CITY OF Goodyear Approved 06/10/21 21-2095 - VIP PRODUCTS

UNDERGROUND SPRINKLER SYSTEM

Part 1 – General

1.01 WORK INCLUDED

A. The work included under these specifications shall consist of the furnishing of all labor, materials, permits, tools, and equipment necessary for the complete installation of a sprinkler irrigation system in accordance with the following specifications and accompanying drawings.

B. It is the intent of these drawings and specifications to form a guide for a complete installation, and although some items may not be specifically noted, but are reasonably necessary for a complete installation, they shall be furnished under this contract. Sprinklers shall be located and spaced so that adequate overlapping of the spray will provide uniform head to head(100%) coverage. The system shall efficiently and evenly irrigate all areas, and shall be complete in every respect, ready for operation by the Owner.

C. It is the responsibility of the Irrigation Contractor to provide 100% coverage to all landscape areas.

1.02 CONTRACTOR'S QUALIFICATIONS

A. Installers shall be licensed irrigation contractors with experience in the installation of automatic underground lawn sprinkling systems. All work shall be performed in a professional workmanlike manner by mechanics skilled in the trade.

B. The contractor is responsible for any damage to any existing conditions until final acceptance of his work.

C. The Contractor shall obtain all permits from, pay required fees to, and arrange any necessary inspections by any government agency having jurisdiction over the work.

1.03 VERIFICATION OF DRAWINGS AND SPECIFICATIONS

A. It shall be the Contractor's responsibility to carefully examine the drawings and specifications, and to visit the site in order to check existing conditions prior to bidding. Any conflict or errors shall be immediately brought to the attention of the Landscape Architect for interpretation or instructions. Otherwise, any changes necessary to meet existing conditions, shall be made at the Contractor's expense.

B. It is the Irrigation Contractor's responsibility to verify water pressure, water source, and size in the field prior to construction. Should a discrepancy exist between design pressure and the field pressure the Landscape Architect shall be notified immediately.

1.04 WORKING CONDITIONS

A. The Contractor shall confine his operations to the areas allotted to him by the Owner, for his work for material and equipment storage.

B. The Contractor shall continuously maintain a competent superintendent, satisfactory to the Owner, on the work during progress, with authority to act for the Contractor in all matters pertaining to the work.

C. The Contractor shall not assign nor sublet any portion of this work without written approval by the Owner.

D. The Contractor shall be responsible for staking out the system from the drawings, using the property lines and building dimensions as a guide.

E. The Contractor shall coordinate his work with that of the other trades, so as to avoid any conflict, and carry the installations to a rapid completion without any unnecessary delays.

PART 2 – PRODUCTS

2.01 PIPING

A. All pressure main piping, on the supply side of the zone valves, shall be class 200 PVC with integrally formed bell–tite joint couplers. All fittings shall be solvent welded, schedule 40 PVC.

B. All lateral piping, on the discharge side of the zone valves, two inches (2") and under, shall be class 200 PVC. Fittings shall be schedule 40 PVC material. 1/2" pvc to be class 315

C. All plastic to metal shall be made with PVC schedule 40 male adapters or PVC schedule 80 nipples. Joint compound for such connections shall be Permatex Type II teflon tape or a prior approved equivalent.

D. Where pipes are installed under roads, drives, parking areas or walks, schedule 40 PVC sleeves shall be provided for the lines. In planting areas, where cultivation might damage shallow plastic piping, protective sleeves must be provided, unless copper tubing is installed. Risers in flower beds and shrubbery shall be schedule 80 PVC.

2.02 SPRINKLER HEADS

A. Emitter heads shall be on PVC laterals, or prior approved equivalent.

2.03 AUTOMATIC CONTROLLER

A. Unit features shall include mechanical time control design, adjustable time setting up to 60 minutes per station, 24–hour clock, 14–day calendar, and automatic rapid advance. Unit shall be UL listed and shall operate on 120 volt, 1 phase, 60 Hertz power. General Contractor to bring power to controller. Irrigation Contractor to hardwired to controller, see detail.

2.04 QUICKCOUPLING VALVES

A. Furnish and install where shown on the drawings quick–coupler with swivel and hose bib, 3/4" size or prior approved equivalent. They shall be mounted on one inch (1") copper swing joint risers, and the tops shall be set flush with the top of the planters. Furnish and deliver to the Owner double–lug coupler key complete with one inch (1") hose swivel for connecting to the above valves. Also furnish two (2) locktop cover key.

2.05 ELECTRICAL CONTROL CABLE

A. All electrical control and ground wire shall be irrigation control cable of size as required. All wiring to be used for connecting the automatic remote control valve to the automatic controllers shall be Type "UF", 600 volt, stranded, or solid copper, single conductor wire with PVC insulation and bear UL approval for direct underground burial feeder cable.

B. All control or "hot" wires shall be on one color and all common or "ground" wire shall be or another color(white).

C. Verifications of wire types and installation procedures shall be checked to conform to local codes.

D. All electric control cable shall be of size as determined by the equipment manufacturer and shall be installed in the piping trenches wherever possible and in the manner recommended by the manufacturer, leaving slack in the wire. Expansion joints in the wire may be provided at 200–foot intervals by making 5 or 6 turns of the wire around a piece of 1/2 inch pipe. Where it is necessary to run wire in a separate trench, the wire shall be a minimum cover of twelve (12") inches.

PART 3 – INSTALLATION

3.01 PROTECTION OF UTILITIES, IRRIGATION SYSTEM, ETC.

A. The Contractor shall verify the location of all utilities and note location of utilities, irrigation piping and underground obstructions. The contractor shall be responsible for the cost of repairing buried conduit, cables or pipelines damaged during the installation of the irrigation system.

B. The Contractor shall clearly make and maintain markers showing locations of irrigation system wiring and piping installed in order that other contractors may avoid damaging this work.

C. The Contractor shall take necessary precautions to protect site conditions and plant materials which are to remain. Should damage be incurred, Contractor shall repair damage to its original condition or furnish and install equal replacement at his expense.

D. The Contractor shall coordinate with the Landscape Architect to provide irrigation to existing materials.

E. contact blue stake prior to digging.

3.02 EXCAVATION

A. The Contractor shall do all necessary excavation for the proper installation of his work. Machine trenchers used on the site shall be of an approved type to cut smooth–bottom trenches on uniform slopes. Trenches shall be no wider than necessary to lay the pipe, except where necessary to make joints. Over excavating shall be backfilled and carefully tamped to proved a smooth and firm bearing surface for laying the pipe. When necessary, Contractor must provide barricades and lights for public protection. Minimum depth of cover shall be at least twenty four 24" depth for the main piping, and at least twelve 12" depth for the lateral branch lines.

3.03 PIPE INSTALLATION

A. All pipe lines shall be installed in the locations and of the sizes indicated, and of the materials specified. Parallel piping may be installed in the same trench. Piping shall be laid accurately to the line and grade required, with full uniform bearing on the trench bottom. No piping shall be laid on soft fill or other unstable material. No direct contact, with other piping or structures, will be permitted at crossing. Interior of piping shall be kept clear of foreign matter before installation, and shall be kept clean by means of plugged or capped ends after lowering into the trench. The supply main lines shall be flushed out and tested for leaks, with control valves in place, before backfilling the joints. All lateral piping sections shall be flushed out before sprinkler heads are attached. All pipe shall be installed in strict accordance with recommendations of the manufacturer. This shall apply to thrust blocking, handling, storage, depth of cover, expansion allowance, testing, etc.

B. Under existing drives or sidewalks, the Contractor shall either saw cut concrete and replace it to the former condition or install the pipe by boring or jacking under the area. pvc sleeves to be at a 24" depth

3.04 BACKFILLING

A. As soon as the work has been installed, inspected and accepted, all excavations and trenches shall be filled and water settled with fine earth materials, free from clods, rocks, or other unsuitable substances. Trenches must be left flush with adjacent finished grade after compacting to the original density of the soil. Flooding of trenches will be permitted downstream of zone valves. Care shall be taken to place any previously tilled and fertilized soil in the top portion of the trench, and subsoil will not be allowed in the top six (6) inches of the backfill.

?3.05 SPRINKLER HEADS

A. Sprinklers shall be set plumb and level with the turf at locations shown on the drawings. In lawn areas where grass has not been established, the heads shall be installed in temporary risers at least three (3) inches above the grade. After the turf is established, the Contractor shall, within then (10) days after notification, lower the heads to their permanent positions flush with the finished grade. This elevation is critical and Contractor shall exercise care to set them exactly at grade – never below.

3.06 AUTOMATIC VALVES

A. Each sprinkler zone shall be operated by automatic electric valves in the sizes indicated on the drawings. Each valve shall be provided with a built–in pressure regulator capable of holding a steady downstream pressure, regardless of fluctuations in the main supply pressure. The valves shall be installed where shown and supplied with a tag on which the valve's zone number shall be plainly marked.

B. All valves to be in valve boxes. valve boxes to have a pea–gravel sump per detail.

C. Each valve shall be housed in an Ametex valve box, or prior approved equivalent. Place valve boxes in an orderly fashion. In the lawn place valve boxes in such a manner that mowing and weeding can easily be performed.

3.07 WATER SUPPLY

A. Connection shall be made to the sprinkler outside the building as shown on the drawings.

B. Water meter to be supplied by general contractor. Unless otherwise noted.

3.08 ELECTRICAL WORK

A. The Electrical Contractor will provide a single source of electrical power for the irrigation system as shown on the drawings. The Underground Sprinkler System Contractor shall furnish and install complete and properly operating all the required electrical work for the lawn irrigation system. This shall include all power and control wiring along with switches, safety switches, relays, transformers, fuses, conduit, wiring devices, etc. required for a properly operating system.

B. All electrical work shall be done in accordance with the National Electrical Code and local ordinances.

C. All wire connections, at remote control valves (either direct buried or in control boxes) and at all wire splices, shall be left with sufficient "slack" so that in case of repair the valve bonnet or splice may be brought to the surface without disconnecting the wires.

D. Each remote control valve or group of remote control valves, which are to be connected to one station of a controller, shall have wire sizes as shown in the wiring diagrams on the drawings or as specified. All remote control valves, which are to be connected to the same controller, shall be connected to a common ground wire to size as shown on the drawings or as specified. Each individual controller shall have a separate common ground wire system entirely independent of the common ground wire system of all other controllers. Only those remote control valves which are being controlled by one specific controller shall be connected to that controller's common ground wire system.

3.09 TESTING

A. After all supports, anchors, and thrust blocks are in place, the line shall be tested at a pressure of 150 psi for 30 minutes. Should any leaks be found, they shall be repaired and the line retested until satisfactory Zone lines shall be tested at 80 psi in like manner. After testing, the system shall be thoroughly flushed out before the heads may be installed. Upon completion, an operating test shall be performed to visually check the coverage of the system. Any heads, which do not function according to the manufacturer's data shall be replaced with sprinklers that do or the installation shall be otherwise corrected to provide satisfactory performance. Final adjustment to the sprinkler heads and automatic equipment will be done by the Contractor upon completion of the installation to the satisfaction of the Landscape Architect. Minor adjustment from then on shall be made by the Owner's Maintenance Staff.

3.10 DRAWINGS OF RECORD

A. The Contractor shall provide and keep up to date a complete "as–built" record set of mylar sepias which shall be corrected to show any changes from the original drawings. These record drawings shall show location of all control lines, valves, valve boxes, main lines, flush caps, controllers, and any substitutions as well as any deviation in piping or location of buried valves, etc. with accurate dimensions indicated.

B. After completion of the sprinkler installation, the Contractor shall deliver to the Owner three prints of the correct and completed "as–built" set of drawings, along with three bound instruction folders covering the equipment installed. Contractor shall present the above information as a condition precedent tot he completion payment.

3.11 GUARANTEE

A. Within ten (10) days after the Contractor's notification that the sprinkler installation is complete, the Landscape Architect will inspect the system and, if necessary, submit a "punch list" to the Contractor. Acceptance by the Landscape Architect of these corrections will signify final acceptance by the Owner.

B. The entire sprinkler system shall be guaranteed for a period of one year from this final acceptance date. The Contractor shall promptly replace, without cost to the Owner, any defective materials of faulty workmanship which may develop within this guarantee period, including restoration of any property damaged during repairs. He shall also be responsible for damages resulting from leaks which may occur in the piping system installed by him, and he shall repair, at his expense, all damage so caused, in a manner satisfactory to the Owner. However the Contractor shall not be held liable for damages occasioned by strikes, fire, weather, violence or theft, acts of God, acts of other contractors, or any other caused beyond the control of the Contractor.

C. It will be the Owner's responsibility to maintain the system in working order during the guarantee period, performing necessary minor maintenance, keeping grass from obstructing the sprinkler heads, protecting against vandalism and preventing damage during the landscape maintenance operation.

D. The Contractor shall service the system at the Owner's request during the guarantee period, and shall be paid for work performed which is not covered by the guarantee, in accordance with a predetermined schedule of fees.

LANDSCAPING

PART 1 – GENERAL

1.01 WORK INCLUDED

A. The work included under these specifications shall consist of the furnishing of all labor, material, permits, tools, and equipment necessary for the complete installation of the landscaping materials as shown on the drawings and as described in the following specifications.

1.02 QUALITY ASSURANCE

A. For standard products, the manufacturer's analysis will be acceptable. For all other materials, analysis shall be by a recognized laboratory.

B. Analysis shall be made in accordance with the current methods of the Association of Official Agriculturral Chemists.

C. Soils shall be analyzed for their composition and fertility in sustaining plant growth and health.

D. All plants furnished under this specification shall be from nursery grown stock, and they shall meet the ARIZONA NURSERY ASSOCIATION of the American Association of Nurserymen, Inc. requirements as to sizing, grading, and quality. Plant materials specified shall conform with the nomenclature of STANDARDIZED PLANT NAMES, Second Edition. The Landscape Architect reserves the right to refuse all plant material based on overall appearance and quality regardless of specifications.

E. Plants of the species specified shall be furnished in the variety, size, grade and quality indicated. Specifications and planting plans shall be strictly adhered to and no changes or substitutions will be allowed prior to bidding without written permission of the Landscape Architect, Owner, or Owner's Representative.

F. By submitting a proposal and accepting award of the Contract, the Contractor acknowledges that he has investigated the supply of planting stock available and has obtained firm commitments from his suppliers assuring delivery of the specific plant materials as required for completion of the project.

G. All plant materials shall be grown in accordance with good horticulture practices and shall bear evidence of proper nursery care during growth under climatic conditions similar to those in the locality of the project for at least two years. They shall have been previously transplanted or root pruned according to standard nursery practice and inspected by State Control Agencies.

H. All plants shall be freshly dug. No heeled in plant or plants from cold storage will be accepted. Plants shall be typical of their species or variety and have normal habits of growth, be healthy and vigorous, well branched and have dense foliage when in leaf. All plants, including root systems, shall be free of disease, disfiguring knots, sunscald, inspect pests, eggs or larvae, dead or broken branches, bark abrasions, and have healthy well developed root systems. The root system of container grown plants shall be sufficiently developed to hold the earth intact upon removal of the container.

I. Planting, sodding and seeding shall be performed by personnel familiar with planting procedures and under the supervision of a qualified planting foreman.

1.03 SUBMITTALS

A. Submit a soil fertility test of the planting soil for approval by the Landscape Architect prior to delivery of soil to the project site. Test reports shall indicate the location of the source for soil.

B. Upon completion of the work, submit a schedule satisfactory to the Landscape Architect for the maintenance of all plant material.

PART 2 – PRODUCTS

2.01 SOD

A. Approved nursery grade cultivated grass sod; species and cultivar as indicated on the drawings with strong, fibrous root system, free from stones and burned or bare spots.

2.02 PLANTING SOIL FOR PLANT PITS AND BEDS

A. Fertile, friable, natural loam containing a liberal amount of humus, capable of sustaining vigorous plant growth. The Ph value of the planting soil shall not be higher than 7.5 or lower than 5.5. It shall be free of any admixture of subsoil, stones, lumps, clods or hard earth, plants, or their roots, sticks, and other extraneous matter. Do not use planting soil for planting operations while in a frozen or muddy condition

2.03 PEAT

A. Acceptable peat moss consisting of at least 73% organic content of natural occurrence. It shall be brown, clean, low in content of mineral and woody materials, mildly acid, and granulated or shredded.

2.04 FERTILIZER

A. Commercial Fertilizer: A complete fertilizer, conforming to FS 0–F–241, Type I, Grade A, part of the elements of which are derived from organic sources containing the following percentages by weight:
10% nitrogen 5% nitrogen
10% phosphoric acid–or–10% phosphoric acid
10% potash 5% potash

B. Organic Fertilizer: An organic activated fertilizer containing a minimum of five percent nitrogen, three percent phosphoric acid and other basic elements by weight.

C. Deliver fertilizer mixed as specified in standard size bags, showing weights, analysis and name of manufacturer. Store in weatherproof storage place in such manner that it will be kept dry and its effectiveness not impaired.

D. The Landscape Architect reserves the right to vary the percentages of the components of the fertilizers subject to the results of the soil fertility tests.

2.05 WATER

A. Shall be furnished by the Owner. The Contractor shall furnish all necessary hose, equipment, attachments, and accessories for the adequate irrigation of all planted areas as may be required to complete the work as specified.

2.06 PLANT MATERIAL

A. All old abrasions and cuts shall be completely calloused over. All shrubs shall be measured when their branches are in their normal position. Height and spread dimensions specified refer to the main body of the plant and not from branch or root tip to tip.

B. Shrubs shall be matched specimens from single block source.

C. Evergreen trees not fully branched from top to bottom will be rejected, and those with terminal leaders exceeding twelve (12) inches in length will also be rejected. During the spring planting seasons, any evergreen plant delivered with new growth in an advanced stage of candling out will be rejected.

D. Plants shall not be pruned before delivery. Trees which have damaged or crooked leaders, or multiple leaders, unless specified will be rejected. Trees with bark abrasions, sunscald, disfiguring knots, or fresh cuts of limb over 1 1/4 inches which have not completely calloused will be rejected. Plants shall be freshly dug or container grown. Heeled in plants or plants from cold storage will not be accepted.

E. Plants shall be true to species and variety, and shall conform to measurements specified on the Drawings. Plants larger than specified may be used if approved by the Landscape Architect. Use of such plants shall not increase contract price. If larger plants are approved, the ball of earth shall be increased proportionally with the size of the plant.

F. Substitutions of plant materials will not be permitted unless authorized in writing by the Landscape Architect. Proof must be submitted that use of nearest equivalent size of variety with corresponding adjustment of Contract Price. Such proof shall be substantiated and submitted in writing.

G. It shall be the responsibility of the Contractor to determine required quantities of plants, as no compensation will be made for error in plant quantities. If plant counts occur on plant legend, it is for the convenience of the contractor only. Verify plant counts with plan. In case of discrepancy, plan shall govern.

H. Each plant shall be properly identified with legible waterproof tags securely fastened. Tags shall remain on the plants until after final acceptance and then be promptly removed by the Contractor.

PART 3 – INSTALLATION

3.01 INSPECTION OF PLANT MATERIAL

A. Plants shall be subject to inspection and approval by Landscape Architect at place of growth and upon delivery. Written request for inspection of plant materials at place of growth shall be submitted to Landscape Architect at least ten (10) calendar days prior to delivery. This written request shall state place of growth and quantity of plants to be inspected. Landscape Architect reserves the right to waive inspection. Such approval shall not impair the right of inspection and rejection upon delivery at the project site or during the progress of the work for size and condition of balls or roots, diseases, insects, and latent defects or injuries. Rejected plants must be immediately removed from the project site.

B. Certificates of inspection of plant materials as may be required by Federal, State or other authorities to accompany shipments and be furnished to Owner upon completion of project.

3.02 DIGGING AND HANDLING

A. Digging shall be done the same season of planting and shall be done by hand as to not injure plants and to meet size requirements. No plant other than the required samples shall be dug or delivered to the site until the required inspections have been made and the plants or samples approved.

B. Dig balled and burlapped (BB) plants with firm, unbroken natural balls of earth, of sufficient diameter and depth to include the fibrous and feeding roots. No synthetic or muddied in balls will be accepted. No plants moved with a ball will be accepted if the ball is cracked or broken before or during planting operations.

C. Roots or balls of all plants shall be adequately protected at all times from excessive exposure to wind, sun, rain, hail, etc. Balled and burlapped plants that cannot be planted immediately on delivery shall be set ont he ground and well protected with soil, wet moss and other acceptable material. Bare rooted plants shall be planted or heeled–in immediately upon delivery.

D. All plant material shall be handled carefully to prevent injury to rootballs, trunks, or branches. Any plant suffering damage sufficient to impair its health and/or natural form will be rejected. No plant shall be bound with wire or rope at any time so as to damage the bark or break branches.

3.03 TIME OF PLANTING

A. The contractor shall notify the Landscape Architect in writing when other divisions of the work have progressed sufficiently to commence landscaping work, including placing of topsoil to finish grade. Thereafter, conduct planting operations under favorable weather conditions.

B. Any plant material installed during typical off seasons (hot summer months or freezing winter months) shall be done at the Contractor's own risk and the Contractor shall be held responsible for replacement of any plant material damaged due to these adverse conditions.

3.04 PLANTING OPERATIONS

A. General

1. The Contractor shall coordinate all aspects a the landscape operations with all aspects of the site construction. The work shall proceed as the indicated portions of the site become available, consistent with the seasonal limitations for landscape planting.
2. The Contractor shall be responsible for any damage to utilities construction, sitework construction, and underground sprinkler systems and shall bear the full cost to repair the damage. Accomplishment of repairs shall be equal to the original installation prior to damage. Any damage shall be immediately reported to the Landscape Architect and repairs shall be approved by him before it is buried.
3. Maintain all trench or grade stakes for work under other Sections until their removal is approved by the Landscape Architect.
4. The Contractor shall stake plant location, shrub pits and other planting areas and secure the Landscape Architect's approval before starting excavation of area, making adjustments as necessary.
5. Unless otherwise directed by Landscape Architect, indication of plant on drawings is to be interpreted as including digging of hole, furnishing plant of specified size, work of planting, mulching, guying, staking, wrapping and watering.

B. Plant Pits and Beds

1. Plant pits shall be excavated with vertical sides, large enough to allow twelve (12) inches of space around the ball in all directions. Adjust depth as necessary to permit a minimum of twelve (12) inches planting soil under the ball when the plant is set at the proper depth.
2. Planting pit backfill for all trees and shrub shall be as follows:
   1. 2/3 parts by volume on site soil.
   2. 1/3 parts by volume forest mulch.
   3. One pound 16–20–0 per cubic yard of mix.
3. Planting pits shall be backfilled with prepared backfill and be water settled to a grade sufficient that in the setting of the plant, the finish grade level after settlement will be the same as that at which plants were grown. Agriform tablets to be used with each planting (six for 36–inch box, three for 15 gallon, two for 5 gallon, and one for 1 gallon).

C. Installations

1. Set plants in center of pits, plumb and straight and at such a level that after settlement the crown of the plant shall be two (2) inches below the finish grade and forming a shallow trough directly over the ball of earth and slightly smaller than the pit to facilitate watering. Space all plants as shown.
2. Set balled and burlapped plants upon a well tamped layer of planting soil. Backfill around ball with planting soil in six to eight (6 – 8) inch lifts, each thoroughly tamped and puddled to top of pit. Avoid air pockets. Remove all ropes and wires from tops and sides of balls. No burlap shall be pulled out from under the balls.
3. Plants supplied in containers shall be installed immediately upon being removed from their containers. Removal of plants rom containers shall be in a manner that will not disturb the root system of the soil in which they were planted. Under no conditions shall the plant be removed from the containers by pulling on the main stem or plant growth. No plants shall be installed with their containers remaining attached.
4. Before install bare root plants, planting soil shall be placed and compacted to a depth of twelve (12) inches in the bottom of the plant pit. The plants shall be installed with their roots evenly distributed and spread in their natural position, with the planting soil being carefully placed and compacted around the roots so as to leave no air space.

D. Pruning, Wrapping, Mulching, Staking and Spraying

1. Pruning
   a. Plants shall not be pruned prior to delivery unless Landscape Architect gives written permission. Pruning will occur only at time of planting and according to standard horticultural practice and at the direction of the Landscape Architect. Amount of pruning shall be limited and is not to exceed thirty–three percent (33%) of total plant as necessary to remove dead or injured twigs and branches and to compensate for root loss resulting rom transplanting. Do not cut leaders.
   b. Remove all dead wood, suckers, and broken or badly bruised branches.
   c. Pruning shall be done with clean, sharp tools according to standard horticultural practices. Cuts shall be made flush leaving no splits.
   d. Cuts over 1/2 inch diameter shall be painted over with approved tree paint. Paint shall cover all exposed cambium as well as other exposed living tissue. Injured cambium and bruises and scars shall be tracked back to living tissue and removed. Smooth and shave wounds so as not to retain water. Treat wound with paint.
2. Staking and Guying
   a. Stake or guy all trees per detail. Trees which blow down, sway excessively, or are otherwise injured because of improper bracing shall be replaced at Contractor's expense.
3. Spraying
   a. All ground cover and non–lawn areas shall be treated with pre–emergent.
4. Decomposed Granite
   a. Prior to placing, the area shall be totally free of weeds using chemical control. Apply a pre–emergence control (Surflan or prior approved equivalent) according to manufacturer's recommendations. The decomposed granite shall be evenly distributed at the designated areas to a depth of two (2) inches. After placing and grading, lightly water to remove fine material from the surface and water settle or roll to an extent satisfactory to the Landscape Architect. Apply second application of pre–emergence control according to manufacturer's recommendations.
   b. Decomposed granite shall be "Madison Gold" in color, 1/2 inch minus in size, shall be free from lumps or balls of clay and shall not contain calcareous coating, caliche, organic matter or deleterious substances. Color and source of decomposed granite shall be approved by Landscape Architect. All material shall be from a single production source and shall present a uniform appearance. Material containing clumps which will not disintegrate with a shovel blow shall be rejected.
5. Workmanship – Decomposed Granite
   a. Install rock to a depth as indicated on the plans (typically two inches thick).
6. Workmanship – Berms
   a. Earth berms (mounding) shall take the form indicated on the plans. The Landscape Architect shall inspect and approve all finished grades prior to any planting.
7. Cleaning Up
   a. Keep all areas of this project in a clean, neat and orderly condition at all times. Trash burning and disposal shall not be done on the site. Prior to acceptance put all areas of the work in a finished condition acceptable to the Landscape Architect.

3.05 OBSTRUCTIONS BELOW GROUND

A. In the event that rock or underground construction work or obstructions are encountered in the excavation of plants pits, alternate locations may be selected by the Landscape Architect. Where locations cannot be changed, remove the obstructions (but not new construction work) to a depth of not less than six (6) inches below the required pit depth.

B. Proper drainage of plant pits is necessary. Bring subsoil conditions permitting the retention of water in planting pits for more than twenty–four hours to that attention of the Landscape Architect with proposals for corrections. If soil conditions indicate modifications as directed by Landscape Architect, the changes required will not increase the contract price.

C. The Contractor is responsible for any damage to underground utilities resulting form landscape operations and bear the full cost to repair the damage. Accomplishment of repairs shall be equal to the original installation prior to damage. Report damage immediately to Landscape Architect who shall approve repairs before they are buried.

3.06 MAINTENANCE

A. Protect and maintain plant material (trees, shrubs, groundcover, lawn and vines) immediately after planting. Maintenance to be provided for sixty (60) days from acceptance by the Landscape Architect. At the end of sixty (60) days the Landscape Architect may extend the maintenance period if during that period the maintenance is not acceptable. maintenance includes watering, weeding, cultivating, mulching, tightening and repairing of guys, removal of dead material, resetting plants to proper grade or upright positions and restoration of the plating saucer and other construction work until acceptance.

3.09 INSPECTION FOR ACCEPTANCE

A. Inspection of the landscaping work to determine completion of contract work, exclusive of the possible replacement of plants, will be made by the Landscape Architect at the conclusion of the maintenance period.

B. Acceptance: After inspection, the Contractor will be notified in writing by the Landscape Architect of acceptance of all work of this Section, exclusive of the possible replacement of plants subject to reinspection and guarantee, or if there are any deficiencies of the requirements for completion of the work.

C. Upon acceptance made by the Landscape Architect, the Contractor maintenance is terminated and the guarantee period begins.

3.10 PLANT GUARANTEE AND REPLACEMENT/FINAL ACCEPTANCE

A. The guarantee is for a period of one year from date of acceptance by the Landscape Architect. The guarantee is for all new plant material, lawns, transplants, and existing plant material.

B. At the end of the guarantee period, the Landscape Architect shall reinspect all guaranteed work for Final Acceptance upon written request of Contractor. Request shall be received at least ten (10) calendar days before anticipated date for final inspection.
Upon final inspection and reinspection of replacements or repairs necessary in judgement of Landscape Architect at that time, Landscape Architect shall certify in writing to Owner as to Final Acceptance of plantings. Contractor shall replace, without cost to Owner, as soon as weather conditions permit, and within specified planting period, all dead plants and all plants not in vigorous, thriving conditions as determined by Landscape Architect at end of guarantee period. Plants shall be free of dead or dying branches and branch tips, and shall bear foliage of normal density, size and color. Replacements shall closely match adjacent specimens of same species and shall be equal in size to previously planted specimens, including increased growth since planting Replacement shall be subject to all requirements of this Specification.

C. Portions of lawns and/or plantings may be accepted in part upon Landscape Architect's approval.

PART 4 – MISCELLANEOUS AND GENERAL NOTES

4.01 FINISH GRADING AND GRADING

A. The General Contractor to provide Landscape Contractor finish grade within + 0.1 of a foot as shown on the civil grading plan and landscape plan.

B. All mounding, berms and finish grading to be approved by the Landscape Architect prior to planting or irrigation work.

4.02 GENERAL NOTES

A. The Landscape Contractor at his own expense shall procure all permits, certificates, and licenses required of him by law for the execution of this work. He shall comply with all state, county, and local laws, ordinances, rules or regulations relating to the performance of this work All deductions or additions will be made though a change order issued by the Architect. Changes made without a change order are not considered part o the contract and payment cannot be guaranteed.

B. The Contractor shall visit and inspect site to thoroughly inform himself of all existing conditions. Any discrepancies between existing conditions and those shown on drawings should immediately be brought to the attention of the Landscape Architect.

NOTES:

1. Field locate all irrigation equipment in landscape areas – some lines are schematic.
2. Coordinate programs to avoid station overlap.
3. Reduce radius as necessary to prevent overspray on turf and shrub sprays.
4. Size and provide Schedule 40 PVC sleeves (approx. twice diameter of pipe) under all walkways, kooldeck, curbs & drives as necessary on all irrigation equipment. at a depth of 24" below grade
5. Contractor shall install all equipment as per manufacturer's specifications and as per city codes.
6. Any substitutions are to be approved by the Landscape Architect.
7. Length of poly to be no greater than five (5) feet from PVC lateral (typical for all rigid drip systems).
8. Install vacuum breaker twelve (12) inches above highest head or lateral pipe in system. Install per local plumbing codes.
9. Contractor shall guarantee 100% coverage in all landscape areas.
10. Contour or berm planter areas to achieve adequate coverage from flood bubblers.
11. All heads to be adjusted so that there is minimum overthrow onto pavement, walls and buildings.
12. All pots and palms to be on a separate valve.
13. Contractor to receive a minimum 48 hour notice prior to sleeving.
14. Mainline to have a minimum of twenty four (24) inches of cover. Lateral lines to have a minimum twelve (12) inches of cover. Lines under paving shall be Sch. 40 PVC. All trenches to be backfilled, compacted, and water settled.
15. All drawings to be bid per plan. No value engineering or substitutions will be accepted during bidding.

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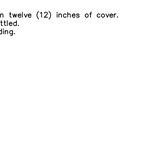
2425 E. CAMELBACK RD., SUITE 775
PHOENIX, ARIZONA 85016
PH: 602–954–6718 FAX: 602–468–9680
E–MAIL: ADMIN@BAG–INC.COM

SUN STATE BUILDERS

VIP PRODUCTS
GOODYEAR, ARIZONA

IRRIGATION PLAN

0' 15' 30' 60'
SCALE: 1"=30'–00"



T.J. McQUEEN & ASSOCIATES, INC.
LANDSCAPE ARCHITECTURE
URBAN DESIGN
SITE PLANNING
10450 N. 74th Street , Suite 120
Scottsdale, Arizona 85258
P.(602)265-0320
EMAIL: timmcqueen@tjmla.net

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