-Dade County or Broward County. **Bidder/Proposer shall provide Internal Revenue Service Forms 941 for a one year period or other supporting documentation.**

   b. ☐ Bidder/Proposer contributes to Miami-Dade County's or Broward County's tax base by paying either real property taxes or tangible personal property taxes to Miami-Dade County or Broward County. **Bidder/Proposer shall provide real property tax receipts or tangible personal property tax returns.**



c/5

## CLAIM OF LOCAL BUSINESS PREFERENCE

c. ☐ Bidder/Proposer contributes to the economic development and well-being of Miami-Dade County or Broward County by some other verifiable and measurable contribution by:

_____
_____
_____
_____
_____
_____
_____
_____
_____

**Bidder/Proposer shall check the box if applicable. If checking item "c" above, Bidder/Proposer shall provide a written statement defining how Bidder/Proposer meets the criteria and provide supporting documentation.**

By signing below, Bidder/Proposer affirms that it meets the above criteria to qualify for Local Preference and has submitted the requested documents.

In addition, to the above, the Bidder/Proposer shall also list the total number of employees that are Miami-Dade County and Broward County residents. The number of employees submitted is to be accurate as of the Bid/Proposal submission due date: _____employees

**Note: At this time, there is an interlocal agreement in effect between Miami-Dade and Broward Counties until <u>September 30, 2007</u>. Therefore, a Bidder/Proposer which meets the requirements of (1) (2) and (3) above for Broward County shall be considered a local business for the purposes outlined herein.**

Name of Firm: _____

Federal Employer Identification Number: _____

Telephone: (_____)_____ Fax: (_____)_____

## CLAIM OF LOCAL BUSINESS PREFERENCE

I hereby certify that to the best of my knowledge and belief all the foregoing facts are true and correct.

_____
(Signature of Authorized Representative)

Title _____

Date _____

STATE OF:

COUNTY OF:

The above affidavits were acknowledged before me this _____day of_____, 20___,

By _____,
(Authorized Representative)

of _____
(Name of Corporation, Partnership, etc.)

who is personally known to me or has produced as identification and who did/did not take an oath.

_____
(Signature of Notary)

Notary Stamp or Seal:

_____
(Print Name)

Notary Commission Number: _____

My Commission Expires: _____

# BID BOND

**State of** _____ **County of** _____
**We,** _____ **as Principal**
**and** _____ **as Surety**, are held and firmly bound unto Miami-Dade County, Florida hereinafter called the County, in the **Penal sum of** _____ **Dollars** ($_____) lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents. The Principal has submitted the attached Bid, **dated**_____, 20___, for **Project Name:**_____, **Project No.** _____.
The Principal shall at time of bid opening furnish all documents and information required by the Contract Documents, and shall not withdraw said Bid within the time stipulated in the advertisement for bids and shall within the time stipulated in the Instructions to Bidders execute and deliver to the County, the Contract, the Performance and Payment Bond and satisfactory evidence of all required Insurance. The Principal shall give a Performance and Payment Bond with good and sufficient surety, as required by the Contract Documents, for the faithful performance and proper fulfillment of such Contract and for the prompt payment of all persons furnishing labor or materials in connection therewith. Having met these obligations shall render this Bond void and of no effect; or in the event of withdrawal of said Bid within the period specified, or in the event of the failure to comply with the Contract Documents, or in the event of failure to enter into such Contract and give such Bonds and evidence of insurance within the time specified, if the Principal shall pay the County the difference between the amounts specified in said Bid and the amount for which the County may procure the required work and supplies, provided the latter amount be in excess of the former, then the above obligations shall be void and of no effect; otherwise, to remain in full force and virtue.

The above bounden parties have caused this Bond to be executed by their appropriate officials as of the____ day of _____, 20___.

**CORPORATION**

_____ _____
**Witness** **By:**
_____ **Title** _____

**PARTNERSHIP OR JOINT VENTURE ***

_____ _____
**Witness** **By:**
_____ **Title**_____

_____ _____
**Witness** **By:**
_____ **Title** _____

* Note: All Partners or Joint Venture Members shall sign and submit documentation proving their authority to sign on behalf of the Partnership or Joint Venture.

*(Corporate Seal)*

**COUNTERSIGNED BY RESIDENT FLORIDA AGENT OF SURETY:** **SURETY:**

_____ _____
By: Attorney-in-Fact

*(A copy of Agent's current Identification Card as issued by State of Florida Insurance Commissioner must be attached.)*

**(THIS FORM MUST BE SUBMITTED IN DUPLICATE - ONE ORIGINAL AND ONE COPY)**

# CONDITION OF AWARD REQUIREMENTS

The following documents having page numbers starting with the prefix "AR" are required to be executed by the selected Contractor prior to the final execution of the Contract by the Owner. The selected Contractor will be notified as to when these documents are due, but should not wait for such notification prior to gathering the information required. The required documents are:

- **Single Execution Condition of Award Affidavits: ..... Page AR-2**

    1. Disability Nondiscrimination
    2. Family Leave
    3. Domestic Leave
    4. Currently Due Fees and Taxes
    5. Drug Free Work Place
    6. Current In County Obligations
    7. Code of Business Ethics

- **Subcontractor/Supplier Listing:..... Page AR-7**

- **Subcontracting Policies Statement: Page AR-8**
  **(Also required, but no format (insert page is provided)**

- **Proof of Authorization to do Business: Page AR-9**
  (Attach a copy of the Certificate of Status or Authorization per 607.0128 F.S., and certificate evidencing compliance with the Florida Fictitious Name Statute per 865.09 F.S., if applicable.)
  **(Also required, but no format (insert page is provided)**

**MIAMI-DADE COUNTY**

**MIAMI-DADE AVIATION DEPARTMENT SINGLE EXECUTION\ CONDITION OF AWARD AFFIDAVITS**

This sworn statement is submitted for:

PROJECT TITLE _____

PROJECT NUMBER _____

COUNTY OF _____

STATE OF _____

Before me the undersigned authority appeared _____(Print Name),

who is personally known to me or who has provided _____ as

identification and who (did or did not) take an oath, and who stated:

That he/she is the duly authorized representative of

_____

(Name of Entity)

_____

(Address of Entity)

____/____-____/____/____/____/____/____/
Federal Employment Identification Number

hereinafter referred to as the Entity being its

_____

(Sole Proprietor)(Partner)(President or Other Authorized Officer)

and as such has full authority to make these affidavits and say as follows.

## AFFIDAVIT No. 1
## DISABILITY NONDISCRIMINATION
## PURSUANT TO COUNTY RESOLUTION NOS. R-182-00 AND R-385-95,

Pursuant to County Resolution No. R-182-00, amending Resolution No. R-385-95, the Entity shall, as a condition of award, provide written certification that the firm is not in violation of the Americans with Disabilities Act of 1990, the Rehabilitation Act of 1973, the Federal Transit Act, the Fair Housing Act, nor any other laws prohibiting discrimination on the basis of disability. Any post-award violation of these Acts may result in the contract being declared void. If any certifying Respondent or their affiliate is found in violation of the Acts, the County will conduct no further business with such attesting firm. Any violation of this Resolution may result in debarment.

_____ The Entity affirms under oath that the Entity is not in violation of the Americans with Disabilities Act of 1990, the Rehabilitation Act of 1973, the Federal Transit Act, the Fair Housing Act, nor any other laws prohibiting discrimination on the basis of disability.

---

## AFFIDAVIT No. 2
## FAMILY LEAVE
## PURSUANT TO COUNTY RESOLUTION NO. R-183-00

Pursuant to County Resolution No. R-183-00, the Entity shall, as a condition of award, provide written certification that the firm provides family leave to their employees as required by the County's family leave policy. Failure to comply with the requirements of this Resolution may result in debarment.

_____ The Entity affirms under oath that the Entity is in compliance with the County's family leave requirements.

---

## AFFIDAVIT No. 3
## DOMESTIC LEAVE
## PURSUANT TO COUNTY RESOLUTION NO. R-185-00

Pursuant to County Resolution No. R-185-00, the Entity shall, as a condition of award, provide written certification that the firm is in compliance with the County's domestic leave policy. Failure to comply with the requirements of this Resolution may result in the contract being declared void, the contract being terminated, and/or the firm being debarred. The obligation to provide domestic leave to their employees shall be a contractual obligation.

_____ The Entity affirms under oath that the Entity is in compliance with the County's domestic leave policy.

---

## AFFIDAVIT No. 4
## CURRENTLY DUE FEES OR TAXES, PURSUANT TO SECTION 2-8.1 (c) OF THE MIAMI-DADE COUNTY CODE

Pursuant to Section 2-8.1(c) of the Code, the Entity shall verify that all delinquent and currently due fees or taxes - including but not limited to real and property taxes, utility taxes and occupational licenses - collected in the normal course by the County Tax Collector, as well as County issued parking tickets for vehicles registered in the name of the Entity, have been paid. Failure to comply with this requirement may result in debarment.

_____ The Entity affirms under oath that the Entity does not have any County delinquent and currently due fees or taxes, including but not limited to real and property taxes, utility taxes and occupational licenses, or County issued parking tickets for vehicles registered in the name of the Entity.

---

## AFFIDAVIT No. 5
## DRUG FREE WORKPLACE PURSUANT TO SECTION 2-8.1.2 (b) OF THE MIAMI-DADE COUNTY CODE

Pursuant to Section 2-8.1.2(b) of the Code, no person or entity shall be awarded or receive a County contract for public improvements unless such person or entity certifies that it will provide a drug free workplace. Failure to comply with this policy may result in debarment for those persons or entities that knowingly violate this policy or falsify information.

_____ The Entity affirms under oath that it will comply with the County's drug free workplace requirements.

---

## AFFIDAVIT No. 6
## CURRENT IN COUNTY OBLIGATIONS AFFIDAVIT
## PURSUANT TO SECTION 2-8.1(h)
OF THE MIAMI-DADE COUNTY CODE

Pursuant to Section 2-8.1(h) of the Code, no individual or entity shall be allowed to receive any additional County contracts, if it is in arrears in any payment under a contract, promissory note or other loan document with the County, or any of its agencies or instrumentalities, including the Public Health Trust, either directly or indirectly through a firm, corporation, partnership or joint venture in which the individual or entity has a controlling financial interest as that term is defined in Section 2-11.1(b)(8) of the Code, until either the arrearage has been paid in full or the County has agreed in writing to a payment schedule. Failure to meet the terms and conditions of any obligation or repayment schedule with the County shall constitute a default of the subject contract and may be cause for suspension, termination and debarment, in accordance with the terms of the contract and the debarment procedures of the County.

_____The Entity affirms under oath that the Entity is current in its obligations to the County.

---

## AFFIDAVIT No. 7
## CODE OF BUSINESS ETHICS AFFIDAVIT
## PURSUANT TO SECTION 2-8.1(i)
## OF THE MIAMI-DADE COUNTY CODE

Pursuant to Section 2-8.1(i) of the Code, each person or entity that seeks to do business with the County shall adopt a Code of Business Ethics ("Ethics Code") and shall, prior to the execution of any contract between the Entity and the County, submit an affidavit stating that the Entity has adopted an Ethics Code that complies with the requirements of Section 2-8.1(i) of the Code. An entity failing to submit the required affidavit shall be ineligible for contract award.

_____The Entity affirms under oath that the Entity has adopted an Ethics Code that complies with the requirements of Section 2-8.1(i) of the Code.

---

**This single execution shall have the same force and effect as if each of the above affidavits had been individually executed.**

_____
(Signature of Authorized Representative)

Title _____

Date _____

STATE OF:

COUNTY OF:

The above affidavits were acknowledged before me this _____day of_____, 20__,

By _____,
(Authorized Representative)

of _____
(Name of Corporation, Partnership, etc.)

who is personally known to me or has produced as identification and who did/did not take an oath.

_____
(Signature of Notary)

Notary Stamp or Seal:

_____
(Print Name)

Notary Commission Number: _____

My Commission Expires: _____

**SUBCONTRACTOR/SUPPLIER LISTING**
**PURSUANT TO SECTION 10-34 OF THE CODE**

Firm Name of Prime Entity/Respondent: _____ Project No._____

Project Name: _____

| Business Name and Address of First tier Subcontractor/Subconsultant | Principal Owner | Scope of Work to be Performed by Subcontractor/Subconsultant | Subcontractor/ Subconsultant Dollar Amount | (Principal Owner) Gender Race | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| **Business Name and Address of Direct Supplier** | **Principal Owner** | **Supplies/Materials/Services to be Provided by Supplier** | **Supplier Dollar Amount** | **(Principal Owner) Gender Race** | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

I certify that the certifications contained in this Subcontractor/Supplier Listing are to the best of my knowledge true and accurate

_____ _____ _____ _____
Prime Entity/Respondent Signature Print Name Print Title Date

(Duplicate if additional space is needed)

# SUBCONTRACTING POLICIES STATEMENT PURSUANT TO SECTION 2-8.8(4) OF THE CODE

Subcontracting Policies Statement (County Code 2-8.8(4)). For all contracts in which a bidder may use a Subcontractor, prior to contract award, the bidder shall provide a detailed statement of its policies and procedures for awarding subcontracts. Failure to provide the required statement shall preclude the bidder from receiving the contract. The format for this document is the Bidder's choice.

## (Insert Here)

**PROOF OF AUTHORIZATION TO DO BUSINESS**
(Attach a copy of the Certificate of Status or Authorization per 607.0128 F.S., and certificate evidencing compliance with the Florida Fictitious Name Statute per 865.09 F.S., if applicable.)

**(Insert Here)**

# CONTRACT

**THIS CONTRACT** made and entered into as of the _____ day of _____,20___, by and between Miami-Dade County, Florida, by its Board of County Commissioners, hereinafter called the Owner and

_____

hereinafter called the Contractor:

WITNESSETH, that the said Contractor, for and in consideration of the payments hereinafter specified and agreed to be made by the County, hereby covenants and agrees to furnish and deliver all the materials required, to do and perform all the Work and labor, in a satisfactory and workmanlike manner, required to complete this Contract within the time specified, in strict and entire conformity with the Plans, Technical Specifications and other Contract Documents, which are hereby incorporated into this Contract by reference, for;

**PROJECT TITLE**: _____

**PROJECT NO**:_____

The Contractor agrees to make payment of all proper charges for labor and materials required in the aforementioned Work, and to defend, indemnify and save harmless the County and all its officers, employees and agents against and from all suits and costs of every kind and description, and from all damages to which the said County or any of its officers, agents and employees may be put, by reason of injury or death to persons or injury to property of others resulting from the performance of said Work, or through the negligence of the Contractor, its officers, agents or employees or through any improper or defective machinery, implements or appliances used by the Contractor, its officers, agents or employees in the aforesaid Work, or through any act or omission on the part of the Contractor, or its officers, agents or employees.

In consideration of these premises, the County hereby agrees to pay to the Contractor for the said Work, when fully completed, the total maximum sum of

_____Dollars ($_____),

consisting of the following accepted items or schedules of Work as taken from the Bid Form:

Total Unit L.S. Year 1-3 (*Intitial term 1096 days*) ..... $_____

Total Unit L.S. Option Year 4 ..... $_____

General Allowance Account ..... $ 900,000

Dedicated Allowance Account ..... $2,166,849

Inspector General Audit Account ..... $_____

TOTAL MAXIMUM CONTRACT AMOUNT ..... $_____

The total maximum Contract amount is subject to such additions and deductions as may be provided for in the Contract Documents. Partial and Final Payments will be made as provided for in the Contract Documents.

**CONTRACT (Cont'd)**

**IN WITNESS WHEREOF,** the above parties have caused this Contract to be executed by their appropriate officials as of the date first above written.

BOARD OF COUNTY COMMISSIONERS
OF MIAMI-DADE COUNTY, FLORIDA,

By: _____
Mayor or designee

(MIAMI-DADE COUNTY SEAL)

_____

Approved for Form and Legal Sufficiency

_____
(Assistant County Attorney)

ATTEST: Harvey Ruvin Clerk

By: _____
Deputy Clerk

CONTRACTOR (If Corporation)

_____
(Corporate Name)

By: _____
President

Attest: _____
Secretary

CONTRACTOR (if Partnership or Corporate Joint Venture)

(A) PARTNERSHIP OR
CORPORATE JOINT VENTURER:

_____
(Corporate Name)

By: _____
President

Attest _____
Secretary

(B) PARTNERSHIP OR
CORPORATE JOINT VENTURER:

_____
(Corporate Name)

By: _____
President

Attest _____
Secretary

(ATTACH ADDITIONAL SHEETS FOR EACH JOINT VENTURER, AS NEEDED)

(CORPORATE SEAL)

NAME OF MANAGING JOINT VENTURER:

By _____
Signature of Authorized Representative of Joint Venture

Witnesses as to Above

_____

_____

## SURETY PERFORMANCE AND PAYMENT BOND

By this Bond, We _____, as Principal, whose principal business address is _____, as Contractor under the Contract dated _____, 20 ___, between Principal and Miami-Dade County for the construction of

_____

Project No. _____ (hereinafter referred to as "Contract") the terms of which Contract are incorporated by reference in its entirety into this Bond and _____, a corporation, whose principal business address is _____ as Surety, are bound to Miami-Dade County (hereinafter referred to as "County") in the sum of _____ (U.S. dollars) $_____, for payment of which we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally.

THE CONDITION OF THIS BOND is that if Principal:

1 . Performs all the Work under the Contract, including but not limited to guarantees, warranties and the curing of latent defects, said Contract being made a part of this bond by reference, and in the times and in the manner prescribed in the Contract, including any and all damages for delay; and

2. Promptly makes payments to all claimants, as defined in Section 255.05(l), Florida Statutes, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal in the prosecution of the Work provided for in the Contract; and

3. Pays County all losses, damages, including damages for delay, expenses, costs and attorney's fees, including appellate proceedings, that County sustains because of a default by Principal under the Contract, including but not limited to a failure to honor all guarantees and warranties or to cure latent defects in its Work or materials within five (5) years after completion of the Work under the Contract; and

4. Performs the guarantee of all Work and materials furnished under the Contract for the time specified in the Contract, including all warranties and curing all latent defects within five (5) years after completion of the Work under the Contract;

then this bond is void; otherwise it remains in full force.

If no specific periods of warranty are stated in the Contract for any particular item or Work, material or equipment, the warranty shall be deemed to be a period of one (1) year from the date of final acceptance by the County. This Bond does not limit the County's ability to pursue suits directly with the Principal seeking damages for latent defects in materials or workmanship, such actions being subject to the limitations found in Section 95.11(3)(c), Florida Statutes.

Any changes in or under the Contract Documents and compliance or noncompliance with any formalities connected with the Contract or the changes does not affect Surety's obligation under this Bond.

**SURETY PERFORMANCE AND PAYMENT BOND (Cont'd)**

IN WITNESS WHEREOF, the above bounden parties have caused this Bond to be executed by their appropriate officials as of the _____ day of _____, 20 ___.

CONTRACTOR

_____
(Contractor Name)

BY:

_____
(President) (Managing Partner or Joint Venturer)

(SEAL)

COUNTERSIGNED BY RESIDENT
FLORIDA AGENT OF SURETY:

_____

(Copy of Agent's current
Identification Card as issued by
State of Florida Insurance Commissioner must be attached)

SURETY:

_____

By: _____

Attorney-in-Fact

(CORPORATE SEAL)

(Power of Attorney must be attached)

## SECTION 2
## GENERAL CONDITIONS

## ARTICLE 1
## DEFINITIONS

### 1.0 DEFINITIONS

When used in these Contract Documents (defined below), or in related documents, the following terms, or pronouns are used in place of them, shall have the meanings given below:

**1.01 Addendum**: A modification of the Bid Documents distributed to prospective Bidders prior to the opening of Bids.

**1.02 Advertisement for Bids**: The public notice inviting the submission of Bids for the Work.

**1.03 AIP:** The Airport Improvement Program, a grant-in-aid program, administrated by the Federal Aviation Administration. No requirement of the AIP Act, the rules and regulations implementing the Act, or this Contract shall be construed as making the Federal Government a party to the Contract, nor will any such requirement interfere, in any way, with the right of either party to the Contract.

**1.04 Air Operations Area**: The Air Operations Area (AOA) shall mean any area of the airport used or intended to be used for landing, taking off or surface maneuvering of aircraft. An air operation area shall include paved or unpaved areas that are used or intended to be used for the unobstructed movement of aircraft in addition to its associated runway, taxiway or apron.

**1.05 Allowance Account(s)**: Account(s) in which stated dollar amount(s) are included in the Contract for the purpose of funding portions of the Work which are unforeseeable at the time of execution of the Contract, or for construction changes, for adjustments of quantities, for unit price work items or for special work deemed desirable by the County to be incorporated into the Contract. Performance of work, if any, under Allowance Account(s) will be authorized by written Work Order(s) issued by the Owner.

**1.06 APM Consultant**: The transportation consulting firm which may be an authorized representative of the Owner to monitor or assess the Contractor's performance of the work, and for conducting activities and discharging contract administration responsibilities assigned by the Owner

**1.07 Not Used**

**1.08 Bid**: The written offer of a Bidder to perform the Work.

**1.09 Bid Bond**: A bond executed by a Bidder and its Surety in the attached form guaranteeing that the Bidder, if awarded the Contract, will execute the same and will timely furnish the required Performance Bond, Payment Bond, and evidence of Insurance.

**1.10 Bidder**: Any individual, firm, partnership or corporation submitting a Bid in accordance with the Instructions to Bidders.

**1.11 Bid Documents**: The Advertisement for Bids, Instructions to Bidders, Bid Form, Bid Bond, Contract, Performance and Payment Bond, General Conditions, Special Provisions, and Technical Specifications, together with all Addenda.

**1.12** **Bid Form**: The form on which Bids are submitted.

**1.13** **Bulletin**: Any written document initiated by the Owner, advising the Contractor of proposed alterations, revisions, additions and deletions in the work and requesting itemized price quotations for such proposed changes.

**1.14** **Calendar Day:** Every day shown on the calendar.

**1.15** **Change Order**: A written agreement executed by the County, the Contractor and the Contractor's Surety, covering modifications to the Contract, recommended by the Owner..

**1.16** **Completion**: When all work defined in the Contract or in subsequent Work Order (additional work) has been satisfactorily completed in accordance with the Contract or Work Order requirements and approved by the Owner in writing.

**1.17** **Contract**: The written agreement between the County and the Contractor for performance of the Work in accordance with the requirements of the Contract Documents and for the payment of the agreed consideration.

**1.18** **Contract Documents**: The Instructions to Bidders, Bid Form, Bid Bond, Condition of Award Requirements, Contract, Performance and Payment Bond, General Conditions, Special Provisions, Technical Specifications, together with all Addenda, Change Orders, and Work Orders.

**1.19** **Contractor**: The individual, firm, partnership, corporation or joint venture whose Bid is accepted and who enters into a Contract with the County and who is liable for the acceptable performance of the work and for the payment of all legal debts pertaining to the Work.

**1.20** **Contract Time**: The number of days allowed for completion of the Work. The Contract Time will be stipulated in the Bid Form, unless extended by a Change Order or by a Work Order.

**1.21** **County**: A political subdivision of the State of Florida, whose governing body is the Board of County Commissioners of Miami-Dade County, Florida.

**1.22** **County Manager**: The County Manager of Miami-Dade County, Florida.

**1.23** **Days**: Reference made to Days shall mean consecutive calendar days.

**1.24** **Not Used**

**1.25** **Direct Costs**: Direct Costs recoverable by the Contractor as a result of changes in the Work shall be limited to the actual additional costs of labor and materials installed as part of the Work and for the reasonable additional cost of rental for any Special Equipment or Machinery. Labor shall be limited to site labor costs, including Employer's Payroll Burden. Specifically excluded from labor are the costs of general foremen and site office personnel. Materials are limited to permanent materials required by the drawings and specifications and materials approved by the Owner as necessary to install the permanent materials in an efficient and workmanlike manner. Rental for Special Equipment and Machinery, not already mobilized on the airport, shall be an amount equal to the appropriate daily, weekly, or monthly rental rate for such equipment, in accordance with the current issue of Associated Equipment Distributor (AED) "Compilation of Nationally Averaged Rental Rates and Model Specifications for Construction Equipment" (not

withstanding the caveats contained therein that such rental rates are not for use by government agencies) for each and every rental period (in weeks, days, or months as applicable) that the Special Equipment or Machinery is in use on the work plus any required mobilization. Payment for Special Equipment and Machinery already mobilized on the airport shall not exceed the monthly rate stated in the AED divided by one hundred and seventy six (176) to establish a per hour rate that the Special Equipment and Machinery is in use on the work, plus any required re-mobilization. For Special Equipment or Machinery not listed in said document the Contractor shall be paid a rental rate corresponding to the average prevailing rental rate for such equipment or machinery in Miami-Dade County, Florida, subject to approval by the Architect/Engineer. No additional payment shall be made to the Contractor for fuel, lubricants, fair wear and tear, transportation, insurance or depreciation. Any equipment or machinery not designated by the Architect/Engineer as Special Equipment and Machinery shall be considered Overhead.

**1.26 Director**: The Director of the Miami-Dade Aviation Department, or his/her Designee. The Director's mailing address is: Post Office Box 025504, Miami, Florida 33102-5504.

**1.27 Employer's Payroll Burden**: The term "employer's payroll burden" shall include, but is not limited to, the following items: costs of workers' compensation insurance, applicable fringe benefits and liability insurance, employer social security contribution, employer pension contributions, unemployment insurance and health insurance.

**1.28 Extra Work**: An item of work not provided for in the awarded Contract as previously modified by Change Order or Work Order, but which is found by the Architect/Engineer to be necessary to complete the work within the intended scope of the Contract.

**1.29 Field Representative**: An authorized representative of the Owner providing administrative and construction inspection services during the pre-construction, construction, and closeout phases of the Contract.

**1.30 Not Used**

**1.31 Final Acceptance**: Upon completion of any Work authorized under this contract or by Work Order (additional work), the Contractor shall perform and pass all required tests as approved by the Owner to receive Final Acceptance which will be provided in writing from the Owner.

**1.32 Lessee**: Any individual, partnership or corporation having a tenant relationship with the County.

**1.33 Not Used**

**1.34 Not Used**

**1.35 Mayor**: Means the Mayor of Miami-Dade County.

**1.36 Miami-Dade Aviation Department (MDAD)**: A department of Miami-Dade County government.

**1.37 Notice To Proceed (NTP)**: The written communication issued by MDAD to the Contractor directing the Contractor to begin Contract Work and establishing the date of commencement of the work.

**1.38 Overhead (Indirect Costs)**: Overhead includes any costs other than Direct Costs, as defined herein, incurred by the Contractor and all its Subcontractors of any tier in the performance

of the Contract. Overhead includes, but is not limited to all costs associated with: project bond premiums, project insurance premiums, costs of supervision, coordination, superintendents, general foremen, consultants, schedulers, cost controllers, accountants, office administrative personnel, time keepers, clerks, secretaries, watch persons, small tools, equipment or machinery not designated by the Owner as Special Equipment or Machinery, utilities, rent, telephones, facsimile machines, computers, word processors, printers, plotters, computer software, all expendable items, job site and general office expenses, profit, extended jobsite general conditions, interest on monies retained by the County, escalated costs of materials and labor, decreased productivity, home office expenses or any cost incurred that may be allocated from the headquarters of the Contractor or any of its Subcontractors, loss of any anticipated profits, loss of bonding capacity or capability losses, loss of business opportunities, loss of productivity on this or any other project, loss of interest income on funds not paid, costs to prepare a bid, cost to prepare a quote for a Change in the Work, costs to prepare, negotiate or prosecute claims, costs of legal and accounting work, costs spent to achieve compliance with applicable laws and ordinances, loss of projects not bid upon, loss of productivity or inefficiencies in the Work from any cause.

**1.39 Owner:** The term Owner as used in this Contract shall mean the Miami-Dade County Board of County Commissioners or the Aviation Department or its duly authorized designee, but it excludes the regulatory departments of Planning, Development and Regulation (Building and Zoning); Department of Environmental Resources Management (DERM); Public Works, Water & Sewer, and Fire Rescue or their successors.

**1.40 Performance and Payment Bond**: Bond executed by the Contractor and its Surety, on the attached form, assuring that the Contractor will, in good faith, perform and guarantee the work in full conformity with the terms of the Contract Documents and will promptly pay all persons supplying the Contractor with labor, materials, or supplies, used directly or indirectly by the Contractor in the prosecution of the Work.

**1.41 Plans**: The APM maintenance and repair procedures, drawings, schematics, wiring diagrams or reproductions thereof, prepared by the Architect/Engineer, which show the locations, character, dimensions and details of the work to be done and which are part of the Contract Documents.

**1.42 Project**: The services required by the Contract Documents, which includes all labor, materials, equipment, and services to be provided by the Contractor to fulfill the Contractor's obligations.

**1.43 Not Used**

**1.44 Project Testing Laboratory**: The laboratory(ies) employed by the County to perform under the direction of the Architect/Engineer all quality assurance testing.

**1.45 Runway**: The area on the airport prepared for the landing and takeoff of aircraft.

**1.46 Site, Project Site, Work Site, Job Site**: The location(s) at which the work under this Contract is to be accomplished, as shown on the Plans.

**1.47 Special Equipment or Machinery:** Equipment or machinery such as power driven rollers, tractors, backhoes, bulldozers, excavators, trucks (excluding "pickup" trucks), cranes, industrial railroad equipment, or any other such equipment approved by the Architect/Engineer as necessary to complete the Project in an efficient and workmanlike manner. This equipment or machinery must be a requirement for the economical performance of the work to be accomplished by the Contractor or by a Subcontractor (of any tier). Special Equipment or Machinery shall not include small tools or pieces of equipment considered to be standard equipment included in the basic inventory of a General Contractor or a Subcontractor (of any tier).

**1.48** **Subcontractor**: Any individual, firm, partnership, joint venture or corporation supplying the Contractor with labor, materials, supplies and equipment used directly or indirectly by the Contractor in the prosecution of the Work.

**1.49** **Not Used**

**1.50** **Surety**: The bonding company furnishing the Bonds required of a Bidder and of the Contractor.

**1.51** **Taxiway**: For the purpose of this document, the term taxiway means the portion of the air operations area of an airport that has been designated by MDAD for movement of aircraft to and from the airport's runways or aircraft parking areas.

**1.52** **Technical Specifications**: The general term comprising all the written directions, provisions and requirements contained herein, entitled "Technical Specifications," those portions of Standard Specifications to which reference is specifically made in the Technical Specifications, and any Addenda, Work Orders and Change Orders that may be issued for the Contract, all describing the work required to be performed, including detailed technical requirements as to labor, materials, supplies and equipment and standards to which such work is to be performed.

**1.53** **Unit Prices**: There are two types of unit price items; "Major Unit Price Item" and "Minor Unit Price Item". The term "Major Unit Price Item" shall refer to any single item of work on the Bid Form for which the extended price on the Bid Form (quantity times unit price) is at least 20% of the Total Amount Bid in the Bid Form. The term "Minor Unit Price Item" shall refer to those item(s) of work not meeting the criteria for "Major Unit Price Item".

**1.54** **Work**: The construction and services required by the Contract Documents, which includes all labor, materials, equipment, and services to be provided by the Contractor to fulfill the Contractor's duties and obligations imposed by the Contract Documents.

**1.55** **Work Order**: A written order, authorized by the Director, directing the Contractor to perform work under a specific Allowance Account, directing the Contractor to perform a change in the work that does not have a monetary impact, including but not limited to, extending the Contract Time without increasing the maximum Contract amount.

## ARTICLE 2
## ADMINISTRATION OF THE CONTRACT

### 2.1 INTENT OF CONTRACT

**2.1.01** The intent of the Contract is to include all necessary items for the proper completion of the Work by the Contractor. The Contractor shall perform, without additional compensation, such incidental work as necessary to complete the Work, so that it will meet the requirements of the Contract documents, in a satisfactory and workmanlike manner.

**2.1.02** It is specifically agreed between the parties executing the Contract that it is not intended by any of the provisions of any part of the Contract to create the public or any member thereof a third party beneficiary or to authorize anyone not a party to the Contract to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of the Contract.

**2.1.03** No acceptance, order, measurement, payment, or certificate of or by the Owner or its employees or agents shall either estop the Owner from asserting any rights or operate as a waiver of any provision hereof or of any power or right herein reserved to the Owner or of any rights to damages herein provided.

### 2.2 OTHER CONTRACTS AND REFERENCE MATERIALS

**2.2.01** The Owner may award other contracts for other work on the Site. The Contractor shall fully cooperate with such other contractors and shall carefully fit his own work to that provided under other contracts as may be directed by the Owner. The Contractor shall not commit or permit any act, which will interfere with the performance of work by any other contractors, or fail to perform such acts as required to avoid interference with the performance of work by any other Contractor.

**2.2.02** In the event of interference between the work of the Contractor and other Contractor(s) working concurrently at the Site, the Owner will instruct the Contractor as to which Work has priority in performance and such instructions shall be binding upon the Contractor. The Contractor shall not have any claim against the Owner or the APM Consultant, for any additional compensation whatsoever in connection therewith.

**2.2.03** The Contractor shall conduct its operations so as not to interfere with or hinder the progress of completion of the work being performed by other contractors.

**2.2.04** Original Equipment Manufacturer documents, drawings, specifications, maintenance and repair procedures, drawings, schematics, and wiring diagrams and reports documenting condition of the equipment including overhauls/upgrades/repairs performed or to be performed showing details necessary for a comprehensive understanding of the work, form a part of the Contract Documents and Reference Materials. All work under the Contract shall be performed in compliance with the requirements of the Contract Documents.

### 2.3 CONTRACT DOCUMENTS

**2.3.01** The Contract Documents provide for a complete work, and may have been prepared in divisions of various crafts, trades and other categories of work. The Contractor is responsible for the performance of all work under the Contract regardless of any such divisions, and shall ensure that all of the work is performed and completed.

**2.3.02** The Owner will provide the Contractor with hard copies of the Reference Materials for the Contractor's use during the execution of the Contract. Reference Material shall be maintained as Confidential. The Contractor shall maintain these items and properly update these items in accordance with the changes or modifications process of this Contract. The Contractor may reproduce these documents for its use during the performance of the work under this Contract.

**2.3.03** The Contractor shall maintain at the Site at all times at least one (1) copy of all Contract Documents, together with at least one (1) complete set of approved Shop Drawings, approved samples and other products developed by the Contractor for its work.

**2.3.04** The Contractor shall make available at the job site one copy of each referenced standards and/or specifications for the Contractor's and the Owner's use during the time that work covered by the standards and/or specifications is underway.

**2.3.05** The Contract and all referenced standards cited are essential parts of the Contract requirements. A requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work.

**2.3.06** In the event of any conflicts, ambiguities, or discrepancies among the Contract Documents, the precedence in resolving such conflicts, ambiguities, or discrepancies shall be as follows:

A. Special Provisions shall govern over General Conditions, and Technical Specifications.

B. General Conditions shall govern over Technical Specifications and Plans.

C. NOT USED.

D. Technical Specifications shall govern over Plans and over Standard Specifications and over standards for testing and materials and over cited FAA Advisory Circulars.

E. Plans shall govern over Standard Specifications and over standards for testing and materials and over cited FAA Advisory Circulars.

F. On the Plans, calculated or figured dimensions shall govern over scaled dimensions.

**2.3.07** The Contractor shall not take advantage of any apparent error, omission, discrepancy or ambiguity on the. If any error, omission, discrepancy or ambiguity is found by the Contractor in the Contract Documents, the Contractor shall refer the same to the Owner in a timely manner to allow sufficient time for an interpretation and decision by the Owner prior to any related work delay. The Owner's decision shall be final.

**2.3.08** The Owner shall have the right to correct apparent errors or omissions in the Contract Documents and to make such interpretations as he may deem necessary for the proper fulfillment of the Contract Documents. During the course of the work, should any conflicts, ambiguities, or discrepancies be found that are not addressed or any discrepancies between the different parts of the Contract Documents to which the Contractor has failed to call attention before submitting the bid, then the Owner will interpret the intent of the Contract Documents and the Contractor hereby agrees to abide by the Owner's interpretation and agrees to carry out the work in accordance with the

decision of the Owner. In such event the Contractor will be held to have included in the bid the most expensive material, solution or approach.

**2.3.9** When a material, article, or equipment is designated by a brand name, and more than one brand name is listed, it will be understood that the design is based on one of the brand name listed products. The Contractor will be responsible for all coordination necessary to accommodate the material, article or equipment actually being provided without additional cost to the Owner.

**2.3.10** The organization of the Contract Documents into divisions, sections and articles, and the arrangement of Drawings does not restrict or limit the Contractor in dividing the Work among Subcontractors or in establishing the extent of work to be performed by any trade.

**2.3.11** Product and Reference Standards:

A. When descriptive catalog designations including manufacturer's name, product brand name, or model number are referred to in the Contract documents, such designations shall be considered as being those found in industry publications of current issue on the date of the first advertisement for bids.

B. When standards of the Federal Government, Florida Department of Transportation, Standards Organization such as ASTM, AASHTO, AWS or ANSI, trade societies, or trade associations are referred in the Contract Documents by specific date of issue, these shall be considered a part of this Contract. When such references do not bear a date of issue, the current published edition on the date of the first advertisement for bids shall be considered as part of the Contract.

**2.3.12** Where in the Contract Documents an item is identified by a particular manufacturer's name, model or other code it shall be interpreted to include other manufacturers' product of like and equal quality whether the words "or equal" are included or not.

**2.3.13** Wherever a particular manufacturer's product is required, to the exclusion of all others, appropriate language is included in the Contract Documents.

**2.3.14** Wherever the terms, "as directed", "ordered", "permitted", "designated", "as approved", "approved equal", "or equal", "acceptable" and other words of similar meaning which authorize an exercise of judgment are used in the Contract Documents, such judgment shall be vested only in the Owner.

## 2.4 CONFORMITY WITH PLANS AND SPECIFICATIONS

**2.4.01** No deviation from the approved Contract Documents shall be permitted without the prior written approval of the Owner, which approved deviation(s) shall be documented to the extent required by the Contract Documents.

## 2.5 AUTHORITY OF THE OWNER

**2.5.01** The Owner shall respond to questions which may arise as to the quality and acceptability of materials furnished, work performed, and as to the manner of performance and rate of progress of the work. The Owner shall decide all questions which may arise as to the interpretation of the Specifications or Plans relating to the work, and the fulfillment of the Contract on the part of the Contractor

**2.5.02** The Owner is not authorized to revoke, alter, or waive any requirement of the Contract except through a change order.

**2.5.03** Where the Contract Documents provide for decisions or other actions by the Owner, the same shall be final and binding upon the Contractor.

**2.5.04** The Owner shall have free access to the work and materials at all times to facilitate the performance of his duties.

**2.5.05** The Owner shall have the right to reject any material or work performed which does not meet the requirements of the Contract Documents. When the Owner discovers any work in progress that does not meet the requirements of the Contract Documents, the Owner shall reject that portion of the work affected and shall confirm such rejection in writing, as soon as practical, detailing the reasons for the rejection. Work rejected by the Owner will not be paid for.

**2.5.06** The fact that the Owner has not made early discovery of materials furnished or work performed which does not meet the requirements of the Contract Documents, shall not bar the Owner from subsequently rejecting said materials or work.

**2.5.07** The observation of the work and actions by the Owner, as herein provided, shall not be construed as undertaking supervisory control of the work or of means and methods employed by the Contractor or his Subcontractors and shall not relieve the Contractor from any of his responsibilities or obligations under the Contract; the Contractor shall not request or attempt to require the Owner to undertake such supervisory control or to administer, to supervise, to inspect, to assist, or to act in any manner so as to relieve the Contractor from such responsibilities or obligations.

## 2.6 AUTHORITY AND DUTIES OF THE OWNER'S REPRESENTATIVE

**2.6.01** The Owner's representative will administer the Contract and the orders of the Owner are to be given through the Owner's representative. The Owner's representative shall determine the amount and quality of the several kinds of work performed and materials furnished which are to be paid for under the Contract.

**2.6.02** The Owner's representative will observe the Contractor's work for compliance with the Contract Documents. Such observation shall extend to all or any part of the work done and to the preparation, fabrication, or manufacture of the material to be used.

**2.6.03** The Owner's representative shall call the Contractor's attention to faulty workmanship or defective materials and shall reject work and materials not conforming to the requirements of the Contract Documents.

**2.6.04** When any work in progress does not meet the requirements of the Contract Documents, the Owner's representative shall have the authority to order the Contractor to shut down that portion of the work affected and shall confirm this order in writing as soon as practicable, detailing the reasons for the shutdown. Work performed in violation of the Owner's order to shutdown will not be accepted or paid for.

**2.6.05** The Owner's representative is not authorized to revoke, alter, or waive any requirements of the Contract.

**2.6.06** When any portion of the work is to be performed away from the site, the Contractor shall notify the Owner's representative, in reasonable time, where and when such work is to be done, and shall make arrangements for access thereto by the Owner's representative in order that same may be inspected by him.

**2.6.07** The Owner's representative shall have the right to reject any material or work performed which does not meet the requirements of the Contract Documents. When the Owner's representative discovers any work in progress that does not meet the requirements of the Contract Documents, the Owner's representative shall reject that portion of the work affected and shall confirm such rejection in writing, as soon as practical, detailing the reasons for the rejection. Work rejected by the Owner's representative will not be paid for.

**2.6.08** The fact that the Owner's representative has not made early discovery of materials furnished or work performed which does not meet the requirements of the Contract Documents, shall not bar the Owner's representative from subsequently rejecting said materials or work.

**2.6.09** The Owner's representative shall not act as a foreman or perform other duties for the Contractor, nor interfere with the management of the work by the Contractor.

**2.6.10** The administration, observation of the work, and actions by the Owner's representative, as herein provided, shall not be construed as undertaking supervisory control of the work or of means and methods employed by the Contractor or his Subcontractors and shall not relieve the Contractor from any of his responsibilities or obligations under the Contract; the Contractor shall not request or attempt to require the Owner's Representative to undertake such supervisory control or to administer, to supervise, to inspect, to assist, or to act in any manner so as to relieve the Contractor from such responsibilities or obligations.

**2.6.11** The Owner's representative shall decide all questions relating to the rights of different contractors on the project.

## 2.7 OBSERVATION OF THE WORK

**2.7.01** All materials and each part or detail of the work shall be subject to observation by the Owner's representative and/or the Owner. The Owner and the Owner's representative shall be allowed access to all parts of the work and shall be furnished with such information and assistance by the Contractor as is required.

**2.7.02** If either the Owner or the Owner's representative requests it, the Contractor, at any time before acceptance of the work, shall remove or uncover such portions of the finished work as may be directed. After examination, the Contractor shall restore said portions of the work to the standard required by the Contract Documents. Should the work thus exposed or examined prove acceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be paid for as Extra Work; but should the work so exposed or examined prove unacceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be at no additional cost to the Owner.

**2.7.03** Any work done or materials used without observation by the Owner's representative may be ordered removed and replaced at the Contractor's expense unless the Owner's representative failed to observe the work after having been given reasonable notice in writing.

## 2.8 OTHER AUTHORIZED INSPECTION

**2.8.01** The Owner, the Lessee(s) and other agencies having jurisdiction over the work hereunder shall be afforded free access to the site to perform such inspections and tests as may be required to determine conformance of the Work with the Contract Documents.

## ARTICLE 3
## OWNER

### 3.1 OWNER PROVIDED INFORMATION

**3.1.01** The interpretation of the documents provided by the Owner and the conclusions drawn therefrom as to the actual existing conditions are the sole responsibility of the Contractor.

### 3.2 INTEREST OF PUBLIC OFFICIALS

**3.2.01** No officer or employee of Miami-Dade County during his tenure or for two years thereafter shall have any interest, direct or indirect, in this Contract or the proceeds thereof.

### 3.3 OWNER RIGHTS IN THE CORRECTION OF DEFECTIVE OR NON-CONFORMING WORK

**3.3.01** If the Contractor is notified by the Owner to correct defective or nonconforming work, and the Contractor fails to proceed with corrective action in a reasonable time, the Owner may, upon written notice, accomplish the redesign, repair, rework or replacement of nonconforming work by the most expeditious means available and backcharge the Contractor for the cost incurred. The cost of backcharge work shall include all reasonable costs associated with the corrective action.

**3.3.02** The Owner shall separately invoice or deduct from payments, otherwise due to the Contractor, the costs as provided herein. The Owner's right to backcharge is in addition to any or all other rights and remedies provided in this Contract, or by law. The performance of backcharge work, on behalf of the Owner, shall not relieve the Contractor of any of its responsibilities under this Contract including but not limited to express or implied warranties, specified standards for quality, contractual liabilities and indemnifications, and the Contract Time.

### 3.4 OWNER RIGHTS IN A CONTRACTOR DEFAULT AND TERMINATION

**3.4.01** In the event of Termination for Default and failure of Surety to prosecute in an expeditious manner, the Owner will have the right to take possession of and use any or all the materials, plant, tools, equipment and property of any kind onsite provided by or on behalf of the Contractor, the Surety, or the Surety's Contractor for the purpose of the work, or a portion of them, without being responsible to the Contractor, the Surety, or the Surety's Contractor, for fair wear and tear. The Contractor, the Surety, the Surety's Contractor, shall have no rights in such property during their use by the Owner. The Owner will not be required to obtain the lowest prices for completing the work but shall make such expenditures as, in the Owner's sole judgment, best accomplish such completion. The expense of completing the work, together with a reasonable charge for engineering, managerial and administrative services, as certified by the Owner, will be deducted by the Owner out of such monies as may be due or may at any time thereafter become due to the Surety. In case such expense is in excess of the sum which otherwise would have been payable to the Surety under the Contract, then the Surety shall promptly pay the amount of such excess to the Owner upon notice from the Owner of the excess so due. The Owner may, in its sole discretion, withhold all or any part of any payments otherwise due the Contractor or Surety until completion and final settlement of the work covered by the Notice of Termination of Contractor.

## ARTICLE 4
## CONTRACTOR

### 4.1 KICK-OFF MEETING

**4.1.01** A kick-off meeting will be held prior to the issuance of the Notice to Proceed to discuss the work to be performed under this Contract. The Contractor and its major Subcontractors shall be required to attend this meeting. The Contractor will be advised of the time, date and location of the meeting.

### 4.2 COMMENCEMENT AND PROSECUTION OF WORK

**4.2.01** Within ninety (90) days after the receipt of an acceptable Performance and Payment Bond, proof of the required insurance, and the condition of award documents, the Owner will issue a written Notice to Proceed (NTP) to the Contractor to proceed with the work, which said Notice to Proceed shall direct the Contractor to commence work on a certain day. The time within which all of the work is to be completed following the giving of the Notice to Proceed shall be as stipulated in the Bid Form of these Contract Documents. The Contractor is not authorized to perform work under the Contract until the effective date of the Notice to Proceed, upon which the Contractor shall commence work and shall diligently prosecute the Work to completion within the time limits specified. The Contract time commences on the effective date shown on the Notice to Proceed.

Any work performed by the Contractor prior to the effective date of the Notice to Proceed shall be at the Contractor's own risk and shall not be considered as the basis for any claim resulting from this pre-NTP work.

**4.2.02** The Contractor shall prosecute the work so as not to interfere with normal airport operations. If the Contractor desires to prosecute the work at other than the days and times set forth herein, it shall notify the Owner at least forty-eight (48) hours in advance, so that the Owner may make arrangements for access to the job site and to be present. Any work performed without such advance notice having been given to the Owner or without having the Owner being present may be rejected, if in the sole judgment of the Owner, such work is not susceptible to its observation after the fact to determine compliance with the Contract Documents.

**4.2.03** The Contractor shall, at all times, employ sufficient labor and equipment for prosecuting the work to full completion in the manner and time required by the Contract Documents. All workers shall have sufficient skill and experience to properly perform the work assigned to them. Workers engaged in special work or skilled work shall have sufficient experience in such work and in the operation of the equipment required to perform the work satisfactorily.

**4.2.04** All proposed equipment shall be of sufficient size and in such mechanical condition as to meet requirements of the work, producing a satisfactory quality of work. Equipment used on any portion of the work shall be such that no injury to previously completed work, adjacent property, or existing airport facilities will result from its use.

**4.2.05** When the Contract Documents specify the use of certain methods and equipment, such methods and equipment shall be used unless others are authorized in writing by the Owner. If the Contractor desires to use a method or type of equipment other than specified in the Contract, he may request permission from the Owner to do so. The request shall be in writing and shall include a full description of the methods and equipment proposed and of the reasons for desiring to make

the change. If approval is given, it will be on the condition that the Contractor will be fully responsible for producing work in conformity with Contract requirements. If, after trial use of the substituted methods or equipment, the Owner determines that the work produced does not meet Contract requirements, the Contractor shall discontinue the use of the substitute method or equipment and shall complete the remaining work with the specified methods and equipment. The Contractor shall remove any deficient work and replace it with work of specified quality, or take such other corrective action as the Owner may direct, at no additional cost to the Owner. No change will be made to the Contract price(s) nor in Contract Time as a result of authorizing a change in methods or equipment under this Article.

**4.2.06** The Contractor shall be responsible for taking steps necessary to ascertain the nature and location of the Work, and the general and local conditions which can affect the Work or the cost thereof. Failure by the Contractor to do so will not relieve it from responsibility for successfully performing work without additional expense to Owner. Owner will not be responsible for any understanding or representations concerning conditions, unless such understanding or representations are expressly stated in the Contract.

## 4.3 CONTRACTOR'S RESPONSIBILITY FOR THE WORK

**4.3.01** The Contractor shall be responsible for the complete performance for all of the work under the Contract, and for the methods, means, and equipment used in performing the Contract and for all materials, tools, apparatus and property of every description used in connection therewith.

**4.3.02** The Contractor shall give constant attention to the work to facilitate the progress thereof, and he shall cooperate with the Owner and its Representatives and with other contractors in every way possible.

**4.3.03** The Contractor shall maintain the work for the duration of the Contract and he shall take every necessary precaution to protect against loss or damage to any part of the work arising from execution or non-execution of the work. The Contractor shall rebuild, repair, restore, and make good at its own expense all loss or damage to any portion of the work occasioned by any of the foregoing causes before its completion and acceptance.

**4.3.04** Not Used.

**4.3.05** The Contractor shall be responsible for scheduling and coordinating the work of all crafts and trades, Subcontractors and suppliers required to perform the Work and to complete the Work within the prescribed time. Any inefficiency or loss of productivity in the labor, materials, or Special Equipment of the Contractor or its Subcontractors of any tier, from any cause, shall be the responsibility of the Contractor. No reimbursement of these or any Direct Costs can be requested by or granted to the Contractor or any of its Subcontractors of any tier for inefficiency or loss of productivity in labor, materials, or Special Equipment. Additional Direct Costs may only be paid to the Contractor as a result of additional Work added to the Contract scope of work.

**4.3.06** The Contractor shall comply with all legal load restrictions in the hauling of materials on public roads beyond the limits of the work. A special permit will not relieve the Contractor of liability for damage that may result from the moving of material or equipment. The operation of equipment of such weight or so loaded to cause damage to structures or to any other type of

construction will not be permitted. The Contractor shall be responsible for all damage done by its hauling equipment and shall correct such damage at its own expense.

**4.3.07** The Contractor shall protect from damage utilities, foundations, walls or other parts of adjacent, abutting or overhead buildings, railroads, bridges, structures, surface and subsurface structures at or near the site of the Work and shall repair or restore any damage to such facilities, except utilities, resulting from failure to exercise reasonable care in the performance of the Work. If the Contractor fails or refuses to repair any such damage promptly, as determined by Owner, the Owner may have the necessary work preformed and charge the cost thereof to the Contractor.

## 4.4 CONTRACTOR'S REPRESENTATIVE AND EQUIPMENT

**4.4.01** The Contractor shall provide a competent English-speaking Representative on the work at all times, who shall be fully authorized as the Contractor's agent on the work. The Representative shall be capable of reading and thoroughly understanding the Plans, Technical Specifications and Contract Documents and its relevant plans, technical specifications and requirements.

**4.4.02** The Contractor shall furnish all labor, materials, services and equipment sufficient for the prosecution of the work in an acceptable manner and at a satisfactory rate of progress.

**4.4.03** All equipment, tools, and machinery used in the prosecution of the work shall be maintained in a safe working condition and shall be appropriate for the work to be performed.

## 4.5 ENVIRONMENTAL PROTECTION

**4.5.01** The Contractor shall comply with all Federal, state, and local laws and regulations controlling pollution of the environment. It shall take necessary precautions to prevent pollution of streams, lakes, ponds, underground waters, aquifers and reservoirs with fuels, oils, bitumens, chemicals, or other harmful materials and to prevent pollution of the atmosphere from particulate and gaseous matter.

## 4.6 NOT USED

## 4.7 SHOP DRAWINGS

**4.7.01** The Contractor is responsible for the preparation of detailed shop drawings necessary for the fabrication, erection and construction of all parts of the work in conformity with the Contract Documents. .

## 4.8 SUBSTITUTION

**4.8.01** For convenience in designation in the Contract Documents, certain materials, articles, or equipment may be designated by a brand or a trade name or the name of the manufacturer, together with catalog designation or other identifying information. When Contract Documents specifically disallow substitution, the specified product shall be provided. Alternative material, article, or equipment which is of equal quality and of the required characteristics for the purpose intended may be proposed for use. The Contractor shall submit a substitution request within 45 calendar days from the Notice to Proceed or sooner as required by the job progress, in order not to impair the project schedule.

**4.8.02** No request for substitution will be considered unless accompanied by complete information and descriptive data necessary to determine the quality of the proposed materials, articles or equipment. Samples shall be provided when requested by the Owner. The burden of proof as to the comparative quality or suitability of the proposed materials, articles or equipment shall be upon the Contractor. The Owner's decision in such matters shall be final. In the event that the Owner rejects the use of such substitute materials, articles or equipment, then one of the particular products designated by brand name shall be provided.

**4.8.03** The Owner will examine and review the Substitution request with the Owner and return it, within twenty-one (21) calendar days from the date of its receipt at the Owner's office, to the Contractor noted with the final decision. If the final decision approves either an equal or a substitution, the approval must also contain the Owner's written approval. When requested by the Owner, the Contractor shall resubmit such Shop Drawings, descriptive data and samples as may be required.

**4.8.04** If any mechanical, electrical, structural, or other changes are required for the proper installation and fit of alternative materials, articles, or equipment, or because of deviations from the Contract Documents, such changes shall be shown in the substitution request and such changes shall be made without additional cost to the Owner.

**4.8.05** Acceptance on another project, by the Owner, of a product other than that specified for this Project does not constitute evidence of its equality with the product specified, nor its suitability for this Project.

## 4.9 APPROVAL OF SOURCES OF SUPPLY OF MATERIALS

**4.9.01** The Contractor shall submit a complete list of the sources of supply and the manufacturers of all items of materials, equipment and machinery requested by the Owner for approval prior to the commencement of any work.

## 4.10 APPROVAL AND ACCEPTANCE OF MATERIALS AND SALVAGE OF MATERIALS

**4.10.01** The materials used on the work shall conform to the requirements of the Contract Documents and may be subject to inspection, testing and approval by the Owner before incorporation in the work. Unless otherwise specified, such materials that are manufactured or processed shall be new (as compared to used or reprocessed).

**4.10.02** In order to expedite the acceptance of materials, the Owner may require the Contractor to furnish complete statements as to the origin, composition, and manufacture of all materials to be used in the work. Such statements shall be furnished sufficiently in advance of the delivery of such materials.

**4.10.03** At the Owner's option, materials may be approved at the source of supply before delivery is slated. If it is found after trial that sources of supply for previously approved materials do not produce specified products, the Contractor shall furnish materials from other sources.

**4.10.04** Any work in which untested materials are used without approval or written permission of the Owner shall be performed at the Contractor's risk. Materials found to be unacceptable and unauthorized will not be paid for and, if directed by the Owner, shall be removed at the Contractor's expense. Unless otherwise designated, Quality Assurance tests performed in

accordance with the requirements of Contract Documents will be made by the Owner or the Project Testing Laboratory at the expense of the Owner. Samples will be taken by the Owner or the Project Testing Laboratory. All materials being used are subject to inspection, test, or rejection at any time prior to or during incorporation into the work and until Acceptance of the Work. Copies of all tests will be furnished to the Contractor's representative at his/her request.

**4.10.05** The Contractor shall furnish airport lighting equipment that conforms to the requirements of cited specifications. In addition, where an FAA specification for airport lighting equipment is cited in the Plans or Specifications, the Contractor shall furnish such equipment that is produced in accordance with FAA Advisory Circular (AC) 150/5345-53B by a manufacturer qualified (by FAA) to produce such specified and listed equipment.

**4.10.06** Samples of all materials to be tested, upon which the acceptance or rejection thereof is to be based, shall be taken by the Owner or the Project testing laboratory. Materials may be sampled either prior to shipment or after being received at the Site.

**4.10.07** The Contractor shall provide such facilities as the Owner or the testing laboratory may require for conducting field tests and for collecting and forwarding samples. The Contractor shall not use or incorporate into the work any materials represented by the samples until tests have been made and the materials found to be acceptable. Only materials conforming to the requirements of the Contract Documents shall be used in the work.

**4.10.08** Materials or assemblies not conforming to the requirements of the Contract Documents shall be considered unacceptable and shall be rejected. The Contractor shall remove any rejected material or assembly from the site of the work, unless otherwise instructed by the Owner Rejected material or assemblies, the defects of which have been corrected by the Contractor, shall not be returned to the site of the work until such time as the Owner has approved its use, in writing, in the work.

**4.10.09** Ownership of all salvaged equipment and materials, surplus excavation, etc., shall remain with the Contractor, unless stated otherwise in the Contract Documents, who shall legally dispose of such equipment, materials and surplus excavation, etc. at a legal disposal site(s) provided by and at the expense of the Contractor, away from the airport site. All equipment and materials to be salvaged for the Owner's use, shall be transported by the Contractor and delivered to the location called for in the Contract Documents.

**4.10.10** The Contractor shall exercise due caution in the removal, dismantling and handling of equipment and materials to be salvaged for the Owner's use. The Contractor shall prepare inventory lists for all such salvaged equipment and materials before removal and such lists shall be receipted by the Owner at the time such equipment and materials are delivered to the Owner.

**4.10.11** The Contractor shall be liable for losses or damage resulting from the Contractor's handling of equipment and materials to be salvaged for the Owner's use.

**4.10.12** The Owner may direct the Contractor to dispose of all or any class of salvage material to a fill or storage site on or adjacent to the work area, at no additional cost to the Owner.

## 4.11 CERTIFICATES OF COMPLIANCE

**4.11.01** The Owner may permit the use, prior to sampling and testing, of certain materials or assemblies when accompanied by manufacturer's certificates of compliance stating that such materials or assemblies fully comply with the requirements of the Contract Documents. The certificate shall be signed by the manufacturer. Each lot of such materials or assemblies delivered to the work must be accompanied by a certificate of compliance in which the lot is clearly identified.

**4.11.02** Materials or assemblies used on the basis of certificates of compliance may be sampled and tested at any time and if found not to be in conformity with the requirements of the Contract Documents will be subject to rejection whether in place or not.

**4.11.03** When a material or assembly is specified by "brand name or equal" and the Contractor elects to furnish the specified "brand name", the Contractor shall be required to furnish the manufacturer's certificate of compliance for each lot of such material or assembly delivered to the work. Such certificate of compliance shall clearly identify each lot delivered and shall certify as to:

A. Conformance to the specified performance, testing, quality or dimensional requirements; and,

B. Suitability of the material or assembly for the use intended in the Work.

**4.11.04** If the Contractor proposes to furnish an "or equal" material or assembly, he shall furnish the manufacturer's certificates of compliance as hereinbefore described for the specified brand name material or assembly. However, the Owner shall be the sole judge as to whether the proposed "or equal" is suitable for use in the work.

**4.11.05** The Owner reserves the right to refuse permission for use of materials or assemblies on the basis of certificates of compliance.

## 4.12 STORAGE OF MATERIALS AND EQUIPMENT

**4.12.01** Before commencing work, the Contractor shall consult with the Owner as to available space for temporary storage of materials, location of temporary structures, if any, equipment and other property of the Contractor. Locations determined for such storage of materials, temporary structures, equipment and other property shall be temporary, and the Contractor shall be required to relocate the same as directed by the Owner to avoid interference with operations of the Owner or with the work of other contractors on the job site. Temporary structures shall be neat in appearance, shall not constitute a fire hazard and shall be properly maintained.

**4.12.02** Any space that the Contractor may require for plant, equipment, storage or other purposes, in addition to that set forth above, shall be procured by the Contractor and the cost thereof shall be included in the price(s) bid for the work. Stored materials, structures, equipment and other property shall remain the property of the Contractor and he shall be solely responsible for the protection of such property from theft, and damage of any sort. To this end, the Contractor shall provide at no additional cost to the Owner all secured enclosures, security personnel, material inventory programs and any other means necessary for the protection of its property. The granting of rights of storage on Owner property shall in no way obligate the Owner for protection or replacement of loss of such stored property.

**4.12.03** Materials shall be so stored as to assure the preservation of their quality and fitness for the work. Stored materials, even though approved before storage, may again be inspected prior to their use in the work. Stored materials shall be located so as to facilitate their prompt inspection. The Contractor shall coordinate the storage of all materials with the Owner. Materials shall be stored on Owner property or in approved bonded warehouse(s); materials stored within the airport limits shall not create an obstruction to air navigation nor shall they interfere with the free and unobstructed movement of aircraft, vehicles, or airport operations. Unless otherwise shown on the Plans, the storage of materials and the location of the Contractor's plant and parked equipment or vehicles shall be as directed by the Owner.

**4.12.04** Unless otherwise specified or directed by the Owner, all storage sites shall be restored to their original condition by the Contractor at no additional cost to the Owner.

## 4.13 NOT USED

## 4.14 SAFETY, FIRE PREVENTION, AND ENVIRONMENTAL CONSIDERATIONS

**4.14.01** The Contractor shall comply with the rules and regulations of the Florida Department of Commerce regarding Industrial Safety under Section 440.56 Florida Statutes, Safety Rules Workers Compensation Laws and with United States Williams Steiger Occupational Safety and Health Act of 1970 commonly referred to as "OSHA", as applicable, and other national consensus standards of safety pertaining to particular trades.

The Contractor shall be solely responsible for developing and implementing a "Site-Specific" Safety and Health Plan ("S&H Plan") pursuant to the terms of this Contract, and shall at a minimum, conform and comply with all Laws governing safety and health in the work place.

Prior to commencing any work at the work site, the Contractor shall submit its S&H Plan which shall include, but is not limited to, the following:

- Hurricane Plan
- Identification of competent person
- Safety statistical data, which will include severity and lost-time frequencies
- Contractor daily project safety inspections
- Project Emergency Notification List (updated as needed)
- Equipment certification and daily inspection
- Confined Space Entry Permitting and coordination
- Maintenance of Traffic Inspection
- Hazard Communication
- Work zone safety and flagging
- Lockout/Tagout Coordination
- Fire prevention, hotwork permitting, and Fire Watch

**4.14.02** The Contractor shall not endanger, by cutting, digging, loading or otherwise, the structural integrity or overall safety of any structure, installation, facility, work in progress or work completed.

**4.14.03** Materials stored upon the Site or along the route of the work shall be so placed and the work shall be so conducted as to cause no obstruction to traffic other than as provided in these Contract Documents.

**4.14.04** The Contractor shall mark all equipment with three foot square orange and white flags whenever such equipment is operating on the Air Operations Area (AOA) or in proximity to flight zones. Equipment employed on the AOA shall be withdrawn from work areas at the close of the work day. Equipment shall not be parked in any location where it will constitute a hazard to aircraft or aircraft operations. Equipment shall be night marked and lighted as required by the Technical Specifications and FAA Advisory Circular 150/5210-5 "Painting, Marking and Lighting of Vehicles Used on an Airport" latest edition.

**4.14.05** Equipment will not be allowed on the airfield which is not properly equipped to contain all material, debris, etc. Constant inspections will be performed by the Contractor to insure a continuous, clean and safe aircraft operating area at all times.

**4.14.06** The Contractor shall obtain from MDAD Airside Operations, for work at Miami International Airport, or from the airport manager for work at other MDAD General Aviation Airports, all equipment height limitations. Approval for use of cranes and other high equipment may be given, provided that the Contractor submits full data and scheduling to MDAD for approval by the FAA. Contractors are cautioned that the FAA processing of this request may take eight (8) weeks from the time of application.

**4.14.07** Bidders are cautioned to allow for such conditions as having to drop crane boom(s) at times required by the FAA (nighttime and inclement weather), providing 2-way radio communications with the FAA control tower, and possible disruption of crane use to accommodate special airport operations requirements.

**4.14.08** The Contractor shall furnish and erect signs, barricades, lights, flags and other protective devices as may be required, to protect aircraft, pedestrian and vehicular traffic and the work. All such signs, barricades, lights, flags and other protective devices shall be in accordance with the requirements of the Contract Documents.

**4.14.09** The Contractor shall furnish flaggers in sufficient numbers to protect and divert vehicular and pedestrian traffic from working areas closed to traffic, or to protect any new work. Such flaggers shall be furnished on a twenty-four (24) hour basis when conditions and/or airport operations require.

**4.14.10** The Contractor and all Subcontractors shall be governed by the provisions of the Miami - Dade County, Florida, Fire Prevention and Safety Code, and shall take all necessary precautions to guard against and eliminate all possible fire hazards and to prevent injury to persons or fire damage to any construction, building materials, equipment, temporary field offices, storage sheds, and all other property, both public and private, particularly when gas or arc welding and torch cutting is taking place. Open flames (except approved torch cutting equipment), including the use of flambeaux, are strictly prohibited.

**4.14.11** The Contractor shall not use explosives on the Site, nor allow explosives of any type or nature to be brought upon the Site, without the prior express written approval of the Miami-Dade Aviation Department. Any such authorized use of explosives shall be governed by the provisions of Chapter 13, Code of Miami-Dade County, and other governing agencies in their use or storage. Subject to conditions outlined below, the Owner will permit the use of powder actuated fasteners and tools in connection with airport work:

A. Permission to use powder actuated fasteners and tools will in no way relieve the Contractor or its Subcontractors from responsibilities under its Contract relating to liability for damages arising out of the use of such equipment.

B. Owner approval must be given specifically, and in writing, for the use of such fasteners for each and every application for which the Contractor desires to use this type of fastener. The Contractor shall submit to the Architect/ Engineer for approval all structural and operational data pertinent to each and every application, such data to include, but not be limited to the following:

(1) Make and model number of the powder actuated tool(s).

(2) Manufacturer's brochure completely describing the proposed fastening system.

(3) Sufficient drawings, cross-sections, and/or descriptive specification data to fully define the location(s) where powder actuated fasteners are intended for use. This information shall include the type and thickness of material into which the fasteners are to be driven, and the penetration of the proposed fasteners.

(4) The name, address and social security number of each operator of the powder actuated tool(s) who has been certified by the manufacturer as a qualified operator of the equipment. The Contractor's submittal shall include an affidavit stating that only the certified operator(s) named shall be permitted to use the powder-actuated tool(s).

C. Only powder actuated tools of a safe, low-velocity, piston type which comply with all the requirements of OSHA regulations shall be allowed.

D. An operator of powder-actuated tools shall have on his/her person at all times the manufacturer's card certifying that he is a qualified operator. The Owner shall immediately suspend any work being conducted by operators not having such certification on his/her person.

E. The Owner the County or the Owner may suspend any work in progress using powder actuated fasteners and tools, if such powder actuated work is deemed to be unsafe, or is considered to be detrimental to the operation of the airport. Failure of the Owner, or the Owner to suspend any such work shall not impose any liability on the Owner.

F. Powder actuated fasteners are specifically prohibited from use in prestressed concrete structural members. The Owner may approve same after reviewing submittal data and after being satisfied as to procedures to be used to locate prestressed tendons.

G. Powder actuated fasteners will be disallowed when, in the opinion of the Owner, the noise from the powder-actuated tool would create disruption of airport operations.

H. This specification is intended to encourage the use of economical, efficient, structurally sound fastening systems, and to use them in a manner that is safe for the operators, other workmen, the public, and the structure.

**4.14.12 Environmental Considerations:**

A. Air pollution: The Contractor shall use emissions control devices on gasoline or diesel powered equipment and minimize idling and unnecessary operation of equipment to prevent and control air pollution in accordance with criteria issued by Federal, State and local agencies having relevant jurisdiction.

B. Dust Control: The Contractor shall employ appropriate measures to control the generation and accumulation of dust at the site. Sprinkling with water or other suitable means shall be used to prevent the dispersal of substantial amounts of dust produced by demolition and other work generating dust. Collection and removal measures shall be employed to prevent accumulation of dust deposits.

C. Asbestos: When asbestos materials are encountered or are suspected to be present in the area of the work, the Contractor shall immediately shut down all work in the area and notify the Architect/ Engineer of the asbestos discovery. The Contractor may be required to prepare and execute a program for asbestos disposal, abatement or encapsulation with the guidance and approval of the County's asbestos consultant. The program shall meet all applicable Federal, State and County regulations relating to asbestos removal, encapsulation, protection of workers and public and any other relevant procedures. Unless otherwise provided in the Contract Documents, all such work will be authorized by an appropriate Work Order or Change Order.

D. Flammable Materials: The Contractor shall store petroleum products, paint and other flammable materials in designated locations and in compliance with fire safety regulations. Spillages shall be collected and legally disposed of promptly and in a manner consistent with fire safety regulations and environmental protection regulations issued by Federal, State and local agencies having relevant jurisdiction.

E. Noise Controls: The Contractor shall minimize noise caused by work operations. The Contractor shall provide machinery and equipment fitted with efficient noise-suppression devices for protection of employees and public and he shall schedule working hours and operations to minimize public disturbance in vicinity of work. The Contractor shall employ sound barriers as directed by the Owner.

F. Fumes: The Contractor shall not conduct operations that will result in the production of noxious, flammable, explosive or odoriferous fumes in locations or in quantities that constitute a hazard to health or safety or an objectionable environment for workers or public.

G. Hydrocarbons: The Contractor is hereby forewarned of a potential hazard peculiar to the working conditions on airport property consisting of the presence of hydrocarbon gas and its fumes in, on, or about the ground water table when exposed by open trench or pit excavation. Should the Contractor encounter the presence of hydrocarbon liquid or gas in an open excavation, it shall immediately cease all work in and about the excavation, notify the Architect/ Engineer of the presence of the hydrocarbon and await further instructions before proceeding with its operations in the affected area. The Contractor shall not perform any open-flame operations (such as torch-cutting, or electric welding, etc.) in or about any such open excavation without first having received approval of the Airport Fire Division, which shall have the authority to require the Contractor to provide, on a standby basis, such fire extinguishing apparatus and personnel as it deems appropriate. The Airport Fire Division shall have the authority to direct the Contractor to cease such opera-

tions and take whatever remedial actions are deemed appropriate and necessary, when, in its representative's opinion, continuing the work would jeopardize airport property, facilities, equipment or personnel.

H. Clean Air and Water Pollution Control Requirements for all Contracts and Subcontracts exceeding $100,000.00:

The Contractor and all its Subcontractors agree:

(1) That any facility to be used in the performance of the Contract or subcontract or to benefit from the Contract is not listed on the Environmental Protection Agency (EPA) list of violating facilities;

(2) To comply with all the requirements of Section 114 of the Clean Air Act, as amended, 42 U.S.C. 1857 et seq. and Section 308 of the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. relating to inspection, monitoring, entry, reports, and information, as well as all other requirements specified in Section 114 and Section 308 of the Acts, respectively, and all other regulations and guidelines issued thereunder.

(3) That, as a condition for the award of this Contract, the Contractor or Subcontractor will notify the Owner of the receipt of any communication from the EPA indicating that a facility to be used for the performance of or benefit from the Contract is under consideration to be listed on the EPA List of Violating Facilities;

(4) To include or cause to be included in any Contract or Subcontract which exceeds $100,000 the aforementioned criteria and requirements.

**4.14.13** Unless otherwise provided for in the Technical Specifications, no additional payment will be made to the Contractor for signs, barricades, lights, flags, watch persons, flaggers, fire extinguishing apparatus and personnel, and other protective devices.

**4.14.14 NOT USED.**

**4.14.15 NOT USED.**

## 4.15 NOT USED

## 4.16 QUALITY OF WORK AND MATERIALS

**4.16.01** The Contractor warrants to the Owner that all materials and equipment furnished under this Contract will be new unless otherwise specified, and that the work will be of good quality, free from faults and defects in materials and workmanship, unless otherwise required under this Contract. Work not conforming to these standards may be considered defective. If required by the Owner, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

## 4.17 SIGNS

**4.17.01** No Contractor sign or other advertising matter shall be permitted on the airport.

**4.17.02** The Contractor shall provide signs as called for in the Contract Documents.

## 4.18 EMPLOYEE FOOD SERVICE

**4.18.01** The Contractor and its Subcontractors shall not bring on to the airport any food or beverage catering trucks, vending machines, or other serving facilities.

## 4.19 PAYMENT OF WAGE RATES AND BENEFITS

**4.19.01** The Contractor and each Subcontractor under him shall pay or cause to be paid, to all employees under them, the wages and benefits as reflected in the Wage and Benefits Schedules incorporated into the Bid Forms and Special Provisions of these Contract Documents. The Contractor and each Subcontractor under him shall comply with all of the requirements of the Miami-Dade County Wage Rates and Benefits Requirements.

## ARTICLE 5
## SUBCONTRACTOR

### 5.1 ASSIGNMENT OF CONTRACT - SUBCONTRACTING PORTIONS OF THE WORK

**5.1.01** The Contractor shall not assign this Contract, nor any part thereof.

**5.1.02** The Contractor will be permitted to subcontract portions of the Work to competent Subcontractors.

**5.1.03** Nothing contained herein shall create any contractual relationship between the Owner and any level of Subcontractor, of materialman or of supplier.

**5.1.04** All work performed for the Contractor by a Subcontractor shall be pursuant to an appropriate agreement between the Contractor and the Subcontractor which shall contain provisions that:

A. Preserve and protect the rights of the Owner and the Owner's Representative under the Contract with respect to the Work to be performed under the subcontract so that the subcontracting thereof will not prejudice such rights;

B. Require that such Work be performed in accordance with the requirements of the Contract Documents;

C. Require submission to the Contractor of applications for payment under each subcontract to which the Contractor is a part, in reasonable time to enable the Contractor to apply for payment;

D. Require that all claims for additional costs, with respect to subcontracted portions of the Work shall be submitted to the Contractor (via any Subcontractor or Sub-subcontractor or Supplier where appropriate) in sufficient time so that the Contractor may comply in the manner provided in the Contract Documents for like claims by the Contractor upon the Owner; and

E. Require specific consent to the provisions of the Contract Document.

## ARTICLE 6
## MISCELLANEOUS PROVISIONS

**6.1** NOT USED.

**6.2** **INTERFERENCE WITH EXISTING UTILITIES, CONTROLS, FAA NAVAIDS, AND NOAA (WEATHER BUREAU) FACILITIES**

**6.2.01** Attention of the Contractor is specifically directed to the need for careful control of all aspects of his work to prevent damage to cables, ducts, water mains, sewers, fire mains, telephone cables, fuel lines, radar cables, and any other underground utilities and structures.

**6.2.02** Before commencing work in any given area, the Contractor shall carefully review the Plans, survey and search the site for utility locations, and determine possible utility conflicts. All known above and underground utilities, including, but not limited to, electrical, telephone, communications, lighting cables, fuel lines, sewer, drainage and water pipes, and other existing structures, etc., are shown on the Plans, but no guarantee is implied that the information is accurate. It shall be the responsibility of the Contractor to verify the location of all such utilities, structures, etc., using magnetic and electronic detectors and by hand excavation or other appropriate measures before performing any work that could result in damage to such utilities or structures. The Contractor shall, in conjunction with the Owner's Representative, make a thorough search of the particular location for underground utilities, structures, etc., whether or not shown on the drawings, before excavation work is commenced in any particular location. To this end the Contractor shall provide and maintain throughout the term of the Contract, electronic and magnetic detecting devices capable of locating underground utilities, etc. The Contractor shall, after locating primary and critical existing utilities, mark their location with indelible material or other means satisfactory to the Owner's Representative and maintain above ground physical identification during the work.

**6.2.03** In the event of damage to, or accidental disruption of utilities or other facilities as a result of the Contractor's operations, the Contractor shall take immediate steps to repair or replace all damage and to restore all services. Further, the Contractor shall engage any additional outside services which may be necessary to prosecute repairs on a continuous "around the clock" basis until services are restored. The Contractor shall also provide and operate any supplemental temporary services to maintain uninterrupted use of the facilities. All costs involved in making repairs and restoring disrupted service resulting from the Contractor's work shall be borne by the Contractor and the Contractor shall be fully responsible for any and all claims resulting from the damage.

**6.2.04** The Contractor is hereby informed that there are installed on the Airport, and within the site, FAA NAVAIDS, including without limitations, FAA NAVAIDS such as ASR, IHF, and VHF receivers and transmitters, U.S. Weather Bureau Facilities, and electronic cables and controls relating to such NAVAIDS and facilities. Such NAVAIDS, Weather Bureau, and other facilities and electric cables are vital to the operation of the Airport and must be fully protected during the entire project. Work under this Contract can be accomplished in the vicinity of these facilities and cables only at approved periods of time. Approval is subject to withdrawal at any time because of changes in the weather, emergency conditions, and for any other reason determined by the Owner's Representative. Any instructions to the Contractor to clear any given area, at any time, given by the Owner Representative or by any authority designated by the Owner Representative such as the Federal Aviation Administration by any means including radio, shall be immediately executed. **Work** will resume in the cleared area only when such instructions are issued by the Owner Representative.

**6.2.05** Power and control cables leading to and from any FAA NAVAIDS, Weather Bureau, or other facilities will be protected from any possible damage from the elements or due to any crossing of these facilities by equipment.

**6.2.06** The Contractor is hereby notified that he shall be required to immediately repair, at his own expense, with identical material by skilled workers, any underground cables serving FAA NAVAIDS, Weather Bureau and other existing FAA facilities which are damaged by his workers, equipment or work, and that prior approval of the FAA must be obtained for materials, workers, time of day or night, method of repairs, and for any temporary or permanent repairs the Contractor proposes to make to any FAA NAVAIDS and facilities damaged by the Contractor.

**6.2.07** Damaged FAA cables (controls, NAVAIDS and NOAA) shall be repaired in accordance with the requirements of FAA-SO-STD-71 Specifications "Installation and Splicing of Underground Cables". Prior approval of the Owner Representative must be obtained for the materials, workers, time of day or night, and for the method of repairs for any temporary or permanent repairs the Contractor proposes to make to any Airport facilities, cables, or existing utilities damaged by the Contractor. The FAA Airways Facilities Sector Field Office (AFSFO) Manager shall have the discretion of determining who shall perform repairs of damaged cables.

**6.2.08** NAVAIDS shall be removed from service when work activities occur within any NAVAIDS critical area, when the runways are closed or when the runway threshold is displaced. If a NAVAID must be removed from service for more than eight hours or for any period of time for three consecutive days, a minimum of fifty (50) day advance notice is required for coordinating the extended facility shutdown with the FAA. Facility shutdown coordination shall be initiated by the Contractor with the Owner Representative; the Owner and the Owner Representative will coordinate the facility shutdown with the FAA AFSFO Manager responsible for this facility.

## 6.3 EXISTING UTILITIES AND STRUCTURES

**6.3.01** The Contractor shall not disrupt or disconnect any type of utility whatsoever without first obtaining the written permission of the Owner's Representative. If a suitable bypass of such utility cannot be provided, then the Owner's Representative may direct the Contractor to proceed with the work on a twenty-four (24) hour per day basis until such interrupted utility services are completely restored. Requests for disconnection shall be submitted on a fully completed copy of the MDAD "Shut Down Form" delivered to the Owner, through the Owner's Representative for processing and approval at least five (5) working days prior to the time of the requested interruption, and shall state:

A. The identity of the utility involved.

B. Justification of the requested disconnect.

C. The location of the requested disconnect.

D. The exact date and time at which the disconnect is requested.

E. The duration of the proposed disconnect.

**6.3.02** The Contractor shall take all necessary precautions when using steel treaded equipment or vehicles to protect the pavement surface from damage. Rubber tires or treads shall be used

whenever possible. Any damage to pavement caused by Contractor's or Subcontractor's equipment or vehicles shall be repaired by the Contractor in a manner acceptable to the Owner's Representative, at no additional cost to the Owner.

**6.3.03** The Contractor shall provide protective shoring and sheet piling, as required, at all existing structures, etc., where they may be affected by installation of new work.

**6.3.04** Not Used.

**6.3.05** In the event of damage to existing facilities or structures, proposed to remain, relocated or otherwise reused by the Owner as a result of the Contractor's operations, the Contractor shall take immediate steps to repair or replace all damage and to restore all services at its sole expense. Further, the Contractor shall, when directed by the Owner's Representative, engage any additional outside services which may be necessary to prosecute repairs on a continuous "around the clock" basis until facilities or structures are restored. The Contractor shall be solely and directly responsible to the owners and operators of such utilities for any damage, injury, expense, loss, inconvenience, or delay, caused by the Contractor's operations. All costs involved in making repairs and restoring disrupted service resulting from the Contractor's work shall be borne by the Contractor and the Contractor shall be fully responsible for any and all claims resulting from the damage.

## 6.4 AIRFIELD OPERATIONS AREA (AOA) SECURITY

**6.4.01** Contractor acknowledges and accepts full responsibility for compliance with all applicable laws, rules and regulations including those of the Transportation Security Administration (TSA), Department of Homeland Security (DHS), Federal Aviation Administration (FAA), Customs and Border Protection (CBP) and MDAD as set forth from time to time relating to Contractor's activities at the Miami International Airport (MIA).

**6.4.02** In order to maintain high levels of security at MIA, Contractor must obtain MDAD photo identification badges for all Contractor employees working in the Secured/AOA/Security Identification Display Area (SIDA)/Sterile Areas or any other restricted areas of the Airport. MDAD issues two types of identification badges: photo identification badges and non-photo passes. All employees, except temporary workers (working less than two weeks), will be required to obtain photo identification badges and will be subject to Federal Bureau of Investigation (FBI) fingerprint-based Criminal History Records Check (CHRC). Temporary workers (working less than two weeks) will be issued non-photo passes. At no time will an employee bearing a non-photo identification badge be authorized in a secured MIA location without being escorted by an MDAD authorized Escort Authority that has been issued a badge with an escort seal by the MDAD ID Section. No other individuals are allowed to escort under any circumstances.

**6.4.03** The Contractor shall be responsible for requesting MDAD to issue identification badges to all employees who Contractor requests be authorized access to the Secured/AOA/SIDA/Sterile Areas or any other restricted areas of the Airport and shall be further responsible for the immediate reporting of all lost or stolen ID badges and the immediate return of the ID badges of all personnel transferred from Airport assignment or terminated from the employ of the Contractor or upon final acceptance of the Work or termination of this Contract. Contractor will be responsible for fees associated with lost and unaccounted for badges or passes as well as the fee(s) for fingerprinting and ID issuance.

**6.4.04** All employees of the Contractor, Subcontractors, or trade contractors who must work within MDAD Secured/AOA/SIDA/Sterile Areas or any other restricted areas at Miami International Airport shall be supplied with MDAD identification badges as specified above, which must be worn at all times while within the referenced areas. Badges shall be worn on outer garments above the waist so as to be clearly visible in order to distinguish, on sight, employees assigned to a particular contractor. MDAD issues the non-photo passes on a daily basis, not to exceed two weeks. In order to obtain a non-photo pass the Contractor must submit a 48 Hour Advance Notification form with required information to the MDAD Security Division, ID Section for all temporary workers requiring access to the MDAD Secured/AOA/SIDA/Sterile Areas or other restricted areas of the airport. Non-photo passes will not be issued to temporary workers who have failed a criminal history records check, are in possession of an expired work permit and/or have an expired MDAD ID badge. Each employee must complete the SIDA training program conducted by MDAD and comply with all other TSA, DHS, CBP, FAA or MDAD requirements as specified by the MDAD at the time of application for the ID badge before an ID badge is issued. MDAD Security and Safety ID Section regularly provides SIDA Training.

**6.4.05** Contractor Ramp Permits will be issued to the Contractor authorizing vehicle entrance to the Airfield Operations Area (AOA) through specified Miami-Dade Aviation Department guard gates for the term of any Project. These permits will be issued only for those vehicles (including vehicles belonging to the Subcontractor) that must have access to the site during the performance of the Work. These permits will be only issued to company owned vehicles or to company leased vehicles (leased from a commercial leasing company). AOA decals, passes, or permits to operate within the Secured/AOA/SIDA will not be issued to privately owned or privately leased vehicles. All vehicles operating within the Secured/AOA/SIDA must have conspicuous company identification signs (minimum of three (3) inch lettering) displayed on both sides of the vehicle.

All vehicles operating within the Secured/AOA/SIDA must be provided with the Automobile Liability Insurance required elsewhere in these General Conditions. Proof of such insurance shall be provided to MDAD Airside Operations Division upon request.

**6.4.06** Vehicles delivering materials to the site will be given temporary passes at the appropriate guard gate. Such vehicles shall not be permitted to operate within the Secured/AOA/SIDA without MDAD escort to be provided by MDAD's Operations Division. To obtain an escort, the Contractor shall notify MDAD Airside Operations Division in writing twenty-four (24) hours in advance of such need. These passes shall be surrendered upon leaving the Secured/AOA/SIDA. All vehicles shall be marked with company name to ensure positive identification at all times while in the Secured/AOASIDA.

**6.4.07** Only Contractor management level staff, supervisors and foremen with pictured MDAD I.D. badges shall be allowed to operate a motor vehicle on the Secured/AOA/SIDA without MDAD escort except when operating a vehicle that requires a specialized license to operate (CDL). Such vehicles must be under MDAD Airside Operations escort when moving on the AOA unless said vehicle is operating in an approved Maintenance of Traffic (MOT). The Contractor shall require such employee to have a current, valid, appropriate Florida driver's license and to attend and successfully complete the AOA Driver Training Course conducted periodically by the Department. The privilege of a person to operate a motor vehicle on the Secured/AOA/SIDA may be withdrawn by the Department because of violation of AOA driving rules or loss of Florida driver's license.

**6.4.08** The Contractor agrees that its personnel, vehicles, cargo, goods, and other personal property

are subject to being searched when attempting to enter, leave or while on the Secured/AOA/SIDA/Sterile Areas or other restricted areas of the airport. It is further agreed that the MDAD has the right to prohibit an individual, agent, or employee of the Contractor or Subcontractor from entering the Secured/AOA/SIDA/Sterile Areas or other restricted areas, based upon facts which would lead a person of reasonable prudence to believe that such individual might be inclined to engage in theft, cargo tampering, aircraft sabotage, or other unlawful activities, including repeated failure to comply with TSA, DHS,, FAA, CBP and MDAD SIDA/access control policies, rules and regulations. Any person denied access to the Secured/AOA/SIDA/Sterile areas or other restricted areas of the airport or whose prior authorization has been revoked or suspended on such grounds shall be entitled to a review hearing before the Director or his/her authorized designee within a reasonable time. Prior to such hearing, the person denied access to the Secured/AOA/SIDA/Sterile Areas or other restricted areas of the airport shall be advised, in writing, of the reasons for such denial.

The Contractor acknowledges and understands that these provisions are for the protection of all users of the Secured/AOA/SIDA/Sterile Areas and are intended to reduce the incidence of terrorism, thefts, cargo tampering, aircraft sabotage, and other unlawful activities at the Airport and to maximize compliance with TSA, DHS, CBP, FAA, and MDAD access control policies and procedures.

**6.4.09** The Contractor understands and agrees that vehicle and equipment shall not be parked/stored on the Secured/AOA/SIDA in areas not designated or authorized by MDAD nor in any manner contrary to any posted regulatory signs, traffic control devices, or pavement markings.

**6.4.10** The Contractor understands and agrees that all persons entering and working in or around arriving international aircraft and facilities used by the various Federal Inspection Services agencies may be subject to the consent and approval of such agencies. Persons not approved or consented to by the Federal Inspection Services agencies shall not be employed by the Contractor in areas under the jurisdiction or control of such agencies. Persons not approved or consented to by the Federal Inspection Services agencies who enter such areas are subject to fines, which shall be borne entirely by the persons and/or the Contractor.

**6.4.11** Any facility that will permit access to the Secured/AOA/SIDA/Sterile Areas via doors or gates, the Contractor shall either (a) keep all such doors and/or gates locked at all times or (b) position a security guard or designated employee to monitor any door and/or gate that must remain open. Keys to such doors and gates shall be limited and issued only to company employees with a current MDAD picture ID. Door/gate keys shall be numbered and stamped "Do Not Duplicate." The Contractor shall keep a log of all keys issued and to whom. The log is subject to audit by the Owner. Employees must have their assigned key in their possession at the time of audit. Failure to comply with these requirements can result in monetary fines, loss of access to the Secured/AOA/SIDA/Sterile Areas, and/or termination of this Contract.

**6.4.12** Notwithstanding the specific provisions of this Article, the Owner shall have the right to add to, amend, or delete any portion hereof in order to meet reasonable security requirements of MDAD or of the TSA/DHS/CBP/FAA.

**6.4.13** The Contractor shall ensure that all employees so required participate in such safety, security, and other training and instructional programs, as MDAD or appropriate Federal agencies may from time to time require.

**6.4.14** Contractor agrees that it will include in all contracts and subcontracts with its MIA Subcontractors, service providers, and suppliers an obligation by such parties to comply with all security requirements applicable to their operations at the Airport. Contractor agrees that in addition to all remedies, penalties, and sanctions that may be imposed by TSA, DHS, CBP, FAA or the MDAD upon Contractor's Subcontractors, suppliers, and their individual employees for a violation of applicable security provisions, Contractor shall be responsible to the Owner for all such violations and shall indemnify and hold the Owner harmless for all costs, fines and penalties arising therefrom, such costs to include reasonable attorneys' fees.

**6.4.15** In addition to the foregoing, the Contractor shall be required to comply with the U.S. Customs and Border Protection (CBP) requirements for obtaining CBP seals for those Contractor employees that will be involved within the CBP/FIS environment at MIA. The Vendor shall be responsible for all related fees for required bonding, fingerprinting and background investigations of Contractor personnel.

**6.4.16** The employee(s) of the Contractor shall be considered to be at all times its employee(s), and not an employee(s) or agent(s) of the County or any of its departments. The Contractor shall provide employee(s) competent and physically capable of performing the Work as required. The County may require the Contractor to remove any employee it deems unacceptable.

## 6.5 MAINTENANCE OF AIRPORT OPERATIONS

**6.5.01** The Contractor shall control its operations and the operations of its Subcontractors and suppliers so as not to compromise the airport's security, interfere with airport operations or with aircraft, vehicular or pedestrian traffic, except as may be provided for in the Contract Documents.

**6.5.02** The Contract is explicitly intended to provide for the maximum degree of safety to aircraft, the general public, airport personnel, equipment and associated facilities, and to the Contractor's personnel and equipment and suppliers, etc., but shall also provide for the minimum interference to the free and unobstructed movement of vehicles and/or personnel engaged in the day to day operation of the Airport and the general public. To this end the Contractor, its Subcontractors and suppliers shall observe all Airport rules and regulations, all other operational limitations which may be imposed from time to time by the MDAD, and shall provide whatever markings, lighting and/or various types of barricades, or other measures which are required to properly identify Contractor personnel, equipment, vehicles, storage areas and any Contractor's work areas or conditions which may be hazardous to the uninterrupted operation of aircraft, airport equipment, including but not limited to maintenance vehicles and fire rescue vehicles, other vehicles, or personnel or vehicles from any source operating on the Airport. In order to provide the maximum degree of safety on airports during construction, the Contractor shall comply with the provisions of FAA Advisory Circular AC 150/5370-2.

**6.5.03** The Contractor shall protect, and shall not interfere with, the operation of visual and electronic signals (including power supplies thereto) used in the guidance of aircraft while operating to, from, and within the AOA.

**6.5.04** When the Work requires the Contractor to work within the AOA, the Contractor shall coordinate its work with MDAD (through the Owner's Representative) at least 48 hours prior to the commencement of such work. The Contractor shall not close an AOA until so authorized by

the Owner's Representative and until all necessary temporary markings and associated lighting are in place, as specified hereinafter.

**6.5.05** When the Work requires the Contractor to work within the AOA on an intermittent basis (intermittent opening and closing of the AOA), the Contractor shall maintain constant communications with the Owner's Representative and MDAD; obey all instructions to vacate the AOA; obey all instructions to resume work in such AOA. Failure to maintain the specified communications or to obey instructions shall be cause for suspension of the Contractor's operations within the AOA until the satisfactory conditions are provided.

**6.5.06** Not Used

**6.5.07** When the work requires closing an air operations area of the airport or portion of such area, the Contractor shall furnish, erect, and maintain temporary markings and associated lighting conforming to the requirements of AC 150/5340-1, Standards for Airport Markings.

**6.5.08** The Contractor shall furnish, erect, and maintain markings and associated lighting of temporary stockpiles and its parked equipment that may be hazardous to the operation of emergency fire-rescue or maintenance vehicles on the airport in reasonable conformance to AC 150/5370-2, Operational Safety on Airports During Construction, current edition.

**6.5.09** The Contractor shall identify each motorized vehicle in reasonable conformance to AC 150/5370-2, current edition.

**6.5.10** The Contractor shall furnish and erect all barricades, warnings signs, and markings for hazards prior to commencing work which requires such erection and shall maintain the barricades, warning signs, and markings for hazards until their dismantling is directed by the Owner's Representative.

**6.5.11** Open-flame type lights are not permitted.

**6.5.12** If the Contractor fails to maintain the markings, lighting and barricades as required above, the Owner shall cause such safety measures to be installed by others. The cost for such service by others in this regard shall be borne by the Contractor.

**6.5.13** The Contractor's responsibility for Maintenance of Traffic shall begin on the day the Contractor starts work on the project, or on the effective date of the Notice to Proceed, whichever comes first.

## 6.6 TEMPORARY UTILITIES

**6.6.01** Not Used.

**6.6.02** All fees, charges, and cost for labor and materials, including the furnishing of temporary equipment and the connection(s) thereof, required for the maintenance of temporary utility services in lieu of existing utilities services disrupted by the Contractor's work shall be furnished by the Contractor at his expense, except where otherwise specified. When such temporary services are no longer required, the Contractor shall remove all temporary equipment and connections and leave

the facilities and existing permanent apparatus in as good condition as existed prior to making such temporary connections.

**6.6.03** The Contractor shall furnish temporary heat or air-conditioning wherever required to prevent injury to work and materials through dampness and cold. Use of open salamanders or any temporary heating devices which may be fire hazards or may cause smoke damage to finished work will not be permitted. Minimum and maximum temperature requirements specified for various materials shall be strictly observed by the Contractor.

**6.6.04** Unless otherwise specified in the Contract Documents, the Contractor shall provide all utility services (e.g. telephone, power, lighting, water, sewer), necessary for the performance of its work

## 6.7 PERMITS, LAWS, TAXES, ROYALTIES AND REGULATIONS

**6.7.01** The Contractor shall apply for and procure all permits, certificates, inspections and licenses, pay all charges, taxes, royalties and fees, and give all notices necessary and incidental to the due and lawful prosecution of the work, except that the Contractor will be reimbursed by the Owner for the actual costs of permit fees including the Planning, Development, and Regulation Permit Fees, DERM, WASA, EPA, DEP, SFWMD and USACE Permit Fees, License Fees, Impact Fees, and Inspection Fees paid to any governmental entity in connection with the work of the project; reimbursement will be made from funds available under the General Allowance Account or, at the Owner's option, the reimbursement will be made directly from other Owner's funds.

**6.7.02** The Owner will not pay or reimburse the Contractor for any penalty(ies) relating to permits or fees as a result of the Contractor's failure to timely obtain all permits, inspections, approvals, etc.

**6.7.03** The Contractor shall observe and comply with all applicable Federal, State, County and other laws, codes, ordinances, rules and regulations of the Federal, State and County governments, and any and all programs developed in compliance therewith, in any manner affecting the conduct of the Work.

**6.7.04** Not Used.

**6.7.05** All activities shall be subject to the pollution prevention requirements established under the National Pollutant Discharge Elimination System (NPDES) program under the Clean Water Act regulating storm water discharges from construction sites.

**6.7.06** If the Contractor is required or desires to use any design, device, material, or process covered by letters of patent or copyright, he shall provide for such use by suitable legal agreement with the patentee or owner. The Contractor and the surety shall indemnify and save harmless the Owner, the County, the Owner's Representative, and the Consulting Engineers from any and all claims for infringement by reason of the use of any such patented design, device, material or process, or any trademark or copyright, and shall indemnify the Owner for any costs, expenses, and damages which it may be obliged to pay by reason of an infringement, at any time during the prosecution or after the completion of the work.

**6.7.07** Unless otherwise specified in this subsection, the Contractor is advised that the site of the work is not within any property, district, or site, and does not contain any building, structure, or object listed in the current National Register of Historic Places published by the United States Department of Interior.

Should the Contractor encounter, during its operations, any building, part of a building, structure, or object that is incongruous with its surroundings, he shall immediately cease operations in that location and notify the Owner's Representative. The Owner's Representative will immediately investigate the Contractor's finding and will direct the Contractor to either resume its operations or to suspend operations as directed.

Should the Owner's Representative order suspension of the Contractor's operations in order to protect an archaeological or historical finding, or order the Contractor to perform extra work, such extra work shall be covered by an appropriate Work Order or Change Order. If appropriate, the delay shall be considered a Compensable Excusable Delay.

**6.7.08** Not Used

**6.7.09** The Contractor shall be subject to and comply with all the provisions of Miami-Dade County Code Sections 2-8.4.1 and 10-38. A breach of the clauses contained in the Contract adversely affecting the performance of the Contractor on this project may be grounds for the initiation of debarment proceedings.

**6.7.10** Not Used.

**6.7.11** Not Used.

## 6.8 AUDIT RIGHTS AND REVIEW OF RECORDS

**6.8.01** The Contractor shall, during the term of this Contract and for a period of five years thereafter, allow the Owner and its duly authorized representatives to inspect all payroll records, invoices for materials, books of account, project correspondence and project-related files and all relevant records pertinent to the Contract.

**6.8.02** The Owner retains the right to audit accounts and access all files, correspondence and documents in reference to all work performed under this Contract. The Owner shall be provided full access upon request to all documents, including those in possession of Subcontractors or suppliers during the work and for a period of five years after the completion of the Work. In case of any litigation regarding this project, such rights shall extend until final settlement of such litigation. Failure to allow the Owner access shall be deemed a waiver of Contractor's claims.

**6.8.03** The Contractor shall maintain a banking account within Miami-Dade County for all payments to laborers, Subcontractors and vendors furnishing labor and materials under this Contract. All records shall be maintained in Miami-Dade County for the term of this Contract.

**6.8.04** Office of the Inspector General.

A. According to Section 2-1076 of the Code of Miami-Dade County, Miami-Dade County has established the Office of the Inspector General (IG) which may, on a random basis, perform audits, inspections, and reviews of all, on any County/Trust contracts, throughout the duration of said contracts. This random audit is separate and distinct from any other audit by the County. To pay for the functions of the Office of the Inspector General, any and all payments to be made to the Contractor under this contract will be assessed one quarter (1/4) of one (1) percent of the total amount of the payment, to be deducted from each progress payment as the same becomes due unless this Contract is federally or state funded where federal or state law or regulations preclude such a charge or where such a charge is otherwise precluded by Special Condition.

B. The Miami-Dade Office of Inspector General is authorized to investigate County affairs and empowered to review past, present and proposed County and Public Health Trust programs, accounts, records, contracts and transactions. In addition, the Inspector General has the power to subpoena witnesses, administer oaths, require the production of witnesses and monitor existing projects and programs. Monitoring of an existing project or program may include a report concerning whether the project is on time, within budget and in conformance with plans, specifications and applicable law. The Inspector General shall have the power to audit, investigate, monitor, oversee, inspect and review operations, activities, performance and procurement process including but not limited to project design, bid specifications, (bid/proposal) submittals, activities of the (Contractor/ Vendor/ Consultant), its officers, agents and employees, lobbyists, County and Public Health Trust staff and elected officials to ensure compliance with contract specifications and to detect fraud and corruption.

C. Upon ten (10) days written notice to the Contractor, the Contractor shall make all requested records and documents available to the Inspector General for inspection and copying. The Inspector General is empowered to retain the services of independent private sector inspectors general to audit, investigate, monitor, oversee, inspect and review operations, activities, performance and procurement process including but not limited to project design, bid specifications, (bid/proposal) submittals, activities of the (Contractor/ Vendor/ Consultant), its officers, agents and employees, lobbyists, County staff and elected officials to ensure compliance with contract specifications and to detect fraud and corruption.

D. The Inspector General shall have the right to inspect and copy all documents and records in the (Contractor/Vendor/Consultant's) possession, custody or control which in the Inspector General's sole judgment, pertain to performance of the contract, including, but not limited to original estimate files, change order estimate files, worksheets, proposals and agreements from and with successful subcontractors and suppliers, all project-related correspondence, memoranda, instructions, financial documents, construction documents, (bid/proposal) and contract documents, back-change documents, all documents and records which involve cash, trade or volume discounts, insurance proceeds, rebates, or dividends received, payroll and personnel records and supporting documentation for the aforesaid documents and records.

E. The Contractor shall make available at its office at all reasonable times the records, materials, and other evidence regarding the acquisition (bid preparation) and performance of this contract, for examination, audit, or reproduction, until three (3) years after final payment under this contract or for any longer period required by statute or by other clauses

of this contract. In addition:

(1) If this contract is completely or partially terminated, the Contractor shall make available records relating to the work terminated until three (3) years after any resulting final termination settlement; and

(2) The Contractor shall make available records relating to appeals or to litigation or the settlement of claims arising under or relating to this contract until such appeals, litigation, or claims are finally resolved.

F. The provisions in this section shall apply to the (Contractor/Vendor/Consultant), its officers, agents, employees, subcontractors and suppliers. The (Contractor/Vendor/Consultant) shall incorporate the provisions in this section in all subcontracts and all other agreements executed by the (Contractor/Vendor/Consultant) in connection with the performance of this contract.

G. Nothing in this section shall impair any independent right to the County to conduct audits or investigative activities. The provisions of this section are neither intended nor shall they be construed to impose any liability on the County by the (Contractor/Vendor/Consultant) or third parties.

H. Exception: The above application of one quarter (1/4) of one percent fee assessment shall not apply to the following contracts: (a) IPSIG contracts; (b) contracts for legal services; (c) contracts for financial advisory services; (d) auditing contracts; (e) facility rentals and lease agreements; (f) concessions and other rental agreements; (g) insurance contracts; (h) revenue-generating contracts; (i) contracts where an IPSIG is assigned at the time the contract is approved by the Trust; (j) professional service agreements under $1,000; (k) management agreements; (l) small purchase orders as defined in Miami-Dade County Administrative Order 3-2; (m) federal, state and local government-funded grants; and (n) interlocal agreements. Notwithstanding the foregoing, the Trust may authorize the inclusion of the fee assessment of one-quarter (1/4) of one percent in any exempted contract at the time of award.

I. Nothing contained above shall in any way limit the powers of the Inspector General to perform audits on all Trust contracts including, but not limited to, those contracts specifically exempted above.

## 6.9 GOVERNING LAWS

**6.9.01** The Contractor shall, during the term of this Contract, be governed by the statutes, regulatory orders, ordinances and procedures of the United States of America, the State of Florida, Miami- Dade County, and MDAD. In addition the Contractor agrees to abide by all federal, state, and County procedures, as may be amended from time to time, regarding how documents to which the Consultant has access are handled, copied, and distributed, particularly documents that contain sensitive security information that are controlled under the provisions of 49 CFR PART 1520 et al.

## 6.10 SUCCESSORS AND ASSIGNS

**6.10.01** The Owner and the Contractor each bind themselves, their partners, successors, assigns and legal representatives to the other party hereto and to the partners, successors, assigns and legal representatives of such other party in respect to all covenants, agreements and obligations contained in the Contract Documents. The Contractor shall not assign the Contract or sublet it as a whole without the written consent of the Owner, nor shall the Contractor assign any moneys due or to become due the Contractor hereunder, without the previous written notice of the Owner.

## 6.11 WRITTEN NOTICE

**6.11.01** Written notice to the Contractor shall be deemed to have been duly served if delivered in person to the individual or member of the firm or to any officer of the corporation for whom it was intended or if delivered at or sent by registered or certified mail to the last business address known to those who give the notice.

**6.11.02** Written notice to the Owner shall be deemed to have been duly served if delivered in person, delivered at or sent by registered or certified mail to the Aviation Department, Miami

International Airport, Facilities, P.O. Box 025504, Miami, Florida, 33102-5504, in care of the Assistant Director, Facilities Division.

## 6.12 NON-DISCRIMINATION - EQUAL EMPLOYMENT OPPORTUNITY

**6.12.01** The Contractor shall not discriminate against any employee or applicant for employment because of race, creed, color, sex or national origin. The Contractor shall take affirmative action to ensure that Applicants are employed, and that employees are treated during employment without regard to their race, creed, color, sex or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; lay-off or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor shall post notices setting forth the provisions of this nondiscrimination clause in conspicuous places, available to employees and applicants for employment.

**6.12.02** The Contractor shall in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, sex or national origin.

**6.12.03** The Contractor shall send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, advising the labor union or workers' representative of the Contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, as amended, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

**6.12.04** The Contractor shall comply with all provisions of Executive Order No. 11246 of September 24, 1965, as amended and with the rules, regulations and relevant orders of the Secretary of Labor.

**6.12.05** The Contractor shall furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, as amended and the rules, regulations and orders of the Secretary of Labor, or pursuant thereto, and shall permit access to his books, records and accounts by the County, the Federal Aviation Administration and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations and orders.

**6.12.06** In the event of the Contractor's non-compliance with the non-discrimination clauses of this Contract or with any of the said rules, regulations, or orders, this Contract may be canceled, terminated or suspended in whole or in part and the Contractor may be declared ineligible for further contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, as amended, and such other sanctions may be imposed and remedies invoked as provided in the said Executive Order, as amended or by rules, regulations or orders of the Secretary of Labor, or as otherwise provided by law.

**6.12.07** The Contractor shall include the provision of Paragraphs 6.12.01 through 6.12.08 in every Subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, as amended, so that such provisions will be binding upon each Subcontractor or Vendor. The Contractor shall take such action with respect to any subcontract or purchase order as the United

States may direct as a means of enforcing such provisions including sanctions for non-compliance; provided, however, that in the event the Contractor becomes involved in, or is threatened with, litigation with a Subcontractor or vendor as a result of such direction by the United States, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

**6.12.08** Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246 as amended by Executive Order 11375):

A. As used in this Article:

(1) "Covered Area": means the geographical area described in the solicitation from which this Contract resulted;

(2) "Director": means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;

(3) "Employer Identification Number": means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

(4) For the purposes of this Part, "Minority" includes:

(a) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
(b) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
(c) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
(d) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

B. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of $10,000 the provision of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this Contract resulted.

C. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to

achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other contractors or subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

D. The Contractor shall implement the specific affirmative action standards provided in Paragraphs 6.12.08.G.1 through 6.12.08.G.16 of this Article. The goals set forth in the solicitation from which this Contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each trade in which it has employees in the covered area. Covered Contractors performing work in geographical areas where they do not have a Federal or Federally assisted contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in Notice form, and such notices may be obtained from any office of Federal Contract Compliance Programs Office or from Federal Procurement Contracting. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.

E. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246 as amended, or the regulations promulgated pursuant thereto.

F. In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

G. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

(1) Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two (2) or more women to each project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

(2) Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

(3) Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a

union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union, or, if referred, not employed by the Contractor, this shall be documented with the file with the reason therefore along with whatever additional actions the Contractor may have taken.

(4) Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor any minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

(5) Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading progress and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 6.12.08.G. (2) above.

(6) Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where work is performed.

(7) Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions, including specific review of these items with on-site supervisory personnel, such as Superintendents, General Foremen, etc., prior to the initiation of work at any jobsite. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

(8) Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other contractors and subcontractors with whom the Contractor does or anticipates doing business.

(9) Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

(10) Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation

employment to minority and female youth, both on the site and in other areas of a Contractor's workforce.

(11) Validate all test and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

(12) Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

(13) Ensure that seniority practices, job classifications, work assignments and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligation under these specifications are being carried out.

(14) Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

(15) Document and maintain a record of all solicitations of offers for subcontracts from minority and female Contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

(16) Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

H. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations [6.12.08.G. (1) through 6.12.08.G.(16)]. The efforts of a Contractor association, joint contractor contract-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 6.12.08.G(1) through 6.12.08G(16) of these specifications, provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

I. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order, if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

J. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

K. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246 as amended.

L. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

M. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in Paragraph 6.12.08.G of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

N. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone number, trade, union affiliation if any, employee's identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained, in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, Contractors shall not be required to maintain separate records.

O. Nothing herein provided shall be construed as limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

## 6.13 NON-DISCRIMINATION - EMPLOYMENT

**6.13.01** The Contractor shall not discriminate against any employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment, or any matter directly or indirectly related to employment because of age, sex, race, color, religion, national origin, ancestry or disability.

**6.13.02** The Contractor shall comply with applicable provisions of the Americans with Disabilities Act, including, but not limited to, provisions pertaining to employment.

**6.13.03** The Contractor shall in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, color, religion, sex, national origin, ancestry or disability.

**6.13.04** The Contractor shall include the provision of the above articles in every Subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor so that such provisions will be binding upon each Subcontractor or Vendor.

## ARTICLE 7
## CHANGES

### 7.1 CHANGES IN THE WORK

**7.1.01** The Owner reserves the right to delete work from this Contract, to add work to this Contract, and to change work to be accomplished under this Contract without invalidating the Contract.

**7.1.02** In the event the Owner exercises its right to change, delete or add work under the Contract, such work will be ordered and paid for as provided for in the Contract Documents.

**7.1.03** Changes in the work may be initiated by the issuance of a Bulletin by the Owner. The Contractor shall submit a price quote to the Owner for review, within twenty-one (21) calendar days of receipt of a Bulletin. The Contractor shall maintain this price, for acceptance by the Owner, for a minimum of 90 calendar days after submittal. The cost or credit to the Owner for any change in the work shall be determined in accordance with the provisions of the Contract Documents. The Contractor shall not be compensated for effort expended in preparing and submitting price quotes.

**7.1.04** Changes in the work covered by Unit Prices, as stated in the Contract Documents shall be all inclusive. These prices will include all Direct and Indirect Costs, remobilization and demobilization associated with the change, means and methods of execution, engineering and any associated work necessary. To be compensable, units must be measured daily by the Contractor and approved in writing by the Owner.

### 7.2 ALLOWANCE ACCOUNTS

**7.2.01** Certain portions of work which may be required to be performed by the Contractor under this Contract are either unforeseeable or have not yet been designed, and the value of such work, if any, is included in the Contract as a specific line item(s) entitled "General Allowance Account(s)".

A. The General Allowance Account shall be used to reimburse the Contractor for the actual costs of permit fees, license fees, impact fees and inspection fees paid to any governmental entity in connection with the work associated with the Project; for furnishing all labor, materials, equipment and services necessary for modifications or Extra Work required to complete the Project because of unforeseeable conditions; for performing minor changes required to resolve: oversight in design, Owner oversight, unforeseen conditions, revised regulations, technological and product development, operational changes, schedule requirements, program interface, emergencies and delays; and for making final adjustment to estimated quantities shown on the Schedule of Prices Bid in the Bid Form to conform to actual quantities installed.

B. Other allowance account(s) may be used as specified in the Contract Documents.

These values, if any, are to be included in the Total Contract Amount, but are not chargeable against the Total Contract Amount unless and until the Contractor is directed to perform work contemplated in the Allowance Account(s) by a written Work Order(s) issued by the Owner.

**7.2.02** At such time as work is to be performed under the Allowance Account(s), if any, the work shall be incorporated into the Construction Schedule and the Schedule of Values, and shall in all respects be integrated into the construction as a part of the Contract as awarded.

**7.2.03** The Work Order for the required work will be issued by the Owner upon receipt from the Contractor of a satisfactory proposal for performance of the work, and the acceptance thereof by the Owner. If the nature of the work is such that a Unit Price or Lump Sum price is not economically practical, the Work Order may be issued to perform the work on a Cost Plus Basis.

**7.2.04** The Contractor shall solicit not less than three (3) competitive bids from appropriate Subcontractors and materials suppliers when so directed by the Owner, for performance of the work in accordance with such Plans and Specifications as may be required and as may be furnished by the Owner. The Contractor shall submit the solicited bids to the Owner for approval or rejection. If the bids are rejected by the Owner, the Contractor shall solicit additional bids for submittal.

**7.2.05** No Work Orders shall be issued against an Allowance Account if such Work Orders in the aggregate exceed the authorized amount of that Allowance Account, provided however that such excess may be authorized by appropriate Change Order.

**7.2.06** At Final Acceptance, the Contract Price shall be decreased to reflect unexpended amounts under the Allowance Accounts.

## 7.3 DELETION OR ADDITION OF WORK

**7.3.01** All final measurement for unit price work shall be performed by the Owner who shall afford the Contractor an opportunity to witness or to participate in the measurements and to review all calculations relating to final measurement.

**7.3.02** In the event the Owner exercises its right to delete any portion(s) of the work contemplated herein, such deletion will be ordered and the Contract Total Amount and Time will be adjusted as provided for in these Contract Documents by Change Order or by Work Order, as appropriate.

A. **Deleted Work - Lump Sum Item(s)**

The Contractor shall credit the Owner for the reasonable value of the deleted work determined from the approved Schedule of Values, subject to approval by the Owner. If the reasonable value of the deleted work cannot be readily ascertained from the Schedule of Values submitted in accordance with these General Conditions, or if requested by the Owner, the Contractor shall supply all data required by the Owner to substantiate the amount of the credit to be given the Owner.

B. **Deleted Work - Major Unit Price Item(s)**

(1) If 100% of the work under any major unit price item is deleted, then the Contractor will not receive any payment for the value of the deleted work.

(2) If a quantity not greater than twenty-five percent (25%) of the work under a major unit price item is deleted, the Contractor shall be paid only for the quantity of such items completed times the Contract Unit Price.

(3) If less than one hundred percent (100%), but more than twenty-five percent (25%) of the work under any major unit price item is deleted, then the Contractor and the Owner may negotiate a new equitable unit price for such item and the Contractor shall be paid for the actual quantity of such item of work performed at such negotiated unit price. If the Owner and the Contractor can not reach agreement for an equitable Unit Price, for any item, then the entire work shall be performed as Work not covered by Unit Prices.

C. **Deleted Work - Minor Unit Price Item(s)**

If work under any minor unit price item is deleted, then the Contractor shall be paid only for the quantity of the work completed times the original Contract Unit Price. The Contractor shall not be entitled to any additional compensation if actual quantities of work performed are less than the estimated quantities shown on the Schedule of Prices Bid in the Bid Form.

**7.3.03** The Contractor shall be reimbursed for any actual reasonable expenses incurred prior to the notice of deletion of work as a result of preparing to perform the work deleted. The Contractor shall submit to the Owner all data required to substantiate the amount of compensation requested therefore. In no event shall the Contractor be entitled to compensation greater than the aggregate amount of the Unit Price times the original bid quantity of Work shown on the Schedule of Prices Bid in the Bid Form.

**7.3.04** No payment(s) shall be made to the Contractor by the Owner for loss of anticipated profit(s) from any deleted work.

**7.3.05** In the event the Owner exercises its right to add to any portion of the work contemplated herein, such addition will be ordered and the Contract Total Amount and Contract Time will be adjusted as provided for in these Contract Documents, by Change Order or by Work Order as appropriate. In the event of a dispute between Owner and Contractor as to the adjustment to the Amount or the Time, the dispute shall be handled in accordance with these General Conditions.

A. **Additional Major Unit Price Work**

(1) If any additional unit price work is ordered which does not change the original Contract quantity of any major unit price item(s) by more than twenty-five percent (25%), the Contractor shall perform the work as ordered and shall be paid for the

actual quantity of such item of work performed at the appropriate original Contract Unit Price.

(2) If additional unit price work is ordered which changes the original Contract quantity of any major unit price item by more than twenty-five percent (25%) then the Owner and the Contractor shall negotiate a new equitable unit price for such item, and the Contractor shall be paid for the actual quantity of such item of work performed at such negotiated unit price.

(3) If the Owner and the Contractor cannot reach agreement on an equitable Unit Price for any such item, then the entire work to be performed under such item shall be paid as Extra Work not Covered by Contract Prices as specified in 7.4.

B. **Additional Minor Unit Price Work**

If additional unit price work is ordered under any minor unit price item(s), then the Contractor shall perform the work as directed and shall be paid for the actual quantity of such item(s) of work performed at the appropriate original Contract Unit Price(s).

**7.3.06** For AIP Contracts, all Change Orders and Work Orders shall be subject to approval by the FAA and shall include valid wage determination of the U.S. Secretary of Labor when the Change Order exceeds $2,000.00. However, if the Contractor elects to waive the limitations on work that increases or decreases the originally awarded Contract or any Major Unit Price Item by more than twenty-five percent (25%), the Change Order and Work Orders shall be subject to the same U.S. Secretary of Labor Wage determinations as were in the originally awarded Contract.

## 7.4 EXTRA WORK

**7.4.01** All additional work ordered, work changed or deleted shall be authorized by Work Order(s) or Change Order(s). All changed or added work so authorized shall be performed by the Contractor at the time and in the manner specified.

A. The Change Order shall include, at a minimum:

(1) Scope of work to be added, deleted or modified;

(2) Cost of work to be added, deleted or modified;

(3) The Contract time extension required to perform the work to be added, deleted or modified;

(4) Full release of claims associated with the Contract thru the date of the change order, or a reservation of claims identified as to each claim reserved, the scope of the work, the maximum cost of the work, and the maximum number of days of Contract time requested, shall be specified.

(5) Justification

B. The Work Order shall include, at a minimum:

(1) Scope of work to be added, deleted or modified;

(2) Cost of work to be added, deleted or modified;

(3) The Contract time extension required to perform the work to be added, deleted or modified;

(4) Full release of claims associated with the work order work, or a reservation of claims identified as to each claim reserved, the scope of the work, the maximum cost of the work, and the maximum number of days of Contract time requested, shall be specified.

(5) Justification

**7.4.02** If Work is ordered, changed, or deleted which is not covered by Unit Prices, then the Owner and the Contractor shall negotiate an equitable adjustment to the Contract Price for the Direct and Indirect Costs for the performance of such work. Direct Costs, as described in Article 1, are limited to site labor costs, permanent materials costs and Special Equipment Costs. Indirect Costs for Work ordered, changed or deleted may be reimbursed for Excusable and Compensable Delay as defined in these Contract Documents.

A. In order to reimburse the Contractor for additional Direct Costs, either by Work Order, Change Order or any other means, the Contractor must have additional work added to the Contract Scope of Work. The additional cost of idle or inefficient labor, from any cause, or the additional cost of labor made idle or inefficient from any cause will not be considered a reimbursable additional Direct Cost. Special Equipment or Machinery, which is made idle or inefficient by the Work ordered, changed or deleted, may be reimbursable if approved by the Owner as an unavoidable cost to the Contractor, caused by the Owner.

B. Costs of Special Equipment or Machinery, not already mobilized on the airport, approved by the Owner, shall be calculated using the current issue of the AED Manual plus any required mobilization. The selection of which of the AED rates (daily, weekly, monthly) to be used to calculate these costs shall be as follows:

(1) Between one (1) day and seven (7) days, use the daily rate.

(2) Between seven (7) days and thirty (30) days, use the weekly rate.

(3) Greater than thirty (30) days, use the monthly rate.

C. For less than one (1) day hourly rates, use the daily rate divided by eight (8).

D. For overtime hourly rates use the daily rate divided by eight (8), the weekly rate divided by forty (40), or the monthly rate divided by one hundred and seventy-six (176) as appropriate.

E. Costs for Special Equipment and Machinery already mobilized on the airport, shall not exceed the monthly rate stated in the AED Manual, divided by one hundred and seventy-six (176), per hour that the Special Equipment and Machinery is in use on the work plus any required re-mobilization.

F. The cost calculation shall not combine rates within the range of a time extension. It shall use decimals of the time extension rate that the extension falls under. For example, the cost calculation for a piece of Special Equipment with an approved delay of forty five (45) days shall be one and one-half (1.5) months times the monthly rate, **not** one (1) month at the monthly rate, plus two (2) weeks at the weekly rate, plus one

(1) day at the daily rate.

**7.4.03** If the Owner and the Contractor cannot reach agreement on an equitable adjustment to the Contract Price as prescribed above or cannot reach agreement on an equitable adjustment to the Contract Price for work not covered by Unit Price Items, or cannot reach an agreement on an equitable Unit Price for Additional Major Unit Price work as specified above, then the Extra Work will be performed on a force account basis as directed by the Owner and paid for as specified below.

**7.4.04** The following percentages will be allowed as mark-ups over Direct Costs for all negotiated adjustments to the Contract Amount or for work performed on either a negotiated lump sum basis or a force account basis (time and materials work):

A. **Extra Work Performed by Contractor's Own Forces**
The Contractor shall be paid fifteen percent (15%) times the actual Direct Cost as direct compensation for Overhead, profit and all other costs associated with the Work.

B. **Extra Work Performed by a Subcontractor or any Subtier Subcontractor**
The Contractor shall be paid twenty-five percent (25%) times the Subcontractor's or subtier Subcontractor's actual Direct Cost as direct compensation for the Contractor and Subcontractors' Overhead, profit and all other costs associated with the Work at all tiers.

C. **Extra Work Involving Compensable Time Extensions**
If a compensable time extension is approved, the Contractor will be paid the daily rate stipulated in the Bid Form.

**7.4.05** In the event Extra Work is performed on a force account basis, then the Contractor and the Subcontractor(s), as appropriate, shall maintain itemized daily records of costs, quantities, labor and the use of authorized Special Equipment or Machinery. Copies of such records, maintained as follows, shall be furnished to the Owner daily for approval, subject to audit.

**A. Comparison of Record.** The Contractor, including its Subcontractor(s) of any tier performing the work, and the Owner shall compare records of the cost of force account work at the end of each day. Agreement shall be indicated by signature of the Contractor, the Subcontractor performing the work, and the Owner or their duly authorized representatives.

**B. Statement.** No payment will be made for work performed on a force account basis until the Contractor has furnished the Owner with duplicate itemized statements of the cost of such force account work detailed as follows:

(1) Name, classification, date, daily hours, total hours, rate and extension for each laborer, tradesman, and foreman.

(2) Designation, dates, daily hours, total hours, rental rate, and extension of each unit of special machinery and equipment.

(3) Quantities of materials, prices, and extensions.

(4) Transportation of materials.

The statements shall be accompanied and supported by a receipted invoice of all materials used and transportation charges. However, if materials used on the force account work are not specifically purchased for such work but are taken from the Contractor's stock, then in lieu of the invoices the Contractor shall furnish an affidavit certifying that such materials were taken from its stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to the Contractor.

**C. Authorization of Special Equipment and Machinery**

No compensation for Special Equipment or Machinery shall be made without written authorization from the Owner. The Owner shall review and evaluate any Special Equipment or Machinery proposed by the Contractor for use on a force account basis. As part of its evaluation, the Owner shall determine whether any of the Special Equipment or Machinery being proposed by the Contractor will be concurrently used on the Project, including approved changes, or on other force account work on the Project. If the Owner determines that such a concurrent use of Special Equipment or Machinery is being proposed by the Contractor, prior to the authorization of such Special Equipment or Machinery, the Owner and thereto Contractor shall establish a straight-line prorated billing mechanism based on the actual percentage of time that the equipment or machinery is required to be used on the force account work(s).

Special Equipment or Machinery which is approved for use by the Owner shall be reviewed and accounted for on a daily basis as provided in the Comparison of Record and Statement paragraphs of this Section of the Contract.

**D. Inefficiency in the Prosecution of the Work**

If in the Owner's opinion, the Contractor or any of its Subcontractors, in performing force account Work, is not making efficient use of labor, materials or equipment or is proceeding in a manner which makes force account Work unnecessarily more expensive to the Owner, the Owner may, in whole or part, direct the Contractor in the deployment of labor, material and equipment. By way of illustration, inefficiency may arise in the following ways: (1) the timing of the Work, (2) the use of unnecessary labor or equipment, (3) the use of a higher percentage of journeymen than in non-force account Work, (4) the failure to procure materials at lowest price, or (5) using materials of quality higher than

necessary.

**7.4.06** Increases to the Contract Amount shall be authorized by a Change Order executed by the Contractor, the Contractor's Surety and the Owner. Decreases to the Contract amount shall be by Change Order or Work Order as determined by the Owner.

**7.4.07** Any claim for payment of Extra Work that is not covered by a Change Order or Work Order will be rejected by the Owner.

**7.5** NOT USED

**7.6 NOT USED**

## 7.7 TEMPORARY SUSPENSION OF WORK

**7.7.01** The Owner shall have the authority to suspend the work wholly, or in part, for such period or periods as may be deemed necessary, because of unsuitable weather, for failure of surety, or other conditions unfavorable for the prosecution of the work, or for failure on the part of the Contractor to carry out the instructions of the Owner as provided for in the Contract Documents.

**7.7.02** If it should become necessary to suspend the work for an indefinite period, the Contractor shall store all materials in such a manner that they will not become an obstruction, nor become damaged in any way, and it shall take every precaution to prevent damage or deterioration of the work performed. The Contractor shall construct temporary structures where necessary to provide for traffic on, to, or from the airport.

**7.7.03** The Contractor shall not suspend the work without written order from the Owner.

**7.7.04** In the event that the Contractor is ordered by the Owner, in writing, to suspend work for some unforeseen cause not otherwise provided for in the Contract Documents and over which the Contractor, its Subcontractors, suppliers or materialmen have no control, the period of such shutdown, if it causes delay in the completion time, may be considered Compensable Excusable delay as provided elsewhere in the Contract Documents. The period of shutdown shall be computed from the effective date of the Owner's order to suspend work to the effective date of the Owner's order to resume the work. No provision of this article shall be construed as entitling the Contractor to compensation for delays due to inclement weather, for suspensions made at the request of the Contractor, or for any other delay provided for in the Contract Documents.

**7.7.05** Nothing in this Contract shall be construed as entitling the Contractor to compensation for delays due to failure of Surety, suspensions ordered as a result of the Contractor's nonconformance with the Contract Documents, as a result of the Contractor's failure to carry out the instructions of the Owner or for any other delays not specifically deemed to be Compensable Excusable Delay, as provided for elsewhere in the Contract Documents.

## ARTICLE 8
## CLAIMS FOR ADDITIONAL COMPENSATION

### 8.1 CLAIMS AND DAMAGES

**8.1.01** Should the Contractor suffer injury or damage to person or property because of any act or omission of Owner or of any of its employees, agents or others for whose acts the Owner is legally liable, a claim shall be made in writing to the Owner within ten (10) days after the first observance of such injury or damage.

**8.1.02** Each claim must be certified by the Contractor as required by the Miami-Dade Code, False Claims Act (see Code Section 21-255, et seq.), and accompanied by a certified final bid tabulation in accordance with Miami-Dade County Code Section 21-257. A "certified claim" shall be made under oath by a person duly authorized by the claimant, and shall contain a statement that:

A. The claim is made in good faith;

B. The claim's supporting data are accurate and complete to the best of the person's knowledge and belief;

C. The amount of the claim accurately reflects the amount that the claimant believes is due from the County; and

D. The certifying person is duly authorized by the claimant to certify the claim.

**8.1.03** No claims for additional compensation, time extension or for any other relief under the Contract shall be recognized, processed, or treated in any manner unless the same is presented in accordance with this Article. Failure to present and process any claim in accordance with this Article shall be conclusively deemed a waiver, abandonment or relinquishment of any such claim, it being expressly understood and agreed that the timely presentation of claims, in sufficient detail to allow proper investigation and prompt resolution thereof, is essential to the administration of this Contract.

**8.1.04** Each and every claim shall be made in writing and delivered to the Owner as soon as reasonably practicable after the event, occurrence or non-occurrence which gives rise to such claim, however, in no event later than ten (10) days after the event or occurrence, or in the case of non-occurrence, within ten (10) days after the time when performance should have occurred. Verbal, telephone or facsimile notice shall be given in those instances where delay in presenting the claim would result in the conditions causing the claim to change, thereby requiring an immediate need to examine the job site or other conditions to ascertain the nature of the claim before the condition(s) disappear or become unobservable. Any such oral or facsimile notice shall be followed, at the earliest practicable time, but in no event more than ten (10) days after the event causing the claim, by written confirmation of the claim information.

**8.1.05** Each and every claim shall state:

A. The date of the event or occurrence giving rise to the claim. In the case of a claim arising from a claimed nonperformance, the date when it is claimed that performance should have occurred shall be stated.

B. The exact nature of the claim, including sufficient detail to identify the basis for the claim, including by way of example only, such detail as drawing numbers, specification sections, job site location, affected trades, Contract clauses relied upon, schedule references, correspondence or any other details reasonably necessary to state the claim.

C. The claim shall clearly state whether additional monies are part of the claim. If known, the dollar value associated with the claim shall be stated. If unknown, the notice shall indicate the types of expenses, costs or other monetary items that are reasonably expected to be part of the claim amount.

D. The dollar value associated with the claim, along with all supporting documentation, shall be delivered within thirty (30) days after completion of the work that is subject of the claim. It shall be broken down into Direct and Indirect Costs. The Direct Costs shall be calculated as Changes in the Work. Indirect Costs shall be as stipulated in the Bid Form.

E. Any claim for additional monies that also involve a request for a Contract time extension shall be submitted together with the amount of time being requested and the supporting data including applicable scheduling references supporting the claim. Scheduling references shall include a month-by-month time impact analysis (TIA) using the approved monthly progress schedules and demonstrating the effect of the delay or change on the Contract completion date for each monthly update period that the change or delay affects.

**8.1.06** Not Used.

**8.1.07** The Owner shall be allowed full and complete access to all personnel, documents, work sites or other information reasonably necessary to investigate any claim. Within sixty (60) days after a claim has been received, the claim shall either be recognized or if the claim is not recognized within sixty (60) days it shall be deemed denied. If the claim is recognized, the parties shall attempt to negotiate a satisfactory settlement of the claim, which settlement shall be included in a subsequent Work Order or Change Order. If the parties fail to reach an agreement on a recognized claim, the Owner shall pay to the Contractor the amount of money it deems reasonable, less any appropriate retention, to compensate the Contractor for the recognized claim.

Failure of the Contractor to make a specific reservation of rights regarding any such disputed amounts in the body of the change order which contains the payment shall be construed as a waiver, abandonment, or relinquishment of all claims for additional monies resulting from the claims embodied in said change order, however, once the Contractor has properly reserved rights to any claim, no further reservations of rights shall be required until the final payment under the Contract. At such time the Contractor shall specify all claims which have been denied and all claims for which rights have been reserved in accordance with this section. Failure to so specify any particular claim shall be constructed as a waiver, abandonment, or relinquishment of such claim.

**8.1.08** No reservation of rights will be effective to preserve any claims that are not fully documented and submitted in accordance with requirements of these Contract Documents. Failure of the Contractor to make a specific reservation of rights regarding any such disputed amounts on the Contractor's Affidavit and Release of Claim for each pay application and on the Contractor's Affidavit and Release of All Claims, within the Request for Final Payment, shall be construed as a waiver, abandonment and relinquishment of all claims for additional monies resulting from the claim.

**8.1.09** The Contractor shall not cease work on account of any denied claim or any recognized claim upon which an agreement cannot be reached.

**8.1.10** With regard to any and all claims for additional compensation resulting from delays to the Work, it is expressly understood and agreed as follows:

A. The claimed delay shall not result from a cause specified in the Contract Documents as a Non-excusable Delay.

B. Notice of the claim shall have been provided in accordance with and within the time specified in this Article.

C. NOT USED.

D. All claimed items of additional compensation shall be properly documented and supported with copies of invoices, time sheets, rental agreements, crew sheets and the like.

E. No payment(s) shall be made to the Contractor by the Owner for loss of anticipated profit(s) from any deleted work.

## ARTICLE 9
## CONFORMITY WITH CONTRACT DOCUMENTS

### 9.1 CONFORMITY WITH PLANS AND SPECIFICATIONS

**9.1.01** All work and all materials furnished shall be in reasonably close conformity with Plans, and other Contract Documents.

**9.1.02** If the Owner finds the materials furnished, work performed, or the finished product not within reasonably close conformity with the Contract Documents but that the portion of the affected work will, in its opinion, result in a finished product having a level of safety, economy, durability, and workmanship acceptable to the Owner, it will provide for an adjustment in the Contract Price for the affected portion of the work. The Owner's determination on a Contract Price adjustments will be based on the requirements of the Technical Specifications, good professional judgment and such tests or retests of the affected work as are, in its opinion, needed. Changes in the Contract Price will be made in a Change Order or Work Order, as applicable.

If the owner finds the materials furnished, work performed, or the finished product are not in reasonably close conformity with the Contract Documents and have resulted in an unacceptable finished product, the affected work or materials shall be removed and replaced or otherwise corrected by and at the expense of the Contractor in accordance with the Owner's written orders.

For the purpose of this Article, the term "reasonably close conformity" shall not be construed as waiving the Contractor's responsibility to complete the work in accordance with the requirements of the Contract Documents. The term "reasonably close conformity" shall not be construed as waiving the Owner's right to insist on strict compliance with the requirements of the Contract Documents during the Contractor's prosecution of the work, when, in the Owner's opinion, such compliance is essential to provide acceptable finished work.

For the purpose of this Article, the term "reasonably close conformity" is also intended to provide the Owner with the authority to use good professional judgment in his/her determinations as to acceptance of work that is not in strict conformity but will provide a finished product equal to or better than that intended by the requirements of the Contract Documents.

### 9.2 REMOVAL OF DEFECTIVE OR UNAUTHORIZED WORK

**9.2.01** All work which has been rejected by the Owner shall be satisfactorily repaired or if it cannot be satisfactorily repaired, it shall be removed and replaced all at no additional cost to the Owner. Materials not conforming to the requirements of the Contract Documents shall be removed immediately from the site of the work and replaced with satisfactory material by the Contractor at no additional cost to the Owner.

**9.2.02** Work done beyond the scope of the Contract, work done without proper inspections, or any Extra Work done without written authority, will be at the Contractor's risk, and such work shall not be paid for unless written authorization in the form of a Work Order or Change Order is obtained. In the event written authorization is not obtained, such work shall be removed or replaced by the Contractor, at no additional cost to the Owner, upon the directions of the Owner.

**9.2.03** Work that is defective or Work that fails to conform with the Contract Documents will be at the Contractor's risk, and no payment shall be made for such work. As specified in the Contract or at the option of the Owner, an agreed equitable amount may be deducted from the Contract amount in lieu of replacement or repair of work not fully meeting the requirements of the Contract Documents. Acceptance by the Owner of such deduction shall not modify the requirements of any guarantees called for by the Contract Documents. Written authorization for such work must be obtained in the form of a Work Order or Change Order with the appropriate credit to the Owner.

**9.2.04** If Owner so requests, the Contractor shall at any time before final acceptance of the work, remove or uncover such portions of the finished work as may be directed. After examinations, the Contractor shall restore said portions of the work to the standard required by the Contract Documents. If the work thus exposed or examined proves acceptable, the uncovering or removing and the replacing of the covering or making good of parts removed shall be at the Owner's expense; but if the work so exposed or examined proves unacceptable, the uncovering or removing and the replacing of the covering or making good of the defective work shall be at the Contractor's expense.

**9.2.05** No extension of time will be allowed the Contractor in connection with the correction of work that fails to conform with the Contract Documents.

## 9.3 CORRECTION OF WORK

**9.3.01** The Contractor shall promptly correct all Work rejected by the Owner as defective or as failing to conform to the Contract Documents whether observed before or after Substantial Completion and whether or not fabricated, installed or completed. The Contractor shall bear all cost of correcting rejected Work, including the cost of the Owner's additional services.

**9.3.02** After being notified in writing by the Owner, of work that is not in accordance with the requirements of the Contract Documents, or of any defects in the Work, the Contractor shall promptly commence and prosecute with due diligence all work necessary to fulfill the terms of the Contract, and to complete the Work within a reasonable period of time.

**9.3.03** In the event of an emergency, constituting an immediate hazard to the health or safety of personnel and/or property, the Owner, without prior notice, has the right but not the obligation to undertake at the Contractor's expense, all work necessary to correct such hazardous condition when it was caused by work of the Contractor not being in accordance with the requirements of the Contract Documents.

**9.3.04** If, within one (1) year after the date of Substantial Completion or within such longer period of time as may be prescribed by law or by the terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be defective or not in accordance with the Contract Documents, the Contractor shall correct such work within ten (10) days after receipt of a written notice from the Owner to do so. In the event the Contractor fails to comply, the Owner may proceed to have such work done at the Contractor's expense and the Contractor and/or its surety will pay the cost thereof upon demand. The Owner shall be entitled to all costs, including reasonable attorney's fees, necessarily incurred upon the Contractor's refusal to pay the above costs.

**9.3.05** All such defective or non-conforming work shall be removed from the site if necessary, and the work shall be corrected to comply with the Contract Documents without cost to the Owner.

**9.3.06** The Contractor shall bear the cost of making good all work of separate contractors destroyed or damaged by such removal or correction.

**9.3.07** Upon failure on the part of the Contractor to comply forthwith with any order of Owner made under the provisions of this Article, the Owner will have authority to cause unacceptable work to be remedied or removed and replaced and unauthorized work to be removed and to deduct the costs (incurred by the Owner) from any monies due or to become due the Contractor.

**9.3.08** Nothing contained herein shall be construed to establish a period of limitation with respect to any other obligation which the Contractor might have under the Contract Documents.

## ARTICLE 10
## PAYMENTS

### 10.1 SCOPE OF PAYMENT

**10.1.01 Special Condition** - The deduction of one quarter (1/4) of one (1) percent from each progress payment to pay for the functions of the Office of Inspector General is inapplicable because this Contract is either funded by aviation revenue or financed by aviation revenue bonds.

**10.01.02** The Contractor shall receive and accept compensation provided for in the Contract as full payment for furnishing all equipment and materials, for performing all work under the Contract in a complete and acceptable manner, and for all risk, loss, damage, or expense of whatever character arising out of the nature of the Work or the prosecution thereof, to the provisions of the Contract.

When the Technical Specifications require that the contract price (price proposed) include compensation for certain work or material essential to the item, this same work or material will not also be measured for payment under any other contract item which may appear elsewhere in the Contract.

The Contractor's attention is directed to Special Provisions-SP-1, providing for expedited payments to small businesses by County agencies; creating dispute resolution procedures for payment of County obligations; and requiring the Contractor to issue prompt payments, and have the same dispute resolution procedures as the County, for all small business Subcontractors. Failure of the Contractor to issue prompt payment to small businesses, or to adhere to its dispute resolution procedures, may be cause for suspension, termination, and debarment, in accordance with the terms of the County contract and debarment procedures of the County.

### 10.2 PARTIAL PAYMENTS TO THE CONTRACTOR

**10.2.01** The Contractor may invoice monthly for services by dividing the total amount proposed for the current Contract term by the total number of months within the current Contract term. Payment for partial months shall be prorated accordingly. Payments for work contained with change orders or work orders shall be lump sum upon completion of the applicable work, or otherwise as stipulated within the change order or work order.

**10.2.02** The Contractor shall submit for Owner's approval two (2) copies of a duly certified invoice for payments due on account of the portion(s) of the work performed. The format, content and submittal date of the invoice shall be as specified by the Owner.

**10.2.03** NOT USED.

**10.2.04** The Contractor shall submit as attachments to each invoice three (3) copies of a properly executed Contractor's affidavit, and Subcontractors' affidavit(s) in the forms as bound herein

**10.2.05** Payment for work represented by the invoice will be made approximately thirty (30) days after approval by the Owner of the invoice. In case of a dispute in one or more of the amounts in an invoice, only the amounts not being disputed will be paid. All

payments to the Contractor shall be payable at the office of the Comptroller of the Miami-Dade Aviation Department, Miami International Airport, Miami, Florida.

**10.2.06** The quantity of work performed and its value will be determined based in accordance with the Technical Specifications, and any changes in the Work as may be authorized by the Owner.

**10.2.07** In the event the Surety on the Performance and Payment Bond given by the Contractor becomes insolvent, or is placed in the hands of a receiver, or has its right to do business in the State of Florida suspended or revoked as provided by law, the Owner shall withhold payment of any invoice(s) until the Contractor shall give a good and sufficient Bond(s) as required by the Contract, in lieu of the Bond(s) so executed by such Surety.

**10.2.08** If any work or material is discovered, which in the opinion of Owner is defective, or should a reasonable doubt arise on the part of the either the Owner as to the integrity of any part of the Work completed previous to the final acceptance and payment, there will be deducted from the first invoice rendered after the discovery of such work, an amount equal in value to the defective or questioned work, and this work will not be included in any subsequent invoice until the defects have been remedied or the causes for doubt removed.

**10.02.09** If the Contractor fails to complete the Work prior to or on the Contract term completion date, no further payments will be made after the date of completion date until the Contractor delivers to the Owner a written consent of the Contractor's Surety covering all payments to be made thereafter, without affecting the validity of the Performance and Payment Bond.

## 10.3 SUBCONTRACTOR'S AFFIDAVITS FOR PAYMENTS

**10.3.01** Except for the first application for payment, Every request by the Contractor for payment of work performed, except the first draw, shall be accompanied by affidavits as required by Section 10-35 of the Code of Miami-Dade County, such affidavits to be in substantially the form as bound herein.

## 10.4 FINAL PAYMENT

**10.4.01** After Final Acceptance of the Work, a request for Final Payment prepared by the Contractor shall be submitted to the Field Representative for approval by the Owner and subsequent payment to the Contractor.

**10.4.02** Except as may be noted on the Contractor's Affidavit and Release of All Claims, the Contractor hereby agrees to accept Final Payment as full payment for performing and completing the Work, for furnishing all labor, materials, services, equipment and everything necessary for or incidental to, and for all incidental expenses in connection with, for all loss by damage to or destruction of the Work due to any cause whatsoever, for any additional expenses because of delays or unforeseen difficulties encountered, for settlement of claims, agreed upon deductions in

lieu of removal and replacement of defective work, and for replacement of defective work and materials. Except as may be noted on the Contractor's Affidavit and Release of All Claims, acceptance of the Final Payment shall constitute an accord and satisfaction between the Owner and the Contractor. In case of unresolved Subcontractor claims against the Contractor, the Owner will withhold all disputed amounts unless the Contractor provides a fully executed Consent of Surety in a form acceptable to the Owner.

## ARTICLE 11
## CONTRACT ACCEPTANCE

### 11.1 NOT USED.

### 11.2 ACCEPTANCE OF THE WORK

Acceptance of a portion of the Work as defined herein shall be as specified in the Technical Specifications, or within the content of the applicable Change Order or Work.

### 11.3 CONTRACTOR'S PROTECTION OF THE WORK

**11.3.01** Until the Final Acceptance of the Work, excepting only those portions of the Work previously accepted, the Contractor shall have the charge and care thereof and shall take every precaution against injury or damage to any part due to the action of the elements or from any other cause, whether arising from the execution or from the non-execution of the Work. The Contractor shall rebuild, repair, restore, and make good all injuries or damages to any portion of the Work occasioned by any of the above causes before Final Acceptance and shall bear the expense thereof.

**11.3.02** If the Work is suspended for any cause whatever, the Contractor shall be responsible for the Work and shall take such precautions necessary to prevent damage to the Work. The Contractor shall erect necessary temporary structures, signs, or other facilities as necessary to protect the Work.

### 11.4 GUARANTEES AND WARRANTIES

**11.4.01** If authorized by work order, replacement/modification work or components will be covered by warranty or guarantee of the work or as specified by a work order. The guaranty period for the entire work covered by the Performance and Payment Bond shall not begin until Final Acceptance of all work under the Contract and will be for a period of one year unless otherwise stipulated in the Technical Specifications or by Work Order.

**11.4.02** The guaranty period for equipment covered by Contractor's and Subcontractors' guarantees shall be in accordance with the requirements of the Technical Specifications.

**11.4.03** The Contractor agrees that it will correct all defects discovered within one year (or longer if a longer period is stipulated in the Technical Specifications) of the date of Final Acceptance and that it will commence work on such repairs within the times specified in the Technical Specifications after being notified by the Owner of the need for this work.

**11.4.04** If the Contractor fails to act within this time period, the Owner reserves the right to have the Work performed by others at the expense of the Contractor, and the Contractor agrees to pay the Owner the cost thereof upon demand. The Owner shall also be entitled to reasonable attorney's fees, necessarily incurred upon the Contractor's refusal to pay the above costs.

**11.4.05** All guarantees and warranties shall be delivered to the Owner prior to Acceptance of each portion of the Work.

**11.4.06 Required Guarantees:**

A. **Subcontractor's Guarantees**
The Contractor shall furnish a written guaranty from each Subcontractor in the form found in the Contract Documents.

B. **Manufacturer's Guarantees**
The Contractor shall furnish an original guaranty or warranty from each of the manufacturers of equipment or materials supplied and installed under this Contract. Each guaranty or warranty shall be in accordance with the respective manufacturer's association Standard Guaranty and shall be in favor of the Contractor and the Owner.

C. **Special Guaranty and Warranty Requirements**
The Contractor shall also furnish any special guaranty or warranty called for in the Contract Documents.

**11.4.07** Not Used.

**11.4.08** Notwithstanding the foregoing provisions, in the event of an emergency constituting an immediate hazard to the health or safety of employees, property, lessees, or the general public, the Owner may undertake, at the Contractor's expense without prior notice, all work necessary to correct such hazardous condition when it was caused by work of the Contractor not being in accordance with the requirements of this Contract.

## 11.5 FINAL ACCEPTANCE

**11.5.01** Final Acceptance of the whole work as defined herein shall be in accordance with the Technical Specifications.

**11.5.02** Upon notification of Final Acceptance, the Contractor shall furnish to the Owner the final Contractor's Affidavit and Release of All Claims.

**11.5.03** Final Acceptance of the Work does not preclude or estop the Owner from correcting any measurement, estimate, or certificate made before or after completion of the Work, nor shall the Owner be precluded or estopped from recovering from the Contractor or its Surety, or both, such overpayment as may be sustained, or by failure on the part of the Contractor to fulfill its obligations under the Contract. A waiver on the part of the Owner of any breach of any part of the Contract shall not be held to be a waiver of any other or subsequent breach.

**11.5.04** The Contractor, without prejudice to the terms of the Contract, shall be liable to the Owner for latent defects, fraud, or such gross mistakes as may amount to fraud, or as regards the Owner's rights under any warranty or guaranty.

**11.5.05** As a condition of Final Acceptance, the Contractor will return all of the Contract Documents, including any copies made, and any copies that are in the possession of Subcontractors, suppliers and materialmen, to the Owner. Failure to return the Contractual Documents, and all copies, to the Owner will be reported to a Law Enforcement Investigating Authority. Furthermore, the Contractor shall not be allowed to participate in future Confidential solicitations until such time that the Contractor has taken corrective actions satisfactory to Miami Dade County.

**11.5.06** Not Used.

## 11.6 CONTRACTOR'S AFFIDAVIT AND RELEASE OF ALL CLAIMS

**11.6.01** Upon the completion of the Work and before the final payment is made, the Contractor shall execute a Contractor's Affidavit and Release of All Claims. This is to be accompanied by a consent of the Surety, in favor of the Owner, on the Form included in the Contract Documents. An original Contractor's Affidavit and Release of All Claims shall be submitted to the Owner with the Contractor's Request for Final Payment.

**11.6.02** The rights of all persons supplying labor, materials and supplies, used directly or indirectly in the prosecution of the Work covered by this Contract are governed by the provisions of Section 255.05, Florida Statutes. Nothing in the Contract Documents shall be construed to confer any benefits or rights upon or to create any relationships whatsoever with any Subcontractor, supplier, laborer or any other party except as same may be granted, conferred or created by Section 255.05 of the Florida Statutes.

## ARTICLE 12
## INDEMNIFICATION AND HOLD HARMLESS

### 12.1 INDEMNIFICATION AND HOLD HARMLESS

**12.1.01** The Contractor shall indemnify, and hold harmless the County and its officers, employees, agents and instrumentalities from any and all liability, losses or damages including attorney's fees and cost of defense , which the County or its officers, employees, agents or instrumentalities may incur as a result of claims, demands, suits, causes of actions or proceedings of any kind or nature arising out of, relating to or resulting from the performance of their Contract by Contractor its employees, agents, servants, partners, principals or subcontractors. Contractor shall pay all claims and losses in connection therewith and shall investigate and defend all claims, suits or actions of any kind or nature in the name of the County, where applicable, including appellate proceedings, and shall pay all costs, judgements and attorney's fees which may issue thereon. Contractor expressly understands and agrees that any insurance protection required by this Contract or otherwise provided by the Contractor shall in no way limit the responsibility to indemnify, keep and save harmless and defend the County or its officers, employees, agents and instrumentalities as herein provided

### 12.2 PERFORMANCE AND PAYMENT BOND

**12.2.01** A Performance and Payment Bond satisfactory to the Owner, on the form attached hereto, each in an amount not less than the Total Contract Amount shall be required of the Contractor.

A. The bond shall be written through surety insurers authorized to do business in the State of Florida as Surety, with the following qualifications as to management and financial strength according to the latest (1986 or later) edition of

Best's Insurance Guide, published by A.M. Best Company, Oldwick, New Jersey:

| Bond (Total Contract) Amount | Best's Rating |
|---|---|
| $500,001 to $1,500,000 | B V |
| $1,500,001 to $2,500,000 | A VI |
| $2,500,001 to $5,000,000 | A VII |
| $5,000,000 to $10,000,000 | A VIII |
| Over $10,000,000 | A IX |

B. On Contract amounts of $500,000 or less, the Bond provisions of Section 287.0935, Florida Statutes (1985) shall be in effect and surety companies not otherwise qualifying with this paragraph may optionally qualify by:

(1) Providing evidence that the surety has twice the minimum surplus and capital required by the Florida Insurance Code at the time the Invitation to Bid is issued.

(2) Certifying that the surety is otherwise in compliance with the Florida Insurance Code, and

(3) Providing a copy of the currently valid Certificate of Authority issued by the United States Department of Treasury under 31 U.S.C. 9304-9308.

Surety insurers shall be listed in the latest Circular 570 of the U.S. Department of the Treasury entitled "Surety Companies Acceptable on Federal Bonds", published annually. The Bond amount shall not exceed the underwriting limitations as shown in this circular.

C. For Contracts in excess of $500,000 the provision of Subsection 12.2.01.B will be adhered to, plus the surety insurer must have been listed on the U.S. Treasury list for at least three consecutive years, or currently hold a valid Certificate of Authority of at least 1.5 million dollars and listed on the Treasury list.

D. Surety Bonds guaranteed through U.S. Government Small Business Administration or Contractors Training and Development Inc. will also be acceptable.

E. The attorney-in-fact or other officer who signs a Performance and Payment Bond for a surety company must file with such Bond a certified copy of his/her power of attorney authorizing him/her to do so.

**12.2.02** The cost of the Bond shall be included in the Total Amount Bid. No separate payment for the cost of the Performance and Payment Bond shall be made by the Owner.

**12.2.03** The required Bond shall be written by or through and shall be countersigned by, a licensed Florida agent of the surety insurer, pursuant to Section 624.425 of the Florida Statutes.

**12.2.04** The Bond shall be delivered to the Owner with the executed Contract.

**12.2.05** In the event the Surety on the Performance and Payment Bond given by the Contractor becomes insolvent, or is placed in the hands of a receiver, or has its right to do business in its State of domicile or the State of Florida suspended or revoked as provided by law, the Owner shall withhold all payments under the provisions of these Contract Documents until the Contractor has given a good and sufficient Bond in lieu of Bond executed by such Surety.

**12.2.06** Cancellation of any Bond, or non-payment by the Contractor of any premium for any Bond required by this Contract shall constitute a breach of this Contract. In addition to any other legal remedies, the Owner at its sole option may terminate this Contract or pay such premiums, and deduct the costs thereof from any amounts that are or may be due to the Contractor.

## 12.3 INSURANCE

**12.3.01** The Contractor shall maintain the following insurance throughout the performance of this Contract until the Work has been completed by the Contractor and accepted by the Owner.

A. **Worker's Compensation**, as required by Chapter 440, Florida Statutes.

B. **Automobile Liability Insurance**, covering all owned, non-owned and hired vehicles used in connection with the work in an amount not less than:

(1) $5,000,000 combined single limit per occurrence for bodily injury and property damage for vehicles used AOA.

(2) $1,000,000 combined single limit per occurrence for bodily injury and property damage covering vehicles when being used by the Contractor off of the AOA.

C. **Commercial General Liability Insurance**, on a comprehensive basis, including Contractual Liability, Broad Form Property Damage and Products and Completed Operations, in an amount not less than $1,000,000 combined single limit per occurrence for bodily injury and property damage. The County must be shown as an additional insured with respect to this coverage.

**12.3.02** All insurance policies required herein shall be issued in companies authorized to do business under the laws of the State of Florida, with the following qualifications:

A. The company must be rated no less than "A-" as to management, and no less than "VII" as to strength in accordance with the latest edition of "Best's Insurance Guide", published by A.M. Best Company, Inc., or its equivalent, subject to approval of MDAD Risk Management.

**12.3.03** The Contractor shall furnish certificates of insurance and insurance policies to the Owner prior to commencing any operations under this Contract. Certificates and policies shall clearly indicate that the Contractor has obtained insurance, in the type, amount, and classifications, as required for strict compliance with this Article. The certificates and policies must provide that, in the event of any material change in or cancellation of the policies reflecting the required coverage, thirty days advance notice shall be given to the MDAD Risk Management.

**12.3.04** Compliance with the foregoing requirements as to the carrying of insurance shall not relieve the Contractor from liability under any other portion of this Contract.

**12.3.05** Cancellation of any insurance or bonds, or non-payment by the Contractor of any premium for any insurance policies or bonds required by this Contract shall constitute a breach of this Contract. In addition to any other legal remedies, the Owner at its sole option may terminate this Contract or pay such premiums, and deduct the costs thereof from any amounts that are or may be due to the Contractor.

**12.3.06** The Contractor shall be responsible for assuring that the insurance certificates required in conjunction with this section remain in force for the duration of the agreement. If insurance certificates are scheduled to expire during the contract period, the Contractor shall be responsible for submitting new or renewed insurance certificates to MDAD's Risk Management Office at a minimum of thirty (30) calendar days before such expiration.

**12.3.07** The Owner reserves the right, upon reasonable notice, to examine the original policies of insurance (including but not limited to: binders, amendments, exclusions, endorsements, riders and applications) to determine the true extent of coverage. The Contractor agrees to permit such inspection at the offices of the Owner.

## ARTICLE 13
## CANCELLATION OR TERMINATION OF CONTRACT

### 13.1 CANCELLATION BY THE OWNER

**13.1.01** The Owner may at its option and discretion cancel the Contract at any time without any default on the part of the Contractor by giving a written Notice of Cancellation to the Contractor and its Surety at least ten (10) days prior to the effective date of such cancellation.

**13.1.02** In the event of cancellation by the Owner, the Owner shall pay the Contractor for all labor performed, all materials and equipment furnished by the Contractor and its Subcontractors, materialmen and suppliers and manufacturers of equipment less all partial payments made on account prior to the date of cancellation as determined by the Owner. The Contractor will be paid for:

A. The final value of all work completed under the Contract, based upon the approved Schedule of Values and/or Unit Prices,

B. The final value of all materials and equipment delivered to but not incorporated into the work and properly stored on the site,

C. The final value of all bonafide irrevocable orders for materials and equipment not delivered to the site as of the date of cancellation. Such materials and equipment must be delivered to the Owner to a site or location designated by the Department prior to release of payment for such materials and equipment.

D. No claims for loss of anticipated profits or for any other reason in connection with the cancellation of the Contract shall be considered.

**13.1.03** In the event of cancellation under this Article, the Contractor shall not be entitled to any anticipated profits for any work not performed due to such cancellation.

**13.1.04** In the event of cancellation under this Article, the Owner does not waive or void any credits otherwise due Owner at the time of cancellation.

**13.1.05** Upon cancellation as above, the Owner shall prepare a certificate for Final Payment to the Contractor.

### 13.2 TERMINATION BY DEFAULT OF CONTRACTOR

**13.2.01** The Contract may be terminated by the Owner for failure of the Contractor to comply with any requirements of the Contract Documents including but not limited to:

A. Failure to begin the work under the Contract within the time specified in the "Notice to Proceed", or

B. Failure to perform the work or failure to provide sufficient workers, equipment or materials to assure completion of work in accordance with the terms of the Contract, and the Technical Specifications, or

C. Performs the work unsuitably or neglects or refuses to remove materials or to perform anew such work as may be rejected as unacceptable and unsuitable, after written directions from the Owner, or

D. Discontinues the prosecution of the work, or

E. Failure to resume work which has been discontinued within a reasonable time after notice to do so, or

F. Becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency, or failure to maintain a qualifier, or

G. Allows any final judgment to stand against him unsatisfied for a period of 10 days, or

H. Makes an assignment for the benefit of creditors, or

I. For any other cause whatsoever, fails to carry on the work in an acceptable manner.

**13.2.02** Before the Contract is terminated, the Contractor and its Surety will be notified in writing by the Owner of the conditions which make termination of the Contract imminent. The Contract will be terminated by the Owner ten (10) days after said notice has been given to the Contractor and its Surety. Unless a satisfactory effort acceptable to the Owner has been made by the Contractor or its Surety to correct the conditions, the Owner may declare the Contract breached and send a written Notice of Termination to the Contractor and its Surety.

**13.2.03** The Owner reserves the right, in lieu of termination as set forth in this Article, to withhold any payments of money which may be due or become due to the Contractor until the said default(s) have been remedied.

**13.2.04** In the event the Owner exercises its right to terminate the Contract for default of the Contractor as set forth herein, the Surety shall complete the Contract in accordance with its terms and conditions. If the Surety fails to act promptly, but no longer than thirty (30) calendar days, the Owner may exercise any of its other options including completing the Work by whatever means and method it deems advisable. No claims for loss of anticipated profits or for any other reason in connection with the termination of the Contract shall be considered.

**13.2.05** The Contractor shall immediately upon receipt communicate any Notice of Termination for Default issued by the Owner to the affected Subcontractors and suppliers at any tier.

## 13.3 TERMINATION FOR NATIONAL EMERGENCIES

**13.3.01** The Owner shall terminate the Contract or portion thereof by written notice when the Contractor is prevented from proceeding with the construction Contract as a direct result of an Executive Order of the President of the United States with respect to the prosecution of war or in the interest of national defense.

**13.3.02** When the Contract, or any portion thereof, is terminated before completion of all items of work in the Contract, payment will be made for the actual number of units or items of work completed at the Contract price or as mutually agreed for items of work partially completed or not

started. No claims or loss of anticipated profits or for any other reason in connection with the termination of the Contract shall be considered.

## 13.4 IMPLEMENTATION OF CANCELLATION OR TERMINATION

**13.4.01** If the Owner cancels or terminates the Contract, the Contractor shall stop all work on the date specified in the Notice of Cancellation or Termination and shall:

A. Cancel all orders and Subcontracts which may be terminated without costs;

B. Cancel and settle other orders and Subcontracts where the cost of settlement will be less than costs which would be incurred were such orders and subcontracts to be completed, subject to prior approval of the Owner,

C. Transfer to the Owner, all materials, supplies, work in progress, facilities, equipment, machinery or tools acquired by the Contractor in connection with the performance of the work and for which the Contractor has been or is to be paid;

D. Deliver to the Owner As-Built Documents, complete as of the date of cancellation or termination, Plans, Shop Drawings, Sketches, Permits, Certificates, Warranties, Guarantees, Specifications, three (3) complete sets of maintenance manuals, pamphlets, charts, parts lists, spare parts (if any), operating instructions required for all installed or finished equipment or machinery, and all other data accumulated by the Contractor for use in the performance of the work.

E. The Contractor shall perform all work as may be necessary to preserve the work then in progress and to protect materials, plant and equipment on the site or in transit thereto.

F. Cancellation or termination of the Contract or a portion thereof shall neither relieve the Contractor of its responsibilities for the completed work nor shall it relieve its Surety of its obligation for and concerning any just claim arising out of the work performed.

G. In arriving at the amount due the Contractor under this Article, there will be deducted, (1) any claim which the Owner may have against the Contractor in connection with this Contract and (2) the agreed price for, or the proceeds of sale of materials, supplies or other items acquired by the Contractor or sold, pursuant to the provisions of this Article, and not otherwise recovered by or credited to the Owner.

# ARTICLE 14

# CONTRACTOR AND SUBCONTRACTORS GUARANTEE FORMS AND AFFIDAVITS

## CONTRACTOR'S GUARANTEE

STATE OF FLORIDA)
ss
COUNTY OF MIAMI-DADE)

Before me, the undersigned authority, personally appeared

_____

who, being duly sworn, deposes and says as follows:

That he is the duly authorized representative of

_____

(Name of Contractor)

being its _____

(Partner) (President) or (other Officer)

and as such has full authority to execute this Contractor's Guarantee.

That the said Contractor has performed certain work for the Owner, under Contract No. _____, Entitled _____ which said Project has now been completed by the Contractor in its entirety.

That in consideration of the partial payments heretofore made by the Owner to the Contractor, and in consideration of the final payment yet to be made, the Contractor does hereby warrant to the Owner that all labor, work, materials and equipment furnished, supplied and performed under said Contract, are in strict accordance with the Contract Documents.

That should any defects develop in the work, during the guarantee periods as required by the Contract Documents, all from the date of final acceptance by the Owner, due to improper materials, workmanship or arrangement, or defective machinery and equipment, the Contractor warrants and covenants that the defects shall be made good by the Contractor, at the time specified by the Owner and that any other work affected in correcting such defects shall also be made good, all at the Contractor's sole cost and expense.

CONTRACTOR:

_____

Name of Contractor

By: _____

(Signature of Authorized Representative)

_____

(Title)

_____

(Date)

## CONTRACTOR'S GUARANTEE (Cont'd)

STATE OF FLORIDA

COUNTY OF MIAMI-DADE

The foregoing instrument was acknowledged before me this _____day of _____20 __,

by _____,
(Authorized Representative)

of _____, who is personally known to me or who
(Corporation, Partnership, etc.)

has produced _____as identification and who did/did not take an oath.

_____
(Signature of Notary)

_____
(Print Name)

*(Notary Stamp or Seal)*

Notary Commission Number: _____

My Commission Expires: _____

## SUBCONTRACTOR'S GUARANTEE

STATE OF FLORIDA)
ss
COUNTY OF MIAMI-DADE)

Before me, the undersigned authority, personally appeared

_____

Who, being duly sworn, deposes and says as follows:

That he is the duly authorized representative of :

_____
(Name of Subcontractor)

being its_____
(Owner) (Partner) (President) or (other Officer)
and as such has full authority to execute this Subcontractor's Guarantee.

That the said Subcontractor has performed certain work for _____ the General Contractor for the Owner, under Contract No. _____ which said work has now been completed by the Subcontractor in its entirety.

That in consideration of the partial payments heretofore made by the Contractor to the Subcontractor, and in consideration of the final payment yet to be made, the Subcontractor does hereby warrant to the Contractor that all labor, work, materials and equipment furnished, supplied and performed under the said Subcontract, by this Subcontractor, are in strict accordance with the Contract Documents.

That should any defects develop in the work during the guarantee periods as required by the Contract Documents, all from the date of final acceptance by the Owner, due to improper materials, workmanship or arrangement, or defective machinery and equipment, the Subcontractor warrants and covenants that promptly upon notice from the Contractor, the defects shall be made good by the Subcontractor at the time specified by the Contractor, and that any other work affected in correcting such defects shall also be made good, all at the Subcontractor's sole cost and expense.

SUBCONTRACTOR:

_____
Name of Subcontractor

By: _____
(Signature of Authorized Representative)

_____
(Title)

_____
(Date)

## SUBCONTRACTOR'S GUARANTEE (Cont'd)

STATE OF FLORIDA

COUNTY OF MIAMI-DADE

The foregoing instrument was acknowledged before me this _____ day of _____, 20 __ by

_____,
(Authorized Representative)

of _____,
(Corporation, Partnership, etc.)

who is personally known to me or who has produced _____ as identification and

who did/did not take an oath.

_____
(Signature of Notary)

_____
(Print Name)

*(Notary Stamp or Seal)*

Notary Commission Number: _____

My Commission Expires: _____

**CONTRACTOR'S AFFIDAVIT AND RELEASE OF CLAIM**
**FOR PAY APPLICATION FOR PAYMENT NO.___**

STATE OF_____

COUNTY OF _____

Before me, the undersigned authority, personally appeared the AFFIANT,_____

who being duly sworn, deposes and says as follows:

That they are the duly authorized representative of

_____
(Name of Contractor)

being its _____
(Partner) (President or other Officer)

and as such has full authority to make this affidavit and to give this Release of Claim.

That the said Contractor has completed certain work for the Owner, under its Contract No. _____dated _____, for which the Contractor has requested partial payment. This Application for Payment is for $_____, and of the said amount, the Contractor has heretofore received the sum of $_____, under prior Pay Application No. ___ leaving a balance of $_____, now due and payable.

That the said Contractor hereby covenants that the claims of all persons supplying labor, materials and supplies, used directly or indirectly in the prosecution of the work covered by the aforesaid prior Application for Payment No. ____, have been paid in full,

That the said Contractor hereby releases the Owner from any and all claims of any nature arising out of the performance of the aforesaid certain work described in prior Pay Application No.____, and hereby accepts the aforesaid Amount in lieu of those claims.

CONTRACTOR:

_____
Name of Contractor

By _____
Signature of Authorized Representative)

_____
(Title) (Date)

**CONTRACTOR'S AFFIDAVIT AND RELEASE OF CLAIM**
**FOR PAY APPLICATION FOR PAYMENT NO. ____ (Cont'd)**

STATE OF _____

COUNTY OF _____

The foregoing instrument was acknowledged before me this ____day of _____ 20__, by

_____
(Authorized Representative)

of _____,
(Corporation, Partnership, etc.)

who is personally known to me or who has produced _____

as identification and who did/did not take an oath.

_____
(Signature of Notary)

_____
(Print Name)

*(Notary Stamp or Seal)*

Notary Commission Number: _____

My Commission Expires: _____

## CONTRACTOR'S AFFIDAVIT AND RELEASE OF ALL CLAIMS

STATE OF _____

COUNTY OF _____

Before me, the undersigned authority, personally appeared the AFFIANT,

_____

who being duly sworn, deposes and says as follows:

That they are the duly authorized representative of:

_____
(Name of Contractor)

being its _____
(Partner) (President or other Officer)

and as such has full authority to make this affidavit and to give this Release of All Claims.

That the said Contractor has completed certain work for the Owner, under its Contract No. _____, dated _____, for which the Contractor has requested payment in full. The Final Contract Amount is $_____, and of the said amount, the Contractor has heretofore received the sum of $_____, leaving a retained balance of $_____, now due and payable.

That the said Contractor hereby covenants that the claims of all persons supplying labor, materials and supplies, used directly or indirectly in the prosecution of the work covered by the aforesaid Contract, have been paid in full, except for the sum of $_____, which shall be paid in full from the aforesaid retained balance due the Contractor.

That the said Contractor hereby releases the Owner from any and all claims of any nature arising out of the performance of the aforesaid Contract, and hereby accepts the aforesaid Final Contract Amount in lieu thereof.

That the said Contractor hereby covenants that payment by the Owner of the Final Contract Amount in no way releases the Contractor from its continuing obligations under the Performance and Payment Bond heretofore posted with the Owner, and the Surety on said Bond hereby consents to the payment by the Owner of the retained funds.

CONTRACTOR:

_____
Name of Contractor

By _____
(Signature of Authorized Representative)

_____
(Title)

_____
(Date)

## CONTRACTOR'S AFFIDAVIT AND RELEASE OF ALL CLAIMS (Cont'd)

STATE OF _____

COUNTY OF _____

The foregoing instrument was acknowledged before me this ____day of _____ 20___, by

_____
(Authorized Representative)

of _____,
(Corporation, Partnership, etc.)

who is personally known to me or who has produced _____

as identification and who did/did not take an oath.

_____
(Signature of Notary)

_____
(Print Name)

*(Notary Stamp or Seal)*

Notary Commission Number: _____

My Commission Expires: _____

**SUBCONTRACTOR'S AFFIDAVIT IN COMPLIANCE WITH SECTION NO. 10-35, MIAMI-DADE COUNTY CODE**

NOTE: The Prime Contractor shall attach this statement, completed by each First Tier Subcontractor whose work appears on the prior requisition for payment, and by each direct supplier to the Prime Contractor who has furnished materials directly to the Prime Contractor which materials were included in the prior requisition for payment.

Project Name: _____ Project Number: _____
Dated: _____
Name - General Contractor_____
Name - Subcontractor/Supplier _____
Signature of Authorized Representative of Subcontractor/Supplier:

_____

Title: _____ Date: _____

This Affidavit is an attachment to the Prime Contractor's Pay Requisition No. _____
Total Subcontract/Supplier Amount $ _____.
Amount of work done by Subcontractor/Supplier under this pay requisition is $ _____.

STATE OF_____

COUNTY OF _____

The foregoing instrument was acknowledged before me this ____day of _____ 20___, by

_____
(Authorized Representative)

of _____,
(Corporation, Partnership, etc.)

who is personally known to me or who has produced _____
as identification and who did/did not take an oath, deposes and says that pursuant to the provisions of the Contract for said project, all money due under prior requisitions for payment have been paid by
_____, the Prime (General) Contractor.

_____
(Signature of Notary)

_____
(Print Name) *(Notary Stamp or Seal)*

Notary Commission Number: _____

My Commission Expires: _____

RELEASES OF CLAIM BY SUBCONTRACTORS REQUIRED

Section 10-35, Miami-Dade County Code

Before any prime contractor can receive any draw, except the first draw, for moneys due it as a result of a percentage of the work completed, it must pay all first-tier subcontractors and all direct suppliers of the prime contractor who have performed any work or supplied any materials directly to the prime contractor for the project as of that date their proportionate share of all previous draws and must provide the Owner's project manager with duly executed affidavits (subcontractor's statement of satisfaction) or releases of claim from all first-tier subcontractors and direct suppliers to the prime contractor who have performed any work or supplied any materials for the project as of that date, stating that said subcontractors and suppliers have been paid their proportionate share of all previous draws. In the event such affidavits cannot be furnished, the contractor may submit an executed consent of surety to requisition payment, identifying the subcontractors and suppliers, and the amounts for which the statement of satisfaction cannot be furnished. The Contractor's failure to provide a consent of surety to requisition payment will result in the amount in dispute being withheld until (1) the statement of satisfaction is furnished, or (2) consent of surety to requisition payment is furnished.

(Ord. No. 78-23, 4-4-78; Ord. No. 84-11, 2-7-84; Ord. No. 86-6, 2-4-86; Ord. No. 88-13, 3-1-88)

# Consent of Surety to Pay Application for Payment

PROJECT NAME:_____ PROJECT NO.:_____

CONTRACTOR:_____

A/E CONSULTANT:_____

**Attachment to Requisition No. _____dated _____ in the amount of $_____**

TO: MIAMI-DADE BOARD OF COUNTY COMMISSIONERS

The Surety Company, _____
(insert full name or legal title and address of Surety)

on the Bond of the Contractor listed above, hereby approves this payment to the Contractor. Said payment shall not relieve the Surety Company of any of its obligations to Miami-Dade County, including the Security from any and all liens, claims, or demands whatsoever that may now exist or be made in the future by any Subcontractor or material suppliers against this project and Contract.

This Consent of Surety recognizes that claims have been made by the following Subcontractors and material suppliers against the Contract in the amounts listed below:

| ( Subcontractor/material supplier name and telephone number ) | ( amount of claim ) |
|---|---|
| _____ | $_____ |
| _____ | $_____ |
| _____ | $_____ |
| _____ | $_____ |
| _____ | $_____ |
| _____ | $_____ |
| _____ | $_____ |
| _____ | $_____ |

( ) attached find additional listed names/amounts on pages 2 thru _____

The Surety recognizes that releases of lien or releases and assignment of claim have not been requested or received from all the Subcontractors and material suppliers for this facility.

IN WITNESS WHEREOF, the Surety Company has hereunto set its hand this _____ day of _____, 20_____.

Attest:
Witnesses:

_____ Surety: _____
Signature of Authorized Representative

_____ Title: _____

(Seal)

Attachment: Surety Power of Attorney

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF AUTOMATED PEOPLE MOVER (APM)

### 3.1 SCOPE

The Contractor shall provide all necessary supervision, labor and parts to maintain the existing Satellite Transit Shuttle (STS) in which an Automated People Mover (APM) System is connecting between Concourse E and Satellite E at Miami International Airport (MIA) pursuant to the requirements of the Contract.

The STS is in an existing APM System originally installed in 1980. The STS operates Bombardier C-100 cars that have been continuously maintained by Bombardier. The Contractor shall provide preventive maintenance, corrective maintenance and maintain adequate spare parts inventories at a minimum level as specified or increased level as necessary to maintain the uninterruptible operation of the STS at MIA.

### 3.2 OFFICE SHALL BE MADE AVAILABLE TO THE CONTRACTOR

The Contractor will be provided with a designated office, workstation, or area within APM maintenance facility located at Satellite E to ensure availability and prompt services. This office shall be staffed twenty-four (24) hours a day, seven (7) days a week by a minimum of one (1) competent Contractor representative who shall be accessible to the County and is authorized to discuss matters pertaining to the Contract and the services specified herein. The Contractor at it's own discretion may choose to provide multiple representatives / staff members to ensure continuity of STS services.

### 3.3 SUPPORT STAFF TO BE SUPPLIED BY THE CONTRACTOR

The Contractor shall employ and maintain competent and knowledgeable staff throughout the duration of the Contract. The staff shall be the primary representative(s) and shall act on behalf of the Contractor. Therefore, all communications given to and all decisions made by the designated person(s), shall be binding on the Contractor. The staff provided shall be considered, at all times, an employee of the Contractor and not an employee or agent of Miami-Dade County. Therefore, it is the Contractor's responsibility to ensure that the staff provided is competent and knowledgeable. If staff provided is deemed not to be competent and knowledgeable by the County, then the staff shall be considered to be a deficiency to be corrected by the Contractor in accordance with Section 2, Paragraph 2.29.

The APM System is active at all times, therefore maintenance shall cover all of the equipment and procedures listed herein.

The staff provided by the Contractor must be fully qualified and must have the ability, training and formal qualification to ascertain the cause of any malfunction and to undertake any immediate corrective action which may be appropriate, see Exhibit D. It is the sole discretion of the County to determine if staff provided is fully qualified and may

request replacement of staff if the County deems necessary in accordance with Section 2, Paragraph 2.29.

Original infrastructure and equipment specification as well as maintenance and repair procedures and reports on the condition of the equipment including any overhauls/upgrades performed or recommended are listed in Appendix ___. As part of the Technical Specification, these documents are available from the County and are hereby included as part of the Technical Specification of this Contract.

## 3.4 ITEMS PROVIDED BY THE COUNTY

The county will provide the following:

1) All labor and parts to operate and maintain the Central Control Console. Additionally the Central Control Console shall be Certified (certification that equipment is fully functional as required) by the Contractor, reference Exhibit D.

2) The labor and materials for daily and weekly cleaning of the cars and all janitorial and building maintenance for the lobbies and the Central Control Console and for any toilet and locker rooms provided for Contractor's staff. The County will coordinate and the Contractor shall facilitate the janitorial and building maintenance activities.

3) Utilities (e.g., electricity, water, sewage service) used in APM operation and maintenance.

4) Fuel for stand-by diesel generator.

5) Reimbursement for repairs listed as additional services in these specifications, with prior authorization.

6) All tools and test equipment required to maintain the APM as listed in exhibit B. Any additional tools and equipment found to be necessary shall be supplied as specified in this section.

NOTE: Contractor shall invoice the County separately for repair of damage to equipment due to vandalism (not caused by the Contractor, its employee or subcontractors, suppliers agents, etc.) and other causes excluded from normal use as defined in Paragraph 3.5 (additional items as specified in Sect.3 Paragraph 3.18).

The Contractor shall provide the labor and materials required for cleaning of the APM maintenance area, the APM tracks, the APM substation, the battery room, and the standby engine-generator room. However, the county will maintain all lights, plumbing, building wiring, etc. which were placed in such areas by others.

Six (6) months prior to the end of the Contract maintenance period or to termination thereof by the county, the county will notify the Contractor of its intention either to exercise its option to extend the Contract pursuant to these Specifications or to arrange for future maintenance in some other way. Should the county decide to take over the APM maintenance, the Contractor shall contribute to an orderly transition by making the full maintenance staff available for apprentice training or similar activity during the last six months of the Contractor's maintenance. All tools, fixtures, instruments, accessories, drawings, technical information, records, and manuals provided by the county at the start of or by the Contractor and charged to the County during the period of maintenance under this contract shall be left in good working order.

## 3.5 MAINTENANCE RESPONSIBILITIES

The Contractor shall maintain all of the equipment, tools, supplies, information records, and repair procedures supplied by the OEM, per exhibit B, in normal operating condition for normal use. The definition of the terms "normal use" and "normal operating condition" is as follows:

**Normal Use:** All normal use of the service and equipment for which it was intended. Normal use does not include loss, damage, or destruction cause directly by sandstorm, hail, riot, vandalism, civil commotion, aircraft, theft, damage due to wind-born or thrown objects striking vehicles of fixed equipment or becoming lodged on the guide-way, collision or accident involving equipment owned or operated by the County, damage due to smoke, fire, or explosion not caused by equipment or materials being maintained or used by the Contractor, and damage due to operation during natural events (damage due to wind gusts, hurricanes, etc.).

Effects of lightning on electrical components are part of normal use, but normal use will not include damage to the vehicle body exterior due to a lightning strike directly to a vehicle shell.

**Normal Operating Condition:** Normal operating condition is that condition which is normal for the equipment being maintained. Such condition shall include but not be limited to:

A. Mechanical equipment within manufacturer specified tolerances for gears, cables, belts, chains, bearing, springs and elastomeric elements.

B. Consumable elements (tires, motor bushes, brake lining, etc.) above manufacturer specified condemning limits.

C. Equipment lubricants, hydraulic fluid, refrigerants, battery fluid, etc., within manufacturer specified fill limits and of manufacturer specified type.

D. Well maintained electrical wire and cable dress, and connections, etc., and good electrical and mechanical condition of wire and cable insulation.

E. Mechanical operation of electrical parts and assemblies including fastenings, slides, catches, connectors, electrical components, antennas, etc. like that of the originally accepted equipment.

F. Well maintained appearance of all furnishings, equipment and surfaces visible to the public.

G. The meeting of all current performance specifications per Exhibit E.

The Contractor shall inspect the equipment and make such repairs and adjustments to and replacements of any modules or components as may be necessary to maintain the equipment in a normal operating condition provided that such repairs, adjustments and replacements are necessitated by normal use of the equipment. For items identified in Section 3.16, replacement or off-airport overhaul will be paid for by the County separately as additional service, per these Specifications.

Preventive maintenance shall be performed according to schedules provided by the OEM and maintained on a computerized Maintenance Management System on site. The Contractor shall have its staff perform preventive maintenance (PM) using copies of the approved PM schedules, per Exhibit B, and shall have them check off each task as completed and also sign and date the schedule when finished. The Contractor shall keep this information on the Maintenance Management System database at the STS maintenance facility for the duration of the Contract.

The County and its authorized representatives shall have full access to inspect all activities and on site records of the Contractor and will inspect the equipment and the Contractor's work at random.

Operation of the system will be done in coordination with the County's Central Control operation group and in accordance with the guidelines in per Exhibit E, Standard Operating Procedures.

## 3.6 MANUALS, DRAWINGS AND PARTS INVENTORY

The Contractor shall maintain the APM maintenance and repair procedures, drawings, and parts inventories for the cars, guide-way, station doors, and power subsystem per Exhibit B.

Any additions to or replacement for the Maintenance and Repair Procedures shall contain general information and specifics for the following:

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF AUTOMATED PEOPLE MOVER (APM)

A. Check off schedules and procedures for periodic inspection and preventive maintenance of all components.

B. Description of system operation and interactions between subsystems, functional block diagrams and complete circuit schematics. Circuit schematics shall be complete to the level of inputs, outputs, and test points of individual circuit boards.

C. Detailed description of tests and test equipment and correct procedures for testing.

D. Procedures for disassembly, maintenance and reassembly of system components including clearances, tolerances, terminal numbers, referenced to schematics and drawings, with copies of those schematics and drawings.

E. Description of expendable parts and recommended spares.

F. General instructions pertaining to the need for care and quality of workmanship required for APM safety and availability and specific warnings against the making of any changes in APM circuitry and controls without written approval from the OEM, reference Exhibit C.

The material in any revised or additional maintenance and repair procedures shall be organized, indexed, and cross referenced so that a skilled technician can localize and diagnose equipment malfunctions and repair them.

The Maintenance and Repair Manuals shall include schematics, drawings, literature and other information covering APM major subassemblies purchased from the OEM and other vendors.

The Contractor shall maintain a complete OEM Parts Lists, identifying all parts which are separately available or which might reasonably be separated for maintenance purposes. The lists shall identify all parts showing the relative storeroom locations of related parts and filed by manufacturer's part number, quantity on hand and minimum quantity before reorder as shown in Exhibit B.

A complete set of APM drawings, schematics and wiring diagrams shall be maintained by the Contractor. These items shall be kept at the APM locations and shall reflect the current status of the APM. Any changes or modifications proposed and accepted by the Owner for the APM shall be implemented as follows:

1. Prints shall be marked by the Contractor to accurately reflect such changes.
2. Any such changes that are adopted shall require revision of all associated drawings and the replacement of the marked prints revised drawings.

3. All Maintenance and Operation Procedures shall be updated by the Contractor to reflect APM changes.

All new or replacements procedures shall be permanently stored on electronic media for reproduction as necessary for field use.

## 3.7 PERIODIC REPORTING AND RECORDING

The Contractor's Maintenance database shall include, but not be limited to, information and recording all modifications and repairs to the STS system. This database shall be kept at the APM maintenance facility and be available to the County at any time. The Contractor shall maintain the database records on each APM vehicle. Car mileage, malfunctions, adjustment, modification and repairs shall be recorded in this database. The Car History database shall be kept at the APM maintenance facility and shall be available to County at any time.

The monthly operational results, including availability, mileage, duration of any downtime, explanation for such downtime and repair method shall be reported to the County each month, per Exhibit A.

The Contractor shall perform a daily visual inspection of the track for integrity and must provide a weekly written report to the County, of any damage and or wear to the track that the Contractor reasonably believes may effect the operation of the APM System. Any wear or damage to the track that may be reasonably considered by the Contractor to be a safety hazard and results in the Contractor stopping of the APM System service shall be reported to the Aviation Department's Operations Control Room and the Contract Project Manager immediately via phone and followed up in writing within one (1) work day.

## 3.8 TOOLS AND MAINTENANCE EQUIPMENT

The Contractor shall maintain the existing APM maintenance tools and equipment currently supplied by the County and shall furnish any additional tools, equipment and instruments deemed necessary by the Contractor for maintaining the APM System.

These tools include electrical meters, instruments, wire terminating tools, and connector servicing tools, mechanical tools including normal mechanics hand tools, and jigs, jacks, stands, wheel chocks, and fixtures necessary to lift and support APM cars and subassemblies. The Contractor must use standard mechanics brand tools and standard electronic instruments in performing the work under this Contract.

The Contractor shall provide and maintain special test and diagnostic boxes if appropriate for tests made frequently for routine preventative maintenance or tune up.

## 3.9 INVENTORY RECORDS AND PARTS STORAGE

The Contractor shall maintain records in the APM maintenance facility of the receipt and disbursement of all quantities of spare parts and supplies related to maintenance and repairs of the APM. These records shall include purchase or procurement records, for all items received.

The Contractor shall ensure that all parts are fully and correctly labeled and shall store them in a neat and systematic manner. Racks, bins, and other furniture for storage of tools, parts, and records shall be maintained by the Contractor.

## 3.10 SPARE PARTS AND CONSUMABLES

Upon completion or termination of the maintenance period the Contractor shall leave a supply of spare parts, repair materials and consumables in the APM maintenance facility. This inventory shall consist of various items used for compliance of the requirements specified herein. This quantity shall be the equivalent of one-year's average usage and calculated on the one-year period immediately preceding Contract termination unless otherwise agreed to or modified by the Contractor and the County. Average usage shall be determined from reports generated from the Maintenance Management System database.

## 3.11 TESTS REQUIRED BY GOVERNMENT

If a County representative notifies the Contractor that a governmental agency requires that some measurements, test or calibrations be conducted relative to APM Communications or other equipment, then the Contractor shall perform all such measurements and testing in the manner required, and prepare reports stating the results in the required format, and shall submit the reports to the County representative. The Contractor shall submit copies to the proper governmental agencies if instructed to do so by said County representative. The Contractor shall inform the County representative of the scheduling of each such test or measurement at least two weeks in advance of the time that it is to be carried out. The Contractor shall keep separate accurate records of the direct labor and equipment costs incurred in each such test and shall submit a claim to the Conty for reimbursement of the costs as Additional Services specified in Section 3.18.

## 3.12 RIGHT OF THE AVIATION DEPARTMENT TO MAINTAIN

If the Contractor fails to provide the maintenance services as specified herein, the County may provide the Contractor with written notice of the deficiency in performance of the required maintenance. The Contractor shall formulate a written plan for correction of the deficiencies and shall submit the plan to County within one week after receipt of written notice for approval. If the County finds that the steps proposed by the Contractor are not adequate to correct the deficiency, then County shall provide the Contractor with a

second written notice stating the reasons, and the Contractor shall submit a revised plan in written form within two weeks of receipt of the second notice. Upon failure to deliver the product(s) or services in accordance with the terms and conditions outlined herein and to the satisfaction of the County within the time stated, the Contractor shall be subject to charges equal to the cost incurred by the County for damages. The County shall have the right to deduct the costs from any amount due or that may become due to the Contractor under this agreement or to invoice the Contractor for such damages if the costs incurred exceed the amount due to the Contractor.

## 3.13 MAINTENANCE AND OTHER COSTS TO BE PAID BY THE COUNTY

The County will reimburse the Contractor, as additional services, for the following categories of work, if required.

1. Equipment changes necessitated by governmental regulations.
2. Repairs of other causes outside of normal use.
3. Overhaul and or replacement cost as agreed to by both, the vendor and Aviation.
4. Track repair
5. Other miscellaneous related services such as: repairs to floor damage, damage to doors, burned out wires, etc.

Whenever maintenance of these types are required, the Contractor shall provide the County with written notice describing the work and giving detailed estimates of the down time and costs which will be incurred in doing the work. The Contractor shall do the work promptly after it has been authorized in writing by Aviation personnel.

### 3.13.1 GENERAL ALLOWANCE ACCOUNT

The Owner may elect to have additional work performed by the Contractor. This work may include but is not limited to the following:

1. Guideway Antenna Tape Replacement
2. Program Stop Module Re-design
3. Vehicle Radio Support Re-design (Lord Mounts)
4. Air Conditioner Upgrade
5. Tire Pressure Monitoring Sys Replacement
6. Vehicle Window Seal Replacement
7. Vehicle Air Compressor -- 4 required
8. Guideway PA System Repair

9. Under Car Wiring Replacement
10. Air Release Valve Replacement
11. Leveling Valve Replacement
12. VASSA Replacement
13. Wheel Drum Spares
14. Shop Air Compressor
15. Vehicle Lighting Upgrade
16. Wayside Uninterruptible Power Supply
17. Wayside/Vehicle Door Operator Motor (96 each)
18. Guideway Steel Structure Paint
19. Motor Control Box Wiring Replacement
20. Necessary Train Weld Repairs

If the Owner elects to perform these or any other additional work deemed necessary the Contractor shall provide a written estimate for such work. Once a price for the work has been negotiated and agreed to by both parties the Owner will direct the Contractor to proceed with the work. All costs for this work will be paid for from the General Allowance Account.

## 3.14 ITEMS TO BE MAINTAINED UNDER THIS CONTRACT

APM System equipment, maintenance equipment, and information to be maintained under this contract include:

1. All of the currently available OEM-supplied STS systems.
2. All approved additions, modifications, additional tools, and additional or modified documentation and information added to the above during the present maintenance of the STS.

Items to be maintained by the Contractor shall include, but not be limited to, the following:

A. 6 vehicles.

B. automatic station doors.

C. dynamic signs in stations.

D. wayside and train control equipment

E. central control mimic board, console, and controls for doors, trains,

   1. power, and communications.

2. track power switch gear, diesel alternator, and communication equipment

F. uninterruptible power supplies for control and communication equipment

G. supplies for control and communication equipment

H. track hardware including:

1. ground rails and mounting hardware
2. power rails and mounting hardware
3. guide beam and mounting hardware
4. train and door control antennae and mounting
5. over speed flags
6. end of track buffers
7. maintenance tools and equipment

I. parts inventory

J. drawings, parts lists, maintenance procedures, maintenance history information, inventory records

K. office equipment

## 3.15 CONTRACTOR PROPERTY IN APM MAINTENANCE FACILITY

The Contractor may use the tools, instruments, equipment, technical information and procedures for maintenance of the APM provided by the County, as specified in Paragraph 3.8. The Contractor is to maintain the tools, instruments, equipment, and technical information which are present in the APM maintenance facility as documented in Exhibit B. If the Contractor finds that additional or modified tools, instruments, equipment, technical information, or procedures are needed for effective maintenance or desirable for more economic maintenance, the Contractor shall supply the necessary item and report such findings to the County. Depending on the nature of the proposed additions or changes, The County may pay for such additions or changes as additional services (as per Paragraph 3.18).

However, the new or changed items shall become the property of Aviation if they have been or are intended to be used in maintenance on a recurring basis. This requirement does not apply in the case of equipment which would normally be rented rather than purchased.

The Contractor may utilize the following items in the APM maintenance facility while performing under the Contract:

A. Personal computers, software, and associated workstation equipment.

B. Video camera, digital camera, and video conferencing equipment.

C. Video cassette recorder / player, and television set for viewing training tapes.

## 3.16 APPROVAL OF REPLACEMENT AND OVERHAUL EQUIPMENT COST AS ADDITIONAL SERVICES

Original equipment or OEM approved parts are to be used to replace worn or failed parts. When any of the items A through K listed below, or others as mutually agreed to, require replacement or overhaul in a specialized shop away from the Airport, the Contractor shall advise the County of the need, invite a County representative to inspect the evidence of wear or failure, provide competitive price quotes for items over $5,000.00 for overhaul or replacement, and retain qualified vendors. Following written consent by a County Representative, the Contractor shall have the worn out or faulty item replaced or overhauled and shall invoice the Contractor's net out-of-pocket cost plus a 15% handling charge (for the replacement or rebuilding including transport to and from the airport). Labor to diagnose problems and arrange for overhaul or replacement shall be provided by the Contractor as part of the work required under this Contract and at no additional cost to the County. The tasks of identifying replacement for obsolete parts and the removal and replacement of worn or defective components that would require additional manpower is not to be included. For example, heavy under car work such as differential or spring replacement.

Contractor shall make replacement or overhaul recommendations to the County, based on its best professional judgment. Such recommendation shall have a reasonable basis and shall further include an analysis of potential results should the County elect not to complete the recommended action. Such a list shall be representative of potential results but shall not be considered exhaustive. These results may include direct damages, liquidated damages due to lack of availability, and public liability (including personal injury or death).

Items identified for overhaul or replacement, include but are not limited to items listed below. The list will be periodically updated by mutual agreement between the County and the Contractor.

A. Main Traction Motors

B. Axle assemblies, including Spindles, Differential and Planetary Gears

C. Air Compressors

D. Exterior Painting of Whole Car (Including Touch-Up)

E. Vehicle Floor and Seat Covers

F. Vehicle Interior Wall and Ceiling Panels

G. Emergency Diesel Generator

H. System wiring, including under car wiring

I. A/C evaporators and condensers.

J. Buffers

K. Flat tire detection system

## 3.17 AVAILABILITY

It shall be understood and explicitly agreed to by the Contractor, that the operation of this APM is critical to passenger movement at the Airport.

Therefore the Contractor agrees to provide a minimum availability of 99% of the scheduled operating hours (SH), otherwise it shall be considered a deficiency as per Section 2, Paragraph 2.29 and Section 3.17.1.

Downtime (DH) is defined as total time in hours for which the STS System is out of service.

Availability (A) is defined as schedule operating hours (SH) minus downtime (DH) hours divided by scheduled operating (SH) hours:

$$A = \frac{SH-DH}{SH}$$ (Expressed as a percentage)

Records shall be kept by the Contractor and the County's Central Control Operator of the cumulative number of hours, rounded to the nearest one thousandth (0.001), each train is out of service during each month. At the beginning of each month, a representative from both parties will meet to review and agree on the records of out-of-service downtime for the previous month. Upon agreement the Contractor shall file for the record the official out-of-service downtime and shall keep such record for a minimum of three years.

A. When a subsystem such as air conditioning, lighting, public address, one door set, etc., fails to function properly, the Contractor shall report immediately to the County's central control console operator or project manager such failure(s).

B. The County shall have the right to require that a vehicle, any of whose subsystems are malfunctioning, significantly degrade passenger comfort or safety, be taken out of service until its subsystems are fully restored to normal operation (in which case the STS System will be operating with a single track/ train). The time for which the vehicle remains out of service will be counted as downtime until the all the subsystems for which the vehicle was removed from service are fully restored.

C. The County does not expect to allow any car to continue operating for more than 30 minutes with a malfunction of any subsystem. Whether or not the County chooses to use this right, in any particular case shall be the County's discretion.

D. No damage shall be assessed against the Contractor due to loss of power from the local electric utility company so long as the standby diesel generator set is used to restore operation within three (3) minutes following the power outage.

E. The Contractor shall be permitted to have one train Out Of Service for maintenance each night from 8:00 p.m. through 6:00 am. No damage will be assessed for reduced service during the scheduled maintenance period so long as the domestic and international passengers continue to receive regular service on at least one track.

F. If for some reason a repair is necessary that will require extended outage of one train, the Contractor shall notify the County as soon as practical in writing, as to the reason for the repair and the expected time required to complete the repair. If approved by the County, no out of service time will accessed the Contractor.

G. Should the County require one train to be out of service during normal operating hours (6:00 a.m. through 8:00 p.m.), no out of service time will be accessed by the Contractor. Should this outage exceed 24 hours, the Contractor will be granted maintenance time for the 24 hours at site.

H. If the second train is out service for any reason while the conditions described in G. above are in effect, no damage shall be assessed against the Contractor for loss of service due to damage beyond the Contractor's control or from causes outside normal usage (to be determined by County) so long as the Contractor acts to resolve service with reasonable promptness.

NOTE: Failure to comply with the above mentioned items may result in work being considered a deficiency as per Section 2, Paragraph 2.29 and Section 3.17.1.

## 3.17.1 DEDUCTIONS FOR DEFICIENCIES IN SYSTEM PERFORMANCE

A deduction for failure to achieve the required performance levels (availability) specified in Section 3.17 herein shall be assessed as follows:

Each invoice period (e.g., month) shall be divided into equal portions representative of each day in that period (e.g., 30 parts for a 30-day invoice period). If the Availability (A), as defined in Section 3.17, for a given day is less than 0.99 (99%), a "Payment Factor" shall be applied by the County to that day (i.e., to that day's portion of the regular invoice amount) in accordance with the following:

| Availability (A) | Payment Factor |
|---|---|

99.0 – 100.0.....1.00
98.9 – 98.99.....0.99
98.8 – 98.89.....0.98
98.7 – 98.79.....0.97
98.6 – 98.69.....0.96
Etc.

For example, if one day in a 30-day invoice period has a 98.5% Availability and all other days were 99% or greater, then a 0.99 payment factor would be applied to one thirtieth (1/30) of the normal total invoice amount.

## 3.18 ADDITIONAL SERVICES

The Contractor shall provide additional services when authorized by the County. Such additional services may include repair of damage caused beyond the Contractor's control, installation of new system options, upgrades to software as required and replacement of obsolete system components.

The Contractor shall invoice the County, as additional services, for additional labor, purchased material and sub-contracted work as a separate item. Additional services shall also include inspection and repair of concrete track that supports the main tires of the vehicle. For reimbursable items and optional system installations, the Contractor shall submit minimum of three (3) quotes to the County for approval. The requirement for a quote may be waived by the County at its sole discretion to perform repairs related to safety or when operationally necessity requires expedited repair.

NOTE: The County reserves the right to negotiate any cost or quote for unscheduled repair, additional services or materials needed to perform in accordance with the terms and conditions specified herein. Additionally, the County reserves the right to seek additional quotes from other providers as deemed necessary. The County reserves the right to reject any price adjustments submitted by the Contractor.

The Contractor shall invoice the County monthly, both for basic monthly maintenance at the amount stated in Contractor's proposal and for its actual out of pocket cost for additional services/ items. Each cost reimbursable item shall be documented and attached to the corresponding invoice and marked "approval for payment" by the Contractor.

## 3.19 DEFINITIONS

APM- Automated People Mover
OEM- Original Equipment Manufacturer
EPA- Environmental Protection Agency
MSDS- Material Safety Data Sheet
MIA- Miami International Airport

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF AUTOMATED PEOPLE MOVER (APM)**

OSHA- Occupational Safety and Health Administration
NIOSH- National Institute of Occupational Safety Hazards
NFPA- National Fire Protection Association

SECTION 3
TECHNICAL SPECIFICATIONS
MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
SAMPLE FORMS

# EXHIBIT A

## PERFORMANCE REPORT

**MIAMI AIRPORT SATELLITE TRANSIT SYSTEM PERFORMANCE REPORT**

**01 MAY THROUGH 31 MAY 2006**

| | NORTH TRAIN | SOUTH TRAIN | SYSTEM |
|---|---|---|---|
| **MILEAGE DATA** | | | |
| Cumulative mileage last month | 1234874 | 1258489 | 2493363 |
| Cumulative mileage this month | 1240994 | 1259155 | 2500149 |
| Mileage this month | 6120 | 666 | 6786 |
| Total number of trips ..... | 24369 | 2586 | 26955 |
| **ENERGY DATA** | | | |
| Energy consumption in KWH ..... | 65400 | 10900 | 76300 |
| Energy conservation in hours ..... | 0 | 0 | 0 |
| Average energy per trip in KWH/TRIP ..... | 2.68 | 4.22 | 3.45 |
| **SYSTEM PERFORMANCE** | | | |
| Scheduled operating minutes this period..... | 33480 | 5400 | 44640 |
| Single guide way incidents this period ..... | 0 | 1 | ---- |
| Single guide way incidents accountable to Bombardier | 0 | 0 | ---- |
| Total single guide way outage time in minutes ..... | 0 | 1 | ---- |
| Single guide way outage time accountable to Bombardier | 0 | 0 | ---- |
| Double guide way incidents this period ..... | -- | -- | 0 |
| Double guide way incidents accountable to Bombardier | -- | -- | 0 |
| Total double guide way outage time in minutes ..... | -- | -- | 0 |
| Double guide way outage time accountable to Bombardier | -- | -- | 0 |
| **SYSTEM AVAILABILITY** | | | |
| % availability considering all incidents .... | 100.000 | 99.981 | 100.00 |
| % availability considering Bombardier incidents | 100.000 | 100.000 | 100.00 |

SECTION 3
TECHNICAL SPECIFICATIONS
MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
SAMPLE FORMS

# EXHIBIT B

## DRAWING BOOK

## LIST OF DRAWINGS ON SITE

## PARTS INVENTORY LIST

## TOOLS INVENTORY LIST

## PM TASK

# SECTION 3
# TECHNICAL SPECIFICATIONS
# MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
# SAMPLE FORMS
# Westinghouse Drawing Book

The basic drawing books issued by Westinghouse contain a set of the more important drawings. The drawings in this book are assigned to sections numbered 1 through 6 according to the original sizes of the drawings:

| Section | Size |
|---|---|
| 1 | B |
| 2 | C |
| 3 | D |
| 4 | F |
| 5 | J |
| 6 | P |

The following is a list of drawings maintained on site.

## LIST OF DRAWINGS ON SITE

SECTION 1:

| Drawing No. | Description |
|---|---|
| 577B453 | Armature Lifting Eye |
| 577B453 | Armature Lifting Eye Assembly |
| 2535B12 | Power Brake Control XCA-248-X Arc Box Assembly |
| 2537B58 | XCD-248F Motor Control Box Manifold |
| 2537B58 | Power Supply |
| 2538B91G01 | Program stop Antenna |

SECTION 2:

| | |
|---|---|
| 3794c58g01 | Antenna Junction Box |
| 3965C97 | Antenna Case and Bobbin Assembly |
| 4683C43, 119 shts. | Vehicle Schematic Package |
| 3970C42, shts.2 & 18 | Power Center – Schematic |
| 3972C56H01 | Connector Panel |
| 3972C80, 30 shts. | Functional Block Diagrams |
| 4675C14 | Transformer Blower |
| 4675C15 | Brake Transformer |
| 6475C16 | Main Transformer |
| 4675C25G02 | Connector Plate Assembly |
| 4675C25G01 | Information Antenna |
| 4675C25G01 | Precise Alignment Antenna |
| 4675C03 | Vehicle Terminal Block Mounting Bracket & Angle Details |
| 4676C46H01 | Junction Box |
| 4677C16 | Bearing Puller Tools |
| 5824C79 | VASSA |
| 5824C78 | VASSA General Assembly |

SECTION 3:

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
# SAMPLE FORMS

| | |
|---|---|
| 107d454 | Brake Resistors |
| 6241D63G01 | Junction Box |
| 6248D37 | No. 1End Antenna Assembly |
| 7076D02 | Overshoot Detector Assembly |
| 7311D49G01 | Non-Vital Relay Basic Cabinet Assembly |
| 7311D78H01 | Cabinet |
| 8362D18, 8shts. | Console Schematic |
| 8362D21, 9shts. | Mimic Board Schematic |
| 8362D60G02, 3shts | Cradle Assembly |
| 8362D61G02, 3shts | Cradle Assembly |
| 8362D62G02, 4shts | Cradle Assembly |
| 8362D63G02, 4shts | Crable Assembly |
| 8362D64G02, 4shts | Crable Assembly |
| 8362D65, 19 shts | ATO To Termination Cabinet Schematic (FIS) |
| 8362D66, 19 shts | ATO To Termination Cabinet Schematic (Satellite) |
| 8362D71, shts 1,2,3 | Low Voltage Switch Gear Schematic |
| 8362D72, 3shts | Power Control Low Voltage |
| 8362D73G01, 2 shts | Cant. Grounding & Power Distribution |
| 8362D74G01, 2 shts | Cant. Grounding & Power Distribution |
| 8362D75 | Schematic Diagram |
| 8362D76 | Voice Communication System |
| 8368D01 | Motor Control Box |
| 8368D54 | Air Control Package |
| Drawing No. | Description |
| 8368D60, 3shts. | Brake Control Package |
| 8368D72G02, 3shts | Central Control Console Assembly |
| 8368D73G02 | Mimic Display Board Cabinet Assembly |
| 8369D53G01 | Control Panel |
| 8370D01 | Transit Expressway Vehicle Component |
| 8370D03 | Air Conditioning Unit |
| 8370D07 | Control Room Layout (Terminal BLDG.) |
| 8370D08 | Control Room Layout (Satellite BLDG.) |
| 8370D14G01 shts. | Vital / Non-Vital Cabinet #11 |
| 8370D15 shts 32 | ATO To Relay Logic Schematic (FIS & Satellite) |
| 8370D96G02, 2shts. | ATO cabinet # 09 |
| 8370D17G01, shts .1 | Termination Cabinet # 08 |
| 8370D18G01, 4 shts | Vital / Non-Vital Cabinet # 42 |
| 8370D23G01 | Train Control Assembly |
| 8370D24G01 | Train Control Assembly |
| 8370D24G01 | Antenna Camp. Panel Assembly |
| 8370D30G01, 2 shts | Basic Relay Cabinet Vital / Non-Vital |
| 8370D31G01, 4 shts | Non-Vital Cabinet # 10 |
| 8370D41 | Air & Brake System Schematic |
| 8370D85G01, 2 shts | Basic Relay Cabinet Vital / Non-Vital |
| 8370D88G01, 4 shts | Non-Vital Cabinet # 10 |
| 8837D18 | Vehicle Communication Equipment Compartment Assembly |
| 8837D72 | Lobby Sensor Face plate Details |

SECTION 4:

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
# SAMPLE FORMS

| | |
|---|---|
| 598F640 | Guide Wheel Assembly |
| 1074F75 | Brake Air Compressor |
| 1117F75 | Transit Shuttle System |
| 1120F21 | Vehicle Outline |
| 1120F38, shts.1&2 | Motor Control Box |
| 1120F43, shts.1&2 | Auxiliary Control Box – Breaker Panel Assembly |
| 1120F44, GR2, GR3 | Auxiliary Control Box – General Assembly |
| 1120F52 | Window installation |
| Drawing | Description |
| 1120F97 | Tow Bar Installation |
| 1120F08, 2 shts | Number 2 Bogey |
| 1121F53, 2 shts | Number 1 Bogey |
| 1121F67 | Air Piping |
| 1121F68 | Collector & Antenna Mounting – A Car # 1 Axle Ref only |
| 1121F69 | Collector & Antenna Mounting Ref only |
| 1121F70 | Antenna Mounting |
| 1121F71 | Collector & Antenna Mounting Ref only |
| 1121F72, 2 shts | Number 2 End Equipment |
| 1121F73G01 | Collector Assembly Ref only |

Tree Assembly Howell Corp 9709005 Rev A 2 shts

| | |
|---|---|
| 1C44448 | REV 1 Swivel Stem |
| 1C44449 | REV 1 Power Stem Insulator Block |
| 1C44451 | REV 1 Shoe Holder Assembly |
| 1C44452 | REV 1 Shoe Holder (Machined Extrusion) |
| 1C44453 | REV 1 Power Knuckle Assembly |
| 1C44454 | REV 1 Power Knuckle |
| 11121F78, 5 shts | Roadway Electrical Installation |
| 1121F81 | Train Assembly 2 car train |
| 1112F8G01 | Mimic Display Board |

# SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
## SAMPLE FORMS

### PARTS INVENTORY LIST

| | | | | |
|---|---|---|---|---|
| | 404P612H27 TERMINAL .375 STUD 1/0 SIZE | 30 | 10 | 30 |
| | 404P669H07 PIN SPIROL | 200 | 50 | 130 |
| | 6966C32G01 OUT PUT PULSE TRANSFORMER | 4 | 2 | 2 |
| | 8588C47H09 TERMINAL | 39 | 10 | 50 |
| | 8588C47H1 I TERMINAL .250/2 AWG COLLECTOR SHOES | 250 | 50 | 200 |
| | 8588C47H17 TERMINAL 5/16 STUD 4 AWG 328163 | 25 | 10 | 60 |
| | 8588C47H18 TERMINAL 5/16 STUD 2 AWG 325202 | 20 | 10 | 60 |
| | 8588C47H22 TERMINAL 5/16 STUD 4/0 AWG 325602 | 30 | 10 | 60 |
| | 8588C47H26 TERMINAL | 25 | 0 | 0 |
| | 8588C47H34 TERMINAL 3/8 STUD 2 AWG 2 HOLE 326799 | 175 | 50 | 200 |
| | 3A63286H62 COTTER PIN SST TOW BAR | 8 | 0 | 0 |
| | 3A63290H1 I COTTER PIN INTERLOCK ASSY. | 25 | 0 | 0 |
| | 3A63290H12 COTTER PIN .062u DOOR CAP\LSI CONTACTOR | 100 | 50 | 300 |
| | 3A63290H31 COTTER PIN SPINDLE .125 X 1.50 LGS | 230 | 50 | 150 |
| | 70312AF04U COTTER PIN LEVELING VALVE | 200 | 50 | 200 |
| | 70312AF07F COTTER PIN ANTENNA .125 X 1.00 LG ST | 40 | 10 | 30 |
| | 70312AF0A2 COTTER PIN SPRB .156 X 1.25 LG S | 46 | 100 | 300 |
| | 70001BU245 SCREW | 40 | 10 | 50 |
| | 70500BD30D SCREW | 85 | 42 | 127 |
| | 8588C47H20 TERMIAL 5/16 STUD 2/0 AWG 325402 | 50 | 10 | 60 |
| | 8588C47H29 TERMINAL 3/6 STUD 2/0 AWG 325403 | 35 | 10 | 80 |
| | 8588C47H31 TERMINAL 3/8 STUD 4/0 AWG 325603 | 47 | 10 | 60 |
| | 8588C47H36 TERMINAL 3/8 STUD 2/0 AWG 2 HOLE 326801 | 50 | 10 | 60 |
| | 8588C47H38 TERMIANL 3/8 STUD 4/0 AWG 2 HOLE | 58 | 25 | 100 |
| | 8588C47H39 TERMINAL | 100 | 10 | 30 |
| K2 | 7O100EGO4W HEX HD BOLT .312(5/16)18 2.00 LG | 28 | 20 | 100 |
| | 7O100EGO4Y HEX HO BOLT .312(5116)18 2.25 LG | 100 | 50 | 200 |
| | 70100EG050 HEX HD BOLT .312(5/16)18 2.5OLG | 110 | 20 | 100 |
| | 70100EG051 HEX HO BOLT .312(5/16)18 2.75 LG | 317 | 20 | 100 |
| | 70100EG052 HEX HD BOLT .312(5/16)18 3.00 LG | 130 | 20 | 100 |
| | 70100EG053 HEX HO BOLT .312(5(16)18 3.25 LG | 380 | 20 | 100 |
| | 70100EG054 HEX HD BOLT .312(5/16)18 3.50 LG | 96 | 20 | 100 |
| | 7O100EGO7Q HEX HD BOLT .375(3/8)16 2.00 LG | 28 | 20 | 100 |
| | 70500CT03Q WASHER .138 | 127 | 20 | 100 |
| K3 | 4567534134 BUTT SPLICE 22-16 AWG NYLON AMP 320559 | 315 | 50 | 300 |
| | 7000IBU2IF SCREW .112-40X .25 | 24 | 10 | 50 |
| | 700016U21H SCREW .112~40X.36 | 32 | 10 | 50 |
| | 7000IBU2IK BOLT .112-40X50 | 34 | 10 | 50 |
| | 7000IBU2IP SCREW .112-40X .75 FIL HD STL | 145 | 50 | 100 |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
## SAMPLE FORMS

| | | | | |
|---|---|---|---|---|
| | 7000IBU2IT SCREW .112-40 X 1.00 FIL HD STL | 148 | 50 | 100 |
| | 7000IBU2IV SCREW .112-40 X 1.25 LG FIL HO STL | 150 | 50 | 100 |
| | 7000IBU2IX SCREW .112-40 X 1.50 FIL HO STL | 50 | 5 | 20 |
| | 70001BU23Z SCREW .138 - 32X.38 | 37 | 18 | 55 |
| | 70001 BU241 SCREW | 60 | 10 | 30 |
| | 70001BU25L FILSTER HEAD SCREW .164(B-32)-32X .75LG | 50 | 20 | 100 |
| | 70001BU25Q FILSTER HEAD SCREW .164(8/32)-32X I .OLG | 50 | 2O | 100 |
| | 7000IBU2SS FIL%STER HEAD SCREW *.164(8132)-32X1.25LG* | 4 | 20 | 100 |
| | 70001BU28L SCREW (REVERSER) | 0 | 10 | 50 |
| | 70001BU28U SCREW .190-32 X 1.00 LG FIL HO STL | 100 | 50 | 100 |
| | 70001 BU28W BOLT | 39 | 10 | 50 |
| | 70001BU28Y BOLT .190-32X1.50 | 120 | 10 | 50 |
| | 70200BNB0T NUT .112.40 | 126 | 63 | 189 |
| | 7O200BNBOX NUT .132.32 | 100 | 50 | 150 |
| | 7O200BNBOZ NUT 0164 -32 | 2 | 10 | 50 |
| | 70200BNB12 NUT .190-32(10/32) | 563 | 20 | 100 |
| | 70500BD30C FLATWASHER | 225 | 10 | 50 |
| | 70500BD30E FLAT WASHER .190 | 110 | 10 | 50 |
| | 7O5IOCVIOE .112 STL LOCKWASHER | 550 | 20 | 100 |
| | 70510CV10G LOCKWASHER .138(6/32) | 28 | 20 | 100 |
| | 7O5IOCVIOH LOCKWASHER .164(8/32) | 239 | 20 | 100 |
| | 70510CV10K LOCKWASHER .190(10.32) | 200 | 20 | 100 |
| K4 | 7O100EGOIY HEX HO BOLT .250(1/4)20 1.75 LG | 70 | 20 | 100 |
| | 70100EG020 HEX HD BOLT .250(1/4)20 2.00 LG | 200 | 20 | 100 |
| | 70100EG022 HEX HD BOLT .250(1/4)20 2.250 LG | 200 | 20 | 100 |
| | 70100EG024 HEX HD BOLT .250(1/4)20 2.50 LG | 200 | 20 | 100 |
| | 70100EG025 HEX HD BOLT .250(1/4)20 2.750LG | 300 | 20 | 100 |
| | 70100EG026 HEX HD BOLT .250(1/4)20 3.00 LG | 351 | 50 | 200 |
| K5 | 7OIOOEGOIN HEX HO BOLT .250(1/4)20 0.50 LG • | 40 | 20 | 100 |
| | 7OIOOEGO1Q HEX I-ID BOLT .250(1/4)20 0.75 LG | 115 | 20 | 100 |
| | 7OIOOEGOIS HEX HD BOLT .250(1/4)20 1.00 LG | 125 | 20 | 100 |
| | 7OIOOEGOIU HEX HD BOLT .250(1/4)20 1.250 LG | 0 | 20 | 100 |
| | 7OIOOEGO1W HEX HO BOLT .250(1/4)20 1.50 LG | 100 | 20 | 100 |
| | 7021 0BK616 NUT .250-20(1/4) • | 200 | 20 | 100 |
| | 7O500CTOOP FLAT WASHER .250(1/4) | 100 | 20 | 100 |
| | 7O5IOCV1OM LOCKWASHER .250(1/4) | 250 | 20 | 100 |
| K6 | 7OIOOEGO4L HEX HO BOLT .312(5/16)18 0.75 LG | 48 | 10 | 30 |
| | 7OIOOEGO4N HEX HO BOLT .312(5/16)18 1.00 LG | 48 | 20 | 100 |
| | 7OIOOEGO4Q HEX HD BOLT .312(5/16)18 1.25 LG | 57 | 50 | 200 |
| | 7OIOOEGO4S HEX HO BOLT .312(5/16)18 1.50 LG | 50 | 20 | 100 |
| | 7O100EGO4U HEX HO BOLT .312(5/16)18 1.75 LG | 100 | 20 | 100 |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
## SAMPLE FORMS

| | | | | |
|---|---|---|---|---|
| | 701 OQEGOCK BOLT .500-13 X .75 LG HEX HD STL | 30 | 10 | 30 |
| | 7OIOOEGOCM BOLT .500-13 X 1.00 LG HEX HO STL | 40 | 10 | 30 |
| | 7OIOOEGOCP BOLT .500-13 X 1.25 LG HEX HD STL | 40 | 10 | 30 |
| | 7OIOOEGOCR BOLT .500-13 X 1.50 LG HEX HO STL | 40 | 10 | 30 |
| | 7OIOOEGOCT BOLT .500-13 X 1.75 LG HEX HD STL | 38 | 10 | 30 |
| | 701 OOEGOCV BOLT .500-13 X 2.00 LG HEX HD STL | 40 | 10 | 30 |
| | 70210BK618 NUT .312-18(5/16) • | 205 | 20 | 100 |
| | 7O500CTOOT FLAT WASHER .312(5/16) | 340 | 20 | 100 |
| | 70500CT016 FLATWASHER .500 STL STD | 200 | 30 | 200 |
| | 70510CV10P LOCKWASHER .312(5/16) | 80 | 20 | 100 |
| | 7OIOOEGO7E HEX HD BOLT *.375(3/8)16* 0.75 LG | 320 | 20 | 100 |
| | 7OIOOEGO7G HX HD BOLT .375(3/8)16 1.00 LG | 100 | 20 | 100 |
| | 7OIOOEGO7J HEX HO BOLT .375(3/8)16 1.25 LG | 40 | 20 | 100 |
| | 701 OOEGO7L HEX HO BOLT .375(318) 16 1.50 LG | 100 | 20 | 100 |
| | 7OIOOEGO7N HEX HD BOLT .375(3/8)16 1.750 LG | 120 | 20 | 100 |
| | 7OIOOEGO7S HEX HO BOLT .375(3/8)16 2.25 LG | 136 | 50 | 200. |
| | 7OIOOEGO7U HEX HO BOLT .375(3/8)16 2.500 LG | 58 | 20 | 100 |
| | 7O100EGO7V HEX HO BOLT .375(318)16 2.75 LG | 118 | 50 | 200 |
| | 701 OOEGO7W HEX HO BOLT .375(3/8)16 3.00 LG | 72 | 20 | 100 |
| | 70210BK61A NUT .375-16(3/8) | 120 | 20 | 60 |
| | 7O500CTOOY FLAT WASHER .375(3/8) | 30 | 20 | 100 |
| | 7051 OCVI OQ LOCKWASHER .375(3/6) | 70 | 20 | 100 |
| | I D47608G01 SWITHCH BOARD ASSY | 4 | 1 | 1 |
| | 396C342G05 ARC SHLJTE (LSI) | 2 | 1 | 1 |
| | 4078B40H02 LS2 COIL | 6 | 3 | 3 |
| | 4726A57G01 LSI CCOIL | 6 | 2 | 4 |
| | 60A2872G37 CAM SWITCH, TYPE XCA-398 | 20 | 3 | 3 |
| L2 | 08C5097G01 LSI SHUNT | 4 | 2 | 4 |
| | 107D836H02 REVERSER CAMS | 0 | 1 | *1* |
| | 107D836H03 REVERSER CAMS | I | I | I |
| | 107D836H04 REVERSER CAM | I | I | I |
| | 107D836H05 REVERSER CAM | 1 | 1 | 1 |
| | 177A001H01 LARGE FLANGE WASHER | 5 | 1 | 1 |
| | 177A001H02 FLAT WASHER | 5 | 1 | 1 |
| | 177A002H01 FELT WASHER | 6 | 1 | 1 |
| | 1 77A1 35G01 SHUNT L62 AND BSC | 8 | 2 | 4 |
| | 26D5848H10 SPRING 16.00) .040 DIA SST W | 3 | 1 | 1 |
| | 3D99510H01 SPRING (REVERSER CAM ASS?) | 8' | 1 | 1 |
| | 404P581H05 REVERSER BEARING | I | I | I |
| | 4227B59001 SHUNT (REVERSER CAM ASS?) | 5 | 1 | 1 |
| | 4228636H01 SMALL FLANGE WASHER | 5 | 1 | 1 |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
# SAMPLE FORMS

| | | | | |
|---|---|---|---|---|
| | 5623B04H30 HEX CAP SCREW .88 LONG | 3 | 1 | 1 |
| | 5623B04H57 HEX CAP SCREW .75 LONG | 12 | 1 | 1 |
| | 610B595G01 REVERSER RACK ASSY | 1 | 0 | 0 |
| | 7O3IOBKOBE GROOVE PIN | 1 | 0 | 0 |
| | 795C168G01 ARC CHUTE MOLDED (LS2/BSC) | 2 | 1 | 1 |
| | 8617A60H02 PACKING CUP | 13 | 1 | 1 |
| | 8617A79G01 CONTACT WITH INSERT | 40 | 0 | 0 |
| L3 | 22A8997G04 CONTACT ASS? (REVERSER) | 8 | 2 | 4 |
| | 280B831 G0l REVERSER AIR TUBE (BETWEEN MAG VALVES) | 3 | 2 | 4 |
| | 404P581H03 REVERSER HOUSING BEARING | 9 | 0 | 1 |
| | 4228B05H01, FINGER SUPPORT BAR | 10 | 1 | 4 |
| | 4724A55G01 REVERSER INLET AIR HOSE | 7 | 2 | 4 |
| | 61 0B599H01 REVERSER FINGER BLOCK (LH) | 13 | 2 | 3 |
| | 610B599H02 REVERSER FINGER BLOCK (RH) | 7 | 2 | 3 |
| | 862C159G01 FINGER SUPPORT ASSY (LH) | 1 | 1 | 2 |
| | 862C1 59G02 FINGER SUPPORT ASSY (RH) | 4 | 1 | 2 |
| L4 | 0877692H30 SPRING (LSI CONTACTOR) | 8 | 1 | 3 |
| | 08B9878G15 REPAIR KIT (MAG VALVE ASSY) | 1 | 2 | 3 |
| | 1627429000 COIL (MAG VALVE) | 7 | 2 | 4 |
| | 17A1754X17 MAG VALVE ASSEMBLY, TYPE UB-73 | 7 | 0 | 0 |
| | 1A96975H01 CRIMP WASHER (LS2/BSC AUX CONTACTS) | *17* | 5 | 10 |
| | 21D3154H01 STANDARD CORE (LS21BSC) | 3 | 1 | 2 |
| | 4227B27G02 FINGER CONTACT ASSY STUD (REVERSER) | 17 | 5 | 10 |
| | 4767A90G01 STD. CONTACT INTERLOCK FINGER | 17 | 10 | 20 |
| | 4779A95H01 CORE (LS2IBSC) | 5 | 1 | 1 |
| | 4779A96H01 INSULATOR SLEEVE (LS2IBSC CORE) | 12 | 5 | 5 |
| | 526D757G01 FLAT CONTACTS (LSI AUX BLOCK) | 23 | 6 | 20 |
| | 526D757G06 MOVING CONTACT (PLAIN) ASSEMBL | 26 | 5 | 10 |
| | 526D757H16 SPRING PIN | 20 | 5 | 10 |
| | 5623B91H01 INSULATOR WASHER (LS2IBSC) | 18 | 5 | 10 |
| | 570A258G01 UPPER VALVE ASSY (REVERSER MAG VALVE) | 2 | 0 | 0 |
| | 5819C58G03 FINGER ASSY ROLLER ARM (REVERSER) | 12 | . 2 | 4 |
| | 6157A68G01 LS2 WIPER CONTACTS | 59 | 10 | 20 |
| | 6157A90G01 FINGER ASSEMBLY | 23 | 10 | 10 |
| | 7000IBU2BZ SCREW (REVERSER FINGER BLOCK) | 6 | 5 | 5 |
| | 70312AF00G COTTER PIN (LSI AUX CONTACT) | 12 | 5 | 20 |
| | 70500B030F FLAT WASHER (REVERSER FINGER BLOCK) | 32 | 5 | 10 |
| | 8617A20G01 LOWER VALVE ASSY (REVERSER MAG VALVE) | 1 | 0 | 0 |
| | 862C1 58G01 CONNECTOR | 0 | 1 | 1 |
| | 862C158G02 CONNECTOR | 4 | 1 | 1 |
| | 862C158G03 CONNECTOR | I | I | I |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
## SAMPLE FORMS

| | | | | |
|---|---|---|---|---|
| L5 | 107D966G01 WIPER CONTACT (LS2/BSC) | 4 | 2 | 6 |
| | 18D9633H01 LS2 MAIN CONTACT | 41 | 10 | 20 |
| | 18D9643H01 LSI MAIN CONTACT | 22 | 4 | 12 |
| | 526D755G03 AUX CONTACT ASSY (LS1) | I | I | I |
| | 526D758G03 INTERLOCKING ASSY | 4 | 5 | 15 |
| | 526D758H02 BASE DOUBLE STATIONARY PART | 4 | 0 | 0 |
| | 577B723G04 LS2 WIPERS RIGHT HAND | 4 | 5 | 7 |
| | 577B724G04 LS2 WIPERS LEFT HAND | 2 | 10 | 15 |
| | 70001BU25Y INTERLOCK SCREWS | 40 | 10 | 30 |
| | 70001BU262 INTERLOCK SCREWS . | 12 | 10 | 30 |
| L6 | 280B522H07 SEAL | 10 | 3 | 10 |
| | 3930A55H01 SCREW, COVER BOLTS | 7 | 3 | 6 |
| | 404P739H04 GUIDE, PCB . | 27 | 3 | 6 |
| | 404P739H05 GUIDE, PCB | 25 | 3 | 6 |
| | 570A168H02 SEAL, MOTOR BOX | 23 | 3 | 6 |
| | 570A169H03 RETAINER, MOTOR BOX | 35 | 0 | 1 |
| | 570A169H04 SEAL | 10 | 5 | 16 |
| | 570A170H02 SEAL, MOTOR BOX | 34 | 3 | 6 |
| | 652A073H10 CABLE GRIP | 17 | 8 | 24 |
| | 652A073H38 CABLE GRIP | 3 | 1 | 4 |
| | 70001BU28N SCREW | 10 | 10 | 50 |
| | 7001 0G0H52 SCREW | 10 | 5 | 1.5 |
| | 7O500BD3OY .112 STD STL WASHER | 50 | 20 | 100 |
| | 7OSOOBD3IY WASHER | 9 | 2 | 10 |
| | 70530AQ13N LOCK WASHER | 201 | 100 | 301 |
| | 8368079H01 CABLE CLAMP | 2 | 1 | 3 |
| | 8368D79H02 CABLE CLAMP | 3. | 2 | 6 |
| | 8368079H03 CABLE CLAMP | 2 | 1 | 4 |
| | 83660791-404 CABLE CLAMP | 5 | 3 | 9 |
| | 8368D79H07 CABLE CLAMP | 16 | 13 | 39 |
| L7 | 21D3155H01 HINGE PIN 1.668).5000IA STL | 6 | 1 | 2 |
| | 23B6306G01 BEARINGGG BRAKET | 2 | 1 | 1 |
| | 699J078G03 REVERSER | 2 | 0 | 0 |
| | 70020BD74M SET SCREW .250-20 X.375 HEX | 2 | 1 | 2 |
| | 8587C42H01 CONTACT ARM .875) EXTRUDED SEC | 1 | 1 | 2 |
| | 226D230A35 CONTACTOR TYPE UMA-859A L & 1 | 6 | 0 | 1 |
| | 31A4669A28 CONTACTOR TYPE UMB-675A L & 2 | 1 | 0 | 1 |
| M-115 | 1121F03G02 MAIN FRAME | 0 | 0 | 0 |
| | 2539B08H01 WHEEL SHIM | 7 | 0 | 0 |
| | 3437C85H06 MAIN DRIVE TIRES | 16 | 0 | 0 |
| | 404P566H08 TRAILING AXLE WHEELS | 4 | 0 | 0 |

## SECTION 3
## TECHNICAL SPECIFICATIONS
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## SAMPLE FORMS

| | | | | |
|---|---|---|---|---|
| | 5574C31H01 GUIDE TIRES | 46 | 10 | 15 |
| | 6246D71G03 LEAF SPRING ASSEMBLY | 8 | 1 | 2 |
| | 8596C95H02 GREASE (EVERYTHING EXCEPT BRAKES/OPERATO | 100 | 10 | 25 |
| | 8596C95H07 BRAKE GREASE | 32 | 0 | 0 |
| | 8597C32H29 GREASE (ADMAX MULTIPLEX) | 21 | 5 | 20 |
| M-115A | 3973C23H01 TOW BAR 20.17) OF 2.00 HE | 3 | 0 | 1 |
| | 4678C16H01 FITTING, AIR BAGS | 5 | 1 | 1 |
| | 4684C78H01 AIR RIDE SPRING, AIR BAGS | 7 | 1 | 1 |
| | 570A055H31 ~ RING, STD SIZE 210, AIR BAGS | 15 | 5 | 10 |
| | 6246D67H15 STUD 8.44) 1.625 DIA HR STL | 6 | 12 | 6 |
| | 70210GA61Q NUT | 3 | 2 | 10 |
| | 70500BR31K WASHER 1.00 WIDE SST | 1 | 0 | 0 |
| | 70510D011A LOCKWASHER 1.00 STD STL | 2 | 1 | 30 |
| M-1 1 5B' | 2969A44H02 BOLT SNUBBER, BRACKET LONG | 8 | 4 | 8 |
| | 652A292H03 BOLT, SNUBBER, BRACKET | 14 | 5 | 5 |
| | 702106K61J NUT, SNUBBER | 14 | 5 | 10 |
| | 7051 OCV1 OU LOCK WASHER, SNUBBER | 11 | 3 | 6 |
| | 8369D24G01 TOP MOUNTING BRACKET ASSEMBLY, SNUBBER | 5 | 2 | 4 |
| | 8369D24G02 BOTTOM MOUNTING BRACKET ASSY., SNUBBER | 14 | 2 | 4 |
| | 8369D56H04 SNUBBER | 3 | 1 | 1 |
| M-115C | 2562655H01 RIM VALVE EXTENSION | 35 | 10 | 20 |
| | 404P458H02 LOCK NUT, GUIDE TIRES RIM | 180 | 50 | 100 |
| | 404P600H12 FLAT WASHER 'D", GUIDE TIRES RIM 350 | 50 | 100 | |
| | 404P631H02 BOLT, GUIDE TIRES RIM | 300 | 50 | 100 |
| | 404P902H01 VALVE | 24 | 10 | 20 |
| | 4785A55H02 FTD CLAMPS | 9 | 1 | 2 |
| | 5826C37G02 FTD X-MITTER (NEW TYPE) | 1 | 3 | 3 |
| | 6965C39H01 COUNTERWEIGHT | 8 | 2 | 2 |
| | 6965C40G02 FTD RECEIVER (NEW TYPE) | 1 | 0 | 0 |
| | 7051 ODLI 00 LOCK WASHER GUIDE TIRES RIM | 380 | 50 | 100 |
| M-115E | 8589C64167 SERVICE BRAKE CHAMBER | 7 | 0 | 0 |
| M-1 I 5F | 70500CT02H WASHER. SHOCK ABSORBERS | 10 | 1 | 3 |
| | 8589C64H76 BRAKE CHAMBER ANCHOR LOCK | 1 | 0 | 0 |
| | 8837D54G01 SHOCK ABSORBER ASSEMBLY | 14 | 2 | 4 |
| M-120 | 3930A91H01 WIREI6AWG19I.0113 | 1 | 200 | 500 |
| | 404P740H03 CABLE #2 AWG WELDING | 1 | 0 | 0 |
| | 404P740H16 INFO ANTENNA CABLE | 2 | 0 | 0 |
| | 404P740H23 O.S. SENSOR | 1 | 0 | 0 |
| | 404P740H44 PROGRAM STOP CABLE | 1 | 0 | 0 |
| | 62111MA35F WIRE 14 AWG 191.0142 | 2 | 200 | 500 |

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| | | | | |
|---|---|---|---|---|
| | 62111 MA35L CABLE 12 AWG | 1 | 50 | 500 |
| | 62IIIMA3CQ HIPALON WIRE #4 | 1 | 0 | 0 |
| | 62111 MA46Z CABLE | 1 | 0 | 0 |
| | 62111 MA4HE CABLE | 1 | 0 | 0 |
| | 62125BT3MN WIRE 2/C SHIELDED | 0 | 0 | 0 |
| | 66711G04MB KAPTON WIRE 16 AWG 600V | 1 | 0 | 0 |
| | 8588C01 H02 WIRE 20 AWG 600V | 0 | 20 | 20 |
| | 8590C82H03 WIRE 18 AWG I 000V | 0 | 20 | 20 |
| M-130 | 404P313H01 HOSE -04 | 1 | 0 | 0 |
| | 404P313H02 HOSE .31 ID X .61 OD | 1201 | 0 | 0 |
| | 404P313H03 HOSE -08 . | 1 | 0 | 0 |
| | 404P313H04 RUBBER HOSE -10 | 1 | 0' | 0 |
| | 404P313H05 HOSE -12 | 1 | 0 | 0 |
| | 404P313H15 TEFLON HOSE | 0 | 0 | 0 |
| | 404P491H14 MAIN TRANSFORMER | 1 | 0 | 0 |
| | 404P508H06 HANGER ASSY | 16 | 0 | 0 |
| | 404P697H31 BATTERY (VEHICLE) DYNASTY GCI2VIOO LEAD | 3 | 2 | 2 |
| | 404P697H35 BATTERY (SWITCH GEAR) EXIDE 3CC-3 0 | 0 | 1 | |
| | 409P077H96 SES SWITCH ASSEMBLY | 4 | 0 | 0 |
| | 4675C06G01 AXLE CLAMP NEAR | 0 | 0 | 0 |
| | 4675C06G02 AXLE CLAMP FAR | 0 | 0 | 0 |
| | 6246D69H06 LOWER SPRING CLAMP. | 0 | 0 | 0 |
| | 8369D36H01 ALUM.EXT. 44.31) | 11 | 0 | 0 |
| | 8369D36H02 VEH. DOOR HANGER ASSY (ODD DOORS) | 3 | 2 | 4 |
| | 8589C64132 BRAKE SHOE LINING | 25 | 0 | 0 |
| M-135 | 53535BY00A GREASE, EL. COMP. PWR. RAIL ONLY | 1 | 0 | 1 |
| M-140 | 409P980H13 EVAP. COIL AIR CONDITIONING | 1 | 0 | 1 |
| M-150 | 1C40540G01 AIR COMPRESSOR | 2 | 2 | 2 |
| M-175 | 332P750G01 TRACTION MOTOR | 2 | 0 | 0. |
| | 4675C16G01 MAIN TRANSFORMER VEHICLE | I | 0 | 0 |
| | 5586B29H06 FIBER GLASS CHANNEL | 7 | 0 | 2 |
| | 5D80084G01 RAIL ASSEMBLY WITH COVER | 45 | 5 | 5 |
| | 5D80085H01 RAIL COVER (BEIGE) 353.00 INCHES | 50 | 5 | 15 |
| | 6972C92G01 POWER RAIL | 45 | 2 | 5 |
| Ml | 1C4081 1102 MTG PLATE | 4 | 1 | 2 |
| | 1C40811103 MTG BRACKET (SW) | 10 | 1 | 2 |
| | 1C40811104 MTG BRACKET (SW) | 10 | 1 | 2 |
| | 1C4081 1105 MTG BRACKET (SW) | 10 | 1 | 2 |
| | 1 C4081 1110 MTG BRACKET . | 4 | 1 | 2 |
| | 1C40811152 CABLE AND HANDLE ASSY | 8 | 1 | .2 |
| | 1C40811154 THIMBLE . | 22 | 1 | 1 |

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| | | | | |
|---|---|---|---|---|
| | 1C40811155 CLAMP | 49 | 1 | 1 |
| | 1C40811H08 MTG PLATE | 3 | 0 | 1 |
| | 1C40811H09 MTG BRACKET . | 4 | 1 | 1 |
| | 1C40811H10 MTG BRACKET | 4 | 1 | 1 |
| | 1C40811H11 MTG BRACKET | 4 | 1 | 1 |
| | 4677C05H01 CABLE ASSEMBLY-EMERGENCY HANDL | 5 | 1 | 2 |
| | 4677C06H01 CABLE ASSY EMERG. HANDLE (CAR SIDE) | 4 | 1 | 3 |
| M2 | 1504F86H10 BRACKET-MTG PIVOTING SLIDE | 2 | 1 | 2 |
| | 2538816H01 STANCHION BOTTOM PLATE | 6 | 1 | 2 |
| | 4078B17H02 LOGO PLATE | 2 | 0 | 1 |
| | 409P077H92 MARKER STRIP | 4 | 1 | 2 |
| | 409P077H93 DOOR PARTS TERMINAL STRIP | 1 | 1 | 2 |
| | 4682C60H01 DETAIL 2.50) OF .12 X .5 | 13 | 2 | 2 |
| | 4682C60H04 DETAIL 22.50) OF .12X .5 | 9 | 2 | 2 |
| | 7001OEUI8F SCREW | 26 | 5 | 10 |
| | 8369D29G01 BRACKET ~.. | 28 | 5 | 10 |
| M3 | 1C40811113 BRACKET ASS'Y BUMPER | 10 | 3 | 7 |
| | 1C40811127 SPRING DOOR SLIDE | 3 | 1 | .3 |
| | 1C40811H71 BRACKET ASS'Y BUMPER | 6 | 3 | 7 |
| | 404 P536H43 SET SCREW . | 55 | 10 | 50 |
| | 404P687H04 GASKET | 10 | 3 | 7 |
| | 404P687H05 OPERATOR GASKET | 7 | 3 | 7 |
| | 404P986H1 I COVER . | 4 | 5 | 15 |
| | 409P119H99 SES POWER SUPPLY . | 3 | 1 | 2 |
| | 409P262H23 SES CONTROLLER | 8 | 2 | 2 |
| | 5580B17H01 PLAIN SLIDE ROLLER (OPERATOR ARM) | 17 | 10 | 20 |
| | 6976C08G06 ROLLER & BEARING | 2 | 10 | 20 |
| 44 | 1 C4081 1170 SHAFT AND LEVER | 8 | 2 | 2 |
| .45 | 1C40811171 SHAFT AND LEVER | 13 | 0 | 0 |
| | 409P128H01 OPERATOR ARM RIGHT HAND | 6 | 2 | 2 |
| V17 | 409P128H02 OPERATOR ARM LEFT HAND | 4 | 2 | 2 |
| | 6957C02G01 SLIDE ASS'Y DOOR | 9. | 2 | 2 |
| MB | 409P077H98 GEAR BOX HOUSING WAYSIDE | 3 | 2 | 2 |
| | 409P077H99 GEAR BOX HOUSING VEHICLE | 3 | 0 | 1 |
| N2 | 404P548H01 KEYED WASHER | 6 | 4 | 4 |
| | 404P549H01 GREASE CAP | 15 | 5 | 10 |
| | 404P551H01 CASTLE NUT | 12 | 10 | 10 |
| | 404P845H05 LOCKNUT .500-20 | 12 | 10 | 10 |
| | 4724A93H01 BOLT WHEEL 1) | 13 | 10 | 10 |
| | 610B574H01 SHIELD DUST 4.750) OF .0 | 19 | 5 | 10 |
| | 652A589H03 FLAT WASHER, GUIDE WHEEL SPINDLES | 62 | 6 | 10 |

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| | | | | |
|---|---|---|---|---|
| | 7O22ODPNIF STOP NUT .500-20 | 49 | 10 | 10 |
| | 8589C64143 THRUST WASHER, SUN GEAR | I | I | I |
| | 8589C64144 LOCK, HUB BEARING NUT | 4 | 1 | 1 |
| | 8589C64H50 SNAP RING, SUN GEAR RETAINER | 4 | 1 | 1 |
| | 404P547H36 SEAL SLEEVE KIT | 5 | 3 | 5 |
| | 404P687H08 GASKET | 10 | 5 | 10 |
| | 404P698H01 UNIVERSAL JOINT | 9 | 2 | 2 |
| | 404P698H03 YOKE SHAFT | 5 | 1 | 2 |
| | 8589C64109 COVER PINION BEARING CAGE | 7 | 3 | 6 |
| | 8589C64H20 OIL SEAL PINION BRG. CAGE | 2 | 3 | 6 |
| N4 | 2532B93H01 AXLE YOKE SPLINED HOLE | 5 | 1 | 2 |
| | 3794C63H01 TOOTHED WHEEL .50 THK STL PL B | 6 | 1 | 1 |
| | 3909C68H01 MOUNTING BRACKET 2.1 2)6.50 DIA | 3 | 1 | 1 |
| | 3D15668H01 END YOKE, MOTOR | 3 | 1 | 2 |
| | 404P698H02 SLIP YOKE | 2 | 1 | *1* |
| N5 | 2532B34G01 RIGHT HAND BALL SOCKET ASSEMBL | 4 | 1 | 2 |
| | 2532B34G02 LEFT HAND BALL SOCKET ASSEMBLY | 5 | 1 | 2 |
| | 2560B11G01 DRIVE SHAFT ASSY. | 1 | 0 | 1 |
| | 3437C83H04 STEEL TUBE 18.25) 1.00 ID X | 3 | 1 | 1 |
| N6 | 2969A44H01 BOLT | 7 | 4 | 8 |
| | 3973C23H02 JAM NUT, TOWBAR | 3 | 1 | 2 |
| | 6246D70G04 SUSPENSION FRAME DETAILS PORKCHOP SPRING 2 | | 0 | 1 |
| | 6246D70G05 SUSPENSION FRAME DETAILS PORKCHOP SPRING 2 | | 0 | 1 |
| NEW | 20203A800A GREASE | 0 | 0 | 0 |
| | 404P443H02 RELAY | 47 | 0 | 0 |
| | 404P645H20 CONNECTOR | 0 | 0 | 0 |
| | 526D759H01 SHIELD INTERLOCK ASSY.(LS2IBSC | 0 | 0 | 0 |
| | 62111 MB35F CABLE | 0 | 0 | 0 |
| | 7001 OCJI5Z SCREW ANTICLIMBER | 0 | 2, | 10 |
| | 8367D80G01 MOTOR CONTROL BOX COVER | 1 | 0 | 1 |
| DI | 404P352H32 TEMPERATURE SENSOR INDICATOR SPINDLE | 81 | 5 | 10 |
| | 404P547H01 SPINDLE SEAL | 47 | 8 | 58 |
| | 404P547H02 SEAL UPPER GUIDE SPINDLES | 41 | 8 | 56 |
| | 4722A42H06 BOLT SPINDLES, GUIDE TIRE | 80 | 16 | 8 |
| | 652A589H01 WASHER .188) OF 2.375 DI | 50 | 4 | 4 |
| 02 | 404P546H01 BEARING CUP | 40 | a | 58 |
| | 404P546H02 BEARING CONE | 41 | 8 | 58 |
| | 404P546H03 BEARING CUP | 52. | 8 | 58 |
| | 404P546H04 BEARING CONE | 53 | 8 | 58 |
| 03 | '404P547H17 HUB SEAL#2 END | 17 | 4 | 2 |
| | 8589C64H62 BEARING, OUTER #2 END | 3 | 4 | 2 |
| | 8589C64H63 CUB HUB BRG. OUTER #2 END | 2 | 4 | 2 |

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| | | | | |
|---|---|---|---|---|
| | 8589C64H67 CUP HUB BRG. INNER #2 END | 6 | 4 | 2 |
| | 8589C64H68 CONE HUB BRG. INNER #2 END | 8 | 4 | 2 |
| 04 | .404P547H13 SEAL, #1 END HUB | 6 | 2 | 2 |
| | 404P698H10 BEARING CUP #1 END OUTER | 7 | 2 | 2 |
| | 404P698H1 I BEARING #*1* END OUTER | 5 | 2 | 2 |
| | 404P698H12 BEARING #1 END (A,B,C) 665A | 7 | 2 | 2 |
| | 404P698H13 BEARING CUP#1 INNER | 6 | 2 | 2 |
| | 4O4P698HI4GASKET#IENDHUB | 10 | 3 | 5 |
| 05 | 409P051 H03 LARGE DIAPHRAM SPRING BRAKE CHAMBER | 23 | 5 | 10 |
| | 409P051H04 SMALL DIAPHRAM SVC. BRAKE CHAMBER | 25 | 5 | 10 |
| | 409P086H12 WEDGE GUIDE | 11 | 3 | 6 |
| | 5585B41H05 ADJUSTING PLUNGER ASSY 18 DEG | 15 | 4 | 12 |
| | 8589C64163 SPRING RETURN | 8 | 3 | 6 |
| | 8589C64165 PLUNGER SEAL | 28 | 5 | 10 |
| | 8589C64H80 BOLT ADJUSTING | 17 | 4 | 12 |
| | 8589C64H91 CLIP HOLD DOWN | 13 | 3 | 6 |
| | 8589C64H93 BRAKE WEDGE | 13 | 4 | 8 |
| P1 | 4O4P698HI5WHEELSTUD(LH) | 22 | 10 | 40 |
| | 4O4P698HI6WHEELSTUD(LH) | 30 | 10 | 40 |
| | 404P698H19STUD(RH)HUB. | 16 | 10 | 20 |
| | 404P698H20#IENDHUB | 21 | 10 | 20 |
| | 404P845H01 LOCKNUT, MAIN DRIVE TIRES | 81 | 10 | 30 |
| | 8589C64142 STUD PLANETARY | 19 | 5 | 10 |
| | 8589C64H65#2 END HUB | 28 | 5 | 10, |
| | 8589C64H72 CAPSCREW BRAKE DRUM | 24 | 5 | 10 |
| P2 | 4O4P698HI7WHEEL STUD CAP (RH) | 16 | 10 | 40 |
| | 404P698H18 WHEEL STUD NUT (LH) | 5 | 10 | 40 |
| | 404P698H21 STUD LONG DIF | 26 | 5 | 10 |
| | 404P698H22 STUD SHORT DIFF | 15 | 5 | 10 |
| | 4724A90H01 BOLT, GUIDE STRUCTURE | 31 | 3 | 6 |
| | 4724A92H01 WASHER, L-9'S .875 HIGH STRENGTH | 31 | 16 | 8 |
| | 4724A92H02 NUT, L-9, .875-14 HIGH STRENGTH | 17 | 16 | 8 |
| | 70210BK61L NUT, .750-10 HEX STL, SPRINGS | 64 | 20 | 100 |
| | 8589C64130 LOCK NUT DIFF | 13 | 10 | 30 |
| | 8589C64140 FLAT WASHER DIFF | 33 | 10 | 30 |
| | 1C41450H01 THRUST WASHER 4.31 DIA) .09 TH | 16 | 0 | 0 |
| | 2538B52H01 HUBOMETER | 1 | 0 | 1 |
| | 2536B52H02 BRACKET MTG. #155 | 1 | 0 | 1 |
| | 2969A43H01 L9BOLT **0** | 11 | 4 | 12 |
| | 4724A91H01 BOLT .312-16 X .88 LG | 20 | 5 | 20 |
| | 6246D67H09 SPRING PLATE | 4 | 1 | 2 |
| | 652A589H02 SPACER LEAF SPRING | 6 | 3 | 12 |

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| | | | | |
|---|---|---|---|---|
| | 7OIOOEGOBX BOLT LEAF SPRING | 7 | 1 | 10 |
| | 70210BK61D NUT, SPRING | 24 | 1 | 3 |
| | 7O5IODLIOW LOCKWASHER, SPRINGS | 9 | 4 | 10 |
| | 8586C26H01 SLEEVE (SPRINGS) | 8 | 4 | 8 |
| | 8586C26H06 KELTROL SLEEVE | 8 | 4 | 8 |
| P4 | 404P769H02 SHRINK TUBING 1.1 OX.375 TRACTION MOTOR | 33 | 10 | 30 |
| | 4675C16H03 BUSHING MAIN TRANSFORMER | 8 | 2 | 2 |
| | 4675C76H01 CLAMP | 19 | 10 | 30 |
| . | 2263D94G01 BRUSH HOLDER ASSEMBLY | 2 | 0 | 0 |
| | 2263D94H02 BRUSH SPRING | 46 | 15 | 10 |
| | 2539B60H01 FILTER, MOTOR COVERS | 9 | 0 | 0 |
| | 3A63286H14 COTTER PIN .062X1.25 MOTOR BRUSH SPRING | 136 | 15 | 30 |
| | 5586B66H01 CARBON BRUSH GRADE WI 87 | 28 | 54 | 48 |
| | 570A055H03 "0" RING, MOTOR COVERS | 19 | 0 | 0 |
| | 6158A81H01 BUSHING, MOTOR | 3 | 0 | 4 |
| | 8837D54H03 SHOCK ABSORBER BUSHING | 0 | 0 | 0 |
| P6 | 1020J38G01 FILTERED COMMUTATOR COVER (RH) | 2 | 1 | 1 |
| | 1020J38G02 FILTERED COMMUTATOR COVER (LH) | 1 | 0 | 1 |
| | 404P769H01 SHRINK TUBING .220-.750 | 40 | 5 | 10 |
| | 4Ô4P769H03 SHRINK TUBING 1.50X.50X9 | 22 | 10 | 30 |
| Q5 | 7O5IODLIOK LOCKWASHER .190 X-DUTY STL, FSE | 0 | 5 | 5 |
| RI | 3965C97G01 INFORMATION RECEIVER ANTENNA | 2 | 1 | 2 |
| | 409P1 01 H03 AC. BALLAST | 4 | 1 | 2 |
| | 4722A46H10 O.S SENSOR BOLT | 17 | 3 | 5 |
| | 4724A98H01 MTG PLATE | 3 | 0 | 1 |
| | 7076D02G03 OVERSHOOT ANTENNA | 2 | 1 | 1 |
| R2 | 404P595H10 AB BREAKER **0** | 19 | 2 | 3 |
| | 404P595H26 AB BREAKER 1-POLE 20 AMP | 22 | 5 | 5 |
| | 404P595H28 AB BREAKER 1-POLE 50 AMP | 6 | 2 | 3 |
| R3 | 404P365H07 RELAY DUST COVER | 7 | 1 | 1 |
| | 404P365H18 COVER PLASTIC | I | I | I |
| | 404P595H51 BREAKER | 2 | 1 | 1 |
| | 404P595H66 BREAKER 60A 120/24OVAC | 2 | 1 | *1* |
| | 409P131H01 BREAKER 3 POLE 50 AMP | 4 | 1 | 2 |
| | 409P131H03 BREAKER | 7 | 2 | '3 |
| | 409P131H06 BREAKER 70A | 3 | 1 | 1 |
| R4 | 404P595H29 BREAKER MOTOR OPERATOR | 1 | 0 | 1 |
| | 404P595H32 BREAKER | 1 | 0 | 1 |
| | 404P595H40 BREAKER | 13 | 5 | 5 |
| | 409P1321-I01 MOTOR CIRCUIT PROTECTOR | 3 | 1 | 2 |
| R5 | 107D964H15 CAPACITOR I UF, 1000 VDC | 1 | 1 | 2 |

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| | | | | |
|---|---|---|---|---|
| | 3965C97G02 ANTENNA | 1 | 0 | 1 |
| | 404P595H46 BREAKER | 1 | 0 | 1 |
| R6 | 404P595H43 BREAKER | 1 | .0 | 1 |
| | 404P595H52 BREAKER S | 2 | 0 | 1 |
| | 404P595H55 BREAKER | 1 | 0 | 1 |
| SI | 107D964H21 CAPACITOR 12 UF, 1000 VDC | 9 | 4 | 10 |
| | 404P568H05 CAPACITOR BRACKET | 8 | 2 | 4 |
| | 5586674H06 CONNECTOR 160 PIN STANDARD | 1 | 0 | 1 |
| S2 | 404P374H16 PIN | 0 | 0 | 0 |
| | 404P541H03 CONNECTOR | 8 | 2 | 4 |
| | 404P616H04 CONNECTOR | 1 | 0 | 1 |
| | 404P645H54 CONNECTOR | 10 | 1 | 1 |
| | 409P059H01 CONNECTOR (28 PIN PLUG) | 0 | 0 | 1 |
| | 409P059H02 SOCKET BLOCK 28 PIN | 4 | 1 | 1 |
| | 409P221 H50 TACH RUBBER BOOT | 2 | 1 | 3 |
| 83 | 2698A54H04 ELECTRO MAGNETIC PICKUP | 2 | 1 | 2 |
| | 404P541H42 CONNECTOR CLAMP, TACH | 5 | 1 | 2 |
| | 404P645H55 CONNECTOR | 2 | 0 | 1 |
| | 7307D80G05 RELAY ASSY, TYPE UT-273 (2 IN- | 1 | 0 | 1 |
| 84 | 404P480H25 CONTACTOR | 6 | 1 | 2 |
| | 404P595H50 BREAKER | 3 | 1 | 2 |
| S5 | 1268C86G04 STARTER CORE | 2 | 0 | 0 |
| | 404P480H36 CONTACTOR INTERLOCK-PRC AUX CONT. | 1 | 0 | 0 |
| | 409P039H02 FUSE BLOCK PRC | 6 | 1 | 2 |
| | 4234B87H01 CURRENT ADJUSTING BOLT MOL RL | 4 | 1 | 1 |
| | 7307D80G04 MOL RELAY TYPE 223 TMAM CAR ONLY | 0 | 0 | 1 |
| S6 | 179C749G01 COIL 120 VAC CONTACT, PRC | 4 | 0 | 0 |
| TI | 4567B03H03 CAPACITOR I UF,660 VAC | 12 | 0 | 0 |
| | 8587C72G01 RESISTORS FOR 75W THYR. | 8 | 0 | 0 |
| | 8587C72G02 RESISTOR FOR 75W THYR. | 12 | 4 | 8 |
| T2 | 2560A90H04 L1GHTINING ARRESTOR | 17 | 0 | 2 |
| | 3965C22H12 DYNAM1C BRAKING FUSE 300A 600V | 2 | 0 | 0 |
| | 404P115H19 DIODE, SPECIAL BOA, 300V,REC | 2 | 0 | 0 |
| | 404P427H19 FUSE 8 AMPS/600 VOLTS | 3 | 0 | 5 |
| | 404P594t-114 VARISTOR 45 VOLTS DC | 3 | 0 | 0 |
| | 404P594H26 VARISTOR .45 WATTS 1000 A | 0 | 0 | 0 |
| | 404P695H15 RED LENS | 7 | 0 | 0 |
| | 404P695H16 WHITE LENS | 7 | 0 | .0 |
| | 404P709H02 HANDSET CRADLE | 1 | 0 | 0 |
| | 404P762H02 JOINT COMPOUND | 3 | 1 | 3 |
| | 404P683H08 THYRISTOR 200 VI7OA 2N4362 BATT. CHARGER | 4 | 1 | 2 |

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| | | | | |
|---|---|---|---|---|
| | 577B060H1 0 DIODE | 11 | 2 | 5 |
| | 577B060H11 DIODE | 11 | 2 | 5 |
| | 577B061H14 THYRISTOR | 4 | 3 | 3 |
| | 577B061H17 SILICON CONTROLLED RECTIFIER | 10 | 4 | 2 |
| | 577B061H18 SILICON CONTROLLED RECTIFIER | 5 | 4 | 2 |
| T4 | 404P427H18 FUSE 3A 300V | 6 | 0 | 0 |
| | 404P427H20 FUSE | 15 | 0 | 0 |
| | 404P427H21 FUSE 3A 600V | 6 | 0 | 0 |
| | 404P427H23 FUSE 6A 600V | 11 | 0 | 0 |
| | 404P427H24 FUSE 15 AMP | 16 | 0 | 0 |
| | 404P427H25 FUSE 30A 600V | 16 | 0 | 0 |
| | 404P554H1 9 FUSE | 3 | 0 | 0 |
| | 404P824H08 FUSE HOLDER | 5 | 0 | 0 |
| T5 | 404P539H02 FUSE HOWER | 0 | 0 | 0 |
| | 404P554H27 FUSE 600V 800A TYPE 4 | 1 | 0 | 0 |
| | 404P624H12 FUSE HOLDER 30 A 600 V | 6 | 0 | 0 |
| | 409P024H05 CONTACT | 12 | 0 | 0 |
| | 409P082H01 HEATER(FOR AIR COMPRESSOR CONTACTOR) | 6 | 5 | 20 |
| T6 | 2124F99H03 DC INVERTER (VEHICLE EMER. LIGHTS) | 2 | 2 | 3 |
| | 404P685H03 LAMP 120 VOLT | 30 | 25 | 25 |
| | 404P695H17 LAMP 30 VOLT 60 WATT | 38 | 25 | 25 |
| UI | 404P354H02 LAMP 28 VOLTS 50 WATTS | 11 | 0 | 0 |
| U2 | 404P354H03 MARKER LIGHT | 18 | 0 | 0 |
| | 404P360H14 BULB | 18 | o | 0 |
| | 404P695H08 PILOT LAMP BASE | 0 | 0 | 0 |
| | *1/4"* PNEUMATIC | | | |
| AC | TORCH, OXY-ACE W/TANKS | M | DRILL | |
| | 404P888H02 LIGHT MARKER | 9 | 0 | 0 |
| U3 | 404P331H02 SWITCH MATRIX I X 1 | 12 | 0 | 0 |
| | 404P332H02 INDICATOR | 6 | 0 | 0 |
| | 404P332H03 SWITCH, MOMENTARY ACTION | 6 | 0 | 0 |
| | 404P332H04 SWITCH 4-POLE ALTERNATE A | 2 | 0 | 0 |
| | 404P332H05 SWITCH | 4 | 0 | 0 |
| | 404P334H02 LENS ASSEMBLY | 0 | 0 | 0 |
| | 404P334H03 LENS | 0 | 0 | 0 |
| | 404P895H09 LED DISPLAY | 7 | 0 | 0 |
| U4 | 404P332H01 CAP DUMMY BLACK | 23 | 0 | 0 |
| | 404P595H46 BREAKER | 2 | 0 | 0 |
| | 4724A57H02 RELAY D.C. VOLT 12 V | 5 | 2 | 4 |
| | 4724A57H03 RELAY D.C. VOLT 24 V | 4 | 4 | 4 |
| | 4768A05H10 CRITICAL RELAY 4 FORM C 12V DC | 3 | 2 | 4 |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
## SAMPLE FORMS

| | | | | |
|---|---|---|---|---|
| | 404P443H41 RELAY | 4 | 0 | 0 |
| | 404P443H45 RELAY | 3 | 0 | 0 |
| | 404P595H39 BREAKER | 6 | 0 | 0 |
| | 2977A69H04 SPRING | 5 | 0 | 0 |
| | 3930A81 HOI SOCKET | 5 | 0 | 0 |
| | 3930A81H02 RET SPRING | 12 | 0 | 0 |
| | 404P365H14 NON-VITAL RELAY 24V DC 300 OHMS 8 CONTAC | 98 | 0 | 0 |
| | 404P428H01 RELAY | 5 | 0 | 0 |
| ri | 404P365H13 TELEPHONE RELAY 24 VOLT | 157 | 10 | 10 |
| | 3927A62H05 RESISTOR 2K .75W +1- 10 | 13 | 2 | 2 |
| | 404P365H05 RELAY | 10 | 3 | 4 |
| | 404P365H15 TELEPHONE RELAY 12 VOLT | .9 | 5 | 10 |
| | 404P365H16 TELEPHONE RELAY 12 VOLT | 4 | '5 | 10 |
| | 404P365H17 SOCKET 28 CONTACT | 2 | 3 | 5 |
| | 404P365H19 RELAY TELEPHONE 24V | 0 | 5 | 10 |
| | 404P732H01 ANTENNA | 1 | 0 | 1 |
| V4 | 1021 J82H05 RELAY | 3 | 3 | 3 |
| | 2970A71H11 RELAY CONTROL, 14 POLE | 1 | 0 | 1 |
| | 404P443H42 RELAY | 4 | 3 | 6 |
| | 409P077H04 THYRECTOR DIODE ASSY (VEH & WAY MCR ONLY | 3 | 4 | 11 |
| VS | 404P595H36 RELAY - | 1 | 0 | 1 |
| | 4166A87G01 RELAY FAIL SAFE | 6 | 1 | 1 |
| V6 | 2535B39H02 RELAY CONTAC@ | 3 | 1 | 1 |
| | 2535B86H01 RELAY (W) TYPE BFD (SPEC | 4 | 1 | 2 |
| | 404P630H1 I RELAY TYPE SG | 3 | 1 | |
| | 404P630H12 RELAY | 2 | 1 | 1 |
| WI | 1253A83H02 RELAY 12V, 200 OHMS 2A | 26 | 20 | 25 |
| | 1253A83H13 RELAY 24V, 800 OHMS 5A | 16 | 20 | 25 |
| | 404P443H09 RELAY | 4 | 0 | 0 |
| | 404P595H38 BREAKER | 1 | 0 | 0 |
| W2 | I D47865G01 RESISTOR TUBE ASSY | 1 | 0 | 1 |
| W3 | 2535B86H02 RELAY (W) TYPE BFD | 5 | 0 | 0 |
| | 404P630H02 RELAY 24 VOLT | 1 | 0 | 0 |
| | 404P630H07 DBR RELAY | 5 | 2 | 5 |
| W4 | 404P595H83 SPRING CHARGING MOTOR KIT | 2 | 0 | 0 |
| | 8620A93H01 CONTACT BLOCK - SECONDARY DISC | 5 | 0 | 0 |
| | 8620A93H05 SWITCH- MOTOR CUTOFF | 2 | 2 | 4 |
| W5 | 652A207H18 RESISTOR 3.0 OHMS 2 | 7 | 0 | 0 |
| W6 | 3909C72G04 ACCELEROMETER SWITCH | 3 | 1 | 2 |
| | 404P391H09 OUTLET RECEPT VECH | 1 | 0 | 0 |
| | 4675C54G01 CONTROL SW | 1 | 0 | 1 |

## SECTION 3
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# SAMPLE FORMS

| | | | | |
|---|---|---|---|---|
| W7 | 404P335H36 LOBBY SENSOR SW ASSY. | 6 | 0 | 0 |
| | 2561 A35H03 HOLSTER PANEL , KNOB | 0 | 0 | 0 |
| | 4675C40G01 SWITCH ASSEMBLY, OVERRIDE SW. | 7 | 0 | 0 |
| | 4675C40G02 SWITCH ASSEMBLY, STOP EMG. SW | . 5 | 2 | 3 |
| | 4675C40G03 SWITCH ASSEMBLY | 3 | 2 | 3 |
| | 467 5C40G04 SWITCH ASSEMBLY | 5 | 2 | 3 |
| | 4675C40G05 SWITCH ASSEMBLY, ENABLE SW. | 5 | 2 | 3 |
| | 4675C40G06 SWITCH ASSEMBLY, HOSTLE PANN DOOR | 5 | 0 | 0 |
| X2 | 7081D46G02 SPEED POTENTIOMETER ASSEMBLY | 12 | 3 | 6 |
| | 8623A03H03 SW. PIN 18-16 AWG TYPE III | 0 | 100 | 100 |
| | 5623A03H06 STD. SOCKET 18-16 AWG TYPE III | 0 | 100 | 100 |
| | 8837D17G01 TRANSIT EXPR@ | 4 | 0 | 0 |
| | 8837D17G03 TRANSIT EXPR~ | 2 | 0 | 0 |
| X3 | 2559A86H05 SONA ALERT SES | I | I | I |
| | 2560A78H05 INHIBIT SWTCH | 2 | 0 | 0 |
| | 404P1 11MM BATTERY CHARGER CUP 52000 MFD -30 WVDC | 12. | 0 | 0 |
| | 8837D17G02. MOUNTING BRACKET, SPEAKER, AMP | 2 | 1 | 1 |
| X4 | 227D928H01 RESISTOR GATE PANEL ASSY (THYRISTOR) | 10 | 2 | 2 |
| | 404P366H01 SOLDER TERMINAL | 30 | 0 | 0 |
| | 404P452H20 TERMINAL BLOCK | 5 | 2 | 2 |
| | 404P495H04 TERMINAL STRIP | I | I | I |
| | 409P144H46 TERMINAL BLOCK 5 POS 20 AMPS | 0 | 1 | 2 |
| | 4725A92H01 CONTACT - FLAG RELAY WIRE SIZE | 45 | 0 | 0 |
| | 652A673H01 CURRENT TRANSDUCTOR 500/iDA | 2 | 1 | 1 |
| | 8623A03H02 STD. PIN 24-20 AWG TYPE ill | 100 | 50 | 100 |
| | 8623A03H05 STO. SOCKET 24-20 AWG TYPE III | 400 | 100 | 100 |
| X5 | 3D15257G01 GATE CONTROL TRANSFORMER | 3 | 0 | 0 |
| | 404P496H01 COIL | 5 | 1 | 2 |
| | 4768A30H01 TRANSFORMER | 4 | 1 | 1 |
| X6 | 4768A05H1 I CRITICAL RELAY 4 FORM C 24V | 25 | 2 | 4 |
| | 4768A30H01 TRANSFORMER | 2 | 0 | 0 |
| YB | 404P374H02 CONNECTOR | 0 | 0 | 0 |
| ZI | 404P541H64 PROGRAM STOP INFO ANT CONN | I | 1 | 1 |
| Z7 | 70210BK612 NUT .190-32 HEX STL | 1 | 20 | 120 |

# TOOLS INVENTORY LIST

| PARTIAL DESCRIPTION | | TYP | MODEL # | SERIAL/TAG # | OWNER | QTY | COST | TOTAL | DATE |
|---|---|---|---|---|---|---|---|---|---|
| 2 CH.THERMAL ARRAYCORDER | GRAPHTEC | C | 7400 | 8058333/P0685 | SITE | 1 | 0 | 0 | 2/9/00 |
| MFG: SHARP | SHARP CAR | F | LINYTRON-PLUS | SKC-1910A | SITE | 1 | 0 | 0 | 9/4/95 |

# SECTION 3
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| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| MFG: GRAPHTEC | GRAPHTEC | C | WR3320 | 91240003 | SITE | 1 | 0 | 0 | 2/9/00 |
| AIR PRESSURE GAUGE | | E | YA258 | 0-200 PSI | SITE | 1 | 0 | 0 | 10/16/9 |
| AMPTECTOR | WESTINGHOUSE | E | S140D481G | 2/204 | SITE | 1 | 0 | 0 | 9/1/95 |
| BAND SAW | SEARS/CRAFTMAN | T | 11324350 | 476 | SITE | 1 | 0 | 0 | 9/4/95 |
| BATTERY CHARGER, 12VDC | DAYTON | T | 3Z351C | CH147 | SITE | 1 | 0 | 0 | 9/4/95 |
| BATTERY DRILL | | T | HD1201 | 1984849824 | SITE | 1 | 0 | 0 | 10/16/9 |
| BATTERY LOAD TESTER | KALE | E | 4260 | 80400/205 | SITE | 1 | 0 | 0 | 9/2/95 |
| BENCH GRINDER | DAYTON | T | 4Z909B | 9301 | SITE | 1 | 0 | 0 | 9/4/95 |
| CABINET, FILES | HON | F | 4 DRAWERS | COLOR: BK | SITE | 1 | 0 | 0 | 9/4/95 |
| CABINET, FILES | STEELCASE | F | 5 DRAWERS | COLOR; BK | SITE | 1 | 0 | 0 | 9/4/95 |
| CABINET, STEEL | HALLOWELL | F | 7'X 3.5', 2 LEAF | COLOR: GRY | SITE | 1 | 0 | 0 | 9/4/95 |
| CABINET, STEEL | HALLOWELL | F | 7'X3.5', 2 LEAF | COLOR: GRY. | SITE | 1 | 0 | 0 | 9/4/95 |
| CABINET, STEEL | | F | 6'X 3', 2 LEAF | COLOR: BK\BR | SITE | 1 | 0 | 0 | 9/4/95 |
| CABINET, STEEL | HALLOWELL | F | 7'X3.5',2 LEAF | COLOR GRY/206 | SITE | 1 | 0 | 0 | 9/2/95 |
| CALIPER, DIGITAL | BROWN & SHARPE | E | 599-571-3 | M5499 | SITE | 1 | 0 | 0 | 9/4/95 |
| CAPACITANCE METER | B & K PRECISION | E | 820 | 9038626/207 | SITE | 1 | 0 | 0 | 9/2/95 |
| CHARGE & TEST MONIFOLD | RITCHIE | T | YELLOW JACKET | 8-Nov | SITE | 1 | 0 | 0 | 9/4/95 |
| CHARGE & TEST MONIFOLD | UNIWELD | T | QAC | C38 | SITE | 1 | 0 | 0 | 9/4/95 |
| CHARGING SCALE, ELECTRONIC | ROBINAIR | E | 14945 | N\A.,., | SITE | 1 | 0 | 0 | 9/4/95 |
| CHOP SAW | | T | 2414B | 54375 | SITE | 1 | 0 | 0 | 10/16/9 |
| CLEANING TANK | ZEP | T | N/A | .N\A | SITE | 1 | 0 | 0 | 9/4/95 |
| COUNT/TIMER | FLUKE | E | 1952B | 0164C/211 | SITE | 1 | 0 | 0 | 9/2/95 |
| CRIMPER, HAND | AMP | T | 16-14 W FLAG | M7330/210 | SITE | 1 | 0 | 0 | 9/2/95 |
| CRIMPER, HAND | AMP | T | 169400 | .N\A. | SITE | 1 | 0 | 0 | 9/4/95 |
| CRIMPER, HAND | AMP | T | 169400 | F5493 | SITE | 1 | 0 | 0 | 9/4/95 |
| CRIMPER, HAND | AMP | T | 600849 | F3152 | SITE | 1 | 0 | 0 | 9/4/95 |
| CRIMPER, HYDRAULIC, HAND | AMP | C | N/A | 59973-1 | SITE | 1 | 0 | 0 | 2/9/00 |
| CURRENT GUN | F.W BELL | E | CG103A | 8312/212 | SITE | 1 | 0 | 0 | 9/2/95 |
| CURRENT GUN | F.W BELL | E | CG100A | N\A/213 | SITE | 1 | 0 | 0 | 9/2/95 |
| CURRENT SHUNT | BIDDLE | E | 72-920 | 49021/214 | SITE | 1 | 0 | 0 | 9/2/95 |
| DECADE CAPACITOR | CORNELL | E | CDA2 | 4/215 | SITE | 1 | 0 | 0 | 9/2/95 |
| DECADE CAPACITOR | CORNELL | E | CDB3 | 4/216 | SITE | 1 | 0 | 0 | 9/2/95 |
| DECADE RESISTOR | HEATH | E | IN3117 | N\A/217 | SITE | 1 | 0 | 0 | 9/2/95 |
| DECADE RESISTOR | HEATH | E | IN3117 | N\A/218 | SITE | 1 | 0 | 0 | 9/2/95 |
| DEPTH MICROMETERS | | T | 0"-6" | 0"-6" | SITE | 1 | 0 | 0 | 10/16/9 |
| DRILL PRESS, 5 SPEED | OHIO FORG | T | 919-020 | 275406 | SITE | 1 | 0 | 0 | 9/4/95 |
| DRILL PRESS, W/PEDESTAL | SEARS/CRAFTMAN | T | 11321371 | 4475 | SITE | 1 | 0 | 0 | 9/4/95 |
| DRIVE STORAGE | DIGITAL | C | N/A | N1709AF612/A6523 | SITE | 1 | 0 | 0 | 2/9/00 |
| ELECTRIC WELDER | SEARS/CRAFTMAN | T | 30-230 AMP | N\A, | SITE | 1 | 0 | 0 | 9/4/95 |
| FAN | DAYTON | T | 3F301A | 15038001 | SITE | 1 | 0 | 0 | 2/9/00 |
| FAN, FLOOR | EMRSON | T | CSG-303-4 | ,N\A. | SITE | 1 | 0 | 0 | 9/4/95 |
| MFG: PANASONIC | PANASONIC | F | PANAFAX UF-585 | 1990400947 | SITE | 1 | 0 | 0 | 2/9/00 |
| FORKLIFT, AUTOPROP.BAT | CROWN | T | 2000 LB | 1A179831 | SITE | 1 | 0 | 0 | 2/9/00 |
| FORKLIFT, BATTERY POWERED | CROWN | T | 15BS/1500 | 25855 | SITE | 1 | 0 | 0 | 9/4/95 |
| HEAT GUN | SNAPON | E | ET1600T/1 | 9246-7/221 | SITE | 1 | 0 | 0 | 9/2/95 |
| HEAT GUN | UNGAR | E | 6970 | N\A/220 | SITE | 1 | 0 | 0 | 9/2/95 |

# SECTION 3
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## SAMPLE FORMS

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| HIGH FREQUENCY VCG GENERATOR | | E | 142 | 256717/222 | SITE | 1 | 0 | 0 | 9/3/95 |
| IC & COMPONENT TESTER | BECKMAN | E | SCOPEMATE 2 | 92031812/223 | SITE | 1 | 0 | 0 | 9/3/95 |
| IMPEDANCE BRIDGE | HEATH | E | IB3128 | 2206-6/224 | SITE | 1 | 0 | 0 | 9/3/95 |
| INFRARED HEAT SENSOR | MINOLTA | E | CYC/COM.3 | 24003132/225 | SITE | 1 | 0 | 0 | 9/3/95 |
| JACK, FLOOR LIFT, HYDRAULIC, | | T | LRJ3C | N\A... | SITE | 1 | 0 | 0 | 9/4/95 |
| JACK, FLOOR W/BASE, HYDRAULIC | | T | 10TON/RC1010 | N\A., | SITE | 2 | 0 | 0 | 9/4/95 |
| JACK, FLOOR, TRANSM.,HYDR., | | T | 67552 | N\A,, | SITE | 1 | 0 | 0 | 9/4/95 |
| LIFT TABLE, HYDRAULIC, 230 VAC | | T | 3000/LSH 3-96 | A711854 | SITE | 1 | 0 | 0 | 2/26/97 |
| LOW FREQUENCY FILTER | L.T KLAUD | E | DWS | 102/226 | SITE | 1 | 0 | 0 | 9/3/95 |
| MEGGER | BIDDLE | E | 21170 | 12682/227 | SITE | 1 | 0 | 0 | 9/3/95 |
| METAL-CUTTING BAND SAW | DAYTON | T | 3Z360G | 988233 | SITE | 1 | 0 | 0 | 9/4/95 |
| MICROMETER, DIAL | NSK | E | N\A | N\A.., | SITE | 1 | 0 | 0 | 9/4/95 |
| MOTOR & PHASE ROTATION TESTER | | E | 80060 | 5087/228 | SITE | 1 | 0 | 0 | 9/3/95 |
| MOTOR TESTER | SITE ELECT. | E | N/A | N\A.,. | SITE | 1 | 0 | 0 | 9/4/95 |
| MULTIMETER, ANALOG | SIMPSON | E | 260 SERIES 8P | N\A/201 | SITE | 1 | 0 | 0 | 9/3/95 |
| MULTIMETER, DIGITAL | FLUKE | E | 8062A | 7030092 | SITE | 1 | 0 | 0 | 9/3/95 |
| MULTIMETER, DIGITAL | FLUKE | E | 83 | 51000972/229 | SITE | 1 | 0 | 0 | 9/3/95 |
| OHMMETER, DIGITAL, LOW RESIST. | | E | 247000 | 12566/233 | SITE | 1 | 0 | 0 | 9/3/95 |
| OSCILLOSCOPE CART | TEKTRONIX | E | S.MO.200C | N\A/237 | SITE | 1 | 0 | 0 | 9/3/95 |
| OSCILLOSCOPE, PORTABLE | TEKTRONIX | E | 2201 | H702243 | SITE | 1 | 0 | 0 | 9/3/95 |
| OSCILLOSCOPE, PORTABLE | TEKTRONIX | E | TDS1002 | C016451 | SITE | 1 | 0 | 0 | 9/3/95 |
| POWER SEMICONDUCTOR TESTER | | E | PST-2000 | 20529407/239 | SITE | 1 | 0 | 0 | 9/3/95 |
| POWER SUPPLY | POWERSTAT | T | 116B | 22/240 | SITE | 1 | 0 | 0 | 9/3/95 |
| POWER SUPPLY, REGULATED | LAMBDA | T | LP-521-FM | B93415/242 | SITE | 1 | 0 | 0 | 9/4/95 |
| POWER SUPPLY, REGULATED | LAMBDA | T | LP-522-FM | B93494 | SITE | 1 | 0 | 0 | 9/4/95 |
| POWER SUPPLY, REGULATED | TOOD PRODUCTS | T | QAD15-2.5 | 900062/241 | SITE | 1 | 0 | 0 | 9/4/95 |
| PRESS, HYDRAULIC | ENERPAC | T | 10TON/C102 | C0992C | SITE | 1 | 0 | 0 | 9/4/95 |
| PUMP, AIR/HYDRAULIC | POWER TEA | T | PA4 | N\A,,. | SITE | 1 | 0 | 0 | 9/4/95 |
| PUMP, AIR/HYDRAULIC | POWER TEA | T | PA6 | N\A,,, | SITE | 1 | 0 | 0 | 9/4/95 |
| PUMP, OIL TANK, HAND | BLACMER | T | HAND | N\A.,, | SITE | 1 | 0 | 0 | 9/4/95 |
| PUMP, VACUUM RECYCLING REFRIG. | ROBINAIR | T | 15101-A | 57453 | SITE | 1 | 0 | 0 | 9/4/95 |
| PUMP, VACUUM | THERMAL E | T | 1817/R-21 | N\A..,, | SITE | 1 | 0 | 0 | 9/4/95 |
| PUMP, VACUUM | RITCHIE | T | 934660 | E150747 | SITE | 1 | 0 | 0 | 9/4/95 |
| REFRIGERATOR | AVANTI | F | 11009RWT | 7400 | SITE | 1 | 0 | 0 | 9/4/95 |
| REFRIGERATOR | GENERAL ELECTRIC | F | SC4SSB | RN081786 | SITE | 1 | 0 | 0 | 9/4/95 |
| SHELF CAROUSEL | SARATOGA | F | GBH-12-6/16/3 | 3065151911 | SITE | 1 | 0 | 0 | 9/4/95 |
| SINE-SQUARE AUDIO GENERATOR | | E | SG-5218 | 46083/245 | SITE | 1 | 0 | 0 | 9/4/95 |
| SINE-SQUARE AUDIO GENERATOR | | E | SG-5218 | 43782/244 | SITE | 1 | 0 | 0 | 9/4/95 |
| SOLDER STATION | WELLER | T | TC202 | N\A/247 | SITE | 1 | 0 | 0 | 9/4/95 |

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| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SOLDER STATION | WELLER | T | EC3001 | N\A/246 | SITE | 1 | 0 | 0 | 9/4/95 |
| START/STOP MODULE TESTER | WESTINGHOUSE | E | N\A | N\A/248 | SITE | 1 | 0 | 0 | 9/4/95 |
| THERMOMETER, DIGITAL, DUAL | HITECH | E | DT280 | 92672 | SITE | 1 | 0 | 0 | 9/4/95 |
| THICKNESS GAUGE | PAUL N.G | E | N/A | N\A/249 | SITE | 1 | 0 | 0 | 9/4/95 |
| TIC TRACER | TIF | E | 300CC | 46287/250 | SITE | 1 | 0 | 0 | 9/4/95 |
| TIRE LOW PRES.SENSOR TESTER | TIRE T | E | 24VDC | 6017 | SITE | 1 | 0 | 0 | 9/4/95 |
| TOOL BOX | SEARS/CRAFTMAN | T | 7 DRAWERS | N\A.,,, | SITE | 1 | 0 | 0 | 9/4/95 |
| TOOL BOX | SEARS/CRAFTMAN | T | 10 DRAWERS | N\A | SITE | 1 | 0 | 0 | 9/4/95 |
| TORCH, OXY-ACE W/TANKS | PRESTO-LI | T | N/A | N/A.,., | SITE | 1 | 0 | 0 | 9/4/95 |
| TORQUE WRENCH | PROTO | T | 6014 | F3158 | SITE | 1 | 0 | 0 | 9/4/95 |
| TORQUE WRENCH | PROTO | T | 6006A | 73157 | SITE | 1 | 0 | 0 | 9/4/95 |
| TORQUE WRENCH | PROTO | T | 6064-5 | 901002 | SITE | 1 | 0 | 0 | 9/4/95 |
| TORQUE WRENCH | PROTO | T | 6064-A | F3156 | SITE | 1 | 0 | 0 | 9/4/95 |
| TORQUE WRENCH | SNAPON | T | N\A | 6171 | SITE | 1 | 0 | 0 | 9/4/95 |
| TORQUE WRENCH | PROTO | T | 6006-4 | N\A,.. | SITE | 1 | 0 | 0 | 9/4/95 |
| TORQUE WRENCH | PROTO | T | 6020-1 | 73659 | SITE | 1 | 0 | 0 | 9/4/95 |
| TORQUE WRENCH | SNAPON | T | QJR-3200B | E25885 | SITE | 1 | 0 | 0 | 9/4/95 |
| TORQUE WRENCH | SNAPON | T | QJR-4600A | B24849 | SITE | 1 | 0 | 0 | 9/4/95 |
| TORQUEMETER | SNAPON | T | N\A | F3151 | SITE | 1 | 0 | 0 | 9/4/95 |
| TRANSISTOR TESTER | HEATH | E | IT3120 | 2206-5 | SITE | 1 | 0 | 0 | 9/4/95 |
| VACUUM CLEANER, WET/DRY | DAYTON | F | 3Z707B | N\A,,,, | SITE | 1 | 0 | 0 | 9/4/95 |
| VACUUM METER, ELECTRONIC | RITCHIE | E | 69040 | 5015570295 | SITE | 1 | 0 | 0 | 9/4/95 |
| VACUUM METER, ELECTRONIC | THERMAL E | E | 1457 | H3294 | SITE | 1 | 0 | 0 | 9/4/95 |
| VOLT/AMMETER CLAMP-ON | AMPROBE | E | RS# | 7321096 | SITE | 1 | 0 | 0 | 9/4/95 |
| VUCCUM | | T | 113 | 97295V5102 | SITE | 1 | 0 | 0 | 10/16/9 |
| WELDING GUN | WELLER | T | 8200N | N/A | SITE | 1 | 0 | 0 | 9/4/95 |
| WORK BENCH W/DRAWERS | EQUIPTO | F | N/A | N\A/202 | SITE | 1 | 0 | 0 | 9/4/95 |

| Qty | ITEM | DESCRIPTION | MANUFACTURER |
|---|---|---|---|
| 1 | Adapter | 1/2" to 3/4" | Snap-On |
| 1 | Adapter | 1/2" to 3/8" | Apex |
| 1 | Adapter | 1/2" to 3/8" | Williams |
| 1 | Adapter | 1/4" to 3/8" | Proto |
| 1 | Adapter | 3/4" - 1" p/n IM72 | Snap-On |
| 1 | Adapter | 3/4" - 1/2" p/n 6-48A | Williams |
| 1 | Adapter | 3/4" - 1/2" p/n GLA62 | Snap-On |
| 1 | Adapter | 3/4" - 1/2" p/n IL72 | Williams |
| 1 | Adapter | 3/4" - 1/2" p/n LA362 | Snap-On |
| 1 | Adapter | 3/4" - 1/2" p/n S453-A | Proto |
| 1 | Adapter | 3/4" to 1" | Snap-On |
| 1 | Adapter | 3/8" to 1/2" | Snap-On |
| 1 | Adapter | 3/8" to 1/4" | Proto |
| 1 | Adapter | 3/8" to 1/4" | Snap-On |
| 1 | Adjustable Pliers | 10" | Craftsman |
| 1 | Adjustable Pliers | 10" | no brand |
| 1 | Adjustable Pliers | 12" | Blue Point |

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## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
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| | | | |
|---|---|---|---|
| 1 | Adjustable Pliers | 9" | Snap-On |
| 1 | Adjustable Wrench | #9 - I" opening | Craftsman |
| 1 | Adjustable Wrench | 10" | Blue Point |
| 1 | Adjustable Wrench | 12" | J. H. Williams |
| 1 | Adjustable Wrench | 12" | Crescent |
| 1 | Adjustable Wrench | 8" | Craftsman |
| 1 | Adjustable Wrench | 8" | no brand |
| 1 | Adjustable Wrench | 8" | Craftsman |
| 1 | Adjustable Wrench | 8" | Craftsman |
| 1 | Bearing Poper Fork | | S & G |
| 1 | Box Wrench | 1 1/2" x 1 7/16" p/n 43936 | Craftsman |
| 1 | Box Wrench | 1 1/4" - 12pts. | Snap-On |
| 1 | Box Wrench | 1 1/6" x 1 1/4" p/n 43934 | Craftsman |
| 1 | Box Wrench | 1 1/8" - 12pts. | Snap-On |
| 1 | Box Wrench | 1 5/16" - 12pts. | Snap-On |
| 1 | Box Wrench | 1/2" - 5/8" 12pts. | Snap-On |
| 1 | Box Wrench | 1/2" - 9/16" | Snap-On |
| 1 | Box Wrench | 1/4" - 5/16" | Snap-On |
| 1 | Box Wrench | 11/16" - 13/16" | Craftsman |
| 1 | Box Wrench | 15/16" - 12pts. | Snap-On |
| 1 | Box Wrench | 15/16" p/n 43929 | Craftsman |
| 1 | Box Wrench | 19/32" - 25/32" | Snap-On |
| 1 | Box Wrench | 3/8" - 7/16" 12pts | Snap-On |
| 1 | Box Wrench | 5/16" x 1/4" | Snap-On |
| 1 | Box Wrench | 5/8" - 12pts | Snap-On |
| 1 | Box Wrench | 7/16" - 1/2" | Snap-On |
| 1 | Box Wrench | 7/16" - 3/8" | Snap-On |
| 1 | Breaker Bar | 1/4" - 6" | Snap-On |
| 1 | Breaker Bar | 3/4" p/n 4443-B | Craftsman |
| 2 | Breaker Bars | 1/2" - 16" | Snap-On |
| 4 | Cable Cutter Pliers | 9" | Klein |
| 1 | Center Punch | 3/32" | Snap-On |
| 1 | Chisel Set | 1/4" | Snap-On |
| 1 | Chisel Set | 7/8" to 3/8" | Enderes |
| 1 | Chisel | 3/8" x 5" | Craftsman |
| 1 | Combination | 1/2" | Alltrade |
| 2 | Combination | 1/2" | Snap-On |
| 1 | Combination | 1/2" | Craftsman |
| 1 | Combination | 1/2" | Husky |
| 1 | Combination | 1/2" | Mack |
| 1 | Combination | 1/4" | Stanley |
| 1 | Combination | 11/16" | Mack |
| 1 | Combination | 11/16" | Craftsman |
| 1 | Combination | 11/32" | Craftsman |
| 1 | Combination | 11/32" | Craftsman |
| 1 | Combination | 13/16" | Craftsman |
| 1 | Combination | 3/4" | Craftsman |
| 1 | Combination | 3/4" | Husky |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
# SAMPLE FORMS

| | | | |
|---|---|---|---|
| 1 | Combination | 3/4" | Mack |
| 3 | Combination | 3/8" | Snap-On |
| 2 | Combination | 3/8" | Husky |
| 1 | Combination | 5/16" | Craftsman |
| 2 | Combination | 5/8" | Snap-On |
| 1 | Combination | 5/8" | Mack |
| 2 | Combination | 5/8" | Craftsman |
| 1 | Combination | 7/16" | Proto |
| 2 | Combination | 7/16" | Snap-On |
| 1 | Combination | 7/16" | Craftsman |
| 1 | Combination | 7/8" | Craftsman |
| 1 | Combination | 9/16" | Craftsman |
| 1 | Combination | 9/16" | Proto |
| 1 | Combination | 9/16" | Alltrade |
| 3 | Combination | 9/16" | Snap-On |
| 1 | Combination Wrench Set | 3/4" to 1/4" | Husky |
| 1 | Combination Wrench Set | 7/8" to 3/8" | Snap-On |
| 1 | Crimping tool | for Ph. Conn. RJ11,RJ12,RJ45 | Radio Shack |
| 1 | Crow Bar | p/n 6577 | Craftsman |
| 1 | Crow Foot Open | 1/2" - 1 1/16" | Snap-On |
| 1 | Crow Foot Open | 1/2" - 1 1/8" | Boney |
| 1 | Crow Foot Open | 1/2" - 1 1/8" | Snap-On |
| 1 | Crow Foot Open | 1/2" - 1 1/8" - 12 pts | Snap-On |
| 1 | Crow Foot Open | 1/2" - 1 11/16" | Snap-On |
| 1 | Crow Foot Open | 1/2" - 1 11/16" | Snap-On |
| 1 | Crow Foot Open | 1/2" - 1 3/4" | Snap-On |
| 1 | Crow Foot Open | 1/2" - 1 3/4" | Granco |
| 1 | Crow Foot Open | 1/2" - 1 5/16" | Snap-On |
| 1 | Crow Foot Open | 1/2" - 1 7/8" | Granco |
| 1 | Crow Foot Open | 1/2" - 2" | Granco |
| 1 | Crow Foot Open | 3/8" - 1/2" | Snap-On |
| 1 | Crow Foot Open | 3/8" - 7/16" | Snap-On |
| 1 | Cutter Pliers | 4 1/2" | Pros Kit |
| 1 | Cutter Pliers | 4 1/2" | Archer |
| 1 | Cutter Pliers | 6 1/2" | no brand |
| 1 | Cutter Pliers | 6 1/2" | Snap-On |
| 1 | Cutter Pliers | 6 1/2" | Craftsman |
| 1 | Cutter Pliers | 7" | Craftsman |
| 1 | Cutter Pliers | 7" | no brand |
| 7 | Cutter Pliers | 7" | Snap-On |
| 2 | De-soldering Pump | | Ungar |
| 1 | Electric Drill | 90 deg. Head | Makita |
| 1 | Electric Grinder | 5" disk | Craftsman |
| 2 | Extension | 1/2' - 3" | Craftsman |
| 1 | Extension | 1/2" - 10" | Snap-On |
| 1 | Extension | 1/2" - 12" | Snap-On |
| 1 | Extension | 1/2" - 5" | Craftsman |
| 1 | Extension | 1/2" - 5" | Snap-On |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
# SAMPLE FORMS

| | | | |
|---|---|---|---|
| 1 | Extension | 1/2" - 6" | Craftsman |
| 1 | Extension | 1/4" - 1" | Craftsman |
| 1 | Extension | 1/4" - 3" | Husky |
| 1 | Extension | 1/4" - 4" | Snap-On |
| 1 | Extension | 1/4" - 4" | Snap-On |
| 1 | Extension | 1/4" - 6" | Craftsman |
| 1 | Extension | 3/4" - 1" | Snap-On |
| 1 | Extension | 3/4" - 6" | Snap-On |
| 1 | Extension | 3/4" p/n 4441-B | Craftsman |
| 1 | Extension | 3/4" p/n 4442-V | Craftsman |
| 1 | Extension | 3/4" p/n IM32A | Snap-On |
| 1 | Extension | 3/8" - 1 1/2" | Snap-On |
| 1 | Extension | 3/8" - 1" | Mack |
| 1 | Extension | 3/8" - 10" | Craftsman |
| 1 | Extension | 3/8" - 3" | Snap-On |
| 1 | Extension | 3/8" - 3" | Craftsman |
| 1 | Extension | 3/8" - 6" | Proto |
| 1 | Extension | 3/8" - 6" | Proto |
| 1 | Extension | 3/8" - 6" | Craftsman |
| 1 | Extension | 3/8" - 8" | Proto |
| 1 | Extension | 3/8" x 3" | Napa |
| 1 | Extension | 3/8" x 3" | Snap-On |
| 1 | Extension | 3/8" x 6" | Craftsman |
| 1 | File | 12" x 1" | Simons |
| 1 | File | 6" x 3/4" | Nicholson |
| 1 | File | 8" x 3/4" | Nicholson |
| 1 | File Set | | Snap-On |
| 1 | Flare Wrench 45deg. | 5/8" to 3/16" | Ritchie |
| 1 | Flare Wrench 45deg. | 5/8" to 3/16" | Craftsman |
| 1 | Flare Wrench 45deg. | 5/8" to 3/16" | Imperial |
| 1 | Flat Nose Pliers | 5" | Diamond |
| 2 | Fuse Puller | 0-100 AMP | no brand |
| 2 | Goose Neck Tip | 3 1/2" | Proto |
| 1 | Hammer | 12 oz | Stanley |
| 3 | Hammer | 12 oz | Stanley |
| 1 | Hammer | 12 oz | Craftsman |
| 3 | Hammer | 16 oz | Stanley |
| 1 | Hammer | 16 oz Carpenter | Craftsman |
| 1 | Hammer | 16 oz. - Carpenter | no brand |
| 1 | Hammer | 16 oz. - Mechanics | Vaugran |
| 2 | Hammer | 24 oz | Stanley |
| 1 | Hammer | 4 oz | Craftsman |
| 1 | Hammer | 4 oz. - Mechanics | Blue Point |
| 1 | Hammer | 8 oz | Craftsman |
| 1 | Hand Saw | | Craftsman |
| 1 | Hex Driver Set | 1/4" to 1/32" | Eklind |
| 1 | Hex Driver Set | from 3/8" to 0.028 | Snap-On |
| 1 | Hex Driver Set | from 3/8" to 1/16" | Eklind |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
# SAMPLE FORMS

| | | | |
|---|---|---|---|
| 1 | Hex Drv. | 3/8" - 1/4" | Snap-On |
| 1 | Hex drv. Flexible Tip | 1/8" - 6" | Snap-On |
| 2 | Hex Drv. Set | 3/8" - 5/16" to 1/8" | Craftsman |
| 1 | Hex Wrench Set | 5/16" to 1/16" | no brand |
| 1 | Hole Punch | 1" | Creenle |
| 1 | IC Chips puller 32 gang | | OK Mach. Tool Corp. |
| 1 | Lock Ring Puller Pliers | 6" | Wilde |
| 1 | Lock Ring Puller Pliers | 9" | Craftsman |
| 1 | Magnet, Flexible Shaft | 18" | no brand |
| 1 | Magnet, Flexible Shaft | 18" | no brand |
| 1 | Magnifier | 2" x 4" | Baush & Lomb |
| 1 | Measuring Tape | 25' x 1" | Irwin |
| 1 | Measuring Tape | 100' x 3/8" | Craftsman |
| 1 | Multiplier | 3/4" p/n MFCI | no brand |
| 1 | Needle Nose Pliers | 4 1/2" | no brand |
| 2 | Needle Nose Pliers | 6 1/2" | no brand |
| 1 | Needle Nose Pliers | 7" | Snap-On |
| 1 | Needle Nose Pliers | 7" | no brand |
| 1 | Needle Nose Pliers | 7" | Snap-On |
| 3 | Needle Nose Pliers | 7" | Snap-On |
| 1 | Needle Nose Pliers | 8" | Snap-On |
| 1 | Nut Driver | 1/4" | Amp |
| 1 | Nut Driver | 1/4" | Craftsman |
| 1 | Nut Driver | 3/16" | no brand |
| 1 | Nut Driver | 3/16" | Amp |
| 1 | Nut Driver | 3/8" | Craftsman |
| 1 | Nut Driver | 5/16" | Snap-On |
| 1 | Nut Driver Set | 1/2" to 3/16" | Craftsman |
| 1 | Nut Driver Set | 5/8" to 1/8" | Snap-On |
| 1 | Nut Rivet Tool (swivel head) | | Powerfast |
| 1 | Offset Screwdriver Flat | 5" | Craftsman |
| 1 | Offset Screwdriver Phillips | 5" | Craftsman |
| 3 | Offset Screwdriver | 5" | Craftsman |
| 1 | Pin Connector Crimper | 6 1/2" | no brand |
| 1 | Pipe Bender | 1/2" O.D. | Ritchie |
| 1 | Pipe Bender | 1/4" O.D. | Imperial |
| 1 | Pipe Bender | 3/4" O.D. | Imperial |
| 1 | Pipe Cutter | 1/4" to 1 1/2" | Craftsman |
| 1 | Pipe Cutter | 1/8" to 1 1/4" O.D. | Craftsman |
| 1 | Pipe Cutter | 1/8" to 1 1/8" O.D. | Superior |
| 1 | Pipe Cutter | 1/8" to 1" O.D. | Imperial |
| 1 | Pipe Cutter | 3/8" to 1 1/2" O.D. | Imperial |
| 1 | Pipe Wrench | 10" | Ridgid |
| 1 | Pipe Wrench | 10" | Sears |
| 1 | Pipe Wrench | 12" | Ridgid |
| 1 | Pipe Wrench | 14" | Ridgid |
| 1 | Pipe Wrench | 14" | Craftsman |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
# SAMPLE FORMS

| | | | |
|---|---|---|---|
| 1 | Pipe Wrench | 8" | Craftsman |
| 1 | Pipe Wrench | 8" | Sears |
| 1 | Pliers | 10" | Craftsman |
| 1 | Pliers | 7" | Craftsman |
| 1 | Pliers | 7" | Craftsman |
| 1 | Pliers | 8" | Craftsman |
| 1 | Pocket Knife | | Sears |
| 1 | Pocket Knife | 3" | Buck |
| 1 | Pray Bar | 6 1/2" | Craftsman |
| 2 | Press | 3" p/n 66723 | Craftsman |
| 1 | Press | 4" | Ching |
| 1 | Press | 5" p/n 66725 | Craftsman |
| 2 | Press | 6" p/n 406 | Die Craft |
| 2 | Press | 8" p/n 408 | Die Craft |
| 1 | Pulley & Gear Puller Set | | Snap-On |
| 1 | Punch | 1/16" x 4" | Proto |
| 1 | Punch | 1/8" x 5" | Craftsman |
| 2 | Punch | 1/8" x 5" | Craftsman |
| 2 | Punch | 5/32" | Snap-On |
| 2 | Punch | 3/32" | Proto |
| 1 | Punch Set | 1/2" to 3/16" | Craftsman |
| 1 | Punch Set | 1/4" to 3/32" | Snap-On |
| 1 | Punch Set | 3/32" to 5/16" | Proto |
| 1 | Punch Set | 3/8" to 1/2" | no brand |
| 1 | Punch Set | 5/16" to 3/16" | Westward |
| 1 | Punch Set | 5/32" to 3/16" | Craftsman |
| 1 | Ring Compressor | | Blue Point |
| 1 | Ring Installer | | Craftsman |
| 1 | Robogrip Pliers | 7" | Ridgid |
| 1 | Robogrip Pliers | 9" | Ridgid |
| 1 | Safety Wire Pliers | 11" | Snap-On |
| 2 | Safety Wire Pliers | 11" | Snap-On |
| 1 | Safety Wire Pliers | 8" | Snap-On |
| 1 | Scissors | 7" | no brand |
| 1 | Scrapper | 1 1/4" | Rex Chemical |
| 1 | Scrapper | 1 1/4" | no brand |
| 1 | Scrapper | 7/8" | Snap-On |
| 1 | Screwdriver Flat | 1 1/2" - #1 | Vessel |
| 1 | Screwdriver Flat | 1 1/2" - #2 | Stanley |
| 1 | Screwdriver Flat | 1 1/2" - #3 | Stanley |
| 1 | Screwdriver Flat | 1 1/2" - #3 | Snap-On |
| 1 | Screwdriver Flat | 2 1/2" | Ace |
| 1 | Screwdriver Flat | 2 1/2" - #2 | Stanley |
| 1 | Screwdriver Flat | 2 1/2" - #2 | Snap-On |
| 1 | Screwdriver Flat | 2" | Snap-On |
| 1 | Screwdriver Flat | 2" - #2 | Snap-On |
| 1 | Screwdriver Flat | 3 1/2" - #2 | Craftsman |
| 1 | Screwdriver Flat | 3 1/2" - #2 | Craftsman |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
# SAMPLE FORMS

| | | | |
|---|---|---|---|
| 1 | Screwdriver Flat | 3 1/2" - #2 | Snap-On |
| 1 | Screwdriver Flat | 3 3/4" - #4 | Craftsman |
| 1 | Screwdriver Flat | 3" | Craftsman |
| 1 | Screwdriver Flat | 3" - #1 | Craftsman |
| 1 | Screwdriver Flat | 3" - #1 | General |
| 2 | Screwdriver Flat | 4" | Craftsman |
| 1 | Screwdriver Flat | 4" | Ridgid |
| 1 | Screwdriver Flat | 4" | Craftsman |
| 1 | Screwdriver Flat | 4" | Husky |
| 1 | Screwdriver Flat | 4" - #1 | Ideal |
| 1 | Screwdriver Flat | 4" - #1 | General |
| 1 | Screwdriver Flat | 4" - #3 | Craftsman |
| 1 | Screwdriver Flat | 5 1/2" - #3 | Craftsman |
| 1 | Screwdriver Flat | 5" | no brand |
| 1 | Screwdriver Flat | 5" - #1 | Universal |
| 1 | Screwdriver Flat | 6" | Snap-On |
| 1 | Screwdriver Flat | 6" - #1 | Snap-On |
| 1 | Screwdriver Flat | 6" - #1 | Ideal |
| 1 | Screwdriver Flat | 6" - #2 | Ridgid |
| 1 | Screwdriver Flat | 6" - #3 | Craftsman |
| 1 | Screwdriver Flat | 6" - #3 | Ridgid |
| 1 | Screwdriver Flat | 7 1/2" - #4 | Craftsman |
| 3 | Screwdriver Flat | 8" | Snap-On |
| 1 | Screwdriver Flat | 8" | Craftsman |
| 1 | Screwdriver Flat | 8" | Craftsman |
| 1 | Screwdriver Flat | 8" - #3 | Snap-On |
| 1 | Screwdriver Flat | 8" - #4 | Snap-On |
| 2 | Screwdriver Flat | 8" - #4 | Craftsman |
| 1 | Screwdriver Flat | 9" - #3 | Craftsman |
| 1 | Screwdriver Flat | screw holder 5 1/2" - #3 | Voco |
| 1 | Screwdriver Phillips | 1 1/2" - #3 | Snap-On |
| 3 | Screwdriver Phillips | 1" | Snap-On |
| 1 | Screwdriver Phillips | 2 1/2" | Craftsman |
| 1 | Screwdriver Phillips | 3" | Craftsman |
| 1 | Screwdriver Phillips | 3" | Snap-On |
| 1 | Screwdriver Phillips | 3" | Craftsman |
| 1 | Screwdriver Phillips | 3" Screw holder | Snap-On |
| 1 | Screwdriver Phillips | 4" | Stanley |
| 1 | Screwdriver Phillips | 4" - #3 | Snap-On |
| 1 | Screwdriver Phillips | 6" | Snap-On |
| 3 | Screwdriver Phillips | 6" | Craftsman |
| 1 | Screwdriver Phillips | 6" | Ridgid |
| 2 | Screwdriver Phillips | 6" | Snap-On |
| 2 | Screwdriver Phillips | 6" - #4 | Snap-On |
| 1 | Screwdriver Phillips | 8" | Craftsman |
| 3 | Screwdriver Phillips | 8" - #3 | Craftsman |
| 1 | Screwdriver Phillips | Bits set w/driver | General |
| 1 | Screwdriver Phillips | 1 1/2" - #3 | Snap-On |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
## SAMPLE FORMS

| | | | |
|---|---|---|---|
| 1 | Screwdriver Phillips | 2 1/2" - #2 | Ridgid |
| 1 | Screwdriver Phillips | 2" - #1 | Snap-On |
| 1 | Screwdriver Phillips | 2" - #1 | Kcolite |
| 1 | Screwdriver Phillips | 2" - #2 | Snap-On |
| 1 | Screwdriver Phillips | 3 1/2" - #2 | Craftsman |
| 1 | Screwdriver Phillips | 3" - #1 | Snap-On |
| 1 | Screwdriver Phillips | 3" - #1 | Vessel |
| 2 | Screwdriver Phillips | 3" - #2 | Snap-On |
| 1 | Screwdriver Phillips | 4" - #1 | General |
| 1 | Screwdriver Phillips | 4" - #2 | Craftsman |
| 1 | Screwdriver Phillips | 4" - #2 | Craftsman |
| 1 | Screwdriver Phillips | 4" - #3 | Craftsman |
| 1 | Screwdriver Phillips | 6" - #3 | Craftsman |
| 1 | Screwdriver Phillips | 6" - #4 | Craftsman |
| 1 | Screwdriver Phillips | 6" - #4 | Snap-On |
| 1 | Seal Puller | | Snap-On |
| 1 | Set of Crow Foot Wrench Open | 3/8" - from 1" to 3/8" in 1/16" incr. | Snap-On |
| 1 | Set of Ring Puller | | no brand |
| 1 | Sheet Metal Scissor | 8" | Sears |
| 1 | Sheet Metal Scissors | 7" | Snap-On |
| 1 | Snap Ring Pliers | 7 1/2" | Blue Point |
| 1 | Snap Ring Pliers | 9" | Black Hawk |
| 2 | Snap Ring Pliers | 9" | Proto |
| 1 | Socket | 1/2" - 1 1/16" 12pts long | Craftsman |
| 1 | Socket | 1/2" - 1 1/16" 12pts. | Craftsman |
| 1 | Socket | 1/2" - 1 1/16" 6pts. | Mack |
| 1 | Socket | 1/2" - 1 1/16" 6pts. long | Mack |
| 1 | Socket | 1/2" - 1 1/4" 12pts. | Craftsman |
| 1 | Socket | 1/2" - 1 1/4" 6pts long | Mack |
| 1 | Socket | 1/2" - 1 1/4" 6pts. | Mack |
| 1 | Socket | 1/2" - 1 1/8" 12pts long | Craftsman |
| 1 | Socket | 1/2" - 1 1/8" 6pts long | Mack |
| 1 | Socket | 1/2" - 1 1/8" 6pts. | Mack |
| 1 | Socket | 1/2" - 1 1/8" 6pts. | Craftsman |
| 1 | Socket | 1/2" - 1 3/16" 6pts. | Mack |
| 1 | Socket | 1/2" - 1 5/16" 6pts long | Snap-On |
| 1 | Socket | 1/2" - 1 5/16" 6pts. | Snap-On |
| 1 | Socket | 1/2" - 1" 12pts long | Dura Chrome |
| 1 | Socket | 1/2" - 1" 12pts. | Craftsman |
| 1 | Socket | 1/2" - 1" 6pts 6pts long | Mack |
| 1 | Socket | 1/2" - 1" 6pts. | Mack |
| 1 | Socket | 1/2" - 1/14" 12pts. | Craftsman |
| 2 | Socket | 1/2" - 1/2" 12pts long | Craftsman |
| 1 | Socket | 1/2" - 1/2" 12pts. | Snap-On |
| 1 | Socket | 1/2" - 1/2" 6pts long | Mack |
| 1 | Socket | 1/2" - 1/2" 6pts. | Mack |
| 1 | Socket | 1/2" - 11/16" 12pts. | Craftsman |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
## SAMPLE FORMS

| | | | |
|---|---|---|---|
| 1 | Socket | 1/2" - 11/16" 6pts long | Mack |
| 1 | Socket | 1/2" - 11/16" 6pts. | Mack |
| 1 | Socket | 1/2" - 13/16" 6pts long | Mack |
| 1 | Socket | 1/2" - 13/16" 6pts. | Mack |
| 1 | Socket | 1/2" - 15/16" 12pts. | Craftsman |
| 1 | Socket | 1/2" - 15/16" 6pts long | Mack |
| 1 | Socket | 1/2" - 15/16" 6pts. | Mack |
| 1 | Socket | 1/2" - 3/4" 6pts long | Mack |
| 1 | Socket | 1/2" - 3/4" 6pts long | Proto |
| 1 | Socket | 1/2" - 3/4" 6pts. | Mack |
| 1 | Socket | 1/2" - 3/8" 6pts. | Mack |
| 1 | Socket | 1/2" - 5/16" 12pts long | Craftsman |
| 1 | Socket | 1/2" - 5/8" 12pts long | Dura Chrome |
| 1 | Socket | 1/2" - 5/8" 12pts long | Snap-On |
| 1 | Socket | 1/2" - 5/8" 6pts long | Mack |
| 1 | Socket | 1/2" - 5/8" 6pts. | Craftsman |
| 1 | Socket | 1/2" - 7/16" 12pts. | Craftsman |
| 1 | Socket | 1/2" - 7/16" 6pts long | Mack |
| 1 | Socket | 1/2" - 7/16" 6pts long | Snap-On |
| 1 | Socket | 1/2" - 7/16" 6pts. | Mack |
| 1 | Socket | 1/2" - 7/8" 12pts long | Craftsman |
| 1 | Socket | 1/2" - 7/8" 12pts. | Craftsman |
| 1 | Socket | 1/2" - 7/8" 6pts long | Mack |
| 1 | Socket | 1/2" - 7/8" 6pts long | Proto |
| 1 | Socket | 1/2" - 7/8" 6pts. | Mack |
| 1 | Socket | 1/2" - 9/16" 6pts long | Mack |
| 1 | Socket | 1/2" - 9/16" 6pts long | Mack |
| 1 | Socket | 1/2" - 9/16" 6pts. | Mack |
| 1 | Socket | 1/2" -13/16" 12pts long | Craftsman |
| 1 | Socket | 1/2" 13/16" 12pts. | Craftsman |
| 1 | Socket | 1/2" 3/4" 12pts. | Craftsman |
| 1 | Socket | 1/4" - 1/2" - 6pts. | Snap-On |
| 1 | Socket | 1/4" - 1/2" - 6pts. - long | Snap-On |
| 1 | Socket | 1/4" - 1/2" 6pts long | SK |
| 1 | Socket | 1/4" - 1/2" 6pts. | Snap-On |
| 1 | Socket | 1/4" - 1/2" 6pts. | Craftsman |
| 2 | Socket | 1/4" - 1/4" - 6pts. | Snap-On |
| 1 | Socket | 1/4" - 1/4" - 6pts. | Craftsman |
| 1 | Socket | 1/4" - 1/4" 6pts long | SK |
| 1 | Socket | 1/4" - 1/4" 6pts. | SK |
| 1 | Socket | 1/4" - 11/32" - 6pts | S - K |
| 1 | Socket | 1/4" - 11/32" - 6pts. - long | Snap-On |
| 1 | Socket | 1/4" - 11/32" 6pts long | SK |
| 1 | Socket | 1/4" - 11/32" 6pts. | Snap-On |
| 1 | Socket | 1/4" - 3/16" - 6pts. | Craftsman |
| 1 | Socket | 1/4" - 3/16" - 6pts. | Snap-On |
| 1 | Socket | 1/4" - 3/16" 6pts | Snap-On |
| 1 | Socket | 1/4" - 3/8" 6pts long | Craftsman |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
## SAMPLE FORMS

| | | | |
|---|---|---|---|
| 1 | Socket | 1/4" - 3/8" 6pts long | Craftsman |
| 2 | Socket | 1/4" - 5/16" - 6pts. | Craftsman |
| 1 | Socket | 1/4" - 5/16" - 6pts. | Proto |
| 1 | Socket | 1/4" - 5/16" - 6pts. - long | Craftsman |
| 1 | Socket | 1/4" - 5/16" 6pts long | Proto |
| 1 | Socket | 1/4" - 7/16" - 6pts. | Snap-On |
| 1 | Socket | 1/4" - 7/16" - 6pts. - long | Craftsman |
| 1 | Socket | 1/4" - 7/16" - 6pts. - long | Snap-On |
| 1 | Socket | 1/4" - 7/16" 12pts. | Snap-On |
| 1 | Socket | 1/4" - 7/16" 6pts. | Craftsman |
| 1 | Socket | 1/4" - 7/32" - 6pts. | Snap-On |
| 1 | Socket | 1/4" - 7/32" 12pts. | Snap-On |
| 1 | Socket | 1/4" - 7/32" 6pts. | SK |
| 1 | Socket | 1/4" - 9/16" 12pts. | Snap-On |
| 1 | Socket | 1/4" - 9/16" 6pts long | Craftsman |
| 1 | Socket | 1/4" - 9/32" - 6pts. | Snap-On |
| 1 | Socket | 1/4" - 9/32" - 6pts. - long | Snap-On |
| 1 | Socket | 1/4" - 9/32" 6pts long | SK |
| 1 | Socket | 3/4" - 1 1/2" 6pts long | Proto |
| 1 | Socket | 3/4" - 1 1/4" 12pts | Proto |
| 1 | Socket | 3/4" - 1" 6pts. | Snap-On |
| 1 | Socket | 3/4" - 13/16" 4pts | Proto |
| 1 | Socket | 3/4" - 15/16" 6pts. | Snap-On |
| 1 | Socket | 3/4" - 3/4" p/n 07570 Swivel | Proto |
| 1 | Socket | 3/4" 1 1/16" p/n 47544 | Craftsman |
| 1 | Socket | 3/4" 1 1/16" p/n IM342 | Snap-On |
| 1 | Socket | 3/4" 1 1/2" p/n 47552 | Craftsman |
| 1 | Socket | 3/4" 1 1/2" p/n 6-648 | Williams |
| 1 | Socket | 3/4" 1 1/2" p/n IM482 | Snap-On |
| 1 | Socket | 3/4" 1 1/4" p/n IM402 | Snap-On |
| 1 | Socket | 3/4" 1 1/8" p/n IM362 | Snap-On |
| 1 | Socket | 3/4" 1 1/8" p/n IM362 | Snap-On |
| 1 | Socket | 3/4" 1 1/8" p/n IM362 | Snap-On |
| 1 | Socket | 3/4" 1 1/8" p/n V-47775 | Craftsman |
| 1 | Socket | 3/4" 1 13/16" p/n V47556 | Craftsman |
| 1 | Socket | 3/4" 1 3/16" p/n IM362 | Snap-On |
| 1 | Socket | 3/4" 1 3/4" p/n 47555 | Craftsman |
| 1 | Socket | 3/4" 1 3/8" p/n 07522-L | Proto |
| 1 | Socket | 3/4" 1 3/8" p/n 47549 | Craftsman |
| 1 | Socket | 3/4" 1 5/16" p/n 47808 | Craftsman |
| 1 | Socket | 3/4" 1 5/16" p/n GLS422 | Snap-On |
| 1 | Socket | 3/4" 1 5/16" p/n IM308 | Snap-On |
| 1 | Socket | 3/4" 1 5/16" p/n IM422 | Snap-On |
| 1 | Socket | 3/4" 1 5/16" p/n LS422A | Snap-On |
| 1 | Socket | 3/4" 1 5/8" p/n 6-652 | Williams |
| 1 | Socket | 3/4" 1 5/8" p/n V47553 | Craftsman |
| 1 | Socket | 3/4" 1 7/16" p/n 47551 | Craftsman |
| 1 | Socket | 3/4" 1 7/16" p/n 6946 | Ridgid |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
# SAMPLE FORMS

| | | | |
|---|---|---|---|
| 1 | Socket | 3/4" 1 7/16" p/n 6946 | Ridgid |
| 1 | Socket | 3/4" 1 7/8" p/n 47557 | Craftsman |
| 1 | Socket | 3/4" 11/16" p/n IM222 | Snap-On |
| 1 | Socket | 3/4" 2" p/n 4755A | Craftsman |
| 1 | Socket | 3/4" 3/4" p/n IM342 | Snap-On |
| 1 | Socket | 3/4" 3/4" p/n SIM342 | Snap-On |
| 1 | Socket | 3/4" 5/16" p/n IM202 | Snap-On |
| 1 | Socket | 3/4" 7/8" p/n IM382 | Snap-On |
| 1 | Socket | 3/4" 9/16" p/n IM182 | Snap-On |
| 2 | Socket | 3/4" drv. - 1 1/4" | Ridgid |
| 1 | Socket | 3/4" drv. - 1 11/16" | Craftsman |
| 2 | Socket | 3/4" drv. - 1 7/16" | Wright |
| 1 | Socket | 3/8 " - 1/2" - 6pts. - long | Craftsman |
| 1 | Socket | 3/8" - 1/2" - 6pts. | Craftsman |
| 1 | Socket | 3/8" - 1/2" - 6pts. | Snap-On |
| 1 | Socket | 3/8" - 1/2" - 6pts. | Proto |
| 1 | Socket | 3/8" - 1/2" - 6pts. - long | Craftsman |
| 1 | Socket | 3/8" - 1/2" 12pts. | Proto |
| 1 | Socket | 3/8" - 1/2" 6pts. long | Snap-On |
| 1 | Socket | 3/8" - 1/2" 6pts. long | Craftsman |
| 1 | Socket | 3/8" - 1/2" 6pts. long | Craftsman |
| 1 | Socket | 3/8" - 11/16" - 6pts. | Mack |
| 1 | Socket | 3/8" - 11/16" - 6pts. | Snap-On |
| 2 | Socket | 3/8" - 11/16" - 6pts. | Craftsman |
| 1 | Socket | 3/8" - 11/16" - 6pts. - long | Snap-On |
| 1 | Socket | 3/8" - 11/16" 6pts long | Snap-On |
| 1 | Socket | 3/8" - 11/16" 6pts. | Mack |
| 1 | Socket | 3/8" - 13/16" - 6pts. | Snap-On |
| 1 | Socket | 3/8" - 13/16" - 6pts. long | Snap-On |
| 1 | Socket | 3/8" - 13/16" 12pts. | Mack |
| 1 | Socket | 3/8" - 13/16" 6pts long | Mack |
| 1 | Socket | 3/8" - 13/16" 6pts long | Snap-On |
| 1 | Socket | 3/8" - 14mm | no brand |
| 1 | Socket | 3/8" - 3/4" - 6pts. long | Snap-On |
| 1 | Socket | 3/8" - 3/4" 12pts. | Mack |
| 1 | Socket | 3/8" - 3/4" 6pts long | Craftsman |
| 1 | Socket | 3/8" - 3/8" 12pts. | Proto |
| 2 | Socket | 3/8" - 3/8" 6pts. long | Snap-On |
| 1 | Socket | 3/8" - 5/16" - 6pts | Snap-On |
| 1 | Socket | 3/8" - 5/16" - 6pts. - long | Snap-On |
| 1 | Socket | 3/8" - 5/16" - 6pts. long | Snap-On |
| 1 | Socket | 3/8" - 5/8" - 6pts | Snap-On |
| 1 | Socket | 3/8" - 5/8" - 6pts. | no brand |
| 1 | Socket | 3/8" - 5/8" - 6pts. - long | Snap-On |
| 1 | Socket | 3/8" - 5/8" - 6pts. long | Snap-On |
| 1 | Socket | 3/8" - 5/8" 6pts long | Snap-On |
| 1 | Socket | 3/8" - 5/8" 6pts long | Mack |
| 1 | Socket | 3/8" - 5/8" 6pts. | Craftsman |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
## SAMPLE FORMS

| | | | |
|---|---|---|---|
| 1 | Socket | 3/8" - 5/8" 6pts. | Snap-On |
| 1 | Socket | 3/8" - 7/16" - 12pts. | Proto |
| 1 | Socket | 3/8" - 7/16" - 6pts. - long | Snap-On |
| 1 | Socket | 3/8" - 7/16" 12pts. long | Craftsman |
| 1 | Socket | 3/8" - 7/8" - 6pts. | Snap-On |
| 1 | Socket | 3/8" - 7/8" - 6pts. long | Snap-On |
| 1 | Socket | 3/8" - 7/8" 6pts long | Snap-On |
| 1 | Socket | 3/8" - 7/8" 6pts long | Mack |
| 1 | Socket | 3/8" - 9/16" - 6pts. | Proto |
| 1 | Socket | 3/8" - 9/16" - 6pts. | Snap-On |
| 2 | Socket | 3/8" - 9/16" 12pts long | Craftsman |
| 1 | Socket | 3/8" - 9/16" 12pts. | Proto |
| 1 | Socket | 3/8" - 9/16" 6pts long | Snap-On |
| 1 | Socket | 3/8" - 9/16" 6pts long | Mack |
| 1 | Socket | 3/8" - 9/16" 6pts. | Craftsman |
| 1 | Socket | 3/8" - Multisize | no brand |
| 1 | Square w/24" sliding rule | | Starret Comp. |
| 1 | Stapling Tool | | Cobra |
| 1 | Stone Cylinder Reamer | | K - D |
| 1 | Switch-Blade Knife | 6" | Ultra |
| 1 | Swivel Speed Wrench | 3/8" p/n 4427 | Craftsman |
| 1 | Tap Set | 5/16"x18, 1/4"x20, 10x32, 8x32, 6x32 | Craftsman |
| 1 | Telescoping Pivoting Mirror | 14" | no brand |
| 1 | Telescoping Pivoting Mirror | 14" | no brand |
| 2 | Telescoping Pivoting Mirror | | Hunter Tools |
| 1 | Tie Rap Gun | | Burndy |
| 1 | Tie Rap Gun | | Thomas & Betts |
| 1 | Torque Wrench | 200' p/n 6064-A | Proto |
| 1 | Torque Wrench | 200' p/n QJR117-E | Snap-On |
| 1 | Torque Wrench | 260' p/n 6014 | Proto |
| 1 | Torque Wrench | 260' p/n TOFR250B - Swivel Head | Snap-On |
| 1 | Torque Wrench | 500' p/n 6020-1 | Proto |
| 1 | Torque Wrench | 600' p/n QJR4600A | Snap-On |
| 1 | Torque Wrench | 80' p/n 6006-A | Proto |
| 1 | Torque Wrench | Pipe | Snap-On |
| 1 | Universal | 1/4" - 1/4" | SK |
| 1 | Universal | 3/8" - 7/16" 12pts. | Mack |
| 1 | Universal | 3/8" long | Snap-On |
| 1 | Universal Drv. | 1/4" - 1/4" | Snap-On |
| 1 | Vise-Grip Lock Pliers | 5" | Craftsman |
| 1 | Vise-Grip Lock Pliers | 6 1/2" | Vise |
| 1 | Vise-Grip Lock Pliers | 6 1/2" | Craftsman |
| 1 | Vise-Grip Lock Pliers | 7" | Vise |
| 1 | Vise-Grip Lock Pliers | 8" | Craftsman |
| 1 | Vise-Grip Lock Pliers | 9" | Vise |
| 1 | Wire Stripper | 5" | no brand |
| 1 | Wire Stripper | 6 1/2" | Radio Shack |
| 1 | Wire Stripper | 6 1/2" | Stripmaster |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
# SAMPLE FORMS

| | | | |
|---|---|---|---|
| 1 | Wire Stripper | 6 1/2" | Ideal |
| 1 | Wire Stripper | 7" | Ideal |
| 3 | Ratchet Wrench | 1/2" - 10" | Craftsman |
| 1 | Ratchet Wrench | 1/2" - 7/8" | Snap-On |
| 1 | Ratchet Wrench | 1/2" - 9/16" | Snap-On |
| 1 | Ratchet Wrench | 1/2" - 9/16" | Husky |
| 1 | Ratchet Wrench | 1/2" - 9/16" | Snap-On |
| 1 | Ratchet Wrench | 1/2" & 9/16" - 6pts. | Kastar |
| 1 | Ratchet Wrench | 1/4" - 4" | Snap-On |
| 1 | Ratchet Wrench | 1/4" - 4pts. | Duro-Chrome |
| 3 | Ratchet Wrench | 1/4" - 5/16" | Craftsman |
| 1 | Ratchet Wrench | 1/4" - 6" | Craftsman |
| 1 | Ratchet Wrench | 1/4" & 5/16" - 12pts. | Snap-On |
| 1 | Ratchet Wrench | 3/4" p/n V-44081 | Craftsman |
| 1 | Ratchet Wrench | 3/8" - 10" | Williams |
| 1 | Ratchet Wrench | 3/8" - 4" | Snap-On |
| 1 | Ratchet Wrench | 3/8" - 5/16" | Craftsman |
| 1 | Ratchet Wrench | 3/8" - 7" | Proto |
| 1 | Ratchet Wrench | 3/8" - 8" | Proto |
| 1 | Ratchet Wrench | 3/8" & 1/4" - 4pts. | Imperial |
| 1 | Ratchet Wrench | 3/8" x 11" Hinged Tip | Snap-On |
| 1 | Ratchet Wrench | 3/8" x 8" | Proto |
| 1 | Ratchet Wrench | 5/16" - 6pts. | Leytool |
| 1 | Ratchet Wrench | 5/16" x 1/4" | Snap-On |
| 1 | Ratchet Wrench | 5/8" - 3/4" | Snap-On |
| 1 | Ratchet Wrench | 5/8" - 3/4" | Craftsman |
| 1 | Ratchet Wrench | 5/8" - 3/4" | Craftsman |
| 2 | Ratchet Wrench | 7/8" - 13/16" | Craftsman |
| 1 | Ratchet Wrench | 9/16" & 1/2" - 6pts & 3/8" & 1/4" - 4pts. | Black Hawk |
| 1 | Wrench, Open End | 1 1/16" | Gedor |
| 1 | Wrench, Open End | 1 1/2" p/n 85-563 | Stanley |
| 1 | Wrench, Open End | 1 1/2" p/n OEX48 | Snap-On |
| 1 | Wrench, Open End | 1 1/4" p/n 86-846 | Stanley |
| 1 | Wrench, Open End | 1 1/8" - 1 1/16" | Craftsman |
| 1 | Wrench, Open End | 1 1/8" p/n C-36 | SK |
| 1 | Wrench, Open End | 1 1/8" x 1 5/16" | Craftsman |
| 1 | Wrench, Open End | 1 3/4" p/n NDF-91 | New Britain |
| 1 | Wrench, Open End | 1 3/8" p/n 85561 | Stanley |
| 1 | Wrench, Open End | 1 5/16" p/n 85560 | Stanley |
| 1 | Wrench, Open End | 1 5/16" p/n 85-560 | Stanley |
| 1 | Wrench, Open End | 1 5/16" p/n G0EX42 | Snap-On |
| 1 | Wrench, Open End | 1 5/8" p/n 1252B | Proto |
| 1 | Wrench, Open End | 1" - 15/16" | Craftsman |
| 1 | Wrench, Open End | 1" p/n 86-843 | Stanley |
| 1 | Wrench, Open End | 1" p/n 88232 | SK |
| 1 | Wrench, Open End | 1/2" - 7/16" | Proto |
| 1 | Wrench, Open End | 11/16" x 5/8" | Easco |
| 1 | Wrench, Open End | 15/16" p/n 44704 | Craftsman |

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

| | | | |
|---|---|---|---|
| 1 | Wrench, Open End | 2" p/n OEX64 | Snap-On |
| 1 | Wrench, Open End | 25/32" - 13/16" | Craftsman |
| 2 | Wrench, Open End | 3/4" - 7/8" | Craftsman |
| 1 | Wrench, Open End | 5/16" x 1/4" | Craftsman |
| 1 | Wrench, Open End | 5/8" - 11/16" | Mack |
| 1 | Wrench, Open End | 5/8" - 9/16" | Snap-On |
| 1 | Wrench, Open End | 7/16" - 3/8" | Craftsman |
| 1 | Wrench, Open End | 7/16" - 3/8" | Mack |
| 1 | Wrench, Open End | 7/8" p/n 1079 | no brand |
| 1 | Wrench, Open End | 9/16" - ½" | Craftsman |
| 1 | Wrench, Open End | 9/16" x ½" | Easco |
| 1 | Wrench, Open End | 9/16" x ½" | Proto |
| 3 | X-acto Knife w/handle | | X-acto |

**AFTERNOON TASKS**

%100

**FIRST SHIFT DAILY**

DEPARTMENTAL PROCEDURE OM-054 Daily Shift Inspection for Car Cleanliness, passenger informational, and comfort systems.

1.0 PURPOSE This procedure is to outline the inspection of the interior of all vehicles at the beginning of each shift to insure that the vehicle is free of debris. Also, the inspection of all communication and comfort systems for proper operation and to insure that no safety hazards exist.

2.0 REFERENCE This procedure is to be used in conjunction with existing procedures and inspections that may already be in place at the individual Service Delivery Centers.

3.0 BACKGROUND This procedure is to address poor interior train quality that may occur between routine daily inspections.

4.0 PROCEDURE NORTH SOUTH

VEHICLE SHOULD BE INSPECTED AT LEAST TWICE PER SHIFT

Areas of Inspection

4.1 Safety Hazards
Inspect all cars for anything that may pose a possible safety hazard to riders of the system.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

4.2 Cleanliness and Train Presentation
Inspect all cars for miscellaneous trash, spills or vandalism within the vehicle.

4.3 HVAC
Inspect all cars for proper HVAC operation, simply check vent for hot or cold air at this time.

4.4 Lighting
Inspect all cars for overhead lighting failures.

4.5 Signage/PIS
Inspect all cars for proper signage operation, this includes both overhead signage as well as voice messaging. Listen to announcements for proper location, time, volume and clarity.

4.6 Quality of Ride
Ride vehicle to insure proper ride quality, this would include checking for any abnormalities.

4.7 Station Doors|
Inspect all Station doors for proper operation, including opening, closing, speed and synchronization with all other doors.

4.8 Car Height/Door Alignment|
Inspect car floor height to platform height (possible safety issue), and check for vehicle/station door alignment and synchronization.

4.9 Emergency Door Check|
While stopped on the guide way, pull a vehicle T-handle, the train should lose power.
Also, check flat tire detector monitor panel.

5.0 Undercarriage Vehicle Inspection
Perform visual inspection under the vehicle for any abnormal or loose condition of equipment. Including, collector shoes, guide tires motor boxes, propulsion motor, pneumatic equipment, main tires, etc.

5.1 Shop Area|
Drain shop air compressor.

5.2 Check Air Conditioning Hanging Brackets and hardware.

CORRECT ALL PROBLEMS FOUND IF APPLICABLE OR ENTER IN THE OPEN ITEMS SECTION OF THE SIMS PUNCH LIST.

Technician _____
Time /Date _____
Vehicle # _____

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

Comments_____

%200
**SECOND SHIFT - DAILY**

DEPARTMENTAL PROCEDURE OM-054 Daily Shift Inspection for Car Cleanliness, passenger informational, and comfort systems.

1.0 PURPOSE This procedure is to outline the inspection of the interior of all vehicles at the beginning of each shift to insure that the vehicle is free of debris. Also, the inspection of all communication and comfort systems for proper operation and to insure that no safety hazards exist.

2.0 REFERENCE: This procedure is to be used in conjunction with existing procedures and inspections that may already be in place at the individual Service Delivery Centers.

3.0 BACKGROUND: This procedure is to address poor interior train quality that may occur between routine daily inspections.

4.0 PROCEDURE NORTH SOUTH

VEHICLE SHOULD BE INSPECTED AT LEAST TWICE PER SHIFT|

Areas of Inspection

4.1 Safety Hazards|
Inspect all cars for anything that may pose a possible safety hazard to riders of the system.

4.2 Cleanliness and Train Presentation
Inspect all cars for miscellaneous trash, spills or vandalism within the vehicle.

4.3 HVAC
Inspect all cars for proper HVAC operation, simply check vent for hot or cold air at this time.

4.4 Lighting
Inspect all cars for overhead lighting failures.

4.5 Signage/PIS
Inspect all cars for proper signage operation, this includes both overhead signage as well as voice messaging. Listen to announcements for proper location, time, volume and clarity.

4.6 Quality of Ride
Ride vehicle to insure proper ride quality, this would include checking for any abnormalities.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

4.7 Station Doors
Inspect all Station doors for proper operation, including opening, closing, speed and synchronization with all other doors.

4.8 Car Height/Door Alignment
Inspect car floor height to platform height (possible safety issue), and check for vehicle/station door alignment and synchronization.

4.9 Emergency Door Check|
While stopped on the guide way, pull a vehicle T-handle, the train should lose power. Also, check flat tire detector monitor panel.

5.0 Undercarriage Vehicle Inspection
Perform visual inspection under the vehicle for any abnormal or loose condition of equipment. Including, collector shoes, guide tires motor boxes, propulsion motor, pneumatic equipment, main tires, etc.

5.1 Shop Area
Drain shop air compressor.

5.2 Check Air Conditioning Hanging Brackets and hardware.

CORRECT ALL PROBLEMS FOUND IF APPLICABLE OR ENTER IN THE OPEN ITEMS SECTION OF THE SIMS PUNCH LIST.

Technician _____
Time /Date _____
Vehicle # _____
Comments_____
_____

%101
**1ST SHIFT 4 DAY**

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-CHECK FOR THE PROPER LEVEL OF THE CARS. + or - 5/8" is the maximum.
South_____North_____

2-CHECK STATION DOORS FOR PROPER OPERATION

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

Pass your hand in front of the door sensitive edge and verify that the door re-opens. Also, using the door test tool, insure the door re-opens within 5 sec. after they close on the tool inserted between the doors. Be careful not to activate the infrared sensor.
South_____ North_____

3-CHECK VEHICLE DOORS FOR PROPER OPERATION.
Using the door test tool, verify the door re-opens when the tool is inserted in between the doors. Insert the tool a second time, and verify the obstruction sonar comes on.
South_____ North_____

4-CHECK FOR PROPER OPERATION OF THE "FSE" VALVES.
Install the rubber stoppers onto all 6 Q/R valves, then dump the air. All 6 stoppers should be blown out of the Q/R valves.
5-CHECK EMERGENCY ACCESS DOORS ALARM OPERATION.
With train in Run Auto Status, open one of the Emergency Access Doors at the Sat and Fis. Verify that Central Control receives alarm and must notify Bombardier personnel when alarm goes off. Alarm I.D at central will appear as the following: EVC SAT NORTH/EVC SAT SOUTH EVC FIS NORTH/EVC FIS SOUTH.

%103
**1ST SHIFT EIGHT DAY**

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-CHECK VEHICLE CURRENT COLLECTOR SHOES FOR WEAR.
If the bevel is gone replaced shoe. Shoe width should be 3/8" min. Shoe thickness should be ½" min. Check wear on top and bottom. Make adjustments if necessary.
South_____ North_____

2-CHECK FOR EXCESS WEAR ON THE SHOE HOLDER.
If wear is found on the holder near were it grips the shoe, it should be replaced.
South_____ North_____

3-LUBE ALL THE BUSHINGS WITH A SMALL AMOUNT OF LIGHT LUBE. Wipe off excess oil.
"DO NOT USE BRAKE KLEEN OR SOLVENT"
South_____ North_____

4-CHECK THE PRESSURE ON THE SHOE AND FREE ARM MOVEMENT
It should be between 8 and 12 pounds when the shoe is about ½" off the rail. With no sticking or binding when the arm is pulled back or shoe pivoted.
South_____ North_____

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

5-DRAIN INLINE AIR FILTER BOWL.
South_____ North_____

6-CLEAN TRANSFORMER COOLING FAN INTAKE FILTER WITH SOAP AND WATER.
Remove the four nuts that hold the filter guard and filter to the motor housing. With a stick, rotate motor fan blade and listen for anything unusual. With flashlight, look inside and inspect motor.
Inspect the filter element. If damaged, install a new filter. If the element is not damaged clean as outlined below. Immerse the filter element in a mild detergent solution and wash thoroughly to remove all dirt. Dry the filter element by gently squeezing the major portion of the cleaning solution from the filter and permitting the element to drip-dry. Caution: the force of a compressed air can damage the filter blast.
Do not use compressed air for drying the filter
South_____ North_____

7-CHECK BATTERY CONNECTIONS FOR CORROSION.
Clean as required. Coat in terminal grease as required.
South_____ North_____

8-CHECK THE MAIN TIRE PRESSURE.
It should be between 115 and 120 psi, when it has been running. (hot).
South_____ North_____

9-CHECK "ZERO SPEED" FLAGS.
Can be checked at either Station. Slowly move vehicle over last two overshoot flags, train should dump.
South_____ North_____

%103
**1ST SHIFT 16 DAY**

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-CHECK THE VOLTAGE THROUGH THE FLAG CIRCUIT. "MAKE SURE TRAIN IS AT THE STATION BEFORE PERFORMING THIS TEST"

Using the test panel located by flag indication inside Wayside Cabinet in Main Office; Connect a voltmeter from the North "jumper " banana jack, TP-1, to chassis ground. Turn the TEST switch to NORTH
THIS WILL ADD A 20-OHM RESISTOR TO DRAW INCREASED CURRENT FOR THIS TEST.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

Take a voltage reading. It should be greater than 15 volts. Return the switch to the OFF position. Repeat for the South,

REMEMBER TO RETURN THE SWITCH TO OFF WHEN DONE.

If either is not greater than 15 volts or the train looses power, you have a bad flag or connection. Find and repair.
South_____ North_____

2-CHECK THE VEHICLE POWER SUPPLIES.
Using voltmeter, take measurements on banana plug test panel right above power supply.
+6.1vdc +/- .3 +12.2vdc +/- .4+15.0vdc +/- .5 -15.0vdc +/- .5

Note: readouts of +15.0 & -15.0 on "A" cars, should be taken when train is running
South_____ North_____

3-CHECK THE LAMPS ON THE VEHICLE MANUAL PANEL.
Use the lamp test button.
South_____ North_____

%104
**1ST SHIFT MONTHLY**

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-CONDUCT THE AIR LEAK TEST. G:\US\MI\miacomm\SD\MIA3007

Allow the compressors to pump up, remove power, and leave the batteries on, car reset and the train lines closed. The pressure should not drop more then 10 psi in 10 minutes. If it does, use soapy water and correct, or if unable to correct problem, write it on repair sheet.
South_____ North_____

2-PERFORM THE VEHICLE BATTERY LOAD TEST. (30 MINS)
With the train berthed at the satellite station And all vehicle and wayside doors closed remove main power from the train to be checked.

Do not turn off any circuit breaker or switch inside the cars during this test.

Note the time when the main power was removed.

Using a digital voltmeter take readings of each of the batteries in each car and record these readings, on the battery load test book, it should be greater than 12 volts +/-.5 volts.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

After 30 minutes and using the same voltmeter take new readings of the batteries and record them in the same data sheet as before.

It should be within .5 volts. If voltage is below 11.0 v dc, the battery should be replaced and data recorded in SIMS history book.
South_____ North_____

3-CHECK THE FTDS ON ONE VEHICLE.
Lower the air pressure to 65psi and hit the tire. The alarm indication should come on. Keep record of failed detectors on data sheet on G:\US\MI\miacomm\Forms & Data\FTD
South_____ North_____

4-LUBE THE TOW BARS.
South_____ North_____

5- INSPECT ALL THE LEAF SPRINGS FOR BROKEN CURLS.
This is very important but difficult to see.
South_____ North_____

6-INSPECT THE AIR HOSES.
Visually check the routing of the air hoses, Look for areas where wear could occur. Use a light or your hand to verify no wear or chafing.
South_____ North_____

7-GUIDEWAY INSPECTION
--Print data sheet from G:\US\MI\miacomm\Forms & Data\PATCHES.DOC
--Check for new or worsening cracks and patches. Update data sheet.
--Print updated list and place on clipboard.

--Check the power rails for unusual wear, arching, corrosion or joint separation.

--Check all hanger and rail pin points.(150 ft. each side of expansion joint)

--Inspect the expansion gaps for wear and proper movement. Gaps should be approx. the same at all locations.
Clean the expansion joint with a wire brush

--Check the condition of the rail covers.
Replace any missing or damaged covers

--Check the alignment of the overshoot plates wire routing and security
Inspect all antennas for wear, deterioration and proper alignment and security.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

--Inspect steel cladding panels for loose or missing hardware.

--Verify Guide way Emergency signage("Danger High Voltage Signs") on top of I-Beam are in place and readable. Also check Fire Extinguishers throughout Guide way for proper inspection tag and condition.
South_____ North_____

8-CHECK DOOR ROLLER OPERATION
Power down and manually move the vehicle doors back and forth and listen for scraping or binding in channel or car body, listen or feel for smooth roller operation.
Record any discrepancies that need attention.
South_____ North_____

9-PERFORM EMERGENCY BRAKE TEST.
Print MA-5001 from G:\US\MI\miacomm\SD\MIA5001.DOC
Run charts calculate data and enter data in G:\US\MI\miacomm\Forms & Data\EMRBKTSTSOUTH.XLS or EMBRKSTNORTH.XLS FILE.
South_____ North_____ PASS/FAIL

10-BRAKE LINING
Check lining thickness 5/16" minimum at one inch from the toe of the pad.

11-CLEAN OR REPLACE THE AIR COMPRESSOR FILTER.
South_____ North_____

12-BLOW THE DUST OUT OF THE AIR COMPRESSOR ASSEMBLY WITH SHOP AIR, INCLUDING THE COOLING TUBE TO THE DRIER.
Note: Do not close the yellow manual valve on the main air package.
South_____ North_____

13-CHECK THE OIL IN THE COMPRESSOR.LUBE THE VEHICLE AIR COMPRESSOR MOTOR. AND CHECK BELT TENSION. Note new motors do not have a fitting, skip.
South_____ North_____

14-CHECK GUIDEWAY EMERGENCY ACCESS DOOR ALARM AT FIS(glass doors).
Open one of the glass doors at FIS free lobby leading to guide way and interrupt the alarm's infrared beam. The following should occur:
--Central Control should right away notify Bombardier personnel that they have received a glass door alarm at FIS.
--Close/lock the door and request Central Control to reset alarm.
--Verify that the alarm bell went off.

%106

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

**1ST SHIFT SEMI-ANNUAL**

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-CLEAN THE CERAMIC INSULATORS ON THE RESISTOR BANKS.
(Jan & July Only) "A" & "C" Cars
Use "Big Orange" cleaner only.
South_____ North_____

2-CHECK THE COMPRESSOR CRADLE HANGER BUSHINGS.
Functional, no damaged.
South_____ North_____

3-INSPECT THE LIFT TABLE ELECTRICAL AND MECHANICAL PARTS
(Jan & July Only)
Wires, electrical connections, electrical boxes, hoses, check hydraulic fluid.
Perform operational check on the lift table.

COMPLETE: _____

4-CHANGE THE SHOP AIR COMPRESSOR OIL AND FILTER. (Jan & July Only)
COMPLETE _____

6-REMOVE AND INSPECT THE HOSTLE PANEL FOR PROPER SWITCH CONTACTS; WIRE TERMINALS, ETC.
The train should be berthed at the satellite station; all vehicle and wayside doors open (sterile or free), Main power off and 24 vdc battery cir.brk.off in all cars. Open the access keyed panel and pull out the hostler panel. At this point verify the correct function of the panel and key locks, also the panel's slide mountings are functioning. Inspect for proper switch contacts; wire terminals, etc. Inspect the panel's wire harness coming out at the back of the panel for proper securing and chaffing protection. Look for wires, whose insulation has been cut or abraded, wires damaged, crushed, burned or bent such that breaks in the insulation or wires are suspected. If found the wire(s) should be repaired or replaced. Visually examine all switches and indicator lights lens for damage. Replace as required. Be very careful to use the same type of switch if replacement is necessary. Remove all four screw located at the corner of the panel and very carefully pull up the panel and flip it over so you can see the wire connections. Check that all wire terminals are properly crimped, including the ones to the big connector. Also, examine terminals and pin connector for corrosion. Repair as required. Make sure all wire terminals are properly fastened to

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

the switches and terminal blocks. Tight up if found loose but do not over tighten as damage may occur to the switch. Visually examine the wiring for proper routing, chaffing protection and securely mounting.

HOSTLER PANEL CONTACT RESISTANCE VERIFICATION
check each contact listed below for less than 0.2 Ohm resistance between the test points. Replace the contact if the resistance is higher than 0.2 Ohm or if the contact is intermittent.

| SWITCH NOMENCLATURE | TYPE | TEST POINTS |
|---|---|---|
| Reset Timing | N.C. | B3 & B4 |
| Overshoot Reset | N.O. | A1 & A2 |
| Overshoot Reset | N.O. | A3 & A4 |
| Car Reset | N.O. | A1 & A2 |
| Car Reset | N.O. | A3 & A4 |
| Hostler Door Open | N.O. | A1 & A2 |
| Hostler Door Open | N.C. | A3 & A4 |
| Overshoot Override | N.O. | C1 & C2 |
| Overshoot Override | N.O. | C3 & C4 |
| Overshoot Override | N.C. | A1 & A2 |
| Overshoot Override | N.C. | A3 & A4 |
| Overshoot Override | N.C. | B1 & B2 |
| Emergency Stop | N.C. | A1 & A2 |
| Emergency Stop | N.C. | A3 & A4 |
| Hostler Enable | N.O. | A1 & A2 |
| Hostler Enable | N.O. | B1 & B2 |
| Hostler Enable | N.C. | C3 & C4 |
| Hostler Enable | N.C. | D1 & D2 |
| Mode Selection – Remote Position | Closed | A1 & A2 |
| Mode Selection – Remote Position | Closed | B1 & B2 |
| Mode Selection – Hostler Position | Closed | C1 & C3 |
| Mode Selection – Hostler Position | Closed | A1 & A3 |
| Mode Selection – Hostler Position | Closed | B1 & B3 |

Very carefully flip back the panel and fasten it. Watch for the wires under the panel. Power up the train and verify the proper function of all switches and indicator lights drive the train manually one round trip and if the train ran ok. Then do another round trip in auto mode to verify the proper operation of the train. If everything is ok then push the panel back under the seat and close the access panel.

South_____ North_____

%107

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

1ST SHIFT ANNUAL DOOR OPERATOR REBUILD--SOUTH

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-PRINT W.I. 2034 FROM THE O DRIVE (G:\US\MI\miacomm\SD\MIA2034).

2-THIRD SHIFT WILL REMOVE THE ASSEMBLIES.

3-FIRST SHIFT SHOULD REBUILD THEM FOR INSTALLATION WITHIN TWO DAYS.

SOUTH: _____

%108

1ST SHIFT ANNUAL-(SOUTH COLLECTOR REBUILD)

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-PRINT INSTRUCTIONS FROM G:\US\MI\miacomm\SD\MIA2033.

2-THIRD SHIFT WILL REMOVE THE ASSEMBLIES FROM THE TRAIN

3-FIRST SHIFT SHOULD REBUILD THEM FOR INSTALLATION WITH IN TWO DAYS.
SOUTH _____

%109

1ST SHIFT ANNUAL GUIDE WHEEL REBUILD--SOUTH

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-PRINT W.I. 2016 FROM G:\US\MI\miacomm\SD\MIA2016

2-THIRD SHIFT WILL REMOVE THE ASSEMBLIES FROM THE VEHICLE.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

3-SECOND SHIFT SHOULD REBUILD THEM FOR INSTALLATION WITHIN TWO DAYS.

COMPLETE: _____

Miami Field Site C-100 & CX-100 Guide wheel Rebuild Signoff Sheet

Rebuild Date:_____ Guide wheel Spindle Serial Number:_____

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1. Rebuild procedure used is on: G:\US\MI\miacomm\SD\MIA2016 Revision: 4

It is important to measure pertinent shaft, and hub housing, using calibrated micrometers to verify that they are within the tolerances shown on drawing 4677C31 for the shaft and drawing 8838D90 for the hub housing. These components must be replaced if they are out of tolerance. The bearing cup must be removed using a bearing puller, not tools that may create nicks or burrs on the hub.

Drawing Number: 4677C31 Revision 12
Drawing Number: 8838D90 Revision:_____

Small Bearing Shaft Measurement:
(1.2498" to 1.2493")
Large Bearing Shaft Measurement:
(1.9995" to 1.9990")

Grease Seal Shaft Measurement:
(_____"to _____") (No groves)

2. Small Bearing Shaft Measurement: Initial _____" 90 deg. _____"
(90 deg. = 90 degree rotation of micrometer from initial reading)
Tech._____ Date_____ Average _____"

3. Large Bearing Shaft Measurement: Initial _____" 90 deg. _____"
(90 deg. = 90 degree rotation of micrometer from initial reading)
Tech._____ Date_____ Average_____"

4. Grease Seal Shaft Measurement: Initial _____" 90 deg. _____"
(90 deg. = 90 degree rotation of micrometer from initial reading)
Tech._____ Date_____ Average _____"

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

5. Bearing Cups installed per specification:
Tech._____ Date_____

Insp._____ Date_____

6. Final End Play Reading:
(.001"-.007")_____"
Tech._____ Date_____

Insp._____ Date_____

7. Cotter Pin Installed & Secured:
Tech._____ Date_____

Insp._____ Date_____

8. Grease Cap Filled to Specifications, Installed Correctly & Torque Sealed:
Tech._____ Date_____
Insp._____ Date_____
9. Heat Sensitive Labels Installed per Specifications:
Tech._____ Date_____

Insp._____ Date_____

Instructions:

a. Line 1: Drawing & revision where your specific guide wheel procedure is located
b. Line 2,3,4: (____to____) = shaft tolerance range of your respective guide axle Initial_____"
= first micrometer reading
c. Line 4,5,6,7,8:
Tech._____ = signature of technician doing work
Insp. _____ = signature of inspector (cannot be the same as Tech.)

%110

3RD SHIFT SEMI-ANNUAL (Lub., bearing ring, radius rods)

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1- LUBRICATE THE RADIUS RODS AND BOGIE BEARING RING.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

%111
A/C CLEAN AND TEST
TEST SPECIFICATIONS FOR MIAMI AIRPORT REHAB DESIGN UNITS (ma-44)

When power is applied to unit, the evaporator fan motor contactor activates the evaporator fan motor to allow continuous air circulation within the car.

Using Honeywell simulator, operate unit to insure staging. 1st stag. - condenser fan contactor activates condenser fan. 2nd stage - liquid line solenoid coil opens liquid line solenoid valve.

As pressures balance, the suction pressure rises to the cut in pressure of 80 P510 (+/- PSIG), allowing the Compressor contactor to activate the compressor.

The system is now in full operation. Depending on the surrounding ambient temperature, the pressures will correspond to the standard refrigerant pressure-temperature relationship chart.

Since the system is not in a totally controlled environment, we must use other methods to test for proper operation.

While system is in full operation, slowly block off the air intake to the condenser, to increase the high (dis-charge) pressure to 375 P510 (+/-5 PSIG).

The compressor contactor will be cut out of the circuit by the high pressure cut out control (HPCO). When the pressure decreases to 265 PSIG (+/- 5 P510) the HPCO will cut back in, & energize the compressor contactor.

Allow pressures to stabilize.

Slowly block off the air return opening to the evaporator, to decrease the low (suction) pressure to 25 PSIG (+/- 5 PSIG).

The compressor contactor will be cut out of the circuit by the low pressure cut out control (LPCO). When the pressure increases to 80 PSIG (+/- 5 PSIG), the LPCO will cut back in, & energize the compressor contactor.

UNIT CONTINUOUS OPERATION

Measure condenser air temperature in & out, the temperature difference (TD) should be 25oF to 3OoF or possibly higher depending on the ambient conditions.

Measure evaporator air temperature in & out, the temperature difference LTD) should be l7oF to 2OoF or possibly higher depending on the ambient conditions.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

Suction & discharge pressures should read 65 P510 (Suction) +/-10 PSIG & 250 PSIG (discharge) +/- 10 PSIG, during normal operating ambient conditions for Miami Florida 91/77 to 89/77 DB & 79/78 WB Chapter 24 item 24.1 ASHRAE ;manual.

%113
AIR COMPRESSOR REBUILD PRINT G:\US\MI\miacomm\SD\MIA2023

%115

1st SHIFT 15 DAYS

CONSUMABLE CHECK

1. Print "Matorder" list from G:\US\MI\miacomm\Forms & Data\Matorder. The last part of the list includes the Consumable List.

2. Make note of quantity for items which need to be ordered.

3. Write an order for item in the Material Order Form.

4. Repair bad cabinet doors, handles etc.

5. Organize stockroom shelves as required.

%116

1st SHIFT SEMI ANNUAL

TEMPORARY CHANGE NOTICE("TCA") TRACKING.

GET TOGETHER OR CONTACT SITE MANAGER, TO DISCUSS IF ANY "TCA'S" HAVE BEEN WRITTEN OR APPROVED RECENTLY.

MAKE ANY CHANGES OR UPDATES IF NECESSARY TO FILE LOG FOUND IN: G:\US\MI\miacomm\Forms & Site's Data\Tca Log.xls.

%117

**1ST SHIFT SEMI ANNUAL**

FIELD CHANGE NOTICE ("FCN") TRACKING

GET TOGETHER OR CONTACT SITE MANAGER, TO DISCUSS IF ANY "FCN'S" HAVE BEEN WRITTEN OR APPROVED RECENTLY.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

MAKE ANY CHANGES OR UPDATES IF NECESSARY TO FILE LOG FOUND IN: G:\US\MI\miacomm\Forms & Site's Data \Fcn list.doc.

%118

1ST SHIFT MONTHLY

CONTROLLED ASSEMBLY PARTS LIST("CAPL") TRACKING

GET TOGETHER, CONTACT OR ADVISE JOSE VAZQUEZ, THAT "CAPL" DATABASE NEEDS TO BE CHECK FOR UPDATES.

IF JOSE VAZQUEZ IS NOT AVAILABLE, DATABASE CAN BE FOUND IN: HTTP://INTERNAL/DEPARTMENTS/TECHNICALDOCUMENTATION/ CONFIGURATION CONTROL CAPL/<DIR>PEOPLEM/<DIR>MIAMI/

MAKE ANY CHANGES OR UPDATES IF NECESSARY TO "CAPL" FILE FOUND IN BOTTOM DRAWER OF FILE CABINET WHERE RADIOS ARE LOCATED.

%201

**2ND SHIFT 4 DAY**

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-BLEED ALL PNEUMATIC STOP COCKS ON VEHICLE MAIN AIR TANKS.
Repair or record on repair sheet any tank that exhausts condensation. Schedule leak test ASAP.
South_____ North_____

2-CHECK THE SERVICE BRAKE AIR CHAMBER GAUGE READINGS
During normal operation as the train enters the Sat. tunnel. should be approx. 20 psi. If there is greater than 10 psi difference check/rebuild A/R-1 valves.(solenoid).
South_____ North_____

3-LISTEN FOR AIR LEAKS.
Power down and walk underneath train, check for loose items and listen for air leaks.

4-CHECK ON "A" CARS ONLY, FOR THE FOLLOWING:
-Spare set of jumper leads inside miscellaneous box to the left of the ATO

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

-Voltmeter

5-CHECK VOLTAGE THROUGH "FB" CIRCUITRY ("A" CAR ONLY). WITH TRAIN IN STATION CHECK THE FOLLOWING VOLTAGES

TBM14---Input voltage of 14.90DC
TBM10---Voltage after "A" and "C" car LS2 Aux. contacts.
TBM12---Voltage after all "FB" Switches.

TROUBLESHOOT CIRCUIT IF VOLTAGE AT TBM12 IS 12VDC OF LOWER.

%202

2ND SHIFT 8 DAY

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-VISUALLY CHECK FOR OIL LEAKAGE ON THE COMPRESSORS.
Check for wet and dirty areas.
South_____ North_____

2-VISUALLY CHECK THE LEVELING VALVES ARM LINKAGE JAM NUTS ARE TIGHT.
South_____ North_____

3-VISUALLY CHECK THE PINION SEAL, SHIMS AND DIFFERENTIAL FOR OIL LEAKS.
South_____ North_____

4-CHECK ALL STANCHIONS FOR LOOSE SCREWS.
South_____ North_____

5-CHECK DIESEL BATTERY VOLTAGE
35.7.volts on float charge and 36.7 volts on high charge. Add water as required. Also, check ammeter for charge indication. The lower the readout the better.

_____ _____

6-CHECK SWITCHGEAR UPS BATTERY VOLTAGE.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

To be 52.9 thru 55.3 volts. Also, check ammeter for charge indication. The lower the readout the better.

_____ _____

7-CHECK SATELLITE UPS BATTERY VOLTAGE.
To be 27 thru 27.6 volts. Also, check ammeter for charge indication. The lower the readout the better.

_____ _____

8-CHECK FIS BATTERY UPS VOLTAGE.
To be 27 thru 27.6 volts. Also, check ammeter for charge indication. The lower the readout the better.

_____ _____

9-CHECK FIS FREE, SAT. N/S FREE, SAT. STERILE PHOTO SENSORS FOR PROPER OPERATION. ADJUST IF NECESSARY.

_____ _____

10- PLUG IN FORK LIFTS SO THAT THE BATTERIES CAN BE CHARGE. LEAVE DOORS OPEN.

11-Check all Emergency Power Off Buttons in Maintenance Area and Wash racks.
Verify that power is removed when button is pushed. Request power and verify
that power does not come on.
%203

**2ND SHIFT 16 DAY**

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-CHECK THE GUIDE TIRES FOR WEAR.
Use go no-go gauge -- no tread replace.
South_____North_____

2-CHECK SATELLITE ATO POWER SUPPLIES.
24.0 VDC -- 6.1 VDC-- 12.2 VDC

_____ _____

3-CHECK FIS ATO POWER SUPPLIES.
24.0 VDC -- 6.1 VDC-- 12.2 VDC

_____ _____

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

4-CHECK THE LAMPS AT CENTRAL.

_____ _____

5-CHECK THE VOLTAGE THROUGH THE WAYSIDE DOOR LS-1 SWITCHES.
24V AT THE CABINET (DWG. 8362D66 SH.2 AND 11)

Measure voltage at TB1 A23 AND TB3 A23 for North and South Train.
South_____North_____

6-CHECK THE VOLTAGE THROUGH THE VEHICLE DOOR LS-1 SWITCHES.
Measure at TB-A- 8 & 9 and TB-A 8 & 11. To be no more than 0.2 volts in each car with the doors closed. (Dwg. 4683C43 SH. 50)
South_____North_____

7-RUN THE TRAINS IN STAGGERED AUTO MODE FOR THIRTY MINUTES USING THE BACKUP GENERATOR.
Complete _____

%204

**2ND SHIFT MONTHLY**

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING.
WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.
1-CHECK THE SPECIFIC GRAVITY IN THE GENERATOR AND PDS UPS BATTERIES.

_____

2- CHECK FORK LIFT WATER LEVEL.

1) First, Check water level making sure plates are submerged in water. If not add enough water to just cover the plates.
2) Last, AFTER batteries are fully charged, recheck water level and if need it add water to fill cell to proper level.

3-CHECK UPS UNIT FOR PROPER OPERATION
(Check for signs of overheating, swelling or discoloration of components)

_____

4-CHECK FOR BURNT OUT BULBS AND BROKEN LENSES IN SWITCHGEAR CABINET.

5-CHECK THE DIESEL FUEL TANK LEVEL.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
# SAMPLE FORMS

Use conversion chart next to board inside break room. Put results in Site Coordinators box. 1"= 40GALLONS

6-CHECK/CHART THE THREE MOTOR CURRENTS. (REF.MA-58 FROM G:\US\MI\miacomm\MA\MA58)
South_____ North_____

7-CLEAN AND VACUUM THE ATO CABINET.
South_____ North_____

8-CLEAN AND VACUUM CIRCUIT BREAKER CABINET.
South_____ North_____

9-CLEAN AND VACUUM THE TERMINAL BLOCK CABINET.
South_____ North_____

10-CHECK CONTACTS IN MOTOR CONTROL BOX AND AUX. BOX.
(REF. WI - 2006, 2007, 2008)

Check the contacts on the North-A car.
Check the contacts on the North-B car.
Check the contacts on the North-C car.
_____

Check the contacts on the South-A car.
Check the contacts on the South-B car.
Check the contacts on the South-C car.
_____

11-INSPECT THE TERMINALS, WIRING, RESISTORS AND CAPACITORS IN THE MOTOR CONTROL AND AUXILIARY CONTROL BOXES. REPLACE BULGING CAP.'S, BURNT RESISTOR.
South_____ North_____

13-REPLACE THE A/C FILTERS.
5a) Before replacing filters clean the grill inside of vehicle preferably with power on, so all the dust and dirt will be suck into the filter before replacement.

14-Clean the A/C drain boot on the bottom of the unit.
South_____ North_____

15- CLEAN THE INLINE AIR FILTER BOWLS.
South_____ North_____

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

16-CHECK THE BRAKE LINING THICKNESS.
5/16" minimum at one inch in from the toe of the pad.
South_____ North_____

17-CHECK THE VEHICLE BATTERY CHARGER READINGS.
26.5v w/pwr. on, +/- depending on temperature. Ref. W.I.2041 FROM
G:\US\MI\miacomm\SD\MIA2041
South_____ North_____

18 LUBE THE REVERSER RACK AND PINION GEAR
Use proper grease
South_____ North_____

%205

**2ND SHIFT QUARTERLY**

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-CLEAN THE BUFFERS.
Clean and wipe off excess oil.
South_____ North_____

2-INSPECT ALL THE SWITCHGEAR BREAKERS
Remove and clean. Inspect for loose or burnt areas. "Do not file or sand".
_____

3-LOAD TEST THE UPS BATTERIES
Switchgear, Satellite and Terminal. With the UPS unit on, disconnect batteries 1 and 2. Use the battery load tester and the Test the batteries. If bad, replace. If good, reconnect. Disconnect batteries 3 and 4. Repeat above steps.
_____

4-CHECK AND REPAIR AS NECESSARY ALL 209P361 G08-G20-G22 RELAYS ON THESE
BOARDS.
Ref. Ma-51. Use test fixture
South_____ North_____

%206
**2ND SHIFT SEMI-ANNUAL (CK AND HOLDBACK VALVE)**

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-TEST THE CHECK VALVES ON THE VEHICLE MAIN AIR TANKS. Ref. W.I 5035 & 5036 FROM G:\US\MI\miacomm\SD\MIA5035 & MIA5036
The train is to be at berth, at the Sat, with all free door assignments and a hold. Leave the batteries on and the train lines closed. Cycle the compressors so that full pressure is applied to the air tanks. After the compressors cycle off, remove the power from the train and lock it out with the emergency stop switch located on the shop wall. Disconnect the hose from check valve. No air should be coming out of the valve (from the reservoirs back to the air dryer) If an air leak is present, replace the valve; If the valve checks ok, install the hose Fitting back onto the check valve. Removal of the check valve. Turn off the batteries. Drain the air from the main air tank. Remove the check valve from the main air tank.

INSTALLATION OF THE CHECK VALVE.
Apply some Teflon to the threads of the check valve and install the valve onto the main air tank. Install the hose onto the check valve. Install the shop air hose on the air tank. Re-test the valve.
South_____ North_____

2-CHECK THE PRESSURE HOLD BACK VALVES ON ALL CARS. (Ref. W.I5035 FROM G:\US\MI\miacomm\SD\MIA5035
Have the train at berth, at the Sat. station. Request all free door assignments with a hold. Remove the main power from the train, turn off the batteries and leave the train-line valves closed. Drain the air from the main air tanks on all vehicles. The level of the vehicles should remain within tolerance(5/8") If any does not remain within tolerance, the hold back valve may be bad or there are air leaks Ahead the hold back valve.(hoses, leveling valve, air bags) Open up the train lines and install the shop air hose to build up full pressure in the vehicles. Remove the air hose, close the train line valves and re-test the hold back valves.
South_____ North_____

%207
**2ND SHIFT SEMI-ANNUAL COLLECTORS REBUILD**

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-PRINT W.I. 2034 FROM G:\US\MI\miacomm\SD\MA-2034).

2-THIRD SHIFT WILL REMOVE THE ASSEMBLIES.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

3-SECOND SHIFT SHOULD REBUILD THEM FOR INSTALLATION WITHIN TWO DAYS.

NORTH: _____ SOUTH:_____

%208
**2ND SHIFT SEMI-ANNUAL DOOR OPERATOR REBUILD**

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-PRINT INSTRUCTIONS FROM G:\US\MI\miacomm\SD\MIA-2033.

2-THIRD SHIFT WILL REMOVE THE ASSEMBLIES FROM THE TRAIN

3-SECOND SHIFT SHOULD REBUILD THEM FOR INSTALLATION WITH IN TWO DAYS.

NORTH: _____ SOUTH:_____

%209
2ND SHIFT ANNUAL (GUIDE AXLE REBUILD - NORTH)

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-PRINT W.I. 2016 FROM G:\US\MI\miacomm\SD\MIA-2016

2-THIRD SHIFT WILL REMOVE THE ASSEMBLIES FROM THE VEHICLE.

3-SECOND SHIFT SHOULD REBUILD THEM FOR INSTALLATION WITHIN TWO DAYS.

Miami Field Site C-100 & CX-100 Guide wheel Rebuild Signoff Sheet

Rebuild Date:_____ Guide wheel Spindle Serial Number:_____

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN the REPAIR LIST.

1. Rebuild procedure used is on: W I 2016 Revision: 4

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
# SAMPLE FORMS

It is important to measure pertinent shaft, and hub housing, using calibrated micrometers to verify that they are within the tolerances shown on drawing 4677C31 for the shaft and drawing 8838D90 for the hub housing. These components must be replaced if they are out of tolerance. The bearing cup must be removed using a bearing puller, not tools that may create nicks or burrs on the hub.

Drawing Number: 4677C31 Revision 12
Drawing Number: 8838D90 Revision:_____

Small Bearing Shaft Measurement: (1.2498" to 1.2493")
Large Bearing Shaft Measurement: (1.9995" to 1.9990")

Grease Seal Shaft Measurement: (_____"to _____") (No groves)

2. Small Bearing Shaft Measurement: Initial _____" 90 deg. _____"
(90 deg. = 90 degree rotation of micrometer from initial reading)
Tech._____ Date_____ Average _____"

3. Large Bearing Shaft Measurement: Initial _____" 90 deg. _____"
(90 deg. = 90 degree rotation of micrometer from initial reading)
Tech._____ Date_____ Average_____"

4. Grease Seal Shaft Measurement: Initial _____" 90 deg. _____"

(90 deg. = 90 degree rotation of micrometer from initial reading)
Tech._____ Date_____ Average _____"

5. Bearing Cups installed per specification:
Tech._____ Date_____

Insp._____ Date_____

6. Final End Play Reading:
(.001"-.007")_____"
Tech._____ Date_____

Insp._____ Date_____

7. Cotter Pin Installed & Secured:
Tech._____ Date_____

Insp._____ Date_____

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

8. Grease Cap Filled to Specifications, Installed Correctly & Torque Sealed:
Tech._____ Date_____

Insp._____ Date_____

9. Heat Sensitive Labels Installed per Specifications:
Tech._____ Date_____

Insp._____ Date_____

Instructions:

a. Line 1: Drawing & revision where your specific guide wheel procedure is located
b. Line 2,3,4: (____to____) = shaft tolerance range of your respective guide axle
Initial_____" = first micrometer reading
c. Line 4,5,6,7,8:
Tech._____ = signature of technician doing work
Insp. _____ = signature of inspector (cannot be the same as Tech.)

%210

**COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.**

1-ON ODD NUMBER YEARS CALL WESTINGHOUSE IN TO CALIBRATE ALL PDS EQUIPMENT AND CONSIDER CALLING FOR INFRARED INSPECTION.
Bob Tate - Westinghouse/Siemens Phone 813-621-2854 FAX 813-623-6261

2-EVERY YEAR, USE AMP-TECTOR TO VERIFY TRIP POINTS ON ALL THE SWITCHGEAR BREAKERS. USE PROCEDURE IN AMP-TECTOR BOX.

BREAKER WAS TESTED-_____ PAST / FAILED

BREAKER WAS TESTED-_____ PAST / FAILED

BREAKER WAS TESTED-_____ PAST / FAILED

BREAKER WAS TESTED-_____ PAST / FAILED

BREAKER WAS TESTED-_____ PAST / FAILED

%211

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

VERIFY PROPER OPERATION OF HURRICANE DOORS.
Manually lower door, verify proper operation, confirm power is removed from the guide way when the doors is down 4" If they are problems, call
South_____North_____

%212

**2nd Shift Annual Pm**

VERIFY TRANSMITTER SIGNAL LEVELS
Measure transmitter signal levels. Ref. W.I.6005 FROM G:\US\MI\miacomm\SD\MIA-6005

TRANSMITTER LEVELS

| | CENTRAL - NORTH | | | CENTRAL - SOUTH | |
|---|---|---|---|---|---|
| | FREQ. | TX (AMPS) | LOCATION | TX (AMPS) | LOCATION |
| P.S. | | 0.9 | A2-XA3-M | 1.2 | A2-XA11-M |
| S.T. | | 0.9 | A2-XA1-M | 0.8 | A2-XA9-M |
| INFO. | LOW | 1.4 | A8-XA6-15 | 0.8 | A2-XA13-15 |
| "A | HIGH | 0.9 | | 1.4 | |
| INFO. | LOW | 0.8 | A2-XA5-15 | 1.3 | A8-XA8-15 |
| "B" | HIGH | 1.2 | | 1.0 | |
| INFO. | LOW | 1.4 | A2-XA7-15 | 1.0 | A2-XA15-15 |
| "C" | HIGH | 1.0 | | 1.3 | |

| | SATELLITE - NORTH | | | SATELLITE - SOUTH | |
|---|---|---|---|---|---|
| | FREQ. | TX (AMPS) | LOCATION | TX (AMPS) | LOCATION |
| P.S. | | 1.4 | A2-XA3-M | 1.2 | A2-XA11-M |
| INFO. | LOW | 1.6 | A2-XA5-15 | 1.6 | A7-XA8-15 |
| "A | HIGH | 1.0 | | 1.0 | |
| INFO. | LOW | 1.6 | A7-XA6-15 | 1.6 | A2-XA13-15 |
| "B" | HIGH | 1.6 | | 1.2 | |
| INFO. | LOW | 1.2 | A2-XA7-15 | 1.6 | A2-XA15-15 |
| "C" | HIGH | 1.2 | | 1.1 | |

| | TRAIN - NORTH | | | TRAIN - SOUTH | |
|---|---|---|---|---|---|
| | FREQ. | TX (AMPS) | LOCATION | TX (AMPS) | LOCATION |
| T.T. | LOW | 1.0 | CR2-XA5-M | 0.9 | CR2-XA5-M |
| | HIGH | 1.1 | | 0.9 | |
| INFO. | LOW | 3.4 | CR2-XA8-15 | 3.0 | CR2-XA8-15 |
| "A | HIGH | 3.0 | | 3.0 | |

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

| | | | | | |
|---|---|---|---|---|---|
| INFO. | LOW | 3.6 | CR2-XA8-15 | 2.8 | CR2-XA8-15 |
| "B" | HIGH | 3.2 | | 2.8 | |
| INFO. | LOW | 1.2 | CR2-XA8-15 | 2.8 | CR2-XA8-15 |
| "C" | HIGH | 2.4 | | 1.6 | |

INFORMATION RECEIVER LEVELSVEHICLE RECEIVERS

| | | | |
|---|---|---|---|
| "A" Car | TBT4 | + | 400mv |
| | TBT5 | - | |
| "B" Car | TBT4 | + | 400mv |
| | TBT5 | - | |
| "C" Car | TBT4 | + | 400mv |
| | TBT5 | - | |

TERMINAL CAB. 08 RECEIVER LEVELS

| | | | | | |
|---|---|---|---|---|---|
| North Traintone | TB1 A & C76 | 400mv | South Traintone | TB3 A & C76 | 400mv |
| NA Info RX | TB1 A & C80 | 400mv | SA Info RX | TB4 A & C37 | 400mv |
| NC Info RX | TB1 A & C85 | 400mv | SC Info RX | TB3 A & C85 | 400mv |
| NB Info RX | TB4 A & C34 | 400mv | SB Info RX | TB3 A & C80 | 400mv |

SATELLITE CAB. 40 RECEIVER LEVELS

| | | | | | |
|---|---|---|---|---|---|
| NA Info RX | TB1 A & C80 | 400mv | SA Info RX | TB4 A & C34 | 400mv |
| NC Info RX | TB1 A & C85 | 400mv | SC Info RX | TB3 A & C80 | 400mv |
| NB Info RX | TB4 A & C34 | 400mv | SB Info RX | TB3 A & C85 | 400mv |

%213
**2nd Shift Annual**

REFERENCE VITAL RELAY PROCEDURE T923A21

1-SEND GRS (VITAL) RELAYS TO GRS FOR CALIBRATION.
Relay serial number _____, _____,_____,_____

2-ENTER DATA ONTO DATA SHEET ON G:\US\MI\miacomm\Forms & Site's Data\
Calibration & TOOLS Info

3-INSURE SOME TYPE OF PAPER WORK IS USED FOR TRACKING, RMR, ETC.VITAL
RELAY CALIBRATION DATA SHEET (7 Year Cycle)

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
# SAMPLE FORMS

Please note, relays get calibrated every 7 years, however, the maintenance pm prints out on an annual basis for checking. See due dates below

| | | | Due date |
|---|---|---|---|
| SA1B SAT | | 73920L022 | 3/22/2007 |
| S-SFTONEFIS | | D79-79C | 3/22/2007 |
| NA1B SAT | 521012 | | 3/23/2007 |
| SAD FIS | 527705 | | 3/23/2007 |
| S-OVERSHFIS | | 532316 | 3/23/2007 |
| S-SAFE | FIS | E79-69D | 3/23/2007 |
| NT3B FIS | 521231 | | 4/24/2007 |
| SAFG FIS | 520537 | | 4/24/2007 |
| SAVD3 | FIS | D79-56E | 4/24/2007 |
| SH FIS | 520351 | | 4/24/2007 |
| ST3B FIS | 522474 | | 4/24/2007 |
| STFG FIS | 522549 | | 4/24/2007 |
| STVD3 | FIS | D79-87B | 4/24/2007 |
| NAFG FIS | 521088 | | 10/5/2007 |
| NTFG FIS | D79-07D | | 10/5/2007 |
| STD FIS | 520419 | | 10/5/2007 |
| S-TRTONEFIS | | D79-86D | 10/5/2007 |
| VEHICLE | NA | 521220 | 10/5/2007 |
| VEHICLE | NC | 522396 | 10/5/2007 |
| VEHICLE | SA | J79-49U | 10/5/2007 |
| VEHICLE | SC | 522531 | 10/5/2007 |
| N-OVERSHFIS | | 530276 | 8/1/2008 |
| N-SAFE | FIS | 521224 | 8/1/2008 |
| N-SFTONEFIS | | 520456 | 8/1/2008 |
| NTD FIS | 532303 | | 8/1/2008 |
| N-TRTONEFIS | | 521208 | 8/1/2008 |
| NTVD3 | FIS | D80-K95 | 8/1/2008 |
| X-STOP | FIS | 520638 | 8/1/2008 |
| NAD FIS | 530244 | | 12/5/2008 |
| NAVD3 | FIS | 522681 | 12/5/2008 |
| NH FIS | 527680 | | 12/5/2008 |
| SPARE | | 520998 | 12/5/2008 |
| SPARE | | 532015 | 12/5/2008 |
| SPARE | | 527836 | 12/5/2008 |
| SPARE | | 527840 | 12/5/2008 |
| SPARE | | 527727 | 4/22/2009 |
| SPARE | | 522676 | 4/22/2009 |
| SPARE | | E79-Y76 | 4/22/2009 |
| SPARE | | D79-47E | 4/22/2009 |

Refer to Document T923A21 in EDMS

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

%215

2ND SHIFT 14 DAY PM'S

1- REMOVE TRASH FROM SHOP AREA.

%303

THIRD SHIFT--30 DAYS

1. REVIEW MAIN TIRE CHANGE OUT DATA SHEET FOUND IN BULLETIN BOARD

OUTSIDE BREAKROOM. USE WEEKLY TRAIN MILEAGE READOUT OR GET CURRENT

MILEAGE AND DETERMINE IF ANY TIRES ARE DUE TO BE CHANGED.

IF MILEAGE IS 3,000 OR LESS, MAKE A REPAIR LIST ENTRY AND TIRE SHOULD BE CHANGED SOON.

%304
THIRD SHIFT MONTHLY

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-LUBRICATE THE DRIVE SHAFTS AND U-JOINTS.
Two to three pumps only
South_____ North_____

2-CHECK THE DIFFERENTIAL OIL LEVEL.
To be 0.5" to 1" below the fill plug.
South_____ North_____

3-VISSUALLY CHECK FOR CRACKS AT THE WELDED AREAS OF THE BOGEY THAT ARE NOT
AIR FILLED CAVITIES. SPECIALLY,THE MOTOR MOUNTING BRACKETS AS SHOWN IN MARKED DRAWING FOUND IN THE FOLLOWING LOCATION:

G:\US\MI\miacomm\Forms & Site's Data\Field Bulletins\Safety Directives\
Propulsion Motor Mounting Bracket#55.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

South_____North_____

4-CHECK THE CONDITION OF THE COMMUTATOR COVERS.
Clean the filters with soap and water.
South_____North_____

5-BLOW DIRT FROM THE MOTOR TACHS WITH SHOP AIR.
Approx. 30 psi ("A" Car Only)
South_____North_____

6-INSPECT PROPULSION MOTOR AND COMPLETE THE MOTOR INSPECTION FORM. Form can be found and filed in the Motor Inspection File. IF BRUSHES OR COMMUNTATOR ARE BAD MAKE A NOTE ON REPAIR LIST TO REPLACE MOTOR AND SCHEDULE TO RESURFACE COMM..

Place on Carlos's desk for review and filing.
South_____North_____

%305
THIRD SHIFT ANNUAL TRACTION MOTOR LUBRICATION.

1-LUBRICATION TRACTION MOTOR PER W.I.3027 FROM
G:\US\MI\miacomm\SD\MIA3027 &MIA3026

2- CLEAN CREEPAGE BAND

3-MEGGER MOTOR ARMATURE AND FIELDS.
REF. W.I.3026 FROM G:\US\MI\miacomm\SD\MIA3026

%306

3rd shift Semi-Annual Guide Wheel Inspection

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

North Train inspection in Feb. and Aug..
South train inspection in May and Nov..
1-CHECK THE VERTICAL PLAY AND BEARING CONDITION OF "ALL" THE GUIDE SPINDLES.

"Use attached guide spindle end play form"

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

Remove the drop beam and move one set of guide wheels over that area.

Attach the bearing endplay measuring device to the guide wheel shaft.

With the guide tire off of the beam and free to rotate, place air bag test fixture about 6 inches below tire.

Fill air bag fixture with 5 psi of air and push tire. Watch deflection on gauge and watch. The indicated movement should read between .001- .007 inches.

With guide wheel off of the beam and free to rotate, manually spin the guide wheel a few revolutions while listening and feeling for indications of a worn guide wheel bearing(s). Symptoms of a worn guide wheel-bearing can include but are not limited to:
----Intermittent tight spots that are felt when the guide wheel is slowly rotated by hand.
----A grinding or scraping sound that is heard when the guide wheel is rotated.
----Grease throw-off around the joint where the grease cap presses into the guide wheel hub.

Move the train forward until the next set of guide wheels in the inspection area. Repeat inspection

Note as the train is moved over the area with go guidance, if it tries to move sharply to the left or right report on repair list.

Repeat until all 24 are checked.

401

SOUTH GUIDE AXLE END PLAY CHECK OFF SHEET

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

SOUTH-A BEARING END PLAY MEASUREMENT:

| #1 | #2 | #3 | #4 | #5 | #6 | #7 | #8 |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

SOUTH-A BEARING ROTATION:

| #1 | #2 | #3 | #4 | #5 | #6 | #7 | #8 |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

SOUTH-C BEARING END PLAY MEASUREMENT:

|#1 |#2 |#3 |#4 |#5 |#6 |#7 |#8 |

| | | | | | | | |

SOUTH-C BEARING ROTATION:

|#1 |#2 |#3 |#4 |#5 |#6 |#7 |#8 |
| | | | | | | | |

SOUTH-B BEARING END PLAY MEASUREMENT:

|#1 |#2 |#3 |#4 |#5 |#6 |#7 |#8 |

| | | | | | | | |

SOUTH-B BEARING ROTATION:

|#1 |#2 |#3 |#4 |#5 |#6 |#7 |#8 |
| | | | | | | | |

400

NORTH GUIDE AXLE END PLAY CHECK OFF SHEET

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

NORTH-A BEARING END PLAY MEASUREMENT:

|#1 |#2 |#3 |#4 |#5 |#6 |#7 |#8 |

| | | | | | | | |

NORTH-A BEARING ROTATION:

|#1 |#2 |#3 |#4 |#5 |#6 |#7 |#8 |
| | | | | | | | |

NORTH-C BEARING END PLAY MEASUREMENT:

|#1 |#2 |#3 |#4 |#5 |#6 |#7 |#8 |

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

| | | | | | | | | |

NORTH-C BEARING ROTATION:

|#1 |#2 |#3 |#4 |#5 |#6 |#7 |#8 |
| | | | | | | | | |

NORTH-B BEARING END PLAY MEASUREMENT:

|#1 |#2 |#3 |#4 |#5 |#6 |#7 |#8 |

| | | | | | | | | |

NORTH-B BEARING ROTATION:

|#1 |#2 |#3 |#4 |#5 |#6 |#7 |#8 |
| | | | | | | | | |

%307
COLLECTORS, REPLACE WITH REBUILT.

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

PRINT W.I. 2032 FROM G:\US\MI\miacomm\SD\MA-2032).

NORTH TRAIN IN SEPT.. SOUTH TRAIN IN OCT..

WHICH CAR WAS DONE? NORTH____ SOUTH_____

Replace current collector on one car with rebuilt assembly the following was done during rebuild, but check it again before installation. Stand the completed assembly, including shoes, on the bench upright. same as it Would be mounted on the car. Gently push all the shoes down and release them. Allow them to return to their float position. Verify that in the float position all shoe are horizontally aligned with respect to each other if not check spacers. Verify that in the float position the arms are level, 90 degrees to the tree. If slightly high ok, wiring will pull it down. If low adjust the springs verify the force to pull the shoe back 1" is 10 +/- 2 pounds. If not check or change the springs
COMPLETED DATE _____ BY_____

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

NOW THE ONLY ADJUSTMENT LEFT IS THE VERTICAL HEIGHT OF THE ASSEMBLE AND CABLE ALIGNMENT AND ROUTING.
Verify the vehicle collector mounting is straight and level. If not shim, install the assembly on the vehicle mounting bracket. Verify that it hangs level and the shoes set on the rail, slightly above center of the rail when the car is empty tighten the mounting bolts. When connecting the cables to the shoes, the cables should be worked to allow them to stay near the mounting. Position without the bolt. If not cut the tie wraps and adjust the cable routing or replace the cables. Tighten the cable mounting hardware.
COMPLETED DATE _____ BY_____

%309
3rd SHIFT 2 YEARS (guide wheels)

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

THE GUIDE WHEELS WILL BE REBUILT EVERY TWO YEARS. ENDPLAY AND ROTATIONAL CHECK WILL BE CHECKED 6 TO 10 DAYS AFTER INSTALLATION AND EVERY SIX MONTHS AFTER.

1-REPLACE THE GUIDE TIRE SPINDLES WITH REBUILT ASSEMBLIES (REF. WI 2015 found at G:\US\MI\miacomm\SD\MA 2015)

ONE NORTH CAR DUE IN JAN, FEB AND MAR..OF EVEN NUMBERED YEARS
ONE SOUTH CAR DUE IN APRIL, MAY AND JUN..OF ODD NUMBERED YEARS

CAR # _____ DATE _____

AXLES REPLACED
#1 #2 #3 #4 #5 #6 #7 #8
| | | | | | | | |

Within 6-10 days of installing rebuilt guide axle assemblies verify the end play is within spec.

CAR # _____ DATE _____

AXLES END PLAY VERIFICATION
#1 #2 #3 #4 #5 #6 #7 #8

| | | | | | | | |

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

%310

3rd shift Three Years

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

PRINT PROCEDURE FROM G:\US\MI\miacomm\MA\MA41.

1-INSPECT AND REPACK THE #1 END AXLE BEARINGS

INBOARD
N-A N-C N-B S-A S-C S-B
| | | | | | |

OUTBOARD
N-A N-C N-B S-A S-C S-B
| | | | | | |

2-REVERSER INSPECTION AND LUB.PRINT PROCEDURE W.I. 2003

Disassemble the magnet valve and clean or rebuild

Lubricate the cylinder walls, inspect the raw hide pistons. (Use grease per Drawings)
N-A N-C S-A S-C
| | | | | |

%311

REPLACE ONE AIR COMPRESSOR
Jan. North A
Mar. North C
May North B
Jul. South A
Sep South C
Nov. South B

Look at the data sheet, AC_COMP. REPLACE, on the wall and verify the unit that needs replaced has not been recently replace.

If it has, note that and do not replace it again. If it has not, replace it and enter the serial numbers of the two units on the data sheet.

# SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
## SAMPLE FORMS

%312

REPLACE ONE A/C UNIT

| | |
|---|---|
| Jan. North A #1. | Jul. South A #1 |
| Feb. North A #2 | Aug. South A #2 |
| Mar. North C #1 | Sep. South C #1 |
| Apr. North C #2 | Oct. South C #2 |
| May North B #1 | Nov. South B #1 |
| Jun. North B #2 | Dec. South B #2 |

Look at the data sheet, AC_COMP. REPLACE, on the wall and verify the unit that needs replaced has not been recently replace.

If it has note that and do not replace it again. If it has not, replace it and enter the serial numbers of the two units on the data sheet.

%314

3RD SHIFT SEMI-ANNUAL PRESSURE SWITCHES AND LEVELING VALVES

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

| | |
|---|---|
| NORTH A IN JAN. | NORTH C IN FEB. |
| NORTH B IN MAR. | SOUTH A IN APR. |
| SOUTH C IN MAY | SOUTH B IN JUN. |
| NORTH A IN JUL. | NORTH C IN AUG. |
| NORTH B IN SEP. | SOUTH A IN OCT. |
| SOUTH C IN NOV | SOUTH B IN DEC. |

1-CLEAN THE INLINE AIR FILTER ON THE DELCO LEVELING VALVES.
Due: Jan, April, July and Oct.
(Ref. W.I.5019 & 5021 FROM G:\US\MI\miacomm\SD\MIA5019 & MIA5021

Use a 9/16" and 7/16" wrench to remove the hose fitting to avoid the filter adapter from moving.

Use a 1/2" wrench to remove the filter.

Before installing, put air into the system in order to clean out the hoses.

Re-install the filter using a 1/2" wrench; ("AVOID OVER-TIGHTENING" THE PART ARE BRASS AND ALUMINUM)

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Blow out the hoses prior to re-connecting.
Install the hose fitting using a 9/16" wrench to "hold" the adapter in place with a 7/16" wrench to avoid stripping out the filter threads while tightening the hose fitting.

2-CHECK ALL THE PRESSURE SWITCHES FOR PROPER PNEUMATIC SETTING.
USE CALIBRATED GAUGE. PRINT WI FROM G:\US\MI\miacomm\SD\MIA5019
BLOW OUT THE HOSES PRIOR TO RE-CONNECTING.

| Switch | Condition | Setting |
|---|---|---|
| MRP | N.O. | 95 PSI decreasing |
| MRPL | N.O. | 65 PSI decreasing |
| PB | N.C. | 65 PSI decreasing |
| PBR | N.C. | 65 PSI decreasing |
| FB | N.O. | 30 PSI INCREASING |
| DB | N.O | 7 PSI INCREASING |
| CSO | | ON @ 125 OFF @ 155 PSI |

Note the time it takes the compressor to pump-up from 120 to 155 PSI

CAR _____ Time _____--

3-CHECK THE RESISTANCE OF ALL THE SWITCHES. PRINT WI FROM G:\US\MI\miacomm\SD\MA-5021 REPAIR OR REPLACE SWITCH IF NECESSARY

%362

THIRD SHIFT SEMI-ANNUAL—(VEHICLE DOORS)

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-PRINT W.I.3032 FROM G:\US\MI\miacomm\SD\MIA3032.doc, FOR DOOR PM.

%364

THIRD SHIFT SEMI-ANNUAL (WAYSIDE DOORS FIS & SAT)

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-PRINT W.I.3017 FROM G:\US\MI\miacomm\SD\MIA3017.doc, FOR DOOR PM.

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2-PRINT MA-18 FROM G:\US\MI\miacomm\MA\MA-18.doc,TO REMOVE OPERATOR
3-PRINT W.I. 2035 FROM G:\US\MI\miacomm\SD\MIA2035.doc,TO REPLACE SES

%365

THIRD SHIFT QUARTERLY (WHEEL NUTS RE-TORQUING)

1- RE-TORQUE ALL #1 END TIRES IN BOTH TRAINS. 400 FT LBS.
RE-TORQUE ALL #2 END TIRES IN BOTH TRAINS. 175 FT LBS.
2- FILL DATA SHEET IN CLIPBOARD, LOCATED NEXT TO REPAIR LIST OR INPUT DATA IN FILE FOUND IN:
G:\US\MI\miacomm\Forms & Site's Data\3RD SHIFT QUARTERLY PM(#365)WHEEL RE-TORQUE DATA

# EXHIBIT C

# FIELD REQUEST INFORMATON

# SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
## SAMPLE FORMS

**Title:**

# Technical Change Authorization (TCA)

**Purpose: The TCA provides a means of documenting a temporary change to an existing equipment configuration for a defined performance evaluation period.**

**Scope: This document details the persons involved in initiating and authorizing the changes covered under the TCA.**

| Responsible unit: | Process owner: | Document type: | Confidentiality status : | Document state : |
|---|---|---|---|---|
| TTS | Operations and Maintenance | Process | Public | Released |

| | | | |
|---|---|---|---|
| **Prepared :** | Rick Love / O & M Performance Manager<br>Author | Signature on File. | 2006-02-01 |
| **Verified :** | Anthony Incorvati / Director | Signature on File. | 2006-02-01 |

# SECTION 3
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## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
## SAMPLE FORMS

| | Name / Function | Signature | Date |
|---|---|---|---|
| | Technical Compliance<br>Sponsor | | |
| **Approved :** | Sue McClure / BTIP<br>BTIP | Signature on File. | 2006-02-01 |
| **Released :** | Michael Shaman / VP O&M<br>process owner | Signature on File. | 2006-02-01 |

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| Organization and BT process structure prefix : | Doc ID-number : |
|---|---|
| TTS-20-15-45- | 002568 |

| Effective date: | Revision : | Original Language : |
|---|---|---|
| 2006-02-01 | 00 | English |

| Translated by: Name / Function | Translation approved by: Name / Function | Translation languages: |
|---|---|---|
| | | |

Doc ID-number: 000003 rev04

| evision | | Description of changes |
|---|---|---|
| 00 | 2006-02-01 | First issue |
| | | |

**Title:**

# Field Request (FR)

**Purpose:** To provide a method of communication between the Service Delivery Center (SDC) and TTS Headquarters.

**Scope:** The FR process is supported by a Lotus Notes based database that incorporates automated forwarding, tracking and archiving all of the information communicated between the SDC and Headquarters.

| Responsible unit: | Process owner: | Document type: | Confidentiality status : | Document state : |
|---|---|---|---|---|
| TTS | Operations & Maintenance (O & M) | Procedure | Public | Released |

| | | | |
|---|---|---|---|
| **Prepared :** | Rick Love/ O & M Performance Manager<br>Author | Signature on File | 2006-02-01 |

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| | Name / Function | Signature | Date |
|---|---|---|---|
| **Verified :** | Anthony Incorvati / Director Technical Compliance<br>Sponsor | Signature on File | 2006-02-01 |
| **Approved :** | Sue McClure / BTIP<br>BTIP | Signature on File | 2006-02-01 |
| **Released :** | Michael Shaman / VP O&M<br>process owner | Signature on File | 2006-02-01 |

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| Organization and BT process structure prefix : | Doc ID-number : | |
|---|---|---|
| TTS-20-40-00- | 002567 | |
| Effective date: 2006-02-01 | Revision : 00 | Original Language : English |

| Translated by: | Translation approved by: | Translation languages: |
|---|---|---|
| Name / Function | Name / Function | |

Doc ID-number: 000003 rev04



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# SECTION 3
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# MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
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## Revision log

| Revision | Date (yyyy-mm-dd) | Description of changes |
|---|---|---|
| 00 | 2006-02-01 | First issue |
| | | |
| | | |
| | | |
| | | |

# FIELD CHANGE NOTICE

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| . FCN NO. | 2. PROGRAM | 3. DATE |
|---|---|---|
| 4. EQUIPMENT INVOLVED (END ITEM) | 5. STYLE NO. | 6. NEW CAPL NO. |
| 7. ECN NO. | 8. CHARGE NUMBER | |
| 9. REFERENCE DRAWING(S)/COPY ATT'D - Y/N | 10. OTHER REFERENCES (if any) | |
| 11. SPARE PARTS AFFECTED (Y/N) | 12. SPARE PARTS DISPOSITION | |
| 13. EFFECTIVITY POINT IN PRODUCTION (SERIAL NO.) | 14. ESTIMATED DATE (PRODUCTION) | |

15. UNIT SERIAL NUMBERS OR QUANTITY TO BE MODIFIED IN FIELD:

16. BRIEF DESCRIPTION OF PROBLEM:

17. TOOLS/TEST EQUIPMENT REQUIRED:

18. RETROFIT INSTRUCTIONS:

19. TEST/INSPECTION REQUIREMENTS:

20. PARTS/MATERIAL/TOOLING ORDERED:

| QTY | PART NUMBER | PART DESCRIPTION | PRINTING INFORMATION |
|---|---|---|---|
| | | | |

| 21. DISTRIBUTION: | 22. PREPARED BY AND DATE: |
|---|---|

23. RETROFIT COMPLETED BY AND DATE:

| APPROVED BY (COG. ENG OR PRG MGR/HQ MGR) | DATE |
|---|---|
| | |

## Table of Contents

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# Executive summary

The Field Request (FR) process is a means of providing two-way communication between the TTS SDC and the Headquarters (Kingston and Pittsburgh). The Lotus Notes based FR database allows SDC personnel to issue a request to Headquarters for technical support. The FR database archives the information exchange between the SDC and Headquarters and is retrievable for future reference.

# Reference documents

| Doc ID-number | Title |
|---|---|
| GRP-20-35-15-001379 | Field Experience Feedback |
| GRP-20-35-20-001378 | Field Data Process |
| MET-20-35-20-000383 | Field Data Reporting Analysis |
| TTS-20-15-45-002569 | Field Change Notice (FCN) |
| TTS-20-15-45-002568 | Temporary Change Authorization (TCA) |
| TTS-20-15-45-003692 | Engineering Change Approval Documentation |
| TTS-20-35-20-006359 | Avis de Modification (AVM) |

The current status of each business process document is documented on the coversheet of the available document in the respective database (e.g. in the eBTM).

# Involvement of functions

| activities for this document | Functions | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Strategy, Markets and Product Planning | Sales | Bid | Contracts | Project Management | Engineering | Procurement | Manufacturing | Quality | Product Introduction | Operation &. Maintenance | Six Sigma | Capital Investment | Finance | Cost Performance Management | Health, Safety & Environment | Information Systems | Human Resources | Leadership Centre | Legal | Communications |
| Draft of the documentation | | | | | I | I | I | | I | C | R | | | | | C | | | | | |
| Verification of the document | | | | | | | | | | | R | | | | | | | | | | |
| Approval of the document | | | | | | | | | | | R | | | | | | | | | | |
| Release of the document | | | | | | | | | | | R | | | | | | | | | | |

R= Responsible C= Consultation I= Information

# Definitions and Abbreviations

| Term | Definition |
|---|---|
| Term: SDC | Definition: Service Delivery Centre |
| Term: FR | Definition: Field Request |

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**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
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Term: FSE Definition: Field Service Engineer

Term: AVM Definition: Avis de Modification (French spelling)
Term: FMI Definition: Field Modification Instruction
Term: FCN Definition: Field Change Notice
Term: TCA Definition: Temporary Change Authorization
Term: OIL Definition: Open Item List
Term: O & M Definition: Operations & Maintenance

Definitions and abbreviations are defined in the Bombardier Transportation lexicon.

## Process Characteristics

| | | |
|---|---|---|
| ***Suppliers***<br>Headquarters Engineering<br>Procurement<br>Quality and Systems Assurance (Safety) | ***Process description***<br>Provide technical support | ***Customers***<br>SDC, Product Introduction group |
| ***Inputs***<br>FR database<br>Safety | | ***Outputs***<br>Engineering solutions<br>Components order/shipment<br>Revisions to Drawings and Manuals |
| ***Indicators***<br>Improved product design, improved product reliability and system availability | | |

## Process description

The purpose of the Field Request (FR) is to provide a communication channel between the Service Delivery Centers (SDC) and Kingston and Pittsburgh (hereafter referred to as Headquarters). The FR process can be used whenever an investigation of an equipment problem is required, quality problems have been noted, or "as-built" drawing updates or corrections are required. The problem may involve engineering or production deficiencies, inadequate quality control, technical manual inaccuracy, drawing changes, or similar problems requiring direct action by Headquarters. Improvement suggestions to be incorporated into present equipment that will provide more efficient and cost effective methods of performing Operations & Maintenance (O&M) tasks or items to be considered for future projects can also utilize the FR process (i.e., Lessons Learned). In addition, the FR serves as a mechanism to provide an SDC charge number (specific to each FR) to pay for Headquarters support. During Project start-up (Product Introduction) activities most field generated change/modification requests are addressed through the project and the project "punch list" (also known as; Open Action Item List, Open Item List). However, should circumstances warrant the visibility of a FR during start-up, it is the SDC/Start-Up Managers option to initiate an FR rather than, or in addition to, placing the item on the project punch list.

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# SAMPLE FORMS

Note: SDC personnel (Start-up and O &M) should contact the O & M Performance Manager to discuss the details of the issue that is being considered for an FR prior to initiating the FR to determine the best course of action.

FR initialization, review, tracking and archiving is a fully electronic process operated within Lotus Notes and administered by the TTS O & M Performance Manager. When an SDC decides to address a technical issue using the FR process, a Field Service Engineer (FSE) initiates the FR by accessing the FR database on his or her Lotus Notes desktop. The FR database includes detailed step-by-step instructions that are contained in the FR database **Help** option.

## FR Initialization and approval (reference the FR database Help option)

When the FR is issued by the FSE, the FR database automatically assigns a sequential FR number and forwards the FR to the SDC manager by way of an e-mail message. At this point the FR is "Pending". The SDC manager reviews the details of the request and either approves or rejects the FR. Rejecting the FR will cancel its issue but it will be archived in the FR database. If approved, the SDC manager will assign an SDC charge number to the "Estimating Charge" field of the FR document. The FR will be forwarded to "Field Action". In the Field Action sequence, the O & M Performance Manager reviews the details of the request to determine if any additional information or communication is required. It is at this point that the FR is reviewed for its "Safety" priority. All FRs are subject to a monthly review by the Quality and Systems Assurance group to determine if the SDC has an acceptable containment plan in place that will mitigate the Safety concern. If the containment plan is agreed to by the Quality and System Assurance group, the FR can be downgraded to an "Immediate" or "Standard" priority. In addition the Quality and Systems Assurance group's review will identify any FR issues that are not designated "Safety" but should be. This discrepancy will be reported to the FR administrator for further review. A Performance Manager approval of the FR will forward it to Engineering. A designated Engineering manager reviews the details of the request and either approves or rejects the FR. Rejecting the FR will cancel its issue but it will be archived in the FR database. Upon approval, the Engineering manager assigns the FR to an engineer. The FR is still pending at this stage. The FR database tracks all Pending FRs. The assigned engineer reviews the details of the request and either approves or rejects the FR. Rejecting the FR will cancel its issue but it will be archived in the FR database. In order for the assigned engineer to approve the FR he or she must provide an Estimated Start Date, Estimated Due Date and Engineering/Drafting hours. The FR database will prompt the engineer for this information. The FR cannot be advanced from this point without this information. The approved FR will be forwarded to Field Action for a second time in the approval process. In the second Field Action sequence, the O & M Performance Manager assigns an FR-specific SDC charge number to the "Charge" field of the FR document. The Performance Manager's approval at this point advances the FR from Pending to "Open".

**Note: When an FR is rejected in Pending, the SDC Manager is notified by way of an e-mail message. The FR prompts the person rejecting the FR to provide an explanation why the FR is being rejected.**

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## Open FR (reference the FR database Help option)

The Open FR will be automatically forwarded to the assigned engineer by way of an e-mail message. The assigned engineer is responsible for logging the hours spent (per month) in the FR document as well as communicating progress to the SDC by way of a monthly FR Status Report. The FR database includes a "Create a Status Report" option.

**Note: FR Status Reports can also be provided by any person who has access to the FR database (i.e., FSE, Performance Manager, Engineering Manager, etc) at any time.**

The FR database tracks all Open FRs. The assigned engineer is automatically notified by way of an e-mail message when the FR is open beyond its Estimated Due Date. When the assigned engineer receives notification of an overdue FR, he or she must provide an FR Status Report and a new Due Date. While the FR is Open, all documentation associated with resolving the FR must be entered in the FR. This can be done by entering the document number in the appropriate fields included in the FR, or by referencing the document(s) in an FR Status Report. Efforts to resolve the FR should include regular communication between the assigned engineer, the FSE and the O & M Performance Manager. In addition, regular FR review meetings should be held between the O & M Performance Manager, Engineering Managers and whenever possible, the FSEs and SDC Managers.

## FR Closure (reference the FR database Help option)

The FR is ready to be closed when all parties; FSE, SDC Manager, assigned engineer and O & M Performance Manager are in agreement that the request has been resolved. In the case of a "Safety" FR, a representative of the Quality and Systems Assurance group will be included in the agreement to close the FR. The resolution of the FR typically results in retrofitting equipment (ordering parts) and changes made to a combination of drawings, procedures and manuals.

The procedures used to implement a retrofit and update documentation are numerous and can vary depending upon the nature and origin of the issue, the location of the documentation (Kingston or Pittsburgh) and the manpower (Vendor or Bombardier personnel).

The various procedures are listed in Section 2.0 Reference documents of this document. Contact the O & M Performance Manager for

The FR has provisions for listing the procedure and document numbers associated with resolving the FR, and follow up changes to documentation. The FR can be closed before these follow up changes are completed. However there may be situations where the SDC Manager chooses to keep the FR open until all follow up documentation and component supply are completed.

## Archiving of Business Process Documentation

Business process documents shall be maintained and archived in accordance with 000005 Directive "Control of Document/Data and Records" and 000350 Procedure "Archiving of Documents/Data and Records".

End of document

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TECHNICAL SPECIFICATIONS
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# EXHIBIT D

# EVALUATION CHECKLIST

## Central Control Operator Evaluation Checklist

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Note: A Bombardier representative will add a comment on each of the following items.

Two Bombardier representatives will evaluate the Central Control Operator. One should be present at Central Control to observe the operator's performance, and the other representative will request commands, and ride the train.

1. Remove one train from service to be used during the evaluation. The operator being evaluated must be notified to be ready to start the test.

2. While at berth, have the operator place the train in stop status with a hold.

3. Have the operator change all the door assignments to sterile, and then change all the door assignments back to free.

4. Have the operator change the dwell timer to 35 Seconds.

5. Have the operator remove all door assignments from the train, one vehicle each time, observing he follows the proper sequence requested. The representative should enter the last vehicle in order to perform the next step.

6. Place a call from the onboard emergency telephone. Wait for a response.

7. Have the operator make a Public Announcement to the train. Ask the operator to make a Public Announcement on board the train. (Example: Stand away from the doors, the technicians are on their way)

8. Have the operator give the train a Run-Auto-Release, and remove the hold.

9. While moving, have the operator switch all doors to sterile, and a hold.

10. Have the operator remove the hold and release the train

11. While moving, have the operator switch all doors to free.

12. At the next station, disable a wayside door. Wait for a response. Operator should report the problem and alarm indication

13. Clear the door problem and request a hold.

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14. Have the operator start the Auxiliary Power Generator, and advise when it is ready.

15. Have the operator remove main power from the train, and bring up the Auxiliary Power.

16. Have the operator remove the Auxiliary Power from the train, and bring up main power.

17. Have the operator turn off the Auxiliary Power Generator.

18. Enter the train and ask the operator to remove the hold.

19. Drive the train out of the tunnel, and stop on the guide way. Open a vehicle door and wait for a response. The Operator should report the problem and alarm indication.

20. Using the emergency phone on the guide way, request a Public Announcement on the guide way.

21. Return to the vehicle but "DO NOT" close the vehicle door. Ask the operator to bring up main power to the train. Wait for a response. Operator should report the problem and alarm indication.

22. Close the vehicle door, have operator bring up main power and drive the train to berth.

23. Depress the emergency stop button on the hostler panel to generate a mechanical alarm. Wait for a response. The operator should report he received a mechanical alarm.

24. Reset the train and step out of the vehicle. Request the operator a Run-Auto-Release.

25. While the train is moving, open a wayside door to place the train into stop status which will produce an Alarm –2. Wait for a response. The operator should report the location of the train if possible, the problem and the alarm indication.

26. Enter the guide way through the glass doors at F.I.S. in order to trigger the alarm. Wait for a response.

27. Have the operator reset the alarm.

28. Drive the train to berth. Have the operator change the dwell timer back to 45 Seconds.

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29 Conclude the evaluation by having a discussion with the operator on procedures such as placing the other train on hold should one train stop on the guide way. **Remind the operator to keep both trains in coordination as much as possible**. Explain the function of the Emergency power shut off which removes guide way power from both trains simultaneously. Discuss any weaknesses discovered during the session.

Representatives: _____ (Print)

_____ (Print)

MDAD Operator: _____ (Print Name)

Signature: _____

Date: _____

Pass _____

Fail _____

OTHER COMMENTS: _____

# EXHIBIT E

# Standard Operating Procedures (S.O.P.) LIST

# SECTION 3
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## S.O.P LIST

| Site # | Description | Revision Level | Skills Demo Ref. # | Current Rev. Date |
|---|---|---|---|---|
| SOP - 1. | Respond to High Winds/Hurricane | 03 | N/A **** | 05/21/03 |
| SOP - 2. | Vacation/Attend. Policy & Procedure | 02 | N/A | 7/30/02 |
| SOP - 3. | Site Red Tag Procedure | 00 | N/A | 03/01/00 |
| SOP - 4. | Respond to Overshoot Alarm | 01 | 4004 | 07/01/99 |
| SOP - 5. | Respond to Dr. Opr. while Running | 01 | 4005 | 07/10/99 |

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| | | | | |
|---|---|---|---|---|
| SOP - 6. | Respond to Emerg. Brake Alarm | 01 | 4006 | 03/30/00 |
| SOP - 7. | Respond to MOL Alarm | 02 | 4023 | 07/12/06 |
| SOP - 8. | Respond to Dr. Fail to Open Alarm | 01 | 4008 | 12/14/01 |
| SOP - 9. | Respond to Dr. Fail to Close Alarm | 02 | 4009 | 12/14/01 |
| SOP - 10 | Perform Inventory Control | 01 | 1005 | 05/05/05 |
| SOP - 11 | Respond to Air Pressure Alarm | 01 | 4011 | 12/14/01 |
| SOP - 12 | Respond to Battery Charger Alarm | 01 | 4012 | 10/28/99 |
| SOP - 13 | Incident Guidelines | 02 | N/A ** | 7/11/06 |
| SOP - 14 | Site Safety Guidelines | 03 | N/A | 02/03/05 |
| SOP - 15 | Respond to Dragging Brake | 02 | N/A | 02/03/05 |
| SOP - 16 | Respond to UPS Pwr. Fail/Indica | 02 | 4016 | 02/03/05 |
| SOP - 17 | Respond to Ground Fault | 02 | 4017 | 02/03/05 |
| SOP - 18 | Respond to Phase / Phase Fault | 02 | 4018 | 02/03/05 |
| SOP - 19 | Perform Dead Car Recovery | 02 | 4019 | 02/03/05 |
| SOP - 20 | Recover for Veh. Low Air Press | 01 | 4020 | 12/04/01 |
| SOP - 21 | Recover from a Total Power Loss | 02 | 4021 | 02/04/05 |
| SOP - 22 | Recover for MPB Trip | 02 | 4022 | 07/12/06 |
| SOP - 23 | Recover for Mtr. Overload | 03 | 4023 | 02/04/05 |
| SOP - 24 | Perform Manual Train Recovery | 02 | 4024 | 02/04/05 |
| SOP - 25 | Perform Manual Train Operation | 04 | 4025 | 06/21/05 |
| SOP - 26 | Recover for Train Emergency Stp. | 02 | 4026 | 02/16/05 |
| SOP - 27 | Recover for Wayside Ovrsht. Fail | 02 | 4027 | 02/16/05 |
| SOP - 28 | Identify Cause Remove from Service | 03 | 4028 *** | 02/16/05 |
| SOP - 29 | Respond to Bomb Threat | 01 | 4029 **** | 02/16/05 |
| SOP-29 | Respond to a Fire Alarm | 02 | 4029 **** | 04/18/05 |
| SOP - 30 | Recover for Grnd.Phase/Phase | 03 | 4030 | 02/17/05 |
| SOP - 31 | Recover for Program Stop Fail | 02 | 4031 | 02/17/05 |
| SOP - 32 | Recover for Veh. Fail to Reverse | 02 | 4032 | 02/17/05 |
| SOP - 33 | Recover for No Auto Veh/Sta. Dr | 01 | 4033 | 2/17/05 |
| SOP - 34 | Recover for No SBR | 02 | 4034 | 02/17/05 |
| SOP - 35 | Perform Purchasing/Ordering | 01 | 1006 | 02/17/05 |
| SOP - 36 | Recover from Car Pwr. Sup. Failure | 00 | 4036 | 07/26/99 |
| SOP - 37 | Guide way Access | 01 | N/A **** | 02/20/05 |
| SOP - 38 | Power Lockout/Tagout | 05 | N/A | 06/06/06 |
| SOP - 39 | Standard Radio Language | 03 | N/A **** | 6/23/06 |
| SOP - 40 | Unattended Package | 01 | 4029 **** | 02/20/05 |
| SOP - 41 | Bombardier Airport Security | 01 | N/A | 3/18/03 |
| SOP - 42 | Emergency Action Plan | 00 | N/A | 02/20/05 |
| SOP - 43 | | 00 | N/A | |
| SOP - 44 | | 00 | N/A | |
| SOP - 45 | | 00 | N/A | |

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

| | | | | |
|---|---|---|---|---|
| SOP - 46 | | 00 | N/A | |

**** require agreement from OCR -

# EXHIBIT F

# VEHICLE & STATION SUMMARY

SUBJECT: MIAMI AIRPORT VEHICLE & STATION CAPL SUMMARY REVISED: 2/11/00

| ITEM | CAPL | DESCRIPTION | ASS'Y NO. | NOTES |
|---|---|---|---|---|
| 1 | 4726A01G10 | Vehicle Ass'y ("A" Car No.1 End) | 4675C45G03 | |
| 2 | 4726A02G09 | Vehicle Ass'y ("A" Car No.2 End) | 4675C45G03 | |
| 3 | 4726A03G10 | Vehicle Ass'y ("B" Car No.1 End) | 4675C45G04 | |
| 4 | 4726A04G10 | Vehicle Ass'y ("B" Car No.2 End) | 4675C45G04 | |

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
**SAMPLE FORMS**

| | | |
|---|---|---|
| 5 | 4726A05G09 | Trailing Axle Suspension 1121F53G01 |
| 6 | 4726A06G09 | Drive Axle Suspension 1121F08G01 |
| 7 | 4726A07G03 | Transformer Blower 4675C14G01 |
| 8 | 4726A08G01 | Main Transformer 4675C16G01 |
| 9 | 4726A09G02 | Braking Transformer 4675C15G02 |
| 10 | 4725A98G09 | Air Control Pkg. Ass'y 8368D54G02 |
| 11 | 4726A11G04 | Info & Train Time TX Cradle 8362D54G03 |
| 12 | 4726A12G07 | ATO Cabinet Gen. Ass'y ("A" Car) 8370D44G02 |
| 13 | 4726A13G05 | ATO Cabinet Gen. Ass'y ("B" Car) 8370D44G03 |
| 14 | 4726A24G08 | Train Control Ass'y 8370D24G01 |
| 15 | 4726A25G10 | Train Control Ass'y (Terminal 8370D23G01 Bldg.) |
| 16 | 4726A26G02 | Roadway Electrical Installation 1121F78G01 |
| 17 | 4726A27G02 | Central Control Console Gen. 8368D72G02 Ass'y |
| 18 | 4726A28G02 | Mimic Display Board Cabinet 8368D73G02 Ass'y |
| 19 | 4726A29G02 | Power Center Interface Relay 1121F93G01 Cab. Ass'y |
| 20 | 4726A32G01 | Train Control Inter-Cabinet 4765A24G01 Cables |
| 21 | 4726A33G03 | Program Stop Enclosure Ass'y 1121F87G01 |
| 22 | 4765A35G05 | Overshoot Cradle 8362D56G02 |
| 23 | 4765A36G04 | Info & Train Tone TX Cradle 8362D54G02 |
| 24 | 4765A37G08 | Brake/Propulsion Cradle 8362D55G02 |
| 25 | 4765A38G07 | Info RX & Traction Controller 8362D57G02 Cradle |
| 26 | 4765A39G07 | Info RX & Traction Controller 8362D57G03 Cradle |
| 27 | 4765A40G07 | Safe Tone RX & Traction 8362D59G02 Controller Cradle |
| 28 | 4765A52G07 | TE-18A Motor Control Box 8368D01G02 |
| 29 | 4765A53G06 | TB-113A Aux. Control Box 1120F44G02 ("A" Car) |
| 30 | 4765A54G05 | TB-113A Aux. Control Box 1120F44G03 ("B" Car) |
| 31 | 4726A79G01 | P.A. Telephone Sw. and Term 8370D85G01 Cabinet |
| 32 | 4726A80G01 | P.A. Telephone Sw. and Term. 8370D88G01 Cabinet |
| 33 | 4726A81G03 | Voice Communication System 8362D76G01 |
| 34 | 4725A98G09 | Air Control Package Gen. Ass'y 8368D54G02 B/M |
| 35 | 4725A99G01 | Brake Control Package Ass'y 8368D60G02 Wiring Diag. |
| 36 | 4809A40G01 | Air Brk. System Aux. Release 8840D89G01 Package |
| 37 | 4809A20G02 | Non-Vital Relay Cabinet 2269D86G01 (Terminal Building) |
| 38 | 8625A97G03 | Low Tire Pressure Junction Box 3D99522G01 |
| 39 | 3A88226G02 | Ctl. Radio Sys Computer Sys 6D55650G01 |
| 40 | 3A88220G02 | Communications Controller Cradle 6D55722G01 |
| 41 | 3A88225G02 | Wayside Comm. Controller 6D55651G01 |

SUBJECT: MIAMI AIRPORT "C" CAR CAPL SUMMARY -- REVISED: 04/27/99

| ITEM | CAPL NO. | DESCRIPTION | ASS'Y NO. | NOTES |
|---|---|---|---|---|
| 1 | 4809A21G09 | Vehicle Ass'y (No. 1 End) | 4682C13G01 | |
| 2 | 4809A22G08 | Vehicle Ass'y (No. 2 End) | 4682C13G01 | |

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**
## SAMPLE FORMS

3 4809A23G04 Under Car Equipment Instl. 1021J91G01
4 4809A25G06 Trailing Axle Suspension 1121F53G02
5 4809A28G07 Drive Axle Suspension 1121F08G02
6 4809A26G05 TE-18B Motor Control Box 8368D01G05
7 4809A27G04 TE-113E Aux. Control Box 1120F44G04
8 4726A07G03 Transformer Blower 4675C14G01
9 4726A08G01 Main Transformer 4675C16G01
10 4726A09G02 Braking Transformer 4675C15G02
11 4725A98G09 Air Control Pkg. Ass'y 8368D54G02
12 4725A99G01 Brake Control Pkg. Ass'y 8368D60G02
13 4809A40G01 Air Brake System Aux. 8840D89G01 Release Pkg. Ass'y
14 4809A24G04 ATO Cabinet General Ass'y 2264D93G01
15 4726A11G04 Info & Train Tone Tx. Cradle 8362D54G03
16 4765A39G07 Info & Traction Controller 8362D57G03 Cradle
17 3A88226G01 Ctl Radio Sys Computer Sys 6D55650G01

SECTION 3
TECHNICAL SPECIFICATIONS
MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

# EXHIBIT A

## PERFORMANCE REPORT

**MIAMI AIRPORT SATELLITE TRANSIT SYSTEM PERFORMANCE REPORT**

**01 MAY THROUGH 31 MAY 2006**

| | NORTH TRAIN | SOUTH TRAIN | SYSTEM |
|---|---|---|---|
| **MILEAGE DATA** | | | |
| Cumulative mileage last month | 1234874 | 1258489 | 2493363 |
| Cumulative mileage this month | 1240994 | 1259155 | 2500149 |
| Mileage this month | 6120 | 666 | 6786 |
| Total number of trips ..... | 24369 | 2586 | 26955 |
| **ENERGY DATA** | | | |
| Energy consumption in KWH ..... | 65400 | 10900 | 76300 |
| Energy conservation in hours ..... | 0 | 0 | 0 |
| Average energy per trip in KWH/TRIP ..... | 2.68 | 4.22 | 3.45 |
| **SYSTEM PERFORMANCE** | | | |
| Scheduled operating minutes this period..... | 33480 | 5400 | 44640 |
| Single guide way incidents this period ..... | 0 | 1 | ---- |
| Single guide way incidents accountable to Bombardier | 0 | 0 | ---- |
| Total single guide way outage time in minutes ..... | 0 | 1 | ---- |
| Single guide way outage time accountable to Bombardier | 0 | 0 | ---- |
| Double guide way incidents this period ..... | -- | -- | 0 |
| Double guide way incidents accountable to Bombardier | -- | -- | 0 |
| Total double guide way outage time in minutes ..... | -- | -- | 0 |
| Double guide way outage time accountable to Bombardier | -- | -- | 0 |
| **SYSTEM AVAILABILITY** | | | |
| % availability considering all incidents .... | 100.000 | 99.981 | 100.00 |
| % availability considering Bombardier incidents | 100.000 | 100.000 | 100.00 |

SECTION 3
TECHNICAL SPECIFICATIONS
MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

# EXHIBIT B

## DRAWING BOOK

## LIST OF DRAWINGS ON SITE

## PARTS INVENTORY LIST

## TOOLS INVENTORY LIST

## PM TASK

**Westinghouse Drawing Book**

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

The basic drawing books issued by Westinghouse contain a set of the more important drawings. The drawings in this book are assigned to sections numbered 1 through 6 according to the original sizes of the drawings:

| Section | Size |
|---|---|
| 1 | B |
| 2 | C |
| 3 | D |
| 4 | F |
| 5 | J |
| 6 | P |

The following is a list of drawings maintained on site.

# LIST OF DRAWINGS ON SITE

SECTION 1:

| Drawing No. | Description |
|---|---|
| 577B453 | Armature Lifting Eye |
| 577B453 | Armature Lifting Eye Assembly |
| 2535B12 | Power Brake Control XCA-248-X Arc Box Assembly |
| 2537B58 | XCD-248F Motor Control Box Manifold |
| 2537B58 | Power Supply |
| 2538B91G01 | Program stop Antenna |

SECTION 2:

| | |
|---|---|
| 3794c58g01 | Antenna Junction Box |
| 3965C97 | Antenna Case and Bobbin Assembly |
| 4683C43, 119 shts. | Vehicle Schematic Package |
| 3970C42, shts.2 & 18 | Power Center – Schematic |
| 3972C56H01 | Connector Panel |
| 3972C80, 30 shts. | Functional Block Diagrams |
| 4675C14 | Transformer Blower |
| 4675C15 | Brake Transformer |
| 6475C16 | Main Transformer |
| 4675C25G02 | Connector Plate Assembly |
| 4675C25G01 | Information Antenna |
| 4675C25G01 | Precise Alignment Antenna |
| 4675C03 | Vehicle Terminal Block Mounting Bracket & Angle Details |
| 4676C46H01 | Junction Box |
| 4677C16 | Bearing Puller Tools |
| 5824C79 | VASSA |
| 5824C78 | VASSA General Assembly |

SECTION 3:

| | |
|---|---|
| 107d454 | Brake Resistors |
| 6241D63G01 | Junction Box |
| 6248D37 | No. 1End Antenna Assembly |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| | |
|---|---|
| 7076D02 | Overshoot Detector Assembly |
| 7311D49G01 | Non-Vital Relay Basic Cabinet Assembly |
| 7311D78H01 | Cabinet |
| 8362D18, 8shts. | Console Schematic |
| 8362D21, 9shts. | Mimic Board Schematic |
| 8362D60G02, 3shts | Cradle Assembly |
| 8362D61G02, 3shts | Cradle Assembly |
| 8362D62G02, 4shts | Cradle Assembly |
| 8362D63G02, 4shts | Crable Assembly |
| 8362D64G02, 4shts | Crable Assembly |
| 8362D65, 19 shts | ATO To Termination Cabinet Schematic (FIS) |
| 8362D66, 19 shts | ATO To Termination Cabinet Schematic (Satellite) |
| 8362D71, shts 1,2,3 | Low Voltage Switch Gear Schematic |
| 8362D72, 3shts | Power Control Low Voltage |
| 8362D73G01, 2 shts | Cant. Grounding & Power Distribution |
| 8362D74G01, 2 shts | Cant. Grounding & Power Distribution |
| 8362D75 | Schematic Diagram |
| 8362D76 | Voice Communication System |
| 8368D01 | Motor Control Box |
| 8368D54 | Air Control Package |
| Drawing No. | Description |
| 8368D60, 3shts. | Brake Control Package |
| 8368D72G02, 3shts | Central Control Console Assembly |
| 8368D73G02 | Mimic Display Board Cabinet Assembly |
| 8369D53G01 | Control Panel |
| 8370D01 | Transit Expressway Vehicle Component |
| 8370D03 | Air Conditioning Unit |
| 8370D07 | Control Room Layout (Terminal BLDG.) |
| 8370D08 | Control Room Layout (Satellite BLDG.) |
| 8370D14G01 shts. | Vital / Non-Vital Cabinet #11 |
| 8370D15 shts 32 | ATO To Relay Logic Schematic (FIS & Satellite) |
| 8370D96G02, 2shts. | ATO cabinet # 09 |
| 8370D17G01, shts .1 | Termination Cabinet # 08 |
| 8370D18G01, 4 shts | Vital / Non-Vital Cabinet # 42 |
| 8370D23G01 | Train Control Assembly |
| 8370D24G01 | Train Control Assembly |
| 8370D24G01 | Antenna Camp. Panel Assembly |
| 8370D30G01, 2 shts | Basic Relay Cabinet Vital / Non-Vital |
| 8370D31G01, 4 shts | Non-Vital Cabinet # 10 |
| 8370D41 | Air & Brake System Schematic |
| 8370D85G01, 2 shts | Basic Relay Cabinet Vital / Non-Vital |
| 8370D88G01, 4 shts | Non-Vital Cabinet # 10 |
| 8837D18 | Vehicle Communication Equipment Compartment Assembly |
| 8837D72 | Lobby Sensor Face plate Details |

SECTION 4:

| | |
|---|---|
| 598F640 | Guide Wheel Assembly |
| 1074F75 | Brake Air Compressor |
| 1117F75 | Transit Shuttle System |
| 1120F21 | Vehicle Outline |
| 1120F38, shts.1&2 | Motor Control Box |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| | |
|---|---|
| 1120F43, shts.1&2 | Auxiliary Control Box – Breaker Panel Assembly |
| 1120F44, GR2, GR3 | Auxiliary Control Box – General Assembly |
| 1120F52 | Window installation |
| Drawing | Description |
| 1120F97 | Tow Bar Installation |
| 1120F08, 2 shts | Number 2 Bogey |
| 1121F53, 2 shts | Number 1 Bogey |
| 1121F67 | Air Piping |
| 1121F68 | Collector & Antenna Mounting – A Car # 1 Axle Ref only |
| 1121F69 | Collector & Antenna Mounting Ref only |
| 1121F70 | Antenna Mounting |
| 1121F71 | Collector & Antenna Mounting Ref only |
| 1121F72, 2 shts | Number 2 End Equipment |
| 1121F73G01 | Collector Assembly Ref only |

Tree Assembly Howell Corp 9709005 Rev A 2 shts

| | |
|---|---|
| 1C44448 | REV 1 Swivel Stem |
| 1C44449 | REV 1 Power Stem Insulator Block |
| 1C44451 | REV 1 Shoe Holder Assembly |
| 1C44452 | REV 1 Shoe Holder (Machined Extrusion) |
| 1C44453 | REV 1 Power Knuckle Assembly |
| 1C44454 | REV 1 Power Knuckle |
| 11121F78, 5 shts | Roadway Electrical Installation |
| 1121F81 | Train Assembly 2 car train |
| 1112F8G01 | Mimic Display Board |

## PARTS INVENTORY LIST

| | | | |
|---|---|---|---|
| 404P612H27 TERMINAL .375 STUD 1/0 SIZE | 30 | 10 | 30 |
| 404P669H07 PIN SPIROL | 200 | 50 | 130 |
| 6966C32G01 OUT PUT PULSE TRANSFORMER | 4 | 2 | 2 |
| 8588C47H09 TERMINAL | 39 | 10 | 50 |
| 8588C47H1 I TERMINAL .250/2 AWG COLLECTOR SHOES | 250 | 50 | 200 |
| 8588C47H17 TERMINAL 5/16 STUD 4 AWG 328163 | 25 | 10 | 60 |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| | | | | |
|---|---|---|---|---|
| | 8588C47H18 TERMINAL 5/16 STUD 2 AWG 325202 | 20 | 10 | 60 |
| | 8588C47H22 TERMINAL 5/16 STUD 4/0 AWG 325602 | 30 | 10 | 60 |
| | 8588C47H26 TERMINAL | 25 | 0 | 0 |
| | 8588C47H34 TERMINAL 3/8 STUD 2 AWG 2 HOLE 326799 | 175 | 50 | 200 |
| | 3A63286H62 COTTER PIN SST TOW BAR | 8 | 0 | 0 |
| | 3A63290H1 I COTTER PIN INTERLOCK ASSY. | 25 | 0 | 0 |
| | 3A63290H12 COTTER PIN .062u DOOR CAP\LSI CONTACTOR | 100 | 50 | 300 |
| | 3A63290H31 COTTER PIN SPINDLE .125 X 1.50 LGS | 230 | 50 | 150 |
| | 70312AF04U COTTER PIN LEVELING VALVE | 200 | 50 | 200 |
| | 70312AF07F COTTER PIN ANTENNA .125 X 1.00 LG ST | 40 | 10 | 30 |
| | 70312AF0A2 COTTER PIN SPRB .156 X 1.25 LG S | 46 | 100 | 300 |
| | 70001BU245 SCREW | 40 | 10 | 50 |
| | 70500BD30D SCREW | 85 | 42 | 127 |
| | 8588C47H20 TERMIAL 5/16 STUD 2/0 AWG 325402 | 50 | 10 | 60 |
| | 8588C47H29 TERMINAL 3/6 STUD 2/0 AWG 325403 | 35 | 10 | 80 |
| | 8588C47H31 TERMINAL 3/8 STUD 4/0 AWG 325603 | 47 | 10 | 60 |
| | 8588C47H36 TERMINAL 3/8 STUD 2/0 AWG 2 HOLE 326801 | 50 | 10 | 60 |
| | 8588C47H38 TERMIANL 3/8 STUD 4/0 AWG 2 HOLE | 58 | 25 | 100 |
| | 8588C47H39 TERMINAL | 100 | 10 | 30 |
| K2 | 7O100EGO4W HEX HD BOLT .312(5/16)18 2.00 LG | 28 | 20 | 100 |
| | 7O100EGO4Y HEX HO BOLT .312(5116)18 2.25 LG | 100 | 50 | 200 |
| | 70100EG050 HEX HD BOLT .312(5/16)18 2.5OLG | 110 | 20 | 100 |
| | 70100EG051 HEX HO BOLT .312(5/16)18 2.75 LG | 317 | 20 | 100 |
| | 70100EG052 HEX HD BOLT .312(5/16)18 3.00 LG | 130 | 20 | 100 |
| | 70100EG053 HEX HO BOLT .312(5(16)18 3.25 LG | 380 | 20 | 100 |
| | 70100EG054 HEX HD BOLT .312(5/16)18 3.50 LG | 96 | 20 | 100 |
| | 7O100EGO7Q HEX HD BOLT .375(3/8)16 2.00 LG | 28 | 20 | 100 |
| | 70500CT03Q WASHER .138 | 127 | 20 | 100 |
| K3 | 4567534134 BUTT SPLICE 22-16 AWG NYLON AMP 320559 | 315 | 50 | 300 |
| | 7000IBU2IF SCREW .112-40X .25 | 24 | 10 | 50 |
| | 700016U21H SCREW .112~40X.36 | 32 | 10 | 50 |
| | 7000IBU2IK BOLT .112-40X50 | 34 | 10 | 50 |
| | 7000IBU2IP SCREW .112-40X .75 FIL HD STL | 145 | 50 | 100 |
| | 7000IBU2IT SCREW .112-40 X 1.00 FIL HD STL | 148 | 50 | 100 |
| | 7000IBU2IV SCREW .112-40 X 1.25 LG FIL HO STL | 150 | 50 | 100 |
| | 7000IBU2IX SCREW .112-40 X 1.50 FIL HO STL | 50 | 5 | 20 |
| | 70001BU23Z SCREW .138 - 32X.38 | 37 | 18 | 55 |
| | 70001 BU241 SCREW | 60 | 10 | 30 |
| | 70001BU25L FILSTER HEAD SCREW .164(B-32)-32X .75LG | 50 | 20 | 100 |
| | 70001BU25Q FILSTER HEAD SCREW .164(8/32)-32X I .OLG | 50 | 2O | 100 |
| | 7000IBU2SS FIL%STER HEAD SCREW *.164(8132)-32X1.25LG* | 4 | 20 | 100 |
| | 70001BU28L SCREW (REVERSER) | 0 | 10 | 50 |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| | | | | |
|---|---|---|---|---|
| | 70001BU28U SCREW .190-32 X 1.00 LG FIL HO STL | 100 | 50 | 100 |
| | 70001 BU28W BOLT | 39 | 10 | 50 |
| | 70001BU28Y BOLT .190-32X1.50 | 120 | 10 | 50 |
| | 70200BNB0T NUT .112.40 | 126 | 63 | 189 |
| | 7O200BNBOX NUT .132.32 | 100 | 50 | 150 |
| | 7O200BNBOZ NUT 0164 -32 | 2 | 10 | 50 |
| | 70200BNB12 NUT .190-32(10/32) | 563 | 20 | 100 |
| | 70500BD30C FLATWASHER | 225 | 10 | 50 |
| | 70500BD30E FLAT WASHER .190 | 110 | 10 | 50 |
| | 7O5IOCVIOE .112 STL LOCKWASHER | 550 | 20 | 100 |
| | 70510CV10G LOCKWASHER .138(6/32) | 28 | 20 | 100 |
| | 7O5IOCVIOH LOCKWASHER .164(8/32) | 239 | 20 | 100 |
| | 70510CV10K LOCKWASHER .190(10.32) | 200 | 20 | 100 |
| K4 | 7O100EGOIY HEX HO BOLT .250(1/4)20 1.75 LG | 70 | 20 | 100 |
| | 70100EG020 HEX HD BOLT .250(1/4)20 2.00 LG | 200 | 20 | 100 |
| | 70100EG022 HEX HD BOLT .250(1/4)20 2.250 LG | 200 | 20 | 100 |
| | 70100EG024 HEX HD BOLT .250(1/4)20 2.50 LG | 200 | 20 | 100 |
| | 70100EG025 HEX HD BOLT .250(1/4)20 2.750LG | 300 | 20 | 100 |
| | 70100EG026 HEX HD BOLT .250(1/4)20 3.00 LG | 351 | 50 | 200 |
| K5 | 7OIOOEGOIN HEX HO BOLT .250(1/4)20 0.50 LG • | 40 | 20 | 100 |
| | 7OIOOEGO1Q HEX I-ID BOLT .250(1/4)20 0.75 LG | 115 | 20 | 100 |
| | 7OIOOEGOIS HEX HD BOLT .250(1/4)20 1.00 LG | 125 | 20 | 100 |
| | 7OIOOEGOIU HEX HD BOLT .250(1/4)20 1.250 LG | 0 | 20 | 100 |
| | 7OIOOEGO1W HEX HO BOLT .250(1/4)20 1.50 LG | 100 | 20 | 100 |
| | 7021 0BK616 NUT .250-20(1/4) • | 200 | 20 | 100 |
| | 7O500CTOOP FLAT WASHER .250(1/4) | 100 | 20 | 100 |
| | 7O5IOCV1OM LOCKWASHER .250(1/4) | 250 | 20 | 100 |
| K6 | 7OIOOEGO4L HEX HO BOLT .312(5/16)18 0.75 LG | 48 | 10 | 30 |
| | 7OIOOEGO4N HEX HO BOLT .312(5/16)18 1.00 LG | 48 | 20 | 100 |
| | 7OIOOEGO4Q HEX HD BOLT .312(5/16)18 1.25 LG | 57 | 50 | 200 |
| | 7OIOOEGO4S HEX HO BOLT .312(5/16)18 1.50 LG | 50 | 20 | 100 |
| | 7O100EGO4U HEX HO BOLT .312(5/16)18 1.75 LG | 100 | 20 | 100 |
| | 701 OQEGOCK BOLT .500-13 X .75 LG HEX HD STL | 30 | 10 | 30 |
| | 7OIOOEGOCM BOLT .500-13 X 1.00 LG HEX HO STL | 40 | 10 | 30 |
| | 7OIOOEGOCP BOLT .500-13 X 1.25 LG HEX HD STL | 40 | 10 | 30 |
| | 7OIOOEGOCR BOLT .500-13 X 1.50 LG HEX HO STL | 40 | 10 | 30 |
| | 7OIOOEGOCT BOLT .500-13 X 1.75 LG HEX HD STL | 38 | 10 | 30 |
| | 701 OOEGOCV BOLT .500-13 X 2.00 LG HEX HD STL | 40 | 10 | 30 |
| | 70210BK618 NUT .312-18(5/16) • | 205 | 20 | 100 |
| | 7O500CTOOT FLAT WASHER .312(5/16) | 340 | 20 | 100 |
| | 70500CT016 FLATWASHER .500 STL STD | 200 | 30 | 200 |
| | 70510CV10P LOCKWASHER .312(5/16) | 80 | 20 | 100 |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| | | | | |
|---|---|---|---|---|
| | 7OIOOEGO7E HEX HD BOLT *.375(3/8)16* 0.75 LG | 320 | 20 | 100 |
| | 7OIOOEGO7G HX HD BOLT .375(3/8)16 1.00 LG | 100 | 20 | 100 |
| | 7OIOOEGO7J HEX HO BOLT .375(3/8)16 1.25 LG | 40 | 20 | 100 |
| | 701 OOEGO7L HEX HO BOLT .375(318) 16 1.50 LG | 100 | 20 | 100 |
| | 7OIOOEGO7N HEX HD BOLT .375(3/8)16 1.750 LG | 120 | 20 | 100 |
| | 7OIOOEGO7S HEX HO BOLT .375(3/8)16 2.25 LG | 136 | 50 | 200. |
| | 7OIOOEGO7U HEX HO BOLT .375(3/8)16 2.500 LG | 58 | 20 | 100 |
| | 7O100EGO7V HEX HO BOLT .375(318)16 2.75 LG | 118 | 50 | 200 |
| | 701 OOEGO7W HEX HO BOLT .375(3/8)16 3.00 LG | 72 | 20 | 100 |
| | 70210BK61A NUT .375-16(3/8) | 120 | 20 | 60 |
| | 7O500CTOOY FLAT WASHER .375(3/8) | 30 | 20 | 100 |
| | 7051 OCVI OQ LOCKWASHER .375(3/6) | 70 | 20 | 100 |
| | I D47608G01 SWITHCH BOARD ASSY | 4 | 1 | 1 |
| | 396C342G05 ARC SHLJTE (LSI) | 2 | 1 | 1 |
| | 4078B40H02 LS2 COIL | 6 | 3 | 3 |
| | 4726A57G01 LSI CCOIL | 6 | 2 | 4 |
| | 60A2872G37 CAM SWITCH, TYPE XCA-398 | 20 | 3 | 3 |
| L2 | 08C5097G01 LSI SHUNT | 4 | 2 | 4 |
| | 107D836H02 REVERSER CAMS | 0 | 1 | *1* |
| | 107D836H03 REVERSER CAMS | I | I | I |
| | 107D836H04 REVERSER CAM | I | I | I |
| | 107D836H05 REVERSER CAM | 1 | 1 | 1 |
| | 177A001H01 LARGE FLANGE WASHER | 5 | 1 | 1 |
| | 177A001H02 FLAT WASHER | 5 | 1 | 1 |
| | 177A002H01 FELT WASHER | 6 | 1 | 1 |
| | 1 77A1 35G01 SHUNT L62 AND BSC | 8 | 2 | 4 |
| | 26D5848H10 SPRING 16.00) .040 DIA SST W | 3 | 1 | 1 |
| | 3D99510H01 SPRING (REVERSER CAM ASS?) | 8' | 1 | 1 |
| | 404P581H05 REVERSER BEARING | I | I | I |
| | 4227B59001 SHUNT (REVERSER CAM ASS?) | 5 | 1 | 1 |
| | 4228636H01 SMALL FLANGE WASHER | 5 | 1 | 1 |
| | 5623B04H30 HEX CAP SCREW .88 LONG | 3 | 1 | 1 |
| | 5623B04H57 HEX CAP SCREW .75 LONG | 12 | 1 | 1 |
| | 610B595G01 REVERSER RACK ASSY | 1 | 0 | 0 |
| | 7O3IOBKOBE GROOVE PIN | 1 | 0 | 0 |
| | 795C168G01 ARC CHUTE MOLDED (LS2/BSC) | 2 | 1 | 1 |
| | 8617A60H02 PACKING CUP | 13 | 1 | 1 |
| | 8617A79G01 CONTACT WITH INSERT | 40 | 0 | 0 |
| L3 | 22A8997G04 CONTACT ASS? (REVERSER) | 8 | 2 | 4 |
| | 280B831 G0l REVERSER AIR TUBE (BETWEEN MAG VALVES) | 3 | 2 | 4 |
| | 404P581H03 REVERSER HOUSING BEARING | 9 | 0 | 1 |
| | 4228B05H01, FINGER SUPPORT BAR | 10 | 1 | 4 |

## SECTION 3
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| | | | | |
|---|---|---|---|---|
| | 4724A55G01 REVERSER INLET AIR HOSE | 7 | 2 | 4 |
| | 61 0B599H01 REVERSER FINGER BLOCK (LH) | 13 | 2 | 3 |
| | 610B599H02 REVERSER FINGER BLOCK (RH) | 7 | 2 | 3 |
| | 862C159G01 FINGER SUPPORT ASSY (LH) | 1 | 1 | 2 |
| | 862C1 59G02 FINGER SUPPORT ASSY (RH) | 4 | 1 | 2 |
| L4 | 0877692H30 SPRING (LSI CONTACTOR) | 8 | 1 | 3 |
| | 08B9878G15 REPAIR KIT (MAG VALVE ASSY) | 1 | 2 | 3 |
| | 1627429000 COIL (MAG VALVE) | 7 | 2 | 4 |
| | 17A1754X17 MAG VALVE ASSEMBLY, TYPE UB-73 | 7 | 0 | 0 |
| | 1A96975H01 CRIMP WASHER (LS2/BSC AUX CONTACTS) | *17* | 5 | 10 |
| | 21D3154H01 STANDARD CORE (LS21BSC) | 3 | 1 | 2 |
| | 4227B27G02 FINGER CONTACT ASSY STUD (REVERSER) | 17 | 5 | 10 |
| | 4767A90G01 STD. CONTACT INTERLOCK FINGER | 17 | 10 | 20 |
| | 4779A95H01 CORE (LS2IBSC) | 5 | 1 | 1 |
| | 4779A96H01 INSULATOR SLEEVE (LS2IBSC CORE) | 12 | 5 | 5 |
| | 526D757G01 FLAT CONTACTS (LSI AUX BLOCK) | 23 | 6 | 20 |
| | 526D757G06 MOVING CONTACT (PLAIN) ASSEMBL | 26 | 5 | 10 |
| | 526D757H16 SPRING PIN | 20 | 5 | 10 |
| | 5623B91H01 INSULATOR WASHER (LS2IBSC) | 18 | 5 | 10 |
| | 570A258G01 UPPER VALVE ASSY (REVERSER MAG VALVE) | 2 | 0 | 0 |
| | 5819C58G03 FINGER ASSY ROLLER ARM (REVERSER) | 12 | . 2 | 4 |
| | 6157A68G01 LS2 WIPER CONTACTS | 59 | 10 | 20 |
| | 6157A90G01 FINGER ASSEMBLY | 23 | 10 | 10 |
| | 7000IBU2BZ SCREW (REVERSER FINGER BLOCK) | 6 | 5 | 5 |
| | 70312AF00G COTTER PIN (LSI AUX CONTACT) | 12 | 5 | 20 |
| | 70500B030F FLAT WASHER (REVERSER FINGER BLOCK) | 32 | 5 | 10 |
| | 8617A20G01 LOWER VALVE ASSY (REVERSER MAG VALVE) | 1 | 0 | 0 |
| | 862C1 58G01 CONNECTOR | 0 | 1 | 1 |
| | 862C158G02 CONNECTOR | 4 | 1 | 1 |
| | 862C158G03 CONNECTOR | I | I | I |
| L5 | 107D966G01 WIPER CONTACT (LS2/BSC) | 4 | 2 | 6 |
| | 18D9633H01 LS2 MAIN CONTACT | 41 | 10 | 20 |
| | 18D9643H01 LSI MAIN CONTACT | 22 | 4 | 12 |
| | 526D755G03 AUX CONTACT ASSY (LS1) | I | I | I |
| | 526D758G03 INTERLOCKING ASSY | 4 | 5 | 15 |
| | 526D758H02 BASE DOUBLE STATIONARY PART | 4 | 0 | 0 |
| | 577B723G04 LS2 WIPERS RIGHT HAND | 4 | 5 | 7 |
| | 577B724G04 LS2 WIPERS LEFT HAND | 2 | 10 | 15 |
| | 70001BU25Y INTERLOCK SCREWS | 40 | 10 | 30 |
| | 70001BU262 INTERLOCK SCREWS . | 12 | 10 | 30 |
| L6 | 280B522H07 SEAL | 10 | 3 | 10 |
| | 3930A55H01 SCREW, COVER BOLTS | 7 | 3 | 6 |

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| | | | | |
|---|---|---|---|---|
| | 404P739H04 GUIDE, PCB . | 27 | 3 | 6 |
| | 404P739H05 GUIDE, PCB | 25 | 3 | 6 |
| | 570A168H02 SEAL, MOTOR BOX | 23 | 3 | 6 |
| | 570A169H03 RETAINER, MOTOR BOX | 35 | 0 | 1 |
| | 570A169H04 SEAL | 10 | 5 | 16 |
| | 570A170H02 SEAL, MOTOR BOX | 34 | 3 | 6 |
| | 652A073H10 CABLE GRIP | 17 | 8 | 24 |
| | 652A073H38 CABLE GRIP | 3 | 1 | 4 |
| | 70001BU28N SCREW | 10 | 10 | 50 |
| | 7001 0G0H52 SCREW | 10 | 5 | 1.5 |
| | 7O500BD3OY .112 STD STL WASHER | 50 | 20 | 100 |
| | 7OSOOBD3IY WASHER | 9 | 2 | 10 |
| | 70530AQ13N LOCK WASHER | 201 | 100 | 301 |
| | 8368079H01 CABLE CLAMP | 2 | 1 | 3 |
| | 8368D79H02 CABLE CLAMP | 3. | 2 | 6 |
| | 8368079H03 CABLE CLAMP | 2 | 1 | 4 |
| | 83660791-404 CABLE CLAMP | 5 | 3 | 9 |
| | 8368D79H07 CABLE CLAMP | 16 | 13 | 39 |
| L7 | 21D3155H01 HINGE PIN 1.668).5000IA STL | 6 | 1 | 2 |
| | 23B6306G01 BEARINGGG BRAKET | 2 | 1 | 1 |
| | 699J078G03 REVERSER | 2 | 0 | 0 |
| | 70020BD74M SET SCREW .250-20 X.375 HEX | 2 | 1 | 2 |
| | 8587C42H01 CONTACT ARM .875) EXTRUDED SEC | 1 | 1 | 2 |
| | 226D230A35 CONTACTOR TYPE UMA-859A L & 1 | 6 | 0 | 1 |
| | 31A4669A28 CONTACTOR TYPE UMB-675A L & 2 | 1 | 0 | 1 |
| M-115 | 1121F03G02 MAIN FRAME | 0 | 0 | 0 |
| | 2539B08H01 WHEEL SHIM | 7 | 0 | 0 |
| | 3437C85H06 MAIN DRIVE TIRES | 16 | 0 | 0 |
| | 404P566H08 TRAILING AXLE WHEELS | 4 | 0 | 0 |
| | 5574C31H01 GUIDE TIRES | 46 | 10 | 15 |
| | 6246D71G03 LEAF SPRING ASSEMBLY | 8 | 1 | 2 |
| | 8596C95H02 GREASE (EVERYTHING EXCEPT BRAKES/OPERATO | 100 | 10 | 25 |
| | 8596C95H07 BRAKE GREASE | 32 | 0 | 0 |
| | 8597C32H29 GREASE (ADMAX MULTIPLEX) | 21 | 5 | 20 |
| M-115A | 3973C23H01 TOW BAR 20.17) OF 2.00 HE | 3 | 0 | 1 |
| | 4678C16H01 FITTING, AIR BAGS | 5 | 1 | 1 |
| | 4684C78H01 AIR RIDE SPRING, AIR BAGS | 7 | 1 | 1 |
| | 570A055H31 ~ RING, STD SIZE 210, AIR BAGS | 15 | 5 | 10 |
| | 6246D67H15 STUD 8.44) 1.625 DIA HR STL | 6 | 12 | 6 |
| | 70210GA61Q NUT | 3 | 2 | 10 |
| | 70500BR31K WASHER 1.00 WIDE SST | 1 | 0 | 0 |
| | 70510D011A LOCKWASHER 1.00 STD STL | 2 | 1 | 30 |

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| | | | | |
|---|---|---|---|---|
| M-1 1 5B' | 2969A44H02 BOLT SNUBBER, BRACKET LONG | 8 | 4 | 8 |
| | 652A292H03 BOLT, SNUBBER, BRACKET | 14 | 5 | 5 |
| | 702106K61J NUT, SNUBBER | 14 | 5 | 10 |
| | 7051 OCV1 OU LOCK WASHER, SNUBBER | 11 | 3 | 6 |
| | 8369D24G01 TOP MOUNTING BRACKET ASSEMBLY, SNUBBER | 5 | 2 | 4 |
| | 8369D24G02 BOTTOM MOUNTING BRACKET ASSY., SNUBBER | 14 | 2 | 4 |
| | 8369D56H04 SNUBBER | 3 | 1 | 1 |
| M-115C | 2562655H01 RIM VALVE EXTENSION | 35 | 10 | 20 |
| | 404P458H02 LOCK NUT, GUIDE TIRES RIM | 180 | 50 | 100 |
| | 404P600H12 FLAT WASHER 'D", GUIDE TIRES RIM 350 | 50 | 100 | |
| | 404P631H02 BOLT, GUIDE TIRES RIM | 300 | 50 | 100 |
| | 404P902H01 VALVE | 24 | 10 | 20 |
| | 4785A55H02 FTD CLAMPS | 9 | 1 | 2 |
| | 5826C37G02 FTD X-MITTER (NEW TYPE) | 1 | 3 | 3 |
| | 6965C39H01 COUNTERWEIGHT | 8 | 2 | 2 |
| | 6965C40G02 FTD RECEIVER (NEW TYPE) | 1 | 0 | 0 |
| | 7051 ODLI 00 LOCK WASHER GUIDE TIRES RIM | 380 | 50 | 100 |
| M-115E | 8589C64167 SERVICE BRAKE CHAMBER | 7 | 0 | 0 |
| M-1 I 5F | 70500CT02H WASHER. SHOCK ABSORBERS | 10 | 1 | 3 |
| | 8589C64H76 BRAKE CHAMBER ANCHOR LOCK | 1 | 0 | 0 |
| | 8837D54G01 SHOCK ABSORBER ASSEMBLY | 14 | 2 | 4 |
| M-120 | 3930A91H01 WIREI6AWG19I.0113 | 1 | 200 | 500 |
| | 404P740H03 CABLE #2 AWG WELDING | 1 | 0 | 0 |
| | 404P740H16 INFO ANTENNA CABLE | 2 | 0 | 0 |
| | 404P740H23 O.S. SENSOR | 1 | 0 | 0 |
| | 404P740H44 PROGRAM STOP CABLE | 1 | 0 | 0 |
| | 62111MA35F WIRE 14 AWG 191.0142 | 2 | 200 | 500 |
| | 62111 MA35L CABLE 12 AWG | 1 | 50 | 500 |
| | 62IIIMA3CQ HIPALON WIRE #4 | 1 | 0 | 0 |
| | 62111 MA46Z CABLE | 1 | 0 | 0 |
| | 62111 MA4HE CABLE | 1 | 0 | 0 |
| | 62125BT3MN WIRE 2/C SHIELDED | 0 | 0 | 0 |
| | 66711G04MB KAPTON WIRE 16 AWG 600V | 1 | 0 | 0 |
| | 8588C01 H02 WIRE 20 AWG 600V | 0 | 20 | 20 |
| | 8590C82H03 WIRE 18 AWG I 000V | 0 | 20 | 20 |
| M-130 | 404P313H01 HOSE -04 | 1 | 0 | 0 |
| | 404P313H02 HOSE .31 ID X .61 OD | 1201 | 0 | 0 |
| | 404P313H03 HOSE -08 . | 1 | 0 | 0 |
| | 404P313H04 RUBBER HOSE -10 | 1 | 0' | 0 |
| | 404P313H05 HOSE -12 | 1 | 0 | 0 |
| | 404P313H15 TEFLON HOSE | 0 | 0 | 0 |

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| | | | | |
|---|---|---|---|---|
| | 404P491H14 MAIN TRANSFORMER | 1 | 0 | 0 |
| | 404P508H06 HANGER ASSY | 16 | 0 | 0 |
| | 404P697H31 BATTERY (VEHICLE) DYNASTY GCI2VIOO LEAD | 3 | 2 | 2 |
| | 404P697H35 BATTERY (SWITCH GEAR) EXIDE 3CC-3 0 | 0 | 1 | |
| | 409P077H96 SES SWITCH ASSEMBLY | 4 | 0 | 0 |
| | 4675C06G01 AXLE CLAMP NEAR | 0 | 0 | 0 |
| | 4675C06G02 AXLE CLAMP FAR | 0 | 0 | 0 |
| | 6246D69H06 LOWER SPRING CLAMP. | 0 | 0 | 0 |
| | 8369D36H01 ALUM.EXT. 44.31) | 11 | 0 | 0 |
| | 8369D36H02 VEH. DOOR HANGER ASSY (ODD DOORS) | 3 | 2 | 4 |
| | 8589C64132 BRAKE SHOE LINING | 25 | 0 | 0 |
| M-135 | 53535BY00A GREASE, EL. COMP. PWR. RAIL ONLY | 1 | 0 | 1 |
| M-140 | 409P980H13 EVAP. COIL AIR CONDITIONING | 1 | 0 | 1 |
| M-150 | 1C40540G01 AIR COMPRESSOR | 2 | 2 | 2 |
| M-175 | 332P750G01 TRACTION MOTOR | 2 | 0 | 0. |
| | 4675C16G01 MAIN TRANSFORMER VEHICLE | I | 0 | 0 |
| | 5586B29H06 FIBER GLASS CHANNEL | 7 | 0 | 2 |
| | 5D80084G01 RAIL ASSEMBLY WITH COVER | 45 | 5 | 5 |
| | 5D80085H01 RAIL COVER (BEIGE) 353.00 INCHES | 50 | 5 | 15 |
| | 6972C92G01 POWER RAIL | 45 | 2 | 5 |
| Ml | 1C4081 1102 MTG PLATE | 4 | 1 | 2 |
| | 1C40811103 MTG BRACKET (SW) | 10 | 1 | 2 |
| | 1C40811104 MTG BRACKET (SW) | 10 | 1 | 2 |
| | 1C4081 1105 MTG BRACKET (SW) | 10 | 1 | 2 |
| | 1 C4081 1110 MTG BRACKET . | 4 | 1 | 2 |
| | 1C40811152 CABLE AND HANDLE ASSY | 8 | 1 | .2 |
| | 1C40811154 THIMBLE . | 22 | 1 | 1 |
| | 1C40811155 CLAMP | 49 | 1 | 1 |
| | 1C40811H08 MTG PLATE | 3 | 0 | 1 |
| | 1C40811H09 MTG BRACKET . | 4 | 1 | 1 |
| | 1C40811H10 MTG BRACKET | 4 | 1 | 1 |
| | 1C40811H11 MTG BRACKET | 4 | 1 | 1 |
| | 4677C05H01 CABLE ASSEMBLY-EMERGENCY HANDL | 5 | 1 | 2 |
| | 4677C06H01 CABLE ASSY EMERG. HANDLE (CAR SIDE) | 4 | 1 | 3 |
| M2 | 1504F86H10 BRACKET-MTG PIVOTING SLIDE | 2 | 1 | 2 |
| | 2538816H01 STANCHION BOTTOM PLATE | 6 | 1 | 2 |
| | 4078B17H02 LOGO PLATE | 2 | 0 | 1 |
| | 409P077H92 MARKER STRIP | 4 | 1 | 2 |
| | 409P077H93 DOOR PARTS TERMINAL STRIP | 1 | 1 | 2 |
| | 4682C60H01 DETAIL 2.50) OF .12 X .5 | 13 | 2 | 2 |
| | 4682C60H04 DETAIL 22.50) OF .12X .5 | 9 | 2 | 2 |
| | 7001OEUI8F SCREW | 26 | 5 | 10 |

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| | | | | |
|---|---|---|---|---|
| | 8369D29G01 BRACKET ~.. | 28 | 5 | 10 |
| M3 | 1C40811113 BRACKET ASS'Y BUMPER | 10 | 3 | 7 |
| | 1C40811127 SPRING DOOR SLIDE | 3 | 1 | .3 |
| | 1C40811H71 BRACKET ASS'Y BUMPER | 6 | 3 | 7 |
| | 404 P536H43 SET SCREW . | 55 | 10 | 50 |
| | 404P687H04 GASKET | 10 | 3 | 7 |
| | 404P687H05 OPERATOR GASKET | 7 | 3 | 7 |
| | 404P986H1 I COVER . | 4 | 5 | 15 |
| | 409P119H99 SES POWER SUPPLY . | 3 | 1 | 2 |
| | 409P262H23 SES CONTROLLER | 8 | 2 | 2 |
| | 5580B17H01 PLAIN SLIDE ROLLER (OPERATOR ARM) | 17 | 10 | 20 |
| | 6976C08G06 ROLLER & BEARING | 2 | 10 | 20 |
| 44 | 1 C4081 1170 SHAFT AND LEVER | 8 | 2 | 2 |
| .45 | 1C40811171 SHAFT AND LEVER | 13 | 0 | 0 |
| | 409P128H01 OPERATOR ARM RIGHT HAND | 6 | 2 | 2 |
| V17 | 409P128H02 OPERATOR ARM LEFT HAND | 4 | 2 | 2 |
| | 6957C02G01 SLIDE ASS'Y DOOR | 9. | 2 | 2 |
| MB | 409P077H98 GEAR BOX HOUSING WAYSIDE | 3 | 2 | 2 |
| | 409P077H99 GEAR BOX HOUSING VEHICLE | 3 | 0 | 1 |
| N2 | 404P548H01 KEYED WASHER | 6 | 4 | 4 |
| | 404P549H01 GREASE CAP | 15 | 5 | 10 |
| | 404P551H01 CASTLE NUT | 12 | 10 | 10 |
| | 404P845H05 LOCKNUT .500-20 | 12 | 10 | 10 |
| | 4724A93H01 BOLT WHEEL 1) | 13 | 10 | 10 |
| | 610B574H01 SHIELD DUST 4.750) OF .0 | 19 | 5 | 10 |
| | 652A589H03 FLAT WASHER, GUIDE WHEEL SPINDLES | 62 | 6 | 10 |
| | 7O22ODPNIF STOP NUT .500-20 | 49 | 10 | 10 |
| | 8589C64143 THRUST WASHER, SUN GEAR | I | I | I |
| | 8589C64144 LOCK, HUB BEARING NUT | 4 | 1 | 1 |
| | 8589C64H50 SNAP RING, SUN GEAR RETAINER | 4 | 1 | 1 |
| | 404P547H36 SEAL SLEEVE KIT | 5 | 3 | 5 |
| | 404P687H08 GASKET | 10 | 5 | 10 |
| | 404P698H01 UNIVERSAL JOINT | 9 | 2 | 2 |
| | 404P698H03 YOKE SHAFT | 5 | 1 | 2 |
| | 8589C64109 COVER PINION BEARING CAGE | 7 | 3 | 6 |
| | 8589C64H20 OIL SEAL PINION BRG. CAGE | 2 | 3 | 6 |
| N4 | 2532B93H01 AXLE YOKE SPLINED HOLE | 5 | 1 | 2 |
| | 3794C63H01 TOOTHED WHEEL .50 THK STL PL B | 6 | 1 | 1 |
| | 3909C68H01 MOUNTING BRACKET 2.1 2)6.50 DIA | 3 | 1 | 1 |
| | 3D15668H01 END YOKE, MOTOR | 3 | 1 | 2 |
| | 404P698H02 SLIP YOKE | 2 | 1 | 1 |
| N5 | 2532B34G01 RIGHT HAND BALL SOCKET ASSEMBL | 4 | 1 | 2 |
| | 2532B34G02 LEFT HAND BALL SOCKET ASSEMBLY | 5 | 1 | 2 |

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| | | | | |
|---|---|---|---|---|
| | 2560B11G01 DRIVE SHAFT ASSY. | 1 | 0 | 1 |
| | 3437C83H04 STEEL TUBE 18.25) 1.00 ID X | 3 | 1 | 1 |
| N6 | 2969A44H01 BOLT | 7 | 4 | 8 |
| | 3973C23H02 JAM NUT, TOWBAR | 3 | 1 | 2 |
| | 6246D70G04 SUSPENSION FRAME DETAILS PORKCHOP SPRING 2 | | 0 | 1 |
| | 6246D70G05 SUSPENSION FRAME DETAILS PORKCHOP SPRING 2 | | 0 | 1 |
| NEW | 20203A800A GREASE | 0 | 0 | 0 |
| | 404P443H02 RELAY | 47 | 0 | 0 |
| | 404P645H20 CONNECTOR | 0 | 0 | 0 |
| | 526D759H01 SHIELD INTERLOCK ASSY.(LS2IBSC | 0 | 0 | 0 |
| | 62111 MB35F CABLE | 0 | 0 | 0 |
| | 7001 OCJI5Z SCREW ANTICLIMBER | 0 | 2, | 10 |
| | 8367D80G01 MOTOR CONTROL BOX COVER | 1 | 0 | 1 |
| DI | 404P352H32 TEMPERATURE SENSOR INDICATOR SPINDLE | 81 | 5 | 10 |
| | 404P547H01 SPINDLE SEAL | 47 | 8 | 58 |
| | 404P547H02 SEAL UPPER GUIDE SPINDLES | 41 | 8 | 56 |
| | 4722A42H06 BOLT SPINDLES, GUIDE TIRE | 80 | 16 | 8 |
| | 652A589H01 WASHER .188) OF 2.375 DI | 50 | 4 | 4 |
| 02 | 404P546H01 BEARING CUP | 40 | a | 58 |
| | 404P546H02 BEARING CONE | 41 | 8 | 58 |
| | 404P546H03 BEARING CUP | 52. | 8 | 58 |
| | 404P546H04 BEARING CONE | 53 | 8 | 58 |
| 03 | '404P547H17 HUB SEAL#2 END | 17 | 4 | 2 |
| | 8589C64H62 BEARING, OUTER #2 END | 3 | 4 | 2 |
| | 8589C64H63 CUB HUB BRG. OUTER #2 END | 2 | 4 | 2 |
| | 8589C64H67 CUP HUB BRG. INNER #2 END | 6 | 4 | 2 |
| | 8589C64H68 CONE HUB BRG. INNER #2 END | 8 | 4 | 2 |
| 04 | .404P547H13 SEAL, #1 END HUB | 6 | 2 | 2 |
| | 404P698H10 BEARING CUP #1 END OUTER | 7 | 2 | 2 |
| | 404P698H1 I BEARING #1 END OUTER | 5 | 2 | 2 |
| | 404P698H12 BEARING #1 END (A,B,C) 665A | 7 | 2 | 2 |
| | 404P698H13 BEARING CUP#1 INNER | 6 | 2 | 2 |
| | 4O4P698HI4GASKET#IENDHUB | 10 | 3 | 5 |
| 05 | 409P051 H03 LARGE DIAPHRAM SPRING BRAKE CHAMBER | 23 | 5 | 10 |
| | 409P051H04 SMALL DIAPHRAM SVC. BRAKE CHAMBER | 25 | 5 | 10 |
| | 409P086H12 WEDGE GUIDE | 11 | 3 | 6 |
| | 5585B41H05 ADJUSTING PLUNGER ASSY 18 DEG | 15 | 4 | 12 |
| | 8589C64163 SPRING RETURN | 8 | 3 | 6 |
| | 8589C64165 PLUNGER SEAL | 28 | 5 | 10 |
| | 8589C64H80 BOLT ADJUSTING | 17 | 4 | 12 |
| | 8589C64H91 CLIP HOLD DOWN | 13 | 3 | 6 |
| | 8589C64H93 BRAKE WEDGE | 13 | 4 | 8 |
| P1 | 4O4P698HI5WHEELSTUD(LH) | 22 | 10 | 40 |

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| | | | | |
|---|---|---|---|---|
| | 4O4P698HI6WHEELSTUD(LH) | 30 | 10 | 40 |
| | 404P698H19STUD(RH)HUB. | 16 | 10 | 20 |
| | 404P698H20#IENDHUB | 21 | 10 | 20 |
| | 404P845H01 LOCKNUT, MAIN DRIVE TIRES | 81 | 10 | 30 |
| | 8589C64142 STUD PLANETARY | 19 | 5 | 10 |
| | 8589C64H65#2 END HUB | 28 | 5 | 10, |
| | 8589C64H72 CAPSCREW BRAKE DRUM | 24 | 5 | 10 |
| P2 | 4O4P698HI7WHEEL STUD CAP (RH) | 16 | 10 | 40 |
| | 404P698H18 WHEEL STUD NUT (LH) | 5 | 10 | 40 |
| | 404P698H21 STUD LONG DIF | 26 | 5 | 10 |
| | 404P698H22 STUD SHORT DIFF | 15 | 5 | 10 |
| | 4724A90H01 BOLT, GUIDE STRUCTURE | 31 | 3 | 6 |
| | 4724A92H01 WASHER, L-9'S .875 HIGH STRENGTH | 31 | 16 | 8 |
| | 4724A92H02 NUT, L-9, .875-14 HIGH STRENGTH | 17 | 16 | 8 |
| | 70210BK61L NUT, .750-10 HEX STL, SPRINGS | 64 | 20 | 100 |
| | 8589C64130 LOCK NUT DIFF | 13 | 10 | 30 |
| | 8589C64140 FLAT WASHER DIFF | 33 | 10 | 30 |
| | 1C41450H01 THRUST WASHER 4.31 DIA) .09 TH | 16 | 0 | 0 |
| | 2538B52H01 HUBOMETER | 1 | 0 | 1 |
| | 2536B52H02 BRACKET MTG. #155 | 1 | 0 | 1 |
| | 2969A43H01 L9BOLT **0** | 11 | 4 | 12 |
| | 4724A91H01 BOLT .312-16 X .88 LG | 20 | 5 | 20 |
| | 6246D67H09 SPRING PLATE | 4 | 1 | 2 |
| | 652A589H02 SPACER LEAF SPRING | 6 | 3 | 12 |
| | 7OIOOEGOBX BOLT LEAF SPRING | 7 | 1 | 10 |
| | 70210BK61D NUT, SPRING | 24 | 1 | 3 |
| | 7O5IODLIOW LOCKWASHER, SPRINGS | 9 | 4 | 10 |
| | 8586C26H01 SLEEVE (SPRINGS) | 8 | 4 | 8 |
| | 8586C26H06 KELTROL SLEEVE | 8 | 4 | 8 |
| P4 | 404P769H02 SHRINK TUBING 1.1 OX.375 TRACTION MOTOR | 33 | 10 | 30 |
| | 4675C16H03 BUSHING MAIN TRANSFORMER | 8 | 2 | 2 |
| | 4675C76H01 CLAMP | 19 | 10 | 30 |
| | 2263D94G01 BRUSH HOLDER ASSEMBLY | 2 | 0 | 0 |
| | 2263D94H02 BRUSH SPRING | 46 | 15 | 10 |
| | 2539B60H01 FILTER, MOTOR COVERS | 9 | 0 | 0 |
| | 3A63286H14 COTTER PIN .062X1.25 MOTOR BRUSH SPRING | 136 | 15 | 30 |
| | 5586B66H01 CARBON BRUSH GRADE WI 87 | 28 | 54 | 48 |
| | 570A055H03 "0" RING, MOTOR COVERS | 19 | 0 | 0 |
| | 6158A81H01 BUSHING, MOTOR | 3 | 0 | 4 |
| | 8837D54H03 SHOCK ABSORBER BUSHING | 0 | 0 | 0 |
| P6 | 1020J38G01 FILTERED COMMUTATOR COVER (RH) | 2 | 1 | 1 |
| | 1020J38G02 FILTERED COMMUTATOR COVER (LH) | 1 | 0 | 1 |
| | 404P769H01 SHRINK TUBING .220-.750 | 40 | 5 | 10 |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| | | | | |
|---|---|---|---|---|
| | 4Ô4P769H03 SHRINK TUBING 1.50X.50X9 | 22 | 10 | 30 |
| Q5 | 7O5IODLIOK LOCKWASHER .190 X-DUTY STL, FSE | 0 | 5 | 5 |
| RI | 3965C97G01 INFORMATION RECEIVER ANTENNA | 2 | 1 | 2 |
| | 409P1 01 H03 AC. BALLAST | 4 | 1 | 2 |
| | 4722A46H10 O.S SENSOR BOLT | 17 | 3 | 5 |
| | 4724A98H01 MTG PLATE | 3 | 0 | 1 |
| | 7076D02G03 OVERSHOOT ANTENNA | 2 | 1 | 1 |
| R2 | 404P595H10 AB BREAKER **0** | 19 | 2 | 3 |
| | 404P595H26 AB BREAKER 1-POLE 20 AMP | 22 | 5 | 5 |
| | 404P595H28 AB BREAKER 1-POLE 50 AMP | 6 | 2 | 3 |
| R3 | 404P365H07 RELAY DUST COVER | 7 | 1 | 1 |
| | 404P365H18 COVER PLASTIC | I | I | I |
| | 404P595H51 BREAKER | 2 | 1 | 1 |
| | 404P595H66 BREAKER 60A 120/24OVAC | 2 | 1 | *1* |
| | 409P131H01 BREAKER 3 POLE 50 AMP | 4 | 1 | 2 |
| | 409P131H03 BREAKER | 7 | 2 | '3 |
| | 409P131H06 BREAKER 70A | 3 | 1 | 1 |
| R4 | 404P595H29 BREAKER MOTOR OPERATOR | 1 | 0 | 1 |
| | 404P595H32 BREAKER | 1 | 0 | 1 |
| | 404P595H40 BREAKER | 13 | 5 | 5 |
| | 409P1321-I01 MOTOR CIRCUIT PROTECTOR | 3 | 1 | 2 |
| R5 | 107D964H15 CAPACITOR I UF, 1000 VDC | 1 | 1 | 2 |
| | 3965C97G02 ANTENNA | 1 | 0 | 1 |
| | 404P595H46 BREAKER | 1 | 0 | 1 |
| R6 | 404P595H43 BREAKER | 1 | .0 | 1 |
| | 404P595H52 BREAKER S | 2 | 0 | 1 |
| | 404P595H55 BREAKER | 1 | 0 | 1 |
| SI | 107D964H21 CAPACITOR 12 UF, 1000 VDC | 9 | 4 | 10 |
| | 404P568H05 CAPACITOR BRACKET | 8 | 2 | 4 |
| | 5586674H06 CONNECTOR 160 PIN STANDARD | 1 | 0 | 1 |
| S2 | 404P374H16 PIN | 0 | 0 | 0 |
| | 404P541H03 CONNECTOR | 8 | 2 | 4 |
| | 404P616H04 CONNECTOR | 1 | 0 | 1 |
| | 404P645H54 CONNECTOR | 10 | 1 | 1 |
| | 409P059H01 CONNECTOR (28 PIN PLUG) | 0 | 0 | 1 |
| | 409P059H02 SOCKET BLOCK 28 PIN | 4 | 1 | 1 |
| | 409P221 H50 TACH RUBBER BOOT | 2 | 1 | 3 |
| 83 | 2698A54H04 ELECTRO MAGNETIC PICKUP | 2 | 1 | 2 |
| | 404P541H42 CONNECTOR CLAMP, TACH | 5 | 1 | 2 |
| | 404P645H55 CONNECTOR | 2 | 0 | 1 |
| | 7307D80G05 RELAY ASSY, TYPE UT-273 (2 IN- | 1 | 0 | 1 |
| 84 | 404P480H25 CONTACTOR | 6 | 1 | 2 |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| | | | | |
|---|---|---|---|---|
| | 404P595H50 BREAKER | 3 | 1 | 2 |
| S5 | 1268C86G04 STARTER CORE | 2 | 0 | 0 |
| | 404P480H36 CONTACTOR INTERLOCK-PRC AUX CONT. | 1 | 0 | 0 |
| | 409P039H02 FUSE BLOCK PRC | 6 | 1 | 2 |
| | 4234B87H01 CURRENT ADJUSTING BOLT MOL RL | 4 | 1 | 1 |
| | 7307D80G04 MOL RELAY TYPE 223 TMAM CAR ONLY | 0 | 0 | 1 |
| S6 | 179C749G01 COIL 120 VAC CONTACT, PRC | 4 | 0 | 0 |
| TI | 4567B03H03 CAPACITOR I UF,660 VAC | 12 | 0 | 0 |
| | 8587C72G01 RESISTORS FOR 75W THYR. | 8 | 0 | 0 |
| | 8587C72G02 RESISTOR FOR 75W THYR. | 12 | 4 | 8 |
| T2 | 2560A90H04 L1GHTINING ARRESTOR | 17 | 0 | 2 |
| | 3965C22H12 DYNAM1C BRAKING FUSE 300A 600V | 2 | 0 | 0 |
| | 404P115H19 DIODE, SPECIAL BOA, 300V,REC | 2 | 0 | 0 |
| | 404P427H19 FUSE 8 AMPS/600 VOLTS | 3 | 0 | 5 |
| | 404P594t-114 VARISTOR 45 VOLTS DC | 3 | 0 | 0 |
| | 404P594H26 VARISTOR .45 WATTS 1000 A | 0 | 0 | 0 |
| | 404P695H15 RED LENS | 7 | 0 | 0 |
| | 404P695H16 WHITE LENS | 7 | 0 | .0 |
| | 404P709H02 HANDSET CRADLE | 1 | 0 | 0 |
| | 404P762H02 JOINT COMPOUND | 3 | 1 | 3 |
| | 404P683H08 THYRISTOR 200 VI7OA 2N4362 BATT. CHARGER | 4 | 1 | 2 |
| | 577B060H1 0 DIODE | 11 | 2 | 5 |
| | 577B060H11 DIODE | 11 | 2 | 5 |
| | 577B061H14 THYRISTOR | 4 | 3 | 3 |
| | 577B061H17 SILICON CONTROLLED RECTIFIER | 10 | 4 | 2 |
| | 577B061H18 SILICON CONTROLLED RECTIFIER | 5 | 4 | 2 |
| T4 | 404P427H18 FUSE 3A 300V | 6 | 0 | 0 |
| | 404P427H20 FUSE | 15 | 0 | 0 |
| | 404P427H21 FUSE 3A 600V | 6 | 0 | 0 |
| | 404P427H23 FUSE 6A 600V | 11 | 0 | 0 |
| | 404P427H24 FUSE 15 AMP | 16 | 0 | 0 |
| | 404P427H25 FUSE 30A 600V | 16 | 0 | 0 |
| | 404P554H1 9 FUSE | 3 | 0 | 0 |
| | 404P824H08 FUSE HOLDER | 5 | 0 | 0 |
| T5 | 404P539H02 FUSE HOWER | 0 | 0 | 0 |
| | 404P554H27 FUSE 600V 800A TYPE 4 | 1 | 0 | 0 |
| | 404P624H12 FUSE HOLDER 30 A 600 V | 6 | 0 | 0 |
| | 409P024H05 CONTACT | 12 | 0 | 0 |
| | 409P082H01 HEATER(FOR AIR COMPRESSOR CONTACTOR) | 6 | 5 | 20 |
| T6 | 2124F99H03 DC INVERTER (VEHICLE EMER. LIGHTS) | 2 | 2 | 3 |
| | 404P685H03 LAMP 120 VOLT | 30 | 25 | 25 |
| | 404P695H17 LAMP 30 VOLT 60 WATT | 38 | 25 | 25 |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| | | | | |
|---|---|---|---|---|
| UI | 404P354H02 LAMP 28 VOLTS 50 WATTS | 11 | 0 | 0 |
| U2 | 404P354H03 MARKER LIGHT | 18 | 0 | 0 |
| | 404P360H14 BULB | 18 | o | 0 |
| | 404P695H08 PILOT LAMP BASE | 0 | 0 | 0 |
| | *1/4"* PNEUMATIC | | | |
| AC | TORCH, OXY-ACE W/TANKS | M | DRILL | |
| | 404P888H02 LIGHT MARKER | 9 | 0 | 0 |
| U3 | 404P331H02 SWITCH MATRIX I X 1 | 12 | 0 | 0 |
| | 404P332H02 INDICATOR | 6 | 0 | 0 |
| | 404P332H03 SWITCH, MOMENTARY ACTION | 6 | 0 | 0 |
| | 404P332H04 SWITCH 4-POLE ALTERNATE A | 2 | 0 | 0 |
| | 404P332H05 SWITCH | 4 | 0 | 0 |
| | 404P334H02 LENS ASSEMBLY | 0 | 0 | 0 |
| | 404P334H03 LENS | 0 | 0 | 0 |
| | 404P895H09 LED DISPLAY | 7 | 0 | 0 |
| U4 | 404P332H01 CAP DUMMY BLACK | 23 | 0 | 0 |
| | 404P595H46 BREAKER | 2 | 0 | 0 |
| | 4724A57H02 RELAY D.C. VOLT 12 V | 5 | 2 | 4 |
| | 4724A57H03 RELAY D.C. VOLT 24 V | 4 | 4 | 4 |
| | 4768A05H10 CRITICAL RELAY 4 FORM C 12V DC | 3 | 2 | 4 |
| | 404P443H41 RELAY | 4 | 0 | 0 |
| | 404P443H45 RELAY | 3 | 0 | 0 |
| | 404P595H39 BREAKER | 6 | 0 | 0 |
| | 2977A69H04 SPRING | 5 | 0 | 0 |
| | 3930A81 HOI SOCKET | 5 | 0 | 0 |
| | 3930A81H02 RET SPRING | 12 | 0 | 0 |
| | 404P365H14 NON-VITAL RELAY 24V DC 300 OHMS 8 CONTAC | 98 | 0 | 0 |
| | 404P428H01 RELAY | 5 | 0 | 0 |
| ri | 404P365H13 TELEPHONE RELAY 24 VOLT | 157 | 10 | 10 |
| | 3927A62H05 RESISTOR 2K .75W +*1*- 10 | 13 | 2 | 2 |
| | 404P365H05 RELAY | 10 | 3 | 4 |
| | 404P365H15 TELEPHONE RELAY 12 VOLT | .9 | 5 | 10 |
| | 404P365H16 TELEPHONE RELAY 12 VOLT | 4 | '5 | 10 |
| | 404P365H17 SOCKET 28 CONTACT | 2 | 3 | 5 |
| | 404P365H19 RELAY TELEPHONE 24V | 0 | 5 | 10 |
| | 404P732H01 ANTENNA | 1 | 0 | 1 |
| V4 | 1021 J82H05 RELAY | 3 | 3 | 3 |
| | 2970A71H11 RELAY CONTROL, 14 POLE | 1 | 0 | 1 |
| | 404P443H42 RELAY | 4 | 3 | 6 |
| | 409P077H04 THYRECTOR DIODE ASSY (VEH & WAY MCR ONLY | 3 | 4 | 11 |
| VS | 404P595H36 RELAY - | 1 | 0 | 1 |
| | 4166A87G01 RELAY FAIL SAFE | 6 | 1 | 1 |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| | | | | |
|---|---|---|---|---|
| V6 | 2535B39H02 RELAY CONTAC@ | 3 | 1 | 1 |
| | 2535B86H01 RELAY (W) TYPE BFD (SPEC | 4 | 1 | 2 |
| | 404P630H1 I RELAY TYPE SG | 3 | 1 | |
| | 404P630H12 RELAY | 2 | 1 | 1 |
| WI | 1253A83H02 RELAY 12V, 200 OHMS 2A | 26 | 20 | 25 |
| | 1253A83H13 RELAY 24V, 800 OHMS 5A | 16 | 20 | 25 |
| | 404P443H09 RELAY | 4 | 0 | 0 |
| | 404P595H38 BREAKER | 1 | 0 | 0 |
| W2 | I D47865G01 RESISTOR TUBE ASSY | 1 | 0 | 1 |
| W3 | 2535B86H02 RELAY (W) TYPE BFD | 5 | 0 | 0 |
| | 404P630H02 RELAY 24 VOLT | 1 | 0 | 0 |
| | 404P630H07 DBR RELAY | 5 | 2 | 5 |
| W4 | 404P595H83 SPRING CHARGING MOTOR KIT | 2 | 0 | 0 |
| | 8620A93H01 CONTACT BLOCK - SECONDARY DISC | 5 | 0 | 0 |
| | 8620A93H05 SWITCH- MOTOR CUTOFF | 2 | 2 | 4 |
| W5 | 652A207H18 RESISTOR 3.0 OHMS 2 | 7 | 0 | 0 |
| W6 | 3909C72G04 ACCELEROMETER SWITCH | 3 | 1 | 2 |
| | 404P391H09 OUTLET RECEPT VECH | 1 | 0 | 0 |
| | 4675C54G01 CONTROL SW | 1 | 0 | 1 |
| W7 | 404P335H36 LOBBY SENSOR SW ASSY. | 6 | 0 | 0 |
| | 2561 A35H03 HOLSTER PANEL , KNOB | 0 | 0 | 0 |
| | 4675C40G01 SWITCH ASSEMBLY, OVERRIDE SW. | 7 | 0 | 0 |
| | 4675C40G02 SWITCH ASSEMBLY, STOP EMG. SW | . 5 | 2 | 3 |
| | 4675C40G03 SWITCH ASSEMBLY | 3 | 2 | 3 |
| | 467 5C40G04 SWITCH ASSEMBLY | 5 | 2 | 3 |
| | 4675C40G05 SWITCH ASSEMBLY, ENABLE SW. | 5 | 2 | 3 |
| | 4675C40G06 SWITCH ASSEMBLY, HOSTLE PANN DOOR | 5 | 0 | 0 |
| X2 | 7081D46G02 SPEED POTENTIOMETER ASSEMBLY | 12 | 3 | 6 |
| | 8623A03H03 SW. PIN 18-16 AWG TYPE III | 0 | 100 | 100 |
| | 5623A03H06 STD. SOCKET 18-16 AWG TYPE III | 0 | 100 | 100 |
| | 8837D17G01 TRANSIT EXPR@ | 4 | 0 | 0 |
| | 8837D17G03 TRANSIT EXPR~ | 2 | 0 | 0 |
| X3 | 2559A86H05 SONA ALERT SES | I | I | I |
| | 2560A78H05 INHIBIT SWTCH | 2 | 0 | 0 |
| | 404P1 11MM BATTERY CHARGER CUP 52000 MFD -30 WVDC | 12. | 0 | 0 |
| | 8837D17G02. MOUNTING BRACKET, SPEAKER, AMP | 2 | 1 | 1 |
| X4 | 227D928H01 RESISTOR GATE PANEL ASSY (THYRISTOR) | 10 | 2 | 2 |
| | 404P366H01 SOLDER TERMINAL | 30 | 0 | 0 |
| | 404P452H20 TERMINAL BLOCK | 5 | 2 | 2 |
| | 404P495H04 TERMINAL STRIP | I | I | I |
| | 409P144H46 TERMINAL BLOCK 5 POS 20 AMPS | 0 | 1 | 2 |
| | 4725A92H01 CONTACT - FLAG RELAY WIRE SIZE | 45 | 0 | 0 |
| | 652A673H01 CURRENT TRANSDUCTOR 500/iDA | 2 | 1 | 1 |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| | | | | |
|---|---|---|---|---|
| | 8623A03H02 STD. PIN 24-20 AWG TYPE ill | 100 | 50 | 100 |
| | 8623A03H05 STO. SOCKET 24-20 AWG TYPE III | 400 | 100 | 100 |
| X5 | 3D15257G01 GATE CONTROL TRANSFORMER | 3 | 0 | 0 |
| | 404P496H01 COIL | 5 | 1 | 2 |
| | 4768A30H01 TRANSFORMER | 4 | 1 | 1 |
| X6 | 4768A05H1 I CRITICAL RELAY 4 FORM C 24V | 25 | 2 | 4 |
| | 4768A30H01 TRANSFORMER | 2 | 0 | 0 |
| YB | 404P374H02 CONNECTOR | 0 | 0 | 0 |
| ZI | 404P541H64 PROGRAM STOP INFO ANT CONN | I | 1 | 1 |
| Z7 | 70210BK612 NUT .190-32 HEX STL | 1 | 20 | 120 |

## TOOLS INVENTORY LIST

| PARTIAL DESCRIPTION | | TYP | MODEL # | SERIAL/TAG # | OWNER | QTY | COST | TOTAL | DATE |
|---|---|---|---|---|---|---|---|---|---|
| 2 CH.THERMAL ARRAYCORDER | GRAPHTEC | C | 7400 | 8058333/P0685 | SITE | 1 | 0 | 0 | 2/9/00 |
| MFG: SHARP | SHARP CAR | F | LINYTRON-PLUS | SKC-1910A | SITE | 1 | 0 | 0 | 9/4/95 |
| MFG: GRAPHTEC | GRAPHTEC | C | WR3320 | 91240003 | SITE | 1 | 0 | 0 | 2/9/00 |
| AIR PRESSURE GAUGE | | E | YA258 | 0-200 PSI | SITE | 1 | 0 | 0 | 10/16/9 |
| AMPTECTOR | WESTINGHOUSE | E | S140D481G | 2/204 | SITE | 1 | 0 | 0 | 9/1/95 |
| BAND SAW | SEARS/CRAFTMAN | T | 11324350 | 476 | SITE | 1 | 0 | 0 | 9/4/95 |
| BATTERY CHARGER, 12VDC | DAYTON | T | 3Z351C | CH147 | SITE | 1 | 0 | 0 | 9/4/95 |
| BATTERY DRILL | | T | HD1201 | 1984849824 | SITE | 1 | 0 | 0 | 10/16/9 |
| BATTERY LOAD TESTER | KALE | E | 4260 | 80400/205 | SITE | 1 | 0 | 0 | 9/2/95 |
| BENCH GRINDER | DAYTON | T | 4Z909B | 9301 | SITE | 1 | 0 | 0 | 9/4/95 |
| CABINET, FILES | HON | F | 4 DRAWERS | COLOR: BK | SITE | 1 | 0 | 0 | 9/4/95 |
| CABINET, FILES | STEELCASE | F | 5 DRAWERS | COLOR; BK | SITE | 1 | 0 | 0 | 9/4/95 |
| CABINET, STEEL | HALLOWELL | F | 7'X 3.5', 2 LEAF | COLOR: GRY | SITE | 1 | 0 | 0 | 9/4/95 |
| CABINET, STEEL | HALLOWELL | F | 7'X3.5', 2 LEAF | COLOR: GRY. | SITE | 1 | 0 | 0 | 9/4/95 |
| CABINET, STEEL | | F | 6'X 3', 2 LEAF | COLOR: BK\BR | SITE | 1 | 0 | 0 | 9/4/95 |
| CABINET, STEEL | HALLOWELL | F | 7'X3.5',2 LEAF | COLOR GRY/206 | SITE | 1 | 0 | 0 | 9/2/95 |
| CALIPER, DIGITAL | BROWN & SHARPE | E | 599-571-3 | M5499 | SITE | 1 | 0 | 0 | 9/4/95 |
| CAPACITANCE METER | B & K PRECISION | E | 820 | 9038626/207 | SITE | 1 | 0 | 0 | 9/2/95 |
| CHARGE & TEST MONIFOLD | RITCHIE | T | YELLOW JACKET | 8-Nov | SITE | 1 | 0 | 0 | 9/4/95 |
| CHARGE & TEST MONIFOLD | UNIWELD | T | QAC | C38 | SITE | 1 | 0 | 0 | 9/4/95 |
| CHARGING SCALE, ELECTRONIC | ROBINAIR | E | 14945 | N\A.,., | SITE | 1 | 0 | 0 | 9/4/95 |
| CHOP SAW | | T | 2414B | 54375 | SITE | 1 | 0 | 0 | 10/16/9 |
| CLEANING TANK | ZEP | T | N/A | .N\A | SITE | 1 | 0 | 0 | 9/4/95 |
| COUNT/TIMER | FLUKE | E | 1952B | 0164C/211 | SITE | 1 | 0 | 0 | 9/2/95 |
| CRIMPER, HAND | AMP | T | 16-14 W FLAG | M7330/210 | SITE | 1 | 0 | 0 | 9/2/95 |
| CRIMPER, HAND | AMP | T | 169400 | .N\A. | SITE | 1 | 0 | 0 | 9/4/95 |
| CRIMPER, HAND | AMP | T | 169400 | F5493 | SITE | 1 | 0 | 0 | 9/4/95 |
| CRIMPER, HAND | AMP | T | 600849 | F3152 | SITE | 1 | 0 | 0 | 9/4/95 |
| CRIMPER, HYDRAULIC, HAND | AMP | C | N/A | 59973-1 | SITE | 1 | 0 | 0 | 2/9/00 |
| CURRENT GUN | F.W BELL | E | CG103A | 8312/212 | SITE | 1 | 0 | 0 | 9/2/95 |



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# SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| CURRENT GUN | F.W BELL | E | CG100A | N\A/213 | SITE | 1 | 0 | 0 | 9/2/95 |
| CURRENT SHUNT | BIDDLE | E | 72-920 | 49021/214 | SITE | 1 | 0 | 0 | 9/2/95 |
| DECADE CAPACITOR | CORNELL | E | CDA2 | 4/215 | SITE | 1 | 0 | 0 | 9/2/95 |
| DECADE CAPACITOR | CORNELL | E | CDB3 | 4/216 | SITE | 1 | 0 | 0 | 9/2/95 |
| DECADE RESISTOR | HEATH | E | IN3117 | N\A/217 | SITE | 1 | 0 | 0 | 9/2/95 |
| DECADE RESISTOR | HEATH | E | IN3117 | N\A/218 | SITE | 1 | 0 | 0 | 9/2/95 |
| DEPTH MICROMETERS | | T | 0"-6" | 0"-6" | SITE | 1 | 0 | 0 | 10/16/9 |
| DRILL PRESS, 5 SPEED | OHIO FORG | T | 919-020 | 275406 | SITE | 1 | 0 | 0 | 9/4/95 |
| DRILL PRESS, W/PEDESTAL | SEARS/CRAFTMAN | T | 11321371 | 4475 | SITE | 1 | 0 | 0 | 9/4/95 |
| DRIVE STORAGE | DIGITAL | C | N/A | N1709AF612/A6523 | SITE | 1 | 0 | 0 | 2/9/00 |
| ELECTRIC WELDER | SEARS/CRAFTMAN | T | 30-230 AMP | N\A, | SITE | 1 | 0 | 0 | 9/4/95 |
| FAN | DAYTON | T | 3F301A | 15038001 | SITE | 1 | 0 | 0 | 2/9/00 |
| FAN, FLOOR | EMRSON | T | CSG-303-4 | ,N\A. | SITE | 1 | 0 | 0 | 9/4/95 |
| MFG: PANASONIC | PANASONIC | F | PANAFAX UF-585 | 1990400947 | SITE | 1 | 0 | 0 | 2/9/00 |
| FORKLIFT, AUTOPROP.BAT | CROWN | T | 2000 LB | 1A179831 | SITE | 1 | 0 | 0 | 2/9/00 |
| FORKLIFT, BATTERY POWERED | CROWN | T | 15BS/1500 | 25855 | SITE | 1 | 0 | 0 | 9/4/95 |
| HEAT GUN | SNAPON | E | ET1600T/1 | 9246-7/221 | SITE | 1 | 0 | 0 | 9/2/95 |
| HEAT GUN | UNGAR | E | 6970 | N\A/220 | SITE | 1 | 0 | 0 | 9/2/95 |
| HIGH FREQUENCY VCG GENERATOR | | E | 142 | 256717/222 | SITE | 1 | 0 | 0 | 9/3/95 |
| IC & COMPONENT TESTER | BECKMAN | E | SCOPEMATE 2 | 92031812/223 | SITE | 1 | 0 | 0 | 9/3/95 |
| IMPEDANCE BRIDGE | HEATH | E | IB3128 | 2206-6/224 | SITE | 1 | 0 | 0 | 9/3/95 |
| INFRARED HEAT SENSOR | MINOLTA | E | CYC/COM.3 | 24003132/225 | SITE | 1 | 0 | 0 | 9/3/95 |
| JACK, FLOOR LIFT, HYDRAULIC, | | T | LRJ3C | N\A... | SITE | 1 | 0 | 0 | 9/4/95 |
| JACK, FLOOR W/BASE, HYDRAULIC | | T | 10TON/RC1010 | N\A., | SITE | 2 | 0 | 0 | 9/4/95 |
| JACK, FLOOR, TRANSM.,HYDR., | | T | 67552 | N\A,, | SITE | 1 | 0 | 0 | 9/4/95 |
| LIFT TABLE, HYDRAULIC, 230 VAC | | T | 3000/LSH 3-96 | A711854 | SITE | 1 | 0 | 0 | 2/26/97 |
| LOW FREQUENCY FILTER | L.T KLAUD | E | DWS | 102/226 | SITE | 1 | 0 | 0 | 9/3/95 |
| MEGGER | BIDDLE | E | 21170 | 12682/227 | SITE | 1 | 0 | 0 | 9/3/95 |
| METAL-CUTTING BAND SAW | DAYTON | T | 3Z360G | 988233 | SITE | 1 | 0 | 0 | 9/4/95 |
| MICROMETER, DIAL | NSK | E | N\A | N\A.., | SITE | 1 | 0 | 0 | 9/4/95 |
| MOTOR & PHASE ROTATION TESTER | | E | 80060 | 5087/228 | SITE | 1 | 0 | 0 | 9/3/95 |
| MOTOR TESTER | SITE ELECT. | E | N/A | N\A.,. | SITE | 1 | 0 | 0 | 9/4/95 |
| MULTIMETER, ANALOG | SIMPSON | E | 260 SERIES 8P | N\A/201 | SITE | 1 | 0 | 0 | 9/3/95 |
| MULTIMETER, DIGITAL | FLUKE | E | 8062A | 7030092 | SITE | 1 | 0 | 0 | 9/3/95 |
| MULTIMETER, DIGITAL | FLUKE | E | 83 | 51000972/229 | SITE | 1 | 0 | 0 | 9/3/95 |
| OHMMETER, DIGITAL, LOW RESIST. | | E | 247000 | 12566/233 | SITE | 1 | 0 | 0 | 9/3/95 |
| OSCILLOSCOPE CART | TEKTRONIX | E | S.MO.200C | N\A/237 | SITE | 1 | 0 | 0 | 9/3/95 |
| OSCILLOSCOPE, PORTABLE | TEKTRONIX | E | 2201 | H702243 | SITE | 1 | 0 | 0 | 9/3/95 |
| OSCILLOSCOPE, PORTABLE | TEKTRONIX | E | TDS1002 | C016451 | SITE | 1 | 0 | 0 | 9/3/95 |
| POWER SEMICONDUCTOR TESTER | | E | PST-2000 | 20529407/239 | SITE | 1 | 0 | 0 | 9/3/95 |
| POWER SUPPLY | POWERSTAT | T | 116B | 22/240 | SITE | 1 | 0 | 0 | 9/3/95 |
| POWER SUPPLY, REGULATED | LAMBDA | T | LP-521-FM | B93415/242 | SITE | 1 | 0 | 0 | 9/4/95 |

# SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| POWER SUPPLY, REGULATED | LAMBDA | T | LP-522-FM | B93494 | SITE | 1 | 0 | 0 | 9/4/95 |
| POWER SUPPLY, REGULATED | TOOD PRODUCTS | T | QAD15-2.5 | 900062/241 | SITE | 1 | 0 | 0 | 9/4/95 |
| PRESS, HYDRAULIC | ENERPAC | T | 10TON/C102 | C0992C | SITE | 1 | 0 | 0 | 9/4/95 |
| PUMP, AIR/HYDRAULIC | POWER TEA | T | PA4 | N\A,,. | SITE | 1 | 0 | 0 | 9/4/95 |
| PUMP, AIR/HYDRAULIC | POWER TEA | T | PA6 | N\A,,, | SITE | 1 | 0 | 0 | 9/4/95 |
| PUMP, OIL TANK, HAND | BLACMER | T | HAND | N\A.,, | SITE | 1 | 0 | 0 | 9/4/95 |
| PUMP, VACUUM RECYCLING REFRIG. | ROBINAIR | T | 15101-A | 57453 | SITE | 1 | 0 | 0 | 9/4/95 |
| PUMP, VACUUM | THERMAL E | T | 1817/R-21 | N\A..,, | SITE | 1 | 0 | 0 | 9/4/95 |
| PUMP, VACUUM | RITCHIE | T | 934660 | E150747 | SITE | 1 | 0 | 0 | 9/4/95 |
| REFRIGERATOR | AVANTI | F | 11009RWT | 7400 | SITE | 1 | 0 | 0 | 9/4/95 |
| REFRIGERATOR | GENERAL ELECTRIC | F | SC4SSB | RN081786 | SITE | 1 | 0 | 0 | 9/4/95 |
| SHELF CAROUSEL | SARATOGA | F | GBH-12-6/16/3 | 3065151911 | SITE | 1 | 0 | 0 | 9/4/95 |
| SINE-SQUARE AUDIO GENERATOR | | E | SG-5218 | 46083/245 | SITE | 1 | 0 | 0 | 9/4/95 |
| SINE-SQUARE AUDIO GENERATOR | | E | SG-5218 | 43782/244 | SITE | 1 | 0 | 0 | 9/4/95 |
| SOLDER STATION | WELLER | T | TC202 | N\A/247 | SITE | 1 | 0 | 0 | 9/4/95 |
| SOLDER STATION | WELLER | T | EC3001 | N\A/246 | SITE | 1 | 0 | 0 | 9/4/95 |
| START/STOP MODULE TESTER | WESTINGHOUSE | E | N\A | N\A/248 | SITE | 1 | 0 | 0 | 9/4/95 |
| THERMOMETER, DIGITAL, DUAL | HITECH | E | DT280 | 92672 | SITE | 1 | 0 | 0 | 9/4/95 |
| THICKNESS GAUGE | PAUL N.G | E | N/A | N\A/249 | SITE | 1 | 0 | 0 | 9/4/95 |
| TIC TRACER | TIF | E | 300CC | 46287/250 | SITE | 1 | 0 | 0 | 9/4/95 |
| TIRE LOW PRES.SENSOR TESTER | TIRE T | E | 24VDC | 6017 | SITE | 1 | 0 | 0 | 9/4/95 |
| TOOL BOX | SEARS/CRAFTMAN | T | 7 DRAWERS | N\A.,,, | SITE | 1 | 0 | 0 | 9/4/95 |
| TOOL BOX | SEARS/CRAFTMAN | T | 10 DRAWERS | N\A | SITE | 1 | 0 | 0 | 9/4/95 |
| TORCH, OXY-ACE W/TANKS | PRESTO-LI | T | N/A | N/A.,., | SITE | 1 | 0 | 0 | 9/4/95 |
| TORQUE WRENCH | PROTO | T | 6014 | F3158 | SITE | 1 | 0 | 0 | 9/4/95 |
| TORQUE WRENCH | PROTO | T | 6006A | 73157 | SITE | 1 | 0 | 0 | 9/4/95 |
| TORQUE WRENCH | PROTO | T | 6064-5 | 901002 | SITE | 1 | 0 | 0 | 9/4/95 |
| TORQUE WRENCH | PROTO | T | 6064-A | F3156 | SITE | 1 | 0 | 0 | 9/4/95 |
| TORQUE WRENCH | SNAPON | T | N\A | 6171 | SITE | 1 | 0 | 0 | 9/4/95 |
| TORQUE WRENCH | PROTO | T | 6006-4 | N\A,.. | SITE | 1 | 0 | 0 | 9/4/95 |
| TORQUE WRENCH | PROTO | T | 6020-1 | 73659 | SITE | 1 | 0 | 0 | 9/4/95 |
| TORQUE WRENCH | SNAPON | T | QJR-3200B | E25885 | SITE | 1 | 0 | 0 | 9/4/95 |
| TORQUE WRENCH | SNAPON | T | QJR-4600A | B24849 | SITE | 1 | 0 | 0 | 9/4/95 |
| TORQUEMETER | SNAPON | T | N\A | F3151 | SITE | 1 | 0 | 0 | 9/4/95 |
| TRANSISTOR TESTER | HEATH | E | IT3120 | 2206-5 | SITE | 1 | 0 | 0 | 9/4/95 |
| VACUUM CLEANER, WET/DRY | DAYTON | F | 3Z707B | N\A,,,, | SITE | 1 | 0 | 0 | 9/4/95 |
| VACUUM METER, ELECTRONIC | RITCHIE | E | 69040 | 5015570295 | SITE | 1 | 0 | 0 | 9/4/95 |
| VACUUM METER, ELECTRONIC | THERMAL E | E | 1457 | H3294 | SITE | 1 | 0 | 0 | 9/4/95 |
| VOLT/AMMETER CLAMP-ON | AMPROBE | E | RS# | 7321096 | SITE | 1 | 0 | 0 | 9/4/95 |
| VUCCUM | | T | 113 | 97295V5102 | SITE | 1 | 0 | 0 | 10/16/9 |
| WELDING GUN | WELLER | T | 8200N | N/A | SITE | 1 | 0 | 0 | 9/4/95 |
| WORK BENCH W/DRAWERS | EQUIPTO | F | N/A | N\A/202 | SITE | 1 | 0 | 0 | 9/4/95 |

| Qty | ITEM | DESCRIPTION | MANUFACTURER |
|---|---|---|---|
| 1 | Adapter | 1/2" to 3/4" | Snap-On |



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## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| | | | |
|---|---|---|---|
| 1 | Adapter | 1/2" to 3/8" | Apex |
| 1 | Adapter | 1/2" to 3/8" | Williams |
| 1 | Adapter | 1/4" to 3/8" | Proto |
| 1 | Adapter | 3/4" - 1" p/n IM72 | Snap-On |
| 1 | Adapter | 3/4" - 1/2" p/n 6-48A | Williams |
| 1 | Adapter | 3/4" - 1/2" p/n GLA62 | Snap-On |
| 1 | Adapter | 3/4" - 1/2" p/n IL72 | Williams |
| 1 | Adapter | 3/4" - 1/2" p/n LA362 | Snap-On |
| 1 | Adapter | 3/4" - 1/2" p/n S453-A | Proto |
| 1 | Adapter | 3/4" to 1" | Snap-On |
| 1 | Adapter | 3/8" to 1/2" | Snap-On |
| 1 | Adapter | 3/8" to 1/4" | Proto |
| 1 | Adapter | 3/8" to 1/4" | Snap-On |
| 1 | Adjustable Pliers | 10" | Craftsman |
| 1 | Adjustable Pliers | 10" | no brand |
| 1 | Adjustable Pliers | 12" | Blue Point |
| 1 | Adjustable Pliers | 9" | Snap-On |
| 1 | Adjustable Wrench | #9 - I" opening | Craftsman |
| 1 | Adjustable Wrench | 10" | Blue Point |
| 1 | Adjustable Wrench | 12" | J. H. Williams |
| 1 | Adjustable Wrench | 12" | Crescent |
| 1 | Adjustable Wrench | 8" | Craftsman |
| 1 | Adjustable Wrench | 8" | no brand |
| 1 | Adjustable Wrench | 8" | Craftsman |
| 1 | Adjustable Wrench | 8" | Craftsman |
| 1 | Bearing Poper Fork | | S & G |
| 1 | Box Wrench | 1 1/2" x 1 7/16" p/n 43936 | Craftsman |
| 1 | Box Wrench | 1 1/4" - 12pts. | Snap-On |
| 1 | Box Wrench | 1 1/6" x 1 1/4" p/n 43934 | Craftsman |
| 1 | Box Wrench | 1 1/8" - 12pts. | Snap-On |
| 1 | Box Wrench | 1 5/16" - 12pts. | Snap-On |
| 1 | Box Wrench | 1/2" - 5/8" 12pts. | Snap-On |
| 1 | Box Wrench | 1/2" - 9/16" | Snap-On |
| 1 | Box Wrench | 1/4" - 5/16" | Snap-On |
| 1 | Box Wrench | 11/16" - 13/16" | Craftsman |
| 1 | Box Wrench | 15/16" - 12pts. | Snap-On |
| 1 | Box Wrench | 15/16" p/n 43929 | Craftsman |
| 1 | Box Wrench | 19/32" - 25/32" | Snap-On |
| 1 | Box Wrench | 3/8" - 7/16" 12pts | Snap-On |
| 1 | Box Wrench | 5/16" x 1/4" | Snap-On |
| 1 | Box Wrench | 5/8" - 12pts | Snap-On |
| 1 | Box Wrench | 7/16" - 1/2" | Snap-On |
| 1 | Box Wrench | 7/16" - 3/8" | Snap-On |
| 1 | Breaker Bar | 1/4" - 6" | Snap-On |
| 1 | Breaker Bar | 3/4" p/n 4443-B | Craftsman |
| 2 | Breaker Bars | 1/2" - 16" | Snap-On |
| 4 | Cable Cutter Pliers | 9" | Klein |
| 1 | Center Punch | 3/32" | Snap-On |
| 1 | Chisel Set | 1/4" | Snap-On |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| | | | |
|---|---|---|---|
| 1 | Chisel Set | 7/8" to 3/8" | Enderes |
| 1 | Chisel | 3/8" x 5" | Craftsman |
| 1 | Combination | 1/2" | Alltrade |
| 2 | Combination | 1/2" | Snap-On |
| 1 | Combination | 1/2" | Craftsman |
| 1 | Combination | 1/2" | Husky |
| 1 | Combination | 1/2" | Mack |
| 1 | Combination | 1/4" | Stanley |
| 1 | Combination | 11/16" | Mack |
| 1 | Combination | 11/16" | Craftsman |
| 1 | Combination | 11/32" | Craftsman |
| 1 | Combination | 11/32" | Craftsman |
| 1 | Combination | 13/16" | Craftsman |
| 1 | Combination | 3/4" | Craftsman |
| 1 | Combination | 3/4" | Husky |
| 1 | Combination | 3/4" | Mack |
| 3 | Combination | 3/8" | Snap-On |
| 2 | Combination | 3/8" | Husky |
| 1 | Combination | 5/16" | Craftsman |
| 2 | Combination | 5/8" | Snap-On |
| 1 | Combination | 5/8" | Mack |
| 2 | Combination | 5/8" | Craftsman |
| 1 | Combination | 7/16" | Proto |
| 2 | Combination | 7/16" | Snap-On |
| 1 | Combination | 7/16" | Craftsman |
| 1 | Combination | 7/8" | Craftsman |
| 1 | Combination | 9/16" | Craftsman |
| 1 | Combination | 9/16" | Proto |
| 1 | Combination | 9/16" | Alltrade |
| 3 | Combination | 9/16" | Snap-On |
| 1 | Combination Wrench Set | 3/4" to 1/4" | Husky |
| 1 | Combination Wrench Set | 7/8" to 3/8" | Snap-On |
| 1 | Crimping tool | for Ph. Conn. RJ11,RJ12,RJ45 | Radio Shack |
| 1 | Crow Bar | p/n 6577 | Craftsman |
| 1 | Crow Foot Open | 1/2" - 1 1/16" | Snap-On |
| 1 | Crow Foot Open | 1/2" - 1 1/8" | Boney |
| 1 | Crow Foot Open | 1/2" - 1 1/8" | Snap-On |
| 1 | Crow Foot Open | 1/2" - 1 1/8" - 12 pts | Snap-On |
| 1 | Crow Foot Open | 1/2" - 1 11/16" | Snap-On |
| 1 | Crow Foot Open | 1/2" - 1 11/16" | Snap-On |
| 1 | Crow Foot Open | 1/2" - 1 3/4" | Snap-On |
| 1 | Crow Foot Open | 1/2" - 1 3/4" | Granco |
| 1 | Crow Foot Open | 1/2" - 1 5/16" | Snap-On |
| 1 | Crow Foot Open | 1/2" - 1 7/8" | Granco |
| 1 | Crow Foot Open | 1/2" - 2" | Granco |
| 1 | Crow Foot Open | 3/8" - 1/2" | Snap-On |
| 1 | Crow Foot Open | 3/8" - 7/16" | Snap-On |
| 1 | Cutter Pliers | 4 1/2" | Pros Kit |
| 1 | Cutter Pliers | 4 1/2" | Archer |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| | | | |
|---|---|---|---|
| 1 | Cutter Pliers | 6 1/2" | no brand |
| 1 | Cutter Pliers | 6 1/2" | Snap-On |
| 1 | Cutter Pliers | 6 1/2" | Craftsman |
| 1 | Cutter Pliers | 7" | Craftsman |
| 1 | Cutter Pliers | 7" | no brand |
| 7 | Cutter Pliers | 7" | Snap-On |
| 2 | De-soldering Pump | | Ungar |
| 1 | Electric Drill | 90 deg. Head | Makita |
| 1 | Electric Grinder | 5" disk | Craftsman |
| 2 | Extension | 1/2' - 3" | Craftsman |
| 1 | Extension | 1/2" - 10" | Snap-On |
| 1 | Extension | 1/2" - 12" | Snap-On |
| 1 | Extension | 1/2" - 5" | Craftsman |
| 1 | Extension | 1/2" - 5" | Snap-On |
| 1 | Extension | 1/2" - 6" | Craftsman |
| 1 | Extension | 1/4" - 1" | Craftsman |
| 1 | Extension | 1/4" - 3" | Husky |
| 1 | Extension | 1/4" - 4" | Snap-On |
| 1 | Extension | 1/4" - 4" | Snap-On |
| 1 | Extension | 1/4" - 6" | Craftsman |
| 1 | Extension | 3/4" - 1" | Snap-On |
| 1 | Extension | 3/4" - 6" | Snap-On |
| 1 | Extension | 3/4" p/n 4441-B | Craftsman |
| 1 | Extension | 3/4" p/n 4442-V | Craftsman |
| 1 | Extension | 3/4" p/n IM32A | Snap-On |
| 1 | Extension | 3/8" - 1 1/2" | Snap-On |
| 1 | Extension | 3/8" - 1" | Mack |
| 1 | Extension | 3/8" - 10" | Craftsman |
| 1 | Extension | 3/8" - 3" | Snap-On |
| 1 | Extension | 3/8" - 3" | Craftsman |
| 1 | Extension | 3/8" - 6" | Proto |
| 1 | Extension | 3/8" - 6" | Proto |
| 1 | Extension | 3/8" - 6" | Craftsman |
| 1 | Extension | 3/8" - 8" | Proto |
| 1 | Extension | 3/8" x 3" | Napa |
| 1 | Extension | 3/8" x 3" | Snap-On |
| 1 | Extension | 3/8" x 6" | Craftsman |
| 1 | File | 12" x 1" | Simons |
| 1 | File | 6" x 3/4" | Nicholson |
| 1 | File | 8" x 3/4" | Nicholson |
| 1 | File Set | | Snap-On |
| 1 | Flare Wrench 45deg. | 5/8" to 3/16" | Ritchie |
| 1 | Flare Wrench 45deg. | 5/8" to 3/16" | Craftsman |
| 1 | Flare Wrench 45deg. | 5/8" to 3/16" | Imperial |
| 1 | Flat Nose Pliers | 5" | Diamond |
| 2 | Fuse Puller | 0-100 AMP | no brand |
| 2 | Goose Neck Tip | 3 1/2" | Proto |
| 1 | Hammer | 12 oz | Stanley |
| 3 | Hammer | 12 oz | Stanley |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| | | | |
|---|---|---|---|
| 1 | Hammer | 12 oz | Craftsman |
| 3 | Hammer | 16 oz | Stanley |
| 1 | Hammer | 16 oz Carpenter | Craftsman |
| 1 | Hammer | 16 oz. - Carpenter | no brand |
| 1 | Hammer | 16 oz. - Mechanics | Vaugran |
| 2 | Hammer | 24 oz | Stanley |
| 1 | Hammer | 4 oz | Craftsman |
| 1 | Hammer | 4 oz. - Mechanics | Blue Point |
| 1 | Hammer | 8 oz | Craftsman |
| 1 | Hand Saw | | Craftsman |
| 1 | Hex Driver Set | 1/4" to 1/32" | Eklind |
| 1 | Hex Driver Set | from 3/8" to 0.028 | Snap-On |
| 1 | Hex Driver Set | from 3/8" to 1/16" | Eklind |
| 1 | Hex Drv. | 3/8" - 1/4" | Snap-On |
| 1 | Hex drv. Flexible Tip | 1/8" - 6" | Snap-On |
| 2 | Hex Drv. Set | 3/8" - 5/16" to 1/8" | Craftsman |
| 1 | Hex Wrench Set | 5/16" to 1/16" | no brand |
| 1 | Hole Punch | 1" | Creenle |
| 1 | IC Chips puller 32 gang | | OK Mach. Tool Corp. |
| 1 | Lock Ring Puller Pliers | 6" | Wilde |
| 1 | Lock Ring Puller Pliers | 9" | Craftsman |
| 1 | Magnet, Flexible Shaft | 18" | no brand |
| 1 | Magnet, Flexible Shaft | 18" | no brand |
| 1 | Magnifier | 2" x 4" | Baush & Lomb |
| 1 | Measuring Tape | 25' x 1" | Irwin |
| 1 | Measuring Tape | 100' x 3/8" | Craftsman |
| 1 | Multiplier | 3/4" p/n MFCI | no brand |
| 1 | Needle Nose Pliers | 4 1/2" | no brand |
| 2 | Needle Nose Pliers | 6 1/2" | no brand |
| 1 | Needle Nose Pliers | 7" | Snap-On |
| 1 | Needle Nose Pliers | 7" | no brand |
| 1 | Needle Nose Pliers | 7" | Snap-On |
| 3 | Needle Nose Pliers | 7" | Snap-On |
| 1 | Needle Nose Pliers | 8" | Snap-On |
| 1 | Nut Driver | 1/4" | Amp |
| 1 | Nut Driver | 1/4" | Craftsman |
| 1 | Nut Driver | 3/16" | no brand |
| 1 | Nut Driver | 3/16" | Amp |
| 1 | Nut Driver | 3/8" | Craftsman |
| 1 | Nut Driver | 5/16" | Snap-On |
| 1 | Nut Driver Set | 1/2" to 3/16" | Craftsman |
| 1 | Nut Driver Set | 5/8" to 1/8" | Snap-On |
| 1 | Nut Rivet Tool (swivel head) | | Powerfast |
| 1 | Offset Screwdriver Flat | 5" | Craftsman |
| 1 | Offset Screwdriver Phillips | 5" | Craftsman |
| 3 | Offset Screwdriver | 5" | Craftsman |
| 1 | Pin Connector Crimper | 6 1/2" | no brand |
| 1 | Pipe Bender | 1/2" O.D. | Ritchie |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| | | | |
|---|---|---|---|
| 1 | Pipe Bender | 1/4" O.D. | Imperial |
| 1 | Pipe Bender | 3/4" O.D. | Imperial |
| 1 | Pipe Cutter | 1/4" to 1 1/2" | Craftsman |
| 1 | Pipe Cutter | 1/8" to 1 1/4" O.D. | Craftsman |
| 1 | Pipe Cutter | 1/8" to 1 1/8" O.D. | Superior |
| 1 | Pipe Cutter | 1/8" to 1" O.D. | Imperial |
| 1 | Pipe Cutter | 3/8" to 1 1/2" O.D. | Imperial |
| 1 | Pipe Wrench | 10" | Ridgid |
| 1 | Pipe Wrench | 10" | Sears |
| 1 | Pipe Wrench | 12" | Ridgid |
| 1 | Pipe Wrench | 14" | Ridgid |
| 1 | Pipe Wrench | 14" | Craftsman |
| 1 | Pipe Wrench | 8" | Craftsman |
| 1 | Pipe Wrench | 8" | Sears |
| 1 | Pliers | 10" | Craftsman |
| 1 | Pliers | 7" | Craftsman |
| 1 | Pliers | 7" | Craftsman |
| 1 | Pliers | 8" | Craftsman |
| 1 | Pocket Knife | | Sears |
| 1 | Pocket Knife | 3" | Buck |
| 1 | Pray Bar | 6 1/2" | Craftsman |
| 2 | Press | 3" p/n 66723 | Craftsman |
| 1 | Press | 4" | Ching |
| 1 | Press | 5" p/n 66725 | Craftsman |
| 2 | Press | 6" p/n 406 | Die Craft |
| 2 | Press | 8" p/n 408 | Die Craft |
| 1 | Pulley & Gear Puller Set | | Snap-On |
| 1 | Punch | 1/16" x 4" | Proto |
| 1 | Punch | 1/8" x 5" | Craftsman |
| 2 | Punch | 1/8" x 5" | Craftsman |
| 2 | Punch | 5/32" | Snap-On |
| 2 | Punch | 3/32" | Proto |
| 1 | Punch Set | 1/2" to 3/16" | Craftsman |
| 1 | Punch Set | 1/4" to 3/32" | Snap-On |
| 1 | Punch Set | 3/32" to 5/16" | Proto |
| 1 | Punch Set | 3/8" to 1/2" | no brand |
| 1 | Punch Set | 5/16" to 3/16" | Westward |
| 1 | Punch Set | 5/32" to 3/16" | Craftsman |
| 1 | Ring Compressor | | Blue Point |
| 1 | Ring Installer | | Craftsman |
| 1 | Robogrip Pliers | 7" | Ridgid |
| 1 | Robogrip Pliers | 9" | Ridgid |
| 1 | Safety Wire Pliers | 11" | Snap-On |
| 2 | Safety Wire Pliers | 11" | Snap-On |
| 1 | Safety Wire Pliers | 8" | Snap-On |
| 1 | Scissors | 7" | no brand |
| 1 | Scrapper | 1 1/4" | Rex Chemical |
| 1 | Scrapper | 1 1/4" | no brand |
| 1 | Scrapper | 7/8" | Snap-On |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| | | | |
|---|---|---|---|
| 1 | Screwdriver Flat | 1 1/2" - #1 | Vessel |
| 1 | Screwdriver Flat | 1 1/2" - #2 | Stanley |
| 1 | Screwdriver Flat | 1 1/2" - #3 | Stanley |
| 1 | Screwdriver Flat | 1 1/2" - #3 | Snap-On |
| 1 | Screwdriver Flat | 2 1/2" | Ace |
| 1 | Screwdriver Flat | 2 1/2" - #2 | Stanley |
| 1 | Screwdriver Flat | 2 1/2" - #2 | Snap-On |
| 1 | Screwdriver Flat | 2" | Snap-On |
| 1 | Screwdriver Flat | 2" - #2 | Snap-On |
| 1 | Screwdriver Flat | 3 1/2" - #2 | Craftsman |
| 1 | Screwdriver Flat | 3 1/2" - #2 | Craftsman |
| 1 | Screwdriver Flat | 3 1/2" - #2 | Snap-On |
| 1 | Screwdriver Flat | 3 3/4" - #4 | Craftsman |
| 1 | Screwdriver Flat | 3" | Craftsman |
| 1 | Screwdriver Flat | 3" - #1 | Craftsman |
| 1 | Screwdriver Flat | 3" - #1 | General |
| 2 | Screwdriver Flat | 4" | Craftsman |
| 1 | Screwdriver Flat | 4" | Ridgid |
| 1 | Screwdriver Flat | 4" | Craftsman |
| 1 | Screwdriver Flat | 4" | Husky |
| 1 | Screwdriver Flat | 4" - #1 | Ideal |
| 1 | Screwdriver Flat | 4" - #1 | General |
| 1 | Screwdriver Flat | 4" - #3 | Craftsman |
| 1 | Screwdriver Flat | 5 1/2" - #3 | Craftsman |
| 1 | Screwdriver Flat | 5" | no brand |
| 1 | Screwdriver Flat | 5" - #1 | Universal |
| 1 | Screwdriver Flat | 6" | Snap-On |
| 1 | Screwdriver Flat | 6" - #1 | Snap-On |
| 1 | Screwdriver Flat | 6" - #1 | Ideal |
| 1 | Screwdriver Flat | 6" - #2 | Ridgid |
| 1 | Screwdriver Flat | 6" - #3 | Craftsman |
| 1 | Screwdriver Flat | 6" - #3 | Ridgid |
| 1 | Screwdriver Flat | 7 1/2" - #4 | Craftsman |
| 3 | Screwdriver Flat | 8" | Snap-On |
| 1 | Screwdriver Flat | 8" | Craftsman |
| 1 | Screwdriver Flat | 8" | Craftsman |
| 1 | Screwdriver Flat | 8" - #3 | Snap-On |
| 1 | Screwdriver Flat | 8" - #4 | Snap-On |
| 2 | Screwdriver Flat | 8" - #4 | Craftsman |
| 1 | Screwdriver Flat | 9" - #3 | Craftsman |
| 1 | Screwdriver Flat | screw holder 5 1/2" - #3 | Voco |
| 1 | Screwdriver Phillips | 1 1/2" - #3 | Snap-On |
| 3 | Screwdriver Phillips | 1" | Snap-On |
| 1 | Screwdriver Phillips | 2 1/2" | Craftsman |
| 1 | Screwdriver Phillips | 3" | Craftsman |
| 1 | Screwdriver Phillips | 3" | Snap-On |
| 1 | Screwdriver Phillips | 3" | Craftsman |
| 1 | Screwdriver Phillips | 3" Screw holder | Snap-On |
| 1 | Screwdriver Phillips | 4" | Stanley |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| | | | |
|---|---|---|---|
| 1 | Screwdriver Phillips | 4" - #3 | Snap-On |
| 1 | Screwdriver Phillips | 6" | Snap-On |
| 3 | Screwdriver Phillips | 6" | Craftsman |
| 1 | Screwdriver Phillips | 6" | Ridgid |
| 2 | Screwdriver Phillips | 6" | Snap-On |
| 2 | Screwdriver Phillips | 6" - #4 | Snap-On |
| 1 | Screwdriver Phillips | 8" | Craftsman |
| 3 | Screwdriver Phillips | 8" - #3 | Craftsman |
| 1 | Screwdriver Phillips | Bits set w/driver | General |
| 1 | Screwdriver Phillips | 1 1/2" - #3 | Snap-On |
| 1 | Screwdriver Phillips | 2 1/2" - #2 | Ridgid |
| 1 | Screwdriver Phillips | 2" - #1 | Snap-On |
| 1 | Screwdriver Phillips | 2" - #1 | Kcolite |
| 1 | Screwdriver Phillips | 2" - #2 | Snap-On |
| 1 | Screwdriver Phillips | 3 1/2" - #2 | Craftsman |
| 1 | Screwdriver Phillips | 3" - #1 | Snap-On |
| 1 | Screwdriver Phillips | 3" - #1 | Vessel |
| 2 | Screwdriver Phillips | 3" - #2 | Snap-On |
| 1 | Screwdriver Phillips | 4" - #1 | General |
| 1 | Screwdriver Phillips | 4" - #2 | Craftsman |
| 1 | Screwdriver Phillips | 4" - #2 | Craftsman |
| 1 | Screwdriver Phillips | 4" - #3 | Craftsman |
| 1 | Screwdriver Phillips | 6" - #3 | Craftsman |
| 1 | Screwdriver Phillips | 6" - #4 | Craftsman |
| 1 | Screwdriver Phillips | 6" - #4 | Snap-On |
| 1 | Seal Puller | | Snap-On |
| 1 | Set of Crow Foot Wrench Open | 3/8" - from 1" to 3/8" in 1/16" incr. | Snap-On |
| 1 | Set of Ring Puller | | no brand |
| 1 | Sheet Metal Scissor | 8" | Sears |
| 1 | Sheet Metal Scissors | 7" | Snap-On |
| 1 | Snap Ring Pliers | 7 1/2" | Blue Point |
| 1 | Snap Ring Pliers | 9" | Black Hawk |
| 2 | Snap Ring Pliers | 9" | Proto |
| 1 | Socket | 1/2" - 1 1/16" 12pts long | Craftsman |
| 1 | Socket | 1/2" - 1 1/16" 12pts. | Craftsman |
| 1 | Socket | 1/2" - 1 1/16" 6pts. | Mack |
| 1 | Socket | 1/2" - 1 1/16" 6pts. long | Mack |
| 1 | Socket | 1/2" - 1 1/4" 12pts. | Craftsman |
| 1 | Socket | 1/2" - 1 1/4" 6pts long | Mack |
| 1 | Socket | 1/2" - 1 1/4" 6pts. | Mack |
| 1 | Socket | 1/2" - 1 1/8" 12pts long | Craftsman |
| 1 | Socket | 1/2" - 1 1/8" 6pts long | Mack |
| 1 | Socket | 1/2" - 1 1/8" 6pts. | Mack |
| 1 | Socket | 1/2" - 1 1/8" 6pts. | Craftsman |
| 1 | Socket | 1/2" - 1 3/16" 6pts. | Mack |
| 1 | Socket | 1/2" - 1 5/16" 6pts long | Snap-On |
| 1 | Socket | 1/2" - 1 5/16" 6pts. | Snap-On |
| 1 | Socket | 1/2" - 1" 12pts long | Dura Chrome |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| | | | |
|---|---|---|---|
| 1 | Socket | 1/2" - 1" 12pts. | Craftsman |
| 1 | Socket | 1/2" - 1" 6pts 6pts long | Mack |
| 1 | Socket | 1/2" - 1" 6pts. | Mack |
| 1 | Socket | 1/2" - 1/14" 12pts. | Craftsman |
| 2 | Socket | 1/2" - 1/2" 12pts long | Craftsman |
| 1 | Socket | 1/2" - 1/2" 12pts. | Snap-On |
| 1 | Socket | 1/2" - 1/2" 6pts long | Mack |
| 1 | Socket | 1/2" - 1/2" 6pts. | Mack |
| 1 | Socket | 1/2" - 11/16" 12pts. | Craftsman |
| 1 | Socket | 1/2" - 11/16" 6pts long | Mack |
| 1 | Socket | 1/2" - 11/16" 6pts. | Mack |
| 1 | Socket | 1/2" - 13/16" 6pts long | Mack |
| 1 | Socket | 1/2" - 13/16" 6pts. | Mack |
| 1 | Socket | 1/2" - 15/16" 12pts. | Craftsman |
| 1 | Socket | 1/2" - 15/16" 6pts long | Mack |
| 1 | Socket | 1/2" - 15/16" 6pts. | Mack |
| 1 | Socket | 1/2" - 3/4" 6pts long | Mack |
| 1 | Socket | 1/2" - 3/4" 6pts long | Proto |
| 1 | Socket | 1/2" - 3/4" 6pts. | Mack |
| 1 | Socket | 1/2" - 3/8" 6pts. | Mack |
| 1 | Socket | 1/2" - 5/16" 12pts long | Craftsman |
| 1 | Socket | 1/2" - 5/8" 12pts long | Dura Chrome |
| 1 | Socket | 1/2" - 5/8" 12pts long | Snap-On |
| 1 | Socket | 1/2" - 5/8" 6pts long | Mack |
| 1 | Socket | 1/2" - 5/8" 6pts. | Craftsman |
| 1 | Socket | 1/2" - 7/16" 12pts. | Craftsman |
| 1 | Socket | 1/2" - 7/16" 6pts long | Mack |
| 1 | Socket | 1/2" - 7/16" 6pts long | Snap-On |
| 1 | Socket | 1/2" - 7/16" 6pts. | Mack |
| 1 | Socket | 1/2" - 7/8" 12pts long | Craftsman |
| 1 | Socket | 1/2" - 7/8" 12pts. | Craftsman |
| 1 | Socket | 1/2" - 7/8" 6pts long | Mack |
| 1 | Socket | 1/2" - 7/8" 6pts long | Proto |
| 1 | Socket | 1/2" - 7/8" 6pts. | Mack |
| 1 | Socket | 1/2" - 9/16" 6pts long | Mack |
| 1 | Socket | 1/2" - 9/16" 6pts long | Mack |
| 1 | Socket | 1/2" - 9/16" 6pts. | Mack |
| 1 | Socket | 1/2" -13/16" 12pts long | Craftsman |
| 1 | Socket | 1/2" 13/16" 12pts. | Craftsman |
| 1 | Socket | 1/2" 3/4" 12pts. | Craftsman |
| 1 | Socket | 1/4" - 1/2" - 6pts. | Snap-On |
| 1 | Socket | 1/4" - 1/2" - 6pts. - long | Snap-On |
| 1 | Socket | 1/4" - 1/2" 6pts long | SK |
| 1 | Socket | 1/4" - 1/2" 6pts. | Snap-On |
| 1 | Socket | 1/4" - 1/2" 6pts. | Craftsman |
| 2 | Socket | 1/4" - 1/4" - 6pts. | Snap-On |
| 1 | Socket | 1/4" - 1/4" - 6pts. | Craftsman |
| 1 | Socket | 1/4" - 1/4" 6pts long | SK |
| 1 | Socket | 1/4" - 1/4" 6pts. | SK |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| | | | |
|---|---|---|---|
| 1 | Socket | 1/4" - 11/32" - 6pts | S - K |
| 1 | Socket | 1/4" - 11/32" - 6pts. - long | Snap-On |
| 1 | Socket | 1/4" - 11/32" 6pts long | SK |
| 1 | Socket | 1/4" - 11/32" 6pts. | Snap-On |
| 1 | Socket | 1/4" - 3/16" - 6pts. | Craftsman |
| 1 | Socket | 1/4" - 3/16" - 6pts. | Snap-On |
| 1 | Socket | 1/4" - 3/16" 6pts | Snap-On |
| 1 | Socket | 1/4" - 3/8" 6pts long | Craftsman |
| 1 | Socket | 1/4" - 3/8" 6pts long | Craftsman |
| 2 | Socket | 1/4" - 5/16" - 6pts. | Craftsman |
| 1 | Socket | 1/4" - 5/16" - 6pts. | Proto |
| 1 | Socket | 1/4" - 5/16" - 6pts. - long | Craftsman |
| 1 | Socket | 1/4" - 5/16" 6pts long | Proto |
| 1 | Socket | 1/4" - 7/16" - 6pts. | Snap-On |
| 1 | Socket | 1/4" - 7/16" - 6pts. - long | Craftsman |
| 1 | Socket | 1/4" - 7/16" - 6pts. - long | Snap-On |
| 1 | Socket | 1/4" - 7/16" 12pts. | Snap-On |
| 1 | Socket | 1/4" - 7/16" 6pts. | Craftsman |
| 1 | Socket | 1/4" - 7/32" - 6pts. | Snap-On |
| 1 | Socket | 1/4" - 7/32" 12pts. | Snap-On |
| 1 | Socket | 1/4" - 7/32" 6pts. | SK |
| 1 | Socket | 1/4" - 9/16" 12pts. | Snap-On |
| 1 | Socket | 1/4" - 9/16" 6pts long | Craftsman |
| 1 | Socket | 1/4" - 9/32" - 6pts. | Snap-On |
| 1 | Socket | 1/4" - 9/32" - 6pts. - long | Snap-On |
| 1 | Socket | 1/4" - 9/32" 6pts long | SK |
| 1 | Socket | 3/4" - 1 1/2" 6pts long | Proto |
| 1 | Socket | 3/4" - 1 1/4" 12pts | Proto |
| 1 | Socket | 3/4" - 1" 6pts. | Snap-On |
| 1 | Socket | 3/4" - 13/16" 4pts | Proto |
| 1 | Socket | 3/4" - 15/16" 6pts. | Snap-On |
| 1 | Socket | 3/4" - 3/4" p/n 07570 Swivel | Proto |
| 1 | Socket | 3/4" 1 1/16" p/n 47544 | Craftsman |
| 1 | Socket | 3/4" 1 1/16" p/n IM342 | Snap-On |
| 1 | Socket | 3/4" 1 1/2" p/n 47552 | Craftsman |
| 1 | Socket | 3/4" 1 1/2" p/n 6-648 | Williams |
| 1 | Socket | 3/4" 1 1/2" p/n IM482 | Snap-On |
| 1 | Socket | 3/4" 1 1/4" p/n IM402 | Snap-On |
| 1 | Socket | 3/4" 1 1/8" p/n IM362 | Snap-On |
| 1 | Socket | 3/4" 1 1/8" p/n IM362 | Snap-On |
| 1 | Socket | 3/4" 1 1/8" p/n IM362 | Snap-On |
| 1 | Socket | 3/4" 1 1/8" p/n V-47775 | Craftsman |
| 1 | Socket | 3/4" 1 13/16" p/n V47556 | Craftsman |
| 1 | Socket | 3/4" 1 3/16" p/n IM362 | Snap-On |
| 1 | Socket | 3/4" 1 3/4" p/n 47555 | Craftsman |
| 1 | Socket | 3/4" 1 3/8" p/n 07522-L | Proto |
| 1 | Socket | 3/4" 1 3/8" p/n 47549 | Craftsman |
| 1 | Socket | 3/4" 1 5/16" p/n 47808 | Craftsman |
| 1 | Socket | 3/4" 1 5/16" p/n GLS422 | Snap-On |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| | | | |
|---|---|---|---|
| 1 | Socket | 3/4" 1 5/16" p/n IM308 | Snap-On |
| 1 | Socket | 3/4" 1 5/16" p/n IM422 | Snap-On |
| 1 | Socket | 3/4" 1 5/16" p/n LS422A | Snap-On |
| 1 | Socket | 3/4" 1 5/8" p/n 6-652 | Williams |
| 1 | Socket | 3/4" 1 5/8" p/n V47553 | Craftsman |
| 1 | Socket | 3/4" 1 7/16" p/n 47551 | Craftsman |
| 1 | Socket | 3/4" 1 7/16" p/n 6946 | Ridgid |
| 1 | Socket | 3/4" 1 7/16" p/n 6946 | Ridgid |
| 1 | Socket | 3/4" 1 7/8" p/n 47557 | Craftsman |
| 1 | Socket | 3/4" 11/16" p/n IM222 | Snap-On |
| 1 | Socket | 3/4" 2" p/n 4755A | Craftsman |
| 1 | Socket | 3/4" 3/4" p/n IM342 | Snap-On |
| 1 | Socket | 3/4" 3/4" p/n SIM342 | Snap-On |
| 1 | Socket | 3/4" 5/16" p/n IM202 | Snap-On |
| 1 | Socket | 3/4" 7/8" p/n IM382 | Snap-On |
| 1 | Socket | 3/4" 9/16" p/n IM182 | Snap-On |
| 2 | Socket | 3/4" drv. - 1 1/4" | Ridgid |
| 1 | Socket | 3/4" drv. - 1 11/16" | Craftsman |
| 2 | Socket | 3/4" drv. - 1 7/16" | Wright |
| 1 | Socket | 3/8 " - 1/2" - 6pts. - long | Craftsman |
| 1 | Socket | 3/8" - 1/2" - 6pts. | Craftsman |
| 1 | Socket | 3/8" - 1/2" - 6pts. | Snap-On |
| 1 | Socket | 3/8" - 1/2" - 6pts. | Proto |
| 1 | Socket | 3/8" - 1/2" - 6pts. - long | Craftsman |
| 1 | Socket | 3/8" - 1/2" 12pts. | Proto |
| 1 | Socket | 3/8" - 1/2" 6pts. long | Snap-On |
| 1 | Socket | 3/8" - 1/2" 6pts. long | Craftsman |
| 1 | Socket | 3/8" - 1/2" 6pts. long | Craftsman |
| 1 | Socket | 3/8" - 11/16" - 6pts. | Mack |
| 1 | Socket | 3/8" - 11/16" - 6pts. | Snap-On |
| 2 | Socket | 3/8" - 11/16" - 6pts. | Craftsman |
| 1 | Socket | 3/8" - 11/16" - 6pts. - long | Snap-On |
| 1 | Socket | 3/8" - 11/16" 6pts long | Snap-On |
| 1 | Socket | 3/8" - 11/16" 6pts. | Mack |
| 1 | Socket | 3/8" - 13/16" - 6pts. | Snap-On |
| 1 | Socket | 3/8" - 13/16" - 6pts. long | Snap-On |
| 1 | Socket | 3/8" - 13/16" 12pts. | Mack |
| 1 | Socket | 3/8" - 13/16" 6pts long | Mack |
| 1 | Socket | 3/8" - 13/16" 6pts long | Snap-On |
| 1 | Socket | 3/8" - 14mm | no brand |
| 1 | Socket | 3/8" - 3/4" - 6pts. long | Snap-On |
| 1 | Socket | 3/8" - 3/4" 12pts. | Mack |
| 1 | Socket | 3/8" - 3/4" 6pts long | Craftsman |
| 1 | Socket | 3/8" - 3/8" 12pts. | Proto |
| 2 | Socket | 3/8" - 3/8" 6pts. long | Snap-On |
| 1 | Socket | 3/8" - 5/16" - 6pts | Snap-On |
| 1 | Socket | 3/8" - 5/16" - 6pts. - long | Snap-On |
| 1 | Socket | 3/8" - 5/16" - 6pts. long | Snap-On |
| 1 | Socket | 3/8" - 5/8" - 6pts | Snap-On |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| | | | |
|---|---|---|---|
| 1 | Socket | 3/8" - 5/8" - 6pts. | no brand |
| 1 | Socket | 3/8" - 5/8" - 6pts. - long | Snap-On |
| 1 | Socket | 3/8" - 5/8" - 6pts. long | Snap-On |
| 1 | Socket | 3/8" - 5/8" 6pts long | Snap-On |
| 1 | Socket | 3/8" - 5/8" 6pts long | Mack |
| 1 | Socket | 3/8" - 5/8" 6pts. | Craftsman |
| 1 | Socket | 3/8" - 5/8" 6pts. | Snap-On |
| 1 | Socket | 3/8" - 7/16" - 12pts. | Proto |
| 1 | Socket | 3/8" - 7/16" - 6pts. - long | Snap-On |
| 1 | Socket | 3/8" - 7/16" 12pts. long | Craftsman |
| 1 | Socket | 3/8" - 7/8" - 6pts. | Snap-On |
| 1 | Socket | 3/8" - 7/8" - 6pts. long | Snap-On |
| 1 | Socket | 3/8" - 7/8" 6pts long | Snap-On |
| 1 | Socket | 3/8" - 7/8" 6pts long | Mack |
| 1 | Socket | 3/8" - 9/16" - 6pts. | Proto |
| 1 | Socket | 3/8" - 9/16" - 6pts. | Snap-On |
| 2 | Socket | 3/8" - 9/16" 12pts long | Craftsman |
| 1 | Socket | 3/8" - 9/16" 12pts. | Proto |
| 1 | Socket | 3/8" - 9/16" 6pts long | Snap-On |
| 1 | Socket | 3/8" - 9/16" 6pts long | Mack |
| 1 | Socket | 3/8" - 9/16" 6pts. | Craftsman |
| 1 | Socket | 3/8" - Multisize | no brand |
| 1 | Square w/24" sliding rule | | Starret Comp. |
| 1 | Stapling Tool | | Cobra |
| 1 | Stone Cylinder Reamer | | K - D |
| 1 | Switch-Blade Knife | 6" | Ultra |
| 1 | Swivel Speed Wrench | 3/8" p/n 4427 | Craftsman |
| 1 | Tap Set | 5/16"x18, 1/4"x20, 10x32, 8x32, 6x32 | Craftsman |
| 1 | Telescoping Pivoting Mirror | 14" | no brand |
| 1 | Telescoping Pivoting Mirror | 14" | no brand |
| 2 | Telescoping Pivoting Mirror | | Hunter Tools |
| 1 | Tie Rap Gun | | Burndy |
| 1 | Tie Rap Gun | | Thomas & Betts |
| 1 | Torque Wrench | 200' p/n 6064-A | Proto |
| 1 | Torque Wrench | 200' p/n QJR117-E | Snap-On |
| 1 | Torque Wrench | 260' p/n 6014 | Proto |
| 1 | Torque Wrench | 260' p/n TOFR250B - Swivel Head | Snap-On |
| 1 | Torque Wrench | 500' p/n 6020-1 | Proto |
| 1 | Torque Wrench | 600' p/n QJR4600A | Snap-On |
| 1 | Torque Wrench | 80' p/n 6006-A | Proto |
| 1 | Torque Wrench | Pipe | Snap-On |
| 1 | Universal | 1/4" - 1/4" | SK |
| 1 | Universal | 3/8" - 7/16" 12pts. | Mack |
| 1 | Universal | 3/8" long | Snap-On |
| 1 | Universal Drv. | 1/4" - 1/4" | Snap-On |
| 1 | Vise-Grip Lock Pliers | 5" | Craftsman |
| 1 | Vise-Grip Lock Pliers | 6 1/2" | Vise |
| 1 | Vise-Grip Lock Pliers | 6 1/2" | Craftsman |
| 1 | Vise-Grip Lock Pliers | 7" | Vise |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| | | | |
|---|---|---|---|
| 1 | Vise-Grip Lock Pliers | 8" | Craftsman |
| 1 | Vise-Grip Lock Pliers | 9" | Vise |
| 1 | Wire Stripper | 5" | no brand |
| 1 | Wire Stripper | 6 1/2" | Radio Shack |
| 1 | Wire Stripper | 6 1/2" | Stripmaster |
| 1 | Wire Stripper | 6 1/2" | Ideal |
| 1 | Wire Stripper | 7" | Ideal |
| 3 | Ratchet Wrench | 1/2" - 10" | Craftsman |
| 1 | Ratchet Wrench | 1/2" - 7/8" | Snap-On |
| 1 | Ratchet Wrench | 1/2" - 9/16" | Snap-On |
| 1 | Ratchet Wrench | 1/2" - 9/16" | Husky |
| 1 | Ratchet Wrench | 1/2" - 9/16" | Snap-On |
| 1 | Ratchet Wrench | 1/2" & 9/16" - 6pts. | Kastar |
| 1 | Ratchet Wrench | 1/4" - 4" | Snap-On |
| 1 | Ratchet Wrench | 1/4" - 4pts. | Duro-Chrome |
| 3 | Ratchet Wrench | 1/4" - 5/16" | Craftsman |
| 1 | Ratchet Wrench | 1/4" - 6" | Craftsman |
| 1 | Ratchet Wrench | 1/4" & 5/16" - 12pts. | Snap-On |
| 1 | Ratchet Wrench | 3/4" p/n V-44081 | Craftsman |
| 1 | Ratchet Wrench | 3/8" - 10" | Williams |
| 1 | Ratchet Wrench | 3/8" - 4" | Snap-On |
| 1 | Ratchet Wrench | 3/8" - 5/16" | Craftsman |
| 1 | Ratchet Wrench | 3/8" - 7" | Proto |
| 1 | Ratchet Wrench | 3/8" - 8" | Proto |
| 1 | Ratchet Wrench | 3/8" & 1/4" - 4pts. | Imperial |
| 1 | Ratchet Wrench | 3/8" x 11" Hinged Tip | Snap-On |
| 1 | Ratchet Wrench | 3/8" x 8" | Proto |
| 1 | Ratchet Wrench | 5/16" - 6pts. | Leytool |
| 1 | Ratchet Wrench | 5/16" x 1/4" | Snap-On |
| 1 | Ratchet Wrench | 5/8" - 3/4" | Snap-On |
| 1 | Ratchet Wrench | 5/8" - 3/4" | Craftsman |
| 1 | Ratchet Wrench | 5/8" - 3/4" | Craftsman |
| 2 | Ratchet Wrench | 7/8" - 13/16" | Craftsman |
| 1 | Ratchet Wrench | 9/16" & 1/2" - 6pts & 3/8" & 1/4" - 4pts. | Black Hawk |
| 1 | Wrench, Open End | 1 1/16" | Gedor |
| 1 | Wrench, Open End | 1 1/2" p/n 85-563 | Stanley |
| 1 | Wrench, Open End | 1 1/2" p/n OEX48 | Snap-On |
| 1 | Wrench, Open End | 1 1/4" p/n 86-846 | Stanley |
| 1 | Wrench, Open End | 1 1/8" - 1 1/16" | Craftsman |
| 1 | Wrench, Open End | 1 1/8" p/n C-36 | SK |
| 1 | Wrench, Open End | 1 1/8" x 1 5/16" | Craftsman |
| 1 | Wrench, Open End | 1 3/4" p/n NDF-91 | New Britain |
| 1 | Wrench, Open End | 1 3/8" p/n 85561 | Stanley |
| 1 | Wrench, Open End | 1 5/16" p/n 85560 | Stanley |
| 1 | Wrench, Open End | 1 5/16" p/n 85-560 | Stanley |
| 1 | Wrench, Open End | 1 5/16" p/n G0EX42 | Snap-On |
| 1 | Wrench, Open End | 1 5/8" p/n 1252B | Proto |
| 1 | Wrench, Open End | 1" - 15/16" | Craftsman |
| 1 | Wrench, Open End | 1" p/n 86-843 | Stanley |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| | | | |
|---|---|---|---|
| 1 | Wrench, Open End | 1" p/n 88232 | SK |
| 1 | Wrench, Open End | 1/2" - 7/16" | Proto |
| 1 | Wrench, Open End | 11/16" x 5/8" | Easco |
| 1 | Wrench, Open End | 15/16" p/n 44704 | Craftsman |
| 1 | Wrench, Open End | 2" p/n OEX64 | Snap-On |
| 1 | Wrench, Open End | 25/32" - 13/16" | Craftsman |
| 2 | Wrench, Open End | 3/4" - 7/8" | Craftsman |
| 1 | Wrench, Open End | 5/16" x 1/4" | Craftsman |
| 1 | Wrench, Open End | 5/8" - 11/16" | Mack |
| 1 | Wrench, Open End | 5/8" - 9/16" | Snap-On |
| 1 | Wrench, Open End | 7/16" - 3/8" | Craftsman |
| 1 | Wrench, Open End | 7/16" - 3/8" | Mack |
| 1 | Wrench, Open End | 7/8" p/n 1079 | no brand |
| 1 | Wrench, Open End | 9/16" - ½" | Craftsman |
| 1 | Wrench, Open End | 9/16" x ½" | Easco |
| 1 | Wrench, Open End | 9/16" x ½" | Proto |
| 3 | X-acto Knife w/handle | | X-acto |

**AFTERNOON TASKS**

%100

**FIRST SHIFT DAILY**

DEPARTMENTAL PROCEDURE OM-054 Daily Shift Inspection for Car Cleanliness, passenger informational, and comfort systems.

1.0 PURPOSE This procedure is to outline the inspection of the interior of all vehicles at the beginning of each shift to insure that the vehicle is free of debris. Also, the inspection of all communication and comfort systems for proper operation and to insure that no safety hazards exist.

2.0 REFERENCE This procedure is to be used in conjunction with existing procedures and inspections that may already be in place at the individual Service Delivery Centers.

3.0 BACKGROUND This procedure is to address poor interior train quality that may occur between routine daily inspections.

4.0 PROCEDURE NORTH SOUTH

VEHICLE SHOULD BE INSPECTED AT LEAST TWICE PER SHIFT

Areas of Inspection

4.1 Safety Hazards

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

Inspect all cars for anything that may pose a possible safety hazard to riders of the system.

4.2 Cleanliness and Train Presentation
Inspect all cars for miscellaneous trash, spills or vandalism within the vehicle.

4.3 HVAC
Inspect all cars for proper HVAC operation, simply check vent for hot or cold air at this time.

4.4 Lighting
Inspect all cars for overhead lighting failures.

4.5 Signage/PIS
Inspect all cars for proper signage operation, this includes both overhead signage as well as voice messaging. Listen to announcements for proper location, time, volume and clarity.

4.6 Quality of Ride
Ride vehicle to insure proper ride quality, this would include checking for any abnormalities.

4.7 Station Doors|
Inspect all Station doors for proper operation, including opening, closing, speed and synchronization with all other doors.

4.8 Car Height/Door Alignment|
Inspect car floor height to platform height (possible safety issue), and check for vehicle/station door alignment and synchronization.

4.9 Emergency Door Check|
While stopped on the guide way, pull a vehicle T-handle, the train should lose power.
Also, check flat tire detector monitor panel.

5.0 Undercarriage Vehicle Inspection
Perform visual inspection under the vehicle for any abnormal or loose condition of equipment. Including, collector shoes, guide tires motor boxes, propulsion motor, pneumatic equipment, main tires, etc.

5.1 Shop Area|
Drain shop air compressor.

5.2 Check Air Conditioning Hanging Brackets and hardware.

CORRECT ALL PROBLEMS FOUND IF APPLICABLE OR ENTER IN THE OPEN ITEMS SECTION OF THE SIMS PUNCH LIST.

Technician _____
Time /Date _____

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

Vehicle # _____
Comments_____

%200
**SECOND SHIFT - DAILY**

DEPARTMENTAL PROCEDURE OM-054 Daily Shift Inspection for Car Cleanliness, passenger informational, and comfort systems.

1.0 PURPOSE This procedure is to outline the inspection of the interior of all vehicles at the beginning of each shift to insure that the vehicle is free of debris. Also, the inspection of all communication and comfort systems for proper operation and to insure that no safety hazards exist.

2.0 REFERENCE: This procedure is to be used in conjunction with existing procedures and inspections that may already be in place at the individual Service Delivery Centers.

3.0 BACKGROUND: This procedure is to address poor interior train quality that may occur between routine daily inspections.

4.0 PROCEDURE NORTH SOUTH

VEHICLE SHOULD BE INSPECTED AT LEAST TWICE PER SHIFT|

Areas of Inspection

4.1 Safety Hazards|
Inspect all cars for anything that may pose a possible safety hazard to riders of the system.

4.2 Cleanliness and Train Presentation
Inspect all cars for miscellaneous trash, spills or vandalism within the vehicle.

4.3 HVAC
Inspect all cars for proper HVAC operation, simply check vent for hot or cold air at this time.

4.4 Lighting
Inspect all cars for overhead lighting failures.

4.5 Signage/PIS
Inspect all cars for proper signage operation, this includes both overhead signage as well as voice messaging. Listen to announcements for proper location, time, volume and clarity.

4.6 Quality of Ride
Ride vehicle to insure proper ride quality, this would include checking for any abnormalities.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

4.7 Station Doors
Inspect all Station doors for proper operation, including opening, closing, speed and synchronization with all other doors.

4.8 Car Height/Door Alignment
Inspect car floor height to platform height (possible safety issue), and check for vehicle/station door alignment and synchronization.

4.9 Emergency Door Check|
While stopped on the guide way, pull a vehicle T-handle, the train should lose power. Also, check flat tire detector monitor panel.

5.0 Undercarriage Vehicle Inspection
Perform visual inspection under the vehicle for any abnormal or loose condition of equipment. Including, collector shoes, guide tires motor boxes, propulsion motor, pneumatic equipment, main tires, etc.

5.1 Shop Area
Drain shop air compressor.

5.2 Check Air Conditioning Hanging Brackets and hardware.

CORRECT ALL PROBLEMS FOUND IF APPLICABLE OR ENTER IN THE OPEN ITEMS SECTION OF THE SIMS PUNCH LIST.

Technician _____
Time /Date _____
Vehicle # _____
Comments_____
_____

%101
**1ST SHIFT 4 DAY**

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-CHECK FOR THE PROPER LEVEL OF THE CARS. + or - 5/8" is the maximum.
South_____ North_____

2-CHECK STATION DOORS FOR PROPER OPERATION

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

Pass your hand in front of the door sensitive edge and verify that the door re-opens. Also, using the door test tool, insure the door re-opens within 5 sec. after they close on the tool inserted between the doors. Be careful not to activate the infrared sensor.
South_____ North_____

3-CHECK VEHICLE DOORS FOR PROPER OPERATION.
Using the door test tool, verify the door re-opens when the tool is inserted in between the doors. Insert the tool a second time, and verify the obstruction sonar comes on.
South_____ North_____

4-CHECK FOR PROPER OPERATION OF THE "FSE" VALVES.
Install the rubber stoppers onto all 6 Q/R valves, then dump the air. All 6 stoppers should be blown out of the Q/R valves.
5-CHECK EMERGENCY ACCESS DOORS ALARM OPERATION.
With train in Run Auto Status, open one of the Emergency Access Doors at the Sat and Fis. Verify that Central Control receives alarm and must notify Bombardier personnel when alarm goes off. Alarm I.D at central will appear as the following: EVC SAT NORTH/EVC SAT SOUTH EVC FIS NORTH/EVC FIS SOUTH.

%103
**1ST SHIFT EIGHT DAY**

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-CHECK VEHICLE CURRENT COLLECTOR SHOES FOR WEAR.
If the bevel is gone replaced shoe. Shoe width should be 3/8" min. Shoe thickness should be ½" min. Check wear on top and bottom. Make adjustments if necessary.
South_____ North_____

2-CHECK FOR EXCESS WEAR ON THE SHOE HOLDER.
If wear is found on the holder near were it grips the shoe, it should be replaced.
South_____ North_____

3-LUBE ALL THE BUSHINGS WITH A SMALL AMOUNT OF LIGHT LUBE. Wipe off excess oil.
"DO NOT USE BRAKE KLEEN OR SOLVENT"
South_____ North_____

4-CHECK THE PRESSURE ON THE SHOE AND FREE ARM MOVEMENT
It should be between 8 and 12 pounds when the shoe is about ½" off the rail. With no sticking or binding when the arm is pulled back or shoe pivoted.
South_____ North_____

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

5-DRAIN INLINE AIR FILTER BOWL.
South_____ North_____

6-CLEAN TRANSFORMER COOLING FAN INTAKE FILTER WITH SOAP AND WATER.
Remove the four nuts that hold the filter guard and filter to the motor housing. With a stick, rotate motor fan blade and listen for anything unusual. With flashlight, look inside and inspect motor.
Inspect the filter element. If damaged, install a new filter. If the element is not damaged clean as outlined below. Immerse the filter element in a mild detergent solution and wash thoroughly to remove all dirt. Dry the filter element by gently squeezing the major portion of the cleaning solution from the filter and permitting the element to drip-dry. Caution: the force of a compressed air can damage the filter blast.
Do not use compressed air for drying the filter
South_____ North_____

7-CHECK BATTERY CONNECTIONS FOR CORROSION.
Clean as required. Coat in terminal grease as required.
South_____ North_____

8-CHECK THE MAIN TIRE PRESSURE.
It should be between 115 and 120 psi, when it has been running. (hot).
South_____ North_____

9-CHECK "ZERO SPEED" FLAGS.
Can be checked at either Station. Slowly move vehicle over last two overshoot flags, train should dump.
South_____ North_____

%103
**1ST SHIFT 16 DAY**

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-CHECK THE VOLTAGE THROUGH THE FLAG CIRCUIT. "MAKE SURE TRAIN IS AT THE STATION BEFORE PERFORMING THIS TEST"

Using the test panel located by flag indication inside Wayside Cabinet in Main Office; Connect a voltmeter from the North "jumper " banana jack, TP-1, to chassis ground. Turn the TEST switch to NORTH
THIS WILL ADD A 20-OHM RESISTOR TO DRAW INCREASED CURRENT FOR THIS TEST.
Take a voltage reading. It should be greater than 15 volts. Return the switch to the OFF position. Repeat for the South,

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

REMEMBER TO RETURN THE SWITCH TO OFF WHEN DONE.

If either is not greater than 15 volts or the train looses power, you have a bad flag or connection. Find and repair.
South_____North_____

2-CHECK THE VEHICLE POWER SUPPLIES.
Using voltmeter, take measurements on banana plug test panel right above power supply.
+6.1vdc +/- .3 +12.2vdc +/- .4+15.0vdc +/- .5 -15.0vdc +/- .5

Note: readouts of +15.0 & -15.0 on "A" cars, should be taken when train is running
South_____North_____

3-CHECK THE LAMPS ON THE VEHICLE MANUAL PANEL.
Use the lamp test button.
South_____North_____

%104
**1ST SHIFT MONTHLY**

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-CONDUCT THE AIR LEAK TEST. G:\US\MI\miacomm\SD\MIA3007

Allow the compressors to pump up, remove power, and leave the batteries on, car reset and the train lines closed. The pressure should not drop more then 10 psi in 10 minutes. If it does, use soapy water and correct, or if unable to correct problem, write it on repair sheet.
South_____North_____

2-PERFORM THE VEHICLE BATTERY LOAD TEST. (30 MINS)
With the train berthed at the satellite station And all vehicle and wayside doors closed remove main power from the train to be checked.

Do not turn off any circuit breaker or switch inside the cars during this test.

Note the time when the main power was removed.

Using a digital voltmeter take readings of each of the batteries in each car and record these readings, on the battery load test book, it should be greater than 12 volts +/-.5 volts.

After 30 minutes and using the same voltmeter take new readings of the batteries and record them in the same data sheet as before.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

It should be within .5 volts. If voltage is below 11.0 v dc, the battery should be replaced and data recorded in SIMS history book.
South_____ North_____

3-CHECK THE FTDS ON ONE VEHICLE.
Lower the air pressure to 65psi and hit the tire. The alarm indication should come on. Keep record of failed detectors on data sheet on G:\US\MI\miacomm\Forms & Data\FTD
South_____ North_____

4-LUBE THE TOW BARS.
South_____ North_____

5- INSPECT ALL THE LEAF SPRINGS FOR BROKEN CURLS.
This is very important but difficult to see.
South_____ North_____

6-INSPECT THE AIR HOSES.
Visually check the routing of the air hoses, Look for areas where wear could occur. Use a light or your hand to verify no wear or chafing.
South_____ North_____

7-GUIDEWAY INSPECTION
--Print data sheet from G:\US\MI\miacomm\Forms & Data\PATCHES.DOC
--Check for new or worsening cracks and patches. Update data sheet.
--Print updated list and place on clipboard.

--Check the power rails for unusual wear, arching, corrosion or joint separation.

--Check all hanger and rail pin points.(150 ft. each side of expansion joint)

--Inspect the expansion gaps for wear and proper movement. Gaps should be approx. the same at all locations.
Clean the expansion joint with a wire brush

--Check the condition of the rail covers.
Replace any missing or damaged covers

--Check the alignment of the overshoot plates wire routing and security
Inspect all antennas for wear, deterioration and proper alignment and security.

--Inspect steel cladding panels for loose or missing hardware.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

--Verify Guide way Emergency signage("Danger High Voltage Signs") on top of I-Beam are in place and readable. Also check Fire Extinguishers throughout Guide way for proper inspection tag and condition.
South_____ North_____

8-CHECK DOOR ROLLER OPERATION
Power down and manually move the vehicle doors back and forth and listen for scraping or binding in channel or car body, listen or feel for smooth roller operation.
Record any discrepancies that need attention.
South_____ North_____

9-PERFORM EMERGENCY BRAKE TEST.
Print MA-5001 from G:\US\MI\miacomm\SD\MIA5001.DOC
Run charts calculate data and enter data in G:\US\MI\miacomm\Forms & Data\EMRBKTSTSOUTH.XLS or EMBRKSTNORTH.XLS FILE.
South_____ North_____ PASS/FAIL

10-BRAKE LINING
Check lining thickness 5/16" minimum at one inch from the toe of the pad.

11-CLEAN OR REPLACE THE AIR COMPRESSOR FILTER.
South_____ North_____

12-BLOW THE DUST OUT OF THE AIR COMPRESSOR ASSEMBLY WITH SHOP AIR, INCLUDING THE COOLING TUBE TO THE DRIER.
Note: Do not close the yellow manual valve on the main air package.
South_____ North_____

13-CHECK THE OIL IN THE COMPRESSOR.LUBE THE VEHICLE AIR COMPRESSOR MOTOR. AND CHECK BELT TENSION. Note new motors do not have a fitting, skip.
South_____ North_____

14-CHECK GUIDEWAY EMERGENCY ACCESS DOOR ALARM AT FIS(glass doors).
Open one of the glass doors at FIS free lobby leading to guide way and interrupt the alarm's infrared beam. The following should occur:
--Central Control should right away notify Bombardier personnel that they have received a glass door alarm at FIS.
--Close/lock the door and request Central Control to reset alarm.
--Verify that the alarm bell went off.

%106

**1ST SHIFT SEMI-ANNUAL**

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-CLEAN THE CERAMIC INSULATORS ON THE RESISTOR BANKS.
(Jan & July Only) "A" & "C" Cars
Use "Big Orange" cleaner only.
South_____ North_____

2-CHECK THE COMPRESSOR CRADLE HANGER BUSHINGS.
Functional, no damaged.
South_____ North_____

3-INSPECT THE LIFT TABLE ELECTRICAL AND MECHANICAL PARTS
(Jan & July Only)
Wires, electrical connections, electrical boxes, hoses, check hydraulic fluid.
Perform operational check on the lift table.

COMPLETE: _____

4-CHANGE THE SHOP AIR COMPRESSOR OIL AND FILTER. (Jan & July Only)
COMPLETE _____

6-REMOVE AND INSPECT THE HOSTLE PANEL FOR PROPER SWITCH CONTACTS; WIRE TERMINALS, ETC.
The train should be berthed at the satellite station; all vehicle and wayside doors open (sterile or free), Main power off and 24 vdc battery cir.brk.off in all cars. Open the access keyed panel and pull out the hostler panel. At this point verify the correct function of the panel and key locks, also the panel's slide mountings are functioning. Inspect for proper switch contacts; wire terminals, etc. Inspect the panel's wire harness coming out at the back of the panel for proper securing and chaffing protection. Look for wires, whose insulation has been cut or abraded, wires damaged, crushed, burned or bent such that breaks in the insulation or wires are suspected. If found the wire(s) should be repaired or replaced. Visually examine all switches and indicator lights lens for damage. Replace as required. Be very careful to use the same type of switch if replacement is necessary. Remove all four screw located at the corner of the panel and very carefully pull up the panel and flip it over so you can see the wire connections. Check that all wire terminals are properly crimped, including the ones to the big connector. Also, examine terminals and pin connector for corrosion. Repair as required. Make sure all wire terminals are properly fastened to the switches and terminal blocks. Tight up if found loose but do not over tighten as damage may occur to the switch. Visually examine the wiring for proper routing, chaffing protection and securely mounting.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

HOSTLER PANEL CONTACT RESISTANCE VERIFICATION
check each contact listed below for less than 0.2 Ohm resistance between the test points. Replace the contact if the resistance is higher than 0.2 Ohm or if the contact is intermittent.

| SWITCH NOMENCLATURE | TYPE | TEST POINTS |
|---|---|---|
| Reset Timing | N.C. | B3 & B4 |
| Overshoot Reset | N.O. | A1 & A2 |
| Overshoot Reset | N.O. | A3 & A4 |
| Car Reset | N.O. | A1 & A2 |
| Car Reset | N.O. | A3 & A4 |
| Hostler Door Open | N.O. | A1 & A2 |
| Hostler Door Open | N.C. | A3 & A4 |
| Overshoot Override | N.O. | C1 & C2 |
| Overshoot Override | N.O. | C3 & C4 |
| Overshoot Override | N.C. | A1 & A2 |
| Overshoot Override | N.C. | A3 & A4 |
| Overshoot Override | N.C. | B1 & B2 |
| Emergency Stop | N.C. | A1 & A2 |
| Emergency Stop | N.C. | A3 & A4 |
| Hostler Enable | N.O. | A1 & A2 |
| Hostler Enable | N.O. | B1 & B2 |
| Hostler Enable | N.C. | C3 & C4 |
| Hostler Enable | N.C. | D1 & D2 |
| Mode Selection – Remote Position | Closed | A1 & A2 |
| Mode Selection – Remote Position | Closed | B1 & B2 |
| Mode Selection – Hostler Position | Closed | C1 & C3 |
| Mode Selection – Hostler Position | Closed | A1 & A3 |
| Mode Selection – Hostler Position | Closed | B1 & B3 |

Very carefully flip back the panel and fasten it. Watch for the wires under the panel. Power up the train and verify the proper function of all switches and indicator lights drive the train manually one round trip and if the train ran ok. Then do another round trip in auto mode to verify the proper operation of the train. If everything is ok then push the panel back under the seat and close the access panel.

South_____North_____

%107

1ST SHIFT ANNUAL DOOR OPERATOR REBUILD--SOUTH

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

1-PRINT W.I. 2034 FROM THE O DRIVE (G:\US\MI\miacomm\SD\MIA2034).

2-THIRD SHIFT WILL REMOVE THE ASSEMBLIES.

3-FIRST SHIFT SHOULD REBUILD THEM FOR INSTALLATION WITHIN TWO DAYS.

SOUTH: _____

%108

1ST SHIFT ANNUAL-(SOUTH COLLECTOR REBUILD)

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-PRINT INSTRUCTIONS FROM G:\US\MI\miacomm\SD\MIA2033.

2-THIRD SHIFT WILL REMOVE THE ASSEMBLIES FROM THE TRAIN

3-FIRST SHIFT SHOULD REBUILD THEM FOR INSTALLATION WITH IN TWO DAYS.
SOUTH _____

%109

1ST SHIFT ANNUAL GUIDE WHEEL REBUILD--SOUTH

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-PRINT W.I. 2016 FROM G:\US\MI\miacomm\SD\MIA2016

2-THIRD SHIFT WILL REMOVE THE ASSEMBLIES FROM THE VEHICLE.

3-SECOND SHIFT SHOULD REBUILD THEM FOR INSTALLATION WITHIN TWO DAYS.

COMPLETE: _____

Miami Field Site C-100 & CX-100 Guide wheel Rebuild Signoff Sheet

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

Rebuild Date:_____ Guide wheel Spindle Serial Number:_____

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1. Rebuild procedure used is on: G:\US\MI\miacomm\SD\MIA2016 Revision: 4

It is important to measure pertinent shaft, and hub housing, using calibrated micrometers to verify that they are within the tolerances shown on drawing 4677C31 for the shaft and drawing 8838D90 for the hub housing. These components must be replaced if they are out of tolerance. The bearing cup must be removed using a bearing puller, not tools that may create nicks or burrs on the hub.

Drawing Number: 4677C31 Revision 12
Drawing Number: 8838D90 Revision:_____

Small Bearing Shaft Measurement:
(1.2498" to 1.2493")
Large Bearing Shaft Measurement:
(1.9995" to 1.9990")

Grease Seal Shaft Measurement:
(_____"to _____") (No groves)

2. Small Bearing Shaft Measurement: Initial _____" 90 deg. _____"
(90 deg. = 90 degree rotation of micrometer from initial reading)
Tech._____ Date_____ Average _____"

3. Large Bearing Shaft Measurement: Initial _____" 90 deg. _____"
(90 deg. = 90 degree rotation of micrometer from initial reading)
Tech._____ Date_____ Average_____"

4. Grease Seal Shaft Measurement: Initial _____" 90 deg. _____"
(90 deg. = 90 degree rotation of micrometer from initial reading)
Tech._____ Date_____ Average _____"

5. Bearing Cups installed per specification:
Tech._____ Date_____

Insp._____ Date_____

6. Final End Play Reading:
(.001"-.007")_____"

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

Tech._____ Date_____

Insp._____ Date_____

7. Cotter Pin Installed & Secured:
Tech._____ Date_____

Insp._____ Date_____

8. Grease Cap Filled to Specifications, Installed Correctly & Torque Sealed:
Tech._____ Date_____
Insp._____ Date_____
9. Heat Sensitive Labels Installed per Specifications:
Tech._____ Date_____

Insp._____ Date_____

Instructions:

a. Line 1: Drawing & revision where your specific guide wheel procedure is located
b. Line 2,3,4: (____to____) = shaft tolerance range of your respective guide axle Initial_____"
= first micrometer reading
c. Line 4,5,6,7,8:
Tech._____ = signature of technician doing work
Insp. _____ = signature of inspector (cannot be the same as Tech.)

%110

3RD SHIFT SEMI-ANNUAL (Lub., bearing ring, radius rods)

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1- LUBRICATE THE RADIUS RODS AND BOGIE BEARING RING.

%111
A/C CLEAN AND TEST
TEST SPECIFICATIONS FOR MIAMI AIRPORT REHAB DESIGN UNITS (ma-44)

When power is applied to unit, the evaporator fan motor contactor activates the evaporator fan motor to allow continuous air circulation within the car.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

Using Honeywell simulator, operate unit to insure staging. 1st stag. - condenser fan contactor activates condenser fan. 2nd stage - liquid line solenoid coil opens liquid line solenoid valve.

As pressures balance, the suction pressure rises to the cut in pressure of 80 P510 (+/- PSIG), allowing the Compressor contactor to activate the compressor.

The system is now in full operation. Depending on the surrounding ambient temperature, the pressures will correspond to the standard refrigerant pressure-temperature relationship chart.

Since the system is not in a totally controlled environment, we must use other methods to test for proper operation.

While system is in full operation, slowly block off the air intake to the condenser, to increase the high (dis-charge) pressure to 375 P510 (+/-5 PSIG).

The compressor contactor will be cut out of the circuit by the high pressure cut out control (HPCO). When the pressure decreases to 265 PSIG (+/- 5 P510) the HPCO will cut back in, & energize the compressor contactor.

Allow pressures to stabilize.

Slowly block off the air return opening to the evaporator, to decrease the low (suction) pressure to 25 PSIG (+/- 5 PSIG).

The compressor contactor will be cut out of the circuit by the low pressure cut out control (LPCO). When the pressure increases to 80 PSIG (+/- 5 PSIG), the LPCO will cut back in, & energize the compressor contactor.

UNIT CONTINUOUS OPERATION

Measure condenser air temperature in & out, the temperature difference (TD) should be 25oF to 3OoF or possibly higher depending on the ambient conditions.

Measure evaporator air temperature in & out, the temperature difference LTD) should be l7oF to 2OoF or possibly higher depending on the ambient conditions.

Suction & discharge pressures should read 65 P510 (Suction) +/-10 PSIG & 250 PSIG (discharge) +/- 10 PSIG, during normal operating ambient conditions for Miami Florida 91/77 to 89/77 DB & 79/78 WB Chapter 24 item 24.1 ASHRAE ;manual.

%113
AIR COMPRESSOR REBUILD PRINT G:\US\MI\miacomm\SD\MIA2023

%115

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

1st SHIFT 15 DAYS

CONSUMABLE CHECK

1. Print "Matorder" list from G:\US\MI\miacomm\Forms & Data\Matorder. The last part of the list includes the Consumable List.

2. Make note of quantity for items which need to be ordered.

3. Write an order for item in the Material Order Form.

4. Repair bad cabinet doors, handles etc.

5. Organize stockroom shelves as required.

%116

1st SHIFT SEMI ANNUAL

TEMPORARY CHANGE NOTICE("TCA") TRACKING.

GET TOGETHER OR CONTACT SITE MANAGER, TO DISCUSS IF ANY "TCA'S" HAVE BEEN WRITTEN OR APPROVED RECENTLY.

MAKE ANY CHANGES OR UPDATES IF NECESSARY TO FILE LOG FOUND IN: G:\US\MI\miacomm\Forms & Site's Data\Tca Log.xls.

%117

**1ST SHIFT SEMI ANNUAL**

FIELD CHANGE NOTICE ("FCN") TRACKING

GET TOGETHER OR CONTACT SITE MANAGER, TO DISCUSS IF ANY "FCN'S" HAVE BEEN WRITTEN OR APPROVED RECENTLY.

MAKE ANY CHANGES OR UPDATES IF NECESSARY TO FILE LOG FOUND IN: G:\US\MI\miacomm\Forms & Site's Data \Fcn list.doc.

%118

1ST SHIFT MONTHLY

CONTROLLED ASSEMBLY PARTS LIST("CAPL") TRACKING

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

GET TOGETHER, CONTACT OR ADVISE JOSE VAZQUEZ, THAT "CAPL" DATABASE NEEDS TO BE CHECK FOR UPDATES.

IF JOSE VAZQUEZ IS NOT AVAILABLE, DATABASE CAN BE FOUND IN: HTTP://INTERNAL/DEPARTMENTS/TECHNICALDOCUMENTATION/ CONFIGURATION CONTROL CAPL/<DIR>PEOPLEM/<DIR>MIAMI/

MAKE ANY CHANGES OR UPDATES IF NECESSARY TO "CAPL" FILE FOUND IN BOTTOM DRAWER OF FILE CABINET WHERE RADIOS ARE LOCATED.

%201

**2ND SHIFT 4 DAY**

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-BLEED ALL PNEUMATIC STOP COCKS ON VEHICLE MAIN AIR TANKS.
Repair or record on repair sheet any tank that exhausts condensation. Schedule leak test ASAP.
South_____ North_____

2-CHECK THE SERVICE BRAKE AIR CHAMBER GAUGE READINGS
During normal operation as the train enters the Sat. tunnel. should be approx. 20 psi. If there is greater than 10 psi difference check/rebuild A/R-1 valves.(solenoid).
South_____ North_____

3-LISTEN FOR AIR LEAKS.
Power down and walk underneath train, check for loose items and listen for air leaks.

4-CHECK ON "A" CARS ONLY, FOR THE FOLLOWING:
-Spare set of jumper leads inside miscellaneous box to the left of the ATO

-Voltmeter

5-CHECK VOLTAGE THROUGH "FB" CIRCUITRY ("A" CAR ONLY). WITH TRAIN IN STATION CHECK THE FOLLOWING VOLTAGES

TBM14---Input voltage of 14.90DC
TBM10---Voltage after "A" and "C" car LS2 Aux. contacts.
TBM12---Voltage after all "FB" Switches.

TROUBLESHOOT CIRCUIT IF VOLTAGE AT TBM12 IS 12VDC OF LOWER.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

%202

2ND SHIFT 8 DAY

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-VISUALLY CHECK FOR OIL LEAKAGE ON THE COMPRESSORS.
Check for wet and dirty areas.
South_____ North_____

2-VISUALLY CHECK THE LEVELING VALVES ARM LINKAGE JAM NUTS ARE TIGHT.
South_____ North_____

3-VISUALLY CHECK THE PINION SEAL, SHIMS AND DIFFERENTIAL FOR OIL LEAKS.
South_____ North_____

4-CHECK ALL STANCHIONS FOR LOOSE SCREWS.
South_____ North_____

5-CHECK DIESEL BATTERY VOLTAGE
35.7.volts on float charge and 36.7 volts on high charge. Add water as required. Also, check ammeter for charge indication. The lower the readout the better.

_____ _____

6-CHECK SWITCHGEAR UPS BATTERY VOLTAGE.
To be 52.9 thru 55.3 volts. Also, check ammeter for charge indication. The lower the readout the better.

_____ _____

7-CHECK SATELLITE UPS BATTERY VOLTAGE.
To be 27 thru 27.6 volts. Also, check ammeter for charge indication. The lower the readout the better.

_____ _____

8-CHECK FIS BATTERY UPS VOLTAGE.
To be 27 thru 27.6 volts. Also, check ammeter for charge indication. The lower the readout the better.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

_____ _____

9-CHECK FIS FREE, SAT. N/S FREE, SAT. STERILE PHOTO SENSORS FOR PROPER OPERATION. ADJUST IF NECESSARY.

_____ _____

10- PLUG IN FORK LIFTS SO THAT THE BATTERIES CAN BE CHARGE. LEAVE DOORS OPEN.

11-Check all Emergency Power Off Buttons in Maintenance Area and Wash racks. Verify that power is removed when button is pushed. Request power and verify that power does not come on.
%203

**2ND SHIFT 16 DAY**

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-CHECK THE GUIDE TIRES FOR WEAR.
Use go no-go gauge -- no tread replace.
South_____ North_____

2-CHECK SATELLITE ATO POWER SUPPLIES.
24.0 VDC -- 6.1 VDC-- 12.2 VDC

_____ _____

3-CHECK FIS ATO POWER SUPPLIES.
24.0 VDC -- 6.1 VDC-- 12.2 VDC

_____ _____

4-CHECK THE LAMPS AT CENTRAL.

_____ _____

5-CHECK THE VOLTAGE THROUGH THE WAYSIDE DOOR LS-1 SWITCHES.
24V AT THE CABINET (DWG. 8362D66 SH.2 AND 11)

Measure voltage at TB1 A23 AND TB3 A23 for North and South Train.
South_____ North_____

6-CHECK THE VOLTAGE THROUGH THE VEHICLE DOOR LS-1 SWITCHES.
Measure at TB-A- 8 & 9 and TB-A 8 & 11. To be no more than 0.2 volts in each car with the doors closed. (Dwg. 4683C43 SH. 50)
South_____ North_____

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

7-RUN THE TRAINS IN STAGGERED AUTO MODE FOR THIRTY MINUTES USING THE BACKUP GENERATOR.
Complete _____

%204

**2ND SHIFT MONTHLY**

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING.
WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.
1-CHECK THE SPECIFIC GRAVITY IN THE GENERATOR AND PDS UPS BATTERIES.
_____

2- CHECK FORK LIFT WATER LEVEL.

1) First, Check water level making sure plates are submerged in water. If not add enough water to just cover the plates.
2) Last, AFTER batteries are fully charged, recheck water level and if need it add water to fill cell to proper level.

3-CHECK UPS UNIT FOR PROPER OPERATION
(Check for signs of overheating, swelling or discoloration of components)
_____

4-CHECK FOR BURNT OUT BULBS AND BROKEN LENSES IN SWITCHGEAR CABINET.

5-CHECK THE DIESEL FUEL TANK LEVEL.
Use conversion chart next to board inside break room. Put results in Site Coordinators box. 1"= 40GALLONS

6-CHECK/CHART THE THREE MOTOR CURRENTS. (REF.MA-58 FROM G:\US\MI\miacomm\MA\MA58)
South_____ North_____

7-CLEAN AND VACUUM THE ATO CABINET.
South_____ North_____

8-CLEAN AND VACUUM CIRCUIT BREAKER CABINET.
South_____ North_____

9-CLEAN AND VACUUM THE TERMINAL BLOCK CABINET.
South_____ North_____

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

10-CHECK CONTACTS IN MOTOR CONTROL BOX AND AUX. BOX.
(REF. WI - 2006, 2007, 2008)

Check the contacts on the North-A car.
Check the contacts on the North-B car.
Check the contacts on the North-C car.

_____

Check the contacts on the South-A car.
Check the contacts on the South-B car.
Check the contacts on the South-C car.

_____

11-INSPECT THE TERMINALS, WIRING, RESISTORS AND CAPACITORS IN THE MOTOR CONTROL AND AUXILIARY CONTROL BOXES. REPLACE BULGING CAP.'S, BURNT RESISTOR.
South_____ North_____

13-REPLACE THE A/C FILTERS.
5a) Before replacing filters clean the grill inside of vehicle preferably with power on, so all the dust and dirt will be suck into the filter before replacement.

14-Clean the A/C drain boot on the bottom of the unit.
South_____ North_____

15- CLEAN THE INLINE AIR FILTER BOWLS.
South_____ North_____

16-CHECK THE BRAKE LINING THICKNESS.
5/16" minimum at one inch in from the toe of the pad.
South_____ North_____

17-CHECK THE VEHICLE BATTERY CHARGER READINGS.
26.5v w/pwr. on, +/- depending on temperature. Ref. W.I.2041 FROM
G:\US\MI\miacomm\SD\MIA2041
South_____ North_____

18 LUBE THE REVERSER RACK AND PINION GEAR
Use proper grease
South_____ North_____

%205

**2ND SHIFT QUARTERLY**

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-CLEAN THE BUFFERS.
Clean and wipe off excess oil.
South_____ North_____

2-INSPECT ALL THE SWITCHGEAR BREAKERS
Remove and clean. Inspect for loose or burnt areas. "Do not file or sand".

_____
3-LOAD TEST THE UPS BATTERIES
Switchgear, Satellite and Terminal. With the UPS unit on, disconnect batteries 1 and 2. Use the battery load tester and the Test the batteries. If bad, replace. If good, reconnect. Disconnect batteries 3 and 4. Repeat above steps.

_____

4-CHECK AND REPAIR AS NECESSARY ALL 209P361 G08-G20-G22 RELAYS ON THESE
BOARDS.
Ref. Ma-51. Use test fixture
South_____ North_____

%206
**2ND SHIFT SEMI-ANNUAL (CK AND HOLDBACK VALVE)**

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-TEST THE CHECK VALVES ON THE VEHICLE MAIN AIR TANKS. Ref. W.I 5035 & 5036 FROM G:\US\MI\miacomm\SD\MIA5035 & MIA5036
The train is to be at berth, at the Sat, with all free door assignments and a hold. Leave the batteries on and the train lines closed. Cycle the compressors so that full pressure is applied to the air tanks. After the compressors cycle off, remove the power from the train and lock it out with the emergency stop switch located on the shop wall. Disconnect the hose from check valve. No air should be coming out of the valve (from the reservoirs back to the air dryer) If an air leak is present, replace the valve; If the valve checks ok, install the hose Fitting back onto the check valve. Removal of the check valve. Turn off the batteries. Drain the air from the main air tank. Remove the check valve from the main air tank.

INSTALLATION OF THE CHECK VALVE.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

Apply some Teflon to the threads of the check valve and install the valve onto the main air tank. Install the hose onto the check valve. Install the shop air hose on the air tank. Re-test the valve.
South_____ North_____

2-CHECK THE PRESSURE HOLD BACK VALVES ON ALL CARS. (Ref. W.I5035 FROM G:\US\MI\miacomm\SD\MIA5035
Have the train at berth, at the Sat. station. Request all free door assignments with a hold. Remove the main power from the train, turn off the batteries and leave the train-line valves closed. Drain the air from the main air tanks on all vehicles. The level of the vehicles should remain within tolerance(5/8") If any does not remain within tolerance, the hold back valve may be bad or there are air leaks Ahead the hold back valve.(hoses, leveling valve, air bags) Open up the train lines and install the shop air hose to build up full pressure in the vehicles. Remove the air hose, close the train line valves and re-test the hold back valves.
South_____ North_____

%207
**2ND SHIFT SEMI-ANNUAL COLLECTORS REBUILD**

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-PRINT W.I. 2034 FROM G:\US\MI\miacomm\SD\MA-2034).

2-THIRD SHIFT WILL REMOVE THE ASSEMBLIES.

3-SECOND SHIFT SHOULD REBUILD THEM FOR INSTALLATION WITHIN TWO DAYS.

NORTH: _____ SOUTH:_____

%208
**2ND SHIFT SEMI-ANNUAL DOOR OPERATOR REBUILD**

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-PRINT INSTRUCTIONS FROM G:\US\MI\miacomm\SD\MIA-2033.

2-THIRD SHIFT WILL REMOVE THE ASSEMBLIES FROM THE TRAIN

3-SECOND SHIFT SHOULD REBUILD THEM FOR INSTALLATION WITH IN TWO DAYS.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

NORTH: _____ SOUTH:_____

%209
2ND SHIFT ANNUAL (GUIDE AXLE REBUILD - NORTH)

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-PRINT W.I. 2016 FROM G:\US\MI\miacomm\SD\MIA-2016

2-THIRD SHIFT WILL REMOVE THE ASSEMBLIES FROM THE VEHICLE.

3-SECOND SHIFT SHOULD REBUILD THEM FOR INSTALLATION WITHIN TWO DAYS.

Miami Field Site C-100 & CX-100 Guide wheel Rebuild Signoff Sheet

Rebuild Date:_____ Guide wheel Spindle Serial Number:_____

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1. Rebuild procedure used is on: W I 2016 Revision: 4

It is important to measure pertinent shaft, and hub housing, using calibrated micrometers to verify that they are within the tolerances shown on drawing 4677C31 for the shaft and drawing 8838D90 for the hub housing. These components must be replaced if they are out of tolerance. The bearing cup must be removed using a bearing puller, not tools that may create nicks or burrs on the hub.

Drawing Number: 4677C31 Revision 12
Drawing Number: 8838D90 Revision:_____

Small Bearing Shaft Measurement: (1.2498" to 1.2493")
Large Bearing Shaft Measurement: (1.9995" to 1.9990")

Grease Seal Shaft Measurement: (_____"to _____") (No groves)

2. Small Bearing Shaft Measurement: Initial _____" 90 deg. _____"
(90 deg. = 90 degree rotation of micrometer from initial reading)
Tech._____ Date_____ Average _____"

3. Large Bearing Shaft Measurement: Initial _____" 90 deg. _____"

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

(90 deg. = 90 degree rotation of micrometer from initial reading)
Tech._____ Date_____ Average_____"

4. Grease Seal Shaft Measurement: Initial _____" 90 deg. _____"

(90 deg. = 90 degree rotation of micrometer from initial reading)
Tech._____ Date_____ Average _____"

5. Bearing Cups installed per specification:
Tech._____ Date_____

Insp._____ Date_____

6. Final End Play Reading:
(.001"-.007")_____"
Tech._____ Date_____

Insp._____ Date_____

7. Cotter Pin Installed & Secured:
Tech._____ Date_____

Insp._____ Date_____

8. Grease Cap Filled to Specifications, Installed Correctly & Torque Sealed:
Tech._____ Date_____

Insp._____ Date_____

9. Heat Sensitive Labels Installed per Specifications:
Tech._____ Date_____

Insp._____ Date_____

Instructions:

a. Line 1: Drawing & revision where your specific guide wheel procedure is located
b. Line 2,3,4: (____to____) = shaft tolerance range of your respective guide axle
Initial_____" = first micrometer reading
c. Line 4,5,6,7,8:
Tech._____ = signature of technician doing work
Insp. _____ = signature of inspector (cannot be the same as Tech.)

%210

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

**COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.**

1-ON ODD NUMBER YEARS CALL WESTINGHOUSE IN TO CALIBRATE ALL PDS EQUIPMENT AND CONSIDER CALLING FOR INFRARED INSPECTION.
Bob Tate - Westinghouse/Siemens Phone 813-621-2854 FAX 813-623-6261

2-EVERY YEAR, USE AMP-TECTOR TO VERIFY TRIP POINTS ON ALL THE SWITCHGEAR BREAKERS. USE PROCEDURE IN AMP-TECTOR BOX.

BREAKER WAS TESTED-_____ PAST / FAILED

BREAKER WAS TESTED-_____ PAST / FAILED

BREAKER WAS TESTED-_____ PAST / FAILED

BREAKER WAS TESTED-_____ PAST / FAILED

BREAKER WAS TESTED-_____ PAST / FAILED

%211

VERIFY PROPER OPERATION OF HURRICANE DOORS.
Manually lower door, verify proper operation, confirm power is removed from the guide way when the doors is down 4" If they are problems, call
South_____ North_____

%212

**2nd Shift Annual Pm**

VERIFY TRANSMITTER SIGNAL LEVELS
Measure transmitter signal levels. Ref. W.I.6005 FROM G:\US\MI\miacomm\SD\MIA-6005

TRANSMITTER LEVELS

| | CENTRAL - NORTH | | | CENTRAL - SOUTH | |
|---|---|---|---|---|---|
| | FREQ. | TX (AMPS) | LOCATION | TX (AMPS) | LOCATION |
| P.S. | | 0.9 | A2-XA3-M | 1.2 | A2-XA11-M |
| S.T. | | 0.9 | A2-XA1-M | 0.8 | A2-XA9-M |
| INFO. | LOW | 1.4 | A8-XA6-15 | 0.8 | A2-XA13-15 |
| "A | HIGH | 0.9 | | 1.4 | |
| INFO. | LOW | 0.8 | A2-XA5-15 | 1.3 | A8-XA8-15 |

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

| | | | | | |
|---|---|---|---|---|---|
| "B" | HIGH | 1.2 | | 1.0 | |
| INFO. | LOW | 1.4 | A2-XA7-15 | 1.0 | A2-XA15-15 |
| "C" | HIGH | 1.0 | | 1.3 | |

| | SATELLITE - NORTH | | | SATELLITE - SOUTH | |
|---|---|---|---|---|---|
| | FREQ. | TX (AMPS) | LOCATION | TX (AMPS) | LOCATION |
| P.S. | | 1.4 | A2-XA3-M | 1.2 | A2-XA11-M |
| INFO. | LOW | 1.6 | A2-XA5-15 | 1.6 | A7-XA8-15 |
| "A | HIGH | 1.0 | | 1.0 | |
| INFO. | LOW | 1.6 | A7-XA6-15 | 1.6 | A2-XA13-15 |
| "B" | HIGH | 1.6 | | 1.2 | |
| INFO. | LOW | 1.2 | A2-XA7-15 | 1.6 | A2-XA15-15 |
| "C" | HIGH | 1.2 | | 1.1 | |

| | TRAIN - NORTH | | | TRAIN - SOUTH | |
|---|---|---|---|---|---|
| | FREQ. | TX (AMPS) | LOCATION | TX (AMPS) | LOCATION |
| T.T. | LOW | 1.0 | CR2-XA5-M | 0.9 | CR2-XA5-M |
| | HIGH | 1.1 | | 0.9 | |
| INFO. | LOW | 3.4 | CR2-XA8-15 | 3.0 | CR2-XA8-15 |
| "A | HIGH | 3.0 | | 3.0 | |
| INFO. | LOW | 3.6 | CR2-XA8-15 | 2.8 | CR2-XA8-15 |
| "B" | HIGH | 3.2 | | 2.8 | |
| INFO. | LOW | 1.2 | CR2-XA8-15 | 2.8 | CR2-XA8-15 |
| "C" | HIGH | 2.4 | | 1.6 | |

INFORMATION RECEIVER LEVELSVEHICLE RECEIVERS

| | | | |
|---|---|---|---|
| "A" Car | TBT4 | + | 400mv |
| | TBT5 | - | |
| "B" Car | TBT4 | + | 400mv |
| | TBT5 | - | |
| "C" Car | TBT4 | + | 400mv |
| | TBT5 | - | |

TERMINAL CAB. 08 RECEIVER LEVELS

| | | | | | |
|---|---|---|---|---|---|
| North Traintone | TB1 A & C76 | 400mv | South Traintone | TB3 A & C76 | 400mv |
| NA Info RX | TB1 A & C80 | 400mv | SA Info RX | TB4 A & C37 | 400mv |
| NC Info RX | TB1 A & C85 | 400mv | SC Info RX | TB3 A & C85 | 400mv |
| NB Info RX | TB4 A & C34 | 400mv | SB Info RX | TB3 A & C80 | 400mv |

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

SATELLITE CAB. 40 RECEIVER LEVELS

| | | | |
|---|---|---|---|
| NA Info RX | TB1 A & C80 400mv | SA Info RX | TB4 A & C34 400mv |
| NC Info RX | TB1 A & C85 400mv | SC Info RX | TB3 A & C80 400mv |
| NB Info RX | TB4 A & C34 400mv | SB Info RX | TB3 A & C85 400mv |

%213
**2nd Shift Annual**

REFERENCE VITAL RELAY PROCEDURE T923A21

1-SEND GRS (VITAL) RELAYS TO GRS FOR CALIBRATION.
Relay serial number _____, _____,_____,_____

2-ENTER DATA ONTO DATA SHEET ON G:\US\MI\miacomm\Forms & Site's Data\ Calibration & TOOLS Info

3-INSURE SOME TYPE OF PAPER WORK IS USED FOR TRACKING, RMR, ETC. VITAL RELAY CALIBRATION DATA SHEET (7 Year Cycle)

Please note, relays get calibrated every 7 years, however, the maintenance pm prints out on an annual basis for checking. See due dates below

| | | | Due date |
|---|---|---|---|
| SA1B SAT | | 73920L022 | 3/22/2007 |
| S-SFTONEFIS | | D79-79C | 3/22/2007 |
| NA1B SAT | 521012 | | 3/23/2007 |
| SAD FIS | 527705 | | 3/23/2007 |
| S-OVERSHFIS | | 532316 | 3/23/2007 |
| S-SAFE | FIS | E79-69D | 3/23/2007 |
| NT3B FIS | 521231 | | 4/24/2007 |
| SAFG FIS | 520537 | | 4/24/2007 |
| SAVD3 | FIS | D79-56E | 4/24/2007 |
| SH FIS | 520351 | | 4/24/2007 |
| ST3B FIS | 522474 | | 4/24/2007 |
| STFG FIS | 522549 | | 4/24/2007 |
| STVD3 | FIS | D79-87B | 4/24/2007 |
| NAFG FIS | 521088 | | 10/5/2007 |
| NTFG FIS | D79-07D | | 10/5/2007 |
| STD FIS | 520419 | | 10/5/2007 |
| S-TRTONEFIS | | D79-86D | 10/5/2007 |
| VEHICLE | NA | 521220 | 10/5/2007 |
| VEHICLE | NC | 522396 | 10/5/2007 |
| VEHICLE | SA | J79-49U | 10/5/2007 |
| VEHICLE | SC | 522531 | 10/5/2007 |

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

| | | | |
|---|---|---|---|
| N-OVERSHFIS | | 530276 | 8/1/2008 |
| N-SAFE | FIS | 521224 | 8/1/2008 |
| N-SFTONEFIS | | 520456 | 8/1/2008 |
| NTD FIS | 532303 | | 8/1/2008 |
| N-TRTONEFIS | | 521208 | 8/1/2008 |
| NTVD3 | FIS | D80-K95 | 8/1/2008 |
| X-STOP | FIS | 520638 | 8/1/2008 |
| NAD FIS | 530244 | | 12/5/2008 |
| NAVD3 | FIS | 522681 | 12/5/2008 |
| NH FIS | 527680 | | 12/5/2008 |
| SPARE | | 520998 | 12/5/2008 |
| SPARE | | 532015 | 12/5/2008 |
| SPARE | | 527836 | 12/5/2008 |
| SPARE | | 527840 | 12/5/2008 |
| SPARE | | 527727 | 4/22/2009 |
| SPARE | | 522676 | 4/22/2009 |
| SPARE | | E79-Y76 | 4/22/2009 |
| SPARE | | D79-47E | 4/22/2009 |

Refer to Document T923A21 in EDMS

%215

2ND SHIFT 14 DAY PM'S

1- REMOVE TRASH FROM SHOP AREA.

%303

THIRD SHIFT--30 DAYS

1. REVIEW MAIN TIRE CHANGE OUT DATA SHEET FOUND IN BULLETIN BOARD

OUTSIDE BREAKROOM. USE WEEKLY TRAIN MILEAGE READOUT OR GET CURRENT

MILEAGE AND DETERMINE IF ANY TIRES ARE DUE TO BE CHANGED.

IF MILEAGE IS 3,000 OR LESS, MAKE A REPAIR LIST ENTRY AND TIRE SHOULD BE CHANGED SOON.

%304
THIRD SHIFT MONTHLY

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-LUBRICATE THE DRIVE SHAFTS AND U-JOINTS.
Two to three pumps only
South_____ North_____

2-CHECK THE DIFFERENTIAL OIL LEVEL.
To be 0.5" to 1" below the fill plug.
South_____ North_____

3-VISSUALLY CHECK FOR CRACKS AT THE WELDED AREAS OF THE BOGEY THAT ARE NOT
AIR FILLED CAVITIES. SPECIALLY,THE MOTOR MOUNTING BRACKETS AS SHOWN IN MARKED DRAWING FOUND IN THE FOLLOWING LOCATION:

G:\US\MI\miacomm\Forms & Site's Data\Field Bulletins\Safety Directives\
Propulsion Motor Mounting Bracket#55.

South_____ North_____

4-CHECK THE CONDITION OF THE COMMUTATOR COVERS.
Clean the filters with soap and water.
South_____ North_____

5-BLOW DIRT FROM THE MOTOR TACHS WITH SHOP AIR.
Approx. 30 psi ("A" Car Only)
South_____ North_____

6-INSPECT PROPULSION MOTOR AND COMPLETE THE MOTOR INSPECTION FORM. Form can be found and filed in the Motor Inspection File. IF BRUSHES OR COMMUNTATOR ARE BAD MAKE A NOTE ON REPAIR LIST TO REPLACE MOTOR AND SCHEDULE TO RESURFACE COMM..

Place on Carlos's desk for review and filing.
South_____ North_____

%305
THIRD SHIFT ANNUAL TRACTION MOTOR LUBRICATION.

1-LUBRICATION TRACTION MOTOR PER W.I.3027 FROM
G:\US\MI\miacomm\SD\MIA3027 &MIA3026

2- CLEAN CREEPAGE BAND

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

3-MEGGER MOTOR ARMATURE AND FIELDS.
REF. W.I.3026 FROM G:\US\MI\miacomm\SD\MIA3026

%306

3rd shift Semi-Annual Guide Wheel Inspection

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

North Train inspection in Feb. and Aug..
South train inspection in May and Nov..
1-CHECK THE VERTICAL PLAY AND BEARING CONDITION OF "ALL" THE GUIDE SPINDLES.

"Use attached guide spindle end play form"

Remove the drop beam and move one set of guide wheels over that area.

Attach the bearing endplay measuring device to the guide wheel shaft.

With the guide tire off of the beam and free to rotate, place air bag test fixture about 6 inches below tire.

Fill air bag fixture with 5 psi of air and push tire. Watch deflection on gauge and watch. The indicated movement should read between .001- .007 inches.

With guide wheel off of the beam and free to rotate, manually spin the guide wheel a few revolutions while listening and feeling for indications of a worn guide wheel bearing(s). Symptoms of a worn guide wheel-bearing can include but are not limited to:
----Intermittent tight spots that are felt when the guide wheel is slowly rotated by hand.
----A grinding or scraping sound that is heard when the guide wheel is rotated.
----Grease throw-off around the joint where the grease cap presses into the guide wheel hub.

Move the train forward until the next set of guide wheels in the inspection area. Repeat inspection

Note as the train is moved over the area with go guidance, if it tries to move sharply to the left or right report on repair list.

Repeat until all 24 are checked.

401

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

SOUTH GUIDE AXLE END PLAY CHECK OFF SHEET

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

SOUTH-A BEARING END PLAY MEASUREMENT:

|#1 |#2 |#3 |#4 |#5 |#6 |#7 |#8 |

| | | | | | | | |

SOUTH-A BEARING ROTATION:

|#1 |#2 |#3 |#4 |#5 |#6 |#7 |#8 |
| | | | | | | | |

SOUTH-C BEARING END PLAY MEASUREMENT:

|#1 |#2 |#3 |#4 |#5 |#6 |#7 |#8 |

| | | | | | | | |

SOUTH-C BEARING ROTATION:

|#1 |#2 |#3 |#4 |#5 |#6 |#7 |#8 |
| | | | | | | | |

SOUTH-B BEARING END PLAY MEASUREMENT:

|#1 |#2 |#3 |#4 |#5 |#6 |#7 |#8 |

| | | | | | | | |

SOUTH-B BEARING ROTATION:

|#1 |#2 |#3 |#4 |#5 |#6 |#7 |#8 |
| | | | | | | | |

400

NORTH GUIDE AXLE END PLAY CHECK OFF SHEET

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

NORTH-A BEARING END PLAY MEASUREMENT:

|#1 |#2 |#3 |#4 |#5 |#6 |#7 |#8 |

| | | | | | | | |

NORTH-A BEARING ROTATION:

|#1 |#2 |#3 |#4 |#5 |#6 |#7 |#8 |
| | | | | | | | |

NORTH-C BEARING END PLAY MEASUREMENT:

|#1 |#2 |#3 |#4 |#5 |#6 |#7 |#8 |

| | | | | | | | |

NORTH-C BEARING ROTATION:

|#1 |#2 |#3 |#4 |#5 |#6 |#7 |#8 |
| | | | | | | | |

NORTH-B BEARING END PLAY MEASUREMENT:

|#1 |#2 |#3 |#4 |#5 |#6 |#7 |#8 |

| | | | | | | | |

NORTH-B BEARING ROTATION:

|#1 |#2 |#3 |#4 |#5 |#6 |#7 |#8 |
| | | | | | | | |

%307
COLLECTORS, REPLACE WITH REBUILT.

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

PRINT W.I. 2032 FROM G:\US\MI\miacomm\SD\MA-2032).

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

NORTH TRAIN IN SEPT.. SOUTH TRAIN IN OCT..

WHICH CAR WAS DONE? NORTH____ SOUTH_____

Replace current collector on one car with rebuilt assembly the following was done during rebuild, but check it again before installation. Stand the completed assembly, including shoes, on the bench upright. same as it Would be mounted on the car. Gently push all the shoes down and release them. Allow them to return to their float position. Verify that in the float position all shoe are horizontally aligned with respect to each other if not check spacers. Verify that in the float position the arms are level, 90 degrees to the tree. If slightly high ok, wiring will pull it down. If low adjust the springs verify the force to pull the shoe back 1" is 10 +/- 2 pounds. If not check or change the springs
COMPLETED DATE _____ BY_____

NOW THE ONLY ADJUSTMENT LEFT IS THE VERTICAL HEIGHT OF THE ASSEMBLE AND CABLE ALIGNMENT AND ROUTING.
Verify the vehicle collector mounting is straight and level. If not shim, install the assembly on the vehicle mounting bracket. Verify that it hangs level and the shoes set on the rail, slightly above center of the rail when the car is empty tighten the mounting bolts. When connecting the cables to the shoes, the cables should be worked to allow them to stay near the mounting. Position without the bolt. If not cut the tie wraps and adjust the cable routing or replace the cables. Tighten the cable mounting hardware.
COMPLETED DATE _____ BY_____

%309
3rd SHIFT 2 YEARS (guide wheels)

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

THE GUIDE WHEELS WILL BE REBUILT EVERY TWO YEARS. ENDPLAY AND ROTATIONAL CHECK WILL BE CHECKED 6 TO 10 DAYS AFTER INSTALLATION AND EVERY SIX MONTHS AFTER.

1-REPLACE THE GUIDE TIRE SPINDLES WITH REBUILT ASSEMBLIES (REF. WI 2015 found at G:\US\MI\miacomm\SD\MA 2015)

ONE NORTH CAR DUE IN JAN, FEB AND MAR..OF EVEN NUMBERED YEARS
ONE SOUTH CAR DUE IN APRIL, MAY AND JUN..OF ODD NUMBERED YEARS

CAR # _____ DATE _____

AXLES REPLACED

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

#1 #2 #3 #4 #5 #6 #7 #8
| | | | | | | | |

Within 6-10 days of installing rebuilt guide axle assemblies verify the end play is within spec.

CAR # _____ DATE _____

AXLES END PLAY VERIFICATION
#1 #2 #3 #4 #5 #6 #7 #8

| | | | | | | | |

%310

3rd shift Three Years

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

PRINT PROCEDURE FROM G:\US\MI\miacomm\MA\MA41.

1-INSPECT AND REPACK THE #1 END AXLE BEARINGS

INBOARD
N-A N-C N-B S-A S-C S-B
| | | | | | |

OUTBOARD
N-A N-C N-B S-A S-C S-B
| | | | | | |

2-REVERSER INSPECTION AND LUB.PRINT PROCEDURE W.I. 2003

Disassemble the magnet valve and clean or rebuild

Lubricate the cylinder walls, inspect the raw hide pistons. (Use grease per Drawings)
N-A N-C S-A S-C
| | | | | |

%311

REPLACE ONE AIR COMPRESSOR

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

Jan. North A
Mar. North C
May North B
Jul. South A
Sep South C
Nov. South B

Look at the data sheet, AC_COMP. REPLACE, on the wall and verify the unit that needs replaced has not been recently replace.

If it has, note that and do not replace it again. If it has not, replace it and enter the serial numbers of the two units on the data sheet.

%312

REPLACE ONE A/C UNIT

| | |
|---|---|
| Jan. North A #1. | Jul. South A #1 |
| Feb. North A #2 | Aug. South A #2 |
| Mar. North C #1 | Sep. South C #1 |
| Apr. North C #2 | Oct. South C #2 |
| May North B #1 | Nov. South B #1 |
| Jun. North B #2 | Dec. South B #2 |

Look at the data sheet, AC_COMP. REPLACE, on the wall and verify the unit that needs replaced has not been recently replace.

If it has note that and do not replace it again. If it has not, replace it and enter the serial numbers of the two units on the data sheet.

%314

3RD SHIFT SEMI-ANNUAL PRESSURE SWITCHES AND LEVELING VALVES

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

| | |
|---|---|
| NORTH A IN JAN. | NORTH C IN FEB. |
| NORTH B IN MAR. | SOUTH A IN APR. |
| SOUTH C IN MAY | SOUTH B IN JUN. |
| NORTH A IN JUL. | NORTH C IN AUG. |
| NORTH B IN SEP. | SOUTH A IN OCT. |
| SOUTH C IN NOV | SOUTH B IN DEC. |

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

1-CLEAN THE INLINE AIR FILTER ON THE DELCO LEVELING VALVES.
Due: Jan, April, July and Oct.
(Ref. W.I.5019 & 5021 FROM G:\US\MI\miacomm\SD\MIA5019 & MIA5021

Use a 9/16" and 7/16" wrench to remove the hose fitting to avoid the filter adapter from moving.

Use a 1/2" wrench to remove the filter.

Before installing, put air into the system in order to clean out the hoses.

Re-install the filter using a 1/2" wrench; ("AVOID OVER-TIGHTENING" THE PART ARE BRASS AND ALUMINUM)

Blow out the hoses prior to re-connecting.
Install the hose fitting using a 9/16" wrench to "hold" the adapter in place with a 7/16" wrench to avoid stripping out the filter threads while tightening the hose fitting.

2-CHECK ALL THE PRESSURE SWITCHES FOR PROPER PNEUMATIC SETTING.
USE CALIBRATED GAUGE. PRINT WI FROM G:\US\MI\miacomm\SD\MIA5019
BLOW OUT THE HOSES PRIOR TO RE-CONNECTING.

| Switch | Condition | Setting |
|---|---|---|
| MRP | N.O. | 95 PSI decreasing |
| MRPL | N.O. | 65 PSI decreasing |
| PB | N.C. | 65 PSI decreasing |
| PBR | N.C. | 65 PSI decreasing |
| FB | N.O. | 30 PSI INCREASING |
| DB | N.O | 7 PSI INCREASING |
| CSO | | ON @ 125 OFF @ 155 PSI |

Note the time it takes the compressor to pump-up from 120 to 155 PSI

CAR _____ Time _____--

3-CHECK THE RESISTANCE OF ALL THE SWITCHES. PRINT WI FROM G:\US\MI\miacomm\SD\MA-5021 REPAIR OR REPLACE SWITCH IF NECESSARY

%362

THIRD SHIFT SEMI-ANNUAL—(VEHICLE DOORS)

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

1-PRINT W.I.3032 FROM G:\US\MI\miacomm\SD\MIA3032.doc, FOR DOOR PM.

%364

THIRD SHIFT SEMI-ANNUAL (WAYSIDE DOORS FIS & SAT)

COMPLETE DATA AND PLACE ON SHIFT LEADERS DESK FOR DATA TRANSFER, REVIEW AND FILING. WRITE ANY DISCREPANCIES FOUND BELOW IN THE REPAIR LIST.

1-PRINT W.I.3017 FROM G:\US\MI\miacomm\SD\MIA3017.doc, FOR DOOR PM.
2-PRINT MA-18 FROM G:\US\MI\miacomm\MA\MA-18.doc,TO REMOVE OPERATOR
3-PRINT W.I. 2035 FROM G:\US\MI\miacomm\SD\MIA2035.doc,TO REPLACE SES

%365

THIRD SHIFT QUARTERLY (WHEEL NUTS RE-TORQUING)

1- RE-TORQUE ALL #1 END TIRES IN BOTH TRAINS. 400 FT LBS.
RE-TORQUE ALL #2 END TIRES IN BOTH TRAINS. 175 FT LBS.
2- FILL DATA SHEET IN CLIPBOARD, LOCATED NEXT TO REPAIR LIST OR INPUT DATA IN FILE FOUND IN:
G:\US\MI\miacomm\Forms & Site's Data\3RD SHIFT QUARTERLY PM(#365)WHEEL RE-TORQUE DATA
.

# EXHIBIT C

# FIELD REQUEST INFORMATON

SECTION 3
TECHNICAL SPECIFICATIONS
MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| Title: |
| --- |
| **Technical Change Authorization (TCA)** |
| **Purpose: The TCA provides a means of documenting a temporary change to an existing equipment configuration for a defined performance evaluation period.** |

# SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

**Scope: This document details the persons involved in initiating and authorizing the changes covered under the TCA.**

| Responsible unit: | Process owner: | Document type: | Confidentiality status : | Document state : |
|---|---|---|---|---|
| TTS | Operations and Maintenance | Process | Public | Released |

| | Name / Function | Signature | Date |
|---|---|---|---|
| **Prepared :** | Rick Love / O & M Performance Manager<br>Author | Signature on File. | 2006-02-01 |
| **Verified :** | Anthony Incorvati / Director Technical Compliance<br>Sponsor | Signature on File. | 2006-02-01 |
| **Approved :** | Sue McClure / BTIP<br>BTIP | Signature on File. | 2006-02-01 |
| **Released :** | Michael Shaman / VP O&M<br>process owner | Signature on File. | 2006-02-01 |

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| Organization and BT process structure prefix : | Doc ID-number : |
|---|---|
| TTS-20-15-45- | 002568 |

| Effective date: | Revision : | Original Language : |
|---|---|---|
| 2006-02-01 | 00 | English |

| Translated by: | Translation approved by: | Translation languages: |
|---|---|---|
| Name / Function | Name / Function | |

Doc ID-number: 000003 rev04

| evision | | Description of changes |
|---|---|---|
| 00 | 2006-02-01 | First issue |
| | | |

**Title:**

# Field Request (FR)

**Purpose:** To provide a method of communication between the Service Delivery Center (SDC) and TTS Headquarters.

# SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

**Scope:** The FR process is supported by a Lotus Notes based database that incorporates automated forwarding, tracking and archiving all of the information communicated between the SDC and Headquarters.

| Responsible unit: | Process owner: | Document type: | Confidentiality status : | Document state : |
|---|---|---|---|---|
| TTS | Operations & Maintenance (O & M) | Procedure | Public | Released |

| | Name / Function | Signature | Date |
|---|---|---|---|
| **Prepared :** | Rick Love/ O & M Performance Manager<br>Author | Signature on File | 2006-02-01 |
| **Verified :** | Anthony Incorvati / Director Technical Compliance<br>Sponsor | Signature on File | 2006-02-01 |
| **Approved :** | Sue McClure / BTIP<br>BTIP | Signature on File | 2006-02-01 |
| **Released :** | Michael Shaman / VP O&M<br>process owner | Signature on File | 2006-02-01 |

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| Organization and BT process structure prefix : | Doc ID-number : |
|---|---|
| TTS-20-40-00- | 002567 |

| Effective date: | Revision : | Original Language : |
|---|---|---|
| 2006-02-01 | 00 | English |

| Translated by: | Translation approved by: | Translation languages: |
|---|---|---|
| Name / Function | Name / Function | |

Doc ID-number: 000003 rev04

# SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE
### Revision log

| Revision | Date (yyyy-mm-dd) | Description of changes |
|---|---|---|
| 00 | 2006-02-01 | First issue |
| | | |
| | | |
| | | |
| | | |

## FIELD CHANGE NOTICE

# SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| . FCN NO. | 2. PROGRAM | 3. DATE |
|---|---|---|
| 4. EQUIPMENT INVOLVED (END ITEM) | 5. STYLE NO. | 6. NEW CAPL NO. |
| 7. ECN NO. | 8. CHARGE NUMBER | |
| 9. REFERENCE DRAWING(S)/COPY ATT'D - Y/N | 10. OTHER REFERENCES (if any) | |
| 11. SPARE PARTS AFFECTED (Y/N) | 12. SPARE PARTS DISPOSITION | |
| 13. EFFECTIVITY POINT IN PRODUCTION (SERIAL NO.) | 14. ESTIMATED DATE (PRODUCTION) | |

15. UNIT SERIAL NUMBERS OR QUANTITY TO BE MODIFIED IN FIELD:

16. BRIEF DESCRIPTION OF PROBLEM:

17. TOOLS/TEST EQUIPMENT REQUIRED:

18. RETROFIT INSTRUCTIONS:

19. TEST/INSPECTION REQUIREMENTS:

20. PARTS/MATERIAL/TOOLING ORDERED:

| QTY | PART NUMBER | PART DESCRIPTION | PRINTING INFORMATION |
|---|---|---|---|
| | | | |

| 21. DISTRIBUTION: | 22. PREPARED BY AND DATE: |
|---|---|

23. RETROFIT COMPLETED BY AND DATE:

| APPROVED BY (COG. ENG OR PRG MGR/HQ MGR) | DATE |
|---|---|
| | |

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# SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE


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**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

# Executive summary

The Field Request (FR) process is a means of providing two-way communication between the TTS SDC and the Headquarters (Kingston and Pittsburgh). The Lotus Notes based FR database allows SDC personnel to issue a request to Headquarters for technical support. The FR database archives the information exchange between the SDC and Headquarters and is retrievable for future reference.

# Reference documents

| Doc ID-number | Title |
|---|---|
| GRP-20-35-15-001379 | Field Experience Feedback |
| GRP-20-35-20-001378 | Field Data Process |
| MET-20-35-20-000383 | Field Data Reporting Analysis |
| TTS-20-15-45-002569 | Field Change Notice (FCN) |
| TTS-20-15-45-002568 | Temporary Change Authorization (TCA) |
| TTS-20-15-45-003692 | Engineering Change Approval Documentation |
| TTS-20-35-20-006359 | Avis de Modification (AVM) |

The current status of each business process document is documented on the coversheet of the available document in the respective database (e.g. in the eBTM).

# Involvement of functions

| activities for this document | Functions | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Strategy, Markets and Product Planning | Sales | Bid | Contracts | Project Management | Engineering | Procurement | Manufacturing | Quality | Product Introduction | Operation &. Maintenance | Six Sigma | Capital Investment | Finance | Cost Performance Management | Health, Safety & Environment | Information Systems | Human Resources | Leadership Centre | Legal | Communications |
| Draft of the documentation | | | | | I | I | I | | I | C | R | | | | | C | | | | | |
| Verification of the document | | | | | | | | | | | R | | | | | | | | | | |
| Approval of the document | | | | | | | | | | | R | | | | | | | | | | |
| Release of the document | | | | | | | | | | | R | | | | | | | | | | |

R= Responsible C= Consultation I= Information

# Definitions and Abbreviations

| Term | Definition |
|---|---|
| Term: SDC | Definition: Service Delivery Centre |
| Term: FR | Definition: Field Request |
| Term: FSE | Definition: Field Service Engineer |
| Term: AVM | Definition: Avis de Modification (French spelling) |

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

| | |
|---|---|
| Term: FMI | Definition: Field Modification Instruction |
| Term: FCN | Definition: Field Change Notice |
| Term: TCA | Definition: Temporary Change Authorization |
| Term: OIL | Definition: Open Item List |
| Term: O & M | Definition: Operations & Maintenance |

Definitions and abbreviations are defined in the Bombardier Transportation lexicon.

# Process Characteristics

| | | |
|---|---|---|
| ***Suppliers***<br>Headquarters Engineering<br>Procurement<br>Quality and Systems Assurance (Safety) | ***Process description***<br>Provide technical support | ***Customers***<br>SDC, Product Introduction group |
| ***Inputs***<br>FR database<br>Safety | | ***Outputs***<br>Engineering solutions<br>Components order/shipment<br>Revisions to Drawings and Manuals |
| ***Indicators***<br>Improved product design, improved product reliability and system availability | | |

# Process description

The purpose of the Field Request (FR) is to provide a communication channel between the Service Delivery Centers (SDC) and Kingston and Pittsburgh (hereafter referred to as Headquarters). The FR process can be used whenever an investigation of an equipment problem is required, quality problems have been noted, or "as-built" drawing updates or corrections are required. The problem may involve engineering or production deficiencies, inadequate quality control, technical manual inaccuracy, drawing changes, or similar problems requiring direct action by Headquarters. Improvement suggestions to be incorporated into present equipment that will provide more efficient and cost effective methods of performing Operations & Maintenance (O&M) tasks or items to be considered for future projects can also utilize the FR process (i.e., Lessons Learned). In addition, the FR serves as a mechanism to provide an SDC charge number (specific to each FR) to pay for Headquarters support. During Project start-up (Product Introduction) activities most field generated change/modification requests are addressed through the project and the project "punch list" (also known as; Open Action Item List, Open Item List). However, should circumstances warrant the visibility of a FR during start-up, it is the SDC/Start-Up Managers option to initiate an FR rather than, or in addition to, placing the item on the project punch list.

Note: SDC personnel (Start-up and O &M) should contact the O & M Performance Manager to discuss the details of the issue that is being considered for an FR prior to initiating the FR to determine the best course of action.

SECTION 3
TECHNICAL SPECIFICATIONS
MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

FR initialization, review, tracking and archiving is a fully electronic process operated within Lotus Notes and administered by the TTS O & M Performance Manager. When an SDC decides to address a technical issue using the FR process, a Field Service Engineer (FSE) initiates the FR by accessing the FR database on his or her Lotus Notes desktop. The FR database includes detailed step-by-step instructions that are contained in the FR database **Help** option.

## FR Initialization and approval (reference the FR database Help option)

When the FR is issued by the FSE, the FR database automatically assigns a sequential FR number and forwards the FR to the SDC manager by way of an e-mail message. At this point the FR is "Pending". The SDC manager reviews the details of the request and either approves or rejects the FR. Rejecting the FR will cancel its issue but it will be archived in the FR database. If approved, the SDC manager will assign an SDC charge number to the "Estimating Charge" field of the FR document. The FR will be forwarded to "Field Action". In the Field Action sequence, the O & M Performance Manager reviews the details of the request to determine if any additional information or communication is required. It is at this point that the FR is reviewed for its "Safety" priority. All FRs are subject to a monthly review by the Quality and Systems Assurance group to determine if the SDC has an acceptable containment plan in place that will mitigate the Safety concern. If the containment plan is agreed to by the Quality and System Assurance group, the FR can be downgraded to an "Immediate" or "Standard" priority. In addition the Quality and Systems Assurance group's review will identify any FR issues that are not designated "Safety" but should be. This discrepancy will be reported to the FR administrator for further review. A Performance Manager approval of the FR will forward it to Engineering. A designated Engineering manager reviews the details of the request and either approves or rejects the FR. Rejecting the FR will cancel its issue but it will be archived in the FR database. Upon approval, the Engineering manager assigns the FR to an engineer. The FR is still pending at this stage. The FR database tracks all Pending FRs. The assigned engineer reviews the details of the request and either approves or rejects the FR. Rejecting the FR will cancel its issue but it will be archived in the FR database. In order for the assigned engineer to approve the FR he or she must provide an Estimated Start Date, Estimated Due Date and Engineering/Drafting hours. The FR database will prompt the engineer for this information. The FR cannot be advanced from this point without this information. The approved FR will be forwarded to Field Action for a second time in the approval process. In the second Field Action sequence, the O & M Performance Manager assigns an FR-specific SDC charge number to the "Charge" field of the FR document. The Performance Manager's approval at this point advances the FR from Pending to "Open".

**Note: When an FR is rejected in Pending, the SDC Manager is notified by way of an e-mail message. The FR prompts the person rejecting the FR to provide an explanation why the FR is being rejected.**

## Open FR (reference the FR database Help option)

The Open FR will be automatically forwarded to the assigned engineer by way of an e-mail message. The assigned engineer is responsible for logging the hours spent (per month) in the FR document as well as communicating progress to the SDC by way of a monthly FR Status Report. The FR database includes a "Create a Status Report" option.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

**Note: FR Status Reports can also be provided by any person who has access to the FR database (i.e., FSE, Performance Manager, Engineering Manager, etc) at any time.**

The FR database tracks all Open FRs. The assigned engineer is automatically notified by way of an e-mail message when the FR is open beyond its Estimated Due Date. When the assigned engineer receives notification of an overdue FR, he or she must provide an FR Status Report and a new Due Date. While the FR is Open, all documentation associated with resolving the FR must be entered in the FR. This can be done by entering the document number in the appropriate fields included in the FR, or by referencing the document(s) in an FR Status Report. Efforts to resolve the FR should include regular communication between the assigned engineer, the FSE and the O & M Performance Manager. In addition, regular FR review meetings should be held between the O & M Performance Manager, Engineering Managers and whenever possible, the FSEs and SDC Managers.

## FR Closure (reference the FR database Help option)

The FR is ready to be closed when all parties; FSE, SDC Manager, assigned engineer and O & M Performance Manager are in agreement that the request has been resolved. In the case of a "Safety" FR, a representative of the Quality and Systems Assurance group will be included in the agreement to close the FR. The resolution of the FR typically results in retrofitting equipment (ordering parts) and changes made to a combination of drawings, procedures and manuals.
The procedures used to implement a retrofit and update documentation are numerous and can vary depending upon the nature and origin of the issue, the location of the documentation (Kingston or Pittsburgh) and the manpower (Vendor or Bombardier personnel).
The various procedures are listed in Section 2.0 Reference documents of this document. Contact the O & M Performance Manager for
The FR has provisions for listing the procedure and document numbers associated with resolving the FR, and follow up changes to documentation. The FR can be closed before these follow up changes are completed. However there may be situations where the SDC Manager chooses to keep the FR open until all follow up documentation and component supply are completed.

## Archiving of Business Process Documentation

Business process documents shall be maintained and archived in accordance with 000005 Directive "Control of Document/Data and Records" and 000350 Procedure "Archiving of Documents/Data and Records".
End of document

# EXHIBIT D

# EVALUATION CHECKLIST

## Central Control Operator Evaluation Checklist

Note: A Bombardier representative will add a comment on each of the following items.

Two Bombardier representatives will evaluate the Central Control Operator. One should be present at Central Control to observe the operator's performance, and the other representative will request commands, and ride the train.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

29. Remove one train from service to be used during the evaluation. The operator being evaluated must be notified to be ready to start the test.

30. While at berth, have the operator place the train in stop status with a hold.

31. Have the operator change all the door assignments to sterile, and then change all the door assignments back to free.

32. Have the operator change the dwell timer to 35 Seconds.

33. Have the operator remove all door assignments from the train, one vehicle each time, observing he follows the proper sequence requested. The representative should enter the last vehicle in order to perform the next step.

34. Place a call from the onboard emergency telephone. Wait for a response.

35. Have the operator make a Public Announcement to the train. Ask the operator to make a Public Announcement on board the train. (Example: Stand away from the doors, the technicians are on their way)

36. Have the operator give the train a Run-Auto-Release, and remove the hold.

37. While moving, have the operator switch all doors to sterile, and a hold.

38. Have the operator remove the hold and release the train

39. While moving, have the operator switch all doors to free.

40. At the next station, disable a wayside door. Wait for a response. Operator should report the problem and alarm indication

41. Clear the door problem and request a hold.

42. Have the operator start the Auxiliary Power Generator, and advise when it is ready.

43. Have the operator remove main power from the train, and bring up the Auxiliary Power.

44. Have the operator remove the Auxiliary Power from the train, and bring up main power.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

45. Have the operator turn off the Auxiliary Power Generator.

46. Enter the train and ask the operator to remove the hold.

47. Drive the train out of the tunnel, and stop on the guide way. Open a vehicle door and wait for a response. The Operator should report the problem and alarm indication.

48. Using the emergency phone on the guide way, request a Public Announcement on the guide way.

49. Return to the vehicle but "DO NOT" close the vehicle door. Ask the operator to bring up main power to the train. Wait for a response. Operator should report the problem and alarm indication.

50. Close the vehicle door, have operator bring up main power and drive the train to berth.

51. Depress the emergency stop button on the hostler panel to generate a mechanical alarm. Wait for a response. The operator should report he received a mechanical alarm.

52. Reset the train and step out of the vehicle. Request the operator a Run-Auto-Release.

53. While the train is moving, open a wayside door to place the train into stop status which will produce an Alarm –2. Wait for a response. The operator should report the location of the train if possible, the problem and the alarm indication.

54. Enter the guide way through the glass doors at F.I.S. in order to trigger the alarm. Wait for a response.

55. Have the operator reset the alarm.

56. Drive the train to berth. Have the operator change the dwell timer back to 45 Seconds.

29 Conclude the evaluation by having a discussion with the operator on procedures such as placing the other train on hold should one train stop on the guide way. **Remind the operator to keep both trains in coordination as much as possible**. Explain the function of the Emergency power shut off which removes guide way power from both trains simultaneously. Discuss any weaknesses discovered during the session.

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

Representatives: _____(Print)

_____(Print)

MDAD Operator: _____(Print Name)

Signature: _____

Date: _____

Pass _____

Fail _____

OTHER COMMENTS: _____

_____

_____

# EXHIBIT E

# Standard Operating Procedures (S.O.P.) LIST

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

## S.O.P LIST

| Site # | Description | Revision Level | Skills Demo Ref. # | Current Rev. Date |
|---|---|---|---|---|
| SOP - 30 | Respond to High Winds/Hurricane | 03 | N/A **** | 05/21/03 |
| SOP - 31 | Vacation/Attend. Policy & Procedure | 02 | N/A | 7/30/02 |
| SOP - 32 | Site Red Tag Procedure | 00 | N/A | 03/01/00 |
| SOP - 33 | Respond to Overshoot Alarm | 01 | 4004 | 07/01/99 |
| SOP - 34 | Respond to Dr. Opr. while Running | 01 | 4005 | 07/10/99 |
| SOP - 35 | Respond to Emerg. Brake Alarm | 01 | 4006 | 03/30/00 |
| SOP - 36 | Respond to MOL Alarm | 02 | 4023 | 07/12/06 |
| SOP - 37 | Respond to Dr. Fail to Open Alarm | 01 | 4008 | 12/14/01 |
| SOP - 38 | Respond to Dr. Fail to Close Alarm | 02 | 4009 | 12/14/01 |
| SOP - 39 | Perform Inventory Control | 01 | 1005 | 05/05/05 |
| SOP - 40 | Respond to Air Pressure Alarm | 01 | 4011 | 12/14/01 |
| SOP - 41 | Respond to Battery Charger Alarm | 01 | 4012 | 10/28/99 |
| SOP - 42 | Incident Guidelines | 02 | N/A ** | 7/11/06 |
| SOP - 43 | Site Safety Guidelines | 03 | N/A | 02/03/05 |
| SOP - 44 | Respond to Dragging Brake | 02 | N/A | 02/03/05 |

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

| | | | | |
|---|---|---|---|---|
| SOP - 45 | Respond to UPS Pwr. Fail/Indica | 02 | 4016 | 02/03/05 |
| SOP - 46 | Respond to Ground Fault | 02 | 4017 | 02/03/05 |
| SOP - 47 | Respond to Phase / Phase Fault | 02 | 4018 | 02/03/05 |
| SOP - 48 | Perform Dead Car Recovery | 02 | 4019 | 02/03/05 |
| SOP - 49 | Recover for Veh. Low Air Press | 01 | 4020 | 12/04/01 |
| SOP - 50 | Recover from a Total Power Loss | 02 | 4021 | 02/04/05 |
| SOP - 51 | Recover for MPB Trip | 02 | 4022 | 07/12/06 |
| SOP - 52 | Recover for Mtr. Overload | 03 | 4023 | 02/04/05 |
| SOP - 53 | Perform Manual Train Recovery | 02 | 4024 | 02/04/05 |
| SOP - 54 | Perform Manual Train Operation | 04 | 4025 | 06/21/05 |
| SOP - 55 | Recover for Train Emergency Stp. | 02 | 4026 | 02/16/05 |
| SOP - 56 | Recover for Wayside Ovrsht. Fail | 02 | 4027 | 02/16/05 |
| SOP - 57 | Identify Cause Remove from Service | 03 | 4028 *** | 02/16/05 |
| SOP - 58 | Respond to Bomb Threat | 01 | 4029 **** | 02/16/05 |
| SOP-29 | Respond to a Fire Alarm | 02 | 4029 **** | 04/18/05 |
| SOP - 47 | Recover for Grnd.Phase/Phase | 03 | 4030 | 02/17/05 |
| SOP - 48 | Recover for Program Stop Fail | 02 | 4031 | 02/17/05 |
| SOP - 49 | Recover for Veh. Fail to Reverse | 02 | 4032 | 02/17/05 |
| SOP - 50 | Recover for No Auto Veh/Sta. Dr | 01 | 4033 | 2/17/05 |
| SOP - 51 | Recover for No SBR | 02 | 4034 | 02/17/05 |
| SOP - 52 | Perform Purchasing/Ordering | 01 | 1006 | 02/17/05 |
| SOP - 53 | Recover from Car Pwr. Sup. Failure | 00 | 4036 | 07/26/99 |
| SOP - 54 | Guide way Access | 01 | N/A **** | 02/20/05 |
| SOP - 55 | Power Lockout/Tagout | 05 | N/A | 06/06/06 |
| SOP - 56 | Standard Radio Language | 03 | N/A **** | 6/23/06 |
| SOP - 57 | Unattended Package | 01 | 4029 **** | 02/20/05 |
| SOP - 58 | Bombardier Airport Security | 01 | N/A | 3/18/03 |
| SOP - 59 | Emergency Action Plan | 00 | N/A | 02/20/05 |
| SOP - 60 | | 00 | N/A | |
| SOP - 61 | | 00 | N/A | |
| SOP - 62 | | 00 | N/A | |
| SOP - 63 | | 00 | N/A | |

**** require agreement from OCR -

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

# EXHIBIT F

# VEHICLE & STATION SUMMARY

SUBJECT: MIAMI AIRPORT VEHICLE & STATION CAPL SUMMARY REVISED: 2/11/00

| ITEM | CAPL | DESCRIPTION | ASS'Y NO. | NOTES |
|---|---|---|---|---|
| 1 | 4726A01G10 | Vehicle Ass'y ("A" Car No.1 End) | 4675C45G03 | |
| 2 | 4726A02G09 | Vehicle Ass'y ("A" Car No.2 End) | 4675C45G03 | |
| 3 | 4726A03G10 | Vehicle Ass'y ("B" Car No.1 End) | 4675C45G04 | |
| 4 | 4726A04G10 | Vehicle Ass'y ("B" Car No.2 End) | 4675C45G04 | |
| 5 | 4726A05G09 | Trailing Axle Suspension | 1121F53G01 | |
| 6 | 4726A06G09 | Drive Axle Suspension | 1121F08G01 | |
| 7 | 4726A07G03 | Transformer Blower | 4675C14G01 | |
| 8 | 4726A08G01 | Main Transformer | 4675C16G01 | |
| 9 | 4726A09G02 | Braking Transformer | 4675C15G02 | |
| 10 | 4725A98G09 | Air Control Pkg. Ass'y | 8368D54G02 | |
| 11 | 4726A11G04 | Info & Train Time TX Cradle | 8362D54G03 | |
| 12 | 4726A12G07 | ATO Cabinet Gen. Ass'y ("A" Car) | 8370D44G02 | |
| 13 | 4726A13G05 | ATO Cabinet Gen. Ass'y ("B" Car) | 8370D44G03 | |
| 14 | 4726A24G08 | Train Control Ass'y | 8370D24G01 | |
| 15 | 4726A25G10 | Train Control Ass'y (Terminal Bldg.) | 8370D23G01 | |
| 16 | 4726A26G02 | Roadway Electrical Installation | 1121F78G01 | |
| 17 | 4726A27G02 | Central Control Console Gen. Ass'y | 8368D72G02 | |

## SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

| | | |
|---|---|---|
| 18 | 4726A28G02 | Mimic Display Board Cabinet 8368D73G02 Ass'y |
| 19 | 4726A29G02 | Power Center Interface Relay 1121F93G01 Cab. Ass'y |
| 20 | 4726A32G01 | Train Control Inter-Cabinet 4765A24G01 Cables |
| 21 | 4726A33G03 | Program Stop Enclosure Ass'y 1121F87G01 |
| 22 | 4765A35G05 | Overshoot Cradle 8362D56G02 |
| 23 | 4765A36G04 | Info & Train Tone TX Cradle 8362D54G02 |
| 24 | 4765A37G08 | Brake/Propulsion Cradle 8362D55G02 |
| 25 | 4765A38G07 | Info RX & Traction Controller 8362D57G02 Cradle |
| 26 | 4765A39G07 | Info RX & Traction Controller 8362D57G03 Cradle |
| 27 | 4765A40G07 | Safe Tone RX & Traction 8362D59G02 Controller Cradle |
| 28 | 4765A52G07 | TE-18A Motor Control Box 8368D01G02 |
| 29 | 4765A53G06 | TB-113A Aux. Control Box 1120F44G02 ("A" Car) |
| 30 | 4765A54G05 | TB-113A Aux. Control Box 1120F44G03 ("B" Car) |
| 31 | 4726A79G01 | P.A. Telephone Sw. and Term 8370D85G01 Cabinet |
| 32 | 4726A80G01 | P.A. Telephone Sw. and Term. 8370D88G01 Cabinet |
| 33 | 4726A81G03 | Voice Communication System 8362D76G01 |
| 34 | 4725A98G09 | Air Control Package Gen. Ass'y 8368D54G02 B/M |
| 35 | 4725A99G01 | Brake Control Package Ass'y 8368D60G02 Wiring Diag. |
| 36 | 4809A40G01 | Air Brk. System Aux. Release 8840D89G01 Package |
| 37 | 4809A20G02 | Non-Vital Relay Cabinet 2269D86G01 (Terminal Building) |
| 38 | 8625A97G03 | Low Tire Pressure Junction Box 3D99522G01 |
| 39 | 3A88226G02 | Ctl. Radio Sys Computer Sys 6D55650G01 |
| 40 | 3A88220G02 | Communications Controller Cradle 6D55722G01 |
| 41 | 3A88225G02 | Wayside Comm. Controller 6D55651G01 |

SUBJECT: MIAMI AIRPORT "C" CAR CAPL SUMMARY -- REVISED: 04/27/99

| ITEM | CAPL NO. | DESCRIPTION | ASS'Y NO. | NOTES |
|---|---|---|---|---|
| 1 | 4809A21G09 | Vehicle Ass'y (No. 1 End) | 4682C13G01 | |
| 2 | 4809A22G08 | Vehicle Ass'y (No. 2 End) | 4682C13G01 | |
| 3 | 4809A23G04 | Under Car Equipment Instl. | 1021J91G01 | |
| 4 | 4809A25G06 | Trailing Axle Suspension | 1121F53G02 | |
| 5 | 4809A28G07 | Drive Axle Suspension | 1121F08G02 | |
| 6 | 4809A26G05 | TE-18B Motor Control Box | 8368D01G05 | |
| 7 | 4809A27G04 | TE-113E Aux. Control Box | 1120F44G04 | |
| 8 | 4726A07G03 | Transformer Blower | 4675C14G01 | |
| 9 | 4726A08G01 | Main Transformer | 4675C16G01 | |
| 10 | 4726A09G02 | Braking Transformer | 4675C15G02 | |
| 11 | 4725A98G09 | Air Control Pkg. Ass'y | 8368D54G02 | |
| 12 | 4725A99G01 | Brake Control Pkg. Ass'y | 8368D60G02 | |
| 13 | 4809A40G01 | Air Brake System Aux. | 8840D89G01 | Release Pkg. Ass'y |
| 14 | 4809A24G04 | ATO Cabinet General Ass'y | 2264D93G01 | |
| 15 | 4726A11G04 | Info & Train Tone Tx. Cradle | 8362D54G03 | |
| 16 | 4765A39G07 | Info & Traction Controller | 8362D57G03 | Cradle |

**SECTION 3**
**TECHNICAL SPECIFICATIONS**
**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

17 3A88226G01 Ctl Radio Sys Computer Sys 6D55650G01

# SECTION 3
## TECHNICAL SPECIFICATIONS
## MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

**MIAMI-DADE COUNTY** **BID NO.: -OTR**

**Submit Bid To:**
**CLERK OF THE BOARD**
**Stephen P. Clark Center**
**111 NW 1st Street**
**17th Floor, Suite 202**
**Miami, Florida 33128-1983**

**OPENING: 2:00 P.M.**
**WEDNESDAY**
**, 2006**
**BID NO.:**

**INVITATION TO BID**
**SECTION 4**
**BID SUBMITTAL FORM**

PLEASE QUOTE PRICES F.O.B. DESTINATION, LESS TAXES, DELIVERED IN MIAMI-DADE COUNTY, FLORIDA

NOTE: Miami-Dade County is exempt from all taxes (Federal, State, Local). Bid price should be less all taxes. Tax Exemption Certificate furnished upon request.

| | | | |
|---|---|---|---|
| Issued by: m.p.g. | DPM Purchasing Division | Date Issued: 12/1/2006 | This Bid Submittal Consists of Pages 212 through 215 |

Sealed bids subject to the Terms and Conditions of this Invitation to Bid and the accompanying Bid Submittal. Such other contract provisions, specifications, drawings or other data as are attached or incorporated by reference in the Bid Submittal, will be received at the office of DPM, Purchasing Division, Vendor Assistance section at the address shown above until the above stated time and date, and at that time, publicly opened for furnishing the supplies or services described in the accompanying Bid Submittal Requirement.

**MAINTENANCE OF AUTOMATED PEOPPLE MOVER AT THE MIAMI INTERNATIONAL AIPORT**

A Bid Deposit in the amount of **N/A** of the total amount of the bid shall accompany all bids

A Performance Bond in the amount of **N/A** of the total amount of the bid will be required upon execution of the contract by the successful bidder and Miami-Dade County.

**DO NOT WRITE IN THIS SPACE**

ACCEPTED _____ HIGHER THAN LOW _____

NON-RESPONSIVE _____ NON-RESPONSIBLE _____

DATE B.C.C. _____ NO BID _____

ITEM NOS. ACCEPTED _____

COMMODITY CODE: **961-74**

SR. PROCUREMENT AGENT: M. Perez-Garviso

**FIRM NAME:** _____

**RETURN ONE ORIGINAL AND TWO COPIES OF BID SUBMITTAL PAGES ONLY**

**FAILURE TO COMPLETE THE CERTIFICATION REGARDING LOCAL PREFERENCE ON PAGE 215 OF SECTION 4, BID SUBMITTAL FORM SHALL RENDER THE VENDOR INELIGIBLE FOR LOCAL PREFERENCE**

**FAILURE TO SIGN PAGE 215 OF SECTION 4, BID SUBMITTAL FORM, WILL RENDER YOUR BID NON-RESPONSIVE**

**BID SUBMITTAL FOR:**

**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

**FIRM NAME:**_____

| ITEM | ESTIMATED QUANTITY | DESCRIPTION | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|

The bidder shall submit in their proposal a monthly fee for services provided, to include all costs for supervision, labor and parts, as a separated bid item, which shall include all fringes, insurance, overhead and profit.

| | | | | |
|---|---|---|---|---|
| 1 | 36 months | To furnish all labor, material, equipment, and supervision to adequately maintain the Automated People Mover system at the Miami International Airport, as per Section 3. | _____ Per month | _____ Total |

**Note: Quotes will be obtained from the Awarded Vendor for any Additional Services required per Section 3, Paragraph 3.18.**

**REQUIRED SUBMITTALS:**

The following information should be submitted as part of this bid submittal form as per Section 2, Paragraph 2.6:

1. A list consisting of three (3) references for which the bidder has provided maintenance services on the APM system, similar to the current system at the Miami International Airport. Bidder must provide the name of client, addresses, telephone number, a contact person and e-mail address. To be considered acceptable, this list must include a description of services and type of system serviced.

2. Must provide Copies of your Company's Articles of Incorporation as documented proof of being in the business for a minimum of five (5) years and direct experience maintaining Automated People Mover Systems or Satellite Transit Shuttle.

**SECTION 4**
**BID SUBMITTAL FOR:**

**MAINTENANCE OF SATELLITE TRANSIT SHUTTLE**

## ACKNOWLEDGEMENT OF ADDENDA

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**INSTRUCTIONS:** COMPLETE PART I OR PART II, WHICHEVER APPLIES

---

**PART I:**

LIST BELOW ARE THE DATES OF ISSUE FOR EACH ADDENDUM RECEIVED IN CONNECTION WITH THIS BID

**Addendum #1, Dated** _____

**Addendum #2, Dated** _____

**Addendum #3, Dated** _____

**Addendum #4, Dated** _____

**Addendum #5, Dated** _____

**Addendum #6, Dated** _____

**Addendum #7, Dated** _____

**Addendum #8, Dated** _____

---

**PART II:**

☐ NO ADDENDUM WAS RECEIVED IN CONNECTION WITH THIS BID

---

**FIRM NAME:** _____

**AUTHORIZED SIGNATURE:** _____ **DATE:** _____

**TITLE OF OFFICER:** _____

MIAMI-DADE COUNTY

## BID SUBMITTAL FORM

**.Bid Title:** MAINTENANCE OF SATELLITE TRANSIT SHUTTLE

By signing this Bid Submittal Form the Bidder certifies that it satisfies all legal requirements (as an entity) to do business with the County, including all Conflict of Interest and Code of Ethics provisions in Section 2-11 of the Miami-Dade County Code. Any County employee or member of his or her immediate family seeking to contract with the County shall seek a conflict of interest opinion from the Miami-Dade County Ethics Commission prior to submittal of a Bid response or application of any type to contract with the County by the employee or his or her immediate family and file a copy of that request for opinion and any opinion or waiver from the Board of County Commissioners with the Clerk of the Board. The affected employee shall file with the Clerk of the Board a statement in a form satisfactory to the Clerk disclosing the employee's interest or the interest of his or her immediate family in the proposed contract and the nature of the intended contract at the same time as or before submitting a Bid, response, or application of any type to contract with the County. Also a copy of the request for a conflict of interest opinion from the Ethics Commission and any corresponding opinion, or any waiver issued by the Board of County Commissioners, must be submitted with the response to the solicitation.

In accordance with Sec. 2-11.1(s) of the County Code as amended, prior to conducting any lobbying **regarding this solicitation, the Bidder must file the appropriate form with the Clerk of the Board stating that a particular lobbyist is authorized to represent the Bidder.** Failure to file the appropriate form in relation to each solicitation may be considered as evidence that the Bidder is not a responsible contractor.

The Bidder confirms that this Bid is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting a Bid for the same goods and/or services and in all respects is without collusion, and that the Bidder will accept any resultant award. Further, the undersigned acknowledges that award of a contract is contingent upon vendor registration. Failure to register as a vendor within the specified time may result in your firm not being considered for award.

Pursuant to Section 2-8.6, any individual, corporation, partnership, joint venture or other legal entity having an officer, director, or executive who has been convicted of a felony during the past ten (10) years shall disclose this information prior to entering into a contract with or receiving funding from the County.

☐ **Place a check mark here to affirm compliance with this disclosure requirement.**

**COUNTY USER ACCESS PROGRAM (UAP): Joint purchase and entity revenue sharing program**

For the County's information, the bidder is requested to indicate, at 'A' and 'B' below, its general interest in participating in the Joint Purchase Program of the County User Access Program (UAP) described in Section 2.21 of this contract solicitation, if that section is present in this solicitation document. Vendor participation in the Joint Purchase portion of the UAP is **voluntary**, and the bidder's expression of general interest at 'A' and 'B' below is for the County's information only and **shall not be binding** on the bidder.

A. If awarded this County contract, would you be interest in participating in the Joint Purchase portion of the UAP with respect to other governmental, quasi-governmental or not-for-profit entities located ***within*** the geographical boundaries of Miami-Dade County?
Yes _____ No _____

and

B. If awarded this County contract, would you be interested in participating in the Joint Purchase portion of the UAP with respect to other governmental, quasi-governmental or not-for-profit entities located ***outside*** the geographical boundaries of Miami-Dade County?
Yes _____ No _____

**LOCAL PREFERENCE CERTIFICATION**: The responding vendor hereby attests, **by checking one of the following blocks**, that it is ☐, or is not ☐, a local business. For the purpose of this certification, a "local business" is a business located within the limits of Miami-Dade County (or Broward County in accordance with the Interlocal Agreement between the two counties) that conforms with the provisions of Section 1.10 of the General Terms and Conditions of this solicitation and contributes to the economic development of the community in a verifiable and measurable way. This may include, but not be limited to, the retention and expansion of employment opportunities and the support and increase to the County's tax base. **Failure to complete this certification at this time (by checking the appropriate box above) shall render the vendor ineligible for Local Preference**.

Firm Name:

_____

Street Address:

_____

Mailing Address (if different):

_____

Telephone No. _____ Fax No. _____

Email Address: _____ FEIN No. __/__-__/__/__/__/__/__/__

Prompt Payment Terms: _____% _____ days net _____days
**(Please see paragraph 1.2 H of General Terms and Conditions)**

***"By signing this document the bidder agrees to all Terms and Conditions of this Solicitation and the resulting Contract"***

**Signature:** _____
**(Signature of authorized agent)**

Print Name: _____ Title: _____

**Failure to sign this page shall render your Bid non-responsive.**

# APPENDIX

## AFFIDAVITS

### FORMAL BIDS

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# MIAMI-DADE COUNTY BID AFFIDAVITS

- **DISABILITY NONDISCRIMINATION AFFIDAVIT**
  **(Resolution R-385-95)**

I, being duly first sworn, state that this firm, corporation, or organization is in compliance with and agrees to continue to comply with, and assure that any subcontractor, or third party contractor under this contract complies with all applicable requirements of the laws listed below including, but not limited to, those provisions pertaining to employment, provision of programs and services, transportation, communications, access to facilities, renovations, and new construction.

The Americans with Disabilities Act of 1990 (ADA), Pub. L. 101-336, 104 Stat 327, 42 U.S.C. Sections 225 and 611 including Title I, Employment; Title II, Public Services; Title III, Public Accommodations and Services Operated by Private Entities; Title IV, Telecommunications; and Title V, Miscellaneous Provisions.

The Rehabilitation Act of 1973, 29 U.S.C. Section 794

The Federal Transit Act, as amended 49 U.S.C. Section 1612

The Fair Housing Act as amended, 42 U.S.C. Section 3601-3631

- **MIAMI-DADE COUNTY DEBARMENT DISCLOSURE AFFIDAVIT**
  **(Ordinance 93-129) See Section 1 (1.3H)**

I, being duly first sworn, upon oath deposes and says that the bidder of this contract or his agents, officers, principals, stockholders, subcontractors or their affiliates are not debarred by Miami-Dade County.

- **MIAMI-DADE COUNTY COLLECTION OF TAXES, FEES AND PARKING TICKETS AFFIDAVIT**
  **(Ordinance 95-178) Section 1 (1.3 E)**

I, being first duly sworn state that in compliance with the procedures contained in Section 2-8.1(c) of the Code of Miami-Dade County, and as amended by Ordinance 95-178, this firm hereby certifies that the foregoing statements are true and correct.

That all delinquent and currently due fees or taxes (including, but not limited to, real and personal property taxes, convention and tourist development taxes, utility taxes, and occupational license taxes) collected in the normal course by the Miami-Dade County Tax Collector and County issued parking tickets for vehicles registered in the name of the above firm, have been paid.

- **AFFIDAVIT RELATING TO INDIVIDUALS AND ENTITIES ATTESTING BEING CURRENT IN THEIR OBLIGATIONS TO MIAMI-DADE COUNTY** **(Ordinance 99-162) See Section 1 (1.3 N)**

I, being first duly sworn state that in compliance with County Ordinance 99-162, the bidder is not in arrears in any payment under a contract, promissory note or other loan document with the County, or any of its agencies or instrumentalities, including the Public Health Trust (hereinafter referred to as "County"), either directly or indirectly through a firm, corporation, partnership or joint venture in which the individual or entity has a controlling financial interest as that term is defined in Section 2-11.1(b)(8) of the County Code.

- **MIAMI-DADE COUNTY DOMESTIC VIOLENCE LEAVE AFFIDAVIT (Ordinance 99-5 & Resolution R-185-00)**

That in compliance with Ordinance No 99-5, Resolution No. R-185-00 and the Code of Miami-Dade County, Florida, the following information is provided and is in compliance with all items in the aforementioned legislation. As an employer having, in the regular course of business, fifty (50) or more employees working in Miami-Dade County for each working day during each of twenty (20) or more calendar work weeks in the current or preceding calendar year, do hereby certify to be in compliance with the Domestic Leave Ordinance, codified at 11A-60 et. Seq., of the Miami-Dade-County Code, and that the obligation to provide domestic violence leave to employees shall be a contractual obligation.

## BY SIGNING AND NOTARIZING THIS PAGE YOU ARE ATTESTING TO AFFIDAVITS ON PAGES 1 AND 2

## MIAMI-DADE COUNTY AFFIDAVITS SIGNATURE PAGE

By: _____ _____ 20 ___
Signature of Affiant Date

_____ ___/___-___/___/___/___/___/___/___/
Printed Name of Affiant and Title Federal Employer Identification Number

_____
Printed Name of Firm

_____
Address of Firm

**SUBSCRIBED AND SWORN TO** (or affirmed) before me this _____ day of _____, 20___

He/She is personally known to me or has presented _____ as identification.
Type of identification

_____ _____
Signature of Notary Serial Number

_____ _____
Print or Stamp Name of Notary Expiration Date

Notary Public – State of _____

Notary Seal

# LIVING WAGE AFFIDAVIT
**(County Ordinance 99-44)**

I, being first duly sworn hereby state and certify that in compliance with Section 2-8.9 of the Miami-Dade County Code, by accepting award of this contract, the bidder or proposer agrees to pay the living wage required by County Ordinance 99-44 to all employees assigned to this contract. The bidder or proposer further understands that the current living wage applied to this contract is $9.81 per hour plus health benefits as described in the ordinance, or $11.23 per hour without health benefits. The Living Wage required by Ordinance 99-44 is subject to indexing as set-forth in Section "C" (Indexing).

By: _____ _____ 20 ___
Signature of Affiant Date

_____ ___/___-___/___/___/___/___/___/___/___/
Printed Name of Affiant and Title Federal Employer Identification Number

_____
Printed Name of Firm

_____
Address of Firm

**SUBSCRIBED AND SWORN TO** (or affirmed) before me this _____ day of _____, 20___

He/She is personally known to me or has presented _____ as identification.
Type of identification

_____ _____
Signature of Notary Serial Number

_____ _____
Print or Stamp Name of Notary Expiration Date

Notary Public – State of _____

## AFFIRMATIVE ACTION PLAN/PROCUREMENT POLICY AFFIDAVIT
**(Code of Miami-Dade County Section 2-8.1.5) (Ordinance No. 98-30)**

I, being duly first sworn, hereby state that the bidder of this contract:

☐ has a current Affirmative Action Plan and Procurement Policy, as required by Section 2-8.1.5 of the Code of Miami-Dade County, processed and approved for filing with the Miami-Dade County Department of Business Development (DBD) under the file No. _____ and the expiration date of _____.

☐ had annual gross revenues in excess of $5,000,000.00 for the previous year and does not have a current Affirmative Action Plan and Procurement Policy as required by Section 2-8.1.5 of the Code of Miami-Dade County, processed and approved for filing with the Miami-Dade County DBD. I will contact DBD at 305-375-3111 regarding this requirement.

☐ had annual gross revenues less than $5,000,000.00 for the previous year; therefore Section 2-8.1.5 of the Code of Miami-Dade County is not applicable. However, I will contact DBD at 305-375-3111 in order to submit the required affidavit and exemption request.

Witness: _____ _____
Signature Signature

Witness: _____ By: _____
Signature Legal Name and Title

The foregoing instrument was acknowledged before me this _____ day of _____, 20 _____

**FOR AN INDIVIDUAL ACTING IN HIS OWN RIGHT:**

By: _____

**FOR A CORPORATION, PARTNERSHIP OR JOINT VENTURE:**

By: _____ having the title of _____

with _____.

☐ a _____ corporation ☐ partnership ☐ joint venture

*PLEASE NOTE:*

***Section 2-10.4(4)(a) of the Code of Miami-Dade County (Ordinance No. 82-37) requires that all properly licensed architectural, engineering, landscape architectural, and land surveyors have an affirmative action plan on file with the County.***

***Section 2-8.1.5 of the Code of Miami-Dade County requires that firms that have annual gross revenues in excess of five (5) million dollars have an affirmative action plan and procurement policy on file with the County. Firms that have a Board of Directors that are representative of the population make-up of the nation may be exempt.***

***For questions regarding these requirements, please contact the Miami-Dade County Department of Business Development at 305-375-3111.***

# CODE OF BUSINESS ETHICS

**Code of Miami-Dade County Section 2-8.1(i)**

I, being duly sworn, hereby state and certify that this firm has adopted a Code of Business Ethics that is fully complaint with the requirements of Section 2-8.1(i) of the Code of Miami-Dade County as amended. I further acknowledge that failure to comply with the adopted Code of Business Ethics shall render any contract with Miami-Dade County voidable, and subject this firm to debarment from County work pursuant to Section 10-38(h)(2) of the Code of Miami-Dade County as amended. I further acknowledge that failure to submit this affidavit shall render this firm ineligible for contract award.

By: _____ _____ 20 ___
Signature of Affiant Date

_____ ___/___-___/___/___/___/___/___/___/
Printed Name of Affiant and Title Federal Employer Identification Number

_____
Printed Name of Firm

_____
Address of Firm

**SUBSCRIBED AND SWORN TO** (or affirmed) before me this _____ day of _____, 20___

He/She is personally known to me or has presented _____ as identification.
Type of identification

_____ _____
Signature of Notary Serial Number

_____ _____
Print or Stamp Name of Notary Expiration Date

Notary Public – State of _____

Notary Seal

# FAIR SUBCONTRACTING PRACTICES
(Ordinance 97-35)

**In compliance with Miami-Dade County Ordinance 97-35, the Bidder shall submit with the bid proposal a detailed statement of its policies and procedures (use separate sheet if necessary) for awarding subcontractors in accordance with Section 1, Paragraph 1.15**

_____

_____

_____

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_____

_____

_____

☐ **NO SUBCONTRACTORS WILL BE UTILIZED FOR THIS CONTRACT**

_____ _____
Signature Date

SUBCONTRACTOR/SUPPLIER LISTING
(Ordinance 97-104)

**Firm Name of Prime Contractor/Respondent:** _____

**Bid No.:** _____ **Title:** _____

**This forms, or a comparable listing meeting the requirements of Ordinance No. 97-104 MUST be completed, signed and submitted by all bidders and respondents on County contracts for purchases of supplies, materials or services, including professional services which involve expenditures of $100,000 or more, and all bidders and respondents on County or Public Health Trust construction contracts which involve expenditures of $100,000 or more. A bidder or respondent who is awarded the contract shall not change or substitute first tier subcontractors or direct suppliers or the portions of the contract work to be performed or materials to be supplied from those identified, except upon written approval of the County.**
**This form, or a comparable listing meeting the requirements of Ordinance No. 97-104, MUST be completed, signed and submitted even though the bidder or proposer will not utilize subcontractors or suppliers on the contract. The bidder or proposer should enter the word "NONE" under the appropriate heading of sub form 100 in those instances where no subcontractors or suppliers will be used on the contract.**

| Business Name and Address of First Tier Subcontractor/Subconsultant | Principal Owner | Scope of Work to be Performed by Subcontractor/Subconsultant | (Principal Owner) Gender | Race |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| **Business Name and Address of Direct Supplier** | **Principal Owner** | **Supplies/Materials/Services to be Provided by Supplier** | **(Principal Owner) Gender** | **Race** |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

**I certify that the representations contained in this Subcontractor/Supplier Listing are to the best of my knowledge true and accurate**

| Prime Contractor/Respondent's Signature | Print Name (Duplicate if additional space is needed) | Print Title | Date |
|---|---|---|---|

FORM 100

357

# MIAMI-DADE COUNTY
# CERTIFICATION OF RECYCLED
# ENVIRONMENTALLY ACCEPTABLE PACKAGING
# PRODUCT CONTENT

**RESOLUTION (R-738-92)**

| MINIMUM CERTIFIED CONTENT | | | | | | |
|---|---|---|---|---|---|---|
| Bid Item Number | RECYCLED PRODUCTS | | RECOVERED MATERIALS | | RECYCABLE PRODUCTS | |
| | % Composition | Type of Material | % Composition | Type of Material | % Composition | Type of Material |
| | | | | | | |
| | | | | | | |
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## DEFINITIONS

"Recycled Material" shall be defined as any waste material or by-products that have been recovered or diverted from solid waste.

**"Recycled Product" shall be defined as any product which is in whole or in part composed of recovered materials.**

**"Recyclable Product" shall be defined as the ability of a product and its packaging to be reused, reconditioned for use, or recycled through existing recycling collection programs.**

**"Waste Reducing Product" shall be defined as any product which will result in less waste generated due to its use rather than another product designed to serve the same function with a greater waste generation rate. This shall include, but not limited to those products that can be reused, refilled or have a longer life expectancy and contain a lesser amount of toxic constituents.**

**I have the knowledge to certify and do so by certify that the Minimum Materials Content in our product(s) are as specified on this form and conform with the definitions as shown above.**

| | | |
|---|---|---|
| **NAME** | | |
| **ADDRESS** | | |
| **CITY** | **STATE** | **ZIP** |
| **SIGNATURE** | **TITLE** | |

# SPECIAL PROVISIONS 1

# SBE SPECIAL PROVISIONS

# SMALL BUSINESS ENTERPRISE PROGRAM (SBE)
## (Ordinance 05-29 and Administrative Order 3-41)

# PARTICIPATION PROVISIONS

Applies to set-asides and/or subcontractor goals

**DEPARTMENT OF BUSINESS DEVELOPMENT**
111 NW 1st STREET, 19th FLOOR
MIAMI, FLORIDA 33128
PHONE: (305) 375-3111 FAX: (305) 375-3160

October 2005



360

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1. Forms

a. Certificate of Unavailability DBD 502
b. Utilization Report DBD 503

## A. DEFINITIONS

The definitions in this section apply only to these Participation Provisions, hereafter referred to as "Provisions".

1. *Agreement* means a duly executed legally binding contract.

2. *Available* or *availability* means to have prior to bid submission, the ability to provide goods or services under a contract, by having:

   a. Reasonably estimated, uncommitted capacity;

   b. All necessary licenses, permits, registrations and certifications, including Small Business Enterprise (SBE) or Micro Enterprise certification to provide the type of goods or services being purchased under the contract;

   c. The ability to obtain financing/insurance that is reasonably required and consistent with normal industry practice; and

   d. The ability to otherwise meet bid specifications.

3. *Bid* means a quotation proposal, letter of interest or offer by any bidder in response to any kind of invitation, request or public announcement to submit such quotation, proposal, letter of interest or offer for a contract.

4. *Bidder* or *Proposer* means any person, partnership, corporation or other business entity that submits a bid or proposal.

5. *Board* means the Miami-Dade County Board of County Commissioners, Miami-Dade County, Florida.

6. *Certificate of Unavailability* means a document signed by an SBE stating that the SBE is not available to participate on a specific project at a specific time.

7. *Certification List* means a list maintained by the Department of Business Development that contains the names, addresses, and certification expiration date, of certified SBEs, sorted by trade, service, and/or commodity.

8. *Commercially Useful Function* means contractual responsibility for the execution of a distinct element of the work of a contract by a business enterprise and the carrying out of its contractual responsibilities by actually performing, managing, and supervising the work involved other than acting as a broker. The determination of whether an activity is a commercially useful function shall include the evaluation of the amount of work subcontracted, normal industry practices, the skills, qualifications, or expertise of the

enterprise to perform the work, whether the business owner himself or herself performs, manages, and/or supervises the work involved, and other relevant factors.

9. *Compliance Monitor* means the Director of the Department of Business Development or designee assigned to review compliance in accordance with Ordinance 05-29 and Administrative Order 3-41.

10. *Contract* means an agreement for the purchase of goods or services, including professional services. Professional services as used in this section includes but is not limited to accounting, legal, health care, consulting and management services. Contract does not mean an agreement to purchase, lease, or rent real property; a grant, license, permit, franchise or a concession; an agreement to acquire professional architectural, engineering, landscape architectural or land surveying and mapping services; or a contract for construction or construction management services.

11. *Contract Measure* means a contract set-aside, a subcontract goal, a bid preference, or a selection factor, singly or in any combination.

12. *Contracting Officer* means the person assigned under a contract, usually a department director or his or her designee, who prior to award manages the bid process or post award has primary responsibility to manage the contract and enforce contract requirements.

13. *County* means Miami-Dade County, Florida, a political subdivision of the State of Florida.

14. *DBD* means the Department of Business Development.

15. *DPM* means the Department of Procurement Management.

16. *Goods* mean any tangible product, material or supply that is not a service.

17. *Joint venture* means an association of two or more persons, partnerships, corporations or other business entities under a contractual agreement to conduct a specific business enterprise for a specified period with both sharing profits and losses.

18. *Joint Venture Agreement* means a document submitted to DBD by a joint venture that provides information regarding the nature of the joint venture.

19. *MDC* means Miami-Dade County, Florida.

20. *Prompt Payment* is the intent of the Board that all firms, including SBEs and MicroEnterprises providing goods and services to the County, receive

payments promptly in accordance with Ordinance 05-29, and Administrative Order 3-41.

21. *Review Committee* or *RC* means the committee established by the County Manager to review proposed contracts for the application of contract measures and for administrative and/or appeal hearings.

22. *Service* means work offered for public or private consumption that does not consist primarily of goods.

23. *Set-aside* means the designation of a given contract for competition among SBEs.

24. *Small Business Enterprise (SBE)* means a business entity certified by DBD, providing goods or services, which has an actual place of business in Miami-Dade County and whose three year average gross revenues does not exceed $5 million. The term Small Business Enterprise shall also include a manufacturer with one hundred (100) employees or less or wholesaler with fifty (50) employees or less without regard to gross revenues. Representations as to a business entity's average gross revenues and payroll shall be subject to audit.

25. *Subcontractor goal* means a proportion of a total contract value stated as a percentage to be subcontracted to SBE(s) to perform a commercially useful function.

26. *Successful Bidder* means the bidder to which the contract is awarded.

27. *Utilization Report* means a report completed and submitted by the successful bidder on a contract with goals, listing all work performed in the past by the SBE identified on the Agreement.

28. *Work* means the provision of goods or services.

B. GENERAL INFORMATION

1. The bidder shall fully comply with these Provisions which implement Miami-Dade County Ordinance 05-29 and Administrative Order 3-41.

2. DBD monitors the compliance of the successful Bidder with the requirements of these Provisions during the course of the work to be performed under the contract.

3. Forms necessary for submittal of information pertaining to these Provisions are included in the appendix. Additional copies may be obtained at: Miami-Dade County Department of Business Development (DBD) at 111 N.W. 1st

Street, 19th Floor, Miami, Florida 33128 or by telephone at (305) 375-3111, facsimile (305) 375-3160, online at www.miamidade.gov/dbd.

C. CERTIFICATION

1. In order to participate as an SBE on this contract, an SBE must have a valid certification at the time of bid submittal, bid award, and throughout the duration of the contract.

2. Bidders shall use the most recent Certification List available prior to bid submission. Certification List may be obtained by contacting DBD at telephone number (305) 375-3111 during normal business hours or online www.miamidade.gov/dbd.

3. The SBE firms on the Certification List will be identified by commodity code. An SBE must be certified in a commodity code and/or service area in order to be eligible to participate as an SBE on contracts in such commodity code and service area. In order to be eligible to participate as an SBE subcontractor, the SBE must be certified in the commodity code or service area in which they are to perform the work.

4. Bidders/Awardees are governed by the certification policies and procedures set forth by DBD for the certification of SBEs.

5. Joint Ventures: Only SBE joint ventures approved by DBD in accordance with Administrative Order 3-41 are eligible to participate as joint ventures in the Program. Joint ventures must be lawfully established. A joint venture is permissible only where the SBE lacks the necessary capacity to perform the contract on its own and the agreement is fair and equitable and will be of substantial benefit to the SBE. However, where DBD concludes that an SBE brings only its certification as contribution to the joint venture relationship DBD will not approve the joint venture. The small business member of the joint venture must be certified as an SBE before the joint venture can be approved.

D. APPLIED CONTRACT MEASURES

1. Set-asides

   a. Set-asides are for bidding solely among SBEs. AN SBE awarded a set-aside contract shall not transfer to a non-SBE through subcontracting or otherwise, any part of the actual work of the contract unless the bid documents expressly and specifically require and/or permit such transfer as consistent with normal industry practice, or the SBE requests and receives prior to bid award an approval letter from DBD.

b. If the SBE is using subcontractors to meet a portion of the set-aside on a contract, an Agreement is required and is subject to the requirements for the submittal of Agreements of Section D.2.c.

c. An SBE may perform 100% of the set-aside with its own workforce.

d. Bids that contain a defective Agreement shall be allowed up to 48 hours from bid submission to cure correctable defects. Correctable defects may include, but are not limited to: SBE percentage not indicated, prime or subcontractor failed to sign the Agreement, or calculation errors.

e. Bidders that fail to correct defects in the Agreement within 48 hours after bid submission shall be non-responsive.

2. Subcontractor goals

a. Bid documents to which a subcontractor goal is applied shall require bidders to submit a signed Agreement at the time of bid submission identifying all SBEs to be utilized to meet the subcontractor goal. Each Agreement shall specify the scope of work and commodity code the SBE will perform. The Agreement constitutes a written representation by the bidder that to the best of the bidders' knowledge the SBEs listed are available and have agreed to perform as specified, or that the Bidder will demonstrate unavailability. Bidders/proposers shall be allowed up to 48-hours from bid submission to cure correctable defects in the Agreement. Correctable defects may include, but are not limited to: SBE percentage not indicated, prime or subcontractor failed to sign the Agreement, or calculation errors. Failure to submit an Agreement and SBE joint venture agreement, if applicable, may deem a bid non-responsive.

b. The Agreement shall incorporate;

i. The scope of work to be performed by the SBE; and

ii. The percentage of services the SBE will provide; and

iii. The prompt payment obligation; and

iv. The SBE joint venture Agreement; if applicable

c. A bidder that is an SBE may meet up to 100% of the subcontractor goal with its own workforce.

d. A bidder challenging or protesting the subcontractor goal must submit to the office or person to whom the bid is submitted, no later than the time of bid submission, written reasons for such challenge or protest. Challenges

or protests to an SBE subcontractor goal by bidders after the time of bid submission, or challenges based on reasons not previously provided in writing prior to bid submission, shall not be heard by the County Commission.

e. After a bid is advertised with a subcontractor goal, it may be reduced only with the approval of the County Commission.

f. Expenditures to subcontracting SBEs shall be counted toward meeting specified goals as follows:

    i. One hundred percent (100%) of the expenditures to SBEs, that perform a commercially useful function in the supply of goods or services required for fulfillment of the contract;

    ii. One hundred percent (100%) of the expenditures to SBEs that subcontract work further to non-SBEs only if bid documents expressly and specifically permit such subcontracting as consistent with normal industry practice, or the bidder or SBE requests and receives prior to bid award an approval letter from DBD.

    iii. One hundred percent (100%) of the expenditures to SBEs who are vendors, working as subcontractors, that perform actual work with their own force;

    iv. None of the expenditures to SBEs that act essentially as a conduit to transfer funds to a non-SBE unless bid documents expressly and specifically permit such transfers as consistent with normal industry practice or the bidder or SBE requests and receives prior to bid award an approval letter.

g. To prove lack of availability, at time of bid submission, bidders must submit the following:

    i. Certificate of Unavailability (Form No. DBD 502) either completed and signed by the SBEs or completed and signed by the bidder explaining the contacts with the SBE's statement or actions of the SBEs showing unavailability, and the reason(s) why the SBE's signature could not be obtained; and

    ii. A listing of any bids received from SBEs, the scope of work and price of each bid, and the bidder's reasons for rejecting each bid; and

    iii. A statement of the bidder's contacts with DBD for assistance in determining available SBEs; and

iv. A complete description of the bidder's process for soliciting and evaluating bids from SBEs; and

v. Bidders may establish an SBE as unavailable if the bidder provides evidence proving the SBE's bid is not reasonably competitive with comparable bids of non-SBEs, for the same scope of work.

E. PRE-AWARD COMPLIANCE

1. The Compliance Monitor reviews bids for compliance with these Provisions on every contract on which an SBE set-aside and/or subcontractor goal has been applied.

2. When there is non-compliance with these Provisions, the Compliance Monitor notifies the bidder in writing, stating the facts and the reasons on which the non-compliance is based. Upon notification from DBD, the bidder may request a meeting in writing within two business days from the date of the notification of non-compliance. If requested, the bidder shall supply further relevant information as required by the Compliance Monitor. However, no new or altered agreement will be accepted.

3. Upon completion of its compliance review, the Compliance Monitor shall issue a written recommendation to the Contracting Officer that includes facts and reasons for the bidder's compliance or non-compliance.

4. The Contracting Officer, in conjunction with the Compliance Monitor, may conduct an informal meeting with the respondent. Other parties may be invited to offer information relevant to the issue of the respondent's non-compliance.

5. The Contracting Officer shall in writing determine whether the bidder complies with the requirements of these Provisions and whether to recommend to the County Manager that the contract be awarded to the bidder. Such recommendation shall not restrict the Board of County Commissioners from rejecting the bid for any reason or to take such action at the recommendation of the Contracting Officer as the Board deems appropriate.

F. PROMPT PAYMENT

1. All firms, including SBEs and Micro Enterprises providing goods and services to the County, shall receive payments promptly in order to maintain sufficient cash flow.

2. Invoices from SBE prime vendors shall be promptly reviewed and payment made by the County or Public Health Trust, where applicable, on those amounts not in dispute within 30 calendar days of invoices.

3. A prime vendor on a contract with SBE measures shall include in its invoices to the County or Public Health Trust, where applicable, copies of undisputed invoices from SBE subcontractors within 14 calendar days of receipt of such invoices, or by the next scheduled invoice, whichever comes first. The prime vendor shall pay those amounts not in dispute to subcontracting SBEs within 2 days of receipt of payment from the County. If the prime vendor fails to submit undisputed invoices from an SBE to the County as specified herein or chooses not to submit any invoice to the County pursuant to the invoice schedule, the prime vendor must pay the full amount of the received SBE invoice by the next invoice cycle or 40 calendar days from receipt, whichever is less.

4. The County or prime vendor in direct privity with an SBE on a contract with SBE measures must notify the SBE and DBD, in writing, of those amounts billed by the SBE which are in dispute, and the specific reasons why they are in dispute, within fourteen (14) calendar days of submittal of such invoice, or by the next scheduled invoice whichever comes first. Failure of the County or prime vendor to comply with the applicable requirements of this subsection shall result in the forfeiture of the right to use the dispute as justification for not paying the SBE and payment shall be forthcoming from the County or prime vendor as appropriate by the next invoice date or 40 calendar days from receipt of invoice date, whichever is less.

5. An SBE may invoice the County or prime vendor, as appropriate, 1% interest per month for any undisputed amount that is not promptly paid.

G. POST AWARD COMPLIANCE AND MONITORING

1. DBD shall monitor and enforce the compliance of the vendor with the requirements of the Administrative Order, and any related program requirements during the duration of the contract and may monitor for up to one year after notice of completion of the work or full payment of contract obligations, whichever comes last.

2. Successful Bidders and SBEs/Micro Enterprises shall permit the County to have access during normal business hours to all books and records relating to the compliance with the contract measure applied to the contract or relating to compliance with certification requirements. This right of access shall be granted for one year after completion of the work or full payment of contract obligations, whichever comes last, or for one year after the expiration of SBE certification.

3. Successful Bidders and SBEs/Micro Enterprises shall permit the County to have access to employees performing work during normal business hours in order to conduct visual inspections and interviews that may be conducted privately when necessitated by County staff.

4. Successful Bidders and SBEs/Micro Enterprises shall comply with all reporting requirements established by DBD. Failure to comply with the reporting requirements may result in the imposition of contractual sanctions or administrative penalties by the County.

5. In the event that during the performance of a contract containing an SBE subcontractor goal, an SBE is not able to provide the services specified in the Agreement submitted at the time of bid, the Successful Bidder must locate an SBE to substitute. The Successful Bidder must receive approval for substitution from DBD. A Successful Bidder that cannot secure a substitute SBE must provide a written statement to the Compliance Monitor.

6. The Compliance Monitor shall be responsible for monitoring the performance of the Successful Bidder regarding compliance with a contract measure applied to the contract. The Compliance Monitor may, at his or her discretion, investigate deviations in the utilization of SBEs from that required by the contract and make recommendations regarding compliance to the Contracting Officer. The Contracting Officer shall not make a final determination without a recommendation regarding compliance from the Compliance Monitor. Deviations from the contract measure stated in the contract that shall be monitored include, but are not limited to:

    a. Termination of an SBE's Agreement;
    b. Reduction in the scope of work to be performed by an SBE
    c. Modifications to the terms of payment or price to be paid to an SBE
    d. Failure to enter into a contract with an SBE being utilized to meet a contract measure.

7. If, after execution of an agreement, the Successful Bidder submits a written request to the Contracting Officer and demonstrates to the satisfaction of the Contracting Officer that, as a result of a change in circumstances beyond his/her control of which he/she was not aware and could not reasonably have been aware, until subsequent to the date of execution of such subcontract, an SBE, who entered into such subcontract has committed a material breach of the agreement, the Successful Bidder shall be entitled to exercise such rights as may be available to him/her to terminate the Agreement.

8. County's Determination of Bidder's Excuse or Termination.

   If the Successful Bidder at any time submits a written request to the Contracting Officer under the prior two paragraphs, the Contracting Officer as

soon as practicable, shall determine whether the Successful Bidder has made the requisite demonstration, and shall not determine that such a demonstration has not been made without first providing the Successful Bidder, upon notice, an opportunity to present pertinent information and arguments.

9. Alternative Subcontracts

If the Successful Bidder is excused from entering into a subcontract or rightfully terminates a subcontract under the Administrative Order and without such subcontract the Successful Bidder will not achieve the level of SBE participation upon which the contract was awarded, the Successful Bidder shall make every reasonable effort to propose and enter into an alternative subcontract or subcontracts for the same work to be performed by another available SBE as appropriate, for a subcontract price or prices totaling not less than the subcontract price under the excused or terminated subcontract, less all amounts previously paid there under. The Successful Bidder must submit to the Compliance Officer an Agreement with the new SBE and provide all documentation required by the County. A successful bidder that cannot secure a substitute SBE must provide all supporting documentation required by the County as detailed previously in this document (Section D.2.g).

a. The Compliance Monitor may require the Successful Bidder to produce such information, as the Compliance Monitor deems appropriate and may obtain further information from other sources. The Compliance Monitor shall make his/her recommendation under this paragraph to the Contracting Officer and forward a copy to the bidder.

b. The Contracting Officer will consider objections to the Compliance Monitor's recommendation only if such written objections are received by the Contracting Officer within five business days from the Successful Bidder's receipt of the Compliance Monitor's recommendation. The Contracting Officer with or without a hearing, and as he/she in his/her discretion may determine, will reply to the Successful Bidder's written objection within ten business days of receipt of these objections.

## H. CONTRACTUAL SANCTIONS

1. Bid and contract documents shall provide that, notwithstanding any other penalties or sanctions provided by law, a bidder's violation of or failure to comply with the Small Business Enterprise Program Ordinance and

Administrative Order may result in the imposition of one or more of the following sanctions:

a. The suspension of any payment or part thereof until such time as the issues concerning compliance are resolved;

b. Work stoppage;

c. Termination, suspension, or cancellation of the contract in whole or part;

d. Loss of SBE certification.

2. In the event a bidder or SBE attempts to comply with the provisions of the SBE ordinance through fraud, misrepresentation, or material misstatement, the County shall, whenever practicable, terminate the contract or require the termination or cancellation of the subcontract for the project on which the bidder or SBE committed such acts. In addition, and as a further sanction, the County may impose any of the above-stated sanctions on any other contracts and subcontracts the bidder or SBE has on other County projects. In each instance, the bidder or SBE shall be responsible for all direct and indirect costs associated with such termination or cancellation including attorney's fees and costs. The bidder or SBE may also be subject to debarment.

3. The foregoing notwithstanding, the County Manager shall include language in all prospective projects containing an SBE goal which provides that, in addition to any other sanction for failure to fulfill the SBE goal requirements for such contract, the contractor's eligibility to receive any future County contract shall be conditioned upon the contractor making up the deficit in SBE participation in such future contract by having SBEs perform work equal to double the dollar value of the deficiency in the SBE goal in the prior contract.

4. The foregoing obligation shall be in addition to any SBE goal otherwise applicable to the future contact. The procedures for making up the SBE deficit shall follow DBD policy.

5. Some of the contractual violations that may result in the imposition of sanctions listed in the administrative order include, but are not limited to, the following:

   a. An SBE serving as a conduit for SBE work awarded to a firm as an SBE, but which is being performed by a non-SBE firm;

   b. A prime vendor not meeting an SBE contract measure;

c. Not obtaining or retaining SBE certification while performing work designated for SBE firms;

d. Failure to timely submit utilization reports;

e. Failure to comply with SBE certification requirements, including not maintaining a place of business in Miami-Dade County, not reporting organizational and operational changes, providing inaccurate or false information, and other certification related violations;

f. Failure to maintain certification;

g. Deviations from the SBE agreement without prior approval from DBD;

h. Termination of the SBE's agreement without prior approval from DBD;

i. Reduction of the scope of work of the SBE subcontract without prior approval from DBD; or

j. Modifications to the terms and/or prices of payment to an SBE without prior approval from DBD

I. Administrative Penalties

Administrative penalties may range from de-certification to debarment.

J. Appeals Process

A respondent may initiate the appeals process after administrative penalties are imposed.

K. APPENDIX

1. Forms

| | |
|---|---|
| a. Certificate of Unavailability | DBD 502 |
| b. Utilization Report | DBD 503 |

# APPENDIX A



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MIAMI-DADE COUNTY

# Small Business Enterprise (SBE) Certificate of Unavailability

**RFP/BID No.** _____

_____
(Name of Prime Contractor) (Firm Name)

_____
(Address) (Telephone No.)

I contacted the _____ to obtain a bid for work items to be
***SBE Firm**
performed on Miami-Dade County project but, the SBE firm was unavailable to perform or submit a bid due to the following reasons:

a. _____ SBE firm did not respond to the invitation.

b. _____ SBE firm was not available to work.

c. _____ SBE firm was not the lowest acceptable bidder.

| |
|---|
| Prime not meeting the goal must provide details of their efforts in soliciting to SBE firms, i.e., advertising, personal calls, mailing lists, etc. Information provided will be verified. Attach all supporting documents such as newspaper ads, phone lists, mailing lists, etc. |

_____ _____
(Prime Contractor Signature) (Date)

_____
Title

***If multiple SBE firms are contacted, please make additional copies as deemed necessary.**

DBD 502



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MIAMI-DADE COUNTY

# SMALL BUSINESS ENTERPRISE PROGRAM (SBE) UTILIZATION REPORT

This report is required by Miami-Dade County. Failure to comply may result in MDC commencing proceedings to impose sanctions on the successful bidder, in addition to pursuing any other available legal remedy. Sanctions may include the suspension of any payment or part thereof, termination or cancellation of the contract, and the denial to participate in any further contracts awarded by MDC.

**Reporting period:** **Project Name:** _____ **Project Goal:** _____%

**From:** _____ **To:** _____ **Project Number:** _____

| Name:<br>FEIN: | Date of Award | Agreement Amount | Change Order Modification(s) Amount | Scheduled Completion Date | Percentage of Contract Completed |
|---|---|---|---|---|---|
| Address: | | | | | |

**Amount of Requisitioned this Period $**_____ **Amount Requisitioned for SBE Subcontractors this Period: $**_____

**Total Amount Requisitioned/Paid to Date $**_____/_____ **Total Amount Requisitioned/Paid to SBE Subcontractors to Date $** _____/_____

**SMALL BUSINESS ENTERPRISE (SBE) CERTIFIED FIRMS**

| Name of SBE Subcontractor | Agreement Amount | Description of Work | Amount Sub Requisitioned this period | Amount Paid to Sub to Date | Actual Starting Date | Scheduled Completion Date |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | $ | $ | | |
| | | | $ | $ | | |
| | | | $ | $ | | |
| | | | $ | $ | | |
| | | | $ | $ | | |
| | | | $ | $ | | |
| | | TOTAL | | | | |

326

_____ Prime Signature _____ Date

_____ Print Name _____ Title _____ Telephone

DBD 503

# SPECIAL PROVISIONS 2

# LIVING WAGE SUPPLEMENTAL GENERAL CONDITIONS

**MIAMI-DADE COUNTY**
**LIVING WAGES**
**SUPPLEMENTAL GENERAL CONDITION**

Bidders providing a covered service are advised that the provisions of Section 2-8.9 of the Code of Miami-Dade County,(Code) as amended by Ordinance [Governing Legislation], will apply to any contract(s) awarded pursuant to this bid or issuance of a GASP/Permit or other Service Contract agreement by Miami-Dade County Aviation Department. By submitting a bid pursuant to these specifications, a bidder is hereby agreeing to comply with the provisions of Section 2-8.9, and to acknowledge awareness of the penalties for non-compliance. A copy of this Code Section may be obtained online at www.miamidade.gov.

This Supplemental General Condition is organized with the following sections:

1. Definitions
2. Minimum Wages and Posting of Information.
3. Liability for Unpaid Wages; Liquidated Damages; Withholding
4. Payrolls, Records and Reporting
5. Subcontracts
6. Complaints and Hearings; Contract Termination and Debarment

1. **DEFINITIONS**

A. "Administrative hearing officer" means a qualified arbitrator appointed by the County Manager to resolve disputes arising from the enforcement of the Living Wage Ordinance.

B. "Applicable department" means the County department(s) using the service contract.

C. "Complaint" means any written charge/allegation presented to the Compliance Officer alleging a practice prohibited by the Ordinance.

D. "Compliance officer" means the County Manager or his/her designee to review compliance with the Governing Legislation or Living Wage Ordinance and the Administrative Order.

E. "Contract" means an agreement, for services covered by the Living Wage Ordinance involving the County or Public Health Trust, or approved by the County, the Procurement Director or his/her designee, or the Public Health Trust or a Permit or Lease agreement with Miami-Dade County Aviation Department.

F. "Contracting officer" means the Department of Procurement Management and Public Health Trust staff or any other County personnel responsible for issuing County service contracts.

G. "County" means the government of Miami-Dade County or the Public Health Trust.

H. "Covered employee" means anyone employed by any service contractor, as further defined in County Code Section 2-8.9, either full or part time, as an employee with or without benefits that is providing covered services pursuant to the service contractor's contract with the County.

I. "Covered employer" means any and all service contractors and subcontractors of service contractors providing covered services. Service contractor is any individual, business entity, corporation (whether for profit or not-for-profit), partnership, limited liability company, joint venture, or similar business that is conducting business in Miami-Dade County or any immediately adjoining county and meets the following criteria:

(1) the service contractor is paid in whole or in part from the County's general fund, capital projects funds, special revenue funds, or any other funds either directly or indirectly, for contracted covered service whether by competitive bid process, informal bids, requests for proposals, some form of solicitation, negotiation, or agreement, or any other decision to enter into a contract; and

(2) the service contractor and any subcontractor is engaged in the business to provide covered services either directly or indirectly for the benefit of the County; or

(3) the service contractor is a General Aeronautical Service (GASP) Permittee or otherwise provides any of the covered services defined herein at any Miami Dade County Aviation Department facility including Miami International Airport pursuant to a permit, lease agreement or otherwise.

J. Covered services are services purchased by the County that are subject to the requirements of the Living Wage Ordinance which are one of the following:

(1) County Service Contracts - Contracts awarded by the County that involve a total contract value of over $100,000 per year for the following services:

(i) food preparation and/or distribution;
(ii) security services;
(iii) routine maintenance services such as custodial, cleaning, refuse removal, repair, refinishing and recycling;
(iv) clerical or other non-supervisory office work, whether temporary or permanent;
(v) transportation and parking services including airport and seaport services;
(vi) printing and reproduction services; and,
(vii) landscaping, lawn and/or agricultural services.

(2) Services provided to Miami-Dade County Aviation facilities: Any service that is provided by a GASP Permittee to a Miami-Dade County Aviation Department Facility or any other service contractor that provides any of the following services to a Miami-Dade County Aviation Department facility is a covered service without reference to any contract value.

(i) Ramp Service: Guiding aircraft in and out of Airport; aircraft loading and unloading positions, designated by the Aviation Department; placing in position and operating passenger, baggage and cargo loading and unloading devices, as required for the safe and efficient loading and unloading of passengers, baggage and cargo to and from aircraft; performing such loading and unloading; providing aircraft utility services, such as air start and cabin air; fueling; catering; towing aircraft; cleaning of aircraft; delivering cargo, baggage and mail to and from aircraft to and from locations at any Miami-Dade County Aviation Department facility; and providing such other ramp services approved in writing by the Aviation Department;

(ii) Porter Assistance Services: Handling and transportation through the use of porters, or other means, of baggage and other articles of the passengers of contracting air carriers or aircraft operators, upon request of the passenger, in public access areas of the Airport Terminal Complex. The Living Wage shall not apply to employees performing tip-related porter assistance services, including curbside check-in;

(iii) Passenger Services: Preparing such clearance documents for the baggage and cargo of aircraft passengers, as may be required by all governmental agencies; furnishing linguists for the assistance of foreign-speaking passengers; passenger information assistance; arranging in-flight meals for departing aircraft with persons or companies authorized by the Department to provide such meals; and providing assistance to handicapped passengers;

(iv) Dispatching and Communications Services: Providing ground to aircraft radio communication service; issuing flight clearances; sending and receiving standard arrival, departure and flight plan messages with appropriate distribution of received messages; providing standby radio flight watch for aircraft in flight; and calculation of fuel loads and take-off and landing weights for aircraft;

(v) Meteorological Navigation Services: Providing information based on the analysis and interpretation of weather charts; planning aircraft flights in accordance with the latest accepted techniques; providing

appropriate prognostic weather charts; and generally providing information appropriate for enroute aerial navigation;

(vi) Ticket Counter and Operations Space Service: The operation of ticket counter and airlines' operations space; ticket checking, sales and processing; weighing of baggage; operation of an information, general traffic operations and communications office for air carriers and aircraft operators with whom the Service Contractor has contracted to supply such services;

(vii) Janitorial Services;

(viii) Delayed Baggage Services;

(ix) Security Services unless provided by federal government or pursuant to a federal government contract; and,

(x) Any other type of service that a GASP permittee is authorized to perform at any Miami-Dade County Aviation Department Facility will be considered a covered service, regardless of whether the service is performed by a GASP permittee or other service contractor.

(xi) In warehouse cargo handlers.

K. "Debar" means to exclude a service contractor, its individual officers, its principal shareholders, its qualifying agent or its affiliated businesses from County contracting and subcontracting for a specific period of time, not to exceed five (5) years, pursuant to section 10-38 of the Code of Miami-Dade County.

L. "Living wage" means the minimum hourly pay rate with or without a health benefit plan as further described in Section 2-8.9 of the Code of Miami-Dade County and as indexed from year to year.

M. "Living Wage Commission" means a fifteen person advisory board established by the County Commission for the purpose of reviewing the effectiveness of the Living Wage Ordinance, reviewing certifications submitted by covered employers, reviewing quarterly reports on complaints filed by employees and making recommendations to the County Mayor and Commission.

N. "Project manager" means the person assigned under a contract, usually a department director of the using agency or his/her designee, who has primary responsibility to manage the contract and enforce contract requirements.

## 2. MINIMUM WAGES AND POSTING OF INFORMATION

A. All covered employees providing covered services shall be paid a living wage in accordance with the current rate for the given year in the manner provided for herein for the adjustment of the Living Wage rate. When the covered employer seeks to comply with the Code by choosing to pay the wage rate applicable when also providing a qualifying Health Benefit Plan, such health benefit plan shall consist of a per hour contribution towards the provision of a Health Benefit Plan for employees and, if applicable, their dependents in accordance with the current rate for the given year. Proof of the provision of such a health benefit plan must be submitted to the awarding authority to qualify for the wage rate for employees with a health benefit plan.

B. The minimum amount of payment by a Service Contractor for the provision of a Health Benefit Plan on a per-hour basis will be calculated based on a maximum of a 40-hour work week. Overtime hours will not require additional payments towards the provision of a health benefit plan. If the service contractor pays less than the required amount for provision a health benefit plan provided in this section, then the service contractor may comply with the Living Wage requirements by paying the difference between the premium it pays for the health benefit plan of the Covered Employee and the minimum amount required by this section for a qualifying health benefit plan. The service contractor may require that all employees enroll in a health benefit plan offered by the service contractor, provided that the employee is not required to pay a premium contribution for employee-only coverage. Health Benefit Plan for purposes of this section shall qualify if it includes the benefits contained in a standard health benefit plan meeting the requirements set forth in §627.6699(12)(a)Florida Statutes.

(1) To the extent a Covered Employer seeks to pay the lower Living Wage rate for employers providing a qualifying Health Benefit Plan during the initial eligibility period applicable to new employees, the Living Wage requirement may be complied with as follows during the eligibility period:

i. A Covered Employer may only qualify to pay the Living Wage rate applicable to employees with a Health Benefit Plan for a term not to exceed the first ninety (90) days of the new initial employee's eligibility period, said term commencing on the employee's date of hire.

ii. If the Covered Employee is not provided with a qualifying Health Benefit Plan within ninety (90) days of initial hire, then the Covered Employer, commencing on the ninety-first (91) day of the new employee's initial eligibility period, must commence to pay the applicable Living Wage rate for Covered Employees without a Health Benefit Plan and must retroactively pay the Covered

Employee the difference between the two Living Wage rates for the term of the eligibility period.

C. Pursuant to Section C of County Code Section 2-8.9, the Living Wage rate must be annually indexed based on the Consumer Price Index (CPI) calculated by the U.S. Department of Commerce as applied to the County of Miami-Dade.

D. Covered employees shall be paid by company or cashier's check, not less than bi-weekly, and without subsequent deduction or rebate on any account. The covered employer shall pay wage rates in accordance with federal and all other applicable laws such as overtime and similar wage laws.

E. Covered employers must post in a visible place on the site where such contract work is being performed, a notice specifying the (1) wages/benefits to be paid; (2) the amount of liquidated damages for any failure to pay such specified combined overall hourly wage rate and benefits; and (3) the name and address of the responsible official in Miami-Dade County to whom written complaints should be sent. Posting requirements will not be required where the employer prints the following statements on the front of the covered employee's paycheck and every six months thereafter: "You are required by Miami-Dade County law to be paid at least [insert applicable rate under this Chapter] dollars an hour. If you are not paid this hourly rate, contact your supervisor or a lawyer." All notices will be printed in English, Spanish and Creole. Any complaints of underpayment must be filed in writing with the Director of the Department of Business Development, 111 Northwest First Street, 19th Floor, Miami, Fl., 33128, (305) 375-3134.

F. Covered employers must refrain from terminating or otherwise retaliating against an employee performing work on the contract even though a complaint of practices has been filed by the employee or other investigative or enforcement action is being taken regarding such service contractor.

3. **LIABILITY FOR UNPAID WAGES; PENALTIES; WITHHOLDING**

A. In the event of any underpayment of required wage rates, the contractor may be liable to the underpaid employee for the amount of such underpayment within thirty (30) days of the findings of violation. Covered employers found to be in violation of the requirements of Section 2-8.9 may also be required to pay liquidated damages of up to $500 to the County for each employee of the covered employer who performs any portion of the contract work for each week, or portion thereof, that is paid less than the specified applicable living wage rate. Request for appeals of violations must be filed in writing with the compliance officer within ten (10) days of receipt of the violation.

B. Any wages not collected by underpaid employees shall be remitted, by the employer responsible for paying the wage debt, to the Department of Business

Development (DBD) for depository into the DBD Trust Fund. Proceeds from the "Trust Fund" shall be held for one (1) year and if not claimed by the underpaid employee, shall be transferred to the State of Florida.

C. The County may withhold from a service contractor any moneys payable on account of work performed under the contract, such sums as may be determined to be necessary to satisfy any liabilities for unpaid wages and penalties as provided herein. In order to preserve the rights of the affected workers under Section 2-8.9, the project manager may withhold or cause to be withheld from the service contractor under this agreement so much of the accrued payments or advances as may be considered necessary to pay employees of the covered employer the full amount of wages required by the contract. In the event of failure to pay any covered employee, employed or working on the project, all or part of the wages required by the contract, the project manager may, after written notice to the service contractor, take such action as may be necessary to cause the suspension of any further payment, until such violations have ceased. The withheld monies shall be remitted to the covered employee only in accordance with the provisions of Section 6, "Complaints and Hearings; Contract Termination and Debarment".

D. In addition to the payment of penalties and backwages, repeat offenders may be debarred from doing business with the County for a period of up to five years and/or have their contracts terminated.

E. A covered employer who fails to respond to a notice of non-compliance, fails to attend a Compliance Meeting, or who does not timely request an administrative hearing from an adverse compliance determination made by DBD after a Compliance Meeting shall be deemed not to have complied with the requirements of this section as stated in the notice or determination of non-compliance. Once the determination is made by DBD, the notice or determination of non-compliance will stand. In the case of underpayment of the Living Wage required, an amount sufficient to pay any underpayment shall be withheld from contract proceeds and remitted to the employee and the covered employer may be fined the applicable penalty for such underpayment as follows. In the case of underpayment of the required Living Wage rate, the amount equal to the amount of such underpayment may be withheld from the covered employer and remitted to the employee and in addition, the covered employer may also be fined for such non-compliance as follows:

(1) For the first underpayment, a penalty in an amount equal to 10% of the amount;
(2) For the second underpayment, a penalty in an amount equal to 20% thereof;
(3) For the third and successive underpayments, a penalty in an amount equal to 30% thereof;

(4) A fourth violation shall constitute a default of the subject contract and may be cause for suspension or termination in accordance with the contract's terms and debarment in accordance with the debarment procedures of the County.

Monies received from payment of penalties imposed hereunder shall be deposited in a separate account and shall be utilized solely to defray DBD's costs of administering the Living Wage provisions. If the required payment is not made within a reasonable period of time, the non-complying Covered Employer and the principal owners thereof shall be prohibited from bidding on or otherwise participating in County Living Wage contracts for a period of three (3) years.

4. **PAYROLL; RECORDS; REPORTING**

A. Each covered employer shall maintain payrolls for all covered employees and records relating thereto and shall preserve them for a period of three (3) years. The records shall contain: the name and address of each covered employee, the job title and classification, the number of hours worked each day, the gross wages earned and deductions made; annual wages paid; a copy of the social security returns and evidence of payment thereof; if applicable, a record of health benefit payments including contributions to approved plans; and any other data or information the Living Wage Commission or compliance officer should require from time to time.

B. The service contractor shall provide a certificate to the applicable department, with every invoice or requisition for payment, that includes the name, address, and phone number of the covered employer, a local contact person, and the specific project for which the service contract is sought; the amount of the contract and the applicable department the contract will serve; a brief description of the project or service provided; a statement of the wage levels for all employees; and a commitment to pay all employees a living wage as set forth in the contract specifications; and the name and social security number of every employee that provided service for that requisition for payment.

C. The covered employer shall submit the information required hereunder every six (6) months, to the applicable department a complete payroll showing the employer's payroll records for each covered employee working on the contract for covered services for one payroll period.

D. The covered employer shall file with the applicable department, every six months, reports of employment activities to be made publicly available, including: race and gender of employees hired and terminated; zip codes of employees hired and terminated; and wage rates of employees hired and terminated.

E. The covered employer shall make the records required to be kept hereunder available for inspection, copying or transcription by an authorized

representative of the County, and shall permit such representative to interview employees during working hours on the job. Failure to submit the required reports upon request or to make records available may be grounds for debarment. The service contractor is responsible for the submission of the information required hereunder and for the maintenance of records and provision of access to same by all subcontractors.

5. **SUBCONTRACTS**

The service contractor shall insert in any subcontracts the clauses set forth in paragraphs 1 through 6 of this provision and also a clause requiring the subcontractors to include these clauses in any subcontracts. The service contractor shall be responsible for compliance by any subcontractor with the clauses set forth in paragraphs 1 through 6 of this provision.

6. **PROCEDURES FOR APPEAL THROUGH ADMINISTRATIVE HEARING OFFICER PROCESS; CONTRACT TERMINATION AND DEBARMENT**

A. Appeals of findings of violation and imposition of penalties by the compliance officer shall be heard by an administrative hearing officer. Upon the receipt of a written appeal, the compliance officer shall notify the County Manager in writing and the County Manager shall appoint an administrative hearing officer and set a time for an administrative hearing. Failure to appeal within the specified time shall be considered a waiver of the appeal process provided for in Section 3.A and an admission of the complaint/violation.

B. Notification of hearing date shall be served by the compliance officer upon the covered employer against whom the complaint is made within ten (10) working days of the appointment of the administrative hearing officer. Such notice shall be by certified mail, return receipt requested. Such notice shall include:

1) A copy of the written complaint, including reasons and causes for the proposed administrative hearing outlining alleged prohibited practices upon which it is based;
2) The penalties assessed;
3) That an administrative hearing shall be conducted before an administrative hearing officer on a date and time not to exceed thirty (30) business days after service of the notice. The notice shall also advise the covered employer that they may be represented by an attorney, may present documentary evidence and verbal testimony, and may cross-examine or rebut evidence and testimony presented against them; and,
4) A description of the effect of the issuance of the notice of the proposed administrative hearing and the potential effect(s) of this administrative hearing.

C. The compliance officer or his/her designee shall, with the assistance of the project manager, present evidence and arguments to the administrative hearing officer.

D. No later than seven (7) days prior to the scheduled hearing date, the covered employer must furnish the compliance officer a list of the defenses the covered employer intends to present at the administrative hearing. If the covered employer fails to submit such list, in writing, at least seven (7) days prior to the administrative hearing, or fails to seek an extension of time within which to do so, the covered employer shall be deemed to have waived the opportunity to be heard at the administrative hearing. The administrative hearing officer shall have the right to grant or deny an extension of time, and the decision may only be reviewed upon an abuse of discretion.

E. Hearsay evidence shall be admissible at the administrative hearing, but shall not form the sole basis for finding a violation of Section 2-8.9. The administrative hearing shall be transcribed, taped or otherwise recorded by a court reporter, at the election of the administrative hearing officer and at the expense of the County. Copies of the hearing tape or transcript shall be furnished at the expense and request of the requesting party. The cost of such transcription may be assessed, by the hearing officer, against a service contractor that has been found to violate Section 2-8.9.

F. In addition to the payment of penalties and back wages, the County Manager may debar, for a period not to exceed three (3) years, a service contractor or subcontractor and the principal owners and/or qualifying agents thereof found to have violated the requirements of Section 2-8.9 a second time. If the County Manager determines a covered employer failed to comply with these provisions a forth time, the non-complying covered employer's service contract with the County may be terminated.

G. The County Manager may order the withheld amount equal to any underpayment remitted to the employee. In addition, the County Manager may order payment of a penalty to the County. If the required payment is not made within a reasonable period of time, the County Manager may order debarment as described above.

A breach of the clauses contained in this Supplemental General Condition shall be deemed a breach of this contract/ Permit or Lease Agreement and may be grounds for termination of the contract, Permit or Lease Agreement and grounds for debarment, and any other remedies available to the County.

# SPECIAL PROVISIONS 3

# LOBBYIST RULES

## 1.1 Purpose and Scope of Lobbying Rules

a) The following rules delineate the responsibilities of lobbyists and County personnel in implementing the requirements of the lobbying section of the Conflict of Interest and Code of Ethics ordinance.

## 1.2 Definition of "Lobbyist"

a) A lobbyist is any person, firm or corporation employed or retained by a principal that seeks to encourage the passage, defeat or modification of

   1) any ordinance, resolution, action or decision of the County Commission;

   2) any action, decision, or recommendation of the County Manager or any County board or committee; or

   3) any action, decision, or recommendation of County personnel during the time period of the entire decision-making process on such action, decision or recommendation which forseeably will be heard or reviewed by the County Commission or a County board or committee. "Lobbyist" specifically includes the principal as well as any employee whose normal scope of employment includes lobbying activities.

## 1.3 Exclusions

a) Attorneys or other representatives retained or employed solely for the purpose of representing individuals, corporations or other entities during publicly noticed quasi-judicial proceedings where the law prohibits ex-parte communication. A quasi-judicial proceeding is a hearing before a County or municipal commission or board where the rights of particular persons or entities are determined and for which prior notice, the opportunity to be heard and the introduction and evaluation of evidence are required (e.g. Value Adjustment Board, Community Zoning Appeals Board, Equal Opportunity Board).

b) Expert witnesses who provide only scientific, technical or other specialized information or testimony in public meetings. An expert witness is a person duly and regularly engaged in the practice of a profession who holds a professional degree from a university or college and special training or experience, or a person who is possessed of special knowledge or skill about the subject.

c) A representative of a neighborhood association who appears without compensation or reimbursement, whether direct, indirect or contingent, to express support of or opposition to any item. A neighborhood association is an organization of residential homeowners and tenants created to address quality of life issues in a defined neighborhood or community.

d) A representative of a not-for-profit community based organization for the purpose of requesting a grant, without special compensation or reimbursement for the appearance. A community based organization is a not-for-profit association or corporation organized under state or local law to engage in community development

activities (including, but not limited to, housing and economic development activities) and has as its primary purpose the improvement of the physical, economic or social environment by addressing one or more of the critical needs of the area, with particular attention to the needs of people with low or moderate incomes

e) Employees of a principal whose normal scope of employment does not include lobbying activities.

## 1.4 Examples of Lobbying Activities

a) Lobbying activities include but are not limited to:

1) Meetings or communication with elected officials or staff regarding a particular solicitation or product (i.e. time frames for the solicitation, specifications, qualifications, etc.).

2) Meetings or communication with elected officials or staff to discuss issues regarding a prior or ongoing solicitation or contract when a resolution of the matter may require approval of the Board of County Commissioners, the County Manager and his or her designee or a County board or committee.

3) Meetings or communication with elected officials or staff regarding any matter where the lobbyist is seeking to influence a decision or recommendation of staff on any matter that will require action or decision by the Board of County Commissioners, the County Manager or any County board or committee.

4) Meetings or communication with elected officials or staff regarding policy matters that may forseeably before the Board of County Commissioners, the County Manager or any County board or committee.

## 1.5 Examples of Activities Not Constituting Lobbying

a) Activities that do not constitute lobbying include but are not limited to the following:

1) Requests for information about procedures, forms, budgets or other requirements on behalf of another

2) Appearances at meetings or communications with staff or an elected official at the department or elected official are request or a description of materials or services available in response to a departmental request.

3) Advices or services communicated to a department or an elected official which arise out of an existing contractual obligation to the county or municipality.

4) Meetings or communication to provide staff or elected officials with general information regarding a firm's background or expertise.

## 1.6 General Registration Requirements

a) Every lobbyist must file an annual registration form with the Clerk at the time of initial registration and on or before January 15th of each year thereafter, along with an annual registration fee of four hundred and ninety dollars ($490.00).

b) Every lobbyist must file a registration form with the Clerk of the Board for each client within five days of being retained by a principal or before conducting any lobbying activities, whichever comes first.

c) The principal must also submit a principal authorization form prior to any lobbying. The principal must identify whether the lobbyist is retained for a particular matter or may lobby on any matter regarding the principal.

d) Every lobbyist must file a Notice of Withdrawal when the representation ends. The lobbyist must file an expenditure statement for the preceding year.

## 1.7 Selection Committee Registration Requirements

a) Any person who appears as a representative for an individual or firm for an oral presentation before a County certification, evaluation, selection n, technical review or similar committee shall list on an affidavit provided by the County, all individuals who may make a presentation. The affidavit shall be filed with the Clerk of Board at the time the response is submitted.

b) The individual or firm must submit a revised affidavit for any additional team members with the Clerk of the Board at least 2 days prior to the oral presentation. Any person not listed on the revised affidavit or who is not a registered lobbyist will not be permitted to participate in the oral presentation.

c) All additional team members, who are lobbyists, as defined herein, must file a principal authorization form (for the individual or entity) with the Clerk of the Board of County Commissioners prior to the oral presentation.

## 1.8 Not for Profit Registration Requirements

a) A lobbyist for a not-for-profit organization (unless lobbying for a community-based organization seeking grant funds) must register and file the required expenditure form. Upon request, the Clerk of the Board may waive the applicable registration fees.

## 1.9 Expenditure Reports

a) All registered lobbyists must file an expenditure report with the Clerk of the Board by July 1st of each year. The date of filing is the date that the report is received by the Clerk's office.

b) A lobbyist must file a report for every principal and must list all expenditures in excess of twenty-five dollars ($25.00) for the preceding calendar year. The form must be filed even if the lobbyist did not make any expenditures during the prior year.

## 1.10 Expenditure Categories

a) The lobbyist must report expenditures in the following categories: communications, entertainment, food and beverages, lodging, media advertising, publications and other. The information covered in each category is:

1) "Communications" means dissemination of information, including but not limited to the following means: audio-visual materials, signs, placards, buttons, promotional materials, or other display materials; together with any associated production services. This category does not include media advertising, publications or research.

2) "Entertainment" means amusement or recreation including but not limited to sporting, hunting, fishing, theatrical, artistic, cultural and musical activities or events.

3) "Food and Beverages" means meals, snacks or edible substances or liquids for drinking including services associated therewith.

4) "Lodging" means sleeping or living accommodations for an individual for one or more nights.

5) "Media advertising" means newspaper and magazine advertising, radio and television advertising and outdoor advertising including production services and copyrighting services.

6) "Other" means any item or service which is not included in one of the specified categories; this category does not include any item or service which is not required by law to be reported.

7) "Publications" means mass-produced, printed materials including but not limited to magazines, newsletters, brochures or pamphlets, which expressly encourage to communicate with agency officials or employees or to influence an agency with respect to a decision of the agency in the area of policy or procurement or which are designed to communicate with agency officials or employees.

8) "Research" means obtaining information relating to a specific policy issue or procurement matter regardless of the form or medium in which such information is provided including, but not limited to, surveys, information services, periodicals and consultants or consultant services to gather data or statistics.

9) "Special Events" means large scale functions, including but not limited to receptions, banquets, dinners or fairs to which more than 250 persons are invited and for which the expenditures associated with hosting the function are negotiated with a catering service or facility at a single, set price or which include multiple expenditure categories.

10) "Travel" means transporting an individual from, one place to another, regardless of the means used.

b) Certain items such as communications, publications and research are office expenses if performed by the lobbyist or principal or their employees. If those functions are performed by independent contractors, other than the lobbyist or principal or an affiliate controlled by the principal, they are reportable under the appropriate expenditure category.

c) If an expense is incurred for a business purpose unrelated to lobbying and the product of that expense is later used for a lobbying purpose, the expenditure does not have to be reported.

## 1.11 Penalties for Late Filing

a) A late fee of fifty dollars per day per report will automatically be assessed for any report filed after the due date. All fines must be paid to the Clerk of the Board of County Commissioners.

b) The Clerk of the Board of County Commissioners will notify all lobbyists who have failed to file by July 15th of each year that they are not in compliance with the ordinance and of the current fines assessed against the lobbyist.

c) A lobbyist is automatically suspended and may not lobby any employee, elected official or before any County board (including the Board of County Commissioners) if the lobbyist has not filed an expenditure report by September 1st of each year.

d) The Clerk of the Board of County Commissioners must provide the Ethics Commission with a report listing all lobbyists who have either failed to file disclosure reports or pay assessed fines by October 1st of each calendar year. The Ethics Commission will provide the list to the Commission Advocate who may initiate complaint proceedings against any lobbyist for failure to file an expenditure report and/or pay assessed fines.

## 1.12 Appeals

a) Any lobbyist may appeal a fine and request a hearing before the Ethics Commission by filing an appeal with the Ethics Commission within fifteen days receipt of the Notice of Violation. Late fees will continue to accrue after an appeal unless the required forms are filed.

b) The lobbyist must mail or fax a letter to the Executive Director of the Ethics Commission stating the reasons for the appeal. The lobbyist must include in his or her notice of appeal any request for a hearing before the Ethics Commission. The lobbyist must attach any documentation or evidence for consideration by the Ethics Commission in making a determination on the appeal at the time the notice of appeal is filed.

c) The Ethics Commission may delegate determinations of appeals without a request for hearing to Commission staff. The staff may have the authority to waive fines in whole

or part for good cause shown. Any determinations by staff must be ratified by the Ethics Commission or a committee appointed by the Chair.

d) A hearing on an appeal under this ordinance may be heard by a committee appointed by the Chair or the Ethics Commission as a whole. The Ethics Commission may waive any fines, in whole or part, for good cause shown.

## 1.13 Contingency Fees

a) After May 16, 2003, no person may, in whole or in part, pay, give or agree to pay or give a contingency fee to another person. No person may, in whole or in part, receive or agree to receive a contingency fee.

b) A contingency fee is a fee, bonus, commission or non-monetary benefit as compensation which is dependent on or in any way contingent upon the passage, defeat, or modification of: 1) any ordinance, resolution, action or decision of the County Commission; 2) any action, decision or recommendation of the County Manager or any County board or committee; or 3) any action, decision or recommendation of any County personnel during the time period of the entire decision-making process regarding such action, decision or recommendation which forseeably will be heard or reviewed by the County Commission or a County board or committee.

## 1.14 Departmental Responsibilities

a) All departments and agencies must maintain a visitor log for anyone seeking to do business with the department or agency or seeking administrative action from the department or agency. The log should include information regarding the name of the visitor, the staff person or persons visited and the purpose of the visit (i.e. name of matter or agenda item number).

b) All elected officials, board members and employees shall be diligent to ascertain whether persons appearing before them have registered as lobbyists. County personnel may check on a lobbyist's status through the Lobbyist Registration section of the Metronet or by calling the Clerk of the Board of County Commissioners. Elected officials, board members and employees may not knowingly permit a person who is not registered to lobby them regarding an issue.

## 1.15 Penalties for Lobbying Violations

a) The Ethics Commission may prohibit any lobbyist who commits a lobbying violation from lobbying before the Board of County Commissioners or any committee, board or personnel of the Miami-Dade County for a period of: 1) ninety days following determination of the first violation; 2) one year following determination of the second violation and 3) five years from determination of the third violation.

b) Any lobbyist who commits a lobbying violation is also subject to a two hundred and fifty-dollar fine for the first violation and a five hundred-dollar fine for the second violation.

c) The County Manager or the Board of County Commissioners may void any contract where a lobbying violation has occurred.

# SPECIAL PROVISIONS 4

# PROCEDURES FOR REQUESTING CONFIDENTIAL RECORDS FROM MDAD

## I. AUTHORITY

A. Florida Statute 119.071, Subsection (3), Paragraph (b), Inspection, Examination, and Duplication of Records; Exemptions, as amended.

"Building plans, blueprints, schematic drawings, and diagrams, including draft, preliminary, and final formats, which depict the internal layout and structural elements of a building, arena, stadium, water treatment facility, or other structure owned or operated by an agency are exempt from s. 119.07(1) and s. 24(a), Article I of the State Constitution. This exemption applies to building plans, blueprints, schematic drawings, and diagrams, including draft, preliminary, and final formats, which depict the internal layout and structural elements of a building, arena, stadium, water treatment facility, or other structure owned or operated by an agency before, on, or after the effective date of this act. Information made exempt by this paragraph may be disclosed to another governmental entity if disclosure is necessary for the receiving entity to perform its duties and responsibilities; to a licensed architect, engineer, or contractor who is performing work on or related to the building, arena, stadium, water treatment facility, or other structure owned or operated by an agency; or upon a showing of good cause before a court of competent jurisdiction. The entities or persons receiving such information shall maintain the exempt status of the information. This paragraph is subject to the Open Government Sunset Review Act in accordance with s. 119.15 and shall stand repealed on October 2, 2007, unless reviewed and reenacted by the Legislature."

## II. CONFIDENTIAL RECORDS

According to federal and state laws, confidential documents of governmental facilities are vulnerable to unlawful interference. In order to comply with the requirements of these laws, MDAD has created two main categories to handle requests for copies of Aviation records that might be exempt from the public records laws.

A. New Confidential Records During Bid Phases:

1. The licensed Architect, Engineer, or Contractor authorized to represent a Bidder must sign a Confidentiality Affidavit, copy attached, stating that they are cognizant of the exempt status of the Proposal Documents and that they will be held responsible for maintaining that status.

2. Firms purchasing Proposal Documents will be charged for those documents as set forth in the Advertisement for Proposals.

3. For all other requests for confidential records *(During bid phases)*, a Bidder must obtain a Request for Copies of MDAD New Confidential Records Form and have it signed by the Owner. The licensed Architect, Engineer, or Contractor authorized to represent a Bidder must also sign a Confidentiality Affidavit stating that they are cognizant of the exempt status of the requested documents and that they will be held responsible for maintaining that status. Firms will be charged the actual reproduction cost to MDAD of producing any such requested documents.

B. As Built, Existing, and New Confidential Records During Non-Bid Phases:

1. A licensed Architect, Engineer or Contractor under contract with MDAD must obtain a Request for Copies of MDAD Confidential Records *(During non-bid phases)* Form and have it signed by the Owner.

2. A licensed Architect, Engineer, or Contractor under contract with MDAD must also sign a Confidentiality Affidavit stating that they are cognizant of the exempt status of the records they have been given access to and that they will be held responsible for maintaining that status.

3. Firms requesting confidential records *(During non-bid phases)* will be charged in accordance with Section II. A. 3. above

## III. CONTROL OF CONFIDENTIAL RECORDS

A. In addition to the above requirements, the Contractor agrees to abide by all federal, state, and County procedures, as may be amended from time to time, by which the documents are handled, copied, and distributed which include but is not limited to:

1. Each Subcontractor that will be involved in the project shall sign an agreement stating that they will not copy, duplicate, or distribute the documents unless authorized by the Owner.

2. The Contractor and Subcontractors agree in writing that the project documents are to be kept and maintained in a secure location.

3. Each set of the project documents are to be numbered and the whereabouts of the documents shall be tracked at all times.

4. A log is developed to track each set of documents logging in the date, time, and name of the individual(s) that work on or view the documents. The Contractor will submit on a monthly basis a copy of the tracking log to the Owner.

B. The Contractor is advised that the sole authority as to the release, or disclosure, of any project related documents to any third party, other than a Subcontractor, supplier, materialmen, or reproduction company, rests with the Director of the Miami Dade Aviation Department, or his/her designee. The Contractor shall not release any contractual related documents to any third party that is not directly related to the project work, or does not have a need to know.

C. As a condition of Final Acceptance, the Contractor will return all of the Contractual Documents, including any copies made, and any copies that are in the possession of Subcontractors, suppliers and materialmen, to the Owner. Failure to return the Contractual Documents, and all copies, to the Owner will be reported to a Law Enforcement Investigating Authority. Furthermore, the Contractor shall not be allowed to participate in future Confidential solicitations until such time that the Contractor has taken corrective actions satisfactory to Miami Dade County.

**MDAD NON-DISCLOSURE AGREEMENT**
**(SSI & FLORIDA PUBLIC RECORDS LAWS)**

STATE OF _____

COUNTY OF _____

Before me, the undersigned authority appeared, _____
Who stated:

1. This agreement is completed for (records requested):

_____

2. I am the duly authorized representative for:

_____
Name and Title

_____
Authorized Entity

_____
Address

3. I have the express authority to sign this agreement and hereby consent to all of the conditions stated herein, in consideration of my being granted conditional access to certain information, specified in paragraph (1) above, that is owned by, produced by, or in the possession of the Miami Dade County Aviation Department.

4. **Sensitive Security Information.** I attest that I am familiar with, and I will comply with the standards for access, dissemination, handling, and safeguarding of SSI information as cited in this Agreement and in accordance with 49 CFR Part 1520, "Protection of Sensitive Security Information," "Policies and Procedures for Safeguarding and Control of SSI," as amended, and any supplementary guidance issued by an authorized official of the Department of Homeland Security.

5. By being granted conditional access to the information in paragraph (1), indicated above, I am obligated to protect this information from unauthorized disclosure. I will not disclose or release any information provided to me pursuant to this Agreement without proper authority or authorization. Only those persons in my company who have a need to know may handle this information, and I will ensure that they will comply with all maintenance, safeguarding, dissemination and handling requirements provided in 49 CFR Part 1520.

6. **Florida Public Records Laws.** I attest that I am familiar with Florida Statutes §119.071 and §281.301, which provides in relevant part that information relating to the security systems for any property owned by or leased to the state or any of its political subdivisions, and information relating to the security systems for any privately owned or leased property which is in the possession of any agency, ... is confidential and exempt from the provisions of §119.01(1) and section 24(a), Article 1 of the [Florida] Constitution.

7. By signing this affidavit, I am certifying that I understand and acknowledge that the records indicated in paragraph (1) above contains information related to airport security systems and I agree to retain the confidential and exempt status of the records in accordance with Florida Statutes §119.071 and §281.301.

8. Neither the execution of this affidavit nor the release of the records indicated in paragraph (1) above operates as a waiver of the confidential and exempt status of the records.

_____
Signature

_____
Title

The above instrument was sworn to and subscribed before me this __ day of _____ 20_____, by

_____
Printed Name

( ) who is personally known to me,
( ) who has produced _____ as identification: and who ( ) did
( ) did not take
an oath.

_____
Signature of Notary Public

_____
Print, type or stamp name of notary public

Notary Commission Number: _____ My Commission Expires:_____

Notary Stamp or Seal:

# SPECIAL PROVISIONS 5

# SBE EXPEDITED PAYMENT PROCESS

## CSBE EXPEDITED PAYMENT PROCESS

DBD will provide financial assistance to eligible CSBEs through an expedited payment process (EPP) for incurred or expended mobilization expenses on County Contract awards. Eligible CSBEs may receive assistance for up to ten percent (10%) of Contract award for approved mobilization expenses.

### 1. CSBE Responsibilities

In order to be eligible for expedited payments, CSBE must show proof of the following:

1. Successful completion of Management and Technical Assistance Program Professional Development and Training Modules.
2. Certification as a CSBE
3. Contract award for a County construction Contract with a prime Contractor or directly with a County Department.

CSBEs must also be in good standing with existing County Ordinances applicable to County construction Contracts. CSBEs seeking participation in the EPP program must sign a notarized agreement accepting the terms and conditions of EPP.

Eligible CSBEs seeking EPP assistance must complete a Disbursement Authorization Form (Form DBD 306). The CSBE must list mobilization expense items, with supporting documentation, for EPP consideration and forward to the prime Contractor, if the CSBE is a Subcontractor. If the CSBE is a prime Contractor, the Disbursement Authorization Form must be submitted directly to the User Department Project Manager. The CSBE must also submit a copy of the Project Schedule of Values to DBD. When the CSBE submits the normal requisition, it should include the mobilization expenses listed on the Disbursement Authorization Form.

### 2. Prime Contractor Responsibilities When CSBE is a Subcontractor

Prime Contractor reviews Disbursement Authorization Form to verify that each expense item is for mobilization expenses and is for line item expenses listed in the Schedule of Values. Prime will also verify that the expenses reflect materials delivered, services performed or any miscellaneous expenses associated with the project start up. For approved expenses, the Prime will sign off on Disbursement Authorization Form and forward to the Department Project Manager. If authorization is not approved, the prime must indicate an explanation on the Disbursement Authorization Form and return to the CSBE with a copy to DBD. In the normal requisition process the Prime will pay the CSBE for services provided or goods delivered and deduct any payments made through EPP.

### 3. Department Project Manner Responsibilities

The Department Project Manager will review Disbursement Authorization Forms received from the CSBE or Prime Contractor, and verify that goods have been received and/or services have

been provided. Department Project Manager signs off on Disbursement Authorization Forms for approved expenses and forwards to DBD. If authorization is not approved, the Department Project Manager must indicate an explanation on the Disbursement Authorization Form and return to the CSBE or Prime Contractor with a copy to DBD.

**4. DBD Responsibilities**

DBD will verify eligibility of all CSBEs applying for EPP assistance. DBD will review all Disbursement Authorization Forms received from Department Project Managers and process check requests for all expenses approved for EPP. DBD will verify that vendors/suppliers indicated on the check request are registered with the Department of Procurement. For unregistered vendors/suppliers, DBD will assist CSBEs in registering these firms. Check requests will be forwarded to the Miami-Dade Aviation Department (MDAD) DBD will provide adequate follow up to ensure CSBE vendors/suppliers receive payment. Any problems or complaints regarding EPP transactions will be the responsibility of DBD.

**5. Finance Department Responsibilities**

MDAD will receive all check requests for EPP payment from DBD. Check requests will be processed for payment and made payable to the CSBE vendor or supplier. MDAD will only issue checks to vendors who are registered with the Department of Procurement. For mobilization expenses paid by the CSBE, MDAD will issue a two party check payable either to the Prime and the CSBE vendor/supplier or to the Prime and the CSBE providing that the CSBE shows adequate proof of expenses paid. All checks will be issued within ten (10) business days from receipt of check request.