ABSTRACT

REDUCING RAIL-TRUCK FREIGHT INTERMODAL DRAYAGE COSTS

by
David Moy Jr.

In rail-truck intermodal transport, a highway truck-trailer or container is moved by truck from a shipper to a rail terminal in the shipper's vicinity, and by rail in line haul between rail terminals. Upon being unloaded at the destination rail terminal, the container is delivered to a receiver (consignee) by truck. The highway portion of the move, or drayage, accounts for a relatively high percentage of total origin to destination cost, and it limits severely the competitiveness of intermodal service with door-to-door truck service. The approach used in this thesis is to examine in detail the current costs and potential for improvement at one intermodal terminal for a pre-determined analysis period. The analysis is conducted by first determining the actual cost of container movements and comparing it with the costs of an operation in which movements are scheduled using a proposed heuristic model that reduces the movements of empty containers. The model results indicate a 7.79% reduction in the overall cost of drayage. This reduction is achieved by repositioning and reloading containers, after they have been unloaded at consignees.

REDUCING RAIL-TRUCK FREIGHT INTERMODAL DRAYAGE COSTS

by
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REDUCING RAIL-TRUCK FREIGHT INTERMODAL DRAYAGE COSTS

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This thesis is dedicated to
my friends and family
who have supported me throughout this work

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CHAPTER 1

INTRODUCTION

As defined by the National Commission on Intermodal Transportation (Final Report, 1994), intermodal service, in general, refers to the "interconnections among modes of transportation" and the "use of multiple modes for a single trip". Rail-truck freight intermodal service, in particular, consists of moving highway truck-trailers loaded on rail flat cars (TOFC) or containers on rail flat cars (COFC) by rail in-line haul between origin and destination rail terminals, and over the highway in local pick up or delivery between the terminal and customers. The local pick-up and delivery is termed drayage, the receivers at the destination are termed consignees, while the customers from which trailers/containers are picked-up and delivered to the terminal are termed shippers. Rail-truck intermodal freight service is considered to be a competitive alternative to the pure over-the-highway long haul movement, because it combines the best of two modes: the low average cost of a rail movement with the efficiency and flexibility of trucks in local pick-up and delivery. This thesis focuses upon the highway portion, or drayage, of intermodal transport.

1.1 Problem Statement

One of the main problems of intermodal is the high cost and unsatisfactory service quality of the drayage portion of the service (Morlok et al, 1994). Currently, drayage consists of delivering a loaded trailer/container from the terminal area

to the consignee, waiting while it is being unloaded, and returning to the terminal area with an empty trailer/container. In the case of a shipper, an empty trailer/container must be first delivered by truck from the rail terminal, loaded, and then returned to the terminal for a subsequent outbound movement by rail.

The current operation is characterized by a high portion of non-revenue movements. The rate charged per container movement is set in such a way that it must account for the large portion of non-revenue miles associated with the movement. For example, if a loaded container is delivered from a Kearny, New Jersey rail terminal to Guiderland Center, New York, where it is unloaded, and then returned empty to Kearny, a rate of $539.00 could be charged for the 310 mile round trip. Although, the container moved loaded only 155 miles, the rate is set to take into account 155 miles of the empty non-revenue producing portion of the movement as well. If the container could be repositioned at a shipper in the vicinity of the consignee that is waiting for an empty container, and reloaded prior to returning to the terminal, the empty miles, and therefore the total cost of drayage, could be substantially reduced. This repositioning is called triangulation in trucking parlance. The cost of a triangulated loaded container delivery, repositioning, and pick-up would be assigned over two loads, resulting in a lower cost per load compared to the previous case.

This thesis focuses on the reduction of the cost of drayage through the formulation of a heuristic which incorporates the method of triangulation, and attempts to accomplish two objectives. The first objective is to design a heuristic that triangulates movements taking into consideration customer specified time windows that minimizes cost. Assuming that

the number of container loads to be moved is fixed, the minimization of operator cost will result in profit maximization. The heuristic logic should yield "near optimal" assignments of container activities, and must incorporate distances, travel times, detention times (the time the trailer or container is detained at a destination for such activities as paperwork, loading, unloading and such)and scheduling times. It is important to carefully determine the values of these parameters since these elements greatly influence operator costs. The second objective is to apply the heuristic to a case study of drayage operations.

1.2 Research Objective

The objective of this thesis is to develop a methodologically sound heuristic for triangulating the movements of trailer/containers in the drayage portion of intermodal trailer/container service. Past studies (Morlok and Spasovic, 1994) show that by combining a more centralized drayage operation and using triangulation, a company could increase the utilization of tractors and trailers and thus the efficiency of the operation. By using triangulation methods, drayage costs could be dramatically reduced by reducing the number of empty tractor-container non-revenue miles. In most past studies, drayage data was aggregate because truckers were reluctant to reveal information on the exact location of customers, time-windows for delivery and pick-ups, and other proprietary data. Actual rates charged for the movements, temporal, spatial, and operational data were not readily available and most often had to be assumed or estimated. This lack of data severely impacted the ability of researchers to take a closer look at the impediments that precluded the formulation of an efficient drayage operation. The design of the heuristic presented here incorporates actual temporal and spatial data, including rates, distances, mileage

calculations, and detention rates and times, and as a consequence presents drayage operations more realistically and accurately.

1.3 Scope

This research focus on intermodal drayage operations for containers of a major Mid-Western railroad at a large drayage company based in South Kearny, New Jersey, with the primary objective to reduce intermodal container drayage costs. Data pertinent to calculations of current drayage operations and for the formulation of a heuristic model were collected within a three week period representative of a typical drayage operation. All drayage times and rates associated with container movements were provided by these companies.

1.4 Overview

This thesis is divided into seven chapters. Chapter 2 reviews the literature and provides a background in the area of intermodal freight transport. Chapter 3 describes the methodological framework used for analyzing improvements in the cost of drayage operations. Chapter 4 describes the heuristic algorithm. Chapter 5 presents the case study. Chapter 6 contains the analysis of results, and Chapter 7 presents conclusions and recommendations for future research.

CHAPTER 2

INTERMODAL FREIGHT TRANSPORT

A typical intermodal freight movement consists of picking up a loaded truck-trailer or container by truck from a shipper and brought to a rail terminal. There, the trailer/container is loaded on a flat rail car and hauled to the destination rail terminal. Upon arrival to the destination, the trailer/container is delivered locally via truck to the consignee. Intermodal freight transport has grown steadily since the 1960's increasing from 1.7 million container/trailer loadings in 1965 to 7.1 million loadings in 1993 (Intermodal Coordination Study, 1994).

2.1 Background

Intermodalism was commercialized and promoted through the worldwide breakthrough of containerization. One of the primary requirements for successful intermodalism is that the freight being moved is efficiently containerizable (North Jersey Transportation Planning Authority, Inc. et al., 1994) which includes most general cargo such as mail, parcels, clothing, perishables and most things consumers purchase. The container revolution advanced the intermodal industry greatly (Mahoney, 3, 1985) by providing many advantages such as standardization, protection of freight, and unitization of loads which leads to easier handling, easier loading, fewer pieces to be accounted for, fewer items being lost or stolen, and easier intermodal transfer (Mahoney, 1985). However, there are

also disadvantages with containers which must be considered, such as the cost of the container and the empty backhaul.

In addition to the containerization movement, intermodalism would not have grown so quickly if it was not for two important pieces of legislation, these being the Staggers Rail Act of 1980 and the Motor Carrier Act of 1980. The Staggers Rail Act of 1980 created a regulatory climate which deregulated Federal government control over intermodal freight services giving shippers a wider range of "carriers and intermodal combination of carriers, and of combinations of rate and joint rates, to choose from" (Mahoney, 1985). The purpose of the Motor Carrier Act of 1980 is "to promote intermodal transportation as one of its policies regulating transportation" and relaxed the requirements of entry into the trucking industry. As a result, in the first year of deregulation, the approval rate of applications for entry into the industry increased from 69.8% to 95.4% (Mahoney, 1985).

2.2 Advantages and Disadvantages of Intermodal

Intermodal freight movements combine the low, per ton-mile cost of rail movements with the flexibility and unlimited access to industrial and commercial locations of drayage. Rail-truck intermodal movements are also fuel efficient because they reduce the highway vehicle miles traveled (VMT) by long haul motor carriers. This reduction of VMT produced by intermodalism puts the industry in a position to benefit from the recently implemented ISTEA and Clean Air Act Amendments of 1990 as public agencies work to produce environmentally advantageous and economically efficient transportation solutions.

In must be noted however, that despite the many advantages of intermodalism, for rail-truck freight movement to be economically viable and to compete with long haul motor carriers, the rail portion of the movement must be sufficiently long to take advantage of the rail line-haul efficiency. These distances are typically about 700 to 800 miles or longer as discussed in (Spasovic, 1990), (Morlok and Spasovic, 1994).

2.3 Intermodal Operations and Pricing

Drayage operations consist of delivering loads to consignees and picking them up from shippers. Upon a delivery of a loaded trailer/container to a consignee, the trailer/container is unloaded and returned to the terminal empty. Similarly for a pick up from a shipper, an empty trailer/container is delivered from a pool at the rail terminal, loaded, and then returned to the terminal.

Trailers/containers can be moved according to two procedures: stay-with or drop and pick. During the stay-with procedure, a driver and tractor stay with a trailer/container at a consignee (shipper) while the trailer/container is unloaded (loaded). The tractor then returns to the terminal area with an empty (loaded) trailer/container. During the drop and pick procedure, driver and tractor leave a trailer/container and depart for another assignment. A driver with a tractor return to pick up the trailer/container at a later date and return it back to the terminal. A movement of a tractor with an empty trailer/container is termed deadheading, while a movement without a trailer/container is termed bob-tailing.

A stay-with procedure consists of 50% empty (non-revenue) miles. The drop and pick procedure is even more inefficient and might involve up to 75% of non-revenue miles (i.e.,

a tractor would deliver a loaded container to a consignee, bobtail from the consignee back to the terminal, bobtail from the terminal to the consignee to pick up the empty, and deadhead back to the terminal). Drayage rates are set to cover the cost of empty non-revenue miles.

It should be noted that drayage was envisioned to be equipment and labor intensive and thus, costly (Morlok and Spasovic, 1994). To achieve a higher level of service to customers, and to enable prompt delivery to consignees and prompt pick ups from shippers, trailer/container movements consist of a high percentage of trailer/container non-revenue movements, deadheading or bob-tailing movements

2.4 Potential

"Despite its relatively short distance compared to rail movement, drayage accounts for a large fraction of intermodal origin to destination costs and is a major factor in service quality as perceived by the shipper" (Morlok and Spasovic, 1992). The reason for this high cost is the extent of empty mileage.

Currently, drayage prices are set assuming that each loaded trailer/container movement is undertaken independently of one another (Morlok and Spasovic, 1993) when in practice, prices could vary as economies and diseconomies are introduced into the operation. Non-revenue movements account for a large fraction of intermodal costs, and if they could be reduced while providing the same or higher level of service, the overall intermodal cost could be reduced.

It has been found in Morlok et al. (1994) that intermodal rail-truck service is only efficient for longer distance hauls where the rail in-line haul economies outweigh the increased terminal and transaction costs associated with the intermodal freight movement. It has been shown in Morlok and Spasovic (1994) and Morlok and Spasovic (1990) that redesign and reengineering of intermodal should begin with the drayage companies and the third parties that arrange for the service, called Intermodal Marketing Companies (IMCs). Combining the reorganization of the drayage operation to a more centralized operation and by implementing leasing of tractor and driver sets could reduce the high cost of drayage. A framework for analyzing the efficiency of drayage is discussed in the next chapter.

CHAPTER 3

METHODOLOGICAL FRAMEWORK

3.1 Introduction

A framework was developed and used to evaluate ways of reducing the cost of drayage. The approach used is to examine in detail, for a pre-determined analysis period, the current costs and assess the potential for improvement at one intermodal terminal. The analysis is conducted by first determining the current cost of container movements and then comparing those results to the costs of an operation in which movements are scheduled using the proposed heuristic model.

First, data on container and tractor activities during a certain time period had to be collected. The data included the locations of consignees and shippers, and the number of loaded containers delivered to consignees and picked up from shippers. Information on the activities associated with a loaded movement, such as delivering an empty container to shippers for loading or removing the empties from consignees upon unloading was also collected

The costs or rates for the container movements were also collected. In the current operation, a container is moved loaded only in one direction and returned empty. For example, it is delivered loaded to a consignee and upon unloading returned empty to the terminal. Similarly, a container is delivered empty from the terminal to a shipper, it is loaded there, and returned loaded to the terminal. Thus, in the current operation, shown in Figure 3.1, container movements are treated independently of each other. The current

rates are set to account for an operation with a large portion of non-revenue miles associated with the delivery and pick-up of loads.

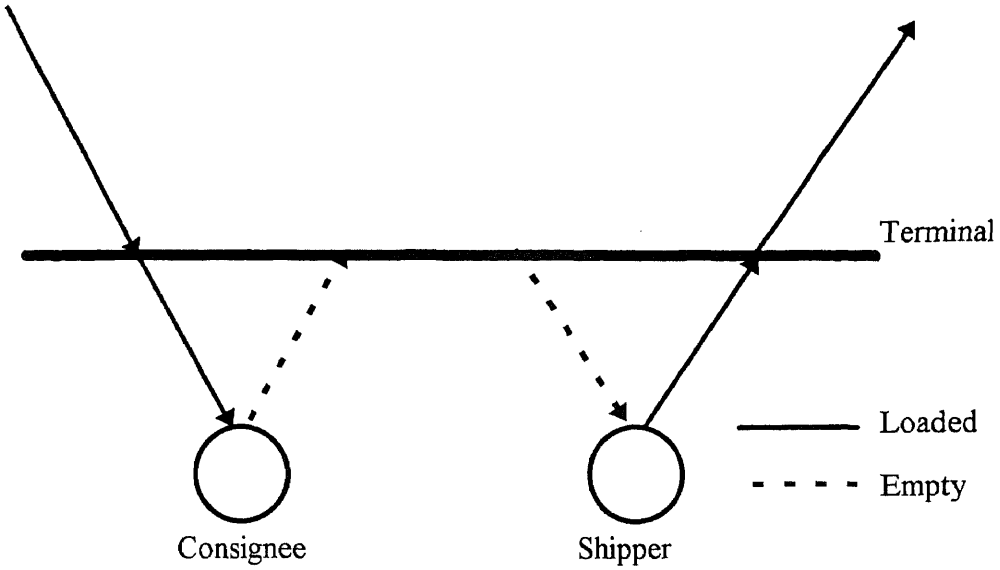

Figure 3.1 Current Operations: Uncoordinated Drayage Operations

In the proposed operation, shown in Figure 3.2, the efficiency of operation is increased by reducing the number of non-revenue producing highway miles through triangulation. The loaded container that was delivered to a consignee is unloaded and instead of returning empty to the terminal is repositioned to a shipper location nearby for loading.

The framework, shown in Figure 3.3 , calculates the current cost of drayage operation by multiplying the current activities with prices associated with them. The spatial and demand data are then entered into an optimization based heuristic model and cost of an optimized operation are calculated. The potential for improvements and cost reductions is

then determined by comparing the current cost to the cost of operations derived using the heuristic model.

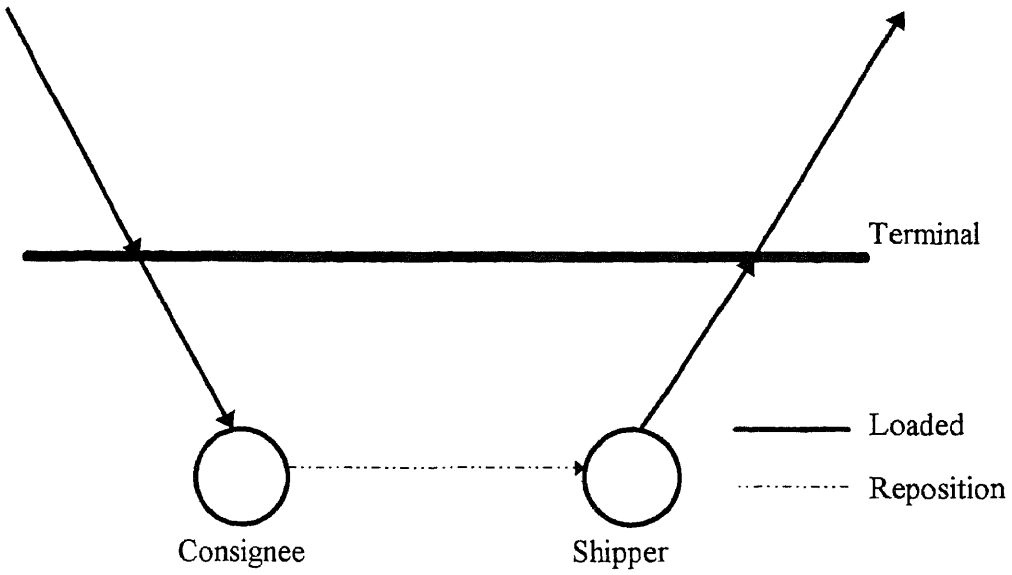

Figure 3.2 Proposed Operations: Coordinated Drayage Operations

3.2 Previous Modeling Approaches

Several methods have been used previously to optimize drayage operations. Two are described briefly. Spasovic and Morlok (1993) developed a planning model, formulated as a mathematical program, that was conceptualized as follows:

Minimize Total Drayage Costs

subject to:

Delivering all loaded trailers to receivers within specified time windows,

Delivering empty trailers to shippers for loading within specified time windows,

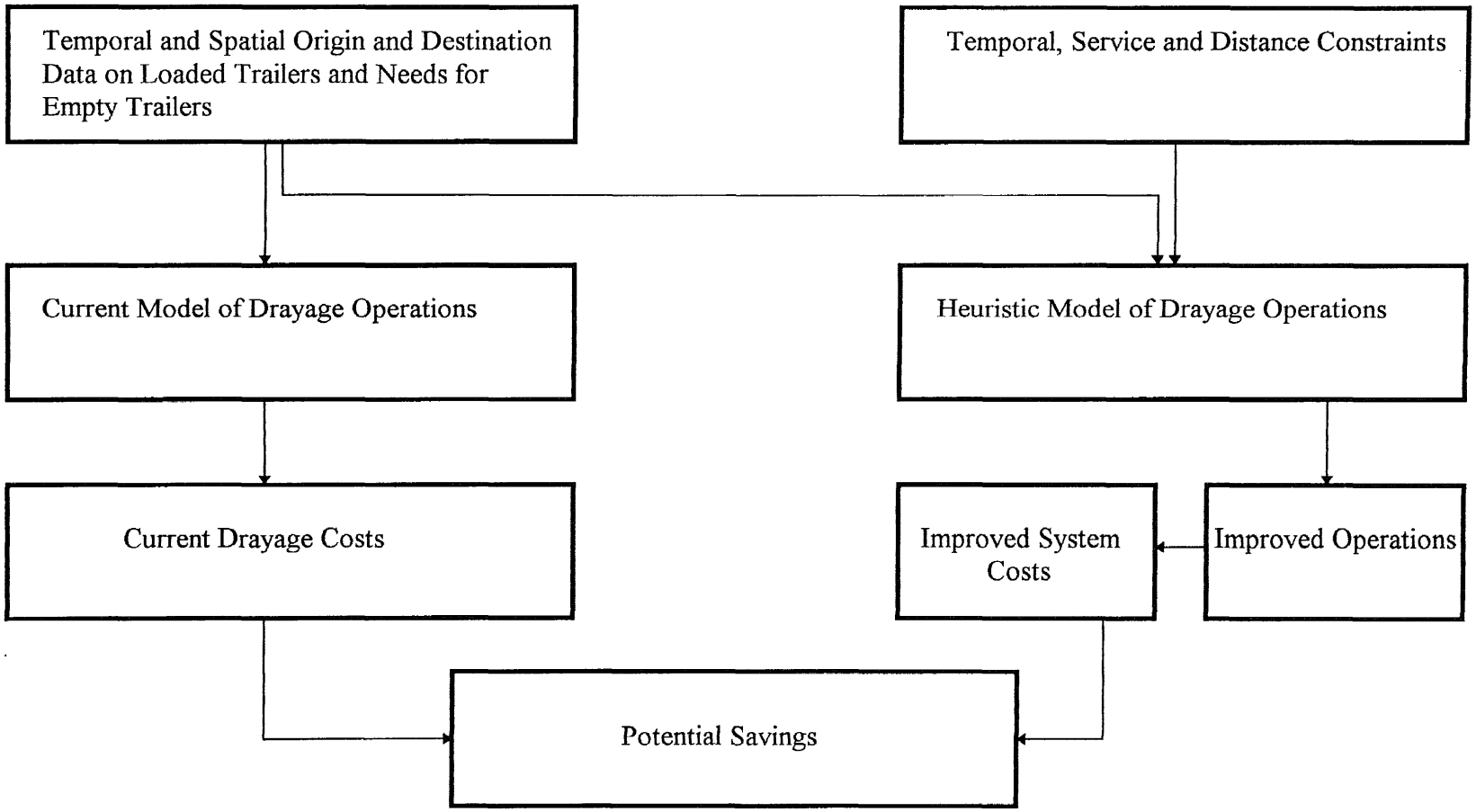

Figure 3.3 Methodological Framework For Improving Intermodal Drayage Operations and Reduction Of Costs
(Source: Morlok and Spasovic, 1992)

Picking up loaded trailers within specified time windows and delivering them to the terminal,

Repositioning empty trailers to avoid accumulation.

The authors exploited the network structure of the model and solved it as a linear program which yielded integer flows of loaded and empty tractor-trailers and tractor movements.

Venkatesan (1992) developed a model for scheduling drayage operation over an eight day period. The model was formulated as a large scale integer programming problem that required substantial computational time

3.3 Reasons for the Heuristic

Because of its combinatorial nature, a moderately sized problem with several consignee and shipper locations, and an operating period of several days, generates an integer programming problem with a substantial number of variables. If these problems were to be solved to optimality, a realistically sized problem would require an enormous amount of solution time. Thus, conventional methods of integer programming are deemed computationally ineffective and inappropriate for real-time applications. It has been decided that near-optimal solutions, developed by using heuristic algorithms that can be computed in a considerably shorter amount of time, can suffice for the real-time solution of these problems. The heuristic used in this thesis is described in the next chapter.

3.4 Heuristic Background

The rise of "inelegant but effective heuristics" (Fisher and Kan, 1988) in the 1950s provided the background for the development of more efficient and effective optimization algorithms of the 1970s. However, as stated by Fisher and Kan (1988), the current optimization community "seems to be returning to its roots with a reflourishing of successful practical applications based on heuristics".

Fisher and Kan (1988), describe the design, analysis and implementation of heuristics from the design of single pass heuristics which generate data after a single pass through the data to the greedy methods in which each successive step is taken in a way that maximizes the immediate gain, which in turn could produce optimal solutions termed matroids or greedoids. The implementation of heuristics has been advanced by the development of software that provides the user with sophisticated mathematical tools.

CHAPTER 4

HEURISTIC ALGORITHM MODEL

4.1 Heuristic Logic

A heuristic model has been developed and used to reduce the cost of drayage by reducing empty miles involved in delivery and pick up operations. The heuristic incorporates characteristics of a single pass algorithm and a greedy heuristic algorithm to produce solutions. The model, in a single pass, matches scheduled pick-ups of loaded containers to deliveries of loaded containers, if both movements are to occur within the time and distance constraint. The matches are first made for pick-ups and deliveries that occur in a single area or zone containing consignee and shipper locations. However, if for a zone, either all possible matches of deliveries and pick ups are exhausted, or the number of deliveries in a zone exceeds the number of pick-ups, then adjacent zones are searched for pick-ups. If a match is found in more than one zone, the heuristic will incorporate a greedy method to select a delivery and pick-up match which minimizes the cost of empty container repositioning from a consignee to a shipper. Once the match has been made, the matching pair is removed from further consideration. While this method chooses the least cost match, it is nevertheless a heuristic, and the optimality of a solution is not guaranteed.

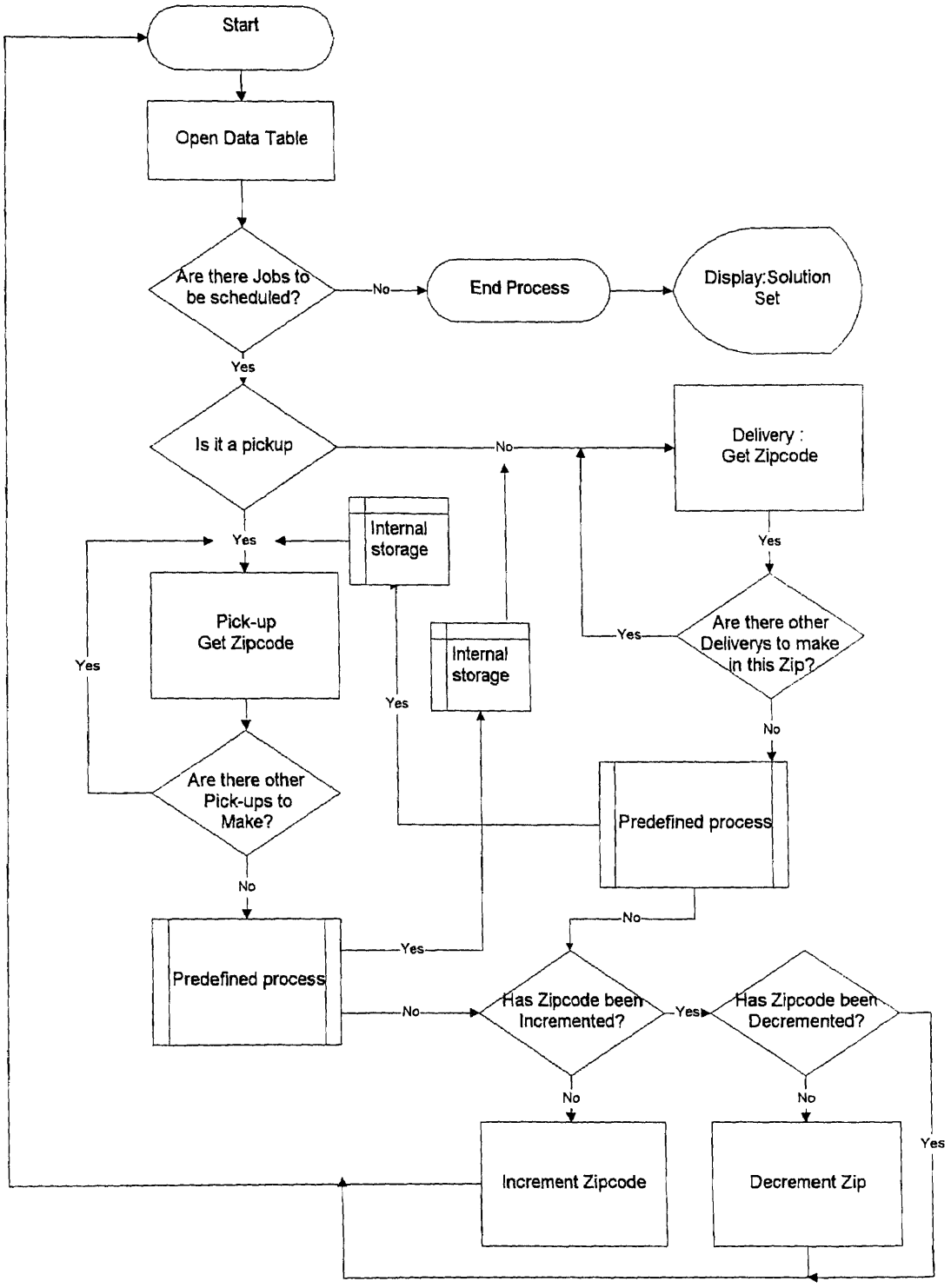

Figure 4.1 Heuristic Algorithm Model

4.2 Algorithm

The heuristic algorithm, shown in Figure 4.1 (facing), begins by searching the working database table in which the information on each pick up and delivery is stored. The jobs to be scheduled are identified and sorted as pick-ups and deliveries. Each movement is characterized by temporal and spatial information, such as a time window in which the movement must occur and the shipper's/consignee's location. The heuristic then matches pick-ups and deliveries that are scheduled within a time window in the same zipcode as defined by the predefined process in the figure. If no matches are found, it searches for matches in the neighboring zipcodes in an order that is determined by the heuristic user. By sorting the database table zipcodes into zones, the model can be manipulated to direct the potential matching of deliveries with pick-ups to minimize the repositioning costs.

4.3 Example

Figure 4.2 shows an example consisting of a terminal T and three shipper and consignee zones, A, B, and C.

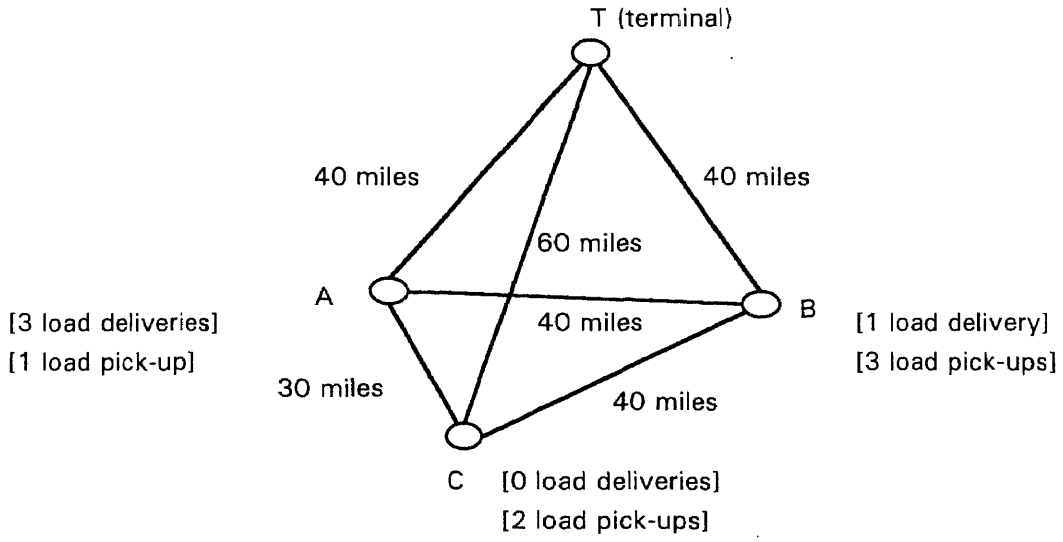

Figure 4.2 Locations of Consignee and Shipper Zones and Inter-zonal Distances

Loaded container movement to be accomplished are shown in Table 4.1. Four loaded containers are to be delivered to consignees and six to be picked up from shippers. Zone A has three loaded container deliveries and one loaded pick-up. These deliveries are labeled D_{1A}, D_{2A}, D_{3A}, while the pick-up is labeled P_{1A}. Zone B has one delivery and three pick-ups, while Zone C has no deliveries and two pickups. All movements are to occur within the same time window; thus all solutions are feasible.

Table 4.1 Deliveries and Pick-Up

ZONE A	ZONE B	ZONE C
D_{1A}	D_{1B}	P_{1C}
D_{2A}	P_{1B}	P_{2C}
D_{3A}	P_{2B}	
P_{1A}	P_{3B}	

In a single pass, the heuristic will match shipper and consignee container movements within each zone, and tabulate the results, if any. This would yield the following solution as shown in Table 4.2:

Table 4.2 Solution Matches After the First Pass

ZONE A	SAVINGS	ZONE B	SAVINGS	ZONE C
$D_{1A} \rightarrow P_{1A}$	80 (160 -80)	$D_{1B} \rightarrow P_{1B}$	80 (160 -80)	P_{1C}
$D_{2A} \rightarrow P_{1A}$	80 (160 -80)	$D_{1B} \rightarrow P_{2B}$	80 (160 -80)	P_{2C}
$D_{3A} \rightarrow P_{1A}$	80 (160 -80)	$D_{1B} \rightarrow P_{3B}$	80 (160 -80)	

The savings are calculated as a difference in mileage between the current operation, where a container is delivered loaded and returned empty, and the triangulated operation. For example, it would take 160 miles, 80 miles per load per round trip, to deliver and pick up two loads at Zone A. With zero miles for repositioning, for matching at the same destination-origin, the two round trips are replaced with a single round trip with loaded containers in both directions. This saves 80 miles.

For Zone A, the heuristic will match the one pick-up to each of the deliveries since all are feasible. This produces three possible results, those being $D_{1A} \rightarrow P_{1A}$, $D_{2A} \rightarrow P_{1A}$, and $D_{3A} \rightarrow P_{1A}$. However, the model selects into the final tableau the one match with the minimal repositioning distance, leaving two deliveries unmatched. For equivalent results, as demonstrated by the resulting solutions for Zone A, the model will tabulate the first resulting answer. Similarly, for Zone B, the algorithm will match deliveries to pick-ups in the same fashion, $D_{1B} \rightarrow P_{1B}$, $D_{1B} \rightarrow P_{2B}$, $D_{1B} \rightarrow P_{3B}$, and will select the least cost match, or the first in this case, and leave two pick-ups unmatched.

This leaves two deliveries at A and two pick ups at B unmatched. The remaining movements which need to be triangulated are 2 deliveries in Zone A with either the two remaining pick-ups in Zone B or the two pick-ups in Zone C. If $D_{1A} \rightarrow P_{1A}$ and $D_{1B} \rightarrow P_{1B}$ were chosen to be tabulated and removed from the set of feasible matches, then the remaining pick-ups and deliveries will produce eight feasible solutions, as depicted in Table 4.3.

Table 4.3 Feasible Solutions After the Second Pass

ZONE A		ZONE B	SAVINGS	ZONE C	SAVINGS
D_{2A}	→	P_{2B}	40 (160-120)		
D_{2A}	→	P_{3B}	40 (160-120)		
D_{3A}	→	P_{2B}	40 (160-120)		
D_{3A}	→	P_{3B}	40 (160-120)		
D_{2A}			→	P_{1C}	70 (200 -130)
D_{2A}			→	P_{2C}	70 (200 -130)
D_{3A}			→	P_{1C}	70 (200 -130)
D_{3A}			→	P_{2C}	70 (200 -130)

Two solutions, shown in Table 4.4, each contain four matches. The solution in part a) of the Table consists of a pick up and delivery in Zone A, a pick up and delivery in Zone B, and two deliveries from Zone A matched with pick-ups in Zone B. The resulting savings from matching is 240 miles. The solution in part b) of the Table consists of a pick up and delivery in Zone A, a pick up and delivery in Zone B, and two deliveries from Zone A matched with pick-ups in Zone C. This yields a savings from matching of 240 miles.

Table 4.4 Solution Matches

a) Matches between A and B.

MATCH	SAVINGS
$D_{1A} \rightarrow P_{1A}$	80 (160 - 80)
$D_{1B} \rightarrow P_{1B}$	80 (160 - 80)
$D_{2A} \rightarrow P_{1B}$	40 (160 - 120)
$D_{2A} \rightarrow P_{2B}$	40 (160 - 120)
TOTAL	240

b) Matches between A and C.

MATCH	SAVINGS
$D_{2A} \rightarrow P_{1C}$	70 (200 - 130)
$D_{2A} \rightarrow P_{2C}$	70 (200 - 130)
$D_{3A} \rightarrow P_{1C}$	70 (200 - 130)
$D_{3A} \rightarrow P_{2C}$	70 (200 - 130)
TOTAL	280

The heuristic would choose the solution in part b) because of the larger savings.

Two operating plans developed to deliver and pick up containers are shown in Table 4.5. The first solution resulted in a cost of operation of 740 miles, while the second solution resulted in a cost of operation of 580 miles. The heuristic will pick the least cost solution contained in part b) of the Table.

Table 4.5 Final Solutions

a) Operating Plan with Matches between A and B.

OPERATION	SAVINGS	TOTAL COST
Match $D_{1A} \rightarrow P_{1A}$	80 (160 - 80)	80
Match $D_{1B} \rightarrow P_{1B}$	80 (160 - 80)	80
Match $D_{2A} \rightarrow P_{2B}$	40 (160 - 120)	120
Match $D_{3A} \rightarrow P_{3B}$	40 (160 - 120)	120
Deliver Empty and Pick-Up Load at C	0 (120 - 120)	120
Deliver Empty and Pick-Up Load at C	0 (120 - 120)	120
TOTAL	240	740

b) Operating Plan with Matches between A and C.

OPERATION	SAVINGS	TOTAL COST
$D_{1A} \rightarrow P_{1A}$	80 (160 - 80)	80
$D_{1B} \rightarrow P_{1B}$	80 (160 - 80)	80
$D_{2A} \rightarrow P_{1C}$	70 (200 -130)	130
$D_{3A} \rightarrow P_{2C}$	70 (200 -130)	130
Deliver Empty and Return Loaded at B	0 (80 - 80)	80
Deliver Empty and Return Loaded at B	0 (80 - 80)	80
TOTAL	300	580

CHAPTER 5

CASE STUDY

Data was gathered over a three week period from April 25, 1994 through May 13, 1994, at a New Jersey terminal from which an intermodal drayer makes local pick-ups and deliveries of containers that are brought into or moved out of the area by railroad.

5.1 Data Sources

The drayage company was chosen due to its location, volume of business, and their willingness to disclose "proprietary" information about their operations. The location of their terminal in South Kearny, New Jersey and its proximity to both a major Northeast railroad rail terminal from which they would deliver containers that arrived by rail, and NJIT, made it an ideal candidate for the study.

The drayage company provides service to many railroad carriers and third parties or volume shippers. The service studied in this thesis involves a major Mid-Western railroads' container service. The loaded containers are moved between the West Coast and the Midwest regions to the Northeast consumer markets. Loaded containers usually originate in the greater Seattle area and are moved on by rail to Chicago, and from there moved by a Northeastern railroads' locomotives to one of the New York/New Jersey metropolitan area terminals, namely the Kearny terminals. The containers that arrive by rail to Kearny are delivered to their final destination by the drayage company's trucks. Similarly, loaded containers are picked up by the drayer at the shippers in

the Kearny service area and brought to the rail terminal. They are then moved via rail line -haul to the Midwest and/or West Coast rail terminals. At the destination terminal, a drayage carrier, would deliver containers to their final destinations.

5.2 Data Collection

The data on movements of these containers was collected at the terminal over a three week period from April 25, 1994 to May 13, 1994. Complete temporal and spatial data of each trailer/container movement as well as rates charged for the movement was extracted from the following five sources:

- Rail Yard Sheets
- Daily Operating Logs
- Rate Sheets
- Dispatch Sheets
- T-Cards

The Rail Yard Sheets record trailer/container movements that arrived by rail to the Kearny terminal for delivery to consignees and contain such information as trailer/container number and date of arrival (or notification date). The Daily Operating Log contains temporal and spatial data of each container such as shipper/consignee addresses and scheduled dates and times of pick-ups/deliveries. It also contains other containers that arrive to Kearny and are moved by a drayage trucker other than the drayer of this study. The Dispatch Sheets, in addition to temporal and spatial data such as shipper and consignee origins and destinations, contain rate information for each of

movement and equipment and driver detention information at shippers/consignees. The T-Cards record the Dispatch Sheet information and other miscellaneous items such as size of trailer/container, weight, number of pieces within, special instructions, and charges for driver assistance in loading and unloading of a container.

The above data are used to derive:

- Arrival (notification) dates and times, consignee locations and rates for all inbound-by-rail loaded containers,
- Scheduled dates and times for all inbound-by-rail and outbound-by-truck loaded and empty containers,
- Scheduled dates and times of all inbound-by-truck and outbound-by-rail loaded and empty containers.

5.3 Database Development

A database is needed to efficiently consolidate and record all pertinent information on each container movement. The database was designed to be user friendly. It was designed to handle a real-time application of data entry and for easy manipulation of the data records to perform calculations of current and optimized drayage operations. The following drayage related data fields were required:

1. Identification number and size of loaded or empty trailer/container.
2. Weight and number of pieces within the loaded trailer/container.
3. Type of Movement, whether pick-up (at shipper) or delivery (to consignee)

4. All spatial data related to the move including location of shipper/consignee by street address, city, state, and zipcode, as well as the name of the party to be billed.
5. All temporal data related to the move including: notification dates and times, scheduled dates and times for both delivery of trailer/container from the terminal to the consignee and pick-up of loaded trailer/container from shippers to the terminal. Also, any temporal data regarding any detention times at consignee or shipper or terminal and type of operation, either stay-with or drop-and-pick.
6. All monetary data related to the move including revenue per trailer, detention charges, and contract carrier rates.
7. All distance data related to the move including one way distances between terminal and shipper/consignee and distances between consignee and shipper.

Table 5.1 shows the fields of the data base record developed for this study. Each container record is assigned a unique identification number so that containers that were moved more than once between the terminal and consignees/shippers can be easily identified. Monetary data are recorded in the rate, and the power detention fields. Temporal data are recorded through notification and scheduled times, as well as a "time window" for pick-ups and deliveries, and detention times, if any. Spatial data are recorded through shipper and consignee street addresses, city, state, and zipcode fields as well as the one-way distances. Several miscellaneous items which could be used for future research were also designed into the database such as the size of the trailer/container, its

weight and the number of pieces within it. The complete database used for this analysis is listed in Appendix A.

Table 5.1 Database Fields of a Record

	List of Fields	Description	Format
1.	Id	Identification Number	Numerical
2.	Trailer/Container	Trailer/Container Number	Character
3.	Status	Type of movement	Character
4.	Destination	City, State	Character
5.	Zip	Zipcode	Numerical
6.	Origin/Ramp	Placement at terminal	Character
7.	Carrier	Carrier name	Character
8.	O/W	One-way distance	Numerical
9.	Rate	Rate charged for movement	Numerical
10.	S/C	Shipper or Consignee	Character
11.	Name	Customer Identity	Character
12.	Id	Identification Number	Numerical
13.	C Address	Consignee street address	Character
14.	C Zip	Consignee zipcode	Numerical
15.	Third Party	Third Party	Character
16.	S Address	Shipper street address	Character
17.	S Zip	Shipper zipcode	Numerical
18.	PO#	PTL Identification Number	Character
19.	WHT	Weight in Pounds within	Numerical
20.	Pieces	Number of Pieces within	Numerical
21.	ID	Identification Number	Numerical
22.	Instruction	Driver related instructions	Character
23.	Special Instruction	Special related instructions	Character
24.	Time Window	Window for movement	Numerical
25.	Not Date	Notification Date	Numerical
26.	Not Time	Notification Time	Numerical
27.	Sch Date	Scheduled Date	Numerical
28.	Sch Time	Scheduled Time	Numerical
29.	Driver	Driver's name	Character
30.	Operation	Type of Operation	Character
31.	PWR DET	Power Detention-Cost	Numerical
32.	TRL DET	Trailer Detention-Time	Character

facing 27

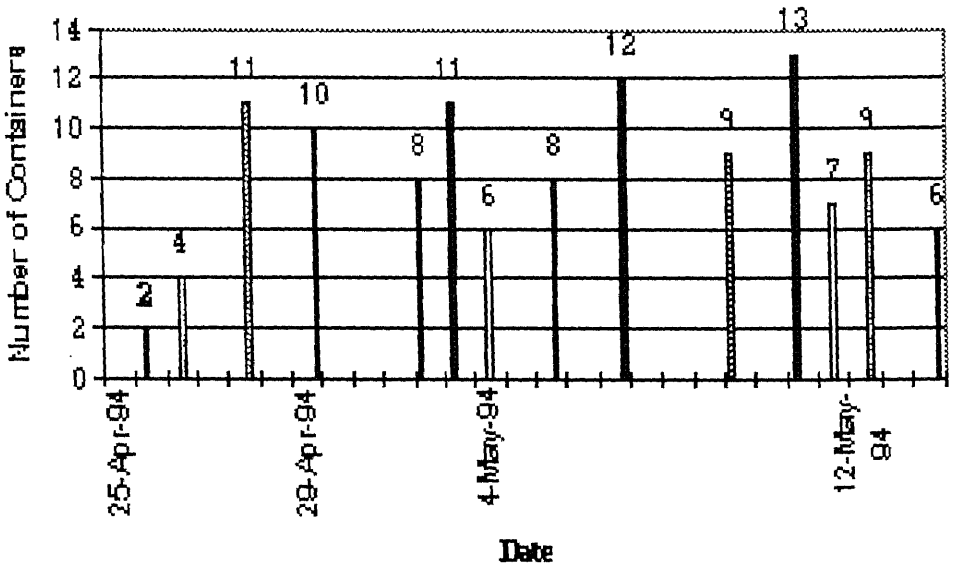

Figure 5.1 Inbound by Rail Loaded Container Arrivals at the terminal for the Analysis Period April 25, 1994 through May 13, 1994.

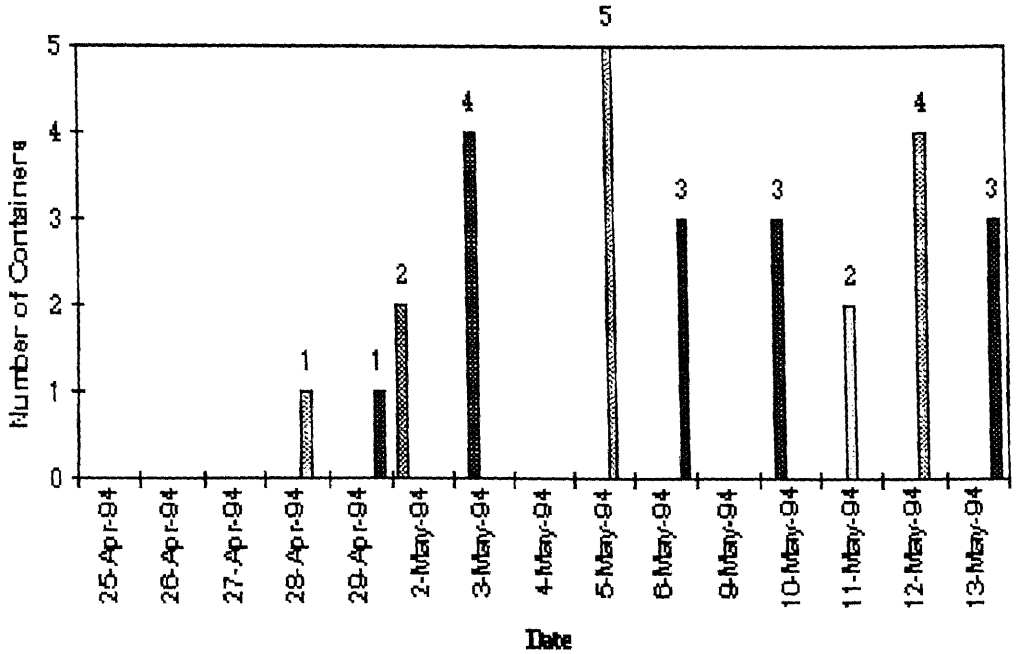

Figure 5.2 Inbound by Truck Loaded Container Arrivals at the terminal for the Analysis Period April 25, 1994 through May 13, 1994.

5.4 Loaded Container Arrival Patterns at Kearny Terminal

During the analysis period, 144 container loads were available to be of which 28 loaded containers arrived by rail to be delivered to consignees, while 116 loaded containers were to be brought to the terminal from shippers by truck for the outbound movement by rail. The arrivals by rail are shown in Figure 5.1 (facing), while the arrivals by truck to the terminal are shown in Figure 5.2 (facing). There is a high imbalance of traffic flow between the Westbound (inbound by rail-out by truck) and Eastbound (in by truck-out by rail) directions, an occurrence which is not atypical for the Northeast US.

5.5 Drayage Systems Performance Analysis of Case Study Data

It was shown in detail in Chapters 1 and 2, that containers in current intermodal transport are not being efficiently utilized. To obtain a high level of service, a substantial empty mileage is associated with a container movement, since a container is very often moved loaded in one direction and empty in the other. Therefore, the level of service needs to be determined to interpret the performance of the current drayage operation. The purpose of this analysis is to determine the service quality of drayage operations as measured by the time elapsed from the moment of arrival of a loaded container at the terminal by rail until it is delivered to the consignee by truck needs to be calculated. Figure 5.3 shows the time between arrival and scheduled delivery for all loaded container arrivals. Figure 5.4 shows the time between arrival and scheduled delivery for loaded container arrivals for each day during the study period.

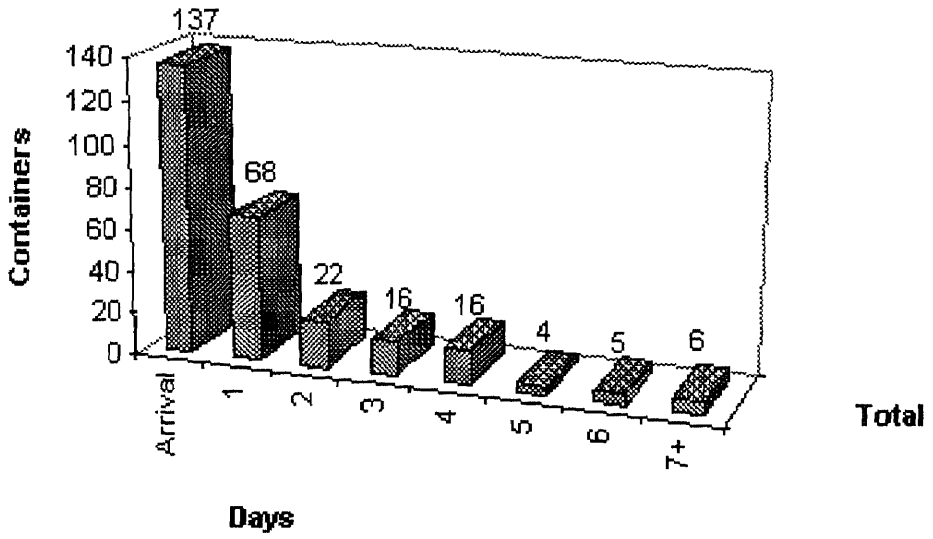

Figure 5.3 Days from Arrival by Rail to Scheduled Delivery by Truck for All Container Arrivals between April 25, 1994 and May 13, 1994

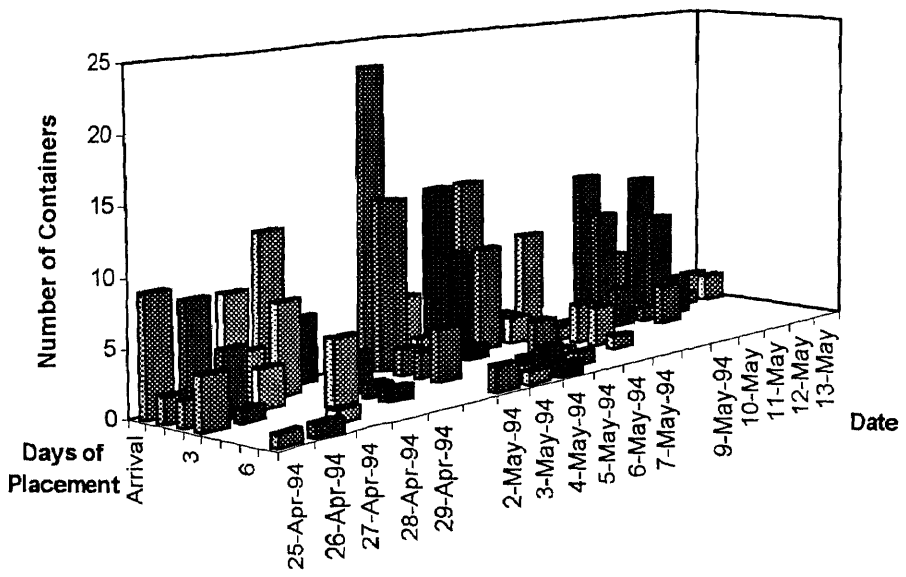

Figure 5.4 Days from Arrival by Rail to Scheduled Delivery by Truck for Daily Arrivals between April 25, 1994 and May 13, 1994

Time between arrival of loaded containers by rail and scheduled delivery at consignees by truck for each day of the study horizon is also shown in Figures D.1 through D.16 in Appendix D. An inspection of the figures reveals that the majority of containers are delivered within a two day period. For example, Figure D.1 shows that out of 9 containers to be delivered, 2 were delivered on the day of arrival, 2 were delivered the next day, 4 were delivered on the third day after arrival, and the last container was delivered seven days after arrival.

The cumulative frequency distribution of days from arrival to delivery is shown in Figures 5.5 and 5.6. The figures show that 65.89% of all arriving inbound-by-rail containers were delivered within two days, while 89.05% of the trailer/containers were delivered within four days.

A more general measure of level of service is the mean time and standard deviation of time between the arrival of containers by rail and the actual scheduled delivery to consignees. The mean was calculated to be 2.51 days or 2 days, 12 hours, and 25 minutes, while the variance was calculated, using the non biased n-1 method, to be 1.79 days or 1 day, 19 hours, and 5 minutes.

These values are compared to the values obtained several years ago by Spasovic and Morlok, 1990 in a study of another representative intermodal terminal. The mean and standard deviation for high level of service and price (or premium) traffic was determined to be 1.7 and 1.6 days, respectively, using US Mail and UPS Service as a basis. For other traffic, the mean and standard deviation were 2.1 and 1.9 days.

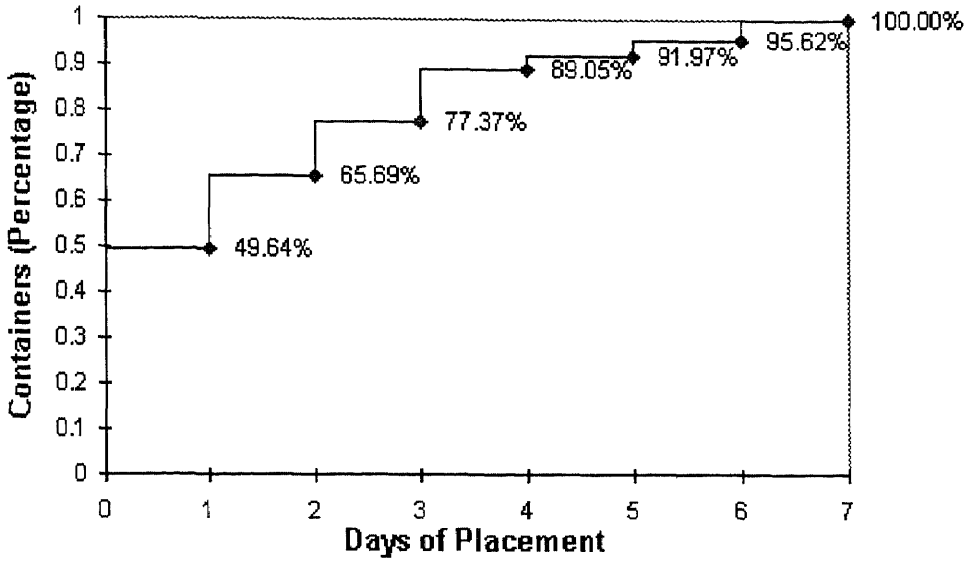

Figure 5.5 Cumulative Frequency Distribution of Days between Arrival to Scheduled Delivery (in percent)

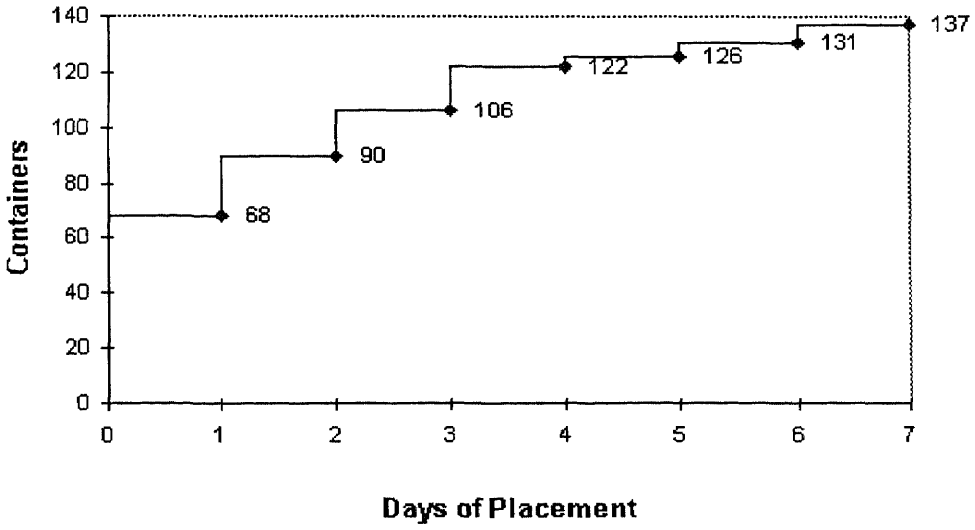

Figure 5.6 Cumulative Frequency Distribution of Days between Arrival to Scheduled Delivery (in containers)

facing 31

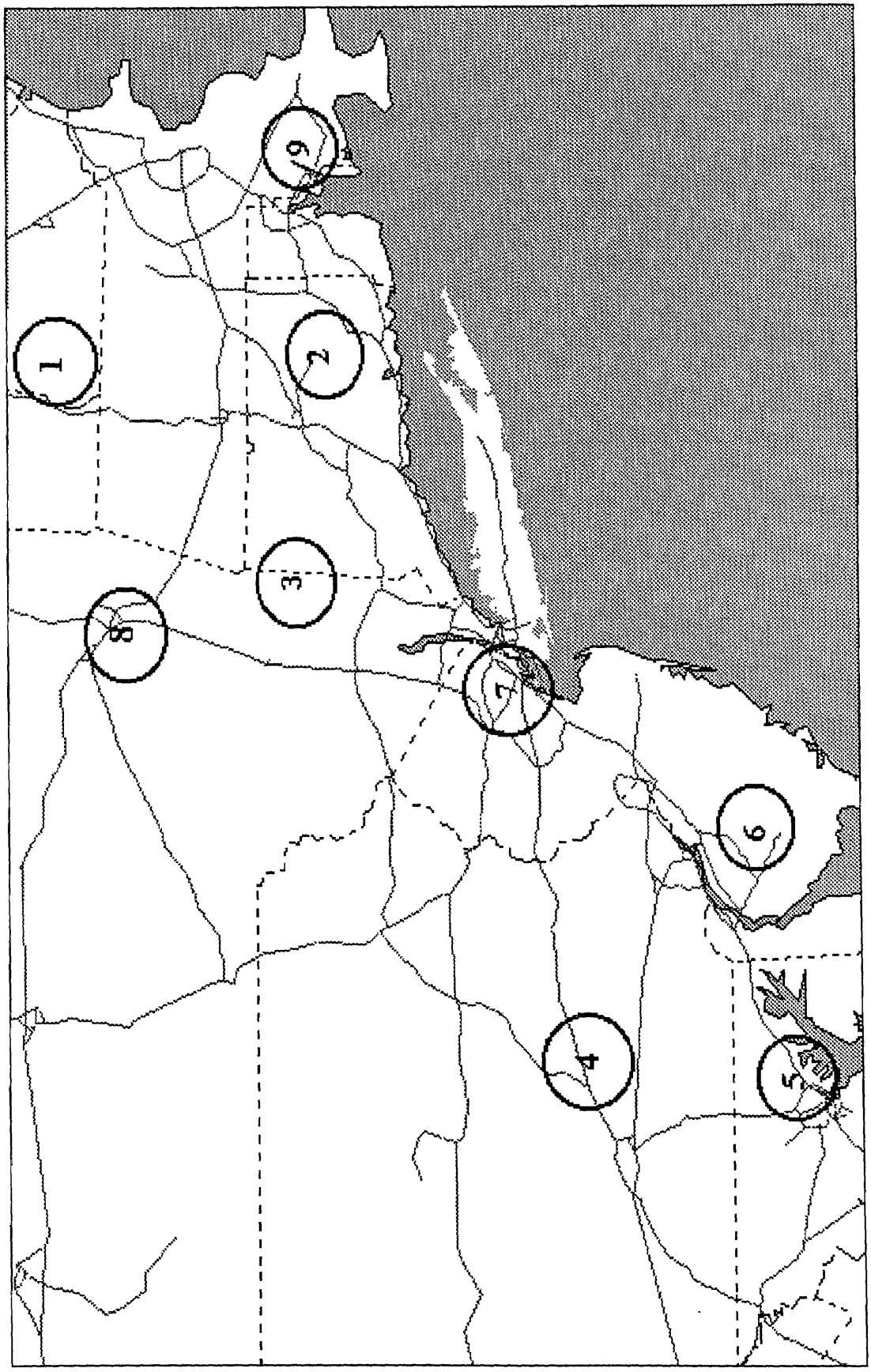

Figure 5.7 Heuristic Algorithm Model Aggregation of Zones

5.6 Analysis of Case Study Data

The sample of loaded container movements that are to be used in the heuristic model was obtained from a larger sample of container moves that were serviced from the terminal area during the April 25, 1994 to May 13, 1994 study period. The sample does not contain containers that arrived during the study period but are moved after the study period. The sample is shown in Table 5.2. The spatial aggregation of the sample container movements is shown in Table 5.3. The analysis period focused on capturing all pertinent data of all trailer/container movements and demands from several sources and consolidating this information into one data source, as shown in Appendix A.

5.7 Case Study Data Requirements

The heuristic algorithm, presented in Chapter 4, needs, as an input, the locations of consignees and shippers (given by their zipcodes). The zipcodes are clustered (aggregated) into nine zones, Zone 1 to Zone 9, based on their proximity. Furthermore, Zone 7, which is the most central, was further broken down into sub-zones 10 to 13 which contain repetitive zipcodes in order to manipulate the model to produce minimal repositioning distances. The zones are shown in Figure 5.7 (facing). The distances between zones are shown in Table 5.4. These were obtained using the Automap Software (1994).

Table 5.2 Loaded Trailer/Container Movement During Analysis Period
April 25, 1994 through May 13, 1994

City	Zipcode	Delivery from Terminal	Pick-Up for Terminal
OXFORD, MA	01540	0	2
WEST WAREHAM, MA	02576	0	1
FALL RIVER, MA	02722	0	2
CRANSTON, RI	02920	1	0
BRATTLEBORO, VT	05301	7	0
WINSTED, CT	06098	1	0
HARTFORD, CT	06101	0	1
DAYVILLE, CT	06241	2	0
CHESHIRE, CT	06410	1	0
CROMWELL, CT	06416	1	0
DURHAM, CT	06422	0	1
MERIDEN, CT	06450	1	0
NO. HAVEN, CT	06473	0	1
WATERBURY, CT	06719	1	0
DANBURY, CT	06810	0	1
GARFIELD, NJ	07026	4	0
KEARNY, NJ	07032	1	0
CARLSTADT, NJ	07072	1	0
MOONACHIE, NJ	07074	0	2
NEWARK, NJ	07105	7	0
NEWARK, NJ	07114	2	0
HILLSIDE, NJ	07205	1	0
JERSEY CITY, NJ	07305	3	0
ELMWOOD PARK, NJ	07407	0	1
OGDENSBURG, NJ	07439	2	0
PATERSON, NJ	07501	0	1
PATERSON, NJ	07503	1	0
HAWTHORNE, NJ	07506	2	0
SOUTH HACKENSACK, NJ	07606	5	0
SUCCASUNNA, NJ	07876	1	0
BRIDGEPORT, NJ	08014	25	0
BURLINGTON, NJ	08016	15	1
MILLVILLE, NJ	08332	5	5
VINELAND, NJ	08360	0	1
TRENTON, NJ	08638	1	0
DAYTON, NJ	08810	2	0
EAST BRUNSWICK, NJ	08816	1	0

Table 5.2 (continued) Loaded Trailer/Container Movement During Analysis Period April 25, 1994 through May 13, 1994

City	Zipcode	Delivery from Terminal	Pick-Up for Terminal
MIDDLESEX, NJ	08846	1	0
NORTH BRUNSWICK, NJ	08902	1	0
MIDDLETOWN, NY	10940	4	0
LONG ISLAND CITY	11101	0	0
BROOKLYN, NY	11232	1	1
JAMAICA, NY	11433	1	0
ALBERTSON, NY	11507	0	0
FREEPORT, NY	11520	0	2
PLAINVIEW, NY	11803	1	0
CALVERTON, NY	11933	1	0
GUILDERLAND CENTER, NY	12085	7	0
UNIVERSITY PARK, PA	16802	1	0
CAMP HILL, PA	17011	0	2
MECHANICSBURG, PA	17055	2	0
LEOLA, PA	17540	1	0
LITITZ, PA	17543	2	0
POTTSVILLE, PA	17901	0	1
CHESTER, PA	19013	0	1
BENSALEM, PA	19020	0	1
PHILADELPHIA, PA	19137	1	0
PHILADELPHIA, PA	19153	1	0
KING OF PRUSSIA, PA	19406	1	0
JESSUP, MD	20794	1	0
	Totals:	116	28

Table 5.3 Spatial Aggregation of Data by Zipcode

Zone	Zipcodes in Zone	Cities in Zone
1	05301	Brattleboro
2	06241, 01540, 06101, 06416, 06098, 06450, 06422, 06719, 06410	Dayville, Oxford, Hartford, Cromwell, Winsted, Meriden, Durham, Waterbury, Cheshire
3	10940, 06810, 07439	Middletown, Danbury, Ogdensburg
4	17901, 16802, 17011, 17055, 17543, 17540	Pottsville, University Park, Camp Hill Mechanicsburg, Lititz, Leola
5	20794	Jessup
6	08360, 08332, 07407, 08014, 19406, 19137, 19153, 19020, 08016, 19013	Vineland, Millville, Elmwood Park, Bridgeport, King of Prussia, Philadelphia, Bensalem, Burlington, Chester
7	11507, 11933, 11101, 11232, 11433, 11520, 11803, 07205, 07105, 07114, 07305, 07074, 07032, 07072, 07026, 07606, 07501, 07503, 07506, 07876, 08902, 08810, 08816, 08846, 08638	Alberson, Calverton, Long Island City, Brooklyn, Jamaica, Freeport, Plainview, Hillside, Newark, Jersey City, Moonachie, Kearny, Carlstadt, Garfield, South Hackensack, Paterson, Hawthorne, Succasunna, North Brunswick, Dayton, East Brunswick, Middlesex, Trenton
8	12085	Guiderland Center
9	02920, 02722, 02756	Cranston, Fall River, West Wareham
10	07205, 07105, 07114, 07305, 07074, 07032, 07072, 07026, 07606, 07501, 07503, 07506, 07876	Hillside, Newark, Jersey City, Kearny, Carlstadt, Garfield, South Hackensack, Paterson, Hawthorne, Succasunna, Moonachie
11	11232, 11433, 11507, 11520, 11803, 11933	Brooklyn, Jamaica, Albertson, Freeport, Plainview, Calverton

Table 5.3 (Continued) Spatial Aggregation of Data by Zipcode

Zone	Zipcodes in Zone	Cities in Zone
12	08638, 08810, 08816, 08846, 08902	Trenton, Dayton, East Brunswick, Middlesex, North Brunswick
13	07876, 07439, 07501, 07503, 07506	Succasunna, Ogdensburg, Paterson, Hawthorne
14	07105, 07114, 07606, 07026, 07032, 07072, 07074, 07205, 07305	Newark, South Hackensack, Garfield, Kearny, Carlstadt, Moonachie, Hillside, Jersey City

Table 5.4 Inter-zonal Distances (in miles)

	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8	Z9
Z1	0	60	215	345	425	330	220	85	170
Z2	60	0	190	260	340	245	195	115	140
Z3	215	190	0	140	285	195	75	130	215
Z4	345	260	140	0	150	130	125	260	320
Z5	425	340	285	150	0	12	240	400	400
Z6	330	245	195	130	12	0	115	290	305
Z7	220	195	75	125	240	115	0	185	185
Z8	85	115	130	260	400	290	185	0	180
Z9	170	140	215	320	400	305	185	180	0

The times of travel between the zones are calculated by dividing inter-zonal distances from Table 5.4, by an average speed of travel which was assumed to be 45 miles per hour. The times are shown in Table 5.5.

Table 5.5 Travel Times Between Zones (in minutes)

	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8	Z9
Z1	0	80	286.667	460	566.667	440	293.333	113.333	226.667
Z2	80	0	253.333	346.667	453.333	326.667	260	153.333	186.667
Z3	286.667	253.333	0	186.667	380	260	100	173.333	286.667
Z4	460	346.667	186.667	0	200	173.333	166.667	346.667	426.667
Z5	566.667	453.333	380	200	0	16	320	533.333	533.333
Z6	440	326.667	260	173.333	16	0	153.333	386.667	406.667
Z7	293.333	260	100	166.667	320	153.333	0	246.667	246.667
Z8	113.333	153.333	173.333	346.667	533.333	386.667	246.667	0	240
Z9	226.667	186.667	286.667	426.667	533.333	406.667	246.667	240	0

5.8 Spatial and Temporal Aspects of Pairings

The heuristic identifies possible pairings of pick ups and deliveries. Only efficient and feasible pairings are considered. The efficiency is a function of the spatial location of a consignee and a shipper. Efficient pairings are considered to be those where the cost of triangulation is less then the cost of two independent tractor-container movements, as shown in Eq. 5.1.

$$L_{TC} + E_{CS} + L_{ST} < L_{TC} + E_{CT} + E_{TS} + L_{ST} \qquad (5.1)$$

where:

L_{TC} = the cost of a loaded container movement from the terminal to the consignee,

E_{CS} = the cost of an empty container repositioning from the consignee to the shipper,

L_{ST} = the cost of a loaded container movement from the shipper to the terminal,

E_{CT} = the cost of an empty container movement from the consignee to the terminal,

E_{TS} = the cost of an empty container movement from the terminal to the shipper.

Feasible pairings are a function of scheduled times of pick-ups and deliveries. Feasible pairings are those in which an empty container can be repositioned from a consignee to a

shipper so that a sufficient time is available for loading and a scheduled pick-up. Feasible pairings are defined by Eq. 5.2.

$$T_i + E_i + T_{ij} < L_j + T_j \qquad (5.2)$$

where:

T_i = the scheduled time of a delivery at consignee i,

E_i = the unloading time of a loaded container at consignee i,

T_{ij} = the travel time from consignee i to shipper j,

L_j = the loading time of an empty container at shipper j,

T_j = the scheduled time of a pick-up at shipper j.

These efficiency and feasibility tests are done by a program written in standard query language, a database design language, shown in Appendix B, to initiate the sorting routines. The sorting routines are linked with a macro function incorporated within the database, for sort ordering, as shown in Appendix C.

5.9 Cost Minimization Within Efficient and Feasible Pairings

The heuristic tries to decrease the cost of a match as well. The cost of triangulation is minimized if containers are repositioned within each zone. Thus matching of all possible moves are first done within each zone. If no match is found, the neighboring zones are searched for a match. Due to the unique placement of consignee/shippers, the most centralized zone was further subdivided into four sections, as depicted in Figure 5.8, for further decreased cost matches.

For example, referring back to Figure 5.7, assume that there is a delivery to Zone 9 and no feasible matching pick-ups in that zone that occur within the time window given by Eq. 5.2. However, there are feasible and efficient pick-ups in Zones 1, 2, and 5. To keep repositioning distances, and thus costs, to a minimum, the algorithm will match first the Zone 9 delivery with a Zone 2 pick up, and then if no matches are found will match the other available zones, in this case Zone 1, and then Zone 5.

The heuristic matches and tabulates solutions. Once the match is tabulated, all other solutions derived are returned to be triangulated and the two containers which were matched would be removed from the list of candidates.

Once the trailer/container movements are triangulated, the reduction of costs could be calculated and compared with the baseline case of the independent container round-trip movements. The cost of triangulation is derived by taking half of the rate for the terminal to consignee round trip movement, add the cost of repositioning (at a cost of a dollar per mile), and half of the rate for the shipper to terminal round trip movement.

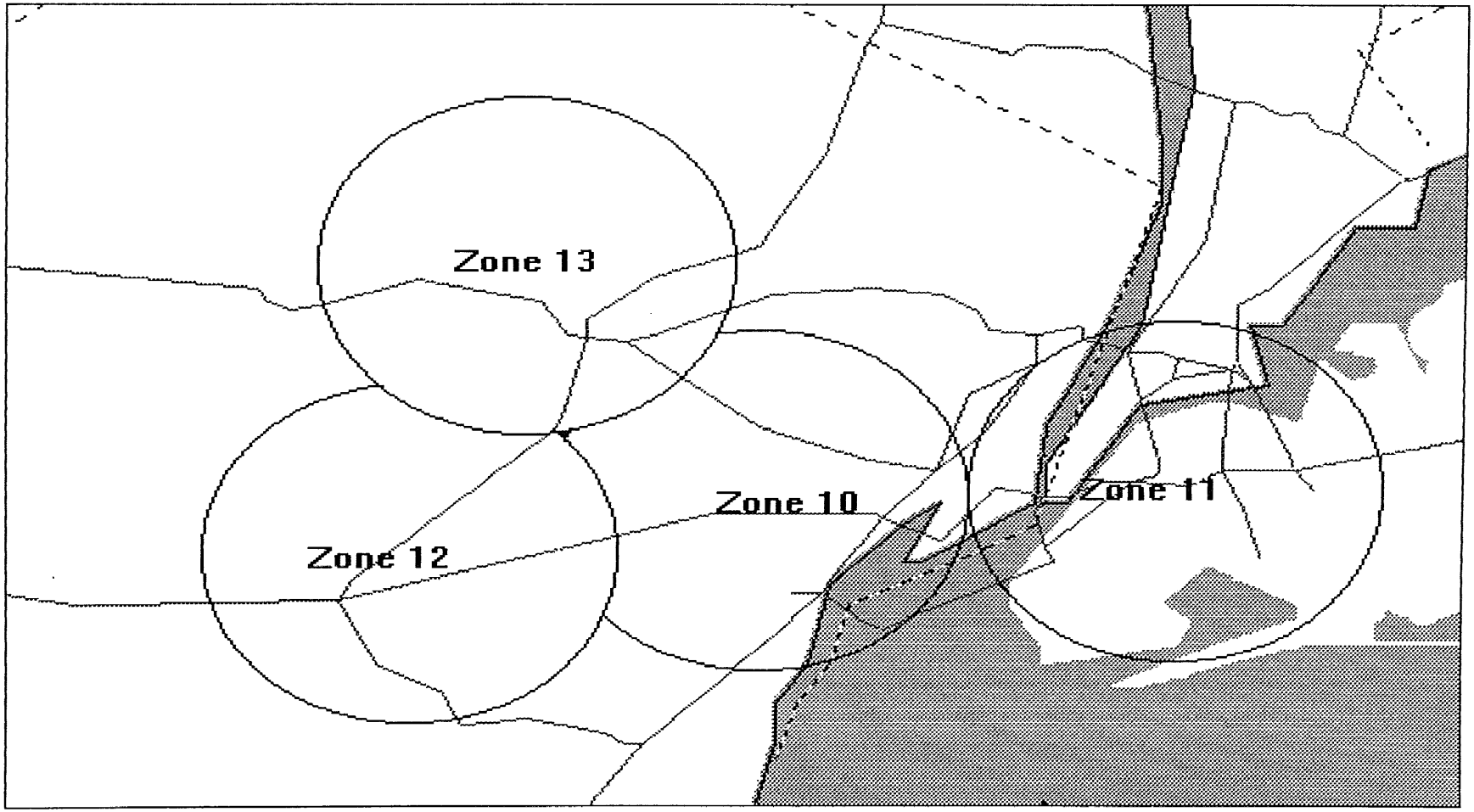

Figure 5.8 Heuristic Algorithm Model Aggregation of Centralized Zone

CHAPTER 6

RESULTS AND ANALYSIS

6.1 Comparison of Costs

The purpose of this chapter is to present the costs of the current (Baseline) operation, and of an operation that minimizes empty tractor and container mileage using the heuristic method proposed in Chapter 3. In both operations, all container movements that occurred during the analysis period, (116 loaded containers to be delivered to consignees, and 28 loads to be picked up at from shippers), have to be completed.

The Baseline operation represents the current drayage operation in which a container is moved loaded in one direction and empty in the other. The drayage rate, of course, is set to account for the 50% empty mileage of each terminal-to-consignee (or terminal-to-shipper) round trip movement. Thus, the Baseline cost of $53,650, shown in Table 6.1, is obtained by multiplying the 144 container movements by the appropriate rate per round trip. This cost is $41,952 for the 116 deliveries and $11,698 for the 28 pick-ups.

The heuristic model matches 18 pick ups (out of the total 28) with 18 deliveries[1]. After delivering a load from the terminal and being unloaded, 18 containers are repositioned to the shippers in the vicinity for loading, and upon loading, returned to the terminal. Table 6.1 shows that the cost of a heuristic generated operating plan is $49,471,70. This operation results in a cost reduction of 7.79% compared to the Baseline case.

[1] Both indexed and non-indexed results are shown in Appendix E and Appendix F respectively.

Table 6.1 Costs of Baseline and Heuristic-derived Operations Plan (without detention charges)

MODEL	COST ($)	REDUCTION (%)
BASELINE		
116 Deliveries from Terminal to Consignees	**41,952**	-
28 Pick-Ups from Shippers to Terminal	**11,698**	-
Total	**53,650**	-
HEURISTIC		
98 Deliveries from Terminal to Consignees	**35,487**	
10 Pick-Ups from Shippers to Terminal	**4,881**	
18 Pairings of Deliveries and Pick-Ups (Triangulated Moves)	**9,103.70**	
Total	**49,471.70**	**7.79**[2]

If the costs of detaining drivers and tractors at consignee and shipper locations are taken into account, the cost of the Baseline operation becomes $56,490, while the cost of the heuristic generated operating plan is $37,297. The heuristics results in a cost reduction of 8.69% compared to the Baseline case. These results are shown in Table 6.2.

[2] $\frac{\text{(Baseline Cost - Heuristic Cost)}}{\text{Baseline Cost}}$

Table 6.2 Costs of Baseline and Heuristic-derived Operations Plan (with detention charges)

MODEL	COST ($)	REDUCTION (%)
BASELINE		
116 Deliveries from Terminal to Consignees	**44,262**	-
28 Pick-Ups from Shippers to Terminal	**12,228**	-
Total	**56,490**	-
HEURISTIC		
98 Deliveries from Terminal to Consignees	**37,297**	
10 Pick-Ups from Shippers to Terminal	**5,181**	
18 Pairings of Deliveries and Pick-Ups (Triangulated Moves)	**9,103.70**	
Total	**51,581.7**	**8.69**[3]

6.2 Sensitivity Analysis

Sensitivity analyses are performed on the results to determine the change in the cost of operation resulting from changes in input parameters, which include container loading/unloading or detention times, and scheduled delivery and pick-up times.

[3] $\frac{\text{(Baseline Cost - Heuristic Cost)}}{\text{Baseline Cost}}$

6.2.1 Variation in Detention Times

For the Case Study, the heuristic assumes that a container is detained for one hour at each shipper or consignee location. As it was mentioned in Chapter 5, this time is added to the travel times for repositioning between consignee and shipper locations (or zones) to determine the feasible pairings. Recall that a delivery is matched with a pick up only if they both occur in the same day, and there is a sufficient time to reposition an empty container from a consignee to a shipper to meet the scheduled pick up time.

If the detention time is increased from one to two hours, the cost of operation as determined by the heuristic is $50,357.05. As shown in Table 6.3, this represents a cost reduction of 6.14% compared to the Baseline case. Also, when the detention times are increased from one hour to two hours, the total number of triangulated movements is reduced from 18 to 15. As a result of this increase in detention times, the cost of the heuristic-derived operating plan increased by 1.76%, (from $49,471.7 to $50,357.05), as shown in Table 6.3. This means that, by increasing the detention time by one hour, the potential savings decrease from $4,178.3 to $3,292,95.

Table 6.4 shows a similar sensitivity analysis when detention charges are taken into account.

Table 6.3 Results of Sensitivity Analysis on Detention Times (without detention charges)

MODEL	COST ($)	REDUCTION (%)
BASELINE	**53,650**	
HEURISTIC - 1 hr detention		
98 Deliveries to Consignees	**35,487**	
10 Pick-Ups from Shippers	**4,881**	
18 Triangulated Moves	**9,103. 70**	
Total	**49,471.70**	**7.79**[4]
HEURISTIC - 2 hr detention		
101 Deliveries to Consignees	**36,577**	
13 Pick-Ups from Shippers	**6,294**	
15 Triangulated Moves	**7,486.05**	
Total	**50,357.05**	**1.76**[5] **6.14**[6]

[4] (Baseline Cost - Heuristic 1 Cost) / Baseline Cost

[5] (Heuristic 1 Cost - Heuristic 2 Cost) / Heuristic 1 Cost

[6] (Baseline Cost - Heuristic 2 Cost) / Baseline Cost

Table 6.4 Results of Sensitivity Analysis on Detention Times (with detention charges)

MODEL	COST ($)	REDUCTION (%)
BASELINE	**53,650**	
HEURISTIC - 1 hr detention		
98 Deliveries to Consignees	**37,297**	
10 Pick-Ups from Shippers	**5,181**	
18 Triangulated Moves	**9,103. 70**	
Total	**51,581.70**	7.79[7]
HEURISTIC - 2 hr detention		
101 Deliveries to Consignees	**38,687**	
13 Pick-Ups from Shippers	**6,724**	
15 Triangulated Moves	**7,486.05**	
Total	**52,897.05**	**2.49**[8] **6.36**[9]

[7] (Baseline Cost - Heuristic 1 Cost) / Baseline Cost

[8] (Heuristic 1 Cost - Heuristic 2 Cost) / Heuristic 1 Cost

[9] (Baseline Cost - Heuristic 2 Cost) / Baseline Cost

6.2.2 Variation in Delivery and Pick Up Times

In the Case Study, it is also assumed that the times and time windows for deliveries and pick-ups are fixed. This reflects the current practice that a party other than the drayage truckers determines when loads must be delivered or picked up. It is important to investigate how the overall cost of the operation would change if these time constraints are relaxed. Three cases are investigated. Case 1 assumes that delivery times are relaxed, (i.e., deliveries can occur at any time during the day). Case 2 assumes that pick-ups can occur at any time during the day, while Case 3 assumes that both deliveries and a pick-ups can occur at any time during the day.

Table 6.5 shows the results of these three cases with detention times of one hour. The cost of operation is $46,680.10, $46,616.40 and $46,613.45, respectively for Cases 1, 2, and 3. By relaxing either delivery or pick-up times or both, all 28 loads can be picked up with containers used for deliveries. The costs reduction over the heuristic operation is 5.65%, 5.77% and 5.78% for Cases 1, 2, and 3 respectively. If the comparison is made with the Baseline, relaxing delivery, pick-up times, or both produces cost reductions of 12.99%, 13.11% and 13.12% respectively for Cases 1, 2 and 3.

Finally, the results for the three cases with one and two hour detention times and detention charges are shown in Table 6.6. It is concluded by this Table, that, with or without detention charges, costs could be reduced further by relaxing the constraints, in this case, delivery, pick-up or delivery and pick-up times.

Table 6.5 Results of Sensitivity on Scheduled Times (without detention charges)

MODEL	COST ($)	REDUCTION (%)
HEURISTIC - 1 hr detention	**49,471.7**	
98 Deliveries to Consignees	**35,487**	
10 Pick-Ups from Shippers	**4,881**	
18 Triangulated Moves	**9,103.7**	
CASE 1 HEURISTIC - 1hr detention - Delivery times relaxed	**46,680.1**	**5.64**[10]
116 Deliveries to Consignees	**30,146**	
0 Pick-Ups from Shippers	**0**	
28 Triangulated Moves	**16,534.10**	
CASE 2 HEURISTIC - 1hr detention - Pick-Up times relaxed	**46,616.4**	**5.77**[11]
116 Deliveries to Consignees	**30,221**	
0 Pick-Ups from Shippers	**0**	
28 Triangulated Moves	**16,395.4**	
CASE 3 HEURISTIC - 1hr detention - Delivery and Pick-Up times relaxed	**46,613.45**	**5.78%**[12]
116 Deliveries to Consignees	**30,207**	
0 Pick-Ups from Shippers	**0**	
28 Triangulated Moves	**16,406.45**	

[10] (Heuristic Cost - Heuristic Case 1 Cost) / Heuristic Cost

[11] (Heuristic Cost - Heuristic Case 2 Cost) / Heuristic Cost

[12] (Heuristic Cost - Heuristic Case 3 Cost) / Heuristic Cost

Table 6.5 (continued) Results of Sensitivity on Scheduled Times (without detention charges)

MODEL	COST ($)	REDUCTION (%)
HEURISTIC - 2 hr detention	**50,357.05**	
101 Deliveries to Consignees	**36,577**	
13 Pick-Ups from Shippers	**6,294**	
15 Triangulated Moves	**7,486.05**	
CASE 1 HEURISTIC - 2 hr detention - Delivery times relaxed	**46,680.1**	**7.3**[13]
116 Deliveries to Consignees	**30,146**	
0 Pick-Ups from Shippers	**0**	
28 Triangulated Moves	**16,534.10**	
CASE 2 HEURISTIC - 2 hr detention - Pick-Up times relaxed		**7.43**[14]
116 Deliveries to Consignees	**30,221**	
0 Pick-Ups from Shippers	**0**	
28 Triangulated Moves	**16,395.40**	
CASE 3 HEURISTIC - 2 hr detention - Delivery and Pick-Up times relaxed	**46,613.45**	**7.43**[15]
116 Deliveries to Consignees	**30,207**	
0 Pick-Ups from Shippers	**0**	
28 Triangulated Moves	**16,406.45**	

[13] $\frac{\text{(Heuristic Cost - Heuristic Case 1 Cost)}}{\text{Heuristic Cost}}$

[14] $\frac{\text{(Heuristic Cost - Heuristic Case 2 Cost)}}{\text{Heuristic Cost}}$

[15] $\frac{\text{(Heuristic Cost - Heuristic Case 3 Cost)}}{\text{Heuristic Cost}}$

Table 6.6 Results of Sensitivity on Scheduled Times (with detention charges)

MODEL	COST ($)	REDUCTION (%)
HEURISTIC - 1 hr detention	**52,081.7**	
98 Deliveries to Consignees	**37,797**	
10 Pick-Ups from Shippers	**5,181**	
18 Triangulated Moves	**9,103.7**	
CASE 1 HEURISTIC - 1hr detention - Delivery times relaxed	**48,770.1**	**6.36**[16]
116 Deliveries to Consignees	**32,236**	
0 Pick-Ups from Shippers	**0**	
28 Triangulated Moves	**16,534.10**	
CASE 2 HEURISTIC - 1hr detention - Pick-Up times relaxed	**48,726.4**	**6.44**[17]
116 Deliveries to Consignees	**32,331**	
0 Pick-Ups from Shippers	**0**	
28 Triangulated Moves	**16,395.4**	
CASE 3 HEURISTIC - 1hr detention - Delivery and Pick-Up times relaxed	**48,703.45**	**6.49**[18]
116 Deliveries to Consignees	**32,297**	
0 Pick-Ups from Shippers	**0**	
28 Triangulated Moves	**16,406.45**	

[16] $\frac{\text{(Heuristic Cost - Heuristic Case 1 Cost)}}{\text{Heuristic Cost}}$

[17] $\frac{\text{(Heuristic Cost - Heuristic Case 2 Cost)}}{\text{Heuristic Cost}}$

[18] $\frac{\text{(Heuristic Cost - Heuristic Case 3 Cost)}}{\text{Heuristic Cost}}$

Table 6.6 (continued) Results of Sensitivity on Scheduled Times (with detention charges)

MODEL	COST ($)	REDUCTION (%)
HEURISTIC - 2 hr detention	**52,897.05**	
101 Deliveries to Consignees	**38,687**	
13 Pick-Ups from Shippers	**6,724**	
15 Triangulated Moves	**7,486.05**	
CASE 1 HEURISTIC - 2 hr detention - Delivery times relaxed	**48,770.1**	**7.8**[19]
116 Deliveries to Consignees	**32,236**	
0 Pick-Ups from Shippers	**0**	
28 Triangulated Moves	**16,534.10**	
CASE 2 HEURISTIC - 2 hr detention - Pick-Up times relaxed	**48,726.4**	**7.88**[20]
116 Deliveries to Consignees	**32,331**	
0 Pick-Ups from Shippers	**0**	
28 Triangulated Moves	**16,395.40**	
CASE 3 HEURISTIC - 2 hr detention - Delivery and Pick-Up times relaxed	**48,703.45**	**7.93**[21]
116 Deliveries to Consignees	**32,297**	
0 Pick-Ups from Shippers	**0**	
28 Triangulated Moves	**16,406.45**	

[19] (Heuristic Cost - Heuristic Case 1 Cost) / Heuristic Cost

[20] (Heuristic Cost - Heuristic Case 2 Cost) / Heuristic Cost

[21] (Heuristic Cost - Heuristic Case 3 Cost) / Heuristic Cost

CHAPTER 7

CONCLUSIONS AND FURTHER RESEARCH

A heuristic model was developed that could improve the efficiency of drayage by matching deliveries of loads to consignees with load pick-ups from shippers in the vicinity, thus reducing the empty miles involved in the operation.

The price of a drayage operating plan derived by the heuristic is between 7.78% to 8.69% lower than the price of the current operation. This reduction has been achieved by matching approximately 64% of the possible load pick-ups with deliveries.

A high load imbalance of 116 loads arriving by rail from the west to the New Jersey intermodal rail terminal and only 28 loads departing westward, obviously limits the magnitude of the possible reductions in costs. However, despite such high load imbalance (for 4.14 loaded containers arriving by rail, there is only one leaving by rail), the majority (18) of the available 28 loads are triangulated. Further analysis indicates that the rigid schedule times have prevented the remaining 10 loads from being triangulated. Had these scheduled times been relaxed, all 28 loads could have been triangulated and the cost of the heuristic-generated operation would have been approximately 13% to 14% lower than the cost of the current drayage operation.

The author feels that by using the heuristic model, a drayage operator could reduce the payments to drivers for drayage while providing the same level of service. By decreasing the load imbalance, a greater reduction of costs and higher driver-tractor set utilization could be achieved, and thus lower drayage rates could be offered to customers. To reduce rates, it would be economically advantageous for a railroad to assign more container movements to a single drayage operator.

Suggestions for further research include potential studies to determine an "optimal mix" of independent owner-operators, that are paid on a per move basis, and "company tractors and drivers". The later assumes that trucks would be leased, and drivers would be salaried. This has a potential of further reducing the cost of drayage operations because it would eliminate inefficiencies inherent in the payments to owner-operators.

Changes in terminal operating policies and procedures need also to be studied further. A recent study of intermodal transport commissioned by the New Jersey Transportation Planning Authority (NJTPA), the Northern New Jersey Metropolitan Planning Organization, and performed by the New Jersey Alliance for Action (NJTPA, 1994) revealed substantial delays associated with picking up trailers/containers at and delivering them to intermodal rail and port terminals in Northern New Jersey. The implementation of advanced vehicle identification technologies that would both ease access to the terminal and reduce or eliminate paperwork would substantially increase driver and trailer/container productivity.

The potential of establishing various partnerships between railroads, drayage truckers and intermodal retailers should be carefully evaluated. Providing incentives to drayage truckers including the flexibility to schedule pick-ups and deliveries, and thus plan their labor and equipment requirements accordingly, could result in lowering the cost of drayage and generating higher profits for all parties involved in the process. However, the increase in the efficiency of operation might require that proprietary information on loads is shared among the parties and this could result in all sorts of problems. Research should be done to determine the results of partnerships of railroads and long haul truckers, such as Santa Fe, and J. B. Hunt, to learn what makes these partnerships efficient and successful, and then try to transfer this knowledge to a partnership that involves a railroad, an intermodal retailer and a trucker.

APPENDIX A

DATABASE

ID	TRAILER/CONTAINER	STATUS	SIZE	DESTINATION	ZIP	ORGIN/RAMP	CARRIER	O/W	RATE
021	BNAU281217	DELIVERY	45	GUILDERLAND CENTER, NY	12085	NYH APT	BN AMERICA	155	539
023	BNAU680056	DELIVERY	45	GUILDERLAND CENTER, NY	12085	NYH APT	BN AMERICA	155	539
026	BNAU281613	DELIVERY	45	SOUTH HACKENSACK, NJ	07606	NYH APT	BN AMERICA	11	166
027	BNAU286426	DELIVERY	45	LITITZ, PA	17543	NYH APT	BN AMERICA	142	513
028	BNAU281907	DELIVERY	45	DAYTON, NJ	08810	NYH APT	BN AMERICA	38	200
030	BNAU287222	DELIVERY	45	PATERSON, NJ	07503	NYH APT	BN AMERICA	16	166
034	MDWU280072	DELIVERY	45	BURLINGTON, NJ	08016	NYH APT	BN AMERICA	68	343
035	MDWU280145	DELIVERY	45	BURLINGTON, NJ	08016	NYH APT	BN AMERICA	68	343
036	BNAU280293	DELIVERY	45	OGDENSBURG, NJ	07439	NYH APT	BN AMERICA	44	209
037	MDWU280237	DELIVERY	45	BURLINGTON, NJ	08016	NYH APT	BN AMERICA	68	343
038	MDWU280340	DELIVERY	45	BRIDGEPORT, NJ	08014	NYH APT	BN AMERICA	105	404
039	BNAU680265	DELIVERY	45	MIDDLETOWN, NY	10940	NYH APT	BN AMERICA	65	390
040	BNAU287418	DELIVERY	45	JERSEY CITY, NJ	07305	NYH APT	BN AMERICA	5	152
041	BNAU283039	DELIVERY	45	JERSEY CITY, NJ	07305	NYH APT	BN AMERICA	5	152
044	BNAU288604	DELIVERY	45	NEWARK, NJ	07105	NYH APT	BN AMERICA	4	152
045	MDWU280200	DELIVERY	45	MIDDLESEX, NJ	08846	NYH APT	BN AMERICA	28	185
046	BNAU287222	PICK-UP	45	WEST WAREHAM, MA	02576	NYH APT	BN AMERICA	239	684
048	BNAU282444	DELIVERY	45	OGDENSBURG, NJ	07439	NYH APT	BN AMERICA	44	209
049	BNAU288191	DELIVERY	45	BRIDGEPORT, NJ	08014	NYH APT	BN AMERICA	105	404
050	BNAU281002	DELIVERY	45	BRATTLEBORO, VT	05301	NYH APT	BN AMERICA	212	643
051	BNAU280610	DELIVERY	45	BRATTLEBORO, VT	05301	NYH APT	BN AMERICA	212	643
052	BNAU280832	DELIVERY	45	BRATTLEBORO, VT	05301	NYH APT	BN AMERICA	212	643
053	BNAU288148	DELIVERY	45	BRATTLEBORO, VT	05301	NYH APT	BN AMERICA	212	643
054	BNAU284275	DELIVERY	45	GARFIELD, NJ	07026	NYH APT	BN AMERICA	14	166
055	BNAU288859	DELIVERY	45	BRATTLEBORO, VT	05301	NYH APT	BN AMERICA	212	643
056	BNAU281139	DELIVERY	45	BRATTLEBORO, VT	05301	NYH APT	BN AMERICA	212	643
058	BNAU289116	DELIVERY	45	BURLINGTON, NJ	08016	NYH APT	BN AMERICA	68	343
059	BNAU286980	DELIVERY	45	NORTH BRUNSWICK, NJ	08902	NYH APT	BN AMERICA	33	200
060	BNAU284592	DELIVERY	45	BRIDGEPORT, NJ	08014	NYH APT	BN AMERICA	105	404
061	MDWU280387	DELIVERY	45	BURLINGTON, NJ	08016	NYH APT	BN AMERICA	68	343
062	BNAU284810	DELIVERY	45	SOUTH HACKENSACK, NJ	07606	NYH APT	BN AMERICA	11	166
063	BNAU289897	DELIVERY	45	SOUTH HACKENSACK, NJ	07606	NYH APT	BN AMERICA	11	166
064	BNAU285000	DELIVERY	45	GUILDERLAND CENTER, NY	12085	NYH APT	BN AMERICA	155	539
065	BNAU282710	DELIVERY	45	MIDDLETOWN, NY	10940	NYH APT	BN AMERICA	65	390
070	MDWU280022	DELIVERY	45	BRIDGEPORT, NJ	08014	NYH APT	BN AMERICA	105	404
071	BNAU286123	DELIVERY	45	BRIDGEPORT, NJ	08014	NYH APT	BN AMERICA	105	404

ID	NAME	C ADDRESS	C ZIP	THIRD PARTY
021	SCOTT PAPER % DIST. UNLIMITED	NORTHEAST INDUSTRIAL PARK, GUILDERLAND CENTER, NY	12085	GST CORP
023	SCOTT PAPER % DIST. UNLIMITED	NORTHEAST INDUSTRIAL PARK, GUILDERLAND CENTER, NY	12085	GST CORP
026	SCHERER & SCHERER C/O AM SEAL	80 LEUNING STREET, SOUTH HACKENSACK, NJ	07606	ALLIANCE SHIPPERS
027	PYRO INDUSTRIES	14-14 A CITATION LN., LITITZ, PA	17543	MCS
028	AMWAY CORP.	MONMOUTH JUNCTION RD., DAYTON, NJ	08810	HUB CITY NORTH CENTRAL
030	BETTER METHODS	1200 MADISON AVE., PATERSON, NJ	07503	TOLAN O' NEAL
034	GSA	1900 RIVER ROAD, BURLINGTON, NJ	08016	BOISE CASCADE INT FALLS MN
035	GSA	1900 RIVER ROAD, BURLINGTON, NJ	08016	BOISE CASCADE INT FALLS MN
036	GARFIELD WILLIAMSON INC.	150 MAIN ST., OGENSBURG, NJ	07439	A P D S
037	GSA	1900 RIVER ROAD, BURLINGTON, NJ	08016	BOISE CASCADE INT FALLS MN
038	BOISE CASCADE PAPER	306 CTR SQUARE RD PURELAND 1, BRIDGEPORT, NJ	08014	BOISE CASCADE INT FALLS MN
039	NEW VERNON MARINE INC	RD 4 BOX 14 DOLSON TOWN RD, MIDDLETOWN, NY	10940	SUN COUNTRY TRANSPORTATION
040	S & W FINE FOODS	2 COLONY RD., JERSEY CITY, NJ	07305	ALLIANCE SHIPPERS
041	POLAROME MFG	200 THEADORE, JERSEY CITY, NJ	07305	GST CORP
044	GREGORY PACKING	247 ROME ST., NEWARK, NJ	07105	A P D S
045	LPS INDUSTRIES	275 LINCOLN BLVD, MIDDLESEX, NJ	08846	BOISE CASCADE INT FALLS MN
046	A WALECKA & SONS			
048	GARFIELD WILLIAMSON INC.	150 MAIN ST., OGDENSBURG, NJ	07439	LASER NETWORKING
049	BOISE CASCADE PAPER	306 CTE SQUARE RD PURELAND 1, BRIDGEPORT, NJ	08014	BOISE CASCADE INT FALLS MN
050	GEORGIA PACIFIC	RR6, RIVERSIDE LANE, BRATTLEBORO, VT.	05301	CONSOLIDATED SVCS
051	GEORGIA PACIFIC	RR6, RIVERSIDE LANE, BRATTLEBORO, VT	05301	CONSOLIDATED SVCS
052	GEORGIA PACIFIC	RR6, RIVERSIDE LANE, BRATTLEBORO, VT	05301	CONSOLIDATED SVCS
053	GEORGIA PACIFIC	RR6, RIVERSIDE LANE, BRATTLEBORO, VT	05301	CONSOLIDATED SVCS
054	KALAMA CHEMICAL CO	290 RIVER DRIVE, GRFIELD, NJ	07026	GST CORP
055	GEORGIA PACIFIC	RR6, RIVERSIDE LANE, BRATTLEBORO, VT	05301	CONSOLIDATED SVCS
056	GEORGIA PACIFIC	RR6, RIVERSIDE LANE, BRATTLEBORO, VT	05301	CONSOLIDATED SVCS
058	GSA	1900 RIVER ROAD, BURLINGTON, NJ	08016	BOISE CASCADE INT FALLS MN
059	PERMACEL	US 1, NORTH BRUNSWICK, NJ	08902	ALLIANCE SHIPPERS
060	BOISE CASCADE PAPER	306 CTR SQUARE RD PURELAND 1, BRIDGEPORT, NJ	08014	BOISE CASCADE INT FALLS MN
061	GSA	1900 RIVER ROAD, BURLINGTON, NJ	08016	BOISE CASCADE INT FALLS MN
062	SCHERER &SCHERER C/O AM SEAL	80 LEUNING STREET, SOUTH HACKENSACK, NJ	07606	ALLIANCE SHIPPERS
063	SCHERER &SCHERER C/O AM SEAL	80 LEUNING STREET, SOUTH HACKENSACK, NJ	07606	ALLIANCE SHIPPERS
064	SCOTT PAPER % DIST. UNLIMITED	NORTHEAST INDUSTRIAL PARK, GUILDERLAND CENTER, NY	12085	GST CORP
065	E A MORRIS	11-25 HARDING ST., MIDDLETOWN, NY	10940	MARK VII TRANSPORTATION
070	BOISE CASCADE PAPER	306 CTR SQUARE RD PURELAND 1, BRIDGEPORT, NJ	08014	BOISE CASCADE INT FALLS MN
071	BOISE CASCADE PAPER	306 CTR SQUARE RD PURELAND 1, BRIDGEPORT, NJ	08014	BOISE CASCADE INT FALLS MN

ID	S ADDRESS	S ZIP	PO#	WHT	PIECES	SPECIAL INSTRUCTIONS	TIME WINDOW
021				14000	48.00		7:45 AM
023			9528144	14304	48.00	SEE CMD 6 SPECIAL INFO	9:00 AM
026				43000	114.00		12:05 PM
027				33083	283.00		7:30 AM
028			R319870	11495	1992.00		1:05 PM
030							8:00 AM
034			01006910	43758	22.00	MUST USE LT CHASSIS AT DEST	8:30 AM
035			101006922	43785	21.00	MUST USE LT CHASSIS AT DEST	10:00 AM
036				44750	895.00	ORGIN INCLS 1 ADD'L PICK-UP	7:00 AM
037			01006922	43785	21.00	MUST USE LT CHASSIS AT DEST	9:30 AM
038			46NE4380324	45870	22.00	MUST USE LT CHASSIS AT DEST	8:00 AM
039				44000	1.00		7:00 AM
040			514980	45000	3675.00		3:30 PM
041				41976	88.00	AGENT REQ RETAINER AS ORGIN DRAY	8:00 AM
044			NONE	44000	72.00	** ORIG AND DEST ARE DRIVER MUST STAY-WITH**	7:00 AM
045						2 STOP DELIVERY ** MUST USE LT CHASSIS AT DESTINATION	12:05 PM
046							3:30 PM
048			NONE			*****GRASS SEED******	7:00 AM
049			46NE6980405	45870	22.00	MUST USE LT CHASSIS AT DEST	8:00 AM
050				42673		DRIVER STANDBY ORGIN AND DESTINATION	9:00 AM
051				42658		DRIVER STANDBY AT ORGIN AND DESTINATION	8:00 AM
052				43744		DRIVER STANDBY AT ORGIN AND DESTINATION	5:00 PM
053				43622		DRIVER STANDY AT ORGIN AND DESTINATION	6:00 PM
054				41206	80.00		3:05 PM
055				43791		DRIVER STANDBY AT ORGIN AND DESTINATION	4:00 PM
056				22596		DRIVER STANDBY AT ORGIN AND DESTINATION	3:00 PM
058			01006976	43758	22.00	MUST USE LT. CHASSIS AT DEST.	8:30 AM
059				40500	41.00		2:05 PM
060			46NE3970322	45870	22.00	MUST USE LT. CHASSIS AT DEST.	8:00 AM
061			01006976	43758	22.00	MUST USE LT. CHASSIS AT DEST.	9:30 AM
062				39102	19.00		1:05 PM
063				43000	114.00		12:05 PM
064				14304	48.00		9:00 AM
065				27921	48.00		7:30 AM
070			46NE4400324	45102	22.00	MUST USE LT. CHASSIS AT DEST.	9:00 AM
071			46NE7590406	45870	22.00	MUST USE LT. CHASSIS AT DEST.	10:00 AM

ID	NOT DATE	NOT TIME	SCH DATE	SCH TIME	DRIVER	OPERATION	PWR DET	TRL DET
021	4/25/94	6:00 AM	4/26/94	745	MIGUEL	WAIT	60	1.5 HOURS
023	4/25/94	6:00 AM	4/26/94	900	ANTON I.	WAIT	60	1.5 HOURS
026	4/26/94	6:00 AM	4/27/94	1205	JOEL	DROP AND PULL		
027	4/26/94	6:00 AM	4/27/94	730	GABE A.	WAIT		
028	4/25/94	6:00 AM	4/27/94	1305	TONY M.	WAIT	60	1.5 HOURS
030	4/25/94	6:00 AM	4/27/94	800	WESLEY K.	DROP AND PULL		
034	4/26/94	6:00 AM	4/28/94	830	JOEL	DROP AND PULL		
035	4/26/94	6:00 AM	4/28/94	1000	JERRY Z	DROP AND PULL		
036	4/26/94	6:00 AM	4/28/94	700	WESLEY K.	DROP AND PULL		
037	4/26/94	6:00 AM	4/28/94	930	TONY M.	DROP AND PULL		
038	4/25/94	6:00 AM	4/28/94	800	PAUL H.	DROP AND PULL		
039	4/27/94	6:00 AM	4/28/94	700	JACK R	DROP AND PULL		
040	4/27/94	6:00 AM	4/28/94	1530	DENNIS W.	WAIT	90	2.25 HOURS
041	4/27/94	6:00 AM	4/28/94	800	CRUZ	DROP AND PULL		
044	4/27/94	6:00 AM	4/28/94	700	VAZ	WAIT	100	2.5 HOURS
045	4/25/94	6:00 AM	4/28/94	1205	JOHN N.	DROP AND PULL		
046	4/25/94	6:00 AM	4/28/94	800	JANUCZ F.	DROP AND PULL		
048	4/28/94	6:00 AM	4/29/94	700	TONY M.	DROP AND PULL		
049	4/28/94	6:00 AM	4/29/94	800	PAUL H.	DROP AND PULL		
050	4/27/94	6:00 AM	4/29/94	900	JACK R	DROP AND PULL		
051	4/27/94	6:00 AM	4/29/94	800	ROBERT W.	WAIT		
052	4/28/94	6:00 AM	4/29/94	1700	DAVID I	WAIT		
053	4/28/94	6:00 AM	4/29/94	1800	JANUCZ F.	WAIT		
054	4/28/94	6:00 AM	4/29/94	1505	JERRY Z.	WAIT	40	1 HOUR
055	4/28/94	6:00 AM	4/29/94	1600	HENRY	WAIT		
056	4/28/94	6:00 AM	4/29/94	1500	ANTON I.	WAIT		
058	4/29/94	6:00 AM	5/2/94	830	GABE A.	DROP AND PULL		
059	4/29/94	6:00 AM	5/2/94	1405	VAZ	DROP AND PULL		
060	4/25/94	6:00 AM	5/2/94	800	PAUL H.	DROP AND PULL		
061	4/29/94	6:00 AM	5/2/94	930	JOHN N.	DROP AND PULL		
062	4/28/94	6:00 AM	5/2/94	1305	VAZ	DROP AND PULL		
063	4/28/94	6:00 AM	5/2/94	1205	JACK R	DROP AND PULL		
064	4/28/94	6:00 AM	5/2/94	900	TONY M.	WAIT		
065	4/28/94	6:00 AM	5/2/94	730	JERRY Z	WAIT	100	2.5 HOURS
070	5/2/94	6:00 AM	5/3/94	900	JOEL	DROP AND PULL		
071	5/2/94	6:00 AM	5/3/94	1000	JOHN N.	DROP AND PULL		

ID	TRAILER/CONTAINER	STATUS	SIZE	DESTINATION	ZIP	ORGIN/RAMP	CARRIER	O/W	RATE
072	BNAU286513	DELIVERY	45	KEARNY, NJ	07032	NYH APT	BN AMERICA	1	152
073	BNAU287039	DELIVERY	45	NEWARK, NJ	07105	NYH APT	BN AMERICA	4	152
074	MDWU280416	DELIVERY	45	PHILADELPHIA, PA	19153	NYH APT	BN AMERICA	89	385
075	MDWU280397	DELIVERY	45	BRIDGEPORT, NJ	08014	NYH APT	BN AMERICA	105	404
076	BNAU680284	DELIVERY	45	SUCCASUNNA, NJ	07876	NYH APT	BN AMERICA	31	200
077	BNAU680282	DELIVERY	45	DAYTON, NJ	08810	NYH APT	BN AMERICA	38	200
078	BNAU281290	DELIVERY	45	MIDDLETOWN, NY	10940	NYH APT	BN AMERICA	65	390
079	BNAU286266	DELIVERY	45	BURLINGTON, NJ	08016	NYH APT	BN AMERICA	68	343
080	BNAU284859	DELIVERY	45	CHESHIRE, CT	06410	NYH APT	BN AMERICA	103	416
081	BNAU289625	DELIVERY	45	BRIDGEPORT, NJ	08014	NYH APT	BN AMERICA	105	404
082	BNAU283247	DELIVERY	45	NEWARK, NJ	07114	NYH APT	BN AMERICA	4	152
083	MDWU280210	DELIVERY	45	BURLINGTON, NJ	08016	NYH APT	BN AMERICA	68	343
085	BNAU280607	DELIVERY	45	MERIDEN, CT	06450	NYH APT	BN AMERICA	110	444
086	BNAU287722	DELIVERY	45	BRIDGEPORT, NJ	08014	NYH APT	BN AMERICA	105	404
087	MDWU280370	DELIVERY	45	BURLINGTON,NJ	08016	NYH APT	BN AMERICA	68	343
090	BNAU288230	DELIVERY	45	GUILDERLAND CENTER, NY	12085	NYH APT	BN AMERICA	155	539
091	BNAU680399	DELIVERY	45	NEWARK, NJ	07114	NYH APT	BN AMERICA	4	152
092	BNAU287153	DELIVERY	45	GUILDERLAND CENTER, NY	12085	NYH APT	BN AMERICA	155	539
093	BNAU286922	DELIVERY	45	BRIDGEPORT, NJ	08014	NYH APT	BN AMERICA	105	404
094	BNAU283511	DELIVERY	45	LITITZ, PA	17543	NYH APT	BN AMERICA	142	513
095	BNAU287027	DELIVERY	45	TRENTON, NJ	08638	NYH APT	BN AMERICA	55	343
096	BNAU289734	DELIVERY	45	DAYVILLE, CT	06241	NYH APT	BN AMERICA	174	546
097	BNAU680687	PICK-UP	45	MILLVILLE, NJ	08332	NYH APT	BN AMERICA	124	471
098	BNAU287873	PICK-UP	45	MILLVILLE, NJ	08332	NYH APT	BN AMERICA	124	471
100	BNAU286147	DELIVERY	45	GARFIELD, NJ	07026	NYH APT	BN AMERICA	14	166
101	BNAU281327	DELIVERY	45	BURLINGTON, NJ	08016	NYH APT	BN AMERICA	68	343
102	BNAU288899	DELIVERY	45	PLAINVIEW, NY	11803	NYH APT	BN AMERICA	44	394
103	BNAU282343	DELIVERY	45	BURLINGTON, NJ	08016	NYH APT	BN AMERICA	68	343
104	BNAU280207	DELIVERY	45	WATERBURY, CT	06719	NYH FCF	BN AMERICA	106	428
105	BNAU287873	DELIVERY	45	BURLINGTON, NJ	08016	NYH APT	BN AMERICA	68	343
106	BNAU680687	DELIVERY	45	BURLINGTON, NJ	08016	NYH APT	BN AMERICA	68	343
108	MDWU280472	DELIVERY	45	BURLINGTON, NJ	08016	NYH APT	BN AMERICA	68	343
109	BNAU280132	DELIVERY	45	CARLSTADT, NJ	07072	NYH APT	BN AMERICA	8	152
110	BNAU282247	DELIVERY	45	KING OF PRUSSIA, PA	19406	NYH APT	BN AMERICA	97	420
111	BNAU287561	DELIVERY	45	LEOLA, PA	17540	NYH APT	BN AMERICA	140	486
112	BNAU280181	DELIVERY	45	BRIDGEPORT, NJ	08014	NYH APT	BN AMERICA	105	404

ID	NAME	C ADDRESS	C ZIP	THIRD PARTY
072	FREEMAN DECORATING	909 HARRISON AV, KEARNY, NJ	07032	INTERMODAL OD TENNESSEE
073	TRU MASK PRODUCTS	16 HERBERT ST, NEWARK, NJ	07105	TOLAN O' NEAL
074	GARRETT BUCHANAN	7575 BREWSTER AVE, PHILADELPHIA, PA	19153	BOISE CASCADE INT FALLS MN
075	BOISE CASCADE PAPER	306 CTR SQUARE RD PURELAND 1, BRIDGEPORT, NJ	08014	BOISE CASCADE INT FALLS MN
076	HOLLAND MFG	15 MAIN ST, SUCCASUNNA, NJ	07876	TOLAN O' NEAL
077	AMWAY CORP.	MONMOUTH JUNCTION RD, DAYTON, NJ	08810	HUB CITY NORTH CENTRAL
078	NEW VERNON MARINE INC	RD 4 BOX 14 DOLSON TOWN RD, MIDDLETOWN, NY	10940	SUN COUNTRY TRANSPORTATION
079	GSA	1900 RIVER ROAD, BURLINGTON, NJ	08016	BOISE CASCADE INT FALLS MN
080	GLOBAL	540 W JOHNSON AVE, CHESHIRE, CT	06410	INTERNATIONAL DISPATCH
081	BOISE CASCADE PAPER	306 CTR SQUARE RD PURELAND 1, BRIDGEPORT, NJ	08014	BOISE CASCADE INT FALLS MN
082	TOYS R US'	888 DOREMUS AVE, NEWARK, NJ	07114	TWIN MODAL
083	GSA	1900 RIVER ROAD, BURLINGTON, NJ	08016	BOISE CASCADE INT FALLS MN
085	FOSDIC/PUBLISHERS CLRNGHSE	500 S BROAD ST, MERIDEN, CT	06450	HUB CITY PORTLAND
086	BOISE CASCADE PAPER	306 CTR SQUARE RD PURELAND 1, BRIDGEPORT, NJ	08014	BOISE CASCADE INT FALLS MN
087	GSA	1900 RIVER ROAD, BURLINGTON, NJ	08016	BOISE CASCADE INT FALLS MN
090	SCOTT PAPER % DIST. UNLIMITED	NORTHEAST INDUSTRIAL PARK, GUILDERLAND CENTER, NY	12085	GST CORP
091	TOYS R US'	888 DOREMUS AVE, NEWARK, NJ	07114	TWIN MODAL
092	SCOTT PAPER % DIST. UNLIMITED	NORTHEAST INDUSTRIAL PARK, GUILDERLAND CENTER, NY	12085	GST CORP
093	BOISE CASCADE PAPER	306 CTR SQUARE RD PURELAND 1, BRIDGEPORT, NJ	08014	BOISE CASCADE INT FALLS MN
094	PYRO INDUSTRIES	14-14A CITATION LN, LITITZ, PA	17543	MCS
095	DONALD F HUBSCH CO	218 4TH ST, TRENTON,NJ	08638	HUB CITY PORTLAND
096	NATIONAL PATENT MEDICAL	349 LAKE RD, DAYVILE, CT	06241	TOLAN O' NEAL
097	DURAND GLASS			ALLIANCE SHIPPERS
098	DURAND GLASS			WABASH TRANSPORTATION
100	KALAMA CHEMICAL CO	1296 NW 3RD, GARFIELD, NJ	07026	GST CORP
101	GSA	1900 RIVER ROAD, BURLINGTON, NJ	08016	BOISE CASCADE INT FALLS MN
102	FIRST IMPRESSIONS	ADAMS COURT, PLAINVIEW, NY	11803	BOISE CASCADE INT FALLS MN
103	GSA	1900 RIVER ROAD, BURLINGTON, NJ	08016	BOISE CASCADE INT FALLS MN
104	JACKSON LEE MFG	2337 E AURORA, WATERBURY, CT	06719	PIGGYBACK PLUS
105	GSA	1900 RIVER ROAD, BURLINGTON, NJ	08016	BOISE CASCADE INT FALLS MN
106	GSA	1900 RIVER ROAD, BURLINGTON, NJ	08016	BOISE CASCADE INT FALLS MN
108	GSA	1900 RIVER ROAD, BURLINGTON, NJ	08016	BOISE CASCADE INT FALLS MN
109	CANON USA--C/O NIPPON EXPRESS	75 ARMOR AVE, CARLSTADT, NJ	07072	BOISE CASCADE INT FALLS MN
110	CHEF FRANCISCO OF PA INC	HANSEN ACCESS RD, KING OF PRUSSIA, PA	19406	U.S. SHIPPERS
111	BOWATER COMMUNICATION PAPER	41 INDUSTRIAL CIRCLE, LEOLA, PA	17540	BOISE CASCADE INT FALLS MN
112	BOISE CASCADE PAPER	306 CTR SQUARE RD PURELAND 1, BRIDGEPORT, NJ	08014	BOISE CASCADE INT FALLS MN

ID	S ADDRESS	S ZIP	PO#	WHT	PIECES	SPECIAL INSTRUCTIONS	TIME WINDOW
072				8000	11.00		3:35 PM
073							9:00 AM
074			111946	43785	21.00	MUST USE LT. CHASSIS AT DEST.	1:05 PM
075			46NE7040405	45870	22.00	MUST USE LT. CHASSIS AT DEST.	8:00 AM
076							8:30 AM
077				10458	1992.00		1:05 PM
078			124102	44000	15.00		11:00 AM
079			01006922	45870	22.00	MUST USE LT. CHASSIS AT DEST.	8:00 AM
080				38480	39.00		2:05 PM
081			46NE4400324	45870	22.00	MUST USE LT. CHASSIS AT DEST.	8:00 AM
082			NONE	19342	1335.00	URGENT	7:00 AM
083			01006911	45870	22.00	MUST USE LT. CHASSIS AT DEST.	9:30 AM
085				27220	675.00	2 PICK-UPS AT ORGIN	11:00 AM
086			46NE7590406	45870	22.00	MUST USE LT. CHASSIS AT DEST.	9:00 AM
087			01006922	45870	22.00	MUST USE LT. CHASSIS AT DEST.	10:30 AM
090			9528838	14000	48.00	SPECIAL INFO	8:00 AM
091				11627	822.00		7:00 AM
092				14304	48.00		7:45 AM
093			46NE1000420	44022	660.00	MUST USE LT. CHASSIS AT DEST.	8:00 AM
094				33262	598.00	AGENT REQ EGSY AT ORGIN	11:00 AM
095				10736	1.00		8:30 AM
096							7:00 AM
097	WADE BLVD, MILLVILLE, NJ	08332	745813				10:00 AM
098	WADE BLVD, MILLVILLE, NJ	08332	74-5812				11:00 AM
100				43000	115.00		2:05 PM
101						MUST USE LT. CHASSIS AT DEST.	10:30 AM
102			0328HBF	45792	864.00	**MUST USE LTWT CHASSIS AT DEST**	8:00 AM
103			01006873	45870	22.00	MUST USE LT. CHASSIS AT DEST.	9:30 AM
104			94-00243			**EAGLE WILL BLOCK / 7 BRACE ATR ORIG PER AGENT**	8:00 AM
105			01006873	45870	22.00	MUST USE LT. CHASSIS AT DEST.	9:00 AM
106			01006873	45870	22.00	MUST USE LT. CHASSIS AT DEST.	8:30 AM
108			01006980	45870	22.00	MUST USE LT. CHASSIS AT DEST.	9:30 AM
109			BCNY035	45870	22.00	MUST USE LT. CHASSIS AT DEST.	8:00 AM
110				45000	450.00		11:00 AM
111			12554	45870	22.00	MUST USE LT. CHASSIS AT DEST.	7:00 AM
112			MILL I66123	40622	396.00	MUST USE LT. CHASSIS AT DEST.	8:00 AM

ID	NOT DATE	NOT TIME	SCH DATE	SCH TIME	DRIVER	OPERATION	PWR DET	TRL DET
072	5/2/94	6:00 AM	5/3/94	1535	ROBERT W.	WAIT	80	2 HOURS
073	5/2/94	6:00 AM	5/3/94	900	TONY M.	DROP AND PULL		
074	5/2/94	6:00 AM	5/3/94	1305	GABE A.	WAIT		
075	5/2/94	6:00 AM	5/3/94	800	PAUL H.	DROP AND PULL		
076	5/2/94	6:00 AM	5/3/94	830	ANTON I.	DROP AND PULL		
077	4/29/94	6:00 AM	5/3/94	1305	VAZ	WAIT	40	1 HOUR
078	5/2/94	6:00 AM	5/3/94	800	SINGLETON	WAIT		
079	5/2/94	6:00 AM	5/3/94	800	JACK R	DROP AND PULL		
080	5/2/94	6:00 AM	5/3/94	1405	JERRY Z	DROP AND PULL		
081	4/29/94	6:00 AM	5/4/94	800	PAUL H.	DROP AND PULL		
082	5/2/94	6:00 AM	5/4/94	700	TONY M.	WAIT	160	4 HOURS
083			5/4/94	930	JERRY Z	DROP AND PULL		
085	5/3/94	6:00 AM	5/4/94	1100	JANUCZ F.	WAIT	140	3.5 HOURS
086	5/2/94	6:00 AM	5/4/94	900	JOEL	WAIT		
087	5/3/94	6:00 AM	5/4/94	1030	JACK R	DROP AND PULL		
090	5/4/94	6:00 AM	5/5/94	800	JOEL	DROP AND PULL		
091	5/4/94	6:00 AM	5/5/94	700	TONY M.	WAIT	120	3 HOURS
092	5/4/94	6:00 AM	5/5/94	745	JERRY Z	DROP AND PULL		
093	5/2/94	6:00 AM	5/5/94	800	PAUL H.	DROP AND PULL		
094	5/4/94	6:00 AM	5/5/94	1100	GABE A.	DROP AND PULL		
095	5/4/94	6:00 AM	5/5/94	830	CRUZ	DROP AND PULL		
096	5/4/94	6:00 AM	5/5/94	700	ROBERT W.	WAIT	40	1 HOUR
097			5/6/94	1000	JACK R.	DROP AND PULL		
098			5/6/94	1100	VAZ	DROP AND PULL		
100	5/5/94	6:00 AM	5/6/94	1405	JANUCZ F.	WAIT	20	.5 HOUR
101	5/5/94	6:00 AM	5/6/94	1030	CRUZ	DROP AND PULL		
102	5/5/94	6:00 AM	5/6/94	800	JOEL	DROP AND PULL		
103	5/5/94	6:00 AM	5/6/94	930	JERRY Z	DROP AND PULL		
104	5/5/94	6:00 AM	5/6/94	800	ROBERT W.	DROP AND PULL		
105	5/5/94	6:00 AM	5/6/94	900	VAZ	DROP AND PULL		
106	5/5/94	6:00 AM	5/6/94	830	JACK R.	DROP AND PULL		
108	5/6/94	6:00 AM	5/9/94	930	JACK R	DROP AND PULL		
109	5/6/94	6:00 AM	5/9/94	800	ROBERT W.	DROP AND PULL		
110	5/5/94	6:00 AM	5/9/94	1100	JOHN N.	DROP AND PULL		
111	5/7/94	6:00 AM	5/9/94	700	GABE A.	DROP AND PULL		
112	5/3/94	6:00 AM	5/9/94	800	PAUL H.	DROP AND PULL		

ID	TRAILER/CONTAINER	STATUS	SIZE	DESTINATION	ZIP	ORGIN/RAMP	CARRIER	O/W	RATE
115	BNAU283335	DELIVERY	45	BRIDGEPORT, NJ	08014	NYH APT	BN AMERICA	105	404
116	BNAU283335	DELIVERY	45	JESSUP, MD	20794	NYH APT	BN AMERICA	202	596
117	BNAU280462	DELIVERY	45	PHILADELPHIA, PA	19137	NYH APT	BN AMERICA	89	385
118	BNAU288433	DELIVERY	45	JERSEY CITY, NJ	07305	NYH APT	BN AMERICA	5	152
119	BNAU287402	DELIVERY	45	BRATTLEBORO, VT	05301	NYH APT	BN AMERICA	212	643
120	BNAU289952	DELIVERY	45	MIDDLETOWN, NY	10940	NYH APT	BN AMERICA	65	390
121	BNAU680099	DELIVERY	45	CRANSTON, RI	02920	NYH APT	BN AMERICA	186	584
122	BNAU280902	DELIVERY	45	MECHANICSBURG, PA	17055	NYH APT	BN AMERICA	168	568
123	BNAU288265	DELIVERY	45	GUILDERLAND CENTER, NY	12085	NYH APT	BN AMERICA	155	539
126	BNAU281190	DELIVERY	45	GARFIELD, NJ	07026	NYH APT	BN AMERICA	14	166
127	MDWU280329	DELIVERY	45	MECHANICSBURG, PA	17055	NYH APT	BN AMERICA	168	568
128	BNAU287513	DELIVERY	45	BRIDGEPORT, NJ	08014	NYH APT	BN AMERICA	105	404
129	STFU284681	DELIVERY	45	BRIDGEPORT, NJ	08014	NYH APT	BN AMERICA	105	404
130	BNAU287436	DELIVERY	45	HAWTHORNE, NJ	07506	NYH APT	BN AMERICA	15	166
132	BNAU280130	DELIVERY	45	JAMAICA, NY	11433	NYH APT	BN AMERICA	21	366
133	BNAU282407	DELIVERY	45	GUILDERLAND CENTER, NY	12085	NYH APT	BN AMERICA	155	539
134	BNAU286706	DELIVERY	45	EAST BRUNSWICK, NJ	08816	NYH APT	BN AMERICA	28	185
135	MDWU280332	DELIVERY	45	BRIDGEPORT, NJ	08014	NYH APT	BN AMERICA	105	404
136	BNAU680643	DELIVERY	45	BRIDGEPORT, NJ	08014	NYH APT	BN AMERICA	105	404
137	BNAU289454	DELIVERY	45	BRIDGEPORT, NJ	08014	NYH APT	BN AMERICA	105	404
138	MDWU280056	DELIVERY	45	BRIDGEPORT, NJ	08014	NYH APT	BN AMERICA	105	404
139	MDWU280252	DELIVERY	45	BRIDGEPORT, NJ	08014	NYH APT	BN AMERICA	105	404
140	MDWU280254	DELIVERY	45	BRIDGEPORT, NJ	08014	NYH APT	BN AMERICA	105	404
141	BNAU286061	DELIVERY	45	GARFIELD, NJ	07026	NYH APT	BN AMERICA	14	166
142	BNAU281377	DELIVERY	45	SOUTH HACKENSACK, NJ	07606	NYH APT	BN AMERICA	11	166
143	MDWU280059	PICK-UP	45	VINELAND, NJ	08360	NYH APT	BN AMERICA	117	450
144	MDWU280368	DELIVERY	45	BRIDGEPORT, NJ	08014	NYH APT	BN AMERICA	105	404
152	MDWU280072	PICK-UP	45	OXFORD, MA	01540	NYH APT	BN AMERICA	180	565
153	BNAU281002	DELIVERY	45	NEWARK, NJ	07105	NYH APT	BN AMERICA	4	152
154	BNAU280610	PICK-UP	45	HARTFORD, CT	06101	NYH APT	BN AMERICA	125	343
155	BNAU288191	PICK-UP	45	BURLINGTON, NJ	08016	NYH APT	BN AMERICA	68	446
156	BNAU286266	PICK-UP	45	MILLVILLE, NJ	08332	NYH APT	BN AMERICA	124	471
157	BNAU287039	PICK-UP	45	MOONACHIE, NJ	07074	NYH APT	BN AMERICA	11	166
158	BNAU286513	PICK-UP	45	MOONACHIE, NJ	07074	NYH APT	BN AMERICA	11	166
159	BNAU280293	PICK-UP	45	FREEPORT, NY	11520	NYH APT	BN AMERICA	40	200
161	BNAU280607	PICK-UP	45	FALL RIVER, MA	02722	NYH APT	BN AMERICA	206	626

ID	NAME	C ADDRESS	C ZIP	THIRD PARTY
115	BOISE CASCADE PAPER	306 CTR SQUARE RD PURELAND 1, BRIDGEPORT, NJ	08014	BOISE CASCADE INT FALLS MN
116	BOISE CASCADE OFFICE PRODUCTS		20794	
117	ATLANTA METAL	ORTHODOX ST AT DELAWARE, PHILADELPHIA, PA	19137	A P D S
118	AMERICAN CONSOLIDATED TRANSP	107 WESTSIDE AVE, JERSEY CITY, NJ	07305	MARK VII TRANSPORTATION
119	GEORGIA PACIFIC	RR6, RIVERSIDE LANE, BRATTLEBORO, VT	05301	CONSOLIDATION SVCS
120	NEW VERNON MARINE INC	RD 4 BOX 14 DOLSON TOWN RD, MIDDLETOWN, NY	10940	SUN COUNTRY TRANSPORTATION
121	STATE WHSE	POWER ROAD, CRANSTON, RI	02920	A P D S
122	FRY COMMUNICATIONS	800 W CHURCH ROAD, MECHANICSBURG, PA	17055	BOISE CASCADE INT FALLS MN
123	SCOTT PAPER % DIST. UNLIMITED	NORTHEAST INDUSTRIAL PARK, GUILDERLAND CENTER, NY	12085	GST CORP
126	C MAYER & ASSOC	141 LANZA AVE, GARFIELD, NJ	07026	INTERMODAL SALES
127	FRY COMMUNICATIONS	800 W CHURCH ROAD, MECHANICSBURG, PA	17055	BOISE CASCADE INT FALLS MN
128	BOISE CASCADE PAPER	306 CTR SQUARE RD PURELAND 1, BRIDGEPORT, NJ	08014	BOISE CASCADE INT FALLS MN
129	BOISE CASCADE PAPER	306 CTR SQUARE RD PURELAND 1, BRIDGEPORT, NJ	08014	BOISE CASCADE INT FALLS MN
130	PARADISE FRUIT	58-5TH, HAWTHORNE, NJ	07506	GST CORP
132	J L ADIKES INC	103 20 40 178TH ST, JAMAICA, NY	11433	LASER NETWORKING
133	SCOTT PAPER % DIST. UNLIMITED	NORTHEAST INDUSTRIAL PARK, GUILDERLAND CENTER, NY	12085	GST CORP
134	LITHOID PRINTING	6 ALVIN CT, EAST BRUNSWICK, NJ	08816	BOISE CASCADE INT FALLS MN
135	BOISE CASCADE PAPER	306 CTR SQUARE RD PURELAND 1, BRIDGEPORT, NJ	08014	BOISE CASCADE INT FALLS MN
136	BOISE CASCADE PAPER	306 CTR SQUARE RD PURELAND 1, BRIDGEPORT, NJ	08014	BOISE CASCADE INT FALLS MN
137	BOISE CASCADE PAPER	306 CTR SQUARE RD PURELAND 1, BRIDGEPORT, NJ	08014	BOISE CASCADE INT FALLS MN
138	BOISE CASCADE PAPER	306 CTR SQUARE RD PURELAND 1, BRIDGEPORT, NJ	08014	BOISE CASCADE INT FALLS MN
139	BOISE CASCADE PAPER	306 CTR SQUARE RD PURELAND 1, BRIDGEPORT, NJ	08014	BOISE CASCADE INT FALLS MN
140	BOISE CASCADE PAPER	306 CTR SQUARE RD PURELAND 1, BRIDGEPORT, NJ	08014	BOISE CASCADE INT FALLS MN
141	KALAMA CHEMICAL CO	290 RIVER DRIVE, GARFIELD, NJ	07026	GST CORP
142	SCHERER & SCHERER C/O AM SEAL	80 LEUNING STREET, SOUTH HACKENSACK, NJ	07606	ALLIANCE SHIPPERS
143	SANTAS BEST	3501 S E BLVD, VINELAND, NJ	08360	BOISE CASCADE INT FALLS MN
144	BOISE CASCADE PAPER	306 CTR SQUARE RD PURELAND 1, BRIDGEPORT, NJ	08014	W. O. S. C. A.
152	LEGGETT & PLATT			MIDWEST GATEWAY
153	GREGORY PACKING	247 ROME ST., NEWARK, NJ	07105	A P D S
154	STANDARD MATTRESS			MCS
155	GSA	1900 RIVER ROAD, BURLINGTON, NJ	08016	BOISE CASCADE INT FALLS MN
156	DURAND GLASS			ALLIANCE SHIPPERS
157	MELNOE IND			INTERMODAL SALES
158	MELNOE IND			INTERMODAL SALES
159	COLUMBIA CEMENT			MARK VII TRANSPORTATION
161	DUROTEX			

ID	S ADDRESS	S ZIP	PO#	WHT	PIECES	SPECIAL INSTRUCTIONS	TIME WINDOW
115			CMD18	41915	88.00	2 STOP	8:00 AM
116			CMD18	41915	88.00	2 STOP	12:05 PM
117			6667	43273	14.00	PLEASE USE LIGHTWEIGHT CAN/CHASSIS PER CUSTOMER	9:30 AM
118							1:05 PM
119				40506		DRIVER STANDBY AT ORGIN AND DESTINATION	11:00 AM
120				44000	1.00		8:00 AM
121				41325	16.00	FAX BOL/POD TO AGENT	2:05 PM
122			D1562221	45885	41.00	MUST USE LT CHASSIS AT DEST.	7:30 AM
123			9529589				10:30 AM
126				35824	619.00	DROP & PULL AT ORGIN	9:00 AM
127			D1562221	46131	40.00	MUST USE LT CHASSIS AT DEST.	1:30 PM
128			46NE1490420	45870	22.00	MUST USE LT CHASSIS AT DEST.	8:00 AM
129			46NE1490420	45870	22.00	MUST USE LT CHASSIS AT DEST.	9:00 AM
130				43500	20.00	MUST USE LIGHTWEIGHT EQUIPMENT	1:00 PM
132							10:30 AM
133			9529591	14304	48.00		9:00 AM
134			01580848	43471	37.00	MUST USE LT CHASSIS AT DEST	9:00 AM
135			46NE1490420	45870	22.00	MUST USE LT CHASSIS AT DEST.	8:00 AM
136			46NE1490420	45870	22.00	MUST USE LT CHASSIS AT DEST.	10:00 AM
137			46NE1490420	45870	22.00	MUST USE LT CHASSIS AT DEST.	11:00 AM
138			46NE1490426	45870	22.00	MUST USE LT CHASSIS AT DEST.	1:00 PM
139			46NE1490420	45870	22.00	MUST USE LT CHASSIS AT DEST.	8:00 AM
140			46NE1490426	45870	22.00	MUST USE LT CHASSIS AT DEST.	10:00 AM
141				44365	88.00	**ONE TIME ONLY**	3:05 PM
142				43000	114.00		7:30 AM
143				5004	848.00		3:35 PM
144			46NE1490426	45870	22.00	MUST USE LT CHASSIS AT DEST.	9:00 AM
152	430 MAIN ST, OXFORD, MA	01540					8:00 AM
153							5:35 PM
154	101 WINDSOR ST., HARTFORD, CT	06101					8:30 AM
155							8:00 AM
156	WADE BLVD, MILLVILLE, NJ	08332					10:00 AM
157	1 CAROL PL, MOONACHIE, NJ	07074					4:05 AM
158	1 CAROL PL, MOONACHIE, NJ	07074					4:05 PM
159	159 HANSE AVE, FREEPORT, NY	11520					12:05 PM
161							2:00 PM

ID	NOT DATE	NOT TIME	SCH DATE	SCH TIME	DRIVER	OPERATION	PWR DET	TRL DET
115	5/7/94	6:00 AM	5/10/94	800	MIGUEL	DROP AND PULL		
116	5/7/94	6:00 AM	5/10/94	1205	MIGUEL	DROP AND PULL		
117	5/9/94	6:00 AM	5/10/94	930	GABE A.	WAIT	220	5.5 HOURS
118	5/9/94	6:00 AM	5/10/94	1305	HENRY	WAIT		
119	5/9/94	6:00 AM	5/10/94	1100	ROBERT W.	DROP AND PULL		
120	5/9/94	6:00 AM	5/10/94	800	VAZ	DROP AND PULL		
121	5/9/94	6:00 AM	5/10/94	1405	JACK R	DROP AND PULL		
122	5/9/94	6:00 AM	5/10/94	730	JOHN N.	WAIT		
123	5/9/94	6:00 AM	5/10/94	1030	TONY M.	DROP AND PULL		
126	5/9/94	6:00 AM	5/10/94	900	DENNIS W.	WAIT	60	1.5 HOURS
127	5/7/94	6:00 AM	5/11/94	1330	JOHN N.	DROP AND PULL		
128	5/7/94	6:00 AM	5/11/94	800	PAUL H.	DROP AND PULL		
129	5/7/94	6:00 AM	5/11/94	900	JOEL	DROP AND PULL		
130	5/10/94	6:00 AM	5/11/94	1300	TONY M.	DROP AND PULL		
132	5/11/94	6:00 AM	5/12/94	1030	DAVID I	WAIT		
133	5/11/94	6:00 AM	5/12/94	900	ANTON I.	DROP AND PULL		
134	5/7/94	6:00 AM	5/12/94	900	JACK R	DROP AND PULL		
135	5/10/94	6:00 AM	5/12/94	800	PAUL H.	DROP AND PULL		
136	5/11/94	6:00 AM	5/12/94	1000	TONY M.	DROP AND PULL		
137	5/11/94	6:00 AM	5/12/94	1100	JOHN N.	DROP AND PULL		
138	5/11/94	6:00 AM	5/12/94	1300	GABE A.	DROP AND PULL		
139	5/10/94	6:00 AM	5/13/94	800	PAUL H.	DROP AND PULL		
140	5/11/94	6:00 AM	5/13/94	1000	TONY M.	DROP AND PULL		
141	5/12/94	6:00 AM	5/13/94	1505	VAZ	WAIT	40	1 HOUR
142	5/10/94	6:00 AM	5/13/94	730	JACK R	DROP AND PULL		
143	5/10/94	6:00 AM	5/13/94	1535	JOE	DROP AND PULL		
144	5/13/94	6:00 AM	5/13/94	900	GABE A.	DROP AND PULL		
152	4/26/94	6:00 AM	4/29/94	800	WESLEY K.	WAIT	100	2.5 HOURS
153	4/27/94	6:00 AM	4/29/94	1735	DENNIS W.	WAIT		
154	4/27/94	6:00 AM	5/2/94	830	ROBERT W.	WAIT	100	2.5 HOURS
155	4/28/94	6:00 AM	5/2/94	800	CRUZ	DROP AND PULL		
156	5/2/94	6:00 AM	5/3/94	1000	JACK R	WAIT	80	2 HOURS
157	5/2/94	6:00 AM	5/3/94	1605	TONY M.	DROP AND PULL		
158	5/2/94	6:00 AM	5/3/94	1605	ROBERT W.	DROP AND PULL		
159	4/26/94	6:00 AM	5/3/94	1205	DENNIS W.	DROP AND PULL		
161	5/3/94	6:00 AM	5/5/94	1400	JANUCZ F.	WAIT	100	2.5 HOURS

ID	TRAILER/CONTAINER	STATUS	SIZE	DESTINATION	ZIP	ORGIN/RAMP	CARRIER	O/W	RATE
162	BNAU282644	PICK-UP	45	FREEPORT, NY	11520	NYH APT	BN AMERICA	40	200
163	BNAU287027	PICK-UP	45	MILLVILLE, NJ	08332	NYH APT	BN AMERICA	124	471
164	BNAU680273	DELIVERY	45	UNIVERSITY PARK, PA	16802	NYH APT	BN AMERICA	226	687
165	MDWU280370	PICK-UP	45	POTTSVILLE, PA	17901	NYH APT	BN AMERICA	125	451
166	BNAU284391	DELIVERY	45	HILLSIDE, NJ	07205	NYH APT	BN AMERICA	8	152
167	BNAU680399	PICK-UP	45	BROOKLYN, NY	11232	NYH APT	BN AMERICA	12	366
168	BNAU287500	DELIVERY	45	BRIDGEPORT, NJ	08014	NYH APT	BN AMERICA	105	404
169	MDWU280096	DELIVERY	45	BRIDGEPORT, NJ	08014	NYH APT	BN AMERICA	105	404
170	BNAU280844	DELIVERY	45	LONG ISLAND CITY, NY	11101	NYH APT	BN AMERICA	17	366
171	BNAU283190	DELIVERY	45	NEWARK, NJ	07105	NYH APT	BN AMERICA	4	152
172	BNAU286363	DELIVERY	45	BURLINGTON, NJ	08016	NYH APT	BN AMERICA	68	343
173	BNAU283035	DELIVERY	45	NEWARK, NJ	07105	NYH APT	BN AMERICA	4	152
174	BNAU288785	DELIVERY	45	SOUTH HACKENSACK, NJ	07606	NYH APT	BN AMERICA	11	166
175	BNAU287910	DELIVERY	45	BURLINGTON, NJ	08016	NYH APT	BN AMERICA	68	343
176	BNAU288230	PICK-UP	45	OXFORD, MA	01540	NYH APT	BN AMERICA	180	565
177	BNAU680273	PICK-UP	45	MILLVILLE, NJ	08332	NYH APT	BN AMERICA	124	471
178	BNAU282567	DELIVERY	45	CROMWELL, CT	06416	NYH APT	BN AMERICA	115	465
179	BNAU280708	DELIVERY	45	NEWARK, NJ	07105	NYH APT	BN AMERICA	4	152
180	BNAU680239	DELIVERY	45	BRIDGEPORT, NJ	08014	NYH APT	BN AMERICA	105	404
181	BNAU289952	PICK-UP	45	PATERSON, NJ	07501	NYH APT	BN AMERICA	16	166
182	BNAU280477	DELIVERY	45	HAWTHORNE, NJ	07506	NYH APT	BN AMERICA	15	166
183	BNAU287732	DELIVERY	45	DAYVILLE, CT	06241	NYH APT	BN AMERICA	174	546
184	BNAU680099	PICK-UP	45	FALL RIVER, MA	02722	NYH APT	BN AMERICA	206	626
185	BNAU282248	DELIVERY	45	NEWARK, NJ	07105	NYH APT	BN AMERICA	4	152
186	BNAU280902	PICK-UP	45	BENSALEM, PA	19020	NYH APT	BN AMERICA	69	364
187	MDWU280411	DELIVERY	45	WINSTED, CT	06098	NYH APT	BN AMERICA	132	471
188	BNAU287993	DELIVERY	45	CALVERTON, NY	11933	NYH APT	BN AMERICA	86	523
189	MDWU280411	PICK-UP	45	DANBURY, CT	06810	NYH APT	BN AMERICA	78	408
190	MDWU280022	PICK-UP	45	DURHAM, CT	06422	NYH APT	BN AMERICA	114	461
191	MDWU280059	DELIVERY	45	BRIDGEPORT, NJ	08014	NYH APT	BN AMERICA	105	404
192	MDWU280368	PICK-UP	45	CAMP HILL, PA	17011	NYH APT	BN AMERICA	165	558
240	BNAU281327	PICK-UP	45	CAMP HILL, PA	17011	NYH APT	BN AMERICA	165	558
242	MDWU280200	DELIVERY	45	BRIDGEPORT, NJ	08014	NYH APT	BN AMERICA	105	404
243	BNAU289734	PICK-UP	45	NO. HAVEN, CT	06473	NYH APT	BN AMERICA	97	404
244	BNAU286706	PICK-UP	45	ELMWOOD PARK, NJ	07407	NYH APT	BN AMERICA	15	166
245	BNAU289454	PICK-UP	45	CHESTER, PA	19013	NYH APT	BN AMERICA	102	404

ID	NAME	C ADDRESS	C ZIP	THIRD PARTY
162	COLUMBIA CEMENT			MARK VII TRANSPORTATION
163	DURAND GLASS			ALLIANCE SHIPPERS
164	PENN			
165	CP LIGHTNING			
166	CUSTOM			
167	JAY IMPORTS	150 52ND ST, BROOKLYN, NY	11232	DISPATCH FREIGHT
168	BOISE CASCADE PAPER	306 CTR SQUARE RD PURELAND 1, BRIDGEPORT, NJ	08014	W. O. S. C. A.
169	BOISE CASCADE PAPER	306 CTR SQUARE RD PURELAND 1, BRIDGEPORT, NJ	08014	W. O. S. C. A.
170	PAUL			
171	GREGORY PACKING	247 ROME ST., NEWARK, NJ	07105	
172	GSA	1900 RIVER ROAD, BURLINGTON, NJ	08016	BOISE CASCADE INT FALLS MN
173	GREGORY PACKING	247 ROME ST., NEWARK, NJ	07105	A P D S
174	SCHERER & SCHERER C/O AM SEAL	80 LEUNING STREET, SOUTH HACKENSACK, NJ	07606	ALLIANCE SHIPPERS
175	GSA	1900 RIVER ROAD, BURLINGTON, NJ	08016	BOISE CASCADE INT FALLS MN
176	LEGGETT & PLATT			MIDWEST GATEWAY
177	DURAND GLASS			ALLIANCE SHIPPERS
178	LITURGICAL PUBLICATIONS	5 PROGRESS DRIVE, CROMWELL, CT	06416	BOISE CASCADE INT FALLS MN
179	GREGORY PACKING	247 ROME ST., NEWARK, NJ	07105	A P D S
180	BOISE CASCADE PAPER	306 CTR SQUARE RD PURELAND 1, BRIDGEPORT, NJ	08014	W. O. S. C. A.
181	I P CONTAINER CORP			IDI
182	PARADISE FRUIT	58-5TH, HAWTHORNE, NJ	07506	GST CORP
183	NATIONAL PATENT MEDICAL	349 LAKE RD, DAYVILE, CT	06241	TOLAN O' NEAL
184	DUROTEX			
185	GREGORY PACKING	247 ROME ST., NEWARK, NJ	07105	A P D S
186	INTEGRITY			
187	REYNOLDS & REYNOLDS/WINST	157 COLEBROOK RIVER RD/RT, WINSTED, CT	06098	
188	DELALIO SOD FARMS	422 EDWARDS AVE, CALVERTON, NY	11933	LASER NETWORKING
189	FAIRFIELD			
190	DURHAM MFG			W. O. S. C. A.
191	BOISE CASCADE PAPER	306 CTR SQUARE RD PURELAND 1, BRIDGEPORT, NJ	08014	W. O. S. C. A.
192	TRUE			
240	TRUE			
242	BOISE CASCADE PAPER	306 CTR SQUARE RD PURELAND 1, BRIDGEPORT, NJ	08014	BOISE CASCADE INT FALLS MN
243	MICHAEL SCHIAVONE & SONS			
244	MARCAL PAPER			
245	DEQUISSA CO			

ID	S ADDRESS	S ZIP	PO#	WHT	PIECES	SPECIAL INSTRUCTIONS	TIME WINDOW
162	159 HANSE AVE, FREEPORT, NY	11520					12:00 PM
163	WADE BLVD, MILLVILLE, NJ	08332					10:00 AM
164							7:00 AM
165							8:00 AM
166							9:00 AM
167							8:30 AM
168							3:00 PM
169							8:00 AM
170							8:30 AM
171							7:00 AM
172							9:00 AM
173							7:00 AM
174							12:05 PM
175							8:30 AM
176	430 MAIN ST, OXFORD, MA	01540					8:00 AM
177	WADE BLVD, MILLVILLE, NJ	08332					9:00 AM
178							8:00 AM
179							7:00 AM
180							8:00 AM
181	864 E 25TH ST, PATERSON, NJ	07501					4:00 PM
182							10:00 AM
183							7:00 AM
184							11:00 AM
185							7:00 AM
186							8:00 AM
187							9:00 AM
188							6:00 AM
189							3:05 PM
190	84 MAIN ST, DURHAM, CT	06422					11:55 PM
191							9:00 AM
192							3:30 PM
240							4:30 PM
242						2 STOP DELIVERY ** MUST USE LT CHASSIS AT DEST	9:00 AM
243							12:05 PM
244							1:00 PM
245							2:35 PM

ID	NOT DATE	NOT TIME	SCH DATE	SCH TIME	DRIVER	OPERATION	PWR DET	TRL DET
162	5/2/94	6:00 AM	5/5/94	1505	DENNIS W.	DROP AND PULL		
163	5/4/94	6:00 AM	5/5/94	1000	CRUZ	WAIT	50	1.25 HOURS
164			5/5/94	800	JOHN N.	WAIT		
165			5/5/94	800	JACK R	WAIT	40	1 HOURS
166	5/4/94	6:00 AM	5/6/94	900	HENRY	WAIT	40	1 HOURS
167	5/2/94	6:00 AM	5/6/94	830	ZEKE	WAIT		
168	5/2/94	6:00 AM	5/6/94	1500	PAUL H.	DROP AND PULL		
169	5/2/94	6:00 AM	5/6/94	800	PAUL H.	DROP AND PULL		
170	5/5/94	6:00 AM	5/6/94	830	DENNIS W.	WAIT		
171	5/2/94	6:00 AM	5/6/94	700	TONY M.	WAIT		
172	5/5/94	6:00 AM	5/9/94	900	JERRY Z	DROP AND PULL		
173	5/2/94	6:00 AM	5/9/94	700	VAZ	WAIT	230	5.75 HOURS
174	5/4/94	6:00 AM	5/9/94	1205	HENRY	DROP AND PULL		
175	5/5/94	6:00 AM	5/9/94	830	TONY M.	DROP AND PULL		
176	5/4/94	6:00 AM	5/10/94	800	DAVID I	WAIT		
177	5/5/94	6:00 AM	5/10/94	900	JANUCZ F.	DROP AND PULL		
178	5/7/94	6:00 AM	5/10/94	800	JERRY Z	DROP AND PULL		
179	5/4/94	6:00 AM	5/10/94	700	ANTON I.	WAIT	300	7.5 HOURS
180	5/3/94	6:00 AM	5/10/94	800	PAUL H.	DROP AND PULL		
181	5/9/94	6:00 AM	5/10/94	1035	VAZ	DROP AND PULL		
182	5/9/94	6:00 AM	5/11/94	1000	DENNIS W.	WAIT	40	1 HOURS
183	5/5/94	6:00 AM	5/11/94	700	ROBERT W.	DROP AND PULL		
184	5/9/94	6:00 AM	5/11/94	1100	JACK R	DROP AND PULL		
185	5/4/94	6:00 AM	5/11/94	700	VAZ	WAIT	160	4 HOURS
186	5/9/94	6:00 AM	5/11/94	800	GABE A.	WAIT	60	1.5 HOURS
187	5/11/94	6:00 AM	5/12/94	900	ROBERT W.	DROP AND PULL		
188	5/11/94	6:00 AM	5/12/94	600	JOEL	WAIT	110	2.75 HOURS
189	5/11/94	6:00 AM	5/12/94	1505	ROBERT W.	WAIT		
190	5/2/94	6:00 AM	5/12/94	2359	JOEL	WAIT		
191	5/11/94	6:00 AM	5/13/94	900	JOEL	DROP AND PULL		
192	5/11/94	6:00 AM	5/13/94	1830	GABE A.	WAIT		
240	5/13/94	6:00 AM	5/13/94	1630	ROBERT W.	WAIT		
242	4/25/94	6:00 AM	4/28/94	900	JOHN N.	DROP AND PULL		
243	5/4/94	6:00 AM	5/5/94	1405	ROBERT W.	WAIT		
244			5/12/94	1300	JACK R.	WAIT		
245			5/12/94	1435	JOHN N.	WAIT		

APPENDIX B

HEURISTIC ALGORITHM MODEL MACRO TO INITIATE SORTING ROUTINES

Properties

Date Created: 11/9/94 12:23:21 PM
Last Updated: 12/21/94 7:54:40 PM
Owner: admin

Actions

Name	Condition	Action	Argument	Value
		SetWarnings	Warnings On:	No
	NO PROMPTS			
		ShowToolbar	Toolbar Name:	Palette
			Show:	No
	DOES NOT SHOW TOOLBAR			
		ShowToolbar	Toolbar Name:	Toolbox
			Show:	No
		ShowToolbar	Toolbar Name:	Table Datasheet
			Show:	No
		ShowToolbar	Toolbar Name:	Database
			Show:	No
		DoMenuItem	Menu Bar:	Database
			Menu Name:	Window
			Command:	Hide
			Subcommand:	
	DOES NOT SHOW WINDOW			
		OpenQuery	Query Name:	RECORD 2
			View:	Datasheet
			Data Mode:	Edit
	OPENS QUERY "RECORD" TO APEND DATA TO FINAL RESULTS			
		Close	Object Type:	Query
			Object Name:	RECORD 2
	CLOSES QUERY			
		OpenTable	Table Name:	ZIP CODE SORTING FOR ALL 8 GROUPS
			View:	Datasheet
			Data Mode:	Edit
	OPENS TABLE 'ZIPCODE SORTING FOR ALL 8 GROUPS' - TO PREP			
		DoMenuItem	Menu Bar:	Table Datasheet
			Menu Name:	Edit
			Command:	Select All Records
			Subcommand:	

SELECTS ALL RECORDS TO PREPARE TO DELETE

DoMenuItem	Menu Bar:	Table Datasheet
	Menu Name:	Edit
	Command:	Delete
	Subcommand:	

DELETES ALL RECORDS, TABLE READY FOR APPENDING

Close	Object Type:	Table
	Object Name:	ZIP CODE SORTING FOR ALL 8 GROUPS

CLOSES TABLE DATASHEET

OpenQuery	Query Name:	ZONE 14 AND 11 PICKUP/DELIVERY MATCH
	View:	Datasheet
	Data Mode:	Edit

OPENS MATCHING ZONES 14 AND 11

Close	Object Type:	Query
	Object Name:	ZONE 14 AND 11 PICKUP/DELIVERY MATCH

CLOSES MATCHING ZONES 14 AND 11

OpenQuery	Query Name:	ZONE 14 AND 12 PICKUP/DELIVERY MATCH
	View:	Datasheet
	Data Mode:	Edit

OPENS MATCHING ZONES 14 AND 12

Close	Object Type:	Query
	Object Name:	ZONE 14 AND 12 PICKUP/DELIVERY MATCH

CLOSES MATCHING ZONES 14 AND 12

OpenQuery	Query Name:	ZONE 14 AND 13 PICKUP/DELIVERY MATCH
	View:	Datasheet
	Data Mode:	Edit

OPENS MATCHING ZONES 14 AND 13

Close	Object Type:	Query
	Object Name:	ZONE 14 AND 13 PICKUP/DELIVERY MATCH

CLOSES MATCHING ZONES 14 AND 13

OpenQuery	Query Name:	ZONE I AND B ZIPCODE MATCH
	View:	Datasheet
	Data Mode:	Edit

OPENS MATCHING ZONES 9 AND 2

Close	Object Type:	Query
	Object Name:	ZONE I AND B ZIPCODE MATCH

CLOSES MATCHING ZONES 9 AND 2

OpenQuery	Query Name:	ZONE C AND J(NEWARK) ZIPCODE MATCH
	View:	Datasheet
	Data Mode:	Edit
OPENS MATCHING ZONES 3 AND 10		
Close	Object Type:	Query
	Object Name:	ZONE C AND J(NEWARK) ZIPCODE MATCH
CLOSES MATCHING ZONES 3 AND 10		
OpenQuery	Query Name:	ZONE E AND F ZIPCODE MATCH
	View:	Datasheet
	Data Mode:	Edit
OPENS MATCHING ZONES 5 AND 6		
Close	Object Type:	Query
	Object Name:	ZONE E AND F ZIPCODE MATCH
CLOSES MATCHING ZONES 5 AND6		
OpenQuery	Query Name:	GROUP A ZIPCODE MATCH
	View:	Datasheet
	Data Mode:	Edit
OPENS ZONE 1		
Close	Object Type:	Query
	Object Name:	GROUP A ZIPCODE MATCH
CLOSES ZONE 1		
OpenQuery	Query Name:	GROUP B ZIPCODE MATCH
	View:	Datasheet
	Data Mode:	Edit
OPENS ZONE 2		
Close	Object Type:	Query
	Object Name:	GROUP B ZIPCODE MATCH
CLOSES ZONE 2		
OpenQuery	Query Name:	GROUP C ZIPCODE MATCH
	View:	Datasheet
	Data Mode:	Edit
OPENS ZONE 3		
Close	Object Type:	Query
	Object Name:	GROUP C ZIPCODE MATCH
CLOSES ZONE 3		
OpenQuery	Query Name:	GROUP D ZIPCODE MATCH
	View:	Datasheet
	Data Mode:	Edit
OPENS ZONE 4		
Close	Object Type:	Query
	Object Name:	GROUP D ZIPCODE MATCH

CLOSES ZONE 4			
	OpenQuery	Query Name:	GROUP E ZIPCODE MATCH
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 5			
	Close	Object Type:	Query
		Object Name:	GROUP E ZIPCODE MATCH
CLOSES ZONE 5			
	OpenQuery	Query Name:	GROUP F ZIPCODE MATCH
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 6			
	Close	Object Type:	Query
		Object Name:	GROUP F ZIPCODE MATCH
CLOSES ZONE 6			
	OpenQuery	Query Name:	GROUP G ZIPCODE MATCH
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 7			
	Close	Object Type:	Query
		Object Name:	GROUP G ZIPCODE MATCH
CLOSES ZONE 7			
	OpenQuery	Query Name:	GROUP H ZIPCODE MATCH
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 8			
	Close	Object Type:	Query
		Object Name:	GROUP H ZIPCODE MATCH
CLOSES ZONE 8			
	OpenQuery	Query Name:	GROUP I ZIPCODE MATCH
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 9			
	Close	Object Type:	Query
		Object Name:	GROUP I ZIPCODE MATCH
CLOSES ZONE9			
	OpenTable	Table Name:	ZIP CODE SORTING FOR ALL 8 GROUPS
		View:	Datasheet
		Data Mode:	Edit
OPENS TABLE 'ZIPCODE SORTING FOR ALL 8 GROUPS' - TO PREP			
	OpenQuery	Query Name:	6/5
		View:	Datasheet

		Data Mode:	Edit
OPENS ZONE 6/5 - SOUTH PAW			
	Close	Object Type:	Query
		Object Name:	6/5
CLOSES ZONE6/5			
	OpenQuery	Query Name:	4/5
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 4/5			
	Close	Object Type:	Query
		Object Name:	4/5
CLOSES ZONE4/5			
	OpenQuery	Query Name:	5/4
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 5/4			
	Close	Object Type:	Query
		Object Name:	5/4
CLOSES ZONE5/4			
	OpenQuery	Query Name:	4/7
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 4/7			
	Close	Object Type:	Query
		Object Name:	4/7
CLOSES ZONE4/7			
	OpenQuery	Query Name:	5/7
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 5/7			
	Close	Object Type:	Query
		Object Name:	5/7
CLOSES ZONE5/7			
	OpenQuery	Query Name:	6/7
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 6/7			
	Close	Object Type:	Query
		Object Name:	6/7
CLOSES ZONE6/7			
	OpenQuery	Query Name:	4/6
		View:	Datasheet
		Data Mode:	Edit

OPENS ZONE 4/6			
	Close	Object Type:	Query
		Object Name:	4/6
CLOSES ZONE 4/6			
	OpenQuery	Query Name:	6/4
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 6/4			
	Close	Object Type:	Query
		Object Name:	6/4
CLOSES ZONE 6/4			
	OpenQuery	Query Name:	6/7
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 2/9 - NORTH PAW			
	Close	Object Type:	Query
		Object Name:	2/9
CLOSES ZONE2/9			
	OpenQuery	Query Name:	1/2
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 1/2			
	Close	Object Type:	Query
		Object Name:	1/2
CLOSES ZONE 1/2			
	OpenQuery	Query Name:	2/1
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 2/1			
	Close	Object Type:	Query
		Object Name:	2/1
CLOSES ZONE 2/1			
	OpenQuery	Query Name:	2/8
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 2/8			
	Close	Object Type:	Query
		Object Name:	2/8
CLOSES ZONE 2/8			
	OpenQuery	Query Name:	8/2
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 8/2			

	Close	Object Type:	Query
		Object Name:	8/2
CLOSES ZONE8/2			
	OpenQuery	Query Name:	2/3
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 2/3			
	Close	Object Type:	Query
		Object Name:	2/3
CLOSES ZONE 2/3			
	OpenQuery	Query Name:	3/2
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 3/2			
	Close	Object Type:	Query
		Object Name:	3/2
CLOSES ZONE 3/2			
	OpenQuery	Query Name:	8/3
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 8/3			
	Close	Object Type:	Query
		Object Name:	8/3
CLOSES ZONE 8/3			
	OpenQuery	Query Name:	3/8
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 3/8			
	Close	Object Type:	Query
		Object Name:	3/8
CLOSES ZONE3/8			
	OpenQuery	Query Name:	1/3
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 1/3			
	Close	Object Type:	Query
		Object Name:	1/3
CLOSES ZONE1/3			
	OpenQuery	Query Name:	3/1
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 3/1			
	Close	Object Type:	Query

		Object Name:	3/1
CLOSES ZONE 3/1			
	OpenQuery	Query Name:	1/8
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 1/8			
	Close	Object Type:	Query
		Object Name:	1/8
CLOSES ZONE 1/8			
	OpenQuery	Query Name:	8/1
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 8/1			
	Close	Object Type:	Query
		Object Name:	8/1
CLOSES ZONE 8/1			
	OpenQuery	Query Name:	9/8
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 9/8			
	Close	Object Type:	Query
		Object Name:	9/8
CLOSES ZONE 9/8			
	OpenQuery	Query Name:	8/9
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 8/9			
	Close	Object Type:	Query
		Object Name:	8/9
CLOSES ZONE 8/9			
	OpenQuery	Query Name:	1/9
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 1/9			
	Close	Object Type:	Query
		Object Name:	1/9
CLOSES ZONE 1/9			
	OpenQuery	Query Name:	9/1
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 9/1			
	Close	Object Type:	Query
		Object Name:	9/1

CLOSES ZONE 9/1			
	OpenQuery	Query Name:	3/9
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 3/9			
	Close	Object Type:	Query
		Object Name:	3/9
CLOSES ZONE 3/9			
	OpenQuery	Query Name:	9/3
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 9/3			
	Close	Object Type:	Query
		Object Name:	9/3
CLOSES ZONE 9/3			
	OpenQuery	Query Name:	2/7
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 2/7			
	Close	Object Type:	Query
		Object Name:	2/7
CLOSES ZONE 2/7			
	OpenQuery	Query Name:	3/7
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 3/7			
	Close	Object Type:	Query
		Object Name:	3/7
CLOSES ZONE 3/7			
	OpenQuery	Query Name:	1/7
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 1/7			
	Close	Object Type:	Query
		Object Name:	1/7
CLOSES ZONE 1/7			
	OpenQuery	Query Name:	8/7
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 8/7			
	Close	Object Type:	Query
		Object Name:	8/7
CLOSES ZONE 8/7			

	OpenQuery	Query Name:	9/7
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 9/7			
	Close	Object Type:	Query
		Object Name:	9/7
CLOSES ZONE 9/7			
	OpenQuery	Query Name:	1/4
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 1/4 - NORTH PAW TO SOUTH PAW			
	Close	Object Type:	Query
		Object Name:	4/1
CLOSES ZONE 1/4			
	OpenQuery	Query Name:	2/4
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 2/4			
	Close	Object Type:	Query
		Object Name:	2/4
CLOSES ZONE 2/4			
	OpenQuery	Query Name:	3/4
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 3/4			
	Close	Object Type:	Query
		Object Name:	3/4
CLOSES ZONE 3/4			
	OpenQuery	Query Name:	8/4
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 8/4			
	Close	Object Type:	Query
		Object Name:	8/4
CLOSES ZONE 8/4			
	OpenQuery	Query Name:	9/4
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 9/4			
	Close	Object Type:	Query
		Object Name:	9/4
CLOSES ZONE 9/4			
	OpenQuery	Query Name:	1/6

		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 1/6			
	Close	Object Type:	Query
		Object Name:	1/6
CLOSES ZONE 1/6			
	OpenQuery	Query Name:	2/6
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 2/6			
	Close	Object Type:	Query
		Object Name:	2/6
CLOSES ZONE 2/6			
	OpenQuery	Query Name:	3/6
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 3/6			
	Close	Object Type:	Query
		Object Name:	3/6
CLOSES ZONE 3/6			
	OpenQuery	Query Name:	8/6
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 8/6			
	Close	Object Type:	Query
		Object Name:	8/6
CLOSES ZONE 8/6			
	OpenQuery	Query Name:	9/6
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 9/6			
	Close	Object Type:	Query
		Object Name:	9/6
CLOSES ZONE 9/6			
	OpenQuery	Query Name:	1/5
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 1/5			
	Close	Object Type:	Query
		Object Name:	1/5
CLOSES ZONE 1/5			
	OpenQuery	Query Name:	2/5
		View:	Datasheet

		Data Mode:	Edit
OPENS ZONE 2/5			
	Close	Object Type:	Query
		Object Name:	2/5
CLOSES ZONE 2/5			
	OpenQuery	Query Name:	3/5
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 3/5			
	Close	Object Type:	Query
		Object Name:	3/5
CLOSES ZONE 3/5			
	OpenQuery	Query Name:	8/5
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 8/5			
	Close	Object Type:	Query
		Object Name:	8/5
CLOSES ZONE 8/5			
	OpenQuery	Query Name:	9/5
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 9/5			
	Close	Object Type:	Query
		Object Name:	9/5
CLOSES ZONE 9/5			
	OpenQuery	Query Name:	6/7
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 4/1 - SOUTH PAW TO NORTH PAW			
	Close	Object Type:	Query
		Object Name:	4/1
CLOSES ZONE 4/1			
	OpenQuery	Query Name:	4/2
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 4/2			
	Close	Object Type:	Query
		Object Name:	4/2
CLOSES ZONE 4/2			
	OpenQuery	Query Name:	4/3
		View:	Datasheet
		Data Mode:	Edit

OPENS ZONE 4/3			
	Close	Object Type:	Query
		Object Name:	4/3
CLOSES ZONE 4/3			
	OpenQuery	Query Name:	4/8
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 4/8			
	Close	Object Type:	Query
		Object Name:	4/8
CLOSES ZONE 4/8			
	OpenQuery	Query Name:	4/9
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 4/9			
	Close	Object Type:	Query
		Object Name:	4/9
CLOSES ZONE 4/9			
	OpenQuery	Query Name:	6/1
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 6/1			
	Close	Object Type:	Query
		Object Name:	6/1
CLOSES ZONE 6/1			
	OpenQuery	Query Name:	6/2
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 6/2			
	Close	Object Type:	Query
		Object Name:	6/2
CLOSES ZONE 6/2			
	OpenQuery	Query Name:	6/3
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 6/3			
	Close	Object Type:	Query
		Object Name:	6/3
CLOSES ZONE 6/3			
	OpenQuery	Query Name:	6/8
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 6/8			

	Close	Object Type:	Query
		Object Name:	6/8
CLOSES ZONE 6/8			
	OpenQuery	Query Name:	6/9
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 6/9			
	Close	Object Type:	Query
		Object Name:	6/9
CLOSES ZONE 6/9			
	OpenQuery	Query Name:	5/1
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 5/1			
	Close	Object Type:	Query
		Object Name:	5/1
CLOSES ZONE 5/1			
	OpenQuery	Query Name:	5/2
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 5/2			
	Close	Object Type:	Query
		Object Name:	5/2
CLOSES ZONE 5/2			
	OpenQuery	Query Name:	5/3
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 5/3			
	Close	Object Type:	Query
		Object Name:	5/3
CLOSES ZONE 5/3			
	OpenQuery	Query Name:	5/8
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 5/8			
	Close	Object Type:	Query
		Object Name:	5/8
CLOSES ZONE 5/8			
	OpenQuery	Query Name:	5/9
		View:	Datasheet
		Data Mode:	Edit
OPENS ZONE 5/9			
	Close	Object Type:	Query

	Object Name:	5/9
CLOSES ZONE 5/9		
	StopMacro	

User Permissions

admin	Delete, Read Permissions, Set Permissions, Change Owner
guest	

Group Permissions

Admins	
Guests	
Users	Delete, Read Permissions, Set Permissions, Change Owner

APPENDIX C

HEURISTIC ALGORITHM MODEL: SORTING ROUTINES

```
'ZONAL DIVISION 1
'Zonal Division 1 (Group A) consists of: Brattleboro, Vt
SELECT DISTINCTROW [PTLFINAL - NEW DATA SET].ID, [PTLFINAL - NEW
DATA SET].DESTINATION, [PTLFINAL - NEW DATA SET].ZIP, [PTLFINAL -
NEW DATA SET].[TRAILER/CONTAINER], [PTLFINAL - NEW DATA
SET].STATUS, [PTLFINAL - NEW DATA SET].[SCH DATE], [PTLFINAL - NEW
DATA SET].[SCH TIME]
FROM [PTLFINAL - NEW DATA SET]
WHERE (([PTLFINAL - NEW DATA SET].ZIP="where" Or [PTLFINAL - NEW
DATA SET].ZIP="05301"))
ORDER BY [PTLFINAL - NEW DATA SET].ZIP;
'DELIVERIES
SELECT DISTINCTROW [Group A].ID, [Group A].[TRAILER/CONTAINER], [Group
A].STATUS, [Group A].DESTINATION, [Group A].ZIP, [Group A].[SCH DATE],
[Group A].[SCH TIME]
FROM [Group A]
WHERE (([Group A].STATUS Like "D*"))
ORDER BY [Group A].[SCH DATE], [Group A].[SCH TIME];
'PICKUPS
SELECT DISTINCTROW [Group A].ID, [Group A].[TRAILER/CONTAINER], [Group
A].STATUS, [Group A].DESTINATION, [Group A].ZIP, [Group A].[SCH DATE],
[Group A].[SCH TIME]
FROM [Group A]
WHERE (([Group A].STATUS Like "P*"))
ORDER BY [Group A].[SCH DATE], [Group A].[SCH TIME];
'APPEND
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP] )
SELECT DISTINCTROW [Group A Deliveries].ID, [Group A Pick-ups].ID, [Group A
Deliveries].[TRAILER/CONTAINER], [Group A Pick-ups].[TRAILER/CONTAINER],
[Group A Deliveries].DESTINATION, [Group A Deliveries].ZIP, [Group A Pick-
ups].DESTINATION, [Group A Pick-ups].ZIP, [Group A Deliveries].[SCH DATE],
[Group A Deliveries].[SCH TIME], [Group A Pick-ups].[SCH TIME]
FROM [Group A Pick-ups] INNER JOIN [Group A Deliveries] ON [Group A Pick-
ups].[SCH DATE] = [Group A Deliveries].[SCH DATE]
WHERE ((([Group A Pick-ups]![SCH TIME]-[Group A Deliveries]![SCH
TIME])>180.72))
ORDER BY [Group A Deliveries].[SCH DATE], [Group A Deliveries].[SCH TIME],
[Group A Pick-ups].[SCH TIME];
END;
```

```
'ZONAL DIVISION 2
'Zonal Division (Group B) consists of:Dayville, Ct; Oxford, Ma; Hartford, Ct; Cromwell,
'Ct; Winsted, Ct; Meriden, Ct; Durham, Ct; Waterbury, Ct; Cheshire,Ct
SELECT DISTINCTROW [PTLFINAL - NEW DATA SET].ID, [PTLFINAL - NEW
DATA SET].DESTINATION, [PTLFINAL - NEW DATA SET].ZIP, [PTLFINAL -
NEW DATA SET].[TRAILER/CONTAINER], [PTLFINAL - NEW DATA
SET].STATUS, [PTLFINAL - NEW DATA SET].[SCH DATE], [PTLFINAL - NEW
DATA SET].[SCH TIME], [PTLFINAL - NEW DATA SET].RATE
FROM [PTLFINAL - NEW DATA SET]
WHERE (([PTLFINAL - NEW DATA SET].ZIP="where" Or [PTLFINAL - NEW
DATA SET].ZIP="06241" Or [PTLFINAL - NEW DATA SET].ZIP="01540" Or
[PTLFINAL - NEW DATA SET].ZIP="06101" Or [PTLFINAL - NEW DATA
SET].ZIP="06416" Or [PTLFINAL - NEW DATA SET].ZIP="06098" Or [PTLFINAL -
NEW DATA SET].ZIP="06450" Or [PTLFINAL - NEW DATA SET].ZIP="06422" Or
[PTLFINAL - NEW DATA SET].ZIP="06719" Or [PTLFINAL - NEW DATA
SET].ZIP="06410" Or [PTLFINAL - NEW DATA SET].ZIP="06473"))
ORDER BY [PTLFINAL - NEW DATA SET].ZIP, [PTLFINAL - NEW DATA
SET].[SCH DATE], [PTLFINAL - NEW DATA SET].[SCH TIME];
'DELIVERIES
SELECT DISTINCTROW [Group B].ID, [Group B].[TRAILER/CONTAINER], [Group
B].STATUS, [Group B].DESTINATION, [Group B].ZIP, [Group B].[SCH DATE],
[Group B].[SCH TIME], [Group B].RATE
FROM [Group B]
WHERE (([Group B].STATUS Like "d*"))
ORDER BY [Group B].[SCH DATE], [Group B].[SCH TIME];
'PICKUPS
SELECT DISTINCTROW [Group B].ID, [Group B].[TRAILER/CONTAINER], [Group
B].STATUS, [Group B].DESTINATION, [Group B].ZIP, [Group B].[SCH DATE],
[Group B].[SCH TIME], [Group B].RATE
FROM [Group B]
WHERE (([Group B].STATUS Like "P*"))
ORDER BY [Group B].[SCH DATE], [Group B].[SCH TIME];
'APPEND
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_PICKUP, RATE_DELIVERY )
SELECT DISTINCTROW [Group B Deliveries].ID, [Group B Pick-ups].ID, [Group B
Deliveries].[TRAILER/CONTAINER], [Group B Pick-ups].[TRAILER/CONTAINER],
[Group B Deliveries].DESTINATION, [Group B Deliveries].ZIP, [Group B Pick-
ups].DESTINATION, [Group B Pick-ups].ZIP, [Group B Deliveries].[SCH DATE],
[Group B Deliveries].[SCH TIME], [Group B Pick-ups].[SCH TIME], [Group B Pick-
ups].RATE, [Group B Deliveries].RATE
```

```
FROM [Group B Pick-ups] INNER JOIN [Group B Deliveries] ON [Group B Pick-
ups].[SCH DATE] = [Group B Deliveries].[SCH DATE]
WHERE ((([Group B Pick-ups]![SCH TIME]-[Group B Deliveries]![SCH
TIME])>180.72))
ORDER BY [Group B Deliveries].[SCH DATE], [Group B Deliveries].[SCH TIME],
[Group B Pick-ups].[SCH TIME];
END;

'ZONAL DIVISION 3
'Zonal Division 3 (Group C) consists of: Middletown, Ny; Danbury, Ct; Ogdensburg, Nj
SELECT DISTINCTROW [PTLFINAL - NEW DATA SET].ID, [PTLFINAL - NEW
DATA SET].DESTINATION, [PTLFINAL - NEW DATA SET].ZIP, [PTLFINAL -
NEW DATA SET].[TRAILER/CONTAINER], [PTLFINAL - NEW DATA
SET].STATUS, [PTLFINAL - NEW DATA SET].[SCH DATE], [PTLFINAL - NEW
DATA SET].[SCH TIME], [PTLFINAL - NEW DATA SET].RATE
FROM [PTLFINAL - NEW DATA SET]
WHERE (([PTLFINAL - NEW DATA SET].ZIP="where" Or [PTLFINAL - NEW
DATA SET].ZIP="10940" Or [PTLFINAL - NEW DATA SET].ZIP="06810" Or
[PTLFINAL - NEW DATA SET].ZIP="07439"))
ORDER BY [PTLFINAL - NEW DATA SET].ZIP, [PTLFINAL - NEW DATA
SET].[SCH DATE], [PTLFINAL - NEW DATA SET].[SCH TIME];
'DELIVERIES
SELECT DISTINCTROW [Group C].ID, [Group C].[TRAILER/CONTAINER], [Group
C].STATUS, [Group C].DESTINATION, [Group C].ZIP, [Group C].[SCH DATE],
[Group C].[SCH TIME], [Group C].RATE
FROM [Group C]
WHERE (([Group C].STATUS Like "D*"))
ORDER BY [Group C].[SCH DATE], [Group C].[SCH TIME];
'PICKUPS
SELECT DISTINCTROW [Group C].ID, [Group C].[TRAILER/CONTAINER], [Group
C].STATUS, [Group C].DESTINATION, [Group C].ZIP, [Group C].[SCH DATE],
[Group C].[SCH TIME], [Group C].RATE
FROM [Group C]
WHERE (([Group C].STATUS Like "P*"))
ORDER BY [Group C].[SCH DATE], [Group C].[SCH TIME];
'APPEND
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_PICKUP, RATE_DELIVERY )
SELECT DISTINCTROW [Group C Deliveries].ID, [Group C Pick-ups].ID, [Group C
Deliveries].[TRAILER/CONTAINER], [Group C Pick-ups].[TRAILER/CONTAINER],
[Group C Deliveries].DESTINATION, [Group C Deliveries].ZIP, [Group C Pick-
ups].DESTINATION, [Group C Pick-ups].ZIP, [Group C Deliveries].[SCH DATE],
```

```
[Group C Deliveries].[SCH TIME], [Group C Pick-ups].[SCH TIME], [Group C Pick-
ups].RATE, [Group C Deliveries].RATE
FROM [Group C Pick-ups] INNER JOIN [Group C Deliveries] ON [Group C Pick-
ups].[SCH DATE] = [Group C Deliveries].[SCH DATE]
WHERE ((([Group C Pick-ups]![SCH TIME]-[Group C Deliveries]![SCH
TIME])>180.72))
ORDER BY [Group C Deliveries].[SCH DATE], [Group C Deliveries].[SCH TIME],
[Group C Pick-ups].[SCH TIME];
END;

'ZONAL DIVISION 4
'Zonal Division 4 (Group D) consists of: Potsville, Pa; University Park, Pa; Camp Hill, Pa;
'Mechanicsburg, Pa; Lititz, Pa; Leola, Pa
SELECT DISTINCTROW [PTLFINAL - NEW DATA SET].ID, [PTLFINAL - NEW
DATA SET].DESTINATION, [PTLFINAL - NEW DATA SET].ZIP, [PTLFINAL -
NEW DATA SET].[TRAILER/CONTAINER], [PTLFINAL - NEW DATA
SET].STATUS, [PTLFINAL - NEW DATA SET].[SCH DATE], [PTLFINAL - NEW
DATA SET].[SCH TIME], [PTLFINAL - NEW DATA SET].RATE
FROM [PTLFINAL - NEW DATA SET]
WHERE (([PTLFINAL - NEW DATA SET].ZIP="where" Or [PTLFINAL - NEW
DATA SET].ZIP="17901" Or [PTLFINAL - NEW DATA SET].ZIP="16802" Or
[PTLFINAL - NEW DATA SET].ZIP="17011" Or [PTLFINAL - NEW DATA
SET].ZIP="17055" Or [PTLFINAL - NEW DATA SET].ZIP="17543" Or [PTLFINAL -
NEW DATA SET].ZIP="17540"))
ORDER BY [PTLFINAL - NEW DATA SET].ZIP, [PTLFINAL - NEW DATA
SET].[SCH DATE], [PTLFINAL - NEW DATA SET].[SCH TIME];
'DELIVERIES
SELECT DISTINCTROW [Group D].ID, [Group D].[TRAILER/CONTAINER],
[Group D].STATUS, [Group D].DESTINATION, [Group D].ZIP, [Group D].[SCH
DATE], [Group D].[SCH TIME], [Group D].RATE
FROM [Group D]
WHERE (([Group D].STATUS Like "D*"))
ORDER BY [Group D].[SCH DATE], [Group D].[SCH TIME];
'PICKUPS
SELECT DISTINCTROW [Group D].ID, [Group D].[TRAILER/CONTAINER],
[Group D].STATUS, [Group D].DESTINATION, [Group D].ZIP, [Group D].[SCH
DATE], [Group D].[SCH TIME], [Group D].RATE
FROM [Group D]
WHERE (([Group D].STATUS Like "P*"))
ORDER BY [Group D].[SCH DATE], [Group D].[SCH TIME];
'APPEND
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
```

```
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_PICKUP, RATE_DELIVERY )
SELECT DISTINCTROW [Group D Deliveries].ID, [Group D Pick-ups].ID, [Group D
Deliveries].[TRAILER/CONTAINER], [Group D Pick-ups].[TRAILER/CONTAINER],
[Group D Deliveries].DESTINATION, [Group D Deliveries].ZIP, [Group D Pick-
ups].DESTINATION, [Group D Pick-ups].ZIP, [Group D Deliveries].[SCH DATE],
[Group D Deliveries].[SCH TIME], [Group D Pick-ups].[SCH TIME], [Group D Pick-
ups].RATE, [Group D Deliveries].RATE
FROM [Group D Pick-ups] INNER JOIN [Group D Deliveries] ON [Group D Pick-
ups].[SCH DATE] = [Group D Deliveries].[SCH DATE]
WHERE ((([Group D Pick-ups]![SCH TIME]-[Group D Deliveries]![SCH
TIME])>180.72))
ORDER BY [Group D Deliveries].[SCH DATE], [Group D Deliveries].[SCH TIME],
[Group D Pick-ups].[SCH TIME];
END;

'ZONAL DIVISION 5
'Zonal Division 5 (Group E) consists of: Jessup, Md
SELECT DISTINCTROW [PTLFINAL - NEW DATA SET].ID, [PTLFINAL - NEW
DATA SET].DESTINATION, [PTLFINAL - NEW DATA SET].ZIP, [PTLFINAL -
NEW DATA SET].[TRAILER/CONTAINER], [PTLFINAL - NEW DATA
SET].STATUS, [PTLFINAL - NEW DATA SET].[SCH DATE], [PTLFINAL - NEW
DATA SET].[SCH TIME], [PTLFINAL - NEW DATA SET].RATE
FROM [PTLFINAL - NEW DATA SET]
WHERE (([PTLFINAL - NEW DATA SET].ZIP="where" Or [PTLFINAL - NEW
DATA SET].ZIP="20794"))
ORDER BY [PTLFINAL - NEW DATA SET].ZIP, [PTLFINAL - NEW DATA
SET].[SCH DATE], [PTLFINAL - NEW DATA SET].[SCH TIME];
'DELIVERIES
SELECT DISTINCTROW [Group E].ID, [Group E].[TRAILER/CONTAINER], [Group
E].STATUS, [Group E].DESTINATION, [Group E].ZIP, [Group E].[SCH DATE],
[Group E].[SCH TIME], [Group E].RATE
FROM [Group E]
WHERE (([Group E].STATUS Like "D*"))
ORDER BY [Group E].[SCH DATE];
'PICKUPS
SELECT DISTINCTROW [Group E].ID, [Group E].[TRAILER/CONTAINER], [Group
E].STATUS, [Group E].DESTINATION, [Group E].ZIP, [Group E].[SCH DATE],
[Group E].[SCH TIME], [Group E].RATE
FROM [Group E]
WHERE (([Group E].STATUS Like "P*"))
ORDER BY [Group E].[SCH DATE], [Group E].[SCH TIME];
'APPEND
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
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[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_PICKUP, RATE_DELIVERY )
SELECT DISTINCTROW [Group E Deliveries].ID, [Group E Pick-ups].ID, [Group E
Deliveries].[TRAILER/CONTAINER], [Group E Pick-ups].[TRAILER/CONTAINER],
[Group E Deliveries].DESTINATION, [Group E Deliveries].ZIP, [Group E Pick-
ups].DESTINATION, [Group E Pick-ups].ZIP, [Group E Deliveries].[SCH DATE],
[Group E Deliveries].[SCH TIME], [Group E Pick-ups].[SCH TIME], [Group E Pick-
ups].RATE, [Group E Deliveries].RATE
FROM [Group E Pick-ups] INNER JOIN [Group E Deliveries] ON [Group E Pick-
ups].[SCH DATE] = [Group E Deliveries].[SCH DATE]
WHERE ((([Group E Pick-ups]![SCH TIME]-[Group E Deliveries]![SCH
TIME])>180.72))
ORDER BY [Group E Deliveries].[SCH DATE], [Group E Deliveries].[SCH TIME],
[Group E Pick-ups].[SCH TIME];
END;

'ZONAL DIVISION 6
'Zonal Division 6 (Group F) consists of: Vineland, Nj; Millville, Nj; Elmwood Park, Nj;
'Bridgeport, Nj; King of Prussia, Pa; Philadelphia, Pa; Bensalem, Pa; Burlington, Nj;
'Chester, Pa
SELECT DISTINCTROW [PTLFINAL - NEW DATA SET].ID, [PTLFINAL - NEW
DATA SET].DESTINATION, [PTLFINAL - NEW DATA SET].ZIP, [PTLFINAL -
NEW DATA SET].[TRAILER/CONTAINER], [PTLFINAL - NEW DATA
SET].STATUS, [PTLFINAL - NEW DATA SET].[SCH DATE], [PTLFINAL - NEW
DATA SET].[SCH TIME], [PTLFINAL - NEW DATA SET].RATE
FROM [PTLFINAL - NEW DATA SET]
WHERE (([PTLFINAL - NEW DATA SET].ZIP="where" Or [PTLFINAL - NEW
DATA SET].ZIP="08360" Or [PTLFINAL - NEW DATA SET].ZIP="08332" Or
[PTLFINAL - NEW DATA SET].ZIP="07407" Or [PTLFINAL - NEW DATA
SET].ZIP="08014" Or [PTLFINAL - NEW DATA SET].ZIP="19406" Or [PTLFINAL -
NEW DATA SET].ZIP="19137" Or [PTLFINAL - NEW DATA SET].ZIP="19153" Or
[PTLFINAL - NEW DATA SET].ZIP="19020" Or [PTLFINAL - NEW DATA
SET].ZIP="08016" Or [PTLFINAL - NEW DATA SET].ZIP="19013"))
ORDER BY [PTLFINAL - NEW DATA SET].ZIP, [PTLFINAL - NEW DATA
SET].[SCH DATE], [PTLFINAL - NEW DATA SET].[SCH TIME];
'DELIVERIES
SELECT DISTINCTROW [Group F].ID, [Group F].[TRAILER/CONTAINER], [Group
F].STATUS, [Group F].DESTINATION, [Group F].ZIP, [Group F].[SCH DATE],
[Group F].[SCH TIME], [Group F].RATE
FROM [Group F]
WHERE (([Group F].STATUS Like "D*"))
ORDER BY [Group F].[SCH DATE], [Group F].[SCH TIME];
'PICKUPS
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SELECT DISTINCTROW [Group F].ID, [Group F].[TRAILER/CONTAINER], [Group
F].STATUS, [Group F].DESTINATION, [Group F].ZIP, [Group F].[SCH DATE],
[Group F].[SCH TIME], [Group F].RATE
FROM [Group F]
WHERE (([Group F].STATUS Like "P*"))
ORDER BY [Group F].[SCH DATE], [Group F].[SCH TIME];
'APPEND
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_PICKUP, RATE_DELIVERY )
SELECT DISTINCTROW [Group F Deliveries].ID, [Group F Pick-ups].ID, [Group F
Deliveries].[TRAILER/CONTAINER], [Group F Pick-ups].[TRAILER/CONTAINER],
[Group F Deliveries].DESTINATION, [Group F Deliveries].ZIP, [Group F Pick-
ups].DESTINATION, [Group F Pick-ups].ZIP, [Group F Deliveries].[SCH DATE],
[Group F Deliveries].[SCH TIME], [Group F Pick-ups].[SCH TIME], [Group F Pick-
ups].RATE, [Group F Deliveries].RATE
FROM [Group F Pick-ups] INNER JOIN [Group F Deliveries] ON [Group F Pick-
ups].[SCH DATE] = [Group F Deliveries].[SCH DATE]
WHERE ((([Group F Pick-ups]![SCH TIME]-[Group F Deliveries]![SCH
TIME])>180.72))
ORDER BY [Group F Deliveries].[SCH DATE], [Group F Deliveries].[SCH TIME],
[Group F Pick-ups].[SCH TIME];
END;

'ZONAL DIVISION 7
'Zonal Division 7 (Group G) consists of: Albertson, Ny; Calverton, Ny; Long Island City,
'Ny; Brooklyn, Ny; Jamaica, Ny; Freeport, Ny; Plainview, Nj; Hillside, Nj; Newark, Nj;
'Newark, Nj; Jersey City, Nj; Moonachie, Nj; Kearney, Nj; Carlstadat, Nj; Garfield, Nj;
'South Hackensack, Nj; Paterson, Nj; Hawthorne, Nj; Succasunna, Nj; North Brunswick,
'Nj; Dayton, Nj; East Brunswick, Nj; Middlesex, Nj; Trenton, Nj
SELECT DISTINCTROW [PTLFINAL - NEW DATA SET].ID, [PTLFINAL - NEW
DATA SET].DESTINATION, [PTLFINAL - NEW DATA SET].ZIP, [PTLFINAL -
NEW DATA SET].[TRAILER/CONTAINER], [PTLFINAL - NEW DATA
SET].STATUS, [PTLFINAL - NEW DATA SET].[SCH DATE], [PTLFINAL - NEW
DATA SET].[SCH TIME], [PTLFINAL - NEW DATA SET].RATE
FROM [PTLFINAL - NEW DATA SET]
WHERE (([PTLFINAL - NEW DATA SET].ZIP="where" Or [PTLFINAL - NEW
DATA SET].ZIP="11507" Or [PTLFINAL - NEW DATA SET].ZIP="11933" Or
[PTLFINAL - NEW DATA SET].ZIP="11101" Or [PTLFINAL - NEW DATA
SET].ZIP="11232" Or [PTLFINAL - NEW DATA SET].ZIP="11433" Or [PTLFINAL -
NEW DATA SET].ZIP="11520" Or [PTLFINAL - NEW DATA SET].ZIP="11803" Or
[PTLFINAL - NEW DATA SET].ZIP="07205" Or [PTLFINAL - NEW DATA
SET].ZIP="07105" Or [PTLFINAL - NEW DATA SET].ZIP="07305" Or [PTLFINAL -
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NEW DATA SET].ZIP="07114" Or [PTLFINAL - NEW DATA SET].ZIP="07074" Or
[PTLFINAL - NEW DATA SET].ZIP="07032" Or [PTLFINAL - NEW DATA
SET].ZIP="07072" Or [PTLFINAL - NEW DATA SET].ZIP="07026" Or [PTLFINAL -
NEW DATA SET].ZIP="07606" Or [PTLFINAL - NEW DATA SET].ZIP="07501" Or
[PTLFINAL - NEW DATA SET].ZIP="07503" Or [PTLFINAL - NEW DATA
SET].ZIP="07506" Or [PTLFINAL - NEW DATA SET].ZIP="07876" Or [PTLFINAL -
NEW DATA SET].ZIP="08902" Or [PTLFINAL - NEW DATA SET].ZIP="08810" Or
[PTLFINAL - NEW DATA SET].ZIP="08816" Or [PTLFINAL - NEW DATA
SET].ZIP="08846" Or [PTLFINAL - NEW DATA SET].ZIP="08638"))
ORDER BY [PTLFINAL - NEW DATA SET].ZIP, [PTLFINAL - NEW DATA
SET].[SCH DATE], [PTLFINAL - NEW DATA SET].[SCH TIME];
'DELIVERIES
SELECT DISTINCTROW [Group G].ID, [Group G].[TRAILER/CONTAINER],
[Group G].STATUS, [Group G].DESTINATION, [Group G].ZIP, [Group G].[SCH
DATE], [Group G].[SCH TIME], [Group G].RATE
FROM [Group G]
WHERE (([Group G].STATUS Like "D*"))
ORDER BY [Group G].[SCH DATE], [Group G].[SCH TIME];
'PICKUPS
SELECT DISTINCTROW [Group G].ID, [Group G].[TRAILER/CONTAINER],
[Group G].STATUS, [Group G].DESTINATION, [Group G].ZIP, [Group G].[SCH
DATE], [Group G].[SCH TIME], [Group G].RATE
FROM [Group G]
WHERE (([Group G].STATUS Like "P*"))
ORDER BY [Group G].[SCH DATE], [Group G].[SCH TIME];
'APPEND
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_PICKUP, RATE_DELIVERY )
SELECT DISTINCTROW [Group G Deliveries].ID, [Group G Pick-ups].ID, [Group G
Deliveries].[TRAILER/CONTAINER], [Group G Pick-ups].[TRAILER/CONTAINER],
[Group G Deliveries].DESTINATION, [Group G Deliveries].ZIP, [Group G Pick-
ups].DESTINATION, [Group G Pick-ups].ZIP, [Group G Deliveries].[SCH DATE],
[Group G Deliveries].[SCH TIME], [Group G Pick-ups].[SCH TIME], [Group G Pick-
ups].RATE, [Group G Deliveries].RATE
FROM [Group G Pick-ups] INNER JOIN [Group G Deliveries] ON [Group G Pick-
ups].[SCH DATE] = [Group G Deliveries].[SCH DATE]
WHERE ((([Group G Pick-ups]![SCH TIME]-[Group G Deliveries]![SCH
TIME])>180.72))
ORDER BY [Group G Deliveries].[SCH DATE], [Group G Deliveries].[SCH TIME],
[Group G Pick-ups].[SCH TIME];
END;
```

```
'ZONAL DIVISION 8
'Zonal Division 8 (Group H) consists of: Guiderland Center, Ny
SELECT DISTINCTROW [PTLFINAL - NEW DATA SET].ID, [PTLFINAL - NEW
DATA SET].DESTINATION, [PTLFINAL - NEW DATA SET].ZIP, [PTLFINAL -
NEW DATA SET].[TRAILER/CONTAINER], [PTLFINAL - NEW DATA
SET].STATUS, [PTLFINAL - NEW DATA SET].[SCH DATE], [PTLFINAL - NEW
DATA SET].[SCH TIME], [PTLFINAL - NEW DATA SET].RATE
FROM [PTLFINAL - NEW DATA SET]
WHERE (([PTLFINAL - NEW DATA SET].ZIP="where" Or [PTLFINAL - NEW
DATA SET].ZIP="12085"))
ORDER BY [PTLFINAL - NEW DATA SET].ZIP, [PTLFINAL - NEW DATA
SET].[SCH DATE], [PTLFINAL - NEW DATA SET].[SCH TIME];
'DELIVERIES
SELECT DISTINCTROW [Group H].ID, [Group H].[TRAILER/CONTAINER],
[Group H].STATUS, [Group H].DESTINATION, [Group H].ZIP, [Group H].[SCH
DATE], [Group H].[SCH TIME], [Group H].RATE
FROM [Group H]
WHERE (([Group H].STATUS Like "D*"))
ORDER BY [Group H].[SCH DATE], [Group H].[SCH TIME];
'PICKUPS
SELECT DISTINCTROW [Group H].ID, [Group H].[TRAILER/CONTAINER],
[Group H].STATUS, [Group H].DESTINATION, [Group H].ZIP, [Group H].[SCH
DATE], [Group H].[SCH TIME], [Group H].RATE
FROM [Group H]
WHERE (([Group H].STATUS Like "P*"))
ORDER BY [Group H].[SCH DATE], [Group H].[SCH TIME];
'APPEND
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_PICKUP, RATE_DELIVERY )
SELECT DISTINCTROW [Group H Deliveries].ID, [Group H Pickups].ID, [Group H
Deliveries].[TRAILER/CONTAINER], [Group H Pickups].[TRAILER/CONTAINER],
[Group H Deliveries].DESTINATION, [Group H Deliveries].ZIP, [Group H
Pickups].DESTINATION, [Group H Pickups].ZIP, [Group H Deliveries].[SCH DATE],
[Group H Deliveries].[SCH TIME], [Group H Pickups].[SCH TIME], [Group H
Pickups].RATE, [Group H Deliveries].RATE
FROM [Group H Pickups] INNER JOIN [Group H Deliveries] ON [Group H
Pickups].[SCH DATE] = [Group H Deliveries].[SCH DATE]
WHERE ((([Group H Pickups]![SCH TIME]-[Group H Deliveries]![SCH
TIME])>180.72))
ORDER BY [Group H Deliveries].[SCH DATE], [Group H Deliveries].[SCH TIME],
[Group H Pickups].[SCH TIME];
END;
```

```
'ZONAL DIVISION 9
'Zonal Division 9 (Group I) consists of: Cranston, Ri; Fall River, Ma; West Wareham, Ma
SELECT DISTINCTROW [PTLFINAL - NEW DATA SET].ID, [PTLFINAL - NEW
DATA SET].DESTINATION, [PTLFINAL - NEW DATA SET].ZIP, [PTLFINAL -
NEW DATA SET].[TRAILER/CONTAINER], [PTLFINAL - NEW DATA
SET].STATUS, [PTLFINAL - NEW DATA SET].[SCH DATE], [PTLFINAL - NEW
DATA SET].[SCH TIME], [PTLFINAL - NEW DATA SET].RATE
FROM [PTLFINAL - NEW DATA SET]
WHERE (([PTLFINAL - NEW DATA SET].ZIP="where" Or [PTLFINAL - NEW
DATA SET].ZIP="02920" Or [PTLFINAL - NEW DATA SET].ZIP="02722" Or
[PTLFINAL - NEW DATA SET].ZIP="02576"))
ORDER BY [PTLFINAL - NEW DATA SET].ZIP, [PTLFINAL - NEW DATA
SET].[SCH DATE], [PTLFINAL - NEW DATA SET].[SCH TIME];
'DELIVERIES
SELECT DISTINCTROW [Group I].ID, [Group I].[TRAILER/CONTAINER], [Group
I].STATUS, [Group I].DESTINATION, [Group I].ZIP, [Group I].[SCH DATE], [Group
I].[SCH TIME], [Group I].RATE
FROM [Group I]
WHERE (([Group I].STATUS Like "D*"))
ORDER BY [Group I].[SCH DATE], [Group I].[SCH TIME];
'PICKUPS
SELECT DISTINCTROW [Group I].ID, [Group I].[TRAILER/CONTAINER], [Group
I].STATUS, [Group I].DESTINATION, [Group I].ZIP, [Group I].[SCH DATE], [Group
I].[SCH TIME], [Group I].RATE
FROM [Group I]
WHERE (([Group I].STATUS Like "P*"))
ORDER BY [Group I].[SCH DATE], [Group I].[SCH TIME];
'APPEND
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group I Deliveries].ID, [Group I Pickups].ID, [Group I
Deliveries].[TRAILER/CONTAINER], [Group I Pickups].[TRAILER/CONTAINER],
[Group I Deliveries].DESTINATION, [Group I Deliveries].ZIP, [Group I
Pickups].DESTINATION, [Group I Pickups].ZIP, [Group I Deliveries].[SCH DATE],
[Group I Deliveries].[SCH TIME], [Group I Pickups].[SCH TIME], [Group I
Deliveries].RATE, [Group I Pickups].RATE
FROM [Group I Deliveries] INNER JOIN [Group I Pickups] ON [Group I
Deliveries].[SCH DATE] = [Group I Pickups].[SCH DATE]
WHERE ((([Group I Pickups]![SCH TIME]-[Group I Deliveries]![SCH
TIME])>180.72))
ORDER BY [Group I Deliveries].[SCH DATE], [Group I Deliveries].[SCH TIME],
[Group I Pickups].[SCH TIME]; END;
```

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'ZONAL DIVISION 10
'Zonal Division 10, 11, 12, 13, 14 are sub-divisions of the most centralized zone, Zone 7
'These sub-zones can overlap due to placement of other zones, for example, a delivery to
'Zone 3 or 8 will first be matched first with pickups in Zone 13 within Zone 7 (Due to
'minimization of repositioning distances) and if no match is found, then the heuristic will
'attempt the next possible zone within Zone 7.  Further, if no match is found, heuristic will
'match other zones within temporal constraints.
'Zonal Division 10 (Group J) consists of: Hillside, Nj; Newark, Nj; Jersey City, Nj;
'Kearny, Nj; Carlstadt, Nj; Garfield, Nj; South Hackensack, Nj; Paterson, Nj; Hawthorne,
'Nj; Succasunna, Nj; Moonachie, Nj
SELECT DISTINCTROW [PTLFINAL - NEW DATA SET].ID, [PTLFINAL - NEW
DATA SET].[TRAILER/CONTAINER], [PTLFINAL - NEW DATA SET].STATUS,
[PTLFINAL - NEW DATA SET].DESTINATION, [PTLFINAL - NEW DATA
SET].ZIP, [PTLFINAL - NEW DATA SET].[SCH DATE], [PTLFINAL - NEW DATA
SET].[SCH TIME], [PTLFINAL - NEW DATA SET].RATE
FROM [PTLFINAL - NEW DATA SET]
WHERE (([PTLFINAL - NEW DATA SET].ZIP="WHERE" Or [PTLFINAL - NEW
DATA SET].ZIP="07026" Or [PTLFINAL - NEW DATA SET].ZIP="07439" Or
[PTLFINAL - NEW DATA SET].ZIP="07501" Or [PTLFINAL - NEW DATA
SET].ZIP="07503" Or [PTLFINAL - NEW DATA SET].ZIP="07506" Or [PTLFINAL -
NEW DATA SET].ZIP="07606" Or [PTLFINAL - NEW DATA SET].ZIP="07876" Or
[PTLFINAL - NEW DATA SET].ZIP="07032" Or [PTLFINAL - NEW DATA
SET].ZIP="07105" Or [PTLFINAL - NEW DATA SET].ZIP="07205" Or [PTLFINAL -
NEW DATA SET].ZIP="07114" Or [PTLFINAL - NEW DATA SET].ZIP="07305" Or
[PTLFINAL - NEW DATA SET].ZIP="07072" Or [PTLFINAL - NEW DATA
SET].ZIP="07074"))
ORDER BY [PTLFINAL - NEW DATA SET].ZIP, [PTLFINAL - NEW DATA
SET].[SCH DATE], [PTLFINAL - NEW DATA SET].[SCH TIME];
'DELIVERIES
SELECT DISTINCTROW [Group J].ID, [Group J].[TRAILER/CONTAINER], [Group
J].STATUS, [Group J].DESTINATION, [Group J].ZIP, [Group J].[SCH DATE], [Group
J].[SCH TIME], [Group J].RATE
FROM [Group J]
WHERE (([Group J].STATUS Like "D*"))
ORDER BY [Group J].[SCH DATE], [Group J].[SCH TIME];
'PICKUPS
SELECT DISTINCTROW [Group J].ID, [Group J].[TRAILER/CONTAINER], [Group
J].STATUS, [Group J].DESTINATION, [Group J].ZIP, [Group J].[SCH DATE], [Group
J].[SCH TIME], [Group J].RATE
FROM [Group J]
WHERE (([Group J].STATUS Like "P*"))
ORDER BY [Group J].[SCH DATE], [Group J].[SCH TIME];

'ZONAL DIVISION 11 (NEW LONG ISLAND)
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'Zonal Division 11 (New Long Island) consists of: Brooklyn, Ny; Jamaica, Ny; Albertson,
'Ny; Freeport, Ny; Plainview, Ny; Calverton, Ny
SELECT DISTINCTROW [PTLFINAL - NEW DATA SET].ID, [PTLFINAL - NEW
DATA SET].[TRAILER/CONTAINER], [PTLFINAL - NEW DATA SET].STATUS,
[PTLFINAL - NEW DATA SET].DESTINATION, [PTLFINAL - NEW DATA
SET].ZIP, [PTLFINAL - NEW DATA SET].[SCH DATE], [PTLFINAL - NEW DATA
SET].[SCH TIME], [PTLFINAL - NEW DATA SET].RATE
FROM [PTLFINAL - NEW DATA SET]
WHERE (([PTLFINAL - NEW DATA SET].ZIP="where" Or [PTLFINAL - NEW
DATA SET].ZIP="11232" Or [PTLFINAL - NEW DATA SET].ZIP="11433" Or
[PTLFINAL - NEW DATA SET].ZIP="11507" Or [PTLFINAL - NEW DATA
SET].ZIP="11520" Or [PTLFINAL - NEW DATA SET].ZIP="11803" Or [PTLFINAL -
NEW DATA SET].ZIP="11933"))
ORDER BY [PTLFINAL - NEW DATA SET].ZIP, [PTLFINAL - NEW DATA
SET].[SCH DATE], [PTLFINAL - NEW DATA SET].[SCH TIME];
'DELIVERIES
SELECT DISTINCTROW [Zone 11 (New Long Island)].ID, [Zone 11 (New Long
Island)].[TRAILER/CONTAINER], [Zone 11 (New Long Island)].STATUS, [Zone 11
(New Long Island)].DESTINATION, [Zone 11 (New Long Island)].ZIP, [Zone 11 (New
Long Island)].[SCH DATE], [Zone 11 (New Long Island)].[SCH TIME], [Zone 11 (New
Long Island)].RATE
FROM [Zone 11 (New Long Island)]
WHERE (([Zone 11 (New Long Island)].STATUS Like "D*"))
ORDER BY [Zone 11 (New Long Island)].[SCH DATE], [Zone 11 (New Long
Island)].[SCH TIME];

'ZONAL DIVISION 12 (NEW MID-JERSEY)
'Zonal Division 12 (New Mid-Jersey) consists of: Trenton, Nj; Dayton, Nj; East
'Brunswick, Nj; Middlesex, Nj; North Brunswick, Nj
SELECT DISTINCTROW [PTLFINAL - NEW DATA SET].ID, [PTLFINAL - NEW
DATA SET].[TRAILER/CONTAINER], [PTLFINAL - NEW DATA SET].STATUS,
[PTLFINAL - NEW DATA SET].DESTINATION, [PTLFINAL - NEW DATA
SET].ZIP, [PTLFINAL - NEW DATA SET].[SCH DATE], [PTLFINAL - NEW DATA
SET].[SCH TIME], [PTLFINAL - NEW DATA SET].RATE
FROM [PTLFINAL - NEW DATA SET]
WHERE (([PTLFINAL - NEW DATA SET].ZIP="where" Or [PTLFINAL - NEW
DATA SET].ZIP="08638" Or [PTLFINAL - NEW DATA SET].ZIP="08810" Or
[PTLFINAL - NEW DATA SET].ZIP="08816" Or [PTLFINAL - NEW DATA
SET].ZIP="08846" Or [PTLFINAL - NEW DATA SET].ZIP="08902"))
ORDER BY [PTLFINAL - NEW DATA SET].ZIP, [PTLFINAL - NEW DATA
SET].[SCH DATE], [PTLFINAL - NEW DATA SET].[SCH TIME];
'DELIVERIES
SELECT DISTINCTROW [Zone 12 (New Mid-Jersey)].ID, [Zone 12 (New Mid-
Jersey)].[TRAILER/CONTAINER], [Zone 12 (New Mid-Jersey)].STATUS, [Zone 12
(New Mid-Jersey)].DESTINATION, [Zone 12 (New Mid-Jersey)].ZIP, [Zone 12 (New
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Mid-Jersey)].[SCH DATE], [Zone 12 (New Mid-Jersey)].[SCH TIME], [Zone 12 (New
Mid-Jersey)].RATE
FROM [Zone 12 (New Mid-Jersey)]
WHERE (([Zone 12 (New Mid-Jersey)].STATUS Like "D*"))
ORDER BY [Zone 12 (New Mid-Jersey)].[SCH DATE], [Zone 12 (New Mid-
Jersey)].[SCH TIME];

'ZONAL DIVISION 13 (NEW N. JERSEY)
'Zonal Division 13 (New N. Jersey) consists of: Succasunna, Nj; Ogdensburg, Nj;
'Paterson, Nj; Hawthorne, Nj
SELECT DISTINCTROW [PTLFINAL - NEW DATA SET].ID, [PTLFINAL - NEW
DATA SET].[TRAILER/CONTAINER], [PTLFINAL - NEW DATA SET].STATUS,
[PTLFINAL - NEW DATA SET].DESTINATION, [PTLFINAL - NEW DATA
SET].ZIP, [PTLFINAL - NEW DATA SET].[SCH DATE], [PTLFINAL - NEW DATA
SET].[SCH TIME], [PTLFINAL - NEW DATA SET].RATE
FROM [PTLFINAL - NEW DATA SET]
WHERE (([PTLFINAL - NEW DATA SET].ZIP="where" Or [PTLFINAL - NEW
DATA SET].ZIP="07439" Or [PTLFINAL - NEW DATA SET].ZIP="07501" Or
[PTLFINAL - NEW DATA SET].ZIP="07503" Or [PTLFINAL - NEW DATA
SET].ZIP="07506" Or [PTLFINAL - NEW DATA SET].ZIP="07876"))
ORDER BY [PTLFINAL - NEW DATA SET].ZIP, [PTLFINAL - NEW DATA
SET].[SCH DATE], [PTLFINAL - NEW DATA SET].[SCH TIME];
'DELIVERIES
SELECT DISTINCTROW [Zone 13 (New N Jersey)].ID, [Zone 13 (New N
Jersey)].[TRAILER/CONTAINER], [Zone 13 (New N Jersey)].STATUS, [Zone 13 (New
N Jersey)].DESTINATION, [Zone 13 (New N Jersey)].ZIP, [Zone 13 (New N
Jersey)].[SCH DATE], [Zone 13 (New N Jersey)].[SCH TIME], [Zone 13 (New N
Jersey)].RATE
FROM [Zone 13 (New N Jersey)]
WHERE (([Zone 13 (New N Jersey)].STATUS Like "d*"));

'ZONAL DIVISION 14 (NEW NEWARK)
'Zonal Division (New Newark) consists of: Newark, Nj; South hackensack, Nj; Garfield,
'Nj; Kearny, Nj; Carlstadt, Nj; Moonachie, Nj; Hillside, Nj; Jersey City, Nj
SELECT DISTINCTROW [PTLFINAL - NEW DATA SET].ID, [PTLFINAL - NEW
DATA SET].[TRAILER/CONTAINER], [PTLFINAL - NEW DATA SET].STATUS,
[PTLFINAL - NEW DATA SET].DESTINATION, [PTLFINAL - NEW DATA
SET].ZIP, [PTLFINAL - NEW DATA SET].[SCH DATE], [PTLFINAL - NEW DATA
SET].[SCH TIME], [PTLFINAL - NEW DATA SET].RATE
FROM [PTLFINAL - NEW DATA SET]
WHERE (([PTLFINAL - NEW DATA SET].ZIP="where" Or [PTLFINAL - NEW
DATA SET].ZIP="07606" Or [PTLFINAL - NEW DATA SET].ZIP="07026" Or
[PTLFINAL - NEW DATA SET].ZIP="07032" Or [PTLFINAL - NEW DATA
SET].ZIP="07072" Or [PTLFINAL - NEW DATA SET].ZIP="07074" Or [PTLFINAL -
NEW DATA SET].ZIP="07105" Or [PTLFINAL - NEW DATA SET].ZIP="07114" Or
```

```
[PTLFINAL - NEW DATA SET].ZIP="07205" Or [PTLFINAL - NEW DATA
SET].ZIP="07305"))
ORDER BY [PTLFINAL - NEW DATA SET].ZIP, [PTLFINAL - NEW DATA
SET].[SCH DATE], [PTLFINAL - NEW DATA SET].[SCH TIME];
'DELIVERIES
SELECT DISTINCTROW [Zone 14 (New Newark)].ID, [Zone 14 (New
Newark)].[TRAILER/CONTAINER], [Zone 14 (New Newark)].STATUS, [Zone 14
(New Newark)].DESTINATION, [Zone 14 (New Newark)].ZIP, [Zone 14 (New
Newark)].[SCH DATE], [Zone 14 (New Newark)].[SCH TIME], [Zone 14 (New
Newark)].RATE
FROM [Zone 14 (New Newark)]
WHERE (([Zone 14 (New Newark)].STATUS Like "D*"))
ORDER BY [Zone 14 (New Newark)].[SCH DATE], [Zone 14 (New Newark)].[SCH
TIME];
'PICKUPS
SELECT DISTINCTROW [Zone 14 (New Newark)].ID, [Zone 14 (New
Newark)].[TRAILER/CONTAINER], [Zone 14 (New Newark)].STATUS, [Zone 14
(New Newark)].DESTINATION, [Zone 14 (New Newark)].ZIP, [Zone 14 (New
Newark)].[SCH DATE], [Zone 14 (New Newark)].[SCH TIME], [Zone 14 (New
Newark)].RATE
FROM [Zone 14 (New Newark)]
WHERE (([Zone 14 (New Newark)].STATUS Like "P*"))
ORDER BY [Zone 14 (New Newark)].[SCH DATE], [Zone 14 (New Newark)].[SCH
TIME];

'The Program is designed to handle the sub-divisions of the centralized zone
'Zone 14/11 Pickup/Delivery Match
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Zone 11 (New Long Island) Deliveries].ID, [Zone 14 (New
Newark) Pickups].ID, [Zone 11 (New Long Island)
Deliveries].[TRAILER/CONTAINER], [Zone 14 (New Newark)
Pickups].[TRAILER/CONTAINER], [Zone 11 (New Long Island)
Deliveries].DESTINATION, [Zone 11 (New Long Island) Deliveries].ZIP, [Zone 14
(New Newark) Pickups].DESTINATION, [Zone 14 (New Newark) Pickups].ZIP, [Zone
11 (New Long Island) Deliveries].[SCH DATE], [Zone 11 (New Long Island)
Deliveries].[SCH TIME], [Zone 14 (New Newark) Pickups].[SCH TIME], [Zone 11
(New Long Island) Deliveries].RATE, [Zone 14 (New Newark) Pickups].RATE
FROM [Zone 11 (New Long Island) Deliveries] INNER JOIN [Zone 14 (New Newark)
Pickups] ON [Zone 11 (New Long Island) Deliveries].[SCH DATE] = [Zone 14 (New
Newark) Pickups].[SCH DATE]
```

```
WHERE ((([Zone 14 (New Newark) Pickups]![SCH TIME]-[Zone 11 (New Long Island)
Deliveries]![SCH TIME])>180.72))
ORDER BY [Zone 11 (New Long Island) Deliveries].[SCH DATE], [Zone 11 (New
Long Island) Deliveries].[SCH TIME], [Zone 14 (New Newark) Pickups].[SCH TIME];
END;

'Zone 14/12 Pickup/Delivery Match
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Zone 12 (New Mid-Jersey) Deliveries].ID, [Zone 14 (New
Newark) Pickups].ID, [Zone 12 (New Mid-Jersey)
Deliveries].[TRAILER/CONTAINER], [Zone 14 (New Newark)
Pickups].[TRAILER/CONTAINER], [Zone 12 (New Mid-Jersey)
Deliveries].DESTINATION, [Zone 12 (New Mid-Jersey) Deliveries].ZIP, [Zone 14 (New
Newark) Pickups].DESTINATION, [Zone 14 (New Newark) Pickups].ZIP, [Zone 12
(New Mid-Jersey) Deliveries].[SCH DATE], [Zone 12 (New Mid-Jersey)
Deliveries].[SCH TIME], [Zone 14 (New Newark) Pickups].[SCH TIME], [Zone 12
(New Mid-Jersey) Deliveries].RATE, [Zone 14 (New Newark) Pickups].RATE
FROM [Zone 14 (New Newark) Pickups] INNER JOIN [Zone 12 (New Mid-Jersey)
Deliveries] ON [Zone 14 (New Newark) Pickups].[SCH DATE] = [Zone 12 (New Mid-
Jersey) Deliveries].[SCH DATE]
WHERE ((([Zone 14 (New Newark) Pickups]![SCH TIME]-[Zone 12 (New Mid-Jersey)
Deliveries]![SCH TIME])>180.72))
ORDER BY [Zone 12 (New Mid-Jersey) Deliveries].[SCH DATE], [Zone 12 (New Mid-
Jersey) Deliveries].[SCH TIME], [Zone 14 (New Newark) Pickups].[SCH TIME];
END;

'Zone 14/13 Pickup/Delivery Match
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY,
DESTINATION_PICKUP, ZIP_DELIVERY, ZIP_PICKUP, [SCH
DATE_DELIVERY], [SCH TIME_DELIVERY], [SCH TIME_PICKUP],
RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Zone 13 (New N Jersey) Deliveries].ID, [Zone 14 (New
Newark) Pickups].ID, [Zone 13 (New N Jersey) Deliveries].[TRAILER/CONTAINER],
[Zone 14 (New Newark) Pickups].[TRAILER/CONTAINER], [Zone 13 (New N Jersey)
Deliveries].DESTINATION, [Zone 14 (New Newark) Pickups].DESTINATION, [Zone
13 (New N Jersey) Deliveries].ZIP, [Zone 14 (New Newark) Pickups].ZIP, [Zone 13
(New N Jersey) Deliveries].[SCH DATE], [Zone 13 (New N Jersey) Deliveries].[SCH
TIME], [Zone 14 (New Newark) Pickups].[SCH TIME], [Zone 13 (New N Jersey)
Deliveries].RATE, [Zone 14 (New Newark) Pickups].RATE
```

```
FROM [Zone 14 (New Newark) Pickups] INNER JOIN [Zone 13 (New N Jersey)
Deliveries] ON [Zone 14 (New Newark) Pickups].[SCH DATE] = [Zone 13 (New N
Jersey) Deliveries].[SCH DATE]
WHERE ((([Zone 14 (New Newark) Pickups]![SCH TIME]-[Zone 13 (New N Jersey)
Deliveries]![SCH TIME])>180.72))
ORDER BY [Zone 13 (New N Jersey) Deliveries].[SCH DATE], [Zone 13 (New N
Jersey) Deliveries].[SCH TIME], [Zone 14 (New Newark) Pickups].[SCH TIME];
END;

'Zone 3 and 10 (Newark) Zipcode Match
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_PICKUP, RATE_DELIVERY )
SELECT DISTINCTROW [Group C Deliveries].ID, [Group J Pickups].ID, [Group C
Deliveries].[TRAILER/CONTAINER], [Group J Pickups].[TRAILER/CONTAINER],
[Group C Deliveries].DESTINATION, [Group C Deliveries].ZIP, [Group J
Pickups].DESTINATION, [Group J Pickups].ZIP, [Group C Deliveries].[SCH DATE],
[Group C Deliveries].[SCH TIME], [Group J Pickups].[SCH TIME], [Group J
Pickups].RATE, [Group C Deliveries].RATE
FROM [Group J Pickups] INNER JOIN [Group C Deliveries] ON [Group J
Pickups].[SCH DATE] = [Group C Deliveries].[SCH DATE]
WHERE ((([Group J Pickups]![SCH TIME]-[Group C Deliveries]![SCH
TIME])>386.67))
ORDER BY [Group C Deliveries].[SCH DATE], [Group C Deliveries].[SCH TIME],
[Group J Pickups].[SCH TIME];
END;

'Zone 5 and 6 Zipcode Match
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_PICKUP, RATE_DELIVERY )
SELECT DISTINCTROW [Group E Deliveries].ID, [Group F Pick-ups].ID, [Group E
Deliveries].[TRAILER/CONTAINER], [Group F Pick-ups].[TRAILER/CONTAINER],
[Group E Deliveries].DESTINATION, [Group E Deliveries].ZIP, [Group F Pick-
ups].DESTINATION, [Group F Pick-ups].ZIP, [Group E Deliveries].[SCH DATE],
[Group E Deliveries].[SCH TIME], [Group F Pick-ups].[SCH TIME], [Group F Pick-
ups].RATE, [Group E Deliveries].RATE
FROM [Group F Pick-ups] INNER JOIN [Group E Deliveries] ON [Group F Pick-
ups].[SCH DATE] = [Group E Deliveries].[SCH DATE]
WHERE ((([Group F Pick-ups]![SCH TIME]-[Group E Deliveries]![SCH TIME])>116))
```

```
ORDER BY [Group E Deliveries].[SCH DATE], [Group E Deliveries].[SCH TIME],
[Group F Pick-ups].[SCH TIME];
END;

'Zone 9 and 2 Zipcode Match
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_PICKUP, RATE_DELIVERY )
SELECT DISTINCTROW [Group I Deliveries].ID, [Group B Pick-ups].ID, [Group I
Deliveries].[TRAILER/CONTAINER], [Group B Pick-ups].[TRAILER/CONTAINER],
[Group I Deliveries].DESTINATION, [Group I Deliveries].ZIP, [Group B Pick-
ups].DESTINATION, [Group B Pick-ups].ZIP, [Group I Deliveries].[SCH DATE],
[Group I Deliveries].[SCH TIME], [Group B Pick-ups].[SCH TIME], [Group B Pick-
ups].RATE, [Group I Deliveries].RATE
FROM [Group B Pick-ups] INNER JOIN [Group I Deliveries] ON [Group B Pick-
ups].[SCH DATE] = [Group I Deliveries].[SCH DATE]
WHERE ((([Group B Pick-ups]![SCH TIME]-[Group I Deliveries]![SCH
TIME])>286.67))
ORDER BY [Group I Deliveries].[SCH DATE], [Group I Deliveries].[SCH TIME],
[Group B Pick-ups].[SCH TIME];
END;

'The following are the rest of the matches. The heuristic was originally designed just to
'match feasible matches within temporal and spatial constraints. However if no feasible
'matches were found, in order to make this a heuristic, the model must match the 'no
'matches' to all of resulting zones. The specific sort order routine is sefined by the
'constraints and initiated through the Macro.
'ZONE 1/2
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group A Deliveries].ID, [Group B Pick-ups].ID, [Group A
Deliveries].[TRAILER/CONTAINER], [Group B Pick-ups].[TRAILER/CONTAINER],
[Group A Deliveries].DESTINATION, [Group A Deliveries].ZIP, [Group B Pick-
ups].DESTINATION, [Group B Pick-ups].ZIP, [Group A Deliveries].[SCH DATE],
[Group A Deliveries].[SCH TIME], [Group B Pick-ups].[SCH TIME], [Group A
Deliveries].RATE, [Group B Pick-ups].RATE
FROM [Group B Pick-ups] INNER JOIN [Group A Deliveries] ON [Group B Pick-
ups].[SCH DATE] = [Group A Deliveries].[SCH DATE]
WHERE ((([Group B Pick-ups]![SCH TIME]-[Group A Deliveries]![SCH
TIME])>180.))
```

```
ORDER BY [Group A Deliveries].[SCH DATE], [Group A Deliveries].[SCH TIME],
[Group B Pick-ups].[SCH TIME];
END;

'ZONE 1/3
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group A Deliveries].ID, [Group C Pick-ups].ID, [Group A
Deliveries].[TRAILER/CONTAINER], [Group C Pick-ups].[TRAILER/CONTAINER],
[Group A Deliveries].DESTINATION, [Group A Deliveries].ZIP, [Group C Pick-
ups].DESTINATION, [Group C Pick-ups].ZIP, [Group A Deliveries].[SCH DATE],
[Group A Deliveries].[SCH TIME], [Group C Pick-ups].[SCH TIME], [Group A
Deliveries].RATE, [Group C Pick-ups].RATE
FROM [Group A Deliveries] INNER JOIN [Group C Pick-ups] ON [Group A
Deliveries].[SCH DATE] = [Group C Pick-ups].[SCH DATE]
WHERE ((([Group C Pick-ups]![SCH TIME]-[Group A Deliveries]![SCH
TIME])>386.67))
ORDER BY [Group A Deliveries].[SCH DATE], [Group A Deliveries].[SCH TIME],
[Group C Pick-ups].[SCH TIME];
END;

'ZONE 1/4
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group A Deliveries].ID, [Group D Pick-ups].ID, [Group A
Deliveries].[TRAILER/CONTAINER], [Group D Pick-ups].[TRAILER/CONTAINER],
[Group A Deliveries].DESTINATION, [Group A Deliveries].ZIP, [Group D Pick-
ups].DESTINATION, [Group D Pick-ups].ZIP, [Group A Deliveries].[SCH DATE],
[Group A Deliveries].[SCH TIME], [Group D Pick-ups].[SCH TIME], [Group A
Deliveries].RATE, [Group D Pick-ups].RATE
FROM [Group D Pick-ups] INNER JOIN [Group A Deliveries] ON [Group D Pick-
ups].[SCH DATE] = [Group A Deliveries].[SCH DATE]
WHERE ((([Group D Pick-ups]![SCH TIME]-[Group A Deliveries]![SCH
TIME])>560.))
ORDER BY [Group A Deliveries].[SCH DATE], [Group A Deliveries].[SCH TIME],
[Group D Pick-ups].[SCH TIME];
END;
```

```
'ZONE 1/5
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group A Deliveries].ID, [Group E Pick-ups].ID, [Group A
Deliveries].[TRAILER/CONTAINER], [Group E Pick-ups].[TRAILER/CONTAINER],
[Group A Deliveries].DESTINATION, [Group A Deliveries].ZIP, [Group E Pick-
ups].DESTINATION, [Group E Pick-ups].ZIP, [Group A Deliveries].[SCH DATE],
[Group A Deliveries].[SCH TIME], [Group E Pick-ups].[SCH TIME], [Group A
Deliveries].RATE, [Group E Pick-ups].RATE
FROM [Group E Pick-ups] INNER JOIN [Group A Deliveries] ON [Group E Pick-
ups].[SCH DATE] = [Group A Deliveries].[SCH DATE]
WHERE ((([Group E Pick-ups]![SCH TIME]-[Group A Deliveries]![SCH
TIME])>666.67))
ORDER BY [Group A Deliveries].[SCH DATE], [Group A Deliveries].[SCH TIME],
[Group E Pick-ups].[SCH TIME];
END;

'ZONE 1/6
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group A Deliveries].ID, [Group F Pick-ups].ID, [Group A
Deliveries].[TRAILER/CONTAINER], [Group F Pick-ups].[TRAILER/CONTAINER],
[Group A Deliveries].DESTINATION, [Group A Deliveries].ZIP, [Group F Pick-
ups].DESTINATION, [Group F Pick-ups].ZIP, [Group A Deliveries].[SCH DATE],
[Group A Deliveries].[SCH TIME], [Group F Pick-ups].[SCH TIME], [Group A
Deliveries].RATE, [Group F Pick-ups].RATE
FROM [Group A Deliveries] INNER JOIN [Group F Pick-ups] ON [Group A
Deliveries].[SCH DATE] = [Group F Pick-ups].[SCH DATE]
WHERE ((([Group F Pick-ups]![SCH TIME]-[Group A Deliveries]![SCH
TIME])>540.))
ORDER BY [Group A Deliveries].[SCH DATE], [Group A Deliveries].[SCH TIME],
[Group F Pick-ups].[SCH TIME];
END;

'ZONE 1/7
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
```

```
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group A Deliveries].ID, [Group G Pick-ups].ID, [Group A
Deliveries].[TRAILER/CONTAINER], [Group G Pick-ups].[TRAILER/CONTAINER],
[Group A Deliveries].DESTINATION, [Group A Deliveries].ZIP, [Group G Pick-
ups].DESTINATION, [Group G Pick-ups].ZIP, [Group A Deliveries].[SCH DATE],
[Group A Deliveries].[SCH TIME], [Group G Pick-ups].[SCH TIME], [Group A
Deliveries].RATE, [Group G Pick-ups].RATE
FROM [Group A Deliveries] INNER JOIN [Group G Pick-ups] ON [Group A
Deliveries].[SCH DATE] = [Group G Pick-ups].[SCH DATE]
WHERE ((([Group G Pick-ups]![SCH TIME]-[Group A Deliveries]![SCH
TIME])>393.33))
ORDER BY [Group A Deliveries].[SCH DATE];
END;

'ZONE 1/8
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group A Deliveries].ID, [Group H Pickups].ID, [Group A
Deliveries].[TRAILER/CONTAINER], [Group H Pickups].[TRAILER/CONTAINER],
[Group A Deliveries].DESTINATION, [Group A Deliveries].ZIP, [Group H
Pickups].DESTINATION, [Group H Pickups].ZIP, [Group A Deliveries].[SCH DATE],
[Group A Deliveries].[SCH TIME], [Group H Pickups].[SCH TIME], [Group A
Deliveries].RATE, [Group H Pickups].RATE
FROM [Group H Pickups] INNER JOIN [Group A Deliveries] ON [Group H
Pickups].[SCH DATE] = [Group A Deliveries].[SCH DATE]
WHERE ((([Group H Pickups]![SCH TIME]-[Group A Deliveries]![SCH
TIME])>213.33))
ORDER BY [Group A Deliveries].[SCH DATE], [Group A Deliveries].[SCH TIME],
[Group H Pickups].[SCH TIME];
END;

'ZONE 1/9
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group A Deliveries].ID, [Group I Pickups].ID, [Group A
Deliveries].[TRAILER/CONTAINER], [Group I Pickups].[TRAILER/CONTAINER],
[Group A Deliveries].DESTINATION, [Group A Deliveries].ZIP, [Group I
Pickups].DESTINATION, [Group I Pickups].ZIP, [Group A Deliveries].[SCH DATE],
```

```
[Group A Deliveries].[SCH TIME], [Group I Pickups].[SCH TIME], [Group A
Deliveries].RATE, [Group I Pickups].RATE
FROM [Group I Pickups] INNER JOIN [Group A Deliveries] ON [Group I
Pickups].[SCH DATE] = [Group A Deliveries].[SCH DATE]
WHERE ((([Group I Pickups]![SCH TIME]-[Group A Deliveries]![SCH
TIME])>326.67))
ORDER BY [Group A Deliveries].[SCH DATE], [Group A Deliveries].[SCH TIME],
[Group I Pickups].[SCH TIME];
END;

'ZONE 2/1
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group B Deliveries].ID, [Group A Pick-ups].ID, [Group B
Deliveries].[TRAILER/CONTAINER], [Group A Pick-ups].[TRAILER/CONTAINER],
[Group B Deliveries].DESTINATION, [Group B Deliveries].ZIP, [Group A Pick-
ups].DESTINATION, [Group A Pick-ups].ZIP, [Group B Deliveries].[SCH DATE],
[Group B Deliveries].[SCH TIME], [Group A Pick-ups].[SCH TIME], [Group B
Deliveries].RATE, [Group A Pick-ups].RATE
FROM [Group A Pick-ups] INNER JOIN [Group B Deliveries] ON [Group A Pick-
ups].[SCH DATE] = [Group B Deliveries].[SCH DATE]
WHERE ((([Group A Pick-ups]![SCH TIME]-[Group B Deliveries]![SCH
TIME])>180.))
ORDER BY [Group B Deliveries].[SCH TIME], [Group A Pick-ups].[SCH TIME];
END;

'ZONE 2/3
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group B Deliveries].ID, [Group C Pick-ups].ID, [Group B
Deliveries].[TRAILER/CONTAINER], [Group C Pick-ups].[TRAILER/CONTAINER],
[Group B Deliveries].DESTINATION, [Group B Deliveries].ZIP, [Group C Pick-
ups].DESTINATION, [Group C Pick-ups].ZIP, [Group B Deliveries].[SCH DATE],
[Group B Deliveries].[SCH TIME], [Group C Pick-ups].[SCH TIME], [Group B
Deliveries].RATE, [Group C Pick-ups].RATE
FROM [Group C Pick-ups] INNER JOIN [Group B Deliveries] ON [Group C Pick-
ups].[SCH DATE] = [Group B Deliveries].[SCH DATE]
WHERE ((([Group C Pick-ups]![SCH TIME]-[Group B Deliveries]![SCH
TIME])>353.33))
```

```
ORDER BY [Group B Deliveries].[SCH DATE], [Group B Deliveries].[SCH TIME],
[Group C Pick-ups].[SCH TIME];
END;

'ZONE 2/4
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group B Deliveries].ID, [Group D Pick-ups].ID, [Group B
Deliveries].[TRAILER/CONTAINER], [Group D Pick-ups].[TRAILER/CONTAINER],
[Group B Deliveries].DESTINATION, [Group B Deliveries].ZIP, [Group D Pick-
ups].DESTINATION, [Group D Pick-ups].ZIP, [Group B Deliveries].[SCH DATE],
[Group B Deliveries].[SCH TIME], [Group D Pick-ups].[SCH TIME], [Group B
Deliveries].RATE, [Group D Pick-ups].RATE
FROM [Group B Deliveries] INNER JOIN [Group D Pick-ups] ON [Group B
Deliveries].[SCH DATE] = [Group D Pick-ups].[SCH DATE]
WHERE ((([Group D Pick-ups]![SCH TIME]-[Group B Deliveries]![SCH
TIME])>446.67))
ORDER BY [Group B Deliveries].[SCH DATE];
END;

'ZONE 2/5
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group B Deliveries].ID, [Group E Pick-ups].ID, [Group B
Deliveries].[TRAILER/CONTAINER], [Group E Pick-ups].[TRAILER/CONTAINER],
[Group B Deliveries].DESTINATION, [Group B Deliveries].ZIP, [Group E Pick-
ups].DESTINATION, [Group E Pick-ups].ZIP, [Group B Deliveries].[SCH DATE],
[Group B Deliveries].[SCH TIME], [Group E Pick-ups].[SCH TIME], [Group B
Deliveries].RATE, [Group E Pick-ups].RATE
FROM [Group B Deliveries] INNER JOIN [Group E Pick-ups] ON [Group B
Deliveries].[SCH DATE] = [Group E Pick-ups].[SCH DATE]
WHERE ((([Group E Pick-ups]![SCH TIME]-[Group B Deliveries]![SCH
TIME])>553.33))
ORDER BY [Group B Deliveries].[SCH DATE], [Group B Deliveries].[SCH TIME],
[Group E Pick-ups].[SCH TIME];
END;

'ZONE 2/6
```

```
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group B Deliveries].ID, [Group F Pick-ups].ID, [Group B
Deliveries].[TRAILER/CONTAINER], [Group F Pick-ups].[TRAILER/CONTAINER],
[Group B Deliveries].DESTINATION, [Group B Deliveries].ZIP, [Group F Pick-
ups].DESTINATION, [Group F Pick-ups].ZIP, [Group B Deliveries].[SCH DATE],
[Group B Deliveries].[SCH TIME], [Group F Pick-ups].[SCH TIME], [Group B
Deliveries].RATE, [Group F Pick-ups].RATE
FROM [Group F Pick-ups] INNER JOIN [Group B Deliveries] ON [Group F Pick-
ups].[SCH DATE] = [Group B Deliveries].[SCH DATE]
WHERE ((([Group F Pick-ups]![SCH TIME]-[Group B Deliveries]![SCH
TIME])>426.67))
ORDER BY [Group B Deliveries].[SCH DATE];
END;

'ZONE 2/7
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY],
RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group B Deliveries].ID, [Group G Pick-ups].ID, [Group B
Deliveries].[TRAILER/CONTAINER], [Group G Pick-ups].[TRAILER/CONTAINER],
[Group B Deliveries].DESTINATION, [Group B Deliveries].ZIP, [Group G Pick-
ups].DESTINATION, [Group G Pick-ups].ZIP, [Group B Deliveries].[SCH DATE],
[Group B Deliveries].RATE, [Group G Pick-ups].RATE
FROM [Group G Pick-ups] INNER JOIN [Group B Deliveries] ON [Group G Pick-
ups].[SCH DATE] = [Group B Deliveries].[SCH DATE]
WHERE ((([Group G Pick-ups]![SCH TIME]-[Group B Deliveries]![SCH
TIME])>360.))
ORDER BY [Group B Deliveries].[SCH DATE], [Group B Deliveries].[SCH TIME],
[Group G Pick-ups].[SCH TIME];
END;

'ZONE 2/8
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group B Deliveries].ID, [Group H Pickups].ID, [Group B
Deliveries].[TRAILER/CONTAINER], [Group H Pickups].[TRAILER/CONTAINER],
```

```
[Group B Deliveries].DESTINATION, [Group B Deliveries].ZIP, [Group H
Pickups].DESTINATION, [Group H Pickups].ZIP, [Group H Pickups].[SCH DATE],
[Group B Deliveries].[SCH TIME], [Group H Pickups].[SCH TIME], [Group B
Deliveries].RATE, [Group H Pickups].RATE
FROM [Group H Pickups] INNER JOIN [Group B Deliveries] ON [Group H
Pickups].[SCH DATE] = [Group B Deliveries].[SCH DATE]
WHERE ((([Group H Pickups]![SCH TIME]-[Group B Deliveries]![SCH
TIME])>253.33))
ORDER BY [Group H Pickups].[SCH DATE], [Group B Deliveries].[SCH TIME],
[Group H Pickups].[SCH TIME];
END;

'ZONE 2/9
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group B Deliveries].ID, [Group I Pickups].ID, [Group B
Deliveries].[TRAILER/CONTAINER], [Group I Pickups].[TRAILER/CONTAINER],
[Group B Deliveries].DESTINATION, [Group B Deliveries].ZIP, [Group I
Pickups].DESTINATION, [Group I Pickups].ZIP, [Group B Deliveries].[SCH DATE],
[Group B Deliveries].[SCH TIME], [Group I Pickups].[SCH TIME], [Group B
Deliveries].RATE, [Group I Pickups].RATE
FROM [Group I Pickups] INNER JOIN [Group B Deliveries] ON [Group I
Pickups].[SCH DATE] = [Group B Deliveries].[SCH DATE]
WHERE ((([Group I Pickups]![SCH TIME]-[Group B Deliveries]![SCH
TIME])>286.67))
ORDER BY [Group B Deliveries].[SCH DATE], [Group B Deliveries].[SCH TIME],
[Group I Pickups].[SCH TIME];
END;

'ZONE 3/1
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group C Deliveries].ID, [Group A Pick-ups].ID, [Group C
Deliveries].[TRAILER/CONTAINER], [Group A Pick-ups].[TRAILER/CONTAINER],
[Group C Deliveries].DESTINATION, [Group C Deliveries].ZIP, [Group A Pick-
ups].DESTINATION, [Group A Pick-ups].ZIP, [Group C Deliveries].[SCH DATE],
[Group C Deliveries].[SCH TIME], [Group A Pick-ups].[SCH TIME], [Group C
Deliveries].RATE, [Group A Pick-ups].RATE
```

```
FROM [Group C Deliveries] INNER JOIN [Group A Pick-ups] ON [Group C
Deliveries].[SCH DATE] = [Group A Pick-ups].[SCH DATE]
WHERE ((([Group A Pick-ups]![SCH TIME]-[Group C Deliveries]![SCH
TIME])>386.67))
ORDER BY [Group C Deliveries].[SCH DATE], [Group C Deliveries].[SCH TIME],
[Group A Pick-ups].[SCH TIME];
END;

'ZONE 3/2
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group C Deliveries].ID, [Group B Pick-ups].ID, [Group C
Deliveries].[TRAILER/CONTAINER], [Group B Pick-ups].[TRAILER/CONTAINER],
[Group C Deliveries].DESTINATION, [Group C Deliveries].ZIP, [Group B Pick-
ups].DESTINATION, [Group B Pick-ups].ZIP, [Group C Deliveries].[SCH DATE],
[Group C Deliveries].[SCH TIME], [Group B Pick-ups].[SCH TIME], [Group C
Deliveries].RATE, [Group B Pick-ups].RATE
FROM [Group B Pick-ups] INNER JOIN [Group C Deliveries] ON [Group B Pick-
ups].[SCH DATE] = [Group C Deliveries].[SCH DATE]
WHERE ((([Group B Pick-ups]![SCH TIME]-[Group C Deliveries]![SCH
TIME])>353.33))
ORDER BY [Group C Deliveries].[SCH DATE];
END;

'ZONE 3/4
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group C Deliveries].ID, [Group D Pick-ups].ID, [Group C
Deliveries].[TRAILER/CONTAINER], [Group D Pick-ups].[TRAILER/CONTAINER],
[Group C Deliveries].DESTINATION, [Group C Deliveries].ZIP, [Group D Pick-
ups].DESTINATION, [Group D Pick-ups].ZIP, [Group C Deliveries].[SCH DATE],
[Group C Deliveries].[SCH TIME], [Group D Pick-ups].[SCH TIME], [Group C
Deliveries].RATE, [Group D Pick-ups].RATE
FROM [Group D Pick-ups] INNER JOIN [Group C Deliveries] ON [Group D Pick-
ups].[SCH DATE] = [Group C Deliveries].[SCH DATE]
WHERE ((([Group D Pick-ups]![SCH TIME]-[Group C Deliveries]![SCH
TIME])>286.67))
ORDER BY [Group C Deliveries].[SCH DATE];
END;
```

```
'ZONE 3/5
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group C Deliveries].ID, [Group E Pick-ups].ID, [Group C
Deliveries].[TRAILER/CONTAINER], [Group E Pick-ups].[TRAILER/CONTAINER],
[Group C Deliveries].DESTINATION, [Group C Deliveries].ZIP, [Group E Pick-
ups].DESTINATION, [Group E Pick-ups].ZIP, [Group C Deliveries].[SCH DATE],
[Group C Deliveries].[SCH TIME], [Group E Pick-ups].[SCH TIME], [Group C
Deliveries].RATE, [Group E Pick-ups].RATE
FROM [Group C Deliveries] INNER JOIN [Group E Pick-ups] ON [Group C
Deliveries].[SCH DATE] = [Group E Pick-ups].[SCH DATE]
WHERE ((([Group E Pick-ups]![SCH TIME]-[Group C Deliveries]![SCH TIME])>480))
ORDER BY [Group C Deliveries].[SCH DATE], [Group C Deliveries].[SCH TIME],
[Group E Pick-ups].[SCH TIME];
END;

'ZONE 3/6
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group C Deliveries].ID, [Group F Pick-ups].ID, [Group C
Deliveries].[TRAILER/CONTAINER], [Group F Pick-ups].[TRAILER/CONTAINER],
[Group C Deliveries].DESTINATION, [Group C Deliveries].ZIP, [Group F Pick-
ups].DESTINATION, [Group F Pick-ups].ZIP, [Group C Deliveries].[SCH DATE],
[Group C Deliveries].[SCH TIME], [Group F Pick-ups].[SCH TIME], [Group C
Deliveries].RATE, [Group F Pick-ups].RATE
FROM [Group F Pick-ups] INNER JOIN [Group C Deliveries] ON [Group F Pick-
ups].[SCH DATE] = [Group C Deliveries].[SCH DATE]
WHERE ((([Group F Pick-ups]![SCH TIME]-[Group C Deliveries]![SCH TIME])>360))
ORDER BY [Group C Deliveries].[SCH DATE], [Group C Deliveries].[SCH TIME],
[Group F Pick-ups].[SCH TIME];
END;

'ZONE 3/7
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
```

```
SELECT DISTINCTROW [Group C Deliveries].ID, [Group G Pick-ups].ID, [Group C
Deliveries].[TRAILER/CONTAINER], [Group G Pick-ups].[TRAILER/CONTAINER],
[Group C Deliveries].DESTINATION, [Group C Deliveries].ZIP, [Group G Pick-
ups].DESTINATION, [Group G Pick-ups].ZIP, [Group C Deliveries].[SCH DATE],
[Group C Deliveries].[SCH TIME], [Group G Pick-ups].[SCH TIME], [Group C
Deliveries].RATE, [Group G Pick-ups].RATE
FROM [Group G Pick-ups] INNER JOIN [Group C Deliveries] ON [Group G Pick-
ups].[SCH DATE] = [Group C Deliveries].[SCH DATE]
WHERE ((([Group G Pick-ups]![SCH TIME]-[Group C Deliveries]![SCH TIME])>200))
ORDER BY [Group C Deliveries].[SCH DATE], [Group C Deliveries].[SCH TIME],
[Group G Pick-ups].[SCH TIME];
END;

'ZONE 3/8
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group C Deliveries].ID, [Group H Pickups].ID, [Group C
Deliveries].[TRAILER/CONTAINER], [Group H Pickups].[TRAILER/CONTAINER],
[Group C Deliveries].DESTINATION, [Group C Deliveries].ZIP, [Group H
Pickups].DESTINATION, [Group H Pickups].ZIP, [Group C Deliveries].[SCH DATE],
[Group C Deliveries].[SCH TIME], [Group H Pickups].[SCH TIME], [Group C
Deliveries].RATE, [Group H Pickups].RATE
FROM [Group H Pickups] INNER JOIN [Group C Deliveries] ON [Group H
Pickups].[SCH DATE] = [Group C Deliveries].[SCH DATE]
WHERE ((([Group H Pickups]![SCH TIME]-[Group C Deliveries]![SCH
TIME])>273.33))
ORDER BY [Group C Deliveries].[SCH DATE], [Group C Deliveries].[SCH TIME],
[Group H Pickups].[SCH TIME];
END;

'ZONE 3/9
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group C Deliveries].ID, [Group I Pickups].ID, [Group C
Deliveries].[TRAILER/CONTAINER], [Group I Pickups].[TRAILER/CONTAINER],
[Group C Deliveries].DESTINATION, [Group C Deliveries].ZIP, [Group I
Pickups].DESTINATION, [Group I Pickups].ZIP, [Group C Deliveries].[SCH DATE],
[Group C Deliveries].[SCH TIME], [Group I Pickups].[SCH TIME], [Group C
Deliveries].RATE, [Group I Pickups].RATE
```

```
FROM [Group I Pickups] INNER JOIN [Group C Deliveries] ON [Group I
Pickups].[SCH DATE] = [Group C Deliveries].[SCH DATE]
WHERE ((([Group I Pickups]![SCH TIME]-[Group C Deliveries]![SCH
TIME])>386.67))
ORDER BY [Group C Deliveries].[SCH DATE], [Group C Deliveries].[SCH TIME],
[Group I Pickups].[SCH TIME];
END;

'ZONE 4/1
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group D Deliveries].ID, [Group A Pick-ups].ID, [Group D
Deliveries].[TRAILER/CONTAINER], [Group A Pick-ups].[TRAILER/CONTAINER],
[Group D Deliveries].DESTINATION, [Group D Deliveries].ZIP, [Group A Pick-
ups].DESTINATION, [Group A Pick-ups].ZIP, [Group D Deliveries].[SCH DATE],
[Group D Deliveries].[SCH TIME], [Group A Pick-ups].[SCH TIME], [Group D
Deliveries].RATE, [Group A Pick-ups].RATE
FROM [Group A Pick-ups] INNER JOIN [Group D Deliveries] ON [Group A Pick-
ups].[SCH DATE] = [Group D Deliveries].[SCH DATE]
WHERE ((([Group A Pick-ups]![SCH TIME]-[Group D Deliveries]![SCH
TIME])>560.));
END;

'ZONE 4/2
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group D Deliveries].ID, [Group B Pick-ups].ID, [Group D
Deliveries].[TRAILER/CONTAINER], [Group B Pick-ups].[TRAILER/CONTAINER],
[Group D Deliveries].DESTINATION, [Group D Deliveries].ZIP, [Group B Pick-
ups].DESTINATION, [Group B Pick-ups].ZIP, [Group D Deliveries].[SCH DATE],
[Group D Deliveries].[SCH TIME], [Group B Pick-ups].[SCH TIME], [Group D
Deliveries].RATE, [Group B Pick-ups].RATE
FROM [Group B Pick-ups] INNER JOIN [Group D Deliveries] ON [Group B Pick-
ups].[SCH DATE] = [Group D Deliveries].[SCH DATE]
WHERE ((([Group B Pick-ups]![SCH TIME]-[Group D Deliveries]![SCH
TIME])>446.67))
ORDER BY [Group D Deliveries].[SCH DATE], [Group D Deliveries].[SCH TIME],
[Group B Pick-ups].[SCH TIME];
END;
```

```
'ZONE 4/3
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group D Deliveries].ID, [Group C Pick-ups].ID, [Group D
Deliveries].[TRAILER/CONTAINER], [Group C Pick-ups].[TRAILER/CONTAINER],
[Group D Deliveries].DESTINATION, [Group D Deliveries].ZIP, [Group C Pick-
ups].DESTINATION, [Group C Pick-ups].ZIP, [Group D Deliveries].[SCH DATE],
[Group D Deliveries].[SCH TIME], [Group C Pick-ups].[SCH TIME], [Group D
Deliveries].RATE, [Group C Pick-ups].RATE
FROM [Group C Pick-ups] INNER JOIN [Group D Deliveries] ON [Group C Pick-
ups].[SCH DATE] = [Group D Deliveries].[SCH DATE]
WHERE ((([Group C Pick-ups]![SCH TIME]-[Group D Deliveries]![SCH
TIME])>286.67))
ORDER BY [Group D Deliveries].[SCH DATE], [Group D Deliveries].[SCH TIME],
[Group C Pick-ups].[SCH TIME];
END;

'ZONE 4/5
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group D Deliveries].ID, [Group E Pick-ups].ID, [Group D
Deliveries].[TRAILER/CONTAINER], [Group E Pick-ups].[TRAILER/CONTAINER],
[Group D Deliveries].DESTINATION, [Group D Deliveries].ZIP, [Group E Pick-
ups].DESTINATION, [Group E Pick-ups].ZIP, [Group E Pick-ups].[SCH DATE],
[Group D Deliveries].[SCH TIME], [Group E Pick-ups].[SCH TIME], [Group D
Deliveries].RATE, [Group E Pick-ups].RATE
FROM [Group E Pick-ups] INNER JOIN [Group D Deliveries] ON [Group E Pick-
ups].[SCH DATE] = [Group D Deliveries].[SCH DATE]
WHERE ((([Group E Pick-ups]![SCH TIME]-[Group D Deliveries]![SCH TIME])>300))
ORDER BY [Group E Pick-ups].[SCH DATE], [Group D Deliveries].[SCH TIME],
[Group E Pick-ups].[SCH TIME];
END;

'ZONE 4/6
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
```

```
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group D Deliveries].ID, [Group F Pick-ups].ID, [Group D
Deliveries].[TRAILER/CONTAINER], [Group F Pick-ups].[TRAILER/CONTAINER],
[Group D Deliveries].DESTINATION, [Group D Deliveries].ZIP, [Group F Pick-
ups].DESTINATION, [Group F Pick-ups].ZIP, [Group D Deliveries].[SCH DATE],
[Group D Deliveries].[SCH TIME], [Group F Pick-ups].[SCH TIME], [Group D
Deliveries].RATE, [Group F Pick-ups].RATE
FROM [Group F Pick-ups] INNER JOIN [Group D Deliveries] ON [Group F Pick-
ups].[SCH DATE] = [Group D Deliveries].[SCH DATE]
WHERE ((([Group F Pick-ups]![SCH TIME]-[Group D Deliveries]![SCH
TIME])>273.33))
ORDER BY [Group D Deliveries].[SCH DATE];
END;

'ZONE 4/7
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group D Deliveries].ID, [Group G Pick-ups].ID, [Group D
Deliveries].[TRAILER/CONTAINER], [Group G Pick-ups].[TRAILER/CONTAINER],
[Group D Deliveries].DESTINATION, [Group D Deliveries].ZIP, [Group G Pick-
ups].DESTINATION, [Group G Pick-ups].ZIP, [Group D Deliveries].[SCH DATE],
[Group D Deliveries].[SCH TIME], [Group G Pick-ups].[SCH TIME], [Group D
Deliveries].RATE, [Group G Pick-ups].RATE
FROM [Group G Pick-ups] INNER JOIN [Group D Deliveries] ON [Group G Pick-
ups].[SCH DATE] = [Group D Deliveries].[SCH DATE]
WHERE ((([Group G Pick-ups]![SCH TIME]-[Group D Deliveries]![SCH
TIME])>266.67))
ORDER BY [Group D Deliveries].[SCH DATE], [Group D Deliveries].[SCH TIME],
[Group G Pick-ups].[SCH TIME];
END;

'ZONE 4/8
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group D Deliveries].ID, [Group H Pickups].ID, [Group D
Deliveries].[TRAILER/CONTAINER], [Group H Pickups].[TRAILER/CONTAINER],
[Group D Deliveries].DESTINATION, [Group D Deliveries].ZIP, [Group H
Pickups].DESTINATION, [Group H Pickups].ZIP, [Group D Deliveries].[SCH DATE],
```

```
[Group D Deliveries].[SCH TIME], [Group H Pickups].[SCH TIME], [Group D
Deliveries].RATE, [Group H Pickups].RATE
FROM [Group H Pickups] INNER JOIN [Group D Deliveries] ON [Group H
Pickups].[SCH DATE] = [Group D Deliveries].[SCH DATE]
WHERE ((([Group H Pickups]![SCH TIME]-[Group D Deliveries]![SCH
TIME])>446.67))
ORDER BY [Group D Deliveries].[SCH DATE], [Group D Deliveries].[SCH TIME],
[Group H Pickups].[SCH TIME];
END;

'ZONE 4/9
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group D Deliveries].ID, [Group I Pickups].ID, [Group D
Deliveries].[TRAILER/CONTAINER], [Group I Pickups].[TRAILER/CONTAINER],
[Group D Deliveries].DESTINATION, [Group D Deliveries].ZIP, [Group I
Pickups].DESTINATION, [Group I Pickups].ZIP, [Group D Deliveries].[SCH DATE],
[Group D Deliveries].[SCH TIME], [Group I Pickups].[SCH TIME], [Group D
Deliveries].RATE, [Group I Pickups].RATE
FROM [Group I Pickups] INNER JOIN [Group D Deliveries] ON [Group I
Pickups].[SCH DATE] = [Group D Deliveries].[SCH DATE]
WHERE ((([Group I Pickups]![SCH TIME]-[Group D Deliveries]![SCH
TIME])>526.67))
ORDER BY [Group D Deliveries].[SCH DATE], [Group D Deliveries].[SCH TIME],
[Group I Pickups].[SCH TIME];
END;

'ZONE 5/1
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group E Deliveries].ID, [Group A Pick-ups].ID, [Group E
Deliveries].[TRAILER/CONTAINER], [Group A Pick-ups].[TRAILER/CONTAINER],
[Group E Deliveries].DESTINATION, [Group E Deliveries].ZIP, [Group A Pick-
ups].DESTINATION, [Group A Pick-ups].ZIP, [Group E Deliveries].[SCH DATE],
[Group E Deliveries].[SCH TIME], [Group A Pick-ups].[SCH TIME], [Group E
Deliveries].RATE, [Group A Pick-ups].RATE
FROM [Group A Pick-ups] INNER JOIN [Group E Deliveries] ON [Group A Pick-
ups].[SCH DATE] = [Group E Deliveries].[SCH DATE]
```

```
WHERE ((([Group A Pick-ups]![SCH TIME]-[Group E Deliveries]![SCH
TIME])>666.67))
ORDER BY [Group E Deliveries].[SCH DATE], [Group E Deliveries].[SCH TIME],
[Group A Pick-ups].[SCH TIME];
END;

'ZONE 5/2
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group E Deliveries].ID, [Group B Pick-ups].ID, [Group E
Deliveries].[TRAILER/CONTAINER], [Group B Pick-ups].[TRAILER/CONTAINER],
[Group E Deliveries].DESTINATION, [Group E Deliveries].ZIP, [Group B Pick-
ups].DESTINATION, [Group B Pick-ups].ZIP, [Group E Deliveries].[SCH DATE],
[Group E Deliveries].[SCH TIME], [Group B Pick-ups].[SCH TIME], [Group E
Deliveries].RATE, [Group B Pick-ups].RATE
FROM [Group B Pick-ups] INNER JOIN [Group E Deliveries] ON [Group B Pick-
ups].[SCH DATE] = [Group E Deliveries].[SCH DATE]
WHERE ((([Group B Pick-ups]![SCH TIME]-[Group E Deliveries]![SCH
TIME])>553.33))
ORDER BY [Group E Deliveries].[SCH DATE], [Group E Deliveries].[SCH TIME],
[Group B Pick-ups].[SCH TIME];
END;

'ZONE 5/3
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group E Deliveries].ID, [Group C Pick-ups].ID, [Group E
Deliveries].[TRAILER/CONTAINER], [Group C Pick-ups].[TRAILER/CONTAINER],
[Group E Deliveries].DESTINATION, [Group E Deliveries].ZIP, [Group C Pick-
ups].DESTINATION, [Group C Pick-ups].ZIP, [Group E Deliveries].[SCH DATE],
[Group E Deliveries].[SCH TIME], [Group C Pick-ups].[SCH TIME], [Group E
Deliveries].RATE, [Group C Pick-ups].RATE
FROM [Group C Pick-ups] INNER JOIN [Group E Deliveries] ON [Group C Pick-
ups].[SCH DATE] = [Group E Deliveries].[SCH DATE]
WHERE ((([Group C Pick-ups]![SCH TIME]-[Group E Deliveries]![SCH TIME])>480))
ORDER BY [Group E Deliveries].[SCH DATE];
END;

'ZONE 5/4
```

```
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group E Deliveries].ID, [Group D Pick-ups].ID, [Group E
Deliveries].[TRAILER/CONTAINER], [Group D Pick-ups].[TRAILER/CONTAINER],
[Group E Deliveries].DESTINATION, [Group E Deliveries].ZIP, [Group D Pick-
ups].DESTINATION, [Group D Pick-ups].ZIP, [Group E Deliveries].[SCH DATE],
[Group E Deliveries].[SCH TIME], [Group D Pick-ups].[SCH TIME], [Group E
Deliveries].RATE, [Group D Pick-ups].RATE
FROM [Group E Deliveries] INNER JOIN [Group D Pick-ups] ON [Group E
Deliveries].[SCH DATE] = [Group D Pick-ups].[SCH DATE]
WHERE ((([Group D Pick-ups]![SCH TIME]-[Group E Deliveries]![SCH TIME])>300))
ORDER BY [Group E Deliveries].[SCH DATE], [Group E Deliveries].[SCH TIME],
[Group D Pick-ups].[SCH TIME];
END;

'ZONE 5/7
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group E Deliveries].ID, [Group G Pick-ups].ID, [Group E
Deliveries].[TRAILER/CONTAINER], [Group G Pick-ups].[TRAILER/CONTAINER],
[Group E Deliveries].DESTINATION, [Group E Deliveries].ZIP, [Group G Pick-
ups].DESTINATION, [Group G Pick-ups].ZIP, [Group E Deliveries].[SCH DATE],
[Group E Deliveries].[SCH TIME], [Group G Pick-ups].[SCH TIME], [Group E
Deliveries].RATE, [Group G Pick-ups].RATE
FROM [Group E Deliveries] INNER JOIN [Group G Pick-ups] ON [Group E
Deliveries].[SCH DATE] = [Group G Pick-ups].[SCH DATE]
WHERE ((([Group G Pick-ups]![SCH TIME]-[Group E Deliveries]![SCH
TIME])>420.))
ORDER BY [Group E Deliveries].[SCH DATE], [Group E Deliveries].[SCH TIME],
[Group G Pick-ups].[SCH TIME];
END;

'ZONE 5/8
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
```

```
SELECT DISTINCTROW [Group E Deliveries].ID, [Group H Pickups].ID, [Group E
Deliveries].[TRAILER/CONTAINER], [Group H Pickups].[TRAILER/CONTAINER],
[Group E Deliveries].DESTINATION, [Group E Deliveries].ZIP, [Group H
Pickups].DESTINATION, [Group H Pickups].ZIP, [Group E Deliveries].[SCH DATE],
[Group E Deliveries].[SCH TIME], [Group H Pickups].[SCH TIME], [Group E
Deliveries].RATE, [Group H Pickups].RATE
FROM [Group H Pickups] INNER JOIN [Group E Deliveries] ON [Group H
Pickups].[SCH DATE] = [Group E Deliveries].[SCH DATE]
WHERE ((([Group H Pickups]![SCH TIME]-[Group E Deliveries]![SCH
DATE])>633.33))
ORDER BY [Group E Deliveries].[SCH DATE], [Group E Deliveries].[SCH TIME],
[Group H Pickups].[SCH TIME];
END;

'ZONE 5/9
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group E Deliveries].ID, [Group I Pickups].ID, [Group E
Deliveries].[TRAILER/CONTAINER], [Group I Pickups].[TRAILER/CONTAINER],
[Group E Deliveries].DESTINATION, [Group E Deliveries].ZIP, [Group I
Pickups].DESTINATION, [Group I Pickups].ZIP, [Group E Deliveries].[SCH DATE],
[Group E Deliveries].[SCH TIME], [Group I Pickups].[SCH TIME], [Group E
Deliveries].RATE, [Group I Pickups].RATE
FROM [Group I Pickups] INNER JOIN [Group E Deliveries] ON [Group I
Pickups].[SCH DATE] = [Group E Deliveries].[SCH DATE]
WHERE ((([Group I Pickups]![SCH TIME]-[Group E Deliveries]![SCH
TIME])>633.33))
ORDER BY [Group E Deliveries].[SCH DATE];
END;

'ZONE 6/1
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group F Deliveries].ID, [Group A Pick-ups].ID, [Group F
Deliveries].[TRAILER/CONTAINER], [Group A Pick-ups].[TRAILER/CONTAINER],
[Group F Deliveries].DESTINATION, [Group F Deliveries].ZIP, [Group A Pick-
ups].DESTINATION, [Group A Pick-ups].ZIP, [Group F Deliveries].[SCH DATE],
[Group F Deliveries].[SCH TIME], [Group A Pick-ups].[SCH TIME], [Group F
Deliveries].RATE, [Group A Pick-ups].RATE
```

```
FROM [Group A Pick-ups] INNER JOIN [Group F Deliveries] ON [Group A Pick-
ups].[SCH DATE] = [Group F Deliveries].[SCH DATE]
WHERE ((([Group A Pick-ups]![SCH TIME]-[Group F Deliveries]![SCH TIME])>540))
ORDER BY [Group F Deliveries].[SCH DATE], [Group F Deliveries].[SCH TIME],
[Group A Pick-ups].[SCH TIME];
END;

'ZONE 6/2
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group F Deliveries].ID, [Group B Pick-ups].ID, [Group F
Deliveries].[TRAILER/CONTAINER], [Group B Pick-ups].[TRAILER/CONTAINER],
[Group F Deliveries].DESTINATION, [Group F Deliveries].ZIP, [Group B Pick-
ups].DESTINATION, [Group B Pick-ups].ZIP, [Group F Deliveries].[SCH DATE],
[Group F Deliveries].[SCH TIME], [Group B Pick-ups].[SCH TIME], [Group F
Deliveries].RATE, [Group B Pick-ups].RATE
FROM [Group B Pick-ups] INNER JOIN [Group F Deliveries] ON [Group B Pick-
ups].[SCH DATE] = [Group F Deliveries].[SCH DATE]
WHERE ((([Group B Pick-ups]![SCH TIME]-[Group F Deliveries]![SCH
TIME])>426.67))
ORDER BY [Group F Deliveries].[SCH DATE], [Group F Deliveries].[SCH TIME],
[Group B Pick-ups].[SCH TIME];
END;

'ZONE 6/3
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group F Deliveries].ID, [Group C Pick-ups].ID, [Group F
Deliveries].[TRAILER/CONTAINER], [Group C Pick-ups].[TRAILER/CONTAINER],
[Group F Deliveries].DESTINATION, [Group F Deliveries].ZIP, [Group C Pick-
ups].DESTINATION, [Group C Pick-ups].ZIP, [Group F Deliveries].[SCH DATE],
[Group F Deliveries].[SCH TIME], [Group C Pick-ups].[SCH TIME], [Group F
Deliveries].RATE, [Group C Pick-ups].RATE
FROM [Group C Pick-ups] INNER JOIN [Group F Deliveries] ON [Group C Pick-
ups].[SCH DATE] = [Group F Deliveries].[SCH DATE]
WHERE ((([Group C Pick-ups]![SCH TIME]-[Group F Deliveries]![SCH TIME])>360))
ORDER BY [Group F Deliveries].[SCH DATE], [Group F Deliveries].[SCH TIME],
[Group C Pick-ups].[SCH TIME];
END;
```

```
'ZONE 6/4
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group F Deliveries].ID, [Group D Pick-ups].ID, [Group F
Deliveries].[TRAILER/CONTAINER], [Group D Pick-ups].[TRAILER/CONTAINER],
[Group F Deliveries].DESTINATION, [Group F Deliveries].ZIP, [Group D Pick-
ups].DESTINATION, [Group D Pick-ups].ZIP, [Group F Deliveries].[SCH DATE],
[Group F Deliveries].[SCH TIME], [Group D Pick-ups].[SCH TIME], [Group F
Deliveries].RATE, [Group D Pick-ups].RATE
FROM [Group D Pick-ups] INNER JOIN [Group F Deliveries] ON [Group D Pick-
ups].[SCH DATE] = [Group F Deliveries].[SCH DATE]
WHERE ((([Group D Pick-ups]![SCH TIME]-[Group F Deliveries]![SCH
TIME])>273.33))
ORDER BY [Group F Deliveries].[SCH DATE], [Group F Deliveries].[SCH TIME],
[Group D Pick-ups].[SCH TIME];
END;

'ZONE 6/5
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group F Deliveries].ID, [Group E Pick-ups].ID, [Group F
Deliveries].[TRAILER/CONTAINER], [Group E Pick-ups].[TRAILER/CONTAINER],
[Group F Deliveries].DESTINATION, [Group F Deliveries].ZIP, [Group E Pick-
ups].DESTINATION, [Group E Pick-ups].ZIP, [Group F Deliveries].[SCH DATE],
[Group F Deliveries].[SCH TIME], [Group E Pick-ups].[SCH TIME], [Group F
Deliveries].RATE, [Group E Pick-ups].RATE
FROM [Group F Deliveries] INNER JOIN [Group E Pick-ups] ON [Group F
Deliveries].[SCH DATE] = [Group E Pick-ups].[SCH DATE]
WHERE ((([Group E Pick-ups]![SCH TIME]-[Group F Deliveries]![SCH TIME])>116))
ORDER BY [Group F Deliveries].[SCH DATE], [Group F Deliveries].[SCH TIME],
[Group E Pick-ups].[SCH TIME];
END;

'ZONE 6/7
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
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DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group F Deliveries].ID, [Group G Pick-ups].ID, [Group F
Deliveries].[TRAILER/CONTAINER], [Group G Pick-ups].[TRAILER/CONTAINER],
[Group F Deliveries].DESTINATION, [Group F Deliveries].ZIP, [Group G Pick-
ups].DESTINATION, [Group G Pick-ups].ZIP, [Group F Deliveries].[SCH DATE],
[Group F Deliveries].[SCH TIME], [Group G Pick-ups].[SCH TIME], [Group F
Deliveries].RATE, [Group G Pick-ups].RATE
FROM [Group F Deliveries] INNER JOIN [Group G Pick-ups] ON [Group F
Deliveries].[SCH DATE] = [Group G Pick-ups].[SCH DATE]
WHERE ((([Group G Pick-ups]![SCH TIME]-[Group F Deliveries]![SCH
TIME])>253.33))
ORDER BY [Group F Deliveries].[SCH DATE], [Group F Deliveries].[SCH TIME],
[Group G Pick-ups].[SCH TIME];
END;

'ZONE 6/8
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group F Deliveries].ID, [Group H Pickups].ID, [Group F
Deliveries].[TRAILER/CONTAINER], [Group H Pickups].[TRAILER/CONTAINER],
[Group F Deliveries].DESTINATION, [Group F Deliveries].ZIP, [Group H
Pickups].DESTINATION, [Group H Pickups].ZIP, [Group F Deliveries].[SCH DATE],
[Group F Deliveries].[SCH TIME], [Group H Pickups].[SCH TIME], [Group F
Deliveries].RATE, [Group H Pickups].RATE
FROM [Group H Pickups] INNER JOIN [Group F Deliveries] ON [Group H
Pickups].[SCH DATE] = [Group F Deliveries].[SCH DATE]
WHERE ((([Group H Pickups]![SCH TIME]-[Group F Deliveries]![SCH
TIME])>486.67))
ORDER BY [Group F Deliveries].[SCH DATE], [Group F Deliveries].[SCH TIME],
[Group H Pickups].[SCH TIME];
END;

'ZONE 6/9
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group F Deliveries].ID, [Group I Pickups].ID, [Group F
Deliveries].[TRAILER/CONTAINER], [Group I Pickups].[TRAILER/CONTAINER],
[Group F Deliveries].DESTINATION, [Group F Deliveries].ZIP, [Group I
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Pickups].DESTINATION, [Group I Pickups].ZIP, [Group F Deliveries].[SCH DATE],
[Group F Deliveries].[SCH TIME], [Group I Pickups].[SCH TIME], [Group F
Deliveries].RATE, [Group I Pickups].RATE
FROM [Group I Pickups] INNER JOIN [Group F Deliveries] ON [Group I
Pickups].[SCH DATE] = [Group F Deliveries].[SCH DATE]
WHERE ((([Group I Pickups]![SCH TIME]-[Group F Deliveries]![SCH
TIME])>506.67))
ORDER BY [Group F Deliveries].[SCH DATE];
END;

'ZONE 8/1
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group H Deliveries].ID, [Group A Pick-ups].ID, [Group H
Deliveries].[TRAILER/CONTAINER], [Group A Pick-ups].[TRAILER/CONTAINER],
[Group H Deliveries].DESTINATION, [Group H Deliveries].ZIP, [Group A Pick-
ups].DESTINATION, [Group A Pick-ups].ZIP, [Group H Deliveries].[SCH DATE],
[Group H Deliveries].[SCH TIME], [Group A Pick-ups].[SCH TIME], [Group H
Deliveries].RATE, [Group A Pick-ups].RATE
FROM [Group A Pick-ups] INNER JOIN [Group H Deliveries] ON [Group A Pick-
ups].[SCH DATE] = [Group H Deliveries].[SCH DATE]
WHERE ((([Group A Pick-ups]![SCH TIME]-[Group H Deliveries]![SCH
TIME])>213.33))
ORDER BY [Group H Deliveries].[SCH DATE], [Group H Deliveries].[SCH TIME],
[Group A Pick-ups].[SCH TIME];
END;

'ZONE 8/2
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group H Deliveries].ID, [Group B Pick-ups].ID, [Group H
Deliveries].[TRAILER/CONTAINER], [Group B Pick-ups].[TRAILER/CONTAINER],
[Group H Deliveries].DESTINATION, [Group H Deliveries].ZIP, [Group B Pick-
ups].DESTINATION, [Group B Pick-ups].ZIP, [Group H Deliveries].[SCH DATE],
[Group H Deliveries].[SCH TIME], [Group B Pick-ups].[SCH TIME], [Group H
Deliveries].RATE, [Group B Pick-ups].RATE
FROM [Group B Pick-ups] INNER JOIN [Group H Deliveries] ON [Group B Pick-
ups].[SCH DATE] = [Group H Deliveries].[SCH DATE]
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WHERE ((([Group B Pick-ups]![SCH TIME]-[Group H Deliveries]![SCH
TIME])>253.33))
ORDER BY [Group H Deliveries].[SCH DATE], [Group H Deliveries].[SCH TIME],
[Group B Pick-ups].[SCH TIME];
END;

'ZONE 8/3
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group H Deliveries].ID, [Group C Pick-ups].ID, [Group H
Deliveries].[TRAILER/CONTAINER], [Group C Pick-ups].[TRAILER/CONTAINER],
[Group H Deliveries].DESTINATION, [Group H Deliveries].ZIP, [Group C Pick-
ups].DESTINATION, [Group C Pick-ups].ZIP, [Group H Deliveries].[SCH DATE],
[Group H Deliveries].[SCH TIME], [Group C Pick-ups].[SCH TIME], [Group H
Deliveries].RATE, [Group C Pick-ups].RATE
FROM [Group C Pick-ups] INNER JOIN [Group H Deliveries] ON [Group C Pick-
ups].[SCH DATE] = [Group H Deliveries].[SCH DATE]
WHERE ((([Group C Pick-ups]![SCH TIME]-[Group H Deliveries]![SCH
TIME])>273.33))
ORDER BY [Group H Deliveries].[SCH DATE], [Group H Deliveries].[SCH TIME],
[Group C Pick-ups].[SCH TIME];
END;

'ZONE 8/4
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group H Deliveries].ID, [Group D Pick-ups].ID, [Group H
Deliveries].[TRAILER/CONTAINER], [Group D Pick-ups].[TRAILER/CONTAINER],
[Group H Deliveries].DESTINATION, [Group H Deliveries].ZIP, [Group D Pick-
ups].DESTINATION, [Group D Pick-ups].ZIP, [Group H Deliveries].[SCH DATE],
[Group H Deliveries].[SCH TIME], [Group D Pick-ups].[SCH TIME], [Group H
Deliveries].RATE, [Group D Pick-ups].RATE
FROM [Group D Pick-ups] INNER JOIN [Group H Deliveries] ON [Group D Pick-
ups].[SCH DATE] = [Group H Deliveries].[SCH DATE]
WHERE ((([Group D Pick-ups]![SCH TIME]-[Group H Deliveries]![SCH
TIME])>446.67))
ORDER BY [Group H Deliveries].[SCH DATE], [Group H Deliveries].[SCH TIME],
[Group D Pick-ups].[SCH TIME];
END;
```

```
'ZONE 8/5
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group H Deliveries].ID, [Group E Pick-ups].ID, [Group H
Deliveries].[TRAILER/CONTAINER], [Group E Pick-ups].[TRAILER/CONTAINER],
[Group H Deliveries].DESTINATION, [Group H Deliveries].ZIP, [Group E Pick-
ups].DESTINATION, [Group E Pick-ups].ZIP, [Group H Deliveries].[SCH DATE],
[Group H Deliveries].[SCH TIME], [Group E Pick-ups].[SCH TIME], [Group H
Deliveries].RATE, [Group E Pick-ups].RATE
FROM [Group E Pick-ups] INNER JOIN [Group H Deliveries] ON [Group E Pick-
ups].[SCH DATE] = [Group H Deliveries].[SCH DATE]
WHERE ((([Group E Pick-ups]![SCH TIME]-[Group H Deliveries]![SCH
TIME])>633.33))
ORDER BY [Group H Deliveries].[SCH DATE], [Group H Deliveries].[SCH TIME],
[Group E Pick-ups].[SCH TIME];
END;

'ZONE 8/6
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group H Deliveries].ID, [Group F Pick-ups].ID, [Group H
Deliveries].[TRAILER/CONTAINER], [Group F Pick-ups].[TRAILER/CONTAINER],
[Group H Deliveries].DESTINATION, [Group H Deliveries].ZIP, [Group F Pick-
ups].DESTINATION, [Group F Pick-ups].ZIP, [Group H Deliveries].[SCH DATE],
[Group H Deliveries].[SCH TIME], [Group F Pick-ups].[SCH TIME], [Group H
Deliveries].RATE, [Group F Pick-ups].RATE
FROM [Group F Pick-ups] INNER JOIN [Group H Deliveries] ON [Group F Pick-
ups].[SCH DATE] = [Group H Deliveries].[SCH DATE]
WHERE ((([Group F Pick-ups]![SCH TIME]-[Group H Deliveries]![SCH
TIME])>486.67))
ORDER BY [Group H Deliveries].[SCH DATE], [Group H Deliveries].[SCH TIME],
[Group F Pick-ups].[SCH TIME];
END;

'ZONE 8/7
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
```

```
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group H Deliveries].ID, [Group G Pick-ups].ID, [Group H
Deliveries].[TRAILER/CONTAINER], [Group G Pick-ups].[TRAILER/CONTAINER],
[Group H Deliveries].DESTINATION, [Group H Deliveries].ZIP, [Group G Pick-
ups].DESTINATION, [Group G Pick-ups].ZIP, [Group H Deliveries].[SCH DATE],
[Group H Deliveries].[SCH TIME], [Group G Pick-ups].[SCH TIME], [Group H
Deliveries].RATE, [Group G Pick-ups].RATE
FROM [Group H Deliveries] INNER JOIN [Group G Pick-ups] ON [Group H
Deliveries].[SCH DATE] = [Group G Pick-ups].[SCH DATE]
WHERE ((([Group G Pick-ups]![SCH TIME]-[Group H Deliveries]![SCH
TIME])>346.67))
ORDER BY [Group H Deliveries].[SCH DATE], [Group H Deliveries].[SCH TIME],
[Group G Pick-ups].[SCH TIME];
END;

'ZONE 8/9
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group H Deliveries].ID, [Group I Pickups].ID, [Group H
Deliveries].[TRAILER/CONTAINER], [Group I Pickups].[TRAILER/CONTAINER],
[Group H Deliveries].DESTINATION, [Group H Deliveries].ZIP, [Group I
Pickups].DESTINATION, [Group I Pickups].ZIP, [Group H Deliveries].[SCH DATE],
[Group H Deliveries].[SCH TIME], [Group I Pickups].[SCH TIME], [Group H
Deliveries].RATE, [Group I Pickups].RATE
FROM [Group H Deliveries] INNER JOIN [Group I Pickups] ON [Group H
Deliveries].[SCH DATE] = [Group I Pickups].[SCH DATE]
WHERE ((([Group I Pickups]![SCH TIME]-[Group H Deliveries]![SCH TIME])>340.))
ORDER BY [Group H Deliveries].[SCH DATE], [Group H Deliveries].[SCH TIME],
[Group I Pickups].[SCH TIME];
END;

'ZONE 9/1
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group I Deliveries].ID, [Group A Pick-ups].ID, [Group I
Deliveries].[TRAILER/CONTAINER], [Group A Pick-ups].[TRAILER/CONTAINER],
[Group I Deliveries].DESTINATION, [Group I Deliveries].ZIP, [Group A Pick-
ups].DESTINATION, [Group A Pick-ups].ZIP, [Group I Deliveries].[SCH DATE],
```

```
[Group I Deliveries].[SCH TIME], [Group A Pick-ups].[SCH TIME], [Group I
Deliveries].RATE, [Group A Pick-ups].RATE
FROM [Group A Pick-ups] INNER JOIN [Group I Deliveries] ON [Group A Pick-
ups].[SCH DATE] = [Group I Deliveries].[SCH DATE]
WHERE ((([Group A Pick-ups]![SCH TIME]-[Group I Deliveries]![SCH
TIME])>326.67))
ORDER BY [Group I Deliveries].[SCH DATE];
END;

'ZONE 9/3
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group I Deliveries].ID, [Group C Pick-ups].ID, [Group I
Deliveries].[TRAILER/CONTAINER], [Group C Pick-ups].[TRAILER/CONTAINER],
[Group I Deliveries].DESTINATION, [Group I Deliveries].ZIP, [Group C Pick-
ups].DESTINATION, [Group C Pick-ups].ZIP, [Group I Deliveries].[SCH DATE],
[Group I Deliveries].[SCH TIME], [Group C Pick-ups].[SCH TIME], [Group I
Deliveries].RATE, [Group C Pick-ups].RATE
FROM [Group C Pick-ups] INNER JOIN [Group I Deliveries] ON [Group C Pick-
ups].[SCH DATE] = [Group I Deliveries].[SCH DATE]
WHERE ((([Group C Pick-ups]![SCH TIME]-[Group I Deliveries]![SCH
TIME])>386.67))
ORDER BY [Group I Deliveries].[SCH DATE], [Group I Deliveries].[SCH TIME],
[Group C Pick-ups].[SCH TIME];
END;

'ZONE 9/4
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group I Deliveries].ID, [Group D Pick-ups].ID, [Group I
Deliveries].[TRAILER/CONTAINER], [Group D Pick-ups].[TRAILER/CONTAINER],
[Group I Deliveries].DESTINATION, [Group I Deliveries].ZIP, [Group D Pick-
ups].DESTINATION, [Group D Pick-ups].ZIP, [Group I Deliveries].[SCH DATE],
[Group I Deliveries].[SCH TIME], [Group D Pick-ups].[SCH TIME], [Group I
Deliveries].RATE, [Group D Pick-ups].RATE
FROM [Group D Pick-ups] INNER JOIN [Group I Deliveries] ON [Group D Pick-
ups].[SCH DATE] = [Group I Deliveries].[SCH DATE]
WHERE ((([Group D Pick-ups]![SCH TIME]-[Group I Deliveries]![SCH
TIME])>526.67))
```

```
ORDER BY [Group I Deliveries].[SCH DATE], [Group I Deliveries].[SCH TIME],
[Group D Pick-ups].[SCH TIME];
END;

'ZONE 9/5
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group I Deliveries].ID, [Group E Pick-ups].ID, [Group I
Deliveries].[TRAILER/CONTAINER], [Group E Pick-ups].[TRAILER/CONTAINER],
[Group I Deliveries].DESTINATION, [Group I Deliveries].ZIP, [Group E Pick-
ups].DESTINATION, [Group E Pick-ups].ZIP, [Group I Deliveries].[SCH DATE],
[Group I Deliveries].[SCH TIME], [Group E Pick-ups].[SCH TIME], [Group I
Deliveries].RATE, [Group E Pick-ups].RATE
FROM [Group E Pick-ups] INNER JOIN [Group I Deliveries] ON [Group E Pick-
ups].[SCH DATE] = [Group I Deliveries].[SCH DATE]
WHERE ((([Group E Pick-ups]![SCH TIME]-[Group I Deliveries]![SCH
TIME])>633.33))
ORDER BY [Group I Deliveries].[SCH DATE];
END;

'ZONE 9/6
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group I Deliveries].ID, [Group F Pick-ups].ID, [Group I
Deliveries].[TRAILER/CONTAINER], [Group F Pick-ups].[TRAILER/CONTAINER],
[Group I Deliveries].DESTINATION, [Group I Deliveries].ZIP, [Group F Pick-
ups].DESTINATION, [Group F Pick-ups].ZIP, [Group I Deliveries].[SCH DATE],
[Group I Deliveries].[SCH TIME], [Group F Pick-ups].[SCH TIME], [Group I
Deliveries].RATE, [Group F Pick-ups].RATE
FROM [Group F Pick-ups] INNER JOIN [Group I Deliveries] ON [Group F Pick-
ups].[SCH DATE] = [Group I Deliveries].[SCH DATE]
WHERE ((([Group F Pick-ups]![SCH TIME]-[Group I Deliveries]![SCH
TIME])>506.67))
ORDER BY [Group I Deliveries].[SCH DATE], [Group I Deliveries].[SCH TIME],
[Group F Pick-ups].[SCH TIME];
END;

'ZONE 9/7
```

```
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group I Deliveries].ID, [Group G Pick-ups].ID, [Group I
Deliveries].[TRAILER/CONTAINER], [Group G Pick-ups].[TRAILER/CONTAINER],
[Group I Deliveries].DESTINATION, [Group I Deliveries].ZIP, [Group G Pick-
ups].DESTINATION, [Group G Pick-ups].ZIP, [Group I Deliveries].[SCH DATE],
[Group I Deliveries].[SCH TIME], [Group G Pick-ups].[SCH TIME], [Group I
Deliveries].RATE, [Group G Pick-ups].RATE
FROM [Group G Pick-ups] INNER JOIN [Group I Deliveries] ON [Group G Pick-
ups].[SCH DATE] = [Group I Deliveries].[SCH DATE]
WHERE ((([Group G Pick-ups]![SCH TIME]-[Group I Deliveries]![SCH
TIME])>346.67))
ORDER BY [Group I Deliveries].[SCH DATE], [Group I Deliveries].[SCH TIME],
[Group G Pick-ups].[SCH TIME];
END;

'ZONE 9/8
INSERT INTO [ZIP CODE SORTING FOR ALL 8 GROUPS] ( ID_DELIVERY,
ID_PICKUP, [TRAILER/CONTAINER_DELIVERY],
[TRAILER/CONTAINER_PICKUP], DESTINATION_DELIVERY, ZIP_DELIVERY,
DESTINATION_PICKUP, ZIP_PICKUP, [SCH DATE_DELIVERY], [SCH
TIME_DELIVERY], [SCH TIME_PICKUP], RATE_DELIVERY, RATE_PICKUP )
SELECT DISTINCTROW [Group I Deliveries].ID, [Group H Pickups].ID, [Group I
Deliveries].[TRAILER/CONTAINER], [Group H Pickups].[TRAILER/CONTAINER],
[Group I Deliveries].DESTINATION, [Group I Deliveries].ZIP, [Group H
Pickups].DESTINATION, [Group H Pickups].ZIP, [Group I Deliveries].[SCH DATE],
[Group I Deliveries].[SCH TIME], [Group H Pickups].[SCH TIME], [Group I
Deliveries].RATE, [Group H Pickups].RATE
FROM [Group I Deliveries] INNER JOIN [Group H Pickups] ON [Group I
Deliveries].[SCH DATE] = [Group H Pickups].[SCH DATE]
WHERE ((([Group H Pickups]![SCH TIME]-[Group I Deliveries]![SCH TIME])>340.))
ORDER BY [Group I Deliveries].[SCH DATE], [Group I Deliveries].[SCH TIME],
[Group H Pickups].[SCH TIME];
END;
```

APPENDIX D

DAILY PLACEMENT OF CONTAINERS

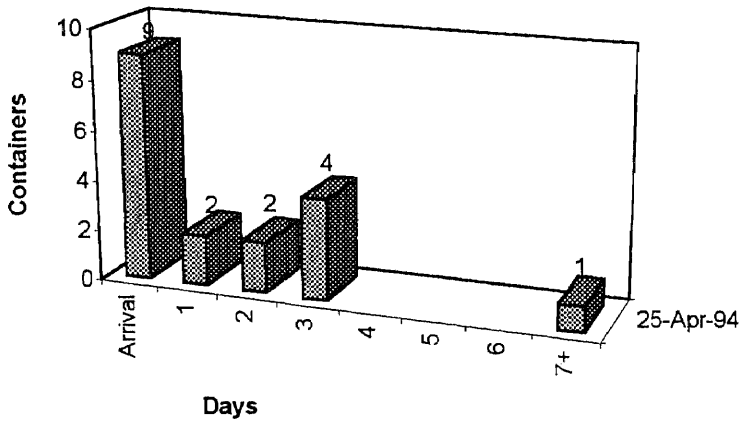

Figure D.1 Days from Arrival by Rail to Scheduled Delivery by Truck for the date of April 25, 1994

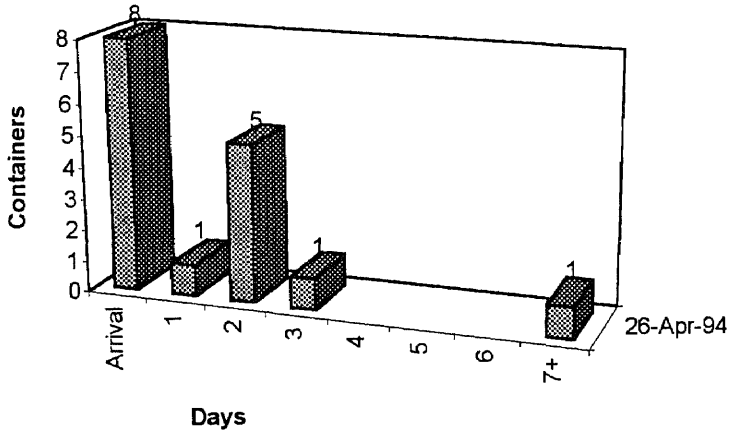

Figure D.2 Days from Arrival by Rail to Scheduled Delivery by Truck for the date of April 26, 1994

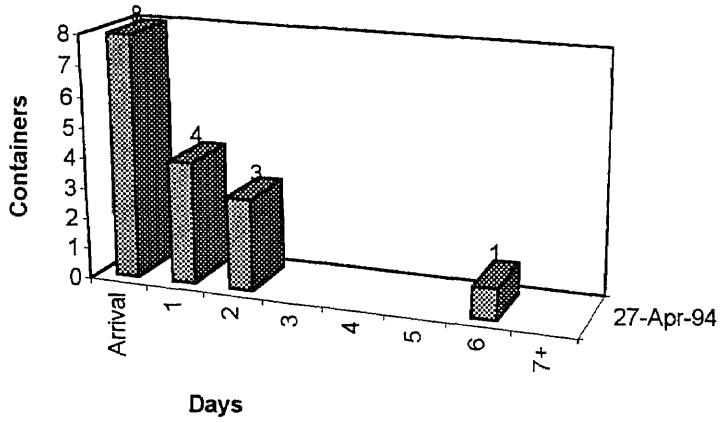

Figure D.3 Days from Arrival by Rail to Scheduled Delivery by Truck for the date of April 27, 1994

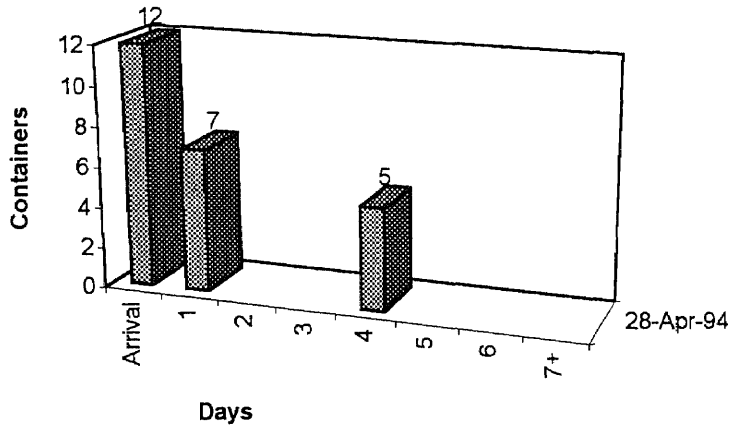

Figure D.4 Days from Arrival by Rail to Scheduled Delivery by Truck for the date of April 28, 1994

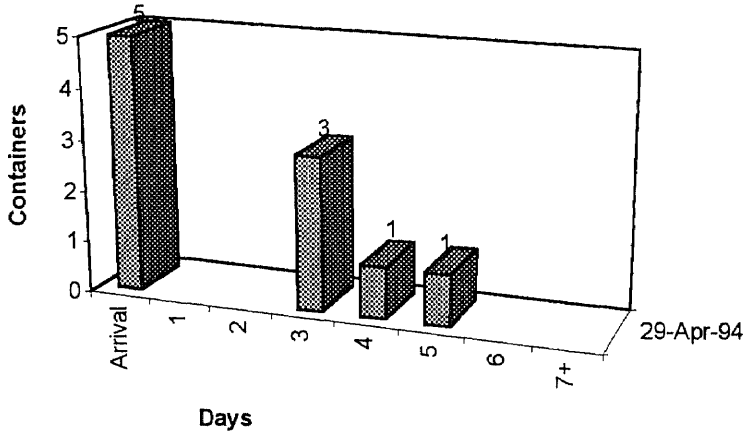

Figure D.5 Days from Arrival by Rail to Scheduled Delivery by Truck for the date of April 29, 1994

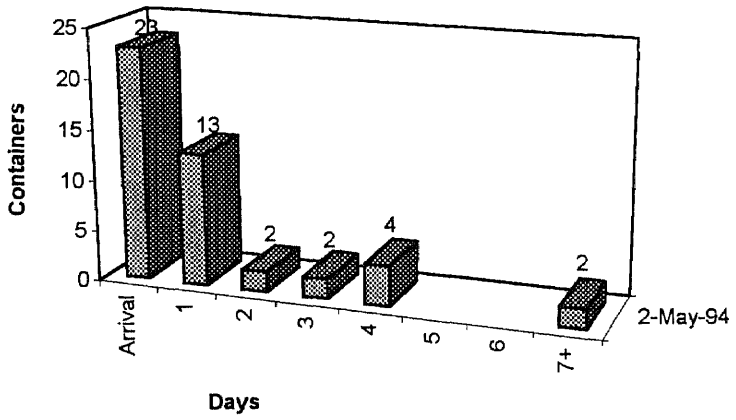

Figure D.6 Days from Arrival by Rail to Scheduled Delivery by Truck for the date of May 2, 1994

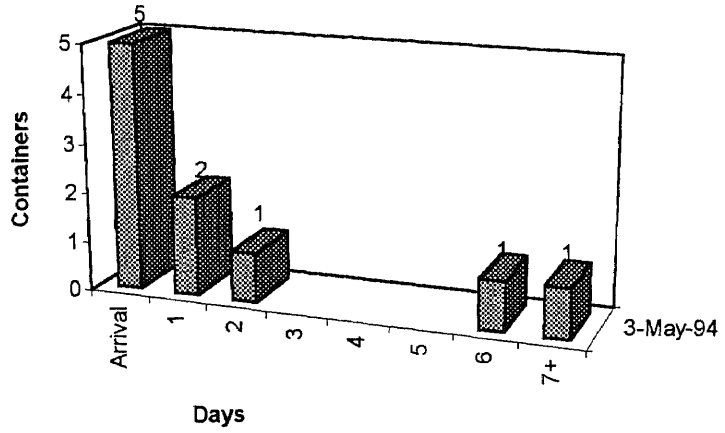

Figure D.7 Days from Arrival by Rail to Scheduled Delivery by Truck for the date of May 3, 1994

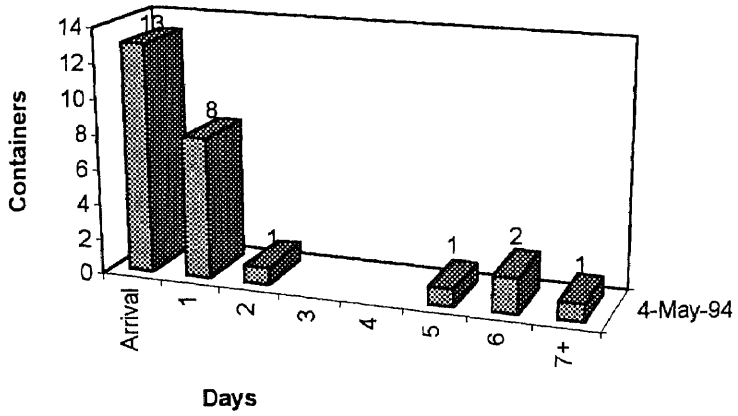

Figure D.8 Days from Arrival by Rail to Scheduled Delivery by Truck for the date of May 4, 1994

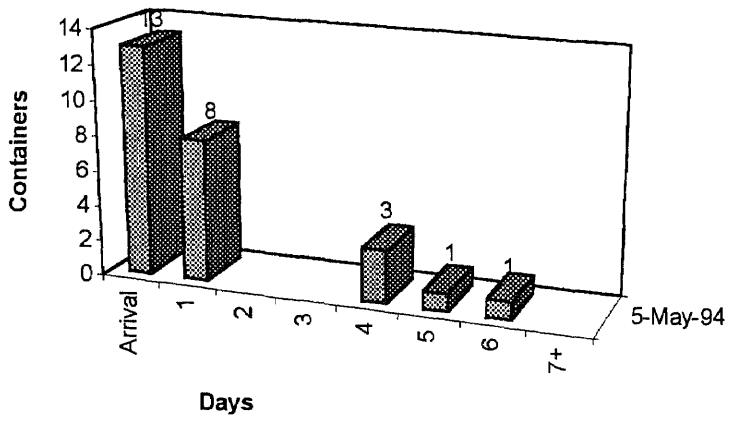

Figure D.9 **Days from Arrival by Rail to Scheduled Delivery by Truck for the date of May 5, 1994**

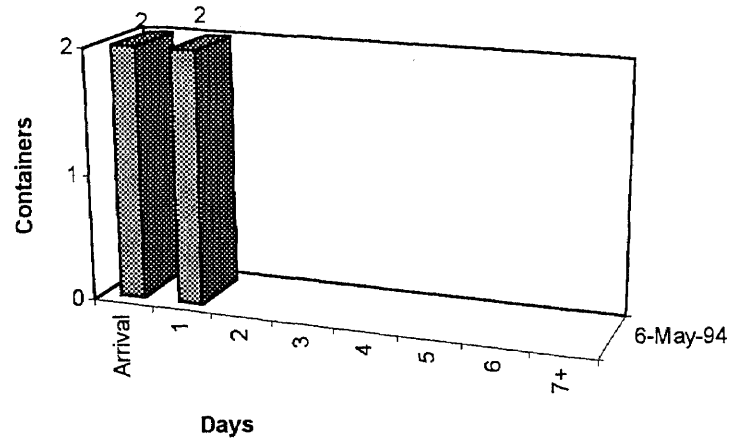

Figure D.10 **Days from Arrival by Rail to Scheduled Delivery by Truck for the date of May 6, 1994**

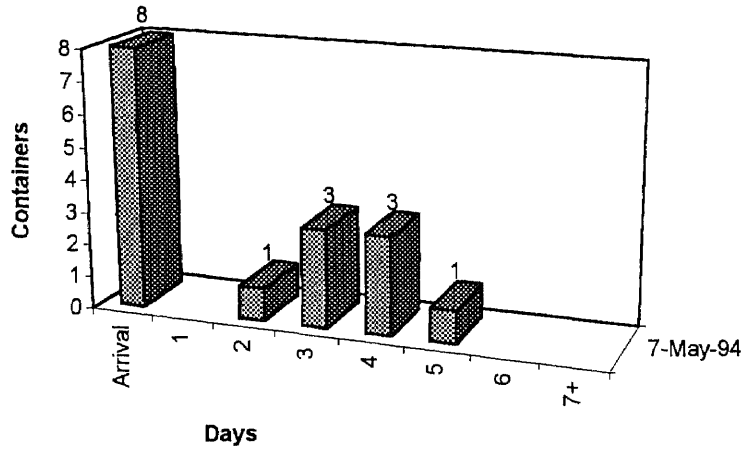

Figure D.11 Days from Arrival by Rail to Scheduled Delivery by Truck for the date of May 7, 1994

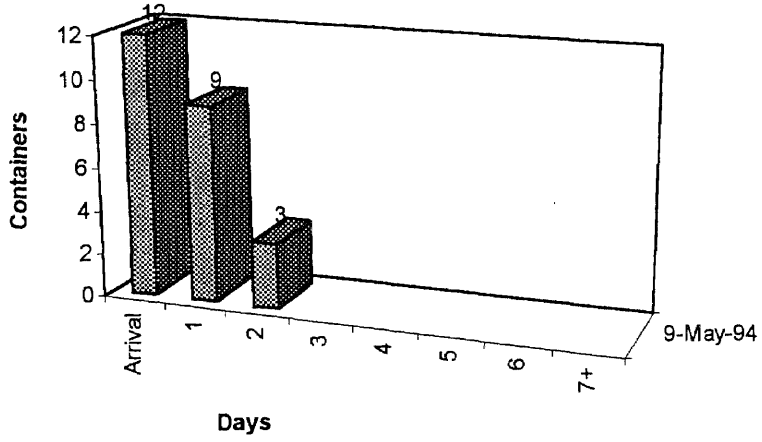

Figure D.12 Days from Arrival by Rail to Scheduled Delivery by Truck for the date of May 9, 1994

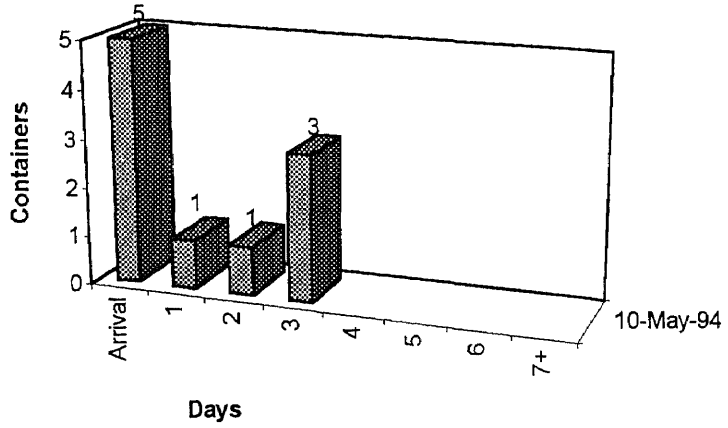

Figure D.13 Days from Arrival by Rail to Scheduled Delivery by Truck for the date of May 10, 1994

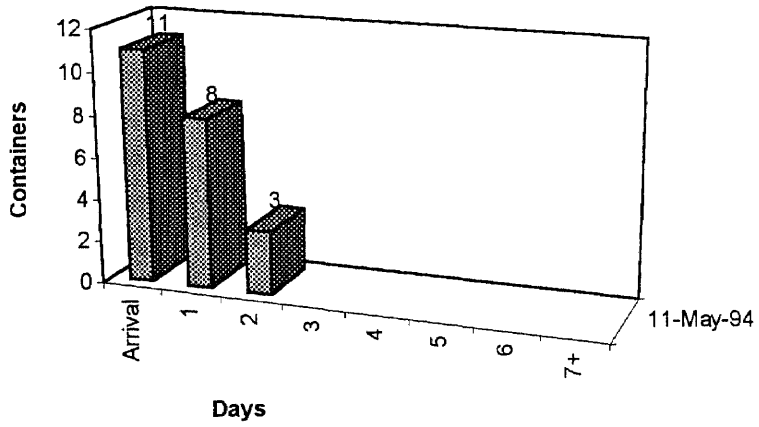

Figure D.14 Days from Arrival by Rail to Scheduled Delivery by Truck for the date of May 11, 1994

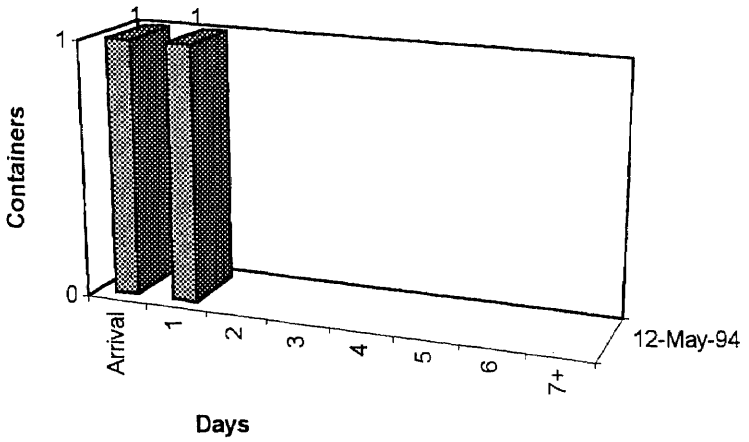

Figure D.15 **Days from Arrival by Rail to Scheduled Delivery by Truck for the date of May 12, 1994**

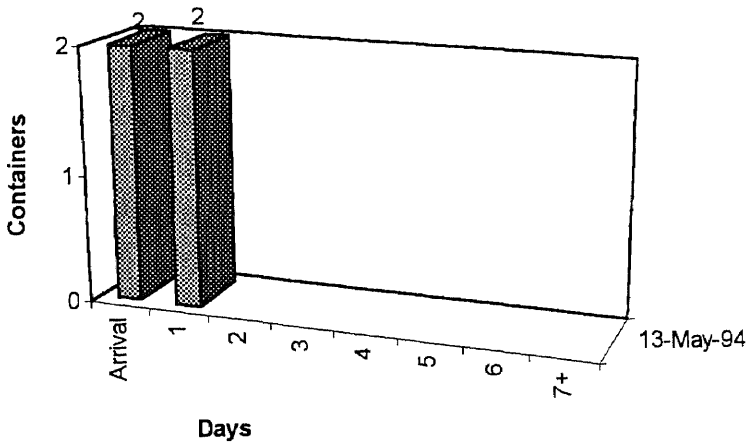

Figure D.16 **Days from Arrival by Rail to Scheduled Delivery by Truck for the date of May 13, 1994**

APPENDIX E

INDEXED RESULTS OF HEURISTIC FOR ONE HOUR AND TWO HOUR DETENTION TIMES

Section 1 Indexed Results: One Hour Detention Time

Section 2 Indexed Results: Two Hour Detention Time

INDEXED RESULTS: ONE HOUR DETENTION TIME

TRAILER/CONTAINER_	DESTINATION_DELIVERY	DESTINATION_PICKUP	ZIP_D	ZIP_P	SCH DAT	SCH TIME_D	SCH TIME_P	ID_P	RATE_P	ID_D	RATE_D
BNAU280293	NEWARK, NJ	FREEPORT, NY	07105	11520	5/3/94	900	1205	159	200	073	152
BNAU286513	SUCCASUNNA, NJ	MOONACHIE, NJ	07876	07074	5/3/94	830	1605	158	166	076	200
BNAU287039	DAYTON, NJ	MOONACHIE, NJ	08810	07074	5/3/94	1305	1605	157	166	077	200
BNAU286266	BURLINGTON, NJ	MILLVILLE, NJ	08016	08332	5/3/94	800	1000	156	471	079	343
BNAU282644	NEWARK, NJ	FREEPORT, NY	07114	11520	5/5/94	700	1505	162	200	091	152
BNAU280607	GUILDERLAND CENTER, NY	FALL RIVER, MA	12085	02722	5/5/94	745	1400	161	626	092	539
BNAU287027	BRIDGEPORT, NJ	MILLVILLE, NJ	08014	08332	5/5/94	800	1000	163	471	093	404
BNAU289734	DAYVILLE, CT	NO. HAVEN, CT	06241	06473	5/5/94	700	1405	243	404	096	546
BNAU287873	BURLINGTON, NJ	MILLVILLE, NJ	08016	08332	5/6/94	830	1100	098	471	106	343
MDWU280411	GUILDERLAND CENTER, NY	DANBURY, CT	12085	06810	5/12/94	900	1505	189	408	133	539
BNAU286706	BRIDGEPORT, NJ	ELMWOOD PARK, NJ	08014	07407	5/12/94	800	1300	244	166	135	404
BNAU289454	BRIDGEPORT, NJ	CHESTER, PA	08014	19013	5/12/94	1000	1435	245	404	136	404
MDWU280059	BRIDGEPORT, NJ	VINELAND, NJ	08014	08360	5/13/94	800	1535	143	450	139	404
MDWU280368	BRIDGEPORT, NJ	CAMP HILL, PA	08014	17011	5/13/94	900	1830	192	558	144	404
BNAU680687	BRIDGEPORT, NJ	MILLVILLE, NJ	08014	08332	5/6/94	800	1000	097	471	169	404
BNAU289952	NEWARK, NJ	PATERSON, NJ	07105	07501	5/10/94	700	1035	181	166	179	152
MDWU280022	WINSTED, CT	DURHAM, CT	06098	06422	5/12/94	900	2359	190	461	187	471
BNAU281327	BRIDGEPORT, NJ	CAMP HILL, PA	08014	17011	5/13/94	900	1630	240	558	191	404

INDEXED RESULTS: TWO HOUR DETENTION TIME

TRAILER/CONTAINER_D	TRAILER/CONTAINER_P	DESTINATION_DELIVERY	DESTINATION_PICKUP	ZIP_D	ZIP_P	SCH DAT	SCH TIME	SCH TIM	ID_P	RATE_P	ID_D
BNAU287039	BNAU280293	NEWARK, NJ	FREEPORT, NY	07105	11520	5/3/94	900	1205	159	200	073
BNAU680284	BNAU286513	SUCCASUNNA, NJ	MOONACHIE, NJ	07876	07074	5/3/94	830	1605	158	166	076
BNAU680282	BNAU287039	DAYTON, NJ	MOONACHIE, NJ	08810	07074	5/3/94	1305	1605	157	166	077
BNAU680399	BNAU282644	NEWARK, NJ	FREEPORT, NY	07114	11520	5/5/94	700	1505	162	200	091
BNAU287153	BNAU280607	GUILDERLAND CENTER, NY	FALL RIVER, MA	12085	02722	5/5/94	745	1400	161	626	092
BNAU289734	BNAU289734	DAYVILLE, CT	NO. HAVEN, CT	06241	06473	5/5/94	700	1405	243	404	096
BNAU282407	MDWU280411	GUILDERLAND CENTER, NY	DANBURY, CT	12085	06810	5/12/94	900	1505	189	408	133
MDWU280332	BNAU286706	BRIDGEPORT, NJ	ELMWOOD PARK, NJ	08014	07407	5/12/94	800	1300	244	166	135
BNAU680643	BNAU289454	BRIDGEPORT, NJ	CHESTER, PA	08014	19013	5/12/94	1000	1435	245	404	136
MDWU280252	MDWU280059	BRIDGEPORT, NJ	VINELAND, NJ	08014	08360	5/13/94	800	1535	143	450	139
MDWU280368	MDWU280368	BRIDGEPORT, NJ	CAMP HILL, PA	08014	17011	5/13/94	900	1830	192	558	144
MDWU280096	BNAU287873	BRIDGEPORT, NJ	MILLVILLE, NJ	08014	08332	5/6/94	800	1100	098	471	169
BNAU280708	BNAU289952	NEWARK, NJ	PATERSON, NJ	07105	07501	5/10/94	700	1035	181	166	179
MDWU280411	MDWU280022	WINSTED, CT	DURHAM, CT	06098	06422	5/12/94	900	2359	190	461	187
MDWU280059	BNAU281327	BRIDGEPORT, NJ	CAMP HILL, PA	08014	17011	5/13/94	900	1630	240	558	191

APPENDIX F

NON-INDEXED RESULTS OF HEURISTIC FOR ONE HOUR AND TWO HOUR DETENTION TIMES

Section 1 Non-Indexed Results: One Hour Detention Time

Section 2 Non-Indexed Results: Two Hour Detention Time

NON-INDEXED RESULTS: ONE HOUR DETENTION TIME

TRAILER/CONTAINER_	TRAILER/CONTAINER_	DESTINATION_DELIVERY	DESTINATION_PICKUP	ZIP_D	ZIP_P	SCH DAT	SCH TIME	SCH TIME	ID_P	RATE_P	ID_D	RATE_D
BNAU680282	BNAU287039	DAYTON, NJ	MOONACHIE, NJ	08810	07074	5/3/94	1305	1605	157	166	077	200
BNAU680282	BNAU286513	DAYTON, NJ	MOONACHIE, NJ	08810	07074	5/3/94	1305	1605	158	166	077	200
BNAU680284	BNAU287039	SUCCASUNNA, NJ	MOONACHIE, NJ	07876	07074	5/3/94	830	1605	157	166	076	200
BNAU680284	BNAU286513	SUCCASUNNA, NJ	MOONACHIE, NJ	07876	07074	5/3/94	830	1605	158	166	076	200
BNAU281290	BNAU287039	MIDDLETOWN, NY	MOONACHIE, NJ	10940	07074	5/3/94	800	1605	157	166	078	390
BNAU281290	BNAU286513	MIDDLETOWN, NY	MOONACHIE, NJ	10940	07074	5/3/94	800	1605	158	166	078	390
BNAU289734	BNAU289734	DAYVILLE, CT	NO. HAVEN, CT	06241	06473	5/5/94	700	1405	243	404	096	546
MDWU280411	MDWU280022	WINSTED, CT	DURHAM, CT	06098	06422	5/12/94	900	2359	190	461	187	471
BNAU286266	BNAU286266	BURLINGTON, NJ	MILLVILLE, NJ	08016	08332	5/3/94	800	1000	156	471	079	343
MDWU280397	BNAU286266	BRIDGEPORT, NJ	MILLVILLE, NJ	08014	08332	5/3/94	800	1000	156	471	075	404
BNAU286922	BNAU287027	BRIDGEPORT, NJ	MILLVILLE, NJ	08014	08332	5/5/94	800	1000	163	471	093	404
MDWU280096	BNAU680687	BRIDGEPORT, NJ	MILLVILLE, NJ	08014	08332	5/6/94	800	1000	097	471	169	404
MDWU280096	BNAU287873	BRIDGEPORT, NJ	MILLVILLE, NJ	08014	08332	5/6/94	800	1100	098	471	169	404
BNAU680687	BNAU287873	BURLINGTON, NJ	MILLVILLE, NJ	08016	08332	5/6/94	830	1100	098	471	106	343
BNAU287873	BNAU287873	BURLINGTON, NJ	MILLVILLE, NJ	08016	08332	5/6/94	900	1100	098	471	105	343
MDWU280332	BNAU286706	BRIDGEPORT, NJ	ELMWOOD PARK, NJ	08014	07407	5/12/94	800	1300	244	166	135	404
MDWU280332	BNAU289454	BRIDGEPORT, NJ	CHESTER, PA	08014	19013	5/12/94	800	1435	245	404	135	404
BNAU680643	BNAU286706	BRIDGEPORT, NJ	ELMWOOD PARK, NJ	08014	07407	5/12/94	1000	1300	244	166	136	404
BNAU680643	BNAU289454	BRIDGEPORT, NJ	CHESTER, PA	08014	19013	5/12/94	1000	1435	245	404	136	404
BNAU289454	BNAU286706	BRIDGEPORT, NJ	ELMWOOD PARK, NJ	08014	07407	5/12/94	1100	1300	244	166	137	404
BNAU289454	BNAU289454	BRIDGEPORT, NJ	CHESTER, PA	08014	19013	5/12/94	1100	1435	245	404	137	404
MDWU280252	MDWU280059	BRIDGEPORT, NJ	VINELAND, NJ	08014	08360	5/13/94	800	1535	143	450	139	404
MDWU280059	MDWU280059	BRIDGEPORT, NJ	VINELAND, NJ	08014	08360	5/13/94	900	1535	143	450	191	404
MDWU280368	MDWU280059	BRIDGEPORT, NJ	VINELAND, NJ	08014	08360	5/13/94	900	1535	143	450	144	404
MDWU280254	MDWU280059	BRIDGEPORT, NJ	VINELAND, NJ	08014	08360	5/13/94	1000	1535	143	450	140	404
BNAU680284	BNAU280293	SUCCASUNNA, NJ	FREEPORT, NY	07876	11520	5/3/94	830	1205	159	200	076	200
BNAU680284	BNAU287039	SUCCASUNNA, NJ	MOONACHIE, NJ	07876	07074	5/3/94	830	1605	157	166	076	200
BNAU680284	BNAU286513	SUCCASUNNA, NJ	MOONACHIE, NJ	07876	07074	5/3/94	830	1605	158	166	076	200
BNAU287039	BNAU280293	NEWARK, NJ	FREEPORT, NY	07105	11520	5/3/94	900	1205	159	200	073	152
BNAU287039	BNAU287039	NEWARK, NJ	MOONACHIE, NJ	07105	07074	5/3/94	900	1605	157	166	073	152
BNAU287039	BNAU286513	NEWARK, NJ	MOONACHIE, NJ	07105	07074	5/3/94	900	1605	158	166	073	152
BNAU680282	BNAU287039	DAYTON, NJ	MOONACHIE, NJ	08810	07074	5/3/94	1305	1605	157	166	077	200
BNAU680282	BNAU286513	DAYTON, NJ	MOONACHIE, NJ	08810	07074	5/3/94	1305	1605	158	166	077	200
BNAU680399	BNAU282644	NEWARK, NJ	FREEPORT, NY	07114	11520	5/5/94	700	1505	162	200	091	152
BNAU287027	BNAU282644	TRENTON, NJ	FREEPORT, NY	08638	11520	5/5/94	830	1505	162	200	095	343
BNAU280708	BNAU289952	NEWARK, NJ	PATERSON, NJ	07105	07501	5/10/94	700	1035	181	166	179	152
BNAU680273	BNAU282644	UNIVERSITY PARK, PA	FREEPORT, NY	16802	11520	5/5/94	800	1505	162	200	164	687
BNAU283511	BNAU282644	LITITZ, PA	FREEPORT, NY	17543	11520	5/5/94	1100	1505	162	200	094	513
BNAU280902	BNAU289952	MECHANICSBURG, PA	PATERSON, NJ	17055	07501	5/10/94	730	1035	181	166	122	568

TRAILER/CONTAINER_	TRAILER/CONTAINER_	DESTINATION_DELIVERY	DESTINATION_PICKUP	ZIP_D	ZIP_P	SCH DAT	SCH TIME	SCH TIME	ID_P	RATE_P	ID_D	RATE_D
BNAU286266	BNAU280293	BURLINGTON, NJ	FREEPORT, NY	08016	11520	5/3/94	800	1205	159	200	079	343
MDWU280397	BNAU280293	BRIDGEPORT, NJ	FREEPORT, NY	08014	11520	5/3/94	800	1205	159	200	075	404
BNAU286266	BNAU286513	BURLINGTON, NJ	MOONACHIE, NJ	08016	07074	5/3/94	800	1605	158	166	079	343
MDWU280397	BNAU286513	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	800	1605	158	166	075	404
BNAU286266	BNAU287039	BURLINGTON, NJ	MOONACHIE, NJ	08016	07074	5/3/94	800	1605	157	166	079	343
MDWU280397	BNAU287039	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	800	1605	157	166	075	404
MDWU280022	BNAU280293	BRIDGEPORT, NJ	FREEPORT, NY	08014	11520	5/3/94	900	1205	159	200	070	404
MDWU280022	BNAU286513	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	900	1605	158	166	070	404
MDWU280022	BNAU287039	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	900	1605	157	166	070	404
BNAU286123	BNAU286513	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	1000	1605	158	166	071	404
BNAU286123	BNAU287039	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	1000	1605	157	166	071	404
MDWU280416	BNAU286513	PHILADELPHIA, PA	MOONACHIE, NJ	19153	07074	5/3/94	1305	1605	158	166	074	385
MDWU280416	BNAU287039	PHILADELPHIA, PA	MOONACHIE, NJ	19153	07074	5/3/94	1305	1605	157	166	074	385
BNAU286922	BNAU282644	BRIDGEPORT, NJ	FREEPORT, NY	08014	11520	5/5/94	800	1505	162	200	093	404
MDWU280252	BNAU281327	BRIDGEPORT, NJ	CAMP HILL, PA	08014	17011	5/13/94	800	1630	240	558	139	404
MDWU280252	MDWU280368	BRIDGEPORT, NJ	CAMP HILL, PA	08014	17011	5/13/94	800	1830	192	558	139	404
MDWU280059	BNAU281327	BRIDGEPORT, NJ	CAMP HILL, PA	08014	17011	5/13/94	900	1630	240	558	191	404
MDWU280368	BNAU281327	BRIDGEPORT, NJ	CAMP HILL, PA	08014	17011	5/13/94	900	1630	240	558	144	404
MDWU280059	MDWU280368	BRIDGEPORT, NJ	CAMP HILL, PA	08014	17011	5/13/94	900	1830	192	558	191	404
MDWU280368	MDWU280368	BRIDGEPORT, NJ	CAMP HILL, PA	08014	17011	5/13/94	900	1830	192	558	144	404
MDWU280254	BNAU281327	BRIDGEPORT, NJ	CAMP HILL, PA	08014	17011	5/13/94	1000	1630	240	558	140	404
MDWU280254	MDWU280368	BRIDGEPORT, NJ	CAMP HILL, PA	08014	17011	5/13/94	1000	1830	192	558	140	404
BNAU286266	BNAU280293	BURLINGTON, NJ	FREEPORT, NY	08016	11520	5/3/94	800	1205	159	200	079	343
MDWU280397	BNAU280293	BRIDGEPORT, NJ	FREEPORT, NY	08014	11520	5/3/94	800	1205	159	200	075	404
BNAU286266	BNAU286513	BURLINGTON, NJ	MOONACHIE, NJ	08016	07074	5/3/94	800	1605	158	166	079	343
MDWU280397	BNAU286513	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	800	1605	158	166	075	404
BNAU286266	BNAU287039	BURLINGTON, NJ	MOONACHIE, NJ	08016	07074	5/3/94	800	1605	157	166	079	343
MDWU280397	BNAU287039	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	800	1605	157	166	075	404
MDWU280022	BNAU280293	BRIDGEPORT, NJ	FREEPORT, NY	08014	11520	5/3/94	900	1205	159	200	070	404
MDWU280022	BNAU286513	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	900	1605	158	166	070	404
MDWU280022	BNAU287039	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	900	1605	157	166	070	404
BNAU286123	BNAU286513	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	1000	1605	158	166	071	404
BNAU286123	BNAU287039	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	1000	1605	157	166	071	404
MDWU280416	BNAU286513	PHILADELPHIA, PA	MOONACHIE, NJ	19153	07074	5/3/94	1305	1605	158	166	074	385
MDWU280416	BNAU287039	PHILADELPHIA, PA	MOONACHIE, NJ	19153	07074	5/3/94	1305	1605	157	166	074	385
BNAU286922	BNAU282644	BRIDGEPORT, NJ	FREEPORT, NY	08014	11520	5/5/94	800	1505	162	200	093	404
BNAU287153	BNAU289734	GUILDERLAND CENTER, NY	NO. HAVEN, CT	12085	06473	5/5/94	745	1405	243	404	092	539
BNAU288230	BNAU289734	GUILDERLAND CENTER, NY	NO. HAVEN, CT	12085	06473	5/5/94	800	1405	243	404	090	539
BNAU282407	MDWU280022	GUILDERLAND CENTER, NY	DURHAM, CT	12085	06422	5/12/94	900	2359	190	461	133	539

TRAILER/CONTAINER_	TRAILER/CONTAINER_	DESTINATION_DELIVERY	DESTINATION_PICKUP	ZIP_D	ZIP_P	SCH DAT	SCH TIME	SCH TIME	ID_P	RATE_P	ID_D	RATE_D
MDWU280411	MDWU280411	WINSTED, CT	DANBURY, CT	06098	06810	5/12/94	900	1505	189	408	187	471
BNAU282407	MDWU280411	GUILDERLAND CENTER, NY	DANBURY, CT	12085	06810	5/12/94	900	1505	189	408	133	539
BNAU287153	BNAU280607	GUILDERLAND CENTER, NY	FALL RIVER, MA	12085	02722	5/5/94	745	1400	161	626	092	539
BNAU288230	BNAU280607	GUILDERLAND CENTER, NY	FALL RIVER, MA	12085	02722	5/5/94	800	1400	161	626	090	539
BNAU289734	BNAU282644	DAYVILLE, CT	FREEPORT, NY	06241	11520	5/5/94	0	0	162	200	096	546
BNAU281290	BNAU280293	MIDDLETOWN, NY	FREEPORT, NY	10940	11520	5/3/94	800	1205	159	200	078	390
BNAU281290	BNAU287039	MIDDLETOWN, NY	MOONACHIE, NJ	10940	07074	5/3/94	800	1605	157	166	078	390
BNAU281290	BNAU286513	MIDDLETOWN, NY	MOONACHIE, NJ	10940	07074	5/3/94	800	1605	158	166	078	390
BNAU289952	BNAU289952	MIDDLETOWN, NY	PATERSON, NJ	10940	07501	5/10/94	800	1035	181	166	120	390
BNAU287153	BNAU282644	GUILDERLAND CENTER, NY	FREEPORT, NY	12085	11520	5/5/94	745	1505	162	200	092	539
BNAU288230	BNAU282644	GUILDERLAND CENTER, NY	FREEPORT, NY	12085	11520	5/5/94	800	1505	162	200	090	539
MDWU280411	BNAU289454	WINSTED, CT	CHESTER, PA	06098	19013	5/12/94	900	1435	245	404	187	471
BNAU282407	BNAU289454	GUILDERLAND CENTER, NY	CHESTER, PA	12085	19013	5/12/94	900	1435	245	404	133	539
BNAU286266	BNAU280293	BURLINGTON, NJ	FREEPORT, NY	08016	11520	5/3/94	800	1205	159	200	079	343
MDWU280397	BNAU280293	BRIDGEPORT, NJ	FREEPORT, NY	08014	11520	5/3/94	800	1205	159	200	075	404
BNAU286266	BNAU286513	BURLINGTON, NJ	MOONACHIE, NJ	08016	07074	5/3/94	800	1605	158	166	079	343
MDWU280397	BNAU286513	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	800	1605	158	166	075	404
BNAU286266	BNAU287039	BURLINGTON, NJ	MOONACHIE, NJ	08016	07074	5/3/94	800	1605	157	166	079	343
MDWU280397	BNAU287039	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	800	1605	157	166	075	404
MDWU280022	BNAU280293	BRIDGEPORT, NJ	FREEPORT, NY	08014	11520	5/3/94	900	1205	159	200	070	404
MDWU280022	BNAU286513	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	900	1605	158	166	070	404
MDWU280022	BNAU287039	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	900	1605	157	166	070	404
BNAU286123	BNAU286513	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	1000	1605	158	166	071	404
BNAU286123	BNAU287039	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	1000	1605	157	166	071	404
MDWU280416	BNAU286513	PHILADELPHIA, PA	MOONACHIE, NJ	19153	07074	5/3/94	1305	1605	158	166	074	385
MDWU280416	BNAU287039	PHILADELPHIA, PA	MOONACHIE, NJ	19153	07074	5/3/94	1305	1605	157	166	074	385
BNAU286922	BNAU282644	BRIDGEPORT, NJ	FREEPORT, NY	08014	11520	5/5/94	800	1505	162	200	093	404
BNAU680273	BNAU289734	UNIVERSITY PARK, PA	NO. HAVEN, CT	16802	06473	5/5/94	800	1405	243	404	164	687
BNAU680273	BNAU280607	UNIVERSITY PARK, PA	FALL RIVER, MA	16802	02722	5/5/94	800	1400	161	626	164	687
BNAU286922	BNAU289734	BRIDGEPORT, NJ	NO. HAVEN, CT	08014	06473	5/5/94	800	1405	243	404	093	404
MDWU280332	MDWU280022	BRIDGEPORT, NJ	DURHAM, CT	08014	06422	5/12/94	800	2359	190	461	135	404
BNAU680643	MDWU280022	BRIDGEPORT, NJ	DURHAM, CT	08014	06422	5/12/94	1000	2359	190	461	136	404
BNAU289454	MDWU280022	BRIDGEPORT, NJ	DURHAM, CT	08014	06422	5/12/94	1100	2359	190	461	137	404
MDWU280056	MDWU280022	BRIDGEPORT, NJ	DURHAM, CT	08014	06422	5/12/94	1300	2359	190	461	138	404
MDWU280332	MDWU280411	BRIDGEPORT, NJ	DANBURY, CT	08014	06810	5/12/94	800	1505	189	408	135	404
BNAU680643	MDWU280411	BRIDGEPORT, NJ	DANBURY, CT	08014	06810	5/12/94	1000	1505	189	408	136	404
BNAU289454	MDWU280411	BRIDGEPORT, NJ	DANBURY, CT	08014	06810	5/12/94	1100	1505	189	408	137	404
BNAU286922	BNAU280607	BRIDGEPORT, NJ	FALL RIVER, MA	08014	02722	5/5/94	800	1400	161	626	093	404

NON-INDEXED RESULTS: TWO HOUR DETENTION TIME

TRAILER/CONTAINER_D	TRAILER/CONTAINER_P	DESTINATION_DELIVERY	DESTINATION_PICKU	ZIP_D	ZIP_P	SCH DAT	SCH TIM	SCH TIM	ID_P	RATE_P	ID_D	RATE_D
BNAU680282	BNAU287039	DAYTON, NJ	MOONACHIE, NJ	08810	07074	5/3/94	1305	1605	157	166	077	200
BNAU680282	BNAU286513	DAYTON, NJ	MOONACHIE, NJ	08810	07074	5/3/94	1305	1605	158	166	077	200
BNAU680284	BNAU287039	SUCCASUNNA, NJ	MOONACHIE, NJ	07876	07074	5/3/94	830	1605	157	166	076	200
BNAU680284	BNAU286513	SUCCASUNNA, NJ	MOONACHIE, NJ	07876	07074	5/3/94	830	1605	158	166	076	200
BNAU281290	BNAU287039	MIDDLETOWN, NY	MOONACHIE, NJ	10940	07074	5/3/94	800	1605	157	166	078	390
BNAU281290	BNAU286513	MIDDLETOWN, NY	MOONACHIE, NJ	10940	07074	5/3/94	800	1605	158	166	078	390
BNAU289734	BNAU289734	DAYVILLE, CT	NO. HAVEN, CT	06241	06473	5/5/94	700	1405	243	404	096	546
MDWU280411	MDWU280022	WINSTED, CT	DURHAM, CT	06098	06422	5/12/94	900	2359	190	461	187	471
MDWU280096	BNAU287873	BRIDGEPORT, NJ	MILLVILLE, NJ	08014	08332	5/6/94	800	1100	098	471	169	404
MDWU280332	BNAU286706	BRIDGEPORT, NJ	ELMWOOD PARK, NJ	08014	07407	5/12/94	800	1300	244	166	135	404
MDWU280332	BNAU289454	BRIDGEPORT, NJ	CHESTER, PA	08014	19013	5/12/94	800	1435	245	404	135	404
BNAU680643	BNAU286706	BRIDGEPORT, NJ	ELMWOOD PARK, NJ	08014	07407	5/12/94	1000	1300	244	166	136	404
BNAU680643	BNAU289454	BRIDGEPORT, NJ	CHESTER, PA	08014	19013	5/12/94	1000	1435	245	404	136	404
BNAU289454	BNAU289454	BRIDGEPORT, NJ	CHESTER, PA	08014	19013	5/12/94	1100	1435	245	404	137	404
MDWU280252	MDWU280059	BRIDGEPORT, NJ	VINELAND, NJ	08014	08360	5/13/94	800	1535	143	450	139	404
MDWU280059	MDWU280059	BRIDGEPORT, NJ	VINELAND, NJ	08014	08360	5/13/94	900	1535	143	450	191	404
MDWU280368	MDWU280059	BRIDGEPORT, NJ	VINELAND, NJ	08014	08360	5/13/94	900	1535	143	450	144	404
MDWU280254	MDWU280059	BRIDGEPORT, NJ	VINELAND, NJ	08014	08360	5/13/94	1000	1535	143	450	140	404
BNAU680284	BNAU280293	SUCCASUNNA, NJ	FREEPORT, NY	07876	11520	5/3/94	830	1205	159	200	076	200
BNAU680284	BNAU287039	SUCCASUNNA, NJ	MOONACHIE, NJ	07876	07074	5/3/94	830	1605	157	166	076	200
BNAU680284	BNAU286513	SUCCASUNNA, NJ	MOONACHIE, NJ	07876	07074	5/3/94	830	1605	158	166	076	200
BNAU287039	BNAU280293	NEWARK, NJ	FREEPORT, NY	07105	11520	5/3/94	900	1205	159	200	073	152
BNAU287039	BNAU287039	NEWARK, NJ	MOONACHIE, NJ	07105	07074	5/3/94	900	1605	157	166	073	152
BNAU287039	BNAU286513	NEWARK, NJ	MOONACHIE, NJ	07105	07074	5/3/94	900	1605	158	166	073	152
BNAU680282	BNAU287039	DAYTON, NJ	MOONACHIE, NJ	08810	07074	5/3/94	1305	1605	157	166	077	200
BNAU680282	BNAU286513	DAYTON, NJ	MOONACHIE, NJ	08810	07074	5/3/94	1305	1605	158	166	077	200
BNAU680399	BNAU282644	NEWARK, NJ	FREEPORT, NY	07114	11520	5/5/94	700	1505	162	200	091	152
BNAU287027	BNAU282644	TRENTON, NJ	FREEPORT, NY	08638	11520	5/5/94	830	1505	162	200	095	343
BNAU280708	BNAU289952	NEWARK, NJ	PATERSON, NJ	07105	07501	5/10/94	700	1035	181	166	179	152
BNAU680273	BNAU282644	UNIVERSITY PARK, PA	FREEPORT, NY	16802	11520	5/5/94	800	1505	162	200	164	687
BNAU283511	BNAU282644	LITITZ, PA	FREEPORT, NY	17543	11520	5/5/94	1100	1505	162	200	094	513
BNAU286266	BNAU280293	BURLINGTON, NJ	FREEPORT, NY	08016	11520	5/3/94	800	1205	159	200	079	343
MDWU280397	BNAU280293	BRIDGEPORT, NJ	FREEPORT, NY	08014	11520	5/3/94	800	1205	159	200	075	404
BNAU286266	BNAU286513	BURLINGTON, NJ	MOONACHIE, NJ	08016	07074	5/3/94	800	1605	158	166	079	343

TRAILER/CONTAINER_D	TRAILER/CONTAINER_P	DESTINATION_DELIVERY	DESTINATION_PICKU	ZIP_D	ZIP_P	SCH DAT	SCH TIM	SCH TIM	ID_P	RATE_P	ID_D	RATE_D
MDWU280397	BNAU286513	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	800	1605	158	166	075	404
BNAU286266	BNAU287039	BURLINGTON, NJ	MOONACHIE, NJ	08016	07074	5/3/94	800	1605	157	166	079	343
MDWU280397	BNAU287039	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	800	1605	157	166	075	404
MDWU280022	BNAU286513	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	900	1605	158	166	070	404
MDWU280022	BNAU287039	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	900	1605	157	166	070	404
BNAU286123	BNAU286513	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	1000	1605	158	166	071	404
BNAU286123	BNAU287039	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	1000	1605	157	166	071	404
BNAU286922	BNAU282644	BRIDGEPORT, NJ	FREEPORT, NY	08014	11520	5/5/94	800	1505	162	200	093	404
MDWU280252	BNAU281327	BRIDGEPORT, NJ	CAMP HILL, PA	08014	17011	5/13/94	800	1630	240	558	139	404
MDWU280252	MDWU280368	BRIDGEPORT, NJ	CAMP HILL, PA	08014	17011	5/13/94	800	1830	192	558	139	404
MDWU280059	BNAU281327	BRIDGEPORT, NJ	CAMP HILL, PA	08014	17011	5/13/94	900	1630	240	558	191	404
MDWU280368	BNAU281327	BRIDGEPORT, NJ	CAMP HILL, PA	08014	17011	5/13/94	900	1630	240	558	144	404
MDWU280059	MDWU280368	BRIDGEPORT, NJ	CAMP HILL, PA	08014	17011	5/13/94	900	1830	192	558	191	404
MDWU280368	MDWU280368	BRIDGEPORT, NJ	CAMP HILL, PA	08014	17011	5/13/94	900	1830	192	558	144	404
MDWU280254	BNAU281327	BRIDGEPORT, NJ	CAMP HILL, PA	08014	17011	5/13/94	1000	1630	240	558	140	404
MDWU280254	MDWU280368	BRIDGEPORT, NJ	CAMP HILL, PA	08014	17011	5/13/94	1000	1830	192	558	140	404
BNAU286266	BNAU280293	BURLINGTON, NJ	FREEPORT, NY	08016	11520	5/3/94	800	1205	159	200	079	343
MDWU280397	BNAU280293	BRIDGEPORT, NJ	FREEPORT, NY	08014	11520	5/3/94	800	1205	159	200	075	404
BNAU286266	BNAU286513	BURLINGTON, NJ	MOONACHIE, NJ	08016	07074	5/3/94	800	1605	158	166	079	343
MDWU280397	BNAU286513	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	800	1605	158	166	075	404
BNAU286266	BNAU287039	BURLINGTON, NJ	MOONACHIE, NJ	08016	07074	5/3/94	800	1605	157	166	079	343
MDWU280397	BNAU287039	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	800	1605	157	166	075	404
MDWU280022	BNAU286513	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	900	1605	158	166	070	404
MDWU280022	BNAU287039	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	900	1605	157	166	070	404
BNAU286123	BNAU286513	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	1000	1605	158	166	071	404
BNAU286123	BNAU287039	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	1000	1605	157	166	071	404
BNAU286922	BNAU282644	BRIDGEPORT, NJ	FREEPORT, NY	08014	11520	5/5/94	800	1505	162	200	093	404
BNAU287153	BNAU289734	GUILDERLAND CENTER, NY	NO. HAVEN, CT	12085	06473	5/5/94	745	1405	243	404	092	539
BNAU288230	BNAU289734	GUILDERLAND CENTER, NY	NO. HAVEN, CT	12085	06473	5/5/94	800	1405	243	404	090	539
BNAU282407	MDWU280022	GUILDERLAND CENTER, NY	DURHAM, CT	12085	06422	5/12/94	900	2359	190	461	133	539
MDWU280411	MDWU280411	WINSTED, CT	DANBURY, CT	06098	06810	5/12/94	900	1505	189	408	187	471
BNAU282407	MDWU280411	GUILDERLAND CENTER, NY	DANBURY, CT	12085	06810	5/12/94	900	1505	189	408	133	539
BNAU287153	BNAU280607	GUILDERLAND CENTER, NY	FALL RIVER, MA	12085	02722	5/5/94	745	1400	161	626	092	539
BNAU288230	BNAU280607	GUILDERLAND CENTER, NY	FALL RIVER, MA	12085	02722	5/5/94	800	1400	161	626	090	539

TRAILER/CONTAINER_D	TRAILER/CONTAINER_P	DESTINATION_DELIVERY	DESTINATION_PICKU	ZIP_D	ZIP_P	SCH DAT	SCH TIM	SCH TIM	ID_P	RATE_P	ID_D	RATE_D
BNAU289734	BNAU282644	DAYVILLE, CT	FREEPORT, NY	06241	11520	5/5/94	0	0	162	200	096	546
BNAU281290	BNAU280293	MIDDLETOWN, NY	FREEPORT, NY	10940	11520	5/3/94	800	1205	159	200	078	390
BNAU281290	BNAU287039	MIDDLETOWN, NY	MOONACHIE, NJ	10940	07074	5/3/94	800	1605	157	166	078	390
BNAU281290	BNAU286513	MIDDLETOWN, NY	MOONACHIE, NJ	10940	07074	5/3/94	800	1605	158	166	078	390
BNAU287153	BNAU282644	GUILDERLAND CENTER, NY	FREEPORT, NY	12085	11520	5/5/94	745	1505	162	200	092	539
BNAU288230	BNAU282644	GUILDERLAND CENTER, NY	FREEPORT, NY	12085	11520	5/5/94	800	1505	162	200	090	539
MDWU280411	BNAU289454	WINSTED, CT	CHESTER, PA	06098	19013	5/12/94	900	1435	245	404	187	471
BNAU286266	BNAU280293	BURLINGTON, NJ	FREEPORT, NY	08016	11520	5/3/94	800	1205	159	200	079	343
MDWU280397	BNAU280293	BRIDGEPORT, NJ	FREEPORT, NY	08014	11520	5/3/94	800	1205	159	200	075	404
BNAU286266	BNAU286513	BURLINGTON, NJ	MOONACHIE, NJ	08016	07074	5/3/94	800	1605	158	166	079	343
MDWU280397	BNAU286513	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	800	1605	158	166	075	404
BNAU286266	BNAU287039	BURLINGTON, NJ	MOONACHIE, NJ	08016	07074	5/3/94	800	1605	157	166	079	343
MDWU280397	BNAU287039	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	800	1605	157	166	075	404
MDWU280022	BNAU286513	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	900	1605	158	166	070	404
MDWU280022	BNAU287039	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	900	1605	157	166	070	404
BNAU286123	BNAU286513	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	1000	1605	158	166	071	404
BNAU286123	BNAU287039	BRIDGEPORT, NJ	MOONACHIE, NJ	08014	07074	5/3/94	1000	1605	157	166	071	404
BNAU286922	BNAU282644	BRIDGEPORT, NJ	FREEPORT, NY	08014	11520	5/5/94	800	1505	162	200	093	404
BNAU680273	BNAU289734	UNIVERSITY PARK, PA	NO. HAVEN, CT	16802	06473	5/5/94	800	1405	243	404	164	687
BNAU286922	BNAU289734	BRIDGEPORT, NJ	NO. HAVEN, CT	08014	06473	5/5/94	800	1405	243	404	093	404
MDWU280332	MDWU280022	BRIDGEPORT, NJ	DURHAM, CT	08014	06422	5/12/94	800	2359	190	461	135	404
BNAU680643	MDWU280022	BRIDGEPORT, NJ	DURHAM, CT	08014	06422	5/12/94	1000	2359	190	461	136	404
BNAU289454	MDWU280022	BRIDGEPORT, NJ	DURHAM, CT	08014	06422	5/12/94	1100	2359	190	461	137	404
MDWU280056	MDWU280022	BRIDGEPORT, NJ	DURHAM, CT	08014	06422	5/12/94	1300	2359	190	461	138	404
MDWU280332	MDWU280411	BRIDGEPORT, NJ	DANBURY, CT	08014	06810	5/12/94	800	1505	189	408	135	404
BNAU680643	MDWU280411	BRIDGEPORT, NJ	DANBURY, CT	08014	06810	5/12/94	1000	1505	189	408	136	404

REFERENCES

Clean Air Act, as amended by Pub.L.101-549 (42 U.S.C. (7401 et seq.)).

Cornuejols, Gerard, George L. Nemhauser and Laurence A. Wolsey. 1980. "Worst-Case and Probabilistic Analysis of Algorithms for a Location Problem." *Operations Research*. Vol. 28, No.4: 847-857.

Fisher, Marshall L. and Alexander H. G. Rinnooy Kan. 1988. "The Design, Analysis and Implementation of Heuristics." *Management Science*. Vol. 34, No.3: 263-265.

French, Simon. 1982. *Sequencing and Scheduling: An Introduction to the Mathematics of the Job-Shop*. E. Horwood: Wiley.

Huerta, Michael P. 1994. Remarks made to the Academia Mexicana De Ingenieria, Mexico City, D.F., Mexico by Associate Deputy Secretary, Department of Transportation, United States of America.

"Intermodal Surface Transportation Efficiency Act of 1991" (ISTEA). United States Department of Transportation. FWHA-PL-92-008; HPP-24/12-91 (5M)E; HPP-24/R 12-91 (50M)E - Public Law 102 - 240 - December 18, 1991. Sec. 5005.

Mahoney, John H. 1985. *Intermodal Freight Transportation*. Westport, Connecticut: ENO Foundation for Transportation, Inc.

Morlok, Edward K. and Lazar N. Spasovic. 1994. "Redesigning Rail-Truck Intermodal Drayage Operations for Enhanced Service and Cost Performance." Journal of the Transportation Research Forum. Vol. 34, No. 1: 16-31.

Morlok, Edward K., John P. Sammon, Lazar N. Spasovic and Linda K. Nozick. 1994. "Improving Productivity in Intermodal Rail-Truck Transportation." *The Service Productivity and Quality Challenge*. Kluner Academic Press: 407-434.

National Commission on Intermodal Transportation. September 1994. "Toward A National Intermodal Transportation System." Final Report.

New Jersey Traffic and Air Pollution Control Act (P.L.1992, C.32, N.J.S.A. 27:26A-1)

North Jersey Transportation Planning Authority, Inc. and The Foundation of the NJ Alliance for Action. August 1994. "Intermodal Coordination Study: A Survey and Consultant Recommendations on Containerized Transportation in Northern New Jersey."

Spasovic, Lazar N. 1990. "Planning Intermodal Drayage Network Operations." Ph.D. Dissertation in Systems Engineering University of Pennsylvania.

Spasovic, Lazar N. and Edward K. Morlok. 1990. "Intermodal Service Planning Project, Case Study Data: Sources and Analysis." Department of Systems, School of Engineering and Applied Science, University of Pennsylvania.

Spasovic, Lazar N. and Edward K. Morlok. 1990. "Intermodal Service Planning Project, Case Study Data: Data Input for Optimization Model of Drayage Operations." epartment of Systems, School of Engineering and Applied Science, University of Pennsylvania.

Spasovic, Lazar N. and Edward K. Morlok. 1993. "Reducing Cost and Improving Service Quality of Drayage in Rail-Truck Intermodal." Presented at the 1993 IANA Conference Workshop.

U.S., Congress, House, The Staggers Rail Act of 1980 - Conference Report on S. 1946, Pub. Lib. 96-448, 96th Congress, 2nd Sess., 1980, H.R. 1430

Venkatesan, Pattabi. 1991. "A Model for Scheduling Tractor-Trailer Operations in Rail-Truck Intermodal Transportation." A Project submitted in Partial Fullfillment of the Requirements for the degree Master of Science in Transportation, New Jersey Institute of Technology.