

AGORA EXCAVATIONS  
American School of Classical Studies  
ATHENS - GREECE

PRELIMINARY REPORT  
for the  
LANDSCAPE DEVELOPMENT

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October 15, 1953

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## FOREWORD

This report is based on my study of the Agora Excavations in Athens during the month of August of this year nineteen hundred and fifty-three. My preliminary sketch plan and estimate of cost were made at the site in consultation with Mr. Thompson, Mr. Caskey and their staff. I also had the benefit of conferences with Mr. Gorham Stevens, Honorary Architect, American School of Classical Studies; Professor Basileios Krimbas, Professor of Viticulture in the Superior School of Agriculture, President of the Association of the Friends of Trees; Mr. K. Biris, Director of the City Plan of Athens; Mrs. A. Adossides, Mrs. E. Zaimi, and Mr. A. Kyriakides, knowledgeable and experienced amateurs, whose assistance was of great value to my understanding of the project.

In compiling my list of plant materials I found excellent references in both the Gennadeion and the archaeological library of the American School. Mr. Thompson arranged visits to the Superior School of Agriculture, the nursery at Kaisariani and several other places where I obtained useful information about plant materials.

My visits as a tourist to other excavations enabled me to see how various types of visitors reacted to different ways of treating landscape problems. The results of my observations are incorporated in my recommendations.

More valuable than almost any other aspect of my study was the opportunity of observing, from the balcony of the office which I shared with Mr. Thompson, the hundreds of visitors who swarmed through the Agora daily. One day I joined the regular Wednesday tours conducted by staff members, Perlzweig and Eliot. Then I watched similar conducted tours wind their way through the ruins and I checked these routes with Mr. Thompson. By this process the proposed path system which forms the skeleton of the landscape scheme was developed. It is the natural route for visitors to follow and very close to the route followed by Pausanias about the year 150 A. D.

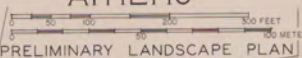
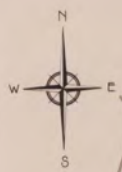
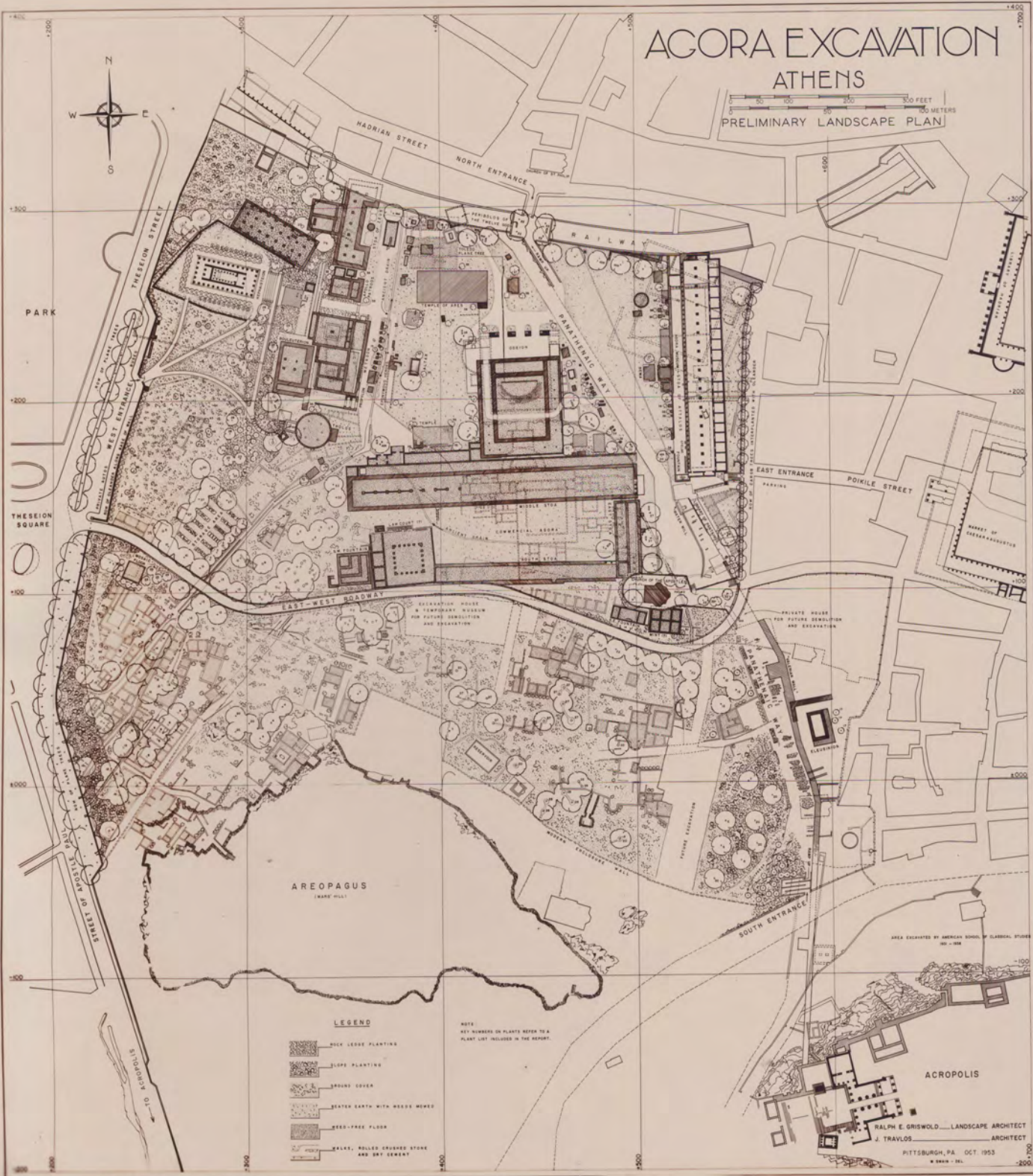
One of the most acute problems for landscape maintenance in Athens is water for irrigation of the plants. Fortunately I was there at the time of year when this problem was at its worst. The importance of adequate irrigation was very apparent and has been given primary consideration in my recommendations.

Among all the excavations of ancient sites in Greece there is no precedent for the proposed systematic landscape development of the Athenian Agora. This is a pioneer undertaking. It is as unique in modern archaeological practice as the Agora was in its historical significance and will add new interest to its ancient traditions.

Ralph E. Griswold

# ACORA EXCAVATION ATHENS

PRELIMINARY LANDSCAPE PLAN



- LEGEND**
- ROCK LEDGE PLANTING
  - SLOPE PLANTING
  - GROUND COVER
  - GRATED EARTH WITH WEEDS MOWED
  - WEED-FREE FLOOR
  - WALKS, ROLLED CRUSHED STONE AND DRY CEMENT

**NOTE**  
KEY NUMBERS ON PLANTS REFER TO A PLANT LIST INCLUDED IN THE REPORT.

ACROPOLIS

RALPH E. GRISWOLD, LANDSCAPE ARCHITECT  
J. TRAVLOS, ARCHITECT

PITTSBURGH, PA. OCT. 1953

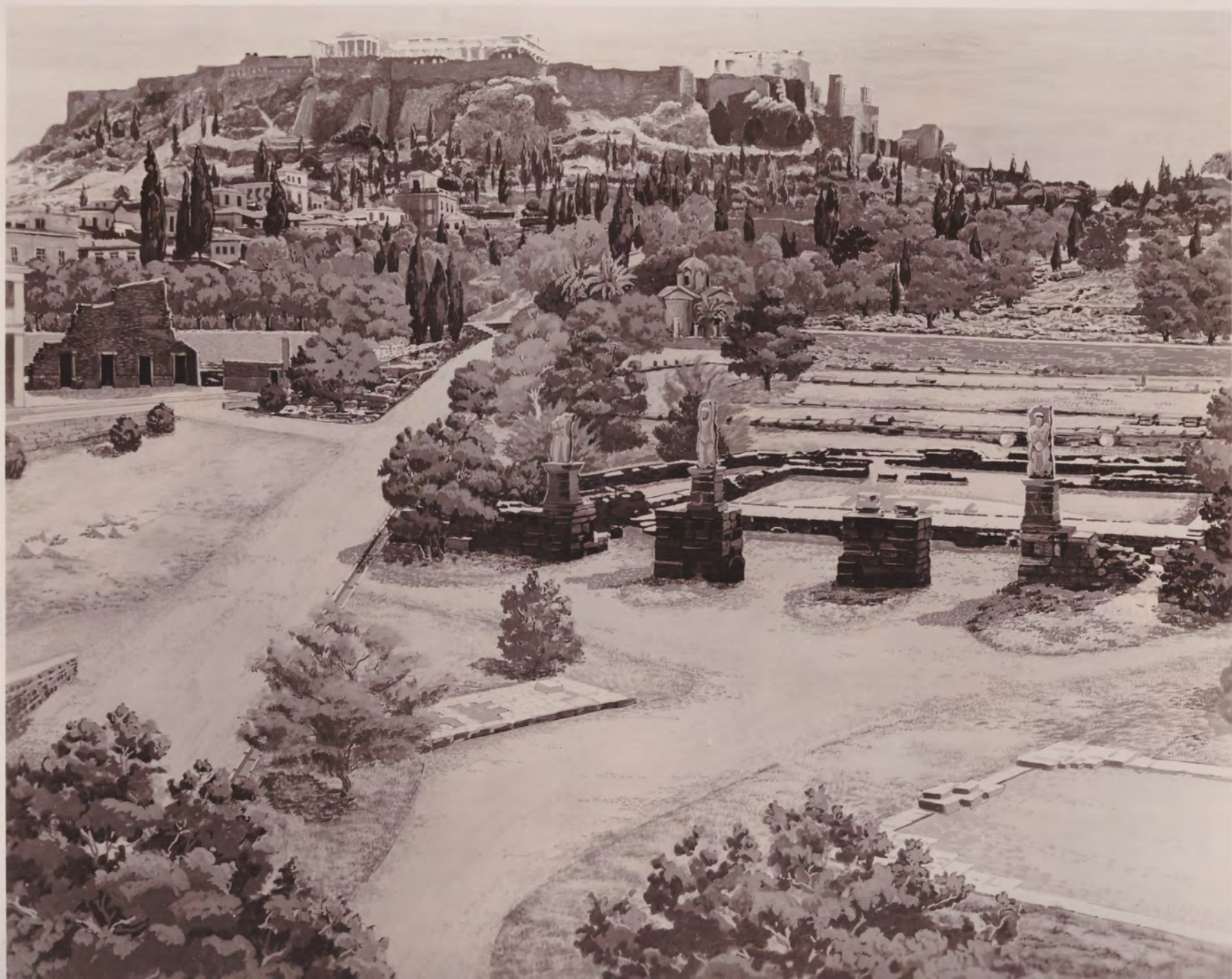




A color reproduction of the proposed view looking  
west from the north entrance will be forthcoming.











## ANALYSIS AND RECOMMENDATIONS

I PURPOSE:

The primary purpose of the landscape development is to enhance the historical significance of the ancient Agora. Wherever plants are known to have existed in antiquity the same varieties are to be replanted as near as possible in their original locations. Except for these plants, which are a recorded part of the ancient landscape, the planting has been designed as a background to the structural antiquities.

Likewise, all other elements of the landscape such as fences, walls, walks, steps and benches serve the sole purpose of protecting and providing access to the Agora and its adjacent areas.

II ENTRANCES:

Because the first impression is very important the entrances have been given careful consideration.

The greatest number of visitors seem to come from the Acropolis from where they have already seen the Agora in birdseye perspective. In this preview the most conspicuous structure is the Temple of Hephaistos. Naturally the structure which they recognize first will attract their attention when they come to the Agora by way of the street of the Apostle Paul. It is inevitable that this entrance from the West will always be one of the most important entrances regardless of future development along the North boundary.

West Entrance

The plan shows a revision of the existing streets of the Apostle Paul and of the Theseion which has been worked out in collaboration with Mr. K. Biris and approved by him for construction by the City of Athens.

From the Northwest corner of the iron fence that now encloses the Areopagus to the western end of the East-West road through the Agora the existing sidewalk has been widened from its present width of four meters to nine meters thus creating a cafe promenade 29.5 feet wide, 581 feet long overlooking the Agora.

Along Theseion Street, north of the connection with the East-West road, a parking strip is separated from the main highway by an island planted with a row of trees. Here twenty-eight automobiles and three buses can park or load and unload, safe from the traffic hazard of the main highway.

The entire West frontage will be enclosed by a wrought iron fence part of which will be salvaged from the existing fence on the North, West and East walls of the Hephaisteion enclosure. By removing the top rail from this fence and bending the verticle bars, its present overpowering appearance will be changed into a much more pleasing design. New fence of similar design will supplement the remodelled existing fence to fill out the total length required. This fence will be mounted on a low limestone masonry wall averaging 1 meter high by 1/2 meter wide.

The massive modern masonry walls enclosing the Hephaistion on the North, East and South sides will be removed and the wall along the street on the West side will be lowered and refaced with masonry to match the new wall along the West boundary.

A small shelter for the guard will be constructed at the West gate.

#### North Entrance

This approach undoubtedly offers the most comprehensive view of the Agora with the Acropolis and Areopagus as background. Ultimately it may become the most important entrance when the final development of the properties along the North boundary is determined. In the meantime a very attractive combination pedestrian and service truck entrance will be constructed. The existing rough rubble South face of the railroad overpass will be cut back and faced with a rubble masonry wall which will be tied into similar retaining walls supporting a ramp. Both the entrance terrace and ramp will be paved with a crushed stone surface serviceable for walking or trucking. This ramp will follow the Northeast side of the Panathenaic Way.

In the four corners of the terrace shade trees will be planted with comfortable benches between them.

#### East Entrance

At present the only entrance from the East is by steps through the courtyard of the Church of the Holy Apostles, the 11th century building which still serves as the parish church of the area. While this entrance is adequate for those visiting the church it will eventually require better treatment. When the Stoa of Attalos is restored a second flight of steps will connect the building with the street providing direct access to the Museum.

The ultimate design of this area also requires the complete integration of the ancient Panathenaic Way and the East-West roadway. This modern roadway now turns two sharp angles around the private building which stands to the east of the church and interrupts the ancient highway connecting the Agora with the Acropolis. In order that the landscape along the Eastern boundary may be more nearly restored to its original condition, this private property should be acquired and the building removed. After this is done and the line of the ancient roadway is re-established the East-West roadway can be relocated to eliminate its ugly angles and provide an attractive entrance in relation to the Church of the Holy Apostles, the Stoa of Attalos and the ancient highway.

The clearance of this intersection will provide an uninterrupted continuity of the Panathenaic Way from the Agora to the Acropolis as it was in antiquity. This improvement to the Eastern boundary is of primary importance to the landscape picture as well as to the archaeological completeness of the Agora.

Along the entire Eastern boundary a protective chain link fence 1 1/2 meters high, topped with a single strand of barbed wire, is proposed. A gate will be provided for the Church of the Holy Apostles.

### South Entrance

At some future time, when the landscaping of the Agora has been completed, the existing stone wall between the Agora and the Areopagus should be removed. It now creates an un-natural division between these two historic areas which were originally one unified landscape.

An additional connection with the historic areas to the South should be provided by a ramp from the Southeast corner of the Agora to the boulevard below the Acropolis. This ramp would enable visitors, after the East boundary is cleared, to follow the Panathenaic Way from the North boundary of the Agora all the way to the Acropolis. It would also provide access to the famous sanctuary of Demeter, the Eleusinion, on the middle slope of the Acropolis and to the various monuments brought to light in the excavations conducted for the School by Oscar Broneer high on the North Slope.

### East-West Road

This road must be retained for public communication between the areas West of the Agora and the Central section of the City. Its Western connection with the street of the Apostle Paul will be relocated and its Eastern connection with the existing streets will depend upon the removal of the existing private building at this intersection.

On the completion of the excavation this road may be closed to vehicular traffic but it must always be kept open for pedestrians. In the meantime the grade of the modern road will be lowered an average of one meter to bring it down to the grade of the ancient road underneath. The width of the regraded road will be five meters between curbs. Existing marble curbs and gutters will be reset and additional new curb and gutter supplied to make the edges uniform throughout the entire length of the road. On both sides new chain-link fence one meter high, topped with a single strand of barbed wire, will control access to the excavations.

The temporary entrance opposite the present museum will be abandoned when the Stoa of Attalos is completed and the museum is moved to its new location.

Service gates in the South fence along the road will be provided for truck access to the areas South of the East-West Road.

### III WALKS AND STEPS:

From the Western gate there will be a choice of three different approaches to the Agora. Paths will lead to the Western and Eastern ends of the Hephaesteion giving visitors or guides a choice of how they wish to view this temple first. For those who wish to go directly into the ancient market place a third path bypasses the temple.

Directly East of the Hephaesteion a lecture terrace will be constructed on the existing slope. Six limestone block steps one meter wide by one-half meter high and fifteen meters long will provide seating

for one hundred sixty-eight visitors facing a panoramic view of the Agora while it is explained to them by the speaker. On the parapet wall below the terrace a map with printed explanation will be mounted for use of those without guides. Intermediate steps down both ends of the terrace will make them accessible and provide the routes from the Hephaisteion to the excavations below.

From the Northeast corner of this terrace steps will lead directly down over the existing rock slopes to the lower level for those who wish to choose their own route. But for those others who wish to use the route recommended by the Agora staff there will be a path running southward on the line of the existing modern wall which will be converted into slope steps leading to the lower level behind the Tholos.

This route will enter the Agora through the Propylon and turn North along the ancient highway in front of the Metroon, Temple of Apollo Patroos and Stoa of Zeus. It will then wind its way through the ruins to the Altar of the Twelve Gods and the plane tree of Demosthenes which has already been replanted by the Greek colony of Toledo, Ohio.

From there the visitor may choose either to follow the Panathenaic Way directly to the Stoa of Attalos and Museum or to take the route of the guides which leads through the Odeion, past the Middle Stoa, to the Library of Pantainos and thence to the Stoa of Attalos. There will be steps from the Panathenaic Way to the Church of the Holy Apostles and a connection to the excavations South of the East-West roadway.

All of these routes will be surfaced for an average width of two meters with a mixture of crushed stone and dry cement rolled down firm and smooth.

Steps will be formed in the existing rock slopes by cutting the natural rock to proper shape wherever possible and filling in with similar rock where necessary. The steps leading from one level to another among the ruins will be formed with salvaged fragments of stone or marble appropriate to the situation.

IV BASE GRADING:

The ancient beaten-earth surfaces that have been brought to light by the excavations have determined the ultimate grades for the major portion of the project; these will be respected and preserved in their original condition so far as possible.

Some refilling of areas around the perimeter has already been done and there are three storage piles of surplus soil totalling approximately 4000 cubic meters remaining to be distributed under the landscape development. Except for the distribution of these soil piles no additional base grading will be required under the landscape development.

V DRAINAGE:

Fortunately the ancient drain lines provide all the drainage that is necessary. In a few locations local drains and drain inlets will be needed but these will be provided under the archaeological budget.

## VI WATER SUPPLY:

Maintenance of the landscape planting will depend to a considerable extent on its irrigation. This was obviously true in ancient times and is equally true today.

A reservoir of sufficient capacity to water one-half of the Agora each week will be constructed on the highest level of the North Areopagus slope midway between the East and West boundaries.

For purposes of the preliminary estimate the reservoir has been calculated as 9 x 16 meters outside dimension by 2 meters deep making a capacity of 275 cubic meters or approximately 60,000 gallons. It will be constructed of rubble masonry with about two-thirds of its height above ground and will be open at the top.

Two main 3 inch galvanized iron supply lines will deliver water to the East and West sides of the Agora where it can be distributed by surface irrigation ditches, hoses or by hand watering from dipping pools.

The water will be pumped from existing ancient wells located South of the temporary administration and museum building to the reservoir.

It may be noted that the scheme of irrigation here proposed has a good precedent: in antiquity the trees in the square were watered from stone surface channels that carried the overflow from two public fountain houses situated on high ground near the Southeast and Southwest corners of the Agora.

## VII PLANTING:

The accompanying list of plant materials includes only indigenous plants or plants which have become completely acclimatized. No exotic plants will be used in the historic area except perhaps one palm on the terrace of the Church of the Holy Apostles.

Each plant mentioned in historic references or determined definitely by my preliminary study is identified by key number on the preliminary plan. On the other hand, much of the planting has been specified only as to general type leaving the final selection for further detailed study when the working drawings and specifications are prepared.

One of the most difficult decisions to make was what street tree to use along the street of the Apostle Paul. After considering the comparative merits of many street trees which are used in Athens I finally came to the conclusion that the plane tree, if properly pruned and adequately irrigated, will be the best. No matter what tree is planted in this location it will require pruning and watering to produce proper results and under these conditions the plane tree suits our purpose best.

It was also very difficult to decide what trees to plant in the garden around the Hephaisteion excavated and described by Dorothy Burr Thompson. Probably the final selection will be wild orange, pomegranate or some other low growing trees that would not grow so high as to obscure the view of the temple and would have some plausible historical association with the site. Such an important decision as this may well be left open for discussion until the time of planting arrives.



The large trees, such as the plane and oak which are indicated on the plan with a ten meter foliage spread, will provide convenient shade for visitors and will also frame the important antiquities without obscuring them from various viewpoints. Trees of this size have also been used to screen the view of the railroad.

Smaller trees such as the laurel or carob which are indicated by a three meter foliage spread will also provide shade but will serve primarily as background and markers for the important structures.

Trees with emphatic shapes and dark evergreen foliage such as cypress and pine have been kept out of the central area and used to emphasize the boundaries particularly in the corners and at entrances.

Places where foundations show the former existence of statues to heroes and prominent citizens will be marked by evergreen plants in scale with the foundations. These dark green plants will be seen in the panoramic views much as the statues were seen in antiquity.

On the rocky slopes North and East of the Hephaisteion and North of the Areopagus trees will be planted in the ancient cisterns. These for the most part will be evergreen trees with a few groups of flowering deciduous trees. Between them the rock ledges will be interplanted with native plants such as heather, gorse and thyme which grow naturally in similar habitats.

In the valley between the West boundary and the central area of the Agora moisture-loving trees such as willow and poplar will be planted along the ancient drains.

Around the Hephaisteion the outline of the ancient peribolos will be simulated by a trimmed evergreen buckthorn hedge. Adjacent to this hedge on the South a comparatively flat area devoid of any particular archaeological interest can be transformed into a wild flower garden displaying the beautiful wild flowers for which Attica is famous.

Among the ruins there are several odd corners where wild flowers will be encouraged to grow as ground cover. In general grass surfaces will not be used although there may be a few spots where tropical grasses may be planted. This will be worked out as the planting progresses.

Plant life of all types will be eradicated in so far as possible from the floor areas and walls of ancient buildings. For this purpose chemical weed killers are being tried out. If the experiment is successful, the preservation of the ancient structures will be greatly facilitated and their identification in the landscape much facilitated.

In the open areas of the market place where the original beaten-earth surface has been brought to light it will not be possible to keep this surface free of weeds by chemicals because the chemicals would kill the other plants as well. Nor will the traffic of visitors be comparable to the intensive use which kept the weeds worn down in ancient times. Hence periodic cutting of weeds will be necessary on these surfaces. Among the weeds are many wild flowers which form a lovely carpet in spring and fall.

### Soil Conditions

Four samples of soil were taken from typical locations and sent to Professor Basileios Krimbas of the Superior School of Agriculture for analysis. The complete analysis has not yet been received but on the basis of previous experience Professor Krimbas has recommended the use of manure at the rate of twelve to twenty tons to the acre. This recommendation agrees with my own observation that the existing soil is deficient in organic content as well as nitrogen and phosphoric acid.

My unit estimates of cost for planting include proper re-vitalization of the existing soil with manure, peat moss and chemical fertilizers. In some locations new topsoil will have to be brought in.

### Source of Plant Material

We have been assured that plants will be furnished free of charge from the Nursery of the "Friends of the Trees" at Kaisefriani, the Government forestry nursery at Kouponia, and from the Superior School of Agriculture in so far as they have material that fulfills our requirements. My estimate includes one dollar per tree to cover the expense of digging and transporting these plants. I have assumed that the plants for ground cover and bank planting will have to be purchased from commercial nurseries or collected from their natural locations and I have made allowance for this cost in my estimate.

## VIII ESTIMATE OF COST:

### Labor Rates

The labor rates used in computation of costs are the prevailing rates being paid on the job in the summer of 1953.

### Materials

Prices for materials are quotations obtained from local sources in Athens except the pumps for the water supply which were estimated by a competent manufacturer in Pittsburgh. Preliminary data on the depth, size and location of three existing wells was furnished by staff personnel. Before a final estimate can be made for the water supply, a working drawing and specifications will have to be made from a more complete survey of existing conditions. Tests must also be run on the wells we propose using to determine how much flow we may anticipate.

### Alternate Fence Posts

I obtained a quotation on galvanized "Junior H type" fence posts 7'-8" long to compare with the price of \$1.00 each that we obtained for plain angle iron posts in Athens. These H type posts would cost at least five times as much as the angle iron posts and in my estimation are not worth the difference. Before ordering fence posts it is quite possible that a better price for heavier posts can be obtained somewhere in Europe.

### Eastern Entrance

No estimate of cost of acquiring or clearing the private property at the intersection of the East-West road and the Panathenaic Way has been included, although the cost of relocating the East-West roadway and the revised entrance to the Church of the Holy Apostles is included.

I have shown a passageway under the East-West roadway connecting the North and South areas along the Panathenaic Way. No cost has been included because until the private house has been acquired and the excavation completed in this area not enough data are available to make an estimate.

### Miscellaneous

Since making the first preliminary estimate three items have been discussed which were not originally included.

### Benches

Twenty-five locations for comfortable benches are shown on the plan in the central area. These benches will consist of simple marble ends supporting comfortable, unpainted, wooden-slat seats and backs similar in design to benches in Constitution Square park.

### Fountain

The ancient fountain at the South end of the Stoa of Attalos terrace will be restored and water recirculated by a small electric pump.

### Memorial Stelae

It has been suggested by Mr. Gorham P. Stevens that the names of donors to the landscape development fund be memorialized by inscribing their names on marble stelae located somewhere on the Stoa of Attalos terrace. An item has been included in the estimate for this purpose.

AGORA EXCAVATIONS  
PLANT MATERIAL LIST

| KEY<br>No.  | NAME                                     |                     | COMMENTS   | QUAN-<br>TITY | SIZE | SOURCE |
|---|--|---------------------|--|---------------|------|--------|
|   | English                                  | SCIENTIFIC<br>Greek |  |               |      |        |
| (These columns to be filled in<br>after final plans are made) |  |                     |  |               |      |        |
| 1   | Platanus orientalis<br>Oriental Plane -  | *                   |  |               |      |        |
| 2   | Populus alba<br>White poplar -           | *                   |  |               |      |        |
| 3   | Brushontia aparifera                     | *                   |  |               |      |        |
| 4   | Celtis australis<br>Nettle tree -        | *                   | Pliny - wood for<br>flute                                |               |      |        |
| 5   | Quercus coccifera<br>Berry bearing oak - | prinos              | Theophrastos<br>used for axles                           |               |      |        |
| 6   | Quercus robur<br>True oak -              | *                   |  |               |      |        |
| 7   | Quercus ilex<br>Holm Oak -               | *                   |  |               |      |        |
| 8   | Quercus suber<br>Cork Oak -              | *                   | Mentioned by Theophrastos<br>and Pausanias               |               |      |        |
| 9   | Quercus agrifolia<br>Valonia oak -       | *                   | Sacred to Jove   |               |      |        |
| 10  | Sterkulia diversifolia<br>*Kurradjong    | *                   | resembles Liquid Amber<br>racemes of red flowers<br>good |               |      |        |
| 11  | Sophora japonica<br>Scholar Tree -       | *                   |  |               |      |        |
| 12  | Salix fragilis<br>Crack willow -         | *                   |  |               |      |        |
| 13  | Salix amplexicaulis<br>Willow -          | *                   |  |               |      |        |
| 14  | Salix caprea<br>Goat willow -            | *                   |  |               |      |        |

Agora Excavations  
Plant Material List (Continued)

- |    |   |                                     |
|----|---|-------------------------------------|
| 16 | *<br>Tsitsiphia Tree                          |                                     |
| 17 | Cupressus sempervirens<br>Cypress tree - *    | fastigate form                      |
| 18 | Cupressus s. horizontalis<br>Cypress tree - * | loose open form                     |
| 19 | Pinus laricio<br>Corsican pine - *            |                                     |
| 20 | Pinus pinea<br>Stone pine - *                 | crowns for<br>Isthmian games        |
| 21 | Pinus halepensis<br>Aleppo pine - *           |                                     |
| 22 | Ceratonia siligua<br>Carob tree - Kharouphia  |                                     |
| 23 | Cercis siliguastrum<br>Redbud - Kotsikas      |                                     |
| 24 | Amygdalus communis<br>Almond tree - amygdalia |                                     |
| 25 | Punica granatum<br>Pomegranate - *            |                                     |
| 26 | Ficus carica<br>Fig tree - *                  |                                     |
| 27 | Olea chrysochyla<br>Olive tree - *            |                                     |
| 28 | Olea oleaster<br>Wild olive tree - *          | used in crowns for<br>Olympic games |
| 29 | Citrus orantium<br>Wild orange - *            |                                     |
| 30 | Vitex agnus castus<br>Chaste tree - Lygaria   |                                     |
| 31 | Nerium oleander<br>Oleander - Pikrodaphne     |                                     |
| 32 | Parkinsonia<br>Palos verdes - *               |                                     |

Agora Excavations  
Plant Material List (Continued)

- |    |   |   |   |
|----|---|---|---|
| 33 | <i>Pistacia vera</i><br>Pistacio                  | * | Nut bearing tree                        |
| 34 | <i>Pistacia lentiscus</i><br>Masticha = Mastichia |   |   |
| 35 | <i>Laurus nobilis</i><br>Laurel Tree = Daphne     |   | sacred to Apollo                        |
| 36 | <i>Myrtus communis</i><br>Myrtle = brosin         |   | sacred to Aphrodite                     |
| 37 | <i>Acacia cyanophylla</i><br>Mimosa =             | * |   |
| 38 | <i>Buxus sempervirens</i><br>Boxwood =            | * | used for Homer's<br>writing tablets     |
| 39 | <i>Ruscus hypoglossum</i><br>Alexandrian laurel = | * |   |
| 40 | <i>Rhamnus alaternus</i><br>Buckthorn =           |   | Evergreen hedge                         |
| 41 | <i>Pyracantha coccinea</i><br>Firethorn =         | * |   |
| 42 | <i>Tamarix africana</i><br>Tamerisk =             | * |   |
| 43 | <i>Rosmarinus officinalis</i><br>Rosemary =       | * |   |
| 44 | <i>Salvia triloba</i><br>Sage = faskomelia        |   |   |
| 45 | <i>Calycotome villosa</i><br>Gorse = asphalaklos  |   | Plato-torment to<br>tyrants in Tartarus |
| 46 | <i>Erica arborea</i><br>Heather = Eriki           |   | Used for Briar Pipes                    |
| 47 | <i>Erica verticillata</i><br>Heather = Eriki      |   |   |
| 48 | <i>Satureia thymbra</i><br>Savory                 |   | Theophrastus =<br>Thymbra               |
| 49 | <i>Thymelaea hirsuta</i><br>therocalo             |   |   |

Agora Excavations  
Plant Material List (Continued)

- 50 *Thymelaea tartaronraira*  
Kolo phouisa
- 51 *Lonicera etrusca*  
Honeysuckle
- 52 *Clematis cirrhosa*  
*Clematis - agrambeli*
- 53 *Clematis*  
\* - perikoklada pale lemon yellow  
rocks - winter bloom
- 54 *Wisteria sinensis*  
Purple wisteria - \*
- 55 *Vitis*  
Grape vine - \*
- 56 *Plumbago*  
Plumbago vine - \*
- 57 *Clematis flammula*  
*Clematis - chelidronia* Evergreen white -  
Summer - wet places
- 58 *Smilax aspera*  
Evergreen smilax - arkoudovatos
- 59 *Vinca major*  
Myrtle - \*
- 60 *Convolvulus elegantissimos*  
- foustanaki like pink morning  
glory
- 61 *Asparagus acutifolius*
- 62 *Asparagus verticillatus*  
Asparagus vine - \* commonly used in  
pots - boxes - beds
- 63 *Asparagus plumosus*  
Asparagus fern - \*
- 64 *Thymus capitatus*  
Wild Thyme - \*
- 65 *Teucrium polium*  
Teucrium - panayochorto
- 66 *Capparis sicula*  
Capper - \*
- 67 *Genista - sparta*  
Broom

AGORA EXCAVATION  
LANDSCAPE DEVELOPMENT  
PRELIMINARY ESTIMATE OF COST

SUMMARY

Entrances

|                   |             |
|-------------------|-------------|
| West              | \$ 7,797.00 |
| North             | 1,775.00    |
| South             | 6,625.00    |
| East              | 1,300.00    |
| East-West Roadway | 7,820.00    |

|                 |                 |
|-----------------|-----------------|
| Walks and Steps | 12,253.00       |
| Base Grading    | 3,000.00        |
| Water Supply    | 9,228.00        |
| Planting        | 27,213.00       |
| Miscellaneous   | <u>3,250.00</u> |

|                      |                 |
|----------------------|-----------------|
| Total                | \$ 80,261.00    |
| Contingencies 10%    | <u>8,026.00</u> |
| Total estimated cost | \$ 88,287.00    |

Professional Services

|   |                 |
|---|-----------------|
| A. Preliminary report, estimate and plans     | \$ 2,500.00     |
| Traveling expense                             | 1,200.00        |
| B. Working drawings and supervision 10 months |                 |
| @ \$700.00                                    | 7,000.00        |
| Traveling expense                             | <u>1,200.00</u> |

11,900.00

|       |              |
|-------|--------------|
| Total | \$100,187.00 |
|-------|--------------|

Alternate Estimate for Area South of East-West Road

|   |             |
|---|-------------|
| 1. Remove and dispose of existing stone wall between Agora and Areopagus. Approx. 434 lin. meters x 2.5 m. average height x 0.5 m. thick = 5425 cu. m. @ \$1.00 | \$ 5,425.00 |
| 2. Ramp between Panathenaic Way and Acropolis (including walls) 120 sq. m. @ \$10.00  | 1,200.00    |
| 3. Planting except bank below new base wall along Street of Apostle Paul  |             |
| A. Major trees, 86 @ \$5.00   | 430.00      |
| B. Minor trees, 24 @ \$5.00   | 120.00      |



Agora Excavation - Landscape Development  
Preliminary Estimate of Cost (Continued)

|    |   |              |                 |
|----|---|--------------|-----------------|
| C. | Shrubs & Vines  |              |                 |
|    | (1) specific location   | 216          |                 |
|    | (2) 2740 sq. m. @ 80% planted =   | <u>2,192</u> |                 |
|    | (1 plant per meter)   | 2,408        |                 |
|    | 2,408 @ \$2.50  |              | \$ 6,020.00     |
| D. | Ground cover  |              |                 |
|    | 11,505 sq. m. @ 50% = 5,753 sq. m.  |              |                 |
|    | (2 plants per m.) @ \$1.00  |              | <u>5,753.00</u> |
|    |   |              | \$18,948.00     |
|    | Contingencies 10%   |              | <u>1,948.00</u> |
|    | If this work is deferred deduct from<br>the total estimated cost            |              | \$ 20,843.00    |
|    | Total, including Professional Services,<br>less alternate for deferred work |              | \$ 79,344.00    |

DETAIL ESTIMATE

I. Entrances

A. West

|    |  |  |               |
|----|--|--|---------------|
| 1. | Removal of North, South and West walls<br>including fence and gates (for salvage)<br>around the Hephaisteion 208 lin. meters<br>@ approx. 1 cu. m. per lin. meter =<br>208 cu. m. @ \$3.50 |  | \$ 728.00     |
| 2. | Revision of existing base wall West of<br>Hephaisteion 55 lin. meters @ \$5.00   |  | 275.00        |
| 3. | New base wall along west boundary<br>350 lin. meters @ \$5.00  |  | 1,750.00      |
| 4. | Revision of salvaged iron fence including<br>resetting 208 m. @ \$6.00   |  | 1,248.00      |
| 5. | New iron fence including setting<br>197 m. @ \$18.00   |  | 3,546.00      |
| 6. | Guard House<br>2.5 x 2.5 x 3.0 m. complete   |  | <u>200.00</u> |
|    |  |  | \$ 7,797.00   |

Agora Excavation - Landscape Development  
Preliminary Estimate of Cost (Continued)

B. North

|   |               |             |
|---|---------------|-------------|
| 1. Remove existing wall and rubble along South face of Railroad overpass<br>300 cu. m. @ \$2.50 | \$ 750.00     |             |
| 2. Regrade and pave surface of railroad overpass with stone macadam<br>230 sq. m. @ \$1.25      | 287.50        |             |
| 3. Move existing ramp and reconstruct, including walls, at proposed location                    | 600.00        |             |
| 4. Pave ramp surface with stone macadam<br>110 sq. m. @ \$1.25                                  | <u>137.50</u> | \$ 1,775.00 |

C. South

|   |                 |          |
|---|-----------------|----------|
| 1. Remove and dispose of existing stone wall between Agora and Areopagus approx. 434 lin. meters x approx. average 2.5 meters high x .5 m. thick = 5425 cu. m. @ \$1.00 | \$ 5,425.00     |          |
| 2. Ramp between Panathenaic Way and Acropolis (including walls) 120 sq. m. @ \$10.00  | <u>1,200.00</u> | 6,625.00 |

D. East

|   |               |          |
|---|---------------|----------|
| 1. New chain link fence (with one top strand of barbed wire) 416 m. (1.5 m. high, 5 cm. mesh of 3 mm wire) @ \$1.00 | \$ 416.00     |          |
| 2. 416 m. barbed wire @ 1½¢   | 6.24          |          |
| 3. 139 angle iron posts 2.5 m. long set in concrete @ \$2.00  | 278.00        |          |
| 4. Labor of setting posts and stretching wire 416 m. @ 36¢  | 149.76        |          |
| 5. Steps from street to Byzantine Church (approx. 10 risers)  | 300.00        |          |
| 6. Steps from Church to Agora (approx. 5 risers)  | <u>150.00</u> | 1,300.00 |

Agora Excavation - Landscape Development  
Preliminary Estimate of Cost (Continued)

E. East-West Roadway

1. Road

|    |  |             |
|----|--|-------------|
| a. | 375 x 5 x 1 m. regrading =<br>1875 cu. m. @ \$1.50 | \$ 2,812.50 |
| b. | 1875 sq. m. surface 0.15 m.<br>thick @ \$1.25      | 2,343.75    |
| c. | existing marble curb and gutter<br>reset 360 @ 50¢ | 180.00      |
| d. | new marble curb and gutter 390 @ \$2.75            | 1,072.50    |

2. Fencing

|    |  |               |
|----|--|---------------|
| a. | New chain link fence including Church<br>area (with one top strand of barbed wire)<br>859 m. (1.0 m. high, 5 cm. mesh of<br>3 mm wire) @ 60¢ | 515.40        |
| b. | 859 m. barbed wire @ 1.5¢  | 12.89         |
| c. | 287 angle iron posts 2 m. long set<br>in concrete @ \$2.00   | 574.00        |
| d. | Labor of setting posts and stretching<br>wire 859 m. @ 36¢   | <u>309.24</u> |
|    |  | \$ 7,820.28   |

II. Walks and Steps

A. West

|    |   |           |
|----|---|-----------|
| 1. | Walks from west gate to Hephaisteion and<br>to top of slope above Tholos<br>west 45<br>center 95 (to end of bleachers)<br>south 60<br><u>200</u> x 2 m. = 400 sq. m. @ \$1.25 | \$ 500.00 |
| 2. | Lecture seats (bleachers) 6 @ 15.5 = 93 m<br>x 1.0 wide x 0.5 m. high @ \$40.00   | 3,720.00  |
| 3. | Removal of wall East of Hephaisteion 100 m.<br>x av. 2.5 x 1 m. = 250 cu. m. @ \$3.50   | 875.00    |

Agora Excavation - Landscape Development  
Preliminary Estimate of Cost (Continued)

|    |  |                 |              |
|----|--|-----------------|--------------|
| 4. | Construction of lecture terrace and walk and steps leading from Hephaisteion to Agora<br>125 m. x 2 m. = 250 sq. m. @ \$3.50 | \$ 875.00       |              |
| 5. | Construction of walks resurfaced with rolled crushed stone and dry cement<br>2,258 sq. m. @ \$1.00                           | 2,258.00        |              |
| 6. | Lower and repair area around Byzantine Church including new wall 805 sq. m. @ \$5.00   | <u>4,025.00</u> | \$ 12,253.00 |

III. Base Grading

|  |   |             |          |
|--|---|-------------|----------|
|  | 3 piles of 1350 $\frac{1}{2}$ - cu. m. accumulated fill.<br>Approx. 4000 cu. m. to be distributed @ 75¢<br>All other grading, except as noted for roadway,<br>to be done in connection with the archaeological<br>excavation. | \$ 3,000.00 |          |
|  |   | <hr/>       | 3,000.00 |

IV. Drainage

The ancient main drain lines are adequate for the present job. The work of connecting local surface drains into them will be done under the archaeological budget.

It is recommended that a few of the ancient drain inlet covers be reinstalled in strategic places.

V. Water Supply

|    |   |             |  |
|----|---|-------------|--|
| A. | Concrete reservoir 9 x 16 x 2.5 m. (with approx. 2 m. water depth)  | \$ 2,500.00 |  |
| B. | Pumping from 3 existing wells   |             |  |
| 1. | Pumps for both East and West wells -<br>Reciprocating plunger type with suction<br>line and strainer, 1 H. P. electric motor<br>w/automatic control |             |  |
| 2. | Pump for middle well - Deep well turbine<br>type, water lubricated, rubber bearing,<br>3 H. P. electric motor w/automatic control                   |             |  |
|    | Cost of all three pumps including Labor<br>of installation  | 2,500.00    |  |
| 3. | Pump House  | 300.00      |  |

Agora Excavation - Landscape Development  
Preliminary Estimate of Cost (Continued)

C. Pipe

|  |                 |             |
|--|-----------------|-------------|
| 1. 3" gal. iron pipe, 800 m. @ 89,000 dr.  | \$ 2,374.00     |             |
| 2. 3" brass valves, 9 @ 350,000 dr.        | 105.00          |             |
| 3. 1½" gal. iron pipe, 300 m. @ 43,000 dr. | 430.00          |             |
| 4. 1½" brass valves, 6 @ 92,000 dr.        | 19.00           |             |
| 5. Labor of installation                   | <u>1,000.00</u> | \$ 9,228.00 |

VI. Planting

Unit cost items include digging hole, disposal of fill, bringing in proper topsoil, labor of planting, staking, wrapping and covering, fertilizer, manure, and peat moss.

|   |                       |                 |
|---|-----------------------|-----------------|
| A. Major trees, 201 @ \$5.00  | \$ 1,005.00           |                 |
| B. Minor trees, 121 @ \$5.00  | 605.00                |                 |
| C. Shrubs and Vines   |                       |                 |
| 1. specific location  | 420                   |                 |
| 2. 7110 sq. m. @ 80% planted<br>= 5,688 @ 1 per meter                                       | 5,688                 |                 |
|   | <u>6,108</u> @ \$2.50 | 15,270.00       |
| D. Wild flowers, 4460 sq. m.<br>(1 plant per meter) @ 50¢                                   |                       | 2,230.00        |
| E. Slope between Hephaisteion and Agora<br>1885 sq. m. (1 plant per meter) @ 50¢            |                       | 942.50          |
| F. Ground cover 14,315 sq. m. @ 50% planted<br>= 7,160 sq. m. (2 plants per meter) @ \$1.00 |                       | <u>7,160.00</u> |
|   |                       | 27,212.50       |

VII. Miscellaneous

|  |               |          |
|--|---------------|----------|
| A. Benches, marble ends with seat and back of natural wood 25 @ \$100.00 | \$ 2,500.00   |          |
| B. Fountain at end of Stoa of Attalos terrace                            | 250.00        |          |
| C. Memorial stelae with donor's names                                    | <u>500.00</u> | 3,250.00 |

Agora Excavation - Landscape Development  
Preliminary Estimate of Cost (Continued)

ITEMS WHICH CAN BE SEGREGATED FOR INDIVIDUAL CONTRIBUTIONS

|     |   |           |           |
|-----|---|-----------|-----------|
| 1.  | <u>Garden of Hephaistos</u>                 |           |           |
|     | 60 trees @ \$5.00                           |           | \$ 300.00 |
| 2.  | <u>Peribolos Hedge around Hephaisteion</u>  |           |           |
|     | 150 meters @ \$2.50                         |           | 375.00    |
| 3.  | <u>Wildflower garden</u>                    |           |           |
|     | 4460 sq. meters @ 50¢                       |           | 2,230.00  |
| 4.  | <u>The Grove of the Phosphoroi</u>          |           |           |
|     | 25 (arbitrary number) @ \$5.00              |           | 125.00    |
| 5.  | <u>The Plane Trees of Kimon</u>             |           |           |
|     | 56 Plane trees @ \$5.00                     |           | 280.00    |
| 6.  | <u>The Grove of Pity</u>                    |           |           |
|     | Altar of the Twelve Gods                    |           |           |
|     | 1 large olive @ \$30.00                     | \$ 30.00  |           |
|     | 2 large laurel @ \$10.00                    | 20.00     |           |
|     |   | <hr/>     | 50.00     |
| 7.  | <u>The Church yard of the Holy Apostles</u> |           |           |
|     | 3 trees @ \$25.00                           | \$ 75.00  |           |
|     | Lower and repair paved area around          |           |           |
|     | Church 805 sq. m. @ \$5.00                  | 4,025.00  |           |
|     |   | <hr/>     | 5,000.00  |
| 8.  | <u>Area of the White Poplar</u>             |           |           |
|     | 10 trees @ \$10.00                          | \$ 100.00 |           |
|     | 8 shrubs @ \$5.00                           | 40.00     |           |
|     | Ground cover @ \$10.00                      | 10.00     |           |
|     |   | <hr/>     | 150.00    |
| 9.  | Fountain at Stoa of Attalos                 |           | 250.00    |
| 10. | 25 benches @ \$100.00                       |           | 2,500.00  |

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