

PLANTING NOTES:

1. PLANT SIZE, TYPE, AND CONDITION SUBJECT TO APPROVAL OF OWNER'S REPRESENTATIVE.

ALL PLANT MATERIAL TO BE NURSERY GROWN STOCK.

SHRUBS BACK FROM CURB 3 FT.

CONTRACTOR RESPONSIBLE FOR MAINTENANCE OF ALL PLANT MATERIAL UNTIL PROJECT ACCEPTANCE.

ALL CONTAINER GROWN PLANTS TO HAVE FULL, VIGOROUS ROOT

SYSTEM, COMPLETELY ENCOMPASSING CONTAINER. 5. ALL PLANTS WELL ROUNDED AND FULLY BRANCHED. ALL TREES WITH

SPREAD 2/3 OF HEIGHT. 6. CONTRACTOR TO PROVIDE OWNER WITH PREFERRED MAINTENANCE

SCHEDULE OF ALL PLANTS AND LAWNS. 7. MAINTAIN/PROTECT VISIBILITY TRIANGLE WITH PLANT MATERIAL PER CITY

STANDARDS AT ALL ENTRANCES TO SITE. 8. PREP ENTIRE WIDTH OF ALL DEFINED PLANTING BEDS WITH MIX AS OUTLINED IN SPECS. WHERE SHRUBS ARE LOCATED ALONG CURB, SET

9. SEE DETAIL SHEET FOLLOWING FOR PLANTING DETAILS. 10. CONTRACTOR RESPONSIBLE FOR LOCATION OF ALL UTILITIES, INCLUDING BUT NOT LIMITED TO TELEPHONE, TELECABLE, ELECTRIC, GAS, WATER AND SEWER. ANY DAMAGE TO UTILITIES TO BE REPAIRED BY CONTRACTOR AT NO COST TO OWNER.

11. EXISTING TREES ARE SHOWN TO REMAIN, CONTRACTOR SHALL PRUNE ONLY ON APPROVAL OF CITY ARBORIST. WORK TO INCLUDE REMOVAL OF ALL SUCKER GROWTH; DEAD AND DISEASED BRANCHES AND LIMBS; VINES, BRIARS AND OTHER INVASIVE GROWTH; AND ALL INTERFERING BRANCHES. MAKE ALL CUTS FLUSH TO REMAINING LIMB. RETAIN NATURAL SHAPE OF PLANT. ALL WORK SUBJECT TO APPROVAL OF OWNER'S REPRESENTATIVE.

12. QUANTITIES ARE PROVIDED AS A COURTESY AND NOT INTENDED FOR BID PURPOSES. CONTRACTOR TO VERIFY PRIOR TO PRICING.

13. INSTALL EDGING BETWEEN LAWN AND PLANTING BEDS. REFER TO SPECIFICATIONS. FILE ALL CORNERS SMOOTH.

14. INSTALL CURLEX BLANKET (OR EQUAL) PER MANUFACTURES INSTRUCTIONS ON ALL GROUNDCOVER/SHRUB BEDS WITH A SLOPE OF 4:1 OR GREATER.

15. AT TIME OF PLAN PREPARATION, SEASONAL PLANT AVAILABILITY CANNOT BE DETERMINED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SECURE AND RESERVE ALL B&B PLANTS WHEN AVAILABLE IN CASE ACTUAL INSTALLATION OCCURS DURING THE OFF-SEASON. PURCHASE AND HOLD B&B PLANTS FOR LATE SEASON INSTALLATION.

16. BERM ALL PARKING LOT ISLANDS AS SHOWN ON ENCLOSED DETAIL

REFERENCE NOTES SCHEDULE

Decomposed Granite 7.4 cy

01 GENERAL

**DESCRIPTION** 

**DESCRIPTION** 

**BOTANICAL NAME** 

Pistacia chinensis

Quercus shumardii

Quercus virginiana

Ulmus crassifolia

**BOTANICAL NAME** 

**BOTANICAL NAME** 

Cynodon dactylon

Eragrostis curvula

Trachelospermum asiaticum

Ilex x 'Nellie R. Stevens'

Myrica cerifera 'Don's Dwarf'

CODE

PIS CHI

QUE VIR

CODE

MYR DON

CODE

ERA CU2

TRA ASI

QUE SHU 15

ULM CRA 10

13

10

<u>QTY</u>

161

326

CYN DAC 34,968 sf

Composite Edging

SHEET. (BERMS MAY NOT BE SHOWN ON GRADING PLAN.) 17. PRIOR TO PLANTING, CONTRACTOR SHALL STAKE TREE LOCATIONS FOR APPROVAL BY OWNER.

<u>QTY</u>

DETAIL

**COMMON NAME** 

Chinese Pistache

Shumard Oak

Cedar Elm

Southern Live Oak

COMMON NAME

COMMON NAME

Bermuda Grass

Asiatic Jasmine

Weeping Lovegrass

Nellie R. Stevens Holly

Don's Dwarf Wax Myrtle

4" Cal.

4" Cal.

4" Cal.

Solid Sod

4" pots

NO LANDSCAPE PLANTINGS WITHIN 3' OF PARKING LOT CURBS.



CAUTION!!! UNDERGROUND UTILITIES ARE LOCATED IN THIS AREA. 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITIES, CONTACT LINE LOCATES FOR FRANCHISE UTILITY INFO. CALL BEFORE YOU DIG: TEXAS EXCAVATION SAFETY SYSTEM (TESS) 1-800-344-8377 TEXAS ONE CALL SYSTEMS 1-800-245-4545

LONE STAR NOTIFICATION CENTER

1-800-669-8344 EXT. 5

**SPACING** 

<u>SPACING</u>

36" O.C.

36" O.C.

<u>SPACING</u>

24" O.C. 24" o.c.

12" O.C. 12" o.c.

**FAIN • CUPPETT** 

1921 MAPLEWOOD DR WEATHERFORD, TX 76087

LANDSCAPE ARCHITECTS, LLC

PARKS AND OPEN SPACE PLANNING • LANDSCAPE ARCHITECTURE • IRRIGATION DESIGN

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<u>SPACING</u>

12` Height Min As Shown

18"-24"

BEFORE YOU DIG..

**REMARKS** 

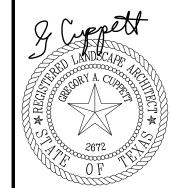
Single Straight Trunk

Single Straight Trunk

<u>REMARKS</u>

<u>REMARKS</u>

682-215-9151



11/29/22

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TREES SHRUBS, AND GROUNDCOVERS

PART I GENERAL

1.01 DESCRIPTION OF WORK

Scope

Bed prep Metal edging

Topoil Planting

Mulching

Guarantee

Related Work Specified Elsewhere

General Requirements — All locations Section 02740 - Irrigation Trenching Section 02750 - Irrigation

Section 02800 — Lawns

1.02 QUALITY ASSURANCE A. Contractor Qualifications

Minimum of three (3) years experience on projects of similar characteristics and size.

Reference Standards:

American Joint Committee Of Horticultural Nomenclature: Standardized Plant Names, Second Edition, 1942; 2. American Association Of Nurserymen: American Standard For Nursery Stock, 1973

C. Substitutions

1. Substitutions accepted only upon written approval of Landscape Architect and Owner. 2. Submit substitutions possessing same characteristics as

Inspection and Testing

indicated on plans and specifications.

The project Owner's representative reserves the right to inspect and tag plants at the place of growth with the Contractor.

2. Inspection at place of growth does not preclude the right of rejection due to improper digging or handling. 3. Owner's representative reserves the right to request soil samples and analysis of soil and plant mix. Remove or correct unacceptable soil. Cost of testing by Contractor.

1.03 SUBMITTALS

A. Certificates

Submit State and Federal certificates of inspection with invoice. (Only if required by Landscape Architect.) 2. File certificates with Owner's representative prior to material acceptance.

1.04 PRODUCT DELIVERY, STORAGE, & HANDLING

Preparation of Delivery

Balled & Burlaped (B&B) Plants

Dig and prepare for shipment in manner that will not damage roots, branches, shape, and future development after replanting.

b. Ball with firm, natural ball of soil, wrapped tightly with burlap covering entire ball. Ball size and ratios: conform to American Association of

Nurserymen standards unless otherwise shown on plant list.

2. Pack plant material to protect against climatic & seasonal damage, as well as breakage injuries during transit. 3. Securely cover plant tops with ventilated tarpaulin or canvas to minimize wind—whipping and drying in transit. 4. Pack and ventilate to prevent sweating of plants during transit. Give special attention to insure prompt delivery and careful handling to point of delivery at job site.

B. Delivery

1. Deliver fertilizer, fertilizer tablets, peat, mulch, soil additives, and amendment materials to site in original, unopened containers, bearing manufacturer's guaranteed chemical analysis, name, trade name, trademark, and conformance to State law.

2. Deliver plants with legible identification and size labels on example plants.

Protect during delivery to prevent damage to root ball or desication of leaves.

4. Notify Owner's representative of delivery schedule in advance so plant material may be inspected upon arrival at job site. Deliver plants to job site only when areas are prepared. C. Storage

1. Protect roots of plant material from drying or other possible injury with wetted mulch or other acceptable material. Protect from weather.

Maintain and protect plant material not to be planted immediately upon delivery.

D. Handling

1. Do not drop plants.

Do not damage ball, trunk, or crown.

3. Lift and handle plants from bottom of container or ball.

1.05 JOB CONDITIONS

E. Planting Season Perform actual planting only when weather and soil conditions are suitable in accordance with locally acceptable practices.

F. Protection Before excavations are made, take precautionary measures to protect areas trucked over and where soil is temporarily stacked.

1.06 GUARANTEE

A. Guarantee new plant material for one year after acceptance of final installation (ie Final Acceptance of project).

B. Make replacement (one per plant) during one year guarantee period at appropriate season with original plant type, size and planting mixture. Repair damage to other plants, lawns, & irrigation caused

during plant replacement at no cost to Owner. D. Use only plant replacements of indicated size and

Ten days before end of quarantee period, notify Owner's representative in writing for year end inspection. Failure to do so, shall automatically extend guarantee until notification is received.

PART II PRODUCTS

2.01 MATERIALS

A. Plant Materials

Hardy under climatic conditions similar to locality of

True to botanical and common name variety. Sound, healthy, vigorous, well branched, and densely foliated when in leaf; with healthy well-developed root system. 4. Free from disease, insects, and defects such as knots, sun-scald, windburn, injuries, disfigurement, or abrasions. Conform to measurements after pruning with branches in normal positions.

6. Conform to American Association of Nurserymen standards unless shown differently on plant list.

Single, straight trunks, unless indicated otherwise Trees with weak, thin trunks not capable of support will

c. All multi-stem trees are to have a minimum of three stems, similar in size and shape, with a spread of approximately 2/3 of the height. All yaupons to be female. Crape myrtle color selection by Landscape Architect.

Nursery grown stock only. Subject to approval of Landscape Architect.

10. Seasonal color

Annuals in 4" pots or as specified Perennials in 4" pots, clumps, bulbs as specified

Topsoil

Natural, fertile, friable soils having a textural classification of loam or sandy loam possessing characteristics of soils in vicinity which produce heavy growth of crops, grass, or other

2. Free of subsoil, brush, organic litter, objectionable weeds, clods, shale, stones 3/4" diameter or larger, stumps, roots or other material harmful to grading, planting, plant growth, or maintenance operations.

3. Presence of vegetative parts of Bermuda grass ( Cynodon dactylon), Johnson grass, nut grass (Cyperus rotundus), and other hard to eradicate weeds or grass will be cause for rejection of topsoil.

4. Test topsoil (cost by Contractor):

a. Available nitrogen

Available phosphorus Available potash

Iron

Ph: 5.5 to 7.0

Decomposed organic matter: 6-10%

C. Mulch

unacceptable.

Top Dressing Mulch - Shredded cypress or hard wood

Mulch for soil prep - Shredded pine bark 3. In pre-packaged bags only; bulk shredded material is D. Peat Moss Commercially available baled peat moss or approved equivalent.

E. Staking Material

1. Stakes for tree support

Construction grade yellow pine, stain brown

b. Size as noted on plans

2. Wires

a. Padded with rubbed hose to protect tree

Galvanized

F. Water 1. Free of oils, acids, alkali, salt, and other substances

d. Evenly tighten turnbuckles with plant in vertical position.

harmful to plant growth 2. Location: Furnish temporary hoses and connections on

G. Sand Washed builders sand

With galvanized turnbuckle

H. Antidesicant - "Wilt-proof" or equal.

I. Edging -3/16" X 4" green, new and unused; with

2.02 MIXES

A. Planting Mixture

Existing topsoil - 50%

3. Shredded pine bark - 50% 4. Fertilizer 10:20:10 at 30 lb./1000 SF

B. Planting Mix for Annuals/Perennials

moss to topsoil mix, raise for drainage.

Prepare above mix 2. Add 2" of sand

C. Azalea mix: solid peat moss in hole 9" wider than root ball each direction. Plant in solid peat moss and provide mound at base of plant to allow for drainage. D. Japanese maple, dogwood, camellias: Provide 50/50 peat

PART III - EXECUTION

3.01 UTILITIES — verify location of all utilities prior to initiating construction; repair any damage caused by construction at no cost to owner.

3.02 INSPECTION

A. Inspect plants for injury and insect infestation; prune prior to installation. B. Inspect site to verify suitable job conditions.

FIELD MEASUREMENTS

A. Location of all trees and shrubs to staked in the field and approved by Owner's representative prior to installation. B. Location of all groundcover and seeding limits as shown on plans.

EXCAVATION FOR PLANTING

Shape — Vertical hand scarified sides and flat bottom. 2. Size for trees - 2 feet wider or twice the root ball, whichever is greater

3. Size for shrubs - Size of planting bed as shown on drawings. 4. Rototill soil mix thoroughly, full depth. NOTE: If beds are proposed beneath drip line of existing

tree canopy, pocket prep plants. Do not roto—till beneath existing trees.

B. Obstructions Below Ground

Owner's representative for instruction.

1. Remove rock or underground obstructions to depth necessary to permit planting. 2. If underground obstructions cannot be removed, notify

C. Excess Soil Dispense of unacceptable or excess soil away from the project site at Contractor's expense.

3.05 PLANTING

A. General

Set plants 2" above existing grade to allow for settling. Set plants plumb and rigidly braced in position until planting mixture has been tamped solidly around ball.

Apply soil in accordance with standard industry practice for the region.

4. Thoroughly settle by water jetting and tamping soil in 6"

Prepare 3" dish outside root ball after planting. Thoroughly water all beds and plants.

Stake trees and large shrubs as indicated on plans. Apply anti-desicant according to manufacturer's instructions.

Apply commercially manufactured root stimulator as directed by printed instruction. 10. Plant and fertilize bedding plants per trade standards.

11. Apply 3" mulch top dressing.

Balled Plants

1. Place in pit of planting mixture that has been hand tamped prior to placing plant.

2. Place with burlap intact to ground line. Top of ball to be 2" above surrounding soil to allow for settling. Remove binding at top of ball and lay top of burlap back 6".

4. Do not pull wrapping from under ball, but cut all binding cord. 5. Do not plant if ball is cracked or broken before or

during planting process or if stem or trunk is loose.

Backfill with planting mixture in 6" lifts.

C. Container Grown Plants

and remove root ball from can.

1. Place in pit on planting mixture that has been hand tamped prior to placing plant. 2. Cut cans on two sides with an acceptable can cutter,

Do not injure root ball.

3. Carefully remove plants without injury or damage to

4. Backfill with planting mixture in 6" lifts.

D. Mulching

Cover planting bed evenly with 3" of mulch.

Water immediately after mulching. Where mulch has settled, add additional mulch to regain

3" thickness. 4. Hose down planting area with fine spray to wash leaves of plants.

D. Pruning

1. Prune minimum necessary to remove injured twigs and branches, dead wood, and succors; remove approximately 1/3 of twig growth as directed by landscape architect; do not cut leaders or other major branches of plant unless directed by landscape architect.

Make cuts flush, leaving no stubs. Paint cuts over 1" diameter with approved tree wound paint.

4. Do not prune evergreens except to remove injured branches.

3.06 EDGING

A. Stake edging alignment with string line prior to installation. Use framing square to insure right angles are

Install all edging straight and true as indicated on drawings. Where edging layout is circular in design, maintain true and constant radii as shown. C. When required on slopes, make vertical cuts

(approximately 6" on center) on bottom of edging to allow bending without crimping edging. D. Install edging so that approximately 1" is exposed on lawn side. Edging should not be visible from bed side after

application of mulch. E. Align edging with architectural features (ie pavement joints, windows, columns, wall, etc.) when drawings indicate. Bend all corners, do not cut corners.

Interlock all pieces with pre-fabricated connectors. Install with all stakes on inside of planting bed.

Remove, file off all sharp corners and burrs.

3.07 CLEAN-UP

A. Sweep and wash all paved surfaces.

Remove all planting and construction debris from site, including rocks, trash and all other miscellaneous materials.

3.08 MAINTENANCE

A. Contractor responsible for routine, and regular maintenance of site until Final Acceptance is awarded by Owner. Work includes:

Weeding (weekly)

Pruning

Spraying

Provide Owner and Landscape Architect with

Watering (as required)

Mowing (weekly)

Fertilizing Mulching

preferred maintenance schedule in writing. Schedule shall include the above—listed tasks and shall address all frequencies, rates, times, levels, etc.

> FAIN • CUPPETT LANDSCAPE ARCHITECTS, LLC 1921 MAPLEWOOD DR WEATHERFORD, TX 76087 682-215-9151 PARKS AND OPEN SPACE PLANNING • LANDSCAPE ARCHITECTURE • IRRIGATION DESIGN

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PART I – GENERAL

### 1.01 DESCRIPTION

- A. Work includes turf establishment (sod, hydromulch, etc.) as described on drawings.
- B. Make required analysis and material tests for topsoil, fertilizers, and other materials of similar character per current methods of the Association of Official Agricultural Chemists, when required.
- C. Grass seed shall conform to tolerances for germination and purity per applicable standards of U.S. Department of Agriculture.
- D. The turf contractor shall have a stand of grass established prior to substantial completion of the project. If this is not possible due to time of year or schedule, he shall maintain and protect the seeded areas until the grass is established.

PART II - PRODUCTS

### 2.01 TOPSOIL MATERIAL

A. Topsoil material (stockpiled, as specified in Specifications) has been saved for use in finish grading. After sifting out all plant growth, rubbish, and stones, use for areas designated to receive grass. If stockpiled topsoil is not sufficient quantity to complete work, furnish acceptable topsoil from another approved source to provide four inches (4") of topsoil for grass areas unless otherwise noted on drawings. Grass areas shall be defined as the graded areas disturbed during construction not to be paved or built upon.

B. Acceptable topsoil material shall be defined as natural, fertile, agricultural soil, capable of sustaining vigorous plant growth, uniform composition throughout admixture of subsoil, free of stones, lumps, plants, and their roots, sticks, or other extraneous matter; do not deliver while in a frozen or muddy condition.

#### 2.02 FERTILIZER

- A. Provide a commercial balanced fertilizer delivered to the job in bags labeled with manufacturer's guaranteed analysis. Store in weatherproof storage, place in such a manner that its effectiveness will not be impaired.
- B. Fertilizer shall be a grade containing the percentages of plant food elements by weight as specified elsewhere in these specifications.
- C. Availability of various elements shall be per Standards of the Association of Official Agricultural Chemists.

# 2.03 GRASS SEED

- A. Grass seed shall be of the previous season's crop and the date of analysis shown on each bag shall be within nine (9) months of the time of delivery to the project. When requested by the Owner or Representative, the seeding contractor shall furnish a sample of seed from each bag for testing.
- B. The seed shall comply with all provisions of the U.S. Department of Agriculture as to labeling, purity, and germination.

# 2.04 MULCHING

- A. Dry straw or hay of good quality, free of seeds of competing plants and at such rate of  $1 \frac{1}{2} - 2$  tons per acre; or,
- B. Wood cellulose or cane fiber mulch at a rate of 1.000 pounds per acre when the slope is 3/4:1 and steeper; or,
- C. A combination of good quality dry straw or hay free of seeds of competing plants at a rate of 2 1/2 tons per acre and wood cellulose or cane fiber mulch at a rate of 500 pounds per acre. This combination shall be used when the slope is flatter than 3/4:1; or,
- D. Sericea lespedza seed bearing hay at a rate of 3 tons per acre. This mulch may be applied green or air dried, but must contain mature seed.
- E. Manufactured mulch materials, such as soil retention blankets, erosion control netting, or others that may be required on special areas of high water concentration or unstable soils. When these materials are used, follow the manufacturer's recommendations for installation.

# 2.05 HYDRO-MULCHING

Wood cellulose fiber or cane fiber mulch will be applied with hydraulic seeding and fertilizing equipment. All slurry ingredients shall be mixed to form a homogeneous slurry and spray applied within one hour after the mixture is made.

When wood cellulose or cane fiber mulch is used at the 500 pound per acre rate, straw or hay mulch with asphalt emulsion is applied over this to complete the mulch.

Wood cellulose or cane fiber mulch at the 1,000 pound per acre rate is used alone where other mulch material will not

Wood cellulose or cane fiber mulch is self anchoring.

PART III - EXECUTION

### 3.01 RESPONSIBILITY

The site grading contractor will be responsible to stockpile acceptable topsoil in a sufficient quantity to provide four inches (4") minimum cover for all grass areas, including but not limited to all curbed islands, and topsoil planting mounds/berms at the appropriate height and width as defined and shown on the landscaping and/or planting drawings. The topsoil and grass areas shall be further defined as any area disturbed during the grading and construction process.

The site grading contractor, shall be responsible to spread the topsoil within all perimeter graded areas and future building areas only.

The site grading contractor shall be responsible for backfilling of all curbed islands and planting mounds/berms. They shall also be responsible for removal of all stones, roots, and raking of all topsoil areas hat are to be seeded and/or planted. It will also be the site grading contractor's responsibility to provide fertilizer, grass seed, and any additional topsoil required and mulching.

#### 3.02 GRASS SEEDING

- A. Remove stones, roots, rubbish and other deleterious materials from topsoiled areas that are to be seeded.
- B. Immediately prior to sowing seed, scarify ground as necessary; rake until surface is smooth and friable. Sow seed evenly, lightly wood rake into C. ground, then roll ground with suitable roller; water thoroughly with fine

spray. During any weather, keep lawn watered with sprinklers or other approved methods. Re-seed any areas not doing well or damaged. At intervals as may be required according to seasonal conditions, mow and water grass and execute necessary weeding until acceptable and full stand of arass has been obtained.

- D. Provide permanent grass seeding for lawn areas so indicated. Seed in accordance with the following schedule (unless otherwise directed by Owner or Owner's Representative::
- 1. Sow areas ready for seeding between March 1 and October 1 with Hulled Common Bermuda at a rate of 85 pounds per
- 2. Sow areas ready for seeding between October 1 and March 1 with Unhulled Common Bermuda at a rate of 90 pounds per acre, and Annual Rye Grass at the rate of 50 pounds per acre.
- 3. Apply fertilizer at a rate of 20/25 pounds per 1,000 square feet.

# 3.03 WILD FLOWERS

- A. Areas indicated on plans to receive wild flower coverage shall br fine graded, fertilized, and prepared in a manner similar to traditional turf establishment.
- Area to be hydromulched with seed mix as follows:

Tickseed	10 pounds/acre
Cosmos	15 pounds/acre
Ox—Eyed Daisy	5 pounds/acre
Side Oats Grama	4 pounds/acre
Showy Primrose	0.5 pounds/acre
Plains Coreopsis	2 pounds/acre
Black Eyed Susan	2 pounds/acre
Indian Blanket	10 pounds/acre
Texas Bluebonnet	4 pounds/acre
Little Bluestem	4 pounds/acre

# 3.04 MULCH

- A. All areas to be seeded shall be mulched. Mulch materials shall be applied uniformly over the seeded area. Mulch shall be straw and shall be at the rate of  $1 \frac{1}{2}$ - 2 tons per acre.
- B. Mulch shall be anchored with an emulsified asphalt binder at the rate of 10 gallons per 1,000 square feet.

# 3.05 PROTECTION

Provide, at no additional cost to Owner, fencing, railing, wire or other types of protection for topsoiled and seeded areas against trespassing and damage. If lawns are damaged prior to Final Acceptance, treat or replace them as directed. Remove protection when so directed.

# 3.06 MAINTENANCE

Provide maintenance from start of work until Final Acceptance. Maintenance includes watering of lawns, weeding, mowing, edging, repairs of wash-outs and gullies, repairs to protection, and other necessary work of maintenance. Maintain slopes against erosion.

# 3.07 REHYDROMULCHING

The Owner's representative will designate areas to be replanted. Areas on which a stand of growing grass is not present in a reasonable length of time, (Bermuda grass seed should be germinating in 6-8 days) shall be prepared, reseeded and remulched, as specified for original planting at no additional cost to Owner. A stand shall be defined as live plants from seed occurring at a rate of not less than 1,000 growing plants per square foot. Replanting required because of faulty operations or negligence on the part of the Contractor shall be performed without cost to Owner.

### 3.08 FINAL CLEAN-UP

- A. At time of final inspection of work, and before final acceptance, clean paved areas that are soiled or stained by operations of work of this section. Clean by sweeping or washing, and remove all defacements or stains.
- B. Remove construction equipment, excess material and tools. Cart away from site any debris resulting from work of this section and dispose of as directed.

SECTION 02922 SODDING

PART I – GENERAL

1.01 DESCRIPTION

A. Work Included

- Sod bed preparation Fertilizing
- Sodding
- Miscellaneous management practices
- Related Work Specified Elsewhere
- Finish Grading, Section 02800 2. Lawns and Grasses, Section 02930
- REFERENCE STANDARDS

A. Standardized Plant Names

B. Texas Highway Department — Standard Specifications for Construction, Item 164, Seeding for Erosion Control.

American Joint Committee of Horticultural Nomenclature,

SUBMITTALS

Second Edition, 1942.

- A. Vendors Certification That Sod Meets Texas State Sod Law
- Include labeling requirements.
- 2. Include purity and type.
- PRODUCT DELIVERY, STORAGE AND HANDLING
- A Sod:
- Previous season's crop with date of analysis on each
- Furnish and deliver each variety in separate bags or
- 3. Sod to be cut no more than three days before delivery.
- B. Fertilizer:
- Unopened bags labeled with the analysis.
- Conform to Texas Fertilizer Law.

JOB CONDITIONS

- A. Planting Season:
- Only during suitable weather and soil conditions.
- 2. As specifically authorized by the Owner's Representative.
- B. Schedule Only after all other construction is complete.
- C. Protect and Maintain Sodded Areas
- From traffic and all other use. Until sodding is complete and accepted.
- PART II PRODUCTS

2.01 MATERIALS

A. Sod:

1. Sod: As specified on drawings, weed, insect, and disease free having a minimum of 1 inch of topsoil attached to the roots and cut no more than three days prior to installation.

2. The sod shall be cut in strips of at least 1/2 sq. yd. and not more than 1 sq. yd. Sod shall be cut into strips not less than 12" in width or more than 9' in length. At the time of harvest, the top growth shall not exceed 3" in length. 3. All sod shall conform to the laws of the State and shall be obtained from sources meeting the approval of the Department of Agriculture, Division of Entomology.

- B. Fertilizer:
- Uniform in composition, free flowing.
- Suitable for application in approved equipment. Analysis of 16-20-0, 16-8-8 or as directed.

C. Water:

1. Free of oil, acid, alkali, salts or other substances harmful to growth of grasses.

PART III - EXECUTION

- SOD BED PREPARATION
- A. Cultivate to a depth of four (4") inches by disking and tilling with a power tiller.

- B. Clear surfaces of all materials:
- 1. Stumps, stones, and other objects larger than one inch
- Roots, brush, wire, stakes, etc.
- Any objects that may interfere with sodding or maintenance.
- C. Prepare sod bed:
- Remove soil clods larger than one inch (1"). 2. Grade areas to smooth, even surface, removing ridges and filling depressions. Final grade to be below finish grade of curbing and edging as shown on details. All grades shall meet approval of Owner's Representative before sodding.

SODDING

### A. Sodding:

1. Lightly water prepared grade, lay sod with staggered ioints and with edges touching. Topdress with topsoil at edges if necessary to provide smooth surface. On slopes of 2 to 1 and greater, fasten sod in place with wood pegs (two each piece) or other approved method. Sod damaged by storage or during installation shall be rejected. Following settling, topdress with screened, approved topsoil. 2. Water and fertilize at 5 lbs. per 1,000 sq. ft.

- 3. Sod shall not be placed during a drought, nor during periods when sod is not normally placed in the area, and shall not be placed on frozen ground. No dry or frozen sod is acceptable.
- 4. The contractor shall keep all keep all sodded areas moist and growing until Final Acceptance. All areas shall be maintained in an acceptable condition until acceptance by Owner.

### B. Rolling:

1. After placing sod, roll with a hand roller, weighing not more than 100 lbs. per foot of width, in two directions. 2. Eliminate all air pockets; finished surface should be free of excessive undulations.

#### 3.05 MAINTENANCE AND MANAGEMENT

A. Includes protection, replanting, maintaining grades, repair of erosion damage. Also includes weekly mowing at  $1 ext{ } 1/2$ " height until final acceptance.

### B. Resodding:

- 1. Resod damaged or unacceptable areas.
- 2. Ruts, ridges, and other surface irregularities shall be corrected.

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DRAWING FILE WITHOUT THE LANDSCAPE ARCHITECT'S EXPRESS WRITTEN PERMISSION.

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FAIN • CUPPETT LANDSCAPE ARCHITECTS, LLC 1921 MAPLEWOOD DR WEATHERFORD, TX 76087 682-215-9151 PARKS AND OPEN SPACE PLANNING • LANDSCAPE ARCHITECTURE • IRRIGATION DESIG

# HYDRAULIC CALCULATIONS IRRIGATION NOTES: SPRAY A13

AVAILABLE PRESSURE 65 PSI (ESTIMATED)

- 23.8 GALLONS PER MINUTE • 1" METER - 3.4 PSI
- 1-1/2" DCVA 6.1 PSI
- 1-1/2" WYE 0.2 PSI • 1-1/2" MAIN LINE LOSS (1220') - 2.0 PSI
- IN-LINE BALL VALVE 0.5 PSI
- ELEVATION CHANGE 0.0 PSI
- FITTING ESTIMATE 1.2 PSI OPERATING PRESSURE AT VALVE - 51.6 PSI

# HYDRAULIC CALCULATIONS DRIP ZONE D11

AVAILABLE PRESSURE 65 PSI (ESTIMATED)

- 11.8 GALLONS PER MINUTE 1" METER - 0.9 PSI
- 1-1/2" DCVA 5.5 PSI • 1-1/2" WYE - 0.1 PSI
- 1-1/2" MAIN LINE LOSS (1220') 0.2 PSI IN-LINE BALL VALVE - 0.5 PSI
- ELEVATION CHANGE 0.0 PSI FITTING ESTIMATE - 0.7 PSI

### OPERATING PRESSURE - 57.1 PSI

- 1. IRRIGATION LINES ARE SOMETIMES SHOWN OUTSIDE PLANTING BEDS FOR GRAPHIC CLARITY ONLY. ADJUST INSIDE BEDS ON SITE. 2. AVOID TRENCHING WITHIN DRIP LINE OF EXISTING TREES. WHERE NECESSARY, TRENCH RADIALLY, RATHER THAN ACROSS THE ROOT
- SYSTEM. 3. MAIN LINE TO BE 1-1/2" (CONTRACTOR TO CONFIRM).
- 4. ALL SLEEVES UNDER PAVING TO EXTEND 12" PAST EDGE OF PAVING. COORDINATE WORK WITH GENERAL AND PAVING SUBCONTRACTOR. 5. ALL HEADS TO BE 4" POPS IN LAWNS. ALL HEADS WITH CHECK VALVES.
- 6. COORDINATE SLEEVE SIZE AND LOCATION FOR FREEZE SENSOR, RAIN GAUGE AND CONTROLLER WITH GENERAL CONTRACTOR. SEAL ALL BUILDING PENETRATIONS WATER TIGHT.
- 7. SEE FOLLOWING DETAIL SHEET FOR IRRIGATION DETAILS. 8. PRESSURE ESTIMATED AT 65 PSI: MINIMUM 50 GPM AS PROVIDED BY CITY. VERIFY ON SITE AND REPORT TO LANDSCAPE ARCHITECT PRIOR TO BEGINNING ANY WORK.
- 9. CONTRACTOR RESPONSIBLE FOR LOCATION OF ALL UTILITIES INCLUDING BUT NOT LIMITED TO TELEPHONE, TELECABLE, ELECTRIC, GAS, WATER, AND SEWER. ANY DAMAGE TO UTILITIES TO BE REPAIRED BY CONTRACTOR AT NO COST TO OWNER. REFER TO SITE/UTILITY PLANS.
- AS SHOWN ON DRAWINGS. 11. IF PEDESTAL MOUNTED CONTROLLER IS SPECIFIED, MOUNT ON 4"X3'X3'

10. VERIFY 100% COVERAGE OF SYSTEM OVER ALL PLANTING & LAWN AREAS

- CONCRETE SLAB WITH (4) #4'S EACH WAY. SLEEVE THROUGH SLAB FOR CONTROLLER WIRING AS REQUIRED. 12. UNLESS NOTED OTHERWISE, THERE ARE NO EXISTING SLEEVES.
- IRRIGATION CONTRACTOR TO SIZE AND COORDINATE SLEEVE INSTALLATION AS NEEDED IN ALL LOCATIONS UNDER PAVEMENT. 13. QUANTITES ARE PROVIDED AS A COURTESY AND ARE NOT INTENDED FOR BID PURPOSES. CONTRACTOR TO VERIFY ALL QUANTITIES PRIOR TO
- 14. IF DOUBLE CHECK IS PROHIBITED BY LOCAL CODE/ORDINANCE, SUBSTITUTE WITH APPROVED BACKFLOW PREVENTION DEVICE. 15. ALL WORK IN ACCORDANCE WITH LOCAL, STATE, & NATIONAL CODES &
- ORDINANCES. 16. CONTRACTOR TO SIZE CONTROL SIZE WIRE AS NECESSARY. HOWEVER, MINIMUM SIZE TO BE 14 GAUGE PER NATIONAL ELECTRICAL CODE. ALL SPLICES WITH APPROVED MANUFACTURED CONNECTOR IN VALVE BOX.
- 17. DO NOT LOCATE VALVE BOXES IN SWALES, LOW AREAS, OR ANY OTHER LOCATIONS THAT MAY COLLECT WATER. 18. CONTROLLER TO BE WIRED ON DEDICATED 110 VOLT CIRCUIT AND GROUNDED W/"GROUNDING SPIKE" PER MANUFACTURER'S
- INSTRUCTIONS. 19. ADJUST HEADS TO AVOID OVERSPRAY ONTO STREETS, ROADWAYS,
- BUILDINGS AND ELECTRICAL EQUIPMENT. 20. INCLUDE ONE SPARE WIRE FROM CONTROLLER TO EACH CONTROL
- VALVE. EACH WIRE TO BE VARYING COLOR. 21. CONTRACTOR IS RESPONSIBLE FOR ADJUSTING FLOW CONTROL AND/OR
- PRESSURE REGULATOR AT EACH CONTROL VALVE AS NECESSARY TO MAKE SYSTEM OPERATE AS INTENDED. 22. DRIP IRRIGATION IS INTENDED TO MAINTAIN ESTABLISHED PLANT
- MATERIAL. CONTRACTOR SHALL HAND WATER AND MAINTAIN NEW PLANTINGS AS REQUIRED UNTIL ESTABLISHMENT AND ACCEPTANCE.
- 23. IRRIGATION CONTROLS SHALL BE SET TO RUN AT OPTIMAL TIMES OF THE DAY TO MINIMIZE EVAPORATION LOSS AND BUSINESS DISRUPTION. BROADCAST SYSTEMS SHOULD NOT BE RUN DURING TENANT'S NORMAL BUSINESS HOURS.

## VALVE SCHEDULE

NUMBER	MODEL	SIZE	<u>TYPE</u>	<u>GPM</u>	WIRE	<u>PSI</u>	PSI @ POC	PRECIP
A1	Hunter ICV-G	1"	Turf Rotor	13.6		34.0		0.73 in/h
A2	Hunter ICV-G	1"	Turf Rotor	5.1		32.9		0.3 in/h
A3	Hunter ICV-G	1"	Turf Rotor	17		34.1		0.56 in/h
A4	Hunter ICV-G	1"	Turf Rotor	17.85		34.1		0.63 in/h
A5	Hunter ICV-G	1"	Turf Spray	11.27		33.5		1.18 in/h
A6	Hunter ICV-G	1"	Turf Rotor	18.65		33.8		0.73 in/h
A7	Hunter ICV-G	1-1/2"	Turf Spray	22.3		32.2		1.15 in/h
A8	Hunter ICV-G	1"	Turf Spray	19.8		33.7		1.23 in/h
A9	Hunter ICV-G	1"	Turf Rotor	11.9		33.6		0.72 in/h
A10	Hunter ICV-G	1"	Turf Rotor	15.6		33.6		0.68 in/h
A11	Hunter ICV-G	1"	Turf Rotor	10.2		33.5		0.5 in/h
A12	Hunter ICV-G	1-1/2"	Turf Rotor	17		32.7		0.53 in/h
A13	Hunter ICV-G	1-1/2"	Turf Rotor	23.75		32.8		0.69 in/h
D1	Hunter ICZ-101-25	1"	Area for Dripline	1.41		35.0		0.51 in/h
D2	Hunter ICZ-101-25	1"	Area for Dripline	9.49		44.5		1.53 in/h
D3	Hunter ICZ-101-25	1"	Area for Dripline	8.39		43.5		1.51 in/h
D4	Hunter ICZ-101-25	1"	Area for Dripline	1.82		35.0		0.54 in/h
D5	Hunter ICZ-101-25	1"	Area for Dripline	8.69		44.5		1.39 in/h
D6	Hunter ICZ-101-25	1"	Area for Dripline	10.95		47.2		1.24 in/h
D7	Hunter ICZ-101-25	1"	Area for Dripline	7.04		37.3		0.42 in/h
D8	Hunter ICZ-101-25	1"	Area for Dripline	3.94		35.4		0.45 in/h
D9	Hunter ICZ-101-25	1"	Area for Dripline	5.25		35.4		0.48 in/h
D10	Hunter ICZ-101-25	1"	Area for Dripline	4.06		35.4		0.45 in/h
D11	Hunter ICZ-101-25	1"	Area for Dripline	11.83		48.8		1.42 in/h
D12	Hunter ICZ-101-25	1"	Area for Dripline	6.9		42.3		1.49 in/h
D13	Hunter ICZ-101-25	1"	Area for Dripline	3.92		40.1		1.61 in/h

BIDDING

IRRIGATION SCHEDULE MANUFACTURER/MODEL/DESCRIPTION <u>QTY</u> Toro 570Z-4P-COM 12 Series (2) (2) (2) (2) (2) Turf Spray, 4" Pop-Up, with a Zero Flush Seal. With Check-O-Matic Check Valve. 1/2" Female-Threaded Inlet. Ideal for small to medium landscape areas. Toro 570Z-4P-COM 15 Series Turf Spray, 4" Pop-Up, with a Zero Flush Seal. With Check-O-Matic Check Valve. 1/2" Female-Threaded Inlet. Ideal for small to medium landscape areas. MANUFACTURER/MODEL/DESCRIPTION <u>QTY</u> <u>GPM</u> Hunter PGJ-04-V 1.0 1.0 0.85 Turf Rotor, 4" Pop-Up. Adjustable and Full Circle. With Drain Check Valve. Hunter PGJ-04-V 2.0 Turf Rotor, 4" Pop-Up. Adjustable and Full Circle. With Drain Check Valve. Hunter PGJ-04-V 3.0 2.5 Turf Rotor, 4" Pop-Up. Adjustable and Full Circle. With Drain Check Valve. Hunter PGJ-04-V 4.0 3.7 Turf Rotor, 4" Pop-Up. Adjustable and Full Circle. With Drain Check Valve. <u>SYMBOL</u> MANUFACTURER/MODEL/DESCRIPTION <u>QTY</u> Hunter ICZ-101-25 Drip Control Zone Kit. 1" ICV Globe Valve with 1" HY100 filter 13 system. Pressure Regulation: 25psi. Flow Range: 2 GPM to 20 GPM. 150 mesh stainless steel screen. Pipe Transition Point above grade Pipe transition point from PVC lateral to drip tubing with riser to above grade installation. Netafim TLSOV Netafim TLSOV- 1/2" manual flush valve, barbed insert. Install in 10" box, with adequate blank or "cobra" tubing to extend valve out of valve box. 2/3 in fits Techline HCVXR, HCVXR-RW/RWP, CV, DL, RW and RWP driplines, and PE irrigation hose Hunter ECO-ID ECO-ID: 1/2" FPT connection with 12-60 PSI operating pressure. Specify with Hunter SJ swing joint. Area to Receive Dripline Hunter Eco-Mat 17 mm 0.6 GPH fleece wrapped inline emitter tubing, with the blanket 6,016 l.f. Eco-Mat. Evenly disperses water from under the surface. Emitters at 12" O.C. Dripline laterals spaced at 12" apart. Specify PLD-LOC fittings. Area to Receive Dripline Hunter HDL-04-18-CV HDL-04-18-CV: Hunter Dripline w/ 0.4 GPH emitters at 18" O.C. 5,263 l.f.

Check valve, dark brown tubing with tan striping. Dripline laterals spaced at 18" apart, with emitters offset for triangular pattern. Install with Hunter PLD barbed or PLD-LOC fittings. MANUFACTURER/MODEL/DESCRIPTION Hunter ICV-G 1", 1-1/2", 2", and 3" Plastic Electric Remote Control Valves, Globe Configuration, with NPT Threaded Inlet/Outlet, for Commercial/Municipal Use. Landscape Products Inc. BBV 1/2", 3/4", 1", 1-1/4", 1-1/2", 2", 2-1/2", 3" Full Port Brass Ball Valve. Suitable for a full range of liquids and gases in residential and commercial applications. Febco 850 1-1/2" Double Check Backflow prevention, 1/2" to 2"

Hunter I2C-2400-M 24 Station Outdoor Modular Controller. With two ICM-800 Module. Commercial Use. Metal Cabinet. Hunter WSS Wireless Solar, rain freeze sensor with outdoor interface, connects to Hunter PCC, Pro-C, and I-Core Controllers, install as noted. Includes 10 year lithium battery and rubber module cover and gutter mount bracket.

Water Meter 1 Irrigation Lateral Line: PVC Class 200 SDR 21

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NOTE: INCLUDE (2) HUNTER MSBN-50Q STREAM BUBBLERS TO EACH NEW TREE. ATTACH EACH BUBBLER TO HUNTER PRO-SPRAY-6" POPUP. LOCATE BUBBLERS INSIDE TREE WELL OF EACH TREE ON OPPOSITE SIDES OF THE ROOT BALL. ALL BUBBLERS TO BE ZONED SEPARATELY FROM OTHER HEADS. CONTRACTOR RESPONSIBLE FOR PIPE SIZING, SLEEVING, ETC. AND ALL OTHER REQUIREMENTS TO MAKE CIRCUIT(S) OPERABLE. TOTAL COUNT FOR BUBBLERS AND VALVE(S) NOT SHOWN IN IRRIGATION KEY. IF TREE IS LOCATED IN DRIP ZONE, IN LIEU OF BUBBLER USE (2) RAIN

BIRD SXB-180-025 XERI-BUBBLERS W/SXB-180-SPYK SPIKE TIED INTO EMITTER TUBING.

TEMPORARY IRRIGATION WILL BE REQUIRED TO ESTABLISH TURF IN ALL DISTURBED AREAS WITHOUT A PERMANENT IRRIGATION SYSTEM. INSTALL SOD TO ESTABLISH TURF IN ALL DISTURBED AREAS AS IDENTIFIED ON GRADING AND EROSION CONTROL PLANS.

Scale : 1" = 30' - 0"

NO LANDSCAPE PLANTINGS WITHIN 3' OF PARKING LOT CURBS.



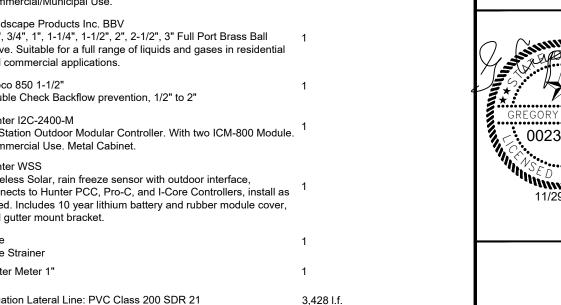
CAUTION!!! UNDERGROUND UTILITIES ARE LOCATED IN THIS AREA. 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITIES, CONTACT LINE LOCATES FOR FRANCHISE UTILITY INFO. CALL BEFORE YOU DIG: TEXAS EXCAVATION SAFETY SYSTEM (TESS) 1-800-344-8377 TEXAS ONE CALL SYSTEMS 1-800-245-4545

LONE STAR NOTIFICATION CENTER 1-800-669-8344 EXT. 5



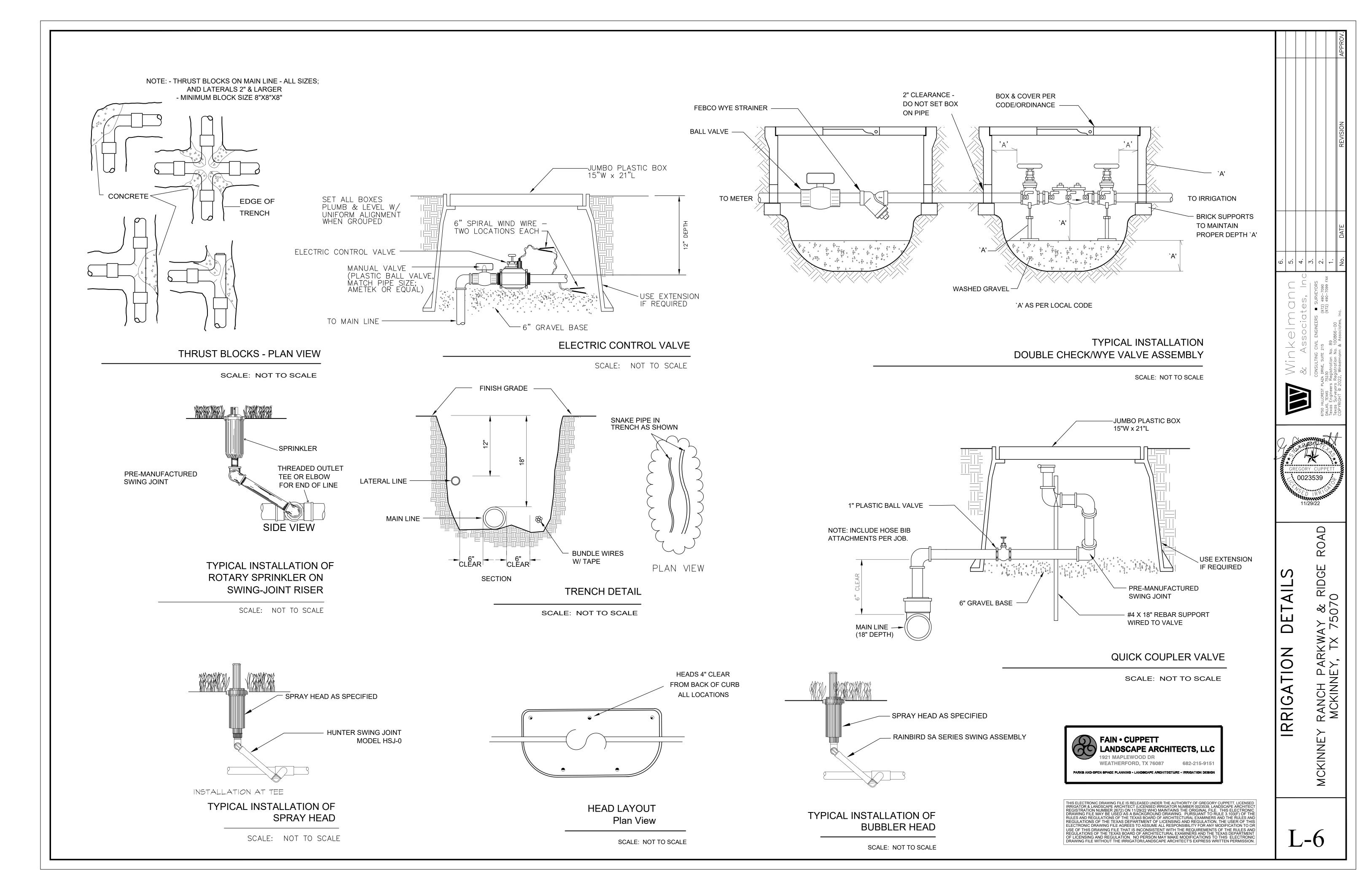
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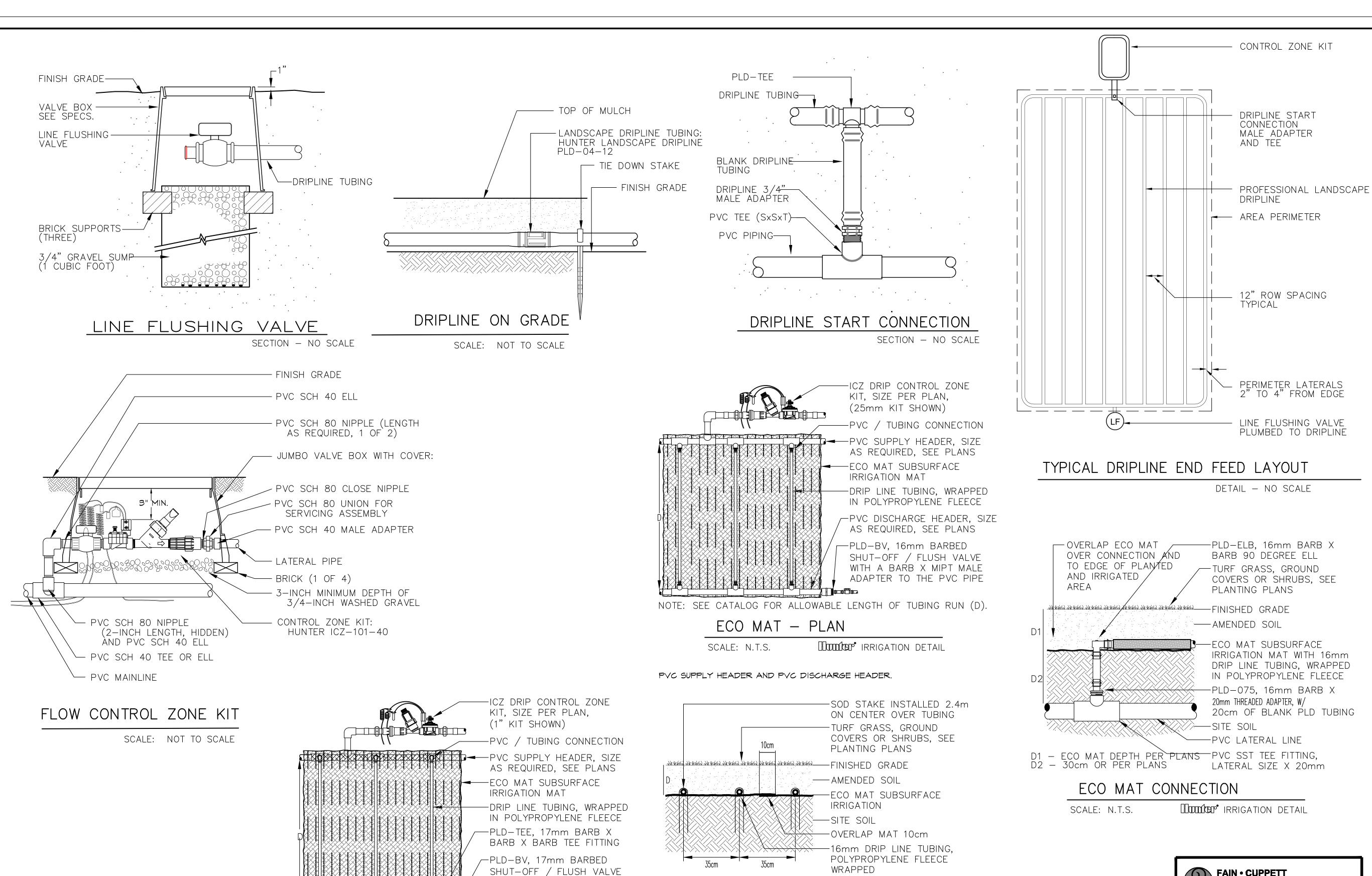
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0023539

R O





\_\_\_17mm PLD BLANK TUBING

AS DISCHARGE HEADER

Doodter IRRIGATION DETAIL

NOTE: SEE CATALOG FOR ALLOWABLE LENGTH OF TUBING RUN (D).

PVC SUPPLY HEADER AND POLY DISCHARGE HEADER.

ECO MAT - PLAN

SCALE: N.T.S.

RECOMMENDED ECO MAT INSTALLATION

ECO MAT - SECTION

DODOCE IRRIGATION DETAIL

TURF AREAS: 10cm - 20cm

GROUND COVER AREAS: 20cm

SHRUB AREAS: 30cm

SCALE: N.T.S.

DEPTH (D):



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ARKWAY (IX, TX 750)

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### 1.01 DESCRIPTION

- A. Work Included
  - Piping and fittings.
  - Connection to existing water lines.
  - Valves, bubblers, and spray heads. All miscellaneous fittings and accessories required
  - to complete and operate system. Excavation and backfill.
  - Testing and adjusting.
  - Clean up.

### B. Related Work Specified Elsewhere

### 1.02 QUALITY ASSURANCE

- A. Codes and Standards:
- 1. All applicable local and national Plumbing Ordinances,
- Electrical Codes, and Building Codes. 2. National Plumbing Code.
- Licenses:
- 1. All work shall be performed by or under the direct supervision of an irrigator or plumber licensed to practice under the authority of the State of Texas.

### C. Reference Standards:

ASTM D-2241-78

### 2. CS 256-63

#### 1.03 SUBMITTALS

- A. Maintenance Materials: At completion of the job, furnish spare parts and all special tools and equipment required to operate and maintain system.
- Maintenance Data: Furnish two copies of parts list and repair manuals and all special tools and equipment required to operate and maintain system.
- C. Manufacturer's Literature: Submit catalogue data indicating, performance, weight, size and function of each item of equipment and material. Also provide manufacturer's operating manual.
- Project Record Documents: Record on a clean set of plans in colored pencil and also a reproducible mylar:
  - All piping and wiring, including control wires by dimensions.

2. Locate all valves by dimension from two directions.

#### **PART II - PRODUCTS**

### 2.01 GENERAL

#### A. Equipment and Material Requirements:

- Standard product of acceptable manufacturer.
- In-service performance records to verify published capabilities. New and unused.

#### 2.02 MATERIALS

### A. PVC Pipe and Fittings:

- Polyvinyl chloride pipe (PVC) in accordance with ASTM D-2241-78 made to SDR-PR dimensions and approved by National Sanitation
- 2. 2 inch pipe and smaller: Solvent weld PVC Type "Bell-End" pipe
- may be used. 2 inch pipe fittings and smaller: Solvent weld type as recommended
- by pipe manufacturer. 4. All pipe downstream of backflow preventer to be Class 200 PVC; all swing joints and risers to be Schedule 80.

### B. Joints and Fittings:

- Nipples and risers: Schedule 80 threaded PVC pipe.
- Fittings: Schedule 80 PVC.

### Valves:

- Double Check Double Gate Valve
  - a. Factory assembled and tested valve train.
- Two spring loaded all brass check valves with soft rubber discs. Two all brass shutoff valves.
- Assembled with brass nipples.
- In accordance with AWWA and ASSE specifications.
- Approved Product: FEBCO.

#### Manual Control Valve

- a. Straight type globe valve.
- b. Size to match upstream pipe or as shown on drawings.
- Cross handle control wheel.
- Brass or bronze body and parts, Class 150.
- Full floating valve disc with replaceable seat and washers. Removable bonnet and stem assembly with packing gland

### Electric Control Valve

and nut.

- a. With flow control.
- b. Globe valve.
- Manual bleed.
- d. 24 VAC solenoid. Electric control, in-line.
- Size to match upstream pipe or as shown on drawings.

### 4. Quick Coupler

- a. 1" female inlet.
- b. Brass or bronze construction. 150 psi capacity.
- d. Self closing cover.
- One piece, single lug, single key construction.
- Provide owner with two quick coupler keys & hose bib
- g. Install in "jumbo" plastic valve box, rectangular, heavy duty.

# D. Valve Boxes:

- 1. Box for Double check double gate valve:
  - a. Concrete box with cast iron cover (or per code). b. Sufficient size to house entire assembly and permit
  - inspection, maintenance and repair.
- 2. Box for Electric Valves, Manual Valves, and Double Check Valves
  - a. "Jumbo", rectangular
  - Heavy duty plastic construction. c. With locking lid.

# E. Sprinkler Heads:

- 1. Bubbler, Flood Type
  - a. Plastic construction. b. 1/2" IPS female inlet.
  - c. Adjustable flow via screen.

# Spray Heads

- a. 4" pop/12" pop
- b. Plastic construction. Stainless steel retraction spring.
- d. Serviceable filter screen and nozzle.
- e. Stationary or gear driven.

# Rotary Heads

- a. 12" pop/4"pop b. Full and part circle heads as drawings indicate.
- Stainless steel retraction spring.
- Serviceable filter screen and nozzle.

# F. Controllers:

- Solid state. Digital readout.
- Dust Barrier.
- Pump/master valve circuit switch.
- 0-60 minute timing per station or as specified.
- Up to three start times/day with manual override.
- UL listed. Battery backup.

# Accessories:

- Jointing Material: Teflon tape for threads on PVC pipe.
- Control Wire: Direct Burial, size for voltage drop, minimum size per National Electric Code.

### **PART III - EXECUTION**

### 3.01 GENERAL

Install all equipment and products in accordance with manufacturer's recommendations.

#### 3.02 INSTALLATION

### A. PVC Pipe and Fittings:

- 1. Handle and install PVC pipe, couplings, and fittings in accordance
- with manufacturer's recommendations and industry standards. All PVC fittings shall be molded of the same material as the pipe and shall be suitable for solvent weld, slip joint ring tight seal, or
- screwed connections. No fittings made of other material shall be used except copper as
- specified in the plans and details. Space pipe length in jointing and snake to allow for expansion and
- contraction. 5. Thoroughly clean interior of the pipe of all foreign matter before being lowered into trench. Keep clean during laying operation by
- means of plugs or other approved method. 6. Do not lay pipe in water or when trench or weather conditions are unsuitable for work. Keep water out of trench until the joints are
- completed. When work is not in progress, securely close open ends of pipe and fittings so that no trench water, earth or other substances will enter
- pipes or fittings. Take up and relay any pipe that has the grade or joints disturbed
- after laying. Fittings at bends in the pipe line and at ends of lines shall be firmly
- wedged against the vertical face of the trench. 10. Make joints in all screwed fittings by applying teflon tape on male
- 11. Only schedule 80 pipe may be threaded.

## Valves:

- Install all new valves as indicated on the plans or as may be required for the proper control of the piping systems in which they are incorporated.
- 2. Bury valves deep enough so that valve box lid will not protrude above the ground.
- 3. Set valves vertically and locate 12 inches from sidewalks where
- 4. Adjust flow control to give correct pressure at sprinkler head.

#### 3.03 FIELD QUALITY CONTROL

### A. Leak Test:

- 1. When the main line or sections of the main line, e.g. loops with swing joints and valves have been installed, the system (or section) will then be pressurized to the operating pressure indicated on the drawings. The pressure will then be maintained for a twenty four hour leak test period.
- All leaks will be repaired and retested prior to backfilling lines.
- Any leaks developed during the first under normal operating pressures due to improper installation shall be repaired by the contractor at no expense to the owner.

# B. Cleaning and Flushing System:

- 1. After pipe, fittings, and valves have been installed and connections made to water source, flush pipe free of all rock, dirt, trash, pipe
- shavings, and other debris before installing heads. After heads have been installed, use system several times before
- final inspection. Immediately before final inspection, check all heads for stoppage.
- Clean if necessary. 4. Remove nozzles of all heads and flush pipes. Clean and replace

### heads before final inspection. C. Maintenance Instructions:

1. School at least two of the Owner's employees that will be maintaining the irrigation system in operating and maintenance

Remove from site any rock or extra soil that resulted from this work and

procedures. 2. Include operation of controllers and valves, balancing of the system, and maintenance of all equipment including removal and replacement of valve and controller components.

# 3.04 CLEANUP

- A. Make final cleanup of all parts of work before final acceptance.
- Remove all construction materials and equipment

restore site to its original condition.

C. Prepare site in an orderly and finished appearance.

# **END OF SECTION**



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