

Transit Asset Inventory Development and Integration

Asset Management Methodology/ Condition Assessment Methodology Research

SEPTEMBER 2012

FTA Report No. 0023 **Federal Transit Administration**

PREPARED BY

Ronald G. Humphrey John C. Lewis Yuanchang Xie, PhD, PE Susan Sharp

CodeRed Business Solutions Bi-State Development Agency (St. Louis Metro) Jackie Joyner-Kersee Ctr.



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CodeRed Business Solutions Bi-State Development Agency (St. Louis Metro)

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Office of Research, Demonstration and Innovation
U.S. Department of Transportation
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Metric Conversion Table

SYMBOL	WHEN YOU KNOW	MULTIPLY BY	TO FIND	SYMBOL	
LENGTH					
in	inches	25.4	millimeters	mm	
ft	feet	0.305	meters	m	
yd	yards	0.914	meters	m	
mi	miles	1.61	kilometers	km	
		VOLUME			
fl oz	fluid ounces	29.57	milliliters	mL	
gal	gallons	3.785	liters	L	
ft³	cubic feet	0.028	cubic meters	m ³	
yd ³	cubic yards	0.765	cubic meters	m³	
NOTE: volumes greater than 1000 L shall be shown in m ³					
		MASS			
OZ	ounces	28.35	grams	g	
lb	pounds	0.454	kilograms	kg	
т	short tons (2000 lb)	0.907	megagrams (or "metric ton")	Mg (or "t")	
	TE	MPERATURE (exact degre	es)		
°F	Fahrenheit	5 (F-32)/9 or (F-32)/1.8	Celsius	°C	

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TABLE OF CONTENTS

1	Executive Summary
3	Section 1: Introduction
3	Study Background, Objectives, and Scope
3	St. Louis Metro
5	Study Scope and Process
8	Section 2: Current Asset Management Practices
8	Background
8	New Maintenance Philosophy
9	The Metro Plan
10	Results
12	LRV Maintenance Program
13	Daily Pre-Trip Inspections
13	Mileage-Based Preventive Maintenance Program
14	Modular Overhaul (MO) Program
15	Performance Monitoring
15	MetroBus, Van, and Non-Revenue Vehicle Maintenance Program
17	Preventive Maintenance Inspection and Predictive Maintenance
18	Work Scheduling
19	Performance Monitoring
19	Work Safety
19	Quality Control
19	Training
19	Equipment and Tools
19	Work Order System
20	Critical Infrastructure
21	Section 3: Current Asset Management Data System
22	Oracle Database System
22	Overview
23	Type of Data
25	Policies and Procedures
26	Materials Management Data
28	Maximus M-5 System
29	Overview
29	Type of Data
30	Facilities Data
31	AIMS for Right-of-Way (ROW) Structure Assets
31	Asset Condition Monitoring

34	Paper and Electronic Files
34	ROW Maintenance
35	Rail System Maintenance
37	Section 4: Findings
37	Analysis
39	Developing Project Priorities
39	Defining Hierarchies between Critical Assets and Data Components
41	Step-by-Step Procedures
42	Software Tools for Hierarchy Development
42	Examples of Hierarchical Structures Created with SmartDraw
43	Signal Houses
47	Other Components
52	Section 5: Recommendations
52	Recommendations Specific to Metro
53	General Recommendations
54	SmartDraw Software
55	Windchill Software
56	Step-by-Step Process
57	Asset Management System for Bus and Railcars
59	Section 6: Best Practices
59	Transformation of Metro's Vehicle Maintenance Department
59	Determining Bus Fleet Maintenance Intervals
60	Comprehensive Maintenance Plan
60	Predictable Maintenance and Replacement
62	Lessons Learned
63	Comprehensive Inventory of Assets
64	Section 7: Conclusions
66	ACRONYMS
68	REFERENCES
69	APPENDIX: Inventory of Assets

LIST OF FIGURES

4	Figure 1-1:	MetroLink System Schematic
4	Figure 1-2:	Metro Maintenance Facilities
10	Figure 2-1:	Bus Maintenance Cost per Mile for 15 Years Before Plan vs. Plan
11	Figure 2-2:	All Mode Mean Distance Between Failures 2002–2012
11	Figure 2-3:	Bus Mean Distance between Failures 2000–2012
11	Figure 2-4:	LRV Mean Distance between Failures 2002–2012
12	Figure 2-5:	LRV Maintenance Plan
16	Figure 2-6:	Overall Bus, Van, and Non-revenue Vehicle Maintenance Practice
18	Figure 2-7:	General Work Scheduling Process
18	Figure 2-8:	General Procedure to Maximize Productivity
20	Figure 2-9:	Work Order Generation
21	Figure 3-1:	Metro Assets by Database System
25	Figure 3-2:	Policies and Procedures for Fixed Assets Additions
27	Figure 3-3:	Materials Management Office Work Flow
31	Figure 3-4:	Right-of-Way (ROW) Structures
33	Figure 3-5:	MetroLink Complete System Map with Asset Locations
33	Figure 3-6:	Asset Database Condition Assessment at Sub-system Level
34	Figure 3-7:	Right-of-Way Maintenance Plan
36	Figure 3-8:	Rail System Maintenance Plan
38	Figure 4-1:	Analysis Process
44	Figure 4-2:	Signal House Components
45	Figure 4-3:	CAD Drawing of a Signal House
46	Figure 4-4:	Typical Signal Control Asset Inventory Counts and Rack 3 Photo
47	Figure 4-5:	Light Rail Vehicle (LRV) Hierarchical Components
48	Figure 4-6:	Typical Rail Station Hierarchical Components
49	Figure 4-7:	Typical Rail Maintenance Facility Hierarchical Components
50	Figure 4-8:	Asset Documentation at Project Outset

LIST OF TABLES

6	Table 1-1:	Step-by-Step Study Process
13	Table 2-1:	LRV Mileage-Based Preventive Maintenance Program
14	Table 2-2:	Modular Overhaul Components
17	Table 2-3:	Definitions
23	Table 3-1:	Table Structure for Fixed Assets in Oracle Database
24	Table 3-2:	Fixed Assets Data in Oracle Database
40	Table 4-1:	Category and Asset Types Reviewed
56	Table 5-1:	Project/Step Objectives

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CodeRed Business Solutions (CRBS), the prime contractor, teamed with St. Louis Metro (Metro), one of the nation's best mid-size transit agencies, which operates both bus and light rail transit. Ronald Humphrey of CodeRed Business Solutions was the principal investigator, supported by John Lewis, Joseph Harrison, Gail Gant, Tobey Dykeman, Rachel Bates, and Susan Sharp of Sharp & Company. This team also included Sharp & Company, and Yuanchang Xie, Ph.D., P.E., Assistant Professor, University of Massachusetts Lowell.

Metro and CRBS formed a unique partnership to perform this research project. This partnership provided CRBS with the opportunity to work with some of the most dedicated transportation professionals in the United States.

CRBS would like to express special thanks to Ray Friem, Chief Operating Officer at Metro, whose support at the beginning of this project was the key factor that ensured the project's overall success. His vision, support, and leadership made the importance of this project clear to all Metro maintenance personnel. This project has helped Metro in developing a process for documenting its physical infrastructure that will assist it in achieving its long-term goal of ensuring that all assets are maintained in a State of Good Repair. Several other key members of Metro's management team were Carl Thiessen, Trent Smith, Scott Grout, Chuck Clemens, and Dave Still. The support provided by these individuals made this research possible and ensured the overall success of this research project.

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Finally, the CRBS team would like to acknowledge the support and guidance provided by Terrell Williams of the FTA Office of Research, Demonstration and Innovation.

ABSTRACT

During the State of Good Repair Roundtable in 2010, the Federal Transit Administration (FTA) expressed a growing concern that a significant proportion of the nation's public transportation assets are in need of capital reinvestment to continue to meet the demand of the American public. To address this need, CodeRed Business Solutions and its primary teammate, St. Louis Metro, were selected to receive a research and technology grant from FTA.

This research summarizes the results of the 13-month effort to consider how urban rail transit agencies can leverage data within their maintenance management systems to build asset inventories for higher-level analysis.

The research goal/objectives were to provide FTA with a plan or roadmap for how transit agencies can leverage existing asset management and maintenance data, regardless of which asset management or maintenance data collection system the agency employs. To achieve this goal, the team developed a process for defining recommended industry-integrated standard asset inventory structures, data elements, and hierarchical relationships. This process is described in detail in this report.

EXECUTIVE SUMMARY

This report summarizes the results of a 13-month effort by Code Red Business Solutions (CRBS) to consider how urban rail transit agencies can leverage data within their maintenance management systems to build asset inventories for higher-level analysis. This would provide a way to optimize transit agency investments in bus/rail capital assets and provide reporting to meet current and future Federal Transit Administration (FTA) requirements. The research goal/requirement was to provide FTA with a plan or roadmap for transit agencies to leverage existing asset management and maintenance data, regardless of which asset management or maintenance data collection system the agency deploys.

To achieve this goal, the research team developed a process for defining recommended industry-integrated standard asset inventory structures, data elements, and hierarchical relationships. This report documents that process, using a representative transit agency, St. Louis Metro (Metro). In addition, this report includes a reference document that delineates and illustrates how larger capital items can be related through the proposed hierarchical relationships to data recorded in maintenance management systems.

The research team comprised representatives from CRBS and subject matter experts from Metro. Metro personnel participated throughout all phases of the project, assisting with data collection and interpretation. A key factor to the team's success was the proactive support provided by the Director of Operations and Department of Maintenance managers at all levels within Metro. The team scheduled meetings and conducted detailed interviews with senior managers and front-line supervisory staff to review and analyze the current asset management practices. These were used to catalog and describe the categories, hierarchies, and data elements. Through one-on-one interviews and numerous meetings, various documents and reports were reviewed to provide a framework to further define categories, hierarchies, and data elements.

Metro already had a well-developed maintenance system, Maximus M-5 (also called Assetworks), and a well-developed scheduled maintenance plan and process. All Metro maintenance divisions had clearly-defined inspection plans. Most divisions have well-documented inspection policies and procedures, and these policies and procedures are regularly updated based on manufacturers' recommendations and Metro's own experience.

The maintenance management and materials management divisions at Metro coordinate scheduled maintenance activities with parts ordering activities by using M-5. This process ensures that every bus and rail car has all the necessary parts required to perform scheduled maintenance activities. The agency's ability to schedule and plan 95 percent of its maintenance activity enhances its ability to produce one of the lowest maintenance costs per mile for bus fleets in the country. The scheduled maintenance model used by Metro's bus division is critical to successful operations. As it is non-proprietary, this model is detailed extensively in this report.

Currently, the Metro assets and their maintenance history data are separated into different database systems, including Oracle, M-5, Asset Inspection and Maintenance System (AIMS, a Web-based GIS system), and paper and electronic files. This configuration makes it challenging to seamlessly integrate data from different sources and to present it in a meaningful way that would support critical decision making. We recommend that Metro consider moving the parts reordering process to Maximus M-5, eliminating the need to frequently interface with Oracle. This change will improve efficiency and reduce the time involved in producing a more seamless process to support maintenance activities.

SECTION

1

Introduction

Study Background, Objectives, and Scope

During the September 2010 State of Good Repair Roundtable, the Federal Transit Administration (FTA) expressed a growing concern that a significant proportion of the nation's public transportation assets were in need of capital reinvestment to continue to meet the demand of the American public. To address this need, FTA updated several reporting systems (Transit Economics Requirements Model [TERM] and the National Transit Database [NTD]) that would provide comprehensive visibility of rolling stock (bus and rail) and all critical fixed assets, including bridges, tunnels, and transportation facilities.

In response, transit agencies have invested in asset management systems to more effectively manage their physical assets. Ideally, these systems use quality inventory and condition data and well-defined objectives to provide a systematic process for improving resource allocation decision making. In actuality, many of these systems fall short of providing the total asset visibility required to allow planning and budgeting personnel to accurately plan for future requirements.

To begin addressing this issue, Code Red Business Solutions (CRBS) teamed with St. Louis Metro (Metro) to explore the development of asset inventories for asset management at an urban transit rail agency. Specifically, the purpose was to consider how urban rail transit agencies leverage data in their maintenance management systems to build asset inventories for higher-level analysis to optimize investments in urban rail capital assets.

St. Louis Metro

Metro was established as the Bi-State Development Agency (BSDA) in 1949 through an interstate compact between Missouri and Illinois, ratified by the U.S. Congress and signed by President Harry S. Truman. The BSDA adopted the name Metro in 2003. The BSDA was created to serve the region on both sides of the Mississippi River and was meant to have a regional outlook not tied to any single municipality, county, or state. As such, it was given broad powers that enable it to cross local, county, and state boundaries to enhance the development of the region.

Metro provides transit services for the St. Louis Metropolitan area, which covers five counties (St. Louis, St. Charles, Madison, St. Clair, and Monroe) in Missouri and Illinois and the city of St. Louis. The services provided by Metro include:

- · MetroLink, the light rail system
- MetroBus, the bus system
- Metro Call-A-Ride, the paratransit van system

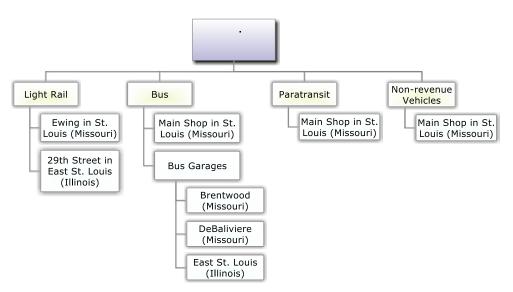
The MetroLink system operates along 46 miles of alignment between Missouri and Illinois. As shown in Figure 1-1, the system has 37 stations extending from Lambert Airport/Shrewsbury in Missouri to Scott Air Force Base in Illinois. The system operates with 87 Light Rail Vehicles (LRVs) on two lines. The MetroLink system also has two LRV maintenance facilities, one in Missouri and the other in Illinois. Metro also operates the Airport, Gateway Arch, Arch Parking Facility, and River Boat.



Figure 1-1 MetroLink System Schematic

The MetroBus system has 370 buses operating 57 routes in Missouri and 17 routes in Illinois. These buses operate out of three facilities, with two in Missouri and one in Illinois. The maintenance facilities for all services are shown in Figure 1-2.

Figure 1-2
Metro Maintenance
Facilities



The Metro Call-A-Ride paratransit system has 120 vans, and its service is available only on the Missouri side of the Metropolitan region.

In addition to the three bus maintenance facilities and two LRV maintenance facilities, Metro has approximately 300 non-revenue vehicles, a separate

facility in Missouri that houses the bus maintenance and paratransit services, a headquarters facility, and additional parking and other facilities.

Metro was selected as a partner because it is a medium-size urban transit agency with rail, bus, and paratransit systems. Metro management was willing to share its current asset management practices and was open to finding ways to improve its systems. The cooperation of Metro managers at all levels was an essential ingredient of the success of this undertaking.

Study Scope and Process

To explore the development of asset inventories for asset management at an urban transit rail agency, over a period of 13 months the CRBS team collected and evaluated asset/inventory data from all available data systems at Metro, working closely with Metro management to gain a more informed perspective on how data are used within the agency's asset maintenance activity. CRBS began by reviewing and mapping/modeling the current asset management practices at Metro. This included all pertinent documents required to catalog and describe the categories, hierarchies, and data elements that were used. Information was gathered through site visits and interviews with Metro representatives and through data retrieval from the agency's management information systems. Based on analysis of this data to identify differences in approach and in details, CRBS synthesized the information to produce a standard set of categories, data, and practices. The methodology established the foundation of a logical data structure that was instrumental in developing vertical and lateral data links of higher assemblies, lower assemblies, and related assemblies. This overall macro structure was presented to FTA. The output of the reviewed structure served as the Conceptual Standard Asset Management Inventory Structure.

CRBS examined how the Metro data are organized and how the agency compares to the organization of the elements in the Conceptual Standard Asset Management Inventory Structure. CRBS also captured and analyzed Metro's asset/inventory data for bus and rail vehicles and all associated equipment and facilities, as well as Maintenance of Way facilities and equipment data. These data were evaluated to determine which data elements are required to support the State of Good Repair (SGR) reporting and reliability improvements, asset warranties, and capital reinvestment requirements. The team documented and illustrated how larger capital items are related through the hierarchical relationships to data recorded in maintenance management systems and how these data can be used to infer conditions of these larger capital assets.

The CRBS team mapped the current processes and documented improvements required to achieve total asset visibility. These data were also used to develop decision support tools that would support life-cycle analysis and complement the existing management information systems and the FTA TERM model.

The methodology described in this final report lists the project steps and objectives required by an agency to use data contained in its maintenance/ management information systems in order to improve its ability to manage its critical assets. During the project kickoff meeting, FTA's Office of Research, Demonstration and Innovation requested that CRBS document and focus on the process for identifying and producing an accurate roadmap for other agencies to follow, regardless of what maintenance or management information systems are being used by an agency. The methodology shown in Table I-I provides that roadmap, enabling agencies to leverage data in their maintenance management systems and asset inventories to achieve a higher level of analysis to optimize investments in urban bus/rail capital assets and achieve total asset visibility.

Table 1-1 Step-by-Step Study Process

Step I. Review current asset management practices.

Objective:

Conduct a complete assessment of current asset management practices. This task requires that the organization take a comprehensive look at its bus and rail operations and ensure that a complete assessment of the overall asset management practices employed by the agency is well documented.

Activities:

• Conduct interviews with all stakeholders involved with asset management.

Step 2. Review and analyze all management and maintenance information systems.

Objective:

Review all management information systems used to identify, track, and report asset management, maintenance/repair, replacement activities and costs.

Activities:

- Review all data currently contained in the agency's management/ maintenance information systems and asset management systems.
- Analyze asset/inventory data for bus and rail fleets and all associated equipment and facilities.
- Analyze Maintenance of Way equipment and facilities data contained on paper or electronically within databases that are not included in the agency's standard information systems.
- Review and evaluate to determine which data elements are required to support the State of Good Repair reporting and reliability improvements, asset warranties, and capital reinvestment requirements.

Step 3. Catalog and describe the hierarchies (parent/child).

Objective:

Create data structures that contain all necessary elements of the transit agency that support rail and bus services. The structures shall be organized utilizing a parent/child relationship so that relevant parameters from a maintenance management system can be leveraged for impact on related assemblies thus providing management with a planning tool.

Activities:

- Review lists of current assets contained in an Asset Management system or database system.
- Document the current hierarchal structure (parent/child relationship).
- Conduct interviews with management, engineering, and other transit professionals to discuss how to document their systems/facilities.
- Recommend improvements and brief senior management to obtain buy-in and approval.

Step 4. Conduct a comprehensive inventory of all critical assets.

Objective:

Perform a comprehensive inventory of all critical assets utilized by the organization to deliver bus and rail revenue service. This step is critical to ensure that all data contained in a maintenance information system is correct and reflects all current assets and their location/ condition.

Activities:

- Request that senior management select a team of qualified personnel to assist in conducting this comprehensive inventory.
- Document asset inventory in an information system that provides total asset visibility.

Step 5. Identify all data elements.

Objective:

Review the current data elements contained in all asset management systems and evaluate the accuracy of those asset data elements. In addition, ensure that the breakdown structure is correct and all hierarchical relationships are reflected correctly.

Activities:

- Review current data elements and structures.
- · Perform analysis of current data elements and structures.
- Generate detailed illustration of hierarchical relationships for critical inventory assets that will be developed for key equipment and facilities to support bus and rail infrastructure.
- Make recommendations and provide support documentation for new data elements.

Step 6. Map data flow.

Objective:

Develop a flowchart of the entire asset process from the original procurement of the asset through its complete life cycle and disposal.

Activities:

• Document/flowchart the complete data flow of existing and new assets (e.g., vehicles, stations, facilities and critical support structures).

Step 7. Review all urban rail/bus capital asset planning data.

Objective:

Perform a comprehensive review of current asset planning data contained in management information systems, standalone spreadsheets, and asset managers' log books. Evaluate how effectively current data is being utilized to support decisions for replacement of critical assets. Consider how maintenance data and life cycle information is being utilized in the decision process.

Activities:

- Collect and evaluate asset/inventory data from both the management/ maintenance and asset management data systems. Review data stored on Excel spreadsheets, log books, personal files maintained by material storeroom and maintenance personnel.
- Determine how State of Good Repair is documented and reported by the agency.
- Review how maintenance, inspection and rehabilitation data is collected and influences the SGR.
- · Review accuracy of current data.
- Review how maintenance and life cycle information is being used in the decision process.
- Review all current tools being used in the asset replacement decision process.

Step 8. Determine tool requirements.

Objective:

Determine what standalone computer software or tools may assist senior management in accurately predicting the replacement of critical assets thus eliminating short notice funding requirements. In addition, these types of tools will provide valuable life cycle costs.

Activities:

- Review current tools being utilized by personnel.
- Review existing tools employed to support the capital budgeting and asset replacement process.

Step 9. Determine what additional enhancements are required.

Objective:

Determine what additional enhancements/ improvements could be made to the overall asset management process.

Activities:

- Gain senior management buy-in and approval.
- Provide new asset breakdown structure for all assets.
- Input new structure and all supporting data into the agency's primary Transit Asset Management (TAM) System.
- · Review all data to ensure accuracy.

SECTION

2

Current Asset Management Practices

Background

Metro operates 87 light rail vehicles (LRVs) on two lines that include 37 rail stations along 46 miles of track alignment. In addition, Metro operates 370 buses that service 57 routes operating in Missouri and 17 routes operating in Illinois. Metro also operates 120 paratransit vehicles and 300 non-revenue vehicles.

Metro's approach to management of its rolling stock assets was the same as most other transit agencies until 2002. Like its peers, Metro was struggling to produce enough revenue service vehicles to meet the daily demand in the St. Louis metropolitan area. This struggle was rooted in a maintenance philosophy that had existed since the 1960s. This philosophy led to out-of-control costs, high customer complaints, and inconsistent fleet practices.

Under the old philosophy, vehicle maintenance operated all major components such as engines, transmissions and differentials, air compressor, and air conditioner components until they failed. Vehicle body and appearance items were addressed when a vehicle was sent to the central maintenance shop due to major engine failure or accident damage. This antiquated and outdated philosophy also created situations where money was spent on vehicles one to two years prior to the vehicle being retired from service, leading to excessive expenditures on vehicles near the end of their life cycle.

New Maintenance Philosophy

Metro adopted a new maintenance philosophy in 2002 that has become a standard of excellence for transit organizations in the U.S. With new leadership assigned to the Light Rail Vehicle (LRV) and Bus Maintenance divisions, Metro began to improve service reliability and lower customer complaints.

Metro's new philosophy started with the creation of a Centralized Maintenance Department. This department included LRVs, buses, paratransit vans, and non-revenue vehicles. Metro's new leadership created improvement teams and gained buy-in and cooperation at all levels of management and supervision. Once the Centralized Maintenance Department was formed, managers spent the first few months analyzing the current situation and determined that there were no plans for improvement, no cost controls affecting life cycle and capital planning, and no overall vision that could be articulated throughout the organization at all levels.

The key to Metro's success was the establishment of the following goals and performance metrics to enhance customer experience and improve service quality. These led to and supported the vision of the maintenance organization, enabling the organization's improvement of asset maintainability:

- Vehicle Appearance
 - Ensuring that all vehicles are maintained to a particular standard that is appealing to passengers and general public.
- Vehicle Reliability
 - Performing analysis and predicting failures to ensure the elimination of vehicle breakdowns.
- Vehicle/Operations Safety
 - Instituting a new series of train operator training classes to reduce the number of accidents occurring along the right-of-way.
 - Instituting maintenance training classes and established maintenance standards that were monitored and tracked by supervision.
- Control of Cost
 - Investing at midlife of an asset to ensure that the asset remains in a state of good repair during its life cycle.
 - Maximizing investment of the asset.
 - Performing life-cycle analysis to ensure that the asset investment was maximized and the serviceable condition of the asset was maintained throughout its useful life.
- Predetermine Needs (Plan)
 - Labor played a major role in this new philosophy, allowing maintenance managers to plan effectively for the number of mechanics and the type of mechanics required to maintain the asset at its optimal performance.
 - Supply and parts replacement planning was key to ensuring that the mechanics had the right item at the right time at the right place to return LRVs, buses and vans back to the new required maintenance standard for revenue service.

The Metro Plan

Metro created a plan that achieved departmental consensus on pre-programmed maintenance activities. This plan set intervals for inspections, adjustments, and replacement maintenance activities. Metro started by focusing its attention on the suggested audits and maintenance intervals recommended by the original equipment manufacturers (OEMs). In addition, Metro developed standard work procedures for pre-planned and routine maintenance activities.

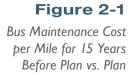
Next, Metro focused on the mechanics performing a complete assessment of expertise and training requirements for completion of all maintenance activities. In addition, Metro worked with the Materials Management department to develop a bill of materials for parts replacement and developed kitting procedures to support all designated maintenance intervals and all scheduled maintenance activities for both bus and LRVs.

Results

The results of the steps taken by Metro to improve overall vehicle reliability, availability, and the management of its rolling stock assets can only be described as an industry best practice (BP). The results of its actions are demonstrated in the reduction of vehicle maintenance expenses, improvement of vehicle curb appeal, and quality of the passenger experience. In addition, being able to predict vehicle reliability throughout the vehicle's life cycle allows management to plan effectively for vehicle/asset replacement.

Another significant benefit derived from Metro's new vision and innovative asset management plan for rolling stock assets was the significant improvement of maintenance productivity without increase in costs and maximization of the investment of the asset.

Figures 2-I through 2-4 demonstrate the results and benefits of the actions taken by senior leadership at Metro.



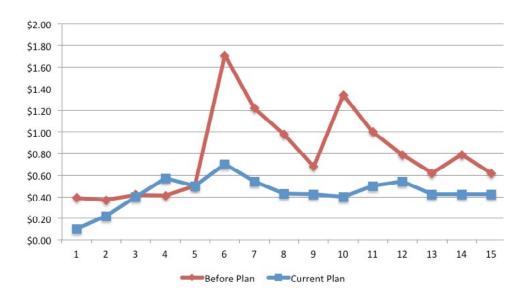


Figure 2-2
All Mode Mean
Distance between
Failures 2002–2012

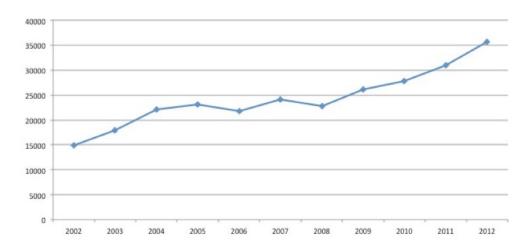


Figure 2-3
Bus Mean Distance
between Failures
2000–2012

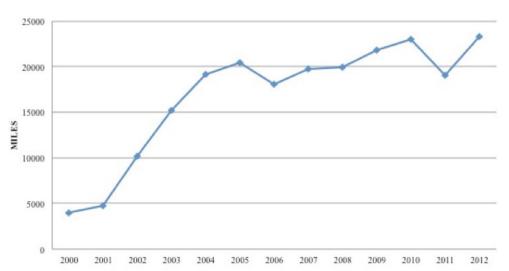
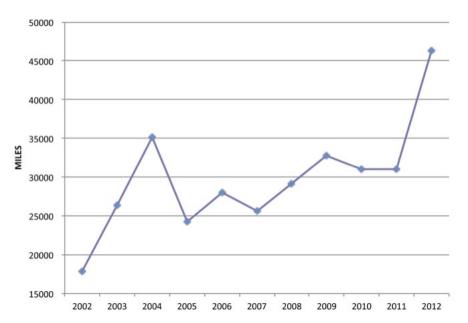


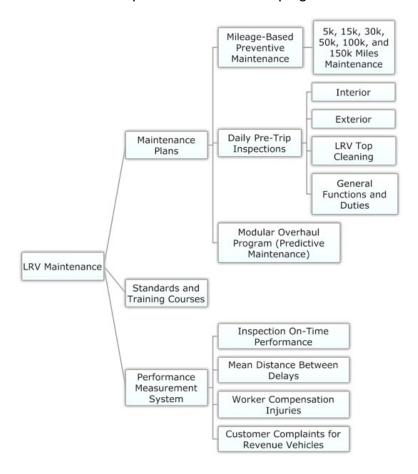
Figure 2-4
LRV Mean Distance
between Failures
2002–2012



LRV Maintenance Program

Metro has a well-documented vehicle maintenance plan for MetroLink LRVs. This maintenance plan has three major components: I) daily pre-trip inspection, 2) mileage-based preventive maintenance, and 3) modular overhaul program. As part of the pre-trip inspection efforts, the mileage of each LRV is recorded on a daily basis and used to determine the maintenance schedule of LRVs. The preventive maintenance program is continuously improved based on the fleet operating performance following Metro's Standard Operating Procedure SOP 109.01 procedure. As shown in Figure 2-5, the Metro LRV Maintenance Department also has a series of standards and training courses to ensure that only qualified personnel conduct various LRV maintenance activities. A performance measurement system has been set up to monitor the effectiveness of the various LRV preventive maintenance programs.

Figure 2-5LRV Maintenance Plan



¹ Thiessen et al., Vehicle Maintenance Plan for MetroLink Light Rail Vehicles, Bi-State Development Agency, Metro, June 2010.

Daily Pre-Trip Inspections

Daily pre-trip inspections ensure the operability of each LRV before it leaves the yard. The pre-trip inspection checklist includes the following four main categories:

- Interior: This includes the cleaning of the passenger and operator areas. During the winter, a disinfectant is used to clean the interior of the LRVs to prevent the potential spread of the flu.
- Exterior: Automated drive-through car wash equipment cleans the exterior of the LRVs. The checklist also includes certain parts of the LRVs that cannot be adequately cleaned by the automated equipment.
- LRV Top Cleaning: The automated drive-through car wash equipment cannot
 adequately clean the LRV roof. Two LRVs are checked each night to ensure
 that the carbon dust built up due to the wearing of pantograph shoes gets
 cleaned up.
- General Functions and Duties: The cleaning personnel report any visible defects, damages, and potentially unsafe conditions.

Mileage-Based Preventive Maintenance Program

Based on the manufacturer's recommendations and Metro's own experience, a comprehensive mileage-based preventive maintenance program was developed. The preventive maintenance activities are scheduled at 5k, 15k, 30k, 50k, 100k and 150k miles. All inspection results are recorded in the Maximus M-5 maintenance system. The items to be inspected for scheduled preventive maintenance are outlined in Table 2-1.

Table 2-1

LRV Mileage-Based Preventive Maintenance Program

Miles	Items to be Inspected
5k	Focuses on overall vehicle integrity, including under floor equipment mounting, passenger safety attributes with specific emphasis on the door systems, mechanical wear items such as pantograph carbons, renewal of all filtration elements, extensive functional checks of specific systems.
I5k	More comprehensive, includes all items in the 5k inspection. Also includes detailed inspections of many other components, such as power relay (contactors), carbon brushes for all motors, and the sensitivity of cab signal system.
30k	Proactive inspection that incorporates most lubrication activities for vehicle.
50k	All wheels are re-profiled and wheel diameters matched. Floor level of LRVs is checked and adjusted. Additional lubrication activities are conducted.
100k	Performed approximately every 14 months to inspect vehicle systems that require maintenance at greater than 1-year intervals. Lubrication and critical oil changes are also performed at this interval.
150k	Only for new SD460 series LRVs, focuses on gearbox and coupling lubrication.

The LRV maintenance division uses M-5 to track the conditions and maintenance history of all vehicles. The information in M-5 is also used to predict when and how many parts need to be repaired or replaced. Based on the M-5 data and the resources available, acquisition requests are then sent to the

Materials Management office. When preparing the requisition requests, the LRV maintenance staff also take into account predictable unscheduled maintenance activities. This can significantly reduce the amount of time it takes to wait for the parts to arrive and minimize the chance for service disruptions. There are certain unscheduled activities that are very difficult to predict. Also, some parts fail at a very rare frequency, and it is difficult to model their failure trends. In this case, requisition requests are submitted whenever failures are reported.

A contractor performs several LRV maintenance activities. Metro has some undocumented procedures to make sure that the work done by contractors meets Metro standards.

The LRV maintenance division follows certain procedures for allocating funds between maintenance and the renewal of rolling stocks, although they are not documented. At Metro, the LRVs remain in service as long as they work appropriately. Currently, there is no documented procedure to determine when to replace LRVs, other than the FTA requirement suggesting the useful life for LRVs should be at least 25 years. The oldest LRV owned by Metro is 18 years old.

Modular Overhaul (MO) Program

Metro initiated an innovative Modular Overhaul (MO) program in October 1996, which is different from the traditional midlife overhaul program. The MO program is designed to minimize the down time for LRVs due to scheduled maintenance activities. With the MO program, the LRV components that need to be repaired or replaced are pre-assembled in the maintenance facility. The maintenance facility is virtually being used as a manufacturing facility in this case. LRVs only need to be brought into the maintenance facility when the components are ready. Without requiring the LRVs to remain in the maintenance facility for an extended period of time, this MO program has saved considerable time and space and significantly improved maintenance efficiency.

Starting with the overhauls of wheels and vehicle pneumatic and friction brake systems, many other subsystems have been included in the MO program. Table 2-2 shows a list of existing Metro modular overhaul components.

Table 2-2Modular Overhaul
Components

ID	ltems	ID	ltems
I	Main Contactor	9	Truck Wheel
2	Ack/Aux Contactor	10	Couplers
3	Air – Compressor & Drier	П	Body Interior – Seat Inserts
4	FB Air Valves – All	12	Operator Cab – Seat Operator (Recaro)
5	FB Calipers (PT)	13	Pantograph – Transtech/Schunk
6	Brakes – BCU (PT/CT)	14	Gearbox
7	S-HVAC – HVAC System - Transitaire	15	Traction Motors
8	TK-HVAC – HVAC System - Thermoking	16	Carbody Exterior

Performance Monitoring

The performance of LRV maintenance is evaluated on a monthly basis and reported to the Metro President quarterly. The performance is evaluated based on the following criteria: I) on-time performance of inspection; 2) mean distance between failures (MDBF); 3) worker compensation injuries; and 4) customer complaints about revenue vehicles.

MetroBus, Van, and Non-Revenue Vehicle Maintenance Program

As shown in Figure I-2, MetroBus has three garages (Brentwood and DeBaliviere in Missouri and East St. Louis facility in Illinois) for indoor bus parking and fueling. It also has a heavy repair facility (Main Shop in Figure I-2) in St. Louis, which provides engine, transmission and body repairs for the various fleets. The Call-A-Ride paratransit van operation and non-revenue repair shops are based in the heavy repair facility. The buses and paratransit vans are made by a few major manufacturers. The uniformity of the fleets helps to enhance Metro's ability to develop effective maintenance plans for buses and vans.

The Metro vehicle (e.g., bus, van and non-revenue vehicles) maintenance team has a detailed maintenance plan,² in which the maintenance objectives are clearly defined. The Metro Vehicle Maintenance Department's objectives are to maximize vehicle reliability, vehicle operating efficiency, and labor productivity. The overall bus, van, and non-revenue maintenance practice is outlined in Figure 2-6 and is further explained in the following sections.

² Thiessen et al., Metro VMD Team Vehicle Management Plan, Bi-State Development Agency, Metro, July 2011.

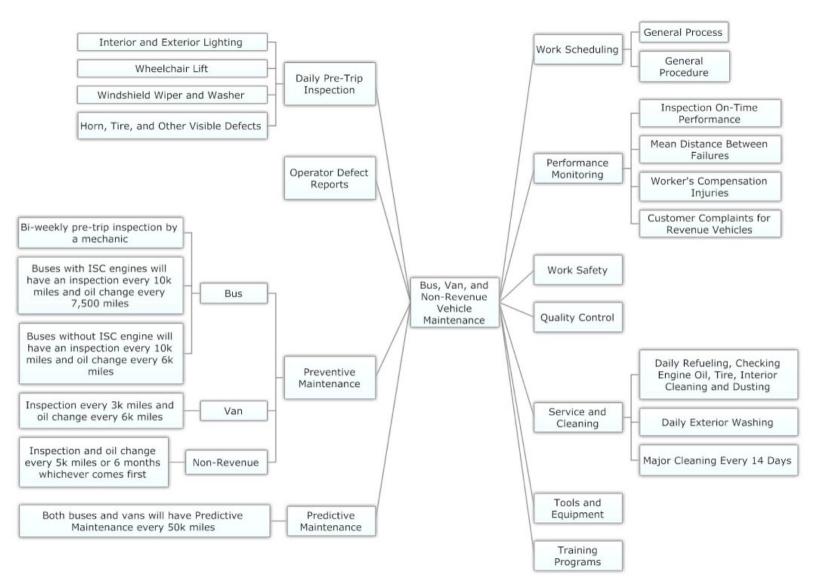


Figure 2-6 Overall Bus, Van, and Non-revenue Vehicle Maintenance Practice

Preventive Maintenance Inspection and Predictive Maintenance

Metro recognizes the importance of preventive maintenance inspections and predictive maintenance, which allow its Vehicle Maintenance Department to act proactively on scheduled repairs instead of frequently reacting to running or unscheduled repairs. Predictive maintenance, preventive maintenance inspection, running or unscheduled repair, scheduled repair and road call are defined in Table 2-3.

Table 2-3Definitions

Terms	Definitions
Preventive Maintenance Inspection (PMI)	A planned inspection of a vehicle performed at set intervals to ensure its mechanical integrity. It typically consists of inspecting, adjusting, and lubricating systems and components as defined in the OEM (original equipment manufacturer) manual or developed through best practices at Metro St. Louis.
Predictive Maintenance (PM)	A comprehensive and proactive maintenance schedule performed at a set interval. It is coordinated with PMI but includes component replacement and visual enhancement to the vehicle. It corresponds to the Modular Overhaul program for LRV.
Scheduled Repair	A planned repair action such as component replacement, campaigns, and deferred repair actions.
Running/ Unscheduled Repair	Unplanned repairs or service performed to get the vehicle back to service. Examples include road calls, driver write-ups, and other unplanned work.
Road Call	Any mechanical failure that disrupts the revenue service—for instance, failure of the air conditioning system. Accidents, fare box faults, and flat tires are considered unscheduled repairs.

All revenue vehicles at Metro are maintained under a dual system of Preventive Maintenance Inspection (PMI) and Predictive Maintenance (PM). The PMI and PM schedules are developed based on OEM recommendations and the best practice at Metro. All inspections and maintenance work are conducted within ±10 percent of the scheduled intervals, and all inspection and maintenance results are recorded in the M-5 asset management system. As shown in Figure 2-6, the PMI and PM programs are complemented by daily pre-trip inspections and operator defect reports. Metro has developed a checklist to facilitate daily pre-trip inspections for operators. At the end of the day, each operator also turns in a "grief card" to either the yard dispatcher or maintenance personnel.

In addition to the regular mechanic check, all buses receive a wheelchair lift (WCL) inspection every 10,000 miles. All buses also receive a WCL inspection annually. Paratransit vans receive a WCL inspection every 3,000 miles concurrent with the preventive maintenance inspection. All WCL inspections are performed based on the OEM recommendations. Vehicle mileage information is captured during the fueling process and recorded in M-5, which automatically generates inspection requests by vehicle number. Based on these inspection requests, maintenance superintendents can schedule PMI activities.

Work Scheduling

Metro has a clearly-defined work scheduling procedure. Given manageable items such as time, materials, tools, equipment, and labor, the scheduling procedure is designed to maximize the productivity and number of available operational vehicles and minimize the cost. The general work scheduling process employed is shown in Figure 2-7. In addition to this process, a general procedure is also developed to ensure maximum productivity, which is described in Figure 2-8.

Figure 2-7

General Work
Scheduling Process

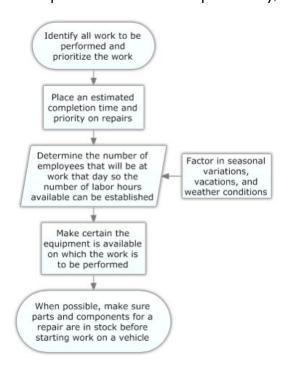
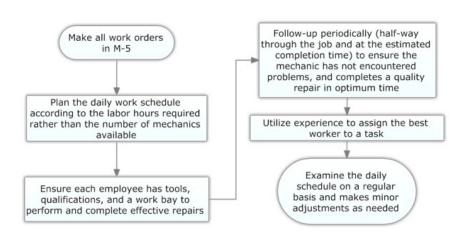


Figure 2-8General Procedure to Maximize Productivity



Performance Monitoring

Similar to the LRV maintenance program, the following four measurements are used for revenue bus and van inspections and performance monitoring: I) on-time performance of inspection, 2) Mean Distance Between Failures (MDBF), 3) worker's compensation injuries, and 4) customer complaints about revenue equipment. The maintenance performance is measured on a monthly basis and reported to the President quarterly. To reflect operational considerations, the standards for performance indicators are adjusted annually.

Work Safety

In addition to the safety and reliability of vehicle operations, the Metro Vehicle Maintenance Department places great emphasis on work safety in the maintenance facilities, especially when the maintenance activities involve lifting, power tools, compressed air, cleaning agents, welding, etc. Detailed safety countermeasures are described in the maintenance manual.³ The maintenance superintendents are required to constantly remind employees of work safety.

Quality Control

Closely related to the safety and reliability of vehicle operations is the quality of the inspection and repair work. In the Vehicle Maintenance Department, there is a set of standards to ensure that repair and service actions are done properly with high quality. Also, maintenance supervisors are responsible for physically checking their assigned employees' work. It is required that each maintenance supervisor inspect not less than 25 percent of their assigned employees' work and 100 percent of all rework.

Training

Metro has a Maintenance Training Department that frequently conducts trainings to improve the skills of maintenance workers and to instruct workers when new equipment and technologies are introduced. The maintenance superintendents are responsible for identifying the training needs annually. Individual training results are recorded in the M-5 asset management system.

Equipment and Tools

Metro recognizes the importance of tools and equipment for vehicle maintenance. It has established a program for replacing/expanding/upgrading maintenance tools and equipment.

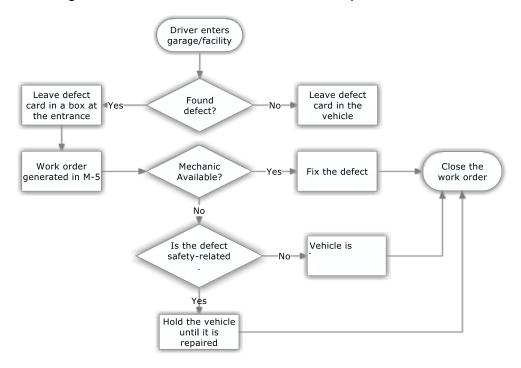
Work Order System

Metro has a well-developed automatic work order system to facilitate its vehicle maintenance activities, including jobs such as a brake realignment or preventive

³ Metro St. Louis, Rail Right-of-Way (ROW), Appendix D, Rail Defect Codes.

maintenance inspection. The work order system is capable of handling all repair activities. All repairs that take more than a half hour or require parts worth more than \$50 are captured by a work order. Figure 2-9 illustrates how a work order is generated and used to address driver defect reports.

Work Order
Generation



Each maintenance supervisor is required to keep a daily log sheet for deferred or open maintenance activities. Each item on the log sheet corresponds to an open work order. The log sheet is used by the maintenance supervisor to schedule work in the shop. The work order form is also used to keep track of the time each mechanic spent for improving labor accountability purposes.

Critical Infrastructure

Although a substantial amount of work had been completed during this FTA-funded project, CRBS and Metro senior management identified the Maintenance of Way (MOW) maintenance areas of MetroLink Rail Maintenance Facilities, Rail Stations, Operations Control Center (OCC), Crossing Houses/Cases, Overhead Catenary System (OCS), Communication Systems, Track System, and Structures as areas requiring additional support to enhance Metro's ability to manage its critical assets and meet the organization's state of good repair goals. Remaining tasks required for Rail Facilities, Rail Stations, Signal Houses/Grade Crossings, and Traction Power Substations include support to design and input Maximus M-5 data into the Metro asset management system. Development of the comprehensive inventory and hierarchical breakdown structure as well as design and input of M-5 data into Metro's asset management system is required for the OCC, OCS, Communication System, Track System, and MetroLink Structures.

SECTION

3

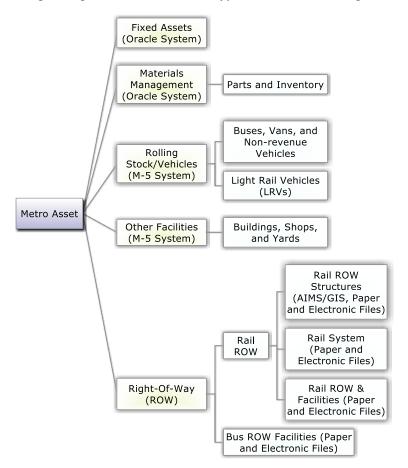
Current Asset Management Data System

Based on the CRBS team review, Metro has 7,510 capital assets totaling \$1.1 billion. Metro's asset data is documented in several different systems within the agency:

- Oracle database system
- Maximus M-5 system
- · Asset Inspection and Maintenance System (AIMS)
- · Other paper and electronic files

There could be many different ways of summarizing or categorizing the asset data for Metro. The asset data structure outlined in Figure 3-I is intuitive and easy to describe, as it also reflects the organizational structure of Metro. Following this asset data structure, this chapter summarizes how transit asset information is being managed and how different types of assets are being maintained at Metro.

Figure 3-1
Metro Assets by
Database System



As shown in Figure 3-1, the Oracle system includes all fixed assets and parts/ inventory data. The M-5 system contains vehicle inventory, vehicle maintenance, and some facility maintenance information. The GIS database or AIMS is used for managing rail right-of-way (ROW) structure maintenance information. The rest of the asset data is in paper or electronic file format.

Most of the fixed assets data in the Oracle system are captured at the system level, and no details are provided regarding the condition of major and subcomponents. One of the objectives of this project was to perform a complete breakdown of these assets at the component/sub-component level, to allow Metro to conduct accurate life cycle analysis of these assets. Metro has been very successful in using the M-5 asset management system for rolling stock assets (e.g., buses and LRVs) management.⁴ Based on this system, Metro has been able to implement a predictive maintenance plan for buses, which keeps MetroBus vehicles in operating conditions for an average of 15 years and 750,000 miles instead of the typical life span of 12 years and 500,000 miles. A similar program has also been established for LRV maintenance. The Vehicle Maintenance Department at Metro was recognized in 2009 as one of the best in the world and has also been featured in the BUSRide Maintenance magazine.⁵

Oracle Database System

Metro has been using the Oracle financial system since 2005 and is currently upgrading to Version I2. Both the fixed assets and materials management (inventory) data are stored in the Oracle system. The following two sections detail the specific fixed assets and inventory data included in the Oracle system.

Overview

At Metro, all capital purchases with an asset life of more than one year and a cost greater than \$5,000 are considered depreciable capital assets. Major improvements to existing plants and equipment that extend the lives of related assets are also capitalized. The fixed assets data are stored in the Oracle system and managed by the fixed assets accountant. Metro conducts a physical inventory of all fixed assets every two years as required by state and local regulations. The most recent physical inventory was completed in 2010. This work was conducted mainly by the Director of Accounting & Budget, Manager of Accounting, Fixed Assets Accountant, and the Grant Accountant.

⁴ William, Metro's Chief Operating Officer receives Federal Transit Administration award. Available online at: http://www.metrostlouis.org/NewsProjects/NewsDetails. aspx?ID=84, accessed on September 28, 2011.

⁵ Hubbard, Metro St. Louis employs predictive monitoring to foresee component failures. Available online at: http://busridemaintenance.com/2011/03/technology-acts-as-the-crystal-ball/, accessed on September 28, 2011.

Type of Data

The Oracle database system used by Metro is not specifically designed for transit asset management purposes and for managing the asset maintenance history information. It uses a generic table structure shown in Table 3-1 for storing the information for different types of fixed assets. These assets (e.g., buses, LRVs, facilities, and equipment) have different features that would be better described using a customized table structure for each of them.

Table 3-1Table Structure for Fixed Assets in Oracle
Database

Field ID	Field Name	Field ID	Field Name
1	Inv Flag	15	Vendor Name
2	Company	16	Condition
3	Location	17	Awardl
4	Tag Number	18	DistI
5	Asset Number	19	Award2
6	Asset Type	20	Dist2
7	Project	21	Award3
8	Description	22	Dist3
9	Date In Service	23	Award4
10	Cost	24	Dist4
П	NBV	25	Award5
12	Fa Category	26	Dist5
13	Serial Number	27	Award6
14	Model Number	28	Dist6

The Oracle system includes fixed assets data for several different divisions within Metro, including the Airport, Gateway Arch, MetroLink (Cross County, St. Clair, Illinois, and Missouri Original), MetroBus, Arch Parking Facility, Paratransit, and River Boats. Since the Airport, Gateway Arch, and Arch Parking Facility, and River Boats are not directly related to transit state of good repair, they are excluded from this review. Table 3-2 summarizes the fixed assets data included in the Oracle system.

Table 3-2 Fixed Assets Data in Oracle Database

Category Code	Type of Asset	Life (Years)	Memo
EQ.COMM	Communication systems	3–7	Broken down by stations
EQ.DP	Computers	3	No breakdowns
EQ.OT05	Other equipment (laws moure hite reals etc.)	5	No breakdowns
EQ.OT10	Other equipment (lawn mower, bike rack, etc.)	10	No breakdowns
EQ.REV	Revenue equipment (fare box,	10	No breakdowns; WORD, Excel, Adobe PDF files stored/attached in Oracle system to provide detailed information for each order
EQ.SHOP	Equipment in different shops	10	No breakdowns
EXP.NONE	Expenses. This can include some equipment or tools that miss cost information.	1	No breakdowns
FF.NONE	Furniture	10	This category was tracked before; now not being tracked in Oracle system
INTA.NONE	Intangible expenses (e.g., software)	3	No breakdowns
LAND.NONE	Land purchased	1	No breakdowns
PPTY.IMPR	Property improvements, including constructions, etc.	15	No breakdowns
RV.10YRBUS		10	
RV.12YRBUS	Revenue buses	12	Broken down into vehicles
RV.15YRBUS		15	
RV.VANS	Revenue vans	4	
RVLR	Revenue light-rail vehicles	25	
RV.REBLT-ENG	Revenue buses with engine rebuilt	6	Broken down into vehicles
RV.REBLT-TRAN	Revenue buses with transmission rebuilt	2	broken down into vehicles
SV.AUTO	Service vehicles – automobiles	5	
SV.TRUCK	Service vehicles – trucks	5–10	
LRB&T	Bridges	30	Broken down into segments
LRCAN SYS	Light-rail catenary system	20	No breakdowns
LRGR CROSS	Light-rail grade crossing	12	Broken down into grade crossings
LRSIG & CON	Light-rail signal and control	25	Broke down into segments, similar to bridges; there are Adobe PDF files attached to the Oracle system to show the details of each segment
LRSTATIONS	Light-rail stations	30	Broken down into stations
LRTRAC POWER	Light-rail power substations	25	Broken down into substations
LRTRACKWORK	Light-rail track	30	No breakdowns into subcomponents
BLDGPF	Yard buildings	25	
BLDGYS	Parking garages	30	
BLDG.IMPR	Improvements to all types of buildings	15	No breakdowns
BLDG.IMPRLH	-	20	NO DIEGUNOMIS
BLDG.NONE	Bus, maintenance shop, other buildings, and headquarter	25	

Policies and Procedures

Metro's fixed assets policies and procedures are based primarily on the following three documents:

- Bi-State Development Agency Fixed Assets' Policies and Procedures, published on August 6, 2002 and revised on November 1, 2005
- FTA Grants Management Requirements (C 5010.1D)
- Metro Process Memo Fixed Assets, approved on June 7, 2010

In the latest Metro Process Memo for fixed assets, approved on November I, 2005, the policies and procedures for the additions, disposals, depreciations, repairs, and maintenance of fixed assets are described in detail. Figure 3-2 summarizes the policies and procedures for fixed assets additions. Based on the Bi-State Development Agency document, the depreciations of fixed assets are calculated using the straight-line method. In most cases, an asset's useful life is determined based on manufacturer recommendations and FTA guidelines. For a fixed asset without an expected useful life, the agency defines one. Before a fixed asset can be disposed of, a disposal form has to be signed by each department's Cost Center manager and approved by the Director of Program Development & Grants. The funding source of the grant for purchasing that asset is also notified.

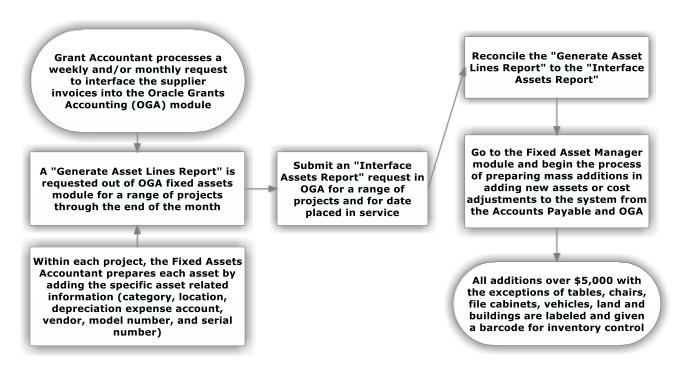


Figure 3-2 Policies and Procedures for Fixed Assets Additions

Senior project managers in the Metro Engineering and Construction Department, Program Development and Grants, and the Fixed Assets Accountant monitor major construction projects that are in progress. The Fixed Assets Accountant prepares a Construction in Progress (CIP) Summary Report and distributes it to upper management monthly. The Engineering Cost Control, Grants and Accounting, and Fixed Assets Accountant hold periodic meetings to discuss CIP issues. The Fixed Assets Accountant is responsible for reviewing all CIP transactions kept in the Oracle system to ensure projects are correctly included or excluded from CIP. Metro follows FTA regulations to define maintenance and capital improvements. Repairs and maintenance improvements that do not meet the capital improvements criteria, such as the replacement of light bulbs in the Debaliviere maintenance facility, are funded through the operating budget.

Metro also implements the following monitoring and application controls:

- Property and depreciation accounts are monitored by the Fixed Assets Accountant and reviewed by Manager of General Accounting.
- · Items are capitalized based on capitalization policies.
- Chief Financial Officer and Director of Program Development & Grants approve all capital expenditures.
- Director of Program Development & Grants approves all disposals.

Materials Management Data

Inventory and parts information is also in the Oracle system. However, the Fixed Assets Accountant does not have control of the inventory data, which is managed by the Materials Management office. The Materials Management office is part of the Procurement Department. Different divisions of Metro, particularly the bus and LRV maintenance divisions, send their order plans to the Materials Management office, which reviews these plans and purchases the requested parts. Currently, the non-revenue vehicles' spare parts are not in the Oracle system.

As shown in Figure 3-3, different Metro divisions submit their purchase plans to the Materials Management office. Purchase plans from the bus maintenance division consist of parts kits. Plans from the LRV division consist of units. Units and parts kits represent sets of predefined parts. Each kit/unit contains all the parts needed for a specific scheduled maintenance for bus or LRV. For each kit in the bus order plans, technical specifications, such as year and engine model of the bus, are also provided. This helps Materials Management office staff identify the right parts for that kit. Combining small parts into units or kits makes it much easier to communicate part and cost information between the Materials Management office and the Metro vehicle (rolling stock) maintenance divisions. Other divisions, including facility, track, and signal maintenance, submit a detailed list with names and quantities of specific parts to be ordered.

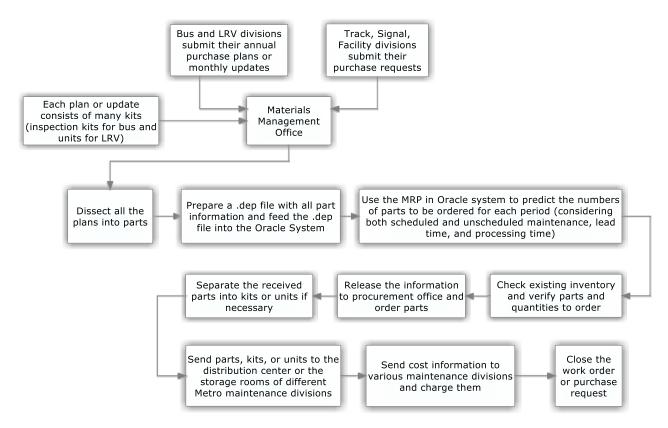


Figure 3-3 Materials Management Office Work Flow

Both the bus and LRV maintenance divisions use Maximus M-5 to generate order plans. There is an automated interface between M-5 and Oracle systems to facilitate the transmission of order plans. However, the process of translating order plans into parts is not automated and is time-consuming. The bus division sends its order plans six months in advance to the Materials Management office, and the LRV division submits its plans 18 months ahead. Every month, the bus and LRV divisions send an update of submitted plans to the Materials Management office. They also have a weekly meeting with the Materials Management office staff. The Materials Management office usually has the parts kits and units built 30–40 days in advance for bus and LRV divisions. The facility maintenance division also uses M-5 to keep track of its maintenance activities and to generate order requests.

Only bus and LRV divisions have order plans; the rest of the maintenance divisions do not currently use M-5. Plans are underway to transition the rest of the division in 2012. Since the maintenance activities for other divisions are difficult to predict, they do not have order plans and submit order requests whenever needed. The track and signal divisions use materials transaction forms to keep track of the cost through its cost centers.

The Materials Management office has a distribution center for storing received materials. Each maintenance division also has a storage room. The Materials Management office monitors how many materials go out to these storage rooms and then replenishes them using the Oracle system's min-max subsystem daily. For items that are unavailable in the storage rooms and are immediately needed, the maintenance divisions can purchase them using ProCard without going through the Materials Management office. This is only allowed for items costing less than \$2,500.

The Oracle system has a forecasting program that prepares Material Requisition Plans (MRPs). It takes historical part ordering information as input and predicts the number of parts that will be required in the future. This program is data-driven and has three different formulas. In general, it is highly accurate, and the Materials Management office is very satisfied with it.

If a requested item costs more than \$2,500, the Materials Management office creates a number for it in the Oracle system and orders it. After an item is requested three times, it is put into inventory as a stock item. It also is included in the forecasting program in Oracle and added as an active item with MRP requirement. For each stock item, its inventory level depends on the usage, lead time, and warranty. In the past, Metro had a huge amount of inventory, worth approximately \$12 million. The current inventory level is close to \$7 million. Metro also contracts with local vendors that carry automotive parts readily available in the local market in order to minimize the inventory level. In addition, both bus and LRV maintenance departments have a designated person for tracking warranty, to help control maintenance costs.

Maximus M-5 System

The Maximus M-5 vehicle maintenance system was implemented at Metro in 1999 as M-4 and upgraded to the Web-based M-5 version in 2005. The system tracks 370 buses, 120 vans, 87 LRVs, 6 facilities, and approximately 300 other vehicles that support equipment. Since 2002, the agency's maintenance productivity has increased 100 percent. Without M-5, Metro would have had great difficulty improving the agency vehicle reliability and reducing overall life cycle costs of its rail car and bus fleets. For buses, the agency has gone from an average breakdown after 6,000 miles to 20,000 miles between delays. In addition, Metro has been very successful in improving the reliability and integrating all of the preventive maintenance scheduling, predictive maintenance forecasting, parts data, and other maintenance performance metrics. In 2002, the agency established a preventive maintenance program for all vehicles. Key elements of this program include:

• Establishment of a set of standard operating procedures for maintaining vehicles, with schedules for key inspection and maintenance activities based on a combination of time and mileage intervals

- Development of maintenance plans describing Metro's schedules for maintaining existing assets consistent with its standards and a capital acquisition plan for the purchase of new assets
- Implementation of the M-5 program to manage the fleet; the system is currently being implemented for managing facilities, ordering parts, and supporting other maintenance-related activities

Metro keeps track of maintenance requirements and needs for 30, 60, or 90 days into the future. It is one of the few transit agencies to implement an 18-month maintenance work outlook program.

M-5 also has added a fully-integrated, automated fueling system option called FuelFocus. This hardware and software system is unique because it manages fuel and fluid dispensing in the same database as the maintenance management application, rather than in two different programs.

Overview

Maximus M-5 software provides an intuitive, familiar Web-based user interface that Metro's senior management and bus and rail maintenance users find extremely helpful in reducing overall maintenance costs while improving the reliability of both the rail and bus fleets. The software has assisted with Metro's plan to adopt a new maintenance strategy that focuses on preventive maintenance rather than the run-to-fail philosophy practiced in the past.

At a practical level, having detailed predictive maintenance data made possible by M-5 is key to running a cost-effective maintenance operation. The improved fleet condition, original equipment maintenance recommendations, and years of seamless operational effectiveness have enabled Metro to implement predictable component replacement instead of "time of failure" replacement. This enables Metro to combine some positions and eliminate others in the maintenance department. Better data, analysis, and control allow Metro to change inspection schedules to be more cost effective and efficient.

Metro has a planned maintenance schedule for its railcars, bus, and van fleets from acquisition to retirement. This was designed to ensure that the highest maintenance dollars were spent at midlife, resulting in the greatest return on maintenance dollars invested. Metro also made another critical change, which was to schedule parts replacement before a part failure actually occurred. This strict predictive maintenance program and the planned preventive maintenance program were both enabled by the use of M-5.

Type of Data

Maximus M-5 is focused on equipment classification, utilization, availability, assignment, accounting, life-cycle tracking, and basic equipment information. Life cycle management of equipment is a desired goal for users and Metro. It provides Metro with the ability to manage each stage in the life of a piece of equipment/

asset, from the organization's plans to purchase it through budgeting and until it is disposed of or replaced.

The basic steps of life cycle management are:

- Classification
- Acquisition activities
- In-service activities
- Maintenance of equipment information
- Disposal/retirement activities

There are numerous pieces of information that impact whether an organization can successfully manage equipment throughout its known life. Cost, condition, usefulness, and classifications, as well as the need for the equipment, are all part of the picture. This pertinent information is needed in order to know that Metro has the right equipment in the right place at the right time to deliver revenue service to the public.

M-5 also provides Metro with the ability to attach files, images, and links to a work order, unit record, parts records, etc. All of Metro's inspections consist of electronic documents that are attached to standard jobs that a mechanic fills out electronically. The mechanic then attaches the inspection form file to the work order, thus eliminating all paper files. Additionally, Metro attaches all title information, licensing information, sale/disposal information, recalls, and any other pertinent information to units within the M-5 application.

Facilities Data

The M-5 system has already been used to keep track of some Metro facility maintenance information. These facilities include Ewing Yard, the main shop, all bus facilities, and Metro headquarters. These facilities are mainly for Metro internal use and not for Metro customers/riders.

In the M-5 system, each facility is broken down into critical components, such as Heating, Ventilation, and Air Conditioning (HVAC). These major components are inspected on a regular basis (e.g., monthly or weekly). Some of the inspection results are scanned and attached to the M-5 asset management system; the rest are in paper file format due to the shortage of staff. However, given enough resources, these paper files can be scanned and attached to the M-5 system. Based on the inspection requirements (e.g., weekly or monthly) specified in the M-5 system, the system automatically generates scheduled inspection requests or work orders. In addition to the scheduled inspection requests, there are other, unscheduled repair work requests. These requests are also input into M-5, and a work order is then generated for each of them. In the M-5 system, basic tables have been set up for the 29th Street Yard and MetroLink platforms. However, the maintenance data for these facilities has not been input into these tables. Also, the data structures for some rail and ROW assets have been set up

in the M-5 system. Theoretically, M-5 can be used for tracking the maintenance history of rail and ROW assets as well.

Similar to the practice of the bus maintenance department, the M-5 system is used to keep track of the time Metro employees spent on each facility work order. The M-5 system can automatically record the time each employee clocks in and out for a particular facility work order. This is very helpful for increasing labor accountability.

AIMS for Right-of-Way (ROW) Structure Assets

Metro has developed a Web-based Asset Inspection and Maintenance System (AIMS) for MetroLink infrastructures. This tool was developed over the past two years and provides MetroLink with the ability to identify, inspect, and maintain all critical assets required for safe and reliable operations using a system that brings together all the relevant information that affects any particular asset.

Metro has established a detailed asset inspection and maintenance standard that covers all MetroLink critical structure assets. The scope of this standard includes all fixed structures that support or carry loads. Figure 3-4 shows the structures inspected by the Metro ROW structure maintenance division. This standard derives from the American Public Transportation Association's (APTA) Standard for Rail Transit Structure Inspection and Maintenance (1st Edition, 2004), the American Association of State Highway and Transportation Officials' (AASHTO) Manual for Condition Evaluation of Bridges (2nd Edition) as required by current Federal Highway Administration (FHWA) regulations for highway bridges, and inspection and risk assessment practices recommended by American Railway Engineering and Maintenance-of-Way Association (AREMA). These structures are inspected on a regular basis ranging from two to five years. A summary report is provided with ratings and recommended repairs for each inspected structure.

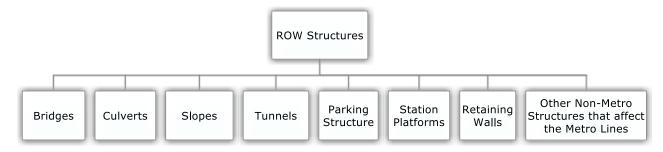


Figure 3-4 Right-of-Way (ROW) Structures

Asset Condition Monitoring

The Geographical Information System tool AIMS used for MetroLink's structural inspections and asset management is based on commercial software developed by the Environmental Systems Research Institute (ESRI). Metro has been successfully using the ESRI software for more than 10 years for a variety of

service planning activities. The AIMS software tool is based on ESRI's ArcGIS Server. This innovative inspection tool combines the power of GIS location capability with detailed databases that contain inspection reports complete with the operational condition of the asset and detailed photographs of its current condition. This combination provides a clear view of every major asset and its major components. It allows for all of the information related to a particular asset to be assembled and viewed across departments needing access to the information. This includes current asset conditions, maintenance history, operational agreements (easements, snow removal, limits of responsibility), record drawings, emergency operational risks (seismic, flood/scour, vehicle impact, and barge impact), major utility crossings (gas, water, and sewer), estimated remaining useful life, and inspection intervals.

This type of total asset visibility allows different departments to gather current information without going through a gatekeeper or other departments that could delay a time-sensitive response. This is particularly important in the cases of an emergency that occurs along the alignment. With complete access to all pertinent records of a particular asset, quick and competent decisions can be made.

This system is particularly useful for identifying assets that are not in a state of good repair, documenting the deficiencies and justifying rehabilitation/ replacement decisions. As shown in Figure 3-5 and Figure 3-6, the Web-based nature of the system provides FTA and state safety agencies with the ability to view reports as well as detailed photographs to get a clear representation of not only the higher-level asset conditions, but also the very detailed subsystem conditions such as cracks in structural steel, deterioration and corrosion problems affecting bridges, stray current corrosion, aging masonry tunnel conditions, and passenger rail platforms.

Figure 3-5

MetroLink
Complete System
Map with Asset
Locations

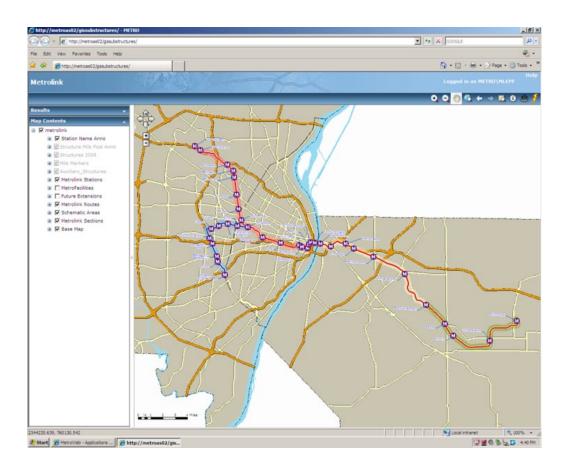
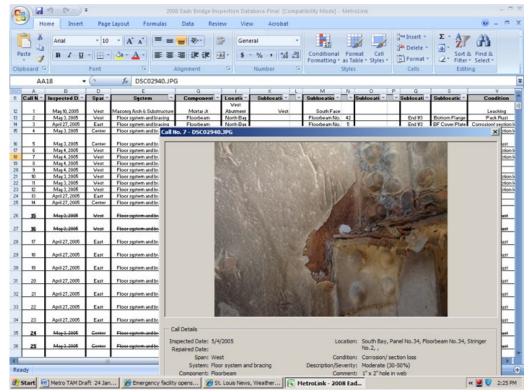


Figure 3-6
Asset Database
Condition
Assessment at
Sub-system Level



Paper and Electronic Files

Both ROW Facility and Rail System Maintenance divisions primarily use paper and electronic files (e.g., Word, Excel, and PDF) to keep track of inspection results and maintenance history. These two divisions have very detailed inspection and maintenance plans.

ROW Maintenance

Figure 3-7 shows the ROW maintenance schedule. Note that the rail structure, yard, shop, and office maintenance and inspection are part of the ROW maintenance. As previously discussed, at Metro, the rail structure maintenance and inspection results are kept in the AIMS system. The maintenance and inspection results for yards, shops, and offices are kept in the M-5 system. The rest of the ROW maintenance data is in the form of Microsoft Word documents, Excel spreadsheets, and PDF files.

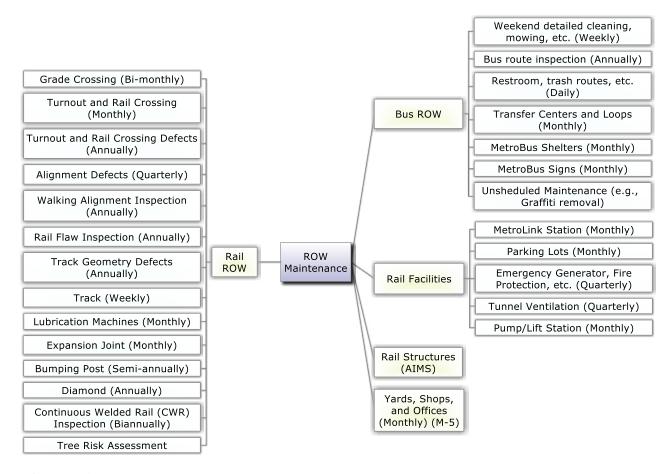


Figure 3-7 Right-of-Way Maintenance Plan

Detailed maintenance schedules and sample forms for bus and rail facilities can be found in the ROW Facilities Maintenance Plan FY 2012.⁶ For rail ROW maintenance and inspections, Metro also has a set of standards⁷ and manuals.^{8,9,10} The inspection plan, standards, and manuals are based on APTA standards, industry standards, and manufacturers' recommendations.

Rail System Maintenance

Rail system maintenance and inspections have three major components: I) signal and train control, 2) traction and power, and 3) communication system. The detailed maintenance and inspection plans for each major component are provided in the following Metro documents:

- MetroLink Communications System Maintenance Plan (June 30, 2010)
- Traction Power System Maintenance Plan (August, 2008)
- Signal Maintenance Plan FY 09 Working Version (September, 2009)

Figure 3-8 shows the maintenance plan for these three components. Unlike buses and LRVs, the failure of rail systems such as signal and control devices is very difficult to predict. Therefore, the rail maintenance division does not have a fixed schedule to replace those components. However, the rail maintenance division does have a very detailed inspection schedule for its various components.

⁶ Metro St. Louis, ROW Facilities Maintenance Plan FY 2012.

⁷ Metro St. Louis, Rail Right-Of-Way (ROW), Appendix D, Rail Defect Codes.

⁸ Metro St. Louis, Rail Right-Of-Way (ROW), Appendix C, Continuous Welded Rail (CWR) Manual.

⁹ Metro St. Louis, MetroLink Track and Rail Right-Of-Way (ROW) Inspection Manual, Section 100.

¹⁰ Metro St. Louis, MetroLink Track and Rail Right-Of-Way (ROW) Maintenance Standard Manual, Section 200.

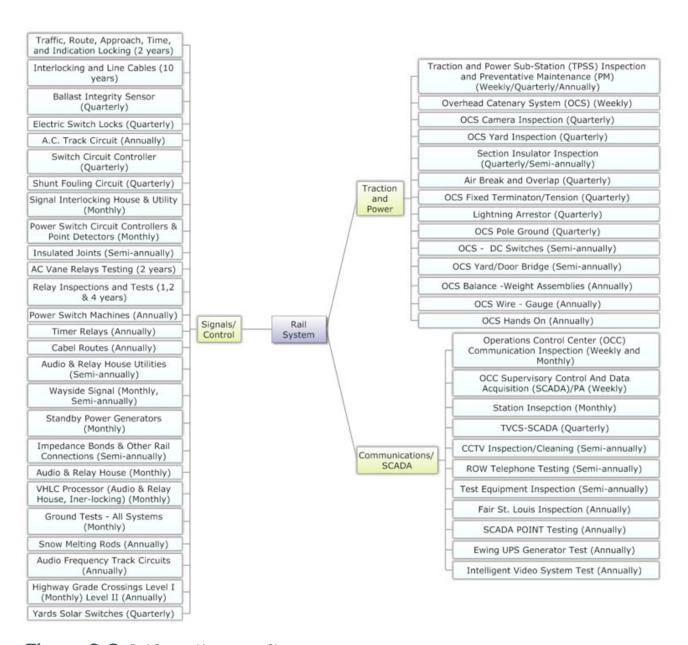


Figure 3-8 Rail System Maintenance Plan

SECTION

4

Findings

Analysis

After reviewing current asset management practices, reviewing and working with Metro's maintenance/information management systems, and examining the data contained in those systems, our team began to perform an analysis to determine how well assets were being maintained and what condition those assets were in. In addition, the team reviewed urban rail capital asset planning data to determine how asset management data were being used to determine asset replacement. The team also reviewed sample data to evaluate the effectiveness of Metro's asset replacement model.

The analysis began with a series of multifaceted interviews with senior management, middle management, and employees. These interviews produced dependable and reliable data that provided a complete and detailed view of how assets are managed, maintained, and replaced at Metro. These data elements provided the team with a complete picture of critical assets at every level of the agency.

While conducting interviews throughout the agency, the team mapped the flow of information as it applies to reliability, maintainability, and condition of critical assets supporting both bus and rail at Metro. In addition, the team reviewed documentation records, both electronic and paper, to determine how assets were being managed, maintained, and planned for replacement throughout their life cycle.

Finally, the analysis and evaluation took a look at how asset data were being stored, how asset conditions were being documented, and how hierarchical data were being captured for each asset. In addition, the team evaluated the data structure and reviewed all elements, relevant data parameters, and lateral data links to higher assemblies, lower assemblies, and related assemblies.

The team also evaluated Metro's decision support capability and its effectiveness in assisting with asset replacement. Figure 4-1 illustrates this process.

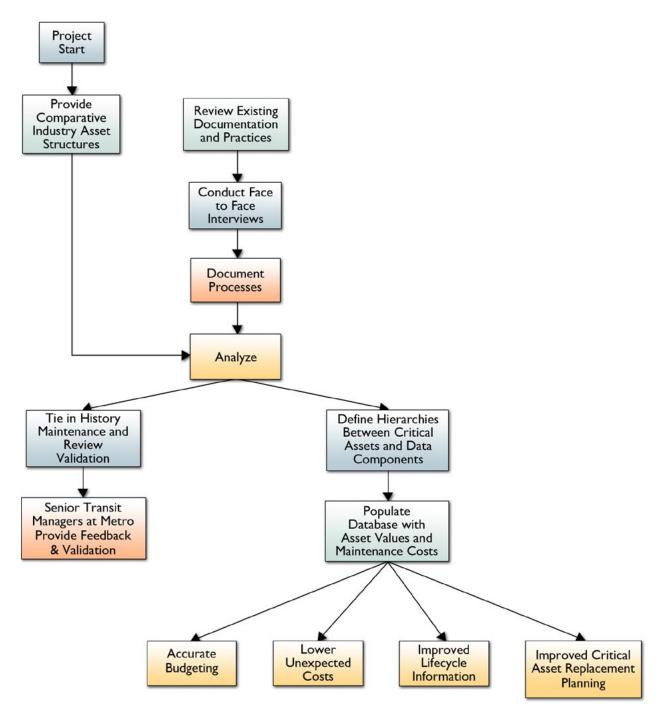


Figure 4-1 Analysis Process

Developing Project Priorities

Metro has a thorough Capital Budget Request process for construction/ rehabilitation, new equipment/replacement, and major computer software procurement/development. The prioritization of a request is a two-tiered process based on the project's priority and its impact on the agency's strategic planning goals and objectives for the three-year budget cycle that is being developed. The primary tier is the priority assigned to the project. The second tier is the project's anticipated impact on the daily operation. The project ranking is a static rating based on the project type. The impact of the project is presented in a composite score of several independent criteria that will allow points based on the project's impact towards meeting the agency's strategic planning and objectives.

After the initial scoring by the Program Development and Grants Department, senior management conducts a separate project scoring for each project. The combined scores from staff and senior management determine the project's prioritization within the capital budget process. The capital request projects have to be included within the Missouri Department of Transportation (MODOT) Technology Innovation Plan (TIP) and Small Infrastructure Project (SIP) before a grant can be submitted to FTA for approval.

Defining Hierarchies between Critical Assets and Data Components

The assets/components reviewed during the surveys included vehicles, HVAC systems, tunnel ventilation systems, pumping stations, Motor Control Center (MCC), station mezzanines (pedestrian bridges), parking lots, automatic transfer switches, emergency generators, and grade/pedestrian crossings. Table 4-I lists the categories and asset types reviewed. As each asset and component was surveyed, a determination was made with Metro as to the condition of that asset/component and noted. Inspection reports were also reviewed to substantiate the findings. Metro maintains a Performance Tracking Sheet to monitor scheduled monthly inspections. A standard monthly inspection form is kept on file for inspections done at each facility and station. The research team reviewed these inspection forms to connect them to the history maintenance asset condition reporting database.

Table 4-1Category and Asset
Types Reviewed

Category	Asset Type
	Buses
Vehicles	Light Rail Vehicles (LRVs)
venicies	Non-Revenue
	Paratransit Vans
	Track
Eisead Cuidassas	Tunnels
Fixed Guideway	Elevated Structures
	Right-of-Way
	Administration
Facilities	Maintenance
racilities	Storage/Warehouses
	Parking Garages
	Station Structures
Stations	Bus Shelters
Stations	Rail Platforms
	Signage & Graphics
	Train Control
	Traction Power
Systems	Communications
	Signals
	Ventilation

A SmartDraw diagram was developed to identify each asset and its components, as well as to illustrate the hierarchical relationship. This diagram was used to develop a logical data structure with vertical and lateral links that would include photos, values, and other relevant information. It provided a complete hierarchical structure for the critical assets and their components and subcomponents that could be input and tracked by management staff. This flowchart, in essence, would provide a complete and accurate record reflecting the value and condition of the critical assets throughout their life cycle.

This approach was taken to provide management with a detailed illustration of hierarchical relationships for critical asset inventory that support bus and rail infrastructure. It aligns with the forthcoming FTA reporting requirements. The end product enabled the team to populate Metro's M-5 and Oracle databases with asset condition values, failures, and maintenance costs information. These key values are required to calculate real life-cycle cost information to determine when critical assets should be planned for replacement. This approach also provides transit organizations with the ability to document and populate the new National Transit Database (NTD) standards being developed by FTA.

Step-by-Step Procedures

Implementing an asset management approach requires information resources that support asset management policies and decisions. The ideal asset management system provides data and decision support for each step in the asset management process, including functionality for:

- Storing a complete asset inventory
- Recording condition and performance data for the inventory
- · Identifying deficiencies of existing assets
- Providing a decision support capability for predicting future conditions and need
- Tracking data on work accomplishments, including maintenance actions and capital projects
- Supporting monitoring an d reporting

The CRBS team reviewed and mapped the current asset management practices at Metro. The results of this review provided the team with the essential information to catalog and describe asset categories, hierarchical relationships, and data elements required to support a state of good repair.

The team gathered asset information through the processes of visits/interviews with Metro representatives and through data retrieval from management information systems Maximus M-5 and Oracle. In addition, asset data were retrieved from standalone databases (Excel) and handwritten log books.

After the team performed an analysis of these data, with Metro's concurrence, it decided to perform a comprehensive inventory of all critical assets. Although conducting a comprehensive inventory is extremely time-consuming and difficult, the team decided it was critical to ensure that all data captured were correct. This method also provided the team with the ability to get photographs and the exact location and condition of each asset.

The team developed the following tasks to ensure that critical assets were captured:

- Review list of assets contained in the Asset Management system.
- Work with Metro engineering/maintenance staff to document all systems and facilities at the transit agency.
- Conduct a comprehensive inventory.
- Document the current hierarchical structure (parent/child).
- Illustrate in detail the hierarchical relationships for critical inventory assets (bus and rail).
- Completely document all steps taken during the process.

Documenting the complete process was an integral part of this research project. Using the step-by-step procedures outlined above will provide transit agencies with a roadmap for developing their own hierarchical relationships of critical assets.

Software Tools for Hierarchy Development

To achieve this hierarchical breakdown structure, the team employed software called SmartDraw[®]. SmartDraw provides the unique ability to capture data and place it in a visual format, allowing users to visually display information. CRBS developed several applications with this tool that allowed the team to display critical asset data in multiple formats.

Examples of Hierarchical Structures Created with SmartDraw

Rail transit signal systems are complex combinations of electrical, mechanical, and electro-mechanical elements with components that may be considered to be subsystems. For purposes of this report, the term "system" represents the highest level of complexity, and the subsystems are referred to as components. In many cases, a component can and will be a simpler system.

When it comes to representing the hierarchies, it may be convenient to adopt categories. The train control system, for example, can be categorized into Automatic Train Protection (ATP), Automatic Train Supervision (ATS), and Automatic Train Operation (ATO). If the system primarily provides ATP with minimal ATS and little to no ATO, only one category is needed. These issues should be clarified before beginning the cataloging process. It requires identifying the particular terminology of the transit agency prior to conducting a comprehensive inventory.

A Train Control system has many subsystems/components distributed near or along the ROW that are located in enclosed areas such as signal houses, signal cases, relay rooms, and the operations control center (OCC). Many components are purchased, delivered, and installed as a single complex entity. These are the components to be considered and designated as elements of the Train Control system. CRBS determined an efficient yet accurate way of forming the hierarchical relationships.

A baseline was determined and implemented as the foundation for all signaling locations. This typical system enabled creating a representation of the train control system that could be documented without recording every signaling asset before the structure was developed. To be in alignment with other asset structures that will be developed, the systems identified as typical were based on an architectural base.

For system elements located on the rails or adjacent to the rails for control of switch points, the architectural element may be related to the special track

work. A visit to the agency and a survey are necessary to determine the fundamental elements of the typical system. CRBS identified how the system is recorded by maintenance staff and other bookkeeping systems, such as capital planning and materials management office.

The following presents some of the specific hierarchies developed for Metro.

Signal Houses

The engineering team comprised CRBS and Metro personnel who were tasked to conduct a comprehensive review and map/model the current asset management practices involved with rail systems maintenance at Metro. The completed models included all pertinent documents required to catalog and describe the categories, hierarchies, and data elements that support signal control, traction power substations, and facilities. Asset information was gathered through visits and interviews with Metro representatives. In addition, asset data were retrieved during a comprehensive inventory of signal control and traction power substations and facilities. This comprehensive inventory provided the team with an accurate record of all assets along the 46-mile rail infrastructure.

CRBS developed a logical data structure, which contained all necessary elements of a typical transit agency including useful and relevant data parameters with vertical and lateral data links to higher assemblies, lower assemblies and related assemblies.

Figure 4-2 shows the hierarchical relationship breakdown of those components at a typical signal house.

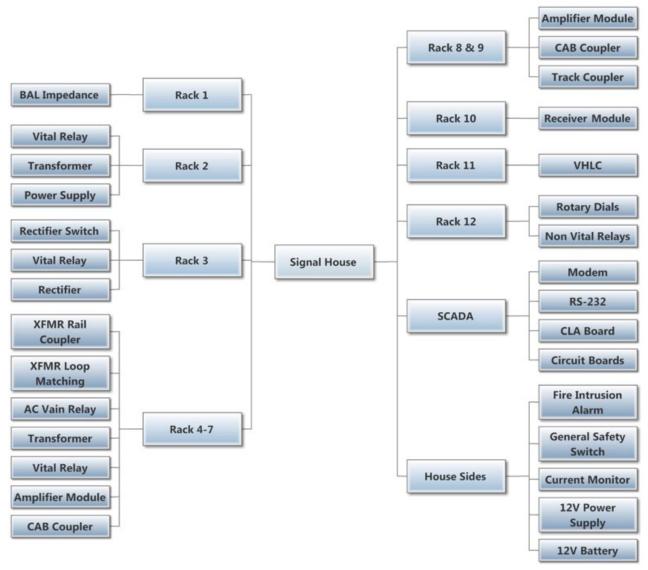
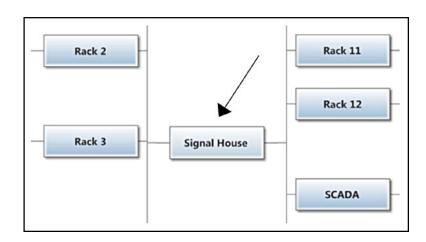


Figure 4-2 Signal House Components

When viewed in SmartDraw, clicking on the "Signal House" block brings up the Computer Aided Design (CAD) drawing of the Signal House, as shown in Figure 4-3.



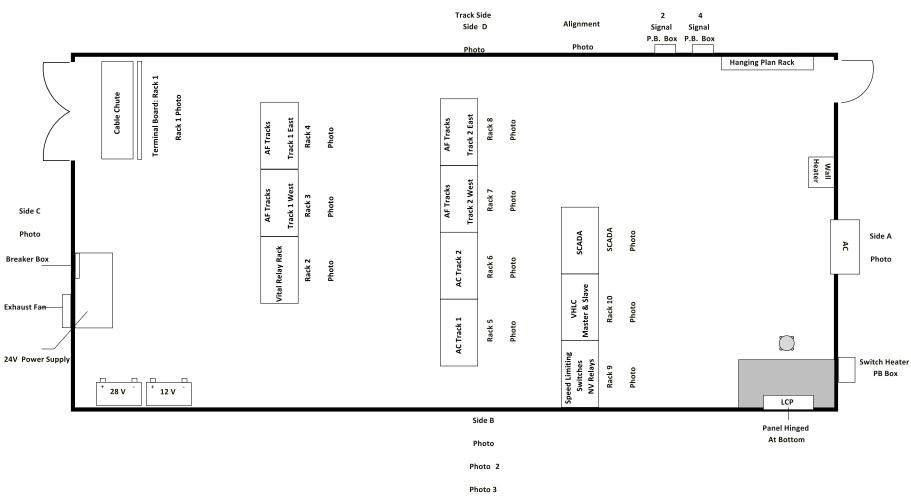


Figure 4-3 CAD Drawing of a Signal House

Spreadsheets of inventories can be obtained by clicking on elements in the hierarchical diagram or on the CAD drawing. For example, clicking on "Rack 3" brings up the spreadsheet and photos (if available) for that signal house, as shown in Figure 4-4.

Signal Control Asset Inventory Counts: N. Hanley Rack 3					
COMPONENT	MANUFACTURER	PART NUMBER	COUNT		
Vital Relay	GRS	A62-122 (56001-921-07)	2		
520 Receiver Module (2970 Feq.)	EPC	150-088019-080 Rev. F	1		
520 Receiver Module (4410 Feq.)	EPC	150-088019-080 Rev. B	1		
520 Receiver Module (3510 Feq.)	EPC	150-088019-080 Rev. B	1		
520 Receiver Module (3870 Feq.)	EPC	150-088019-080 Rev. B	1		
510 Amplifier Module	EPC	150-088019-050 Rev. B	7		
530 CAB Coupler (2340 Feq.)	EPC	150-088019-051 Rev. B	4		
540 Train Detection Coupler (2970 Feq.)	EPC	150-088019-060 Rev. B	1		
540 Train Detection Coupler (3510Feq.)	EPC	150-088019-060 Rev. B	1		
540 Train Detection Coupler (4410 Feq.)	EPC	150-088019-060 Rev. B	1		

(a)

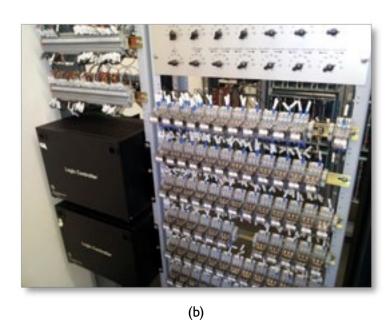


Figure 4-4 Typical Signal Control Asset Inventory Counts (a) and Rack 3 Photo (b)

Other Components

This same approach was used to develop the hierarchical relationships for many of the category and asset types. It could be used for all of them. Figures 4-5, 4-6, and 4-7 are examples of hierarchical components for several other asset types. As with signal houses, clicking on the boxes brings up a spreadsheet of the inventory items and photographs. Appendix A provides hierarchical components for all assets inventoried as part of this project.

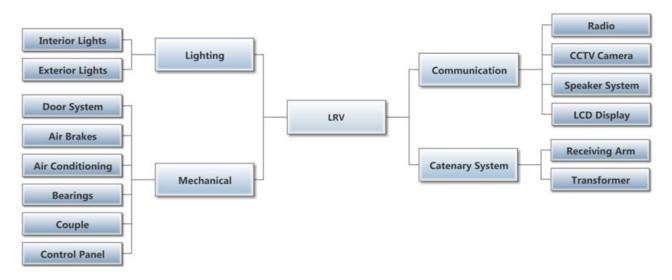


Figure 4-5 Light Rail Vehicle (LRV) Hierarchical Components

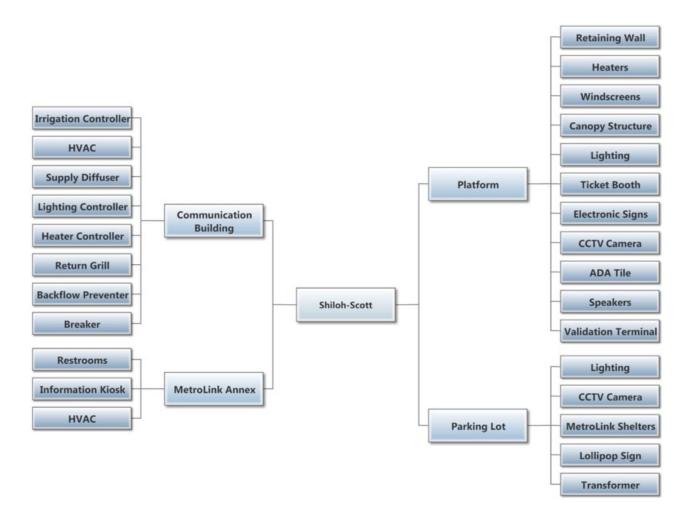


Figure 4-6 Typical Rail Station Hierarchical Components

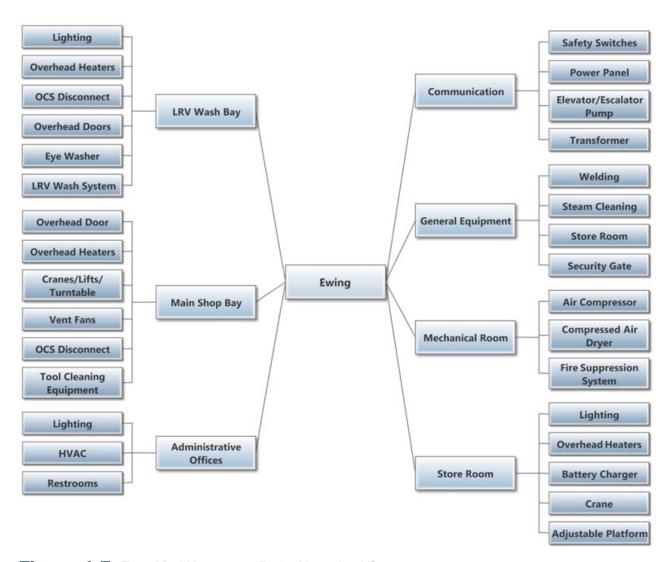


Figure 4-7 Typical Rail Maintenance Facility Hierarchical Components

Figure 4-8 describes how assets were documented in various systems at Metro at the beginning of the research project.

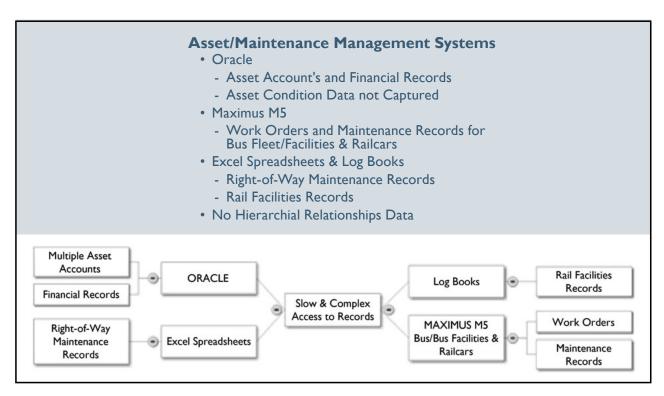


Figure 4-8 Asset Documentation at Project Outset

The key point this chart reveals is that asset data are being stored in three separate, stove-piped systems. At the beginning of the project, the systems did not communicate with each other, inhibiting total asset visibility. Oracle, used by Metro's asset accountant, did not reflect any hierarchical data as it applied to the asset within the Oracle database. Asset condition data were being captured for structures supporting MetroLink; however, these data was all compiled in paper records filed as PDF documents.

At project start, Maximus M-5 was the asset management system producing work orders and documenting all maintenance actions for both rail and bus rolling stock assets. M-5 was also being used to document all work performed on bus facilities. This situation had been previously identified by Metro; however, the agency had not addressed the issue due to resource constraints.

The transit asset inventory development and integration research project provided the critical resources required to address Maintenance of Way assets and their input into M-5. To accomplish this task, the team had to perform a comprehensive inventory of Maintenance of Way assets to ensure that all data entered into M-5 reflected the assets' hierarchical relationship and condition.

This major philosophy change was accepted and supported by Maintenance of Way senior management and the Senior Vice President of Transit Operations. The loading and documentation of the hundreds of critical assets within the Maintenance of Way division will take an additional year to accomplish.

The process of setting up a senior management review panel was critical to the overall success of the project. This panel, comprising Metro senior management and CRBS Senior Engineers, reached consensus of all major changes to Metro asset management documentation practices and procedures. This panel also provided validation, buy-in, and cooperation at all levels within Metro. This major paradigm shift provided Metro with clear and concise data that could be used to make critical decisions of prioritizing its asset rehabilitation and replacement programs.

SECTION

5

Recommendations

Recommendations Specific to Metro

The following recommendations are based on the CRBS research and analysis of Metro's asset/inventory data elements for bus, rail, signaling, traction power substations, and facilities, as well as all associated financial and maintenance software tools that are currently being used to support the State of Good Repair (SGR) reporting and reliability improvements, asset warranties, and capital reinvestment requirements. As part of this research, the CRBS team documented and illustrated how larger capital items are related through the hierarchical relationships of data elements recorded in maintenance and financial management systems and how these data can be used to deduce conditions of these larger capital assets. Based on observations and thorough review of procedures within the budgeting and maintenance departments, CRBS highly recommends that Metro takes full advantage of the Maximus M-5 system as its main SGR database.

Metro has already realized significant cost savings by using its M-5 system to capture failure trends, inspection records, warranty information, and vehicle life cycles for both bus and rail fleets. CRBS has concluded that the M-5 TAM is the best system for Metro to achieve total asset visibility, asset condition, asset planning, and life cycle costs for its vehicles and physical infrastructure. The software tool has the necessary data elements needed to develop the standard asset management inventory structures.

To significantly improve accountability and efficiency and to end confusion/ reconciliation within the agency, CRBS recommends that parts ordering reside within M-5 and no longer be generated with the financial software (Oracle). Oracle is a great tool for financial matters such as payroll and contracted services, but here it impedes rather than facilitates the process. Information on parts ordered that staff are currently searching for by using Oracle would be readily accessible within a program that is used every day to report failures and repairs on those exact parts/components. Also, from the Metro Information Technology department's perspective, it would be easier to manage one main system of data instead of two separate ones. The M-5 system has the capability to track costs, collect detailed information, and produce essential reports. Using the M-5 system for parts ordering and as the main source of data would streamline the procurement process and improve productivity, in spite of requiring parts information to be manually entered accurately to create precise and proper work order information.

To assist in the development of hierarchical relationships, CRBS recommends that Metro continue to use a tool such as SmartDraw to conduct a comprehensive inventory of those critical assets that were not included within the research project. The completion of conducting Metro's comprehensive inventories/photographs of critical assets was not required to meet the scope of work identified in the original FTA project work plan. However, the CRBS team made a decision to conduct comprehensive inventories of key physical infrastructures to ensure that all asset data that were loaded into the Maximus M-5 system were thoroughly identified and documented correctly. The data documented during the research project are currently being used to support lifecycle analysis and augment the existing management information systems. Metro should establish a core team to conduct condition assessments of their critical assets every 3–5 years to ensure that the static SmartDraw data coincide with the Capital Request Budget process.

General Recommendations

CRBS recommends that Metro's Bus Life Cycle Cost model be adopted by the transit industry as a best practice. It has significantly reduced Metro's cost per vehicle mile and road call breakdowns. Metro continues to recognize the importance of preventive maintenance inspections and predictive maintenance, which has allowed vehicle maintenance staff to act proactively on scheduled repairs rather than constantly reacting to running or unscheduled repairs. Metro has clearly defined maintenance staff work schedules and procedures within its model. This has enabled it to manage items such as time, materials, tools, equipment, and labor. PMI scheduling maximizes employee productivity/ accountability, and number of available operational vehicles while minimizing costs.

CRBS also recommends that Metro continue to develop its Web-based Asset Inspection and Maintenance System for all MetroLink structures and physical infrastructure. This tool has been under development during the past two years and has provided MetroLink with the capability to identify, inspect, and maintain critical assets such as bridges and tunnels as required by federal/state laws to ensure a safe and reliable operation.

Public transit organizations induct, configure, maintain, modify, and dispose of a wide variety of assets—visible assets (buses, railcars, stations, etc.) and critical infrastructure (track, switches, power substations, tunnels, etc.). The recent passage of MAP-21 increases the scope of asset and service management challenges facing agencies. To meet the new requirements of FTA, all transit agencies will be required to have and maintain a detailed asset management plan and a method to report the condition of all assets supporting the delivery of transportation services to the public.

The ability to track hundreds of thousands of assets through a synchronized business process and to provide accurate, readily-available engineering data will

be a significant step toward achieving cost-effective management goals. Good, accurate data on assets will lead to solid transit asset management programs, which, in turn, will lead to sound and timely investment decisions, prioritization, and planning. The resulting effect is a state of good repair, a reliable and predictable operation, and enhanced life of assets.

Most transit agencies have methods to document work performed on rolling stock assets (buses and railcars). However, documentation of infrastructure for most agencies provides a unique challenge. Metro is no different. Data for the Maintenance of Way Division were stored in log books, paper, Microsoft Excel spreadsheets, and a Microsoft Access database. Asset condition and hierarchal data were not being captured, and asset inventory data were incomplete at best.

In the process of conducting its research, CRBS examined two software tools that can be of use in meeting these requirements.

SmartDraw Software

The benefits of using SmartDraw to conduct a comprehensive inventory/ photographs as well as to develop hierarchical relationships are numerous. It is simple to use, and it lays out information in a diagram type that can be easily understood by any level of employee. Customizing SmartDraw per the request of a Metro department would be a simple task to initiate after receiving an outline list of requirements. Many transit agencies have their own set of procedures/ processes for using their data that may not involve entry into a software tool. However, with SmartDraw, the transition to digital forms of critical asset data would be a smoother process and be accepted much more easily within an organization because the information can be presented in a flowchart/ hierarchical format. SmartDraw provides a complete hierarchical structure for the critical assets and their components and sub-components that allow the data to be input and tracked by management staff. The flowchart, in essence, provides a complete and accurate record reflecting the value and current condition assessment of the critical assets throughout their life cycle.

For this project, SmartDraw provided the team with a tool to visually display its thoughts within flowcharts or mind maps as the team began the process of developing the hierarchical relationships of each asset. Many of these mind maps and flowcharts are displayed throughout this final report.

As the team began using SmartDraw, other capabilities became apparent that could assist in the overall process of conducting a comprehensive inventory of the MetroLink infrastructure. CRBS developed a series of Excel spreadsheets to collect pertinent information about the infrastructure that Metro management staff recommended. These spreadsheets provided the team with a way to collect manufacturer information, location, installation date, asset inventory, and the condition of those assets within one document. Overall, CRBS used primarily a mix of SmartDraw and Excel spreadsheets to document this project; this is highly

beneficial because an Excel document can be imported into Oracle or Maximus M-5.

While conducting the comprehensive inventory of MetroLink's infrastructure, the team decided to capture pictures of each asset. This provided a visual record of the asset as well as the exact location of that asset and, in some cases, also assisted with determining a particular asset's condition. SmartDraw provided the team with the opportunity to link all data, photographs, video clips, and asset condition into one record. This software provided Metro senior management with a powerful tool that can generate a detailed snapshot of a critical asset to answer questions about the condition and inventory. Metro's management also discovered that SmartDraw can serve as a training tool for new employees assigned to maintain the infrastructure.

The majority of the information documented by many agencies is typically in an Excel spreadsheet format which is then imported into major tools such as Maximus M-5 or Oracle. However, many agencies have not updated their documented asset information for some time. The team used SmartDraw to build what an agency would need in the process of starting to build a comprehensive inventory to the point where it will have all that is needed to move forward in the future with simple-to-read, accurate, and up-to-date information. These three things are the backbone of building a Transit Asset Management System that will quickly benefit an agency.

SmartDraw provides an agency something that many software tools are not designed or programmed to do, especially for the price. SmartDraw provides an agency with the capability of customizing the configuration of its critical assets and associated inventories. This customization not only provides an agency a way to build an inventory of its assets that is understandable, it creates a great foundation for the short- and long-term planning needed for asset management growth. The ability to fully understand an entire critical asset and know where the components/sub components of that asset are is a very powerful tool to sustain a state of good repair and operate a transit system reliably and efficiently. In our opinion, the simplicity and customization of SmartDraw are unmatched.

One of the major features that SmartDraw offers that provides a seamless integration with other software tools is that information stored within the Excel files is typically uploaded onto a server that provides the user access to change one file for a specific asset, instead of many files that would need to be searched through to find the most updated version. This will provide an agency with a great foundation for building a reliable Asset Management System that will be well documented and structured accurately.

Windchill Software

During the final stage of the research project, the team discovered a more comprehensive tool that could be deployed to support medium to large agencies

that already have mature existing enterprise asset management systems such as Maximus M-5 or Maximo. This tool was developed by Parametric Technology Corporation (PTC), a solutions provider well known for supporting the Department of Defense. PTC's tool, known as "Windchill," was demonstrated to the research team using rail car and bus data from Washington Metro and ROW maintenance assets such as signals and stations from St. Louis Metro.

Windchill provides organizations with the capability to move data from their existing Enterprise Asset Management (EAM) systems into a tool that will provide a decision support capability for the organization. Windchill acts as the single source of truth for all asset-related data and thus offers enterprise-level integrations to Enterprise Resource Planning (ERP) and EAM systems. These integrations allow Windchill to assume master control over processes and ensure that standard business processes are created and followed. Decisions and actions logged in disparate transactional systems (e.g., engineering, reliability, supply chain management, inventory management, service, operations, warranty entitlement) are consolidated and become accessible for necessary data consumption. This feedback loop enables performance-based metrics to support decisions at every level of the enterprise.

Step-by-Step Process

The step-by-step process described in Table 5-I lists the project steps, objectives, and activities required by an agency to use the existing data contained in its maintenance/management information systems to improve its ability to manage its critical assets. These steps provide transit agencies with a roadmap to leverage data in their maintenance management systems to build asset inventories to achieve a higher level of analysis to optimize investments in urban bus/rail capital assets. Table 5-I provides the steps necessary to use data in an agency's current maintenance/information management systems to improve overall asset management.

Table 5-1

Project/Step
Objectives

Step	Name	Objectives/Activities
Ī	Review current asset management practices.	 Conduct interviews with all stakeholders involved with Asset Management. Review all written policies, documentation, and regulations that provide guidance to personnel regarding critical assets. Flowchart the complete current process. Recommend improvements and brief senior management to obtain buy-in and approval.
2	Review and analyze all management information systems.	 Review all data currently contained in data systems. Analyze asset/inventory data for bus and rail vehicles and all associated equipment and facilities. Analyze equipment and facilities data contained in databases that are not part of the standard information systems. These systems should be reviewed and evaluated to determine which data elements are required to support the State of Good Repair reporting and reliability improvements, asset warranties, and capital reinvestment requirements.

Step	Name	Objectives/Activities
3	Catalog and describe hierarchies (parent/child).	 Review list of current assets contained in the Asset Management systems. Document the current hierarchal structure (parent/child relationship). Work with engineering staff and other transit professionals to discuss and document systems/facilities. Generate detailed illustration of hierarchical relationships for critical inventory assets such as key equipment and facilities that support bus and rail infrastructure.
4	Conduct a comprehensive inventory of all critical assets.	 Request that senior management select a team of qualified personnel to conduct this comprehensive inventory. This team should include engineering and maintenance personnel with the expertise to identify and assess the condition of assets. The team should also include individuals capable of collecting the data electronically in an Excel spreadsheet or on an electronic device.
5	Identify all data elements.	 Review current data elements and structures. Perform analysis of current data elements and structures. Develop detailed illustration of hierarchical relationships for critical inventory assets for key equipment and facilities that support bus and rail infrastructure. Make recommendations and provide support documentation for new data elements.
6	Map data flow.	• Document/flowchart the complete data flow of existing and new assets (e.g., rail car, bus stations and critical support structures).
7	Review all urban rail/bus capital asset planning data.	 Collect and evaluate asset/inventory data from management/ maintenance data systems. In addition, retrieve data stored in Excel spreadsheets, log books, and personal files maintained by material storeroom and maintenance personnel.
8	Determine tool requirements.	 Review current tools. Search for already-developed/existing tools that can be employed to support the capital budgeting and asset replacement process.
9	Determine what additional enhancements are required.	 Determine required enhancements. Provide new asset breakdown structure for all assets. Input new structure of all supporting data into all asset and maintenance management systems. Gain senior management support and approval.

Asset Management System for Bus and Railcars

In recent years, Metro has been very successful in improving the state of good repair of its system, particularly with respect to its buses and LRVs. In 2002, the agency established a preventive maintenance program for its vehicles. Key elements of this program include:

• Establishment of a set of standards for maintaining vehicles, with schedules for key inspections and maintenance activities based on a combination of time and mileage intervals.

- Development of maintenance plans describing Metro's schedules for maintaining existing assets consistent with its standards and a capital acquisition plan for the purchase of new assets.
- Implementation of the M-5 program to manage the fleet; the system is currently being implemented for managing facilities, ordering parts, and supporting other maintenance-related activities.

SECTION

6

Best Practices

Transformation of Metro's Vehicle Maintenance Department

In 2001, it was determined that Metro's bus performance was substandard for several reasons:

- Budgets were out of control and could not be justified to upper management.
- Performance was lackluster and unreliable, with frequent breakdowns of vehicles that were dirty and in poor condition.
- Significant resources were being expended on equipment near the end of its designed life cycle.
- Vehicles held for minor repairs became long-term hold vehicles that were stripped of parts to keep the rest of the fleet operating.

Bus purchases had been made when funding was available, without regard to maintenance implications. As a result, vehicle systems broke down at the same time, overstraining maintenance personnel and disrupting inventory control as service area directors competed for resources.

While routine maintenance was performed on a regular, scheduled basis, other repairs were done as needed. Inventory was not necessarily available in a timely manner, slowing repairs and maintenance and creating an unreliable fleet. Customer complaints increased, and the mean distance between failures (MDBF) hovered at merely 4,000 miles.

To turn this around, in 2002 Metro conducted a critical review of its bus maintenance program. Metro's senior managers were tasked with two imperatives: control costs and improve reliability.

Determining Bus Fleet Maintenance Intervals

Metro separated its bus fleet into sub fleets by model and year. Each principal was assigned a fleet to research and determine the OEM-recommended maintenance intervals. Once research was completed, personnel came back as a group and discussed their findings as well as solicited individual input based upon experience. Detailed questions were asked, such as, "At what point do airbags tend to fail?" and "How long does it typically take for an alternator or starter to fail?" They also developed a list of every component/item that caused road calls and, customer or driver complaints. That included coolant hoses, hydraulic lines, valves, switches, relays, and motors. Anything and everything that might fail or otherwise cause a road call was listed.

The team determined that, in many cases, the OEM recommends that maintenance be performed on a preset interval of one year or 50,000 miles, whichever comes first. That interval fit well within Metro's operating profile since their vehicles were averaging 50,000 miles per year. For some components, it applied the warranty provided by the OEM. As an example, alternators are scheduled to be replaced at 200K miles.

The team reviewed the OEM recommended maintenance actions and decided that Metro could design its maintenance program around the 50,000-mile cycle. Senior management asked if they could extend the life of a bus to 15 years. After careful consideration, they decided that goal was feasible.

Comprehensive Maintenance Plan

The team then constructed a comprehensive maintenance plan that included component replacements, adjustments, fluid changes, or appearance and comfort items around that cycle for the life of a bus. Items addressed included components of the vehicle that are not specifically addressed by the OEM but become maintenance issues nonetheless, such as paint, body work, and replacement of driver/passenger seats.

Major component replacements are planned during the midlife of the vehicle. Major inspection points, where expenditures are highest, are at 200k, 300k, 400k, and 500k miles. Maintenance intensity and expenditures trail off starting at 600k miles. Some abbreviated major inspections are performed every 50k miles until the vehicle is retired.

Antifreeze change out (green), minor maintenance items, and engine tune-ups are scheduled every 50k miles. Alternators, starter motors, and driver seats are replaced at the 200k, 400k and 600k mileage intervals. Allison transmissions are rebuilt every 200k miles, and Voith transmissions are rebuilt every 300k miles. Buses are scheduled to be repainted once during their useful life between 6 and 8 years of age. In the end, everything the team could think of was put into the plan for replacement, adjustment, or to be checked.

Regular preventive maintenance is conducted on a 10k-mile cycle. 10k-mile inspections are synchronized with the major planned inspection at 50k miles.

Predictable Maintenance and Replacement

The team then developed comprehensive inspection forms for every planned maintenance point by sub fleet. Detailed inspection forms that include tolerances, specifications, instructions, and places to record information were created and imbedded into the M-5 Vehicle Maintenance Database (VMD) module. Every inspection has a detailed bill of materials that corresponds to the work expected to be completed at that point.

The M-5 Asset Management System uses vehicle history information to forecast inspection due dates for the next 18 months as well as to track and record inspection on-time performance. Inspection forecast by sub-fleet is provided to the materials management office. In addition, 30-, 60-, and 90-day reports with specific bus numbers are provided to the parts department every month. The Materials Management office uses that information to assure that parts are available at the time the inspection is scheduled.

Kits for the corresponding inspection activities are available at the time when work is scheduled. Mechanics are budgeted and available to perform the work. Waiting for parts or out-of-service vehicles has been eliminated.

The Vehicle Maintenance Department tracks progress and adherence. Since inception, 100 percent of inspections scheduled are completed during the fiscal year. Also, on-time performance for 10K mile inspections has been consistently over 99 percent.

The program that was developed in 2002 has matured. The VMD team holds periodic meetings to discuss progress, make adjustments, or add items that were overlooked. In addition, as a new vehicle progresses through the system, meetings are held to discuss changes or additions that are necessary because of different configurations or new technologies.

Budgets are developed around the maintenance plan to ensure that the fleet is being well maintained. Expected inspection schedules for the fiscal year are budgeted and provided to department managers. With relatively fixed costs for inspections, forecasting future maintenance needs is very predictable.

In an effort to further refine its system, Metro decided to pursue a vehicle replacement plan that evened out its maintenance workloads. With a maintenance plan that takes vehicle life to 15 years, it budgets to replace I/I5th of the fleet every year. This high-level planning allows Metro to deliver a 20-year bus replacement plan to the Grants department.

Regular replacement of vehicles has evened out the resources needed for every aspect of Metro's business plan. With a 370-vehicle bus fleet, Metro programs the replacement of 27 vehicles every year. By doing this, in the seventh year of that sub fleet, it will be necessary to paint just over two buses per month. Taking this concept to its logical conclusion, Metro will need to rebuild the same number of transmissions, driver seats, or any other component every month. This predictability has made it very easy to plan for and staff mechanics as well as materials.

Metro developed similar programs for their LRV and Call-A-Ride van fleets.

Lessons Learned

The results of Metro's program have been very positive. Maintenance costs have remained constant in the face of rising commodity and labor costs. The agency has also realized enormous efficiencies in labor by having a trained mechanic with the part in hand available when planned activities are scheduled. In addition, the improved efficiencies in labor have eliminated road calls. Metro's current MDBF for its fleets is buses—21,382 miles, vans—49,997 miles, and LRVs—40,808 miles.

Metro continues to realize efficiencies in labor and parts availability by scheduling overhauls of major components/systems and not waiting until they fail. For example, Metro can overhaul an Allison transmission for about \$5,000 if it is removed and overhauled on a schedule, or it could pay \$20,000 or more to overhaul that same transmission if it continues to run it until a failure occurs that damages mort parts and requires unscheduled resources. Metro's parts inventory for the bus fleet has been reduced by \$5 million due to its tightly-held scheduling process and part usage.

Changing the culture was not easy. Metro offers the following information about the issues that arose during its journey:

It was very difficult for managers and front-line personnel to envision the move from breakdown maintenance to planned activities. Metro struggled to convince a supervisor or superintendent to replace the alternator on a bus on a planned basis while having another bus dead on the wall because it was waiting for an alternator. Resistance was significant.

To overcome this, Metro developed a core support team of "believers" within maintenance, a small team of individuals who were committed to the program and were willing to pursue it. They argued and supported the program into existence.

Metro transitioned to the new program in phases. Management decided that anything that was purchased in 2000 or newer would be brought up to a state of good repair and maintained fully under the new program. Vehicles from 1992 to 1997 were incorporated into the program with some modifications. As new vehicles were purchased, they were incorporated into the program from cradle to grave.

Metro enhanced its mechanic training by rewriting its entire program, creating training that was specific to the new maintenance program.

The key to its success, Metro staff pursued the goal relentlessly. Since its inception, Metro staff have recognized that their planned maintenance program is one of the agency's best accomplishments. Vehicle reliability is among the best in the nation, costs are under control, and customer complaints are almost nonexistent.

Comprehensive Inventory of Assets

A thorough review of the data contained in Maximus M-5 as well as Oracle by the team prompted a decision to conduct a comprehensive inventory. The team understood that conducting such an inventory would be extremely time-consuming and require a massive investment of resources from both CRBS and Metro personnel. However, it was imperative that all information captured during the project reflected Metro's current asset configuration, location, and condition. After conducting the comprehensive inventory of MetroLink's Right-of Way, the team was asked to provide input to assist Metro in the population of the new NTD format. Because of CRBS's hierarchical breakdown structure and inventory, this requirement was easy to accomplish. The team quickly recognized that this format closely resembled what FTA is requiring for the new format. Therefore, the accomplishment of a comprehensive inventory by all transit agencies could yield the benefits of managing physical infrastructure and fleets within constrained budgets and prepare all organizations for the forthcoming FTA requirements.

SECTION

7

Conclusions

The research described in this report provides an example of how urban rail transit agencies can leverage existing data that may be contained in their maintenance/management information systems. These data could be used to build asset inventories for higher-level analysis as a way to optimize an agency's investments in bus and rail capital assets. In addition, this report provides a roadmap to accomplish this task by identifying critical assets and using the data collected from Metro to develop an asset management plan.

This report provides the process and examples of how the CRBS team developed a reference document defining recommended industry-integrated standard asset inventory structures, data elements, and hierarchical relationships. In addition, this report reveals how the team documented and illustrated how larger capital items are related through the proposed hierarchical relationships of data recorded in maintenance management systems. Transit agencies can employ the research results and best practices identified in this report to improve their overall asset management capability, identify failure trends, monitor corrective/ preventive maintenance, and document asset condition.

The improvement in total asset visibility is driven by the capability to capture complete data for each asset and critically review its condition. This process includes the analysis of the asset and costs associated with repairing or modifying it to influence the decision of planning for its replacement. The methods used by the research team are not meant to be the only way an agency can approach asset management; rather, they provide a structure that has been demonstrated successfully at Metro.

The research team developed a framework to conduct a comprehensive inventory and store data into SmartDraw, a product that visually displays the asset and associated data. In addition, this report provides a framework that could be used by any agency, regardless of its size, to conduct a comprehensive inventory and perform a hierarchical breakdown of each of its major assets.

SmartDraw provides an agency with simplicity that many software tools do not have, especially for the price. Furthermore, SmartDraw allows users to build an inventory customized for their infrastructure with diagrams and spreadsheets. This customization not only provides an agency a way to build an inventory of their assets they understand, but creates a great foundation for the long-term plan of documenting assets expansion and asset condition.

The user-friendly software facilitates a better understanding of an entire system/ components and breakdowns of these critical assets to determine capital project prioritization. SmartDraw is a very powerful tool, in particular for replacement/

rehabilitation projects that focus on the current condition of an asset in comparison to its useful life.

Finally, the key to the success of this project was the cooperation at all levels of management at Metro. The ability to interview all management staff as well as front-line employees to determine how assets were being managed, repaired, modified, and evaluated was crucial to determining what worked well and what did not. This report provides a step-by-step process to accomplish a comprehensive inventory of assets, along with examples of how to develop hierarchical structures that depict the parent-child relationships of those assets and how that data could be displayed in a simple but concise manner. In addition, this report outlines tools that could be used to collect asset data and display that data to improve the management of assets and forecast their useful life cycle.

ACRONYMS

AASHTO American Association of State Highway and Transportation Officials

AC Alternating Current

ADA Americans with Disabilities Act

AIMS Asset Inspection and Maintenance System **APTA** American Public Transportation Association Core Geographic Information System Server ArcGIS

AREMA American Railway Engineering and Maintenance of Way Association

ATO Automatic Train Operation **ATP Automatic Train Protection ATS** Automatic Train Supervision

BP **Best Practice**

ERP

BSDA Bi-State Development Agency CAD Computer Aided Design Close Circuit Television **CCTV** CIP Construction in Progress CMO Chief Mechanical Officer **CRBS** Code Red Business Solutions **CWR** Continuous Welded Rail **EAM Enterprise Asset Management**

Enterprise Resource Planning ESRI Environmental System Research Institute

FHWA Federal Highway Administration **FTA** Federal Transit Administration **GIS** Geographic Information Systems **HVAC** Heat Ventilation Air Conditioning

IT Information Technology **LCD** Liquid Crystal Display LRV Light Rail Vehicle **MCC** Metro Control Center

MDBF Mean Distance Between Failure

MO Modular Overhaul

MODOT Missouri Department of Transportation

MOW Maintenance of Way **MRP** Material Requisition Plans NTD National Transit Database OCC **Operations Control Center** OCS Overhead Catenary System **OEM** Original Equipment Manufacturer

OGA Oracle Grants Accounting **PDF** Portable Document Format PM Predictive Maintenance

PMI Preventive Maintenance Inspection

ROI Return On Investment

ROW Right-of-Way

SCADA Supervisory Control and Data Acquisition

State of Good Repair **SGR**

SIP Small Infrastructure Project
SOP Standard Operating Procedure
TAM Transit Asset Management

TERM Transit Economics Requirements Model

TIP Technology Innovation Plan

TPSS Traction and Power Substation Systems
TVCS Tunnel Ventilation Control System
UPS Uninterruptible Power Supply
VHLC Vital Harmon Logic Controller

VMD Metro's Vehicle Maintenance Department

VMD M-5 Vehicle Maintenance Database

WCL Wheelchair Lift XFMR Transformer

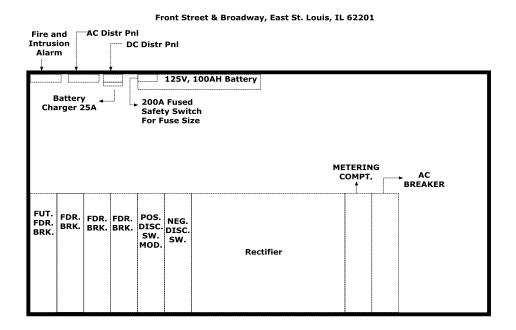
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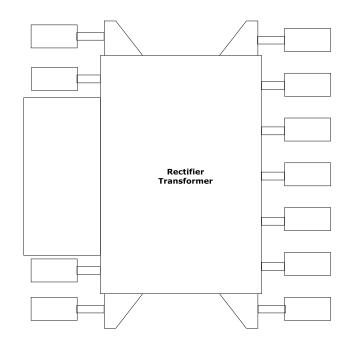
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APPENDIX

Inventory of Assets

Sub-Station: IL #1, MO #2, 4-12





Transformer	Image	Inventory			
			Transformer		
		COMPONENT	MANUFACTURER	PART NUMBER	COUNT
		Lighting Arrestors			3
	柳林県 泉 長 島	Phase Stab			3
		Oil Drain Valve			1
		Connector Surge Arrestor		M392270	3
AC Breaker		AC High	Voltage Breaker Siemen	s M391035 (1)	
AC DI Cakei	-	COMPONENT	MANUFACTURER	PART NUMBER	COUNT
		Static Trip (rms-ts-tz)	Siemens	C398755	2
	THE REPORT OF THE PARTY OF THE	Motors			
		Actuators			
	TATAL				
		27DC Control Power Relay	Agostat		

Sub-Station: IL #1, MO #2, 4-12 Asset Inventory				
Item	Image	Inventory		
Rectifier		Rectifier (ABB)		
	Marie Marie	COMPONENT MANUFACTURER PART NUMBER COUNT		
		Diode Fuse 700V/ 1400A Ferraz M393023 36		
		Diode Heat sink M393525		
	The second secon	fuses		
	AND AND ADDRESS OF THE PARTY OF	switch		
		transducers DC Compton CM398655 1		
		transistors (cap)		
		fluorescent light		
		filters		
		Enunciator		
		64 relay		
		relay ground protective ABB C395935 1		
		hot enclosure ABB		
		reverse current relay ABB		
	4	lock out relay Electroswitch 2		
		M397360		
		relay time delay Agastat M395956 1		
		resistor 5K ohm Ohmite M396101 4		
		Relay control MSD inc M395921 1		
		Relay Aux. MSD inc M395910 1		
		Relay Aux / Lockout 86X MSD inc M395911 1		
		Relay control 120V MSD inc M395920 1		
		Contactor DC 240V 3 pole ABB M392340 1		
		Clamp Tri-Start 5000 Assembly ABB M392020 36		
		Fuse SND 62C 65A 34.5KB SEC M393028 3		
		Card Flasher Audible Enunciator Ameritech M391771 20		
		Card Single point sequence Ameritech M391781 30		
		Diode 1830am 2500V CCTR ABB* or Westcode* M392500 24		

Sub-Station: IL #1, MO #2, 4-12 Asset Inventory

Image Item

Inventory

DC Breaker



	DC Breaker		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
Control Relay			
		M395962/M39596	
Relay Timing	Agastats	3	3
	Schwartz engineering		
over current relay type 76	smc	M395952	2
fuses			
load measuring devices			
Volt Meter			
Relay control	MSD inc	M395921	1
Relay Aux.	MSD inc	M395910	1
Limiter Multiplier/ Voltage	Crompton	M394250	1
Indicator Assembly		M393690	1 ea.
Nut Hex 1/2 by 13 Silicon Bronze			50
Bellow Assembly	ABB*	M390660	1 ea.

House Walls



House Walls				
COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
Brk Test Box				
A.P.T.				
A.P.T Sec				
Thermostat	Dayton			
100amp hours Batteries	Exide		19	
15amp Charger*	GNB	C391930	1	
5K Heater	NuTone		1	
Fan battery Exhaust Wall Mount		M392840	1	

Sub-Station: IL #1, MO #2, 4-12 Asset Inventory

Image Item

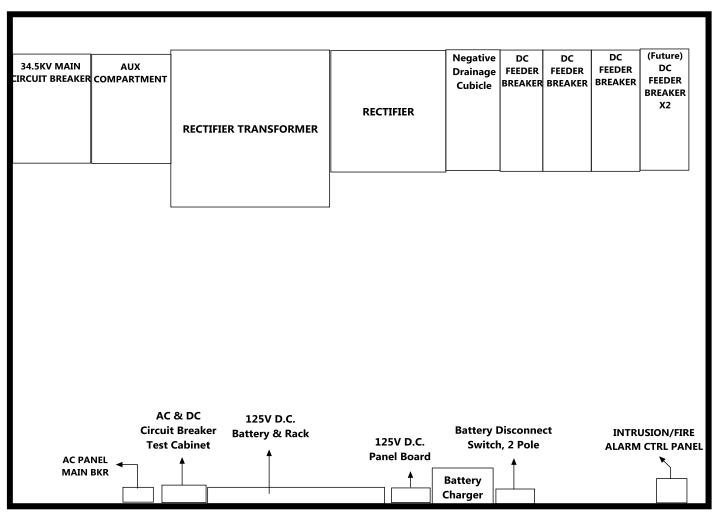
M.O.D. 89C



M.O.D. 89C				
COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
switch breaker		M398001	1	
Operator Motor Positive Disconnect	NMC Positive Power Switch	M394802	1	
actuator				
Relay Control 110V		M395926	0	

Sub-Station: IL #2-6

219 North 5th Street, East St. Louis, IL 62201



Sub-Station: IL #2-6 Asset Inventory

Item	Image		
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AC Breaker



Inventory

AC High Voltage Breaker M391035 (1)				
COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
Fuse Current Limiting AC 6A 600V		M393007	2	
Relay Under Volt/Phase Sequence	ABB	M395970	1	
Fuse Control Trans 38KV1E	Bussmann	M393052	2	
Motor Spring Charging	Siemens	M394520	2	
Relay Lock Out	Electroswitch	M395946	1	
Contacts Primary 38KV		M392426	0	
Relay Over Current Time	Bazzler	M395937	0	
Coil Closing 38KV		M392256	2	
Coil Trip 38KV Vacuum		M392262	2	
Motor Spring Charging 38KV		M394522	2	
Bottles Vacuum 38KV	Siemens	M390804	2	
Volt Meter AC 0-43KV		M399115	0	
AMP Meter AC 0-50A		M390184	1	
Contacts Secondary 38KV CI		M392425	2	

Rectifier



Rectifier (Impulse)			
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
Relay Lock Out	Electroswitch	M395946	1
Fuse Current Limiting AC 6A 600V		M393007	2
Relay Under Volt/Phase Sequence	ABB	M395970	1
Fuse Control Trans 38KV1E	Bussmann	M393052	2
Motor Spring Charging	Siemens	M394520	2
Relay Lock Out	Electroswitch	M395946	1
Contacts Primary 38KV		M392426	0
Relay Over Current Time	Bazzler	M395937	0
Coil Closing 38KV		M392256	2
Coil Trip 38KV Vacuum		M392262	2
Motor Spring Charging 38KV		M394522	2
Bottles Vacuum 38KV	Siemens	M390804	2
Volt Meter AC 0-43KV		M399115	0
AMP Meter AC 0-50A		M390184	1

Sub-Station: IL #2-6 Asset Inventory

Image Item

DC Breaker

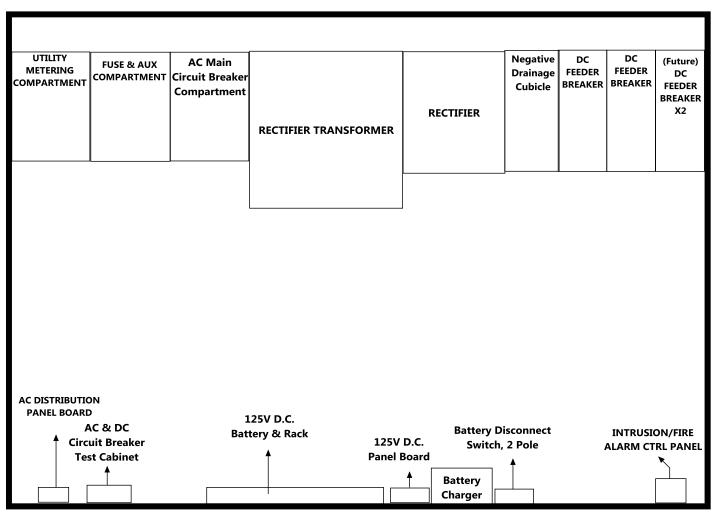


COMPONENT	MANUFACTURER	PART NUMBER	COUNT
Control Relay			
Relay Timing	Agastats	M395962/M395963	3
over current relay type 76	Schwartz engineering smc	M395952	2
fuses			
load measuring devices			
Bolt Meter			
Contactor Main Fixed	Impulse	M392350	4
Relay control	MSD inc	M395921	1
Relay Aux.	MSD inc	M395910	1
Limiter Multiplier/ Voltage	Crompton	M394250	1
Indicator Assembly	·	M393690	1 ea.
Nut Hex 1/2 by 13 Silicon Bronze			50
Bellow Assembly	ABB*	M390660	1 ea.
Contact Arcing Fix DC Circuit	Impulse	M392274	3
DC Breaker Lamp Indicator Red	·	M394110	0
Lamp LED 9M White		M394112	0
Lamp LED 9M Green		M394114	0
Lens Blue		M394150	10
Lens Clear LED		M394152	9
Lens Green LED		M394154	10
Lens Red LED		M394156	8
Bulb 28V	Miniture Light Bulbs	M391055	9
Reclosure Auto HV		M395452	1
Enclosure Relay 82/83		M392590	1
Resistor Load Measuring		M396150	0
Contact Arcing Moving DC		M392276	3
Contacts Secondary 38KV CI		M392425	2
Enclosure Relay Type 76		M392588	2
Motor Spring Charging		M394524	10
Volt Meter DC		M399120	1
Volt Meter 1000VDC		M399127	2
Amp Meter Pluse/Minus	Caronptom	M390195	1
Amp Meter DC Switch Board	Caronptom	M390197	1
Relay High Voltage Part of 27th Device	Impulse	M395972	2
Relay Low Voltage Part of 27th Device	Impulse	M395973	2
Relay Over Current DC Type 76	,	C395952	0
Coil Trip For DC Breaker	Ansaldo	M392264	10
Relay Control 110V		M395926	0
Contactor Aux. A		M392284	3
Contactor Aux. B		M392286	3
Relay Reclosing DC Type 82		C395955	0
- 7	I		-

Sub-Station: IL #2-6 Asset Inventory Image Inventory Item **House Walls** House MANUFACTURER COMPONENT PART NUMBER COUNT Walls **Brk Test Box** A.P.T. A.P.T Sec Thermostat Dayton Exide 100amp hours Batteries 19 15amp Charger* Exide M391935 1 Wall Fan NuTone 1 Fan battery Exhaust Wall Mount M392840 1 Board Aux. Relay Circuit Assembly M390765 2 Board Main Control Battery Charger AT10 M390775 0 M.O.D. M.O.D. 89C COMPONENT MANUFACTURER PART NUMBER COUNT 89C switch breaker M398001 1 Operator Motor Positive Disconnect NMC Positive Power Switch M394802 1 actuator Relay Control 110V M395926 0

Sub-Station: IL #7-14

2209 Dutch Hollow Road, Belleville, IL 62223



Sub-Station: I		
Item	Image	Inventory
AC Breaker		AC High Voltage Breaker Siemens M391035 (1)
		COMPONENT MANUFACTURER PART NUMBER COU
		Fuse Current Limiting AC 6A 600V M393007 2
	41	Relay Under Volt/Phase Sequence ABB M395970 1
		Fuse Control Trans 38KV1E Bussmann M393052 2
	The second secon	Motor Spring Charging Siemens M394520 2
		Relay Lock Out Electroswitch M395946 1
	and we have	Contacts Primary 38KV M392426 0
		Relay Over Current Time Bazzler M395937 0
		Coil Closing 38KV M392256 2
		Coil Trip 38KV Vaccum M392262 2
		Motor Spring Charging 38KV M394522 2
		Bottles Vaccum 38KV Siemens M390804 2
		Volt Meter AC 0-43KV M399115 0
		Volt Meter AC 0-43KV M399115 0
Rectifier		Volt Meter AC 0-43KV M399115 0 AMP Meter AC 0-50A M390184 1 Contacts Secondary 38KV Cl M392425 2 Rectifier (Impulse)
 ectifier		Volt Meter AC 0-43KV M399115 0 AMP Meter AC 0-50A M390184 1 Contacts Secondary 38KV CI M392425 2 Rectifier (Impulse) COMPONENT MANUFACTURER PART NUMBER COUITION COUIT
ectifier		Volt Meter AC 0-43KV M399115 0
ectifier		Volt Meter AC 0-43KV M399115 0
ectifier		Volt Meter AC 0-43KV M399115 0
ectifier		Volt Meter AC 0-43KV M399115 0
ectifier		Volt Meter AC 0-43KV M399115 0
ectifier		Volt Meter AC 0-43KV
ectifier		Volt Meter AC 0-43KV
ctifier		Volt Meter AC 0-43KV
ectifier		Volt Meter AC 0-43KV

Item Image

DC Breaker



COMPONENT	MANUFACTURER	PART NUMBER	COUNT
Control Relay			
Relay Timing	Agastats	M395962/M395963	3
over current relay type 76	schwartz engineering smc	M395952	2
fuses	5 5		
load measuring devices			
Bolt Meter			
Contactor Main Fixed	Impulse	M392350	4
Relay control	MSD inc	M395921	1
Relay Aux.	MSD inc	M395910	1
Limiter Mulitplier/ Voltage	Crompton	M394250	1
Indicator Assmebly		M393690	1 ea.
Nut Hex 1/2 by 13 Silicon Bronze			50
Bellow Assembly	ABB*	M390660	1 ea.
Contact Arcing Fix DC Circuit	Impulse	M392274	3
DC Breaker Lamp Indicator Red		M394110	0
Lamp LED 9M White		M394112	0
Lamp LED 9M Green		M394114	0
Lens Blue		M394150	10
Lens Clear LED		M394152	9
Lens Green LED		M394154	10
Lens Red LED		M394156	8
Bulb 28V	Miniture Light Bulbs	M391055	9
Reclosure Auto HV		M395452	1
Enclosure Relay 82/83		M392590	1
Resistor Load Measuring		M396150	0
Contact Arcing Moving DC		M392276	3
Contacts Secondary 38KV CI		M392425	2
Enclosure Relay Type 76		M392588	2
Motor Spring Charging		M394524	10
Volt Meter DC		M399120	1
Volt Meter 1000VDC		M399127	2
Amp Meter Pluse/Minus	Caronptom	M390195	1
Amp Meter DC Switch Board	Caronptom	M390197	1
Relay High Voltage Part of 27th Device	Impulse	M395972	2
Relay Low Voltage Part of 27th Device	Impulse	M395973	2
Relay Over Current DC Type 76		C395952	0
Coil Trip For DC Breaker	Ansaldo	M392264	10
Relay Control 110V		M395926	0
Contactor Aux. A		M392284	3
Contactor Aux. B		M392286	3
Relay Reclosing DC Type 82		C395955	0

Item	Image
House Walls	

Inventory

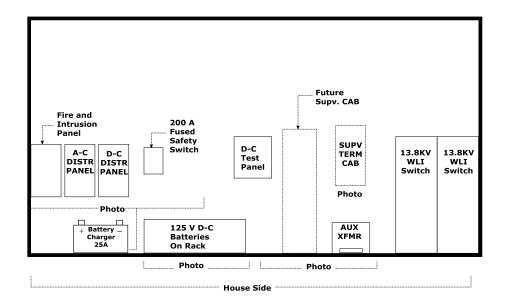
House Walls						
COMPONENT MANUFACTURER PART NUMBER C						
Brk Test Box						
A.P.T.						
A.P.T Sec						
Thermostat	Dayton					
100amp hours Batteries	Exide		19			
15amp Charger*	Exide	M391935	1			
Wall Fan	NuTone		1			
Fan battery Exhaust Wall Mount		M392840	1			

M.O.D. 89C



M.O.D. 89C					
COMPONENT	MANUFACTURER	PART NUMBER	COUNT		
switch breaker		M398001	1		
Operator Motor Positive Disconnect	NMC Positive Power Switch	M394802	1		
actuator					
Relay Control 110V		M395926	0		

Sub-Station: MO #1



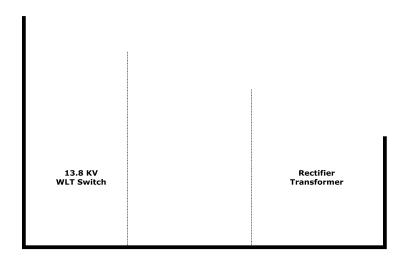


Image Inventory Item

AC Breaker



AC Lower Voltage Breaker					
COMPONENT	MANUFACTURER	PART NUMBER	COUNT		
Over Current Relays	Westinghouse	C395961	4		
Static Trip (rms-ts-tz)	Siemens	C398755	2		
Motors					
Actuators					
27DC Control Power Relay	Agostat				

Image Item

Rectifier



Rectifier (ABB)				
COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
Diode Fuse 700V/ 1400A	Ferraz	M393023	36	
Diode Heat sink		M393525		
fuses				
switch				
transducers DC	Compton	CM398655	1	
transistors (cap)				
fluorescent light				
filters				
Enunciator				
64 relay				
relay ground protective	ABB	C395935	1	
hot enclosure	ABB			
reverse current relay	ABB			
lock out relay	Electro switch		2	
solenoid closing coil		M397360		
relay time delay	Agastat	M395956	1	
resisitor 5K ohm	Ohmite	M396101	4	
Relay control	MSD inc	M395921	1	
Relay Aux.	MSD inc	M395910	1	
Relay Aux / Lockout 86X	MSD inc	M395911	1	
Relay control 120V	MSD inc	M395920	1	
Contactor DC 240V 3 pole	ABB	M392340	1	
Clamp Tri-Start 5000 Assembly	ABB	M392020	36	
Fuse SND 62C 65A 34.5KB	SEC	M393028	3	
Card Flasher Audible Enunciator	Ameritech	M391771	20	
Card Single point sequence	Ameritech	M391781	30	
Diode 1830am 2500V CCTR	ABB* or Westcode*	M392500	24	

Image Inventory Item

DC Breaker



DC Breaker				
COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
Control Relay				
Relay Timing	Agastats	M395962/M395963	3	
	Schwartz engineering			
over current relay type 76	smc	M395952	2	
fuses				
load measuring devices				
Bolt Meter				
Relay control	MSD inc	M395921	1	
Relay Aux.	MSD inc	M395910	1	
Limiter Multiplier/ Voltage	Crompton	M394250	1	
Indicator Assembly		M393690	1 ea.	
Nut Hex 1/2 by 13 Silicon				
Bronze			50	
Bellow Assembly	ABB*	M390660	1 ea.	

House Sides



House Walls						
COMPONENT MANUFACTURER PART NUMBER						
Brk Test Box						
A.P.T.						
A.P.T Sec						
Thermostat	Dayton					
100amp hours Batteries	Exide		19			
15amp Charger*	Exide	M391935	1			
Wall Fan	NuTone		1			
Fan battery Exhaust Wall Mount		M392840	1			

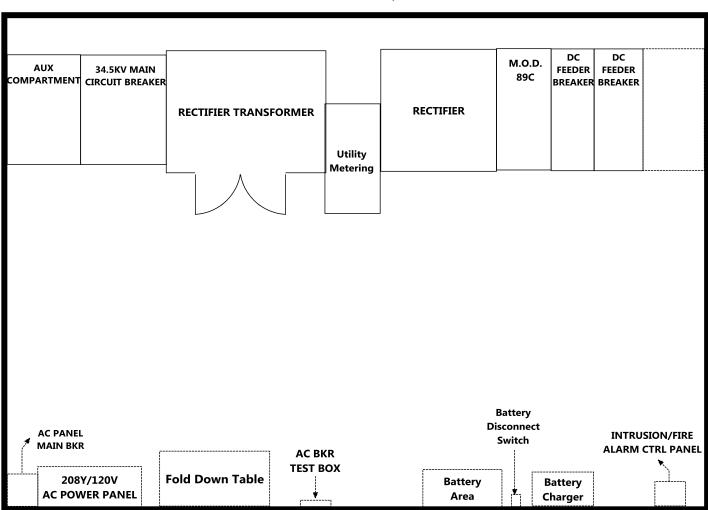
Item





M.O.D. 89C					
COMPONENT	MANUFACTURER	PART NUMBER	COUNT		
switch breaker		M398001	1		
fuses					
actuator					

Sub-Station: M0 #3



326 S. 21st Street St. Louis, MO 63103

AC Breaker

Item



AC High Voltage Breaker					
COMPONENT	MANUFACTURER	PART NUMBER	COUNT		
Fuse	Bussmann				
Control Fuse	Bussmann				
Power Fuse	Bussmann				
Dummy Fuse	Bussmann				
Semiconductor Fuse	Bussmann				
Curve					
Fuse Operation Indicator	Bussmann				
Current Limiting Fuse	General Electric				
Curves					
Fuse	Ferraz				
Current Limiting Fuse	Ferraz				

Sub-Station: MO #3 Asset Inventory Image Inventory Item Rectifier

1	Rectifier (Controlled Power)	T	
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
Surge Arrester	Ohio Brass		
Surge Arrester	Swartz (SMC)		
Diode Fuse Monitor	VG Controls		
Silicon Rectifier Diode	Dynex Semiconductor		
Diode	Fagor		
Diode	International Rectifier		
Silicon Rectifier Diode	Microsemi Corp.		
Zener Diode	Motorola		
Diode Clamp	Iconopower		
Load Measuring Resistor	Telema, Byrne & Schaefer, Inc.		
Resistor	Ohmite		
Mounting Feet			
Resistor	Huntington		
Mounting Feet			
Metal Oxide Varistor	Harris (Little fuse)		
Fuse	Bussmann		
Control Fuse	Bussmann		
Power Fuse	Bussmann		
Dummy Fuse	Bussmann		
Semiconductor Fuse	Bussmann		
Curve			
Fuse Operation Indicator	Bussmann		
Current Limiting Fuse	General Electric		
Curves			
Fuse	Ferraz		
Current Limiting Fuse	Ferraz		

Sub-Station: MO #3 Asset Inventory Item Image Inventory DC **COMPONENT MANUFACTURER PART NUMBER** COUNT Molded Case Circuit Breaker Cutler-Hammer Breaker Curve **Ground Provision Key Interlock Mounting** Key Interlock Contactor ABB **Current Transformer** ITI Voltage Transformer Sadtem **Control Power Transformer** Magnetic Technologies Interphase Transformer Magnetic Technologies DC Current Transducer Swartz (SMC) DC Current Transducer Swartz (SMC) Voltage Transducer Scientific Columbus **Undervoltage Relay** ABB **Timing Relay** Agastat Relay Extender Board **Undervoltage Relay Basler** DC Voltage Relay E-Max **Lockout Relay** Electroswitch DC Multifunctional Relay **PPECO** DC Reverse Current Relay Swartz (SMC) Structure Ground Relay Swartz (SMC) Bussmann Fuse **Control Fuse** Bussmann Power Fuse Bussmann **Dummy Fuse** Bussmann Semiconductor Fuse Bussmann Curve **Fuse Operation Indicator** Bussmann **Current Limiting Fuse General Electric** Curves Fuse

Current Limiting Fuse

Ferraz

Ferraz

Sub-Station: MO #3 Asset Inventory						
Item	Image	Inventory				
House			House Walls			
Walls	0 .	COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
		Battery Assembly	GNB			
		MSDS				
	The state of the s	MSDS				
	The same of the same of	Battery Charger	Hindle Power			
	2 miles (100)	Errata Sheet-Rectifier Assembly				
		Auxiliary Relay Alarm Card				
	The state of the s	Temperature Probe				
	SALES DE LA COMPANSION	Temp. Compensation Field Instr.				

Item Image

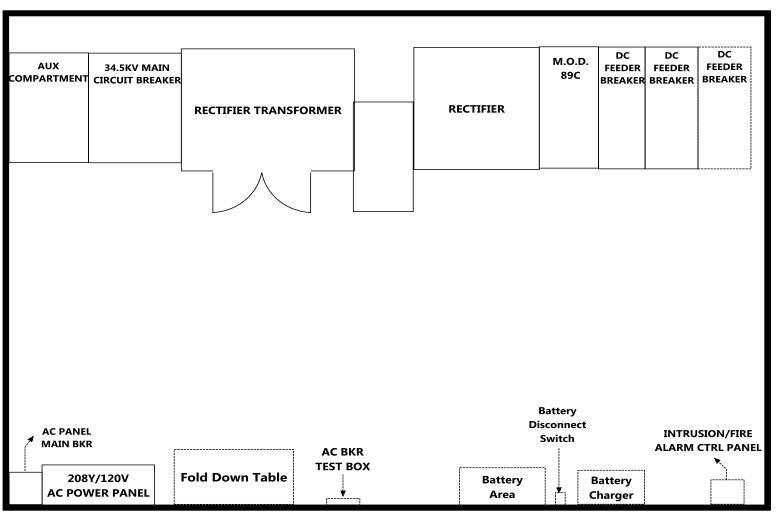
M.O.D. 89C



M.O.D. 89C				
COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
Load Interrupter Switch	Cutler-Hammer			
Bolted Pressure Switch	Filnor			
Disconnect Switch	Filnor			
Gear Motor Drive	Filnor (Bison Gear)			
Safety Switch	General Electric			
Breaker Control, Selector, Ammeter & Voltmeter Switches	ITI			
Test Switch & Test Plug	ITI			
Limit Switch	Square D			
Limit Switch	Siemens			
Toggle Switch	Hubbell			
Pushbutton	Cutler-Hammer			
Contact Block				
Shroud				
Enclosure & Cover				
Indicating Light	General Electric			
Lead/Lag Controller	Eubank Manufacturing			
Strip Heater	Heatrex			
Strip Heater	Watlow			
Thermostat	Dayton			
Thermostat	Therm-O-Disc			
Exhaust Fan	Broan/Nutone			

Sub-Station: MO #21-15

7201 Lansdowne Avenue, St. Louis, MO 63119



Sub-Station: MO #21-25 Asset Inventory					
Item Image Inventory					
AC	OFF ADMITS		AC High Voltage Breaker		
Breaker		COMPONENT	MANUFACTURER	PART NUMBER	COUNT
ı		Fuse	Bussmann		
		Control Fuse	Bussmann		
		Power Fuse	Bussmann		
		Dummy Fuse	Bussmann		
		Semiconductor Fuse	Bussmann		
	00	Curve			
	-	Fuse Operation Indicator	Bussmann		
		Current Limiting Fuse	General Electric		
		Curves			
	(N.F.)	Fuse	Ferraz		
	SCHOOL DE WE-	Current Limiting Fuse	Ferraz		

Item	Image	Inventory				
Rectifier		Rectifier (Controlled Power)				
		COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Surge Arrester	Ohio Brass			
	V ST WELL BOARD	Surge Arrester	Swartz (SMC)			
	Committee of the last of the l	Diode Fuse Monitor	VG Controls			
		Silicon Rectifier Diode	Dynex Semiconductor			
		Diode	Fagor			
		Diode	International Rectifier			
		Silicon Rectifier Diode	Microsemi Corp.			
		Zener Diode	Motorola			
		Diode Clamp	Iconopower			
		Load Measuring Resistor	Telema, Byrne & Schaefer, Inc.			
		Resistor	Ohmite			
		Mounting Feet				
		Resistor	Huntington			
		Mounting Feet				
		Metal Oxide Varistor	Harris (Little fuse)			
		Fuse	Bussmann			
		Control Fuse	Bussmann			
		Power Fuse	Bussmann			
		Dummy Fuse	Bussmann			
		Semiconductor Fuse	Bussmann			

Curve **Fuse Operation Indicator**

Current Limiting Fuse

Curves Fuse

Current Limiting Fuse

Bussmann

General Electric

Ferraz

Ferraz

Item Image

DC Breaker



COMPONENT	MANUFACTURER	PART NUMBER	COUNT
Molded Case Circuit Breaker	Cutler-Hammer		
Curve			
Ground Provision			
Key Interlock Mounting			
Key Interlock			
Contactor	ABB		
Current Transformer	ITI		
Voltage Transformer	Sadtem		
Control Power Transformer	Magnetic Technologies		
Interphase Transformer	Magnetic Technologies		
DC Current Transducer	Swartz (SMC)		
DC Current Transducer	Swartz (SMC)		
Voltage Transducer	Scientific Columbus		
Undervoltage Relay	ABB		
Timing Relay	Agastat		
Relay Extender Board			
Undervoltage Relay	Basler		
DC Voltage Relay	E-Max		
Lockout Relay	Electroswitch		
DC Multifunctional Relay	PPECO		
DC Reverse Current Relay	Swartz (SMC)		
Structure Ground Relay	Swartz (SMC)		
Fuse	Bussmann		
Control Fuse	Bussmann		
Power Fuse	Bussmann		
Dummy Fuse	Bussmann		
Semiconductor Fuse	Bussmann		
Curve			
Fuse Operation Indicator	Bussmann		
Current Limiting Fuse	General Electric		
Curves			
Fuse	Ferraz		
Current Limiting Fuse	Ferraz		

Sub-Station: MO #21-25 Asset Inventory									
Item	Image	Inventory							
House Walls		House Walls							
		COMPONENT	MANUFACTURER	PART NUMBER	COUNT				
		Battery Assembly	GNB						
		MSDS							
	1	MSDS							
		Battery Charger	Hindle Power						
		Errata Sheet-Rectifier Assembly							
		Auxiliary Relay Alarm Card							
		Temperature Probe							
		Temp. Compensation Field Instr.							

Sub-Station: MO #21-25 Asset Inventory

Item

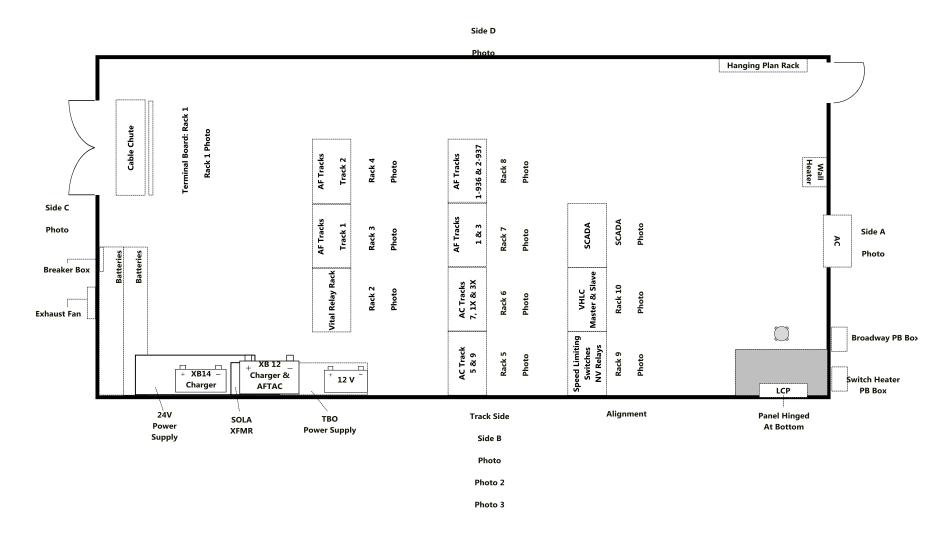
Image

M.O.D. 89C

Inventory

M.O.D. 89C			
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
Load Interrupter Switch	Cutler-Hammer		
Bolted Pressure Switch	Filnor		
Disconnect Switch	Filnor		
Gear Motor Drive	Filnor (Bison Gear)		
Safety Switch	General Electric		
Breaker Control, Selector, Ammeter & Voltmeter Switches	ITI		
Test Switch & Test Plug	ITI		
Limit Switch	Square D		
Limit Switch	Siemens		
Toggle Switch	Hubbell		
Pushbutton	Cutler-Hammer		
Contact Block			
Shroud			
Enclosure & Cover			
Indicating Light	General Electric		
Lead/Lag Controller	Eubank Manufacturing		
Strip Heater	Heatrex		
Strip Heater	Watlow		
Thermostat	Dayton		
Thermostat	Therm-O-Disc		
Exhaust Fan	Broan/Nutone		

5th and Missouri Signal House



Item	Image
Rack 1	

Inventory

	Rack	(1	
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
BPL-1	EPC		8
BPL-3	HARMON	150-097031-013 REV O	1





Rack 2			
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
1X/2X XFMR	Harmon	MLT-50	2
Vital Relay	GRS	A62-429 56001-926-01	8
Vital Relay	GRS	A62-432 56001-785-01	4
Vital Relay	GRS	A62-122 56001-921-07	5
Vital Relay	ALSTOM	A62-691	2
Vital Relay	SAFETRAN	400700	1
Vital Relay	GRS	A62-407 56001-745-02	2
Vital Relay	GRS	A62-360 56001-774-01	1
Vital Relay	GRS	A62-247	1
Vital Relay	GRS	A62-671 56001-974-01	1
Vital Relay	SAFETRAN	400023	2
Vital Relay	SAFETRAN	400900	1
Rectifier		A53-541	2
Flasher Relay	GRS	30733-1	2

5 th and M	lissouri Signal House Asset Inv	entory				
Item	Image	Inventory				
Rack 3			Rack 3			
		COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
	学文章 上于一层 对 课期	Vital Relay	GRS	A62-122 56001-921-07	2	
	建设是 建	Vital Relay	SAFETRAN	400900	2	
	THE RESERVE THE PARTY OF THE PA	520 Receiver Module (4410 Feq.)	EPC	150-088019-080 Rev. B	1	
	THE PERSON NAMED IN COLUMN	520 Receiver Module (2970 Feq.)	EPC	150-088019-080 Rev. B	4	
		520 Receiver Module (3870 Feq.)	EPC	150-088019-080 Rev. F	1	
		520 Receiver Module (3510 Feq.)	EPC	150-088019-080 Rev. B	1	
		520 Receiver Module (4410 Feq.)	EPC	150-088019-080 Rev. F	1	
		510 Amplifier Module	EPC	150-088019-050 Rev. B	8	
		530 CAB Coupler (2340 Feq.)	EPC	150-088019-051 Rev. B	4	
	540 Train Detection Coupler (3870 Feq.)	EPC	150-088019-060 Rev. B	1		
		540 Train Detection Coupler (2970 Feq.)	EPC	150-088019-060 Rev. B	1	
		540 Train Detection Coupler (3510 Feq.)	EPC	150-088019-060 Rev. B	1	
		540 Train Detection Coupler (4410 Feq.)	EPC	150-088019-060 Rev. B	1	
Rack 4			Rack 4			
	2 X 2	COMPONENT	MANUFACTURER	PART NUMBER	COUN	
	Man PROSES	Vital Relay	GRS	A62-122 56001-921-07	1	
		520 Receiver Module (3330 Feq.)	EPC	150-088019-080 Rev. B	2	
	MARKET AND THE PARTY OF THE PAR	520 Receiver Module (4230 Feq.)	EPC	150-088019-080 Rev. B	4	
		520 Receiver Module (3680 Feq.)	EPC	150-088019-080 Rev. B	2	
	OLD THE STATE OF T	510 Amplifier Module	EPC	150-088019-050 Rev. B	8	
	THE NAME OF THE PARTY OF THE PA	530 CAB Coupler (2340 Feq.)	EPC	150-088019-051 Rev. B	4	
	医原始性 医神经神经 / 1972	540 Train Detection Coupler (3330 Feq.)	EPC	150-088019-060 Rev. B	2	
	() [1] [1] [1] [1] [1] [1] [1] [1] [1] [1]	540 Train Detection Coupler (4230 Feq.)	EPC	150-088019-060 Rev. B	1	
	540 Train Detection Coupler (3690 Feg.)	EPC	150-088019-060 Rev. B	1		

Item	Image	
Rack 5		

Inventory

	Rack 5		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
XFMR Matching Rail Coupler	EPC	800-088019-300	4
AC Vain Relay	GRS	A62-486	2
Bal Imp		A3-117	2
3 OHM Resistor *	GRS	A3-207 (01246-1)	2
25 OHM Resistor *		56105-11	2
5T/9T XFMR	GRS	31094-000 (A95 50)	1
510 Amplifier Module	EPC	150-088019-050 Rev. B	4
530 CAB Coupler (2340 Feq.)	EPC	150-088019-051 Rev. B	4





	Rack 6		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
XFMR Matching Rail Coupler	EPC	800-088019-300	2
XFMR Loop Matching (2340 Feq.)	EPC	800-088019-200	2
AC Vain Relay	Alstom	A62-486	3
Bal Imp		A3-117	3
3 OHM Resistor	GRS	A3-207 (01246-1)	3
25 OHM Resistor	Dale	56105-11	3
7T/1XT/3XT XFMR	GRS	31094-000 (A95 50)	2
510 Amplifier Module	EPC	150-088019-050 Rev. B	4
530 CAB Coupler (2340 Feq.)	EPC	150-088019-051 Rev. B	4

Item	Image	Inventory

Rack 7



	Rack 7		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
XFMR Matching Rail Coupler	EPC	800-088019-300	4
AC Vain Relay	Alstom	A62-486	2
Bal Imp		A3-117	2
3 OHM Resistor	GRS	A3-207 (01246-1)	2
25 OHM Resistor	Dale	56105-11	2
XFMR *	GRS	31094-000 (A95 50)	1
510 Amplifier Module	EPC	150-088019-050 Rev. B	4
530 CAB Coupler (2340 Feq.)	EPC	150-088019-051 Rev. B	4



	Rack 8		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
520 Receiver Module (3510 Feq.)	EPC	150-088019-080 Rev. B	1
700 AMPLIFIER MODULE	HARMOND	150-094017-022 REV.D	2
701-2 CAB Coupler (2340 Feg.)		150-097031-010 Rev. O	2

Image

Inventory

Rack 9



Rack 9						
COMPONENT	MANUFACTURER	PART NUMBER	COUNT			
Rotary Dials (Full Hemisphere-OLD)			12			
Non-Vital Relays			59			
KEY SWITCH*			1			



Rack 10						
COMPONENT	MANUFACTURER	PART NUMBER	COUNT			
Vital Relay	GRS	A62-122 56001-921-07	4			
VLP			2			
ACP-2			2			
SSM			2			
CCI			2			
VSD			2			
VGP I/O			2			
VGP I/O-12V			1			
NV I/O			3			
32 NVI			2			
VGPI 16			4			
Surge Protector BSA-4	Harmon	250597	1			
CLA BOARD	Harmon	226859-000	1			
RS-232			2			
Modem			2			
12V Power Supply			2			

SCADA



Inventory

SCADA					
COMPONENT	MANUFACTURER	PART NUMBER	COUNT		
Modem			1		
C186			1		
SBX			1		
DI			2		
DO			2		
REMZ			1		
Power Supply			2		
Non Vital Relays			35		
Batteries	GENESIS	NP7-12 12V,7.0Ah	2		

Image Item

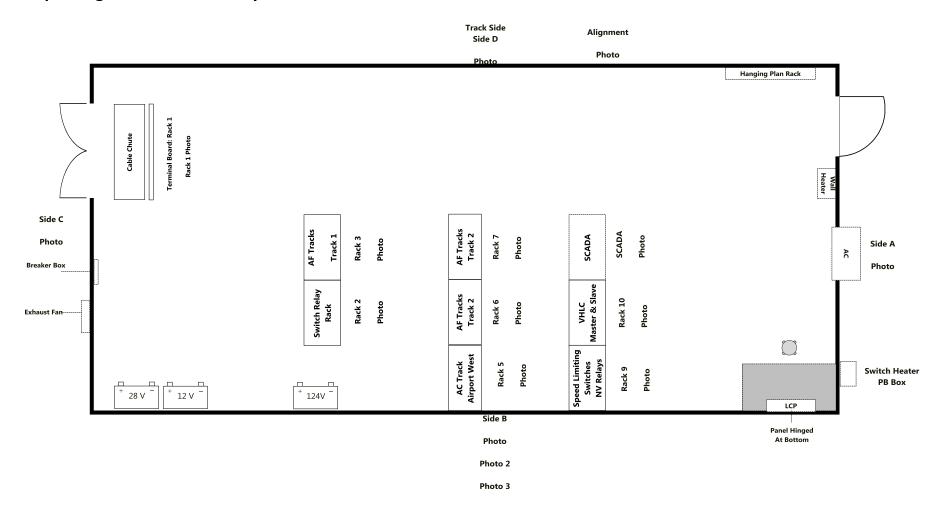
Inventory

Sides



House Side-A					
			COUN		
COMPONENT	MANUFACTURER	PART NUMBER	Т		
Switch Heater Push Button Box			1		
Push Button CONTROL Box			1		
House Sic	de-B				
CLCP	Harmon		1		
12 V POWER SUPPLY			1		
12 V Battery	CD TECHNOLOGIES	TEL 12-90	1		
28V Power Supply	Lamar he	A12B-60-24V-A1	1		
28V Power Supply	Lamarche	A12B-20-24V-A1	1		
12V Power Supply	NRS	ERB/C 12/501	1		
12V Power Supply	Lamarche	A29-30-12V-A1	1		
Heavy Duty Double Throw Safety Switch 100 A					
240V/250DC	Siemens		1		
General Duty Safety Switch 100A 240V AC/250V DC	Square D	40276-004-02	1		
Automatic Transfer Switch	Kohler	KSS-DFNC-0100S	1		
AFTAC	Harmon	1101BT/R	1		
SURGE PANNEL		123	1		
TRANSMITTER		60371-1A	1		
OUT PUT FILTER		60257-C	1		
FRONT END FILTER		60235A	1		
RECEIVER		60360-1A	1		
DISCRIMINATOR		225020-020	1		
FILTER		225021-006	1		
MINI/MICRO COMPUTER REGULATOR	SOLAR ELECTRIC	63-23-150-8	1		
House Sig	de-C				
2.25V BATTERIES	GNB		7		
ADJUSTABE RESISTOR	RACO		20		
Heavy Duty Safety Switch 100A 240V AC/250V DC	Square D	40276-003-02	1		
House Side-D (Fire	Control Panel)				
Keypad	Raydioncs	D360TD	1		
Omega Alarm	Raydioncs	D8112	1		
Modem		D8129	1		
Battery		NP7-1212V,7.0Ah	1		

Airport Signal House Inventory



Airport Signal House Asset Inventory Image Inventory Item Rack 1 Rack 1 COMPONENT MANUFACTURER PART NUMBER COUNT BPL-1 EPC Rack 2 Rack 2 COMPONENT MANUFACTURER **PART NUMBER** COUNT A62-429 (56001-926-01) Vital Relay GRS 2 GRS Vital Relay A62-432 (50001-785-01) 1 Rectifier 120AC/120DC Switch Harmon 250756-000 1 510 Amplifier Module EPC 5 150-088019-050 Rev. B 530 CAB Coupler (2340 Feq.) EPC 150-088019-051 Rev. B 4 EPC 150-088019-060 Rev. B 540 Train Detection Coupler (3870 Feq.) 1

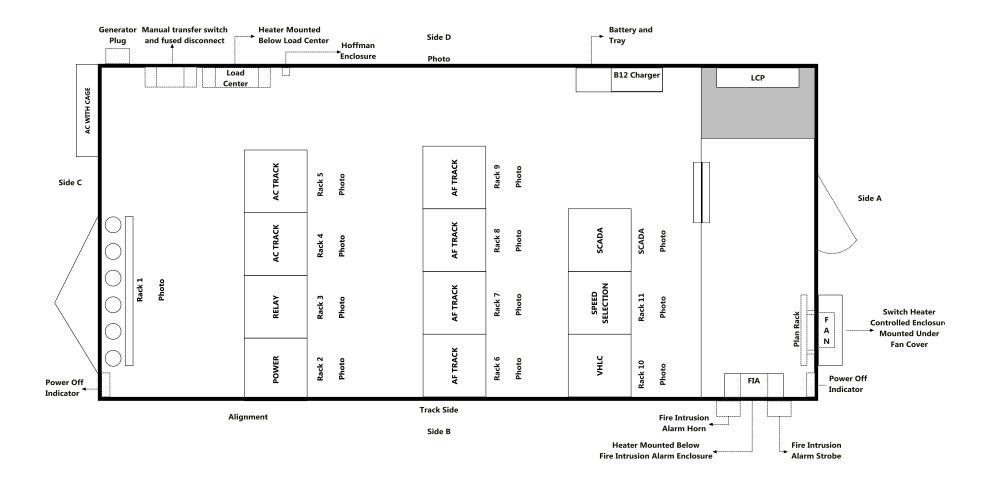
Airport Signal House Asset Inventory Item **Image** Inventory Rack 3 Rack 3 **COMPONENT MANUFACTURER PART NUMBER** COUNT Vital Relay GRS A62-122 (56001-921-07) 2 520 Receiver Module (2970 Feq.) **EPC** 150-088019-080 Rev. B 1 520 Receiver Module (4410 Feq.) EPC 150-088019-080 Rev. B 1 520 Receiver Module (3510 Feq.) EPC 150-088019-080 Rev. B 1 520 Receiver Module (3510 Feq.) **EPC** 150-088019-080 Rev. F 1 510 Amplifier Module EPC 150-088019-050 Rev. B 7 530 CAB Coupler (2340 Feq.) **EPC** 150-088019-051 Rev. B 4 540 Train Detection Coupler (2970 Feq.) **EPC** 150-088019-060 Rev. B 1 540 Train Detection Coupler (3510 Feq.) **EPC** 150-088019-060 Rev. B 1 540 Train Detection Coupler (4410 Feg.) **EPC** 150-088019-060 Rev. B 1 Rack 5 Rack 5 COMPONENT **MANUFACTURER PART NUMBER** COUNT XFMR Matching Rail Coupler EPC 800-088019-300 2 XFMR Loop Matching EPC 800-088019-200 1 GRS AC Vain Relay A62-486 1 **AC Vain Relay** Alstom A62-486 1 Bal Imp A3-117 2 3 ohm Resistor ABJ GRS A3-207 (01246-1) 2 2 25 ohm Resistor ABJ Dale 56105-11 530 CAB Coupler (2340 Feq.) EPC 150-088019-051 Rev. B 3 510 Amplifier Module EPC 150-088019-050 Rev. B 3 GRS **XFMR** (A95 50) 31094-000

Image	Inventory			
V atta		Rack 6		
A STATE OF THE STA	COMPONENT	MANUFACTU	TURER PART NUMBER	
100	520 Receiver Module (3690 Feq.)	EPC	150-088019-080	Rev. B 1
	520 Receiver Module (3330 Feq.)	EPC	150-088019-0801	Rev. B 2
Mary P. Mary Co., Co., Co., Co., Co., Co., Co., Co.,	520 Receiver Module (3330 Feq.)	EPC	150-088019-080	Rev. F 1
	520 Receiver Module (3690 Feq.)	EPC	150-088019-080	Rev. F 1
	520 Receiver Module (4950 Feq.)	EPC	150-088019-080	Rev. F 1
	510 Amplifier Module	EPC	150-088019-050 I	Rev. B 7
I I I I I I I I I I I I I I I I I I I	530 CAB Coupler (2340 Feq.)	EPC	150-088019-051	Rev. B 4
	540 Train Detection Coupler (3690 Feq.)	EPC	150-088019-060 I	Rev. B 1
	540 Train Detection Coupler (3330 Feq.)	EPC	150-088019-060 I	Rev. B 1
	3 to Train Detection Couples (1330 Feq.)		130 000013 000 1	Rev. B 1
1000	COMPONENT	Rack 7	DART NI IMRER	COUNT
A STATE OF THE PARTY OF THE PAR				1
				1
				1
				1
	` ' '	_		7
	·	EPC		4
Control of the contro		EPC	150-088019-060 Rev. B	1
THE COLUMN TWO IS NOT THE PARTY.		EPC	150-088019-060 Rev. B	1
	540 Train Detection Coupler (3330 Feq.)	EPC	150-088019-060 Rev. B	1
		S20 Receiver Module (3690 Feq.) 520 Receiver Module (3330 Feq.) 520 Receiver Module (3330 Feq.) 520 Receiver Module (3690 Feq.) 520 Receiver Module (4950 Feq.) 520 Receiver Module (4950 Feq.) 510 Amplifier Module 530 CAB Coupler (2340 Feq.) 540 Train Detection Coupler (3690 Feq.) 540 Train Detection Coupler (4950 Feq.) 540 Train Detection Coupler (4950 Feq.) 520 Receiver Module (4950 Feq.) 520 Receiver Module (3330Feq.) 520 Receiver Module (4230 Feq.) 510 Amplifier Module 530 CAB Coupler (2340 Feq.) 540 Train Detection Coupler (3690 Feq.) 540 Train Detection Coupler (4950 Feq.)	COMPONENT MANUFACTU	COMPONENT

Airport Signal House Asset Inventory Image Inventory Item Rack 9 Rack 9 MANUFACTURER COMPONENT **PART NUMBER** COUNT Rotary Dials (Full Hemisphere-OLD) 16 Rotary Dials (Half Hemisphere-NEW) 3 Non-Vital Relays 60 Rack 10 Rack 10 COMPONENT MANUFACTURER PART NUMBER COUNT A62-122 (56001-921-07) Vital Relay GRS 2 Vital Relay SafeTran 400900 3 VLP 2 ACP-2 2 SSM 2 CCI 2 VSD 1 VGP I/O 1 VGP I/O-12V 1 NV I/O 3 32 NVI 2 VGPI 16 2 Surge Protector BSA-4 250597 Harmon 1 RS-232 2 Modem 1 12V Power Supply

Airport Signal House Asset Inventory Image Inventory Item **SCADA SCADA** COMPONENT MANUFACTURER **PART NUMBER** COUNT Modem C186 1 SPX 1 DI 2 DO 2 REMZ 1 Relay 4 **Power Supply** 2 Non Vital Relays 32 **Batteries** Walls House Side-A COUNT COMPONENT **MANUFACTURER PART NUMBER** Switch Heater Push Button Box 1 **House Side-B** Diode Board (Control Panel) Harmon 1 Battery PowerSafe 12V 155FS 1 A29-60-24V 28V Power Supply Lamarche 1 **House Side-C** 12V Power Supply Lamarche: A12B-30-12V-A1 1 **House Side-D (Fire Control Panel)** Keypad Radionics D360TD 1 Omega Alarm D8112 Radionics 1 Modem D8129 Battery NP7-1212V,7.0Ah 1

Bellville Signal House

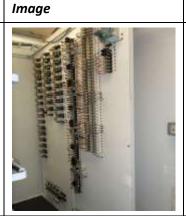


Bellville Signal House Asset Inventory

Iten	n

Inventory

Rack 1



	Rack 1		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
BPL-3	HARMON	150-097031-013 Rev. O	4
Carrier Surge Arrester 1	HARMON	250197-001	2

Rack 2



Rack 2					
COMPONENT	MANUFACTURER	PART NUMBER	COUNT		
Vital Relay	Alstom	A62-407 56001-745-02	1		
Vital Relay	Alstom	A62-122 56001-921-07	3		
POR XFMR	Alstom	31094-000-01 Rev. F	1		
28V Power Supply	Керсо	PRR 28-38M24787	2		
28V Power Supply	Керсо	PRM 28-17-24810	2		
Rectifier 25V .3A Selenium Type S	Alstom	A53-541	1		



Rack 3						
COMPONENT	MANUFACTURER	PART NUMBER	COUNT			
Rectifier 120AC/120DC Switch		250756-000	2			
Vital Relay	Alstom	A62-429 56001-926-01	8			
Vital Relay	Alstom	A62-432 56001-785-01	4			
Vital Relay	Alstom	A62-247	4			
Vital Relay	GRS	A62-122 56001-921-07	1			

Bellville S	Bellville Signal House Asset Inventory					
Item	Image	Inventory				
Rack 4			Rack 4			
		COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
		XFMR Loop Matching (2340 Feq.)	EPC	800-088019-200	1	
		XFMR Matching Rail Coupler	EPC	800-088019-300	2	
		AC Vain Relay	Alstom	A62-486	2	
		Bal Imp	Alstom	A3-117	2	
		1 ohm Resistor (1XT/3XT)	GRS	A3-207 (01246-1)	2	
		2.5 ohm Resistor (1XTRN/3XTRN)*		56105-11	2	
	The same of the sa	1T/1XT XFMR	Alstom	31094-000 (A95 50)	1	
		700 Amplifier Module		150-094017-022 Rev. D	1	
		700 Amplifier Module		150-094017-022 Rev. C	2	
		701-2 CAB Coupler (2340 Feq.)		150-097031-010 Rev. O	3	
		Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	1	
Rack 5		Rack 5				
		COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
	有一种人员	XFMR Loop Matching (2340 Feq.)	EPC	800-088019-200	1	
	The state of the s	XFMR Matching Rail Coupler	EPC	800-088019-300	2	
		AC Vain Relay	Alstom	A62-486	2	
	医型型	Bal Imp	Alstom	A3-117	2	
		1 ohm Resistor (1XT/3XT)	GRS	A3-207 (01246-1)	2	
		2.5 ohm Resistor (1XTRN/3XTRN)		56105-11	2	
	Months of the Control	3T/3XT XFMR	Alstom	31094-000 (A95 50)	1	
		700 Amplifier Module		150-094017-022 Rev. D	3	
	THE REPORT OF THE PARTY OF THE	701-2 CAB Coupler (2340 Feq.)		150-097031-010 Rev. O	3	
		Chassis AF Track XMT TTT-2	Getsgs	812097031-001	1	
		Chassis AF Track XMT TTT-2	Getsgs	812097031-001	1	

Bellville Signal House Asset Inventory						
Item	Image	Inventory				
Rack 6			Rack 6			
	用機能器接触	COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
	WHAT IN THE STATE OF	700 Amplifier Module		150-094017-022 Rev. D	7	
	Manual designation of the	701-2 CAB Coupler (2340 Feq.)		150-097031-010 Rev. O	4	
	COLUMN TWO IS NOT THE OWNER.	702-1 Track Coupler (4410 Feq.)		150-095025-034 Rev. B	1	
		702-1 Track Coupler (3870 Feq.)		150-095025-034 Rev. B	1	
		702-1 Track Coupler (2970 Feq.)		150-095025-034 Rev. B	1	
	A STATE OF THE PARTY OF THE PAR	703-1 Receiver Module (3510 Feq.)		150-095025-047 Rev. D	1	
	VANA I	703-1 Receiver Module (4410 Feq.)		150-095025-047 Rev. D	1	
	THE REAL PROPERTY.	703-1 Receiver Module (3870 Feq.)		150-095025-047 Rev. D	1	
	ASSESSED A LINE	703-1 Receiver Module (2970 Feq.)		150-095025-047 Rev. E	1	
		Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	2	
		AF Track Receiver Chassis	Getsgs	812-097031-034	1	
Rack 7	Name of the last o	Rack 7				
		COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
		700 Amplifier Module		150-094017-022 Rev. D	6	
		701-2 CAB Coupler (2340 Feq.)		150-097031-010 Rev. O	3	
		702-1 Track Coupler (4410 Feq.)		150-095025-034 Rev. B	1	
		702-1 Track Coupler (3870 Feq.)		150-095025-034 Rev. B	1	
	A STATE OF THE PARTY OF THE PAR	702-1 Track Coupler (2970 Feq.)		150-095025-034 Rev. B	1	
		703-1 Receiver Module (4410 Feq.)		150-095025-047 Rev. D	3	
		703-1 Receiver Module (3870 Feq.)		150-095025-047 Rev. D	1	
		Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	2	
		AF Track Receiver Chassis	Getsgs	812-097031-034	1	
	AND A MARKET TO THE					

Bellville Signal House Asset Inventory Item *Image* Inventory Rack 8 Rack 8 **COMPONENT MANUFACTURER PART NUMBER** COUNT 700 Amplifier Module 150-094017-022 Rev. C 7 150-094017-022 Rev. D 700 Amplifier Module 1 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 4 702-1 Track Coupler (3690 Feq.) 150-095025-034 Rev. CAO 1 702-1 Track Coupler (4950 Feq.) 150-095025-034 Rev. B 1 702-1 Track Coupler (3330 Feq.) 150-095025-034 Rev. B 1 1 702-1 Track Coupler (4230 Feq.) 150-095025-034 Rev. B 703-1 Receiver Module (4950 Feq.) 150-095025-047 Rev. E 1 703-1 Receiver Module (3330 Feq.) 150-095025-047 Rev. D 2 703-1 Receiver Module (4230 Feq.) 150-095025-047 Rev. D 2 Chassis AF Track XMT TTT-2 812-097031-001 2 Getsgs Rack 9 Rack 9 MANUFACTURER COMPONENT **PART NUMBER** COUNT 700 Amplifier Module 150-094017-022 Rev. D 5 3 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 702-1 Track Coupler (4950 Feq.) 150-095025-034 Rev. B 1 702-1 Track Coupler (3330 Feq.) 150-095025-034 Rev. B 1 703-1 Receiver Module (4950 Feg.) 150-095025-047 Rev. E 1 703-1 Receiver Module (3330 Feq.) 150-095025-047 Rev. D 1 703-1 Receiver Module (4230 Feq.) 150-095025-047 Rev. E 1 Chassis AF Track XMT TTT-2 812-097031-001 2 Getsgs **AF Track Receiver Chassis** Getsgs 812-097031-034 1

Bellville Signal House Asset Inventory

Item Image

Inventory

Rack 10



Rack 10					
COMPONENT	MANUFACTUROR	PART NUMBER	COUNT		
VLP			2		
ACP-2			2		
SSM			2		
CCI			2		
VSD			1		
VGPI 16			2		
VGP I/O-12V					
VGP I/O			3		
NV I/O			3		
32 NVI			4		
CLA Board			1		
RS-232			2		
Modem			2		
12V Power Supply			2		

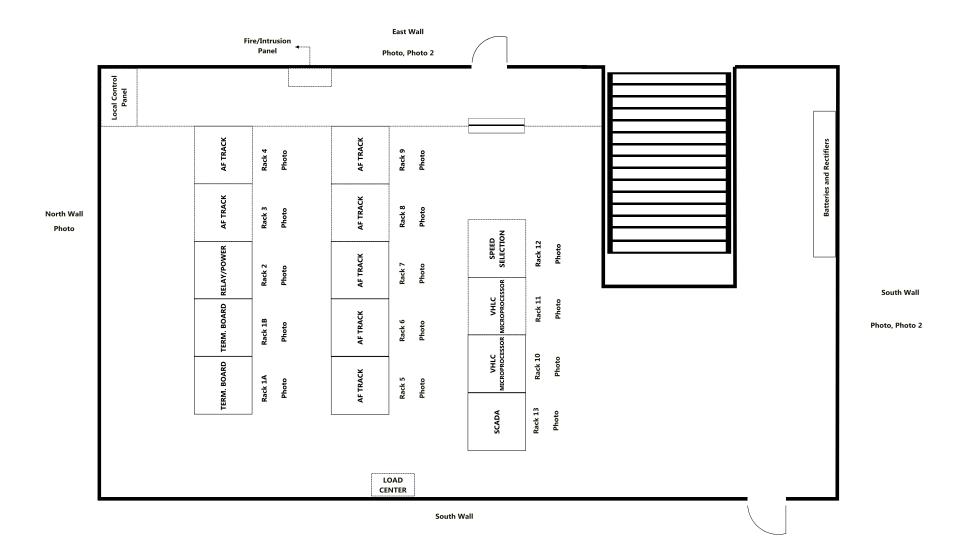


Rack 11			
COMPONENT	MANUFACTUROR	PART NUMBER	COUNT
Rotary Dials (HALF Hemisphere-NEW)			20
Non-Vital Relays			60
KEY LOCK SWITCH/2-POS 2-POLE STD LOCK	FOA SWITCH CORP	51-236 025D	1

Bellville S	Signal House Asset Inventory				
Item	Image	Inventory			
SCADA	The second like the second		SCADA		
		COMPONENT	MANUFACTUROR	PART NUMBER	COUNT
	A STATE OF THE PARTY OF THE PAR	Power Supply	Schneider Electric	TSXPSY1610	1
	E	CPU	Schneider Electric	TSP57203	1
		Memory Card	Schneider Automation S.A.	TSXMRP064P	1
	ARIE LAND	RS-232			1
		Input Card	Schneider Electric	TSX DEY12A2	6
	The state of the s	INPUT TERMINAL BLOCK	Schneider Automation S.A.	TSX BLY01	6
		Output Card	Schneider Electric	TSX DSY64T2K	1
	The state of the s	Output Cord	Phoenix Contact	22 98 438	2
		Relays	Phoenix Contact	ABE7*	2
		Power Supply	WEID MULLER	CSA 991534	1
		Battery Charger	WEID MULLER	991628 0024	1
		Batteries	CD Technologies	UPS12-150MR	2
		Backplane			1
		MODEM	MOTOROLA	B3600	1

Bellville	Signal House Asset Inventory				
Item	Image	Inventory			
Sides	3 (//	House Side-A			
		COMPONENT	MANUFACTUROR	PART NUMBER	COUNT
	The second is a second	FIA-Keypad Controller	NAPCO	RPC3000LCDe	1
	The state of the s	SWITCH HEATER CONTROL BOX			1
	Name of the	Hous	e Side-B		
		Fire Intrusion Alarm	NAPCO	MA 3000	1
	Tanana III	Battery	Genesis	NP7-1212V,7.0Ah	2
		Main Board			1
		Relay Boards			1
		Hous	se Side-C		
		Hous	e Side-D		
		Double Throw Enclosed Switch 100A 240V AC/ 250V DC	Square D	40274-556-01	1
		GENERAL Duty Safety Switch 100A 240V AC/ 250V DC	Square D	40275-933-01	1
		BATTERY SURGE ARRESTOR 4	US&S	N451552-0507	1
		Current Monitor*	NRS		1
		12V Power Supply	NRS	ERB-C 12/40C	1
		BATTERY	MARATHON	M12V90	1
		CLCP 256 IO LED Driver Module	Getsgs	Assy 227027-001 Rev. 806	1
		Power Supply CLCP 12VDC 20W	Getsgs	226609-200	1
		KEY LOCK SWITCH/2-POS 2-POLE STD. LOCK	EOA SWITCH CORP	51-236.025D	1

Big Bend Signal House



Item	Image	Inventory				
Rack 1A				Rack 1A		
10011 171		COMPONENT	MANUFACTURER	PART NUMBI	ER	COUNT
	2 2 1 2	BPL-3	Harmon	150-097031-013		11
ack 1B	78 3 6			Rack 1B		
		COMPONENT BPL-3	MANUFACTURER Harmon	PART NUMBE 150-097031-013 R		COUNT 11
	3 351					
ack 2			Rack 2			
ack 2		COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
ack 2		Vital Relay	MANUFACTURER Alstom	PART NUMBER A62-407 (56001-745-02)	1	
ack 2		Vital Relay Vital Relay	MANUFACTURER Alstom Alstom	PART NUMBER A62-407 (56001-745-02) A62-122 (56001-921-07)	3	
ack 2		Vital Relay Vital Relay Vital Relay	MANUFACTURER Alstom Alstom Alstom	PART NUMBER A62-407 (56001-745-02) A62-122 (56001-921-07) A62-247	1 3 4	
ack 2		Vital Relay Vital Relay Vital Relay XFMR	MANUFACTURER Alstom Alstom Alstom Alstom	PART NUMBER A62-407 (56001-745-02) A62-122 (56001-921-07) A62-247 31094-000-01 Rev. F	1 3 4 1	
ack 2		Vital Relay Vital Relay Vital Relay XFMR 28V Power Supply	MANUFACTURER Alstom Alstom Alstom Alstom Kepco	PART NUMBER A62-407 (56001-745-02) A62-122 (56001-921-07) A62-247 31094-000-01 Rev. F PRR 28-38M24787	1 3 4 1 3	
ack 2		Vital Relay Vital Relay Vital Relay XFMR	MANUFACTURER Alstom Alstom Alstom Alstom	PART NUMBER A62-407 (56001-745-02) A62-122 (56001-921-07) A62-247 31094-000-01 Rev. F	1 3 4 1	

Big Bend Signal House Asset Inventory Item **Image** Inventory Rack 3 Rack 3 COMPONENT **MANUFACTURER PART NUMBER** COUNT 28V Power Supply Керсо PRR 28-38M24787 3 28V Power Supply Kepco PRM 28-17-24810 Rack 4 Rack 4 COMPONENT **MANUFACTURER PART NUMBER** COUNT 700 Amplifier Module 150-094017-022 Rev. D Harmon 16 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 8 Harmon 702-1 Track Coupler (2970 Feg.) Harmon 150-095025-034 Rev. CAO 1 702-1 Track Coupler (3870 Feq.) Harmon 150-095025-034 Rev. CAO 1 702-1 Track Coupler (4410 Feq.) Harmon 150-095025-034 Rev. CAO 2 702-1 Track Coupler (3510 Feq.) 150-095025-034 Rev. CAO 1 Harmon 2 702-1 Track Coupler (2970 Feq.) 150-095025-034 Rev. CAO Harmon 702-1 Track Coupler (3870 Feq.) Harmon 150-095025-034 Rev. B 1 Chassis AF Track XMT TTT-2 Getsgs 812097031-001 4

Item	Image	Inventory			
Rack 5	THE PARTY OF	Kalen	Rack 5		
		COMPONENT	MANUFACTURER	PART NUMBER	COUN T
		700 Amplifier Module	Harmon	150-094017-022 Rev. D	16
	The state of the s	701-2 CAB Coupler (2340 Feq.)	Harmon	150-097031-010 Rev. O	9
	THE AMERICAN	702-1 Track Coupler (3510 Feq.)	Harmon	150-095025-034 Rev. CAO	2
		702-1 Track Coupler (2970 Feq.)	Harmon	150-095025-034 Rev. CAO	1
		702-1 Track Coupler (3870 Feq.)	Harmon	150-095025-034 Rev. CAO	2
		702 2 11 delt 00 dp.c. (00 70 1 eq.)		130 033023 03 1 1101. 6/10	. – .
	THE REAL PROPERTY.	702-1 Track Coupler (4410 Feq.)	Harmon	150-095025-034 Rev. CAO	2
Rack 6		702-1 Track Coupler (4410 Feq.)	Harmon	150-095025-034 Rev. CAO	2
ack 6		702-1 Track Coupler (4410 Feq.)	Harmon Getsgs	150-095025-034 Rev. CAO	2
ack 6		702-1 Track Coupler (4410 Feq.) Chassis AF Track XMT TTT-2	Harmon Getsgs	150-095025-034 Rev. CAO 812097031-001	2 4
ack 6		702-1 Track Coupler (4410 Feq.) Chassis AF Track XMT TTT-2 COMPONENT	Harmon Getsgs Rack 6 MANUFACTURER	150-095025-034 Rev. CAO 812097031-001 PART NUMBER	2 4
ack 6		702-1 Track Coupler (4410 Feq.) Chassis AF Track XMT TTT-2 COMPONENT 700 Amplifier Module	Rack 6 MANUFACTURER Harmon	150-095025-034 Rev. CAO 812097031-001 PART NUMBER 150-094017-022 Rev. D	2 4 COUNT 16
ack 6		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.)	Rack 6 MANUFACTURER Harmon Harmon	150-095025-034 Rev. CAO 812097031-001 PART NUMBER 150-094017-022 Rev. D 150-097031-010 Rev. O	2 4 COUNT 16 9
ack 6		COMPONENT 702-1 Track Coupler (4410 Feq.) Chassis AF Track XMT TTT-2 COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.)	Rack 6 MANUFACTURER Harmon Harmon Harmon	150-095025-034 Rev. CAO 812097031-001 PART NUMBER 150-094017-022 Rev. D 150-097031-010 Rev. O 150-095025-034 Rev. CAO	2 4 COUNT 16 9 2
ack 6		COMPONENT 702-1 Track Coupler (4410 Feq.) Chassis AF Track XMT TTT-2 COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.) 702-1 Track Coupler (3690 Feq.)	Rack 6 MANUFACTURER Harmon Harmon Harmon Harmon	150-095025-034 Rev. CAO 812097031-001 PART NUMBER 150-094017-022 Rev. D 150-097031-010 Rev. O 150-095025-034 Rev. CAO 150-095025-034 Rev. CAO	2 4 COUNT 16 9 2 2

ltem	Image	Inventory			
Rack 7			Rack 7		
		COMPONENT	MANUFACTURER	PART NUMBER	COUNT
		700 Amplifier Module	Harmon	150-094017-022 Rev. D	14
		701-2 CAB Coupler (2340 Feq.)	Harmon	150-097031-010 Rev. O	8
		702-1 Track Coupler (3330 Feq.)	Harmon	150-095025-034 Rev. CAO	3
		702-1 Track Coupler (4950 Feq.)	Harmon	150-095025-034 Rev. CAO	1
		702-1 Track Coupler (4230 Feq.)	Harmon	150-095025-034 Rev. CAO	1
	THE REAL PROPERTY OF THE PARTY	702-1 Track Coupler (3690 Feq.)	Harmon	150-095025-034 Rev. CAO	1
		Chassis AF Track XMT TTT-2	Getsgs	812097031-001	4
ack 8			Rack 8		
Rack 8		COMPONENT	Rack 8 MANUFACTURER	PART NUMBER	COUN
Rack 8		COMPONENT 703-1 Receiver Module (3870 Feq.)	Rack 8 MANUFACTURER Harmon	PART NUMBER 150-095025-047 Rev. FAO	COUN 6
ack 8			MANUFACTURER		
ack 8		703-1 Receiver Module (3870 Feq.)	MANUFACTURER Harmon	150-095025-047 Rev. FAO	6
dack 8		703-1 Receiver Module (3870 Feq.) 703-1 Receiver Module (4410 Feq.)	MANUFACTURER Harmon Harmon	150-095025-047 Rev. FAO 150-095025-047 Rev. FAO	6

Big Bend Signal House Asset Inventory Inventory Item **Image** Rack 9 Rack 9 COMPONENT MANUFACTURER PART NUMBER COUNT 703-1 Receiver Module (3690 Feq.) Harmon 150-095025-047 Rev. FAO 5 703-1 Receiver Module (4950 Feq.) 150-095025-047 Rev. FAO 6 Harmon 703-1 Receiver Module (3330 Feq.) 150-095025-047 Rev. FAO 5 Harmon 703-1 Receiver Module (4230 Feq.) Harmon 150-095025-047 Rev. FAO 3 AF Track Receiver Chassis Getsgs 812-097031-034 3 Rack 10 Rack 10 MANUFACTURER COMPONENT **PART NUMBER** COUNT HLC Cabinet with Lexan Cover Getsgs 226802-001 VLP 2 ACP-3 2 SSM 2 CCI 2 VSD 1 VGP I/O-12V 3 NV I/O 4 32 NVI 5 VGPI 16 2 **CLA Board** 1 RS-232 5 Modem 1 12V Power Supply

Big Bend Signal House Asset Inventory

Item	Image
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Inventory

Rack 11



	Rack 11		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
HLC Cabinet with Lexan Cover	Getsgs	226802-001	1
VLP			1
ACP-3			1
SSM			1
CCI			1
NV I/O			1
RS-232			2
Modem			1
12V Power Supply			1

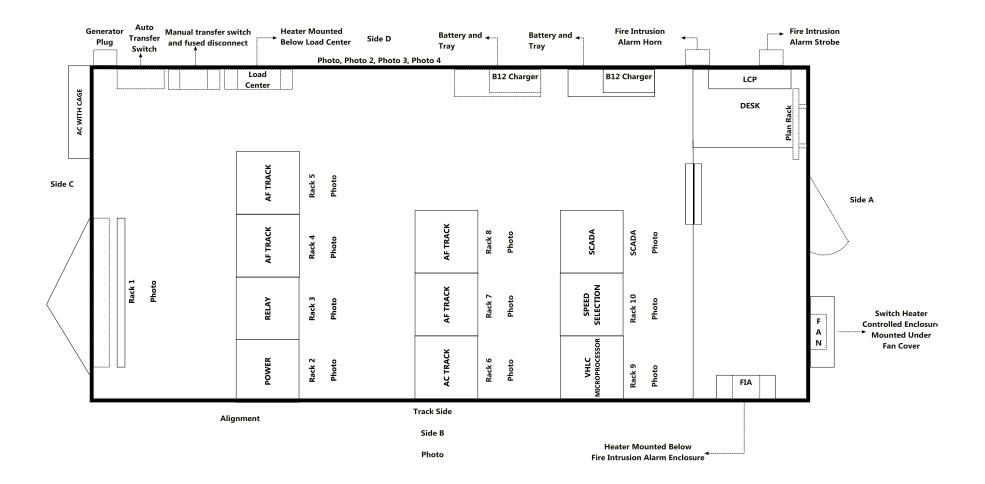


Rack 12			
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
Rotary Dials (Full Hemisphere-NEW)			34
Non-Vital Relays			78

Big Bend Signal House Asset Inventory Item **Image** Inventory **SCADA** SCADA MANUFACTURER COMPONENT **PART NUMBER** COUNT Power Supply Schneider Electric TSXPSY1610 1 CPU Schneider Electric TSP57203 1 Memory Card TSXMRP064P Schneider Automation S.A. 1 Input Card Schneider Electric TSXDEY32D2K 3 Input Cord Schneider Electric TSXCDP203 6 **Output Card** Schneider Electric TSXDSY32T2K 1 **Output Cord Phoenix Contact** 22 98 438 2 Input Card ABE7 Schneider Electric ABE7H16C11 6 Relays **Phoenix Contact** PLC-V8/FLK14/OUT 4 **Power Supply** Connect Power 992534 0024 1 **Battery Charger** Connect Power 991628 0024 1 **Batteries CD Technologies** UPS12-150MR 2 Fiber Media Converter GarrettCom Inc. CS14P-SST-48VDC 1 Phone Line Extender Tcom 1 1 Backplane

Big Bend Signal House Asset Inventory Image Inventory Item Sides **House East Wall** COMPONENT PART NUMBER MANUFACTURER COUNT FIA-Keypad Controller **NAPCO** RPC3000LCDe 1 Fire Intrusion Alarm NAPCO 1 NP7-1212V,7.0Ah 2 Battery Genesis Main Board 1 **Relay Boards** 1 **Expansion Modules** 1 Hawk Event Recorder 251210-00001 2 Getsgs **House North Wall** CLCP 256 IO LED Driver Module Getsgs Assy 227027-001 Rev. 806 1 Getsgs Power Supply CLCP 12VDC 20W 226609-200 1 **House West Wall House South Wall** Surge Protector 18V AC 15A USSP US&S N451552-0507 3 **Current Monitor** NRS 16775-00 2 12V Power Supply ERB-C 12/501C 2 NRS 2.25V Battery **GNB** 50A15 12

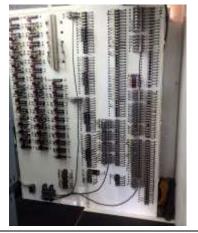
Brentwood Signal House



Brentwood Signal House Asset Inventory

Item	Image		Inventory
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Rack 1



	Rack 1			
	COMPONENT	MANUFACTURER	PART NUMBER	COUNT
Ī	BPL-3	HARMON	150-097031-013 Rev. O	3



	Rack 2		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
Vital Relay	Alstom	A62-407 (56001-745-02)	1
Vital Relay	Alstom	A62-122 (56001-921-07)	3
POR XFMR	Alstom	31094-000-01 Rev. F	1
28V Power Supply	Керсо	PRR 28-38M24787	2
28V Power Supply	Керсо	PRM 28-17-24810	2
BX110/NX110 - 100Hz Converter	Behlman	RR1200-100	1
Rectifier	Alstom	A53-541	1

Brentwood Signal House Asset Inventory					
Item	Image	Inventory			
Rack 3		Rack 3			
		COMPONENT	MANUFACTURER	PART NUMBER	COUNT
		Switch Rectifier 120AC/120DC		250756-000	2
		Vital Relay	Alstom	A62-429 (56001-926-01)	8
		Vital Relay	Alstom	A62-432 (56001-785-01)	4
		Vital Relay	Alstom	A62-122 (56001-921-07)	2
		Vital Relay	Alstom	A62-247	4
Rack 4		Rack 4			
		COMPONENT	MANUFACTURER	PART NUMBER	COUNT
		700 Amplifier Module	Harmon	150-094017-022 Rev. D	14
		701-2 CAB Coupler (2340 Feq.)	Harmon	150-097031-010 Rev. O	8
		702-1 Track Coupler (3870 Feq.)	Harmon	150-095025-034 Rev. CA	0 2
		702-1 Track Coupler (2970 Feq.)	Harmon	150-095025-034 Rev. CA	0 1
		702-1 Track Coupler (3510 Feq.)	Harmon	150-095025-034 Rev. CA	0 1
		702-1 Track Coupler (4410 Feq.)		150-095025-034 Rev. CA	
		702-1 Track Coupler (4410 Feq.)	Harmon	150-095025-034 Rev. B	1
		Chassis AF Track XMT TTT-2	Getsgs	812097031-001	4

Brentwood Signal House Asset Inventory Item *Image* Inventory Rack 5 Rack 5 **COMPONENT MANUFACTURER PART NUMBER** COUNT 700 Amplifier Module **HARMON** 150-094017-022 Rev. D 701-2 CAB Coupler (2340 Feq.) **HARMON** 150-097031-010 Rev. O 702-1 Track Coupler (3870 Feq.) **HARMON** 150-095025-034 Rev. CAO 1 702-1 Track Coupler (2970 Feg.) **HARMON** 150-095025-034 Rev. CAO 1 702-1 Track Coupler (3510 Feq.) **HARMON** 150-095025-034 Rev. CAO 1 702-1 Track Coupler (4410 Feq.) **HARMON** 150-095025-034 Rev. CAO 3 3 703-1 Receiver Module (4410 Feq.) **HARMON** 150-095025-047 Rev. FAO 703-1 Receiver Module (3870 Feq.) **HARMON** 150-095025-047 Rev. FAO 3 703-1 Receiver Module (2970 Feq.) **HARMON** 150-095025-047 Rev. FAO 2 703-1 Receiver Module (3510 Feq.) **HARMON** 2 150-095025-047 Rev. FAO 703-1 Receiver Module (3510 Feq.) **HARMON** 2 150-095025-047 Rev. E 703-1 Receiver Module (4410 Feq.) **HARMON** 150-095025-047 Rev. E 1 Chassis AF Track XMT TTT-2 Getsgs 812-097031-001 2 AF Track Receiver Chassis 812-097031-034 2 Getsgs Rack 6 Rack 6 MANUFACTURER COMPONENT PART NUMBER COUNT XFMR Loop Matching **EPC** 800-088019-200 2 **AC Vain Relay** Alstom A62-597 2 Alstom A3-117 2 Bal Imp GRS A3-207 (01246-1) 2 3 ohm Resistor 25 ohm Resistor 56105-11 2 2 **XFMR** 31094-000 (A95 50) Alstom 700 Amplifier Module **HARMON** 150-094017-022 Rev. D 4 3 701-2 CAB Coupler (2340 Feq.) **HARMON** 150-097031-010 Rev. O 702-1 Track Coupler (3870 Feq.) **HARMON** 150-095025-034 Rev. CAO 1 702-1 Track Coupler (4950 Feq.) **HARMON** 150-095025-034 Rev. CAO 1 **HARMON** 2 702-1 Track Coupler (3330 Feq.) 150-095025-034 Rev. CAO 702-1 Track Coupler (4230 Feq.) **HARMON** 150-095025-034 Rev. CAO 1 Chassis AF Track XMT TTT-2 Getsgs 812-097031-001 1

Brentwood Signal House Asset Inventory Item *Image* Inventory Rack 7 Rack 7 **COMPONENT** MANUFACTURER **PART NUMBER** COUNT 700 Amplifier Module **HARMON** 150-094017-022 Rev. D 16 9 701-2 CAB Coupler (2340 Feq.) **HARMON** 150-097031-010 Rev. O 702-1 Track Coupler (4950 Feq.) **HARMON** 150-095025-034 Rev. CAO 3 702-1 Track Coupler (3330 Feq.) **HARMON** 150-095025-034 Rev. B 1 702-1 Track Coupler (4230 Feq.) **HARMON** 150-095025-034 Rev. CAO 1 702-1 Track Coupler (3690 Feq.) **HARMON** 150-095025-034 Rev. CAO 1 702-1 Track Coupler (3330 Feq.) **HARMON** 150-095025-034 Rev. CAO 1 Chassis AF Track XMT TTT-2 Getsgs 812-097031-001 4 Rack 8 Rack 8 **COMPONENT** MANUFACTURER COUNT PART NUMBER 700 Amplifier Module **HARMON** 150-094017-022 Rev. D 8 701-2 CAB Coupler (2340 Feq.) **HARMON** 150-097031-010 Rev. O 4 **HARMON** 150-095025-034 Rev. CAO 702-1 Track Coupler (3330 Feq.) 1 702-1 Track Coupler (4230 Feg.) **HARMON** 150-095025-034 Rev. CAO 1 702-1 Track Coupler (3690 Feq.) **HARMON** 150-095025-034 Rev. CAO 1 702-1 Track Coupler (4950 Feq.) **HARMON** 150-095025-034 Rev. B 1 703-1 Receiver Module (3330 Feg.) **HARMON** 150-095025-047 Rev. FAO 4 703-1 Receiver Module (4230 Feq.) **HARMON** 150-095025-047 Rev. E 1 703-1 Receiver Module (3690 Feq.) **HARMON** 150-095025-047 Rev. FAO 2 703-1 Receiver Module (4230 Feq.) **HARMON** 150-095025-047 Rev. FAO 2 **HARMON** 703-1 Receiver Module (4950 Feq.) 150-095025-047 Rev. FAO 3 703-1 Receiver Module (4950 Feq.) **HARMON** 150-095025-047 Rev. E 1 Chassis AF Track XMT TTT-2 Getsgs 812-097031-001 2 2 AF Track Receiver Chassis Getsgs 812-097031-034

Brentwood Signal House Asset Inventory

Image Item

Inventory

Rack 9



	Rack 9		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
HLC Cabinet with Lexan Cover	Getsgs	226802-001	2
VLP			2
ACP-3			2
SSM			2
CCI			2
VSD			1
VGP I/O-12V			2
NV I/O			4
32 NVI			6
VGPI 16			2
CLA Board			1
RS-232			4
Modem			2
12V Power Supply			2

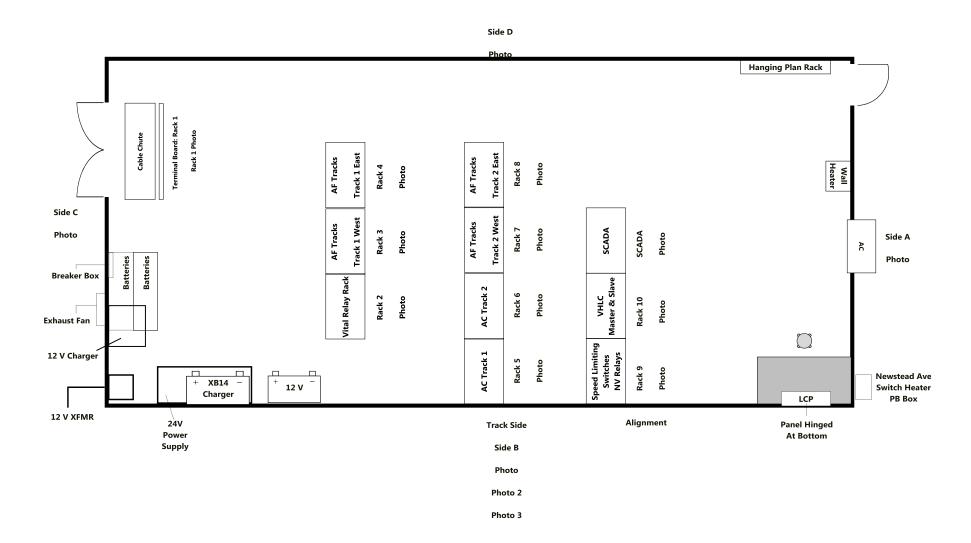


	Rack 10		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
Rotary Dials (Full Hemisphere-NEW)			28
Non-Vital Relays			82

Brentwood Signal House Asset Inventory Image Inventory Item **SCADA** SCADA COMPONENT MANUFACTURER **PART NUMBER** COUNT **Power Supply** Schneider Electric TSXPSY1610 1 CPU Schneider Electric TSP57203 1 Memory Card TSXMRP064P Schneider Automation S.A. 1 Input Card Schneider Electric TSXDEY32D2K 3 Input Cord Schneider Electric TSXCDP203 6 **Output Card** Schneider Electric TSXDSY32T2K 1 **Output Cord Phoenix Contact** 22 98 438 2 Input Card ABE7 Schneider Electric ABE7H16C11 6 Relays **Phoenix Contact** PLC-V8/FLK14/OUT 4 **Power Supply** Connect Power 992534 0024 1 **Battery Charger** Connect Power 991628 0024 1 **Batteries CD** Technologies UPS12-150MR 2 GarrettCom Inc. CS14P-SST-48VDC Fiber Media Converter 1 Phone Line Extender Tcom 1 Backplane 1

Brentwood Signal House Asset Inventory Item **Image** Inventory **House Side-A** Sides COMPONENT PART NUMBER **MANUFACTURER** COUNT FIA-Keypad Controller NAPCO RPC3000LCDe 1 Switch Heater Push Button Box 1 House Side-B Fire Intrusion Alarm NAPCO 1 NP7-1212V,7.0Ah 2 **Battery** Genesis 1 Main Board **Relay Boards** 1 **Expansion Modules House Side-C House Side-D** CLCP 256 IO LED Driver Module Assy 227027-001 Rev. 806 Getsgs 1 226609-200 Power Supply CLCP 12VDC 20W Getsgs 1 Double Throw Enclosed Switch 100A 240V AC/ 250V DC Square D 40275-953-01 1 Heavy Duty Safety Switch 100A 240V AC/ 250V DC Square D 40276-003-01 1 Heavy Duty Safety Switch 100A 240V AC/ 250V DC Square D 40276-003-02 1 **Automatic Transfer Switch** Kohler KCT-AFNA-0104S 1 Hawk Event Recorder 251210-00001 Getsgs 1 Surge Protector 18V AC 15A USSP US&S N451552-0507 2 **Current Monitor** NRS 16775-00 2 ERB-C 12/501C 2 12V Power Supply NRS 2.25V Battery **GNB** 50A15 12

Central West End Signal House



Central West End Signal House Asset Inventory

Item	Image
Rack 1	

Inventory

Rack 1						
COMPONENT	MANUFACTURER	PART NUMBER	COUNT			
BPL-3	HARMON	150-097031-013 REV.O	1			
BPL-1						

Rack 2



Rack 2					
COMPONENT	MANUFACTURER	PART NUMBER	COUNT		
SWITCH RECTIFIER 12AC/120DC SWITCH	HARMON	250756-00	2		
Vital Relay	GRS	A62-429 (56001-926-01)	8		
Vital Relay	GRS	A62-432 (56001-785-01)	4		
Vital Relay	GRS	A62-122 (56001-921-07)	6		
Vital Relay	ALSTOM	56001-934	1		
Vital Relay	GRS	A62-407 (56001-745-02)	1		
Vital Relay	GRS	A62-360 (56001-774-01)	1		
Vital Relay	SAFETRAN	400023	1		
Rectifier		A53-541	1		
Flasher Relay	GRS	30733-1	1		
2 OHM ADJUSTABLE RESISTOR	SAFETRAN	602-6	6		

Central West End Signal House Asset Inventory							
Item	Image	Inventory	Inventory				
Rack 3			Rack 3				
	Salar	COMPONENT	MANUFACTURER	PART NUMBER	COUNT		
	The same of the sa	520 Receiver Module (2970 Feg.)	EPC	150-088019-080 Rev. B	1		
	The state of the s	520 Receiver Module (3510 Feg.)	EPC	150-088019-080 Rev. B	1		
		520 Receiver Module (3870 Feq.)	EPC	150-088019-080 Rev. B	1		
		520 Receiver Module (4410 Feq.)	EPC	150-088019-080 Rev. B	2		
		510 Amplifier Module	EPC	150-088019-050 Rev. B	7		
		510 Amplifier Module	EPC	150-088019-050 Rev. F	1		
		530 CAB Coupler (2340 Feq.)	EPC	150-088019-051 Rev. B	4		
		540 Train Detection Coupler (2970 Feq.)	EPC	150-088019-060 Rev. B	1		
		540 Train Detection Coupler (3510 Feq.)	EPC	150-088019-060 Rev. B	1		
		540 Train Detection Coupler (4410 Feq.)	EPC	150-088019-060 Rev. B	1		
		540 Train Detection Coupler (3870 Feq.)	EPC	150-088019-060 Rev. B	1		
		XMIT CHASSIS	EPC	800-088019-020	2		
		RECEIVER CHASSIS	EPC	800-088019-030	1		
Dools 4			Pack 4				
Rack 4		COMPONENT	Rack 4	PART NIIMRER	COUNT		
Rack 4		COMPONENT Vital Polav	MANUFACTURER	PART NUMBER			
Rack 4		Vital Relay	MANUFACTURER GRS	A62-122 (56001-921-07)	1		
Rack 4		Vital Relay 520 Receiver Module (3510 Feq.)	MANUFACTURER GRS EPC	A62-122 (56001-921-07) 150-088019-080 Rev. B	1 2		
Rack 4		Vital Relay 520 Receiver Module (3510 Feq.) 520 Receiver Module (2970 Feq.)	MANUFACTURER GRS EPC EPC	A62-122 (56001-921-07) 150-088019-080 Rev. B 150-088019-080 Rev. F	1 2 1		
Rack 4		Vital Relay 520 Receiver Module (3510 Feq.) 520 Receiver Module (2970 Feq.) 520 Receiver Module (4410 Feq.)	MANUFACTURER GRS EPC EPC EPC	A62-122 (56001-921-07) 150-088019-080 Rev. B 150-088019-080 Rev. F 150-088019-080 Rev. B	1 2 1 2		
Rack 4		Vital Relay 520 Receiver Module (3510 Feq.) 520 Receiver Module (2970 Feq.) 520 Receiver Module (4410 Feq.) 520 Receiver Module (3870 Feq.)	MANUFACTURER GRS EPC EPC EPC EPC	A62-122 (56001-921-07) 150-088019-080 Rev. B 150-088019-080 Rev. F 150-088019-080 Rev. B 150-088019-080 Rev. B	1 2 1 2 2		
Rack 4		Vital Relay 520 Receiver Module (3510 Feq.) 520 Receiver Module (2970 Feq.) 520 Receiver Module (4410 Feq.) 520 Receiver Module (3870 Feq.) 510 Amplifier Module	GRS EPC EPC EPC EPC EPC EPC	A62-122 (56001-921-07) 150-088019-080 Rev. B 150-088019-080 Rev. F 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-050 Rev. B	1 2 1 2 2 2 8		
Rack 4		Vital Relay 520 Receiver Module (3510 Feq.) 520 Receiver Module (2970 Feq.) 520 Receiver Module (4410 Feq.) 520 Receiver Module (3870 Feq.) 510 Amplifier Module 530 CAB Coupler (2340 Feq.)	GRS EPC EPC EPC EPC EPC EPC EPC EPC EPC	A62-122 (56001-921-07) 150-088019-080 Rev. B 150-088019-080 Rev. F 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-050 Rev. B 150-088019-051 Rev. B	1 2 1 2 2 2 8 4		
Rack 4		Vital Relay 520 Receiver Module (3510 Feq.) 520 Receiver Module (2970 Feq.) 520 Receiver Module (4410 Feq.) 520 Receiver Module (3870 Feq.) 510 Amplifier Module 530 CAB Coupler (2340 Feq.) 540 Train Detection Coupler (2970 Feq.)	GRS EPC	A62-122 (56001-921-07) 150-088019-080 Rev. B 150-088019-080 Rev. F 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-050 Rev. B 150-088019-051 Rev. B 150-088019-060 Rev. B	1 2 1 2 2 2 8 4		
ack 4		Vital Relay 520 Receiver Module (3510 Feq.) 520 Receiver Module (2970 Feq.) 520 Receiver Module (4410 Feq.) 520 Receiver Module (3870 Feq.) 510 Amplifier Module 530 CAB Coupler (2340 Feq.) 540 Train Detection Coupler (2970 Feq.) 540 Train Detection Coupler (3510 Feq.)	GRS EPC	A62-122 (56001-921-07) 150-088019-080 Rev. B 150-088019-080 Rev. F 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-050 Rev. B 150-088019-051 Rev. B 150-088019-060 Rev. B	1 2 1 2 2 2 8 4 1 1		
Rack 4		Vital Relay 520 Receiver Module (3510 Feq.) 520 Receiver Module (2970 Feq.) 520 Receiver Module (4410 Feq.) 520 Receiver Module (3870 Feq.) 510 Amplifier Module 530 CAB Coupler (2340 Feq.) 540 Train Detection Coupler (2970 Feq.) 540 Train Detection Coupler (4410 Feq.)	GRS EPC	A62-122 (56001-921-07) 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-050 Rev. B 150-088019-051 Rev. B 150-088019-060 Rev. B 150-088019-060 Rev. B	2 1 2 2 8 4 1 1		
Rack 4		Vital Relay 520 Receiver Module (3510 Feq.) 520 Receiver Module (2970 Feq.) 520 Receiver Module (4410 Feq.) 520 Receiver Module (3870 Feq.) 510 Amplifier Module 530 CAB Coupler (2340 Feq.) 540 Train Detection Coupler (2970 Feq.) 540 Train Detection Coupler (4410 Feq.) 540 Train Detection Coupler (3870 Feq.)	GRS EPC	A62-122 (56001-921-07) 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-050 Rev. B 150-088019-050 Rev. B 150-088019-060 Rev. B 150-088019-060 Rev. B 150-088019-060 Rev. B	1 2 1 2 2 8 4 1 1 1		
Rack 4		Vital Relay 520 Receiver Module (3510 Feq.) 520 Receiver Module (2970 Feq.) 520 Receiver Module (4410 Feq.) 520 Receiver Module (3870 Feq.) 510 Amplifier Module 530 CAB Coupler (2340 Feq.) 540 Train Detection Coupler (2970 Feq.) 540 Train Detection Coupler (4410 Feq.)	GRS EPC	A62-122 (56001-921-07) 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-050 Rev. B 150-088019-051 Rev. B 150-088019-060 Rev. B 150-088019-060 Rev. B	1 2 1 2 2 8 4 1 1		

Central West End Signal House Asset Inventory							
Item	Image	Inventory	Inventory				
Rack 5	200000000000000000000000000000000000000	Rack 5					
	The state of the s	COMPONENT	MANUFACTURER	PART NUMBER	COUNT		
	新聞記録器 ()	XFMR Matching Rail Coupler	EPC	800-088019-300	2		
	· · · · · · · · · · · · · · · · · · ·	XFMR Loop Matching	EPC	800-088019-200	1		
		AC Vain Relay	GRS	A62-486	2		
		Bal Imp		A3-117	2		
		3 OHM ADJUSTABLE Resistor	GRS	A3-207 (01246-1)	2		
	A STATE OF THE STA	25 OHM ADJUSTABLE Resistor		56105-11	2		
		XFMR	GRS	31094-000 (A95 50)	1		
		510 Amplifier Module	EPC	150-088019-050 Rev. B	3		
					_		
		530 CAB Coupler (2340 Feq.)	EPC	150-088019-051 Rev. B	3		
		530 CAB Coupler (2340 Feq.) XMIT CHASSIS	EPC EPC	150-088019-051 Rev. B 800-088019-020	1		
Rack 6							
Rack 6			EPC		1		
Rack 6		XMIT CHASSIS	Rack 6 MANUFACTURER EPC	800-088019-020	1		
Rack 6		COMPONENT	Rack 6 MANUFACTURER	800-088019-020 PART NUMBER	1 COUNT		
Rack 6		COMPONENT XFMR Matching Rail Coupler	Rack 6 MANUFACTURER EPC	PART NUMBER 800-088019-300 800-088019-200 A62-486	COUNT 2		
Rack 6		COMPONENT XFMR Matching Rail Coupler XFMR Loop Matching AC Vain Relay Bal Imp	Rack 6 MANUFACTURER EPC EPC Alstom	PART NUMBER 800-088019-300 800-088019-200 A62-486 A3-117	1 COUNT 2 1 2 2		
Rack 6		COMPONENT XFMR Matching Rail Coupler XFMR Loop Matching AC Vain Relay Bal Imp 3 OHM ADJUSTABLE Resistor	Rack 6 MANUFACTURER EPC EPC Alstom GRS	PART NUMBER 800-088019-300 800-088019-200 A62-486 A3-117 A3-207 (01246-1)	1 COUNT 2 1 2 2 2		
Rack 6		COMPONENT XFMR Matching Rail Coupler XFMR Loop Matching AC Vain Relay Bal Imp 3 OHM ADJUSTABLE Resistor 25 OHM ADJUSTABLE Resistor	Rack 6 MANUFACTURER EPC EPC Alstom GRS Dale	PART NUMBER 800-088019-300 800-088019-300 800-088019-200 A62-486 A3-117 A3-207 (01246-1) 56105-11	1 COUNT 2 1 2 2 2 2		
Rack 6		COMPONENT XFMR Matching Rail Coupler XFMR Loop Matching AC Vain Relay Bal Imp 3 OHM ADJUSTABLE Resistor 25 OHM ADJUSTABLE Resistor XFMR	Rack 6 MANUFACTURER EPC EPC Alstom GRS Dale GRS	PART NUMBER 800-088019-300 800-088019-300 800-088019-200 A62-486 A3-117 A3-207 (01246-1) 56105-11 31094-000 (A95 50)	1 COUNT 2 1 2 2 2 2 1		
Rack 6		COMPONENT XFMR Matching Rail Coupler XFMR Loop Matching AC Vain Relay Bal Imp 3 OHM ADJUSTABLE Resistor 25 OHM ADJUSTABLE Resistor XFMR 510 Amplifier Module	Rack 6 MANUFACTURER EPC EPC Alstom GRS Dale GRS EPC	800-088019-020 PART NUMBER 800-088019-300 800-088019-200 A62-486 A3-117 A3-207 (01246-1) 56105-11 31094-000 (A95 50) 150-088019-050 Rev. B	1 COUNT 2 1 2 2 2 2 1 2		
Rack 6		COMPONENT XFMR Matching Rail Coupler XFMR Loop Matching AC Vain Relay Bal Imp 3 OHM ADJUSTABLE Resistor 25 OHM ADJUSTABLE Resistor XFMR 510 Amplifier Module 510 Amplifier Module	Rack 6 MANUFACTURER EPC EPC Alstom GRS Dale GRS EPC EPC	800-088019-020 PART NUMBER 800-088019-300 800-088019-200 A62-486 A3-117 A3-207 (01246-1) 56105-11 31094-000 (A95 50) 150-088019-050 Rev. B 150-088019-050 Rev. F	1 COUNT 2 1 2 2 2 2 1 2 1		
Rack 6		COMPONENT XFMR Matching Rail Coupler XFMR Loop Matching AC Vain Relay Bal Imp 3 OHM ADJUSTABLE Resistor 25 OHM ADJUSTABLE Resistor XFMR 510 Amplifier Module	Rack 6 MANUFACTURER EPC EPC Alstom GRS Dale GRS EPC	800-088019-020 PART NUMBER 800-088019-300 800-088019-200 A62-486 A3-117 A3-207 (01246-1) 56105-11 31094-000 (A95 50) 150-088019-050 Rev. B	1 COUNT 2 1 2 2 2 2 1 2		

Item	Image	Inventory				
Rack 7		Rack 7				
	The state of the s	COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
	THE PERSON NAMED IN STREET	Vital Relay	SafeTran	400900	4	
	O Bandones	520 Receiver Module (3690 Feq.)	EPC	150-088019-080 Rev. B	1	
		520 Receiver Module (4950 Feq.)	EPC	150-088019-080 Rev. B	3	
		520 Receiver Module (3330 Feq.)	EPC	150-088019-080 Rev. B	2	
	M	510 Amplifier Module	EPC	150-088019-050 Rev. B	6	
		510 Amplifier Module	EPC	150-088019-050 Rev. F	1	
		530 CAB Coupler (2340 Feq.)	EPC	150-088019-051 Rev. B	4	
		540 Train Detection Coupler (3690 Feq.)	EPC	150-088019-060 Rev. B	1	
THE STREET	540 Train Detection Coupler (3330Feq.)	EPC	150-088019-060 Rev. B	1		
	540 Train Detection Coupler (4950 Feq.)	EPC	150-088019-060 Rev. B	1		
	XMIT CHASSIS	EPC	800-088019-020	2		
	A STREET, STRE	RECEIVER CHASSIS	EPC	800-088019-030	1	
Rack 8	T	Rack 8				
	The state of the s	COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
		Vital Relay	GRS	A62-122 56001-921-07	2	
	THE RESERVE OF THE PARTY OF THE	520 Receiver Module (3690 Feq.)	EPC	150-088019-080 Rev. F	1	
	THE RESIDENCE OF THE PARTY OF T	520 Receiver Module (3690 Feq.)	EPC	150-088019-080 Rev. F	1	
		520 Receiver Module (3690 Feq.)	EPC	150-088019-080 Rev. B	1	
		520 Receiver Module (4950 Feq.)	EPC	150-088019-080 Rev. B	1	
		520 Receiver Module (3330 Feq.)	EPC	150-088019-080 Rev. B	2	
	THE PARTY OF THE P	520 Receiver Module (4230 Feq.)	EPC	150-088019-080 Rev. B	1	
	THE REAL PROPERTY AND ADDRESS OF THE PERSON NAMED AND ADDRESS	510 Amplifier Module	EPC	150-088019-050 Rev. B	7	
		530 CAB Coupler (2340 Feq.)	EPC	150-088019-051 Rev. B	4	
		330 C/ 12 Couplet (23 to 1 eq.)		150-088019-060 Rev. B	1	
		540 Train Detection Coupler (3690 Feq.)	EPC	120-088013-000 KeV. B		
			EPC EPC	150-088019-060 Rev. B	1	
		540 Train Detection Coupler (3690 Feq.)			1	
		540 Train Detection Coupler (3690 Feq.) 540 Train Detection Coupler (4950Feq.)	EPC	150-088019-060 Rev. B		

Central West End Signal House Asset Inventory Image Inventory Item Rack 9 Rack 9 COMPONENT MANUFACTURER PART NUMBER COUNT Rotary Dials (Full Hemisphere-OLD) 22 Non-Vital Relays 72 Rack 10 Rack 10 MANUFACTURER **COMPONENT PART NUMBER** COUNT Vital Relay GRS A62-122 (56001-921-07) 3 VLP 2 ACP-2 2 SSM 2 CCI 2 VSD 1 VGP I/O 3 VGP I/O-12V 1 NV I/O 5 32 NVI 2 VGPI 16 4 Surge Protector BSA-4 Harmon 250597 1 RS-232 2 Modem 2 12V Power Supply 2 VHLC CHASSIS 226607=003 2 Harmon

Central West End Signal House Asset Inventory					
Item	Image	Inventory			
SCADA	12-111		SCADA		
	222 111 4	COMPONENT	MANUFACTURER	PART NUMBER	COUNT
	AND THE REAL PROPERTY AND ADDRESS OF THE PARTY	Modem	Telenetics	V3600	1
	THE PARTY OF THE P	Power Supply	Modicon	TSXPSY1610	1
	EE BOA	CPU	Modicon	TSXP57203	1
	10000000000000000000000000000000000000	RS-232			1
	The latest and the la	Memory Card			1
	AND DESCRIPTIONS AND	Input Card	Modicon	TSX DEY32D2K	3
		Input Cord			6
	TOTAL DISEASE OF THE PARTY OF T	Output Card	Modicon	TSXDSY32T2K	1
		Output Cord		22 98 438	2
		Input Card ABE7			6
		Relays	Phoenix Contact	PLC-V8/FLK14/OUT	4
		Power Supply	Connect Power	992534 0024	1
		Battery Charger	Connect Power	991628 0024	1
		Batteries	Technologies Power Solutions	UPS12-140FR	2
		BACKPLANE	SCHNEIDER ELECTRIC	TSXRKY12EX	1

Central West End Signal House Asset Inventory

Image Item

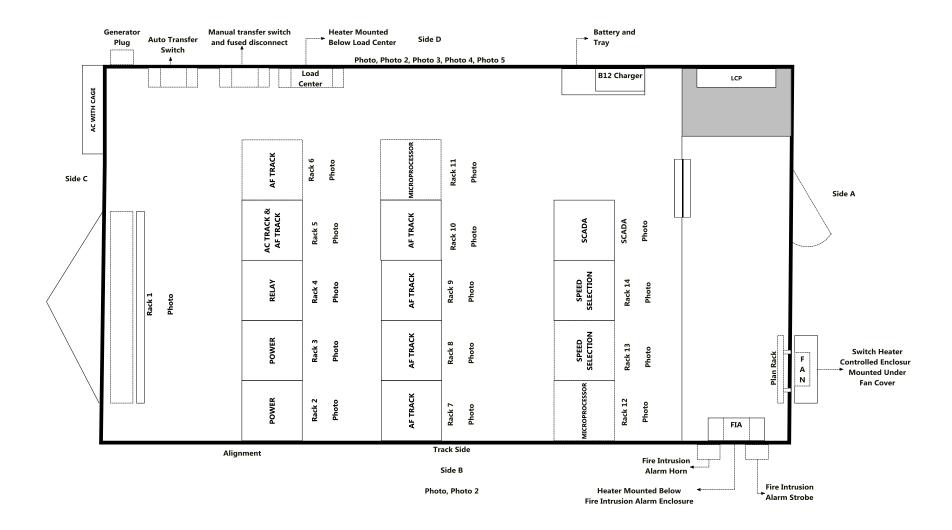
Sides



Inventory

House	Side-A					
COMPONENT	MANUFACTURER	PART NUMBER	COUNT			
Switch Heater Push Button Box			1			
PUSH BUTTON CONTROL BOX			1			
House	House Side-B					
Diode Board (Control Panel)	Harmon		1			
Battery	PowerSafe	12V 155FS	1			
28V Power Supply	Lamarche	A29-60-24V-A1	1			
28V Power Supply	Lamarche	A29-20-24V-A1	1			
12V Power Supply	Lamarche	A12B-30-12V-A1	1			
Heavy Duty Double Throw Safety Switch 100 A						
240V/250DC	Siemens		1			
General Duty Safety Switch 100A 240V AC/250V						
DC	Square D	40276-004-02	1			
Automatic Transfer Switch	Kohler	KSS-DFNC-0100S	1			
House	Side-C					
Heavy Duty Safety Switch 100A 240V AC/250V DC	Square D	40276-003-02	1			
12V Power Supply	NRS	ERB/C 12/501	1			
TRANSFORMER	Harmon	MLT-50	2			
SURGE SUPPRESSOR	EATON	PTX160-1S101	1			
2.25 V BATTERY	GNB		8			
House Side-D (Fir	e Control Panel)					
Keypad	Raydioncs	D360TD	1			
Omega Alarm	Raydioncs	D8112	1			
Modem		D8129	1			
Battery		NP7-1212V,7.0Ah	1			

Debaliviere Signal House



Debaliviere Signal House Asset Inventory

Item

Image

Inventory

Rack 1



	Rack 1		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
BPL-3	Harmon	150-097031-013 Rev. O	4
ISOLATED LOOP CIRCUIT PROTECTOR		PC642C-036X	3



Rack 2					
COMPONENT	MANUFACTURER	PART NUMBER	COUNT		
Vital Relay	Alstom	A62-407 (56001-745-02)	1		
Vital Relay	Alstom	A62-122 (56001-921-07)	8		
XFMR	Alstom	31094-000-01 Rev. F	1		
28V Power Supply	Керсо	PRR 28-38M24787	3		
28V Power Supply	Керсо	PRM 28-17-24810	1		
Rectifier	Alstom	A53-541	1		

Debaliviere Signal House Asset Inventory

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Inventory

Rack 3



	Rack 3		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
28V Power Supply	Керсо	PRR 28-38M24787	3
28V Power Supply	Керсо	PRM 28-17-24810	1



	Rack 4		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
Switch Rectifier 120AC/120DC		250756-000	2
Vital Relay	Alstom	A62-429 (56001-926-01)	4
Vital Relay	Alstom	A62-432 (56001-785-01)	2
Vital Relay	Alstom	A62-122 (56001-921-07)	2
Vital Relay	Alstom	A62-247	6

Debaliviere Signal House Asset Inventory Item **Image** Inventory Rack 5 Rack 5 COMPONENT **MANUFACTURER PART NUMBER** COUNT XFMR Loop Matching EPC 800-088019-200 2 2 **AC Vain Relay** Alstom A62-0486 Bal Imp Alstom A3-117 2 3 ohm Resistor GRS A3-207 (01246-1) 2 25 ohm Resistor 56105-11 2 **XFMR** Alstom 31094-000 (A95 50) 2 700 Amplifier Module Harmon 150-094017-022 Rev. D 4 701-2 CAB Coupler (2340 Feq.) 2 Harmon 150-097031-010 Rev. O 702-1 Track Coupler (3870 Feq.) Harmon 150-095025-034 Rev. B 1 702-1 Track Coupler (4410 Feq.) Harmon 150-095025-034 Rev. CAO 1 Chassis AF Track XMT TTT-2 812-097031-001 1 Getsgs Rack 6 Rack 6 COMPONENT **MANUFACTURER PART NUMBER** COUNT 700 Amplifier Module Harmon 150-094017-022 Rev. D 15 701-2 CAB Coupler (2340 Feq.) Harmon 150-097031-010 Rev. O 10 702-1 Track Coupler (3510 Feq.) Harmon 150-095025-034 Rev. CAO 1 702-1 Track Coupler (4410 Feq.) Harmon 150-095025-034 Rev. CAO 1 702-1 Track Coupler (4230 Feg.) Harmon 150-095025-034 Rev. CAO 2 702-1 Track Coupler (3690 Feq.) Harmon 150-095025-034 Rev. CAO 1 Chassis AF Track XMT TTT-2 812097031-001 4 Getsgs

Item	Image	Inventory			
Rack 7	CO COST OF		Rack 7		
	(国际) [1]	COMPONENT	MANUFACTURER	PART NUMBER	COUNT
		700 Amplifier Module	Harmon	150-094017-022 Rev. D	15
		701-2 CAB Coupler (2340 Feq.)	Harmon	150-097031-010 Rev. O	9
	Charles and the	702-1 Track Coupler (3510 Feq.)	Harmon	150-095025-034 Rev. CAO	1
	A CONTRACTOR OF THE PARTY OF TH	702-1 Track Coupler (2970 Feq.)	Harmon	150-095025-034 Rev. CAO	1
		702-1 Track Coupler (3510 Feq.)	Harmon	150-095025-034 Rev. CAO	1
		702-1 Track Coupler (3870 Feq.)	Harmon	150-095025-034 Rev. CAO	1
		702-1 Track Coupler (4410 Feq.)	Harmon	150-095025-034 Rev. CAO	1
		702-1 Track Coupler (3510 Feq.)	Harmon	150-095025-034 Rev. CAO	1
	AND THE RESERVE OF THE PERSON	Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	4
Rack 8			Rack 8		
Rack 8		COMPONENT	Rack 8 MANUFACTURER	PART NUMBER	COUNT
Rack 8		700 Amplifier Module	MANUFACTURER Harmon	150-094017-022 Rev. D	16
Rack 8		700 Amplifier Module 701-2 CAB Coupler (2340 Feq.)	MANUFACTURER Harmon Harmon	150-094017-022 Rev. D 150-097031-010 Rev. O	16 9
Rack 8		700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.)	MANUFACTURER Harmon Harmon Harmon	150-094017-022 Rev. D 150-097031-010 Rev. O 150-095025-034 Rev. CAO	16 9 1
Rack 8		700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.) 702-1 Track Coupler (3690 Feq.)	MANUFACTURER Harmon Harmon Harmon	150-094017-022 Rev. D 150-097031-010 Rev. O 150-095025-034 Rev. CAO 150-095025-034 Rev. B	16 9 1 1
Rack 8		700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.) 702-1 Track Coupler (3690 Feq.) 702-1 Track Coupler (4950 Feq.)	MANUFACTURER Harmon Harmon Harmon Harmon Harmon	150-094017-022 Rev. D 150-097031-010 Rev. O 150-095025-034 Rev. CAO 150-095025-034 Rev. B 150-095025-034 Rev. CAO	16 9 1 1 2
Rack 8		700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.) 702-1 Track Coupler (3690 Feq.) 702-1 Track Coupler (4950 Feq.) 702-1 Track Coupler (3330 Feq.)	MANUFACTURER Harmon Harmon Harmon Harmon Harmon Harmon	150-094017-022 Rev. D 150-097031-010 Rev. O 150-095025-034 Rev. CAO 150-095025-034 Rev. B 150-095025-034 Rev. CAO 150-095025-034 Rev. CAO	16 9 1 1 2
Rack 8		700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.) 702-1 Track Coupler (3690 Feq.) 702-1 Track Coupler (4950 Feq.) 702-1 Track Coupler (3330 Feq.) 702-1 Track Coupler (3690 Feq.)	MANUFACTURER Harmon Harmon Harmon Harmon Harmon Harmon Harmon	150-094017-022 Rev. D 150-097031-010 Rev. O 150-095025-034 Rev. CAO 150-095025-034 Rev. CAO 150-095025-034 Rev. CAO 150-095025-034 Rev. CAO 150-095025-034 Rev. CAO	16 9 1 1 2 1 2
Rack 8		700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.) 702-1 Track Coupler (3690 Feq.) 702-1 Track Coupler (4950 Feq.) 702-1 Track Coupler (3330 Feq.)	MANUFACTURER Harmon Harmon Harmon Harmon Harmon Harmon	150-094017-022 Rev. D 150-097031-010 Rev. O 150-095025-034 Rev. CAO 150-095025-034 Rev. B 150-095025-034 Rev. CAO 150-095025-034 Rev. CAO	16 9 1 1 2

em	Image	Inventory			
Rack 9	DIF PARTY		Rack 9		
		COMPONENT	MANUFACTURER	PART NUMBER	COUNT
		700 Amplifier Module	Harmon	150-094017-022 Rev. D	3
		701-2 CAB Coupler (2340 Feq.)	Harmon	150-097031-010 Rev. O	2
	SERVICE AND ADDRESS OF THE PERSON NAMED IN COLUMN 1	702-1 Track Coupler (4950 Feg.)	Harmon	150-095025-034 Rev. CAO	1
	WHITE RESERVED	703-1 Receiver Module (4410 Feg.)	Harmon	150-095025-047 Rev. FAO	2
		703-1 Receiver Module (3510 Feg.)	Harmon	150-095025-047 Rev. FAO	3
		703-1 Receiver Module (2970 Feq.)	Harmon	150-095025-047 Rev. FAO	2
		703-1 Receiver Module (3690 Feq.)	Harmon	150-095025-047 Rev. E	1
	The state of the s	703-1 Receiver Module (3330 Feq.)	Harmon	150-095025-047 Rev. FAO	1
		703-1 Receiver Module (3690 Feq.)	Harmon	150-095025-047 Rev. FAO	1
		703-1 Receiver Module (3870 Feg.)	Harmon	150-095025-047 Rev. FAO	1
				040 00=004 004	
		Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	1
		Chassis AF Track XMT TTT-2 AF Track Receiver Chassis	Getsgs Getsgs	812-097031-001 812-097031-034	3
Rack			Getsgs		
Rack		AF Track Receiver Chassis	Getsgs Rack 10	812-097031-034	3
		AF Track Receiver Chassis COMPONENT	Getsgs Rack 10 MANUFACTURER	812-097031-034 PART NUMBER	COUNT
		COMPONENT 700 Amplifier Module	Rack 10 MANUFACTURER Harmon	812-097031-034 PART NUMBER 150-094017-022 Rev. D	3
		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.)	Getsgs Rack 10 MANUFACTURER	812-097031-034 PART NUMBER	3 COUNT 2 1
		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.)	Rack 10 MANUFACTURER Harmon Harmon	PART NUMBER 150-094017-022 Rev. D 150-097031-010 Rev. O	COUNT 2 1 1
Rack 10		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.) 703-1 Receiver Module (4410 Feq.)	Rack 10 MANUFACTURER Harmon Harmon Harmon	PART NUMBER 150-094017-022 Rev. D 150-095025-034 Rev. CAO 150-095025-047 Rev. FAO	3 COUNT 2 1 1 2
		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.) 703-1 Receiver Module (4410 Feq.) 703-1 Receiver Module (3510 Feq.)	Rack 10 MANUFACTURER Harmon Harmon	PART NUMBER 150-094017-022 Rev. D 150-095025-034 Rev. CAO 150-095025-047 Rev. FAO 150-095025-047 Rev. FAO	COUNT 2 1 1 2 1 1
		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.) 703-1 Receiver Module (4410 Feq.)	Rack 10 MANUFACTURER Harmon Harmon Harmon Harmon Harmon	PART NUMBER 150-094017-022 Rev. D 150-095025-034 Rev. CAO 150-095025-047 Rev. FAO	3 COUNT 2 1 1 2 2 1 1 1 1
		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.) 703-1 Receiver Module (4410 Feq.) 703-1 Receiver Module (3510 Feq.) 703-1 Receiver Module (2970 Feq.)	Rack 10 MANUFACTURER Harmon Harmon Harmon Harmon Harmon Harmon	PART NUMBER 150-094017-022 Rev. D 150-095025-034 Rev. CAO 150-095025-047 Rev. FAO 150-095025-047 Rev. FAO 150-095025-047 Rev. FAO	3 COUNT 2 1 1 2 1 1 3
		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.) 703-1 Receiver Module (4410 Feq.) 703-1 Receiver Module (3510 Feq.) 703-1 Receiver Module (2970 Feq.) 703-1 Receiver Module (3690 Feq.)	Rack 10 MANUFACTURER Harmon Harmon Harmon Harmon Harmon Harmon Harmon Harmon	PART NUMBER 150-094017-022 Rev. D 150-095025-034 Rev. CAO 150-095025-047 Rev. FAO 150-095025-047 Rev. FAO 150-095025-047 Rev. FAO 150-095025-047 Rev. FAO	3 COUNT 2 1 1 2 1 1 3 3 3
		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.) 703-1 Receiver Module (3510 Feq.) 703-1 Receiver Module (3590 Feq.) 703-1 Receiver Module (2970 Feq.) 703-1 Receiver Module (3690 Feq.) 703-1 Receiver Module (4950 Feq.)	Rack 10 MANUFACTURER Harmon Harmon Harmon Harmon Harmon Harmon Harmon Harmon Harmon	PART NUMBER 150-094017-022 Rev. D 150-095025-034 Rev. CAO 150-095025-047 Rev. FAO	3 COUNT 2 1 1 2 1 1 3 3 1 1
		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.) 703-1 Receiver Module (3510 Feq.) 703-1 Receiver Module (3590 Feq.) 703-1 Receiver Module (3690 Feq.) 703-1 Receiver Module (3690 Feq.) 703-1 Receiver Module (350 Feq.) 703-1 Receiver Module (3690 Feq.) 703-1 Receiver Module (3690 Feq.)	Rack 10 MANUFACTURER Harmon	PART NUMBER 150-094017-022 Rev. D 150-095025-034 Rev. CAO 150-095025-047 Rev. FAO 150-095025-047 Rev. FAO	3 COUNT 2 1 1 2 1 1 3 3 1 1

Item	Image	Inventory			
Rack			Rack 11		
11	A STATE OF THE PARTY OF THE PAR	COMPONENT	MANUFACTURER	PART NUMBER	COUNT
	THE RESERVE THE PARTY OF THE PA	HLC Cabinet with Lexan Cover	Getsgs	226802-001	2
	The State of the S	VLP			2
	BUS THE STREET	ACP-3			2
		SSM			2
	Markey Committee of the last o	CCI			2
	Parameter Comments	VSD			2
	The state of the s	VGP I/O-12V			5
		NV I/O			1
		32 NVI			6
	Talk Command	VGPI 16			2
	- I	CLA Board			1
		RS-232			5
		Modem			1
		12V Power Supply			2
Rack			Rack 12		
				PART NUMBER	COUNT
	THE WHOLE	COMPONENT	MANUFACTURER		
		HLC Cabinet with Lexan Cover	Getsgs	226802-001	2
		HLC Cabinet with Lexan Cover VLP			2
		HLC Cabinet with Lexan Cover VLP ACP-3			2 2 2
		HLC Cabinet with Lexan Cover VLP ACP-3 SSM			2 2 2 2
		HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI			2 2 2 2 1
		HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI VSD			2 2 2 2 1 1
		HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI VSD VGP I/O-12V			2 2 2 2 1 1 6
		HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI VSD VGP I/O-12V NV I/O			2 2 2 2 1 1 6
		HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI VSD VGP I/O-12V NV I/O RS-232			2 2 2 2 1 1 6 5
12		HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI VSD VGP I/O-12V NV I/O			2 2 2 2 1 1 6

Debaliviere Signal House Asset Inventory

Image

Rack 13

Item



Inventory

	Rack 13		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
Rotary Dials (Full Hemisphere-NEW)			19
Non-Vital Relays			75



	Rack 14		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
Rotary Dials (Full Hemisphere-NEW)			14
Non-Vital Relays			50

Debaliviere Signal House Asset Inventory Image Inventory Item **SCADA SCADA** COMPONENT **MANUFACTURER PART NUMBER** COUNT **Power Supply** Schneider Electric TSXPSY1610 1 CPU TSP57203 1 Schneider Electric Memory Card TSXMRP064P Schneider Automation S.A. 1 Input Card Schneider Electric TSXDEY32D2K 4 Input Cord Schneider Electric TSXCDP203 8 **Output Card** Schneider Electric TSXDSY32T2K 2 **Output Cord Phoenix Contact** 22 98 438 4 Input Card ABE7 Schneider Electric 8 ABE7H16C11 Relays **Phoenix Contact** PLC-V8/FLK14/OUT 8 **Power Supply** Connect Power 992534 0024 1 **Battery Charger** Connect Power 991628 0024 1 **Batteries CD Technologies** UPS12-150MR 2 GarrettCom Inc. Fiber Media Converter CS14P-SST-48VDC 1 Phone Line Extender Tcom 1 1 Backplane

Debaliviere Signal House Asset Inventory *Image* Inventory Item **House Side-A** Sides COMPONENT PART NUMBER MANUFACTURER COUNT FIA-Keypad Controller NAPCO RPC3000LCDe 1 Switch Heater Push Button Box 1 **House Side-B** Fire Intrusion Alarm **NAPCO** 1 2 Battery Genesis NP7-1212V,7.0Ah Main Board 1 **Relay Boards** 1 **Expansion Modules** 1 **House Side-C** THE PROPERTY OF THE PARTY OF TH **House Side-D** Assy 227027-001 CLCP 256 IO LED Driver Module Getsgs Rev. 806 1 226609-200 Power Supply CLCP 12VDC 20W Getsgs 1 **Double Throw Enclosed Switch** 100A 240V AC/ 250V DC Square D 40275-953-01 1 Heavy Duty Safety Switch 100A 240V AC/ 250V DC Square D 40276-003-01 2 Hawk Event Recorder 251210-00001 Getsgs Surge Protector 18V AC 15A USSP US&S N451552-0507 4 **Current Monitor** NRS 16775-00 2 12V Power Supply NRS ERB-C 12/501C 2 12 2.25V Battery **GNB** 50A15

Emerson Park A Signal House

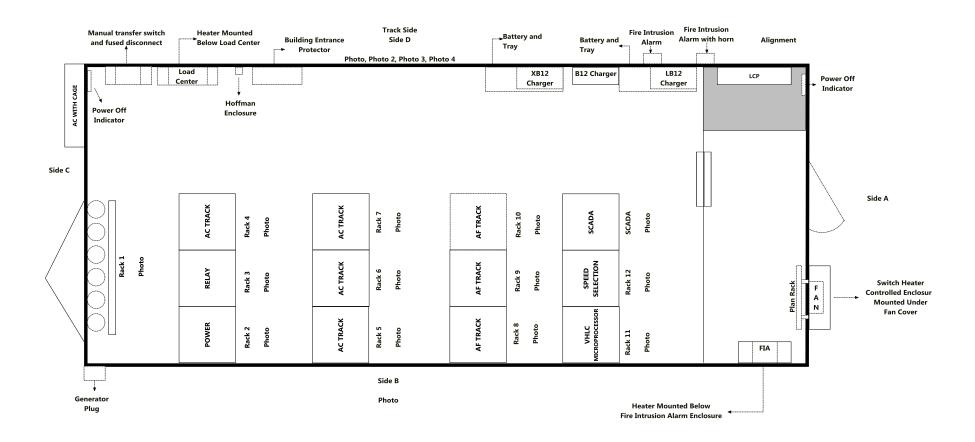


Image Item

Inventory

Rack 1



	Rack 1		
COMPONENT	Manufacturer	PART NUMBER	COUNT
BPL-3	HARMON	150-097031-013 Rev. O	3
CARRIER SURGE ARRESTOR	HARMON	250197-001	2



Rack 2				
COMPONENT	Manufacturer	PART NUMBER	COUNT	
Vital Relay	Alstom	A62-122 56001-921-07	5	
1X/2X XFMR	HARMON	MLT-50	2	
28V Power Supply	Керсо	PRR 28-38M24787	2	
28V Power Supply	Kepco	PRM 28-17-24810	2	

Image Item

Inventory

Rack 3



	Rack 3		
COMPONENT	Manufacturer	PART NUMBER	COUNT
Rectifier 120AC/120DC Switch		250756-000	2
Vital Relay	Alstom	A62-429 56001-926-01	6
Vital Relay	SAFE TRAN	400600	3
Vital Relay	Alstom	A62-407 56001-745-02	2
Vital Relay	Alstom	A62-122 56001-921-07	2
Vital Relay	SAFE TRAN	400700	2
Vital Relay	GRS	A62-360 56001-774-01	1
Vital Relay	Alstom	A62-580 56001-951-01	2
NON VITAL RELAY			1
Vital Relay	SAFE TRAN	400900	2
Vital Relay	Alstom	A62-691	5
Rectifier 25V .3A Selenium Type S	Alstom	A53-541	2
RELAY FLASHER	Alstom	30733-001-04	2



	Rack 4		
COMPONENT	Manufacturer	PART NUMBER	COUNT
XFMR Matching Rail Coupler	EPC	810-088019-311	2
XFMR Loop Matching (2340 Feq.)	EPC	800-088019-200	1
AC Vain Relay	Alstom	A62-486	2
Bal Imp	Alstom	A3-117	2
1 ohm Resistor (1XT/3XT)	GRS	A3-207 (01246-1)	2
2.5 ohm Resistor (1XTRN/3XTRN)		56105-11	2
1T/1XT XFMR	Alstom	31094-000 (A95 50)	1
VITAL RELAY	Alstom	A62-122 56001-921-07	1
700 Amplifier Module		150-094017-022 Rev. D	3
701-2 CAB Coupler (2340 Feq.)		150-097031-010 Rev. O	3
Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	1

Image Item

Inventory

Rack 5



Rack 5			
COMPONENT	Manufacturer	PART NUMBER	COUNT
XFMR Matching Rail Coupler	EPC	810-088019-311	4
AC Vain Relay	Alstom	A62-486	2
Bal Imp	Alstom	A3-117	2
1 ohm Resistor (1XT/3XT)	GRS	A3-207 (01246-1)	2
2.5 ohm Resistor (1XTRN/3XTRN)		56105-11	2
1AT/C-977T XFMR	Alstom	31094-000 (A95 50)	1
700 Amplifier Module		150-094017-022 Rev. D	4
701-2 CAB Coupler (2340 Feq.)		150-097031-010 Rev. O	4
Chassis AF Track XMT TTT-2	Getsgs	812097031-001	1



	Rack 6			
COMPONENT		Manufacturer	PART NUMBER	COUNT
	XFMR Loop Matching (2340 Feq.)	EPC	800-088019-200	1
	XFMR Matching Rail Coupler	EPC	810-088019-311	2
	AC Vain Relay	Alstom	A62-486	2
	Bal Imp	Alstom	A3-117	2
	1 ohm Resistor (1XT/3XT)	GRS	A3-207 (01246-1)	2
	2.5 ohm Resistor (1XTRN/3XTRN)		56105-11	2
	5T/5XT XFMR	Alstom	31094-000 (A95 50)	1
	VITAL RELAY	Alstom	A62-122 56001-921-07	1
	700 Amplifier Module		150-094017-022 Rev. D	3
	701-2 CAB Coupler (2340 Feq.)		150-097031-010 Rev. O	3
	Chassis AF Track XMT TTT-2	Getsgs	812097031-001	1

Image Inventory Item

Rack 7



Rack 7			
COMPONENT	Manufacturer	PART NUMBER	COUNT
AC Vain Relay	Alstom	A62-486	1
Bal Imp	Alstom	A3-117	1
XFMR Matching Rail Coupler	EPC	810-088019-311	2
1 ohm Resistor (1XT/3XT)	GRS	A3-207 (01246-1)	1
2.5 ohm Resistor (1XTRN/3XTRN)		56105-11	1
5AT/C-SP XFMR	Alstom	31094-000 (A95 50)	1
Chassis AF Track XMT TTT-2	Getsgs	812097031-001	1
700 Amplifier Module		150-094017-022 Rev. D	2
701-2 CAB Coupler (2340 Feq.)		150-097031-010 Rev. O	2



Rack 8			
COMPONENT	Manufacturer	PART NUMBER	COUNT
700 Amplifier Module		150-094017-022 Rev. D	6
700 Amplifier Module		150-094017-022 Rev. C	1
701-2 CAB Coupler (2340 Feq.)		150-097031-010 Rev. O	4
702-1 Track Coupler (3510 Feq.)		150-095025-034 Rev. B	1
702-1 Track Coupler (4410 Feq.)		150-095025-034 Rev. CAO	1
702-1 Track Coupler (2970 Feq.)		150-095025-034 Rev. B	1
Chassis AF Track XMT TTT-2	Getsøs	812-097031-001	3

Emerson Park A Signal House Asset Inventory Item **Image** Inventory Rack 9 Rack 9 **COMPONENT** Manufacturer **PART NUMBER** COUNT 700 Amplifier Module 150-094017-022 Rev. C 5 700 Amplifier Module 150-094017-022 Rev. D 700 Amplifier Module 150-094017-022 Rev. A 2 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 4 702-1 Track Coupler (3690 Feq.) 150-095025-034 Rev. B 1 702-1 Track Coupler (4950 Feq.) 150-095025-034 Rev. B 1 702-1 Track Coupler (3330 Feq.) 150-095025-034 Rev. B 1 702-1 Track Coupler (4230 Feq.) 150-095025-034 Rev. B 1 Chassis AF Track XMT TTT-2 Getsgs 812-097031-001 3 Rack Rack 10 COMPONENT Manufacturer **PART NUMBER** COUNT 10 703-1 Receiver Module (2970 Feq.) 150-095025-047 Rev. E 1 703-1 Receiver Module (3510 Feq.) 150-095025-047 Rev. E 2 703-1 Receiver Module (4410 Feq.) 150-095025-047 Rev. E 2 703-1 Receiver Module (4950 Feg.) 150-095025-047 Rev. D 2 703-1 Receiver Module (3330 Feq.) 150-095025-047 Rev. D 1 703-1 Receiver Module (3690 Feq.) 150-095025-047 Rev. D 1 **AF Track Receiver Chassis** 812-097031-034 2 Getsgs

Emerson Park A Signal House Asset Inventory Item Image Inventory Rack Rack 11 COMPONENT PART NUMBER COUNT Manufacturer 11 VLP 2 ACP-2 2 SSM 2 CCI 2 VSD 2 VGP I/O 2 VGP I/O-12 1 VGP 16 2 NV I/O 4 32 NVI 3 **CLA Board** 2 RS-232 2 Modem 2 12V Power Supply 2 Rack 12 Rack Manufacturer COMPONENT PART NUMBER COUNT 12 Rotary Dials (HALF Hemisphere-NEW) 20 Non-Vital Relays 140

Emerson Park A Signal House Asset Inventory Image Inventory Item **SCADA** SCADA COMPONENT Manufacturer PART NUMBER COUNT **Power Supply** Schneider Electric TSXPSY1610 1 CPU TSXP57202 1 Schneider Electric Memory Card Schneider Automation S.A. TSXMRP064P 1 RS-232 1 **Input Card** Schneider Electric TSX DEY16A2 9 INPUT TERMINAL BLOCK Schneider Automation S.A. TSX BLY01 9 **Output Card** Schneider Electric TSX DSY64T2K 1 **Output Cord Phoenix Contact** 22 98 438 4 Relays* **Phoenix Contact** ABE7* 4 **Power Supply** WEID MULLER CSA 991534 1

WEID MULLER

CD Technologies

MOTOROLA

991628 0024

UPS12-150MR

V3600

1

2

1

1

Battery Charger

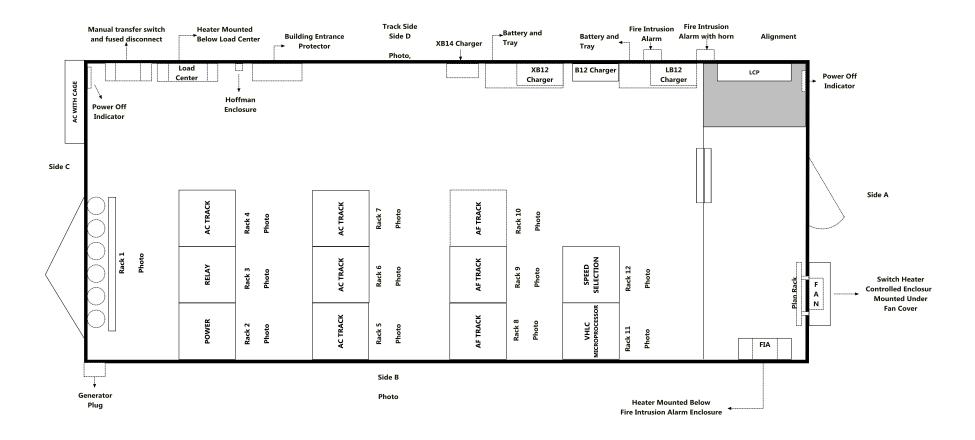
Batteries

Backplane

MODEM

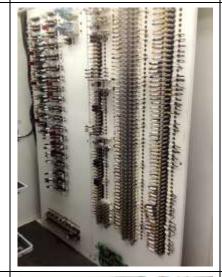
Emerson Park A Signal House Asset Inventory *Image* Inventory Item **House Side-A** Sides COMPONENT Manufacturer **PART NUMBER** COUNT RPC3000LCDe FIA-Keypad Controller NAPCO 1 SWITCH HEATER CONTROL BOX 1 **House Side-B** Fire Intrusion Alarm NAPCO 1 2 Battery Genesis NP7-1212V,7.0Ah Main Board 1 **Relay Boards** 1 **PUSH BUTTON CONTROL BOX** 1 **House Side-C House Side-D** CLCP 256 IO LED Driver Module Getsgs Assy 227027-001 Rev. 806 2 Power Supply CLCP 12VDC 20W Getsgs 226609-200 2 Double Throw NOT FUSEABLE Switch 100A 240V AC/ 250V DC Square D 40274-556-01 1 GENERAL Duty Safety Switch 100A 240V AC/ 250V DC Square D 40275-933-01 1 **Current Monitor** NRS 16775-00 2 **BATTERY SURGE ARRESTOR 4 HARMON** 250597 1 2 12V Power Supply NRS ERB-C 12/40 12V Power Supply NRS ERB-C 12/501 1 12V Battery MARATHON M12V90 1 12V Battery **CD TECHNOLOGIES** 12V-90AH 1 Resistor (adjustable)* 029603-2 18 8 2.25V Battery **GNB** 50A15

Emerson Park B Signal House



Item	Image	Inventory
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Rack 1



Rack 1			
COMPONENT	Manufacturer	PART NUMBER	COUNT
BPL-3	HARMON	150-097031-013 Rev. O	3
CARRIER SURGE ARRESTOR	HARMON	250197-001	2



Rack 2			
COMPONENT	Manufacturer	PART NUMBER	COUNT
Vital Relay	Alstom	A62-122 56001-921-07	5
1X/2X XFMR	HARMON	MLT-50	2
28V Power Supply	Керсо	PRR 28-38M24787	2
28V Power Supply	Керсо	PRM 28-17-24810	2

Emerson Park B Signal House Asset Inventory Item **Image** Inventory Rack 3 Rack 3 **COMPONENT** Manufacturer **PART NUMBER** COUNT Rectifier 120AC/120DC Switch 250756-000 Vital Relay Alstom A62-429 56001-926-01 6 Vital Relay SAFE TRAN 400600 3 A62-407 56001-745-02 2 Vital Relay Alstom Vital Relay Alstom A62-122 56001-921-07 2 Vital Relay SAFE TRAN 400700 2 Vital Relay GRS A62-360 56001-774-01 1 Vital Relay Alstom A62-580 56001-951-01 2 **NON VITAL RELAY** 1 Vital Relay SAFE TRAN 400900 2 Vital Relay Alstom A62-691 5 Rectifier 25V .3A Selenium Type S Alstom A53-541 2 RELAY FLASHER Alstom 30733-001-04 2 Rack 4 Rack 4 COMPONENT Manufacturer **PART NUMBER** COUNT XFMR Matching Rail Coupler **EPC** 810-088019-311 2 XFMR Loop Matching (2340 Feq.) EPC 800-088019-200 1 AC Vain Relay Alstom A62-486 2 A3-117 2 Bal Imp Alstom 1 ohm Resistor (1XT/3XT) GRS A3-207 (01246-1) 2 2.5 ohm Resistor (1XTRN/3XTRN) 56105-11 2 1T/1XT XFMR Alstom 31094-000 (A95 50) 1 VITAL RELAY Alstom A62-122 56001-921-07 1 700 Amplifier Module 150-094017-022 Rev. D 3 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 3 Chassis AF Track XMT TTT-2 Getsgs 812-097031-001 1

Emerson Park B Signal House Asset Inventory Item **Image** Inventory Rack 5 Rack 5 COMPONENT Manufacturer **PART NUMBER** COUNT XFMR Matching Rail Coupler **EPC** 810-088019-311 Alstom 2 **AC Vain Relay** A62-486 Bal Imp Alstom A3-117 2 1 ohm Resistor (1XT/3XT) GRS A3-207 (01246-1) 2 2.5 ohm Resistor (1XTRN/3XTRN) 56105-11 2 1AT/C-977T XFMR Alstom 31094-000 (A95 50) 1 700 Amplifier Module 150-094017-022 Rev. D 4 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 4 Chassis AF Track XMT TTT-2 Getsgs 812097031-001 1 Rack 6 Rack 6 COMPONENT Manufacturer **PART NUMBER** COUNT XFMR Loop Matching (2340 Feq.) EPC 800-088019-200 1 XFMR Matching Rail Coupler EPC 810-088019-311 2 AC Vain Relay Alstom A62-486 2 A3-117 2 Bal Imp Alstom 1 ohm Resistor (1XT/3XT) GRS A3-207 (01246-1) 2 2.5 ohm Resistor (1XTRN/3XTRN) 56105-11 2 5T/5XT XFMR Alstom 31094-000 (A95 50) 1 VITAL RELAY Alstom A62-122 56001-921-07 1 700 Amplifier Module 150-094017-022 Rev. D 3 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 3 Chassis AF Track XMT TTT-2 812097031-001 1 Getsgs

Emerson Park B Signal House Asset Inventory Item **Image** Inventory Rack 7 Rack 7 COMPONENT Manufacturer **PART NUMBER** COUNT AC Vain Relay Alstom A62-486 1 Bal Imp Alstom A3-117 1 XFMR Matching Rail Coupler EPC 810-088019-311 2 1 ohm Resistor (1XT/3XT) GRS A3-207 (01246-1) 1 2.5 ohm Resistor (1XTRN/3XTRN) 56105-11 1 5AT/C-SP XFMR Alstom 31094-000 (A95 50) 1 Chassis AF Track XMT TTT-2 Getsgs 812097031-001 1 700 Amplifier Module 150-094017-022 Rev. D 2 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 2 Rack 8 Rack 8 COMPONENT Manufacturer **PART NUMBER** COUNT 700 Amplifier Module 150-094017-022 Rev. D 6 700 Amplifier Module 150-094017-022 Rev. C 1 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 4 702-1 Track Coupler (3510 Feq.) 150-095025-034 Rev. B 1 702-1 Track Coupler (4410 Feq.) 150-095025-034 Rev. CAO 1 702-1 Track Coupler (2970 Feq.) 150-095025-034 Rev. B 1 Chassis AF Track XMT TTT-2 812-097031-001 Getsgs 3

Emerson Park B Signal House Asset Inventory Item **Image** Inventory Rack 9 Rack 9 **COMPONENT** Manufacturer **PART NUMBER** COUNT 700 Amplifier Module 150-094017-022 Rev. C 5 700 Amplifier Module 150-094017-022 Rev. D 700 Amplifier Module 150-094017-022 Rev. A 2 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 4 702-1 Track Coupler (3690 Feq.) 150-095025-034 Rev. B 702-1 Track Coupler (4950 Feq.) 150-095025-034 Rev. B 1 702-1 Track Coupler (3330 Feq.) 150-095025-034 Rev. B 1 702-1 Track Coupler (4230 Feq.) 150-095025-034 Rev. B 1 Chassis AF Track XMT TTT-2 Getsgs 812-097031-001 3 Rack 10 Rack 10 **COMPONENT** Manufacturer PART NUMBER COUNT 703-1 Receiver Module (2970 Feq.) 150-095025-047 Rev. E 1 2 703-1 Receiver Module (3510 Feq.) 150-095025-047 Rev. E 703-1 Receiver Module (4410 Feq.) 150-095025-047 Rev. E 2 703-1 Receiver Module (4950 Feq.) 150-095025-047 Rev. D 2 703-1 Receiver Module (3330 Feq.) 150-095025-047 Rev. D 1 703-1 Receiver Module (3690 Feq.) 150-095025-047 Rev. D 1 AF Track Receiver Chassis 812-097031-034 2 Getsgs

Item	Image	Inventory				
Rack 11			Rack	: 11		
tack 11	Ter	COMPONENT	Manufacture		RT NUMBER	COUNT
	N. Comments	VLP				2
		ACP-2				2
		SSM				2
		CCI				2
		VSD				2
	PRODUCTION AND A P.	VGP I/O				2
		VGP I/O-12				1
		VGP 16				2
		NV I/O				4
		32 NVI				3
		CLA Board				2
		RS-232				2
		Modem				2
	(A)	12V Power Supply				2
ack 12	Zal Property Sales		Rack	. 12		
ack 12	THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER, BUT IN COLUMN TWO	COMPONENT	Nack	Manufacturer	PART NUMBER	COUN
	13 · · · ·	Rotary Dials (HALF Hemisp	nere-NEW)	Manaraccarci	TART NOMBER	20
		Non-Vital Relays				47
	1	Non vital Kelays				7/
	CANADA AND AND AND AND AND AND AND AND AN					

Emerson Park B Signal House Asset Inventory

Image Item

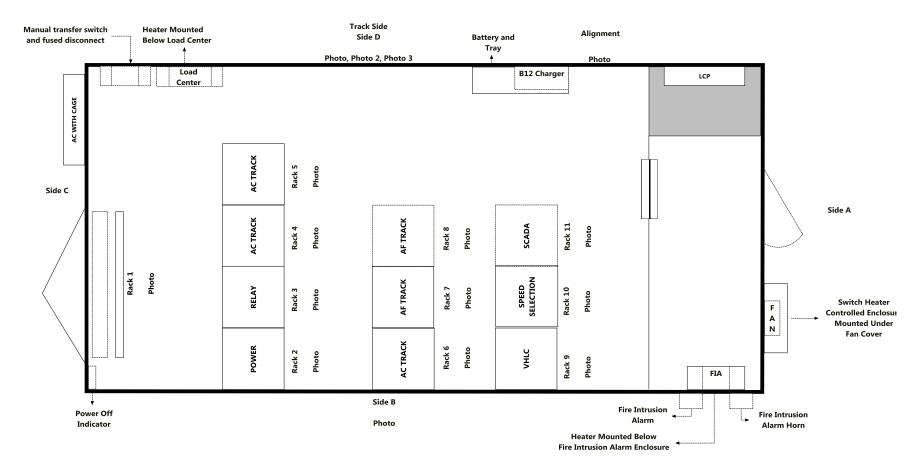
Sides



Inventory

House Sid	e-A		
COMPONENT	Manufacturer	PART NUMBER	COUNT
FIA-Keypad Controller	NAPCO	RPC3000LCDe	1
SWITCH HEATER CONTROL BOX			1
House Sid	e-B		
Fire Intrusion Alarm	NAPCO		1
Battery	Genesis	NP7-1212V,7.0Ah	2
Main Board			1
Relay Boards			1
PUSH BUTTON CONTROL BOX			1
House Sid	e-C		
House Sid	e-D		
		Assy 227027-001	
CLCP 256 IO LED Driver Module	Getsgs	Rev. 806	2
Power Supply CLCP 12VDC 20W	Getsgs	226609-200	2
Double Throw NOT FUSEABLE Switch 100A 240V AC/ 250V			
DC	Square D	40274-556-01	1
GENERAL Duty Safety Switch 100A 240V AC/ 250V DC	Square D	40275-933-01	1
Current Monitor	NRS	16775-00	2
BATTERY SURGE ARRESTOR 4	HARMON	250597	1
12V Power Supply	NRS	ERB-C 12/40	2
12V Power Supply	NRS	ERB-C 12/501	1
12V Battery	MARATHON	M12V90	1
	CD		
12V Battery	TECHNOLOGIES	12V-90AH	1
Resistor (adjustable)*		029603-2	18
2.25V Battery	GNB	50A15	8

Enterprise Signal House



Enterprise Signal House Asset Inventory Image Inventory Item Rack 1 Rack 1 COMPONENT MANUFACTURER PART NUMBER COUNT BPL-3 HARMON 150-097031-013 Rev. O 13 250197-001 Carrier Surge Arrester 1 HARMON 2 Rack 2 Rack 2 COMPONENT MANUFACTURER PART NUMBER COUNT Vital Relay Alstom A62-407 56001-745-02 1 Vital Relay Alstom A62-122 56001-921-07 3 POR XFMR Alstom 31094-000-01 Rev. F 1 28V Power Supply Керсо PRR 28-38M24787 2 28V Power Supply Керсо PRM 28-17-24810 2 Rectifier 25V .3A Selenium Type S Alstom A53-541 1

Rack 3 COMPONENT MA Rectifier 120AC/120DC Switch Vital Relay Vital Relay Vital Relay Vital Relay Vital Relay	Rack 3 MANUFACTURER Alstom Alstom Alstom GRS	PART NUMBER 250756-000 A62-429 56001-926-01 A62-432 56001-785-01 A62-247 A62-122 56001-921-07	COUNT 2 8 4 4 1 1
COMPONENT MA Rectifier 120AC/120DC Switch Vital Relay Vital Relay Vital Relay	Alstom Alstom Alstom Alstom	250756-000 A62-429 56001-926-01 A62-432 56001-785-01 A62-247	2 8 4 4
Rectifier 120AC/120DC Switch Vital Relay Vital Relay Vital Relay	Alstom Alstom Alstom	250756-000 A62-429 56001-926-01 A62-432 56001-785-01 A62-247	2 8 4 4
Vital Relay Vital Relay Vital Relay	Alstom Alstom	A62-429 56001-926-01 A62-432 56001-785-01 A62-247	8 4 4
Vital Relay Vital Relay	Alstom Alstom	A62-432 56001-785-01 A62-247	4 4
Vital Relay	Alstom	A62-247	
Vital Relay	GRS	A62-122 56001-921-07	1
Rack 4	Rack 4		
	MANUFACTURER	PART NUMBER	COUNT
XFMR Loop Matching (2340 Feq.)	EPC	800-088019-200	1
XFMR Matching Rail Coupler	EPC	800-088019-300	2
AC Vain Relay	Alstom	A62-486	2
Bal Imp	Alstom	A3-117	2
1 ohm Resistor (1XT/3XT)	GRS	A3-207 (01246-1)	2
2.5 ohm Resistor (1XTRN/3XTRN)*		56105-11	2
1T/1XT XFMR	Alstom	31094-000 (A95 50)	1
700 Amplifier Module		150-094017-022 Rev. a	2
700 Amplifier Module		150-094017-022 Rev. C	1
701-2 CAB Coupler (2340 Feq.)		150-097031-010 Rev. O	3
Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	1

Item	Image	Inventory						
Rack 5	The second		Rack 5					
		COMPONENT	MANUFACTURER	PART NUMBER	COUNT			
	100 miles 100 mi	XFMR Loop Matching (2340 Feq.)	EPC	800-088019-200	1			
		XFMR Matching Rail Coupler	EPC	800-088019-300	2			
	The same	AC Vain Relay	Alstom	A62-486	2			
		Bal Imp	Alstom	A3-117	2			
	《大学》	1 ohm Resistor (1XT/3XT)	GRS	A3-207 (01246-1)	2			
	The state of the s	2.5 ohm Resistor (1XTRN/3XTRN)		56105-11	2			
		3T/3XT XFMR	Alstom	31094-000 (A95 50)	1			
		700 Amplifier Module		150-094017-022 Rev. A	1			
				450 004045 000 0	1			
		700 Amplifier Module		150-094017-022 Rev. C	Ι Ι			
		700 Amplifier Module 700 Amplifier Module		150-094017-022 Rev. C 150-094017-022 Rev. D	1			
		·						
		700 Amplifier Module	Getsgs	150-094017-022 Rev. D	1			
Pack 6		700 Amplifier Module 701-2 CAB Coupler (2340 Feq.)		150-094017-022 Rev. D 150-097031-010 Rev. O	1 3			
Rack 6		700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) Chassis AF Track XMT TTT-2	Rack 6	150-094017-022 Rev. D 150-097031-010 Rev. O 812097031-001	1 3 1			
Rack 6		700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) Chassis AF Track XMT TTT-2 COMPONENT		150-094017-022 Rev. D 150-097031-010 Rev. O 812097031-001 PART NUMBER	1 3 1			
Rack 6		700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) Chassis AF Track XMT TTT-2 COMPONENT 700 Amplifier Module	Rack 6	150-094017-022 Rev. D 150-097031-010 Rev. O 812097031-001 PART NUMBER 150-094017-022 Rev. A	1 3 1			
Rack 6		700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) Chassis AF Track XMT TTT-2 COMPONENT 700 Amplifier Module 700 Amplifier Module	Rack 6	150-094017-022 Rev. D 150-097031-010 Rev. O 812097031-001 PART NUMBER 150-094017-022 Rev. A 150-094017-022 Rev. C	1 3 1 1 COUN 2 3			
Rack 6		700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) Chassis AF Track XMT TTT-2 COMPONENT 700 Amplifier Module 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.)	Rack 6	150-094017-022 Rev. D 150-097031-010 Rev. O 812097031-001 PART NUMBER 150-094017-022 Rev. A 150-094017-022 Rev. C 150-097031-010 Rev. O	1 3 1			
Rack 6		700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) Chassis AF Track XMT TTT-2 COMPONENT 700 Amplifier Module 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4410 Feq.)	Rack 6	150-094017-022 Rev. D 150-097031-010 Rev. O 812097031-001 PART NUMBER 150-094017-022 Rev. A 150-094017-022 Rev. C	1 3 1 1 COUN 2 3 3			
Rack 6		TOO Amplifier Module TO1-2 CAB Coupler (2340 Feq.) Chassis AF Track XMT TTT-2 COMPONENT TOO Amplifier Module TOO Amplifier Module TO1-2 CAB Coupler (2340 Feq.) TO2-1 Track Coupler (4410 Feq.) TO2-1 Track Coupler (3870 Feq.)	Rack 6	150-094017-022 Rev. D 150-097031-010 Rev. O 812097031-001 PART NUMBER 150-094017-022 Rev. A 150-094017-022 Rev. C 150-097031-010 Rev. O 150-095025-034 Rev. B	1 3 1 1 COUN 2 3 3 1			
Rack 6		700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) Chassis AF Track XMT TTT-2 COMPONENT 700 Amplifier Module 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4410 Feq.)	Rack 6	150-094017-022 Rev. D 150-097031-010 Rev. O 812097031-001 PART NUMBER 150-094017-022 Rev. A 150-094017-022 Rev. C 150-097031-010 Rev. O 150-095025-034 Rev. B 150-095025-034 Rev. B	1 3 1 1			
Rack 6		TOO Amplifier Module TO1-2 CAB Coupler (2340 Feq.) Chassis AF Track XMT TTT-2 COMPONENT TOO Amplifier Module TOO Amplifier Module TO1-2 CAB Coupler (2340 Feq.) TO2-1 Track Coupler (4410 Feq.) TO3-1 Receiver Module (4410 Feq.)	Rack 6	150-094017-022 Rev. D 150-097031-010 Rev. O 812097031-001 PART NUMBER 150-094017-022 Rev. A 150-094017-022 Rev. C 150-097031-010 Rev. O 150-095025-034 Rev. B 150-095025-047 Rev. E	COUN' 2 3 1 1 2			
ack 6		TOO Amplifier Module TO1-2 CAB Coupler (2340 Feq.) Chassis AF Track XMT TTT-2 COMPONENT TOO Amplifier Module TOO Amplifier Module TO1-2 CAB Coupler (2340 Feq.) TO2-1 Track Coupler (4410 Feq.) TO2-1 Track Coupler (3870 Feq.) TO3-1 Receiver Module (4410 Feq.) TO3-1 Receiver Module (3510 Feq.)	Rack 6	150-094017-022 Rev. D 150-097031-010 Rev. O 812097031-001 PART NUMBER 150-094017-022 Rev. A 150-094017-022 Rev. C 150-097031-010 Rev. O 150-095025-034 Rev. B 150-095025-047 Rev. E 150-095025-047 Rev. D	COUN 2 3 1 1 1 1 1 1 1 1 1 1 1 1			
Rack 6		TOO Amplifier Module TO1-2 CAB Coupler (2340 Feq.) Chassis AF Track XMT TTT-2 COMPONENT TOO Amplifier Module TOO Amplifier Module TO1-2 CAB Coupler (2340 Feq.) TO2-1 Track Coupler (4410 Feq.) TO3-1 Receiver Module (4410 Feq.) TO3-1 Receiver Module (3510 Feq.) TO3-1 Receiver Module (4410 Feq.)	Rack 6	150-094017-022 Rev. D 150-097031-010 Rev. O 812097031-001 PART NUMBER 150-094017-022 Rev. A 150-094017-022 Rev. C 150-097031-010 Rev. O 150-095025-034 Rev. B 150-095025-047 Rev. E 150-095025-047 Rev. D 150-095025-047 Rev. D	COUN 2 3 1 1 1 1 1 1 1 1 1 1 1 1			

Enterpris	e Signal House Asset Inventory							
Item	Image	Inventory						
Rack 7	THE RESERVE AND ADDRESS OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED I		Rack 7					
	1 前	COMPONENT	MANUFACTURER	PART NUMBER	COUNT			
		700 Amplifier Module		150-094017-022 Rev. C	3			
	图图 	700 Amplifier Module		150-094017-022 Rev. A	1			
		700 Amplifier Module		150-094017-022 Rev. D	2			
	AMERICAN AND ADDRESS OF THE PERSON NAMED IN COLUMN 1	701-2 CAB Coupler (2340 Feq.)		150-097031-010 Rev. O	3			
	A CONTRACTOR OF THE PERSON NAMED IN	702-1 Track Coupler (3510 Feq.)		150-095025-034 Rev. B	1			
		702-1 Track Coupler (4410 Feq.)		150-095025-034 Rev. B	1			
		702-1 Track Coupler (3870 Feq.)		150-095025-034 Rev. B	1			
		703-1 Receiver Module (3510 Feq.)		150-095025-047 Rev. D	2			
	South March 11 19	703-1 Receiver Module (3510 Feq.)		150-095025-047 Rev. E	1			
	1	703-1 Receiver Module (3870 Feq.)		150-095025-047 Rev. E	1			
		703-1 Receiver Module (4410 Feq.)		150-095025-047 Rev. E	1			
		Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	2			
	XXIV MAGESTINE	AF Track Receiver Chassis	Getsgs	812-097031-034	1			
Rack 8	The same of the sa	W	Rack 8					
tack o	A STREET	COMPONENT	MANUFACTURER	PART NUMBER	COUN			
		700 Amplifier Module		150-094017-022 Rev. D	2			
		700 Amplifier Module		150-094017-022 Rev. C	3			
		700 Amplifier Module		150-094017-022 Rev. A	1			
		701-2 CAB Coupler (2340 Feg.)		150-097031-010 Rev. O	3			
	THE PARTY OF	702-1 Track Coupler (3690 Feg.)		150-095025-034 Rev. CAO	1			
	THE RESERVE OF THE PERSON NAMED IN	702-1 Track Coupler (4950 Feg.)		150-095025-034 Rev. B	1			
		702-1 Track Coupler (3330 Feg.)		150-095025-034 Rev. B	1			
		703-1 Receiver Module (3690 Feq.)		150-095025-047 Rev. D	1			
		703-1 Receiver Module (4950 Feq.)		150-095025-047 Rev. D	3			
		703-1 Receiver Module (3330 Feq.)		150-095025-047 Rev. D	2			
		Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	2			
		AF Track Receiver Chassis	Getsgs	812-097031-034	1			

Item	Image	Inventory				
Rack 9			R	ack 9		
tack 5	THE PERSON NAMED IN	COMPONENT	MANUFACT		NUMBER	COUNT
		VLP				2
		ACP-2				2
		SSM				2
		CCI				2
		VSD				1
		VGPI 16				2
	SUBINE CONTRACTOR	VGP I/O-12V				
		VGP I/O				3
		NV I/O				3
		32 NVI				4
		CLA Board				1
		RS-232				2
		Modem				2
		12V Power Supply				2
Rack 10		Rack 10				
	A STATE OF THE PARTY OF THE PAR	COMPONENT		MANUFACTURER	PART NUMBER	COUN
		Rotary Dials (HALF Hemisp	nere-NEW)			18
	3	Non-Vital Relays				58
		KEY LOCK SWITCH/2-POS 2-PO	LE STD. LOCK	EOA SWITCH CORP	51-236.025D	1
	PARTIE STATE OF THE PARTIES OF THE P					

Enterprise Signal House Asset Inventory								
Item	Image	Inventory						
SCADA	_		SCADA					
	LEV BY	COMPONENT	MANUFACTURER	PART NUMBER	COUNT			
	A THE RESERVE OF THE	Power Supply	Schneider Electric	TSXPSY1610	1			
		CPU	Schneider Electric	TSP57203	1			
		Memory Card	Schneider Automation S.A.	TSXMRP064P	1			
		RS-232			1			
			Input Card	Schneider Electric	TSX DEY12A2	5		
		INPUT TERMINAL BLOCK	Schneider Automation S.A.	TSX BLY01	5			
		Output Card	Schneider Electric	TSX DSY64T2K	1			
		Output Cord	Phoenix Contact	22 98 438	2			
		Relays	Phoenix Contact	ABE7*	2			
		Power Supply	WEID MULLER	CSA 991534	1			
	The state of the s	Battery Charger	WEID MULLER	991628 0024	1			
		Batteries	CD Technologies	UPS12-150MR	2			
		Backplane			1			
		MODEM	MOTOROLA	B3600	1			

Enterprise Signal House Asset Inventory Inventory Item **Image House Side-A** Sides COMPONENT PART NUMBER **MANUFACTURER** COUNT FIA-Keypad Controller NAPCO RPC3000LCDe 1 SWITCH HEATER CONTROL BOX 1 **House Side-B** Fire Intrusion Alarm NAPCO MA 3000 1 Genesis NP7-1212V,7.0Ah 2 Battery 1 Main Board **Relay Boards** 1 **House Side-C House Side-D** Double Throw Enclosed Switch 100A 240V AC/ 250V DC Square D 40274-556-01 1 GENERAL Duty Safety Switch 100A 240V AC/ 250V DC 40275-933-01 Square D 1 **BATTERY SURGE ARRESTOR 4** US&S N451552-0507 1 Current Monitor* NRS 1 12V Power Supply NRS ERB-C 12/40C 1 BATTERY MARATHON M12V90 1 Assy 227027-001 CLCP 256 IO LED Driver Module Getsgs Rev. 806 1 Power Supply CLCP 12VDC 20W 226609-200 Getsgs 1

KEY LOCK SWITCH/2-POS 2-POLE STD. LOCK

51-236.025D

EOA SWITCH CORP

1

Fairview Signal House

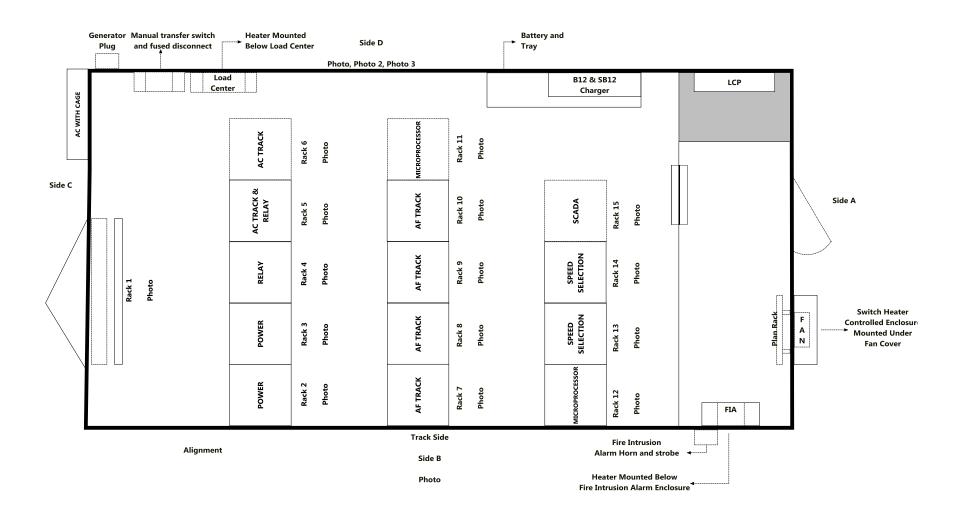


Image	Inventory			
		Rack 1		
	COMPONENT		PART NUMBER	COUNT
22.5 全量。在2				4
		LFC	130-097031-013 KeV. O	4
· · · · · · · · · · · · · · · · · · ·		FDCO	PC642C-036X	2
		Rack 2		
	COMPONENT	MANUFACTURER	PART NUMBER	COUN
	Vital Relay	Alstom	A62-407 56001-745-02	1
				8
				1
				3
	Rectifier 25V .3A Selenium Type S	Alstom	A53-541	1
	Image	COMPONENT BPL-3 ISOLATED LOOP CIRCUIT PROTECTOR COMPONENT	Rack 1 COMPONENT MANUFACTURER BPL-3 EPC ISOLATED LOOP CIRCUIT PROTECTOR EDCO Rack 2 COMPONENT MANUFACTURER Vital Relay Alstom Vital Relay Alstom POR XFMR Alstom 28V Power Supply Kepco	Rack 1

Fairview Signal House Asset Inventory Image Inventory Item Rack 3 Rack 3 COMPONENT MANUFACTURER PART NUMBER COUNT 28V Power Supply PRR 28-38M24787 Керсо 2 28V Power Supply PRM 28-17-24810 Керсо 2 BX110/NX110 - 100Hz Converter Behlman RR1200-100 1 Rack 4 Rack 4 COMPONENT MANUFACTURER PART NUMBER COUNT Rectifier 120AC/120DC Switch 250756-000 3 Vital Relay Alstom A62-429 56001-926-01 12 Vital Relay A62-432 56001-785-01 6 Alstom Vital Relay A62-122 56001-921-07 Alstom 8 Vital Relay Alstom A62-247 4

Fairviev	v Signal House Asset Inventory				
Item	Image	Inventory			
Rack 5			Rack 5		
		COMPONENT	MANUFACTURI	R PART NUMBER	COUNT
		XFMR Loop Matching (2340 Feq.)	EPC	800-088019-200	4
		AC Vain Relay	Alstom	A62-597	4
		Bal Imp	Alstom	A3-117	4
		3 ohm Resistor (1XT/3XT)	GRS	A3-207 (01246-1)	4
		25 ohm Resistor (1XTRN/3XTRN)		56105-11	4
	1 号 看 图 4				
Rack 6			Rack 6		
Rack 6	No. of the latest the	COMPONENT	Rack 6 MANUFACTURER	PART NUMBER	COUNT
Rack 6		COMPONENT 700 Amplifier Module		PART NUMBER 150-094017-022 Rev. A	COUNT 1
Rack 6					
Rack 6		700 Amplifier Module 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.)		150-094017-022 Rev. A 150-094017-022 Rev. EAO 150-097031-010 Rev. O	1 11 8
Rack 6		700 Amplifier Module 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (2970 Feq.)		150-094017-022 Rev. A 150-094017-022 Rev. EAO 150-097031-010 Rev. O 150-095025-034 Rev. CAO	1 11 8 1
Rack 6		700 Amplifier Module 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (2970 Feq.) 702-1 Track Coupler (3510 Feq.)		150-094017-022 Rev. A 150-094017-022 Rev. EAO 150-097031-010 Rev. O 150-095025-034 Rev. CAO 150-095025-034 Rev. CAO	1 11 8 1 1
Rack 6		700 Amplifier Module 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (2970 Feq.) 702-1 Track Coupler (3510 Feq.) 702-1 Track Coupler (3870 Feq.)		150-094017-022 Rev. A 150-094017-022 Rev. EAO 150-097031-010 Rev. O 150-095025-034 Rev. CAO 150-095025-034 Rev. CAO 150-095025-034 Rev. B	1 11 8 1 1
Rack 6		700 Amplifier Module 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (2970 Feq.) 702-1 Track Coupler (3510 Feq.) 702-1 Track Coupler (3870 Feq.) 702-1 Track Coupler (3510 Feq.)		150-094017-022 Rev. A 150-094017-022 Rev. EAO 150-097031-010 Rev. O 150-095025-034 Rev. CAO 150-095025-034 Rev. B 150-095025-034 Rev. B	1 11 8 1 1 1
Rack 6		700 Amplifier Module 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (2970 Feq.) 702-1 Track Coupler (3510 Feq.) 702-1 Track Coupler (3870 Feq.) 702-1 Track Coupler (3510 Feq.) 703-1 Receiver Module (3870 Feq.)		150-094017-022 Rev. A 150-094017-022 Rev. EAO 150-097031-010 Rev. O 150-095025-034 Rev. CAO 150-095025-034 Rev. CAO 150-095025-034 Rev. B 150-095025-034 Rev. CAO 150-095025-047 Rev. D	1 11 8 1 1 1 1
Rack 6		700 Amplifier Module 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (3510 Feq.) 702-1 Track Coupler (3870 Feq.) 702-1 Track Coupler (3510 Feq.) 702-1 Track Coupler (3510 Feq.) 703-1 Receiver Module (3870 Feq.) 703-1 Receiver Module (2970 Feq.)		150-094017-022 Rev. A 150-094017-022 Rev. EAO 150-097031-010 Rev. O 150-095025-034 Rev. CAO 150-095025-034 Rev. CAO 150-095025-034 Rev. B 150-095025-034 Rev. CAO 150-095025-047 Rev. D	1 11 8 1 1 1 1 2
Rack 6		700 Amplifier Module 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (3510 Feq.) 702-1 Track Coupler (3870 Feq.) 702-1 Track Coupler (3510 Feq.) 702-1 Track Coupler (3510 Feq.) 703-1 Receiver Module (3870 Feq.) 703-1 Receiver Module (2970 Feq.) 703-1 Receiver Module (3510 Feq.)		150-094017-022 Rev. A 150-094017-022 Rev. EAO 150-097031-010 Rev. O 150-095025-034 Rev. CAO 150-095025-034 Rev. CAO 150-095025-034 Rev. B 150-095025-034 Rev. CAO 150-095025-047 Rev. D 150-095025-047 Rev. FAO 150-095025-047 Rev. FAO	1 11 8 1 1 1 1 1 2
Rack 6		700 Amplifier Module 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (3510 Feq.) 702-1 Track Coupler (3870 Feq.) 702-1 Track Coupler (3510 Feq.) 702-1 Track Coupler (3510 Feq.) 703-1 Receiver Module (3870 Feq.) 703-1 Receiver Module (2970 Feq.) 703-1 Receiver Module (3510 Feq.) 703-1 Receiver Module (3570 Feq.)		150-094017-022 Rev. A 150-094017-022 Rev. EAO 150-097031-010 Rev. O 150-095025-034 Rev. CAO 150-095025-034 Rev. CAO 150-095025-034 Rev. B 150-095025-034 Rev. CAO 150-095025-047 Rev. D 150-095025-047 Rev. FAO 150-095025-047 Rev. FAO	1 11 8 1 1 1 1 1 2 2
Rack 6		700 Amplifier Module 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (3510 Feq.) 702-1 Track Coupler (3870 Feq.) 702-1 Track Coupler (3510 Feq.) 702-1 Track Coupler (3510 Feq.) 703-1 Receiver Module (3870 Feq.) 703-1 Receiver Module (3970 Feq.) 703-1 Receiver Module (3510 Feq.) 703-1 Receiver Module (3870 Feq.) 703-1 Receiver Module (3870 Feq.)	MANUFACTURER	150-094017-022 Rev. A 150-094017-022 Rev. EAO 150-097031-010 Rev. O 150-095025-034 Rev. CAO 150-095025-034 Rev. CAO 150-095025-034 Rev. B 150-095025-034 Rev. CAO 150-095025-047 Rev. D 150-095025-047 Rev. FAO 150-095025-047 Rev. FAO 150-095025-047 Rev. E 150-095025-047 Rev. FAO	1 11 8 1 1 1 1 1 2 2 1
Rack 6		700 Amplifier Module 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (3510 Feq.) 702-1 Track Coupler (3870 Feq.) 702-1 Track Coupler (3510 Feq.) 702-1 Track Coupler (3510 Feq.) 703-1 Receiver Module (3870 Feq.) 703-1 Receiver Module (2970 Feq.) 703-1 Receiver Module (3510 Feq.) 703-1 Receiver Module (3570 Feq.)		150-094017-022 Rev. A 150-094017-022 Rev. EAO 150-097031-010 Rev. O 150-095025-034 Rev. CAO 150-095025-034 Rev. CAO 150-095025-034 Rev. B 150-095025-034 Rev. CAO 150-095025-047 Rev. D 150-095025-047 Rev. FAO 150-095025-047 Rev. FAO	1 11 8 1 1 1 1 1 2 2

Fairview	v Signal House Asset Inventory						
Item	Image	Inventory					
Rack 7	32-010-11	Rack 7					
rack /		COMPONENT	MANUFACTURER	PART NUMBER	COUNT		
	120-20-120-120-120-120-120-120-120-120-1	700 Amplifier Module		150-094017-022 Rev. A	1		
		700 Amplifier Module		150-094017-022 Rev. EAO	11		
		701-2 CAB Coupler (2340 Feq.)		150-097031-010 Rev. O	6		
	States and the	702-1 Track Coupler (2970 Feq.)		150-095025-034 Rev. CAO	2		
	Children and Market 19	702-1 Track Coupler (4410 Feq.)		150-095025-034 Rev. CAO	2		
		702-1 Track Coupler (3870 Feq.)		150-095025-034 Rev. CAO	1		
		702-1 Track Coupler (3510 Feq.)		150-095025-034 Rev. CAO	1		
	13131個日間電	703-1 Receiver Module (4410 Feq.)		150-095025-047 Rev. FAO	1		
	12 Ch. 12 12 12 12 12 12 12 12 12 12 12 12 12	703-1 Receiver Module (4410 Feq.)		150-095025-047 Rev. E	1		
		703-1 Receiver Module (3870 Feq.)		150-095025-047 Rev. FAO	1		
		703-1 Receiver Module (2970 Feq.)		150-095025-047 Rev. FAO	2		
		703-1 Receiver Module (3510 Feq.)		150-095025-047 Rev. FAO	1		
		Chassis AF Track XMT TTT-2	Getsus	812097031-001	3		
		AF Track Receiver Chassis	Getsgs	812-097031-034	1		
Rack 8			Rack 8				
		COMPONENT	MANUFACTURER	PART NUMBER	COUNT		
		700 Amplifier Module		150-094017-022 Rev. C	1		
		700 Amplifier Module		150-094017-022 Rev. EAO	11		
		701-2 CAB Coupler (2340 Feq.)		150-097031-010 Rev. O	8		
		702-1 Track Coupler (4230 Feq.)		150-095025-034 Rev. CAO	1		
		702-1 Track Coupler (3870 Feq.)		150-095025-034 Rev. CAO	1		
		702-1 Track Coupler (3330 Feq.)		150-095025-034 Rev. CAO	1		
		702-1 Track Coupler (4230 Feq.)		150-095025-034 Rev. B	1		
		Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	3		

Fairview	v Signal House Asset Inventory				
Item	Image	Inventory			
Rack 9			Rack 9		
		COMPONENT	MANUFACTURER	PART NUMBER	COUNT
		700 Amplifier Module		150-094017-022 Rev. A	1
		700 Amplifier Module		150-094017-022 Rev. D	1
	13 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	700 Amplifier Module		150-094017-022 Rev. EAO	10
		701-2 CAB Coupler (2340 Feq.)		150-097031-010 Rev. O	8
		702-1 Track Coupler (3690 Feg.)		150-095025-034 Rev. CAO	2
	10000	702-1 Track Coupler (4950 Feq.)		150-095025-034 Rev. B	1
	Marie and American	702-1 Track Coupler (4950 Feq.)		150-095025-034 Rev. CAO	1
		703-1 Receiver Module (4230 Feq.)		150-095025-047 Rev. E	2
	三甲基磺基基	703-1 Receiver Module (3690 Feq.)		150-095025-047 Rev. E	1
	MARINA	703-1 Receiver Module (4950 Feq.)		150-095025-047 Rev. D	1
		703-1 Receiver Module (3690 Feq.)		150-095025-047 Rev. FAO	2
	THE REAL PROPERTY.	703-1 Receiver Module (4950 Feq.)		150-095025-047 Rev. FAO	1
		Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	3
		AF Track Receiver Chassis	Getsgs	812-097031-034	1
Rack 10	A STATE OF THE PARTY OF THE PAR		Rack 10		
		COMPONENT	MANUFACTURER	PART NUMBER	COUNT
		700 Amplifier Module		150-094017-022 Rev. A	1
		700 Amplifier Module		150-094017-022 Rev. EAO	11
		701-2 CAB Coupler (2340 Feq.)		150-097031-010 Rev. O	7
	AND ADDRESS OF THE PARTY AND ADDRESS OF THE PA	702-1 Track Coupler (3690 Feq.)		150-095025-034 Rev. CAO	1
		702-1 Track Coupler (4950 Feq.)		150-095025-034 Rev. B	1
		702-1 Track Coupler (3330 Feq.)		150-095025-034 Rev. B	1
		702-1 Track Coupler (4230 Feq.)		150-095025-034 Rev. B	1
	12 10 10 10 10 10 10 10 10 10 10 10 10 10	702-1 Track Coupler (3690 Feq.)		150-095025-034 Rev. B	1
		703-1 Receiver Module (4950 Feq.)		150-095025-047 Rev. FAO	2
		703-1 Receiver Module (3330 Feq.)		150-095025-047 Rev. D	1
		703-1 Receiver Module (4230 Feq.)		150-095025-047 Rev. FAO	2
	The state of the s	703-1 Receiver Module (3330 Feq.)		150-095025-047 Rev. FAO	1
		703-1 Receiver Module (3690 Feq.)		150-095025-047 Rev. D	1
		Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	3
		AF Track Receiver Chassis	Getsgs	812-097031-034	1

Rack 11	Image	Inventory			
Rack 11	and the state of t				
	THE RESERVE THE PROPERTY OF THE PARTY OF THE		Rack 11		
		COMPONENT	MANUFACTURER	PART NUMBER	COUNT
	a. 7 Magazina	HLC Cabinet with Lexan Cover	Getsgs	226802-001	2
		VLP			2
	图·超过图》(从64图22)	ACP-3			2
		SSM			2
	The second second	CCI			2
		VSD			2
		VGPI 16			2
	logit Santala	VGP I/O-12V			3
		NV I/O			4
		32 NVI			5
		CLA Board			2
		RS-232			5
	- Indiana.	Modem			1
		12V Power Supply			2
Rack 12			Rack 12		
Nack 12		COMPONENT	MANUFACTURER	PART NUMBER	COUNT
	1	HLC Cabinet with Lexan Cover	Getsgs	226802-001	1
		VLP			1
		ACP-3			1
		SSM			1
	Lege Generalie	CCI			1
	- 1	VSD			1
	A C	VGP I/O-12V			1
	ai'	NV I/O			3
		NVI 32			1
		RS-232			2
	100	Modem			1
		12V Power Supply			1
		Hawk Event Recorder	Getsgs	251210-00001	2

Fairview Signal House Asset Inventory Item Image Inventory Rack 13 Rack 13 PART COMPONENT **MANUFACTURER NUMBER** COUNT Rotary Dials (Full Hemisphere-NEW) 21 Non-Vital Relays 76 Key Lock Switch 2-POS 2-POL STD.Lock **EAO Switch Corp** 51-236.025D 1 Rack 14 Rack 14 COMPONENT MANUFACTURER PART NUMBER COUNT Rotary Dials (Full Hemisphere-NEW) 16 75 Non-Vital Relays

ltem	Image	Inventory			
SCADA	A THE SECOND		SCADA		
		COMPONENT	MANUFACTURER	PART NUMBER	COUNT
	Media-	Power Supply	Schneider Electric	TSXPSY1610	1
		CPU	Schneider Electric	TSXP57203	1
	THE RESERVE THE RE	Memory Card	Schneider Automation S.A.	TSXMRP064P	1
		RS-232			1
	" "	Input Card	Schneider Electric	TSXDEY32D2K	6
	A CONTRACTOR OF THE PARTY OF TH	Input Cord	Schneider Electric	TSXCDP203	12
	The second of	Output Card	Schneider Electric	TSXDSY32T2K	2
		Output Cord	Phoenix Contact	22 98 438	4
	THE RESERVE THE PARTY OF THE PA	Input Card ABE7	Schneider Electric	ABE7H16C11	12
	S. Spanners, State of the last	Relays	Phoenix Contact	PLC-V8/FLK14/OUT	8
		Power Supply	Connect Power	992534 0024	1
		Battery Charger	Connect Power	991628 0024	1
	THE PERSON NAMED IN	Batteries	CD Technologies	UPS12-150MR	2
		TC8802/TC8800			1
		Backplane			1
	2 /2 50	TSX Momentum/ RS-232	Schneider Electric	171CCC76010	1

Fairview Signal House Asset Inventory Item **Image** Inventory **House Side-A** Sides **MANUFACTURE** COMPONENT COUNT **PART NUMBER** NAPCO FIA-Keypad Controller RPC3000LCDe 1 Switch Heater Push Button Box 1 House Side-B Fire Intrusion Alarm NAPCO 1 Battery NP7-1212V,7.0Ah 2 Genesis Main Board 1 **Relay Boards** 1 **House Side-C House Side-D** Double Throw Enclosed Switch 100A 240V AC/ 250V DC 40275-953-02 Square D 1 GENERAL Duty Safety Switch 100A 240V AC/ 250V DC 40276-004-02 Square D 1 Surge Protector 18V AC 15A USSP US&S N451552-0507 3 **Current Monitor** NRS 16775-00 2 12V Power Supply NRS ERB-C 12/501C 2 2.25V Battery **GNB** 50A15 12 Assy 227027-001 CLCP 256 IO LED Driver Module Getsgs 2 Rev. 806 Power Supply CLCP 12VDC 20W Getsgs 226609-200 2 **EAO Switch**

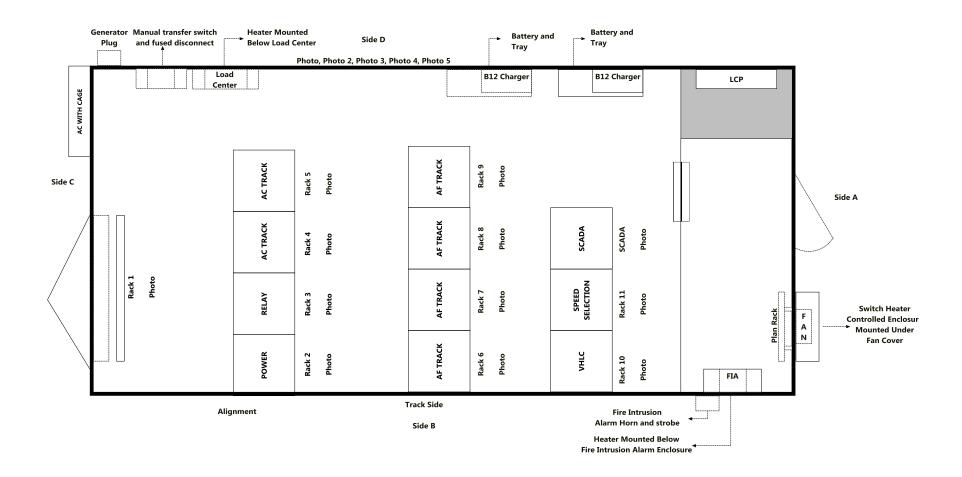
Key Lock Switch 2-POS 2-POL STD.Lock

51-236.025D

Corp

2

Forest Park A Signal House



Forest Park A Signal House Asset Inventory Image Inventory Item Rack 1 Rack 1 COMPONENT MANUFACTURER PART NUMBER COUNT 150-097031-013 Rev. O BPL-3 **HARMON** 2 ISOLATED LOOP CIRCUIT 3 PROTECTOR PC642C-036X Rack 2 Rack 2 COMPONENT MANUFACTURER PART NUMBER COUNT Vital Relay A62-407 (56001-745-02) Alstom 1 A62-122 (56001-921-07) Vital Relay Alstom 5 XFMR 31094-000-01 Rev. F Alstom 1 28V Power Supply Керсо PRR 28-38M24787 2 28V Power Supply Керсо PRM 28-17-24810 2 Rectifier Alstom A53-541 1

Forest Park A Signal House Asset Inventory Image Inventory Item Rack 3 Rack 3 COMPONENT MANUFACTURER PART NUMBER COUNT PRR 28-38M24787 28V Power Supply Керсо 1 28V Power Supply PRM 28-17-24810 Керсо Rack 4 Rack 4 COMPONENT MANUFACTURER PART NUMBER COUNT Switch Rectifier 120AC/120DC 250756-000 2 Vital Relay A62-429 (56001-926-01) Alstom 6 Vital Relay Alstom A62-432 (56001-785-01) 3 Vital Relay 2 Alstom A62-247

Item	Image	Inventory			
Rack 5			Rack 5		
	The state of the s	COMPONENT	MANUFACTURER	PART NUMBER	COUNT
	10 TO	XFMR Loop Matching	EPC	800-088019-200	1
	一直是美國國際	AC Vain Relay	Alstom	A62-486	1
		Bal Imp	Alstom	A3-117	1
		3 ohm Resistor	GRS	A3-207 (01246-1)	1
	7 (24 5) 65 (25)	25 ohm Resistor		56105-11	1
		XFMR	Alstom	31094-000 (A95 50)	1
	阿利金 	VITAL RELAY	Alstom	A62-122 (56001-921-07)	1
	1 1 1 1 1	700 Amplifier Module	Harmon	150-094017-022 Rev. D	4
		701-2 CAB Coupler (2340 Feq.)	Harmon	150-097031-010 Rev. O	4
		Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	1
Pack 6			Rack 6		
Rack 6		COMPONENT	Rack 6 MANUFACTURER	PART NUMBER	COUNT
Rack 6		COMPONENT XFMR Loop Matching	Rack 6 MANUFACTURER EPC	PART NUMBER 800-088019-200	COUNT
Rack 6		XFMR Loop Matching	MANUFACTURER		_
Rack 6			MANUFACTURER EPC	800-088019-200	1
Rack 6		XFMR Loop Matching AC Vain Relay	MANUFACTURER EPC Alstom	800-088019-200 A62-486	1
Rack 6		XFMR Loop Matching AC Vain Relay Bal Imp	MANUFACTURER EPC Alstom Alstom	800-088019-200 A62-486 A3-117	1 1 1
Rack 6		XFMR Loop Matching AC Vain Relay Bal Imp 3 ohm Resistor	MANUFACTURER EPC Alstom Alstom	800-088019-200 A62-486 A3-117 A3-207 (01246-1)	1 1 1 1
Rack 6		XFMR Loop Matching AC Vain Relay Bal Imp 3 ohm Resistor 25 ohm Resistor	EPC Alstom Alstom GRS	800-088019-200 A62-486 A3-117 A3-207 (01246-1) 56105-11	1 1 1 1 1
Rack 6		XFMR Loop Matching AC Vain Relay Bal Imp 3 ohm Resistor 25 ohm Resistor XFMR	EPC Alstom Alstom GRS Alstom	800-088019-200 A62-486 A3-117 A3-207 (01246-1) 56105-11 31094-000 (A95 50)	1 1 1 1 1 1
Rack 6		XFMR Loop Matching AC Vain Relay Bal Imp 3 ohm Resistor 25 ohm Resistor XFMR VITAL RELAY	MANUFACTURER EPC Alstom Alstom GRS Alstom Alstom Alstom	800-088019-200 A62-486 A3-117 A3-207 (01246-1) 56105-11 31094-000 (A95 50) A62-122 (56001-921-07)	1 1 1 1 1 1
Rack 6		XFMR Loop Matching AC Vain Relay Bal Imp 3 ohm Resistor 25 ohm Resistor XFMR VITAL RELAY 700 Amplifier Module	MANUFACTURER EPC Alstom Alstom GRS Alstom Alstom Harmon	800-088019-200 A62-486 A3-117 A3-207 (01246-1) 56105-11 31094-000 (A95 50) A62-122 (56001-921-07) 150-094017-022 Rev. D	1 1 1 1 1 1 1 1 3

Item	Image	Inventory			
Rack 7			Rack 7		
rideit 7	4404	COMPONENT	MANUFACTURER	PART NUMBER	COUN
		700 Amplifier Module	Harmon	150-094017-022 Rev. D	6
		701-2 CAB Coupler (2340 Feq.)	Harmon	150-097031-010 Rev. O	3
		702-1 Track Coupler (3510 Feq.)	Harmon	150-095025-034 Rev. CAO	1
		702-1 Track Coupler (2970 Feq.)	Harmon	150-095025-034 Rev. CAO	1
	Market C. I have at I	702-1 Track Coupler (3510 Feq.)	Harmon	150-095025-034 Rev. B	1
		703-1 Receiver Module (2970 Feq.)	Harmon	150-095025-047 Rev. E	2
		703-1 Receiver Module (3510 Feq.)	Harmon	150-095025-047 Rev. FAO	1
		703-1 Receiver Module (3870 Feq.)	Harmon	150-095025-047 Rev. E	1
	THE BANKS OF THE STATE OF THE S	Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	2
		AF Track Receiver Chassis	Getsgs	812-097031-034	1
Rack 8		AF Track Receiver Chassis	Getsgs Rack 8	812-097031-034	1
Rack 8		AF Track Receiver Chassis COMPONENT		812-097031-034 PART NUMBER	COUN
Rack 8			Rack 8		
Rack 8		COMPONENT	Rack 8 MANUFACTURER	PART NUMBER	COUN
Rack 8		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.)	Rack 8 MANUFACTURER Harmon	PART NUMBER 150-094017-022 Rev. D 150-097031-010 Rev. O 150-095025-034 Rev. CAO	COUN 6
Rack 8		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.)	Rack 8 MANUFACTURER Harmon Harmon	PART NUMBER 150-094017-022 Rev. D 150-097031-010 Rev. O	COUN 6 3
Rack 8		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.) 702-1 Track Coupler (3330 Feq.) 702-1 Track Coupler (4410 Feq.)	Rack 8 MANUFACTURER Harmon Harmon Harmon	PART NUMBER 150-094017-022 Rev. D 150-097031-010 Rev. O 150-095025-034 Rev. CAO	COUN 6 3 1 1 1
Rack 8		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.) 702-1 Track Coupler (3330 Feq.) 702-1 Track Coupler (4410 Feq.) 703-1 Receiver Module (4410 Feq.)	Rack 8 MANUFACTURER Harmon Harmon Harmon Harmon Harmon Harmon Harmon	PART NUMBER 150-094017-022 Rev. D 150-097031-010 Rev. O 150-095025-034 Rev. CAO 150-095025-034Rev. FAO 150-095025-034 Rev. B 150-095025-047 Rev. E	COUN 6 3 1 1
Rack 8		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.) 702-1 Track Coupler (3330 Feq.) 702-1 Track Coupler (4410 Feq.)	Rack 8 MANUFACTURER Harmon Harmon Harmon Harmon Harmon Harmon	PART NUMBER 150-094017-022 Rev. D 150-097031-010 Rev. O 150-095025-034 Rev. CAO 150-095025-034Rev. FAO 150-095025-034 Rev. B	COUN 6 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Rack 8		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.) 702-1 Track Coupler (3330 Feq.) 702-1 Track Coupler (4410 Feq.) 703-1 Receiver Module (4410 Feq.) 703-1 Receiver Module (4230 Feq.) 703-1 Receiver Module (3510 Feq.)	Rack 8 MANUFACTURER Harmon Harmon Harmon Harmon Harmon Harmon Harmon Harmon Harmon	PART NUMBER 150-094017-022 Rev. D 150-097031-010 Rev. O 150-095025-034 Rev. CAO 150-095025-034Rev. FAO 150-095025-034 Rev. B 150-095025-047 Rev. E 150-095025-047 Rev. E	COUN 6 3 1 1 1 1 1 1 1
Rack 8		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.) 702-1 Track Coupler (3330 Feq.) 702-1 Track Coupler (4410 Feq.) 703-1 Receiver Module (4410 Feq.) 703-1 Receiver Module (4230 Feq.)	Rack 8 MANUFACTURER Harmon Harmon Harmon Harmon Harmon Harmon Harmon Harmon	PART NUMBER 150-094017-022 Rev. D 150-097031-010 Rev. O 150-095025-034 Rev. CAO 150-095025-034Rev. FAO 150-095025-034 Rev. B 150-095025-047 Rev. E 150-095025-047 Rev. E	COUN 6 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

Item	Image	Inventory				
Rack 9	A Control of the Cont		Rack 9			
	The state of the state of	COMPONENT	MANUFACTURER		PART NUMBER	COUN
	AND ADDRESS OF THE PERSON NAMED IN	700 Amplifier Module	Harmon	150	-094017-022 Rev. D	5
	223111	700 Amplifier Module	Harmon	150	-094017-022 Rev. A	1
		701-2 CAB Coupler (2340 Feq.)	Harmon	150	-097031-010 Rev. O	4
	STATE OF THE PERSON NAMED IN	702-1 Track Coupler (3690 Feq.)	Harmon	150	-095025-034 Rev. B	1
	THE RESERVE THE PERSON	702-1 Track Coupler (2970 Feq.)	Harmon	150	-095025-034 Rev. B	1
		703-1 Receiver Module (3690 Feq.)	Harmon	150	-095025-047 Rev. D	1
	3,3,3,000	703-1 Receiver Module (4950 Feq.)	Harmon	150-0	095025-047 Rev. FAO	1
		Chassis AF Track XMT TTT-2	Getsgs		812-097031-001	2
	J Manin	AF Track Receiver Chassis	Getsgs		812-097031-034	1
Rack 10			Rack 10			
Rack 10		COMPONENT	Rack 10 MANUFACTU		PART NUMBER	COUN
Rack 10		COMPONENT HLC Cabinet with Lexan Cover	Rack 10			COUN 2
Rack 10		COMPONENT HLC Cabinet with Lexan Cover VLP	Rack 10 MANUFACTU		PART NUMBER	COUN 2 2 2
Rack 10		COMPONENT HLC Cabinet with Lexan Cover VLP ACP-3	Rack 10 MANUFACTU		PART NUMBER	COUN 2 2 2 2 2
Rack 10		COMPONENT HLC Cabinet with Lexan Cover VLP ACP-3 SSM	Rack 10 MANUFACTU		PART NUMBER	2 2 2 2 2
Rack 10		COMPONENT HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI	Rack 10 MANUFACTU		PART NUMBER	2 2 2 2 2 2
Rack 10		COMPONENT HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI VSD	Rack 10 MANUFACTU		PART NUMBER	2 2 2 2 2
Rack 10		COMPONENT HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI	Rack 10 MANUFACTU		PART NUMBER	2 2 2 2 2 2 2
Rack 10		COMPONENT HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI VSD VGP I/O-12V	Rack 10 MANUFACTU		PART NUMBER	2 2 2 2 2 2 2 4
Rack 10		COMPONENT HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI VSD VGP I/O-12V NV I/O	Rack 10 MANUFACTU		PART NUMBER	2 2 2 2 2 2 2 4 4
Rack 10		COMPONENT HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI VSD VGP I/O-12V NV I/O 32 NVI	Rack 10 MANUFACTU		PART NUMBER	2 2 2 2 2 2 2 4 4
Rack 10		COMPONENT HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI VSD VGP I/O-12V NV I/O 32 NVI CLA Board	Rack 10 MANUFACTU		PART NUMBER	2 2 2 2 2 2 2 4 4 4 4

Item	Imago	Inventory			
ıtem	Image	inventory			
Rack 11	W W		Rack 11		
	The man was	COMPONENT	MANUFACTUR	RER PART NUMBER	COUNT
	A Company of the Comp	Rotary Dials (Full Hemisp	here-NEW)		17
		Non-Vital Relay	r'S		81
Scada			SCADA		
	THE RESERVE THE PARTY OF THE PA	COMPONENT	MANUFACTURER		
	(C. 八九九九日中中中) (C. 四	CONFONEIVI	IVIANUFACTURER	PART NUMBER	COUN
		Power Supply	Schneider Electric	TSXPSY1610	COUN 1
		Power Supply	Schneider Electric	TSXPSY1610	1
		Power Supply CPU	Schneider Electric Schneider Electric	TSXPSY1610 TSP57203	1
		Power Supply CPU Memory Card	Schneider Electric Schneider Electric	TSXPSY1610 TSP57203	1 1 1
		Power Supply CPU Memory Card RS-232	Schneider Electric Schneider Electric Schneider Automation S.A.	TSXPSY1610 TSP57203 TSXMRP064P	1 1 1 1
		Power Supply CPU Memory Card RS-232 Input Card	Schneider Electric Schneider Electric Schneider Automation S.A. Schneider Electric	TSXPSY1610 TSP57203 TSXMRP064P TSXDEY32D2K	1 1 1 1 3
		Power Supply CPU Memory Card RS-232 Input Card Input Cord	Schneider Electric Schneider Electric Schneider Automation S.A. Schneider Electric Schneider Electric	TSXPSY1610 TSP57203 TSXMRP064P TSXDEY32D2K TSXCDP203	1 1 1 1 3 6
		Power Supply CPU Memory Card RS-232 Input Card Input Cord Output Card Output Cord Input Cord	Schneider Electric Schneider Automation S.A. Schneider Electric Schneider Electric Schneider Electric Schneider Electric Phoenix Contact Schneider Electric	TSXPSY1610 TSP57203 TSXMRP064P TSXDEY32D2K TSXCDP203 TSXDSY32T2K 22 98 438 ABE7H16C11	1 1 1 1 3 6 2 4 6
		Power Supply CPU Memory Card RS-232 Input Card Input Cord Output Card Output Cord	Schneider Electric Schneider Automation S.A. Schneider Electric Schneider Electric Schneider Electric Schneider Electric Phoenix Contact	TSXPSY1610 TSP57203 TSXMRP064P TSXDEY32D2K TSXCDP203 TSXDSY32T2K 22 98 438	1 1 1 1 3 6 2 4
		Power Supply CPU Memory Card RS-232 Input Card Input Cord Output Card Output Cord Input Cord	Schneider Electric Schneider Automation S.A. Schneider Electric Schneider Electric Schneider Electric Schneider Electric Phoenix Contact Schneider Electric	TSXPSY1610 TSP57203 TSXMRP064P TSXDEY32D2K TSXCDP203 TSXDSY32T2K 22 98 438 ABE7H16C11	1 1 1 1 3 6 2 4 6
		Power Supply CPU Memory Card RS-232 Input Card Input Cord Output Card Output Card Input Cord RS-232	Schneider Electric Schneider Automation S.A. Schneider Electric Schneider Electric Schneider Electric Schneider Electric Phoenix Contact Schneider Electric Phoenix Contact	TSXPSY1610 TSP57203 TSXMRP064P TSXDEY32D2K TSXCDP203 TSXDSY32T2K 22 98 438 ABE7H16C11 PLC-V8/FLK14/OUT	1 1 1 1 3 6 2 4 6 8
		Power Supply CPU Memory Card RS-232 Input Card Input Cord Output Card Output Card Input Cord RS-232 Input Cord Input Cord Input Cord Input Cord Input Card ABE7 Relays Power Supply	Schneider Electric Schneider Automation S.A. Schneider Electric Schneider Electric Schneider Electric Schneider Electric Phoenix Contact Schneider Electric Phoenix Contact Connect Power	TSXPSY1610 TSP57203 TSXMRP064P TSXDEY32D2K TSXCDP203 TSXCDY32T2K 22 98 438 ABE7H16C11 PLC-V8/FLK14/OUT 992534 0024	1 1 1 1 3 6 2 4 6 8
		Power Supply CPU Memory Card RS-232 Input Card Input Cord Output Card Output Card Input Card ABE7 Relays Power Supply Battery Charger	Schneider Electric Schneider Automation S.A. Schneider Electric Schneider Electric Schneider Electric Schneider Electric Phoenix Contact Schneider Electric Phoenix Contact Connect Power Connect Power	TSXPSY1610 TSP57203 TSXMRP064P TSXDEY32D2K TSXCDP203 TSXCDY32T2K 22 98 438 ABE7H16C11 PLC-V8/FLK14/OUT 992534 0024 991628 0024	1 1 1 1 3 6 2 4 6 8 1
		Power Supply CPU Memory Card RS-232 Input Card Input Cord Output Card Output Card Input Card ABE7 Relays Power Supply Battery Charger Batteries	Schneider Electric Schneider Automation S.A. Schneider Electric Schneider Electric Schneider Electric Schneider Electric Phoenix Contact Schneider Electric Phoenix Contact Connect Power Connect Power CD Technologies	TSXPSY1610 TSP57203 TSXMRP064P TSXDEY32D2K TSXCDP203 TSXDSY32T2K 22 98 438 ABE7H16C11 PLC-V8/FLK14/OUT 992534 0024 991628 0024 UPS12-150MR	1 1 1 1 3 6 2 4 6 8 1 1

Forest Park A Signal House Asset Inventory Item **Image** Inventory House Side-A Sides COMPONENT MANUFACTURER PART NUMBER COUNT FIA-Keypad Controller NAPCO RPC3000LCDe 1 SWITCH HEATER CONTROL BOX 1 **House Side-B** Fire Intrusion Alarm NAPCO 1 NP7-1212V,7.0Ah 2 Battery Genesis 1 Main Board **Relay Boards** 1 icommittee **Expansion Modules** 1 **House Side-C House Side-D** Assy 227027-001 Rev. CLCP 256 IO LED Driver Module Getsgs 806 2 226609-200 2 Power Supply CLCP 12VDC 20W Getsgs Double Throw Enclosed Switch 100A 240V AC/ 250V DC Square D 40275-953-01 1 Heavy Duty Safety Switch 100A 240V AC/ 250V DC Square D 40276-003-01 1 EATON ELECTRICAL TRANSIENT VOLTAGE SURGE SUPPRESSOR PTX160-1S101 1 Hawk Event Recorder 251210-00001 1 Getsgs Surge Protector 18V AC 15A USSP US&S N451552-0507 2 **Current Monitor** NRS 16775-00 2 12V Power Supply NRS ERB-C 12/501C 2

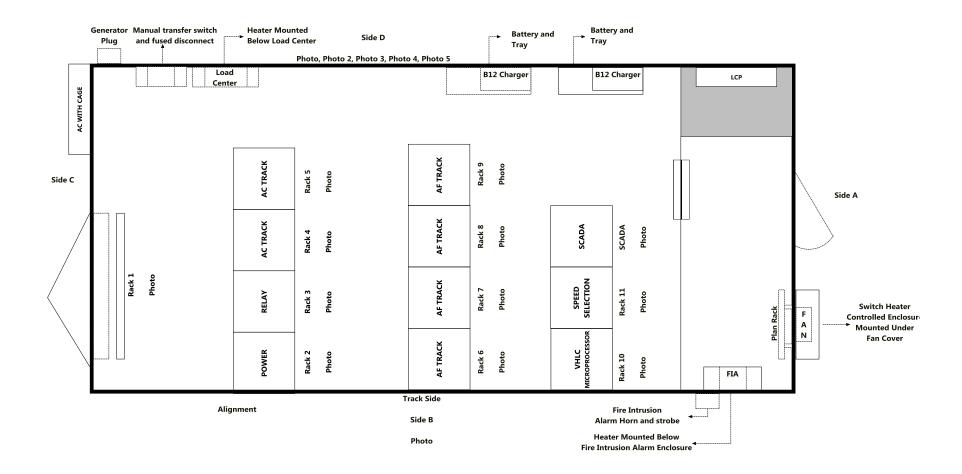
2.25V Battery

50A15

GNB

12

Forest Park B Signal House



Forest Park B Signal House Asset Inventory Image Inventory Item Rack 1 Rack 1 COMPONENT MANUFACTURER PART NUMBER COUNT 150-097031-013 Rev. O BPL-3 **HARMON** 2 ISOLATED LOOP CIRCUIT PROTECTOR 3 PC642C-036X Rack 2 Rack 2 COMPONENT MANUFACTURER PART NUMBER COUNT Vital Relay A62-407 (56001-745-02) Alstom 1 A62-122 (56001-921-07) Vital Relay Alstom 5 XFMR 31094-000-01 Rev. F Alstom 1 28V Power Supply Керсо PRR 28-38M24787 2 28V Power Supply Керсо PRM 28-17-24810 2 Rectifier Alstom A53-541 1

Forest Park B Signal House Asset Inventory Image Inventory Item Rack 3 Rack 3 COMPONENT MANUFACTURER PART NUMBER COUNT PRR 28-38M24787 28V Power Supply Керсо 1 28V Power Supply PRM 28-17-24810 Керсо Rack 4 Rack 4 COMPONENT MANUFACTURER PART NUMBER COUNT Switch Rectifier 120AC/120DC 250756-000 2 Vital Relay A62-429 (56001-926-01) Alstom 6 Vital Relay Alstom A62-432 (56001-785-01) 3 Vital Relay 2 Alstom A62-247

Forest Pa	ark B Signal House Asset Inventory		
Item	Image	Inventory	
Rack 5		Rack 5	
	PACE OF THE PACE O	COMPONENT MANUFACTURER PART NUMBER	COUNT
		XFMR Loop Matching EPC 800-088019-200	1
		AC Vain Relay Alstom A62-486	1
		Bal Imp Alstom A3-117	1
		3 ohm Resistor GRS A3-207 (01246-1)	1
	一次 多糖 · 福川	25 ohm Resistor 56105-11	1
	-	XFMR Alstom 31094-000 (A95 50)	1
	划的 在企业	VITAL RELAY Alstom A62-122 (56001-921-07)	1
	10 日曜 フード	700 Amplifier Module Harmon 150-094017-022 Rev. D	4
	4 /4	701-2 CAB Coupler (2340 Feq.) Harmon 150-097031-010 Rev. O	4
	700	Chassis AF Track XMT TTT-2 Getsgs 812-097031-001	1
Rack 6	12/2	Rack 6	
Nack U		COMPONENT MANUFACTURER PART NUMBER	COUNT
		XFMR Loop Matching EPC 800-088019-200	1
		AC Vain Relay Alstom A62-486	1
		Bal Imp Alstom A3-117	1
		3 ohm Resistor GRS A3-207 (01246-1)	1
	TO IE	25 ohm Resistor 56105-11	1
		XFMR Alstom 31094-000 (A95 50)	1
		VITAL RELAY Alstom A62-122 (56001-921-07)	1
		700 Amplifier Module Harmon 150-094017-022 Rev. D	3
		701-2 CAB Coupler (2340 Feq.) Harmon 150-097031-010 Rev. O	3
	William .	Chassis AF Track XMT TTT-2 Getsgs 812097031-001	1
	1100		

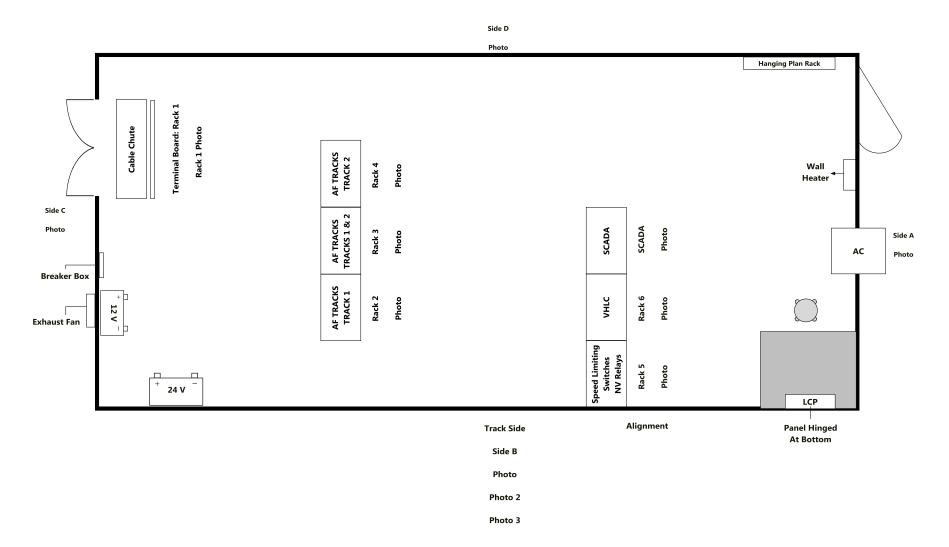
Forest Pa	rk B Signal House Asset Inventory				
Item	Image	Inventory			
Rack 7			Rack 7		
		COMPONENT	MANUFACTURER	PART NUMBER	COUNT
		700 Amplifier Module	Harmon	150-094017-022 Rev. D	6
		701-2 CAB Coupler (2340 Feq.)	Harmon	150-097031-010 Rev. O	3
	· 义 · · · · · · · · · · · · · · · · · ·	702-1 Track Coupler (3510 Feq.)	Harmon	150-095025-034 Rev. CAO	1
		702-1 Track Coupler (2970 Feq.)	Harmon	150-095025-034 Rev. CAO	1
	Marie Control of Contr	702-1 Track Coupler (3510 Feq.)	Harmon	150-095025-034 Rev. B	1
	Laratata Barrier	703-1 Receiver Module (2970 Feq.)	Harmon	150-095025-047 Rev. E	2
		703-1 Receiver Module (3510 Feq.)	Harmon	150-095025-047 Rev. FAO	1
	1000000000000000000000000000000000000	703-1 Receiver Module (3870 Feq.)	Harmon	150-095025-047 Rev. E	1
		Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	2
		AF Track Receiver Chassis	Getsgs	812-097031-034	1
Rack 8			Rack 8		
Nack o		COMPONENT	MANUFACTURER	PART NUMBER	COUNT
		700 Amplifier Module	Harmon	150-094017-022 Rev. D	6
		701-2 CAB Coupler (2340 Feq.)	Harmon	150-097031-010 Rev. O	3
		702-1 Track Coupler (4230 Feq.)	Harmon	150-095025-034 Rev. CAO	1
		702-1 Track Coupler (3330 Feg.)	Harmon	150-095025-034Rev. FAO	1
		702-1 Track Coupler (4410 Feq.)	Harmon	150-095025-034 Rev. B	1
	122111	703-1 Receiver Module (4410 Feq.)	Harmon	150-095025-047 Rev. E	1
		703-1 Receiver Module (4230 Feq.)	Harmon	150-095025-047 Rev. E	1
		703-1 Receiver Module (3510 Feq.)	Harmon	150-095025-047 Rev. FAO	1
		Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	2
	100	AF Track Receiver Chassis	Getsgs	812-097031-034	1
	TO SHARE				

Item	Image	Inventory			
Rack 9			Rack 9		
	The state of the s	COMPONENT	MANUFACTURER	PART NUMBER	COUN
	THE R. P. LEWIS CO., LANSING, MICH.	700 Amplifier Module	Harmon	150-094017-022 Rev.	D 5
	2 2 B 1 1 1	700 Amplifier Module	Harmon	150-094017-022 Rev.	A 1
		701-2 CAB Coupler (2340 Feq.)	Harmon	150-097031-010 Rev.	0 4
	The state of the s	702-1 Track Coupler (3690 Feq.)	Harmon	150-095025-034 Rev.	B 1
	AND ADDRESS OF THE PARTY OF THE	702-1 Track Coupler (2970 Feq.)	Harmon	150-095025-034 Rev.	B 1
	A 10 10 20 20 20 10 10 10 10 10 10 10 10 10 10 10 10 10	703-1 Receiver Module (3690 Feq.)	Harmon	150-095025-047 Rev.	D 1
		703-1 Receiver Module (4950 Feq.)	Harmon	150-095025-047 Rev. F	AO 1
		Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	2
		AF Track Receiver Chassis	Getsgs	812-097031-034	1
Rack 10			Rack 10		
Rack 10		COMPONENT HIS Cobinet with Layer Cover	MANUFACTU		
Rack 10		HLC Cabinet with Lexan Cover		RER PART NUMBE 226802-001	2
Rack 10		HLC Cabinet with Lexan Cover VLP	MANUFACTU		2 2
Rack 10		HLC Cabinet with Lexan Cover VLP ACP-3	MANUFACTU		2 2 2
Rack 10		HLC Cabinet with Lexan Cover VLP ACP-3 SSM	MANUFACTU		2 2 2 2
Rack 10		HLC Cabinet with Lexan Cover VLP ACP-3	MANUFACTU		2 2 2
Rack 10		HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI	MANUFACTU		2 2 2 2 2
Rack 10		HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI VSD	MANUFACTU		2 2 2 2 2 2 2
Rack 10		HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI VSD VGP I/O-12V	MANUFACTU		2 2 2 2 2 2 2 4
Rack 10		HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI VSD VGP I/O-12V NV I/O 32 NVI CLA Board	MANUFACTU		2 2 2 2 2 2 2 4 4
Rack 10		HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI VSD VGP I/O-12V NV I/O 32 NVI CLA Board RS-232	MANUFACTU		2 2 2 2 2 2 2 4 4 4 2 4
Rack 10		HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI VSD VGP I/O-12V NV I/O 32 NVI CLA Board	MANUFACTU		2 2 2 2 2 2 2 2 4 4 4 4 2

Item	Image	Inventory				
Rack 11	W.W.	Rack 11				
	Eliza man con	COMPONENT	MANUFACTUR	ER PART NUMBER	COUNT	
		Rotary Dials (Full Hemisp	here-NEW)		25	
		Non-Vital Relay			84	
Scada			SCADA			
	FAMILE DE	COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
	100	Power Supply	Schneider Electric	TSXPSY1610	1	
	WW-	CPU	Schneider Electric	TSP57203	1	
		Memory Card	Schneider Automation S.A.	TSXMRP064P	1	
	THE RESERVE THE PARTY OF THE PA	RS-232			1	
	Samuel Control of the	Input Card	Schneider Electric	TSXDEY32D2K	3	
		Input Cord	Schneider Electric	TSXCDP203	6	
	A	Output Card	Schneider Electric	TSXDSY32T2K	2	
	The state of the s	Output Cord	Phoenix Contact	22 98 438	4	
		Input Card ABE7	Schneider Electric	ABE7H16C11	6	
	10.40	Relays	Phoenix Contact	PLC-V8/FLK14/OUT	8	
		Power Supply	Connect Power	992534 0024	1	
		Battery Charger	Connect Power	991628 0024	1	
	(1.00) - CON	Batteries	CD Technologies	UPS12-150MR	2	
		Fiber Media Converter	GarrettCom Inc.	CS14P-SST-48VDC	1	
		Phone Line Extender	Tcom		1	
	The Party of the P	Backplane				

Forest Park B Signal House Asset Inventory						
Item	Image	Inventory				
Sides	Land Market	House Side-A				
	THE RESIDENCE OF THE PERSON AND ADDRESS OF THE PERSON ADDRESS OF	COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
	A Thomas and the second	FIA-Keypad Controller	NAPCO	RPC3000LCDe	1	
	■ ● 本本 三	SWITCH HEATER CONTROL BOX			1	
		House Side-B				
		Fire Intrusion Alarm	NAPCO		1	
		Battery	Genesis	NP7-1212V,7.0Ah	2	
		Main Board			1	
		Relay Boards			1	
	3 James 19	Expansion Modules			1	
	ACCOUNTS ASSESSED.	House Side-C				
	The state of the s	v.				
		House Side-D				
				Assy 227027-001 Rev.		
		CLCP 256 IO LED Driver Module	Getsgs	806	2	
		Power Supply CLCP 12VDC 20W	Getsgs	226609-200	2	
		Double Throw Enclosed Switch 100A 240V				
		AC/ 250V DC	Square D	40275-953-01	1	
		Heavy Duty Safety Switch 100A 240V AC/				
		250V DC	Square D	40276-003-01	1	
		TRANSIENT VOLTAGE SURGE SUPPRESSOR	EATON ELECTRICAL	PTX160-1S101	1	
		Hawk Event Recorder	Getsgs	251210-00001	1	
		Surge Protector 18V AC 15A USSP	US&S	N451552-0507	2	
		Current Monitor	NRS	16775-00	2	
		12V Power Supply	NRS	ERB-C 12/501C	2	
		2.25V Battery	GNB	50A15	12	

Grand Signal House



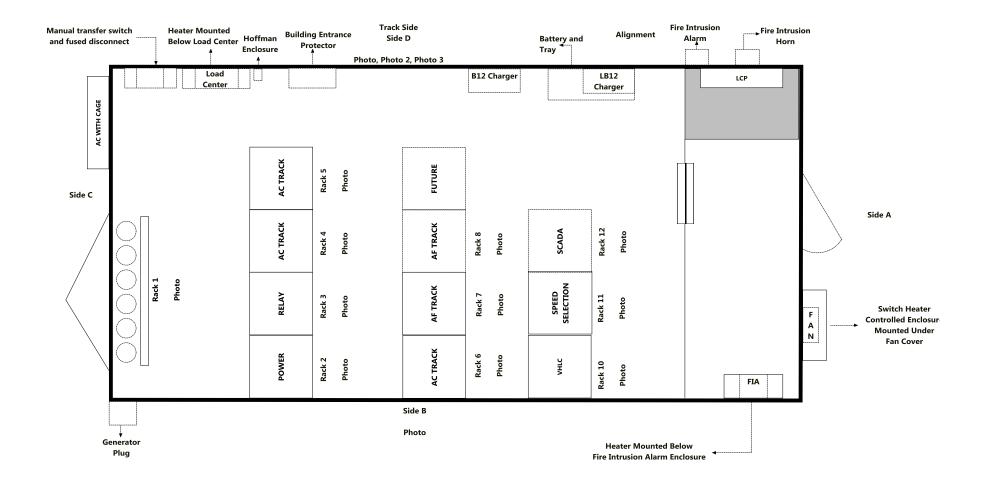
Grand Signal House Asset Inventory Inventory Item *Image* Rack 1 Rack 1 MANUFACTURER COMPONENT PART NUMBER COUNT BPL-1 **EPC** Rack 2 Rack 2 COMPONENT **MANUFACTURER PART NUMBER** COUNT Vital Relay GRS A62-122 (56001-921-07) 4 520 Receiver Module (3870 Feq.) EPC 150-088019-080 Rev. B 1 EPC 3 520 Receiver Module (2970 Feq.) 150-088019-080 Rev. B 520 Receiver Module (3510 Feq.) EPC 150-088019-080 Rev. F 1 EPC 520 Receiver Module (2970 Feq.) 150-088019-080 Rev. F 1 520 Receiver Module (4410 Feq.) EPC 150-088019-080 Rev. B 1 EPC 510 Amplifier Module 7 150-088019-050 Rev. B 530 CAB Coupler EPC 4 150-088019-051 Rev. B 540 Train Detection Coupler (2970 Feq.) EPC 150-088019-060 Rev. B 1 540 Train Detection Coupler (3510 Feg.) EPC 1 150-088019-060 Rev. B 540 Train Detection Coupler (4410 Feq.) EPC 150-088019-060 Rev. B 1 XMIT CHASSIS EPC 800-088019-020 2 RECIEVER CHASSIS EPC 800-088019-030 1

Grand Signal H	ouse Asset Inventory						
Item	Image	Inventory					
Rack 3	Perhadus (P)	Rack 3					
	The state of the s	COMPONENT	MANUFACTURER	PART NUMBER	COUNT		
	GEORGE ST	Vital Relay	GRS	A62-122 (56001-921-07)	4		
	The state of the s	520 Receiver Module (3690 Feq.)	EPC	150-088019-080 Rev. B	4		
		520 Receiver Module (3330 Feq.)	EPC	150-088019-080 Rev. F	1		
	a the same	520 Receiver Module (4230 Feq.)	EPC	150-088019-080 Rev. B	1		
	The second second	520 Receiver Module (4950 Feq.)	EPC	150-088019-080 Rev. B	1		
	N. W. W. W.	510 Amplifier Module	EPC	150-088019-050 Rev. B	7		
		530 CAB Coupler	EPC	150-088019-051 Rev. B	4		
		540 Train Detection Coupler (4230 Feq.)	EPC	150-088019-060 Rev. B	1		
	and the second	540 Train Detection Coupler (3690 Feq.)	EPC	150-088019-060 Rev. B	1		
		540 Train Detection Coupler (3330 Feq.)	EPC	150-088019-060 Rev. B	1		
		XMIT CHASSIS	EPC	800-088019-020	2		
		RECIEVER CHASSIS	EPC	800-088019-030	1		
Rack 4	1 March 1 / 10 - 1		Rack 4				
	THE RESERVE	COMPONENT	MANUFACTURER	PART NUMBER	COUNT		
		AC Vain Relay	GRS	A62-486	2		
	THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAM	Bal Imp		A3-117	2		
	The state of the s	3 OHM ADJUSTABLE Resistor	GRS	A3-207 (01246-1)	2		
	A STATE OF THE PARTY OF THE PAR	25 OHM ADJUSTABLE Resistor		56105-11	2		
		XFMR	GRS	31094-000 (A95 50)	1		
		510 Amplifier Module	EPC	150-088019-050 Rev. B	8		
		530 CAB Coupler (2340 Feq.)	EPC	150-088019-051 Rev. B	4		
	The state of the s	540 Train Detection Coupler (2970 Feq.)	EPC	150-088019-060 Rev. B	1		
		540 Train Detection Coupler (3510 Feq.)	EPC	150-088019-060 Rev. B	1		
		540 Train Detection Coupler (4230 Feq.)	EPC	150-088019-060 Rev. B	1		
		540 Train Detection Coupler (3690 Feq.)	EPC	150-088019-060 Rev. B	1		
	A STATE OF THE PARTY OF THE PAR	XMIT CHASSIS	EPC	800-088019-020	2		

Grand Signal House Asset Inventory Image Inventory Item Rack 5 Rack 5 COMPONENT MANUFACTURER **PART NUMBER** COUNT Rotary Dials (Full Hemisphere-OLD) 12 Non-Vital Relays 22 VITAL RELAY SAFETRAN 400900 2 Rack 6 Rack 6 MANUFACTURER COMPONENT **PART NUMBER** COUNT A62-122 56001-921-07 Vital Relay GRS 4 VLP 1 ACP-2 1 SSM 1 CCI 1 VSD 1 VGP I/O 2 VGP I/O-12V 1 NV I/O 1 32 NVI 2 VGPI 16 1 Surge Protector BSA-4 Harmon 250597 1 Modem 2 12V Power Supply 1 VHLC CHASSIS Harmon 226607=003

Grand Signal House Asset Inventory Image Inventory Item **SCADA SCADA** MANUFACTURER COMPONENT PART NUMBER COUNT Modem V3225 1 C186 1 SBX 1 DΙ 2 DO 1 REMZ 1 **Power Supply** 2 Non Vital Relays 19 **Batteries GENESIS** NP7-12 12V,7.0Ah 2 Sides **House Side-A** COMPONENT **MANUFACTURER** COUNT **PART NUMBER House Side-B** DIODE BOARD 1 28V Power Supply Lamarche A29-40-24V-A1 1 28V Power Supply Lamarche A29-10-24V-A1 1 **House Side-C** 12V Power Supply A29-20-12V-A1 Lamarche 1 12V Battery PowerSafe 12V 155FS 1 INOVATIVE TECHNOLOGIES SURGE SUPPRESSOR PTX 160 1 **House Side-D (Fire Control Panel)** Keypad Raydioncs D360TD 1 Omega Alarm Raydioncs D8112 1 Modem D8129 1 Battery NP7-1212V,7.0Ah

Hall Park A Signal House



Hall Park A Signal House Asset Inventory Item Image Inventory Rack 1 Rack 1 COMPONENT MANUFACTURER COUNT **PART NUMBER** BPL-3 HARMON 150-097031-013 Rev. O HARMON 2 CARRIER SURGE ARRESTOR 250197-001 Rack 2 Rack 2 COMPONENT MANUFACTURER PART NUMBER COUNT Vital Relay Alstom A62-407 56001-745-02 Vital Relay Alstom A62-122 56001-921-07 5 POR XFMR Alstom 31094-000-01 Rev. F 1 28V Power Supply Керсо PRR 28-38M24787 2 28V Power Supply PRM 28-17-24810 2 Kepco Rectifier 25V .3A Selenium Type S A53-541 Alstom 1

Hall Park A Signal House Asset Inventory *Image* Item Inventory Rack 3 Rack 3 COMPONENT MANUFACTURER **PART NUMBER** COUNT Rectifier 120AC/120DC Switch 250756-000 2 A62-429 56001-926-01 Vital Relay Alstom 8 Vital Relay Alstom A62-432 56001-785-01 4 Vital Relay A62-247 Alstom 4 A62-122 56001-921-07 Vital Relay Alstom Rack 4 Rack 4 MANUFACTURER **COMPONENT PART NUMBER** COUNT XFMR Matching Rail Coupler **EPC** 810-088019-311 2 XFMR Loop Matching (2340 Feq.) EPC 800-088019-200 1 AC Vain Relay Alstom A62-486 2 Alstom A3-117 2 Bal Imp 1 ohm Resistor (1XT/3XT) GRS A3-207 (01246-1) 2 2.5 ohm Resistor (1XTRN/3XTRN) 56105-11 2 1T/1XT XFMR 31094-000 (A95 50) 1 Alstom VITAL RELAY Alstom A62-122 56001-921-07 1 700 Amplifier Module 150-094017-022 Rev. D 3 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 3 Chassis AF Track XMT TTT-2 Getsgs 812-097031-001 1

Hall Park A Signal House Asset Inventory *Image* Item Inventory Rack 5 Rack 5 MANUFACTURER COMPONENT **PART NUMBER** COUNT XFMR Loop Matching (2340 Feq.) **EPC** 800-088019-200 XFMR Matching Rail Coupler EPC 2 810-088019-311 AC Vain Relay Alstom A62-486 2 Bal Imp Alstom A3-117 2 1 ohm Resistor (1XT/3XT) GRS A3-207 (01246-1) 2 2.5 ohm Resistor (1XTRN/3XTRN) 56105-11 2 5T/5XT XFMR 31094-000 (A95 50) Alstom 1 700 Amplifier Module 150-094017-022 Rev. A 1 700 Amplifier Module 150-094017-022 Rev. C 1 700 Amplifier Module 150-094017-022 Rev. D 1 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 3 Getsgs Chassis AF Track XMT TTT-2 812097031-001 1 Rack 6 Rack 6 **COMPONENT** MANUFACTURER **PART NUMBER** COUNT AC Vain Relay A62-486 Alstom 3 Bal Imp Alstom A3-117 3 1 ohm Resistor (1XT/3XT) GRS A3-207 (01246-1) 3 2.5 ohm Resistor (1XTRN/3XTRN) 56105-11 3 10EAT/10WAT 5A/SP XFMR Alstom 31094-000 (A95 50)

nan Fai	rk A Signal House Asset Invent	•	
Item	Image	Inventory	
Rack 7	THE PERSON NAMED IN	Rack 7	
	A MILE PARTY OF THE PARTY OF TH	COMPONENT MANUFACTURER PART NUMBER	COUNT
		700 Amplifier Module 150-094017-022 Rev. D	6
		700 Amplifier Module 150-094017-022 Rev. C	1
		701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O	4
		702-1 Track Coupler (2970 Feq.) 150-095025-034 Rev. B	1
		702-1 Track Coupler (4410 Feq.) 150-095025-034 Rev. B	1
		702-1 Track Coupler (3870 Feq.) 150-095025-034 Rev. B	1
		Chassis AF Track XMT TTT-2 Getsgs 812-097031-001	2
		703-1 Receiver Module (3870 Feq.) 150-095025-047 Rev. D	1
		703-1 Receiver Module (2970 Feq.) 150-095025-047 Rev. E	1
		703-1 Receiver Module (4410 Feq.) 150-095025-047 Rev. D	1
		AF Track Receiver Chassis Getsgs 812-097031-034	1
Rack 8		Rack 8	
Rack 8		Rack 8 COMPONENT MANUFACTURER PART NUMBER	COUN
Rack 8			COUNT 6
Rack 8		COMPONENT MANUFACTURER PART NUMBER	
Rack 8		COMPONENTMANUFACTURERPART NUMBER700 Amplifier Module150-094017-022 Rev. D	6
Rack 8		COMPONENT MANUFACTURER PART NUMBER 700 Amplifier Module 150-094017-022 Rev. D 700 Amplifier Module 150-094017-022 Rev. C	6
Rack 8		COMPONENT MANUFACTURER PART NUMBER 700 Amplifier Module 150-094017-022 Rev. D 700 Amplifier Module 150-094017-022 Rev. C 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O	6 1 4
Rack 8		COMPONENT MANUFACTURER PART NUMBER 700 Amplifier Module 150-094017-022 Rev. D 700 Amplifier Module 150-094017-022 Rev. C 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 702-1 Track Coupler (4230 Feq.) 150-095025-034 Rev. B	6 1 4 1
Rack 8		COMPONENT MANUFACTURER PART NUMBER 700 Amplifier Module 150-094017-022 Rev. D 700 Amplifier Module 150-094017-022 Rev. C 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 702-1 Track Coupler (4230 Feq.) 150-095025-034 Rev. B 702-1 Track Coupler (3690 Feq.) 150-095025-034 Rev. B	6 1 4 1 1
Rack 8		COMPONENT MANUFACTURER PART NUMBER 700 Amplifier Module 150-094017-022 Rev. D 700 Amplifier Module 150-094017-022 Rev. C 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 702-1 Track Coupler (4230 Feq.) 150-095025-034 Rev. B 702-1 Track Coupler (3690 Feq.) 150-095025-034 Rev. B 702-1 Track Coupler (3330 Feq.) 150-095025-034 Rev. B	6 1 4 1 1
Rack 8		COMPONENT MANUFACTURER PART NUMBER 700 Amplifier Module 150-094017-022 Rev. D 700 Amplifier Module 150-094017-022 Rev. C 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 702-1 Track Coupler (4230 Feq.) 150-095025-034 Rev. B 702-1 Track Coupler (3690 Feq.) 150-095025-034 Rev. B 702-1 Track Coupler (3330 Feq.) 150-095025-034 Rev. B Chassis AF Track XMT TTT-2 Getsgs 812-097031-001 703-1 Receiver Module (3690 Feq.) 150-095025-047 Rev. D 703-1 Receiver Module (3690 Feq.) 150-095025-047 Rev. E	6 1 4 1 1 1 2
Rack 8		COMPONENT MANUFACTURER PART NUMBER 700 Amplifier Module 150-094017-022 Rev. D 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 702-1 Track Coupler (4230 Feq.) 150-095025-034 Rev. B 702-1 Track Coupler (3690 Feq.) 150-095025-034 Rev. B 702-1 Track Coupler (3330 Feq.) 150-095025-034 Rev. B Chassis AF Track XMT TTT-2 Getsgs 812-097031-001 703-1 Receiver Module (3690 Feq.) 150-095025-047 Rev. D 703-1 Receiver Module (3330 Feq.) 150-095025-047 Rev. E 703-1 Receiver Module (3330 Feq.) 150-095025-047 Rev. D	6 1 4 1 1 1 2 2
Rack 8		COMPONENT MANUFACTURER PART NUMBER 700 Amplifier Module 150-094017-022 Rev. D 700 Amplifier Module 150-094017-022 Rev. C 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 702-1 Track Coupler (4230 Feq.) 150-095025-034 Rev. B 702-1 Track Coupler (3690 Feq.) 150-095025-034 Rev. B 702-1 Track Coupler (3330 Feq.) 150-095025-034 Rev. B Chassis AF Track XMT TTT-2 Getsgs 812-097031-001 703-1 Receiver Module (3690 Feq.) 150-095025-047 Rev. D 703-1 Receiver Module (3690 Feq.) 150-095025-047 Rev. E	6 1 4 1 1 1 2 2 2 1
Rack 8		COMPONENT MANUFACTURER PART NUMBER 700 Amplifier Module 150-094017-022 Rev. D 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 702-1 Track Coupler (4230 Feq.) 150-095025-034 Rev. B 702-1 Track Coupler (3690 Feq.) 150-095025-034 Rev. B 702-1 Track Coupler (3330 Feq.) 150-095025-034 Rev. B Chassis AF Track XMT TTT-2 Getsgs 812-097031-001 703-1 Receiver Module (3690 Feq.) 150-095025-047 Rev. D 703-1 Receiver Module (3330 Feq.) 150-095025-047 Rev. D 703-1 Receiver Module (4230 Feq.) 150-095025-047 Rev. FAO 703-1 Receiver Module (4230 Feq.) 150-095025-047 Rev. FAO 703-1 Receiver Module (4230 Feq.) 150-095025-047 Rev. E	6 1 4 1 1 2 2 1 1 1 1
Rack 8		COMPONENT MANUFACTURER PART NUMBER 700 Amplifier Module 150-094017-022 Rev. D 700 Amplifier Module 150-094017-022 Rev. C 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 702-1 Track Coupler (4230 Feq.) 150-095025-034 Rev. B 702-1 Track Coupler (3690 Feq.) 150-095025-034 Rev. B 702-1 Track Coupler (3330 Feq.) 150-095025-034 Rev. B Chassis AF Track XMT TTT-2 Getsgs 812-097031-001 703-1 Receiver Module (3690 Feq.) 150-095025-047 Rev. D 703-1 Receiver Module (3330 Feq.) 150-095025-047 Rev. D 703-1 Receiver Module (4230 Feq.) 150-095025-047 Rev. FAO	6 1 4 1 1 1 2 2 1 1 1

Hall Park A Signal House Asset Inventory Item Image Inventory Rack Rack 10 COMPONENT MANUFACTURER COUNT PART NUMBER 10 VLP ACP-2 2 SSM 2 CCI 2 VSD 2 VGP I/O 3 VGP 16 2 NV I/O 3 32 NVI 3 **CLA Board** 2 RS-232 2 Modem 2 12V Power Supply Rack Rack 11 COMPONENT MANUFACTURER COUNT 11 PART NUMBER Rotary Dials (HALF Hemisphere-NEW) 14 Non-Vital Relays 154 KEY LOCK SWITCH/2-POS 2-POLE STD. LOCK EOA SWITCH CORP 51-236.025D 1

Item	Image	Inventory	Inventory				
SCADA			SCADA				
	CARRIED A	COMPONENT	MANUFACTURER	PART NUMBER	COUNT		
	100	Power Supply	Schneider Electric	TSXPSY1610	1		
		CPU	Schneider Electric	TSXP57202	1		
		Memory Card	Schneider Automation S.A.	TSXMRP064P	1		
		RS-232			1		
	TA MINISTRA	Input Card	Schneider Electric	TSX DEY16A2	9		
	A STATE OF THE PARTY OF THE PAR	INPUT TERMINAL BLOCK	Schneider Automation S.A.	TSX BLY01	9		
	PERSONAL PROPERTY OF	Output Card	Schneider Electric	TSX DSY64T2K	1		
	The second secon	Output Cord	Phoenix Contact	22 98 438	4		
	4.5	Relays	Phoenix Contact	ABE7*	4		
	1	Power Supply	WEID MULLER	CSA 991534	1		
	1 10 10 10 10 10 10 10 10 10 10 10 10 10	Battery Charger	WEID MULLER	991628 0024	1		
	*	Batteries	CD Technologies	UPS12-150MR	2		
		Backplane			1		
		MODEM	MOTOROLA	V3600	1		

Image Item

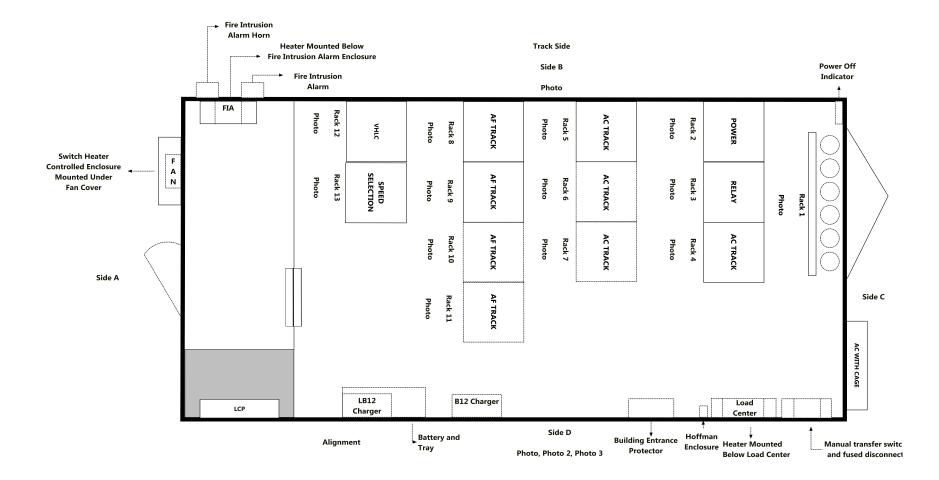
Sides



Inventory

House Side-A				
COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
FIA-Keypad Controller	NAPCO	RPC3000LCDe	1	
SWITCH HEATER CONTROL BOX			2	
House	Side-B			
Fire Intrusion Alarm	NAPCO		1	
Battery	Genesis	NP7-1212V,7.0Ah	2	
Main Board			1	
Relay Boards			1	
House	Side-C		•	
House	Side-D			
		Assy 227027-001		
CLCP 256 IO LED Driver Module	Getsgs	Rev. 806	2	
Power Supply CLCP 12VDC 20W	Getsgs	226609-200	2	
Double Throw NOT FUSEABLE Switch 100A 240V				
AC/ 250V DC	Square D	40274-556-01	1	
GENERAL Duty Safety Switch 100A 240V AC/ 250V				
DC	Square D	40275-933-01	1	
Current Monitor	NRS	16775-00	2	
BATTERY ARRESTOR 4	HARMON	250597	1	
12V Power Supply	NRS	ERB-C 12/40	2	
12V Battery	MARATHON	M12V90	3	

Hall Park B Signal House



Item	Image
Rack 1	

Inventory

	Rack 1		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
BPL-3	HARMON	150-097031-013 Rev. O	9
CARRIER SURGE ARRESTOR	HARMON	250197-001	2

Rack 2



	Rack 2		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
Vital Relay	Alstom	A62-407 56001-745-02	1
Vital Relay	Alstom	A62-122 56001-921-07	4
POR XFMR	Alstom	31094-000-01 Rev. F	1
28V Power Supply	Керсо	PRR 28-38M24787	2
28V Power Supply	Керсо	PRM 28-17-24810	2
Rectifier 25V .3A Selenium Type S	Alstom	A53-541	1

Image Item

Rack 3



Inventory

	Rack 3		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
Rectifier 120AC/120DC Switch		250756-000	2
Vital Relay	Alstom	A62-429 56001-926-01	8
Vital Relay	Alstom	A62-432 56001-785-01	4
Vital Relay	Alstom	A62-247	4
Vital Relay	Alstom	A62-122 56001-921-07	2

Rack



	Rack 4		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
XFMR Matching Rail Coupler	EPC	810-088019-311	2
XFMR Loop Matching (2340 Feq.)	EPC	800-088019-200	1
AC Vain Relay	Alstom	A62-486	2
Bal Imp	Alstom	A3-117	2
1 ohm Resistor (1XT/3XT)	GRS	A3-207 (01246-1)	2
2.5 ohm Resistor (1XTRN/3XTRN)		56105-11	2
1T/1XT XFMR	Alstom	31094-000 (A95 50)	1
VITAL RELAY	Alstom	A62-122 56001-921-07	1
700 Amplifier Module		150-094017-022 Rev. D	3
701-2 CAB Coupler (2340 Feq.)		150-097031-010 Rev. O	3
Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	1

Hall Park B Signal House Asset Inventory Item **Image** Inventory Rack 5 Rack MANUFACTURER COMPONENT **PART NUMBER** COUNT XFMR Loop Matching (2340 Feq.) EPC 800-088019-200 1 EPC 2 XFMR Matching Rail Coupler 810-088019-311 AC Vain Relay Alstom A62-486 2 Bal Imp Alstom A3-117 2 1 ohm Resistor (1XT/3XT) GRS A3-207 (01246-1) 2 2.5 ohm Resistor (1XTRN/3XTRN) 56105-11 2 5T/5XT XFMR 1 Alstom 31094-000 (A95 50) 700 Amplifier Module 3 150-094017-022 Rev. A 700 Amplifier Module 150-094017-022 Rev. C 3 700 Amplifier Module 150-094017-022 Rev. D 1 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 2 Chassis AF Track XMT TTT-2 Getsgs 812097031-001 2 Rack 6 Rack COMPONENT **MANUFACTUROR PART NUMBER** COUNT 6 XFMR Loop Matching (2340 Feq.) EPC 800-088019-200 1 **AC Vain Relay** Alstom A62-486 1 Bal Imp Alstom A3-117 1 1 ohm Resistor (1XT/3XT) GRS A3-207 (01246-1) 1 2.5 ohm Resistor (1XTRN/3XTRN) 56105-11 1 9XT/SP XFMR 31094-000 (A95 50) Alstom 1 700 Amplifier Module 150-094017-022 Rev. D 1 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 1 Chassis AF Track XMT TTT-2 Getsgs 812097031-001 1

Hall Park B Signal House Asset Inventory Item *Image* Inventory Rack Rack 7 MANUFACTUROR COMPONENT **PART NUMBER** COUNT 7 AC Vain Relay Alstom A62-486 2 Bal Imp A3-117 2 Alstom A3-207 (01246-1) 1 ohm Resistor (1XT/3XT) GRS 2 2.5 ohm Resistor (1XTRN/3XTRN) 56105-11 2 YD201T/YD214T XFMR Alstom 31094-000 (A95 50) Rack Rack 8 COMPONENT **MANUFACTURER PART NUMBER** COUNT 8 700 Amplifier Module 150-094017-022 Rev. D 7 700 Amplifier Module 150-094017-022 Rev. C 2 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 5 702-1 Track Coupler (2970 Feq.) 150-095025-034 Rev. B 1 702-1 Track Coupler (4410 Feq.) 150-095025-034 Rev. B 1 702-1 Track Coupler (3870 Feg.) 150-095025-034 Rev. B 1 Chassis AF Track XMT TTT-2 812-097031-001 1 Getsgs 703-1 Receiver Module (3870 Feq.) 150-095025-047 Rev. D 3 703-1 Receiver Module (2970 Feq.) 150-095025-047 Rev. E 7 703-1 Receiver Module (4410 Feq.) 150-095025-047 Rev. D 2 AF Track Receiver Chassis Getsgs 812-097031-034 5

Image Item

Rack



Inventory

	Rack 9		
COMPONENT	MANUFACTUROR	PART NUMBER	COUNT
703-1 Receiver Module (3870 Feq.)		150-095025-047 Rev. D	2
703-1 Receiver Module (3870 Feq.)		150-095025-047 Rev. E	1
703-1 Receiver Module (4410 Feq.)		150-095025-047 Rev. D	2
703-1 Receiver Module (3510 Feq.)		150-095025-047 Rev. E	1
703-1 Receiver Module (3510 Feq.)		150-095025-047 Rev. D	2
703-1 Receiver Module (2970 Feq.)		150-095025-047 Rev. D	1
AF Track Receiver Chassis	Getsgs	812-097031-034	2

Rack 10



	Rack 10		
COMPONENT	MANUFACTUROR	PART NUMBER	COUNT
700 Amplifier Module		150-094017-022 Rev. C	3
700 Amplifier Module		150-094017-022 Rev. D	7
701-2 CAB Coupler (2340 Feq.)		150-097031-010 Rev. O	5
702-1 Track Coupler (4230 Feq.)		150-095025-034 Rev. B	1
702-1 Track Coupler (3690 Feq.)		150-095025-034 Rev. B	1
702-1 Track Coupler (4950 Feq.)		150-095025-034 Rev. A	1
702-1 Track Coupler (3330 Feq.)		150-095025-034 Rev. B	1
702-1 Track Coupler (4230 Feq.)		150-095025-034 Rev. B	1
Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	3

Item	Image
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Inventory

Rack 11



	Rack 11		
COMPONENT	MANUFACTUROR	PART NUMBER	COUNT
703-1 Receiver Module (4950 Feq.)		150-095025-047 Rev. D	1
703-1 Receiver Module (4950 Feq.)		150-095025-047 Rev. E	2
703-1 Receiver Module (3690 Feq.)		150-095025-047 Rev. E	1
703-1 Receiver Module (3330 Feq.)		150-095025-047 Rev. E	1
703-1 Receiver Module (4230 Feq.)		150-095025-047 Rev. E	2
703-1 Receiver Module (3690 Feq.)		150-095025-047 Rev. D	1
AF Track Receiver Chassis	Getsgs	812-097031-034	2

Rack 12



	Rack 12		
COMPONENT	MANUFACTUROR	PART NUMBER	COUNT
VLP			2
ACP-2			2
SSM			2
CCI			2
VSD			2
VGP I/O			3
VGP 16			3
NV I/O			4
32 NVI			1
CLA Board			2
RS-232			2
Modem			2
12V Power Supply			2

Image Item

Inventory

Rack 13



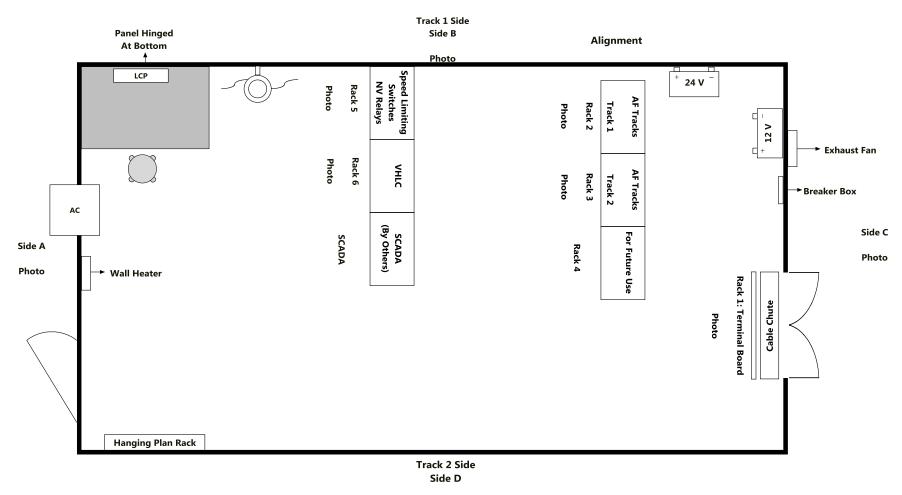
	Rack 13		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
Rotary Dials (HALF Hemisphere-NEW)			17
Non-Vital Relays			52

Sides



House	e Side-A		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
FIA-Keypad Controller	NAPCO	RPC3000LCDe	1
SWITCH HEATER CONTROL BOX			2
House	e Side-B		
Fire Intrusion Alarm	NAPCO		1
Battery	Genesis	NP7-1212V,7.0Ah	2
Main Board			1
Relay Boards			1
House	e Side-C		
House	e Side-D		
		Assy 227027-001 Rev.	
CLCP 256 IO LED Driver Module	Getsgs	806	2
Power Supply CLCP 12VDC 20W	Getsgs	226609-200	2
Double Throw NOT FUSEABLE Switch 100A 240V AC/			
250V DC	Square D	40274-556-01	1
GENERAL Duty Safety Switch 100A 240V AC/ 250V DC	Square D	40275-933-01	1
Current Monitor	NRS	16775-00	2
BATTERY ARRESTOR 4	HARMON	250597	1
12V Power Supply	NRS	ERB-C 12/40	2
12V Battery	MARATHON	M12V90	3

I-70 Signal House



Photo

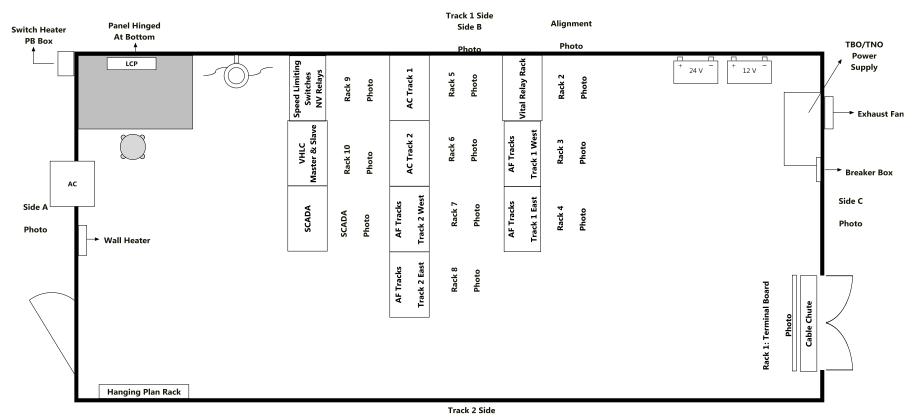
I-70 Signal House Asset Inventory Item *Image* Inventory Rack 1 Rack 1 MANUFACTURER COMPONENT PART NUMBER COUNT BPL-1 **EPC** Rack 2 Rack 2 COMPONENT MANUFACTURER **PART NUMBER** COUNT Vital Relay A62-122 (56001-921-07) GRS 2 520 Receiver Module (3870 Feq.) EPC 150-088019-080 Rev. B 1 520 Receiver Module (2970 Feq.) EPC 1 150-088019-080 Rev. B 520 Receiver Module (3510 Feq.) EPC 1 150-088019-080 Rev. B EPC 520 Receiver Module (4410 Feq.) 1 150-088019-080 Rev. B 520 Receiver Module (3870 Feq.) EPC 150-088019-080 Rev. F 1 510 Amplifier Module EPC 150-088019-050 Rev. B 8 530 CAB Coupler EPC 150-088019-051 Rev. B 4 540 Train Detection Coupler (2970 Feq.) EPC 150-088019-060 Rev. B 1 540 Train Detection Coupler (3510 Feq.) EPC 150-088019-060 Rev. B 1 EPC 540 Train Detection Coupler (4410 Feq.) 150-088019-060 Rev. B 1 540 Train Detection Coupler (3870 Feq.) EPC 150-088019-060 Rev. B 1

House Asset Inventory				
Image	Inventory			
		Rack 3		
	COMPONENT		PART NUMBER	COUNT
THE REAL PROPERTY.	Vital Relay	GRS	A62-122 (56001-921-07)	3
	520 Receiver Module (3690 Feq.)	EPC	150-088019-080 Rev. B	1
	520 Receiver Module (4950 Feq.)	EPC	150-088019-080 Rev. B	1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	520 Receiver Module (3330 Feq.)	EPC	150-088019-080 Rev. F	1
	520 Receiver Module (3330 Feq.)	EPC	150-088019-080 Rev. B	2
	520 Receiver Module (4230 Feq.)	EPC	150-088019-080 Rev. F	1
	510 Amplifier Module		150-088019-050 Rev. B	8
	530 CAB Coupler	EPC	150-088019-051 Rev. B	4
		EPC		1
		EPC		1
			150-088019-060 Rev. B	1
	540 Train Detection Coupler (3330 Feq.)	EPC	150-088019-060 Rev. B	1
	R	ack 5		
the limit has not the real	COMPONENT M	ANUFACTURER PA	ART NUMBER COUNT	
	Rotary Dials (Full Hemisphere-OLD)		8	
	Non-Vital Relays		5	
	Image Image	COMPONENT Vital Relay 520 Receiver Module (3690 Feq.) 520 Receiver Module (4950 Feq.) 520 Receiver Module (3330 Feq.) 520 Receiver Module (3330 Feq.) 520 Receiver Module (3330 Feq.) 520 Receiver Module (4230 Feq.) 520 Receiver Module (4230 Feq.) 510 Amplifier Module 530 CAB Coupler 540 Train Detection Coupler (4230 Feq.) 540 Train Detection Coupler (4950 Feq.) 540 Train Detection Coupler (3330 Feq.)	Rack 3	Rack 3

I-70 Signal	House Asset Inventory					
Item	Image	Inventory				
Rack 6	WO'S CO.			Rack 6		
		COMPO	NENT	MANUFACTURER	PART NUMBER	COUNT
	- The state of the	Vital F	Relay	SafeTran	400900	2
	77	VL	Р			1
		ACF	-2			1
		SSI	M			1
		CC]			1
		VGP I/O	D-12V			2
		NV I	/0			1
		N\	/			1
		VGP	16			1
		Surge Prote	ctor BSA-4	Harmon	250597	1
	A CONTRACTOR OF THE PARTY OF TH	Mod	em			2
		12V Powe	r Supply			1

I-70 Signal House Asset Inventory Image Inventory Item Sides House Side-A COMPONENT MANUFACTURER **PART NUMBER** COUNT Window Unit Air Conditioner 1 **House Side-B** 28V Power Supply NRS ERV-C 24/30 1 NRS **Current Monitor** 16775-00 1 House Side-C 12V Power Supply Lamarche A29B-20-12V-A1 1 2.25 Battery PowerSafe DDr 50-17 14 Odyssey PC2150 12V Battery 1 House Side-D (Fire Control Panel) Keypad Radionics D360TD 1 D8112 Omega Alarm 1 Radionics D8129 Modem 1 Battery NP7-1212V,7.0Ah 1 **SCADA Control Box** Modem 1 SBX 1 Baseboard 1 DI 1 **Power Supply** 2 Non-Vital 1 Battery NP7-1212V,7.0Ah 2 Genesis

Laclede's Landing Signal House



Laclede's Landing Signal House Asset Inventory Item Image Inventory Rack 1 Rack 1 COMPONENT MANUFACTURER PART NUMBER COUNT BPL-1 EPC 5 Rack 2 Rack 2 MANUFACTURER COMPONENT PART NUMBER COUNT 250756-000 Rectifier 120AC/120DC Switch Harmon 2 A62-429 56001-926-01 Vital Relay GRS 8 Vital Relay A62-432 56001-785-01 GRS 4 Vital Relay GRS A62-122 56001-921-07 2

Item	Image	Inventory			
Rack 3	4000	18	Rack 3		
		COMPONENT	MANUFACTURER	PART NUMBER	COUNT
	(MA)	Vital Relay	ALSTOM	A62-612	1
	工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工	Vital Relay	GRS	A62-407 56001-745-02	1
	Distance of the last	520 Receiver Module (3870 Feq.)	EPC	150-088019-080 Rev. B	2
	THE STATE OF THE S	520 Receiver Module (2970 Feq.)	EPC	150-088019-080 Rev. B	1
		520 Receiver Module (3510 Feq.)	EPC	150-088019-080 Rev. B	1
		520 Receiver Module (4410 Feg.)	EPC	150-088019-080 Rev. B	1
		510 Amplifier Module	EPC	150-088019-050 Rev. B	7
		530 CAB Coupler (2340 Feq.)	EPC	150-088019-051 Rev. B	4
			.) EPC	150-088019-060 Rev. B	1
		540 Train Detection Coupler (2970 Fed	.) EPC	130-066013-000 KeV. B	
		540 Train Detection Coupler (2970 Fed 540 Train Detection Coupler (3510Fed	•	150-088019-060 Rev. B	1
) EPC		
Dock 4		540 Train Detection Coupler (3510Fed	EPC EPC	150-088019-060 Rev. B	1
ack 4		540 Train Detection Coupler (3510Fed 540 Train Detection Coupler (4410 Fed	EPC EPC Rack 4	150-088019-060 Rev. B 150-088019-060 Rev. B	1
 эсk 4		540 Train Detection Coupler (3510Fee 540 Train Detection Coupler (4410 Fee 540 Train Detection Coupler (4410 Fee 6410 Fe	Pack 4 MANUFACTURER	150-088019-060 Rev. B 150-088019-060 Rev. B	1 1
ack 4		540 Train Detection Coupler (3510Fed 540 Train Detection Coupler (4410 Fed 540 Train Detection Coupler (4410	Rack 4 MANUFACTURER EPC	150-088019-060 Rev. B 150-088019-060 Rev. B PART NUMBER 150-088019-080 Rev. B	1 1 COUNT 2
k 4		COMPONENT 520 Receiver Module (3510 Feq.) 520 Receiver Module (3510 Feq.)	Rack 4 MANUFACTURER EPC EPC	150-088019-060 Rev. B 150-088019-060 Rev. B PART NUMBER 150-088019-080 Rev. B 150-088019-080 Rev. B	1 1 2 1
ck 4		COMPONENT 520 Receiver Module (2970 Feq.) 520 Repriver Module (3510 Feq.) 510 Amplifier Module	Rack 4 MANUFACTURER EPC EPC EPC EPC	PART NUMBER 150-088019-080 Rev. B 150-088019-060 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-050 Rev. B	1 1 2 1 6
nck 4		COMPONENT 520 Receiver Module (2970 Feq.) 520 Receiver Module (3510 Feq.) 510 Amplifier Module 530 CAB Coupler (2340 Feq.)	Rack 4 MANUFACTURER EPC EPC EPC EPC	PART NUMBER 150-088019-080 Rev. B PART NUMBER 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-050 Rev. B 150-088019-051 Rev. B	1 1 2 1 6 3
ack 4		COMPONENT 520 Receiver Module (2970 Feq.) 510 Amplifier Module 530 CAB Coupler (2340 Feq.) 540 Train Detection Coupler (2970 Feq.)	Rack 4 MANUFACTURER EPC EPC	PART NUMBER 150-088019-060 Rev. B PART NUMBER 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-050 Rev. B 150-088019-050 Rev. B 150-088019-050 Rev. B	1 1 2 1 6 3 1
Rack 4		COMPONENT 520 Receiver Module (2970 Feq.) 520 Receiver Module (3510 Feq.) 510 Amplifier Module 530 CAB Coupler (2340 Feq.)	Rack 4 MANUFACTURER EPC EPC	PART NUMBER 150-088019-080 Rev. B PART NUMBER 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-050 Rev. B 150-088019-051 Rev. B	1 1 2 1 6 3

Item	Image	Inventory			
Rack 5			Rack 5		
Nack 5		COMPONENT	MANUFACTURER	PART NUMBER	COUNT
	434 (51)	XFMR Matching Rail Couple		800-088019-300	2
		XFMR Loop Matching	EPC	800-088019-200	1
		AC Vain Relay	GRS	A62-486	2
		Bal Imp		A3-117	2
		3 OHM ADJUSTABLE Resisto	r GRS	A3-207 (01246-1)	2
	11 11 11	25 OHM ADJUSTABLE Resist	or	56105-11	2
		XFMR	GRS	31094-000 (A95 50)	1
		510 Amplifier Module	EPC	150-088019-050 Rev. B	3
	100	530 CAB Coupler (2340 Feq) EPC	150-088019-051 Rev. B	3
Rack 6			Rack 6		
Rack 6		COMPONENT	MANUFACTURER	PART NUMBER	COUNT
ack 6		XFMR Matching Rail Couple	MANUFACTURER EPC	800-088019-300	2
ack 6		XFMR Matching Rail Coupled XFMR Loop Matching	MANUFACTURER EPC EPC	800-088019-300 800-088019-200	2
ack 6		XFMR Matching Rail Coupled XFMR Loop Matching AC Vain Relay	MANUFACTURER EPC	800-088019-300 800-088019-200 A62-486	2 1 1
ack 6		XFMR Matching Rail Coupled XFMR Loop Matching AC Vain Relay Bal Imp	MANUFACTURER EPC EPC GRS	800-088019-300 800-088019-200 A62-486 A3-117	2 1 1 1
ack 6		XFMR Matching Rail Coupled XFMR Loop Matching AC Vain Relay Bal Imp 3 OHM Resistor	EPC EPC GRS	800-088019-300 800-088019-200 A62-486 A3-117 A3-207 (01246-1)	2 1 1 1
ack 6		XFMR Matching Rail Coupled XFMR Loop Matching AC Vain Relay Bal Imp 3 OHM Resistor 25 OHM RESISTOR	EPC EPC GRS GRS Dale	800-088019-300 800-088019-200 A62-486 A3-117 A3-207 (01246-1) 56105-11	2 1 1 1 1 1
ack 6		XFMR Matching Rail Coupled XFMR Loop Matching AC Vain Relay Bal Imp 3 OHM Resistor 25 OHM RESISTOR XFMR	EPC EPC GRS GRS Dale GRS	800-088019-300 800-088019-200 A62-486 A3-117 A3-207 (01246-1) 56105-11 31094-000 (A95 50)	2 1 1 1 1 1 1
tack 6		XFMR Matching Rail Coupled XFMR Loop Matching AC Vain Relay Bal Imp 3 OHM Resistor 25 OHM RESISTOR XFMR 510 Amplifier Module	EPC EPC GRS GRS Dale GRS EPC	800-088019-300 800-088019-200 A62-486 A3-117 A3-207 (01246-1) 56105-11 31094-000 (A95 50) 150-088019-050 Rev. B	2 1 1 1 1 1 1 3
Rack 6		XFMR Matching Rail Coupled XFMR Loop Matching AC Vain Relay Bal Imp 3 OHM Resistor 25 OHM RESISTOR XFMR	EPC EPC GRS GRS Dale GRS EPC	800-088019-300 800-088019-200 A62-486 A3-117 A3-207 (01246-1) 56105-11 31094-000 (A95 50)	2 1 1 1 1 1 1

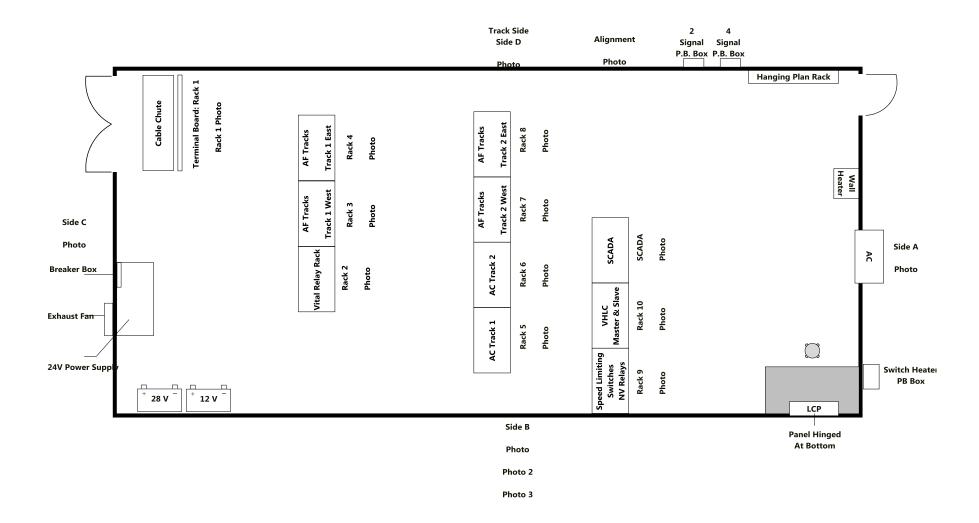
ltem	Image	Inventory			
Rack 7	THE PERSON NAMED IN COLUMN 1		Rack 7		
Tack 7		COMPONENT	MANUFACTURER	PART NUMBER	COUNT
	AL PRINTERS IN	Vital Relay	SafeTran	400900	4
	The state of the s	520 Receiver Module (3690 Feq.)	EPC	150-088019-080 Rev. B	3
	100	520 Receiver Module (4950 Feg.)	EPC	150-088019-080 Rev. B	1
	The state of the s	520 Receiver Module (3330 Feq.)	EPC	150-088019-080 Rev. B	1
		510 Amplifier Module	EPC	150-088019-050 Rev. B	8
	60000000000000000000000000000000000000	530 CAB Coupler (2340 Feq.)	EPC	150-088019-051 Rev. B	4
		540 Train Detection Coupler (4230 Feq.)	EPC	150-088019-060 Rev. B	1
		540 Train Detection Coupler (3690Feq.)	EPC	150-088019-060 Rev. B	1
		540 Train Detection Coupler (4950 Feq.)	EPC	150-088019-060 Rev. B	1
	A CONTRACTOR OF THE PARTY OF TH	540 Train Detection Coupler (3330 Feq.)	EPC	150-088019-060 Rev. B	1
 ck 8			Rack 8		
k 8		COMPONENT	MANUFACTURER	PART NUMBER	COUNT
× 8		COMPONENT Vital Relay	MANUFACTURER GRS	A62-122 56001-921-07	1
8		COMPONENT Vital Relay 520 Receiver Module (3690 Feq.)	MANUFACTURER GRS EPC	A62-122 56001-921-07 150-088019-080 Rev. F	1
8		COMPONENT Vital Relay 520 Receiver Module (3690 Feq.) 520 Receiver Module (4230 Feq.)	GRS EPC EPC	A62-122 56001-921-07 150-088019-080 Rev. F 150-088019-080 Rev. B	1 1 1
3		COMPONENT Vital Relay 520 Receiver Module (3690 Feq.) 520 Receiver Module (4230 Feq.) 520 Receiver Module (4950 Feq.)	GRS EPC EPC EPC	A62-122 56001-921-07 150-088019-080 Rev. F 150-088019-080 Rev. B 150-088019-080 Rev. B	1 1 1 1
3		COMPONENT Vital Relay 520 Receiver Module (3690 Feq.) 520 Receiver Module (4230 Feq.) 520 Receiver Module (4950 Feq.) 520 Receiver Module (3330 Feq.)	GRS EPC EPC EPC EPC	A62-122 56001-921-07 150-088019-080 Rev. F 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B	1 1 1 1 1
·		COMPONENT Vital Relay 520 Receiver Module (3690 Feq.) 520 Receiver Module (4230 Feq.) 520 Receiver Module (4950 Feq.) 520 Receiver Module (3330 Feq.) 510 Amplifier Module	GRS EPC EPC EPC EPC EPC EPC	A62-122 56001-921-07 150-088019-080 Rev. F 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-050 Rev. B	1 1 1 1 1 6
8		COMPONENT Vital Relay 520 Receiver Module (3690 Feq.) 520 Receiver Module (4230 Feq.) 520 Receiver Module (4950 Feq.) 520 Receiver Module (3330 Feq.) 510 Amplifier Module 530 CAB Coupler (2340 Feq.)	MANUFACTURER GRS EPC EPC EPC EPC EPC EPC EPC	A62-122 56001-921-07 150-088019-080 Rev. F 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-050 Rev. B 150-088019-051 Rev. B	1 1 1 1 1 6 3
<u>.</u> 8		COMPONENT Vital Relay 520 Receiver Module (3690 Feq.) 520 Receiver Module (4230 Feq.) 520 Receiver Module (4950 Feq.) 520 Receiver Module (3330 Feq.) 520 Receiver Module (3330 Feq.) 510 Amplifier Module 530 CAB Coupler (2340 Feq.) 540 Train Detection Coupler (4230 Feq.)	GRS EPC	A62-122 56001-921-07 150-088019-080 Rev. F 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-050 Rev. B 150-088019-051 Rev. B 150-088019-060 Rev. B	1 1 1 1 1 6 3 1
k 8		COMPONENT Vital Relay 520 Receiver Module (3690 Feq.) 520 Receiver Module (4230 Feq.) 520 Receiver Module (4950 Feq.) 520 Receiver Module (3330 Feq.) 510 Amplifier Module 530 CAB Coupler (2340 Feq.)	MANUFACTURER GRS EPC EPC EPC EPC EPC EPC EPC	A62-122 56001-921-07 150-088019-080 Rev. F 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-050 Rev. B 150-088019-051 Rev. B	1 1 1 1 1 6 3

Laclede's Landing Signal House Asset Inventory Image Inventory Item Rack 9 Rack 9 COMPONENT MANUFACTURER PART NUMBER COUNT Rotary Dials (Full Hemisphere-OLD) 20 Non-Vital Relays 2 IMBEDDED COMPUTER MOXA IA240 2 MAGNUM CS14H CONVERTER SWITCH **GARRET COM** CS14H 1 Rack 10 Rack 10 MANUFACTURER COMPONENT **PART NUMBER** COUNT A62-122 56001-921-07 Vital Relay GRS 3 VLP2 ACP-2 2 SSM 2 CCI 2 VSD 1 VGP I/O 3 NV I/O 3 32 NVI 4 VGPI 16 2 Surge Protector BSA-4 Harmon 250597 1 CLA BOARD 1 RS-232 3 Modem 2 12V Power Supply

Laclede's Landing Signal House Asset Inventory Item Image Inventory **SCADA** SCADA MANUFACTURER COMPONENT PART NUMBER COUNT MOTOROLA V3225 Modem 1 SPX 1 C186 1 2 DI DO 2 REMZ 1 Power Supply 2 Non Vital Relays 25 Batteries NP7-12 12V, 7.0 Ah 2 Genesis SCADA Case Eurobec Metal N.Cat.N: 9500 DA722436 1

Laclede's Landing Signal House Asset Inventory Inventory Item **Image** Sides **House Side-A** COMPONENT **MANUFACTURER PART NUMBER** COUNT Switch Heater Push Button Box 1 **House Side-B** CLCP 256 IO LED Driver Module Getsgs Assy 227027-001 Rev. 806 1 Power Supply CLCP 12VDC 20W Getsgs 226609-200 1 12V155FS 1 **Battery** PowerSafe A12B-40-24V-A1 28V Power Supply Lamarche 1 12V Power Supply NRS ERB-CERB-C 12/40 1 **CURRENT MONITOR** NRS 1 Heavy Duty Double Throw Safety Switch 100 A 240V/250DC Siemens 1 General Duty Safety Switch 100A 240V AC/250V DC Square D 1 **Automatic Transfer Switch** KSS-DFNC-0100S Kohler 1 **House Side-C** 28V Power Supply Lamarche A29-20-24V-A1 1 Heavy Duty Safety Switch 100A 240V AC/250V DC 40276-003-02 Square D 1 House Side-D (Fire Control Panel) Keypad Raydioncs D360TD 1 Omega Alarm Raydioncs D8112 1 Modem D8129 1 2 **Battery** NP7-1212V,7.0Ah

North Hanley Signal House



North Hanley Signal House Asset Inventory Item Image Inventory Rack 1 Rack 1 MANUFACTURER COMPONENT PART NUMBER COUNT BPL-1 EPC Rack 2 Rack 2 MANUFACTURER COUNT COMPONENT PART NUMBER GRS A62-429 (56001-926-01) Vital Relay 8 GRS A62-432 (56001-785-01) Vital Relay 4 GRS A62-122 (56001-921-07) Vital Relay 2 Switch Rectifier 120AC/120DC Harmon 250756-000 2

North Hanle	y Signal House Asset Inventory				
Item	Image	Inventory			
Rack 3			Rack 3	_	
		COMPONENT	MANUFACTURE	PART NUMBER	COUN
		Vital Relay	GRS	A62-122 (56001-921-	07) 2
		520 Receiver Module (2970 Feq.)	EPC	150-088019-080 Rev	. F 1
		520 Receiver Module (4410 Feq.)	EPC	150-088019-080 Rev	. B 1
		520 Receiver Module (3510 Feq.)	EPC	150-088019-080 Rev	
		520 Receiver Module (3870 Feq.)	EPC	150-088019-080 Rev	. B 1
		510 Amplifier Module	EPC	150-088019-050 Rev	. В 7
		530 CAB Coupler (2340 Feq.)	EPC	150-088019-051 Rev	. B 4
		540 Train Detection Coupler (2970 Feq.)	EPC	150-088019-060 Rev	. B 1
		540 Train Detection Coupler (3510 Feq.)	EPC	150-088019-060 Rev	. B 1
		540 Train Detection Coupler (4410 Feq.)	EPC	150-088019-060 Rev	. B 1
Rack 4			Rack 4		
	Commence of the second	COMPONENT	MANUFACTURER	PART NUMBER	COUNT
	de la companya de la	520 Receiver Module (3510 Feq.)		150-088019-080 Rev. B	2
		520 Receiver Module (2970 Feq.)	EPC	150-088019-080 Rev. B	2
		520 Receiver Module (4410 Feq.)	EPC	150-088019-080 Rev. B	1
	CONTRACTOR OF THE PARTY OF THE	520 Receiver Module (4410 Feq.)		150-088019-080 Rev. F	1
	COLUMN	510 Amplifier Module	EPC	150-088019-050 Rev. B	8
		530 CAB Coupler (2340 Feq.)		150-088019-051 Rev. B	4
	TANKS OF THE PARTY	540 Train Detection Coupler (2970 Feq.)		150-088019-060 Rev. B	1
		540 Train Detection Coupler (3510 Feq.)		150-088019-060 Rev. B	1
		540 Train Detection Coupler (4410 Feq.)		150-088019-060 Rev. B	1
		540 Train Detection Coupler (3870 Feq.)	EPC	150-088019-060 Rev. B	1

North Hanley Signal House Asset Inventory Image Item Inventory Rack 5 Rack 5 COMPONENT MANUFACTURER **PART NUMBER** COUNT XFMR Matching Rail Coupler EPC 800-088019-300 2 XFMR Loop Matching EPC 1 800-088019-200 AC Vain Relay GRS A62-486 2 Bal Imp A3-117 2 3 ohm Resistor ADJ GRS A3-207 (01246-1) 2 25 ohm Resistor ADJ 56105-11 2 XFMR GRS 31094-000 (A95 50) 1 510 Amplifier Module EPC 150-088019-050 Rev. B 3 530 CAB Coupler (2340 Feq.) EPC 150-088019-051 Rev. B 3 Rack 6 Rack 6 COMPONENT **MANUFACTURER PART NUMBER** COUNT XFMR Matching Rail Coupler EPC 800-088019-300 2 XFMR Loop Matching EPC 800-088019-200 1 AC Vain Relay GRS A62-486 1 A3-117 Bal Imp 1 3 ohm Resistor ADJ GRS A3-207 (01246-1) 1 25 ohm Resistor ADJ Dale 56105-11 1 GRS **XFMR** 31094-000 (A95 50) 1 EPC 510 Amplifier Module 150-088019-050 Rev. B 3 530 CAB Coupler (2340 Feq.) EPC 150-088019-051 Rev. B 3

Item	Image	Inventory			
Rack 7		Raci	:k 7		
	1 1 1 1 1 1 1	COMPONENT MANU	UFACTURER	PART NUMBER	COUNT
	The state of the s	Vital Relay Sa	afeTran	400900	4
		520 Receiver Module (3690 Feq.)	EPC	150-088019-080 Rev. B	1
	A CONTRACTOR OF THE PARTY OF TH	520 Receiver Module (4950 Feq.)	EPC	150-088019-080 Rev. B	1
		520 Receiver Module (3330 Feq.)	EPC	150-088019-080 Rev. B	2
		510 Amplifier Module	EPC	150-088019-050 Rev. B	8
		530 CAB Coupler (2340 Feq.)	EPC	150-088019-051 Rev. B	4
		540 Train Detection Coupler (4230 Feq.)	EPC	150-088019-060 Rev. B	1
	10 to	540 Train Detection Coupler (3690 Feq.)	EPC	150-088019-060 Rev. B	1
			EPC	150-088019-060 Rev. B	4
		540 Train Detection Coupler (4950 Feq.)	LIC	120-000013-000 KeV. P	1
		540 Train Detection Coupler (4950 Feq.) 540 Train Detection Coupler (3330 Feq.)	EPC	150-088019-060 Rev. B	1
22 al. 0		540 Train Detection Coupler (3330 Feq.)	EPC		
tack 8		540 Train Detection Coupler (3330 Feq.)	EPC	150-088019-060 Rev. B	1
ack 8		S40 Train Detection Coupler (3330 Feq.) Rac COMPONENT MANL	EPC ck 8 UFACTURER	150-088019-060 Rev. B PART NUMBER	COUNT
ack 8		S40 Train Detection Coupler (3330 Feq.) Rac COMPONENT MANL Vital Relay	Ck 8 UFACTURER GRS	150-088019-060 Rev. B PART NUMBER A62-122 (56001-921-07)	COUNT 2
ack 8		S40 Train Detection Coupler (3330 Feq.) Rac COMPONENT MANL Vital Relay 520 Receiver Module (3690 Feq.)	ck 8 UFACTURER GRS EPC	PART NUMBER A62-122 (56001-921-07) 150-088019-080 Rev. B	1 COUNT 2 1
ack 8		COMPONENT MANU Vital Relay 520 Receiver Module (3690 Feq.) 520 Receiver Module (4950 Feq.)	ck 8 UFACTURER GRS EPC EPC	PART NUMBER A62-122 (56001-921-07) 150-088019-080 Rev. B 150-088019-080 Rev. B	1 COUNT 2 1 1
ack 8		S40 Train Detection Coupler (3330 Feq.) Rac COMPONENT MANU Vital Relay 520 Receiver Module (3690 Feq.) 520 Receiver Module (4950 Feq.) 520 Receiver Module (3330 Feq.)	ck 8 UFACTURER GRS EPC EPC	PART NUMBER A62-122 (56001-921-07) 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B	1 COUNT 2 1 1 1 1
ack 8		COMPONENT MANU Vital Relay 520 Receiver Module (3690 Feq.) 520 Receiver Module (4950 Feq.) 520 Receiver Module (3330 Feq.) 520 Receiver Module (4230 Feq.)	ck 8 UFACTURER GRS EPC EPC EPC	PART NUMBER A62-122 (56001-921-07) 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B	1 COUNT 2 1 1 1 1 1 1
ack 8		COMPONENT MANU Vital Relay 520 Receiver Module (3690 Feq.) 520 Receiver Module (3330 Feq.) 520 Receiver Module (3330 Feq.) 520 Receiver Module (4230 Feq.) 520 Receiver Module (4230 Feq.) 510 Amplifier Module	ck 8 UFACTURER GRS EPC EPC EPC EPC EPC	PART NUMBER A62-122 (56001-921-07) 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B	1 COUNT 2 1 1 1 1
ack 8		COMPONENT MANL Vital Relay 520 Receiver Module (3690 Feq.) 520 Receiver Module (4950 Feq.) 520 Receiver Module (3330 Feq.) 520 Receiver Module (4230 Feq.) 520 Receiver Module (4230 Feq.) 520 Receiver Module (4230 Feq.) 530 CAB Coupler (2340 Feq.)	ck 8 UFACTURER GRS EPC EPC EPC	PART NUMBER A62-122 (56001-921-07) 150-088019-080 Rev. B	1 COUNT 2 1 1 1 1 7
ack 8		COMPONENT MANU Vital Relay 520 Receiver Module (3690 Feq.) 520 Receiver Module (3330 Feq.) 520 Receiver Module (3330 Feq.) 520 Receiver Module (4230 Feq.) 520 Receiver Module (4230 Feq.) 510 Amplifier Module	ck 8 UFACTURER GRS EPC EPC EPC EPC EPC EPC	PART NUMBER A62-122 (56001-921-07) 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B	1 COUNT 2 1 1 1 7 4

North Hanley Signal House Asset Inventory Image Inventory Item Rack 9 Rack 9 MANUFACTURER COMPONENT PART NUMBER COUNT Rotary Dials (Full Hemisphere-OLD) 22 Non-Vital Relays 67 Rack 10 Rack 10 MANUFACTURER PART NUMBER **COMPONENT** COUNT A62-122 (56001-921-07) Vital Relay GRS 3 VLP 2 ACP-2 2 SSM 2 CCI 2 VSD 1 VGP I/O 2 VGP I/O-12V 1 NV I/O 3 32 NVI 4 VGPI 16 2 Surge Protector BSA-4 250597 1 Harmon RS-232 2 Modem 2 12V Power Supply 2

North Hanley Signal House Asset Inventory Item Image Inventory **SCADA** SCADA COMPONENT MANUFACTURER PART NUMBER COUNT Modem 1 SPX 1 C186 1 DI 2 DO 1 REMZ 1 Power Supply 2 Non Vital Relays 29 Batteries NP7-12 12V, 7.0 Ah Genesis 2 SCADA Case 1

North Hanley Signal House Asset Inventory

Image Item

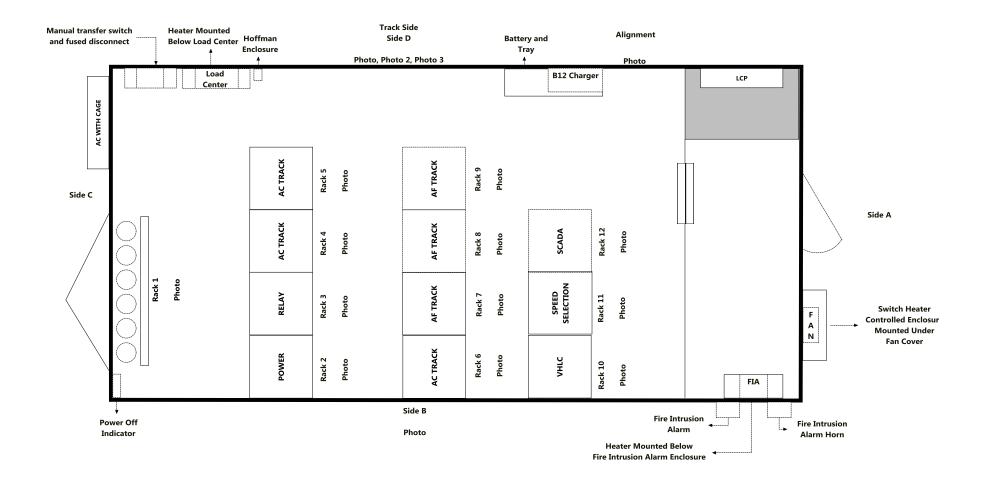
Sides



Inventory

House Side-A						
COMPONENT	MANUFACTURER	PART NUMBER	COUNT			
Switch Heater Push Button Box			1			
House S	ide-B					
Diode Board (Control Panel)	Harmon		1			
Battery	PowerSafe	12V 155FS	1			
28V Power Supply	Lamarche	A29-60-24V-A1	1			
12V Power Supply	Lamarche	A29-30-12V-A1	1			
Heavy Duty Double Throw Safety Switch 100 A						
240V/250DC	Siemens		1			
General Duty Safety Switch 100A 240V AC/250V						
DC	Square D	40276-004-02	1			
Automatic Transfer Switch	Kohler	KSS-DFNC-0100S	1			
House S	Side-C					
28V Power Supply	Lamarche	A29-20-24V-A1	1			
Heavy Duty Safety Switch 100A 240V AC/250V DC	Square D	40276-003-02	1			
House Side-D (Fire	e Control Panel)					
Keypad	Radionics	D360TD	1			
Omega Alarm	Radionics	D8112	1			
Modem		D8129	1			
Battery		NP7-1212V,7.0Ah	1			

Royal Signal House



Royal Signal House Asset Inventory Image Inventory Item Rack 1 Rack 1 MANUFACTURER COMPONENT PART NUMBER COUNT BPL-3 HARMON 150-097031-013 Rev. O 13 Carrier Surge Arrester 1 250197-001 2 HARMON Rack 2 Rack 2 MANUFACTURER COMPONENT PART NUMBER COUNT Vital Relay Alstom A62-407 56001-745-02 1 Vital Relay Alstom A62-122 56001-921-07 3 POR XFMR Alstom 31094-000-01 Rev. F 1 28V Power Supply Керсо PRR 28-38M24787 2 28V Power Supply Керсо PRM 28-17-24810 2 Rectifier 25V .3A Selenium Type S 1 Alstom A53-541

Royal Signal House Asset Inventory

Item	Image	Inventory
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Rack 3



	Rack 3		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
Rectifier 120AC/120DC Switch		250756-000	2
Vital Relay	Alstom	A62-429 56001-926-01	8
Vital Relay	Alstom	A62-432 56001-785-01	4
Vital Relay	Alstom	A62-247	4
Vital Relay	GRS	A62-122 56001-921-07	1

Rack 4



	Rack 4		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
XFMR Loop Matching (2340 Feq.)	EPC	800-088019-200	1
XFMR Matching Rail Coupler	EPC	800-088019-300	2
AC Vain Relay	Alstom	A62-486	2
Bal Imp	Alstom	A3-117	2
1 ohm Resistor (1XT/3XT)	GRS	A3-207 (01246-1)	2
2.5 ohm Resistor (1XTRN/3XTRN)*		56105-11	2
1T/1XT XFMR	Alstom	31094-000 (A95 50)	1
700 Amplifier Module		150-094017-022 Rev. a	2
700 Amplifier Module		150-094017-022 Rev. C	1
701-2 CAB Coupler (2340 Feq.)		150-097031-010 Rev. O	3
Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	1

Royal Sig	gnal House Asset Inventory				
Item	Image	Inventory			
Rack 5	THE PARTY OF THE P		Rack 5		
		COMPONENT	MANUFACTURER	PART NUMBER	COUNT
	100 miles	XFMR Loop Matching (2340 Feq.)	EPC	800-088019-200	1
		XFMR Matching Rail Coupler	EPC	800-088019-300	2
	The second second	AC Vain Relay	Alstom	A62-486	2
		Bal Imp	Alstom	A3-117	2
		1 ohm Resistor (1XT/3XT)	GRS	A3-207 (01246-1)	2
	The state of the s	2.5 ohm Resistor (1XTRN/3XTRN)		56105-11	2
		3T/3XT XFMR	Alstom	31094-000 (A95 50)	1
		700 Amplifier Module		150-094017-022 Rev. A	1
		700 Amplifier Module		150-094017-022 Rev. C	1
		700 Amplifier Module		150-094017-022 Rev. D	1
		701-2 CAB Coupler (2340 Feq.)		150-097031-010 Rev. O	3
	THE REAL PROPERTY.	Chassis AF Track XMT TTT-2	Getsgs	812097031-001	1
Rack 6			Rack 6		
Nack 0		COMPONENT	MANUFACTURER	PART NUMBER	COUNT
	TAXABLE DESIGNATION OF THE PERSON OF THE PER	700 Amplifier Module		150-094017-022 Rev. A	_
	マボ 質 徳 送	700 Amplifier Module		150-094017-022 Rev. C	
		701-2 CAB Coupler (2340 Feq.)		150-097031-010 Rev. O	
	12/4/2/2011 - 1	702-1 Track Coupler (4410 Feq.)		150-095025-034 Rev. B	
		702-1 Track Coupler (3870 Feq.)		150-095025-034 Rev. B	1
	WAS ARREST OF THE	703-1 Receiver Module (4410 Feq.)		150-095025-047 Rev. E	2
	Villey and the last	703-1 Receiver Module (3510 Feq.)		150-095025-047 Rev. D	1
		703-1 Receiver Module (4410 Feq.)		150-095025-047 Rev. D	1
		703-1 Receiver Module (3870 Feq.)		150-095025-047 Rev. D	2
	1000cm	Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	2
		AF Track Receiver Chassis	Getsgs	812-097031-034	1

Royal Sig	gnal House Asset Inventory				
Item	Image	Inventory			
Rack 7	THE RESERVE OF THE PARTY OF THE		Rack 7		
		COMPONENT	MANUFACTURER	PART NUMBER	COUNT
		700 Amplifier Module		150-094017-022 Rev. C	3
		700 Amplifier Module		150-094017-022 Rev. A	1
	《 图 图 图 图 图 图	700 Amplifier Module		150-094017-022 Rev. D	2
		701-2 CAB Coupler (2340 Feq.)		150-097031-010 Rev. O	3
	AND DESCRIPTION OF THE PERSON NAMED IN	702-1 Track Coupler (3510 Feq.)		150-095025-034 Rev. B	1
		702-1 Track Coupler (4410 Feq.)		150-095025-034 Rev. B	1
		702-1 Track Coupler (3870 Feq.)		150-095025-034 Rev. B	1
		703-1 Receiver Module (3510 Feq.)		150-095025-047 Rev. D	2
		703-1 Receiver Module (3510 Feq.)		150-095025-047 Rev. E	1
		703-1 Receiver Module (3870 Feq.)		150-095025-047 Rev. E	1
	N. Harrison	703-1 Receiver Module (4410 Feq.)		150-095025-047 Rev. E	1
		Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	2
		Chassis Al Track Aivit 111-2			
		AF Track Receiver Chassis	Getsgs	812-097031-034	1
Rack 8				812-097031-034	1
Rack 8			Getsgs	812-097031-034 PART NUMBER	COUNT
Rack 8		AF Track Receiver Chassis	Getsgs Rack 8		COUNT
Rack 8		AF Track Receiver Chassis COMPONENT	Getsgs Rack 8	PART NUMBER	COUNT 2
Rack 8		AF Track Receiver Chassis COMPONENT 700 Amplifier Module	Getsgs Rack 8	PART NUMBER 150-094017-022 Rev. D	COUNT 2 3
Rack 8		COMPONENT 700 Amplifier Module 700 Amplifier Module	Getsgs Rack 8	PART NUMBER 150-094017-022 Rev. D 150-094017-022 Rev. C	COUNT 2 3 1
Rack 8		COMPONENT 700 Amplifier Module 700 Amplifier Module 700 Amplifier Module	Getsgs Rack 8	PART NUMBER 150-094017-022 Rev. D 150-094017-022 Rev. C 150-094017-022 Rev. A	COUNT 2 3 1 3
Rack 8		COMPONENT 700 Amplifier Module 700 Amplifier Module 700 Amplifier Module 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.)	Getsgs Rack 8	PART NUMBER 150-094017-022 Rev. D 150-094017-022 Rev. C 150-094017-022 Rev. A 150-097031-010 Rev. O	COUNT 2 3 1 3 3 0 1
Rack 8		COMPONENT 700 Amplifier Module 700 Amplifier Module 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (3690 Feq.) 702-1 Track Coupler (4950 Feq.) 702-1 Track Coupler (3330 Feq.)	Getsgs Rack 8	PART NUMBER 150-094017-022 Rev. D 150-094017-022 Rev. C 150-094017-022 Rev. A 150-097031-010 Rev. O 150-095025-034 Rev. CAG	COUNT 2 3 1 3 3 0 1 1 1
Rack 8		COMPONENT 700 Amplifier Module 700 Amplifier Module 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (3690 Feq.) 702-1 Track Coupler (4950 Feq.) 702-1 Track Coupler (3330 Feq.) 703-1 Receiver Module (3690 Feq.)	Getsgs Rack 8	PART NUMBER 150-094017-022 Rev. D 150-094017-022 Rev. C 150-094017-022 Rev. A 150-097031-010 Rev. O 150-095025-034 Rev. CA0 150-095025-034 Rev. B	COUNT 2 3 1 3 3 0 1 1 1 1
Rack 8		COMPONENT 700 Amplifier Module 700 Amplifier Module 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (3690 Feq.) 702-1 Track Coupler (4950 Feq.) 702-1 Track Coupler (3690 Feq.) 703-1 Receiver Module (3690 Feq.) 703-1 Receiver Module (4950 Feq.)	Getsgs Rack 8	PART NUMBER 150-094017-022 Rev. D 150-094017-022 Rev. C 150-094017-022 Rev. A 150-095025-034 Rev. CAC 150-095025-034 Rev. B 150-095025-034 Rev. B 150-095025-047 Rev. D	2 3 1 3 0 1 1 1 1
Rack 8		COMPONENT 700 Amplifier Module 700 Amplifier Module 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (3690 Feq.) 702-1 Track Coupler (4950 Feq.) 702-1 Track Coupler (3330 Feq.) 703-1 Receiver Module (3690 Feq.)	Getsgs Rack 8	PART NUMBER 150-094017-022 Rev. D 150-094017-022 Rev. C 150-094017-022 Rev. A 150-097031-010 Rev. O 150-095025-034 Rev. CAC 150-095025-034 Rev. B 150-095025-034 Rev. B	2 3 1 3 0 1 1 1 1
Rack 8		COMPONENT 700 Amplifier Module 700 Amplifier Module 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (3690 Feq.) 702-1 Track Coupler (4950 Feq.) 702-1 Track Coupler (3690 Feq.) 703-1 Receiver Module (3690 Feq.) 703-1 Receiver Module (4950 Feq.)	Getsgs Rack 8	PART NUMBER 150-094017-022 Rev. D 150-094017-022 Rev. C 150-094017-022 Rev. A 150-095025-034 Rev. CAC 150-095025-034 Rev. B 150-095025-034 Rev. B 150-095025-047 Rev. D	2 3 1 3 0 1 1 1 1

Royal Sig	gnal House Asset Inventory						
Item	Image	Inventory					
Rack 9	The second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a section in the second section in the section is a section in the section in the section in the section is a section in the section in the section in the section in the section is a section in the sec			Rack 9			
		COMPON	NENT	MANUFACTURER	PART	NUMBER	COUNT
		700 Amplifie	r Module		150-09403	17-022 Rev. D	3
		700 Amplifie			150-0940	17-022 Rev. A	1
	第 	700 Amplifie				17-022 Rev. C	1
	MANAGEMENT OF THE PARTY OF THE	701-2 CAB Couple				31-010 Rev. O	3
		702-1 Track Coupl				25-034 Rev. B	1
	TO THE PARTY OF TH	702-1 Track Coupl				25-034 Rev. B	1
		703-1 Receiver Mod				25-047 Rev. D	1
		703-1 Receiver Mod				25-047 Rev. D	3
	STATE OF THE PARTY	703-1 Receiver Mod				25-047 Rev. E	1
		703-1 Receiver Mod		Catana		25-047 Rev. D	1
	· 网络多克斯斯里里	Chassis AF Track AF Track Receive		Getsgs Getsgs		97031-001 97031-034	2
Rack 10	THE PARTY OF THE P	Rack 10					
		COMPONENT	MANUFACTURER	PART NUMBER	_		
		VLP			2		
		ACP-2			2		
	DESCRIPTION OF THE PARTY OF THE	SSM			2		
		CCI VSD			2		
		VSD VGPI 16			2		
		VGP I/O-12V					
		VGP I/O			3		
		NV I/O			3		
		32 NVI			4		
		CLA Board			1		
		RS-232			2		
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Modem			2		
		Modelli					

Royal Signal House Asset Inventory

Item Image Inventory

Rack 11



Rack 11				
COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
Rotary Dials (HALF Hemisphere-NEW)			18	
Non-Vital Relays			58	
KEY LOCK SWITCH/2-POS 2-POLE STD. LOCK	EOA SWITCH CORP	51-236.025D	1	

SCADA



	SCADA		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
Power Supply	Schneider Electric	TSXPSY1610	1
CPU	Schneider Electric	TSP57203	1
Memory Card	Schneider Automation S.A.	TSXMRP064P	1
RS-232			1
Input Card	Schneider Electric	TSX DEY12A2	5
INPUT TERMINAL BLOCK	Schneider Automation S.A.	TSX BLY01	5
Output Card	Schneider Electric	TSX DSY64T2K	1
Output Cord	Phoenix Contact	22 98 438	2
Relays	Phoenix Contact	ABE7*	2
Power Supply	WEID MULLER	CSA 991534	1
Battery Charger	WEID MULLER	991628 0024	1
Batteries	CD Technologies	UPS12-150MR	2
Backplane			1
MODEM	MOTOROLA	B3600	1

Royal Signal House Asset Inventory

Item Image

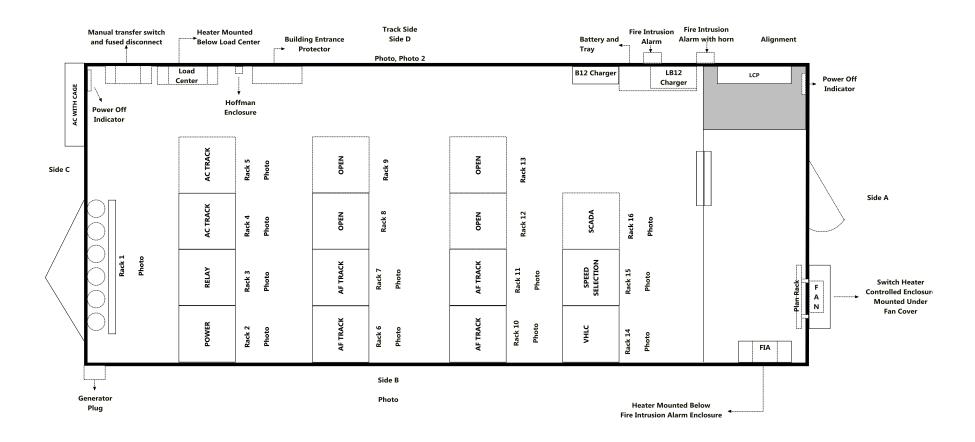
Sides



Inventory

House Side-A						
COMPONENT	MANUFACTURER	PART NUMBER	COUNT			
FIA-Keypad Controller	NAPCO	RPC3000LCDe	1			
SWITCH HEATER CONTROL BOX			1			
House	e Side-B					
Fire Intrusion Alarm	NAPCO	MA 3000	1			
Battery	Genesis	NP7-1212V,7.0Ah	2			
Main Board			1			
Relay Boards			1			
House	e Side-C					
House	e Side-D					
Double Throw Enclosed Switch 100A 240V AC/ 250V DC	Square D	40274-556-01	1			
GENERAL Duty Safety Switch 100A 240V AC/ 250V DC	Square D	40275-933-01	1			
BATTERY SURGE ARRESTOR 4	US&S	N451552-0507	1			
Current Monitor*	NRS		1			
12V Power Supply	NRS	ERB-C 12/40C	1			
BATTERY	MARATHON	M12V90	1			
		Assy 227027-001 Rev.				
CLCP 256 IO LED Driver Module	Getsgs	806	1			
Power Supply CLCP 12VDC 20W	Getsgs	226609-200	1			
KEY LOCK SWITCH/2-POS 2-POLE STD. LOCK	EOA SWITCH CORP	51-236.025D	1			

Shiloh-Scott Signal House



Shiloh-Scott Signal House Asset Inventory Image Inventory Item Rack 1 Rack 1 MANUFACTURER COMPONENT PART NUMBER COUNT BPL-3 HARMON 150-097031-013 Rev. O 250197-001 Carrier Surge Arrester 1 **HARMON** 1 Rack 2 Rack 2 COMPONENT MANUFACTURER PART NUMBER COUNT A62-407 56001-745-02 Vital Relay Alstom 1 A62-122 56001-921-07 Vital Relay Alstom 4 POR XFMR Alstom 31094-000-01 Rev. F 1 28V Power Supply PRR 28-38M24787 Керсо 2 28V Power Supply PRM 28-17-24810 Керсо 2 Rectifier 25V .3A Selenium Type S Alstom A53-541 1

Shiloh-Scott Signal House Asset Inventory

Image Rack 3

Inventory

	Rack 3		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
Rectifier 120AC/120DC Switch		250756-000	2
Vital Relay	Alstom	A62-429 56001-926-01	8
Vital Relay	Alstom	A62-432 56001-785-01	4
Vital Relay	Alstom	A62-247	2
Vital Relay	GRS	A62-122 56001-921-07	1



Item



Rack 4				
COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
XFMR Loop Matching (2340 Feq.)	EPC	800-088019-200	1	
XFMR Matching Rail Coupler	EPC	800-088019-300	2	
AC Vain Relay	Alstom	A62-486	2	
Bal Imp	Alstom	A3-117	2	
3 ohm Resistor (1XT/3XT)	GRS	A3-207 (01246-1)	2	
25 ohm Resistor (1XTRN/3XTRN)		56105-11	2	
1T/1XT XFMR	Alstom	31094-000 (A95 50)	1	
700 Amplifier Module		150-094017-022 Rev. D	3	
701-2 CAB Coupler (2340 Feq.)		150-097031-010 Rev. O	3	
Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	1	

Shiloh-Scott Signal House Asset Inventory Item **Image** Inventory Rack 5 Rack 5 **COMPONENT** MANUFACTURER **PART NUMBER** COUNT XFMR Loop Matching (2340 Feq.) EPC 800-088019-200 1 EPC 800-088019-300 2 XFMR Matching Rail Coupler AC Vain Relay Alstom A62-486 1 Bal Imp Alstom A3-117 1 3 ohm Resistor (1XT/3XT) GRS A3-207 (01246-1) 1 25 ohm Resistor (1XTRN/3XTRN) 56105-11 1 3XT XFMR Alstom 31094-000 (A95 50) 1 700 Amplifier Module 3 150-094017-022 Rev. D 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 3 Chassis AF Track XMT TTT-2 Getsgs 812097031-001 Rack 6 Rack 6 COMPONENT **MANUFACTURER PART NUMBER** COUNT 700 Amplifier Module 150-094017-022 Rev. D 9 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 5 702-1 Track Coupler (4410 Feq.) 150-095025-034 Rev. B 1 702-1 Track Coupler (3870 Feg.) 150-095025-034 Rev. B 1 702-1 Track Coupler (2970 Feq.) 150-095025-034 Rev. B 1 702-1 Track Coupler (3510 Feq.) 150-095025-034 Rev. B 1 Chassis AF Track XMT TTT-2 Getsgs 812-097031-001 3

Shiloh-Scott Signal House Asset Inventory Item **Image** Inventory Rack 7 Rack 7 **COMPONENT MANUFACTURER PART NUMBER** COUNT 700 Amplifier Module 150-094017-022 Rev. D 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 1 702-1 Track Coupler (3870 Feq.) 150-095025-034 Rev. B 1 702-1 Track Coupler (2970 Feq.) 150-095025-034Rev. B 1 703-1 Receiver Module (3510 Feq.) 150-095025-047 Rev. E 3 703-1 Receiver Module (4410 Feq.) 150-095025-047 Rev. E 1 703-1 Receiver Module (3870 Feq.) 150-095025-047 Rev. E 2 703-1 Receiver Module (2970 Feq.) 150-095025-047 Rev. E 2 Chassis AF Track XMT TTT-2 Getsgs 812-097031-001 1 **AF Track Receiver Chassis** 812-097031-034 Getsgs 2 Rack 10 Rack 10 COMPONENT **MANUFACTURER** PART NUMBER COUNT 700 Amplifier Module 150-094017-022 Rev. D 8 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 4 1 702-1 Track Coupler (4950 Feq.) 150-095025-034 Rev. B 702-1 Track Coupler (3330 Feq.) 150-095025-034 Rev. B 1 702-1 Track Coupler (4230 Feq.) 150-095025-034 Rev. B 1 1 702-1 Track Coupler (3690 Feq.) 150-095025-034 Rev. B 703-1 Receiver Module (3330 Feq.) 150-095025-047 Rev. E 1 703-1 Receiver Module (4230 Feq.) 150-095025-047 Rev. E 2 703-1 Receiver Module (3690 Feq.) 150-095025-047 Rev. E 1 703-1 Receiver Module (4950 Feq.) 150-095025-047 Rev. E 2 Chassis AF Track XMT TTT-2 812-097031-001 Getsgs 2 AF Track Receiver Chassis 812-097031-034 1 Getsgs

Shiloh-Scott Signal House Asset Inventory Image Inventory Item Rack 11 Rack 11 COMPONENT MANUFACTURER **PART NUMBER** COUNT 700 Amplifier Module 150-094017-022 Rev. EAO 1 700 Amplifier Module 4 150-094017-022 Rev. D 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 2 702-1 Track Coupler (4950 Feq.) 150-095025-034 Rev. B 1 702-1 Track Coupler (4230 Feq.) 150-095025-034 Rev. B 1 702-1 Track Coupler (3690 Feq.) 150-095025-034 Rev. B 1 703-1 Receiver Module (4230 Feq.) 1 150-095025-047 Rev. E 703-1 Receiver Module (3690 Feq.) 150-095025-047 Rev. E 1 Chassis AF Track XMT TTT-2 Getsgs 812-097031-001 2 AF Track Receiver Chassis Getsgs 812-097031-034 1 Rack 14 Rack 14 COMPONENT MANUFACTURER **PART NUMBER** COUNT VLP 2 ACP-2 2 SSM 2 CCI 2 VSD 2 VGP I/O-12V 3 NV I/O 3 32 NVI 4 VGPI 16 2 1 **CLA Board** RS-232 2 Modem 1 2 12V Power Supply

Shiloh-Scott Signal House Asset Inventory

Rack	1	5	

Item





Rack 15					
COMPONENT	MANUFACTURER	PART NUMBER	COUNT		
Rotary Dials (Full Hemisphere-NEW)			18		
Non-Vital Relays			70		
KEY LOCK SWITCH/2-POS 2-POLE STD. LOCK	EOA SWITCH CORP	51-236.025D	1		

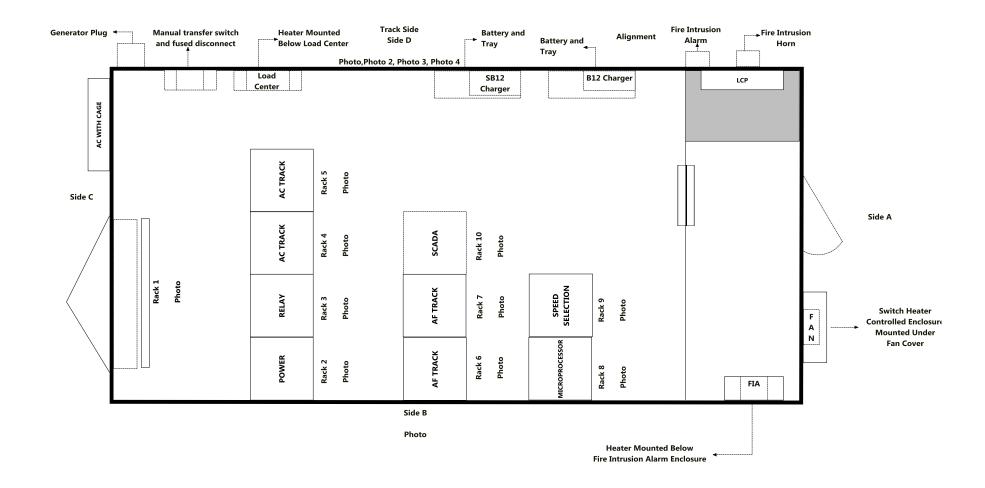
SCADA



	SCADA		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
Power Supply	Schneider Electric	TSXPSY1610	1
CPU	Schneider Electric	TSP57203	1
Memory Card	Schneider Automation S.A.	TSXMRP064P	1
RS-232			1
Input Card	Schneider Electric	TSX DEY12A2	8
Output Card	Schneider Electric	TSX DSY64T2K	1
Output Cord	Phoenix Contact	22 98 438	4
Relays	Phoenix Contact	ABE7*	3*
Power Supply	Connect Power	992534 0024	1
Battery Charger	Connect Power	991628 0024	1
Batteries	CD Technologies	UPS12-150MR	2
Backplane			1
MODEM	MOTOROLA	B3600	1

Shiloh-Scott Signal House Asset Inventory Image Inventory Item Sides **House Side-A** MANUFACTURER COMPONENT PART NUMBER COUNT FIA-Keypad Controller **NAPCO** RPC3000LCDe 1 SWITCH HEATER CONTROL BOX 1 **House Side-B** Fire Intrusion Alarm NAPCO 1 Genesis NP7-1212V,7.0Ah 2 Battery 1 Main Board Relay Boards 1 **Expansion Modules** 1 **House Side-C House Side-D** Double Throw Enclosed Switch 100A 240V AC/ 250V DC 40275-951-01 Square D 1 40276-004-01 GENERAL Duty Safety Switch 100A 240V AC/ 250V DC Square D 1 **BATTERY SURGE ARRESTOR 4** US&S N451552-0507 1 **Current Monitor** NRS 2 12V Power Supply NRS ERB-C 12/40 2 3 2.25V Battery MARATHON M12V90 CLCP 256 IO LED Driver Module Getsgs Assy 227027-001 Rev. 806 2 Power Supply CLCP 12VDC 20W 226609-200 Getsgs 2 KEY LOCK SWITCH/2-POS 2-POLE STD. LOCK 51-236.025D 1 **EOA SWITCH CORP**

Shrewsbury Signal House



Shrewsbury Signal House Asset Inventory Image Inventory Item Rack 1 Rack 1 COMPONENT MANUFACTURER PART NUMBER COUNT BPL-3 150-097031-013 Rev. O Harmon Rack 2 Rack 2 MANUFACTURER PART NUMBER COUNT **COMPONENT** A62-407 (56001-745-02) Vital Relay Alstom 1 Vital Relay Alstom A62-122 (56001-921-07) 4 XFMR Alstom 31094-000-01 Rev. F 1 28V Power Supply Керсо PRR 28-38M24787 2 28V Power Supply PRM 28-17-24810 Керсо 2 Rectifier Alstom A53-541 1

Shrewsbury Signal House Asset Inventory Item **Image** Inventory Rack 3 Rack 3 MANUFACTURER COMPONENT **PART NUMBER** COUNT Switch Rectifier 120AC/120DC 250756-000 2 XFMR Loop Matching EPC 800-088019-200 1 Vital Relay Alstom A62-429 (56001-926-01) 8 Alstom A62-432 (56001-785-01) 4 Vital Relay Vital Relay Alstom A62-12 (56001-921-07) 3 Vital Relay Alstom A62-247 2 Rack 4 Rack 4 COMPONENT **MANUFACTURER PART NUMBER** COUNT EPC XFMR Loop Matching 800-088019-200 1 AC Vain Relay Alstom A62-486 1 Bal Imp Alstom A3-117 1 3 ohm Resistor GRS A3-207 (01246-1) 1 25 ohm Resistor 56105-11 1 **XFMR** Alstom 31094-000 (A95 50) 1 700 Amplifier Module Harmon 150-094017-022 Rev. D 4 701-2 CAB Coupler (2340 Feq.) Harmon 150-097031-010 Rev. O 2 702-1 Track Coupler (4410 Feq.) Harmon 150-095025-034 Rev. CAO 1 702-1 Track Coupler (3510 Feq.) Harmon 150-095025-034 Rev. CAO 1 Chassis AF Track XMT TTT-2 Getsgs 812097031-001 1

Image	Inventory			
		Rack 5		
Manufacture	COMPONENT	MANUFACTURE	PART NUMBER	COUNT
WART STATE	700 Amplifier Module	Harmon	150-094017-022 Rev. D	12
SHA RANGE	701-2 CAB Coupler (2340 Feq.)	Harmon	150-097031-010 Rev. O	8
	702-1 Track Coupler (3870 Feq.)	Harmon	150-095025-034 Rev. CAC	1
	702-1 Track Coupler (4410 Feq.)	Harmon	150-095025-034 Rev. B	1
新 1000 Jan 100 Jan	702-1 Track Coupler (2970 Feq.)	Harmon	150-095025-034 Rev. CAC	1
HER STANDS	702-1 Track Coupler (3870 Feq.)	Harmon	150-095025-034 Rev. CAC	1
	703-1 Receiver Module (3510 Feq.)	Harmon	150-095025-047 Rev. E	1
	703-1 Receiver Module (2970 Feq.)	Harmon	150-095025-047 Rev. FAC	1
- Imaginament	703-1 Receiver Module (3870 Feq.)	Harmon	150-095025-047 Rev. FAC	3
- Myararta	703-1 Receiver Module (4410 Feq.)	Harmon	150-095025-047 Rev. FAC	3
	Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	3
	AF Track Receiver Chassis	Getsgs	812-097031-034	1
		Rack 6		1
	COMPONENT		PART NUMBER	COUNT
	700 Amplifier Module	Harmon	150-094017-022 Rev. D	15
	701-2 CAB Coupler (2340 Feq.)	Harmon	150-097031-010 Rev. O	10
	702-1 Track Coupler (3690 Feq.)	Harmon	150-095025-034 Rev. CAO	1
Miles and Marie	702-1 Track Coupler (4950 Feq.)	Harmon	150-095025-034 Rev. CAO	1
	702-1 Track Coupler (3330 Feq.)	Harmon	150-095025-034 Rev. CAO	2
	702-1 Track Coupler (4230 Feq.)	Harmon	150-095025-034 Rev. CAO	1
	702-1 Hack Couplet (4230 Feq.)			
_		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (3870 Feq.) 702-1 Track Coupler (2970 Feq.) 702-1 Track Coupler (3870 Feq.) 703-1 Receiver Module (3510 Feq.) 703-1 Receiver Module (2970 Feq.) 703-1 Receiver Module (3870 Feq.) 703-1 Receiver Module (4410 Feq.) Chassis AF Track XMT TTT-2 AF Track Receiver Chassis	COMPONENT MANUFACTURER 700 Amplifier Module Harmon 701-2 CAB Coupler (2340 Feq.) Harmon 702-1 Track Coupler (3870 Feq.) Harmon 702-1 Track Coupler (4410 Feq.) Harmon 702-1 Track Coupler (2970 Feq.) Harmon 702-1 Track Coupler (2970 Feq.) Harmon 703-1 Receiver Module (3810 Feq.) Harmon 703-1 Receiver Module (3870 Feq.) Harmon 703-1 Receiver Module (3870 Feq.) Harmon 703-1 Receiver Module (3870 Feq.) Harmon 703-1 Receiver Module (4410 Feq.) Harmon 703-1 Receiver Module (4410 Feq.) Harmon Chassis AF Track XMT TTT-2 Getsgs AF Track Receiver Chassis Getsgs Rack 6 COMPONENT MANUFACTURER 700 Amplifier Module Harmon 701-2 CAB Coupler (2340 Feq.) Harmon 702-1 Track Coupler (3690 Feq.) Harmon 702-1 Track Coupler (4950 Feq.) Harmon	Rack 5

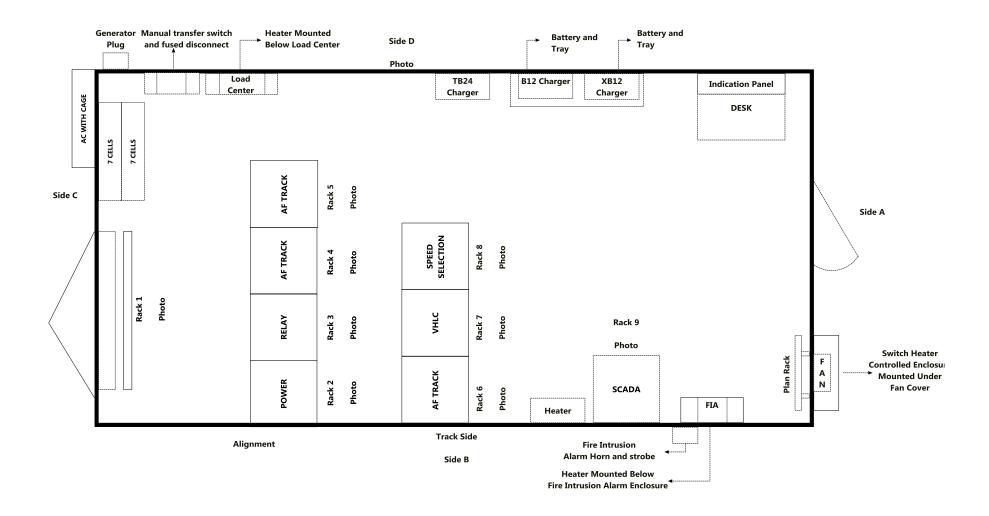
ltem	Image	Inventory	Inventory			
Rack 7			Rack 7			
ridek 7	THE PART OF THE PA	COMPONENT	MANUFACTURE	R PART	NUMBER	COUNT
		700 Amplifier Module	Harmon		17-022 Rev. D	2
	Partie C	701-2 CAB Coupler (2340 Feq.)			31-010 Rev. O	1
		702-1 Track Coupler (2970 Feq.			5-034 Rev. CAO	1
	THE PARTY NAMED IN	703-1 Receiver Module (4950 Fed	q.) Harmon	150-09502	5-047 Rev. FAO	1
	SACTOR AND DESCRIPTION OF THE PERSON NAMED IN	703-1 Receiver Module (3330 Fed	q.) Harmon	150-09502	5-047 Rev. FAO	1
		703-1 Receiver Module (4230 Fed	q.) Harmon	150-09502	5-047 Rev. FAO	2
		703-1 Receiver Module (3330 Fe	q.) Harmon	150-0950	25-047 Rev. E	1
		703-1 Receiver Module (3690 Fe	q.) Harmon	150-09502	5-047 Rev. FAO	1
		Chassis AF Track XMT TTT-2	Getsgs	812-09	97031-001	1
		AF Track Receiver Chassis	Getsgs	812-09	97031-034	1
		7.11.71.00.17.00.07.01.00.00.00.00.00.00.00.00.00.00.00.00.				<u> </u>
Rack 8						1 -
Rack 8			Rack 8	ART NUMBER	COUNT	
Rack 8			Rack 8 MANUFACTURER P			
Rack 8		COMPONENT	Rack 8	ART NUMBER	COUNT	
Rack 8		COMPONENT HLC Cabinet with Lexan Cover	Rack 8 MANUFACTURER P	ART NUMBER	COUNT 2	
Rack 8		COMPONENT HLC Cabinet with Lexan Cover VLP	Rack 8 MANUFACTURER P	ART NUMBER	COUNT 2 2 2	
Rack 8		COMPONENT HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI	Rack 8 MANUFACTURER P	ART NUMBER	COUNT 2 2 2 2	
Rack 8		COMPONENT HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI VSD	Rack 8 MANUFACTURER P	ART NUMBER	COUNT 2 2 2 2 2 2	
Rack 8		COMPONENT HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI VSD VGP I/O-12V	Rack 8 MANUFACTURER P	ART NUMBER	COUNT 2 2 2 2 2 2 2 2 2	
Rack 8		COMPONENT HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI VSD VGP I/O-12V NV I/O	Rack 8 MANUFACTURER P	ART NUMBER	COUNT 2 2 2 2 2 2 2 2 2 2 3	-
Rack 8		COMPONENT HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI VSD VGP I/O-12V NV I/O 32 NVI	Rack 8 MANUFACTURER P	ART NUMBER	COUNT 2 2 2 2 2 2 2 2 2	-
Rack 8		COMPONENT HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI VSD VGP I/O-12V NV I/O 32 NVI VGPI 16	Rack 8 MANUFACTURER P	ART NUMBER	COUNT 2 2 2 2 2 2 2 2 2 3 4 2	
Rack 8		COMPONENT HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI VSD VGP I/O-12V NV I/O 32 NVI VGPI 16 CLA Board	Rack 8 MANUFACTURER P	ART NUMBER	COUNT 2 2 2 2 2 2 2 2 2 3 4 2 1	
Rack 8		COMPONENT HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI VSD VGP I/O-12V NV I/O 32 NVI VGPI 16 CLA Board RS-232	Rack 8 MANUFACTURER P	ART NUMBER	COUNT 2 2 2 2 2 2 2 2 3 4 2 1 4	
Rack 8		COMPONENT HLC Cabinet with Lexan Cover VLP ACP-3 SSM CCI VSD VGP I/O-12V NV I/O 32 NVI VGPI 16 CLA Board	Rack 8 MANUFACTURER P	ART NUMBER	COUNT 2 2 2 2 2 2 2 2 2 3 4 2 1	

Shrewsbury Signal House Asset Inventory Item **Image** Inventory Rack 9 Rack 9 COMPONENT MANUFACTURER **PART NUMBER** COUNT Rotary Dials (Full Hemisphere-NEW) 21 Non-Vital Relays 85 **SCADA SCADA COMPONENT MANUFACTURER PART NUMBER** COUNT Schneider Electric TSXPSY1610 **Power Supply** 1 CPU Schneider Electric TSP57203 1 TSXMRP064P Memory Card Schneider Automation S.A. 1 TSXDEY32D2K 3 Input Card Schneider Electric Input Cord Schneider Electric TSXCDP203 6 **Output Card** Schneider Electric TSXDSY32T2K 2 **Output Cord Phoenix Contact** 22 98 438 4 Input Card ABE7 Schneider Electric ABE7H16C11 6 **Phoenix Contact** PLC-V8/FLK14/OUT 8 Relays Power Supply Connect Power 992534 0024 1 **Battery Charger** Connect Power 991628 0024 1 Batteries **CD** Technologies UPS12-150MR 2 Fiber Media Converter GarrettCom Inc. CS14P-SST-48VDC 1 Phone Line Extender Tcom 1 Backplane 1

Shrewsbury Signal House Asset Inventory Item Image Sides

	House Side-A	
COMPONENT	MANUFACTURER	PART NUMBER
FIA-Keypad Controller	NAPCO	RPC3000LCDe
Switch Heater Push Button Box		
	 House Side-B	
Fire Intrusion Alarm	NAPCO	
Battery	Genesis	NP7-1212V,7.0Ah
Main Board		
Relay Boards		
Expansion Modules		
	House Side-C	
	louse Side-D	
		Assy 227027-001 Rev
CLCP 256 IO LED Driver Module	Getsgs	806
Power Supply CLCP 12VDC 20W	Getsgs	226609-200
Double Throw Enclosed Switch 100A 240V AC/		
250V DC	Square D	40275-953-01
Heavy Duty Safety Switch 100A 240V AC/		
250V DC	Square D	40276-003-01
Heavy Duty Safety Switch 100A 240V AC/		
250V DC	Square D	40276-003-02
Automatic Transfer Switch	Kohler	KCT-AFNA-0104S
Hawk Event Recorder	Getsgs	251210-00001

Sunnen Signal House



Sunnen Signal House Asset Inventory

Image Item

Inventory

Rack 1



	Rack 1					
l	COMPONENT	MANUFACTURER	PART NUMBER	COUNT		
	BPL-3	Harmon	150-097031-013 Rev. O	6		

Rack 2



Rack 2				
COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
Vital Relay	Alstom	A62-407 (56001-745-02)	2	
XFMR	GRS	31094-000-01 Rev. F	1	
XFMR	GRS	31094-000-01 Rev. F	1	
XB12 Battery Monitor	Cragg	520603-1V12	1	

Sunnen Signal House Asset Inventory

Image Item

Inventory

Rack 3



Rack 3					
COMPONENT	MANUFACTURER	PART NUMBER	COUNT		
Vital Relay	Alstom	A62-671 (56001-985-01)	2		
Vital Relay	Alstom	A62-580 (56001-951-01)	1		
Vital Relay	Alstom	A62-360 (56001-774-01)	2		
Vital Relay	Alstom	A62-122 (56001-921-07)	2		
Vital Relay	Alstom	A62-247	2		
Microchron II Vital Timer	Alstom	A62-691	2		
Relay Flasher	Alstom	30733-003-01	2		

Rack 4



	Rack 4		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
700 Amplifier Module	Harmon	150-094017-022 Rev. D	12
701-2 CAB Coupler (2340 Feq.)	Harmon	150-097031-010 Rev. O	6
702-1 Track Coupler (3510 Feq.)	Harmon	150-095025-034 Rev. CAO	2
702-1 Track Coupler (4410 Feq.)	Harmon	150-095025-034 Rev. CAO	2
702-1 Track Coupler (3870 Feq.)	Harmon	150-095025-034 Rev. CAO	1
702-1 Track Coupler (2970 Feq.)	Harmon	150-095025-034 Rev. CAO	1
703-1 Receiver Module (2970 Feq.)	Harmon	150-095025-047 Rev. FAO	3
703-1 Receiver Module (4410 Feq.)	Harmon	150-095025-047 Rev. FAO	2
703-1 Receiver Module (3510 Feq.)	Harmon	150-095025-047 Rev. FAO	1
703-1 Receiver Module (3870 Feq.)	Harmon	150-095025-047 Rev. D	1
703-1 Receiver Module (3870 Feq.)	Harmon	150-095025-047 Rev. FAO	1
Chassis AF Track XMT TTT-2	Getsgs	812097031-001	3
AF Track Receiver Chassis	Getsgs	812-097031-034	1

Sunnen	Signal House Asset Inventory					
Item	Image	Inventory				
Rack 5	-21110	Rack 5				
		COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
	The state of the s	700 Amplifier Module	Harmon	150-094017-022 Rev. D	12	
	1810 A 19	701-2 CAB Coupler (2340 Feq.)	Harmon	150-097031-010 Rev. O	6	
		702-1 Track Coupler (4230 Feq.)	Harmon	150-095025-034 Rev. CAO	1	
	国烈 人在30	702-1 Track Coupler (3690 Feq.)	Harmon	150-095025-034 Rev. CAO	2	
		702-1 Track Coupler (4950 Feq.)	Harmon	150-095025-034 Rev. CAO	1	
		702-1 Track Coupler (3330 Feq.)	Harmon	150-095025-034 Rev. CAO	1	
		702-1 Track Coupler (4230 Feq.)	Harmon	150-095025-034 Rev. CAO	1	
		703-1 Receiver Module (3690 Feq.)	Harmon	150-095025-047 Rev. FAO	3	
		703-1 Receiver Module (4950 Feq.)	Harmon	150-095025-047 Rev. FAO	2	
		703-1 Receiver Module (3330 Feq.)	Harmon	150-095025-047 Rev. FAO	2	
		703-1 Receiver Module (4230 Feq.)	Harmon	150-095025-047 Rev. FAO	1	
		Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	3	
		AF Track Receiver Chassis	Getsgs	812-097031-034	1	
Rack 6		Rack 6				
		COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
		703-1 Receiver Module (3510 Feq.)	Harmon	150-095025-047 Rev. FAO	1	
		703-1 Receiver Module (4950 Feq.)	Harmon	150-095025-047 Rev. FAO	1	
	730 Million	Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	2	
		Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	2	

Sunnen Signal House Asset Inventory Item Image Inventory Rack 7 Rack 7 COMPONENT MANUFACTURER PART NUMBER COUNT VHLC Chassis 226607-03 Harmon 1 VLP 1 ACP-2 1 SSM 1 CCI 1 VGP I/O-12V 2 NV I/O 1 32 NVI 2 VGPI 16 2 **CLA Board** 1 RS-232 1 Modem 2 12V Power Supply 1 Rack 8 Rack 8 COMPONENT MANUFACTURER PART NUMBER COUNT Rotary Dials (Full Hemisphere-NEW) 12 Non-Vital Relays 16

Sunnen Signal House Asset Inventory

Item Image

SCADA



Inventory

SCADA								
COMPONENT	MANUFACTURER	PART NUMBER	COUNT					
Power Supply	Schneider Electric	TSXPSY1610	1					
CPU	Schneider Electric	TSP57203	1					
Memory Card	Schneider Automation S.A.	TSXMRP064P	1					
Input Card	Schneider Electric	TSXDEY32D2K	2					
Input Cord	Schneider Electric	TSXCDP203	4					
Output Card	Schneider Electric	TSXDSY32T2K	1					
Output Cord	Phoenix Contact	22 98 438	2					
Input Card ABE7	Schneider Electric	ABE7H16C11	4					
Relays	Phoenix Contact	PLC-V8/FLK14/OUT	4					
Power Supply	Connect Power	992534 0024	1					
Battery Charger	Connect Power	991628 0024	1					
Batteries	CD Technologies	UPS12-150MR	2					
Fiber Media Converter	GarrettCom Inc.	CS14P-SST-48VDC	1					
Phone Line Extender	Tcom		1					
Backplane			1					

Sunnen Signal House Asset Inventory

Image Item

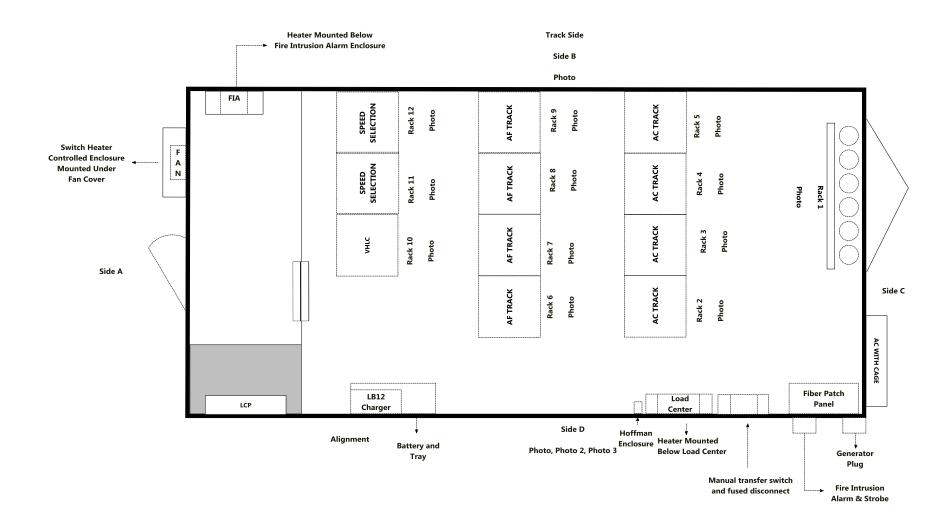
Sides



Inventory

House	e Side-A		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
FIA-Keypad Controller	NAPCO	RPC3000LCDe	1
Push Button Box Assembly (2 Buttons)			2
House	e Side-B		
Fire Intrusion Alarm	NAPCO		1
Battery	Genesis	NP7-1212V,7.0Ah	2
Main Board			1
Relay Boards			1
Expansion Modules			1
			1
12V Power Supply	NRS	ERB-C 12/501C	1
Current Monitor	NRS	16775-00	1
Surge Protector 18V AC 15A USSP	US&S	N451552-0507	1
Battery	GNB	50A15	6
House	e Side-C		
House	e Side-D		
CLCP 256 IO LED Driver Module	Getsgs	Assy 227027-001 Rev. 806	1
Power Supply CLCP 12VDC 20W	Getsgs	226609-200	1
Double Throw Enclosed Switch 100A 240V AC/ 250V DC	Square D	40275-953-02	1
Heavy Duty Safety Switch 100A 240V AC/ 250V DC	Square D	40276-003-01	1
Heavy Duty Safety Switch 100A 240V AC/ 250V DC	Square D	40276-003-02	1
Hawk Event Recorder	Getsgs	251210-00001	1
Current Monitor	NRS	16775-00	2
12V Power Supply	NRS	ERB-C 12/501C	1
Battery	GNB	50A15	21
24V Charger	NRS	1N02405010020000	1
Resistor (adjustable)		029603-2	20

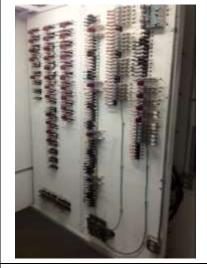
Tucker Signal House



Tucker Signal House Asset Inventory

Image Item

Rack 1



Inventory

Rack 1				
COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
BPL-3	HARMON	150-097031-013 Rev. O	5	
CARRIER SURGE ARRESTER	GE	250197-001 REV. KOJ	2	

Rack 2



Rack 2				
COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
Vital Relay	Alstom	A62-407 (56001-745-02)	1	
Vital Relay	Alstom	A62-122 (56001-921-07)	3	
XFMR	Alstom	31094-000-01 Rev. F	1	
28V Power Supply	Керсо	PRR 28-38M24787	2	
28V Power Supply	Керсо	PRM 28-17-24810	2	
Rectifier	Alstom	A53-541	1	

Tucker Signal House Asset Inventory Item Image Inventory Rack 3 Rack 3 COMPONENT MANUFACTURER **PART NUMBER** COUNT 250756-000 Switch Rectifier 120AC/120DC 2 A62-429 (56001-926-01) Vital Relay Alstom 8 Vital Relay Alstom A62-432 (56001-785-01) 4 Alstom A62-122 (56001-921-07) 1 Vital Relay Vital Relay Alstom A62-247 4 Rack 4 Rack 4 COMPONENT MANUFACTURER PART NUMBER COUNT EPC XFMR Loop Matching 800-088019-200 RAIL MATCHING COUPLER BRC-1 800-088-019-300 2 AC Vain Relay A62-597 Alstom 2 Bal Imp Alstom A3-117 2 1 ohm Resistor GRS A3-207 (01246-1) 2 2.5 ohm Resistor 56105-11 2 XFMR 31094-000 (A95 50) 1 Alstom 700 Amplifier Module 150-094017-022 Rev. D 1 700 Amplifier Module 150-094017-022 Rev. FAO 2 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 3 Chassis AF Track XMT TTT-2 812-097031-001 1 Getsgs

Tucker Signal House Asset Inventory

Item Image

Inventory

Rack 5



Rack 5				
COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
XFMR Loop Matching	EPC	800-088019-200	1	
RAIL MATCHING COUPLER BRC-1		800-088-019-300	2	
AC Vain Relay	Alstom	A62-597	2	
Bal Imp	Alstom	A3-117	2	
1 ohm Resistor	GRS	A3-207 (01246-1)	2	
2.5 ohm Resistor		56105-11	2	
XFMR	Alstom	31094-000 (A95 50)	1	
700 Amplifier Module	HARMON	150-094017-022 Rev. D	2	
700 Amplifier Module	HARMON	150-094017-022 Rev. FAO	1	
701-2 CAB Coupler (2340 Feq.)	HARMON	150-097031-010 Rev. O	3	
Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	1	

Rack 6



	Rack 6		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
700 Amplifier Module	HARMON	150-094017-022 Rev. D	5
700 Amplifier Module	HARMON	150-094017-022 Rev. C	1
700 Amplifier Module	HARMON	150-094017-022 Rev. EAO	1
701-2 CAB Coupler (2340 Feq.)	HARMON	150-097031-010 Rev. O	4
702-1 Track Coupler (3510 Feq.)	HARMON	150-095025-034 Rev. CAO	2
702-1 Track Coupler (4410 Feq.)	HARMON	150-095025-034 Rev. B	1
703-1 Receiver Module (3510 Feq.)	HARMON	150-095025-047 Rev. FAO	2
703-1 Receiver Module (3510 Feq.)	HARMON	150-095025-047 Rev. D	1
703-1 Receiver Module (3510 Feq.)	HARMON	150-095025-047 Rev. E	1
703-1 Receiver Module (3870 Feq.)	HARMON	150-095025-047 Rev. E	1
703-1 Receiver Module 3870 Feq.)	HARMON	150-095025-047 Rev. D	1
703-1 Receiver Module (4410 Feq.)	HARMON	150-095025-047 Rev. E	1
Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	2
AF Track Receiver Chassis	Getsgs	812-097031-034	1

Item	Image	Inventory	Inventory			
Rack 7	THE PARTY OF THE P		Rack 7			
	CHECKE LAND	COMPONENT	MANUFACTURI	ER PART NUMBER	COUN	
	A Carpenda III	700 Amplifier Module	HARMON	150-094017-022 Rev.	D 1	
		700 Amplifier Module	HARMON	150-094017-022 Rev. E	AO 1	
		510 Amplifier Module	HARMON	150-088019-050 REV.	В 2	
		530 CAB Coupler (2340 Feq.)	HARMON	150-088019-051 REV.	B 1	
		701-2 CAB Coupler (2340 Feq.)	HARMON	150-097031-010 Rev.	0 1	
	A COLUMN TO A COLU	540 TRACK DETECTION COUPLER (387	0) HARMON	150-088019-060 REV.	B 1	
		702-1 Track Coupler (3870 Feq.)	HARMON	150-095025-034 Rev.	B 1	
		Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	2	
Rack 8			Rack 8			
Rack 8		COMPONENT	Rack 8 MANUFACTURER	PART NUMBER	COUNT	
Rack 8		COMPONENT 700 Amplifier Module		PART NUMBER 150-094017-022 Rev. D	COUNT 7	
Rack 8			MANUFACTURER			
Rack 8		700 Amplifier Module	MANUFACTURER HARMON HARMON	150-094017-022 Rev. D	7	
Rack 8		700 Amplifier Module 701-2 CAB Coupler (2340 Feq.)	MANUFACTURER HARMON HARMON HARMON	150-094017-022 Rev. D 150-097031-010 Rev. O	7 4	
Rack 8		700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4950 Feq.)	MANUFACTURER HARMON HARMON HARMON	150-094017-022 Rev. D 150-097031-010 Rev. O 150-095025-034 Rev. CAO	7 4 1	
Rack 8		700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4950 Feq.) 702-1 Track Coupler (3690 Feq.)	MANUFACTURER HARMON HARMON HARMON HARMON HARMON	150-094017-022 Rev. D 150-097031-010 Rev. O 150-095025-034 Rev. CAO 150-095025-034 Rev. CAO	7 4 1 1	
Rack 8		700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4950 Feq.) 702-1 Track Coupler (3690 Feq.) 702-1 Track Coupler (4950 Feq.) 703-1 Receiver Module (2950 Feq.) 703-1 Receiver Module (3690 Feq.)	MANUFACTURER HARMON HARMON HARMON HARMON HARMON HARMON HARMON HARMON	150-094017-022 Rev. D 150-097031-010 Rev. O 150-095025-034 Rev. CAO 150-095025-034 Rev. B 150-095025-047 Rev. FAO 150-095025-047 Rev. FAO	7 4 1 1	
Rack 8		700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4950 Feq.) 702-1 Track Coupler (3690 Feq.) 702-1 Track Coupler (4950 Feq.) 703-1 Receiver Module (2950 Feq.) 703-1 Receiver Module (3690 Feq.) 703-1 Receiver Module (3330 Feq.)	MANUFACTURER HARMON HARMON HARMON HARMON HARMON HARMON HARMON	150-094017-022 Rev. D 150-097031-010 Rev. O 150-095025-034 Rev. CAO 150-095025-034 Rev. CAO 150-095025-034 Rev. B 150-095025-047 Rev. FAO	7 4 1 1 1 2 1	
Rack 8		700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4950 Feq.) 702-1 Track Coupler (3690 Feq.) 702-1 Track Coupler (4950 Feq.) 703-1 Receiver Module (2950 Feq.) 703-1 Receiver Module (3690 Feq.)	MANUFACTURER HARMON HARMON HARMON HARMON HARMON HARMON HARMON HARMON	150-094017-022 Rev. D 150-097031-010 Rev. O 150-095025-034 Rev. CAO 150-095025-034 Rev. B 150-095025-047 Rev. FAO 150-095025-047 Rev. FAO	7 4 1 1 2 1	

Tucker Signal House Asset Inventory Item Image Inventory Rack 9 Rack 9 COMPONENT MANUFACTURER **PART NUMBER** COUNT 700 Amplifier Module **HARMON** 150-094017-022 Rev. D 510 Amplifier Module **HARMON** 150-088019-050 REV.B 1 530 CAB Coupler (2340 Feq.) **HARMON** 150-088019-051 REV.B 1 701-2 CAB Coupler (2340 Feq.) **HARMON** 150-097031-010 Rev. O 1 702-1 Track Coupler (3330 Feq.) **HARMON** 150-095025-034 Rev. B 1 520 RECEIVER MODULE (4230 FEQ) HARMON 150-088019-080 REV.B 1 Chassis AF Track XMT TTT-2 Getsgs 812-097031-001 2 **500RECEIVER CHASSIS** EPC 800-088019-030 1 Rack 10 Rack 10 MANUFACTURER COMPONENT **PART NUMBER** COUNT **HLC Cabinet with Lexan Cover** Getsgs 226802-001 2 VLP 2 ACP-2 2 SSM 2 CCI 2 VSD 1 VGP I/O-12V 4 NV I/O 3 32 NVI 4 VGPI 16 2 **CLA Board** 1 RS-232 4 Modem 2 2 12V Power Supply

Tucker Signal House Asset Inventory

Image Item

Rack 11



Inventory

Rack 11				
COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
Rotary Dials (Full Hemisphere-NEW)			18	
Non-Vital Relays			72	

SCADA



SCADA				
COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
Power Supply	Schneider Electric	TSXPSY1610	1	
CPU	Schneider Electric	TSXP572623	1	
Memory Card	Schneider Automation S.A.	TSXMRP064P	1	
RS-232			1	
Input Card	Schneider Electric	TSX DEY16A2	6	
INPUT TERMINAL BLOCK	Schneider Automation S.A.	TSX BLY01	6	
Output Card	Schneider Electric	TSX DSY64T2K	1	
Output Cord	Phoenix Contact	22 98 438	3	
Relays	Phoenix Contact	ABE7*	3	
Power Supply	CONNECT POWER	992534 0024	1	
Battery Charger	CONNECT POWER	991628 0024	1	
Batteries	CD Technologies	UPS12-150MR	2	
Backplane			1	
Phone Line Extender	Tcom		1	

Tucker Signal House Asset Inventory

Image Item

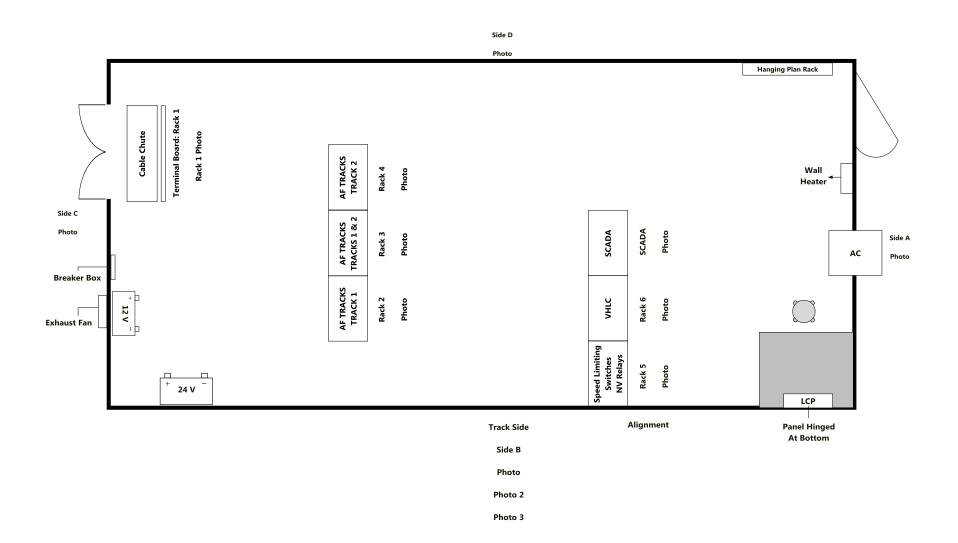
Sides



Inventory

House Side-A				
COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
Switch Heater Push Button Box			1	
Hous	e Side-B			
FIA-Keypad Controller	NAPCO	RPC3000LCDe	1	
Fire Intrusion Alarm	NAPCO		1	
Battery	Genesis	NP7-1212V,7.0Ah	2	
Main Board			1	
Relay Boards			1	
Hous	e Side-C			
Hous	e Side-D			
CLCP 256 IO LED Driver Module	Getsgs	Assy 227027-001 Rev. 806	1	
Power Supply CLCP 12VDC 20W	Getsgs	226609-200	1	
Double Throw Enclosed Switch 100A 240V AC/ 250V DC	Square D	40275-953-02	1	
Heavy Duty Safety Switch 100A 240V AC/ 250V DC	Square D	40276-001-02	1	
Hawk Event Recorder	Getsgs	251210-00001	1	
Current Monitor	NRS	16775-00	2	
BATTERY SURGE ARRESTOR	HARMON	250597-000	1	
12V Power Supply	NRS	ERB-C 12/40	2	
12V BATTERY	CD TECHNOLOGIES	TEL 12-90	1	

UMSL South Signal House



UMSL South Signal House Asset Inventory

Rack 1



Inventory

	Rack 1			
С	OMPONENT	MANUFACTURER	PART NUMBER	COUNT
	BPL-1	EPC		2

Rack 2



Rack 2				
COMPONENT	MANUFACTURER	PART NUMBER	COUNT	
Vital Relay	GRS	A62-122 (56001-921-07)	2	
520 Receiver Module (3870 Feq.)	EPC	150-088019-080 Rev. B	1	
520 Receiver Module (2970 Feq.)	EPC	150-088019-080 Rev. B	2	
520 Receiver Module (3510 Feq.)	EPC	150-088019-080 Rev. B	2	
520 Receiver Module (4410 Feq.)	EPC	150-088019-080 Rev. B	1	
520 Receiver Module (3870 Feq.)	EPC	150-088019-080 Rev. F	1	
510 Amplifier Module	EPC	150-088019-050 Rev. B	8	
530 CAB Coupler	EPC	150-088019-051 Rev. B	4	
540 Train Detection Coupler (2970 Feq.)	EPC	150-088019-060 Rev. B	1	
540 Train Detection Coupler (3510 Feq.)	EPC	150-088019-060 Rev. B	1	
540 Train Detection Coupler (4410 Feq.)	EPC	150-088019-060 Rev. B	1	
540 Train Detection Coupler (3870 Feq.)	EPC	150-088019-060 Rev. B	1	

Item	Image	Inventory			
Rack 3	123		Rack 3		
	The state of the s	COMPONENT	MANUFACTURER	PART NUMBER	COUNT
		510 Amplifier Module	EPC	150-088019-050 Rev. B	8
		530 CAB Coupler	EPC	150-088019-051 Rev. B	4
		540 Train Detection Coupler (2970 Feq.)	EPC	150-088019-060 Rev. B	1
	AND DESCRIPTION OF THE PERSON	540 Train Detection Coupler (3510 Feq.)	EPC	150-088019-060 Rev. B	1
	一种大型工程的	540 Train Detection Coupler (4230 Feq.)	EPC	150-088019-060 Rev. B	1
		540 Train Detection Coupler (3690 Feq.)	EPC	150-088019-060 Rev. B	1
Do als 4			Rack 4		
Rack 4			каск 4		
	The state of the s	COMPONENT	BAABILIEACTUDED	DADT MUMADED	COLINI
	and the second	COMPONENT Vital Bolov	MANUFACTURER	PART NUMBER	COUN
		Vital Relay	GRS	A62-122 (56001-921-07)	2
		Vital Relay 520 Receiver Module (3690 Feq.)	GRS EPC	A62-122 (56001-921-07) 150-088019-080 Rev. B	2
		Vital Relay 520 Receiver Module (3690 Feq.) 520 Receiver Module (4950 Feq.)	GRS EPC EPC	A62-122 (56001-921-07) 150-088019-080 Rev. B 150-088019-080 Rev. B	2 3 2
		Vital Relay 520 Receiver Module (3690 Feq.) 520 Receiver Module (4950 Feq.) 520 Receiver Module (3330 Feq.)	GRS EPC EPC EPC	A62-122 (56001-921-07) 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B	2 3 2 1
		Vital Relay 520 Receiver Module (3690 Feq.) 520 Receiver Module (4950 Feq.) 520 Receiver Module (3330 Feq.) 520 Receiver Module (4230 Feq.)	GRS EPC EPC EPC EPC	A62-122 (56001-921-07) 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B	2 3 2
		Vital Relay 520 Receiver Module (3690 Feq.) 520 Receiver Module (4950 Feq.) 520 Receiver Module (3330 Feq.) 520 Receiver Module (4230 Feq.) 510 Amplifier Module	GRS EPC EPC EPC EPC EPC	A62-122 (56001-921-07) 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B	2 3 2 1
		Vital Relay 520 Receiver Module (3690 Feq.) 520 Receiver Module (4950 Feq.) 520 Receiver Module (3330 Feq.) 520 Receiver Module (4230 Feq.)	GRS EPC EPC EPC EPC	A62-122 (56001-921-07) 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-050 Rev. B	2 3 2 1 1 8
		Vital Relay 520 Receiver Module (3690 Feq.) 520 Receiver Module (4950 Feq.) 520 Receiver Module (3330 Feq.) 520 Receiver Module (4230 Feq.) 510 Amplifier Module 530 CAB Coupler	GRS EPC EPC EPC EPC EPC EPC	A62-122 (56001-921-07) 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-050 Rev. B 150-088019-051 Rev. B	2 3 2 1 1 8 4
		Vital Relay 520 Receiver Module (3690 Feq.) 520 Receiver Module (4950 Feq.) 520 Receiver Module (3330 Feq.) 520 Receiver Module (4230 Feq.) 510 Amplifier Module 530 CAB Coupler 540 Train Detection Coupler (4230 Feq.)	GRS EPC EPC EPC EPC EPC EPC EPC EPC	A62-122 (56001-921-07) 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-050 Rev. B 150-088019-051 Rev. B 150-088019-060 Rev. B	2 3 2 1 1 8 4
		Vital Relay 520 Receiver Module (3690 Feq.) 520 Receiver Module (4950 Feq.) 520 Receiver Module (3330 Feq.) 520 Receiver Module (4230 Feq.) 510 Amplifier Module 530 CAB Coupler 540 Train Detection Coupler (4230 Feq.) 540 Train Detection Coupler (3690 Feq.)	GRS EPC	A62-122 (56001-921-07) 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-080 Rev. B 150-088019-050 Rev. B 150-088019-051 Rev. B 150-088019-060 Rev. B	2 3 2 1 1 8 4 1

UMSL South Signal House Asset Inventory

Item Image	
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Rack 5



Inventory

	Rack 5		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
Rotary Dials (Full Hemisphere-OLD)			12
Non-Vital Relays			9

Rack 6



	Rack 6		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
Vital Relay	SafeTran	400900	2
VLP			1
ACP-2			1
SSM			1
CCI			1
VGP I/O			1
NV I/O			1
NVI 32			2
VGPI 16			1
Surge Protector BSA-4	Harmon	250597	1
Modem			2
12V Power Supply			1

UMSL South Signal House Asset Inventory

Image Item

Sides



Inventory

	House Side-	Α	
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
20V Power Supply	NRS	ERV-C 24/30	1
Current Monitor	NRS	16775-00	1
	House Side-	·c	
12V Power Supply	Lamarche	A29B-20-12V-A1	1
2.25V Battery	PowerSafe	DDr 50-17	14
12V Battery	Odyssey	PC2150	1
Н	ouse Side-D (Fire Co	ntrol Panel)	
Keypad	Radionics	D360TD	1
Omega Alarm	Radionics	D8112	1
Modem		D8129	1
Battery		NP7-1212V,7.0Ah	1
	SCADA Control	Вох	
Modem			1
SBX			1
Baseboard			1
DI			1
Power Supply	Power-1	HC15-3-A	2
Non-Vital			1
Battery	Genesis	NP7-1212V,7.0Ah	2

Union Station Signal House

Hanging Plan Rack

Track 1 Side Side B Alignment Photo, Photo 2 Speed Limiting Switches NV Relays LCP 24 V Photo Rack 5 AF TRACKS TRACK 1 Photo 12V Power **Exhaust Fan** Rack 6 Supply AF TRACKS TRACKS 1 & 2 Photo **Breaker Box** Side A SCADA SCADA AC Photo AF TRACKS TRACK 2 Photo Side C Rack 4 Photo Photo Terminal Board: Rack 1 Wall Cable Chute Photo

Track 2 Side

Side D

Photo

Union Station Signal House Asset Inventory Image Item Inventory Rack 1 Rack 1 MANUFACTURER COMPONENT PART NUMBER COUNT BPL-1 **EPC** Rack 2 Rack 2 COMPONENT MANUFACTURER **PART NUMBER** COUNT Vital Relay GRS A62-122 56001-921-07 1 520 Receiver Module (4410 Feq.) EPC 150-088019-080 Rev. B 1 520 Receiver Module (2970 Feq.) 1 EPC 150-088019-080 Rev. B 520 Receiver Module (3870 Feq.) EPC 150-088019-080 Rev. B 1 520 Receiver Module (2970 Feq.) EPC 150-088019-080 Rev. F 1 510 Amplifier Module EPC 150-088019-050 Rev. B 4 530 CAB Coupler EPC 150-088019-051 Rev. B 2 540 Train Detection Coupler (3870 Feq.) EPC 150-088019-060 Rev. B 1 540 Train Detection Coupler (2970 Feq.) EPC 150-088019-060 Rev. B 1

Union Station	Signal House Asset Inventory				
Item	Image	Inventory			
Rack 3			Rack 3		
		COMPONENT	MANUFACTURER	PART NUMBER	COUNT
		510 Amplifier Module	EPC	150-088019-050 Rev. B	2
		530 CAB Coupler	EPC	150-088019-051 Rev. B	1
		540 Train Detection Coupler (3690 Feq.)	EPC	150-088019-060 Rev. B	1
Rack 4			Rack 4		
	Distriction	COMPONENT	MANUFACTURER	PART NUMBER	COUNT
	8	520 Receiver Module (4230 Feq.)	EPC	150-088019-080 Rev. B	2
	s VIII The second /	520 Receiver Module (3690 Feq.)	EPC	150-088019-080 Rev. B	1
		510 Amplifier Module	EPC	150-088019-050 Rev. B	4
	£ 1000 - 1000 / 1000	530 CAB Coupler	EPC	150-088019-051 Rev. B	2
		540 Train Detection Coupler (3330 Feq.) 540 Train Detection Coupler (4230 Feq.)	EPC EPC	150-088019-060 Rev. B 150-088019-060 Rev. B	1
		5 .5			

Union Station Signal House Asset Inventory Image Inventory Item Rack 5 Rack 5 COMPONENT MANUFACTURER PART NUMBER COUNT Rotary Dials (Full Hemisphere-OLD) 6 Non-Vital Relays Rack 6 Rack 6 MANUFACTURER COMPONENT PART NUMBER COUNT Vital Relay SafeTran 400900 2 VLP 1 ACP-2 1 SSM 1 CCI 1 VGP I/O 1 NV I/O 2 32 NVI 1 VGPI 16 1 Surge Protector BSA-4 250597 1 Harmon CLA 1 Modem 2 12V Power Supply 1

Item	Image	Inventory			
SCADA			SCA	DA	
	44	COMPONENT	MANUFACTURER	PART NUMBER	COUNT
		Modem		V3225	1
		SPX			1
		C186			1
		DI			2
		Power Supply			2
		Non Vital Relays			1
		Batteries	Genesis	NP7-12 12V, 7.0 Ah	2
		SCADA Case	Eurobec Metal	N.Cat.N: 9500 DA722436	1

Union Station Signal House Asset Inventory

Image Item

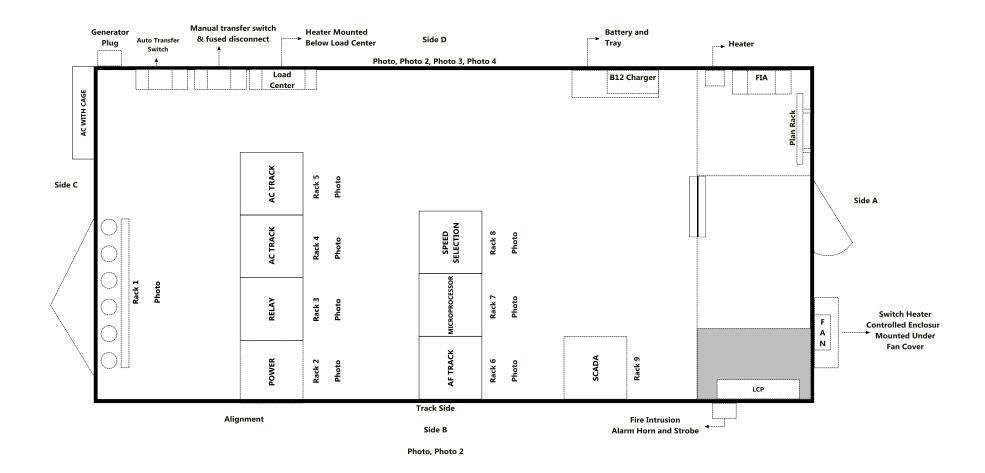
Sides



Inventory

	House Side-A		
COMPONENT	MANUFACTURER	PART NUMBER	COUNT
	House Side-B		
CLCP 256 IO LED Driver Module	Getsgs	Assy 227027-001 Rev. 806	1
Power Supply CLCP 12VDC 20W	Getsgs	226609-200	1
28V Power Supply	NRS	ERV-C 24/30	1
Current Monitor	NRS		1
	House Side-C		
12V Power Supply	Lamarche	A29-20-12V-A1	1
Battery	PowerSafe	DDr 50-17	14
12V Battery	PowerSafe	12V 155FS	1
Hou	se Side-D (Fire Contr	rol Panel)	
Keypad	Raydioncs	D360TD	1
Omega Alarm	Raydioncs	D8112	1
Modem		D8129	1
Battery		NP7-1212V,7.0Ah	1

Waterman Signal House



Waterman Signal House Asset Inventory Image Inventory Item Rack 1 Rack 1 COMPONENT MANUFACTURER PART NUMBER COUNT HARMON 150-097031-013 Rev. O BPL-3 Rack 2 Rack 2 PART NUMBER COMPONENT MANUFACTURER COUNT Vital Relay Alstom A62-407 (56001-745-02) 1 Vital Relay A62-122 (56001-921-07) 2 Alstom XFMR Alstom 31094-000-01 Rev. F 1 28V Power Supply PRR 28-38M24787 Керсо 2 28V Power Supply PRM 28-17-24810 2 Керсо Rectifier A53-541 Alstom 1

Waterman Signal House Asset Inventory Inventory Item **Image** Rack 3 Rack 3 COMPONENT MANUFACTURER **PART NUMBER** COUNT Switch Rectifier 120AC/120DC 250756-000 1 Vital Relay Alstom A62-429 (56001-926-01) 4 Vital Relay Alstom A62-432 (56001-785-01) 2 Vital Relay Alstom A62-122 (56001-921-07) 1 A62-247 Vital Relay Alstom 4 Rack 4 Rack 4 COMPONENT **MANUFACTURER PART NUMBER** COUNT EPC 800-088019-200 XFMR Loop Matching 1 Alstom **AC Vain Relay** A62-486 1 A3-117 Bal Imp Alstom 1 3 ohm Resistor ADJ GRS A3-207 (01246-1) 1 25 ohm Resistor ADJ 56105-11 1 XFMR Alstom 31094-000 (A95 50) 1 700 Amplifier Module 150-094017-022 Rev. D 4 701-2 CAB Coupler (2340 Feq.) 150-097031-010 Rev. O 2 702-1 Track Coupler (2970 Feq.) 150-095025-034 Rev. B 1 702-1 Track Coupler (3870 Feq.) 150-095025-034 Rev. B 1 Chassis AF Track XMT TTT-2 812097031-001 Getsgs 1

tem	Image	Inventory			
Rack 5			Rack 5		
	- Contractor Co.	COMPONENT	MANUFACTURER	PART NUMBER	COUNT
	100	700 Amplifier Module		150-094017-022 Rev. D	9
	THE R. LEWIS CO., LANSING, MICH.	701-2 CAB Coupler (2340 Feq.)		150-097031-010 Rev. O	6
		702-1 Track Coupler (4410 Feq.)		150-095025-034 Rev. B	1
		702-1 Track Coupler (3510 Feq.)		150-095025-034 Rev. B	1
	100101 - 3011	702-1 Track Coupler (3330 Feq.)		150-095025-034 Rev. B	1
		703-1 Receiver Module (3870 Fed)	150-095025-047 Rev. E	1
		703-1 Receiver Module (4410 Fed)	150-095025-047 Rev. E	1
		703-1 Receiver Module (3510 Fed		150-095025-047 Rev. E	1
				+	+
	C INN	Chassis AF Track XMT TTT-2	Getsgs	812-097031-001	3
		Chassis AF Track XMT TTT-2 AF Track Receiver Chassis	Getsgs Getsgs	812-097031-001 812-097031-034	3 1
Rack 6					
Rack 6			Getsgs		
Rack 6		AF Track Receiver Chassis	Getsgs Rack 6	812-097031-034	1
Rack 6		AF Track Receiver Chassis COMPONENT	Getsgs Rack 6	812-097031-034 PART NUMBER	1 COUNT 11 7
Rack 6		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.)	Getsgs Rack 6	PART NUMBER 150-094017-022 Rev. D 150-097031-010 Rev. O 150-095025-034 Rev. B	1 COUNT 11 7 1
Rack 6		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.)	Getsgs Rack 6	PART NUMBER 150-094017-022 Rev. D 150-097031-010 Rev. O	1 COUNT 11 7
Rack 6		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.) 702-1 Track Coupler (3690 Feq.) 702-1 Track Coupler (4950 Feq.)	Getsgs Rack 6	PART NUMBER 150-094017-022 Rev. D 150-097031-010 Rev. O 150-095025-034 Rev. B	1 COUNT 11 7 1
Rack 6		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.) 702-1 Track Coupler (3690 Feq.)	Getsgs Rack 6	PART NUMBER 150-094017-022 Rev. D 150-097031-010 Rev. O 150-095025-034 Rev. B 150-095025-034 Rev. B	1 COUNT 11 7 1 1 1
Rack 6		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.) 702-1 Track Coupler (4950 Feq.) 702-1 Track Coupler (4950 Feq.) 702-1 Track Coupler (3330 Feq.) 703-1 Receiver Module (3330 Feq.)	Rack 6 MANUFACTURER	PART NUMBER 150-094017-022 Rev. D 150-097031-010 Rev. O 150-095025-034 Rev. B 150-095025-034 Rev. B	1 COUNT 11 7 1 1 1 1 1 2
Rack 6		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.) 702-1 Track Coupler (4950 Feq.) 702-1 Track Coupler (3330 Feq.) 702-1 Track Coupler (3330 Feq.) 703-1 Receiver Module (3330 Feq.) 703-1 Receiver Module (4230 Feq.)	Rack 6 MANUFACTURER)))	PART NUMBER 150-094017-022 Rev. D 150-095025-034 Rev. B 150-095025-034 Rev. B 150-095025-034 Rev. B 150-095025-034 Rev. B	1 COUNT 11 7 1 1 1 1 1 1
Rack 6		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (3690 Feq.) 702-1 Track Coupler (4950 Feq.) 702-1 Track Coupler (3330 Feq.) 702-1 Track Coupler (3330 Feq.) 703-1 Receiver Module (3330 Feq.) 703-1 Receiver Module (4230 Feq.) 703-1 Receiver Module (3690 Feq.)	Rack 6 MANUFACTURER))))	PART NUMBER 150-094017-022 Rev. D 150-095025-034 Rev. B	1 COUNT 11 7 1 1 1 1 1 2
Rack 6		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (4230 Feq.) 702-1 Track Coupler (4950 Feq.) 702-1 Track Coupler (3330 Feq.) 702-1 Track Coupler (4950 Feq.) 703-1 Receiver Module (3330 Feq.) 703-1 Receiver Module (4230 Feq.) 703-1 Receiver Module (4950 Feq.) 703-1 Receiver Module (4950 Feq.)	Rack 6 MANUFACTURER)))))	PART NUMBER 150-094017-022 Rev. D 150-095025-034 Rev. B 150-095025-034 Rev. B 150-095025-034 Rev. B 150-095025-034 Rev. B 150-095025-047 Rev. E 150-095025-047 Rev. E 150-095025-047 Rev. E	1 COUNT 11 7 1 1 1 1 2 2 2 1 1 1
Rack 6		COMPONENT 700 Amplifier Module 701-2 CAB Coupler (2340 Feq.) 702-1 Track Coupler (3690 Feq.) 702-1 Track Coupler (4950 Feq.) 702-1 Track Coupler (3330 Feq.) 702-1 Track Coupler (3330 Feq.) 703-1 Receiver Module (3330 Feq.) 703-1 Receiver Module (4230 Feq.) 703-1 Receiver Module (3690 Feq.)	Rack 6 MANUFACTURER))))	PART NUMBER 150-094017-022 Rev. D 150-095025-034 Rev. B 150-095025-034 Rev. B 150-095025-034 Rev. B 150-095025-034 Rev. B 150-095025-047 Rev. E 150-095025-047 Rev. E	1 COUNT 11 7 1 1 1 1 2 2 2 1 1

Waterma	n Signal House Asset Inventory	1			
Item	Image	Inventory			
Rack 7	Mark I		Rack 7		
	是 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	COMPONENT	MANUFACTURER	PART NUMBER	COUNT
	Transaction of	HLC Cabinet with Lexan Cover	Getsgs	226802-001	2
		VLP			2
		ACP-2			1
	A CONTRACTOR OF THE PARTY OF TH	ACP-3			1
	THE RESIDENCE OF THE PARTY OF T	SSM			2
		CCI			2
	The second secon	VSD			1
		VGP I/O-12V			2
	The second secon	NV I/O			3
		32 NVI			3
		VGPI 16			2
	1 Sept Schools	CLA Board			1
		RS-232			4
		Modem			2
	1/2	12V Power Supply			2
Rack 8			Rack 8		
		COMPONENT	MANUFACTI	JRER PART NUM	ABER CC
	100 100 100 100 100 100 100 100 100 100	Rotary Dials (Full Hemisphere-N	IEW)		
		Non-Vital Relays			

Watermar	n Signal House Asset Inventory				
Item	Image	Inventory			
SCADA	1 T 1 T 1 T 1 T 1 T 1 T 1 T 1 T 1 T 1 T		SCADA		
		COMPONENT	MANUFACTURER	PART NUMBER	COUNT
		Power Supply	Schneider Electric	TSXPSY1610	1
	TOTAL STATE OF THE	CPU	Schneider Electric	TSP57203	1
	TA STANKE OF THE	Memory Card	Schneider Automation S.A.	TSXMRP064P	1
		Input Card	Schneider Electric	TSXDEY32D2K	3
		Input Cord	Schneider Electric	TSXCDP203	6
		Output Card	Schneider Electric	TSXDSY32T2K	1
		Output Cord	Phoenix Contact	22 98 438	2
		Input Card ABE7	Schneider Electric	ABE7H16C11	6
		Relays	Phoenix Contact	PLC-V8/FLK14/OUT	4
		Power Supply	Connect Power	992534 0024	1
		Battery Charger	Connect Power	991628 0024	1
		Batteries	CD Technologies	UPS12-150MR	2
	THE PARTY OF THE P	Fiber Media Converter	GarrettCom Inc.	CS14P-SST-48VDC	1
		Phone Line Extender	Tcom		1
	E CONTRACTOR OF THE PARTY OF TH	Backplane	Schneider Electric	21041811988	1

Waterman Signal House Asset Inventory Item **Image** Inventory House Side-A Sides COMPONENT MANUFACTURER **PART NUMBER** COUNT FIA-Keypad Controller NAPCO RPC3000LCDe 1 Switch Heater Push Button Box 1 House Side-B CLCP 256 IO LED Driver Module Getsgs Assy 227027-001 Rev. 806 1 Power Supply CLCP 12VDC 20W Getsgs 226609-200 1 House Side-C **House Side-D** Fire Intrusion Alarm NAPCO 1 Genesis NP7-1212V,7.0Ah 2 Battery Main Board 1 Relay Boards 1 **Expansion Modules** Double Throw Enclosed Switch 100A 240V AC/ 250V DC Square D 40275-953-01 1 Heavy Duty Safety Switch 100A 240V AC/ 250V DC 40276-003-01 Square D 1 Automatic Transfer Switch Thompson Technology TS 842MS3-100B-240-SE 1 251210-00001 Hawk Event Recorder Getsgs 1 Surge Protector 18V AC 15A USSP US&S N451552-0507 2 **Current Monitor** NRS 16775-00 1 12V Power Supply NRS ERB-C 12/501C 1 Battery GNB 50A15 6



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