Lochsa engineering

T 702-365-9312 | F 702-365-9317

6345 S Jones Blvd, Suite 100
Las Vegas, NV 89118

Traffic Impact Analysis for

Ocean Mist Farms Expansion

Coachella, California

October 2014

10-15-2014

Prepared For:

Ocean Mist Farms
52300 Enterprise Way
Coachella, CA 92236

Project No. 141092

TABLE OF CONTENTS

TABLES

APPENDICES

EXECUTIVE SUMMARY

The traffic impact analysis (TIA) has been prepared to assess the potential circulation impacts associated with the expansion of the Ocean Mist Farms facility in Coachella, CA. The current facility is located at 52300 Enterprise Way on the southeast corner of Enterprise Way at Avenue 52. The project expansion consists of the addition of a 1,122 square foot ice storage facility, an 18,000 square foot covered sorting facility, and a 2,600 square foot administration building. In addition, the project will build a truck parking lot (30 spaces) and employee parking lot (100 spaces) on the southeast corner of Industrial Way at Enterprise Way.

The project is anticipated to generate two distinct trips: truck trips and employee trips. The project is anticipated to generate 100 truck trips during the AM and PM peak hours. The project is anticipate to generate 60 employee trip during the AM peak hour and 95 employee trips during the PM peak hour.

Traffic conditions were analyzed at 2 intersections, Enterprise Way at Avenue 52 and Industrial Way at Enterprise Way, for the AM and PM peak hours for the following conditions:

- Existing Condition (2014)
- Existing plus Project Condition (2014)
- Completion Year without and with project (2015): ambient growth
- Cumulative Completion Year without and with project (2015): ambient growth and cumulative development projects

The analysis indicates that the cumulative completion year with project AM peak hour will experience unacceptable delays at Enterprise Way at Avenue 52. A traffic signal is the recommended measure to mitigate the unacceptable LOS upon completion of La Entrada Phase I and Phase II. A full traffic signal warrant analysis of this intersection would be recommended upon completion of La Entrada Phase I and Phase II prior to installation of the traffic signal.

The following conclusions and recommendations are provided to mitigate the circulation impacts of the project:

An analysis of Warrant 3 of the MUTCD and the MUTCD 2012 California Supplement indicates that the intersection in the scenario would meet the warrant for signalization. The project traffic contribution in this scenario is 15.1% during the PM peak hour (164 project trips/1084 total intersection volume = 0.151)

An assessment of the proposed circulation finds that the impact to the local roadways adjacent to the project site should be minimal. In order to improve the safety along Industrial Way the following measures should be undertaken:

- Installation of "DO NOT ENTER" (D5-1) signs at the project proposed truck staging parking lot from Industrial Way.
- Installation of lighting along Industrial Way with placement to illuminate the driveway locations.
- Installation of "Truck Crossing" (W8-6) signs to alert motorists to the trucks crossing Industrial Way from the staging lot to the loading dock.

- Provide a marked crosswalk across Industrial Way with appropriate signage and lighting.

A. INTRODUCTION

A.1. Purpose of the TIA and Study Objectives

The traffic impact analysis (TIA) has been prepared to assess the potential impacts associated with the proposed expansion of the Ocean Mist Farms facility located within the City of Coachella, CA.

The report has been prepared based upon the Riverside County Transportation Department's *Traffic Impact Analysis Preparation Guide,* April 2008. The objective of this traffic impact analysis is to evaluate the potential impacts to traffic and circulation associated with the development of the proposed project and then recommend improvements to mitigate the project's impacts.

A.2. Site Location

The existing Ocean Mist Farms facility is located on the southeast corner of Enterprise Way at Avenue 52 and is addressed as 52300 Enterprise Way. This facility is located on assessor parcel numbers (A.P.N.) referred to as 763-131-029, 763-131-066, 763-131-010, 763-131-011, 763-131-046, and 763-131-015.

In conjunction with expansion at the existing facility, a parking lot for truck staging and employees will be constructed on the southeast corner of Industrial Way at Enterprise Way. The parking lots will be constructed on portion of the A.P.N. referred to as 763-131-063.

Refer to Figure 1 which illustrates the project location.

A.3. Development Project Description

Ocean Mist Farms is proposing an expansion of the existing company's distribution plant to be completed in one phase by the year 2015. The expansion consists of the addition of a 1,122 square foot ice storage facility, an 18,000 square foot covered sorting facility, and a 2,600 square foot administration building. In addition, the project will build a truck parking lot (30 spaces) and employee parking lot (100 spaces) on the southeast corner of Industrial Way at Enterprise Way.

The project will also modify the site's access from the local roadway network. The current driveway from Avenue 52 will remain and will continue to operate as an exit for trucks departing after off-loading product at the facility. The current five (5) driveways from Enterprise Way shall be reduced to two driveways as part of the site expansion. It is anticipated that these driveways shall allow full access movements. Along Industrial Way, the facility's current two driveways shall remain while an additional three driveways shall be constructed for the parking lots located on the south side of Industrial Way. Expect for the truck parking lot which circulates one-way, the driveways on Industrial Way shall allow full access movements. Refer to Figure 2 for the proposed site plan.

The current facility is located on parcels zoned as M-S (Manufacturing Service) as per the City of Coachella's Official Zoning Map. The parcel for the proposed parking lots is zoned as M-H (Heavy Industrial) and will require a zone change to M-S.

B. ANALYSIS SCENARIOS

This traffic study will assess the project impacts on traffic for each of the following conditions:

- Existing Condition (2014)
- Existing plus Project Condition (2014)
- Completion Year without and with project (2015): ambient growth
- Cumulative Completion Year without and with project (2015): ambient growth and cumulative development projects

Existing Condition (2014)

The existing year conditions (2014) was analyzed to represent the baseline traffic operation as they existing when the project was proposed.

Existing plus Project Condition (2014)

The existing plus project analysis assists in determining the direct project related traffic impacts that occur on the existing roadway system in a case where the project is assumed to be in operation with existing traffic conditions.

Completion Year Without and With Project Conditions (2015)

The completion year without and with project analysis was utilized to determine the impacts related to the City of Coachella population growth and direct project related impacts. The existing volumes were increase by a yearly ambient growth rate of 2 percent.

Cumulative Completion Year Without and With Project Conditions (2015)

The cumulative completion year without and with project analysis was utilized to determine the cumulative traffic impacts due to the other specific development projects and direct project related impacts. Specifically the impact from Phase I and II of the La Entrada community located just west of the project site with a major access point to the development at Avenue 52.

C. METHODOLOGY

The traffic operations of the study intersections are described utilizing the level of service (LOS) classification. This classifies the roadway operations qualitatively based on several factors such as speed, travel time, and delay. The classification is broken down in six levels ranging from LOS "A", representing completely free flow operations to LOS "F", representing breakdown in the flow.

The study intersections are classified as unsignalized locations. The *Highway Capacity Manual* (HCM) expresses the LOS at unsignalized locations as a measure of the delay for the stop controlled leg (weighted average of the movements) and for any uncontrolled left turn movements. For this traffic impact analysis the software package Highway Capacity Software 2010 by McTrans was utilized to perform the LOS analysis of the study intersections.

The City of Coachella General Plan designates the threshold for acceptable operations on the roadways and intersection within the city as a LOS "D." As such any intersection operating below that threshold is considered to be operating at an unacceptable condition. Based upon the Riverside County traffic study guidelines, a significant impact occurs when the project traffic causes a study intersection level of service to degrade from an acceptable rating (LOS "D" or better) to an unacceptable level of service (LOS "E" or "F"). If the project traffic contributes to an already existing unacceptable level of service, it is considered a cumulative impact and payment of programmed fees is usually considered sufficient mitigation.

D. STUDY AREA

The study area was provided by the City of Coachella as part of the development's application through the city's Community Development Department. Based on pre-application final comments letter dated September 4, 2014, the following study intersections, as outlined in comment 40, were to be analyzed:

1. Enterprise Way at Avenue 52
2. Industrial Way at Enterprise Way

Refer to Appendix B for the referenced City of Coachella traffic study scope. Refer to Figure 3 for the study intersection locations.

D.1. Existing Roadways and Intersections

Avenue 52

This east-west roadway consists of two lanes in each direction separated by a center two-way left turn lane. The speed limit is posted at 50 miles per hour in the vicinity of the project. On-street parking is permitted along this roadway in the vicinity of the project. During the preparation of the traffic study, to the west of the study area a detour in conjunction with the construction of the grade separation structure over the Union Pacific tracks is in place affecting Avenue 52.

Enterprise Way

This north-south roadway consists of one lane in each direction. The speed limit is posted at 35 miles per hour in the vicinity of the project. On-street parking is permitted along this roadway in the vicinity of the project.

Industrial Way

This east-west roadway consists of one lane in each direction. The speed limit is not posted in the vicinity of the project. On-street parking is permitted along this roadway in the vicinity of the project.

Enterprise Way at Avenue 52

This three-leg intersection is currently sop controlled on the south leg (Enterprise Way). The east leg consists of one exclusive left turn lane and two through lanes. The south leg consists of one left turn lane and a right turn lane. The west leg consists of a two through lanes and a right turn lane. On the south and west legs, the right turn lane is not designated by striping or signage but sufficient pavement width exists at the intersection to allow a vehicle to make the right turn movement separate from the adjacent lane.

Industrial Way at Enterprise Way

This four leg intersection is currently stop controlled on the north and south legs (Enterprise Way). The legs of this intersection consist of a combined left turn/through lane and a right turn lane. On all four legs of the intersection, the right turn lane is not designated by striping or signage but sufficient pavement width exists at the intersection to allow a vehicle to make the right turn movement separate from the adjacent lane.

Refer to Figure 4 for the illustrative description of the existing intersection lane configurations.

Avenue 52 is designated as a primary arterial per the circulation element of the City of Coachella's General Plan 2035. Enterprise Way and Industrial Way are not defined within the circulation element of the general plan. Refer to Figure 5 for the circulation element.

D.2. Existing Transit Service

The study area is served currently by the SunLine Transit Agency, the transit provider for the Riverside County Transportation Commission in the Coachella Valley. The transit agency provides service in the area via Route 95 along Avenue 52. The existing bus route in the area provided by SunLine Transit Agency is shown in Figure 6.

D.3. Existing Traffic Counts

Manual turning movement counts were conducted during the AM and PM peak hours on September 30, 2014. The volumes were recorded in 15-minute intervals between the hours of 7:00am to 9:00am and 4:00pm to 6:00pm. Refer to Figure 7 for the existing AM intersection volumes and Figure 8 for the existing PM intersection volumes. Due to the industrial land uses in the vicinity of the project, vehicle classifications distinguishing between passenger vehicles and larger vehicles were recorded during the count period to determine the appropriate percentage of heavy vehicles. The 15-minute volume counts and vehicle classifications are contained in Appendix C.

It should be noted that the existing volume counts do not account for the current operations of the facility. Currently the facility is operating with minimal staff as it is not currently picking season for the agricultural products that are processed at the facility. The facility operates approximately 215 days during the year generally between Thanksgiving and Easter and then from the end of April to the first of July.

In addition, the turning movement counts at the study intersections were performed while during a detour for the construction of the grade separation bridge for Avenue 52 over the Union Pacific rail lines. It is anticipated that this detour increased the number of vehicles observed on Avenue 52.

D.4. Existing Condition Analysis

The existing peak hour traffic operations for the study intersections have been evaluated based on the methodologies presented in TRB publication entitled *Highway Capacity Manual* and implemented in the Highway Capacity Software package by McTrans. The intersection operations analysis results are indicated in Table A for the study intersections. The intersection operation analysis worksheet are included in Appendix D. The results of the analysis is as follows:

TABLE A
Existing Intersection Operations Analysis (2014)

1. Enterprise Way at Avenue 52		AM	PM
WESTBOUND LEFT	Level of Service	A	A
	Average Delay (Sec)	8.3	7.9
NORTHBOUND	Level of Service	C	A
	Average Delay (Sec)	15.4	9.7
2. Industrial Way at Enterprise Way		**AM**	**PM**
EASTBOUND LEFT	Level of Service	A	A
	Average Delay (Sec)	7.6	7.4
WESTBOUND LEFT	Level of Service	A	A
	Average Delay (Sec)	7.6	7.4
NORTHBOUND	Level of Service	B	B
	Average Delay (Sec)	11.8	11.9
SOUTHBOUND	Level of Service	B	B
	Average Delay (Sec)	11.6	11.6

E. PROJECTED FUTURE TRAFFIC

E.1. Project Trip Generation

Trip generation represents the amount of traffic which is attracted to and produce by the development. Trip generation rates are generally provided by the Institute of Transportation Engineers publication entitled *Trip Generation Manual*. In the case of the Ocean Mist Farms the facility is a specialized use, the collection and sorting of agricultural products for

distribution to commercial entities, without an applicable land use listed in the *Trip Generation Manual*.

In absence of data within the manual, the second preferred method is to observe a similar site, in this case the existing facility. As noted previously, the current facility is running at minimal staffing levels due to the out of season for the agricultural products that are processed at the facility. Due to the current operating conditions, the trip generation was calculated based upon the following information:

- The current facility processes approximately 200 trucks per day when in operation (75 receiving trucks and 120 shipping trucks). Upon completion of the proposed expansion the facility will be able to process 250 trucks a day (100 receiving trucks and 150 shipping trucks).
- The current facility employees approximately 75 persons when fully operating and is anticipated to increase to 165 persons upon completion of the expansion. These employee are divided into four shifts with starting times at 6:00 am, 9:00 am, 12:00 pm, and 3:00 pm.
- The facility operates generally between the hours of 6:00 a.m. until 1:00 a.m. the following day.

To determine what trips the project would generate, the trip generation was computed separately between the truck trips and the employee trips.

For the project's truck trip generation, the peak hour was assumed to be 20% of the total daily truck generation. This equates to a peak hour volume of 50 trucks (250 trucks x 20% = 50 trucks). It was assumed the number of entering and exiting trucks are equal during the AM and PM peak hours which equates to a peak hour volume of 100 trucks. As operations vary depending on a variety of conditions and circumstances the peak hour volume for truck generated trips was applied to the AM and PM peak hours.

For the employee trip generation the total number of employees were separated into four shifts with an assumed vehicle occupancy of 1 person per vehicle. The 9:00 am and 3:00 pm shifts represent the AM peak and PM peak periods for employees entering/exiting the site. Based upon information provide by the owner, the following peak hour employee generated trips were utilized for the entire facility upon completion of the expansion is as follows:

TABLE B
Employee Trip Generation

AM PEAK HOUR	
Entering 60 Trips	Exiting 0 Trips
PM PEAK HOUR	
Entering 35 Trips	Exiting 60 Trips

E.2. Project Trip Distribution

The trip distribution was developed to identify the probable traffic routes that will be utilized by the project traffic. For the purpose of this traffic impact analysis the trip distribution was calculated separately for the project's truck trips and the project's employee trips generated by the project. The truck trip distribution was based on the local roadway network, location of principal roadways and highways, and the location of agricultural areas. The employee trip distribution was based upon the location of the residential areas and the local roadway network.

The trip distribution for the truck trips are depicted in Figure 9. The trip distribution for the employee trips are depicted in Figure 10.

E.3. Project Trip Assignment

The project trip assignment at the study intersections was based upon the trip generation information and the trip distribution. The project's truck trip assignment is shown in Figure 11 for the AM peak hour and Figure 12 for the PM peak hour. The project's employee trip assignment is shown in Figure 13 for the AM peak hour and Figure 14 for the PM peak hour.

E.4. Background Traffic

Future traffic volumes have been calculated based upon one year of ambient growth at 2.0% to calculate the year 2015 traffic conditions. The 2.0% growth rate was calculated based upon the historical population growth pattern for the last four year (2010 through 2014). Refer to Table B for the growth rate calculations.

TABLE C
City of Coachella, CA Population

2010	2011	2012	2013	2014
40,464	41,339	42,030	42,784	43,633

$$\text{Growth Rate} = \left\{\frac{43,633}{40,464}\right\}^{1/4} = 1.019 \text{ or } 2\%$$

Source: California DOF website

The growth rate was applied to the existing traffic volumes to account for area-wide growth not reflected in cumulative development projects. The existing traffic volumes were multiplied by the growth rate to arrive at the completion year conditions without project.

E.5. Cumulative Development Traffic

Riverside County traffic impact analysis guidelines require that foreseeable development projects that are either approved or being processed concurrently in the study area also be included as part of a cumulative analysis scenario.

In the case of this project, the La Entrada community has been approved in the vicinity of the study area. The La Entrada project is a multi-use project consisting of 2,200 acres generally

west of Coachella branch of the All American Canal and south of Interstate 10. Refer to Appendix E for a conceptual community development and phasing plan as presented in the traffic impact analysis prepared by LSA Associate, Inc. The principal access points for the community are proposed at Avenue 50, Avenue 52, and a future interchange with Interstate 10. According to the traffic impact analysis prepared LSA Associate, Inc., the project is proposed to consist of the following:

- Approximately 7,800 residential units
- 135 acres of mixed uses including, high density residential, commercial, public facilities and other non-residential uses
- Three elementary and one middle school
- Approximately 345 acres of parks/recreation uses
- Approximately 557 acres of open space

The development is slated to be constructed in a series of five phases over the next 20 years, with an approximate completion date of 2035. For the cumulative analysis scenario phase I-II traffic volumes were added to the project year ambient growth rate traffic volumes at the study intersections.

Based upon the trip generation, Phase I-II are anticipated to generate 1,846 external trips during the AM peak hour and 2,714 external trips during the PM peak hour. Refer to Appendix E for the trip generation calculations presented in the La Entrada traffic impact analysis.

The trip distribution and trip assignments in the study area were based upon the scenario presented within the traffic study without the Avenue 50 interchange at Interstate 10. Refer to Appendix E for the appropriate trip distribution and assignment as presented in the La Entrada traffic impact analysis. It should be noted that the La Entrada traffic impact analysis analyzed the intersection of Avenue 52 at California State Route 86S to the east of the site and Tyler Street at Avenue 52 to the west of the site. Between this two intersections, trips generated by the project decrease from east to west indicating that the developments in the study area attract trips from and generate trips to the La Entrada community. As no information is provided in the study on the trip distribution between these two intersections, it was assumed half of the generated and attracted trips in this area would utilize Enterprise Way. The trip distribution of these trips at Industrial Way at Enterprise Way is based on the existing turning movement counts observed at the intersection.

The La Entrada AM trip assignment in the study area is illustrated in Figure 15. The La Entrada PM trip assignment in the study area is illustrated in Figure 16.

F. EXISTING PLUS PROJECT TRAFFIC ANALYSIS

As a requirement of the CEQA guideline, an analysis of the existing traffic volumes plus the traffic generated by the proposed project (E+P) has been performed for the study intersections. The analysis of the E+P traffic conditions allow for the direct project-related impacts to be evaluated and identified. The project trip assignment were added to the respective AM and PM existing peak hour intersection volumes to arrive at the E+P traffic

volumes. Refer to Figure 17 for the AM peak hour and Figure 18 for the PM peak hour intersection counts in the E+P scenario.

The E+P peak hour traffic operations for the study intersections have been evaluated based on the methodologies presented in TRB publication entitled *Highway Capacity Manual* and implemented in the Highway Capacity Software package by McTrans. The intersection operations analysis results are indicated in Table D for the study intersections. The intersection operation analysis worksheet are included in Appendix F. The results of the analysis is as follows:

TABLE D
Existing + Project Intersection Operations Analysis (2014)

1. Enterprise Way at Avenue 52		AM	PM
WESTBOUND LEFT	Level of Service	A	A
	Average Delay (Sec)	9.3	8.4
NORTHBOUND	Level of Service	C	B
	Average Delay (Sec)	24.3	10.8
2. Industrial Way at Enterprise Way		**AM**	**PM**
EASTBOUND LEFT	Level of Service	A	A
	Average Delay (Sec)	7.7	7.6
WESTBOUND LEFT	Level of Service	A	A
	Average Delay (Sec)	7.6	7.4
NORTHBOUND	Level of Service	B	B
	Average Delay (Sec)	12.2	13.7
SOUTHBOUND	Level of Service	B	B
	Average Delay (Sec)	14.3	14.4

As shown in Table D, the study area intersections are anticipated to experience acceptable level of service during the peak hours under the E+P scenario. As such there are no mitigation measures warranted due solely from the impact of the project.

G. COMPLETION YEAR (2015) TRAFFIC ANALYSIS

This section discusses the analysis of the completion year traffic scenarios which includes the following:

- Completion Year without and with project (2015): ambient growth
- Cumulative Completion Year without and with project (2015): ambient growth and cumulative development projects

G.1. Roadway Improvements

At the time this traffic impact analysis was prepared no known improvements are known to be planned or constructed at the study intersections or for the adjacent roadway network.

G.2. Completion Year-Ambient Growth Intersection Operation Analysis

This scenario involved multiplying the existing traffic volumes by an ambient growth rate factor of 2% to determine the 2015 completion year ambient growth volumes. Refer to Figure 19 for the AM peak hour and Figure 20 for the PM peak hour of this scenario. In addition the project trip assignment volumes were then added to the 2015 completion year ambient growth rate volumes to arrive at the 2015 completion year ambient growth rate with project volumes. Refer to Figure 21 for the AM peak hour and Figure 22 for the PM peak hour of this scenario.

The peak hour traffic operations for the study intersections under both scenarios have been evaluated based on the methodologies presented in TRB publication entitled *Highway Capacity Manual* and implemented in the Highway Capacity Software package by McTrans. The intersection operations analysis results are indicated in Table E for the study intersections. The intersection operation analysis worksheet are included in Appendix G. The results of the analysis is as follows:

TABLE E
Completion Year Ambient Growth Intersection Operations Analysis (2015)

		Without Project		With Project	
1. Enterprise Way at Avenue 52		**AM**	**PM**	**AM**	**PM**
WESTBOUND LEFT	**Level of Service**	A	A	A	A
	Average Delay (Sec)	8.3	7.9	9.3	8.4
NORTHBOUND	**Level of Service**	C	A	D	B
	Average Delay (Sec)	15.8	9.8	25.3	10.9
2. Industrial Way at Enterprise Way		**AM**	**PM**	**AM**	**PM**
EASTBOUND LEFT	**Level of Service**	A	A	A	A
	Average Delay (Sec)	7.6	7.4	7.7	7.6
WESTBOUND LEFT	**Level of Service**	A	A	A	A
	Average Delay (Sec)	7.6	7.4	7.6	7.4
NORTHBOUND	**Level of Service**	B	B	B	B
	Average Delay (Sec)	11.9	12.0	12.3	13.8
SOUTHBOUND	**Level of Service**	B	B	B	B
	Average Delay (Sec)	11.6	11.6	14.5	14.5

As shown in Table E, the study area intersections are anticipated to experience acceptable level of service during the peak hours under the 2015 completion year ambient growth without the project and with the project scenarios. As such there are no mitigation measures warranted based upon this analysis scenario.

G.3. Completion Year-Ambient + Cumulative Projects Intersection Operation Analysis

This scenario involved multiplying the existing traffic volumes by an ambient growth rate factor of 2% to determine the 2015 completion year ambient growth volumes. Traffic from the La Entrada development were then added to volumes to arrive at this scenario's intersection volumes. Refer to Figure 23 for the AM peak hour and Figure 24 for the PM peak hour of this scenario. In addition the project trip assignment volumes were then added

to the 2015 completion year ambient + cumulative project volumes to arrive at the 2015 completion year ambient + cumulative projects with project volumes. Refer to Figure 25 for the AM peak hour and 26 for the PM peak hour of this scenario.

The peak hour traffic operations for the study intersections under both scenarios have been evaluated based on the methodologies presented in TRB publication entitled *Highway Capacity Manual* and implemented in the Highway Capacity Software package by McTrans. The intersection operations analysis results are indicated in Table F for the study intersections. The intersection operation analysis worksheet are included in Appendix H. The results of the analysis is as follows:

TABLE F
Completion Year Ambient + Cumulative Intersection Operations Analysis (2015)

		Without Project		With Project	
1. Enterprise Way at Avenue 52		**AM**	**PM**	**AM**	**PM**
WESTBOUND LEFT	**Level of Service**	A	A	B	B
	Average Delay (Sec)	9.0	9.0	10.3	10.1
NORTHBOUND	**Level of Service**	C	B	F	B
	Average Delay (Sec)	23.8	12.0	54.2	14.0
2. Industrial Way at Enterprise Way		**AM**	**PM**	**AM**	**PM**
EASTBOUND LEFT	**Level of Service**	A	A	A	A
	Average Delay (Sec)	7.6	7.4	7.6	7.6
WESTBOUND LEFT	**Level of Service**	A	A	A	A
	Average Delay (Sec)	7.6	7.4	7.6	7.4
NORTHBOUND	**Level of Service**	B	B	B	B
	Average Delay (Sec)	12.2	12.6	12.6	14.7
SOUTHBOUND	**Level of Service**	B	B	C	C
	Average Delay (Sec)	12.0	12.0	15.1	15.7

Enterprise Way at Avenue 52

This intersection is anticipated to operate at an unacceptable level of service during the AM peak hour in the 2015 completion year ambient growth + cumulative projects with project volume for the northbound movement. In a review of the analysis for the 2015 completion year ambient + cumulative and the 2015 completion year ambient with project, both the project volumes and the La Entrada project volumes significantly impact the intersection operations. The project volumes when the La Entrada volumes are not included increases the intersection northbound movement delays by 9.5 seconds, The La Entrada project volumes when the project volumes are not included increase the intersection movement delays by 8 seconds. Separately neither project causes the intersection to operate at an unacceptable level of service. The combination of both projects generated trips significantly impacts the northbound movement causing a significant impact.

In order to mitigate the impact on the intersection, a traffic signal would be necessary. Refer to Section H for the traffic signal warrant analysis.

H. TRAFFIC SIGNAL WARRANT ANALYSIS

Traffic signal warrants are a list of criteria used by public agencies to quantitatively justify the need for the installation of a traffic signal. The traffic impact analysis utilized the signal warrant criteria in the latest edition of the Federal Highway Administration's (FHWA) *Manual on Uniform Traffic Control Devices (MUTCD),* and the *MUTCD 2012 California Supplement* for the warrant analysis.

The signal warrant analysis utilized warrant 3 the peak hour volume warrant for the basis of determining if the intersection meets the minimum criteria for a traffic signal. It should be noted in both the *MUTCD* and the *MUTCD 2012 California Supplement* the installation of a traffic signal is justified if a minimum of one warrant is met. Further analysis beyond the scope of this traffic study should be required in the future to determine if additional warrants are met at the analyzed intersection upon completion of La Entrada Phase I & II.

Due to the unacceptable LOS for the intersection of Enterprise Way at Avenue 52, the recommended mitigation measure is to install a traffic signal. As such a preliminary warrant analysis would be required for the potential of a traffic signal at this location. Warrant 3, peak hour warrant, takes into account four factors: number of approach lanes at the intersection, intersection volume, community size and major street roadway speed. The analysis of the intersection of Enterprise Way at Avenue 52 during the 2015 completion year ambient + cumulative projects with project volumes is as follows:

TABLE G
Enterprise Way at Avenue 52
Traffic Signal Warrant Analysis

Roadway Segment		
1. Enterprise Way (Minor Approach)	**AM**	**PM**
Number of Lanes	1 lane	1 lane
Volume	214 vehicles	303 vehicles
2. Avenue 52 (Major Approach)	**AM**	**PM**
Number of Lanes	2 lanes	2 lanes
Speed Limit	50 mph	50 mph
Volume	867 vehicles	781 vehicles
Location<10,000 Community	NO	NO
Warrant 3 Criteria Met	YES	YES

I. MITIGATION MEASURES

I.1. Mitigation Funding Programs/Sources

Several regional and local funding mechanisms have been developed by City of Coachella and Riverside County to address long-term transportation infrastructure needs. The typical program collects a mitigation fee for a set of improvement along roadway segments, intersections, and interchanges. The following fee programs are applicable to the study area of the proposed project:

- City of Coachella Development Impact Fee (DIF)
- The CVAG Transportation Uniform Mitigation Fee (TUMF)

J. PROJECT CIRCULATION ASSESSMENT

As required by the City of Coachella, an assessment of the proposed circulation on the project site and the adjacent roadway network was undertaken. The project site has three distinct circulation routes for the following facility users: employee, shipping trucks, and receiving trucks. Refer to Figure 27 for a graphical representation of the proposed circulation for each of these users. A detailed assessment of each user's circulation route is provided.

Employees

Upon completion of the project, employees will be provided a 100 space parking lot on the south side of Industrial Road generally located across from the southeast corner of the Ocean Mist Farms' parcel. Access to the parking lot is via a driveway from Industrial Way which will allow full access movements.

It is anticipated that the employees will primarily access the parking lot from the west and depart the parking lot to the west as travelling to/from the east on Industrial Way results in a circular route which ultimately intersects with Enterprise Way south of the proposed project without any access to other roadways.

A marked crosswalk with lighting and signage will be provided to increase the safety of employees crossing Industrial Way.

Receiving Trucks

Trucks delivering products to be processed shall access the site from Enterprise Way. Trucks entering the site to deliver product shall enter via the northern driveway on Enterprise Way and proceed to the off-loading station. After the vehicle is off-loaded, the truck shall proceed further on-site and be loaded with empty cartons for the next load. From the carton area, the truck shall proceed to exit the site from the existing driveway on Avenue 52. This circulation pattern is similar to the existing patterns at the facility.

There is not anticipated to be a significant negative impact to Enterprise Way due to the vehicles accessing the site as the increase in vehicle due to the expansion over the course of a day represents a small increase in the hourly volume. In addition, the loading of the shipping trucks currently occurs on the northern side of the building also and with the relocation of loading of the shipping trucks to the south side of the building, the driveways on Enterprise Way and Avenue 52 should actually experience a reduction in the number of turning movements.

Shipping Trucks

The loading of shipping trucks shall be relocated to the south side of the building with access to the proposed loading docks from Industrial Way. In addition a 30 space truck staging lot with a truck scale will be constructed on the southeast corner of Industrial Way at Enterprise Way.

Trucks entering the site to be loaded for shipping shall first proceed to the staging lot via the western driveway on Industrial Way and park. The driver shall then proceed to utilize the crosswalk on Industrial Way to obtain their loading number from the facility staff. Upon time to load, the vehicle shall proceed to the scale to record the empty truck weight and then exit via the eastern driveway on Industrial Way and enter the facility via the western driveway on the north side of Industrial Way. Once on-site the vehicle shall be loaded at the loading docks and exit the facility onto Industrial Way. It is anticipated that the driveways providing access to the staging lot shall operate in a one way direction with the western driveway serving entering truck traffic and the eastern driveway serving existing truck traffic. Appropriate signage (D5-1) at the staging lot driveways should be installed to reinforce the circulation pattern.

This circulation pattern will increase the traffic and congestion of the area immediately east of the intersection of Industrial Way at Enterprise Way to the eastern property line of the Ocean Mist facility, as mentioned previously Industrial Way roadway alignment will minimize the impact of the project on the roadway network east of the project site. On the segment of Industrial Way adjacent to the truck staging and loading docks upon the expansion completion it is anticipated the traffic volume on Industrial Way shall be 111 AM peak hour vehicles and 156 PM peak hour vehicles with potential of 20 trucks crossing from one side of the street to the other. Due to the low number of vehicles expected on this roadway the crossing of trucks on Industrial Way is not anticipated to have a significant impact on the roadway operations. It should be noted that Industrial Way is a local roadway with a straight alignment to the east and west of the project site location allowing for sufficient sight distance to vehicle drivers on Industrial Way and truck drivers maneuvering from the staging area/loading docks to observe opposing vehicles. Additionally the approach legs on Enterprise Way are stop controlled so left and right turn traffic from this roadway onto Industrial Way will be maneuvering from stop position which will result in reducing the crash potential due to a truck maneuvering on Industrial Way due to the anticipated low vehicle speeds.

Though the impact is anticipated to be minimal, measures should be taken to account for further growth and development in the vicinity of the project. The measures include sufficient lighting on Industrial Way to illuminate the driveway entrances and the recommendation of installation of "TRUCK CROSSING" (W8-6) on Industrial Way to warn motorists of the truck movement.

K. CONCLUSION AND RECOMMENDATIONS

K.1. Traffic Impacts and LOS

Enterprise Way at Avenue 52

Upon project completion, the northbound movement of this intersection shall experience a LOS of "F" in the 2015 completion year ambient + cumulative project with project volume scenario. A traffic signal is the recommended measure to mitigate the unacceptable level of service.

An analysis of Warrant 3 of the *MUTCD* and the *MUTCD 2012 California Supplement* indicates that the intersection in the scenario would meet the warrant for signalization. The project traffic contribution in this scenario is 15.1% during the PM peak hour (164 project trips/1084 total intersection volume = 0.151). A full warrant analysis is recommended of the intersection upon completion of La Entrada Phase I & II prior to the installation of a traffic signal.

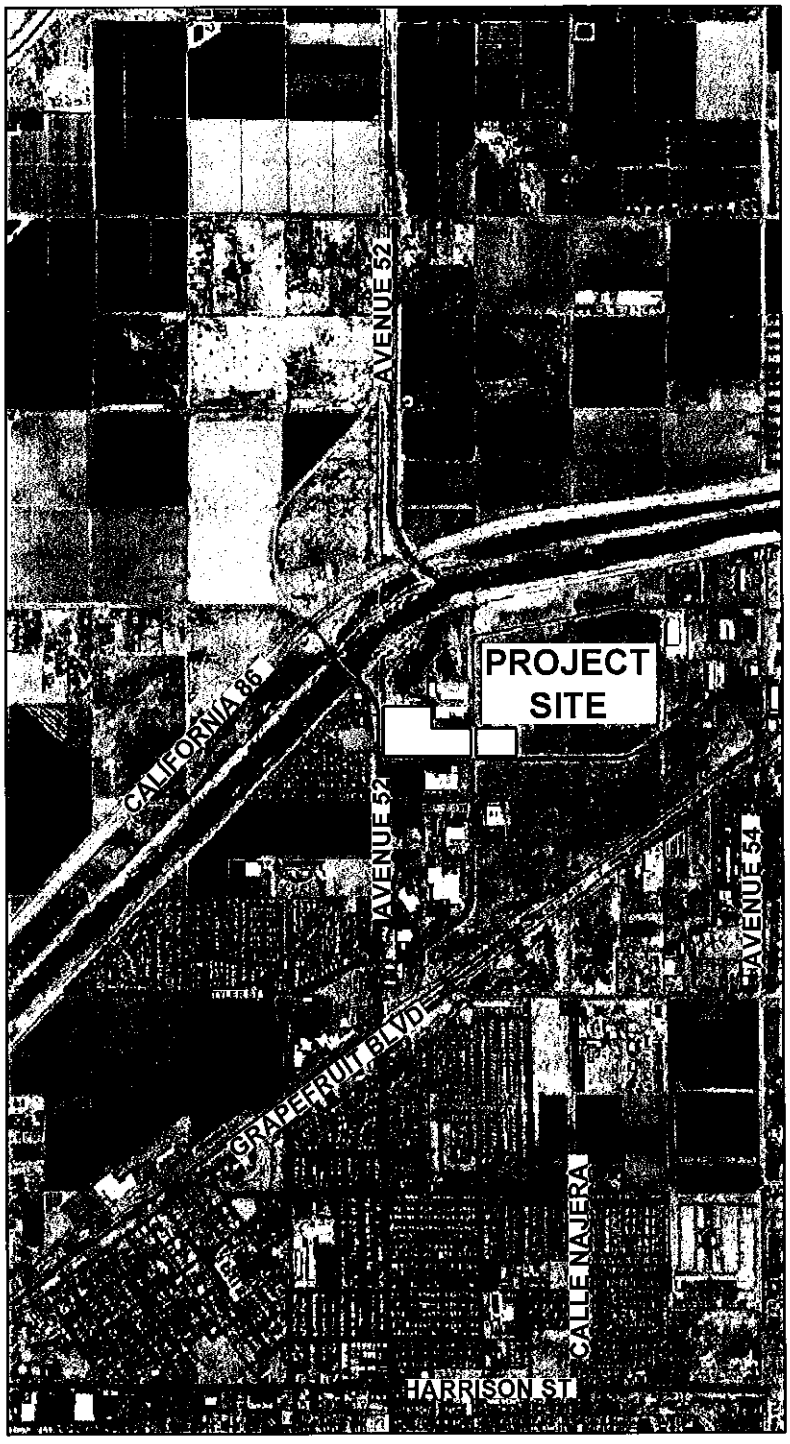
K.2. Circulation Measures

An assessment of the proposed circulation finds that the impact to the local roadways adjacent to the project site should be minimal. In order to improve the safety along Industrial Way the following measures should be undertaken:

- Installation of "DO NOT ENTER" (D5-1) signs at the project proposed truck staging parking lot from Industrial Way.
- Installation of lighting along Industrial Way with placement to illuminate the driveway locations.
- Installation of "Truck Crossing" (W8-6) signs to alert motorists to the trucks crossing Industrial Way from the staging lot to the loading dock.
- Provide a marked crosswalk across Industrial Way with appropriate signage and lighting.

APPENDIX A

TRAFFIC IMPACT ANALYSIS FIGURES



N

N.T.S.

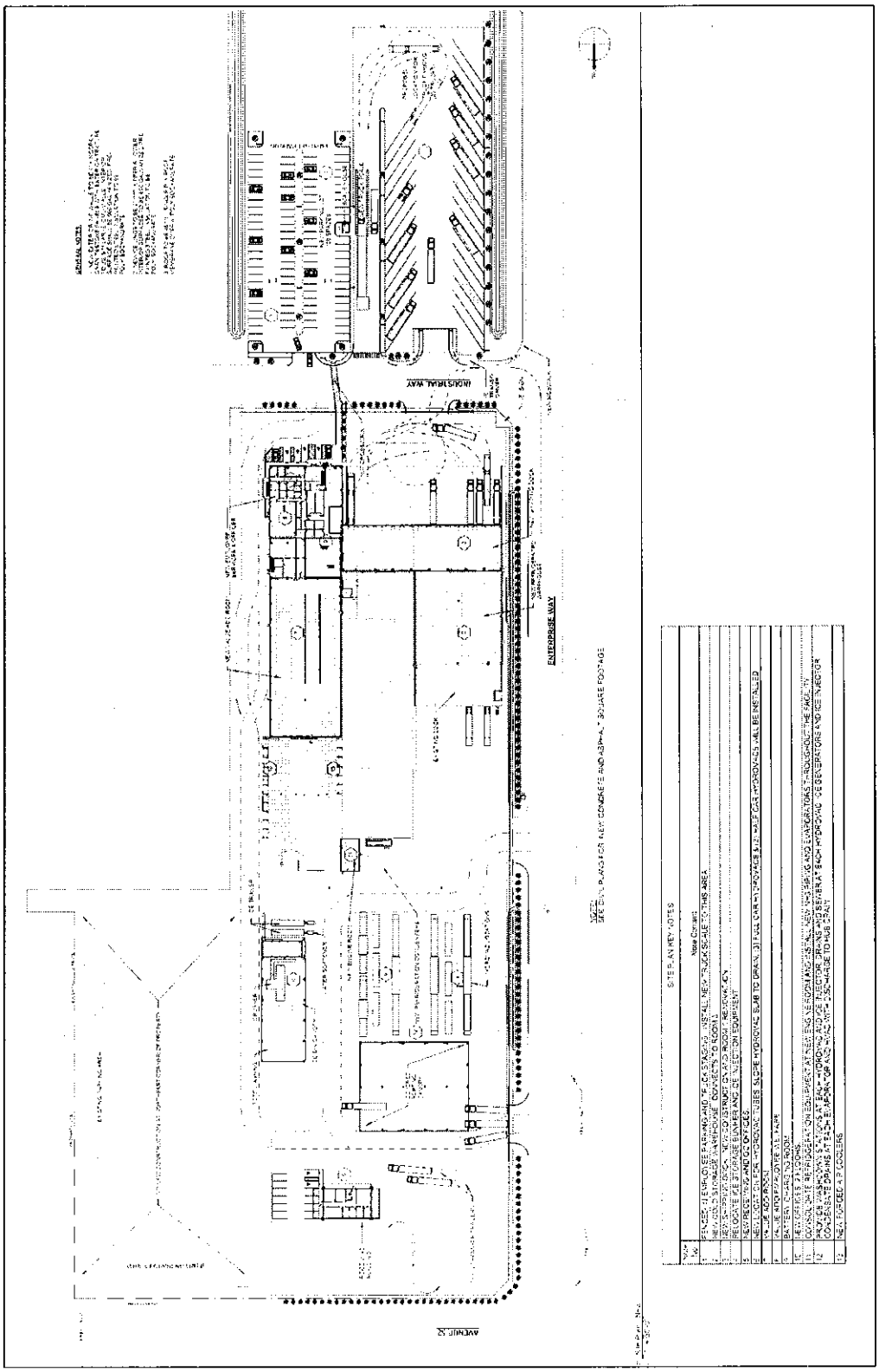
T:\CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG

Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

VICINITY MAP

FIGURE 1

OCEAN MIST FARMS EXPANSION



N.T.S.

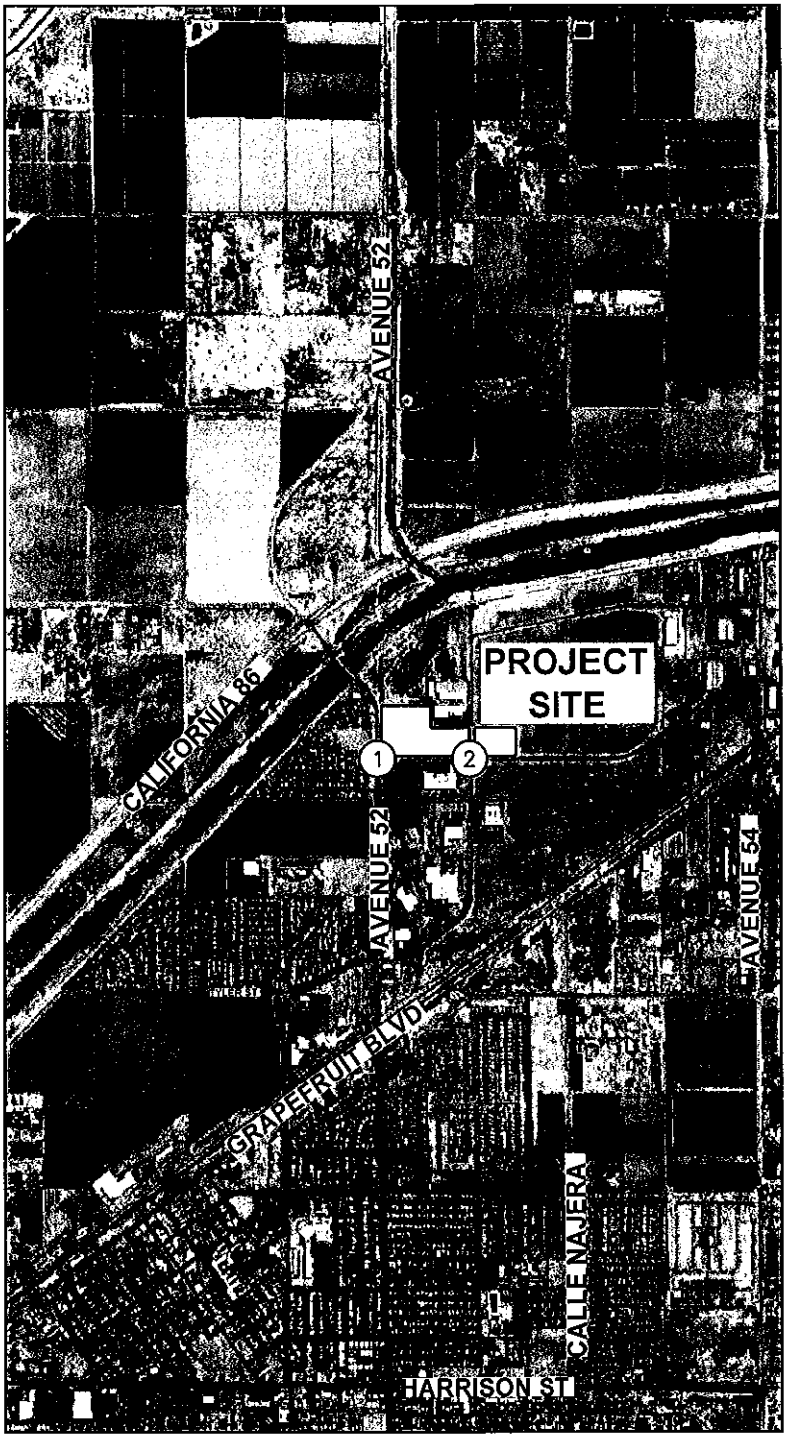
Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

SITE PLAN

FIGURE 2

OCEAN MIST FARMS EXPANSION

T:\CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG



N

N.T.S.

(1) ENTERPRISE WAY AT AVENUE 52

(2) INDUSTRIAL WAY AT ENTERPRISE WAY

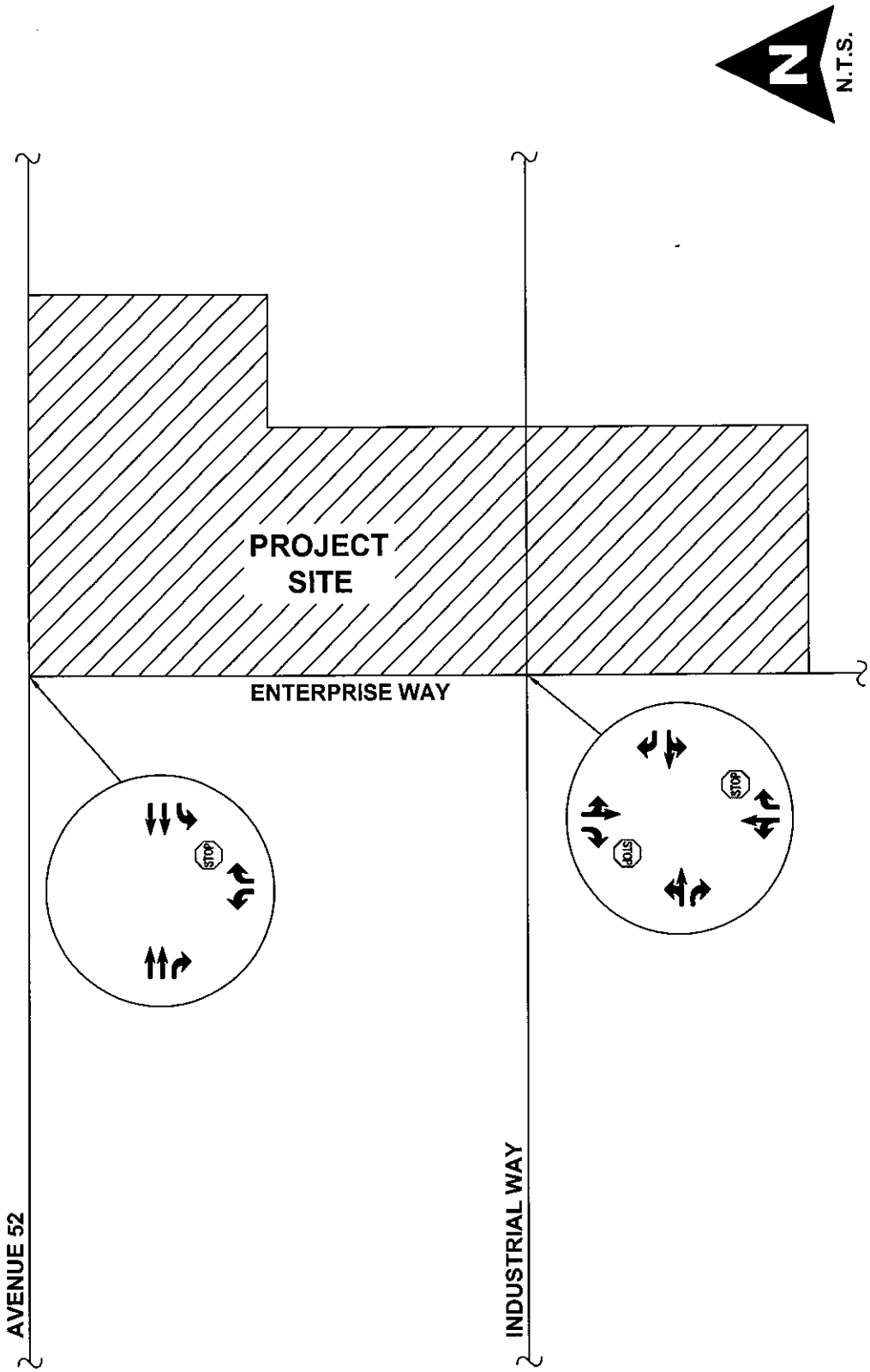
T:\CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG

Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

STUDY INTERSECTIONS

FIGURE 3

OCEAN MIST FARMS EXPANSION



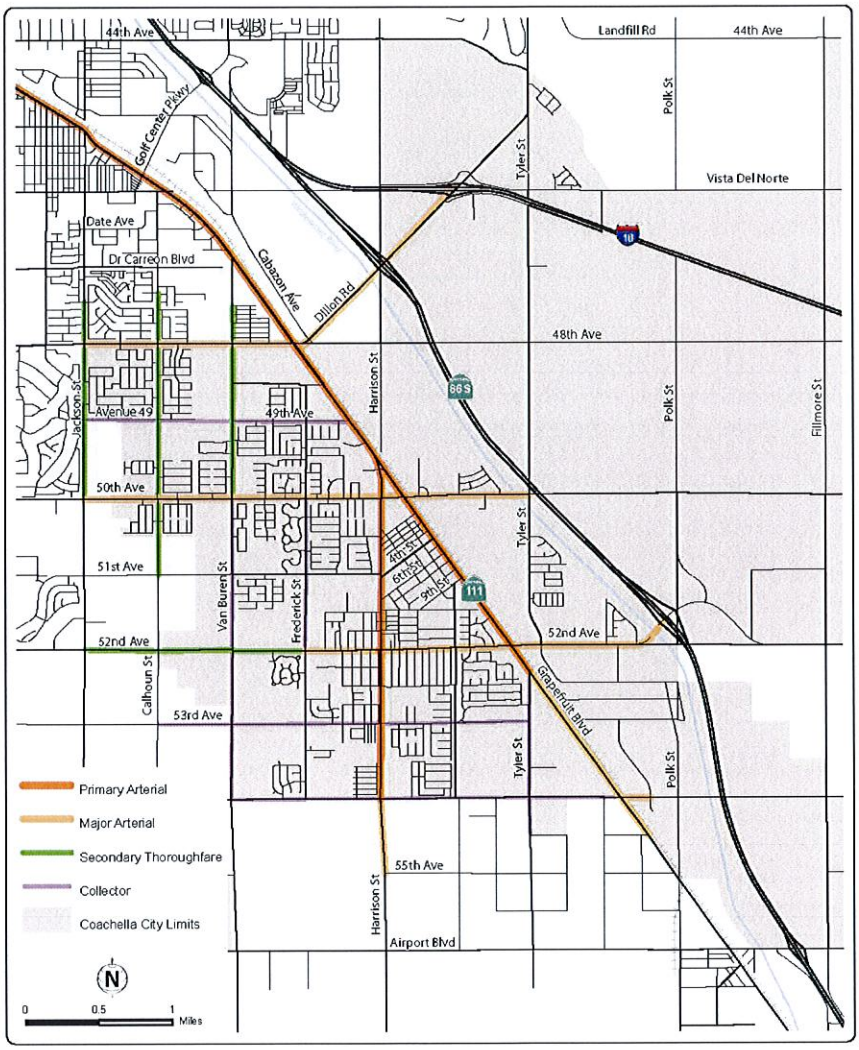
Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

EXISTING INTERSECTION CONFIGURATION
FIGURE 4

OCEAN MIST FARMS EXPANSION

T:\CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG

Figure 4.9-1: Existing Roadway System in the City of Coachella.



T:\CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG

Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

COACHELLA CIRCULATION ELEMENT FIGURE 5

OCEAN MIST FARMS EXPANSION

LINE 95 — WEEKDAY ONLY

WESTBOUND
North Shore To Indio

Club View & Windlass	Family Health Center	COD Mecca/ Thermal	Ave 50 & Harrison	Hwy 111 & Flower
AM 5:35	6:05	*	6:33	6:47
8:33	9:03	**9:15**	9:35	9:49
11:58	12:28	**12:40**	1:00	1:14
PM 2:58	3:28	**3:40**	4:00	4:14
5:58	6:28	*	6:56	7:10

EASTBOUND
Indio To North Shore

Hwy 111 & Flower	Ave 50 & Harrison	COD Mecca/ Thermal	Ave 66 @ Library	Club View & Windlass
AM 7:15	7:25	**7:45**	7:59	8:29
10:40	10:50	**11:10**	11:24	11:54
PM 1:40	1:50	**2:10**	2:24	2:54
4:40	4:50	**5:10**	5:24	5:54
7:40	7:50	*	8:20	8:50

Times in **BOLD** operate on school days only

* Does NOT provide direct service to COD Mecca/Thermal on school days before 7 a.m. / after 5:10 p.m., non-school days and weekends. Service is provided on Ave 62 and Buchanan at all time.

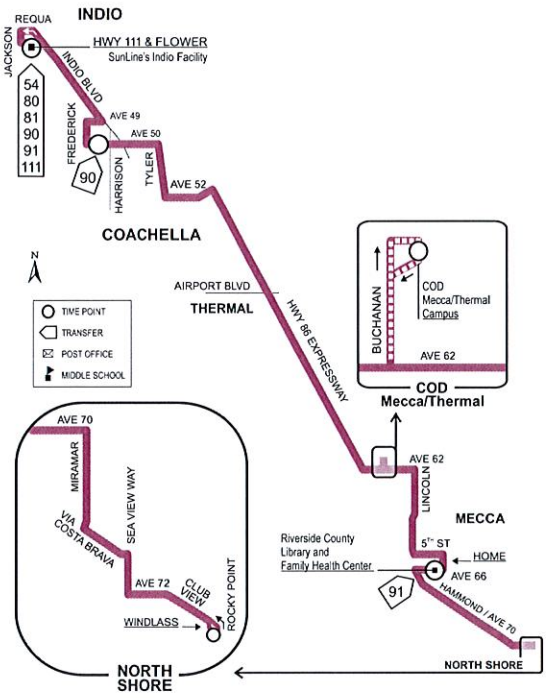
Saturday/Sunday service operates New Year's Day, Memorial Day, Independence Day, Labor Day. NO service on Thanksgiving and Christmas Day.

*Horas **OSCURAS** operan los días escolares solamente*

* *NO se proporciona servicio directamente a COD Mecca/Thermal antes de las 7 a.m. / después de las 5:10 p.m., días escolares y fin de semana. El servicio se proporciona en Ave 62 y Buchanan en todas horas.*

Se proveerá el servicio de Saturday/Sunday (Sábado/Domingo) en los días festivos: New Year's Day, Memorial Day, Independence Day, Labor Day. NO se proveerá servicio en Thanksgiving y Christmas Day.

LINE 95 MAP



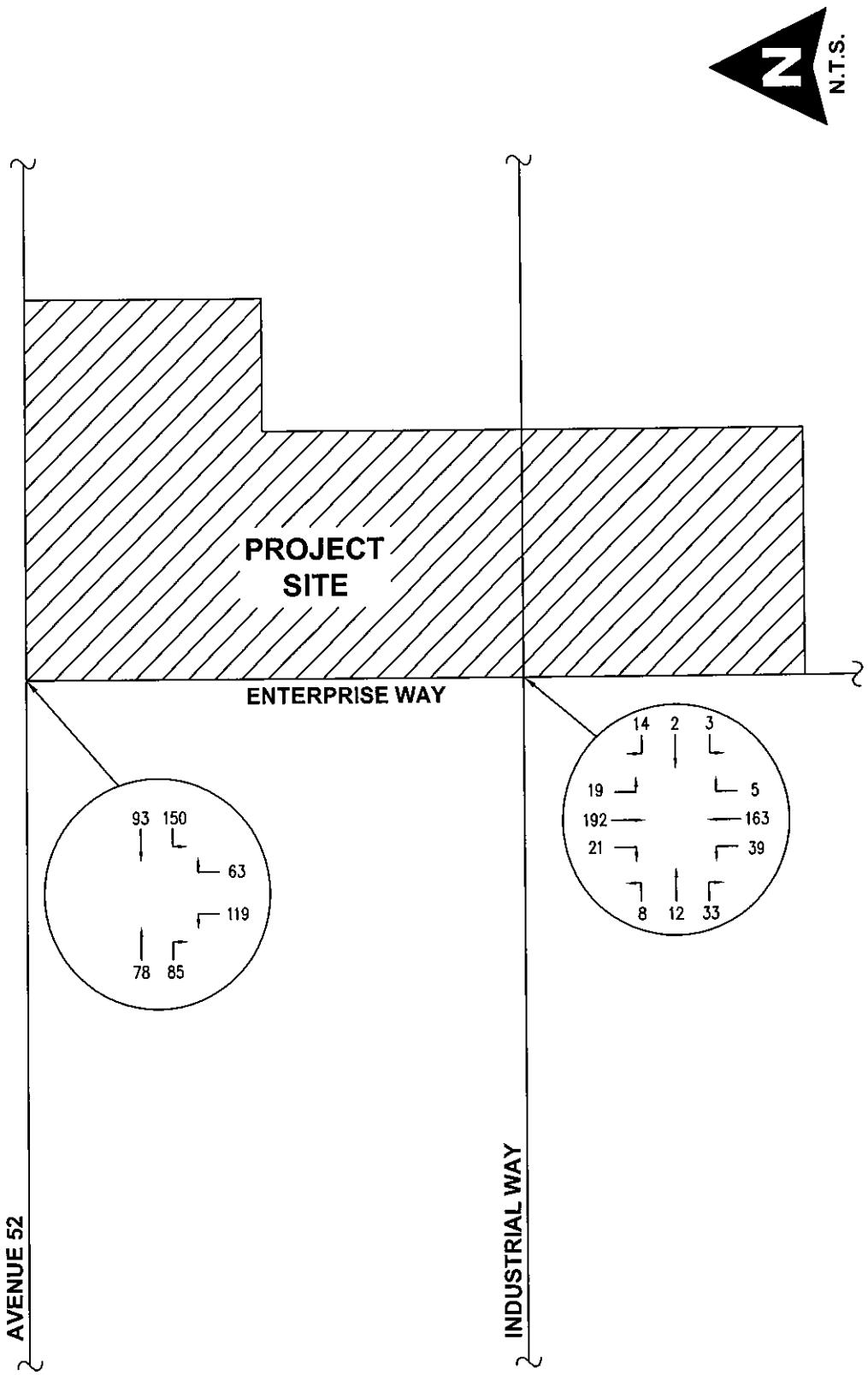
Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

MASS TRANSIT ROUTES

FIGURE 6

OCEAN MIST FARMS EXPANSION

T:\CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG

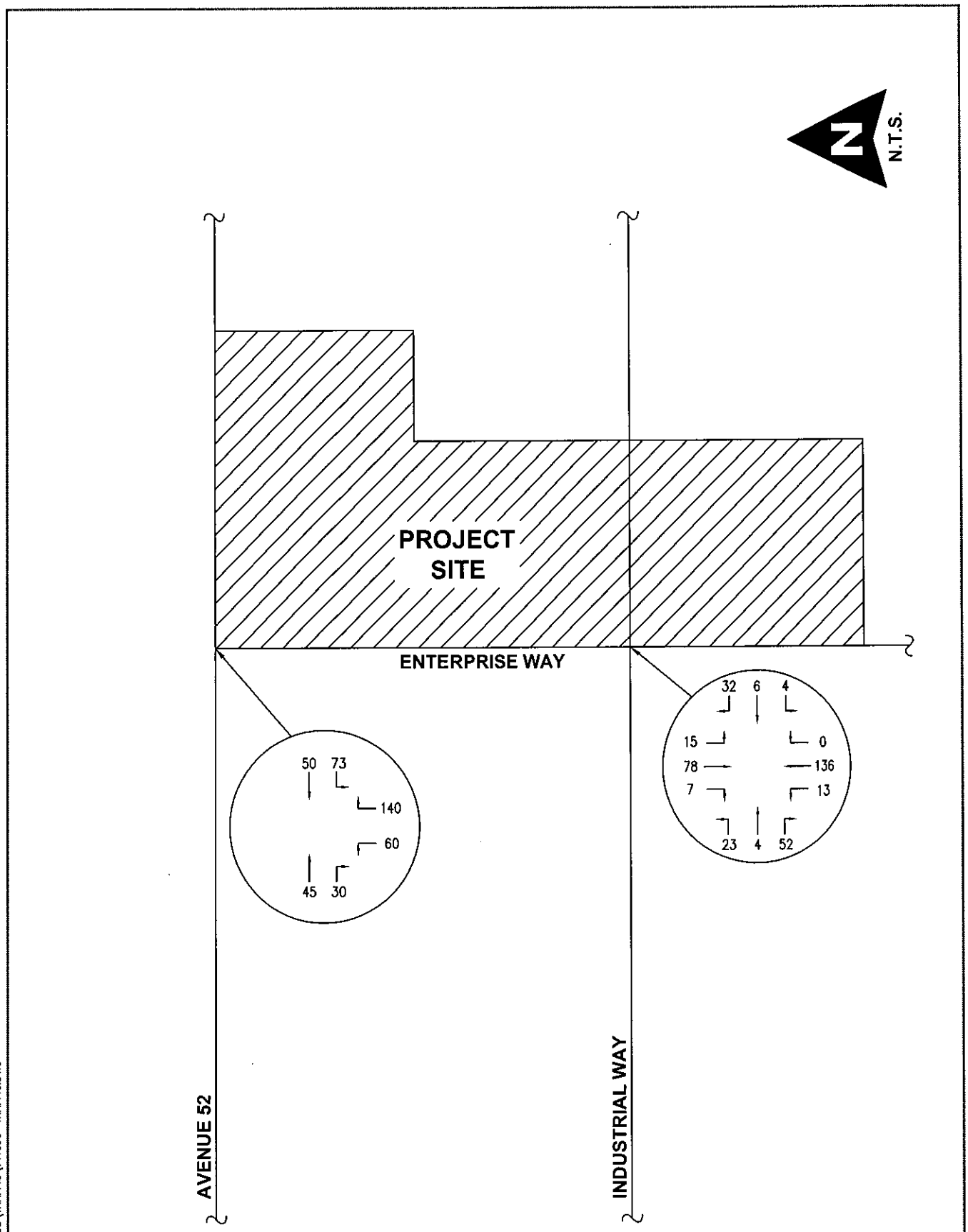


Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

EXISTING AM PEAK HOUR VOLUMES FIGURE 7

OCEAN MIST FARMS EXPANSION

T:\CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG

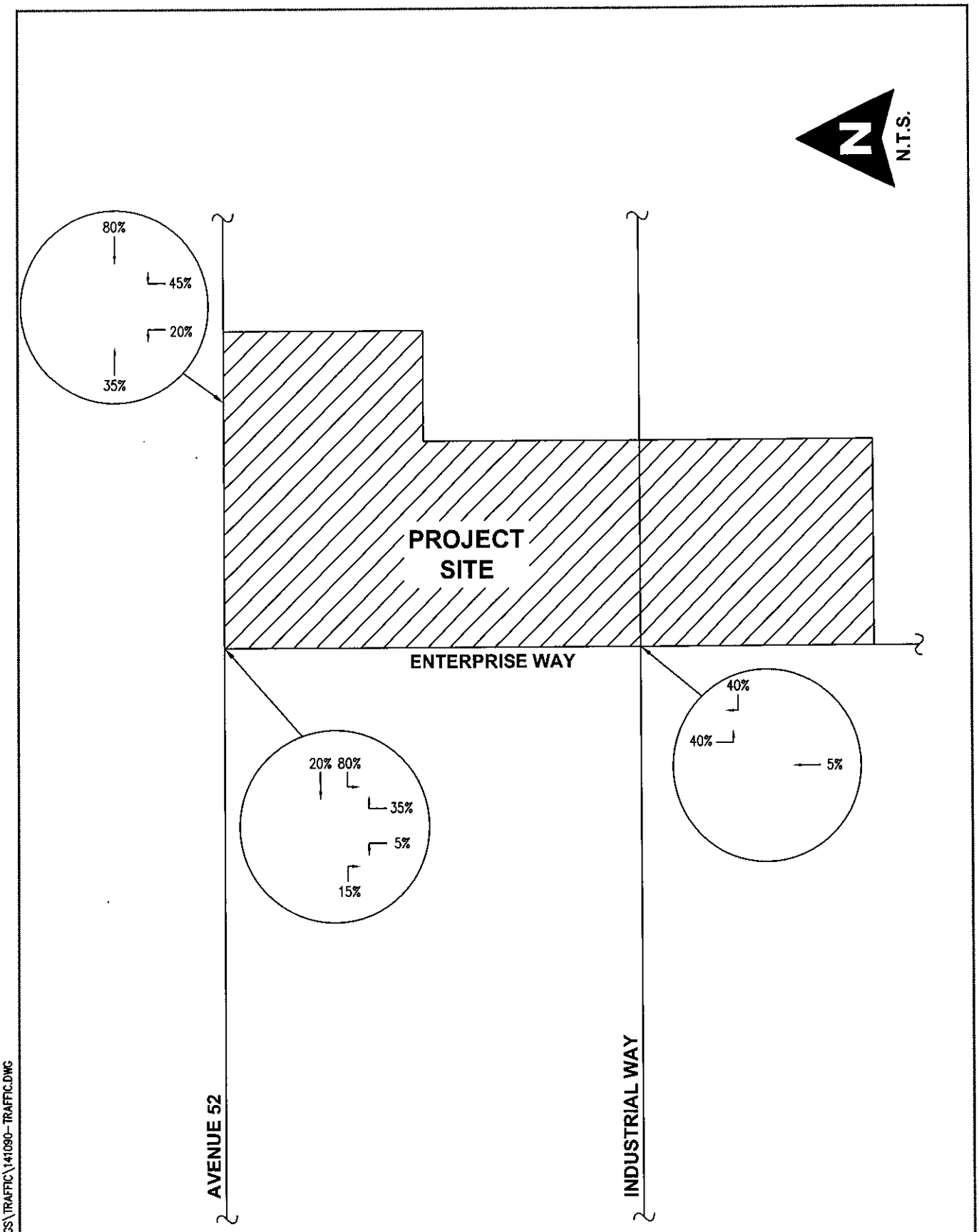


T:\CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG

Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

EXISTING PM PEAK HOUR VOLUMES FIGURE 8

OCEAN MIST FARMS EXPANSION

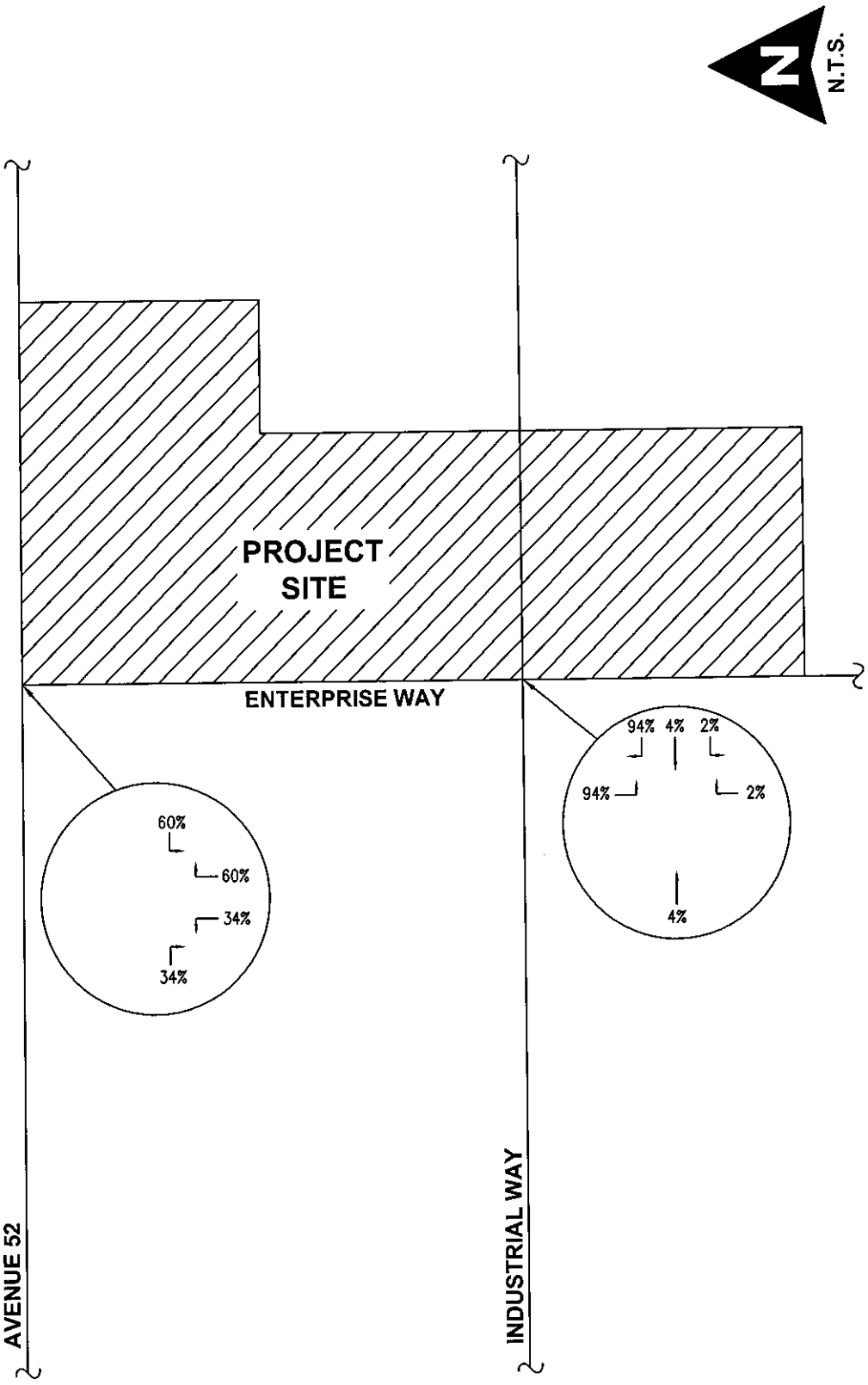


T:\CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG

Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

TRUCK TRIP DISTRIBUTION FIGURE 9

OCEAN MIST FARMS EXPANSION

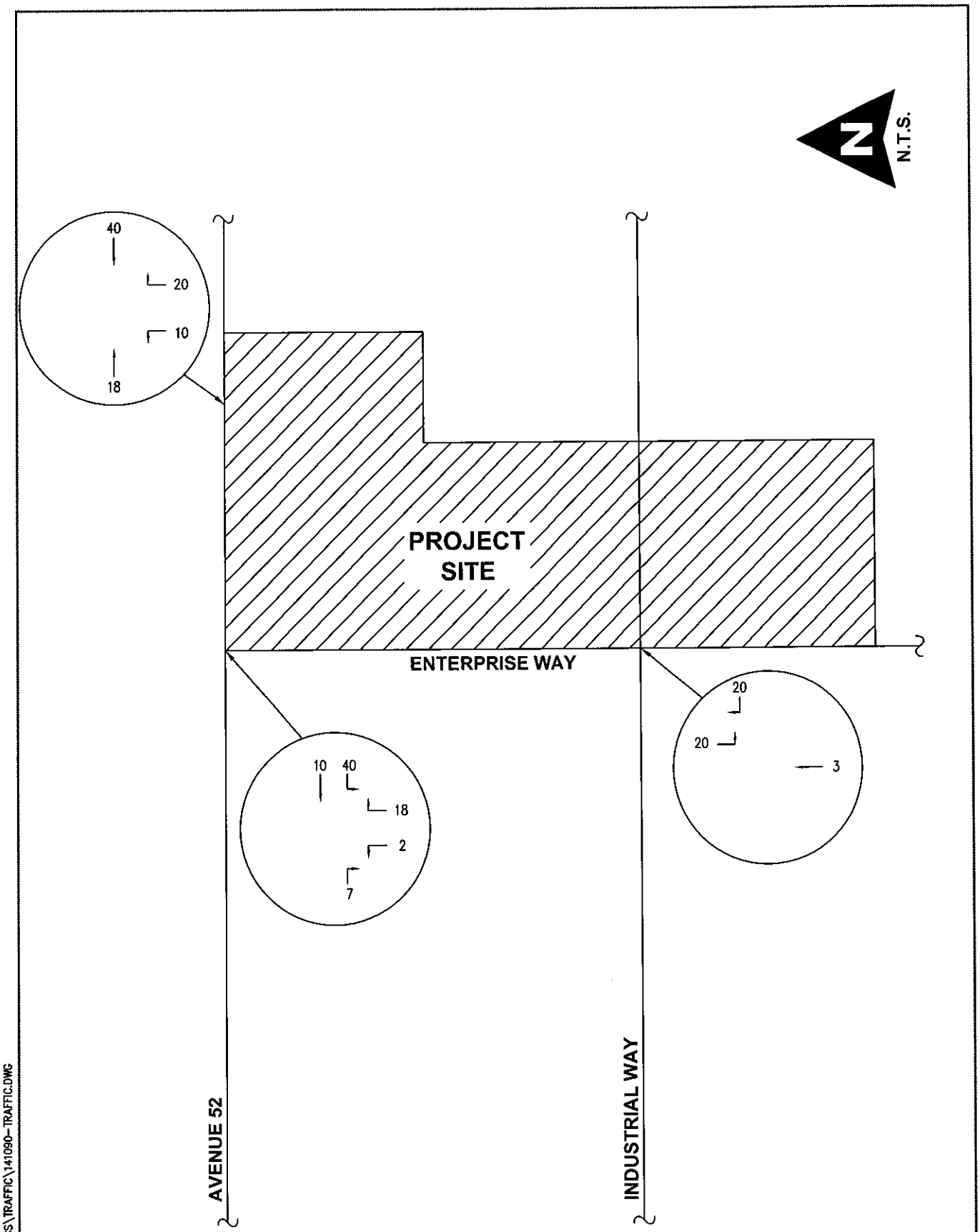


Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

EMPLOYEE TRIP DISTRIBUTION FIGURE 10

OCEAN MIST FARMS EXPANSION

T:\CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG

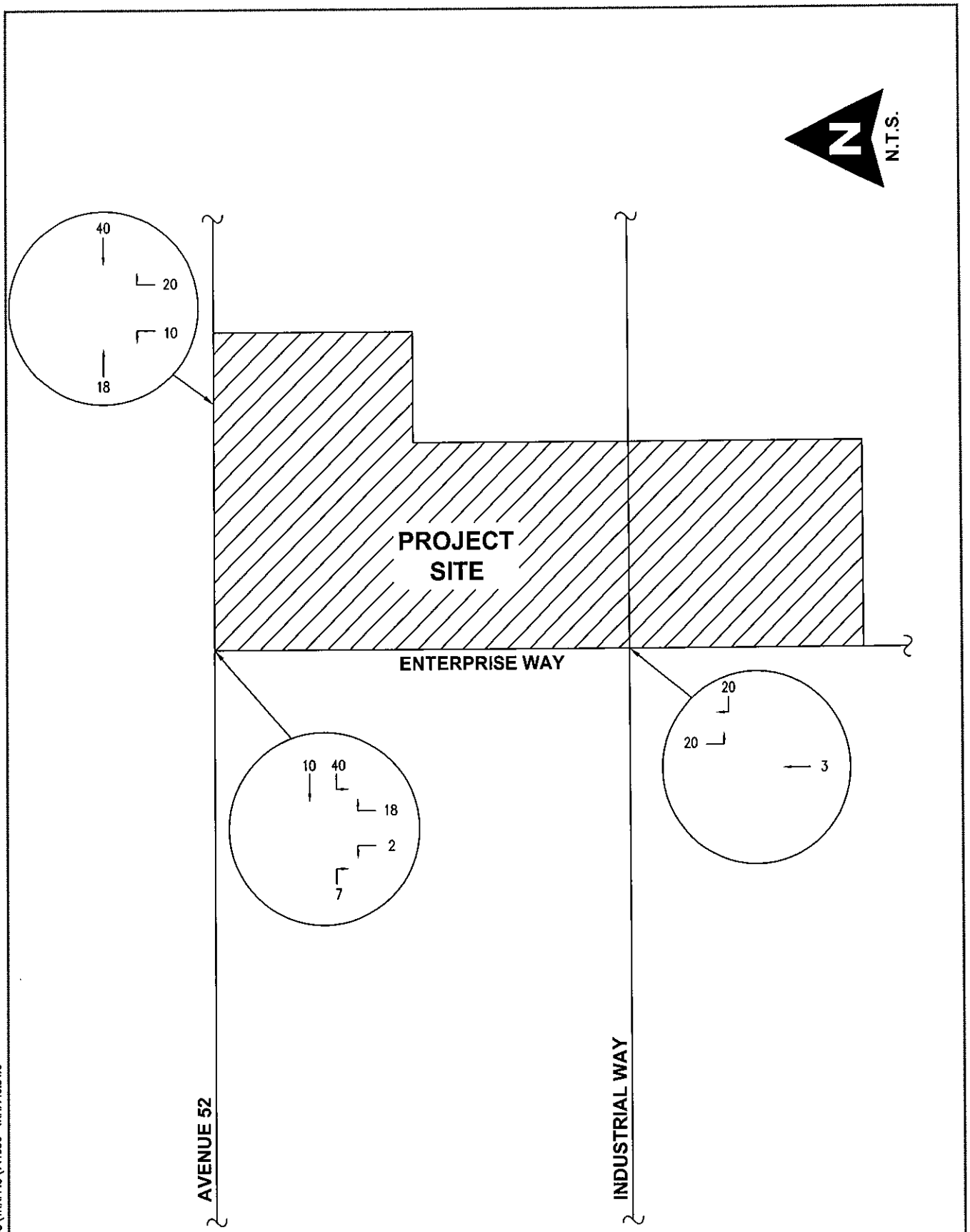


Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

TRUCK
AM TRIP ASSIGNMENT
FIGURE 11

OCEAN MIST
FARMS EXPANSION

T:\CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG

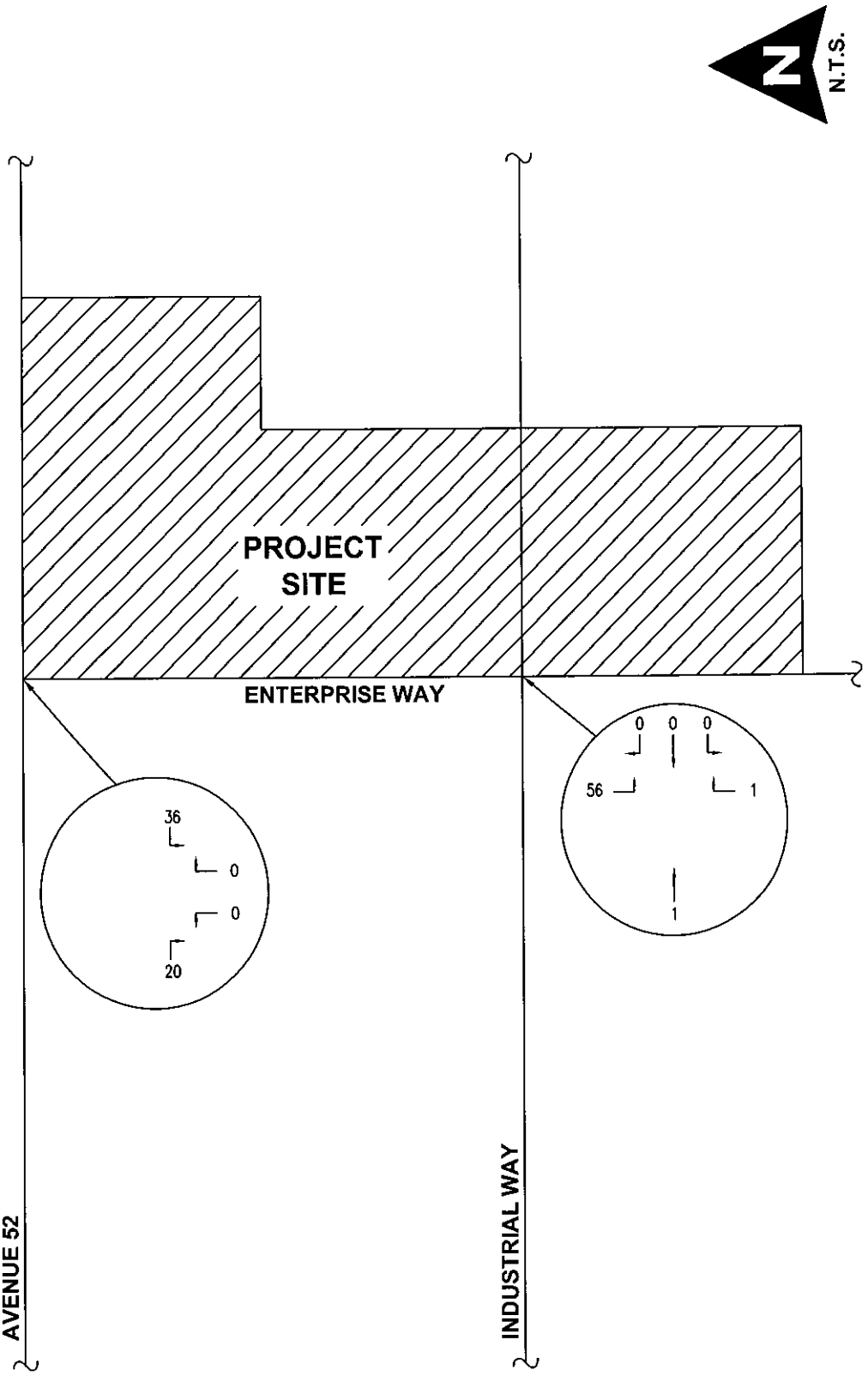


Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

TRUCK PM TRIP ASSIGNMENT FIGURE 12

OCEAN MIST FARMS EXPANSION

T:\CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG

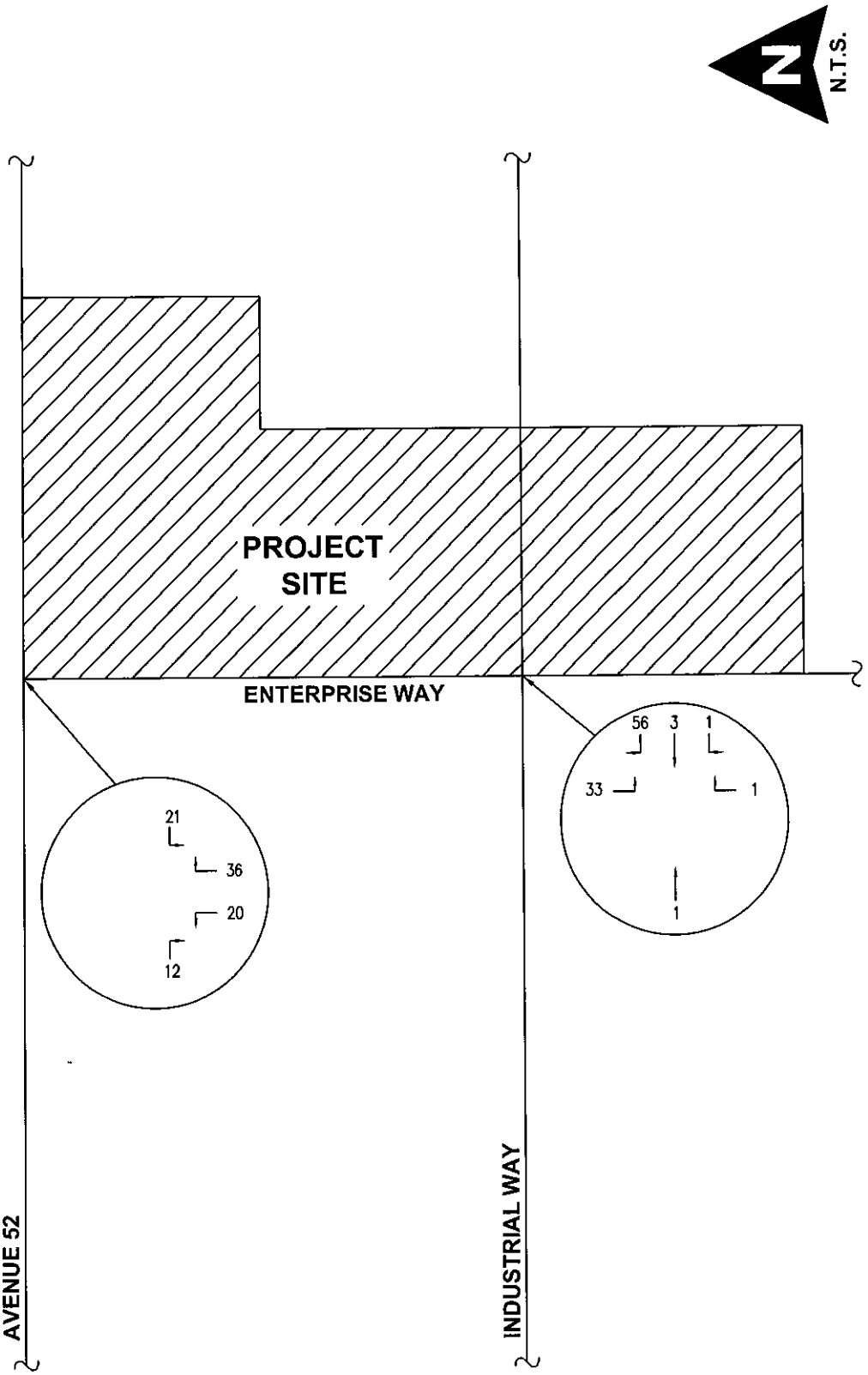


Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

EMPLOYEE AM TRIP ASSIGNMENT FIGURE 13

OCEAN MIST FARMS EXPANSION

T:\CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG

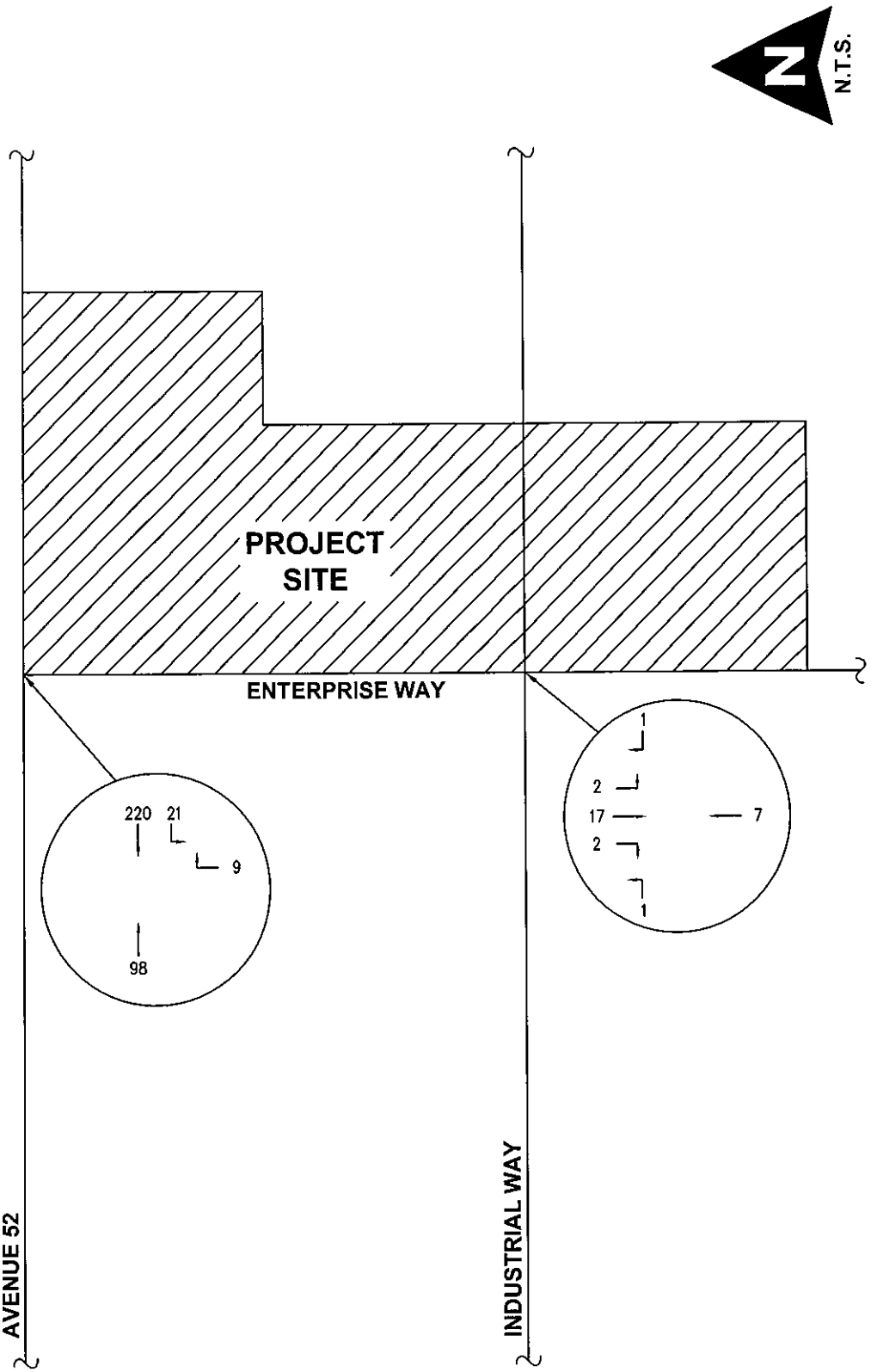


T:\CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG

Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

EMPLOYEE PM TRIP ASSIGNMENT FIGURE 14

OCEAN MIST FARMS EXPANSION

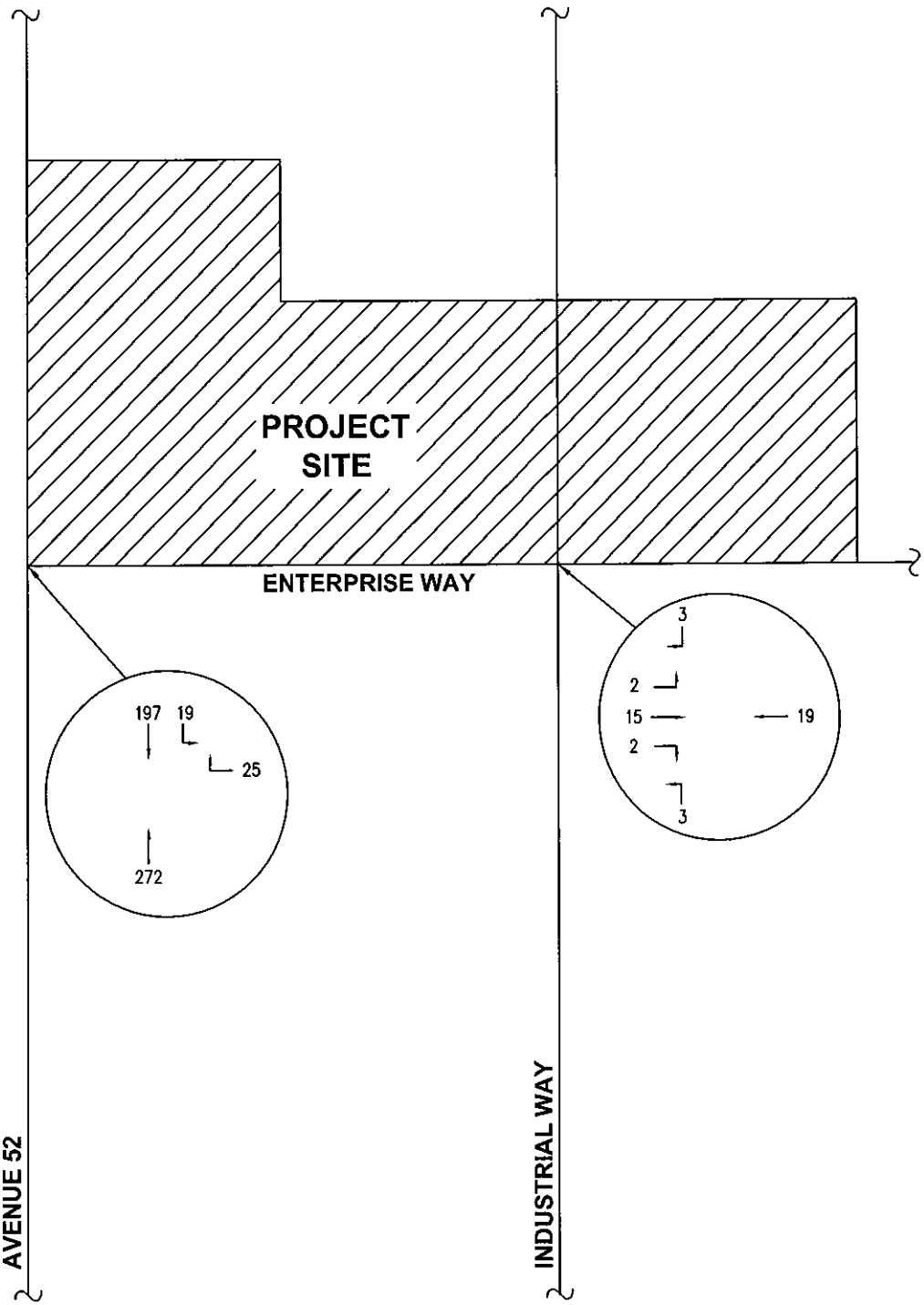


T:\CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG

Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

LA ENTRADA
AM TRIP ASSIGNMENT
FIGURE 15

OCEAN MIST
FARMS EXPANSION

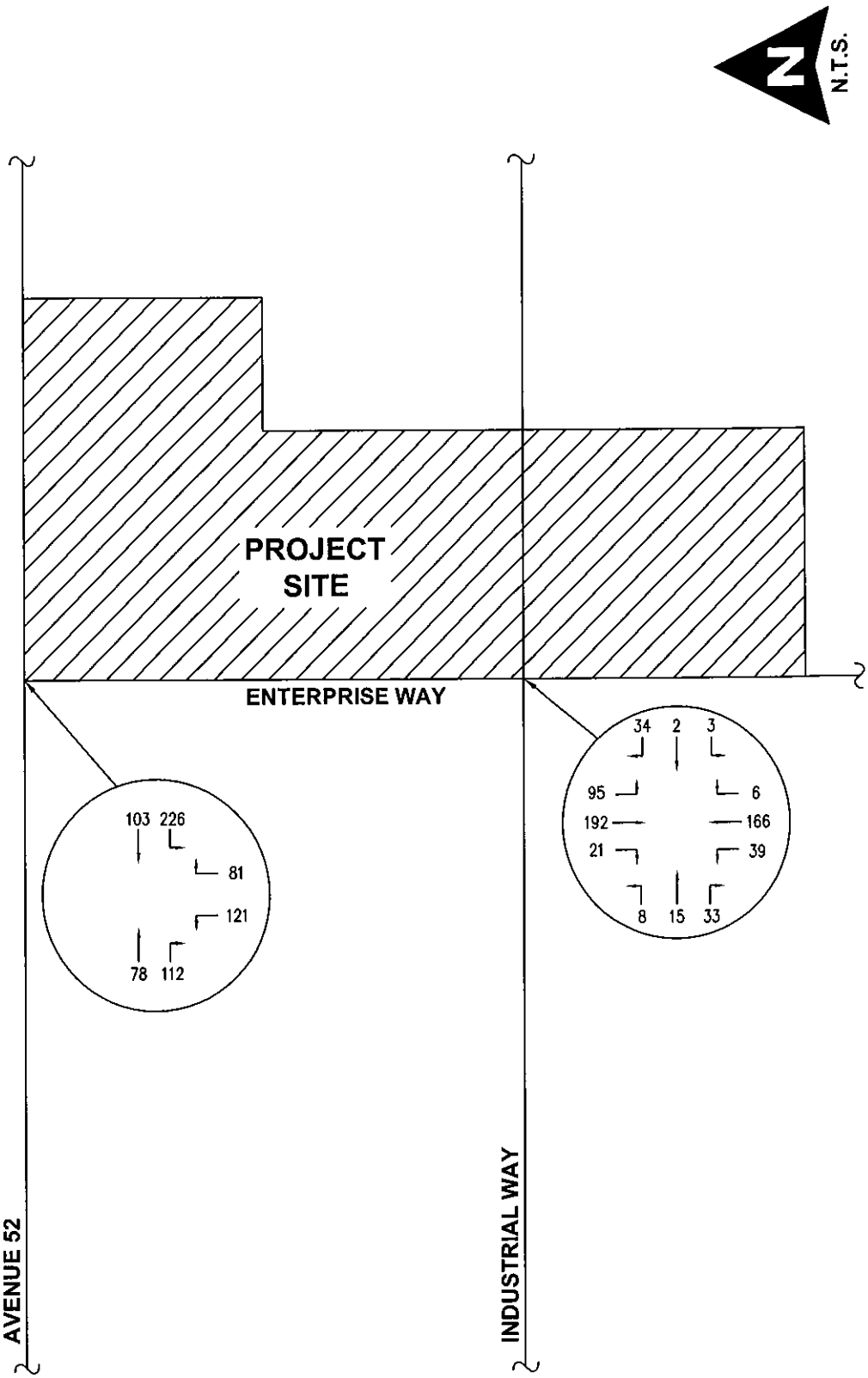


Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

LA ENTRADA
PM TRIP ASSIGNMENT
FIGURE 16

OCEAN MIST FARMS EXPANSION

T:\CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG

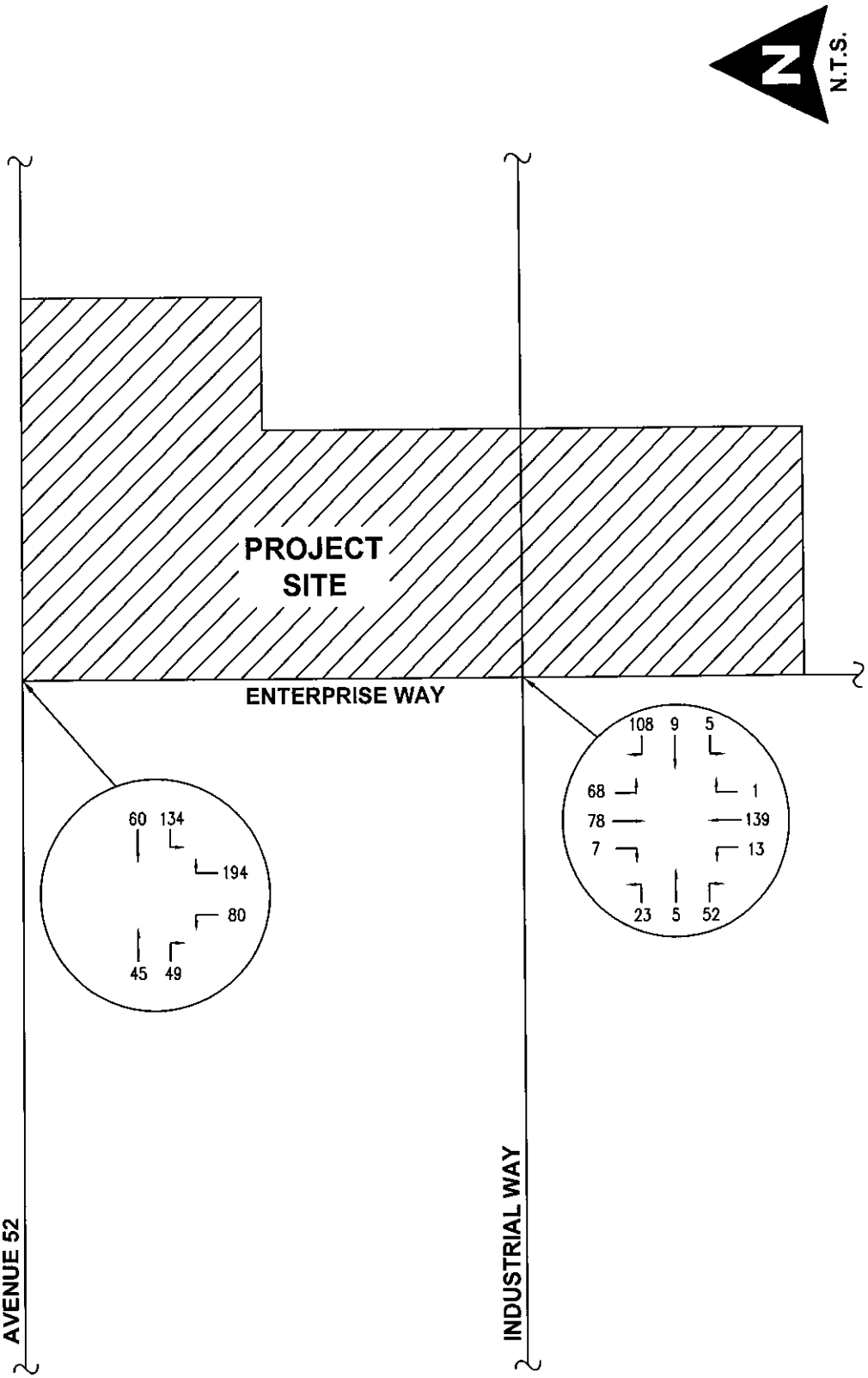


Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

EXISTING + PROJECT AM PEAK HOUR VOLUMES FIGURE 17

OCEAN MIST FARMS EXPANSION

T:\CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG

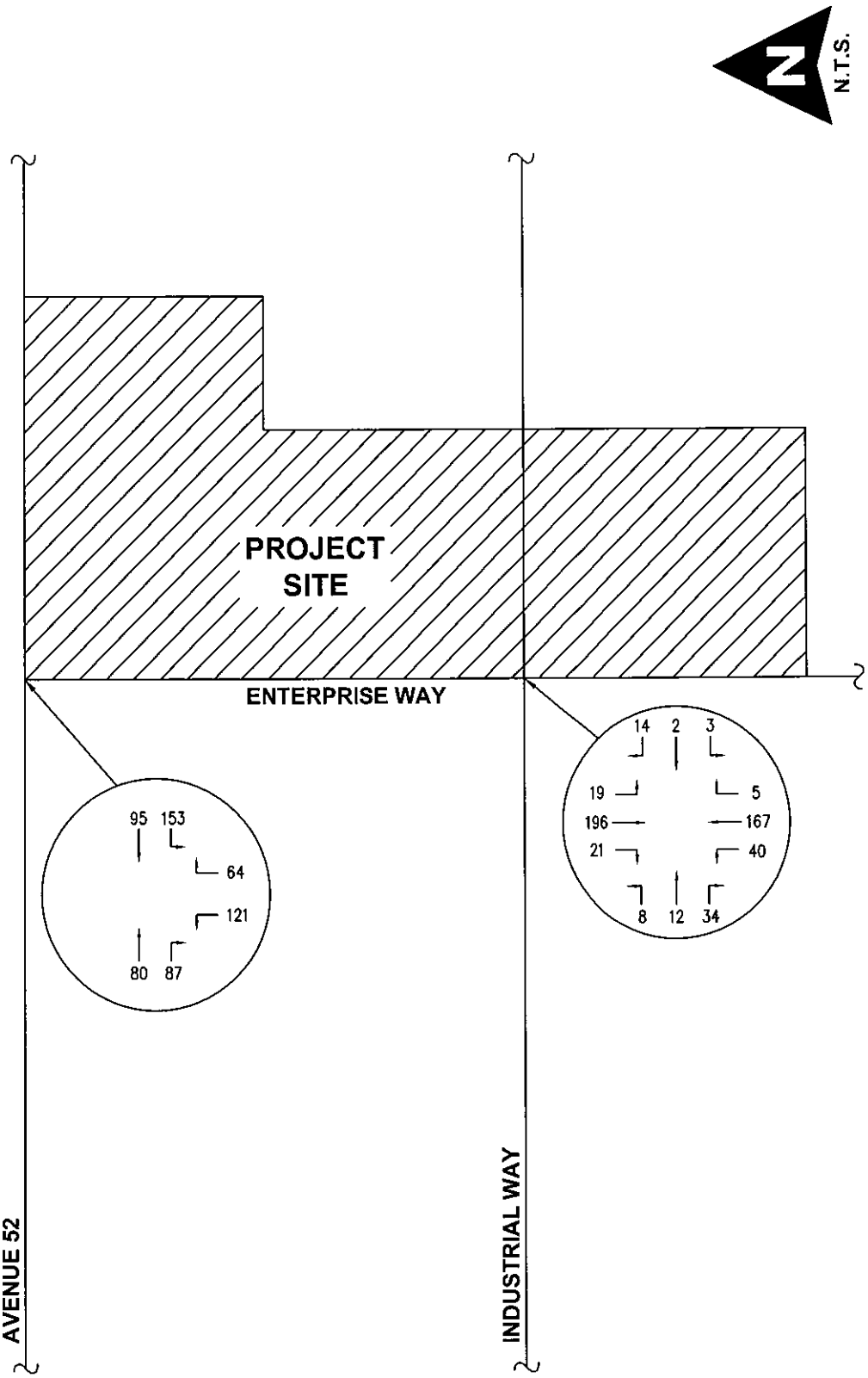


Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

EXISTING + PROJECT PM PEAK HOUR VOLUMES FIGURE 18

OCEAN MIST FARMS EXPANSION

T:\CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG

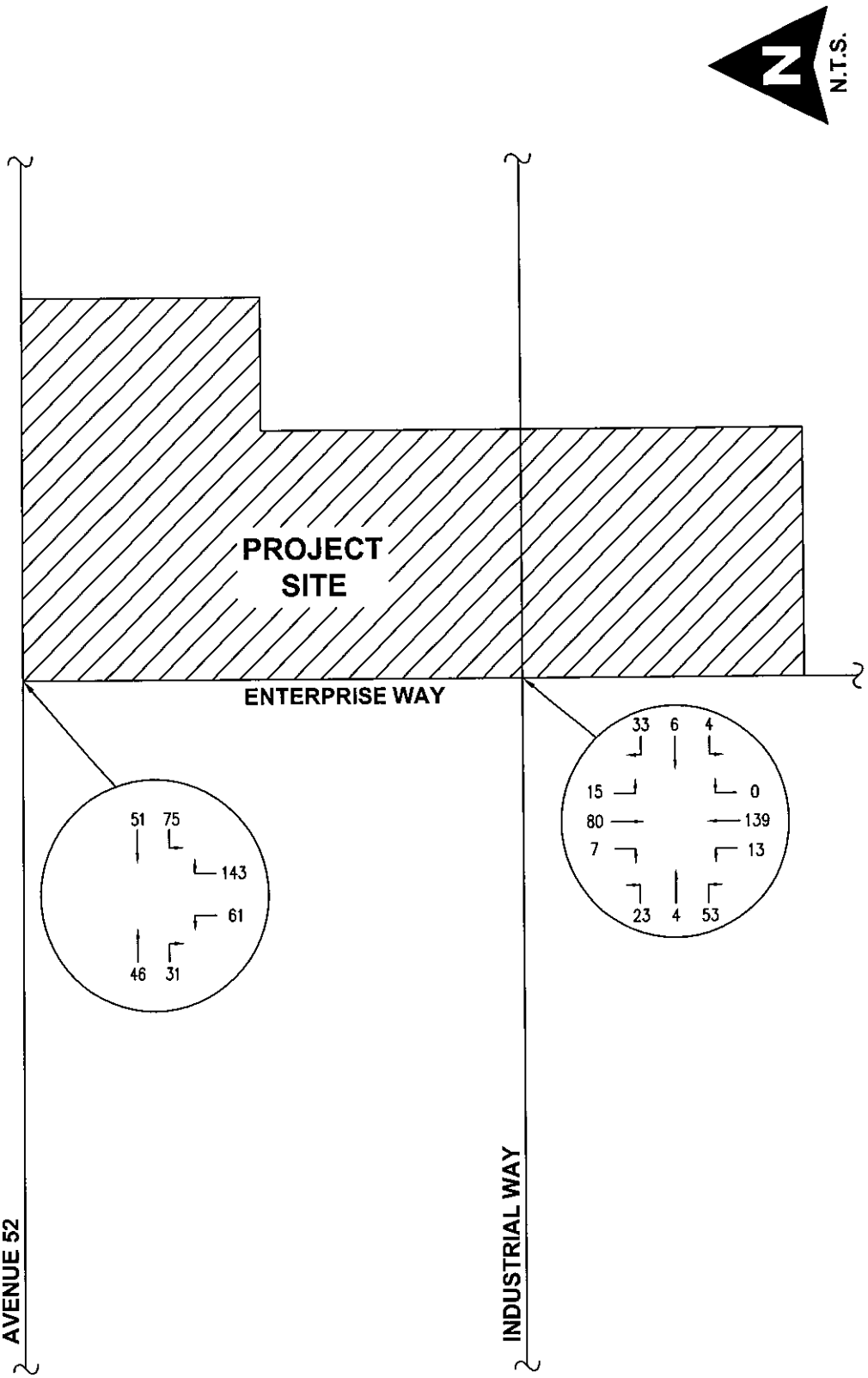


T:\CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG

Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

2015 AMBIENT GROWTH AM PEAK HOUR VOLUMES FIGURE 19

OCEAN MIST FARMS EXPANSION

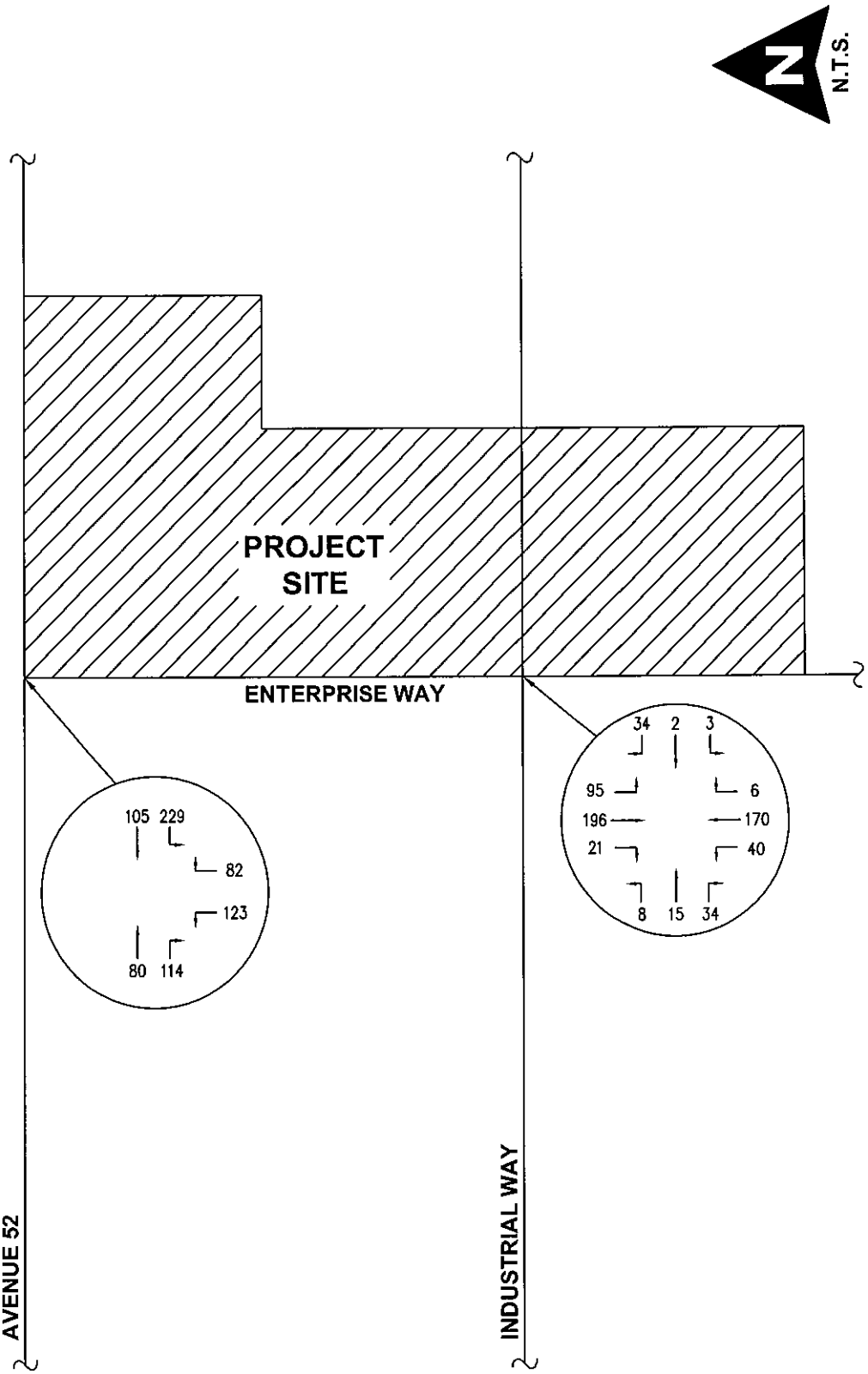


Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

2015 AMBIENT GROWTH PM PEAK HOUR VOLUMES FIGURE 20

OCEAN MIST FARMS EXPANSION

T:\CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG

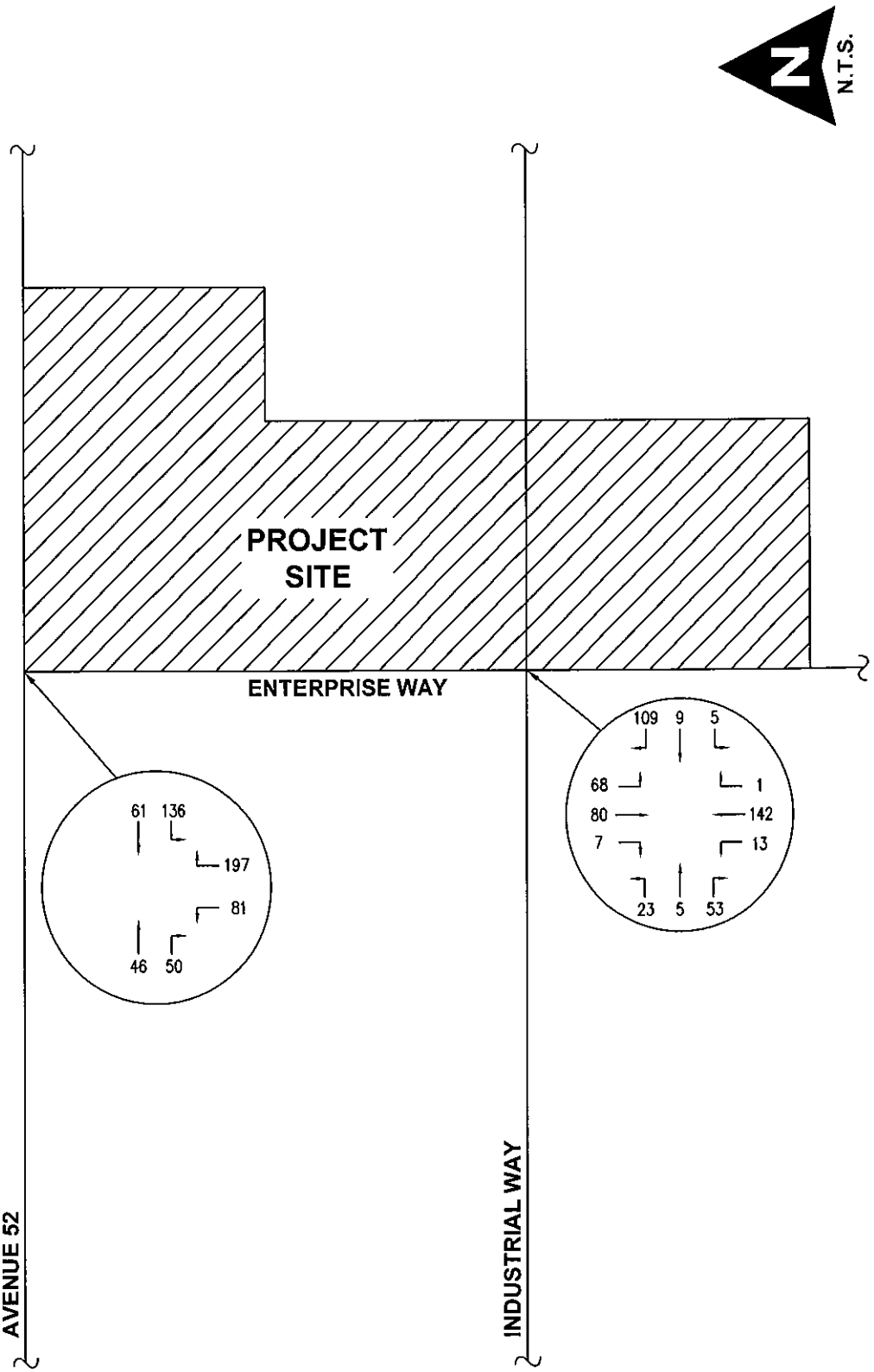


Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

2015 AMBIENT GROWTH + PROJECT AM PEAK HOUR VOLUMES
FIGURE 21

OCEAN MIST FARMS EXPANSION

T:\CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG

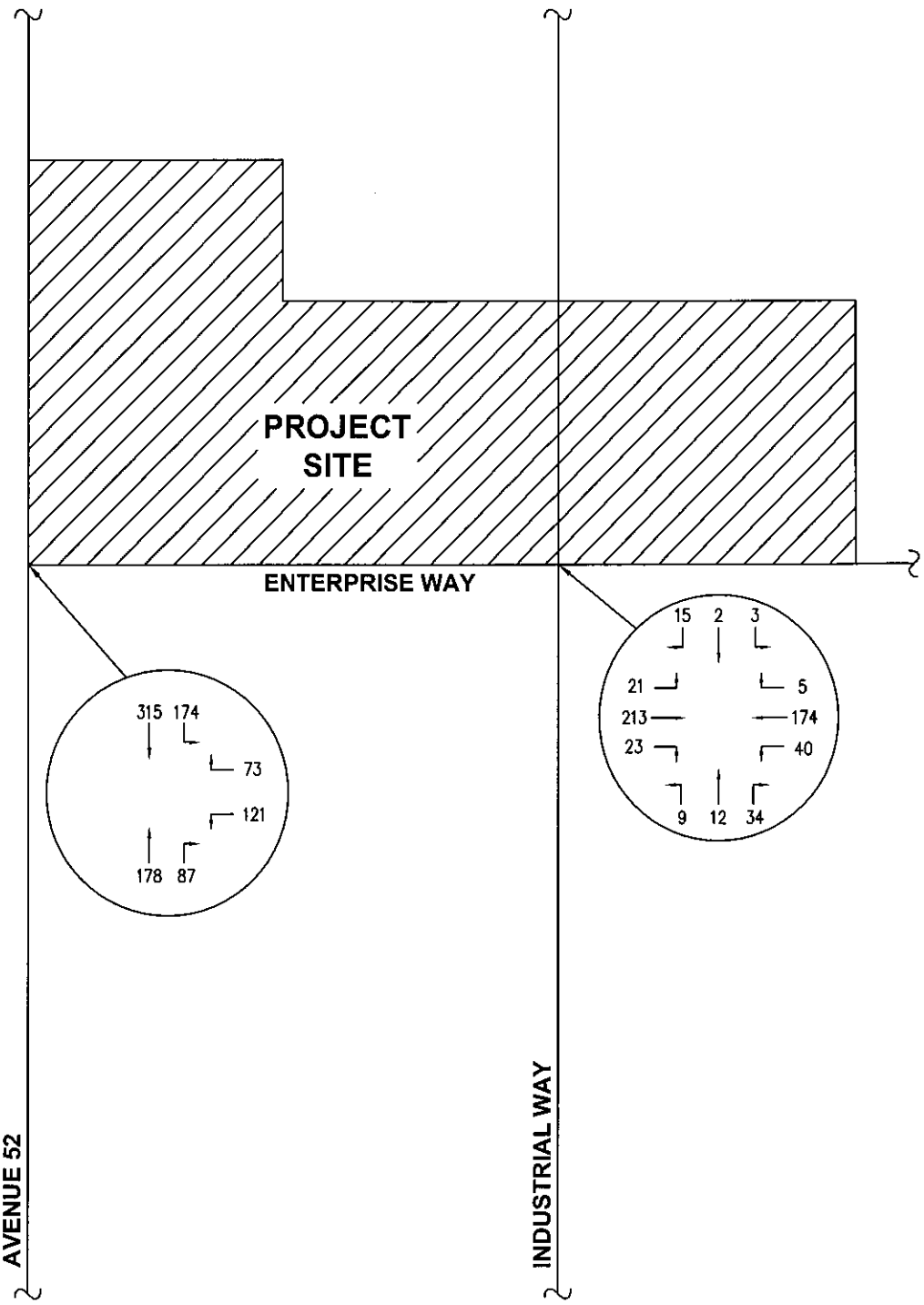


T:\CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG

Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

2015 AMBIENT GROWTH + PROJECT PM PEAK HOUR VOLUMES
FIGURE 22

OCEAN MIST FARMS EXPANSION

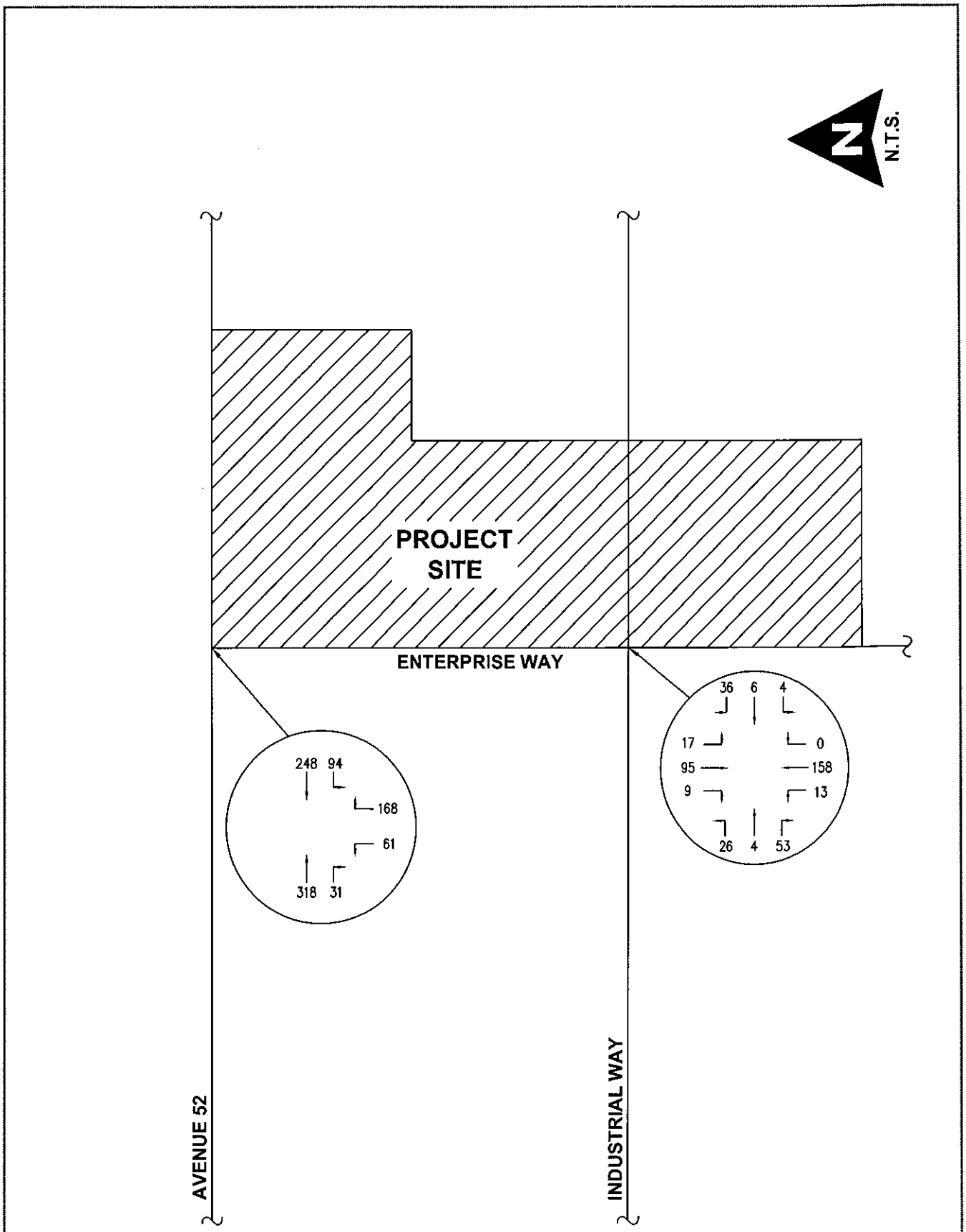


T:\CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG

Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

2015 AMBIENT GROWTH + CUMULATIVE AM PEAK HOUR VOLUMES
FIGURE 23

OCEAN MIST FARMS EXPANSION

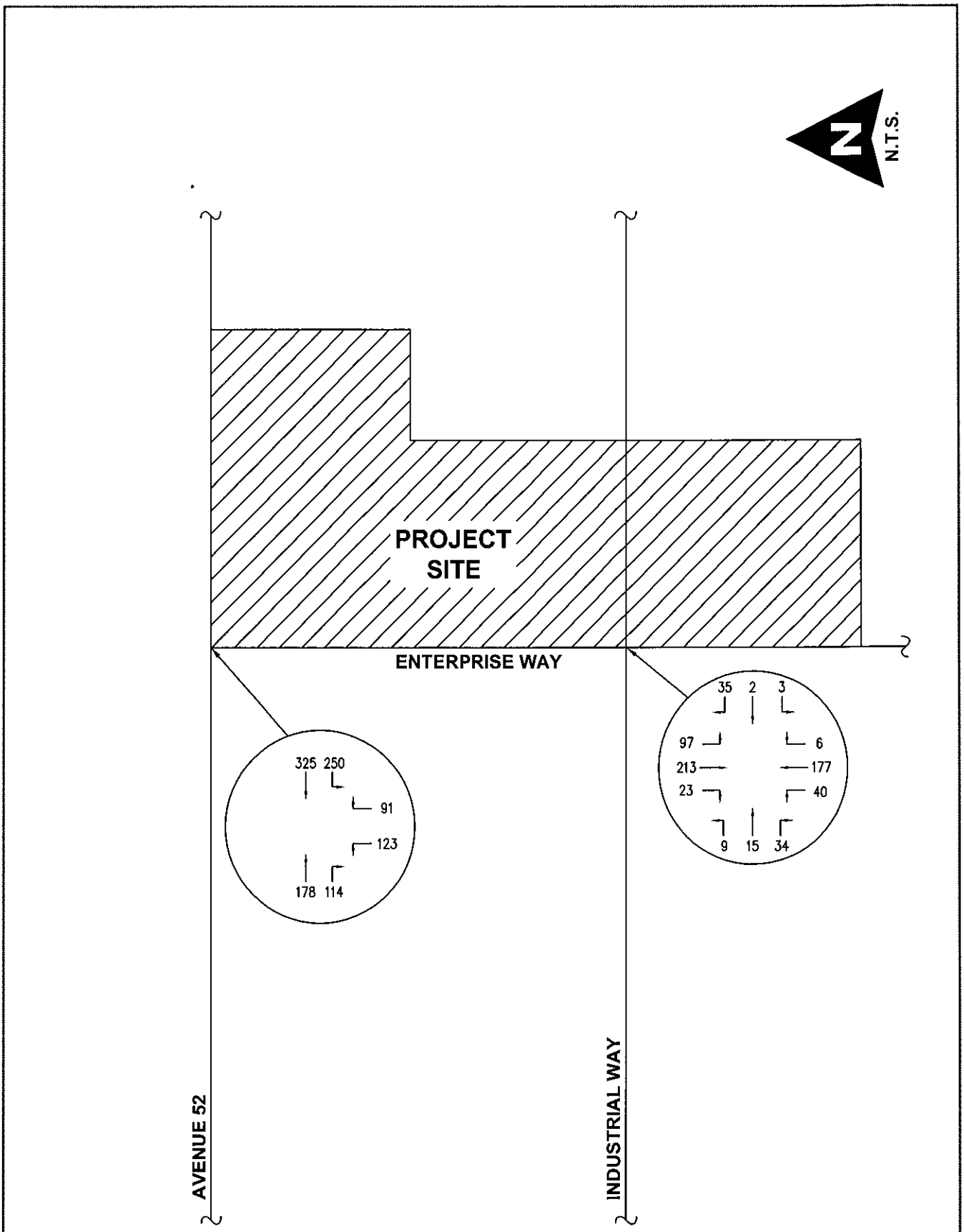


T: \CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG

Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

2015 AMBIENT GROWTH + CUMULATIVE PM PEAK HOUR VOLUMES
FIGURE 24

OCEAN MIST FARMS EXPANSION

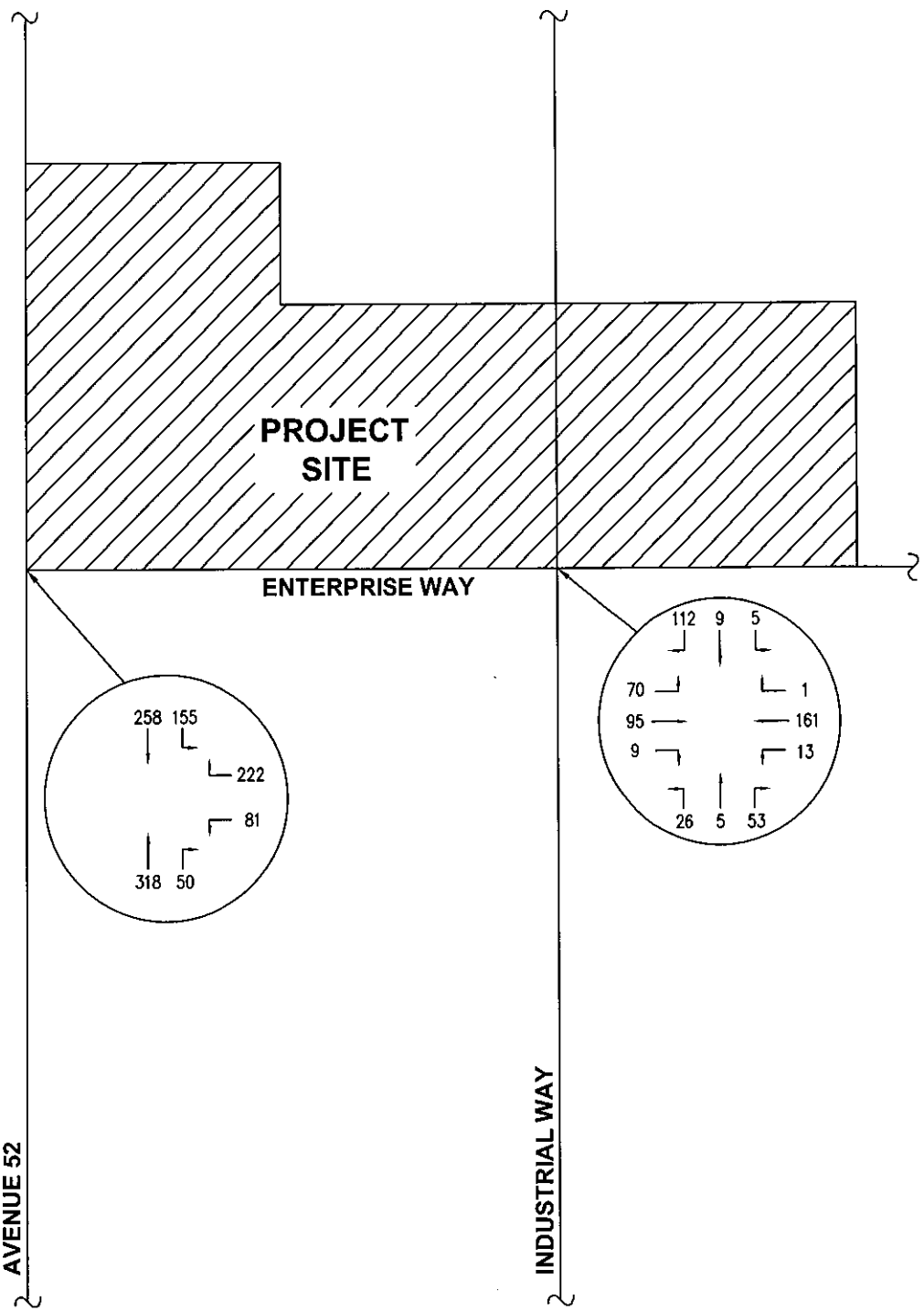


T:\CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG

Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

2015 AMBIENT GROWTH + CUMULATIVE + PROJECT AM PEAK HOUR VOLUMES
FIGURE 25

OCEAN MIST FARMS EXPANSION

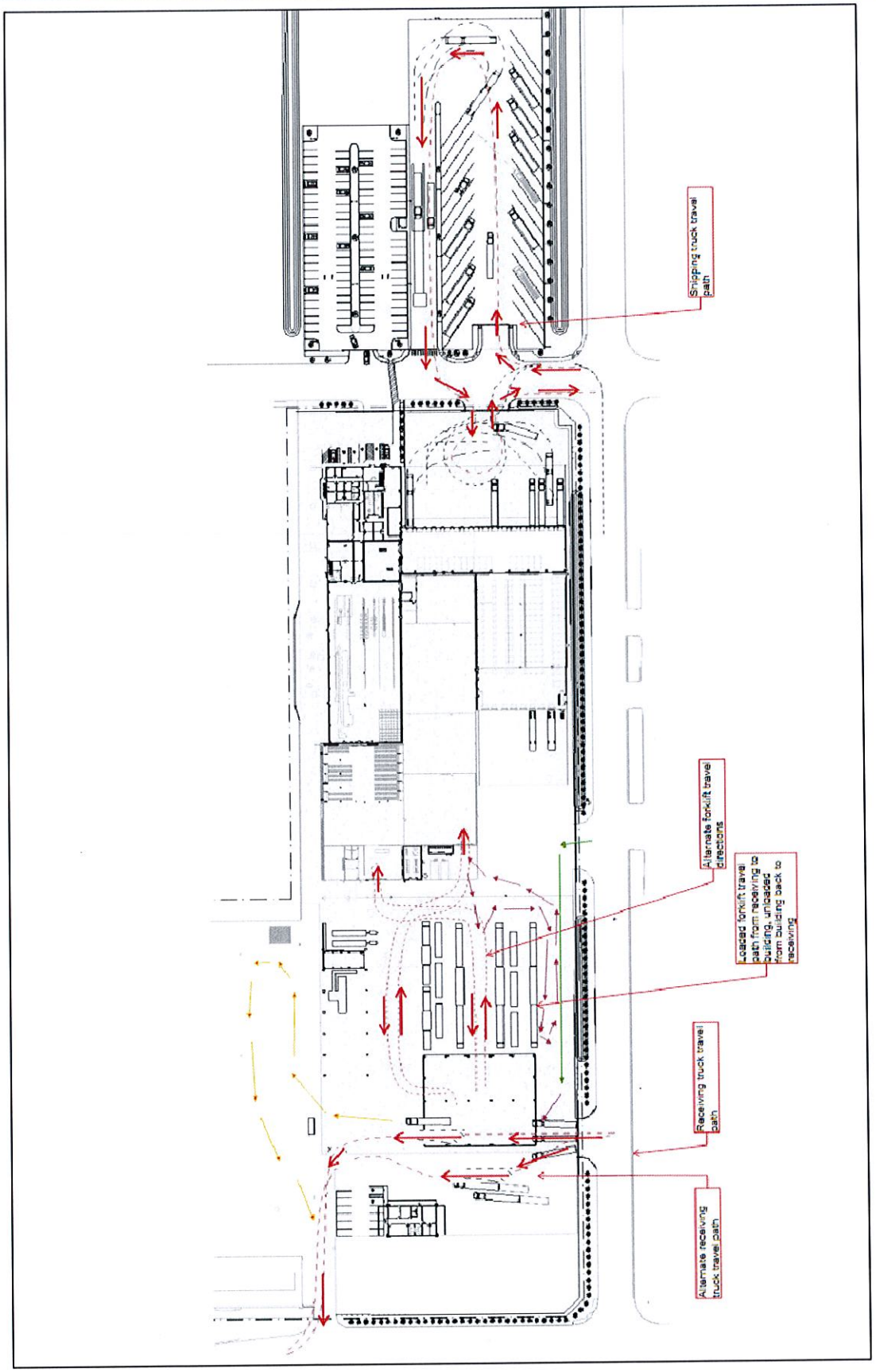


T:\CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG

Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

2015 AMBIENT GROWTH + CUMULATIVE + PROJECT PM PEAK HOUR VOLUMES
FIGURE 26

OCEAN MIST FARMS EXPANSION



T:\CAD\141090\DRAWINGS\TRAFFIC\141090-TRAFFIC.DWG

Lochsa engineering
6345 South Jones Blvd. Suite 100 - Las Vegas, NV 89118
Phone (702) 365-9312 - Fax (702) 365-9317 - www.lochsa.com

CIRCULATION ROUTE FIGURE 27

OCEAN MIST FARMS EXPANSION