

**Μελέτη Κυκλοφοριακών Επιπτώσεων από την ανέγερση
Γραφειακής και Εμπορικής Ανάπτυξης στο Δήμο Μέσα
Γειτονιάς, στη Λεμεσό**

Δεκέμβριος 2023

ΜΕΛΕΤΗΤΕΣ ΕΚΘΕΣΗΣ

Οι βασικοί μελετητές του Οίκου **A.L.A. Planning Partnership** που ετοίμασαν την παρούσα Μελέτη είναι οι ακόλουθοι:

- Άννα Καραμοντάνη – Πολιτικός Μηχανικός, Πολεοδόμος
- Λουκάς Ζωδιάτης – Συγκοινωνιολόγος
- Χρίστος Γκαρτζονίκας – Πολιτικός Μηχανικός, Συγκοινωνιολόγος

Η παρούσα μελέτη αποτελεί πνευματική ιδιοκτησία της Εταιρείας **A.L.A. Planning Partnership Consultancy L.L.C.** για τη μοναδική χρήση του εργοδότη. Για οποιαδήποτε χρήση της Μελέτης, ο εργοδότης θα την προβάλλει στο σύνολο της και χωρίς παραποιήσεις και θα περιλαμβάνει τα διακριτικά των Συμβούλων Μελετητών.

Περίληψη στα Ελληνικά

Η παρούσα μελέτη αναλύει τις κυκλοφοριακές επιπτώσεις για την ανέγερση γραφειακής και εμπορικής ανάπτυξης στη Λεμεσό και βρίσκεται εντός των ορίων του Δήμου Μέσα Γειτονιάς. Η προτεινόμενη ανάπτυξη βρίσκεται στα βορειοανατολικά του αστικού κέντρου της Λεμεσού στα νότια του Α1 Αυτοκινητόδρομου Λεμεσού – Λευκωσίας και γειτνιάζει με τη Λεωφ. Σπ. Κυπριανού. Τα τεμάχια προς ανάπτυξη είναι τα τεμάχια με αριθμό 615 και 616 του Φ. Σχ.: 54/510101,102 και 54/510103, 104. Η περιοχή περιμετρικά του χώρου ανάπτυξης είναι αρκετά αναπτυγμένη και περιλαμβάνει οικιστικές και εμπορικές αναπτύξεις. Συγκεκριμένα, η περιοχή δυτικά της ανάπτυξης περιλαμβάνει δημοτικό σχολείο και στα ανατολικά περιλαμβάνεται το μεγάλο υπερκατάστημα “Jumbo”, καθώς και ένα αριθμό εμπορικών χρήσεων κατά μήκος της Αγ. Αθανασίου που αποτελεί εμπορικό άξονα. Ο χώρος της ανάπτυξης σε υπόβαθρο χωρομετρικού σχεδίου φαίνεται στο συνημμένο **Σχέδιο 1.1**. Τα αρχιτεκτονικά σχέδια της προτεινόμενης ανάπτυξης περιλαμβάνονται στο **Παράρτημα Α**.

Μετά από συνεννόηση με το αρμόδιο Τμήμα Δημοσίων Έργων (ΤΔΕ) καθορίστηκαν οι θέσεις των κυκλοφοριακών μετρήσεων (στρέφουσες κινήσεις) και ορίστηκε όπως οι κυκλοφοριακές μετρήσεις πραγματοποιηθούν κατά τις περιόδους 07:00-08:30, 12:30-14:00 και 17:00–18:30 μιας καθημερινής ημέρας (Φεβρουάριος 2023). Οι κυκλοφοριακές μετρήσεις για στρέφουσες κινήσεις και για τον κυκλοφοριακό φόρτο της πρόσβασης προς την ανάπτυξη, που πραγματοποιήθηκαν στα πλαίσια της παρούσας Μελέτης, έγιναν στις ακόλουθες έξι (6) οδικές συμβολές:

1. Αγ. Αθανασίου / Α1 Αυτοκινητόδρομος Λεμεσού (Κυκλικός Κόμβος)
2. Αγ. Αθανασίου / Ιαπετού (Φωτοελεγχόμενη Συμβολή)
3. Αγ. Αθανασίου / Α. Καριόλου (Φωτοελεγχόμενη Συμβολή)
4. Αγ. Αθανασίου / Σπ. Κυπριανού (Φωτοελεγχόμενη Συμβολή)
5. Αγ. Αθανασίου / Κολωνακίου / Γρ. Διγενή / Γ. Νεοφύτου (Φωτοελεγχόμενη Συμβολή)
6. Σπ. Κυπριανού / Γ. Νεοφύτου (Φωτοελεγχόμενη Συμβολή)

Οι θέσεις των μετρήσεων παρουσιάζονται στο συνημμένο **Σχέδιο 2.1**.

Το ΤΔΕ ζήτησε επίσης την διεξαγωγή μετρήσεων κυκλοφοριακών ουρών, ρών κορεσμού (saturation flows) και βαθμών κορεσμού (degree of saturation) στις πιο πάνω οδικές συμβολές, έτσι ώστε να μπορεί να διεξαχθεί ο έλεγχος, η βαθμονόμηση και η επικύρωση (validation) των μετρήσεων. Τα αποτελέσματα αυτών των μετρήσεων παρουσιάζονται στα **Παραρτήματα Β, C και D**, αντίστοιχα.

Η παρούσα Μελέτη έχει διερευνήσει όλα τα σχετικά θέματα κυκλοφορίας και μετά από συμφωνία που έγινε με το ΤΔΕ, η κύρια Μελέτη και οι σχετικές αναλύσεις παρουσιάζονται στην Αγγλική γλώσσα με μια συνοπτική περίληψη των κύριων συμπερασμάτων στην Ελληνική γλώσσα.

Τα κύρια συμπεράσματα και οι προτάσεις της Μελέτης για αυτή την ανάπτυξη παρουσιάζονται συνοπτικά πιο κάτω.

Από τη μελέτη των σχεδίων της ανάπτυξης προέκυψαν τα ακόλουθα:

- Το μεικτό εμβαδόν της γραφειακής χρήσης είναι περίπου 6,245m² και το μεικτό εμβαδόν της εμπορικής χρήσης είναι 545m².
- Η ανάπτυξη θα διαθέτει συνολικά 156 χώρους στάθμευσης, εκ των οποίων 11 χώροι στάθμευσης θα είναι διαθέσιμοι για ΑμεΑ.

- Η προτεινόμενη ανάπτυξη θα διαθέτει δύο κύρια σημεία οχηματικής πρόσβασης προς/από το χώρο της ανάπτυξης, που οδηγούν στους χώρους στάθμευσης. Συγκεκριμένα, η πρώτη οχηματική πρόσβαση βρίσκεται στα ανατολικά της ανάπτυξης, όπου επιτρέπονται όλες οι κινήσεις. Η δεύτερη οχηματική πρόσβαση βρίσκεται στα νότια της ανάπτυξης, όπου επιτρέπονται όλες οι κινήσεις. Τα σημεία πρόσβασης παρουσιάζονται στο **Παράρτημα Α**.

Σε πρώτη φάση, ζητήθηκε η βαθμονόμηση και επικύρωση (validation) των φωτοελεγχόμενων συμβολών, ώστε να βελτιωθεί η ακρίβεια των κυκλοφοριακών μοντέλων. Το στάδιο αυτό περιλαμβάνει τη σύγκριση των προβλέψεων του μοντέλου με την πραγματική παρατηρούμενη κυκλοφοριακή συμπεριφορά. Έτσι, οι ροές κορεσμού που προέκυψαν με βάση τη πραγματική παρατηρούμενη κυκλοφοριακή συμπεριφορά συγκρίθηκαν με τις τιμές που προκύπτουν με χρήση της εξίσωσης RR67. Οι τελικές τιμές των ροών κορεσμού υπολογίστηκαν και συμφωνήθηκαν με το ΤΔΕ πριν από την εκτίμηση επιπτώσεων και παρουσιάζονται στο **Παράρτημα F**. Επιπλέον, υπολογίστηκαν οι τιμές DoS και UGT με βάση την παρατηρούμενη κυκλοφοριακή συμπεριφορά, ώστε να συγκριθούν με τις τιμές που προκύπτουν από τα κυκλοφοριακά μοντέλα. Όπως συμφωνήθηκε και με το ΤΔΕ δεδομένης της δυσκολίας συλλογής αντιπροσωπευτικού αριθμού μετρήσεων για στρέφουσες κινήσεις, η σύγκριση συγκεντρώθηκε στις μη στρέφουσες κινήσεις. Επιπρόσθετα, συμφωνήθηκε ως κριτήριο αποδοχής της επικύρωσης διαφορά +/-15% μεταξύ των πραγματικών μετρήσεων και των μετρήσεων που προκύπτουν από τα κυκλοφοριακά μοντέλα. Σε περιπτώσεις, όπου αυτό δεν ήταν εφικτό, παρέχονται σχόλια για ένδειξη τυχόν ζητημάτων (π.χ. περιορισμοί δεδομένων). Τα αποτελέσματα της σύγκρισης περιλαμβάνονται στο **Παράρτημα Η** όπου τα αποτελέσματα δείχνουν ότι επιτεύχθηκε η επικύρωση των φωτοελεγχόμενων συμβολών διασφαλίζοντας την ακρίβεια των μοντέλων κυκλοφορίας.

Η αξιολόγηση που έγινε, βασίστηκε σε κυκλοφοριακές μετρήσεις που έγιναν στο τοπικό οδικό δίκτυο και τη μετρηθείσα γένεση κυκλοφορίας της προτεινόμενης ανάπτυξης, λαμβάνοντας υπόψη παραμέτρους βάσει υποδείξεων του ΤΔΕ. Για την πρωινή περίοδο αιχμής (07:00 – 08:00) μιας καθημερινής μέρας, προέκυψε γένεση κυκλοφορίας δύο κατευθύνσεων 137 Μονάδων Επιβατικών Αυτοκινήτων (ΜΕΑ) – 124 αφίξεις και 13 αναχωρήσεις. Για την μεσημβρινή περίοδο αιχμής (12:00 – 13:00) μιας καθημερινής μέρας, προέκυψε γένεση κυκλοφορίας δύο κατευθύνσεων 83 ΜΕΑ – 44 αφίξεις και 39 αναχωρήσεις. Για την απογευματινή περίοδο αιχμής (17:00 – 18:00) μιας καθημερινής μέρας, προέκυψε γένεση κυκλοφορίας δύο κατευθύνσεων 147 ΜΕΑ – 23 αφίξεις και 124 αναχωρήσεις. Επιπρόσθετα, ένα σενάριο ανάλυσης ευαισθησίας έχει ληφθεί υπόψη για τη μελλοντική χρονιά, το οποίο περιλαμβάνει τις παραδοχές γένεσης κυκλοφορίας όπως ορίστηκαν από το ΤΔΕ, όπου προκύπτουν 204 ΜΕΑ (187 αφίξεις και 17 αναχωρήσεις) για την πρωινή περίοδο αιχμής, 65 ΜΕΑ (33 αφίξεις και 32 αναχωρήσεις) για τη μεσημβρινή περίοδο αιχμής και 212 ΜΕΑ (20 αφίξεις και 192 αναχωρήσεις) για την απογευματινή περίοδο αιχμής. Η γένεση μετακινήσεων παρουσιάζεται στο **Παράρτημα G**. Επίσης, ο βαθμός κορεσμού του χώρου στάθμευσης της προτεινόμενης ανάπτυξης λαμβάνοντας υπόψη το σύνολο των παρεχόμενων θέσεων στάθμευσης, υπολογίστηκε σε 237 οχήματα που αντιστοιχεί σε περίπου 151%. Στη Μελέτη αυτή προτείνονται στη συνέχεια κάποια μέτρα όπως Ειδικά Σχέδια Μετακίνησης και Σχέδια Διαχείρισης της Στάθμευσης της ανάπτυξης. Συγκεκριμένα, όπως προτείνεται στο σενάριο το οποίο λαμβάνει υπόψη κίνητρα και μέτρα που αποσκοπούν σε αυξημένη χρήση βιώσιμης κινητικότητας και αναλύεται παρακάτω, ο βαθμός κορεσμού της στάθμευσης μειώνεται στο 92%.

Για τα σενάρια, μετά από συνεννόηση με τους αρμόδιους φορείς έχουν ληφθεί υπόψη τα ακόλουθα οδικά δίκτυα ταυτόχρονα με τα σενάρια έναρξης λειτουργίας της ανάπτυξης: α) κατασκευή του κυκλικού κόμβου Σπ. Κυπριανού / Αγ. Αθανασίου το οποίο προωθείται από το Τμήμα Πολεοδομίας και Οικήσεως, β) κατασκευή του κυκλικού κόμβου Σπ. Κυπριανού / Γ. Νεοφύτου ο οποίος θα προωθηθεί στα πλαίσια μιας γειτονικής ανάπτυξης (Mall of Limassol). Οι αναβαθμίσεις των οδικών δικτύων παρουσιάζονται στο **Παράρτημα E**. Επιπρόσθετα έχει συζητηθεί με τους αρμόδιους φορείς να ληφθεί υπόψη η γένεση κυκλοφορίας τριών γειτονικών αναπτύξεων. Οι αναπτύξεις αφορούν α) την μεικτή ανάπτυξη «Silicon», η οποία χωροθετείται νοτιοδυτικά του κυκλικού κόμβου Λινόπετρας

και περιλαμβάνει οικιστική και γραφειακή χρήση, β) εμπορικό κέντρο Λινόπετρας που χωροθετείται στα βορειοανατολικά του κυκλικού κόμβου Λινόπετρας και γ) εμπορικό κέντρο “Mall of Limassol” στη Μέσα Γειτονιά που χωροθετείται στα βόρεια της Σπ. Κυπριανού. Όλες οι γειτονικές αναπτύξεις αναμένεται να αναπτυχθούν μέχρι το σενάριο έναρξης λειτουργίας (2026).

Η επίπτωση από τη γένεση κυκλοφορίας στο τοπικό οδικό δίκτυο αξιολογήθηκε για δύο σενάρια, ένα για την χρονιά έναρξης λειτουργίας της ανάπτυξης που θα είναι το 2026 και ένα για τη «μελλοντική χρονιά» που θα είναι το 2036. Επιπρόσθετα, ένα σενάριο ανάλυσης ευαισθησίας έχει ληφθεί υπόψη για τη μελλοντική χρονιά, το οποίο περιλαμβάνει τις παραδοχές γένεσης κυκλοφορίας όπως ορίστηκαν από το ΤΔΕ. Η επίπτωση της κυκλοφορίας της ανάπτυξης υποδείχθηκε ελέγχοντας τη χωρητικότητα στις οδικές συμβολές της περιοχής μελέτης. Οι έλεγχοι χωρητικότητας των κόμβων στην περιοχή παρουσιάζονται στο **Παράρτημα Η**.

Σύμφωνα με τις αναλύσεις του **Παραρτήματος Η**, κατά την υφιστάμενη κατάσταση 2023 δεν παρατηρείται σημαντική κυκλοφοριακή συμφόρηση στο τοπικό δίκτυο εκτός από τον κυκλικό κόμβο Αγ. Αθανασίου / Α1 Αυτοκινητόδρομος Λεμεσού σε όλες τις περιόδους αιχμής. Επιπρόσθετα, ορισμένα σκέλη των φωτοελεγχόμενων συμβολών Αγ. Αθανασίου / Ιαπετού (πρωινή και απογευματινή περίοδο αιχμής) και Αγ. Αθανασίου / Α. Καριόλου (πρωινή περίοδο αιχμής) είναι κυκλοφοριακά φορτισμένα.

Στο σενάριο 2026 ‘Χωρίς την Ανάπτυξη’ εκτός από τη κυκλοφοριακή συμφόρηση που παρατηρείται στον κυκλικό κόμβο Αγ. Αθανασίου / Α1 Αυτοκινητόδρομος Λεμεσού, οι κυκλοφοριακές συνθήκες στις φωτοελεγχόμενες συμβολές βελτιώνονται ως αποτέλεσμα της βελτιστοποίησης της σηματοδότησης. Στο σενάριο 2026 ‘Με την Ανάπτυξη’ οι κυκλοφοριακές συνθήκες δεν εντείνονται ιδιαίτερα στις κρίσιμες συμβολές του τοπικού οδικού δικτύου.

Για τα σενάρια 2036 ‘Χωρίς την Ανάπτυξη’ και ‘Με την Ανάπτυξη’, θέματα παρατηρούνται στο κυκλικό κόμβο Αγ. Αθανασίου / Α1 Αυτοκινητόδρομος Λεμεσού, μεγάλες ουρές. Στη φωτοελεγχόμενη συμβολή Αγ. Αθανασίου / Ιαπετού ορισμένα κυκλοφοριακά θέματα παρατηρούνται κατά την απογευματινή περίοδο αιχμής αλλά οι βαθμοί κορεσμού είναι σε αποδεκτά επίπεδα.

Για την απάμβλυνση των αναφερόμενων κυκλοφοριακών συνθηκών στο σενάριο της «μελλοντικής» χρονιάς το 2036, έχει δημιουργηθεί η Επιλογή 2, με κίνητρα και μέτρα που αποσκοπούν σε αυξημένη χρήση βιώσιμης κινητικότητας και προώθηση μέσων μαζικής μεταφοράς. Τα αποτελέσματα της ανάλυσης με ενσωμάτωση των μέτρων που προτείνονται μέσω της Επιλογής 2, οδηγούν σε βελτίωση των κυκλοφοριακών συνθηκών στο οδικό δίκτυο. Αξίζει να σημειωθεί ότι το σενάριο βιώσιμης αστικής κινητικότητας, όπως έχει δημιουργηθεί με την Επιλογή 2, προωθεί μετακινήσεις φιλικές στο περιβάλλον.

1. Σχέδιο Μετακινήσεων: Το Σχέδιο Μετακινήσεων είναι ο πυρήνας των προτεινόμενων μέτρων μετριασμού για απάμβλυνση των κυκλοφοριακών συνθηκών και θα πρέπει να περιλαμβάνει σαφείς στόχους και κίνητρα ως επιπλέον μέτρα προώθησης μέσων μαζικής μεταφοράς. Για παράδειγμα οι εργαζόμενοι, με σειρά, μπορούν να χρησιμοποιούν τους χώρους στάθμευσης μόνο για 3 εβδομάδες για κάθε 4 εβδομάδες εκ περιτροπής, έτσι ώστε οι εργαζόμενοι να χρησιμοποιούν εναλλακτικούς τρόπους μετακίνησης όπως μέσα μαζικής μεταφοράς, πετυχαίνοντας μείωση 25% στη ζήτηση της στάθμευσης και στη γένεση κυκλοφορίας. Το Σχέδιο Μετακινήσεων θα πρέπει να βρίσκεται υπό συνεχή παρακολούθηση και να αναπροσαρμόζεται ανάλογα με τις επικρατούσες συνθήκες.
2. Σχέδιο Διαχείρισης Στάθμευσης: Αυτό το Σχέδιο Διαχείρισης Στάθμευσης θα αποτελεί μέρος του Σχεδίου Μετακινήσεων και θα περιλαμβάνει την προκράτηση θέσεων στάθμευσης, χρήση χρονικού ορίου, την χρήση των χώρων στάθμευσης από χρήστες των οποίων οι μετακινήσεις είναι ουσιώδεις, την προώθηση ομαδικών τρόπων μετακίνησης (car-pooling) οι οποίοι

επιτυγχάνουν αύξηση της πληρότητας του αυτοκινήτου, παροχή θέσεων στάθμευσης για ηλεκτρικά οχήματα με σταθμούς φόρτισης ;όπως αναγράφεται στην υφιστάμενη νομοθεσία, εγκατάσταση 30 θέσεων στάθμευσης ποδηλάτων για προώθηση χρήσης του μέσου, κλπ.

3. **Λειτουργικά Μέτρα:** Διάφορα λειτουργικά μέτρα προτείνονται τα οποία μπορούν να βελτιώσουν τη λειτουργικότητα και την αποτελεσματικότητα των διάφορων χρήσεων. Προώθηση κινήτρων, όπως χρηματικά κίνητρα στους υπάλληλους να χρησιμοποιούν ποδήλατα για τη μετακίνησή τους, χρήση ομαδικών τρόπων μετακίνησης, πολιτική για εργοδότηση υπαλλήλων που διαμένουν σε ακτίνα λίγων χιλιομέτρων από την ανάπτυξη και προώθηση ευέλικτων ή κλιμακωτών ωραρίων εργασίας και τηλε-εργασίας, ώστε να μειωθούν οι καθημερινές μετακινήσεις.

Για την επίλυση των προβλημάτων προτείνονται τα ακόλουθα επιπρόσθετα μέτρα μετριασμού που θα μετριάσουν τυχόν κυκλοφοριακά θέματα, επιλύοντας τα κυκλοφοριακά ζητήματα επαρκώς.

Συγκεκριμένα:

- Προτείνεται η παροχή θέσεων στάθμευσης για ηλεκτρικά οχήματα με σταθμούς φόρτισης όπως προνοείται στην υφιστάμενη νομοθεσία
- Προτείνεται η εγκατάσταση 30 θέσεων στάθμευσης ποδηλάτων για προώθηση χρήσης του μέσου
- Προτείνεται η σηματοδότηση του κυκλικού κόμβου Αγ. Αθανασίου / Α1 Αυτοκινητόδρομος Λεμεσού. Τα αποτελέσματα αυτής της ανάλυσης με κάποιες παραδοχές που έγιναν για τη σηματοδότηση, παρουσιάζονται στο **Παράρτημα Η**.

Συμπερασματικά, η γένεση κυκλοφορίας από την ανάπτυξη, λόγω και των ανωτέρω προτεινόμενων μέτρων μετριασμού, δεν επιβαρύνει επιπλέον το ήδη κυκλοφοριακά φορτισμένο οδικό δίκτυο της περιοχής μελέτης, ενώ η παροχή θέσεων στάθμευσης της ανάπτυξης, είναι ικανοποιητική για να καλύψει τη ζήτηση. Τα προτεινόμενα μέτρα βιώσιμης κινητικότητας για τη διαχείριση της στάθμευσης που προτείνονται πιο πάνω, αντιμετωπίζουν σε ένα βαθμό τα κυκλοφοριακά θέματα που παρουσιάζονται στην περιοχή με και χωρίς την προτεινόμενη ανάπτυξη. Εντούτοις, πρέπει να επισημανθεί ότι η ανάπτυξη δεν συμβάλλει αποκλειστικά στην κυκλοφοριακή κατάσταση στην περιοχή. Επίσης, με την ύπαρξη ασφαλών και αποτελεσματικών προσβάσεων στην ανάπτυξη, βελτιώνουν ακόμα περισσότερο την κατάσταση. Συνεπώς, με βάση τα πορίσματα της παρούσας Μελέτης μπορεί να εκδοθεί η σχετική άδεια ανάπτυξης για υλοποίηση της προτεινόμενης γραφειακής και εμπορικής ανάπτυξης στο Δήμο Μέσα Γειτονιάς, στη Λεμεσό.

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1. INTRODUCTION

The Study

1.1 This study considers all the traffic and parking-related aspects of a proposed office and retail development. The key components of the study are set out below:

- Identification of the existing traffic situation on the surrounding network.
- Estimates of traffic generated by the development.
- Assessment of the impact of the development.
- Testing of capacity at local junctions.
- Recommendations and proposals for any mitigation measures that may be required.

Site Location

1.2 The site is located to the north-east of the centre of Limassol, within the Municipality of Mesa Geitonia and close to the boundary of Ayios Athanasios Municipality. The development site is shown on the official 'Department of Lands & Registry' plan presented in **Figure 1.1**. The development is located to the south of the A1 Limassol Highway, on S. Kyprianou. The area around the site is partially developed with residential and commercial uses. However, there is primary school to the west of the site, and a large Jumbo store to the east. The site is very close to the main road and activity spine of Ay. Athanasios where a number of retail uses and supermarkets are located. Further afield, the Ay. Athanasios industrial zone is located to the east of the site.

1.3 The site covers an area of 4.174m² and is currently not in any use.

Existing Transport Infrastructure

1.4 A summary of the key features of the local transport infrastructure are as follows:

- **Road Network** - As already stated, the site is located to the south of the A1 Limassol Highway, which is a key route in the national road network and is a dual 2 lane standard. The Ay. Athanasiou corridor is located to the east of the site and is a key road in Limassol's primary road network which is busy during peak periods. Closer to the site is S. Kyprianou, which is located on the northern boundary of the development and is a key orbital route in Limassol. The study area network also contains a number of critical junctions. These include the grade-separated roundabout of Ay. Athanasiou / A1 Limassol Highway (known as the Linopetra roundabout), and the signalsied junctions at Ay. Athanasiou with Sp. Kyprianou and Kolonakiou. This local area network (including the locations of the traffic counts) is presented in **Figure 1.2**, which shows that local and strategic access to the site is good.

With regards to road safety, following discussions with the local Police, we have been notified that there are no specific issues in the study area network.

Figure 1.2: Site Location, Existing Road Network and Traffic Count Locations



- **Public Transport** - There are four bus routes that serve the area, with bus stops located on S. Kyprianou, and serving route 11 that connects the Ay. Athanasiou industrial area with Leontiou bus station in the city centre. Furthermore, there are bus stops on Sp. Kyprianou and Arch. Makariou that serve bus routes 3 (Ay. Athanasios – Arch. Makariou / Mesa Geitonía), 14 (Estias / Ay. Athanasios – Leontiou bus station) and 20 (T. Christodoulou – Ay. Nikolaos Fire Brigade Station). As such, the public transport accessibility of the development can be considered as fairly good for Cypriot standards. The key features of these bus routes are summarised in the table below.

Table 1.1: Public Transport Services

Bus Route No.	Origin	Destination	Service Type
3	Ay. Athanasios	Arch. Makariou - Mesa Geitonía	Urban
11	Ay. Athanasios Housing Finance Agency	Leontiou Bus Station	Urban
14	Estias – Ay. Athanasios	Leontiou Bus Station	Urban
20	T. Christodoulou	Ay. Nikolaos Fire Brigade Station	Urban

- **Cycling & Pedestrians** - The Limassol Local Plan includes cycle routes to the east of the development site, which facilitates and promotes sustainable transportation. Specifically, cycle routes are included on Ay. Athanasiou to the south and east of the development. The Ay. Athanasiou corridor to the east, Arch. Makariou corridor to the west and Sp. Kyprianou corridor to the north of the development provide a good standard of pedestrian

footways. Furthermore, the signalised junctions on the aforementioned corridors include dedicated pedestrian crossing facilities. Therefore, this represents good infrastructure facilities for these non-motorised transportation modes.

Development Characteristics

- 1.5 Land Use and Floorspace – The proposed development will be offices, with a total gross floor area of 6,245m². The building will be set over 13 floors and will contain a shop (retail use at the ground floor area) with gross floor area of 545m². There will also be one surface and two underground parking levels. The layout of the site is contained in **Appendix A**.
- 1.6 Year of Opening – The development is expected to be operational by 2026, if no undue complications are encountered. There will be no phased development.
- 1.7 Operating Times – The offices will work typical hours for this type of land use, with the main activities typically between 07:00 – 18:00 and the retail use will mainly operate between 08:00-20:00.
- 1.8 Staffing – The precise number of staff that will be working at the development site is difficult to determine precisely at this stage, but given the scale of site, it is estimated at around 350 persons.
- 1.9 Parking Provision – The layout plans of the site presented in **Appendix A** shows the parking arrangements. A total of 156 spaces will be provided within the site, at one surface and two underground parking levels. Of these spaces, 11 have been allocated for disabled users. A summary of the parking provision is set out below.

Table 1.2: Proposed Parking Provision

Parking Space Type	Number of Spaces
Employee	145
Disabled	11
Total	156

- 1.10 The 11 disabled parking spaces proposed are above the requirements of the local parking standards.
- 1.11 With regards to cycle parking, none are proposed at present. Therefore, we would propose 15 cycle racks, which would produce 30 parking spaces. These should be installed at the surface level parking area, in a safe and secure location. We consider this to be a very important provision, as it will help to encourage the use of cycling for travel to/from the development.
- 1.12 Site Access – The development will have 2 vehicle access points, as shown in **Appendix A**. These are as follows:
 - Access 1 – Located to the east of the site and facilitates access to the small surface area car park where, amongst others, the disabled spaces are located.
 - Access 2 – This point is located to the south of the site and provides access to the 2 underground parking areas.

- 1.13 Demand – The catchment area of the development is expected to be quite widespread, generating demand mainly from the Greater Limassol area, the peripheral communities, and beyond.

Report Structure

- 1.14 The report is presented in 4 sections. Following this introduction, section 2 considers the traffic analysis, with the impact assessment presented in section 3. The final section outlines the conclusions.

2. TRAFFIC ANALYSIS

Traffic Flows

Traffic Surveys

- 2.1 In discussions with the PWD, it was agreed that traffic data would be required for the AM peak during 07:00 – 08:30, the MD period between 12:30 to 14:00, and the PM peak period between 17:00 – 18:30 during a weekday. The surveys were undertaken in February 2023.
- 2.2 The turning count locations on the local road network that have been agreed with PWD are shown in **Figure 2.1** and outlined in the table below. In addition to these surveys, the PWD have requested that queue, saturation flow and degree of saturation surveys be undertaken so that the validation of base year junction tests could be conducted. The various surveys undertaken at each junction are also summarised in the table below, with the outcomes presented in **Appendices B, C and D**.

Table 2.1: Traffic Surveys

Junction Name	Junction Type	Survey Type			
		Turning Count	Queue	Saturation Flow	Degree of Saturation
A1 Limassol Highway/Ay. Athanasiou	Roundabout	✓	✓	-	-
Ay. Athanasiou/Iapetou	Signals	✓	✓	✓	✓
Ay. Athanasiou/A. Kyariolou	Signals	✓	✓	✓	✓
Ay. Athanasiou/Sp. Kyprianou	Signals	✓	✓	✓	✓
Ay. Athanasiou/Kolonakiou	Signals	✓	✓	✓	✓
Kolonakiou/G. Digeni	Signals	✓	✓	✓	✓
Sp. Kyprianou/G. Neofytou	Signals	✓	✓	✓	✓

- 2.3 The turning counts undertaken have also been classified in terms of the following vehicle types, which were used for conversion to PCU's.

Table 2.2: PCU Values

Vehicle Type	PCU Value
Vans & Light Goods Vehicles	1.0
Heavy Good Vehicles	2.5
Buses	2.0
Motor-Cycles	0.5

Assessment Period

- 2.4 The assessment periods for this study were selected as 07:00 to 08:00, 13:00 to 14:00 and 17:00 – 18:00 for the Weekday AM, MD and PM periods respectively, which were the highest hourly periods during the surveys. These periods combine the peak hours on the local road network with busy activity periods at the site.

Traffic Volumes

- 2.5 The 2023 base year traffic flows are presented in **Figure 2.2a**, **Figure 2.2b**, and **Figure 2.2c** for the Weekday AM, MD and PM respectively.

Traffic Distribution

- 2.6 The distribution of traffic to/from the site during the assessment periods have been identified through the use of the existing traffic patterns, which have been qualified by the local population and settlement patterns. The results of this exercise are contained in **Figure 2.3a**, **Figure 2.3b** and **Figure 2.3c**, for each assessment period.

Committed and Proposed Road Schemes and Developments

- 2.7 The public authorities have been asked whether there are any committed road schemes and/or developments that need to be taken into consideration in the vicinity of the site. The only committed road scheme in the vicinity of the site is the conversion of the S. Kyprianou/Ay. Athanasiou signals into a roundabout. The designs for this improvement have been acquired, but the implementation is not known at present. However, it will be assumed that this scheme will be in place by 2026.
- 2.8 Also, a new roundabout with S. Kyprianou and G. Neofytou has been proposed and designed, which will improve circulation and turning facilities on Sp; Kyprianou in the local and wider areas, in combination with the new S. Kyprianou/Ay. Athanasiou roundabout outlined above. Details of both roundabout designs are presented in **Appendix E**.
- 2.9 In terms of ‘committed’ developments, the PWD have requested that the following developments are taken into account:
- Limassol ‘Silicon’ Mixed-Use Development – This is a mixed use development, located to the south-west of the A1 Limassol Highway/Ay. Athanasiou roundabout, west of Ay. Athanasiou. It will comprise 190 residential units and 10.000m² of office use, with an expected implementation year of 2026. Also, a total of 502 parking spaces will be provide, with 424 for employees and residents, 33 for visitors and 45 for disabled persons. The traffic generation for the AM period is 225 arrivals and 75 departures, for the MD periods is 65 arrivals and 56 departures, and for the PM period is 91 arrivals and 274 departures.
 - Linopetra Business Centre - This is an office development, located to the north east of the A1 Limassol Highway/Ay. Athanasiou roundabout. Other than some generated traffic data supplied by the PWD, we do not have any further details of the development. The following traffic generation in the AM period is 238 arrivals and 18 departures, in the MD period it is 134 arrival and 135 departures, and in the PM peak period it is 30 arrivals and 258 departures. In terms of implementation, we assume it will be in place by 2026.
 - Mall of Limassol Development - This is a shopping mall development located on the north side of S. Kyprianou, where the study team is currently preparing a TIA. It will comprise a

6-screen cinema, 2.500m² of food retail floor area, 19.400m² of non-food retail uses, and 3.250m² of food and beverage floor area, with an expected implementation year of 2026. It will also supply 1.056 parking spaces, of which 34 will be for disabled persons. The traffic generation for the AM period is 48 arrivals and 25 departures, for the MD period is 370 arrivals and 332 departures, and for the PM period is 564 arrivals and 373 departures.

Traffic Growth

- 2.10 In order to develop future year flow forecasts, as agreed with the PWD, a traffic growth rate of 2% per annum was used until the year operation (2026). Therefore, the base flows in 2023 have been increased by 6% to obtain the 2026 'year of opening' flows.
- 2.11 To obtain the 2036 'future year' flows, a traffic growth rate of 1% per annum has been applied. However, it has also been agreed with the PWD that that a 10% reduction in flows should also be applied, to take account of public transport and SUMP initiatives being undertaken in the Limassol area. As a result, the 2036 traffic has been increased by 1%.

Validation of Base Year Flows

- 2.12 As requested by the PWD, a validation exercise for the signalised junctions of the local road network has been conducted for this TIA. The main goals of the validation exercise were the following:
- Improve the accuracy of traffic models: Traffic impact assessments invariably involve the use of junction capacity testing software. These models rely on various parameters, such as traffic volumes, signal timings, and the geometric characteristics of junctions. Validating the signalised junctions helps ensure that the traffic modelling accurately represents the actual conditions at these critical points in the network under study, leading to more reliable predictions of traffic impacts.
 - Calibration of traffic models: Validation of signalised junctions involves comparing the model's predictions with actual observed traffic behavior. This process allows the adjustment of various input parameters to better match the local traffic conditions. Calibrating the models enhances the accuracy of the assessment, and the subsequent recommendations for mitigating potential traffic issues.
 - Identification of issues: Validating the signalised junctions allows the identification of discrepancies between the model's predictions and the actual performance of the junctions. If the model does not accurately represent the observed traffic patterns, it may indicate errors or limitations in the model. Addressing these discrepancies is important for making accurate assessments and generating effective mitigation strategies.
 - Impact of proposed changes: Validating the existing junctions provides a baseline for understanding current traffic conditions, which is essential for evaluating how the proposed changes will affect traffic flow, congestion levels, and safety.
- 2.13 In order to undertake the above, the following data collection was conducted:
- Queue surveys (presented in **Appendix B**).
 - Saturation Flows Surveys (presented in **Appendix C**).

- Degree of Saturation (DoS) surveys and Under-Utilised Green Time (UGT) data (presented in **Appendix D**).

- 2.14 The saturation flow surveys led to the calculation of saturation flows, based on the surveyed data. Further, the saturation flows were also calculated in terms of the geometric characteristics and traffic behavior of the signalised junctions, using the formulae in Research Report 67. It is worth noting that in several instances, the surveyed saturation flows were above 2,000 PCUs/hour and the PWD suggested using the calculated values. The surveyed saturation flows were also used to estimate the site adjusted saturation flows. Thus, the final values of the saturation flows were calculated and agreed with the PWD prior to the impact assessment (shown in **Appendix F**).
- 2.15 Furthermore, based on surveyed data of the DoS and UGT, values were calculated for the signalised junctions. DoS and UGT data play a significant role in validating traffic models. In particular, the DoS surveys can help identify bottlenecks or critical areas where traffic demand exceeds the capacity of a junction. Validating this data helps ensure that the traffic model correctly identifies these bottlenecks and accurately predicts their effects on traffic flow and overall performance. Following consultation with the PWD, this task focused on validating specifically the straight-ahead movements, as they were data limitations to producing the DoS and UGT data for specific right-turn movements. Several data points containing outliers (e.g., DoS values over 2000PCUs/hour; UGTs with high negative values) were removed in order to have a representative sample. In the cases where the UGT data was found to have a negative value, the PWD suggested using zero. Information on the DoS and UGT data are shown in **Appendix D**.
- 2.16 A comparison was then made between the surveyed DoS and UGT data for both assessment periods, with the obtained DoS values and results of the validation process. The results for the base models are included in the junction tests summary table (shown in **Appendix H**), which was reviewed by the PWD prior to the impact assessment of the year of opening and future year scenarios. Moreover, a cut-off threshold of +/- 15% was suggested by the PWD, to indicate whether a link was validated adequately. As requested by the PWD, an extra column including comments was also included to indicate any issues that arose due to data limitations. In general, the links were adequately validated, especially for the cases of straight-ahead movements.
- 2.17 In summary, the validation of signalised junctions was achieved, and this helps to ensure the accuracy of the traffic models and provides a solid foundation for evaluating the impact of proposed changes on the road network due to the development.

Traffic Generation

Trip Rates

- 2.18 The parameters for the development have been formulated in discussions with the PWD. Basically, recommendations were made for parameters based on previously agreed rates for TIAs conducted for office uses, which were amended upwards by the PWD. However, this could lead to the potentially significant overestimation of the generated traffic. Consequently, research was undertaken using the UK's TRICS database to derive more appropriate rates and a more realistic daily distribution of trip.
- 2.19 This exercise was undertaken in advance of conducting specific research of actual office development traffic generation in Cyprus (which has not been conducted in time for the preparation of this TIA). Nevertheless, these rates were used to formulate the base case for

the traffic assessment. The PWD recommendations are then used to conduct a ‘sensitivity test’. As a result of the above, the derivation of two-way vehicle-trip rates and assumptions made for the traffic generation are as set out in the table below.

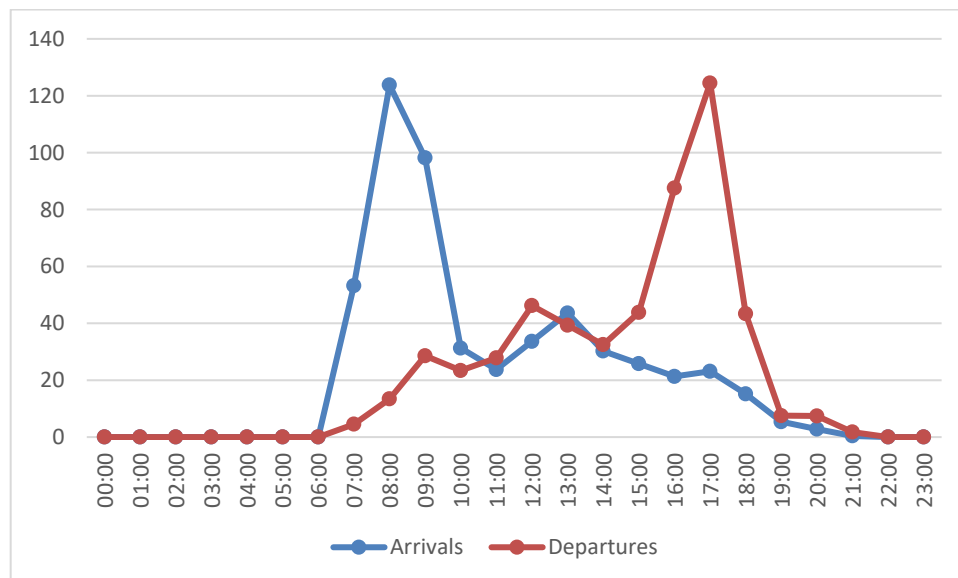
Table 2.3: Traffic Generation Assumptions

Land Use	Two-Way Trip Rate Assumptions
Office	<u>Consultants Recommendations for Base Case:</u> Staff - 15.16 per 100m ² gross floor area, with 95% of the employees assumed to drive. Visitors - 0.66 per 100m ² .
	<u>PWD Recommendations for Sensitivity Test:</u> No. of employees (which acts as a proxy for trip generation) is derived by the gross floor area/20m ² (assuming 95% of the employees drive), with each employee making 3 trips/day, where all staff arrive in the AM, 50% depart and return during the MD period, and all staff depart in the PM.
Retail (shop)	30 trips/100m ² gross floor area

Traffic Generation Estimates

2.20 The generated traffic of the development is presented in **Appendix G** and summarised in **Figures 2.4** below, which shows the hourly arrival and departure profile for a typical weekday scenario at the site. As can be seen for the 2025 scenario, there are two peaks during the day, in the morning for arrivals and the afternoon for departures. This is the pattern we would expect for a development where offices are the main use.

Figure 2.4: 2026 Hourly Arrivals & Departures at the Development – Weekday



2.21 During the assessment period of 07:00 – 08:00, 124 arrivals and 13 departures are estimated. During 13:00 – 14:00 period, there are 44 arrivals and 39 departures. During 17:00 – 18:00 period, there are 23 arrivals and 124 departures. This results in a total development traffic of 137, 83 and 147 vehicles trips in the AM, MD and PM periods respectively.

2.22 The traffic generation that was calculated using the PWD recommendations for the sensitivity test results in a total development traffic of 204, 65 and 212 vehicle trips in the AM, MD, and PM periods. The traffic generation is summarised in the table below.

Table 2.4: Traffic Generation of the Development

Development Scenario	Assessment Period								
	AM 07:00 – 08:00			PM 13:00 – 14:00			PM 17:00 – 18:00		
	Arr.	Dep.	Total	Arr.	Dep.	Total	Arr.	Dep.	Total
Development Traffic*	124	13	137	44	39	83	23	124	147
Development Traffic**	187	17	204	33	32	65	20	192	212

*based on UK TRICS data

**based on PWD assumptions

Diverted/Pass-by/Multi-Purpose Trips

2.23 Within most estimates of generated traffic, there are a proportion of trips that can be considered as 'diverted' and/or 'pass-by' trips. These are trips that have either been diverted to the development from other similar destinations in the area or are passing by the site. However, in this case it has been deemed appropriate that no diversion is applied to this development.

Generated Traffic Flows

2.24 The 2026 traffic flows without the development are based on the patterns captured during the traffic surveys in 2022 factored by 2% per year. Also, the 3 'committed' developments requested for consideration by the PWD and the conversion of the S. Kyprianou signals with Ay. Athanasiou and G. Neofytou into roundabouts have been incorporated. The resulting flows are presented in **Figure 2.5a**, **Figure 2.5b** and **Figures 2.5c**.

2.25 The traffic generation of 137 in the AM period, 83 in the MD period and 147 in the PM period have been added to the 2026 traffic flows to obtain the with development traffic flow. The actual generated traffic is presented in **Figure 2.6a**, **Figure 2.6b** and **Figure 2.6c**, with the combined traffic presented in **Figure 2.7a**, **Figure 2.7b**, and **Figure 2.7c**.

2.26 The 2036 'Future Year' traffic flows are growthed up from the 2026 without and with development scenarios plus a reduction over the same period to take account of public transport initiatives. For the 2036 'Future Year' traffic flows, a 'without' development scenario has been developed and presented in **Figures 2.8a**, **2.8b** and **Figure 2.8c**. For the 'with' development scenario, the development traffic was added to the 2036 'Future Year' traffic flows and presented in **Figure 2.9a**, **Figure 2.9b** and **Figure 2.9c**.

2.27 However, as a result of the potential impact that the office use will have on the parking provision, a further scenario has been formulated as set out below:

- Sustainable Transport Scenario – This option has been created due to the level of parking demand at the site. This option has been formulated by taking the 'with' development scenario (which is a car-dominated, unconstrained scenario) and applying the following measures:
 - Implementation of Development Site Travel Plan. This will have numerous features and associated items promoting sustainable modes and reducing the use of the private

car, which are outlined further in **Section 3**. However, the key item related to traffic movement is the implementation of an ‘employee parking plan’, which limits on-site parking to three weeks out of every four for each employee using a car, on a rotating basis.

- Parking Management System, where spaces will be controlled by a system of identifying ‘essential users’ created, and measures to incentivize car-sharing and cycle use. Specific details of this initiative are contained in **Section 3**.
- Promotion of enhanced public transport services and other sustainable modes. This will take a number of forms, which are described in more detail in **Section 3**.

2.28 The estimated impact of these measures would be to reduce all generated traffic by 35%, with the resulting flows presented in **Figure 2.10a**, **Figure 2.10b** and **Figure 2.10c**.

2.29 As described above, a sensitivity analysis was carried out, considering the trip generation rates provided by the PWD. We have already stated our reservations about this approach. As such, we considered these rates as part of a sensitivity analysis, with the development flows presented in **Figure 2.11a**, **Figure 2.11b**, and **Figure 2.11c**. The 2036 flows that incorporate the generated traffic are presented in **Figure 2.12a**, **Figure 2.12b** and **Figure 2.12c**.

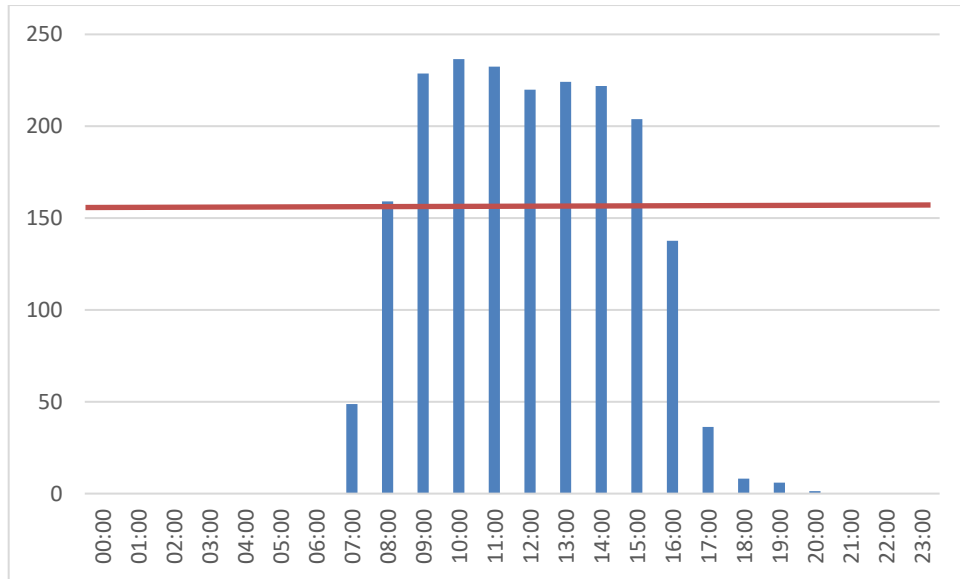
Parking Accumulation

2.30 To determine the adequacy of the parking provision, an accumulation analysis has been conducted. The results are contained in **Appendix G** and are summarised in **Figure 2.13** below. The accumulation analysis for the site in 2026 shows a peak parking occupancy of 237 vehicles, which is above the proposed provision of 156 car spaces. It represents a peak parking occupancy of 151%, which means that the parking provisions is not quite adequate for the unconstrained demand of the development. Indeed, the car park is slightly overcapacity between 09:00 – 14:00. This means that either supply is increased, or the demand is restrained and managed.

2.31 In order to deal with this situation, potential mitigation measures are presented in Section 3.

2.32 It should be noted that the parking provision has been derived from the local parking standards and are a legal obligation for the developer of a site to comply with. However, we would like to state that although this may be the case, it is the intention of the developers to promote sustainable travel.

Figure 2.13: 2026 Parking Accumulation at the Development – Weekday



3. IMPACT ASSESSMENT

Traffic Assessment

- 3.1 This new development is a moderate generator of traffic during its peak periods of activity. Initial observations suggest that the 137, 83 and 147 vehicle trips generated in the Weekday AM, MD and PM periods in 2026, will certainly increase the traffic flows, and may well create or exacerbate existing capacity issues and delays on the critical junctions of the local road network. By 2036, the fruition of the public transport and sustainable transport initiatives being undertaken by the public authorities may well pay dividends, and lead to a modal transfer. However, this will be assessed to establish the scale of this shift and the impact of the development.
- 3.2 The impact assessment of the generated traffic on the local road network is conducted by testing the capacities of the critical junctions on the network ‘without’ and ‘with’ the generated traffic in the ‘year of opening’ in 2026. In addition, further consideration is then carried out of the road infrastructure in the future (2036), in order to test its ability to deal with projected traffic volumes generated by development site. Finally, an assessment is then carried out of the likely issues that may arise, and mitigation measures are proposed where necessary.

Junction Testing

- 3.3 The junction testing exercise has been conducted by using appropriate capacity testing software. The PICADY programme is used for assessing the priority junctions, TRANSYT for signals and ARCADY for roundabouts.

Saturation Flows

- 3.4 For the testing of signalised junction in the TIA, the derivation of realistic saturation flows is important. As a result, the saturation flows used in the junction tests have either been specifically surveyed (as outlined in **Section 2**) or calculated using the formulae contained in Research Report 67 – ‘*The Prediction of Saturation Flows for Road Junctions Controlled by Traffic Signals*’, which was produced by the TRL for the UK Department of Transport in 1986. The results of this exercise are presented in **Appendix F**. These saturation flows have also been incorporated into the TRANSYT files.

Capacity Testing Results

- 3.5 The outcome of the capacity testing and assessment of impacts is outlined below for the local road network. The actual results are summarised in **Appendix H**. Due to size the junction test files are attached in a CD.
- 3.6 Validation junction tests were conducted with the 2023 flows, and as can be seen in the tabulation in **Appendix H**, these tests demonstrate a reasonable representation of the existing conditions in most cases. The main delays occur at the Ay. Athanasiou / A1 Limassol Highway roundabout in all assessment periods, which is an established congestion point. Also, there are some issues at the Ay. Athanasiou/lapetou signals in the weekday AM and PM, and the Ay. Athanasiou/Kariolou signals In the AM period.
- 3.7 For the 2026 assessment period (without and with the development), the issues are resolved with some adjustments to the signal timings (through optimization of the existing plans). Conditions at the roundabouts obviously worsen, with excessive queuing observed, which is a function of the **existing congestion** exacerbated by the 2% per annum growth rate which is requested by the PWD.

- 3.8 In the future year of 2036, 1% per annum growth and a 10% modal shift to public transportation were applied, as advised by the PWD. The outcome of the analysis is outlined below, for both the without and with development scenarios, during the weekday AM, MD and PM assessment periods.
- 3.9 For the 2036 Weekday scenarios (without and with the development), the network is quite busy, with the key outcomes are as follows:
- Ay. Athanasiou / A1 Limassol Highway (Roundabout) – large levels of congestion and excessive queuing, leading to potential road safety problems on the Limassol Highway.
 - Ay. Athanasiou / Iapetou (Signalised Junction) – the junction is busier with some congestion emerging in the PM. However, it is not at levels that are of concern.

Other Impacts

- 3.10 In addition to the traffic impacts outlined above, the adequacy of the parking provision has to be considered. A total of 156 parking spaces are proposed. This provision is based on the Limassol Local Plan parking standards.
- 3.11 The parking accumulation analysis shows that the ‘unregulated’ peak accumulation is 237 parked vehicles, which equates to a 151% peak parking occupancy. This, therefore, demonstrates that the parking provision is not quite adequate. Nevertheless, the measures by which to mitigate this parking impact are detailed in this section.
- 3.12 The impact of the Travel Plan and associated public transport measures are a 40% decrease in car travel. This translates into a reduction in parking demand, as set out below.

Table 3.1: Parking Impact of Mitigation Measures

Development	Parking Provision	Original Parking Accumulation		Parking Accumulation with Mitigation Measures	
		Peak Accumulation	Peak Occupancy %	Peak Accumulation	Peak Occupancy %
Development	156	237	151%	144	92%

- 3.13 As can be seen, the sustainable transport measures will reduce the parking demand to acceptable levels, with some spare capacity to accommodate any unforeseen demand.

Mitigation Measures

- 3.14 As demonstrated in the traffic assessment, there are no real issues in either 2026 or 2036, mainly as a result of the modal shift foreseen by the public authorities in this area, and its incorporation into this study.
- 3.15 However, some elements of the ‘Sustainable Transport’ option recommended for the development site are being pursued and have been incorporated into a package of mitigation measures that reduce car travel to/from the site. The measures have been embraced and are wholly supported by the site developers, who have stated they will follow the guidance and recommendations of the TIA. The package of measures includes the following items, with specific details of each of these items are set out below:

- Travel Plan.
- Parking Management Plan.
- Operational Measures.

3.16 Travel Plan – This is an important measure, and should comprise the following components which are to be defined and documented in a comprehensive plan:

- Clearly set objectives, that seek to reduce car travel and increase the use of non-car modes, especially public transport.
- Be based on a thorough understanding of the baseline travel conditions of the site.
- Include measures that are effective in achieving the identified objectives. In this case, we recommend an employee parking scheme that allows on-site staff parking for 3 out of every 4 weeks, on a rotating basis – thus forcing employees to use other means for one week out of four, e.g. car-sharing, buses, cycling, and so forth. The immediate impact of this is that it reduces employee and external student trips by 25%.
- The plan should have a robust management structure, with a Travel Plan Co-Ordinator appointed.
- A series of targets and associated monitoring system should be formulated, in terms of reductions in car travel, increased use of other modes, etc., so that the effectiveness, or otherwise, of the Travel Plan can be seen.
- Be a ‘live’ document that is updated and responsive to changing conditions. It should also be formulated in conjunction with stakeholders.

3.17 Parking Management Plan – This would form part of the Travel Plan, with the key components being as follows:

- Encourage and incentivise car-sharing and cycling, by linking the provision of parking spaces to vehicle occupancy and cycle use.
- Facilitate the increasing use of electric vehicles, through the provision of dedicated spaces and charging points, as suggested in the current legislation.

3.18 Operational Measures – These are a variety of micro-level measures that can be used to improve the operation and efficiency of the site, whilst ensuring their impact on peak period travel is minimised:

- Encouragement and incentives for staff to use bicycles and motorbikes, through designated parking spaces and monetary bonuses.
- Local employment policy, to recruit support staff that live within a few kms of the development.
- Encourage flexible or staggered working hours, and tele-working, thus reducing the necessity to travel to the site daily.

- 3.19 The above forms a comprehensive package of ‘soft’ measures, which form the sustainable transport option.
- 3.20 In addition, a few other supplementary measures are also recommended:
- In order to promote sustainable travel to the development and make use of the existing and planned cycle infrastructure in the area, it is recommended that 30 cycle parking spaces (15 cycle racks) are provided in various locations within the parking areas.
 - It is recommended to signalise the A1 Limassol Highway/Ay. Athanasiou roundabout, which should be undertaken by the public authorities. An initial scheme has been formulated and tested for the PM period (when the problems are worst), which shows that there is merit to its more detailed consideration and design. The impact of this proposed scheme is shown contained in **Appendix H**, with the assessment results.
- 3.21 The physical measures outlined above supplement the individual site-specific internal measures recommended. However, it should be pointed out that the development is not the sole contributor to the traffic situation in the local area. Major existing developments in the area and those that are pursued or seek planning approval also contribute to the necessity for implementing the above recommended signalization of the A1 Limassol Highway/Ay. Athanasiou roundabout.

4. CONCLUSIONS

- 4.1 This study into the traffic impact of this development located in the Municipality of Mesa Geitonia has considered all the relevant traffic-related, parking and operational issues. Our concluding comments and recommendations on this development are therefore outlined below.
- 4.2 The key characteristics of the development are:
- A total gross floor area for the office use of 6,245m² and a gross floor area for the retail use (shop located in the ground floor area) of 545m².
 - The building will be configured over 13 floors, with surface level and 2 underground parking areas.
 - A total of 156 parking spaces will be provided, of which 11 are proposed for disabled users.
- 4.3 The assessment conducted has been based on traffic surveys of the local road network that took place in February 2023. The data was collected at 7 junctions on major and local roads in the vicinity of the site.
- 4.4 Specific traffic generation estimates were made for the year of opening. The trip rates and assumptions were derived using the UK TRICS database and formed a base case. This is because we have reservations with the PWD recommendations, and as such, have used these parameters to undertake a sensitivity test. The resulting estimates of the development are summarised in the Table below.

Table 4.1: Summary of Traffic Generation Estimates

Land Use	Assessment Period								
	AM 07:00 – 08:00			MD 13:00 – 14:00			PM 17:00 – 18:00		
	Arrivals	Departures	Total	Arrivals	Departures	Total	Arrivals	Departures	Total
Development*	124	13	137	44	39	83	23	124	147
Development**	187	17	204	33	32	65	20	192	212

*based on UK TRICS data

**based on PWD assumptions

- 4.5 The impact of this generated traffic on the local road network has been assessed for the 2026 ‘year of opening’ and the 2036 ‘future year’ scenarios and is demonstrated by the testing of capacity at local junctions. This exercise shows that the local road network is busy, with existing issues at the A1 Limassol Highway/Ay. Athanasiou roundabout and the Ay. Athanasiou signalised junctions with Iapteou and A. Kariolou.
- 4.6 In the 2026 ‘year of opening’ and 2036 ‘future year’ scenarios, the traffic conditions are resolved at the signals with some timing adjustment. This can be seen in the table summarising the junction testing outcomes in **Appendix H**.
- 4.7 In order to reduce the car-dependence of the development, especially with regards to parking demand, a ‘Sustainable Transport’ option has also been formulated. The site’s developers are keen to embrace the recommendations made for environmentally friendly travel to/from the site, and to ensure that wider sustainability goals of the development are achieved. As a result, a variety of measures were packaged to form the Sustainable Transport alternative (with a summary of the actions outlined below), with the core measures being the formulation of a

Travel Plan (which includes a parking rotation scheme), parking management plans) and operational measures. The effect of these measures lead to a 40% reduction of the generated traffic for the offices.

- 4.8 The development will be served by two access points, which are located to the east and south of the site. The eastern access point is for the small surface level parking area, which also contains the disabled spaces. The southern access point provides access to the 2 underground parking levels.
- 4.9 An overall total of 156 parking spaces will be provided within the development site, with 5 for disabled users. A parking accumulation profile has been developed and is summarised in the Table below. It shows that the parking area will be overcapacity. When the impact of the Sustainable Transport option is taken into account, the situation improves to more acceptable levels, with some spare capacity.

Table 4.2: Summary of the Parking Accumulation Analysis

Parking Area	Parking Provision	Parking Accumulation - Original	Parking Accumulation – With Sustainable Transport Option
Development	156	151%	92%

- 4.10 Although major mitigation measures directly related to the development site are not required, a comprehensive package of ‘Sustainable Transport’ measures are proposed. This is a result of the developers’ objective of to create an office complex area that is environmentally-friendly and as sustainable as possible. Specific details are contained in Section 3, with a summary of the recommendations outlined below.
- 4.11 Travel Plan – this is an important measure, and should comprise the following components which are to be defined and documented in a comprehensive plan:
- Clearly set objectives, that seek to reduce car travel and increase the use of non-car modes, especially public transport.
 - Be based on a thorough understanding of the baseline travel conditions of the site.
 - Include measures that are effective in achieving the identified objectives. In this case, we recommend an employee parking scheme that allows on-site staff parking for 3 out of every 4 weeks, on a rotating basis – thus forcing employees to use other means for one week out of four, e.g. car-sharing, buses, cycling, and so forth. The immediate impact of this is that it reduces employee trips by 25%.
 - The plan should have a robust management structure, with a Travel Plan Co-Ordinator appointed.
 - A series of targets and associated monitoring system should be formulated, in terms of reductions in car travel, increased use of other modes, etc., so that the effectiveness, or otherwise, of the Travel Plan can be seen.
 - Be a ‘live’ document that is updated and responsive to changing conditions. It should also be formulated in conjunction with stakeholders.

4.12 Parking Management Plan:

- Encourage and incentivise car-sharing and cycling, by linking the provision of parking spaces to vehicle occupancy and cycle use.
- Facilitate the increasing use of electric vehicles, through the provision of dedicated spaces and charging points, as suggested in the current legislation.

4.13 Operational Measures:

- Encouragement and incentives for staff to use bicycles and motorbikes, through designated parking spaces and monetary bonuses.
- Local employment policy, to recruit support staff that live within a few kms of the development.
- Encourage flexible or staggered working hours, and tele-working, thus reducing the necessity to travel to the site daily.

4.14 The above forms a comprehensive package of ‘soft’ measures, which form the sustainable transport option.

4.15 However, a few other measures are recommended (although not all directly related to the development site), which are summarised below:

- 30 cycle parking spaces (15 cycle racks).
- It is proposed to signalise the A1 Limassol Highway/Ay. Athanasiou roundabout, which should be undertaken by the public authorities.

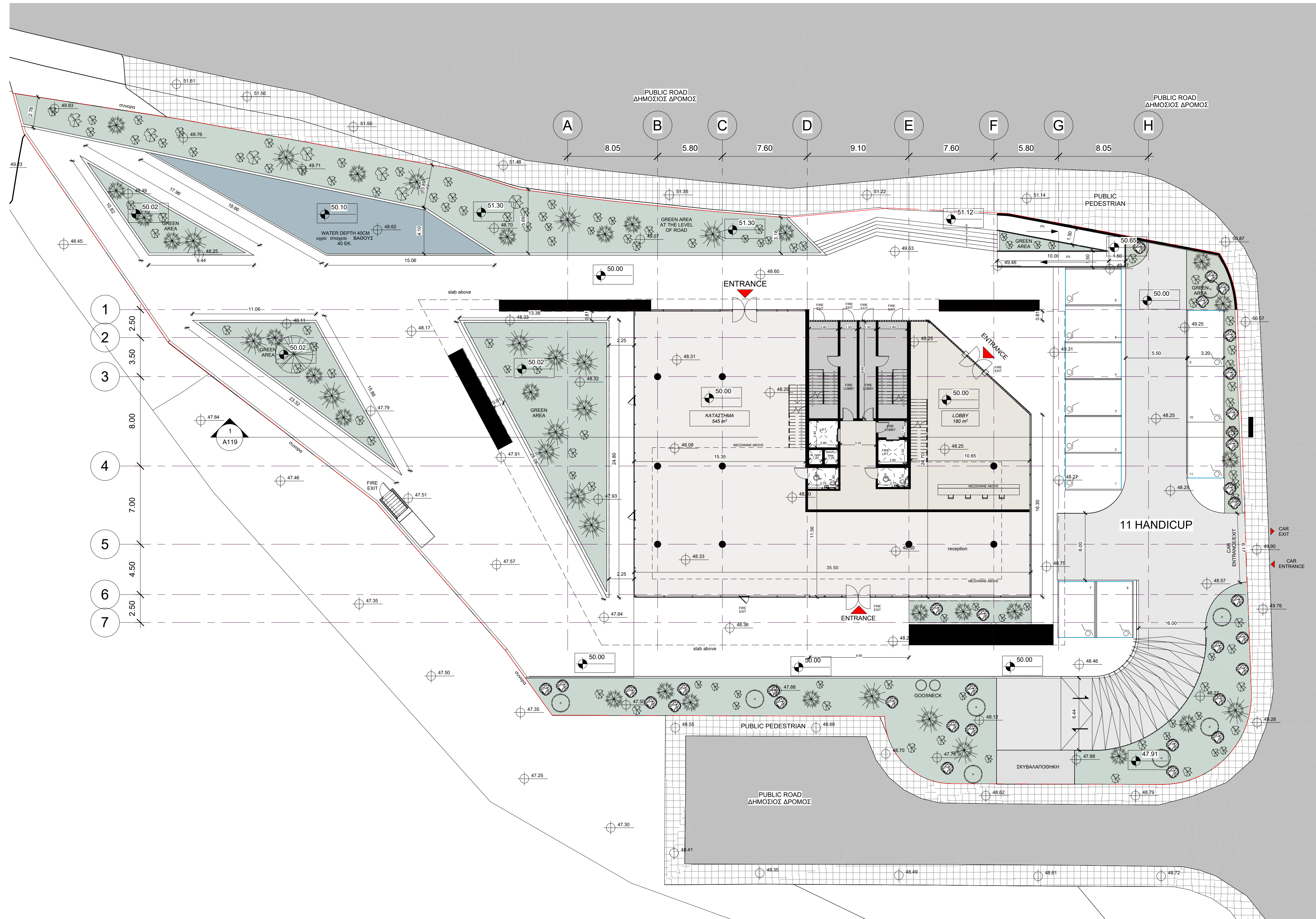
4.16 The physical measures outlined above supplement the individual site-specific measures recommended. However, it should be pointed out that the development is not the sole contributor to the traffic situation in the local area. The traffic generated by existing developments in the area and those that are pursued or seek planning approval is also contributing to the necessity for implementing the above recommended signalization of the A1 Limassol Highway/Ay. Athanasiou roundabout .

4.17 We would therefore conclude that the traffic generated by the site is moderate, and it can generally be accommodated on the local road network with the mitigation outlined above. The parking provision is also adequate for the site, when the demand is regulated through the mitigation proposed. Also, safe and efficient access to the site has been created. As such, all traffic-related matters have been dealt with and we would therefore recommend that permission be granted for the development of the site.

APPENDICES

APPENDIX A

Development Layout Plans



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No.	Description	Date

No.	Description	Date

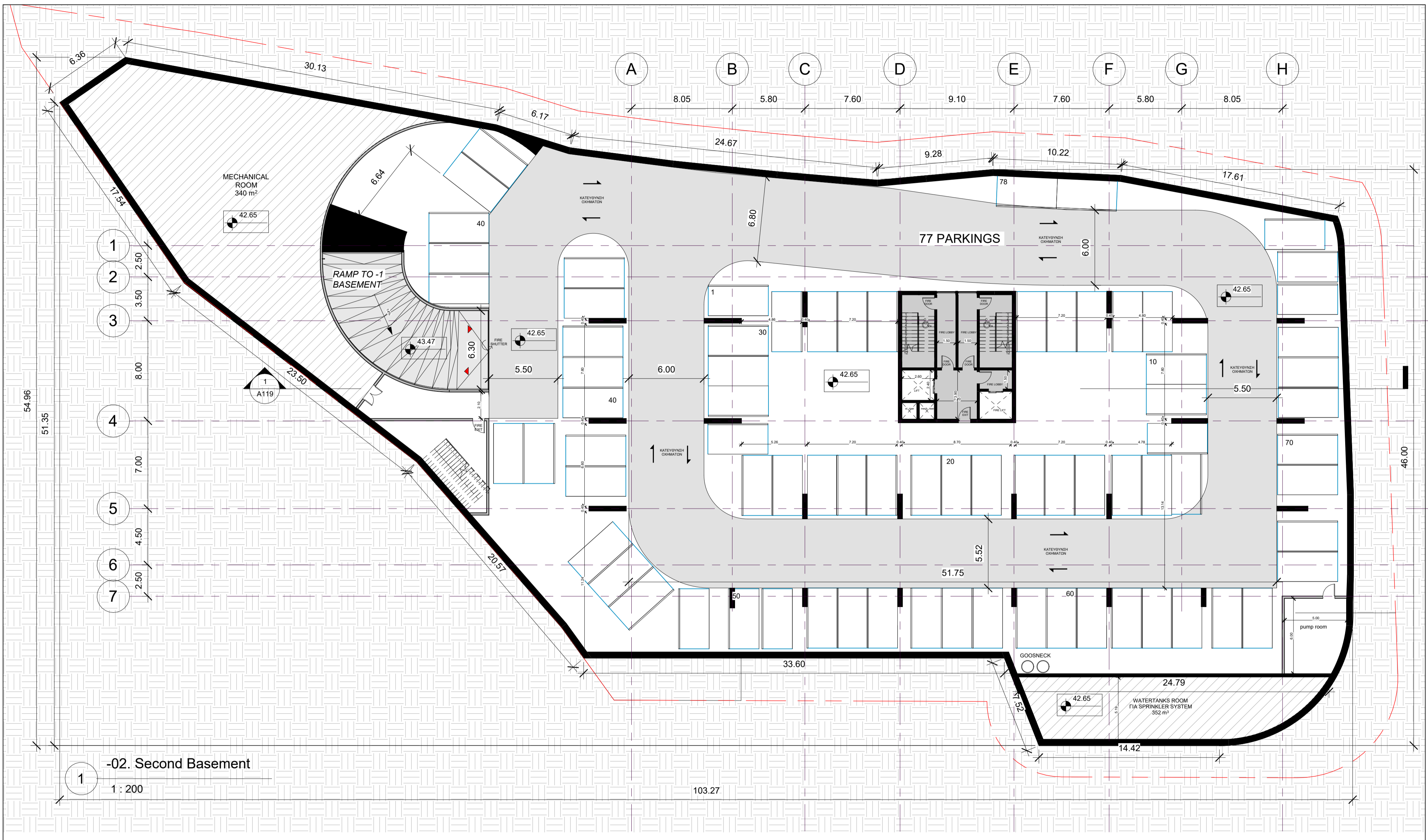
MAKEDONIAS OFFICES

ΧΩΡΟΤΑΞΙΚΟ

PROPERTY GALLERY

A100

Location	ΜΕΣΑ ΓΕΙΤΟΝΙΑ
Date	10/2023
Scale	1 : 200



LAZAROU & MICHAEL
PARTNERS ARCHITECTS

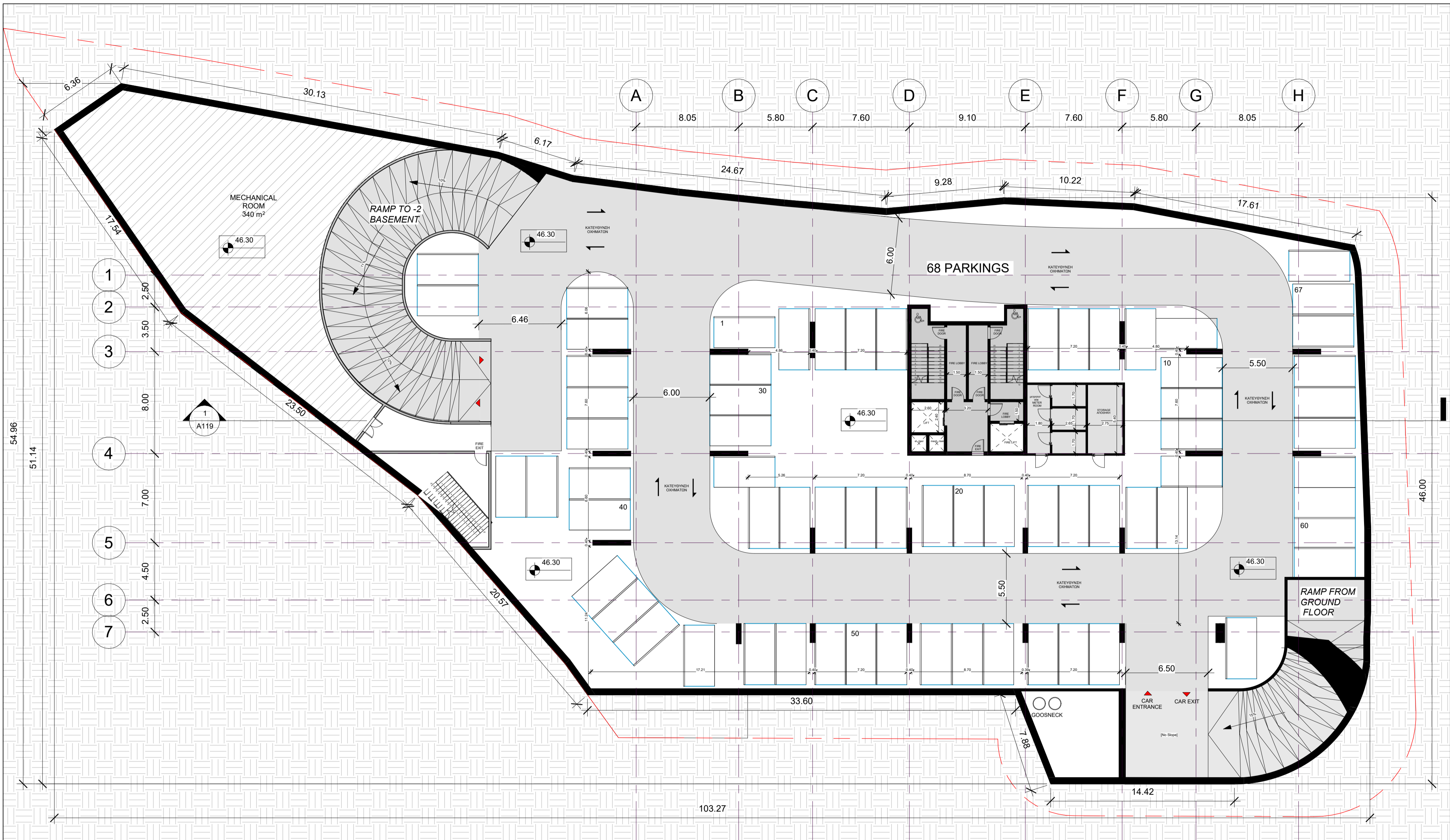


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No.	Description	Date

MAKEDONIAS OFFICES		BASEMENT -2	
PROPERTY GALLERY		Location	ΜΕΣΑ ΓΕΙΤΟΝΙΑ
		Date	10/2023
		Drawn by	Author
		Checked by	Checker
		Scale	1 : 200
			A101



LAZAROU & MICHAEL
PARTNERS ARCHITECTS

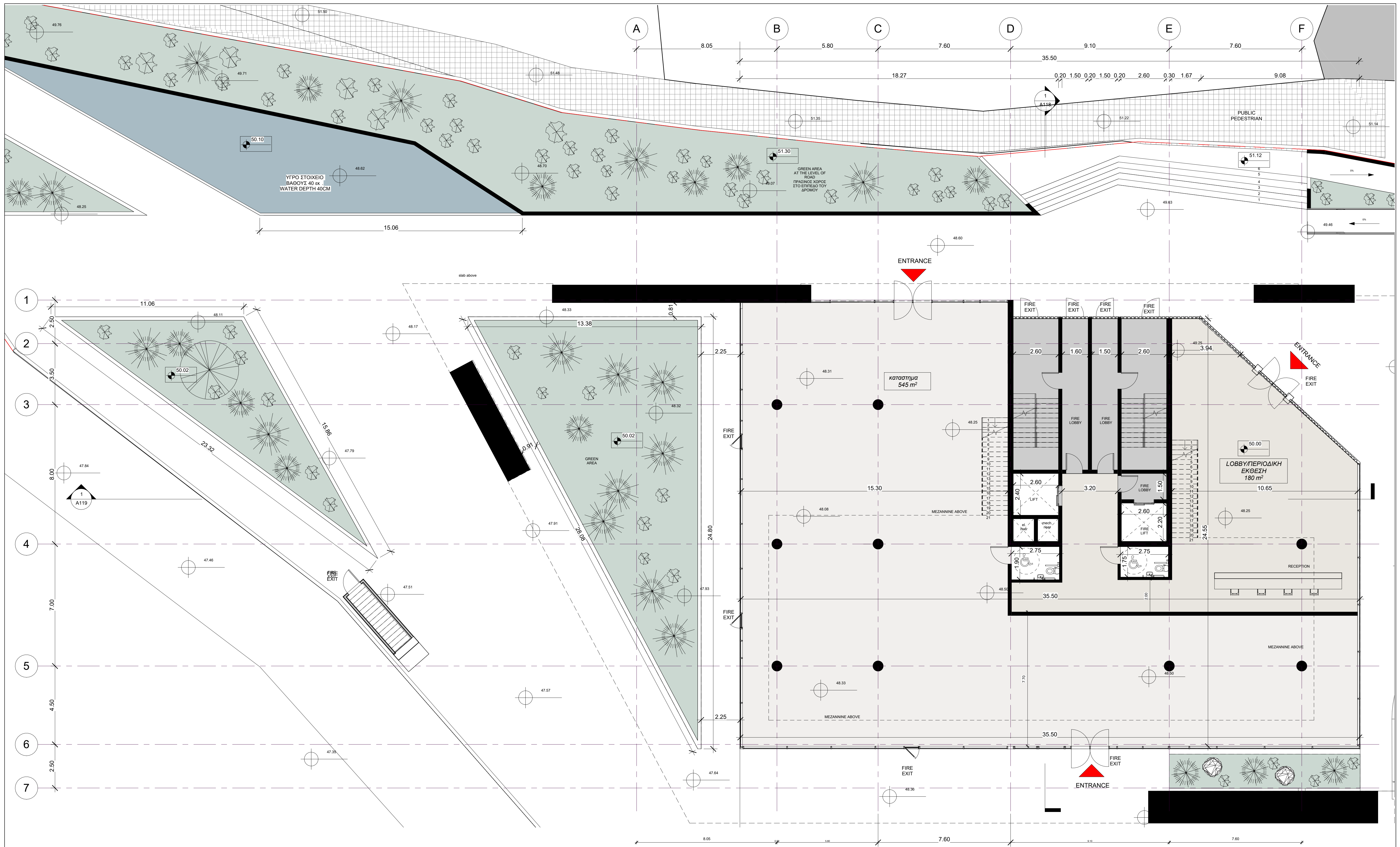


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No.	Description	Date

MAKEDONIAS OFFICES		BASEMENT -1	
PROPERTY GALLERY		Location	ΜΕΣΑ ΓΕΙΤΟΝΙΑ
		Date	10/2023
		Drawn by	Author
		Checked by	Checker
		Scale	1 : 200
		A102	



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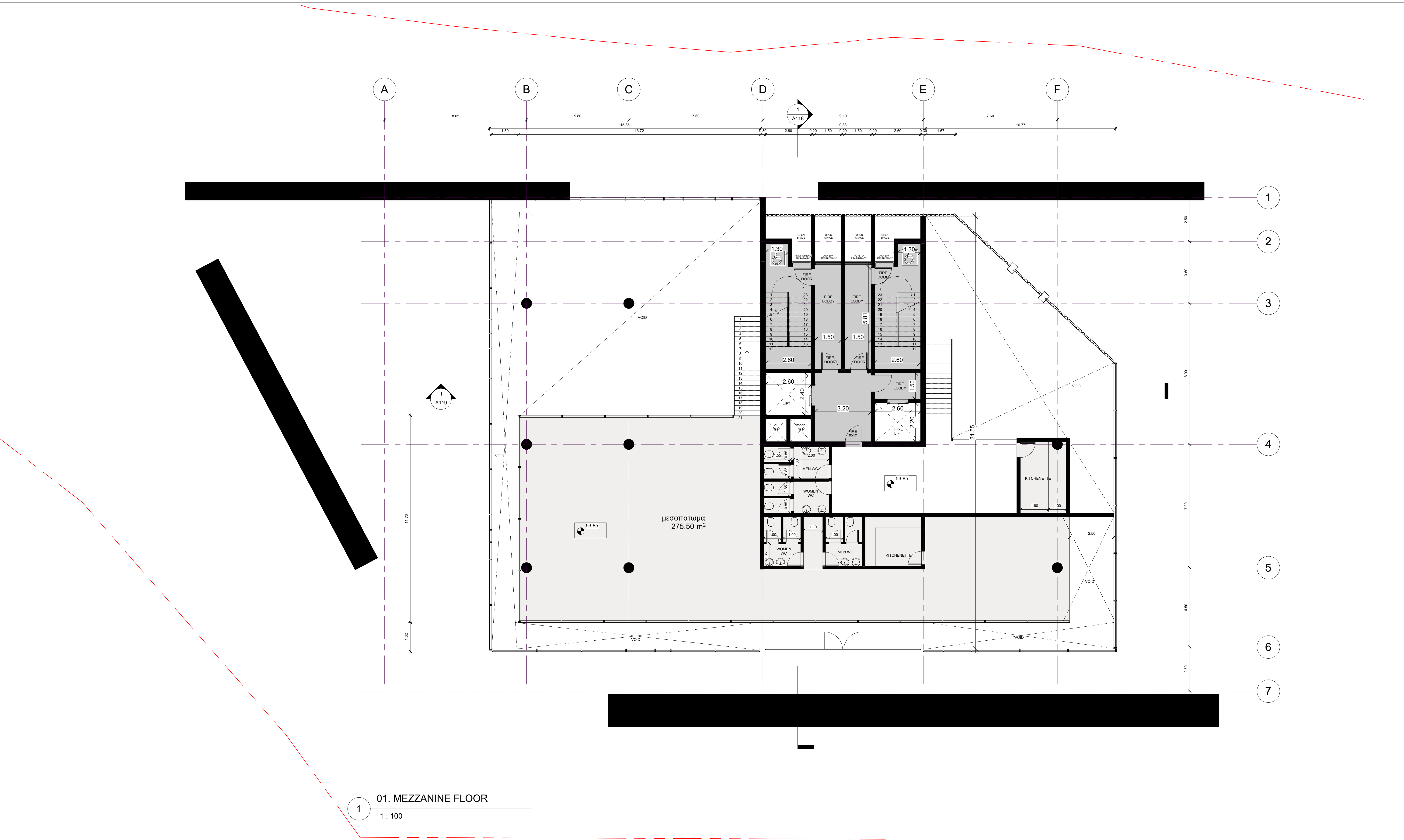
No.	Description	Date

No.	Description	Date

MAKEDONIAS OFFICES
PROPERTY GALLERY

ΚΑΤΟΠΗ
ΙΣΟΓΕΙΟΥ
A103

Location	ΜΕΣΑ ΓΕΙΤΟΝΙΑ
Date	10/2023
Scale	1 : 100



1 01. MEZZANINE FLOOR
1 : 100

LAZAROU
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ARCHITECTS &
MICHAEL

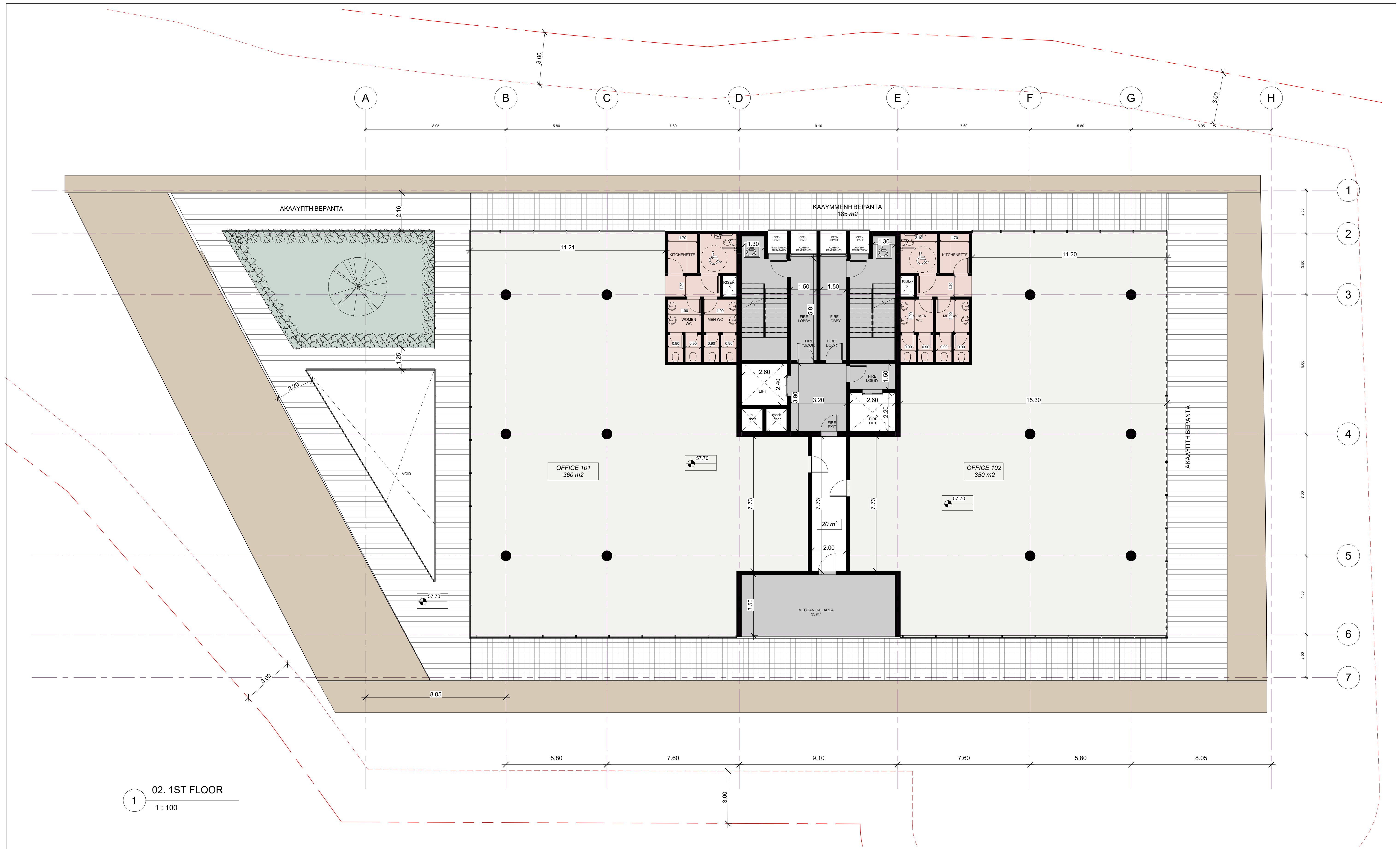


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No.	Description	Date

No.	Description	Date

MAKEDONIAS OFFICES	MEZZANINE FLOOR	Location	ΜΕΣΑ ΓΕΙΤΟΝΙΑ
PROPERTY GALLERY	A104	Date	10/2023
		Scale	1 : 100



02. 1ST FLOOR
1: 100

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No.	Description	Date

No.	Description	Date

MAKEDONIAS OFFICES
PROPERTY GALLERY

1ST FLOOR
A105

Location	ΜΕΣΑ ΓΕΙΤΟΝΙΑ
Date	10/2023
Scale	1 : 100

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No.	Description	Date

MAKEDONIAS OFFICES
PROPERTY GALLERY

SECTION A-A

Location ΜΕΣΑ ΓΕΙΤΟΝΙΑ

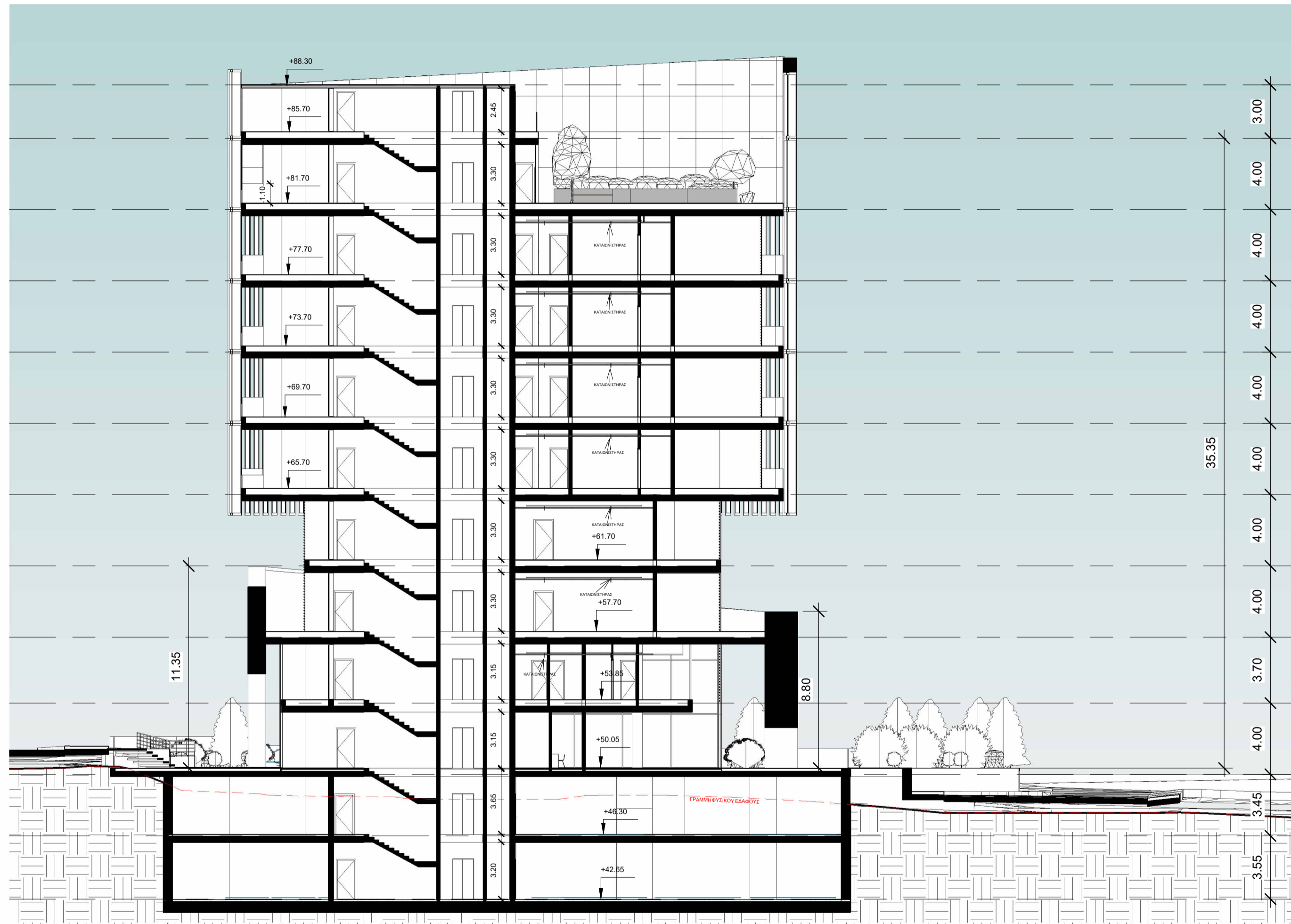
Date 10/2023

Drawn by Author

Checked by Checker

A118

Scale 1 : 200



- 10. ROOF 39.65
- 09. ROOF GARDEN 36.65
- 08. 7TH FLOOR 32.65
- 07. 6TH FLOOR 28.65
- 06. 5TH FLOOR 24.65
- 05. 4TH FLOOR 20.65
- 04. 3RD FLOOR 16.65
- 03. 2ND FLOOR 12.65
- 02. 1ST FLOOR 8.65
- 01. MEZZANINE FLOOR 4.95
- 00. Ground Floor 0.95
- 01. First Basement -2.50
- 02. Second Basement -6.05

Section A
1 : 200

APPENDIX B

Queue Surveys

QUEUE SURVEYS

JUNCTIONS & LINKS

	SURVEY TIME*							MD							PM						
	AM																				
	07:00	07:10	07:20	07:30	07:40	07:50	Average	13:00	13:10	13:20	13:30	13:40	13:50	Average	17:00	17:10	17:20	17:30	17:40	17:50	Average
Ay. Athanasiou / A1 Limassol Highway Roundabout																					
Ay. Athanasiou (n) - all	38	54	56	58	63	41	52	15	6	3	3	2	8	6	14	13	18	17	21	18	17
A1 Limassol Highway (e) - all	13	10	13	18	9	3	11	2	1	0	1	2	2	1	8	8	12	15	16	16	13
Ay. Athanasiou (s) - all	8	7	5	2	3	10	6	21	5	12	5	7	13	11	13	12	17	22	24	26	19
A1 Limassol Highway (w) - all	28	32	36	35	29	28	31	6	15	5	11	5	6	8	8	10	12	13	15	12	12
Ay. Athanasiou / Iapetou Signalised Junction																					
Ay. Athanasiou (n) - S	9	11	8	11	12	9	10	6	5	5	6	6	5	6	6	9	7	11	19	8	10
Ay. Athanasiou (n) - L	8	10	8	12	11	10	10	7	5	6	7	6	4	6	7	5	10	6	7	12	8
Iapetou - R	5	7	9	8	5	6	7	10	5	12	28	7	10	12	50	50	50	50	50	50	50
Iapetou - L	0	1	0	0	1	0	0	1	1	2	1	1	2	1	0	1	0	1	1	2	1
Ay. Athanasiou (s) - R	4	7	6	7	7	7	6	3	1	4	4	2	0	2	7	9	10	10	8	9	9
Ay. Athanasiou (s) - S	21	18	20	21	19	19	20	11	15	33	27	12	17	19	50	50	50	50	50	50	50
Ay. Athanasiou / A. Kariolou Signalised Junction																					
Ay. Athanasiou (n) - S	10	11	12	23	27	18	17	1	5	10	9	10	12	8	15	18	11	18	9	15	14
Ay. Athanasiou (n) - S+L	8	12	15	20	32	16	17	3	5	14	3	8	9	7	16	12	6	15	11	14	12
A. Kariolou - R	7	4	10	7	2	3	6	9	15	16	13	7	22	14	41	38	27	23	11	16	26
A. Kariolou - L	1	0	1	2	1	1	1	1	3	2	2	0	1	2	2	4	2	3	4	6	4
Ay. Athanasiou (s) - R	3	7	8	7	7	4	6	0	4	3	4	6	2	3	9	5	2	8	3	2	5
Ay. Athanasiou (s) - S	24	24	35	37	31	25	29	23	22	19	21	23	15	21	40	38	33	29	31	35	34
Ay. Athanasiou / Sp. Kyprianou Signalised Junction																					
Ay. Athanasiou (n) - R	18	18	18	18	18	18	18	12	8	13	18	13	13	13	10	12	12	11	12	11	11
Ay. Athanasiou (n) - S	13	13	8	13	6	12	11	3	4	5	12	3	7	6	8	9	5	3	23	13	10
Ay. Athanasiou (s) - S	6	2	6	14	9	5	7	10	4	2	6	3	3	5	5	7	11	6	3	28	10
Ay. Athanasiou (s) - L	6	4	5	15	8	3	7	8	3	5	0	3	5	4	4	7	9	2	7	30	10
Sp. Kyprianou - R	1	1	5	7	1	2	3	1	2	3	5	5	3	3	5	6	12	9	15	18	11
Sp. Kyprianou - L	5	9	6	7	7	8	7	3	4	3	4	7	5	4	3	0	3	4	10	12	5
Ay. Athanasiou / Kolonakiou Signalised Junction																					
Ay. Athanasiou (n) - R	20	21	24	26	24	12	21	11	10	12	12	9	5	10	9	6	6	10	11	10	9
Ay. Athanasiou (n) - L	8	7	7	8	7	7	7	10	11	9	8	7	6	9	2	0	0	2	2	1	1
Kolonakiou (e) - R	8	11	8	7	11	12	10	7	7	9	11	7	10	9	7	8	10	4	6	6	7
Kolonakiou (e) - S	7	4	7	9	2	11	7	7	8	7	12	9	9	9	18	21	23	20	19	21	20
Kolonakiou (w) - S	3	3	4	3	5	4	4	4	4	3	5	5	7	5	6	5	5	8	4	5	6
Kolonakiou (w) - L	1	1	2	2	1	1	1	1	2	0	3	3	3	2	6	1	1	4	2	2	3
G. Neofytou/ Kolonakiou / G. Digeni Signalised Junction																					
G. Neofytou - S+R	2	1	4	5	5	4	4	2	1	8	4	2	3	3	5	3	3	5	4	4	4
G. Neofytou - L	0	3	1	5	1	0	2	3	0	5	11	4	6	5	5	4	4	6	4	3	4
Kolonakiou (e) - R	2	1	2	4	2	2	2	2	1	2	6	3	0	2	2	1	4	3	2	3	3
Kolonakiou (e) - S	11	11	10	10	11	11	11	11	10	7	9	7	2	8	7	8	7	8	7	6	7
Kolonakiou (e) - L	3	7	9	6	2	9	6	5	3	1	5	4	2	3	5	4	6	4	6	6	5
G. Digeni (s) - S+R	8	13	16	14	9	16	13	29	30	30	25	20	22	26	8	7	6	10	8	7	8
G. Digeni (s) - L	0	1	3	2	1	3	2	2	3	4	3	1	4	3	0	2	4	1	2	3	2
G. Digeni (w) - R	0	0	0	2	2	1	1	0	0	1	3	0	1	1	0	0	1	0	1	2	1
G. Digeni (w) - S	16	12	6	13	22	21	15	30	23	27	23	21	26	25	9	10	8	12	9	8	9
G. Digeni (w) - S+L	7	5	12	7	2	2	6	3	3	5	8	3	2	4	12	10	11	10	9	11	11
Sp. Kyprianou / G. Neofytou Signalised Junction																					
Sp. Kyprianou (w) - R	1	2	7	15	17	6	8	3	3	3	2	2	2	3	1	1	8	7	2	6	4
Sp. Kyprianou (w) - S	9	5	7	22	21	22	14	6	9	7	12	7	13	9	12	11	8	10	5	6	9
Sp. Kyprianou (e) - S	4	6	11	18	12	5	9	5	10	7	9	6	9	8	3	3	8	9	4	10	6
Sp. Kyprianou (e) - S & L	7	5	7	15	11	7	9	6	10	11	14	8	11	10	6	4	4	5	3	4	4
G. Neofytou - R	3	7	15	9	8	8	8	10	7	12	19	10	6	11	14	9	5	6	5	8	8
G. Neofytou - L	11	6	3	21	5	2	8	8	2	21	7	22	3	11	5	6	8	6	3	4	5

* Start time of 10 minute survey

APPENDIX C

Saturation Flow Surveys

10 most saturated readings for each movement

Movement - Lane 1 -> line1																
Freeflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes						Total PCU	Saturation Flow per Reading		
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK			Total	
1	07:00:28	07:00:41	13.292	2.215	0.819	3.569	5	0	0	0	0	1	1	7	8.50	0.639
2	07:01:56	07:02:09	13.515	2.253	1.740	3.239	6	0	0	0	0	1	0	7	7.00	0.518
4	07:11:28	07:11:42	14.405	2.058	1.335	3.052	7	0	0	0	0	1	0	8	8.00	0.555
5	07:17:46	07:18:01	15.318	2.188	1.477	3.198	7	0	0	0	0	1	0	8	8.00	0.522
6	07:19:20	07:19:39	18.875	2.097	1.206	3.240	8	0	0	0	0	1	1	10	11.50	0.609
9	07:30:28	07:30:43	15.208	2.173	1.577	3.141	7	0	0	0	0	0	1	8	9.50	0.625
10	07:38:19	07:38:37	17.538	1.754	1.193	2.286	10	0	0	0	0	1	0	11	11.00	0.627
11	07:39:56	07:40:06	10.358	2.072	1.542	3.408	6	0	0	0	0	0	0	6	6.00	0.579
13	07:55:45	07:56:06	20.435	2.044	0.992	3.449	10	0	0	0	0	1	0	11	11.00	0.538
15	08:06:53	08:07:09	16.397	2.050	1.379	3.487	8	0	0	0	0	1	0	9	9.00	0.549
TOTAL			155.341				74	0	0	0	0	8	3	85	89.5	
SATURATION FLOW (PCU/hour)															2074.55	

Movement - Lane 2 -> line2																
Freeflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes						Total PCU	Saturation Flow per Reading		
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK			Total	
3	07:05:05	07:05:20	15.074	1.884	1.300	3.411	9	0	0	0	0	0	0	9	9.00	0.597
5	07:17:46	07:17:59	12.786	2.131	1.382	3.594	7	0	0	0	0	0	0	7	7.00	0.547
6	07:19:19	07:19:31	11.796	1.966	1.349	2.351	6	0	1	0	0	0	0	7	6.50	0.551
7	07:20:54	07:21:04	10.301	1.717	1.250	2.099	6	0	0	0	0	1	0	7	7.00	0.680
8	07:24:06	07:24:17	10.326	2.065	1.395	2.710	6	0	0	0	0	0	0	6	6.00	0.581
12	07:38:19	07:38:32	12.976	1.854	1.593	2.546	8	0	0	0	0	0	0	8	8.00	0.617
15	08:03:40	08:03:56	16.346	2.043	0.896	3.918	8	0	0	0	0	1	0	9	9.00	0.551
17	08:07:07	08:07:18	10.756	2.151	1.058	2.974	5	0	0	0	0	1	0	6	6.00	0.558
18	08:14:51	08:15:02	10.734	2.147	1.190	2.965	4	0	0	0	0	1	1	6	7.50	0.699
21	08:29:46	08:29:59	12.909	1.844	0.767	3.032	8	0	0	0	0	0	0	8	8.00	0.620
TOTAL			124.004				67	0	1	0	0	4	1	73	74	
SATURATION FLOW (PCU/hour)															2159.84	

Movement - Lane 3 -> line3																
Freeflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes						Total PCU	Saturation Flow per Reading		
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK			Total	
1	07:17:59	07:18:11	11.244	2.249	1.626	3.592	6	0	0	0	0	0	0	6	6.00	0.534
2	07:21:25	07:21:35	10.414	2.083	1.678	2.472	6	0	0	0	0	0	0	6	6.00	0.576
3	07:29:31	07:29:51	19.767	1.977	1.022	2.617	11	0	0	0	0	0	0	11	11.00	0.556
4	07:32:28	07:32:42	13.615	2.269	1.105	3.146	6	0	1	0	0	0	0	7	6.50	0.477
6	07:46:27	07:46:38	10.581	1.764	1.129	2.866	7	0	0	0	0	0	0	7	7.00	0.662
7	07:51:44	07:51:57	12.503	2.084	1.398	3.539	7	0	0	0	0	0	0	7	7.00	0.560
8	07:59:07	07:59:17	10.293	2.059	1.216	3.023	6	0	0	0	0	0	0	6	6.00	0.583
9	08:08:43	08:09:05	21.915	1.992	1.068	3.343	12	0	0	0	0	0	0	12	12.00	0.548
10	08:13:46	08:14:10	23.356	2.336	1.019	3.578	10	0	0	0	0	1	0	11	11.00	0.471
12	08:26:22	08:26:36	14.064	2.344	1.388	2.903	7	0	0	0	0	0	0	7	7.00	0.498
TOTAL			147.752				78	0	1	0	0	1	0	80	79.5	
SATURATION FLOW (PCU/hour)															1967.14	

Movement - Lane 4 -> line4																
Freeflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes						Total PCU	Saturation Flow per Reading		
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK			Total	
3	07:03:43	07:04:05	22.187	2.017	1.469	2.644	12	0	0	0	0	0	0	12	12.00	0.541
7	07:13:14	07:13:35	20.642	2.294	1.559	3.606	9	0	0	0	0	0	1	10	11.50	0.557
11	07:29:02	07:29:16	13.509	2.252	1.507	3.453	7	0	0	0	0	0	0	7	7.00	0.518
19	07:54:25	07:54:35	10.799	2.160	1.516	2.988	5	0	0	0	0	0	1	6	7.50	0.695
20	07:55:56	07:56:10	13.656	2.276	1.659	2.796	7	0	0	0	0	0	0	7	7.00	0.513
23	08:00:43	08:01:12	28.877	2.063	1.183	3.597	13	0	0	0	0	2	0	15	15.00	0.519
26	08:05:27	08:05:40	12.878	2.146	0.761	2.588	6	0	0	0	0	1	0	7	7.00	0.544
28	08:10:34	08:10:44	10.145	2.029	1.364	2.980	6	0	0	0	0	0	0	6	6.00	0.591
30	08:15:00	08:15:11	10.621	2.124	1.389	2.830	6	0	0	0	0	0	0	6	6.00	0.565
33	08:24:31	08:24:47	15.831	1.979	1.349	2.625	9	0	0	0	0	0	0	9	9.00	0.569
TOTAL			159.145				80	0	0	0	0	3	2	85	88	
SATURATION FLOW (PCU/hour)															2020.00	

Movement - Lane 6 -> line6																
Freeflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes						Total PCU	Saturation Flow per Reading		
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK			Total	
1	12:44:19	12:44:32	12.405	2.068	1.566	3.324	7	0	0	0	0	0	0	7	7.00	0.564
3	12:49:04	12:49:15	10.780	2.156	1.605	2.742	5	0	0	0	0	1	0	6	6.00	0.557
5	12:58:40	12:58:55	14.420	2.060	1.415	2.976	8	0	0	0	0	0	0	8	8.00	0.555
6	13:01:50	13:02:03	12.891	1.842	1.275	2.624	8	0	0	0	0	0	0	8	8.00	0.621
7	13:03:24	13:03:37	12.600	2.100	1.404	2.832	6	0	0	0	0	1	0	7	7.00	0.556
9	13:12:52	13:13:08	15.934	1.992	1.333	3.216	7	0	0	0	0	2	0	9	9.00	0.565
10	13:14:29	13:14:41	12.263	2.044	1.517	2.856	7	0	0	0	0	0	0	7	7.00	0.571
13	13:25:33	13:25:49	15.654	1.957	1.566	2.562	9	0	0	0	0	0	0	9	9.00	0.575
17	13:50:52	13:51:13	20.597	1.872	1.262	2.591	11	0	0	0	0	1	0	12	12.00	0.583
18	13:52:28	13:52:44	16.379	2.047	1.044	3.230	9	0	0	0	0	0	0	9	9.00	0.549
TOTAL			143.923				77	0	0	0	0	5	0	82	82	
SATURATION FLOW (PCU/hour)															2050.01	

Movement - Lane 7 -> line7																
Freeflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes						Total PCU	Saturation Flow per Reading		
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK			Total	
1	07:14:34	07:14:45	10.990	2.198	1.093	2.822	6	0	0	0	0	0	0	6	6.00	0.546
2	07:54:07	07:54:18	10.750	2.688	2.301	3.549	3	0	0	0	0	2	0	5	5.00	0.465
TOTAL			21.740				9	0	0	0	0	2	0	11	11	
SATURATION FLOW (PCU/hour)															1819.92	

10 most saturated readings for each movement

Movement - Lane 1 -> line1

Freeflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes							Total PCU	Saturation Flow per Reading
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK	Total		
TOTAL															
SATURATION FLOW (PCU/hour)														0.00	

Movement - Lane 2 -> line2

Freeflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes							Total PCU	Saturation Flow per Reading
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK	Total		
TOTAL															
SATURATION FLOW (PCU/hour)														0.00	

Movement - Lane 3 -> line3

Freeflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes							Total PCU	Saturation Flow per Reading
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK	Total		
1	17:04:19	17:04:31	12.604	2.101	1.763	3.164	7	0	0	0	0	0	7	7.00	0.555
4	17:39:50	17:40:03	12.599	2.100	1.725	2.596	7	0	0	0	0	0	7	7.00	0.556
5	17:46:20	17:46:32	12.083	2.417	1.546	2.828	5	0	0	0	1	0	6	6.00	0.497
6	17:53:21	17:53:34	13.585	2.717	2.053	3.867	6	0	0	0	0	0	6	6.00	0.442
7	17:56:54	17:57:14	20.193	2.524	1.719	3.413	9	0	0	0	0	0	9	9.00	0.446
8	18:05:35	18:05:46	10.933	2.187	1.687	2.763	5	0	0	0	1	0	6	6.00	0.549
9	18:07:19	18:07:29	10.370	2.074	1.626	2.611	5	0	0	0	0	1	6	7.50	0.723
10	18:19:37	18:19:56	18.670	2.667	1.548	3.564	8	0	0	0	0	0	8	8.00	0.428
12	18:26:34	18:26:46	12.405	2.481	1.723	3.753	6	0	0	0	0	0	6	6.00	0.484
13	18:28:21	18:28:31	10.455	2.614	2.320	2.869	5	0	0	0	0	0	5	5.00	0.478
TOTAL			133.897				63	0	0	0	2	1	66	67.5	1856.65
SATURATION FLOW (PCU/hour)														1856.65	

Movement - Lane 4 -> line4

Freeflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes							Total PCU	Saturation Flow per Reading
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK	Total		
1	12:01:15	12:01:28	13.418	2.236	1.629	3.605	7	0	0	0	0	0	7	7.00	0.522
2	12:06:27	12:06:41	14.239	2.034	0.746	2.796	6	0	0	0	0	2	8	11.00	0.773
3	12:17:13	12:17:25	11.676	1.668	0.700	2.255	7	0	1	0	0	0	8	7.50	0.642
4	12:19:03	12:19:13	10.139	2.535	1.610	3.465	5	0	0	0	0	0	5	5.00	0.493
6	12:29:48	12:30:09	20.777	2.309	1.682	3.536	10	0	0	0	0	0	10	10.00	0.481
7	12:33:24	12:33:41	17.152	2.450	1.487	3.539	8	0	0	0	0	0	8	8.00	0.466
9	12:46:20	12:46:36	16.536	2.362	1.510	3.382	7	0	0	0	1	0	8	8.00	0.484
10	13:01:16	13:01:32	16.187	2.312	1.599	3.033	8	0	0	0	0	0	8	8.00	0.494
11	13:17:47	13:17:57	10.533	2.633	1.622	3.338	5	0	0	0	0	0	5	5.00	0.475
12	13:25:15	13:25:28	12.397	2.479	1.662	3.755	6	0	0	0	0	0	6	6.00	0.484
TOTAL			143.054				69	0	1	0	1	2	73	75.5	1913.08
SATURATION FLOW (PCU/hour)														1913.08	

Movement - Lane 5 -> line5

Freeflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes							Total PCU	Saturation Flow per Reading
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK	Total		
3	07:15:10	07:15:24	13.767	1.967	1.703	2.245	8	0	0	0	0	0	8	8.00	0.581
4	07:19:00	07:19:11	10.713	2.143	1.679	2.853	6	0	0	0	0	0	6	6.00	0.560
5	07:20:54	07:21:05	11.352	1.892	1.612	2.370	7	0	0	0	0	0	7	7.00	0.617
7	07:28:36	07:28:48	12.765	1.824	1.527	2.586	8	0	0	0	0	0	8	8.00	0.627
10	07:51:35	07:51:45	10.720	2.144	1.298	3.143	5	0	0	0	1	0	6	6.00	0.560
11	08:07:01	08:07:15	14.332	2.047	1.546	3.106	8	0	0	0	0	0	8	8.00	0.558
12	08:14:32	08:14:47	14.844	2.121	1.656	2.684	7	0	0	0	1	0	8	8.00	0.539
13	08:16:28	08:16:41	12.940	1.849	1.515	2.532	8	0	0	0	0	0	8	8.00	0.618
15	08:24:10	08:24:23	13.652	2.730	1.686	3.656	5	0	0	0	0	1	6	7.50	0.549
16	08:27:57	08:28:11	13.066	1.867	1.219	2.932	8	0	0	0	0	0	8	8.00	0.612
TOTAL			128.151				70	0	0	0	2	1	73	74.5	2095.64
SATURATION FLOW (PCU/hour)														2095.64	

Movement - Lane 6 -> line6

Freeflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes							Total PCU	Saturation Flow per Reading
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK	Total		
1	07:38:09	07:38:22	12.444	2.489	1.979	2.890	6	0	0	0	0	0	6	6.00	0.482
TOTAL			12.444				6	0	0	0	0	0	6	6	6
SATURATION FLOW (PCU/hour)														1735.78	

Movement - Lane 7 -> line7

Freeflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes							Total PCU	Saturation Flow per Reading
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK	Total		
1	17:04:01	17:04:13	11.979	1.997	1.415	3.196	6	0	0	0	1	0	7	7.00	0.584
3	17:14:30	17:14:46	16.002	2.286	1.572	3.255	8	0	0	0	0	0	8	8.00	0.500
4	17:16:16	17:16:31	14.359	2.051	1.073	3.943	8	0	0	0	0	0	8	8.00	0.557
5	17:23:16	17:23:29	12.846	2.141	1.354	3.357	7	0	0	0	0	0	7	7.00	0.545
6	17:29:24	17:29:36	11.530	2.306	1.885	2.555	5	0	0	0	1	0	6	6.00	0.520
9	17:37:18	17:37:33	14.906	2.129	1.602	3.035	8	0	0	0	0	0	8	8.00	0.537
10	17:39:04	17:39:16	12.096	2.016	1.553	2.659	7	0	0	0	0	0	7	7.00	0.579
11	17:40:46	17:40:57	10.449	2.090	1.791	2.401	6	0	0	0	0	0	6	6.00	0.574
13	18:08:49	18:09:03	13.593	2.266	1.558	3.016	7	0	0	0	0	0	7	7.00	0.515
14	18:14:04	18:14:17	13.204	2.201	1.952	2.473	7	0	0	0	0	0	7	7.00	0.530
TOTAL			130.964				69	0	0	0	2	0	71	71	1958.93
SATURATION FLOW (PCU/hour)														1958.93	

10 most saturated readings for each movement

Movement - Lane 1 -> line1

Freeflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes						Total PCU	Saturation Flow per Reading	
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK			Total
TOTAL															
SATURATION FLOW (PCU/hour)															0.00

Movement - Lane 2 -> line2

Freeflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes						Total PCU	Saturation Flow per Reading		
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK			Total	
3	12:40:03	12:40:16	13.412	2.235	1.071	3.810	5	0	0	0	0	2	0	7	7.00	0.522
4	12:41:41	12:41:59	17.581	2.512	1.220	3.833	6	2	0	0	0	0	0	8	10.00	0.569
6	12:45:22	12:45:37	15.273	2.182	1.526	3.158	8	0	0	0	0	0	0	8	8.00	0.524
9	12:51:04	12:51:25	20.923	1.902	0.598	3.796	9	0	2	0	0	1	0	12	11.00	0.526
11	12:54:35	12:54:59	23.760	2.160	1.547	3.255	11	0	0	0	0	1	0	12	12.00	0.505
13	13:05:35	13:05:55	20.373	2.037	1.413	2.914	10	0	0	0	0	1	0	11	11.00	0.540
15	13:11:14	13:11:26	11.178	1.863	1.137	2.423	6	0	1	0	0	0	0	7	6.50	0.581
17	13:18:23	13:18:42	19.491	2.166	1.590	2.989	10	0	0	0	0	0	0	10	10.00	0.513
18	13:22:02	13:22:14	11.405	1.901	1.211	2.842	6	0	1	0	0	0	0	7	6.50	0.570
22	13:29:24	13:29:39	14.754	2.108	1.797	2.465	8	0	0	0	0	0	0	8	8.00	0.542
TOTAL				168.150			79	2	4	0	5	0	90	90		
SATURATION FLOW (PCU/hour)															1941.10	

Movement - Lane 4 -> line4

Freeflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes						Total PCU	Saturation Flow per Reading		
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK			Total	
1	12:33:05	12:33:17	11.505	2.301	1.905	3.269	6	0	0	0	0	0	0	6	6.00	0.522
3	12:43:55	12:44:13	18.079	2.260	1.389	3.588	9	0	0	0	0	0	0	9	9.00	0.498
4	12:45:37	12:46:01	23.939	2.176	1.317	3.619	10	0	0	0	0	2	0	12	12.00	0.501
6	12:51:18	12:51:33	15.329	1.916	1.053	2.454	9	0	0	0	0	0	0	9	9.00	0.587
7	12:52:56	12:53:25	29.505	2.108	0.815	3.676	13	0	1	0	0	1	0	15	14.50	0.491
9	13:07:39	13:08:03	24.386	2.217	1.550	3.182	6	0	1	0	0	3	2	12	14.50	0.595
11	13:16:51	13:17:01	10.183	2.546	2.009	3.681	3	0	0	0	0	2	0	5	5.00	0.491
12	13:24:14	13:24:28	13.865	2.773	2.116	3.155	5	0	0	0	0	0	1	6	7.50	0.541
13	13:26:07	13:26:18	11.904	2.381	1.631	3.974	6	0	0	0	0	0	0	6	6.00	0.504
17	13:42:45	13:42:56	11.016	2.203	1.688	2.678	6	0	0	0	0	0	0	6	6.00	0.545
TOTAL				169.711			73	0	2	0	8	3	86	89.5		
SATURATION FLOW (PCU/hour)															1898.79	

Movement - Lane 5 -> line5

Freeflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes						Total PCU	Saturation Flow per Reading	
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK			Total
TOTAL															
SATURATION FLOW (PCU/hour)															0.00

Movement - Lane 6 -> line6

Freeflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes						Total PCU	Saturation Flow per Reading		
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK			Total	
1	12:44:32	12:44:44	11.741	2.935	2.017	3.990	5	0	0	0	0	0	0	5	5.00	0.426
2	12:50:00	12:50:14	13.338	3.335	3.076	3.781	5	0	0	0	0	0	0	5	5.00	0.375
3	12:51:50	12:52:02	11.578	2.316	1.742	2.787	6	0	0	0	0	0	0	6	6.00	0.518
4	13:19:23	13:19:37	14.776	2.111	1.290	3.486	7	0	1	0	0	0	0	8	7.50	0.508
5	13:21:12	13:21:36	23.243	2.905	2.138	3.716	7	0	2	0	0	0	0	9	8.00	0.344
6	13:35:53	13:36:10	16.797	2.400	1.841	2.925	8	0	0	0	0	0	0	8	8.00	0.476
7	13:37:44	13:38:02	17.721	2.532	0.916	3.112	7	0	1	0	0	0	0	8	7.50	0.423
8	13:50:40	13:50:50	10.170	2.543	1.584	3.180	4	0	1	0	0	0	0	5	4.50	0.442
TOTAL				119.364			49	0	5	0	0	0	0	54	51.5	
SATURATION FLOW (PCU/hour)															1580.72	

10 most saturated readings for each movement

Movement - Lane 1 -> line6																
Freeflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes						Total PCU	Saturation Flow per Reading		
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK			Total	
1	07:32:24	07:32:36	11.426	2.857	1.351	3.832	5	0	0	0	0	0	0	5	5.00	0.438
2	07:34:12	07:34:25	12.888	2.148	1.225	3.459	7	0	0	0	0	0	0	7	7.00	0.543
3	07:40:56	07:41:16	19.699	2.189	1.804	2.725	10	0	0	0	0	0	0	10	10.00	0.508
4	07:42:42	07:42:52	10.174	1.696	1.205	2.345	7	0	0	0	0	0	0	7	7.00	0.688
5	07:44:29	07:44:52	22.850	2.285	1.682	2.957	11	0	0	0	0	0	0	11	11.00	0.481
6	07:46:16	07:46:33	17.177	2.147	1.284	2.663	9	0	0	0	0	0	0	9	9.00	0.524
7	07:51:46	07:51:59	12.665	2.111	1.646	2.899	7	0	0	0	0	0	0	7	7.00	0.553
8	07:53:25	07:53:42	17.755	2.219	1.431	3.194	9	0	0	0	0	0	0	9	9.00	0.507
TOTAL			124.634				65	0	0	0	0	0	0	65	65	
SATURATION FLOW (PCU/hour)															1908.62	

Movement - Lane 2 -> line5																
Freeflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes						Total PCU	Saturation Flow per Reading		
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK			Total	
1	07:32:27	07:32:46	19.572	2.447	1.418	3.568	9	0	0	0	0	0	0	9	9.00	0.460
2	07:36:08	07:36:27	18.867	2.695	1.461	3.743	8	0	0	0	0	0	0	8	8.00	0.424
3	07:39:26	07:39:36	10.720	2.680	1.516	3.895	5	0	0	0	0	0	0	5	5.00	0.466
4	07:44:30	07:44:41	10.749	2.150	1.359	2.850	6	0	0	0	0	0	0	6	6.00	0.558
5	07:46:18	07:46:37	19.017	2.377	1.424	3.846	9	0	0	0	0	0	0	9	9.00	0.473
6	07:49:50	07:50:07	17.236	2.155	1.413	3.200	9	0	0	0	0	0	0	9	9.00	0.522
TOTAL			96.161				46	0	0	0	0	0	0	46	46	
SATURATION FLOW (PCU/hour)															1742.34	

Movement - Lane 3 -> line7																
Freeflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes						Total PCU	Saturation Flow per Reading		
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK			Total	
1	07:52:23	07:52:39	15.367	2.561	1.693	3.428	7	0	0	0	0	0	0	7	7.00	0.456
TOTAL			15.367				7	0	0	0	0	0	0	7	7	
SATURATION FLOW (PCU/hour)															1639.88	

Movement - Lane 4 -> line8																
Freeflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes						Total PCU	Saturation Flow per Reading		
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK			Total	
1	07:45:16	07:45:26	10.702	1.784	1.424	2.222	7	0	0	0	0	0	0	7	7.00	0.654
TOTAL			10.702				7	0	0	0	0	0	0	7	7	
SATURATION FLOW (PCU/hour)															2354.70	

Movement - Lane 5 -> line1																
Freeflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes						Total PCU	Saturation Flow per Reading		
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK			Total	
1	07:35:26	07:35:40	13.836	2.767	2.167	3.990	6	0	0	0	0	0	0	6	6.00	0.434
2	07:37:15	07:37:32	16.930	2.116	1.239	2.931	8	0	1	0	0	0	0	9	8.50	0.502
3	07:40:25	07:40:49	24.110	2.679	1.831	3.681	10	0	0	0	0	0	0	10	10.00	0.415
4	07:49:59	07:50:10	11.084	2.771	1.977	3.948	5	0	0	0	0	0	0	5	5.00	0.451
5	07:52:56	07:53:09	12.820	2.564	1.804	3.658	6	0	0	0	0	0	0	6	6.00	0.468
TOTAL			78.780				35	0	1	0	0	0	0	36	35.5	
SATURATION FLOW (PCU/hour)															1634.11	

Movement - Lane 6 -> line2																
Freeflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes						Total PCU	Saturation Flow per Reading		
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK			Total	
1	07:32:17	07:32:57	40.697	1.938	1.143	2.834	22	0	0	0	0	0	0	22	22.00	0.541
2	07:34:02	07:34:40	37.391	2.199	1.485	3.970	18	0	0	0	0	0	0	18	18.00	0.481
3	07:35:52	07:36:29	36.989	2.055	1.343	2.932	19	0	0	0	0	0	0	19	19.00	0.514
5	07:40:48	07:41:13	24.935	1.918	1.103	3.100	14	0	0	0	0	0	0	14	14.00	0.561
7	07:44:23	07:44:39	16.304	2.038	1.535	2.837	9	0	0	0	0	0	0	9	9.00	0.552
8	07:46:08	07:46:23	15.046	2.149	1.319	2.762	8	0	0	0	0	0	0	8	8.00	0.532
9	07:47:56	07:48:31	34.458	2.154	1.496	3.756	16	0	0	0	1	0	0	17	17.00	0.493
10	07:50:02	07:50:25	22.724	2.272	1.084	3.154	11	0	0	0	0	0	0	11	11.00	0.484
11	07:51:30	07:51:58	28.556	2.197	1.414	3.408	13	0	0	0	0	1	0	14	14.00	0.490
12	07:53:23	07:53:45	21.669	2.167	1.287	3.979	11	0	0	0	0	0	0	11	11.00	0.508
TOTAL			278.769				141	0	0	0	0	2	0	143	143	
SATURATION FLOW (PCU/hour)															1856.21	

Movement - Lane 8 -> line4																
Freeflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes						Total PCU	Saturation Flow per Reading		
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK			Total	
1	07:33:41	07:33:53	11.654	1.942	1.474	3.092	7	0	0	0	0	0	0	7	7.00	0.601
2	07:37:12	07:37:22	10.262	2.052	1.443	2.416	6	0	0	0	0	0	0	6	6.00	0.585
3	07:45:43	07:45:58	14.394	1.799	1.437	2.084	9	0	0	0	0	0	0	9	9.00	0.625
4	07:49:19	07:49:29	10.819	1.803	1.474	2.321	7	0	0	0	0	0	0	7	7.00	0.647
5	07:51:06	07:51:21	15.039	2.148	1.235	2.864	8	0	0	0	0	0	0	8	8.00	0.532
TOTAL			62.168				37	0	0	0	0	0	0	37	37	
SATURATION FLOW (PCU/hour)															2152.48	

Movement - Lane 10 -> line3																
Freeflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes						Total PCU	Saturation Flow per Reading		
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK			Total	
TOTAL																
SATURATION FLOW (PCU/hour)															0.00	

10 most saturated readings for each movement

Movement - Lane 1 -> line1																
Freelflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes							Total PCU	Saturation Flow per Reading	
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK	Total			
1	07:10:06	07:10:20	13.602	2.267	1.009	3.084	7	0	0	0	0	0	0	7	7.00	0.515
2	07:24:00	07:24:12	11.301	2.825	2.009	3.302	3	0	0	0	2	0	0	5	5.00	0.442
3	07:26:38	07:26:50	11.028	2.206	1.727	3.201	6	0	0	0	0	0	6	6.00	0.544	
4	07:28:15	07:28:34	18.917	2.102	1.294	3.683	10	0	0	0	0	0	10	10.00	0.529	
5	07:31:34	07:31:48	13.554	1.936	1.172	2.755	6	0	0	0	2	0	8	8.00	0.590	
6	07:33:13	07:33:31	17.216	1.722	1.129	2.411	11	0	0	0	0	0	11	11.00	0.639	
7	07:36:38	07:36:53	14.922	2.132	1.392	3.330	8	0	0	0	0	0	8	8.00	0.536	
8	07:39:56	07:40:22	25.932	2.161	1.158	3.194	13	0	0	0	0	0	13	13.00	0.501	
9	07:41:53	07:42:05	12.045	3.011	2.301	3.873	5	0	0	0	0	0	5	5.00	0.415	
10	08:09:55	08:10:07	11.531	1.922	1.274	2.637	7	0	0	0	0	0	7	7.00	0.607	
TOTAL			150.048				76	0	0	0	4	0	80	80		
SATURATION FLOW (PCU/hour)																
															1914.67	

Movement - Lane 2 -> line2																
Freelflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes							Total PCU	Saturation Flow per Reading	
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK	Total			
1	07:28:14	07:28:30	15.688	1.961	1.052	3.244	8	0	0	0	1	0	9	9.00	0.574	
2	07:29:55	07:30:09	13.952	1.993	0.985	3.956	7	0	0	0	0	1	8	9.50	0.681	
3	08:08:19	08:08:29	10.036	2.007	1.096	2.348	5	0	0	0	1	0	6	6.00	0.598	
4	12:51:01	12:51:16	15.491	2.213	1.037	3.816	8	0	0	0	0	0	8	8.00	0.516	
5	12:58:34	12:58:45	10.997	1.833	0.702	3.276	7	0	0	0	0	0	7	7.00	0.637	
6	13:00:02	13:00:13	11.353	2.271	1.708	3.632	6	0	0	0	0	0	6	6.00	0.528	
7	13:09:01	13:09:14	13.519	1.931	0.998	3.586	8	0	0	0	0	0	8	8.00	0.592	
8	13:12:01	13:12:14	12.719	2.120	1.132	2.609	7	0	0	0	0	0	7	7.00	0.550	
9	13:52:34	13:52:44	10.198	1.700	1.195	1.981	7	0	0	0	0	0	7	7.00	0.686	
10	13:54:03	13:54:20	17.051	2.131	1.306	3.593	9	0	0	0	0	0	9	9.00	0.528	
TOTAL			39.676				20	0	0	0	2	1	23	24.5		
SATURATION FLOW (PCU/hour)																
															2120.40	

Movement - Lane 3 -> line3																
Freelflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes							Total PCU	Saturation Flow per Reading	
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK	Total			
4	07:13:28	07:13:40	12.307	2.051	1.073	3.043	6	0	0	0	0	1	7	8.50	0.691	
5	07:15:07	07:15:22	14.732	2.105	1.502	3.005	7	0	0	0	1	0	8	8.00	0.543	
7	07:26:48	07:27:00	12.339	2.057	1.372	3.010	7	0	0	0	0	0	7	7.00	0.567	
8	07:30:09	07:30:22	13.316	1.902	1.133	3.548	8	0	0	0	0	0	8	8.00	0.601	
11	07:35:05	07:35:32	26.441	2.034	1.273	3.914	13	0	0	0	0	1	14	15.50	0.586	
14	07:45:20	07:45:34	14.278	2.040	1.481	3.007	7	0	0	0	1	0	8	8.00	0.560	
15	07:48:25	07:48:49	23.758	1.980	1.071	3.217	13	0	0	0	0	0	13	13.00	0.547	
17	07:51:58	07:52:08	10.288	2.058	1.074	3.549	5	0	0	0	1	0	6	6.00	0.583	
20	08:05:06	08:05:32	25.855	1.989	1.248	3.657	13	0	0	0	1	0	14	14.00	0.541	
23	08:20:05	08:20:18	13.005	1.858	1.349	2.209	8	0	0	0	0	0	8	8.00	0.615	
TOTAL			166.319				87	0	0	0	4	2	93	96		
SATURATION FLOW (PCU/hour)																
															2100.71	

Movement - Lane 4 -> line4																
Freelflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes							Total PCU	Saturation Flow per Reading	
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK	Total			
1	07:13:28	07:13:41	12.570	2.095	0.921	3.993	7	0	0	0	0	0	7	7.00	0.557	
4	07:28:28	07:28:49	21.663	1.805	1.266	3.095	12	0	0	0	1	0	13	13.00	0.600	
6	07:33:25	07:33:41	15.567	1.946	1.276	2.853	9	0	0	0	0	0	9	9.00	0.578	
7	07:38:29	07:38:41	12.020	2.003	1.371	2.588	7	0	0	0	0	0	7	7.00	0.582	
8	07:40:05	07:40:25	20.369	1.852	1.322	2.494	12	0	0	0	0	0	12	12.00	0.589	
9	07:41:44	07:42:03	18.892	1.889	1.298	2.730	10	0	0	0	1	0	11	11.00	0.582	
10	07:46:45	07:46:59	13.348	1.907	1.268	2.463	8	0	0	0	0	0	8	8.00	0.599	
11	07:51:52	07:52:15	22.013	1.834	1.130	2.704	12	0	0	0	1	0	13	13.00	0.591	
13	08:01:48	08:01:59	11.506	1.918	1.437	3.127	7	0	0	0	0	0	7	7.00	0.608	
16	08:25:08	08:25:18	10.304	2.061	1.405	3.152	6	0	0	0	0	0	6	6.00	0.582	
TOTAL			158.252				90	0	0	0	3	0	93	93		
SATURATION FLOW (PCU/hour)																
															2113.00	

Movement - Lane 5 -> line5																
Freelflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes							Total PCU	Saturation Flow per Reading	
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK	Total			
1	07:02:55	07:03:05	10.392	1.732	1.511	1.946	7	0	0	0	0	0	7	7.00	0.674	
2	07:17:53	07:18:04	11.014	2.203	1.179	3.879	5	0	1	0	0	0	6	5.50	0.499	
3	08:01:10	08:01:22	11.967	1.995	1.203	3.195	7	0	0	0	0	0	7	7.00	0.585	
4	08:09:32	08:09:43	10.855	1.809	1.233	2.615	6	0	0	0	1	0	7	7.00	0.645	
TOTAL			44.228				25	0	1	0	1	0	27	26.5		
SATURATION FLOW (PCU/hour)																
															2162.49	

Movement - Lane 6 -> line6																
Freelflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes							Total PCU	Saturation Flow per Reading	
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK	Total			
2	07:16:13	07:16:24	10.503	1.751	1.595	1.964	7	0	0	0	0	0	7	7.00	0.666	
5	07:26:11	07:26:24	13.588	2.265	1.191	2.891	6	0	0	0	0	1	7	8.50	0.626	
9	07:32:50	07:33:02	12.545	1.792	1.252	2.933	8	0	0	0	0	0	8	8.00	0.638	
12	07:41:09	07:41:22	12.691	1.813	1.291	3.002	8	0	0	0	0	0	8	8.00	0.630	
13	07:42:50	07:43:03	12.720	1.817	1.320	2.805	8	0	0	0	0	0	8	8.00	0.629	
14	07:44:30	07:44:44	13.257	1.657	1.022	2.817	9	0	0	0	0	0	9	9.00	0.679	
15	07:46:10	07:46:20	10.727	1.788	1.494	2.020	7	0	0	0	0	0	7	7.00	0.653	
16	07:47:51	07:48:03	12.799	1.828	1.305	2.663	8	0	0	0	0	0	8	8.00	0.625	
18	07:51:09	07:51:22	12.710	1.816	0.959	3.270	7	0	0	0	1	0	8	8.00	0.629	
20	07:59:31	07:59:42	10.680	2.136	1.529	3.143	5	0	0	0	0	1	6	7.50	0.702	
TOTAL			122.220				73	0	0	0	1	2	76	79		
SATURATION FLOW (PCU/hour)																
															2331.79	

Movement - Lane 7 -> line7																
Freelflow Reading	Start of full demand	End of full demand	Duration (sec)	TIME GAP (sec)			Traffic Volumes							Total PCU	Saturation Flow per Reading	
				Avg	Min	Max	CAR	BUS	MOTORCYCLE	BICYCLE	VAN	TRUCK	Total			
1	07:36:31	07:36:41	10.004	2.001	1.535	2.583	5	0	1	0	0	0	6	5.50	0.550	
2	07:54:52	07:55:02	10.059	2.012	1.429	2.793	5	0	0	0	1	0	6	6.00	0.596	
3	08:02:06	08:02:22	15.969	2.281	2.011	2.732	8	0	0	0	0	0	8	8.00	0.501	
TOTAL			36.032				18	0	1	0	1	0	20	19.5		
SATURATION FLOW (PCU/hour)																
															1976.68	

APPENDIX D

Degree of Saturation Surveys

Project: TIA Office and Retail Development in Mesa Geitonia Municipality, Limassol

Site No: Site 5
Cycle Time: 105

Arm/Lane: Lane 1
Description: Kolonakiou (E) - Left Lane

DOES THE LANE INCLUDE FLARE AT SIDE? NO

Cycle	PCUS				Total PCU during Full Demand (s)	Time of Full Demand (s)	Status of Full Demand (1,2,3,4)	No. of Additional PCUs	Actual Green + Leaving Amber (s)	FLARE STRG PCU	Total PCUs	Underutilised Green Time (s)	Degree of Saturation Measured on Site
1		12			12	30.12	1	2	47		14.0	1.06	63.021%
2		11			11	27.61	1	0.0	47		11.0	4.85	54.1948%
3		14			14	35.14	1	3.0	47		17.0	6.45	87.223%
4		19.5			19.5	47.00	1	2.0	47		21.5	7.43	113.191%
5		15			15	37.65	1	4.0	47		19.0	6.98	98.848%
6		21			21	47.00	1	2.0	47		23.0	4.46	112.226%
7		23			23	47.00	1	0.0	47		23.0	0.51	102.247%
8		26			26	47.00	1	0.0	47		26.0	-5.43	101.983%
9		26.5			26.5	47.00	1	0.0	47		26.5	-6.42	101.945%
10		19			19	47.00	1	0.0	47		19.0	8.42	102.734%
Total					187	412.52						2.83	93.761%
Sat Flow					1820	Assumption from Lane 2 Sat flow							

Arm/Lane: Lane 4
Description: Kolonakiou (W) - Left Lane

DOES THE LANE INCLUDE FLARE AT SIDE? NO

Cycle	PCUS				Total PCU during Full Demand (s)	Time of Full Demand (s)	Status of Full Demand (1,2,3,4)	No. of Additional PCUs	Actual Green + Leaving Amber (s)	FLARE STRG PCU	Total PCUs	Underutilised Green Time (s)	Degree of Saturation Measured on Site
1		5			5	12.55	1	4	64		9.0	2.07	28.470%
2		7			7	17.57	1	1.0	64		8.0	3.30	25.8362%
3		6			6	15.06	1	4.0	64		10.0	2.69	31.961%
4		13.5			13.5	33.89	1	1.0	64		14.5	7.29	50.246%
5		0			0	0.00	1	5.0	64		5.0	0.00	15.288%
6		17.5			17.5	43.93	1	3.0	64		20.5	9.75	74.378%
7		3			3	7.53	1	5.0	64		8.0	0.84	24.798%
8		19			19	47.69	1	1.0	64		20.0	10.67	73.866%
9		11			11	27.61	1	1.0	64		12.0	5.76	40.447%
10		14			14	35.14	1	5.0	64		19.0	7.60	66.211%
Total					96	240.96						5.00	43.150%
Sat Flow					1899								

Arm/Lane: Lane 5
Description: Ag. Athanasiou (N)

DOES THE LANE INCLUDE FLARE AT SIDE? NO

Cycle	PCUS				Total PCU during Full Demand (s)	Time of Full Demand (s)	Status of Full Demand (1,2,3,4)	No. of Additional PCUs	Actual Green + Leaving Amber (s)	FLARE STRG PCU	Total PCUs	Underutilised Green Time (s)	Degree of Saturation Measured on Site
1		8			7.5	17.72	1	3.0	35		10.5	1.06	68.644%
2		0			0	0.00	1	4.0	35		4.0	0.00	25.311%
3		4			4	9.36	1	1.0	35		5.0	0.01	31.646%
4		12			11.5	34.15	1	0.0	35		11.5	9.14	100.629%
5		14			14	34.62	1	0.0	35		14.0	4.39	102.167%
6		12			12	29.73	1	0.0	35		12.0	3.67	85.441%
7		6			6	15.72	1	1.0	35		7.0	2.19	47.444%
8		13			13	34.81	1	0.0	35		13.0	6.66	103.076%
9		14			14	34.72	1	0.0	35		14.0	4.49	102.525%
10		11			10.5	33.86	1	0.0	35		10.5	10.93	99.366%
Total												4.25	76.625%
Sat Flow					1724	Assumption							

Project: TIA Office and Retail Development in Mesa Geitonia Municipality, Limassol

Site No: Site 5
Cycle Time: 65

Arm/Lane: Lane 1
Description: Kolonakiou (E) - Left Lane

DOES THE LANE INCLUDE FLARE AT SIDE? NO

Cycle	PCUS				Total PCU during Full Demand (s)	Time of Full Demand (s)	Status of Full Demand (1,2,3,4)	No. of Additional PCUs	Actual Green + Leaving Amber (s)	FLARE STRG PCU	Total PCUs	Underutilised Green Time (s)	Degree of Saturation Measured on Site
1		22			22	54.72	1	0	42		20.0	-0.71	75.187%
2		19			19	48.95	1	2.0	42		21.0		
3		27			27	53.91	1	0.0	42		27.0		
4		11			11	27.61	1	6.0	42		16.0	4.85	68.042%
5		16			16	40.16	1	3.0	42		18.0	7.51	87.591%
6		18			18	45.18	1	3.0	42		21.0		
7		13			13	32.63	1	5.0	42		17.0	5.92	76.657%
8		19.5			19.5	48.95	1	2.0	42		21.5		
9		11			11	27.61	1	5.5	42		14.5	4.85	59.601%
10		21.5			21.5	53.97	1	1.0	42		22.5		
Total		178			178	433.68						4.49	73.416%
Sat Flow					1820	Assumption from Lane 2 Sat flow							

Arm/Lane: Lane 4
Description: Kolonakiou (W) - Left Lane

DOES THE LANE INCLUDE FLARE AT SIDE? NO

Cycle	PCUS				Total PCU during Full Demand (s)	Time of Full Demand (s)	Status of Full Demand (1,2,3,4)	No. of Additional PCUs	Actual Green + Leaving Amber (s)	FLARE STRG PCU	Total PCUs	Underutilised Green Time (s)	Degree of Saturation Measured on Site
1		7.5			7.5	18.83	1	5	42		12.5	3.61	43.113%
2		14			14	35.14	1	2.5	42		13.5	7.60	56.982%
3		18			18	45.18	1	1.5	42		19.5		
4		13			13	32.63	1	2.0	42		13.0	6.99	52.648%
5		11			11	27.61	1	4.0	42		13.0	5.76	49.969%
6		8			8	20.08	1	8.0	42		12.0	3.91	41.041%
7		9.5			9.5	23.85	1	5.5	42		13.0	4.84	48.084%
8		16.5			16.5	41.42	1	1.5	42		18.0		
9		9			9	22.59	1	6.0	42		13.0	4.53	47.477%
10		15			15	37.65	1	2.0	42		17.0		
Total					122	304.97						5.32	48.474%
Sat Flow					1899								

Arm/Lane: Lane 5
Description: Ag. Athanasiou (N)

DOES THE LANE INCLUDE FLARE AT SIDE? NO

Cycle	PCUS				Total PCU during Full Demand (s)	Time of Full Demand (s)	Status of Full Demand (1,2,3,4)	No. of Additional PCUs	Actual Green + Leaving Amber (s)	FLARE STRG PCU	Total PCUs	Underutilised Green Time (s)	Degree of Saturation Measured on Site
1		8			8	17.00	1	2.0	17		10.0	-0.71	132.959%
2		12			12	17.00	1	1.0	17		13.0	-9.06	112.836%
3		14			13.5	17.00	1	0.0	17		13.5	-12.19	103.678%
4		8			8	17.00	1	1.0	17		9.0	-0.71	119.663%
5		7			7	17.00	1	0.0	17		7.0	1.38	107.344%
6		8			8	17.00	1	0.0	17		8.0	-0.71	106.367%
7		9			9	17.00	1	1.0	17		10.0	-2.79	117.356%
8		3			3	8.55	1	3.0	17		6.0	1.29	91.356%
9		11			11	17.00	1	0.0	17		11.0	-6.97	104.552%
10		10			10	17.00	1	0.0	17		10.0	-4.88	105.030%
Total												-3.53	110.114%
Sat Flow					1724	Assumption							

Lane 1
Description Gr. Digeni (W) - Left Lane

DOES THE LANE INCLUDE FLARE AT SIDE? NO

Cycle	PCUS				Total PCU during Full Demand (s)	Time of Full Demand (s)	Status of Full Demand (1,2,3,4)	No. of Additional PCUs	Actual Green + Leaving Amber (s)	FLARE STRG PCU	Total PCUs	Underutilised Green Time (s)	Degree of Saturation Measured on Site
1	10				10	25.60	1	0.0	38		10.0	4.49	63.823%
2	10				10	25.60	1	1.5	38		11.5	4.49	73.396%
3	10.5				10.5	26.88	1	2.0	38		12.5	4.76	80.480%
4	0				0	0.00	1	4.0	38		4.0	0.00	22.346%
5	7				7	17.92	1	2.0	38		9.0	2.84	54.588%
6	14.5				14.5	34.18	1	0.0	38		14.5	4.02	91.183%
7	8.5				8.5	21.76	1	1.0	38		9.5	3.67	59.088%
8	7				7	17.92	1	1.0	38		8.0	2.84	48.523%
9	6				6	15.36	1	1.5	38		7.5	2.29	44.750%
10	6				6	15.36	1	1.5	38		7.5	2.29	44.750%
Total												3.17	58.293%
Sat Flow					1790								

Arm/Lane: Lane 2
Description Gr. Digeni (W) - Right Lane (Direction Straight)

DOES THE LANE INCLUDE FLARE AT SIDE? NO

Cycle	PCUS				Total PCU during Full Demand (s)	Time of Full Demand (s)	Status of Full Demand (1,2,3,4)	No. of Additional PCUs	Actual Green + Leaving Amber (s)	FLARE STRG PCU	Total PCUs	Underutilised Green Time (s)	Degree of Saturation Measured on Site
1	10				10	25.60	1	0.0	38		10.0	4.61	63.681%
2	3				3	7.68	1	1.5	38		4.5	0.68	25.4696%
3	10				10	25.60	1	2.0	38		12.0	4.61	76.418%
4	0				0	0.00	1	4.0	38		4.0	0.00	22.210%
5	18				17.5	38.00	1	0.0	38		17.5	2.02	102.943%
6	8				7.5	19.20	1	3.0	38		10.5	3.21	64.005%
7	12				11.5	29.44	1	3.0	38		14.5	5.45	94.882%
8	15				15	38.00	1	1.0	38		16.0	7.02	110.347%
9	7				7	17.92	1	4.0	38		11.0	2.93	66.484%
10	17				17	37.96	1	0.0	38		17.0	2.98	102.907%
Total					99	239.40						3.35	72.935%
Sat Flow					1801								

ught not to be used = give way at green - co

Arm/Lane: Lane 3
Description G. Neophytou (N) - Left Lane

DOES THE LANE INCLUDE FLARE AT SIDE? NO

Cycle	PCUS				Total PCU during Full Demand (s)	Time of Full Demand (s)	Status of Full Demand (1,2,3,4)	No. of Additional PCUs	Actual Green + Leaving Amber (s)	FLARE STRG PCU	Total PCUs	Underutilised Green Time (s)	Degree of Saturation Measured on Site
1	0				0	0.00	1	1	28		1.0	0.00	8.140%
2	0				0	0.00	1	2.0	28		2.0	0.00	16.280%
3	0				0	0.00	1	0.0	28		0.0	0.00	0.000%
4	0				0	0.00	1	1.0	28		1.0	0.00	8.140%
5	4				4	10.24	1	0.0	28		4.0	0.77	33.560%
6	5				5	12.80	1	0.0	28		5.0	1.22	42.700%
7	3				3	7.68	1	0.0	28		3.0	0.33	24.735%
8	4				4	10.24	1	1.0	28		5.0	0.77	41.949%
9	0				0	0.00	1	2.0	28		2.0	0.00	16.280%
10	0				0	0.00	1	1.0	28		1.0	0.00	8.140%
Total					16	40.96						0.31	19.992%
Sat Flow					1701								

Arm/Lane: Lane 4
Description G. Neophytou (N) - Right Lane

DOES THE LANE INCLUDE FLARE AT SIDE? NO

Cycle	PCUS				Total PCU during Full Demand (s)	Time of Full Demand (s)	Status of Full Demand (1,2,3,4)	No. of Additional PCUs	Actual Green + Leaving Amber (s)	FLARE STRG PCU	Total PCUs	Underutilised Green Time (s)	Degree of Saturation Measured on Site
1	0				0	0.00	1	3	28		3.0	0.00	22.297%
2	7				7	14.68	1	0.0	28		7.0	-1.00	54.870%
3	3				3	7.68	1	1.0	28		4.0	-1.00	31.354%
4	4				4	10.24	1	1.0	28		5.0	-1.00	39.193%
5	0				0	0.00	1	2.0	28		2.0	0.00	16.280%
6	7				7	14.39	1	0.0	28		7.0	1.22	59.781%
7	6				6	15.36	1	1.0	28		7.0	0.33	57.714%
8	5				5	12.80	1	3.0	28		8.0	0.77	67.119%
9	7				7	14.88	1	1.0	28		8.0	-1.00	62.708%
10	4				4	10.24	1	0.0	28		4.0	-1.00	31.354%
Total												-0.27	44.267%
Sat Flow					1863								

Lane 1
Description Gr. Digeni (W) - Left Lane

DOES THE LANE INCLUDE FLARE AT SIDE? NO

Cycle	PCUS				Total PCU during Full Demand (s)	Time of Full Demand (s)	Status of Full Demand (1,2,3,4)	No. of Additional PCUs	Actual Green + Leaving Amber (s)	FLARE STRG PCU	Total PCUs	Underutilised Green Time (s)	Degree of Saturation Measured on Site
1		5			5	12.80	1	1.0	27		6.0	1.74	51.888%
2		3.5			3.5	8.96	1	1.0	27		4.5	0.92	37.586%
3		6			6	15.36	1	2.5	27		8.5	2.29	75.285%
4		7			7	17.92	1	1.0	27		8.0	2.84	72.611%
5		0			0	0.00	1	2.5	27		2.5	0.00	20.112%
6		8			8	20.48	1	2.0	27		10.0	3.39	93.069%
7		8			8	20.48	1	1.0	27		9.0	3.39	83.762%
8		6			6	15.36	1	1.0	27		7.0	2.29	61.999%
9		6			6	15.36	1	0.0	27		6.0	2.29	53.142%
10		3			3	7.68	1	2.0	27		5.0	0.65	41.291%
Total												1.98	59.075%
Sat Flow					1790								

Arm/Lane: Lane 2
Description Gr. Digeni (W) - Right Lane (Direction Straight)

DOES THE LANE INCLUDE FLARE AT SIDE? NO

Cycle	PCUS				Total PCU during Full Demand (s)	Time of Full Demand (s)	Status of Full Demand (1,2,3,4)	No. of Additional PCUs	Actual Green + Leaving Amber (s)	FLARE STRG PCU	Total PCUs	Underutilised Green Time (s)	Degree of Saturation Measured on Site
1		16			16	27.00	1	0.0	27		16.0	-5.98	103.228%
2		18			18	27.00	1	0.0	27		18.0	-9.98	102.8588%
3		17			17	27.00	1	0.0	27		17.0	-7.98	103.032%
4		13			13	27.00	1	0.0	27		13.0	0.01	104.002%
5		15			15	27.00	1	0.0	27		15.0	-3.98	103.450%
6		11			11	27.00	1	2.0	27		13.0	4.01	123.813%
7		11			11	27.00	1	1.0	27		12.0	4.01	114.289%
8		16			15.5	27.00	1	2.0	27		17.5	-4.98	116.669%
9		11			11	27.00	1	4.0	27		15.0	4.01	142.861%
10		10			9.5	24.32	1	0.0	27		9.5	4.33	91.872%
Total												-1.65	110.607%
Sat Flow					1801								

ught not to be used = give way at green - co

Arm/Lane: Lane 3
Description G. Neophytou (N) - Left Lane

DOES THE LANE INCLUDE FLARE AT SIDE? NO

Cycle	PCUS				Total PCU during Full Demand (s)	Time of Full Demand (s)	Status of Full Demand (1,2,3,4)	No. of Additional PCUs	Actual Green + Leaving Amber (s)	FLARE STRG PCU	Total PCUs	Underutilised Green Time (s)	Degree of Saturation Measured on Site
1		0			0	0.00	1	1	12		1.0	0.00	21.164%
2		0			0	0.00	1	2.0	12		2.0	0.00	42.328%
3		0			0	0.00	1	0.0	12		0.0	0.00	0.000%
4		0			0	0.00	1	3.0	12		3.0	0.00	63.492%
5		7			7	17.92	1	0.0	12		7.0	2.11	187.652%
6		3			3	7.68	1	1.0	12		4.0	0.33	87.552%
7		4			4	10.24	1	1.0	12		5.0	0.77	114.703%
8		7			7	17.92	1	1.0	12		8.0	2.11	214.460%
9		6			6	15.36	1	0.0	12		6.0	1.66	152.288%
10		7.5			7.5	19.20	1	0.0	12		7.5	2.33	206.868%
Total												0.93	109.051%
Sat Flow					1701								

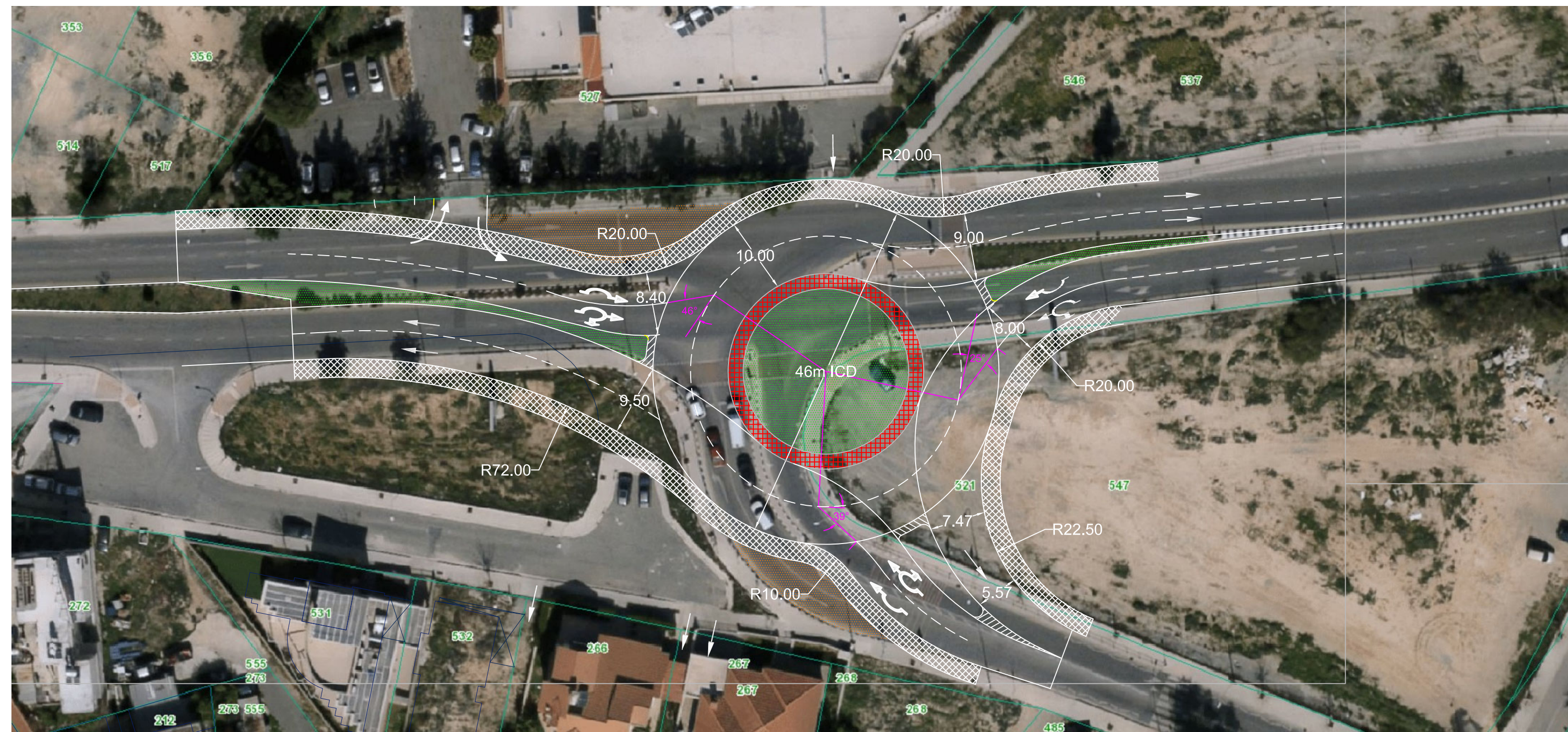
Arm/Lane: Lane 4
Description G. Neophytou (N) - Right Lane

DOES THE LANE INCLUDE FLARE AT SIDE? NO

Cycle	PCUS				Total PCU during Full Demand (s)	Time of Full Demand (s)	Status of Full Demand (1,2,3,4)	No. of Additional PCUs	Actual Green + Leaving Amber (s)	FLARE STRG PCU	Total PCUs	Underutilised Green Time (s)	Degree of Saturation Measured on Site
1		0			0	0.00	1	2	12		2.0	0.00	49.647%
2		6			6	12.00	1	0.0	12		6.0		
3		0			0	0.00	1	2.0	12		2.0	0.00	42.328%
4		0			0	0.00	1	3.0	12		3.0	0.00	63.492%
5		0			0	0.00	1	3.0	12		3.0	0.00	63.492%
6		6			6	12.00	1	0.5	12		6.5		
7		6			6	12.00	1	1.0	12		7.0		
8		0			0	0.00	1	3.5	12		3.5	0.00	74.074%
9		0			0	0.00	1	5.5	12		5.5		
10		4.5			4.5	11.52	1	0.0	12		4.5		
Total												0.00	58.607%
Sat Flow					1863								

APPENDIX E

Committed & Proposed Roundabout Designs





Αρ. Πρωτ.: 408175
 Αδελφός Ν. Σαχινίδης

891
 890
 897
 898
 899
 896
 546
 547
 912
 914
 913
 1091
 1092
 1159
 1140

328
 489
 510
 329
 330
 331
 334
 912
 914
 796
 976
 1159
 1140

APPENDIX F

Saturation Flows

SATURATION FLOWS

Project:	TIA Office Devt in			
	Limassol			
Junction, Link & Lane Name	Movement			Final saturation flow applied in models and in DoS/UGT calculations
		Surveyed*	Calculated**	
Ay. Athanasiou / Iapetou Signalised Junction				
Ay. Athanasiou (n) - Offside	S	1,934		1,934
Ay. Athanasiou (n) - Middle	S		1,820	1,820
Ay. Athanasiou (n) - Kerbside	L		1,726	1,726
Iapetou - Offside	R		1,754	1,754
Iapetou - Kerbside	L		1,735	1,735
Ay. Athanasiou (s) - Kerbside	R		1,746	1,746
Ay. Athanasiou (s) - Middle	S		1,811	1,811
Ay. Athanasiou (s) - Offside	S		1,811	1,811
Ay. Athanasiou / A. Kariolou Signalised Junction				
Ay. Athanasiou (n) - Kerbside	S	1,967		1,967
Ay. Athanasiou (n) - Kerbside	S+L		1,872	1,872
A. Kariolou - Offside	R		1,754	1,754
A. Kariolou - Kerbside	L		1,726	1,726
Ay. Athanasiou (s) - Offside	R		1,737	1,737
Ay. Athanasiou (s) - Middle	S		1,801	1,801
Ay. Athanasiou (s) - Kerbside	S		1,801	1,801
Ay. Athanasiou / Sp. Kyprianou Signalised Junction				
Ay. Athanasiou (n) - Offside	R	1,959		1,959
Ay. Athanasiou (n) - Middle	S		1,820	1,820
Ay. Athanasiou (n) - Kerbside	S		1,829	1,829
Ay. Athanasiou (s) - Offside	S		1,820	1,820
Ay. Athanasiou (s) - Middle	S		1,811	1,811
Ay. Athanasiou (s) - Kerbside	L		1,754	1,754
Sp. Kyprianou - Offside	R		1,741	1,741
Sp. Kyprianou - Middle	R		1,754	1,754
Sp. Kyprianou - Kerbside	L		1,735	1,735
Ay. Athanasiou / Kolonakiou Signalised Junction				
Ay. Athanasiou (n) - Offside	R		1,737	1,737
Ay. Athanasiou (n) - Kerbside	R		1,724	1,724
Ay. Athanasiou (n) - Kerbside	L		1,709	1,709
Kolonakiou (e) - Offside	R	1,941		1,941
Kolonakiou (e) - Kerbside	S		1,820	1,820
Kolonakiou (w) - Kerbside	L		1,709	1,709
Kolonakiou (w) - Offside	S	1,899		1,899
G. Neofytou/ Kolonakiou / G. Digeni Signalised Junction				
G. Neofytou - Offside	S+R		1,863	1,863
G. Neofytou - Kerbside	L		1,701	1,701
Kolonakiou (e) - Offside	R		1,737	1,737
Kolonakiou (e) - Offside	S	1,856		1,856
Kolonakiou (e) - Kerbside	L		1,726	1,726
G. Digeni (s) - Offside	S+R		1,775	1,775
G. Digeni (s) - Kerbside	L		1,701	1,701
G. Digeni (w) - Offside	R		1,693	1,693
G. Digeni (w) - Offside	S		1,801	1,801
G. Digeni (w) - Kerbside	S+L		1,790	1,790
Sp. Kyprianou / G. Neofytou Signalised Junction				
Sp. Kyprianou (w) - Kerbside	R		1,754	1,754
Sp. Kyprianou (w) - Offside	S		1,811	1,811
Sp. Kyprianou (w) - Kerbside	S	1,915		1,915
Sp. Kyprianou (e) - Kerbside	S		1,829	1,829
Sp. Kyprianou (e) - Kerbside	S & L		1,836	1,836
G. Neofytou - Kerbside	R		1,763	1,763
G. Neofytou - Kerbside	L		1,735	1,735

*surveyed saturation flows

**calculated saturation flows based on RR67

APPENDIX G

Traffic Generation & Parking Accumulation at the Development

TRAFFIC GENERATION & PARKING ACCUMULATION FOR THE OFFICE DEVELOPMENT IN MESA GEITONIA

Consultants Traffic Generation Parameters

Start Hour	Office Staff		Office Visitors		Retail		Overall		
	Arr	Dep	Arr	Dep	Arr	Dep	Arr	Dep	Acc
0:00	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0	0	0
6:00	0	0	0	0	0	0	0	0	0
7:00	51	4	1	0	1	0	53	4	49
8:00	117	10	3	2	4	2	124	13	159
9:00	89	21	3	2	6	5	98	29	229
10:00	23	17	2	2	7	5	31	23	237
11:00	15	19	2	2	6	7	24	28	232
12:00	26	38	1	1	7	7	34	46	220
13:00	35	31	2	2	6	6	44	39	224
14:00	22	25	1	2	6	6	30	32	222
15:00	17	35	2	3	6	6	26	44	204
16:00	13	80	1	1	7	6	21	88	138
17:00	13	116	1	1	9	8	23	124	36
18:00	7	35	1	0	8	8	15	43	8
19:00	0	0	0	0	5	8	5	8	6
20:00	0	0	0	0	3	7	3	7	1
21:00	0	0	0	0	0	2	0	2	0
22:00	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0
Total	431	431	19	19			532	532	-

PWD Traffic Generation Parameters (Sensitivity Tests)

Start Hour	Office Staff		Office Visitors		Retail		Overall		
	Arr	Dep	Arr	Dep	Arr	Dep	Arr	Dep	Acc
0:00	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0	0	0
6:00	0	0	0	0	0	0	0	0	0
7:00	36	1	2	0	1	0	39	1	38
8:00	178	14	5	1	4	2	187	17	209
9:00	61	18	4	1	6	5	71	24	256
10:00	28	19	1	1	7	5	36	25	266
11:00	19	25	1	1	6	7	26	33	260
12:00	25	28	1	2	7	7	34	37	256
13:00	24	24	2	2	6	6	33	32	257
14:00	22	22	1	1	6	6	30	29	258
15:00	19	27	1	2	6	6	27	35	249
16:00	15	44	1	4	7	6	23	54	218
17:00	11	179	1	5	9	8	20	192	46
18:00	5	28	0	2	8	8	13	38	21
19:00	1	14	0	0	5	8	6	22	6
20:00	0	0	0	0	3	7	3	7	1
21:00	0	0	0	0	0	2	0	2	0
22:00	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0
Total	445	445	21	21			548	548	-

APPENDIX H

Junction Test Summaries and CD

AM PEAK PERIOD: 07:00 - 08:00

Capacity Tests at Signalised Junctions

Junction and Arms	Surveyed			Modeled		Modeled 2023 Existing (Validation - after applying UGT)		Modelled (validated) - Observed
	Validation Data			2023 Existing*				(surveyed) DoS
	Q Survey	DoS (%)	UGT (sec)	Q	DoS	Q	DoS	DoS
Ay. Athanasiou / Iapetou Signalised Junction								
Ay. Athanasiou (n) - straight	6	77	6.1	23	60	26	68	9
Ay. Athanasiou (n) - left	6			0	47	0	47	
Iapetou - right	12	60	1.5	6	48	6	52	8
Iapetou - left	1			0	7	0	7	
Ay. Athanasiou (s) - right	2			13	106	13	106	
Ay. Athanasiou (s) - straight	19	55	3.3	16	49	18	51	4
Ay. Athanasiou / A. Kariolou Signalised Junction								
Ay. Athanasiou (n) - straight	17	51	5.0	8	45	10	53	2
Ay. Athanasiou (n) - straight & left	17	89	9.3	14	66	18	78	11
A. Kariolou - right	6	59	0.8	4	45	4	48	11
A. Kariolou - left	1			0	8	0	8	
Ay. Athanasiou (s) - right	6			3	24	3	24	
Ay. Athanasiou (s) - straight	29	41	3.1	16	49	17	51	10
Ay. Athanasiou / Sp. Kyprianou Signalised Junction								
Ay. Athanasiou (n) - right	18			12	53	12	53	
Ay. Athanasiou (n) - straight	11	18	3.5	10	29	11	31	13
Ay. Athanasiou (s) - straight	7	43	2.0	14	39	15	40	3
Ay. Athanasiou (s) - left	7	33	1.3	0	23	0	23	10
Sp. Kyprianou - right	3	32	0.2	5	20	5	20	12
Sp. Kyprianou - left	7			0	44	0	44	
Link1								
Node1:								
Ay. Athanasiou / Kolonakiou Signalised Junction								
Ay. Athanasiou (n) - right	21	61	8.1	5	20	5	26	5
Ay. Athanasiou (n) - left	7			0	7	0	7	
Kolonakiou (e) - right	10			3	21	3	22	
Kolonakiou (e) - straight	7	94	2.8	25	90	29	96	2
Kolonakiou (w) - straight	4	43	5.0	4	41	4	45	2
Kolonakiou (w) - left	1			1	30	2	30	
Node2:								
G. Neofytou/ Kolonakiou / G. Digeni Signalised Junction								
G. Neofytou - straight & right	4			4	35	4	35	
G. Neofytou - left	2	20	0.3	3	31	3	31	11
Kolonakiou (e) - right	2			2	14	2	15	
Kolonakiou (e) - straight	11	78	2.8	8	62	9	66	12
Kolonakiou (e) - left	6			4	28	5	28	
G. Digeni (s) - straight & right	13	71	0.0	6	58	6	58	13
G. Digeni (s) - left	2			0	2	0	2	
G. Digeni (w) - right	1			1	4	1	5	
G. Digeni (w) - straight	15			8	48	8	51	
G. Digeni (w) - straight & left	6	58	3.2	9	56	10	60	
Sp. Kyprianou / G. Neofytou Signalised Junction								
Sp. Kyprianou (w) - right	8			3	23	3	23	
Sp. Kyprianou (w) - straight	14	41	8.9	7	27	10	31	10
Sp. Kyprianou (e) - straight	9	50	5.1	6	38	7	41	9
Sp. Kyprianou (e) - straight and left	9			11	59	11	59	
G. Neofytou - right	8	97	0.0	19	103	19	103	6
G. Neofytou - left	8			4	36	4	36	

Q – Queue in PCU's DoS – Degree of Saturation

*including surveyed saturation flows (where it is applicable)

Capacity Tests at Roundabouts

Junction and Link Movements

2023 Existing

	Q Survey	Q	RFC
Ay. Athanasiou / A1 Limassol Highway Roundabout			
Ay. Athanasiou (n) - all	52	52	1.13
A1 Limassol Highway (e) - all	11	11	0.95
Ay. Athanasiou (s) - all	6	6	0.86
A1 Limassol Highway (w) - all	31	31	1.01

Q – Queue in PCU's RFC – Demand/Capacity Ratio

MD PEAK PERIOD: 13:00 - 14:00

Capacity Tests at Signalised Junctions

Junction and Arms	Surveyed			Modeled		Modeled 2023 Existing (Validation - after applying UGT)		Modelled (validated) - Observed
	Validation Data			2023 Existing*				(surveyed) DoS
	Q Survey	DoS (%)	UGT (sec)	Q	DoS	Q	DoS	DoS
Ay. Athanasiou / Iapetou Signalised Junction								
Ay. Athanasiou (n) - straight	6	41	3.3	16	46	17	49	8
Ay. Athanasiou (n) - left	6			0	13	0	13	
Iapetou - right	12	78	0.7	9	71	9	73	5
Iapetou - left	1			0	12	0	12	
Ay. Athanasiou (s) - right	2			4	69	4	69	
Ay. Athanasiou (s) - straight	19	71	6.0	26	65	31	72	1
Ay. Athanasiou / A. Kariolou Signalised Junction								
Ay. Athanasiou (n) - straight	8	47	3.9	6	35	7	40	7
Ay. Athanasiou (n) - straight & left	7	67	6.8	10	55	12	62	5
A. Kariolou - right	14	91	0.1	10	85	10	85	6
A. Kariolou - left	2			0	12	0	12	
Ay. Athanasiou (s) - right	3			3	24	3	24	
Ay. Athanasiou (s) - straight	21	50	3.7	18	53	20	56	6
Ay. Athanasiou / Sp. Kyprianou Signalised Junction								
Ay. Athanasiou (n) - right	13			8	42	8	42	
Ay. Athanasiou (n) - straight	6	33	2.1	7	24	8	25	8
Ay. Athanasiou (s) - straight	5	46	2.2	12	36	13	37	9
Ay. Athanasiou (s) - left	4	33	1.7	0	19	0	19	14
Sp. Kyprianou - right	3	20	0.0	4	20	4	20	0
Sp. Kyprianou - left	4			0	48	0	48	
Link1								
Node1:								
Ay. Athanasiou / Kolonakiou Signalised Junction								
Ay. Athanasiou (n) - right	10	54	0.6	7	33	7	34	20
Ay. Athanasiou (n) - left	9			0	9	0	9	
Kolonakiou (e) - right	9			4	27	5	29	
Kolonakiou (e) - straight	9	73	4.5	11	56	12	61	12
Kolonakiou (w) - straight	5	48	5.3	4	33	4	36	12
Kolonakiou (w) - left	2			3	30	3	30	
Node2:								
G. Neofytou/ Kolonakiou / G. Digeni Signalised Junction								
G. Neofytou - straight & right	3			4	41	4	41	
G. Neofytou - left	5	59	0.0	6	64	6	64	5
Kolonakiou (e) - right	2			2	16	2	17	
Kolonakiou (e) - straight	8	50	2.3	7	49	7	51	1
Kolonakiou (e) - left	3			2	23	2	23	
G. Digeni (s) - straight & right	26	40	2.0	2	28	3	31	9
G. Digeni (s) - left	3			0	0	0	0	
G. Digeni (w) - right	1			1	6	1	6	
G. Digeni (w) - straight	25			6	38	6	38	
G. Digeni (w) - straight & left	4			7	42	7	42	
Sp. Kyprianou / G. Neofytou Signalised Junction								
Sp. Kyprianou (w) - right	3			2	18	2	18	
Sp. Kyprianou (w) - straight	9	51	5.3	10	38	12	41	10
Sp. Kyprianou (e) - straight	8	45	6.3	4	29	4	32	13
Sp. Kyprianou (e) - straight and left	10			7	41	7	41	
G. Neofytou - right	11	60	0.7	5	62	5	66	6
G. Neofytou - left	11			9	63	9	63	

Q – Queue in PCU's DoS – Degree of Saturation

*including surveyed saturation flows (where it is applicable)

Capacity Tests at Roundabouts

Junction and Link Movements

2023 Existing

	Q Survey	Q	RFC
Ay. Athanasiou / A1 Limassol Highway Roundabout			
Ay. Athanasiou (n) - all	6	6	0.87
A1 Limassol Highway (e) - all	1	1	0.34
Ay. Athanasiou (s) - all	11	11	0.93
A1 Limassol Highway (w) - all	8	8	0.9

Q – Queue in PCU's RFC – Demand/Capacity Ratio

PM PEAK PERIOD: 17:00 - 18:00

Capacity Tests at Signalised Junctions

Junction and Arms	Surveyed			Modeled		Modeled 2023 Existing (Validation - after applying UGT)		Modelled (validated) - Observed
	Validation Data			2023 Existing*				(surveyed) DoS
	Q Survey	DoS (%)	UGT (sec)	Q	DoS	Q	DoS	DoS
Ay. Athanasiou / Iapetou Signalised Junction								
Ay. Athanasiou (n) - straight	10	54	2.0	12	38	13	40	14
Ay. Athanasiou (n) - left	8			0	11	0	11	
Iapetou - right	50	93	0.0	23	100	23	100	7
Iapetou - left	1			0	10	0	10	
Ay. Athanasiou (s) - right	9			0	8	0	8	
Ay. Athanasiou (s) - straight	50	92	6.5	22	58	26	66	26
Ay. Athanasiou / A. Kariolou Signalised Junction								
Ay. Athanasiou (n) - straight	14	63	1.0	6	34	9	49	14
Ay. Athanasiou (n) - straight & left	12	55	2.2	11	58	8	46	9
A. Kariolou - right	26	81	3.4	7	71	8	85	4
A. Kariolou - left	4			0	10	0	10	
Ay. Athanasiou (s) - right	5			9	89	9	89	
Ay. Athanasiou (s) - straight	34	86	25.0	14	45	26	71	
Ay. Athanasiou / Sp. Kyprianou Signalised Junction								
Ay. Athanasiou (n) - right	11			3	21	3	21	
Ay. Athanasiou (n) - straight	10	27	1.4	8	26	8	27	0
Ay. Athanasiou (s) - straight	10	41	2.9	10	32	11	34	7
Ay. Athanasiou (s) - left	10	32	2.0	0	30	0	30	2
Sp. Kyprianou - right	11	41	0.0	12	54	12	54	13
Sp. Kyprianou - left	5			0	38	0	38	
Link1								
Node1:								
Ay. Athanasiou / Kolonakiou Signalised Junction								
Ay. Athanasiou (n) - right	9	64	4.8	7	31	8	36	28
Ay. Athanasiou (n) - left	1			0	5	0	5	
Kolonakiou (e) - right	7			5	29	5	29	
Kolonakiou (e) - straight	20	65	0.2	19	80	19	80	15
Kolonakiou (w) - straight	6	36	0.8	6	48	6	49	13
Kolonakiou (w) - left	3			0	28	0	28	
Node2:								
G. Neofytou/ Kolonakiou / G. Digeni Signalised Junction								
G. Neofytou - straight & right	4			4	40	4	40	
G. Neofytou - left	4	67	0.0	6	56	6	56	11
Kolonakiou (e) - right	3			3	22	3	22	
Kolonakiou (e) - straight	7	74	0.6	8	60	8	60	14
Kolonakiou (e) - left	5			4	27	4	27	
G. Digeni (s) - straight & right	8	60	0.0	5	50	5	50	10
G. Digeni (s) - left	2			0	1	0	1	
G. Digeni (w) - right	1			1	5	1	5	
G. Digeni (w) - straight	9			7	47	7	47	
G. Digeni (w) - straight & left	11			9	55	9	55	
Sp. Kyprianou / G. Neofytou Signalised Junction								
Sp. Kyprianou (w) - right	4			2	18	2	18	
Sp. Kyprianou (w) - straight	9	43	1.7	7	28	8	29	14
Sp. Kyprianou (e) - straight	6	44	1.5	4	30	4	31	13
Sp. Kyprianou (e) - straight and left	4			8	49	8	49	
G. Neofytou - right	8	95	0.0	15	98	15	98	3
G. Neofytou - left	5			5	39	5	39	

Q – Queue in PCU's DoS – Degree of Saturation

*including surveyed saturation flows (where it is applicable)

Capacity Tests at Roundabouts

Junction and Link Movements

2023 Existing

	Q Survey	Q	RFC
Ay. Athanasiou / A1 Limassol Highway Roundabout			
Ay. Athanasiou (n) - all	17	17	0.99
A1 Limassol Highway (e) - all	13	12	0.98
Ay. Athanasiou (s) - all	19	19	0.97
A1 Limassol Highway (w) - all	12	12	0.95

Q – Queue in PCU's RFC – Demand/Capacity Ratio

AM PEAK PERIOD: 07:00 - 08:00

Capacity Tests at Signalised Junctions

Junction and Arms	2023 Existing (Validation - after applying UGT)		2026 Without Devt.		2026 With Devt.		2036 Without Devt.		2036 With Devt.		2036 With Devt. (Sustainable Transport)		2036 With Devt. (Sensitivity Test*)		
	Q Survey	Q	DoS	Q	DoS	Q	DoS	Q	DoS	Q	DoS	Q	DoS	Q	DoS
Ay. Athanasiou / Iapetou Signalised Junction															
Ay. Athanasiou (n) - straight	6	26	68	29	72	32	75	30	72	32	75	31	74	33	77
Ay. Athanasiou (n) - left	6	0	47	0	50	0	50	0	50	0	50	0	50	0	50
Iapetou - right	12	6	52	8	82	8	82	8	82	8	82	8	82	8	82
Iapetou - left	1	0	7	0	7	0	7	0	7	0	7	0	7	0	7
Ay. Athanasiou (s) - right	2	13	106	6	52	6	52	6	52	6	52	6	52	6	52
Ay. Athanasiou (s) - straight	19	18	51	17	73	17	74	17	74	18	75	18	75	18	75
Ay. Athanasiou / A. Kariolou Signalised Junction															
Ay. Athanasiou (n) - straight	17	10	53	10	52	11	55	10	53	11	55	11	54	11	57
Ay. Athanasiou (n) - straight & left	17	18	78	18	75	19	78	18	76	20	78	19	77	20	80
A. Kariolou - right	6	4	48	6	80	6	80	6	80	6	80	6	80	6	80
A. Kariolou - left	1	0	8	0	9	0	9	0	9	0	9	0	9	0	9
Ay. Athanasiou (s) - right	6	3	24	3	23	3	23	3	23	3	23	3	23	3	23
Ay. Athanasiou (s) - straight	29	17	51	17	52	17	53	17	53	17	53	17	53	17	53
Ay. Athanasiou / Sp. Kyprianou Signalised Junction															
Ay. Athanasiou (n) - right	18	12	53	-	-	-	-	-	-	-	-	-	-	-	-
Ay. Athanasiou (n) - straight	11	11	31	-	-	-	-	-	-	-	-	-	-	-	-
Ay. Athanasiou (s) - straight	7	15	40	-	-	-	-	-	-	-	-	-	-	-	-
Ay. Athanasiou (s) - left	7	0	23	-	-	-	-	-	-	-	-	-	-	-	-
Sp. Kyprianou - right	3	5	20	-	-	-	-	-	-	-	-	-	-	-	-
Sp. Kyprianou - left	7	0	44	-	-	-	-	-	-	-	-	-	-	-	-
Link1															
Node1:															
Ay. Athanasiou / Kolonakiou Signalised Junction															
Ay. Athanasiou (n) - right	21	5	26	7	63	7	64	7	64	7	64	7	64	7	65
Ay. Athanasiou (n) - left	7	0	7	0	7	0	7	0	7	0	8	0	8	0	8
Kolonakiou (e) - right	10	3	22	3	21	3	22	3	21	3	22	3	23	4	24
Kolonakiou (e) - straight	7	29	96	17	73	17	73	17	73	17	73	17	73	19	75
Kolonakiou (w) - straight	4	4	45	5	40	5	41	5	41	5	41	5	41	5	41
Kolonakiou (w) - left	1	2	30	0	33	1	34	1	33	2	34	2	34	3	36
Node2:															
G. Neofytou/ Kolonakiou / G. Digeni Signalised Junction															
G. Neofytou - straight & right	4	4	35	5	60	5	60	5	61	5	61	5	60	5	61
G. Neofytou - left	2	3	31	4	52	4	54	4	52	4	54	4	54	4	57
Kolonakiou (e) - right	2	2	15	1	12	1	13	1	13	1	13	1	13	1	17
Kolonakiou (e) - straight	11	9	66	10	58	10	58	10	59	10	59	10	58	10	59
Kolonakiou (e) - left	6	5	28	1	26	1	27	1	27	1	27	1	27	1	27
G. Digeni (s) - straight & right	13	6	58	7	70	7	72	7	70	7	72	7	72	8	72
G. Digeni (s) - left	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2
G. Digeni (w) - right	1	1	5	0	4	0	4	0	4	0	4	0	4	0	4
G. Digeni (w) - straight	15	8	51	7	42	7	42	7	42	7	43	7	43	7	43
G. Digeni (w) - straight & left	6	10	60	9	49	9	50	9	50	9	50	9	50	9	51
Sp. Kyprianou / G. Neofytou Signalised Junction															
Sp. Kyprianou (w) - right	8	3	23	-	-	-	-	-	-	-	-	-	-	-	-
Sp. Kyprianou (w) - straight	14	10	31	-	-	-	-	-	-	-	-	-	-	-	-
Sp. Kyprianou (e) - straight	9	7	41	-	-	-	-	-	-	-	-	-	-	-	-
Sp. Kyprianou (e) - straight and left	9	11	59	-	-	-	-	-	-	-	-	-	-	-	-
G. Neofytou - right	8	19	103	-	-	-	-	-	-	-	-	-	-	-	-
G. Neofytou - left	8	4	36	-	-	-	-	-	-	-	-	-	-	-	-

Q – Queue in PCU's DoS – Degree of Saturation *using PWD T/G assumptions
**including surveyed saturation flows (where it is applicable)

Capacity Tests at Roundabouts

Junction and Link Movements	2023 Existing (Validation - after applying UGT)		2026 Without Devt.		2026 With Devt.		2036 Without Devt.		2036 With Devt.		2036 With Devt. (Sustainable Transport)		2036 With Devt. (Sensitivity Test*)		
	Q Survey	Q	RFC	Q	RFC	Q	RFC	Q	RFC	Q	RFC	Q	RFC	Q	RFC
Ay. Athanasiou / A1 Limassol Highway Roundabout															
Ay. Athanasiou (n) - all	52	52	1.13	109	1.31	117	1.34	113	1.33	121	1.35	118	1.34	126	1.37
A1 Limassol Highway (e) - all	11	11	0.95	18	0.99	23	1.01	19	1.00	24	1.02	22	1.01	28	1.03
Ay. Athanasiou (s) - all	6	6	0.86	22	0.99	22	0.99	25	1.00	24	1.00	25	1.00	24	0.99
A1 Limassol Highway (w) - all	31	31	1.01	153	1.21	165	1.22	163	1.22	176	1.24	171	1.23	182	1.25
Ay. Athanasiou / Sp. Kyprianou Roundabout															
Ay. Athanasiou (n) - all	-	-	-	1	0.62	1	0.65	1	0.63	1	0.66	1	0.64	1	0.67
Ay. Athanasiou (s) - all	-	-	-	0	0.59	0	0.62	0	0.60	1	0.62	0	0.61	1	0.63
Sp. Kyprianou - all	-	-	-	0	0.50	0	0.51	0	0.51	0	0.52	0	0.51	0	0.53
G. Neofytou / Sp. Kyprianou Roundabout															
Sp. Kyprianou (w) - all	-	-	-	0	0.54	0	0.55	0	0.54	0	0.55	0	0.55	0	0.56
Sp. Kyprianou (e) - all	-	-	-	0	0.53	0	0.53	0	0.54	0	0.54	0	0.54	0	0.54
G. Neofytou - all	-	-	-	0	0.36	0	0.36	0	0.36	0	0.37	0	0.37	0	0.37

Q – Queue in PCU's RFC – Demand/Capacity Ratio

MD PEAK PERIOD: 13:00 - 14:00

Capacity Tests at Signalised Junctions

Junction and Arms	2023 Existing (Validation - after applying UGT)		2026 Without Devt.		2026 With Devt.		2036 Without Devt.		2036 With Devt.		2036 With Devt. (Sustainable Transport)		2036 With Devt. (Sensitivity Test*)		
	Q Survey	Q	DoS	Q	DoS	Q	DoS	Q	DoS	Q	DoS	Q	DoS	Q	DoS
Ay. Athanasiou / Iapetou Signalised Junction															
Ay. Athanasiou (n) - straight	6	17	49	24	62	24	63	24	62	24	63	24	63	24	63
Ay. Athanasiou (n) - left	6	0	13	0	14	0	14	0	14	0	14	0	14	0	14
Iapetou - right	12	9	73	12	88	12	88	13	89	13	89	13	89	13	89
Iapetou - left	1	0	12	0	14	0	14	0	14	0	14	0	14	0	14
Ay. Athanasiou (s) - right	2	4	69	4	69	4	70	4	70	4	71	4	70	4	70
Ay. Athanasiou (s) - straight	19	31	72	41	82	42	83	42	83	42	84	42	83	42	84
Ay. Athanasiou / A. Kariolou Signalised Junction															
Ay. Athanasiou (n) - straight	8	7	40	10	53	10	54	10	54	11	55	11	54	11	54
Ay. Athanasiou (n) - straight & left	7	12	62	18	77	19	78	18	78	19	78	19	78	19	78
A. Kariolou - right	14	10	85	11	86	11	86	11	87	11	87	11	87	11	87
A. Kariolou - left	2	0	12	0	14	0	15	0	15	0	15	0	15	0	15
Ay. Athanasiou (s) - right	3	3	24	4	28	4	29	4	29	4	29	4	29	4	29
Ay. Athanasiou (s) - straight	21	20	56	30	71	31	72	30	72	31	72	31	72	32	73
Ay. Athanasiou / Sp. Kyprianou Signalised Junction															
Ay. Athanasiou (n) - right	13	8	42	-	-	-	-	-	-	-	-	-	-	-	-
Ay. Athanasiou (n) - straight	6	8	25	-	-	-	-	-	-	-	-	-	-	-	-
Ay. Athanasiou (s) - straight	5	13	37	-	-	-	-	-	-	-	-	-	-	-	-
Ay. Athanasiou (s) - left	4	0	19	-	-	-	-	-	-	-	-	-	-	-	-
Sp. Kyprianou - right	3	4	20	-	-	-	-	-	-	-	-	-	-	-	-
Sp. Kyprianou - left	4	0	48	-	-	-	-	-	-	-	-	-	-	-	-
Link1															
Node1:															
Ay. Athanasiou / Kolonakiou Signalised Junction															
Ay. Athanasiou (n) - right	10	7	34	10	67	11	68	10	68	11	69	11	68	10	68
Ay. Athanasiou (n) - left	9	0	9	0	12	0	12	0	12	0	12	0	12	0	12
Kolonakiou (e) - right	9	5	29	4	28	4	29	4	29	4	29	4	29	4	29
Kolonakiou (e) - straight	9	12	61	12	59	12	59	12	60	12	60	12	60	12	60
Kolonakiou (w) - straight	5	4	36	5	34	5	34	5	34	5	34	5	34	5	34
Kolonakiou (w) - left	2	3	30	3	32	3	33	3	33	3	33	3	33	3	33
Node2:															
G. Neofytou / Kolonakiou / G. Digeni Signalised Junction															
G. Neofytou - straight & right	3	4	41	4	42	4	42	4	42	4	42	4	42	4	42
G. Neofytou - left	5	6	64	6	63	6	64	6	64	6	64	6	64	6	65
Kolonakiou (e) - right	2	2	17	2	18	2	18	2	18	2	19	2	19	2	19
Kolonakiou (e) - straight	8	7	51	9	54	9	55	9	55	9	55	9	55	9	55
Kolonakiou (e) - left	3	2	23	2	27	2	27	2	27	2	28	2	28	2	28
G. Digeni (s) - straight & right	26	3	31	4	61	4	62	4	62	4	62	4	62	4	62
G. Digeni (s) - left	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G. Digeni (w) - right	1	1	6	1	5	1	5	1	5	1	5	1	5	1	5
G. Digeni (w) - straight	25	6	38	6	36	6	37	6	37	6	37	6	37	6	37
G. Digeni (w) - straight & left	4	7	42	7	41	7	42	7	42	7	42	7	42	7	42
Sp. Kyprianou / G. Neofytou Signalised Junction															
Sp. Kyprianou (w) - right	3	2	18	-	-	-	-	-	-	-	-	-	-	-	-
Sp. Kyprianou (w) - straight	9	12	41	-	-	-	-	-	-	-	-	-	-	-	-
Sp. Kyprianou (e) - straight	8	4	32	-	-	-	-	-	-	-	-	-	-	-	-
Sp. Kyprianou (e) - straight and left	10	7	41	-	-	-	-	-	-	-	-	-	-	-	-
G. Neofytou - right	11	5	66	-	-	-	-	-	-	-	-	-	-	-	-
G. Neofytou - left	11	9	63	-	-	-	-	-	-	-	-	-	-	-	-

Q – Queue in PCU's DoS – Degree of Saturation *using PWD T/G assumptions
**including surveyed saturation flows (where it is applicable)

Capacity Tests at Roundabouts

Junction and Link Movements	2023 Existing (Validation - after applying UGT)		2026 Without Devt.		2026 With Devt.		2036 Without Devt.		2036 With Devt.		2036 With Devt. (Sustainable Transport)		2036 With Devt. (Sensitivity Test*)		
	Q Survey	Q	RFC	Q	RFC	Q	RFC	Q	RFC	Q	RFC	Q	RFC	Q	RFC
Ay. Athanasiou / A1 Limassol Highway Roundabout															
Ay. Athanasiou (n) - all	6	6	0.87	69	1.11	72	1.12	74	1.12	77	1.13	76	1.13	76	1.13
A1 Limassol Highway (e) - all	1	1	0.34	1	0.41	1	0.42	1	0.42	1	0.42	1	0.42	1	0.42
Ay. Athanasiou (s) - all	11	11	0.93	109	1.10	115	1.10	120	1.11	126	1.11	124	1.11	125	1.11
A1 Limassol Highway (w) - all	8	8	0.9	68	1.10	71	1.11	74	1.11	77	1.12	77	1.12	77	1.12
Ay. Athanasiou / Sp. Kyprianou Roundabout															
Ay. Athanasiou (n) - all	-	-	-	0	0.58	0	0.59	0	0.59	0	0.60	0	0.59	0	0.60
Ay. Athanasiou (s) - all	-	-	-	0	0.53	0	0.55	0	0.54	0	0.55	0	0.55	0	0.55
Sp. Kyprianou - all	-	-	-	1	0.67	1	0.68	1	0.68	1	0.68	1	0.68	1	0.68
G. Neofytou / Sp. Kyprianou Roundabout															
Sp. Kyprianou (w) - all	-	-	-	1	0.68	1	0.69	1	0.69	1	0.70	1	0.69	1	0.69
Sp. Kyprianou (e) - all	-	-	-	0	0.48	0	0.48	0	0.48	0	0.48	0	0.48	0	0.48
G. Neofytou - all	-	-	-	0	0.47	0	0.47	0	0.47	0	0.48	0	0.48	0	0.48

Q – Queue in PCU's RFC – Demand/Capacity Ratio

PM PEAK PERIOD: 17:00 - 18:00

Capacity Tests at Signalised Junctions

Junction and Arms	2023 Existing (Validation - after applying UGT)		2026 Without Devt.		2026 With Devt.		2036 Without Devt.		2036 With Devt.		2036 With Devt. (Sustainable Transport)		2036 With Devt. (Sensitivity Test*)		
	Q Survey	Q	DoS	Q	DoS	Q	DoS	Q	DoS	Q	DoS	Q	DoS	Q	DoS
Ay. Athanasίου / Iapetou Signalised Junction															
Ay. Athanasίου (n) - straight	10	13	40	21	58	21	58	21	58	21	59	21	59	21	59
Ay. Athanasίου (n) - left	8	0	11	0	11	0	11	0	12	0	12	0	12	0	12
Iapetou - right	50	23	100	16	89	16	89	17	90	17	90	17	90	17	90
Iapetou - left	1	0	10	0	12	0	12	0	12	0	13	0	13	0	13
Ay. Athanasίου (s) - right	9	0	8	1	15	1	18	1	15	1	18	1	16	1	18
Ay. Athanasίου (s) - straight	50	26	66	38	83	41	85	39	83	41	86	40	85	41	86
Ay. Athanasίου / A. Kariolou Signalised Junction															
Ay. Athanasίου (n) - straight	14	9	49	16	74	17	76	16	75	17	77	17	77	17	77
Ay. Athanasίου (n) - straight & left	12	8	46	10	57	10	58	10	57	11	59	11	59	11	59
A. Kariolou - right	26	8	85	10	90	10	90	10	91	10	91	10	91	10	91
A. Kariolou - left	4	0	10	0	14	0	14	0	14	0	14	0	14	0	14
Ay. Athanasίου (s) - right	5	9	89	8	78	8	76	8	79	8	77	8	76	8	77
Ay. Athanasίου (s) - straight	34	26	71	37	87	41	90	38	88	42	91	40	90	42	91
Ay. Athanasίου / Sp. Kyprianou Signalised Junction															
Ay. Athanasίου (n) - right	11	3	21	-	-	-	-	-	-	-	-	-	-	-	-
Ay. Athanasίου (n) - straight	10	8	27	-	-	-	-	-	-	-	-	-	-	-	-
Ay. Athanasίου (s) - straight	10	11	34	-	-	-	-	-	-	-	-	-	-	-	-
Ay. Athanasίου (s) - left	10	0	30	-	-	-	-	-	-	-	-	-	-	-	-
Sp. Kyprianou - right	11	12	54	-	-	-	-	-	-	-	-	-	-	-	-
Sp. Kyprianou - left	5	0	38	-	-	-	-	-	-	-	-	-	-	-	-
Link1															
Node1:															
Ay. Athanasίου / Kolonakiou Signalised Junction															
Ay. Athanasίου (n) - right	9	8	36	12	74	13	74	13	74	13	75	13	74	13	75
Ay. Athanasίου (n) - left	1	0	5	0	9	0	9	0	9	0	9	0	9	0	9
Kolonakiou (e) - right	7	5	29	3	23	4	23	4	23	4	24	4	23	4	24
Kolonakiou (e) - straight	20	19	80	15	68	16	69	16	69	16	70	16	70	16	70
Kolonakiou (w) - straight	6	6	49	8	45	9	46	8	46	8	46	8	46	8	46
Kolonakiou (w) - left	3	0	28	0	31	0	32	0	32	0	32	0	32	0	32
Node2:															
G. Neofytou/ Kolonakiou / G. Digeni Signalised Junction															
G. Neofytou - straight & right	4	4	40	6	50	6	52	6	50	6	50	6	50	6	50
G. Neofytou - left	4	6	56	8	67	8	70	8	67	8	68	8	68	8	68
Kolonakiou (e) - right	3	3	22	3	23	3	24	3	24	3	24	3	24	3	24
Kolonakiou (e) - straight	7	8	60	11	65	12	66	12	66	12	67	12	66	12	67
Kolonakiou (e) - left	5	4	27	3	32	3	32	3	32	3	33	3	33	3	33
G. Digeni (s) - straight & right	8	5	50	6	73	6	73	6	73	7	74	7	74	7	74
G. Digeni (s) - left	2	0	1	0	1	0	1	0	1	0	1	0	1	0	1
G. Digeni (w) - right	1	1	5	1	4	1	4	1	4	1	4	1	4	1	4
G. Digeni (w) - straight	9	7	47	7	42	7	42	7	42	7	42	7	42	7	42
G. Digeni (w) - straight & left	11	9	55	10	54	10	54	10	54	10	54	10	54	10	54
Sp. Kyprianou / G. Neofytou Signalised Junction															
Sp. Kyprianou (w) - right	4	2	18	-	-	-	-	-	-	-	-	-	-	-	-
Sp. Kyprianou (w) - straight	9	8	29	-	-	-	-	-	-	-	-	-	-	-	-
Sp. Kyprianou (e) - straight	6	4	31	-	-	-	-	-	-	-	-	-	-	-	-
Sp. Kyprianou (e) - straight and left	4	8	49	-	-	-	-	-	-	-	-	-	-	-	-
G. Neofytou - right	8	15	98	-	-	-	-	-	-	-	-	-	-	-	-
G. Neofytou - left	5	5	39	-	-	-	-	-	-	-	-	-	-	-	-

Q – Queue in PCU's DoS – Degree of Saturation *using PWD T/G assumptions
**including surveyed saturation flows (where it is applicable)

Capacity Tests at Roundabouts

Junction and Link Movements	2023 Existing (Validation - after applying UGT)		2026 Without Devt.		2026 With Devt.		2036 Without Devt.		2036 With Devt.		2036 With Devt. (Sustainable Transport)		2036 With Devt. (Sensitivity Test*)		
	Q Survey	Q	RFC	Q	RFC	Q	RFC	Q	RFC	Q	RFC	Q	RFC	Q	RFC
Ay. Athanasίου / A1 Limassol Highway Roundabout															
Ay. Athanasίου (n) - all	17	17	0.99	152	1.36	153	1.36	158	1.38	159	1.38	159	1.38	159	1.38
A1 Limassol Highway (e) - all	13	12	0.98	44	1.17	45	1.18	46	1.18	47	1.19	47	1.19	47	1.19
Ay. Athanasίου (s) - all	19	19	0.97	113	1.11	139	1.14	52	1.12	149	1.15	138	1.14	149	1.15
A1 Limassol Highway (w) - all	12	12	0.95	61	1.11	62	1.11	66	1.12	67	1.12	66	1.12	67	1.12
Ay. Athanasίου / Sp. Kyprianou Roundabout															
Ay. Athanasίου (n) - all	-	-	-	0	0.58	0	0.58	0	0.59	0	0.59	0	0.59	0	0.59
Ay. Athanasίου (s) - all	-	-	-	0	0.57	0	0.60	0	0.57	0	0.61	0	0.59	0	0.61
Sp. Kyprianou - all	-	-	-	1	0.73	1	0.75	1	0.74	1	0.76	1	0.75	1	0.76
G. Neofytou / Sp. Kyprianou Roundabout															
Sp. Kyprianou (w) - all	-	-	-	1	0.62	1	0.63	1	0.63	1	0.63	1	0.63	1	0.63
Sp. Kyprianou (e) - all	-	-	-	0	0.51	0	0.52	0	0.52	0	0.53	0	0.52	0	0.52
G. Neofytou - all	-	-	-	0	0.46	0	0.47	0	0.47	0	0.47	0	0.47	0	0.47

Q – Queue in PCU's RFC – Demand/Capacity Ratio

PM PEAK PERIOD: 17:00 - 18:00

Junction & Links

2036 With Devt. (Mitigation Measures)

	Q	DoS
Ay. Athanasiou / A1 Limassol Highway Roundabout		
10 A1 Limassol Bypass (e) - straight + left	8	50
12 A1 Limassol Bypass (e) Circulating Link - straight + left	6	57
20 Ay Athanasiou (s) - Straight + left	25	67
22 Ay Athanasiou (s) Ciculating Link - Straight + left	9	69
30 A1 Limassol Bypass (w) - straight + left	16	64
32 A1 Limassol Bypass (w) Circulating Link - straight + left	10	73
40 Ay Athanasiou (n) - Straight + left	18	76
42 Ay Athanasiou (n) Ciculating Link - Straight & Left	13	78

Q – Queue in PCU's DoS – Degree of Saturation

FIGURES



ALA PLANNING
 PLANNING ENVIRONMENT TRANSPORT CONSULTANTS

Traffic Impact Assessment
 "Office Development" Project
 in Mesa Geitonia, Limassol

Figure 2.1 Existing Road Network and Traffic Count Locations

Proposed Development Area

x Traffic Count Locations

December 2023

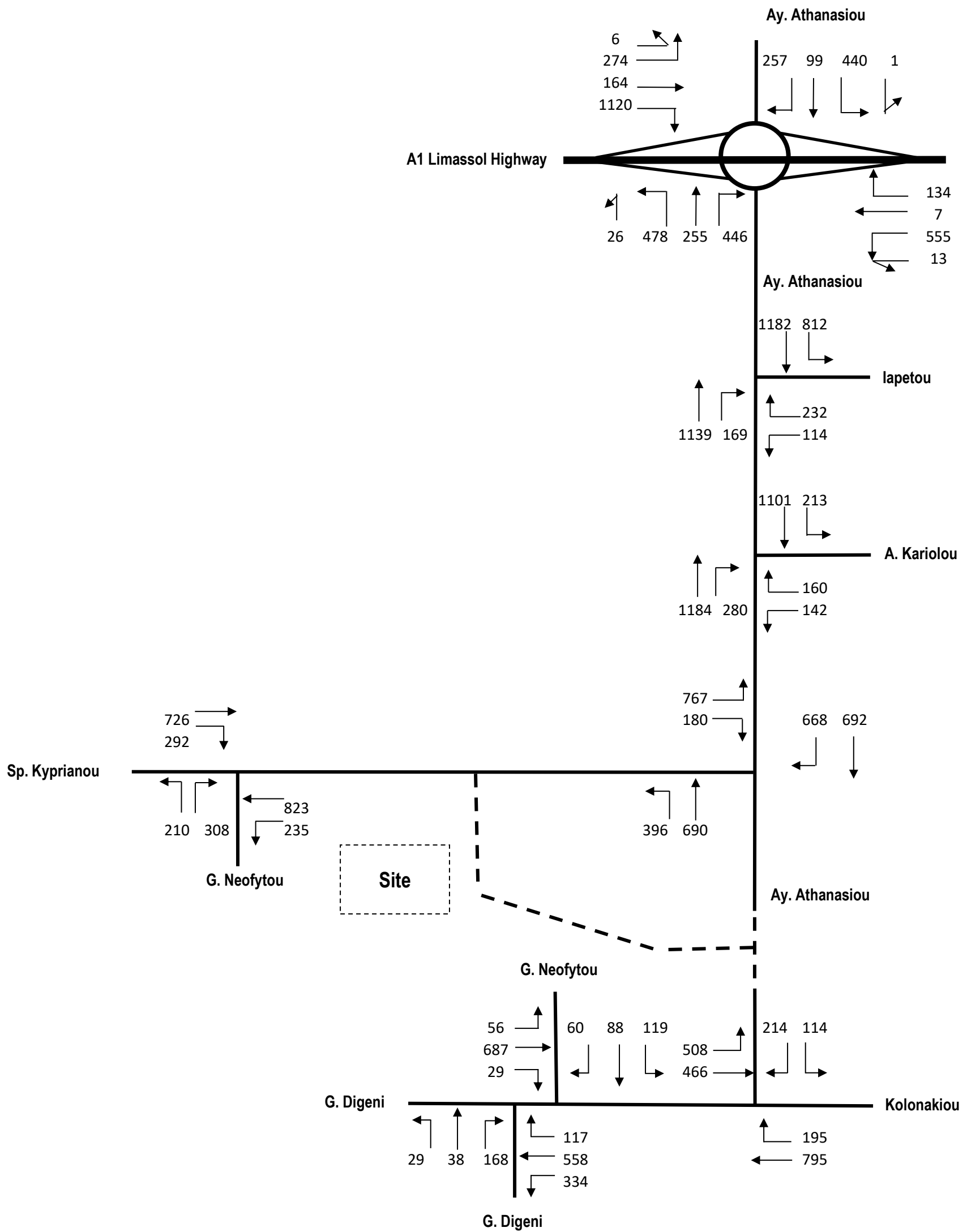


Figure 2.2a: 2023 Existing Traffic Flows Weekday 07:00 – 08:00

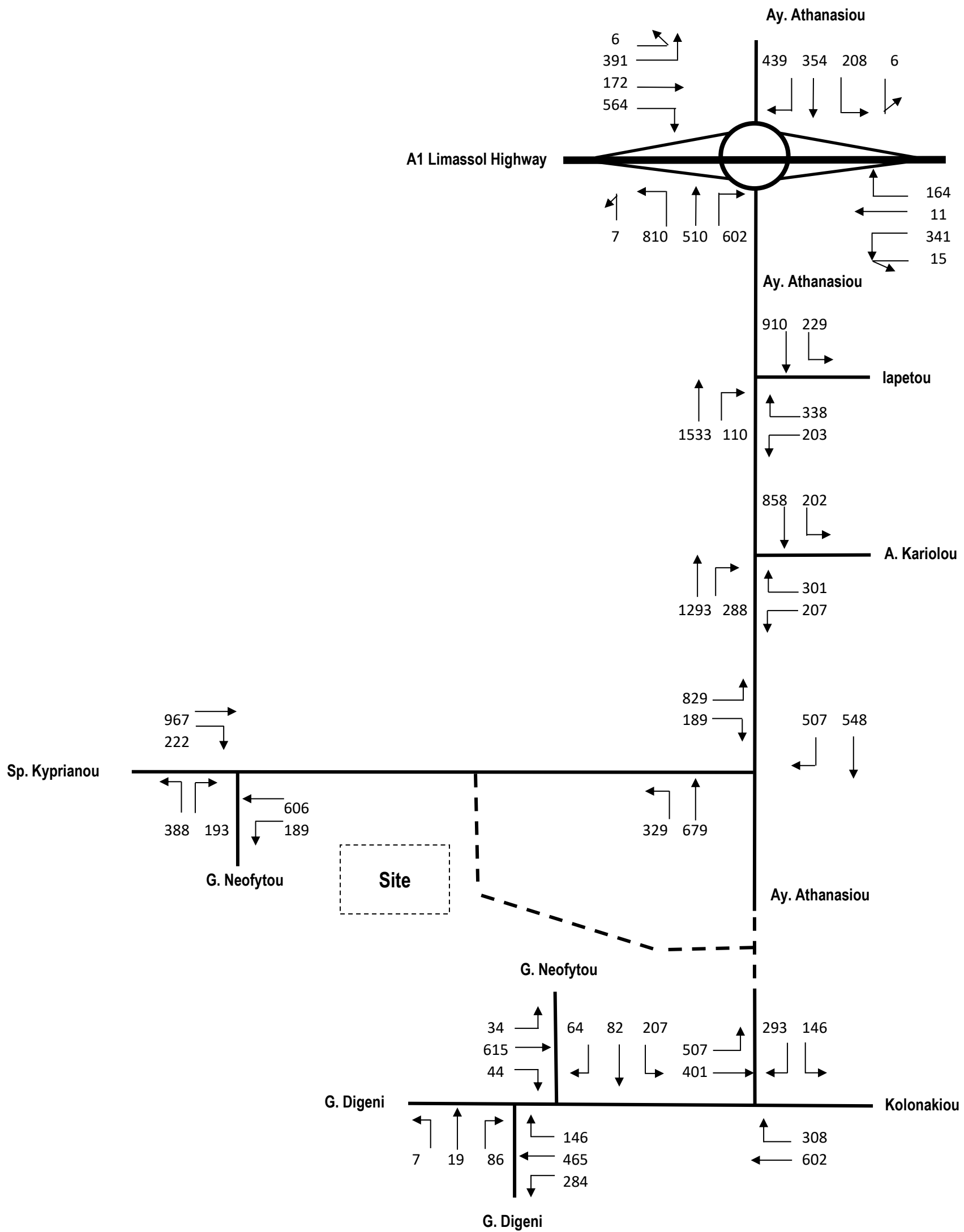


Figure 2.2b: 2023 Existing Traffic Flows Weekday 13:00 – 14:00

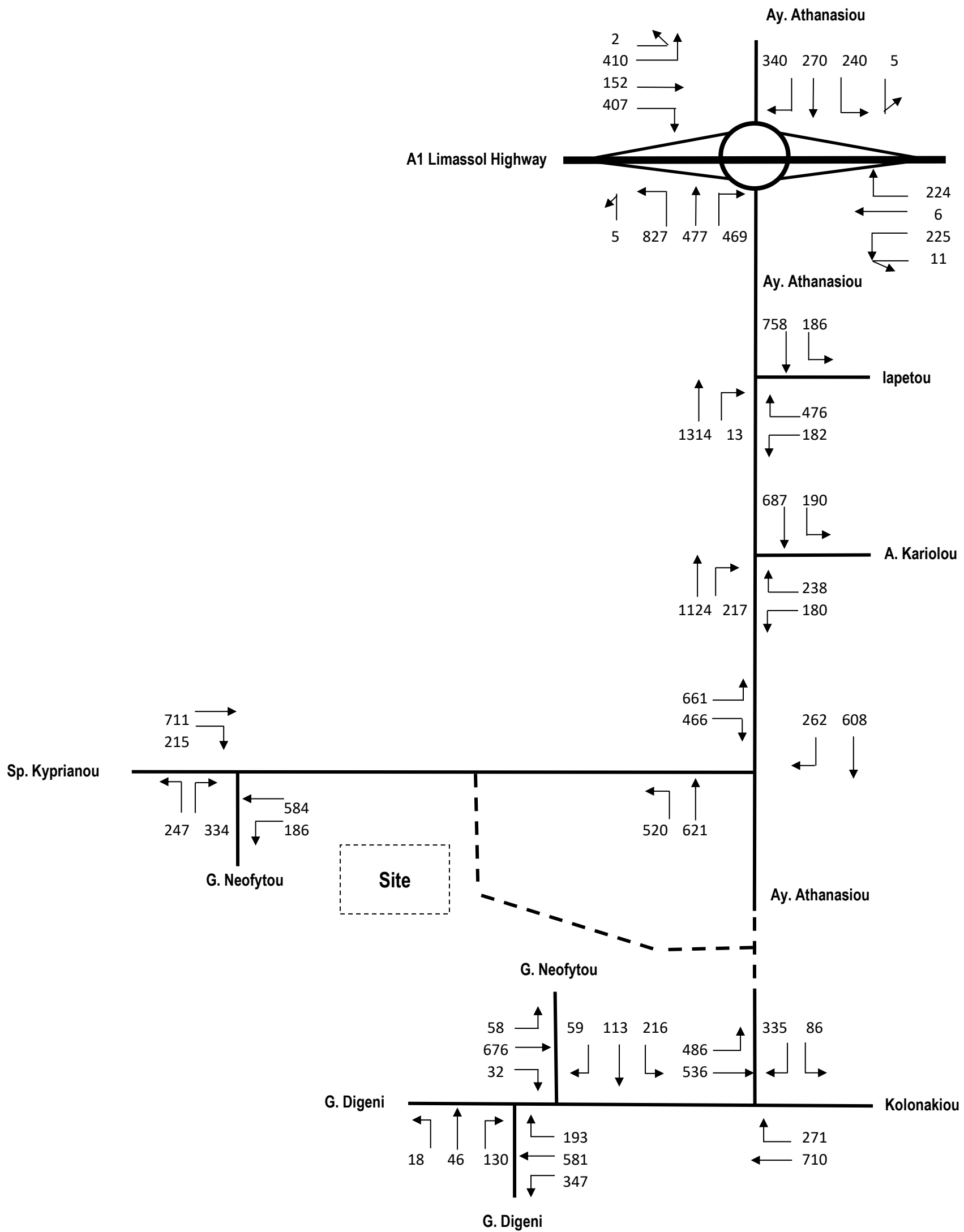


Figure 2.2c: 2023 Existing Traffic Flows Weekday 17:00 – 18:00

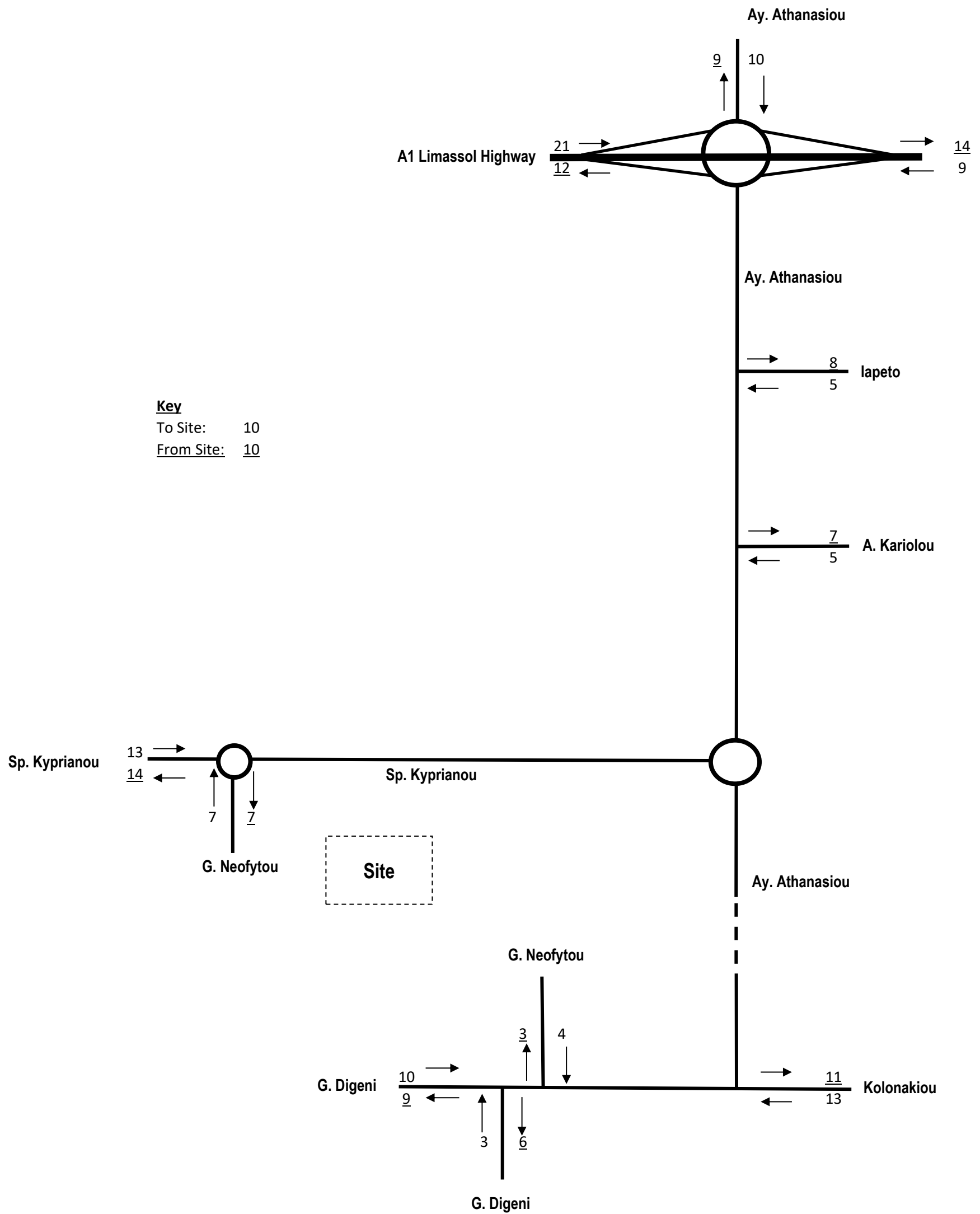


Figure 2.3a: 2026 Traffic Distribution Weekday 07:00 – 08:00

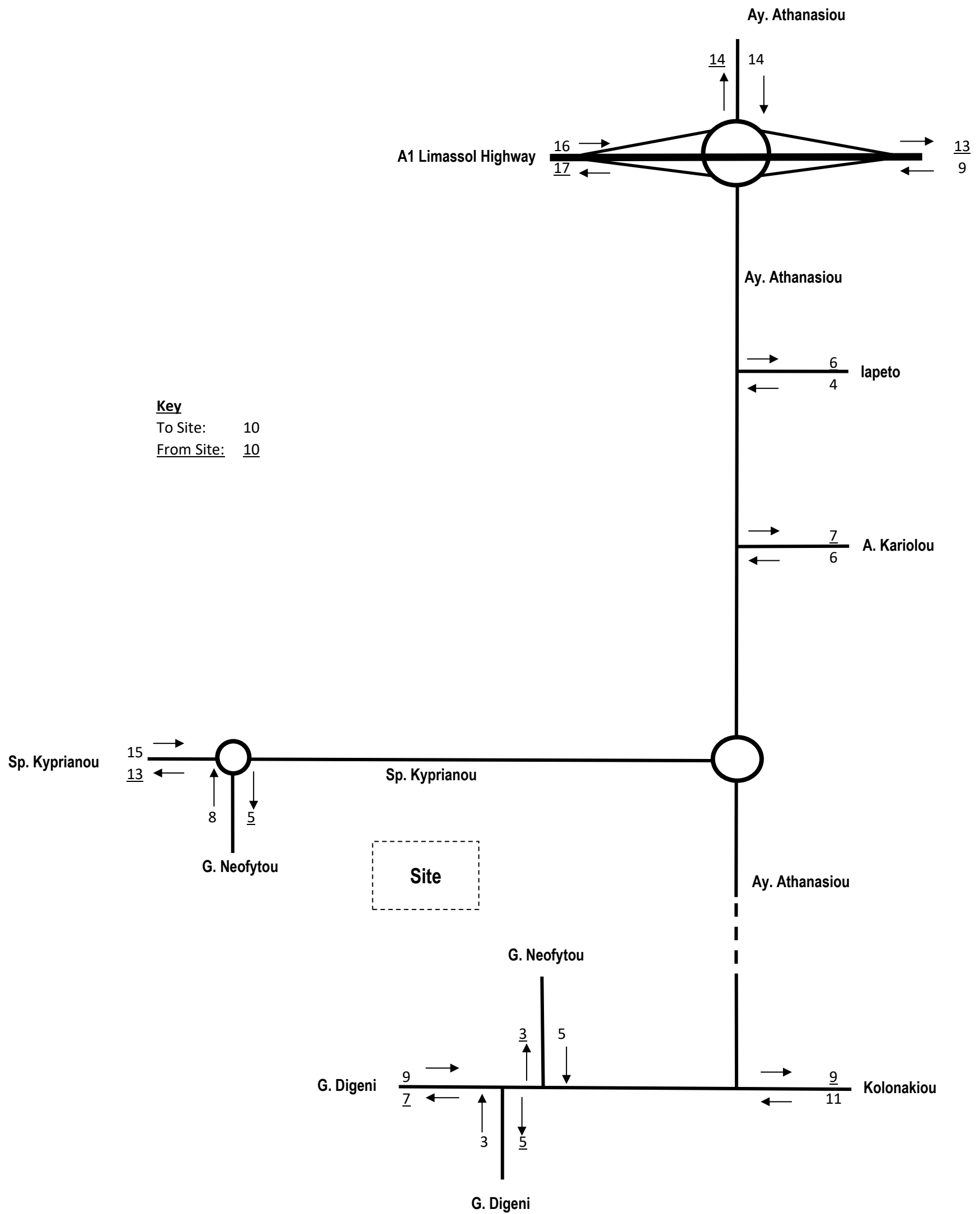


Figure 2.3b: 2026 Traffic Distribution Weekday 13:00 – 14:00

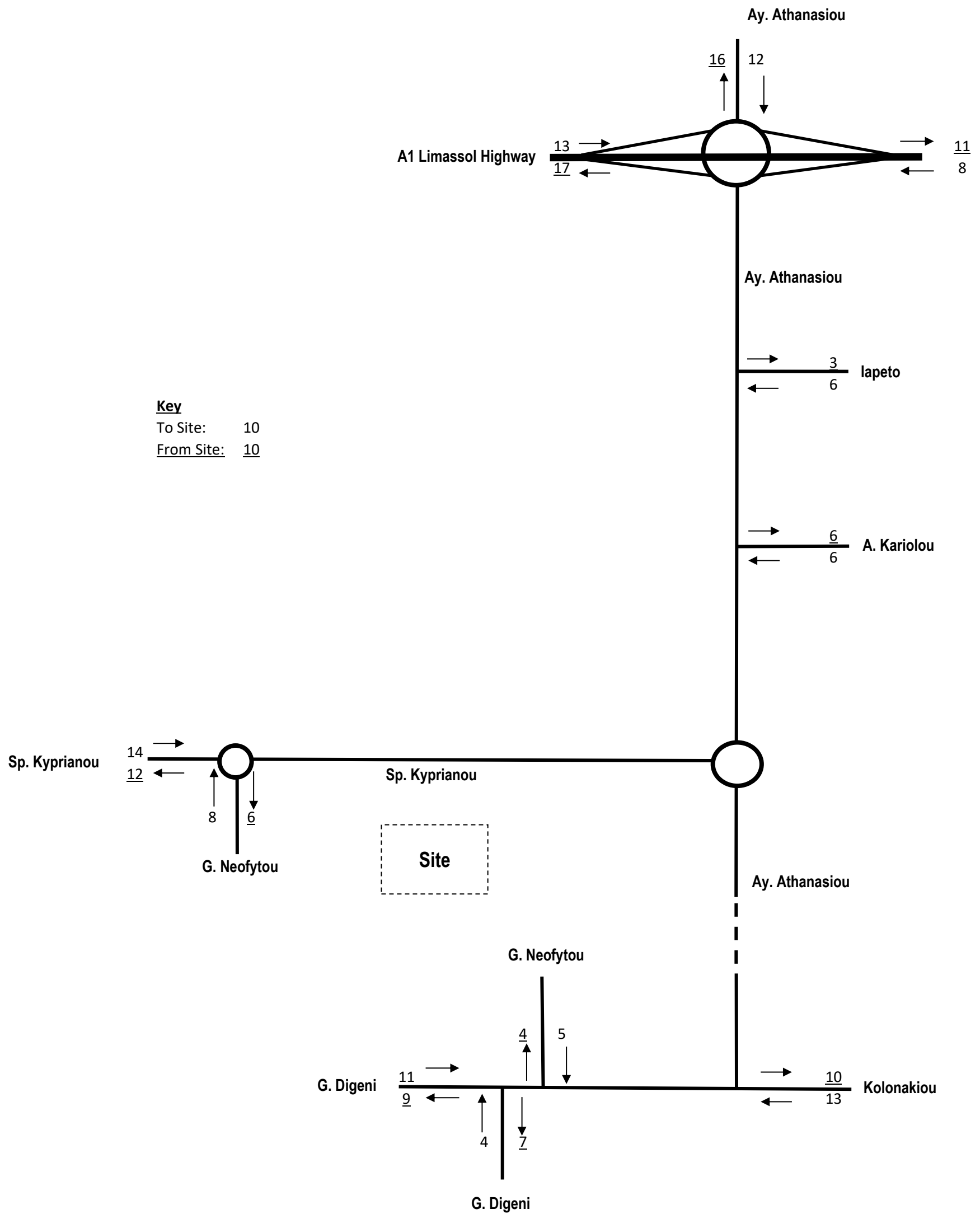


Figure 2.3c: Traffic Distribution Weekday 17:00 – 18:00

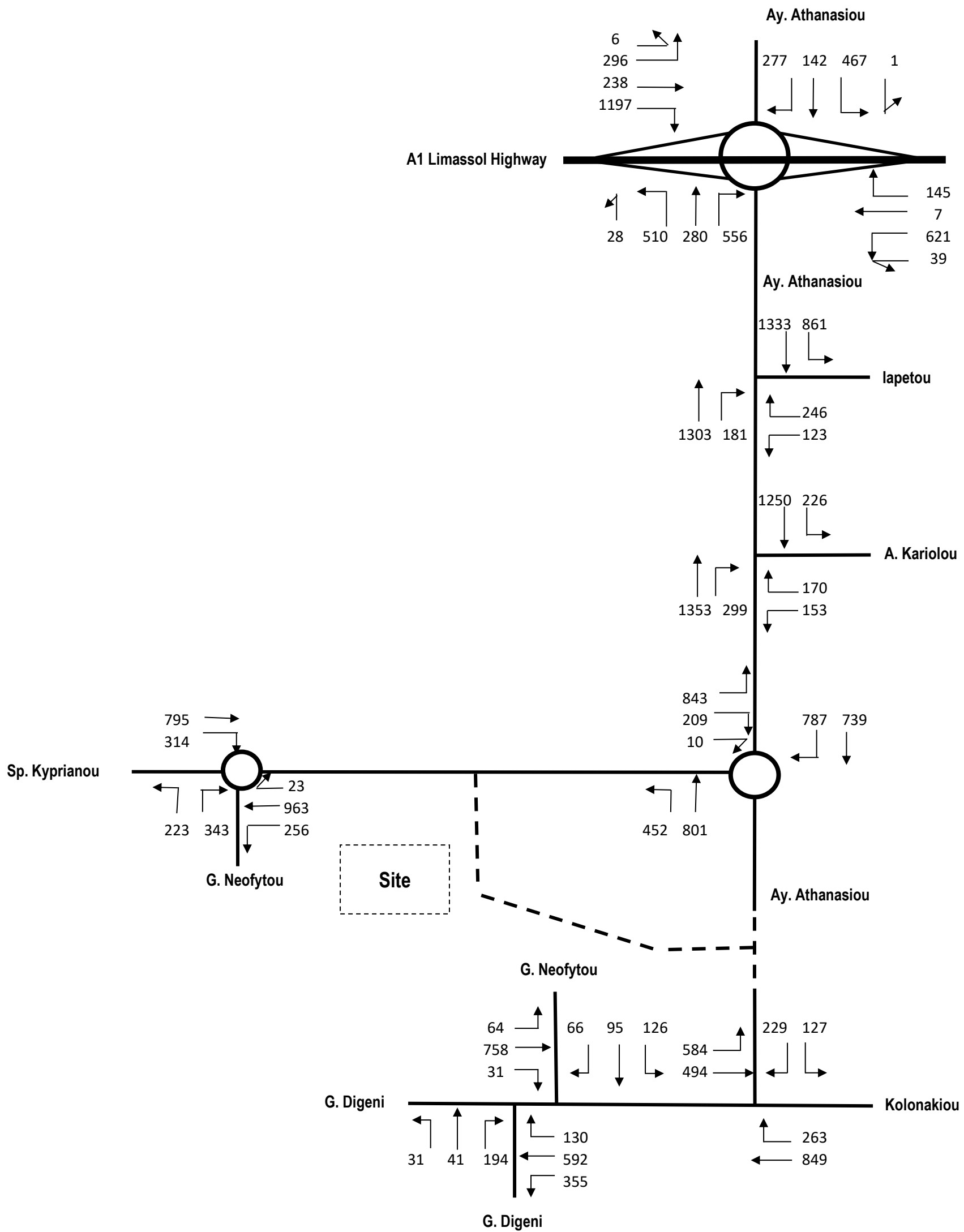


Figure 2.5a: 2026 Traffic Flows Without Development Weekday 07:00 – 08:00

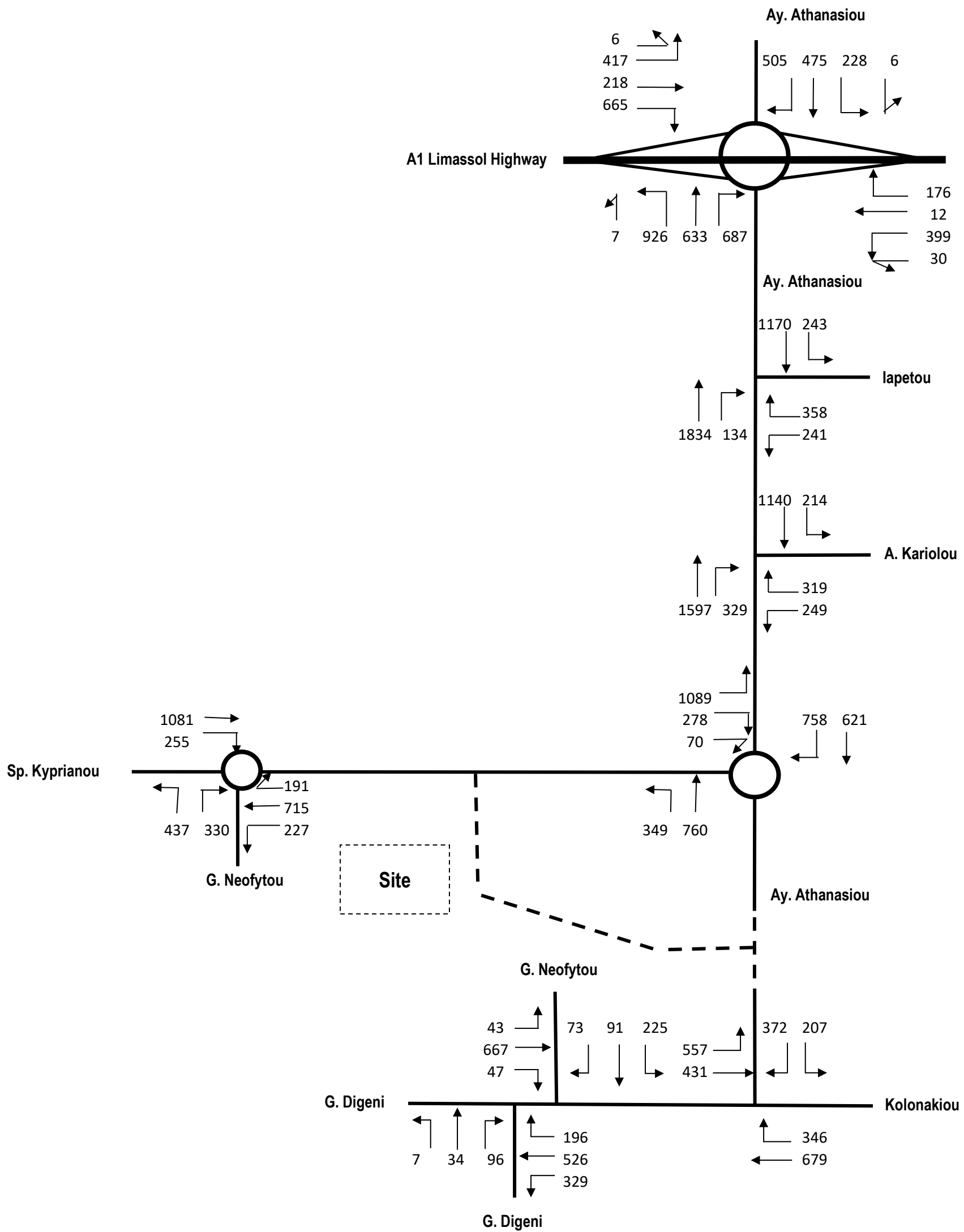


Figure 2.5b: 2026 Traffic Flows Without Development Weekday 13:00 – 14:00

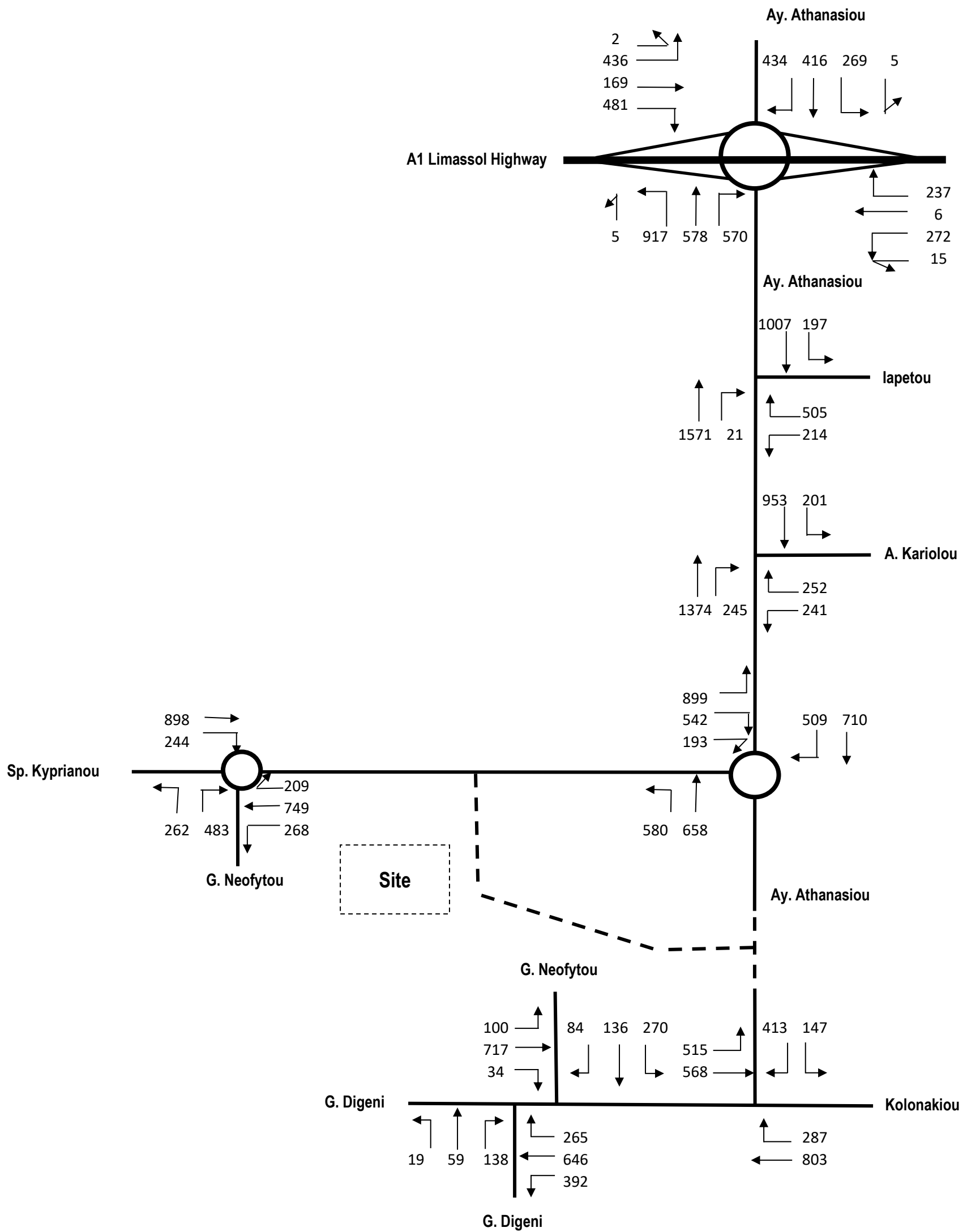


Figure 2.5c: 2026 Traffic Flows Without Development Weekday 17:00 – 18:00

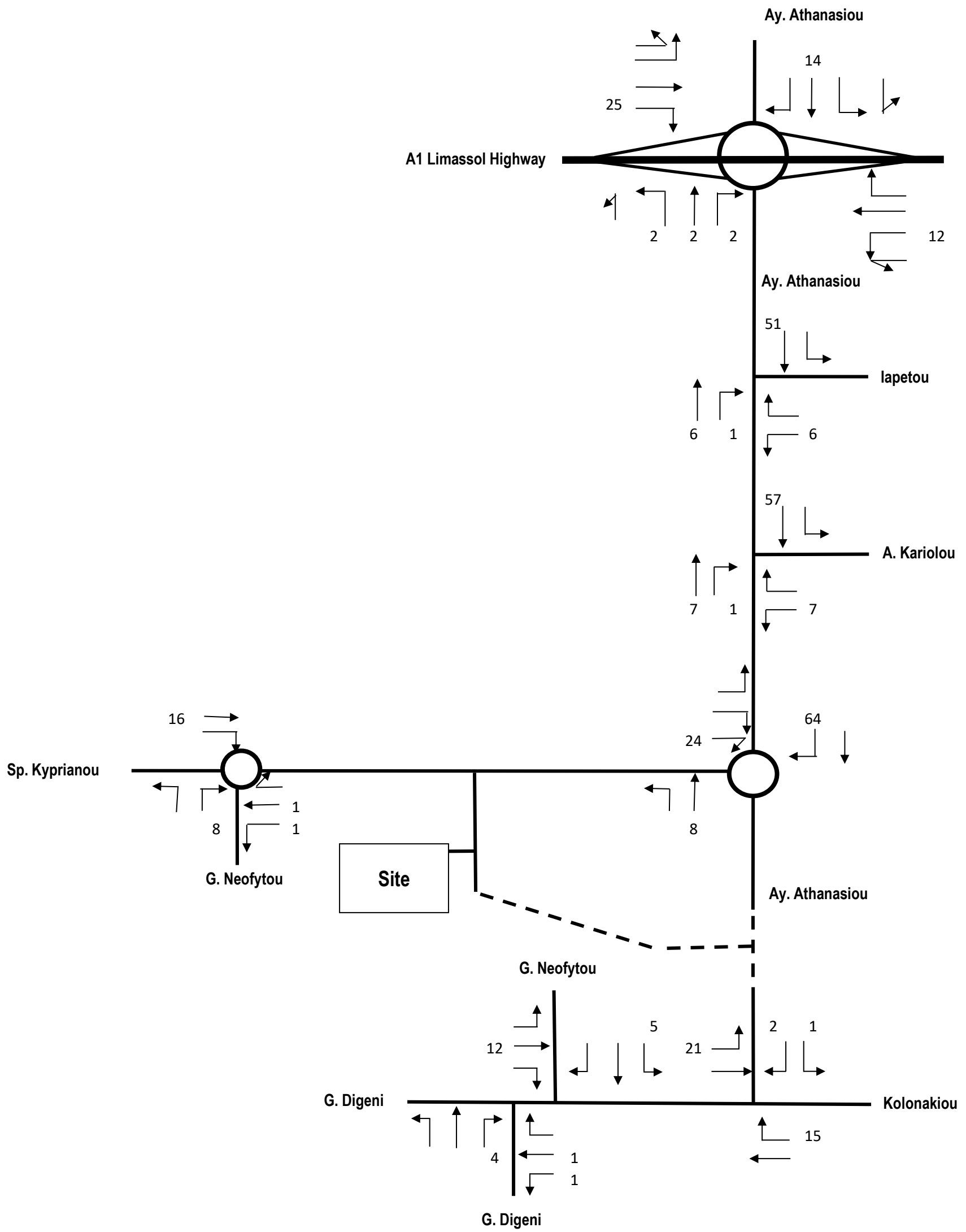


Figure 2.6a: 2026 Development Traffic Weekday 07:00 – 08:00

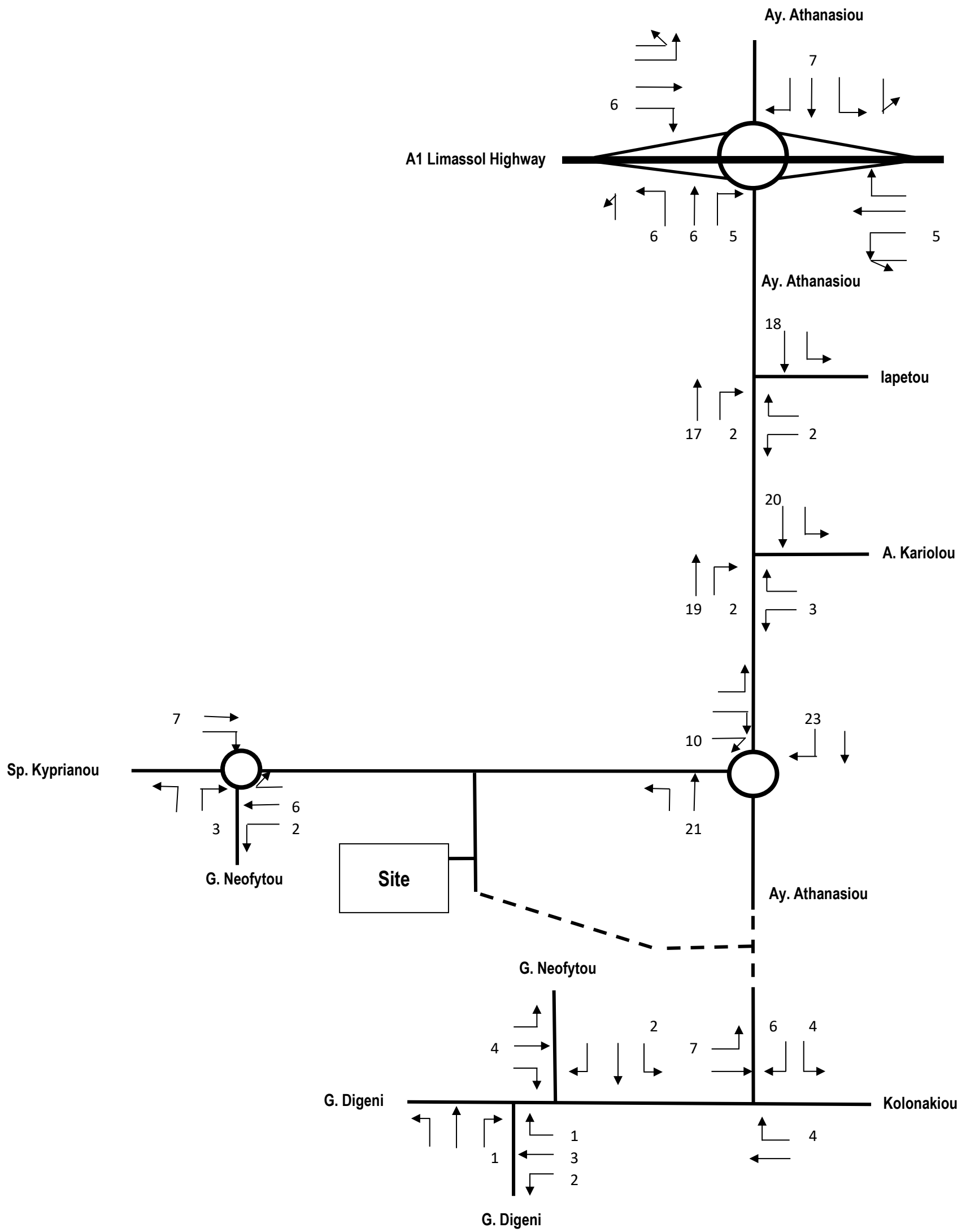


Figure 2.6b: 2026 Development Traffic Weekday 13:00 – 14:00

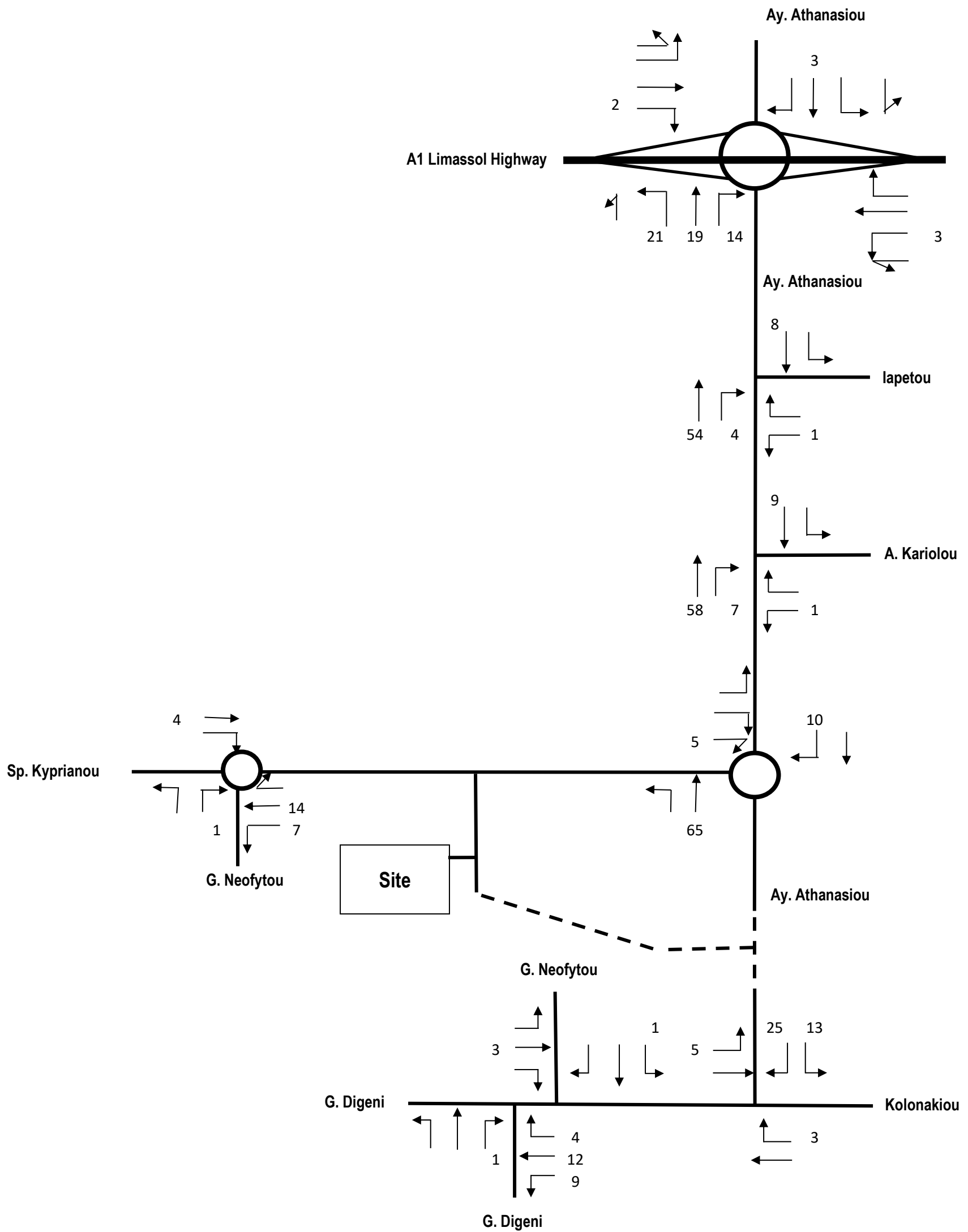


Figure 2.6c: 2026 Development Traffic Weekday 17:00 – 18:00

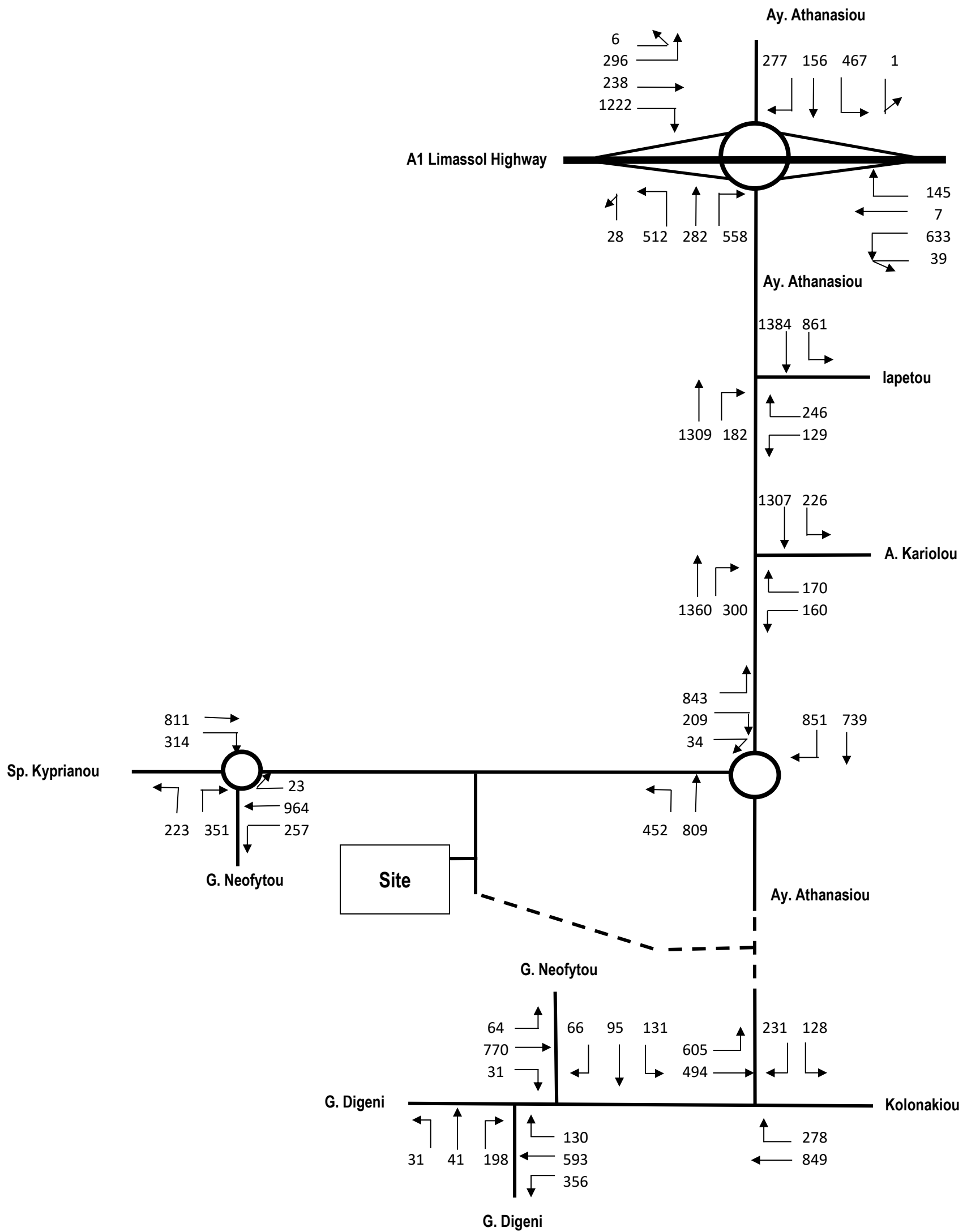


Figure 2.7a: 2026 Traffic Flows With Development Weekday 07:00 – 08:00

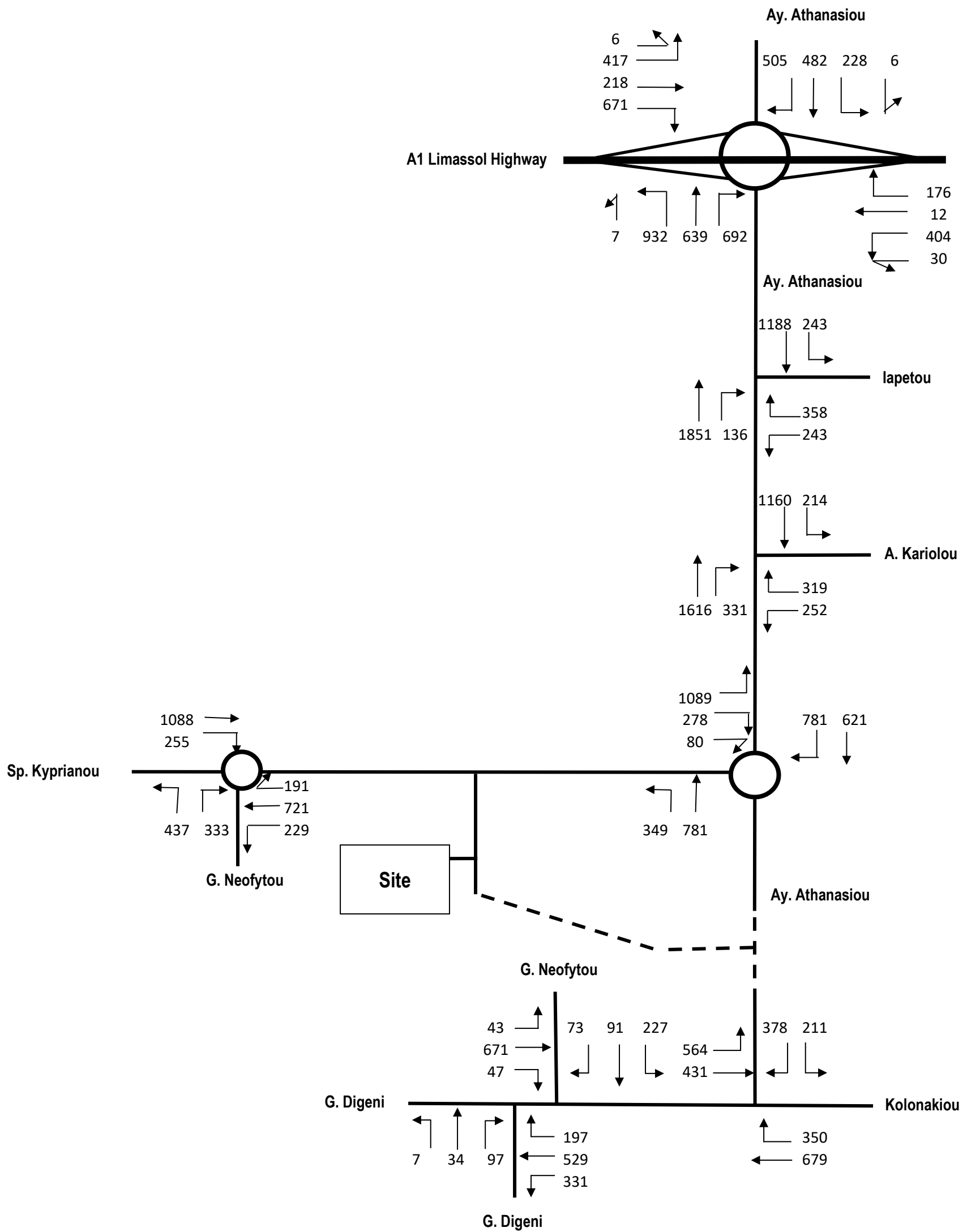


Figure 2.7b: 2026 Traffic Flows With Development Weekday 13:00 – 14:00

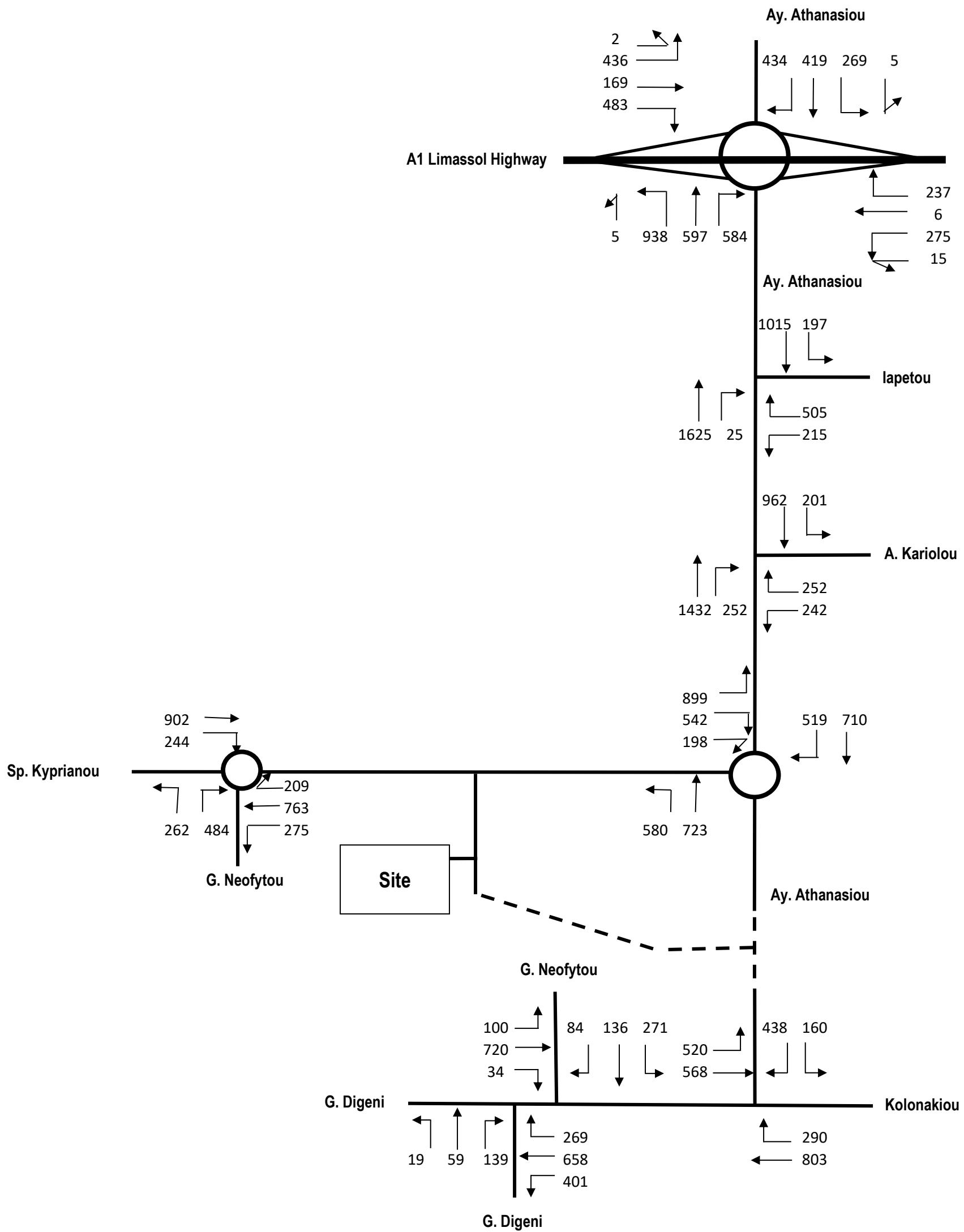


Figure 2.7c: 2026 Traffic Flows With Development Weekday 17:00 – 18:00

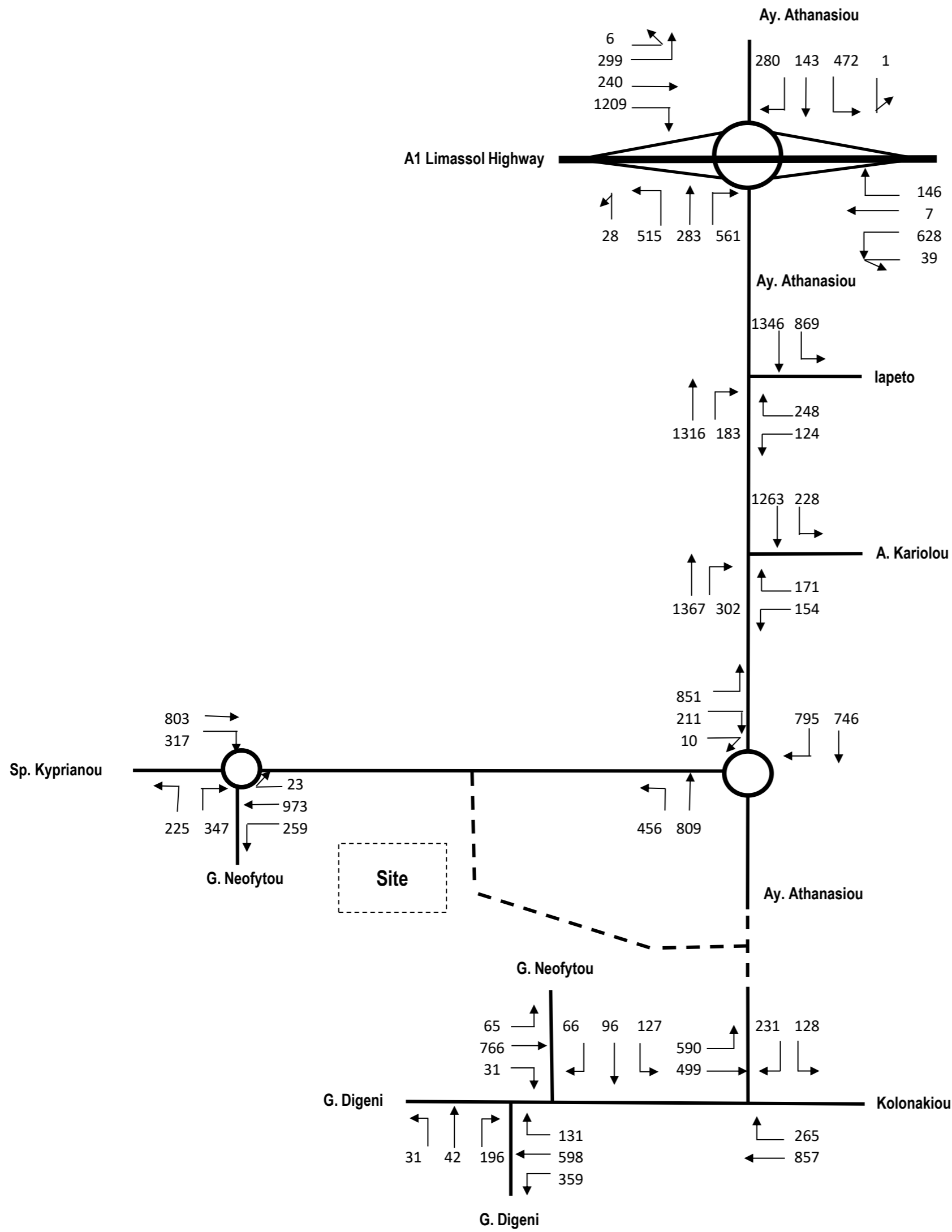


Figure 2.8a: 2036 Traffic Flows Without Development Weekday 07:00 – 08:00

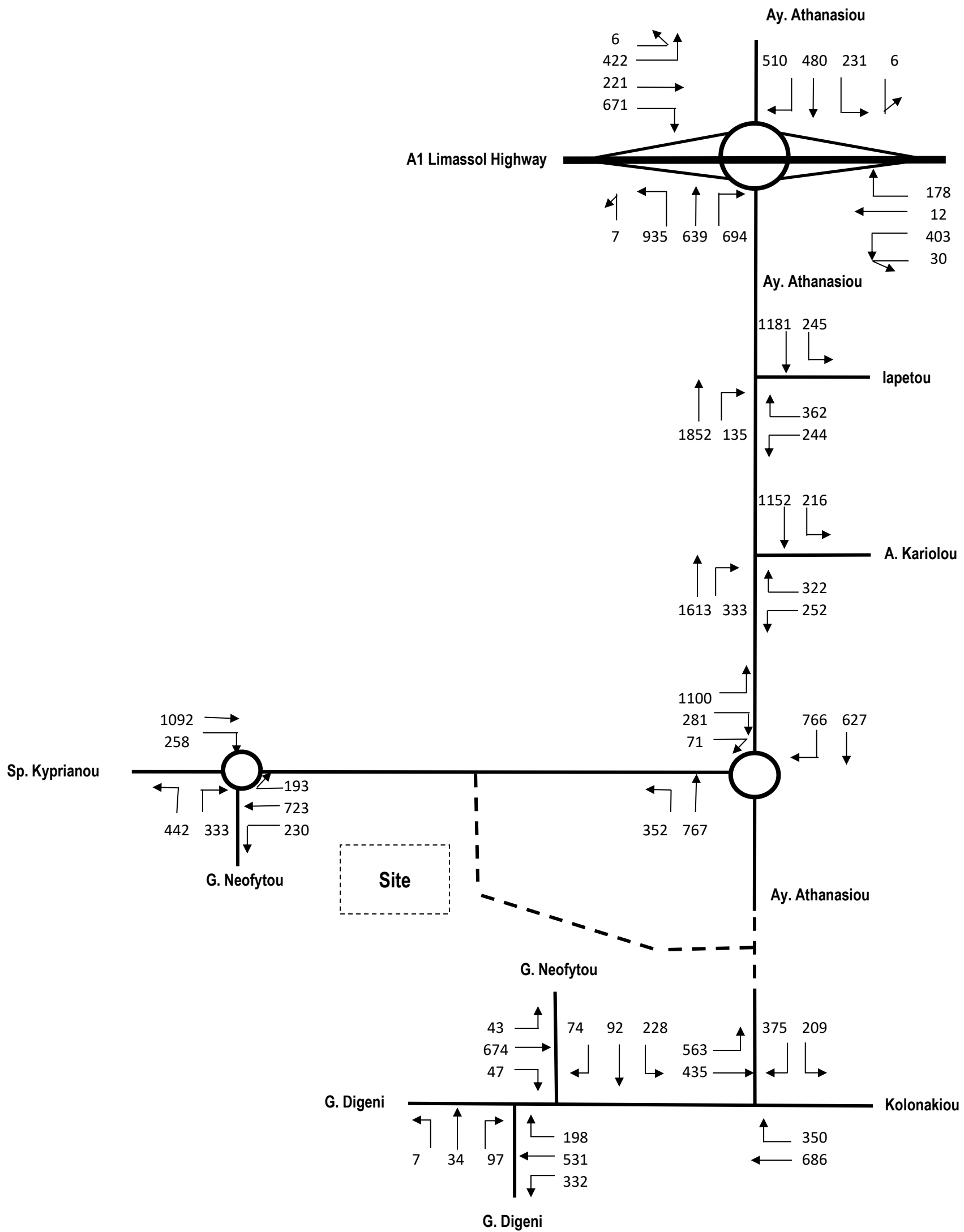


Figure 2.8b: 2036 Traffic Flows Without Development Weekday 13:00 – 14:00

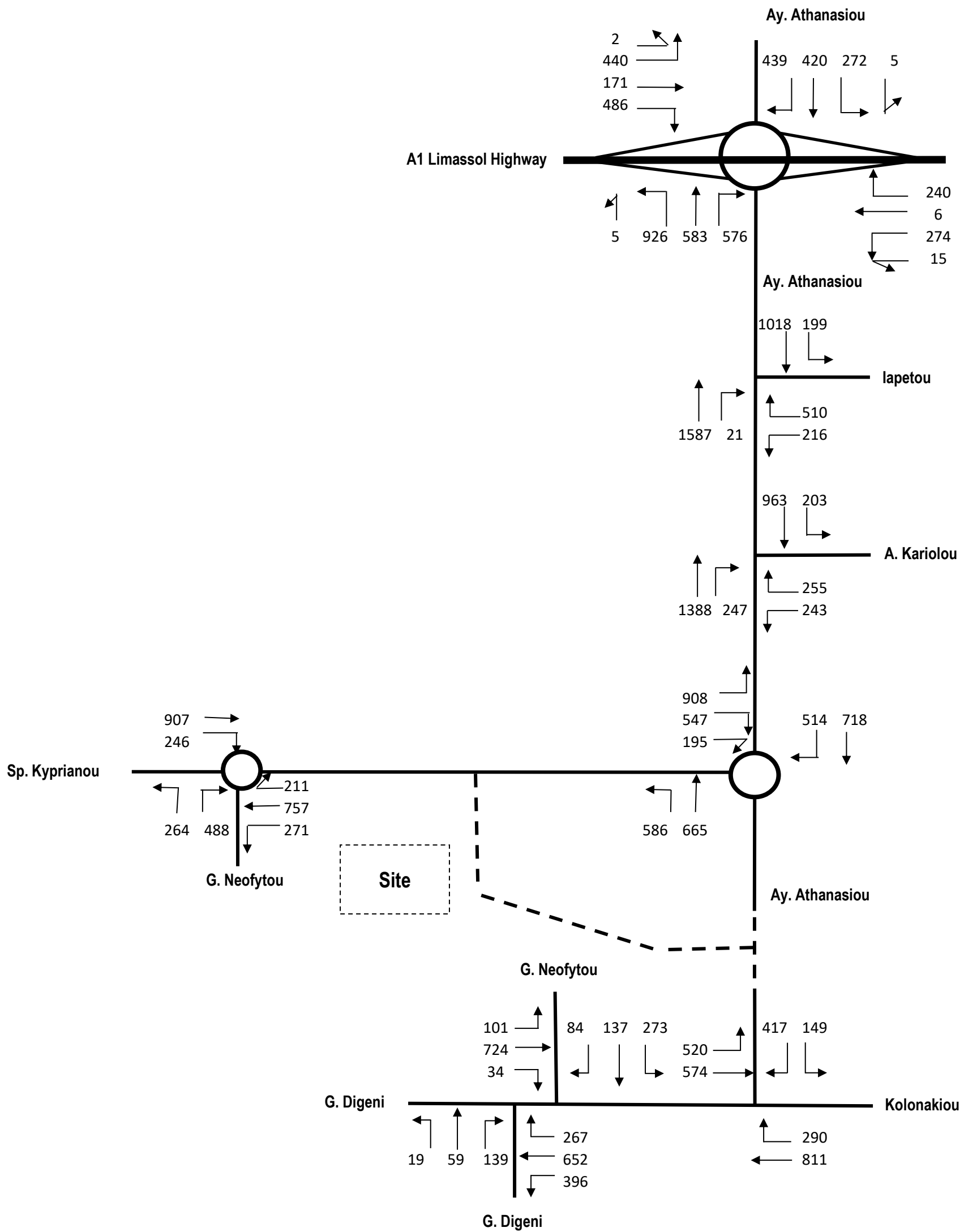


Figure 2.8c: 2036 Traffic Flows Without Development Weekday 17:00 – 18:00

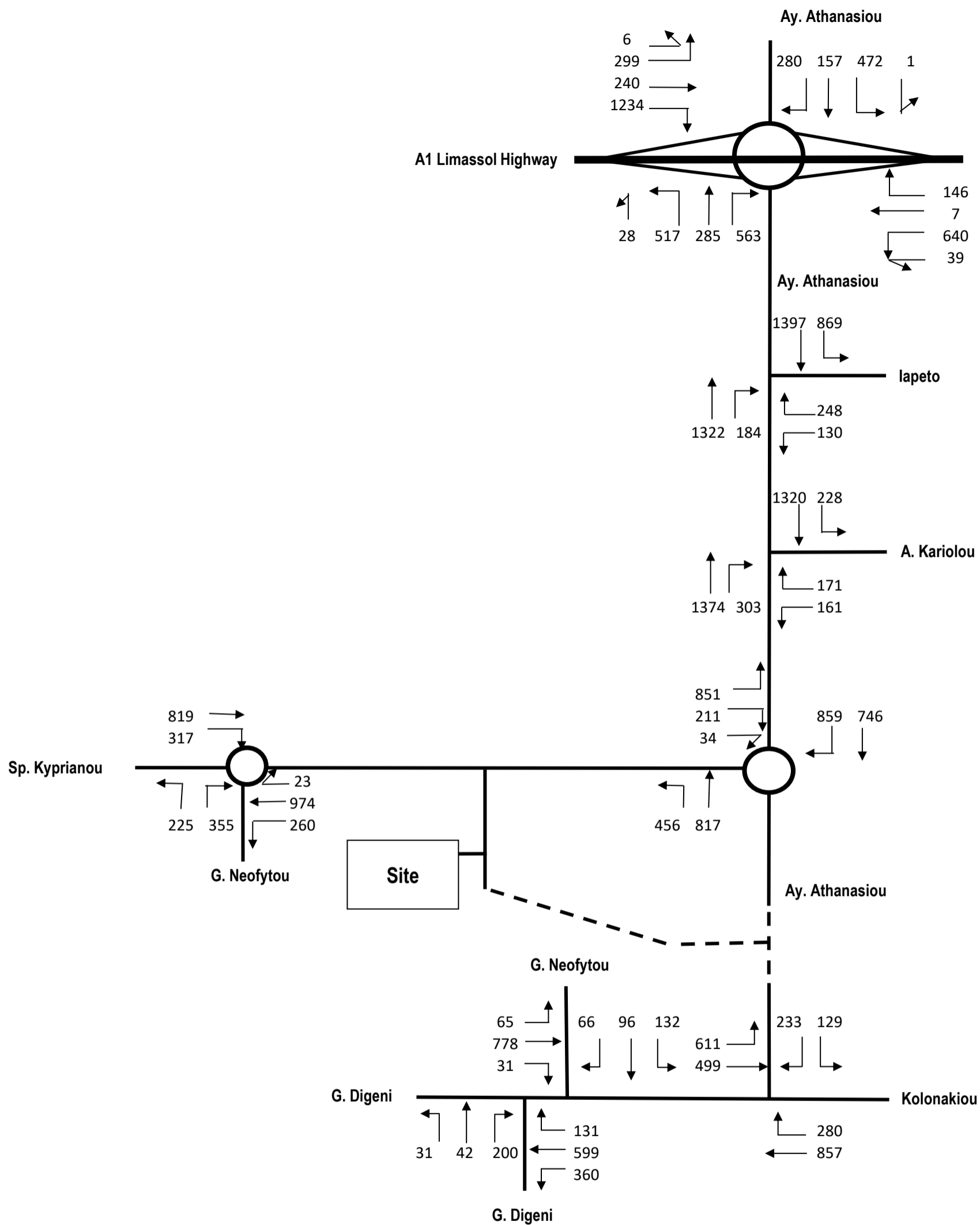


Figure 2.9a: 2036 Traffic Flows With Development Weekday 07:00 – 08:00 - Base Option

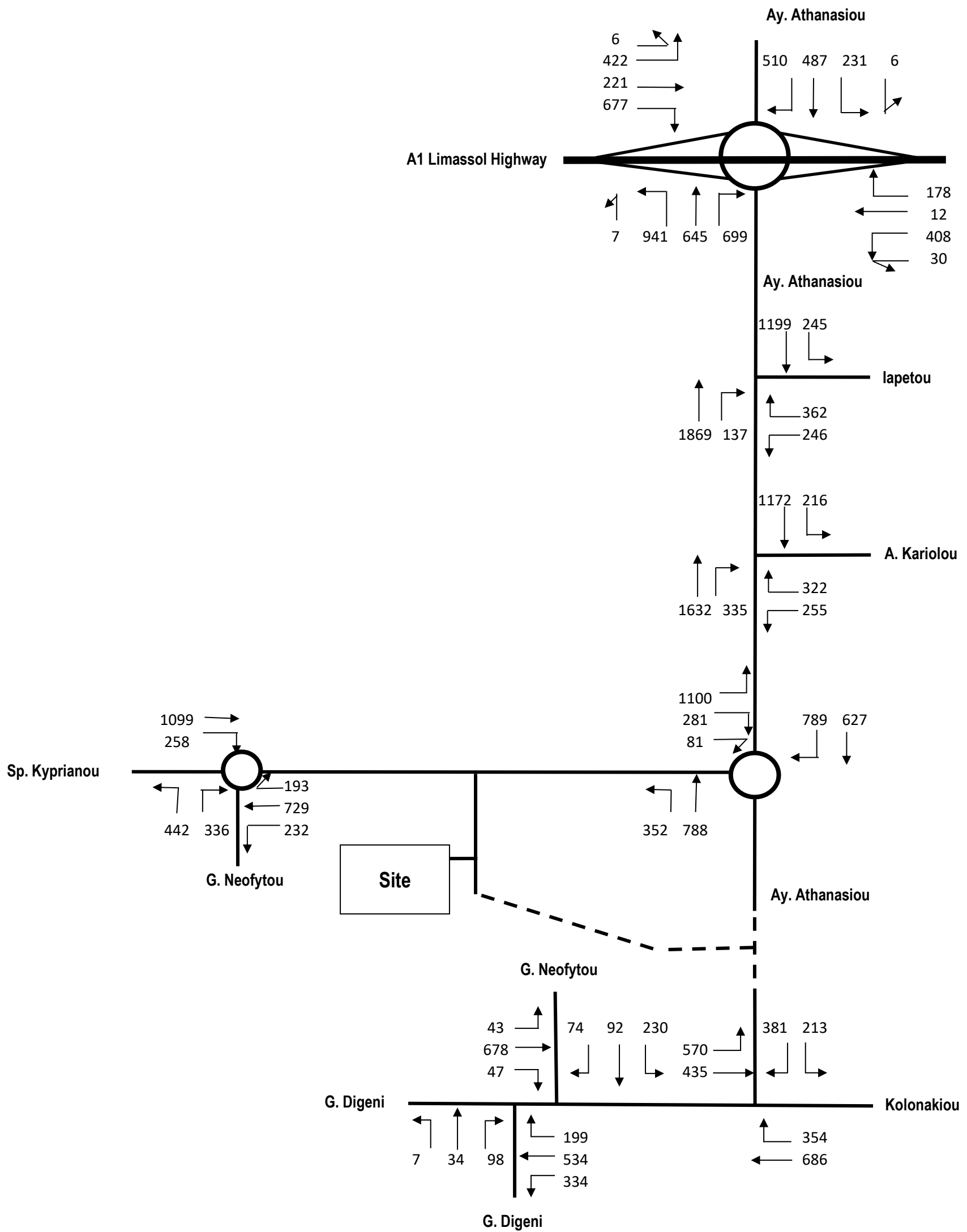


Figure 2.9b: 2036 Traffic Flows With Development Weekday 13:00 – 14:00 - Base Option

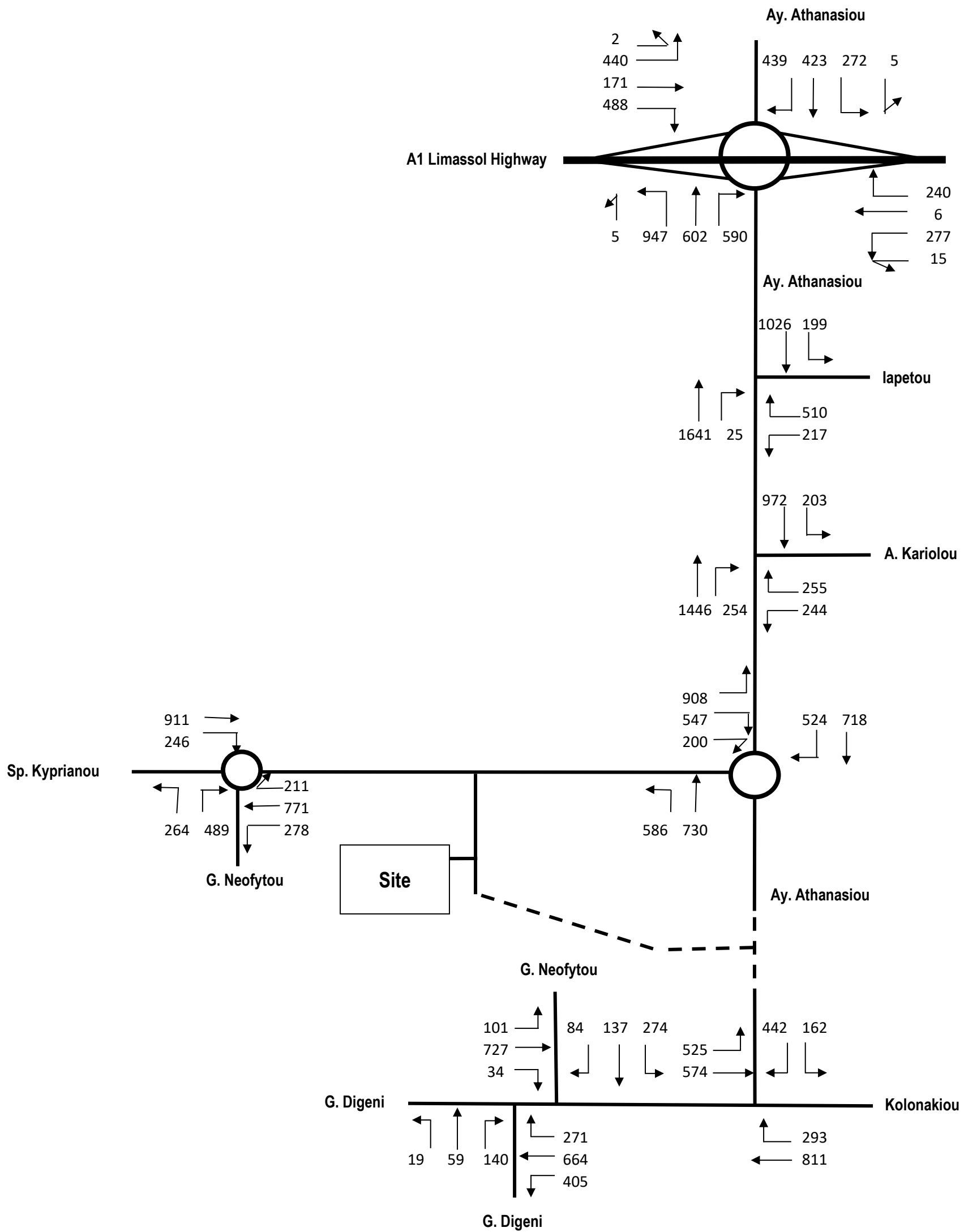
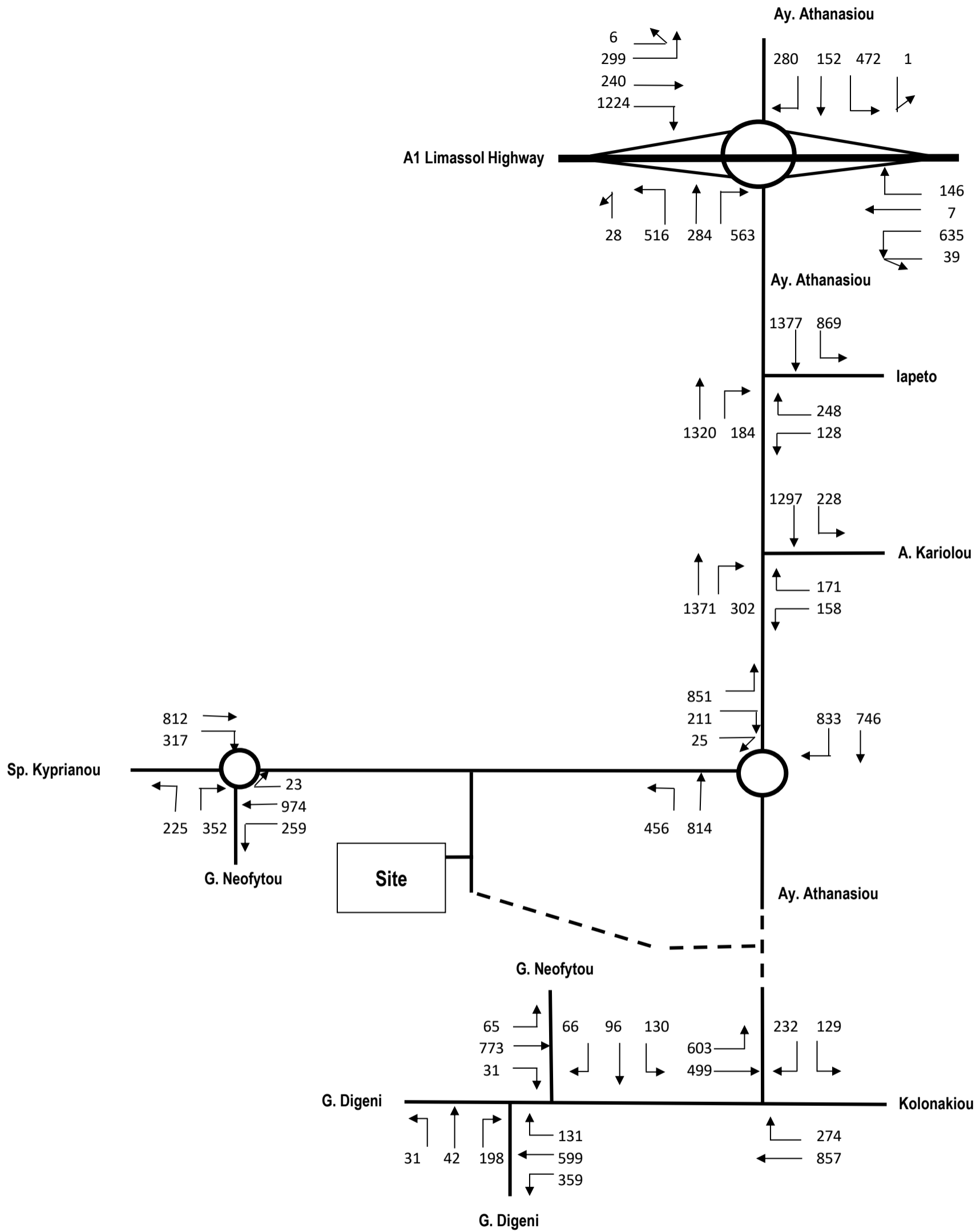


Figure 2.9c: 2036 Traffic Flows With Development Weekday 17:00 – 18:00 - Base Option



**Figure 2.10a: 2036 Traffic Flows With Development & Sustainable Transport
Weekday 07:00 – 08:00**

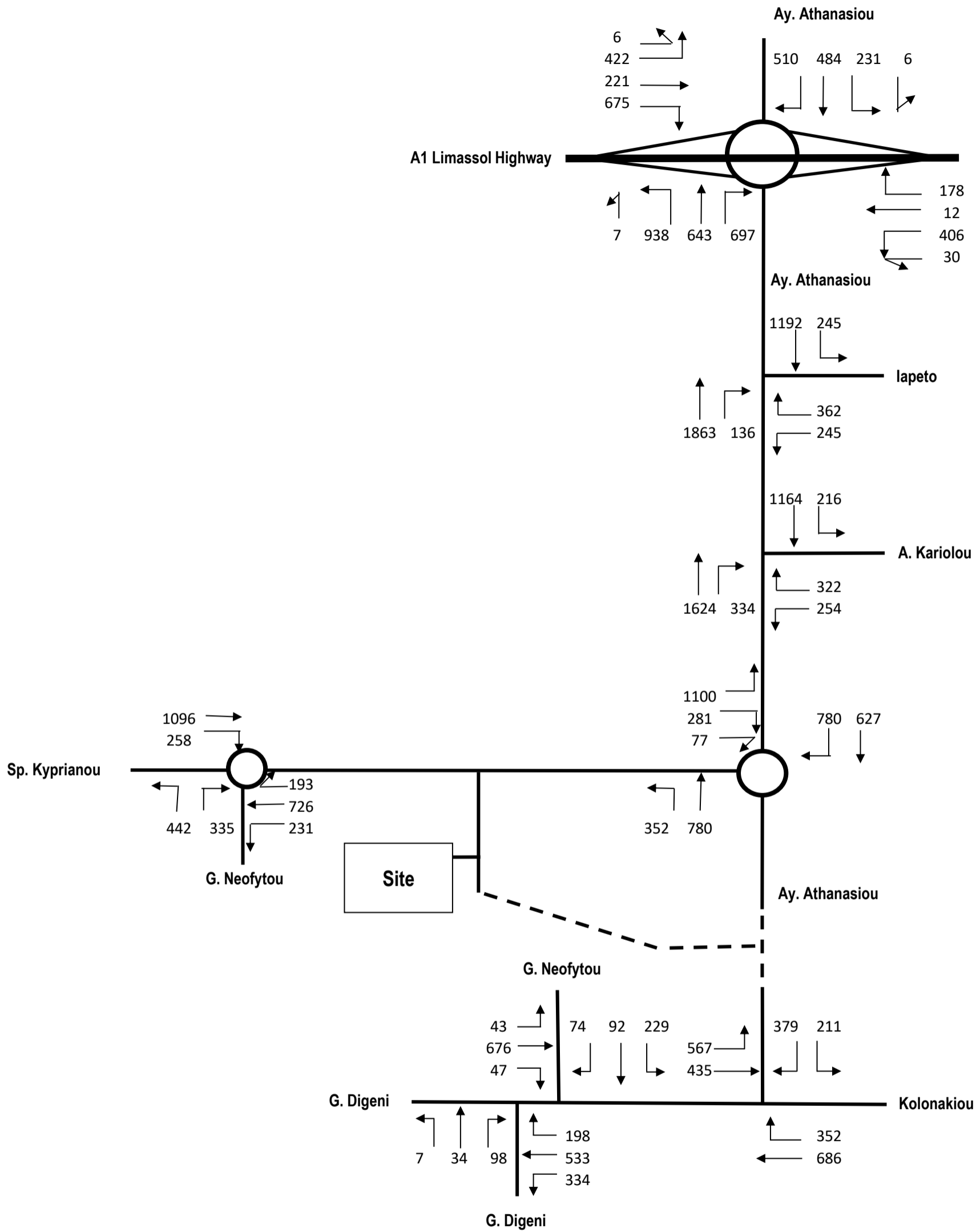
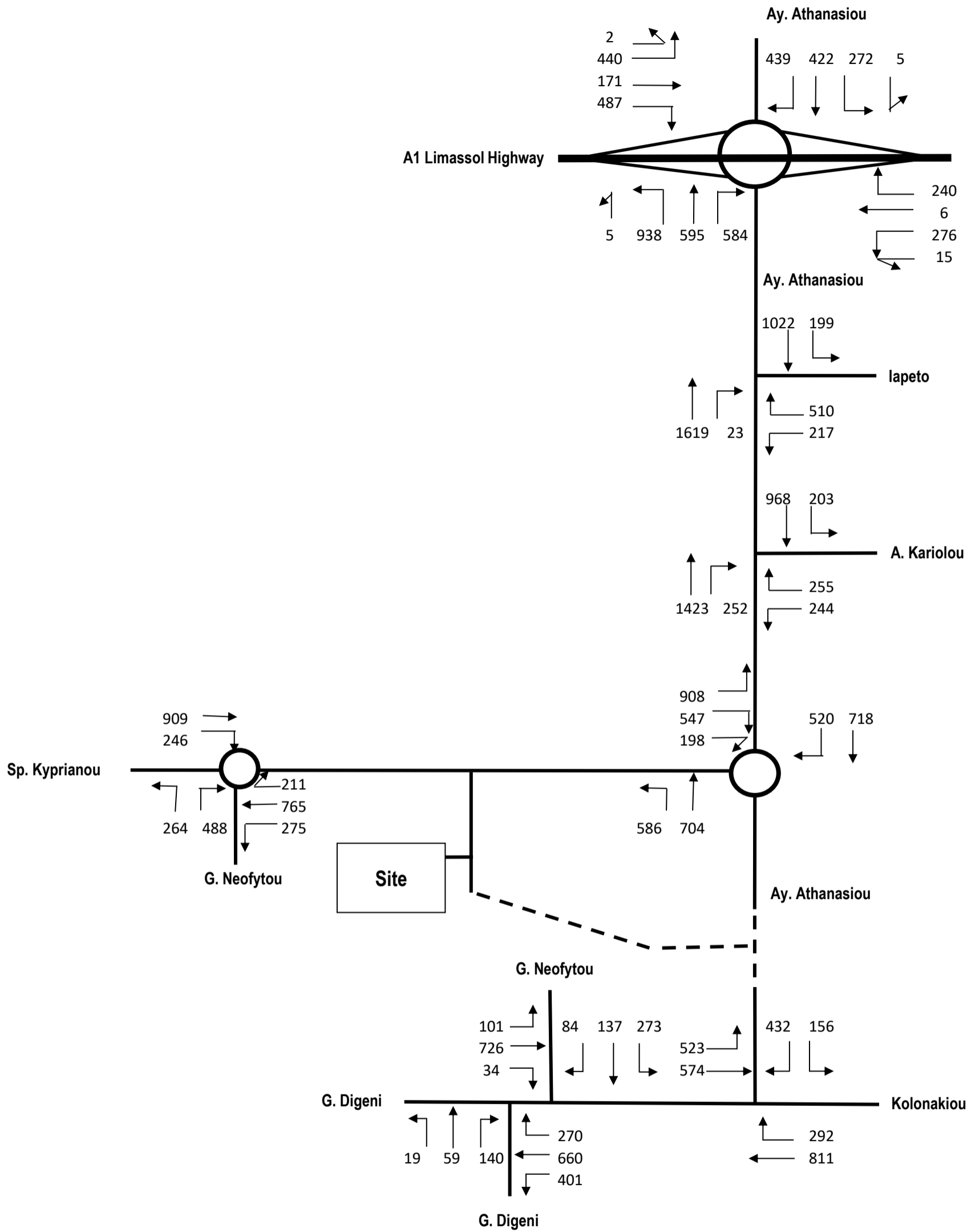


Figure 2.10b: 2036 Traffic Flows With Development & Sustainable Transport Option
Weekday 13:00 – 14:00



**Figure 2.10c: 2036 Traffic Flows With Development & Sustainable Transport Option
Weekday 17:00 – 18:00**

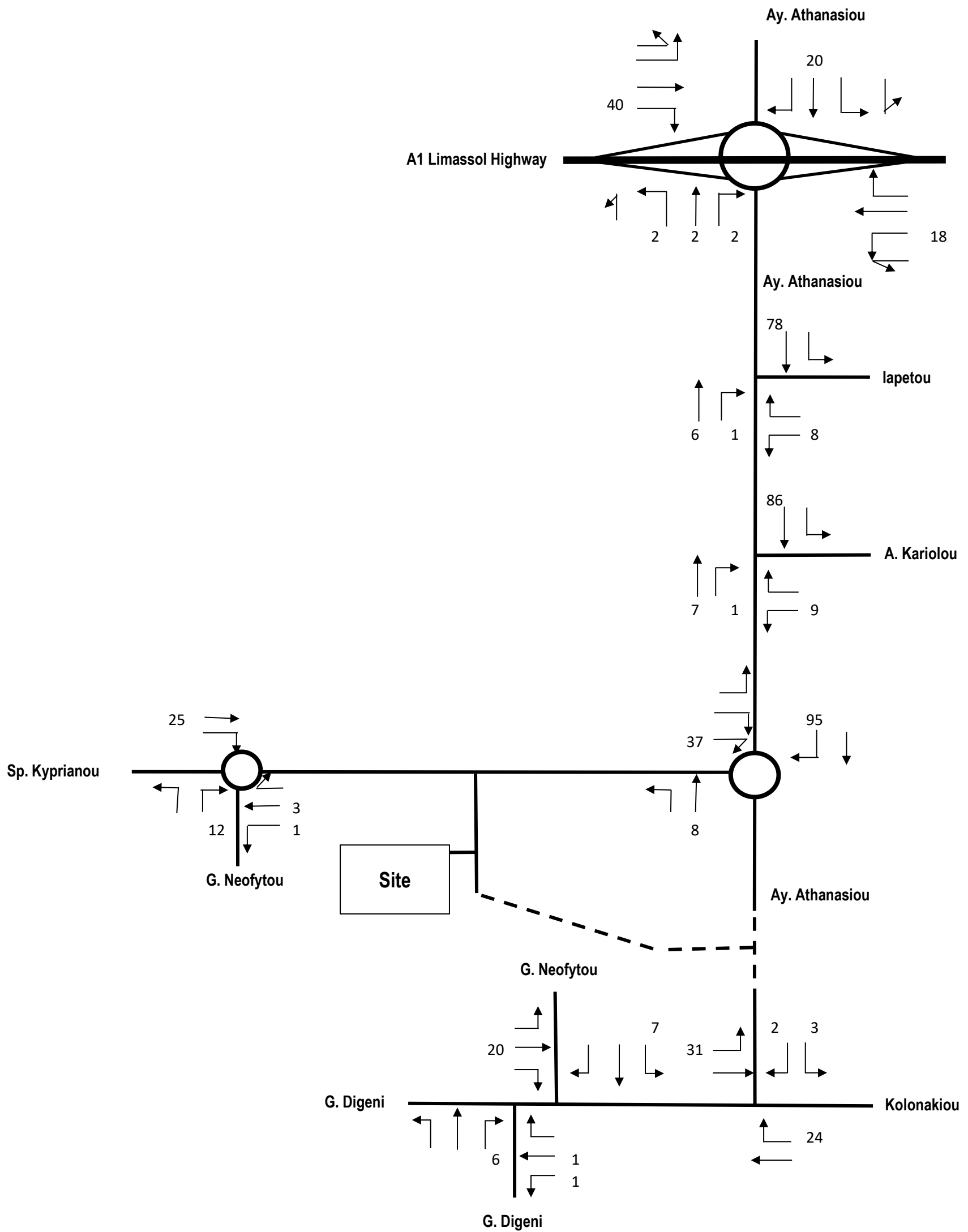


Figure 2.11a: 2036 Development Traffic - Weekday 07:00 – 08:00 (Sensitivity Test)

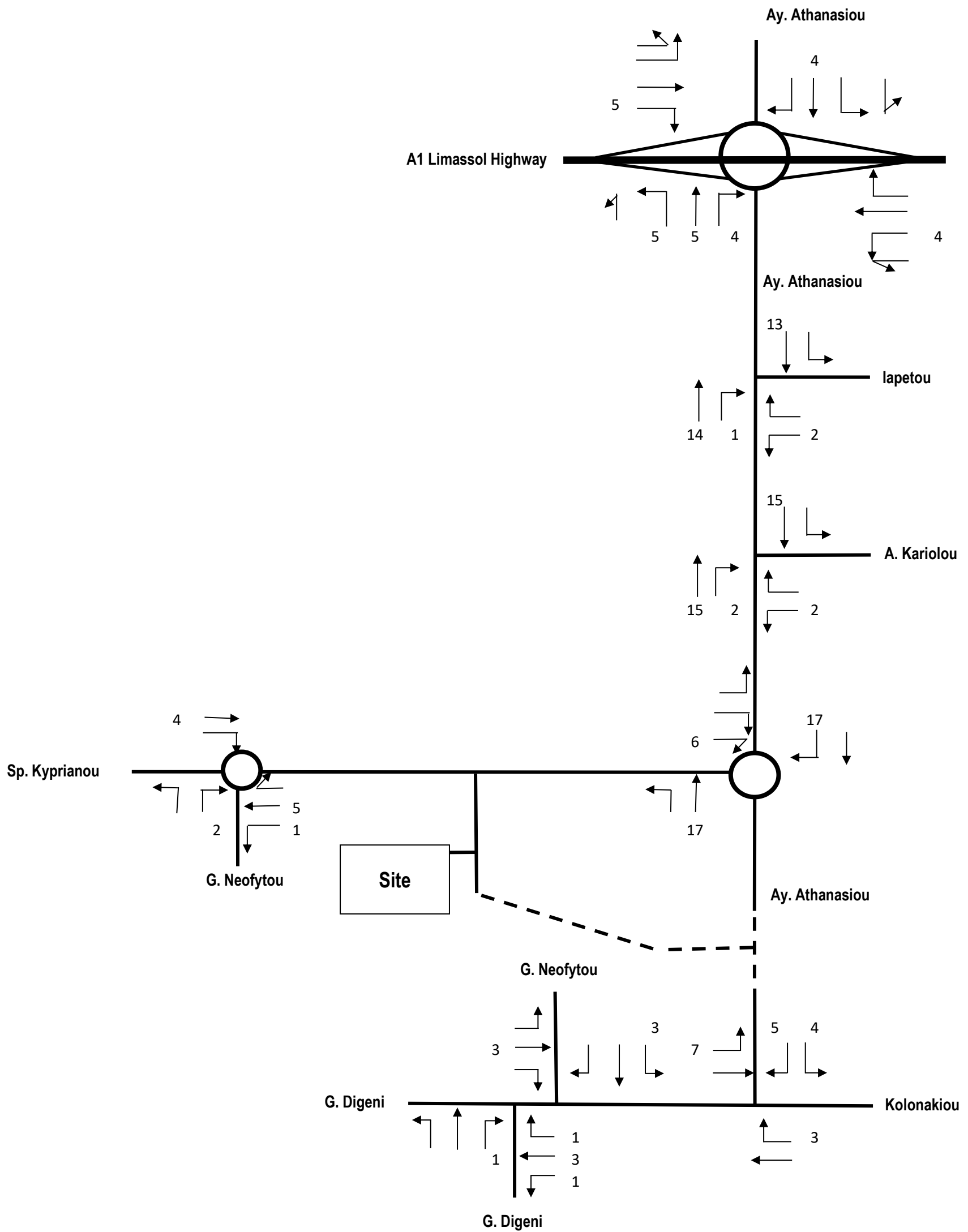


Figure 2.11b: 2036 Development Traffic Weekday 13:00 – 14:00 (Sensitivity Test)

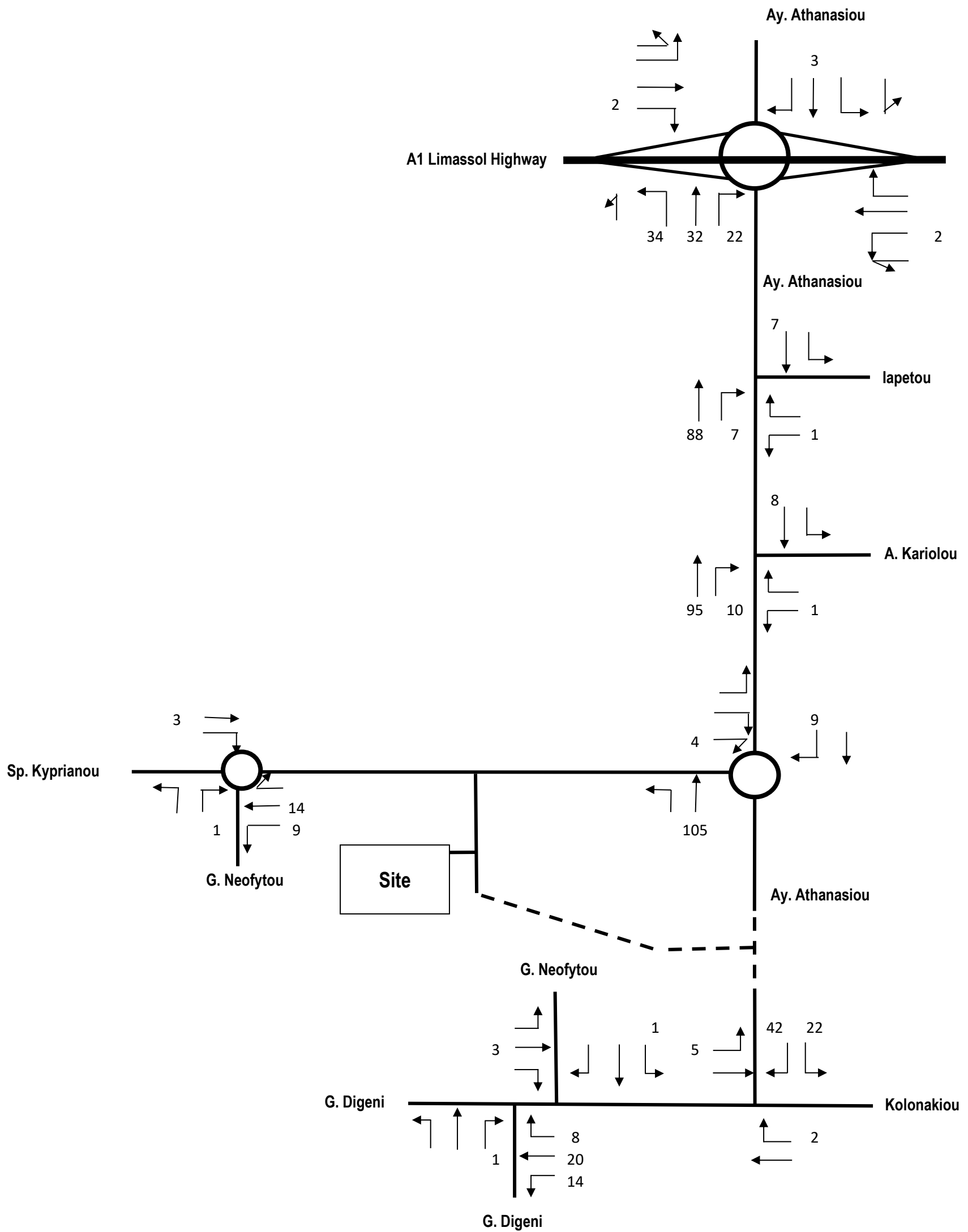


Figure 2.11c: 2036 Development Traffic - Weekday 17:00 – 18:00 (Sensitivity Test)

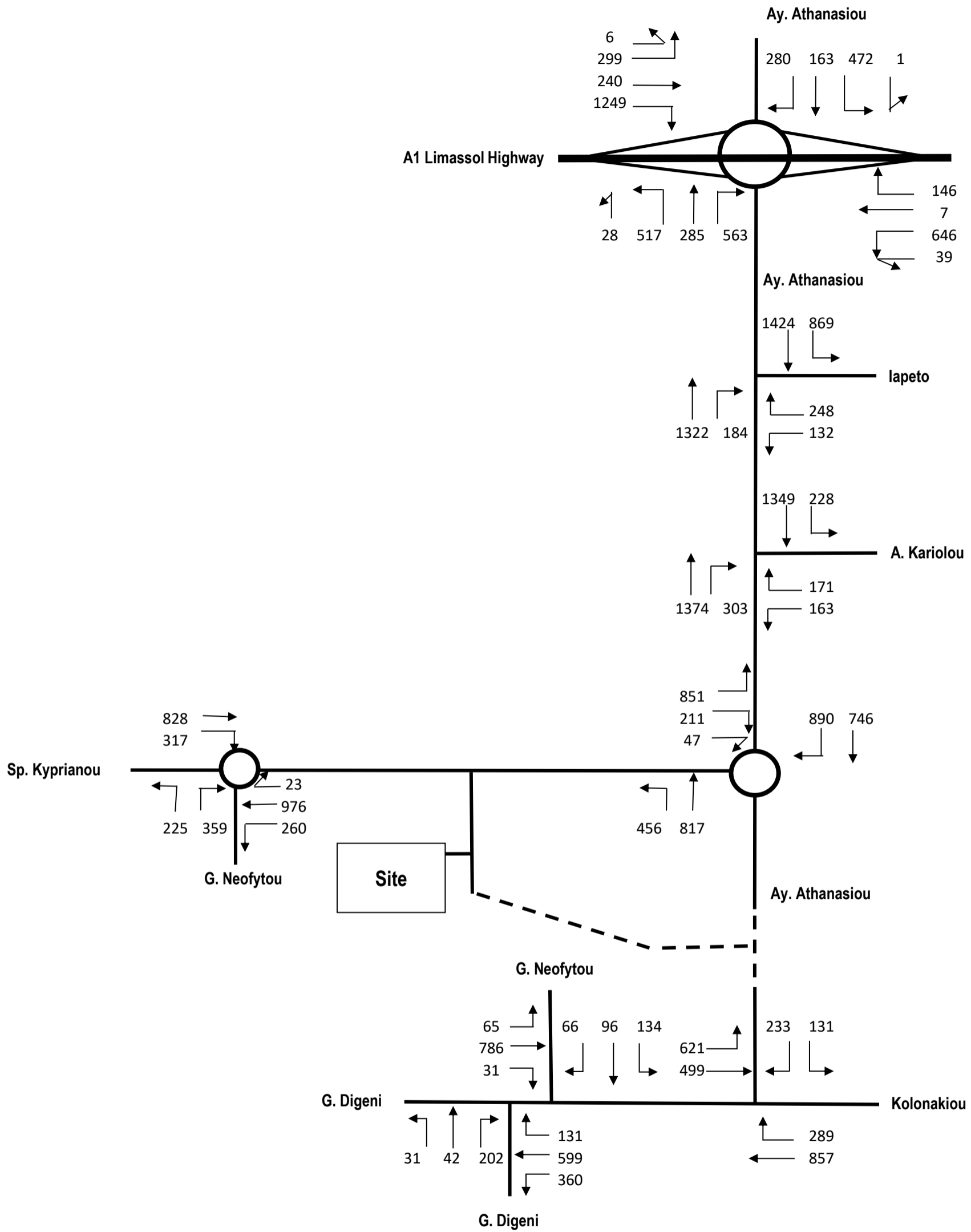


Figure 2.12a: 2036 Traffic Flows With Development - Weekday 07:00 – 08:00 (Sensitivity Test)

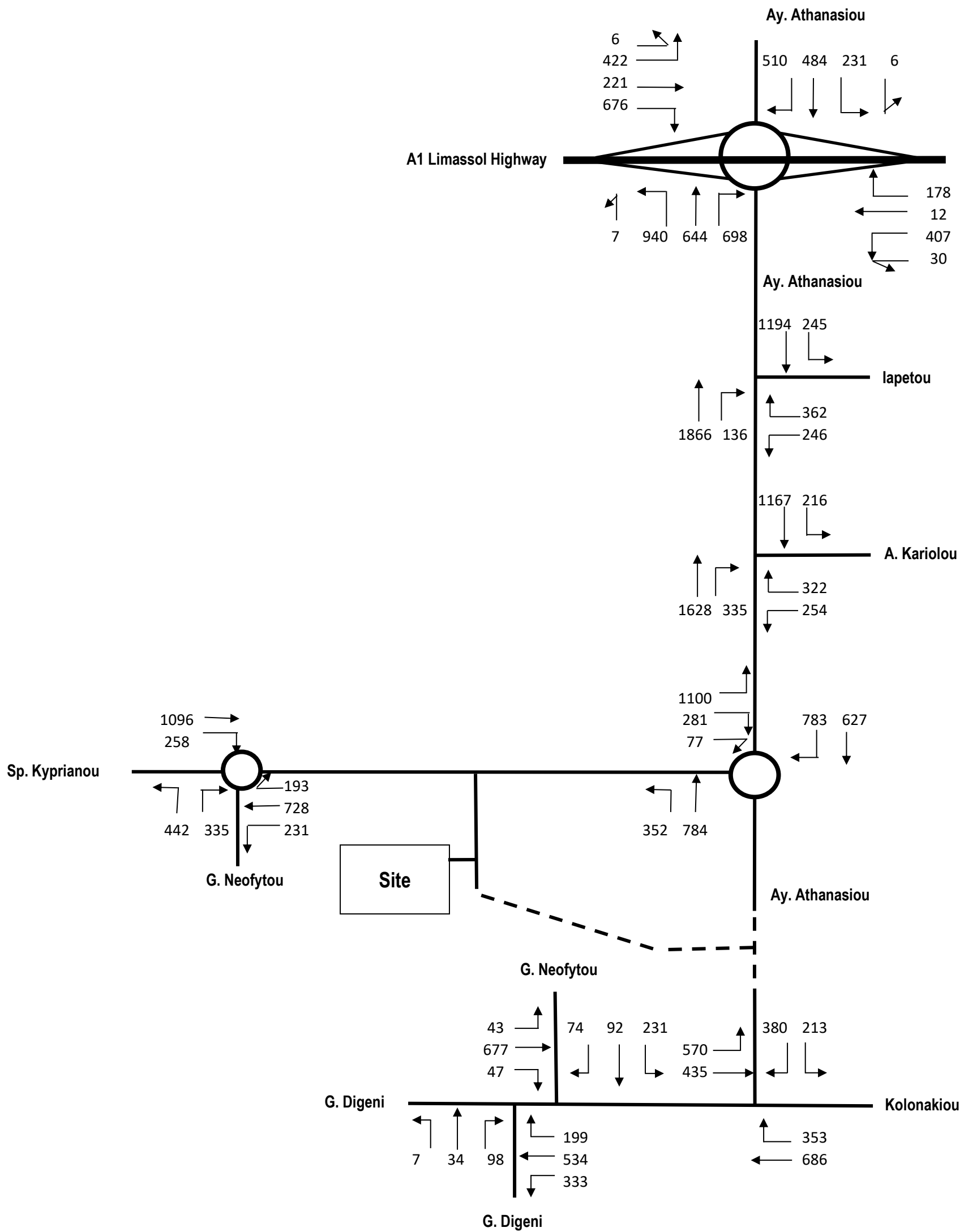


Figure 2.12b: 2036 Traffic Flows With Development Weekday 13:00 – 14:00 (Sensitivity Test)

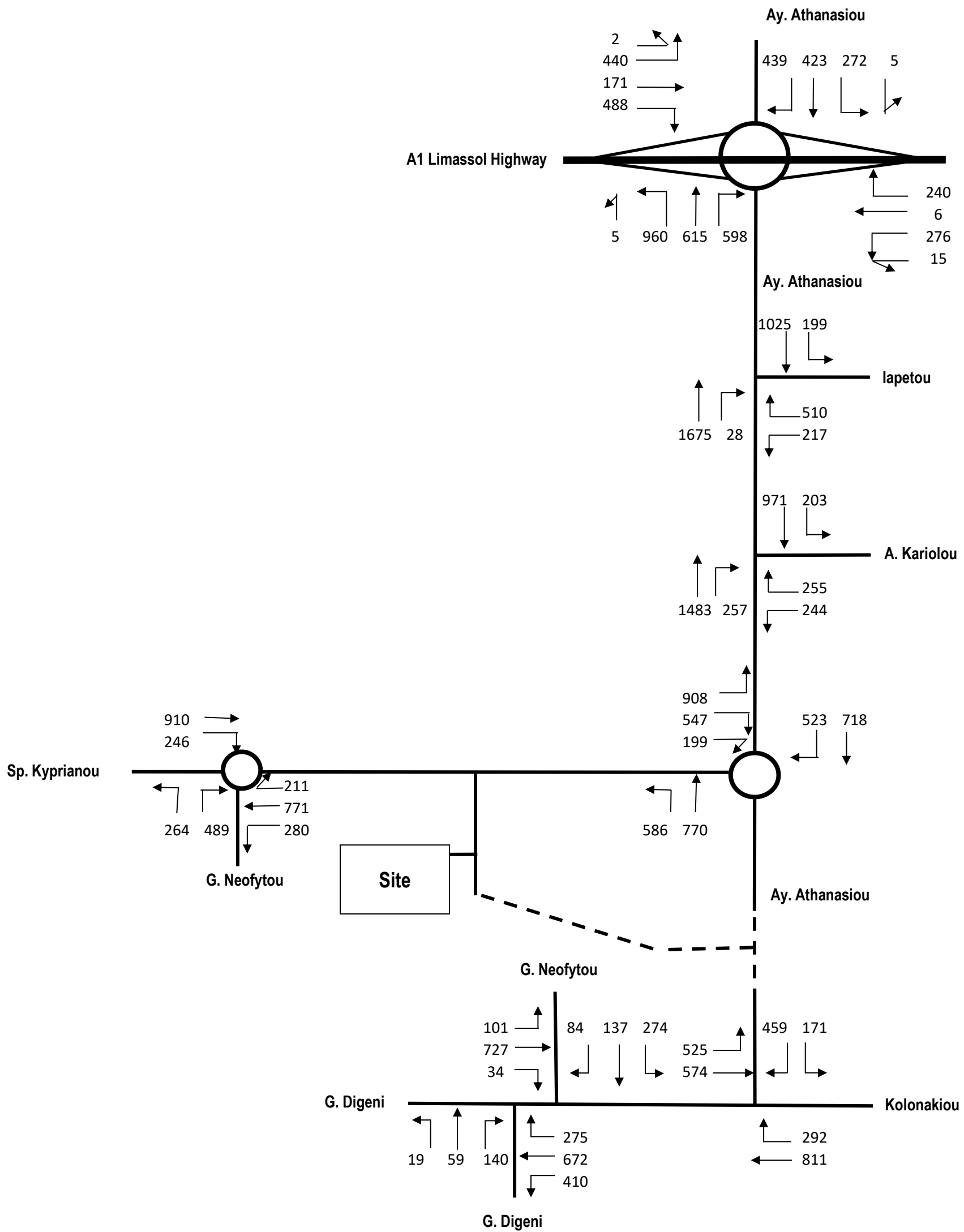


Figure 2.12c: 2036 Traffic Flows With Development Weekday 17:00 – 18:00 (Sensitivity Test)