SHARM DRIVE WAREHOUSE

941 W. SHARM DR.,
PHARR, TEXAS, 78577

LANDSCAPE DRAWING INDEX

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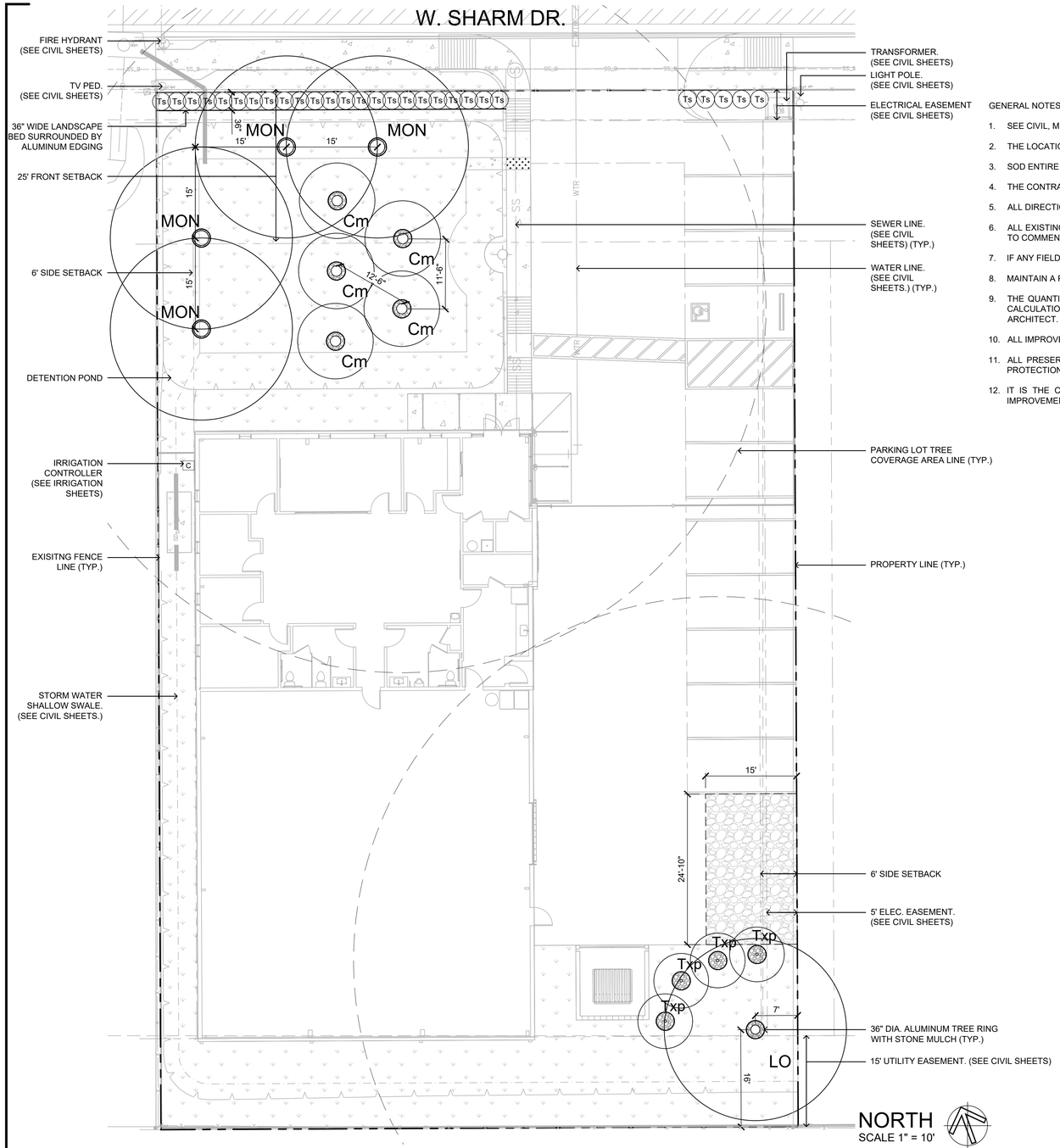


GENERAL NOTES:

1. SEE CIVIL, MEP AND ARCHITECTURAL SHEETS FOR ALL CIVIL, MEP AND ARCHITECTURAL IMPROVEMENTS.
2. THE LOCATION OF ALL TREES, BOULDERS, SHRUBS AND EDGING SHALL BE STAKED OR MARKED IN THE FIELD BY THE CONTRACTOR FOR LANDSCAPE ARCHITECT APPROVAL PRIOR TO INSTALLATION.
3. SOD ENTIRE PROJECT LIMITS AND ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES. DO NOT SOD LANDSCAPE BEDS OR IMPERVIOUS SURFACES.
4. THE CONTRACTOR SHALL REMOVE 12" OF EXISTING SOIL IN ALL LANDSCAPE BEDS AND REPLACE WITH 9" OF PLANTING MIX AND 3" OF MULCH.
5. ALL DIRECTIONAL SIGNAGE TO BE PLACED INSIDE LANDSCAPE BEDS. SEE ARCHITECTURAL SHEETS FOR SIGNAGE.
6. ALL EXISTING AND PROPOSED UTILITIES ARE SHOWN SCHEMATICALLY AND ARE FOR THE CONTRACTORS REFERENCE. THE CONTRACTOR SHALL VERIFY THE LOCATION, SIZE AND DEPTH OF ALL UTILITIES PRIOR TO COMMENCING WORK.
7. IF ANY FIELD CONDITIONS VARY FROM THE CONTRACT DOCUMENTS THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT IN WRITING UPON DISCOVERY.
8. MAINTAIN A POSITIVE SLOPE AWAY FROM THE BUILDING FOUNDATION.
9. THE QUANTITIES INDICATED ON THE LANDSCAPE MATERIAL SCHEDULE & PLAN ARE PROVIDED FOR THE BENEFIT OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN QUANTITY CALCULATIONS AND THE LIABILITY WHICH PERTAINS TO THESE QUANTITIES AND TO ANY RELATED CONTRACT DOCUMENTS AND/ OR PRICE QUOTATIONS. QUESTIONS SHOULD BE DIRECTED TO THE LANDSCAPE ARCHITECT.
10. ALL IMPROVEMENTS SHALL BE CONSTRUCTED TO COMPLY WITH THE TEXAS ACCESSIBILITY STANDARDS AND THE ARCHITECTURAL BARRIERS ACT OF 1968.
11. ALL PRESERVED TREES SHALL BE TRIMMED BY A CERTIFIED ARBORIST UNDER THE DIRECTION OF THE LANDSCAPE ARCHITECT. THIS SHALL BE DONE ONCE CONTRACTOR MOBILIZES AND BEFORE TREE PROTECTIONS ARE PUT INTO PLACE. MAINTAIN MINIMUM 14'-17' OVERHEAD CLEARANCE FOR EMERGENCY VEHICLES. NO MORE THAN 25% OF ANY TREE CANOPY CAN BE REMOVED.
12. IT IS THE CLIENT'S RESPONSIBILITY TO SUBMIT AND OBTAIN THE REVIEW AND APPROVAL FROM THE LOCAL GOVERNMENT AGENCY THAT HAS JURISDICTION OVER THE LANDSCAPE AND IRRIGATION IMPROVEMENTS INCLUDED IN THIS SET OF DRAWINGS.

CITY OF PHARR LANDSCAPE ORDINANCE COMPLIANCE WORKSHEET

DEVELOPMENT AREA	17,955	SF
IMPERVIOUS AREA	11,706	SF
LANDSCAPE AREA	6,249	SF
NUMBER OF PARKING STALLS	11	PARKING STALLS

ZONING DISTRICT	NON-RESIDENTIAL ~ HEAVY COMMERCIAL	
REQUIRED % LOT LANDSCAPE	35	%
PROPOSED % LOT LANDSCAPE	**35**	%
MINIMUM % TREE CANOPY	35	%
PROPOSED % TREE CANOPY	**39**	%

PRIMARY LANDSCAPE CALCULATION-

IMPERVIOUS COVERAGE= 11,706 SF

11,706 SF X 35% = 4,097 / 600 = 7 UNITS

7 UNITS X 2 TREE = 14 TREES REQUIRED.

7 UNITS X 4 SHRUBS = 28 SHRUBS REQUIRED.

PROPOSED TREES = **14** **TREES**

SHRUBS PROPOSED **30** **SHRUBS**

TREE CANOPY CALCULATION

TOTAL LOT AREA = 17,955 SF X 35%= 6,285 SF OF TREE CANOPY REQUIRED

CRAPE MYRTLE	79	CANOPY SF X	5	QTY =	395	TOTAL CANOPY SF
TEXAS PERSIMMON	79	CANOPY SF X	4	QTY =	316	TOTAL CANOPY SF
LIVE OAK -	1256	CANOPY SF X	1	QTY =	1,256	TOTAL CANOPY SF
MONTERREY OAK	1256	CANOPY SF X	4	QTY =	5,024	TOTAL CANOPY SF

PROPOSED TREE CANOPY SF GRAND TOTAL **6,991** **SF OF TREE CANOPY PROPOSED (ALL TREES 2" CALIPER)**

W SHARM DR. STREET TREE CALCULATIONS (OVERLAPS WITH PRIMARY LANDSCAPE AND TREE CANOPY REQ.)-

LF OF STREET FRONTAGE- 105 LF/ 50 = 3 TREES

GRAND TOTAL OF STREET TREES = 3 TREES REQUIRED. **3** **TREES PROPOSED**

PARKING LOT LANDSCAPE CALCULATION (OVERLAPS WITH PRIMARY LANDSCAPE AND TREE CANOPY REQ.)-

24% OF THE PARKING IS LOCATED BETWEEN BUILDING AND W. SHARM DR. = 13 SF OF LANDSCAPE PER STALL

13 SF PER PARKING STALL X 11 PARKING STALLS = 143 / 600 = 1 UNITS

1 UNITS X 2 TREES = 2 TREES REQUIRED **2** **TREES PROPOSED**

1 UNITS X 4 SHRUBS = 4 SHRUBS REQUIRED **30** **SHRUBS PROPOSED**

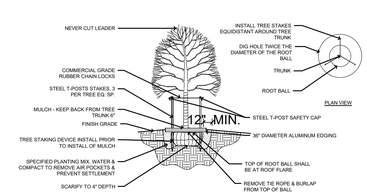
ALL PARKING STALLS WITHIN 60' OF A TREE TRUNK
ALL PARKING SCREENED WITH 36' HEIGHT PLANTS IN A 3' WIDE BED WITH LANDSCAPE EDGING NEEDED
NO MORE THAN 25% OF ANY REQUIRED TREE IS OF THE SAME SPECIES

LANDSCAPE MATERIAL SCHEDULE

CODE	BOTANICAL NAME	COMMON NAME	APPROXIMATE QTY.	COMMENTS
Txp	DIOSPYROS TEXANA	TEXAS PERSIMMON	4	2" CAL., B&B, 6' HT.
Cm	LAGERSTROMEIA INDICA 'BASHAM PARTY PINK'	BASHAM PARTY PINK CRAPE MYRTLE	5	2" CAL., 30 GALLON, 10' HT., MULTI-STEM
Ts	LEUCOPHYLLUM FRUTESCENS 'GREEN CLOUD'	GREEN CLOUD TEXAS SAGE	30	1 GALLON
MON	QUERCUS POLYMORPHA	MONTERREY OAK	4	2" CAL., 45 GALLON, 10' HT
LO	QUERCUS VIRGINIANA	SOUTHERN LIVE OAK	1	2" CAL., 45 GALLON, 10' HT

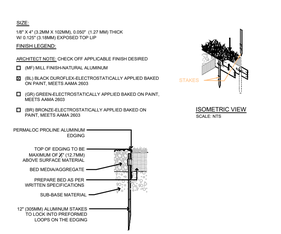
SYMBOL	ITEM	TYPE	APPROXIMATE QTY.	COMMENTS
	HYDROMULCH	COMMON BERMUDA	5,662 SF	
	STONE MULCH	WASHED GRAVEL	439 SF (INCLUDES TREE RINGS)	1" - 2", 4" LAYER INSTALLED ON A LAYER OF DEWITT PRO NON-WOVEN LANDSCAPE FABRIC.
	WOOD MULCH	PREMIUM CYPRESS	218 SF	3" LAYER INSTALLED WITH A LAYER OF LANDSCAPE FABRIC
	LANDSCAPE BED EDGING	ALUMINUM	262 LF (INCLUDES TREE RINGS)	4" ALUMINUM, BLACK FINISH EDGING

ALL LANDSCAPE MATERIAL SHALL BE APPROVED PRIOR TO DELIVERY TO THE SITE, AND SHALL BE MATCHING IN LANDSCAPE ARCHITECT APPROVED SIZE, SHAPE , AND QUALITY.

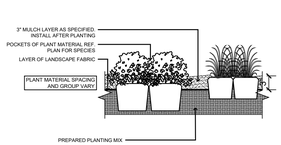


NOTES:
1. FOR EACH ONE (1) INCH CALIPER OF TREE TRUNK DIAMETER INSTALL ONE 21 GRAM AGRIFORM PLANTING TABLET . INSTALL HALF-WAY UP THE ROOTBALL 1" FROM ROOT TIPS.
2. SET TOP OF ROOT CROWN 1" ABOVE FINISHED GRADE WHERE APPLICABLE. TRIM FABRIC AROUND TRUNK OF TREE.
3. REMOVE ALL PLASTIC OR POLYETHYLENE MESH FROM ROOT BALLS.
4. REMOVE ALL NYLON TWINE STRING.
5. STEEL CASING TO BE REMOVED @ 23lbs.
6. **USE MULCH TREE RING IF TREE IS IN MULCH LANDSCAPE BED.**

1 / L-1 TREE & PALM PLANTING
N.T.S.



2 / L-1 PERMALOC ALUMINUM EDGING
N.T.S.



3 / L-1 1 & 3 GALLON SHRUB PLANTING
N.T.S.

HEFFNER DESIGN TEAM, PLLC

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(956) 540-7850

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San Antonio, TX 78217
(210) 820-2677

REGISTERED LANDSCAPE ARCHITECT
ANDREW T. HEFFNER
2529
STATE OF TEXAS

DATE: 02-07-2024

PROJECT:

SHARM DRIVE WAREHOUSE
941 W. SHARM DR.,
PHARR, TEXAS, 78577

DATE	DESCRIPTION
02-07-2024	PERMIT SET

SHEET TITLE:

LANDSCAPE PLAN

PROJECT NUMBER:
24-03 K.L.S.

SHEET NUMBER:

L1

Section 328400

POTABLE LANDSCAPE IRRIGATION SYSTEM

PART 1 - PRODUCTS

1.1 GENERAL

A. Unless otherwise noted on the Drawings, all materials shall be new and unused. The irrigation equipment catalog numbers used for reference in these Specifications are to establish minimum quality standards and may be substituted with an "approved equal" as outlined in Paragraph 1.06 of this section, unless specifically requested by the Owner.

1.2 POLYVINYL CHLORIDE PIPE (PVC PIPE)

PVC pipe manufactured in accordance with ASTM Standards noted herein.

A. Marking and Identification: PVC pipe shall be continuously and permanently marked with the following information: Manufacturer's name, size, type of pipe, and material, PVC number, Product Standard number, and the NSF (National Sanitation Foundation) Seal.

B. PVC pipe fittings: Shall be of the same material as the PVC pipe specified and compatible with PVC pipe furnished. Solvent weld type shall be for Schedule 40.

C. PVC Pipe: Lateral line pipe shall be Class 200 solvent weld, SDR_21, PS 22_70 for all sizes 3/4" _ 2". Mainline pipe shall schd.40 PVC, unless otherwise noted on the Drawings.

D. Flexible PVC Risers (Nipples): All flexible PVC nipples shall be made from virgin PVC material, and shall comply with ASTM D2287, shall be tested at 200 P.S.I. static pressure for 2 hours and have a quick burst rating of a minimum 400 P.S.I. Flexible PVC pipe nipples shall be factory assembled only.

E. Unless otherwise noted on the Drawings, no pipe smaller than ¾" shall be used.

1.3 SWING JOINTS

Swing joints shall be O-ring seal type. Use Lasco, KBI or approved equal.

1.4 WIRE AND SPLICES

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

B. Verification of wire types and installation procedures shall be checked to conform to local codes.

C. Wire connectors shall be King low voltage connectors, tan color.

D. Two-wire No. 14 UF Direct Burial Cable

1. Conductor: Soft-annelaed copper conforming to UL std. 719, Parts 18-22.
2. Insulation: Polyvinylchloride, 60 degree C rated, conforming to UL std. 719, Parts 23-25.
3. Manufacturer's Identification: Surface embossed with manufacturer's name, voltage rating, size and type of designation.
4. Underwriter's Laboratories Approval: All cable shall be tested physically and electrically in accordance with UL std. 719, and shall bear UL labels.

E. No. 10/2 UF Direct Burial Cable:

1. Conductors: The conductors shall consist of solid, soft-annealed copper.
2. Insulation: Over each conductor, there shall be extruded a polyvinylcholoride compound, UL rated for 60 degrees CENTIGRADE.
3. Color Coding: In conformance with the National Electrical Code.

a. Assembly: Flat, parallel configuration.

4. Overall Sheath: A polyvinylchloride sheath compound conforming to UL 719, for "UF" cable shall be applied overall.

F. Ground: The ground conductor shall consist of solid, uncoated soft-annealed No. 6 copper wire.

1.5 MANUAL/ISOLATION VALVES

A. All isolation valves 2-1/2 inches and larger shall be resilient wedge gate valve as manufactured by Matco-Norca series 10RT. All isolation valves smaller than 2-1/2" shall be Speers PVC, double union ball valves or approved equal. All valves must be certified for a working pressure of 125 PSI with a hyrdrostatic shell test of 200 PSI and a hydrostatic seal test of 150 PSI. Both ends must be screw type for use with PVC pipe.

B. All isolation valves shall be housed in an appropriately sized valve box.

1.6 HUNTER ELECTRICAL REMOTE CONTROL VALVES

A. All electric valves shall be "normally closed", solenoid operated, 24 volt A.C., 60 Hz., Globe-Angle or Globe type valve installed in the angle or globe configuration.

B. Valves shall be Hunter, Pressure Regulating (XPR), Series, unless otherwise indicated on the Drawings.

C. A flow stem adjustment shall be included in each valve.

1.7 ARMOR VALVE BOXES

A. All electrical valves shall be placed below grade within 10" round valve boxes. Valve boxes shall be ARMOR No.181104 with matching green bolt down or locking cover marked "Irrigation Control Valve," or approved equal.

B. All isolation shut-off valves shall be installed in suitable valve access boxes or proper size) as required for easy access to the valve. Valve boxes shall be Armor model No. 181104 (minimum size), with matching green bolt down or locking cover marked "Irrigation Control Valve," or approved equal.

C. A valve box shall be provided for all valves.

D. Boxes shall be suitable in size and configuration for the operability and adjustment of the valve.

E. Extension sections will be used as appropriate to the depth of piping.

F. All valve box covers shall bolt down or have locking mechanisms and shall be colored green.

1.8 HUNTER POP_UP SPRAY, MICRO SPRAY, ROTOR AND BUBBLER HEADS

A. Pop-up spray, rotor and bubbler heads are specified on the Drawings.

B. One adjustable bubbler head shall be provided per each tree location as shown on the Drawings.

C. Spray heads shall have a minimum 4" pop_up or 12" pop-up as designated on the Drawings. The sprinkler body and all related parts shall be plastic cycolac or polycarbonate. They shall have a spring retraction for positive return action of the pop_up nozzle. The spring for retraction and the adjustable nozzle screw shall be made of corrosion resistant materials.

D. All heads are to be operated and site adjusted to match precipitation rate of all heads in the zone with proper nozzle selection and arc adjustments.

E. MICRO-SPRAYS -The nozzle shall be constructed of corrosion and UV-resistant plastic. The nozzle shall have a pop-up stem that when under water pressure, pops up an additional inch. It shall also have a stainless steel retraction spring to retract the stem when water pressure is released. The stem shall have an integral elastomeric flow bushing for maintaining a constant flow rate over the operating pressure range of 25 to 60 PSI (1.7 to 4.1 bars; 172 to 413 kPa). The nozzle shall be protected from debris by a stainless steel screen that is integral to the pop-up stem. The nozzle shall have standard female threads that are compatible with the threaded riser on Hunter spray heads as well as some other manufacturer's spray heads. The nozzle shall carry a two-year, exchange warranty (not prorated). Must be installed in Institutional spray body.

1.9 RAINBIRD DRIP IRRIGATION (FOR POTABLE IRRIGATION ONLY)

A. The dripperline shall be XFS-09-12 non-potable as manufactured by Rain Bird Irrigation, Inc. Dripper flow rate and spacing shall be as indicated on the Drawings.

B. Soil Staples (TLS6): All on-surface/under mulch Techline CV/Techline Techlite installations shall be held in place with Techline Soil Staples spaced evenly every 3' to 5' on center, and with two staples on each change of direction.

C. Line Flushing Valves: All Techline/Techlite systems shall be installed with Netafim Automatic Line Flushing Valves as indicated on drawings. Techline CV zones do not require an automatic line flushing valve but must have a manual flushing port(s) in the position that an automatic flush valve would be positioned.

D. Pressure Regulator: A pressure regulator shall be installed at each zone valve or on the main line to ensure operating pressures do not exceed system requirements. The pressure regulator shall be a Netafim Pressure Regulator.

E. Disc Filter: A disc filter shall be installed at each zone valve or on the main line to ensure proper filtration. The filter shall be a Netafim Disc Filter. Model number and mesh as indicated on the Drawings.

1.10 HUNTER ELECTRIC CONTROLLER

A. The electric irrigation controller shall be a Controller type controller capable of operating the number of stations as indicated on the Drawings. The system is designed to operate multiple valves at a time, unless otherwise noted. The controller will be specified on the Drawings.

B. Power source shall be standard 120 volt 60 Cycle AC. Output for operation of companion solenoid actuated valves shall be 24 volts 60 Cycle AC., unless otherwise noted on the Drawings.

C. Provide an automatic rain/freeze shutoff with controller.

D. All local and applicable codes shall take precedence in the furnishing and/or connecting of the 120 volt electrical service to the controller.

E. Adequate coverage and protect of the 24 volt service wires leading from the controllers shall be installed from the bottom of the controllers to at least six (6) inches below ground level or to floor level.

1.11 BACKFLOW PREVENTER

A. A backflow prevention device shall be located and sized as shown on the Drawings.

B. This assembly shall be installed in a box and conform to the City Plumbing Codes and manufacturer's recommendations.

C. Backflow preventer housing shall be called for on the Drawings.

1.12 GLUE

A. All glue used shall be Red Christie Hot Glue.

PART 2 - EXECUTION

2.1 INSTALLATION, GENERAL

A. Design Pressure: This irrigation system has been designed to operate with a minimum static inlet water pressure as indicated on the Drawings. The Contractor shall take a pressure reading prior to beginning construction. If the pressure reading is 5% less than above, the Contractor shall notify the Landscape Architect.

B. Contractor Responsibility: The Contractor shall not willfully install the irrigation system as shown on the drawings when it is obvious in the field that obstructions, grade differences or discrepancies in equipment usage, area dimensions or water pressure exist that might not have been considered in the design. Any deviation between the Contract Documents and field conditions shall be brought to the attention of the Engineer/Architect in writing. In the event this notification is not performed, the Contractor shall assume full responsibility for any revision necessary.

C. Staking: Before installation is started, place a stake or flag where each sprinkler is to be located, in accordance with the Drawings. Staking shall be approved by the Landscape Architect before proceeding.

D. Piping Layout: Piping layout is diagrammatic. Route piping around existing trees and root zones in such a manner as to avoid damage to plantings. Where access is restricted, bore under large existing trees to avoid damage and exposure of the root system. Do not dig within the ball of newly planted trees or shrubs.

E. In areas where trees are present, trenches will be adjusted on site to provide a minimum clearance of four times the trunk diameter of the tree (at its base) between any tree and any trench.

F. All material and equipment shall be delivered to the Worksite in unbroken reels, cartons or other packaging to demonstrate that such material is new and of a quality and grade in keeping with the intent of these Specifications.

G. Refer to the Drawings for drip installation details.

2.2 EXCAVATION AND TRENCHING

A. All backfill operations shall conform to Title 30, TAC, Chapter 344.62, effective Jan. 1, 2009.

B. The Contractor shall perform all excavation to the depth indicated in these Specifications and Contract drawings. The banks of trenches shall be kept as nearly vertical as practicable. Trenches shall be wide enough to allow a minimum of 4" between parallel pipelines or electrical wiring. Where rock excavation is required, or where stones or rubbles is encountered in the bottom of the trench that would create a concentrated pressure on the pipe, the rock, stones, or rubble shall be removed to a depth of six (6) inches minimum below the trench depth indicated. The over depth rock excavation and all excess trench excavation shall be backfilled with loose, moist earth or sand, thoroughly tamped. Whenever wet or otherwise unstable soil that is incapable of properly supporting the pipe is encountered in the trench bottom, such shall be removed to a depth and length required, and the trench backfilled to trench bottom grade as hereinafter specified, with course sand, fine gravel or other suitable material.

C. Bottom of trench grade shall be continued past ground surface deviations to avoid air pockets and low collection points in the line. The minimum cover specifications shall govern regardless of variations in ground surface profile and the occasional deeper excavation required at banks and other field conditions. Excavation shall be such that a uniform trench grade variation will occur in all cases where variations are necessary.

D. Trench excavation shall comprise the satisfactory removal and disposition of all materials, and shall include all shoring and sheeting required to protect the excavation and to safeguard employees.

E. During excavation, material suitable for backfilling shall be stockpiled in an orderly manner a sufficient distance back from edge of trenches to avoid overloading and prevent slides or cave_ins. Material unsuitable for backfilling shall be wasted as directed by the Landscape Architect. When excavated material is of a rocky nature and the topsoil or any other layer of excavated material is suitable for pipe bedding and backfill in the vicinity of the pipe, such material shall be separately stockpiled for use in such bedding and pipe backfill operations, unless satisfactory imported material is used.

F. All excavations and backfill shall be unclassified and covered in the basic bid. No additional compensation will be allowed for rock or rubble encountered.

G. Restore all surfaces, existing underground installations, etc., damaged or cut as a result of the excavations to their original conditions in a manner acceptable to the Engineer/Architect.

2.3 PIPE INSTALLATION

A. Sprinkler Mains: Sprinkler mains are that portion of piping from water source to electric valves. This portion of piping is subject to surges since it is a closed portion of the sprinkler system. Sprinkler mains shall be installed in a trench with a minimum of 18 inches of cover.

B. Lateral Piping: Lateral piping is that portion of piping from electrical valve to sprinkler heads. This portion of piping is not subject to surges since it is an "open end" portion of the sprinkler system. Lateral piping shall be installed in a trench with a minimum of 18 inches of cover.

C. Remove lumber, rubbish, and rocks from trenches. Provide firm, uniform bearing for entire length of each pipeline to prevent uneven settlement. Wedging or blocking of pipe will not be permitted. Remove foreign matter or dirt from inside of pipe before welding, and keep piping clean during and after laying pipe.

D. PVC pipe shall not be installed where there is water in the trench, nor shall PVC pipe be laid when temperature is 40 deg. F or below or when rain is imminent. PVC pipe will expand and contract as the temperature changes. Therefore, pipe shall be snaked from side to side of trench bottom to allow for expansion and contraction.

E. PVC pipe shall be cut with a hand saw or hack saw with the assistance of a square and sawing vice, or in a manner so as to ensure a square cut. Burrs at cut ends shall be removed prior to installation so that a smooth unobstructed flow will be obtained.

F. All PVC pipe shall be installed with pipe markings facing the top of the trench.

G. Thrust blocks shall be installed as indicated on the Drawings.

2.4 PVC PIPE AND FITTING ASSEMBLY

A. Make solvent_welded joints following standards noted herein. Thoroughly clean pipe and fittings of dirt, dust, and moisture with an approved colored PVC primer before applying solvent.

B. All plastic to plastic joints shall be solvent-weld joints or slip seal joints. Only the solvent recommended by the pipe manufacturer shall be used. All plastic pipe and fittings shall be installed as outlined and instructed by the pipe manufacturer and it shall be the Contractor's responsibility to make arrangements with the pipe manufacturer for any field assistance that may be necessary. The Contractor shall assume full responsibility for the correct installation.

C. Solvent weld joints shall be made in the following manner:

1. Thoroughly clean the mating pipe and fittings with approved cleaner and a clean dry cloth.
2. Apply a uniform coat of solvent to the outside of the pipe with a non-synthetic bristle brush or applicator.
3. Apply solvent to inside of the fitting in a similar manner.
4. Re-apply a light coat of solvent to the pipe and quickly insert it into the fitting.
5. Give the pipe or fitting a quarter turn to ensure even distribution of the solvent and make sure that the pipe is inserted to the full depth of the fitting socket.
6. Hold in position for 15 seconds.
7. Wipe of excess solvent that appears at the outer shoulder of the fitting. Cure 24 hours before charging system with water.

D. PVC to Metal Connection: Work metal connections first. Use a non_hardening pipe dope such as Permatex No. 2 or "Teflon" tape on threaded PVC to metal joints. Use only light wrench pressure. All plastic to metal joints shall be made with plastic male adapters.

E. Threaded PVC Connections: Where required, use threaded PVC adapters into which pipe may be welded.

2.5 CONTROL WIRE INSTALLATION

A. All electric control cables shall be of size as shown on the Drawings and/or as specified and shall be installed in the piping trenches wherever possible.

B. Install wire in the pipe trench as detailed on the Drawings.

C. Wire shall be placed in the trench as loose as possible and with as much slack as possible to allow for expansion and contraction of the wire. Where it is necessary to run wire in a separate trench, the wire shall have at least twelve (12) inches of cover.

D. All wire connections at remote control valves, either direct buried or in boxes, and at all splices shall be left with sufficient slack so that in case of repair, the splice may be brought to the surface without disconnecting the wires. Slack shall be coiled in approximately 1" wraps.

E. 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, what are to be connected to the same controller, shall be connected to a 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.

F. All control wire less than 500 feet in length shall be continuous without splices or joints from the controller to the valves. Connections to the electric valves shall be made within 18 inches of the valve using connectors specified in Paragraph 2.4 of this section, unless otherwise approved by the Engineer/Architect in writing.

G. The Contractor shall obtain the Engineer/Architect's approval for wire routing when installed in a separate ditch. Control wires may be installed in a common ditch with piping; however, wires must be installed underneath mainline piping.

H. All wire passing under existing or future paving, sidewalk, construction, etc., shall be encased in 1" minimum PVC Schedule 40 conduit extending at least twelve (12) inches beyond edges of paving, sidewalks, or construction.

2.6 POP_UP SPRAY, MICRO-SPRAY, ROTORY AND BUBBLER HEADS

A. Provide heads and nozzles as specified and install in locations as shown on the Contract Drawings.

B. All heads of a particular type and for a particular function in the system shall be of the same manufacturer and shall be marked with the manufacturer's name and identification, in such a position that they can be identified without being removed from the system. All sprinkler heads and quick coupling valves shall be set perpendicular to finished grades unless otherwise indicated on the Drawings.

C. Pop_up spray and micro-spray heads shall be installed on a swing joint pipe connector as detailed. Rotary heads shall be installed on a double swing joint connected to the lateral pipe. Bubbler shall be a tree well flexible riser-bubbler head on a flex pipe. Provide wire staple to secure the bubbler to the top of the root ball. Keep heads a minimum of 4 inches from paved surfaces.

D. Heads shall be installed with underside of flange flush with the finished grade.

E. Contractor will be required to adjust heads as necessary after establishment of grass or other plant material.

2.7 MANUAL VALVES

A. Manual valves shall be sized and located where shown on the Drawings.

B. Valve boxes shall be adjusted to be flush with finished grade.

C. Valve boxes shall be properly supported and of sufficient construction that tractors, mowers or other equipment crossing over the boxes will not push boxes down and damage the pipe, valve, or box.

2.8 VALVE AND VALVE BOX PLACEMENT

A. A ball valve shall precede each valve to provide shut off for repair of valves.

B. All manual, electric, and quick coupling valves shall be in boxes as specified in Paragraph 2.6 of this section, and shall be set with a minimum of six (6) inches of space between their top surface and the bottom of the valve box. The base of the box shall be filled with pea gravel per manufacturer's installation instructions.

C. Valves shall be fully opened and fully closed to ensure that all parts are in operating condition.

D. Valve boxes shall be set plumb, vertical, and concentric with the valve stem.

E. Any valve box which has moved from this required position so as to prevent the use of the operating wheel of the valve shall be reset by the Contractor at his own expense.

2.9 ELECTRIC CONTROLLER

A. Electric controller shall be located as shown on the Drawings and shall be capable of operating the number of stations indicated.

B. The system is designed to operate multiple sections at a time, unless otherwise noted on the Drawings in strict accordance with the manufacturer's published installation instructions.

2.10 ELECTRIC REMOTE CONTROL VALVES

A. Remote control valves shall be located and sized as shown on the Drawings. All electrical connections shall be made when the weather is dry with connection kits as specified in Paragraph 2.4 of this section in strict accordance with manufacturer's recommended procedures. All remote control valves shall be installed in a horizontal position, in accordance to the manufacturer's published installation instructions.

B. It shall be the responsibility of the Contractor to furnish and install the proper size wire on each of the low voltage circuits from the master control center to the various electric remote control valves.

C. Consideration shall be given to each circuit for allowance of voltage drop and economy consistent with accepted practices of electrical installation. Under no circumstances shall the voltage of any branch circuit be reduced more than proper due to length of run exceeding the maximum allowable for the wire size used. "Up-sizing" wire to compensate for voltage drop shall be at the Contractor's expense, whether or not indicated on the Drawings.

2.11 BACKFILL AND COMPACTION

A. After system is operating and required tests and inspections have been made, the trenches shall be carefully backfilled with the excavated materials approved for backfilling, consisting of earth, loam, sandy clay, sand, gravel, soft shale, or other approved materials, free from large clods of earth or stone. Rock, broken concrete, or pavement, and large boulders shall not be used as backfill material. The backfill shall be thoroughly compacted and made flush with the adjacent soil level.

B. Compact trenches in areas to be planted by thoroughly flooding the backfill with water. Compact all other areas by flooding or hand tamping. The jetting process may be used in areas when flooding.

C. Backfill for all trenches, regardless of the type of pipe covered, shall be compacted to a minimum of 90% density.

D. Any trenches improperly backfilled, or where settlement occurs, shall be reopened to the depth required for compaction, then refilled and compacted with the surface restored to the required grade and left in a completed surface condition as described above.

E. Specifically tamp backfill under heads and around the flange of heads in a one (1) foot radius by a suitable means after trench backfill has dried from flooding to prevent heads loosening in the ground.

2.12 FINAL ADJUSTMENT

A. After installation has been completed, make final adjustment of sprinkler system prior to Engineer/Architect's final inspection.

B. Completely flush system to remove debris from lines by removing nozzle from heads on ends of lines and turning on system.

C. Check sprinklers for proper operation and proper alignment for direction of throw.

D. Check each new section for operating pressure and balance to other sections by use of flow adjustment on top of each valve.

E. Check nozzling for proper coverage. Prevailing wind conditions may indicate that arc or angle of spray should be other than as shown on the Drawings. In this case, change nozzles to provide correct coverage and furnish as-built data to Engineer/Architect with each change.

F. After system is thoroughly flushed and ready for operation, each section of sprinklers shall be adjusted to control pressure at heads. Use the following method, one section at a time:

1. Remove last head on section and install a temporary riser above grade. Install tee with pressure gauge attached on top of riser and re_install head with nipple onto tee.
2. Correct operating pressure at last head of each section as follows: Spray Heads _ 20_25 psi; rotor heads - 30 to 40 psi (and as recommended by the manufacturer).
3. After replacing head, at grade, tamp thoroughly around head.

G. Prior to final inspection, cycle the system through three (3) complete watering schedules of not less than twenty (20) minutes each for sprinklers and three (3) hours each for drip to assure proper function of sprinklers, valves and controller.

2.13 CLEAN_UP

A. The Site shall be thoroughly cleaned of all waste materials and all unused or salvaged materials, equipment, tools, etc.

B. After completion of the work, areas disturbed shall be leveled and the Site shall be raked clean and left in an orderly condition.

2.14 TEMPORARY IRRIGATION FOR GRASS ESTABLISHMENT

If the permanent irrigation system is inoperable the Contractor shall provide temporary irrigation for all new turf areas. Temporary irrigation may include equipment securely staked above grade. It shall be the Contractor's responsibility to provide complete, consistent temporary coverage in order to establish a viable, mowable stand of grass. Any above grade equipment shall be removed by the Contractor upon acceptance of the turf by the Engineer/Architect.

SECTION 329200

TURF AND GRASSES

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK AND RELATED DOCUMENTS

A. Furnish all work and materials, appliances, tools, equipment, facilities, transportation and services required and incidental thereto, as shown on drawings and/or specified herein including but not limited to; seed bed preparation, fertilization, installation and uniform establishment of hydromulch and sod materials, subsequent maintenance requirements.

B. Related Work Specified Elsewhere:

1. Plants: Section 329300

C. It is the responsibility of the Contractor to establish a dense, top quality lawn of permanent grasses as specified. Any part of the area that fails to show a uniform germination shall be reseeded/resodded and such reseeding/resodding shall continue until a dense lawn area is established. The Contractor shall provide all maintenance of the lawn areas as described below until Final Acceptance.

1.2 QUALITY ASSURANCE

A. Work in this Section is to be performed by a single firm specializing in commercial landscape work of similar size and quality with a minimum of five (5) years experience. The Landscape Architect shall review qualifications and approve subcontractor prior to commencing work.

B. All chemical applications shall be performed in accordance with current county, state, and federal laws, utilizing approved materials and methods of application. These applications shall be performed under the supervision of a Licensed Certified Applicator.

C. All seed must meet the requirements of the U.S. Department of Agriculture Rules & Regulations as set forth in the Federal Seed Act and the Texas Seed Law.

D. All sod must be laid within forty-eight hours of cutting and immediately upon arrival to the project site. Stack sod roots to roots and protect from damage by exposure to environmental conditions. If laying of sod is delayed more than four hours after arrival to the site it must be stored under shade and kept moist. Do not tear, stretch or drop sod. Do not allow soil to break free of turf roots.

E. Suspend all work in this Section if conditions of drought, excessive moisture, high winds or extreme or prolonged cold exist.

1.3 WARRANTY AND MAINTENANCE

A. The Contractor shall maintain all plant material described in this Section from the date of installation and continue ninety (90) days after written approval of substantial completion is received from the Landscape Architect.

B. If a uniform lawn has not been established after ninety (90) days the Contractor shall take additional actions to meet the turf establishment requirement of these Contract Documents. The Contractor shall provide a written statement to the Landscape Architect detailing a course of action to establish a lawn.

C. Maintenance period work shall include the following tasks completed weekly:

1. Provide insect and disease control to maintain health of plants.
2. Dispose of all maintenance debris/clippings off-site. Owner's dumpsters shall not be used for disposal.
3. Keep all site areas tidy and free of grass clippings, mulch or other foreign materials.
4. Reapply hydromulch or resod as necessary to achieve uniform coverage.
5. Mow turf areas to maintain a 2" maximum height. However, not more than 1/3 of the rass leaf shall be removed at any one cutting and cutting shall not be fewer than ten (10) days apart.
6. Trim/edge all turf areas that abut edging, plant beds, pavement, etc.
7. Fertilize as indicated in this Section.
8. Assure adequate watering by utilizing irrigation system, if any. Monitor and adjust the irrigation system as needed.
9. Hand water all turf if irrigation system is not functional or does not exist

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REGISTERED LANDSCAPE ARCHITECT
ANDREW T. HEFFNER
2529
STATE OF TEXAS

DATE: 02-07-2024

STATE OF TEXAS
ROBERT DURAN
18576
LICENSED
IRRIGATOR
02-07-24

PROJECT:

SHARM DRIVE WAREHOUSE

941 W. SHARM DR.,
PHARR, TEXAS, 78577

DATE	DESCRIPTION
02-07-2024	PERMIT SET

SHEET TITLE:

SPECIFICATIONS

PROJECT NUMBER:

24-03 K.L.S.

SHEET NUMBER:

L2

1.4 SUBMITTALS

A. The Contractor shall submit manufacturer's specifications for fertilizers, soil amendments and seed mixtures/percentages. Also include sod inspection certificates from the Texas Department of Agriculture and one sod delivery ticket per truckload. Sod delivery tickets shall indicate sod species, nursery certification and the date and time of cutting.

B. The submittal shall include the manufacturer's name, model number, and manufacturer's installation recommendation, if applicable, for each proposed item.

C. No partial submittal will be accepted and submittals shall be neatly bound into a brochure and logically organized. After the submittal has been approved, substitutions will not be allowed except by written consent of the Landscape Architect.

D. Approval of the submittals are required prior to delivery of any materials to the job site.

E. Shop drawings shall include dimensions, elevations, construction details, arrangements, and capacity of equipment, as well as manufacturer's installation recommendations.

1.5 APPROVAL OF PLANT MATERIAL

A. All plant material shall be approved by the Landscape Architect prior to installation. At no time shall any approval impair the right of further inspection and rejection during the progress of the work or contract life for failure to conform to the listed size and condition requirements or latent defects, diseases or injuries. Rejected plant materials shall be promptly removed from the site by the Contractor.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Topsoil shall be in accordance to Section 329300.

B. Sod shall be premium #1 certified sod, grown in a sod nursery on clayey soil, at least one year old, with a heavy top, strong well-knit root system and free of weeds and disease. Refer to drawings for type of sod required.

C. Seed shall be fresh, clean, new crop seed. Apply uniformly at the following rates for type of seed and planting date:

TYPE	APPLICATION RATE POUND S/AC	SEEDING DATE
HULLED COMMON BERMUDA GRASS 98 / 88 UNHULLED COMMON BERMUDA GRASS 98 / 88	40 40	JANUARY 1 TO MARCH 31
HULLED COMMON BERMUDA GRASS 98 / 88	40	APRIL 1 TO SEPTEMBER 30
HULLED COMMON BERMUDA GRASS 98 / 88 UNHULLED COMMON BERMUDA GRASS 98 / 88 ANNUAL RYE GRASS (GULF)	40 40 30	OCTOBER 1 TO DECEMBER 31

D. Fertilizer shall be water soluble with an analysis of 12 percent Nitrogen, 4 percent Phosphoric Acid and 8 percent Potash. The fertilizer shall be delivered to the site in fully labeled containers. Fertilizer shall be kept dry prior to being used.

E. Mulch shall be virgin wood cellulose fiber made from whole wood chips. Within the fiber mulch material, at least 20 percent of the fibers will be 10.7 mm in length and .27 mm in diameter. Rate of application shall be 2000 pounds per acre. Mulch shall have a non-toxic green dye to guide in application. Hay or straw shall not be used.

F. Tackifier shall be equal to Terra Tack. The tackifier shall be applied at a rate of 40 pounds per acre. Terra Type III, or approved equal, shall be used on slopes exceeding 10% and Terra Type I, or approved equal, shall be used in all other areas.

G. Wetting agent shall be potable water.

H. Herbicide shall have an active ingredient of 41% gylphosate. The Contractor shall follow all manufacturer's warnings and application instructions.

PART 3 - INSTALLATION

3.1 EXAMINATION

A. Examine the areas and conditions under which work of this Section will be performed. Notify the Landscape Architect of unsatisfactory conditions. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected and the Landscape Architect has provided written acceptance. Beginning work indicates acceptance of the site as satisfactory by the installer.

3.2 PREPARATION

A. Site Preparation: Compacted or unsuitable soils and sub-soils from construction activities must be ripped and tilled until a loose, friable and free-draining condition is met. All existing weeds, grass, stabilized sub-base material, rubble, excavated soil and other material shall be removed from the site and disposed of by the contractor prior to starting any new landscape work. All stones over one (1) inch in any dimension in the top two (2) inches of soil shall be removed. Soil conditions around entire site must be approved by the Landscape Architect prior to rough and finish grading operations. The Contractor shall not install any fill or topsoil in turf areas prior to site condition approval by the Landscape Architect.

B. Turf Area Preparation: Grade areas to finish grades, filling as needed or removing surplus material. Float all turf areas to a smooth, uniform grade as indicated in the Contract Documents. Add compost and incorporate as stated on Plans. All turf areas shall slope to drain away from structures and planting beds. Areas where no grades are shown shall have a smooth and continual grade between fixed elements and elevations shown. The Contractor shall ensure proper drainage around all structures and adjust grades as necessary or as directed by the Landscape Architect. Lightly compact all turf areas with weighted roller to assure future settling will not occur.

C. Turf Areas and Herbicide Application: All turf areas shall be free of weeds, grass, insects, or any other deleterious material prior to bed preparation. Contractor shall herbicide all turf areas at least two times prior to installation of any new material (topsoil or seed/sod). The Contractor shall wait seven (7) days from last herbicide application before proceeding with hydromulch or sod material installation.

3.3 INSTALLATION - HYDROMULCH

A. Prior to commencement of seeding operations, the Contractor shall protect all stationary items from overspray. Any overspray shall be immediately removed from any stationary object while still wet.

B. The Contractor shall obtain approval of hydromulch area from Landscape Architect prior to application. Immediately after approval begin hydromulch application to reduce potential for erosion and excessive weed growth.

C. Turf areas shall be seeded with an approved mechanical hydromulcher. Hydraulic equipment used for the application of fertilizer, seed and slurry of prepared wood fiber mulch shall have a built-in agitation system with an operating capacity sufficient to agitate, suspend and homogeneously mix a slurry containing up to forty (40) pounds of fiber plus a combined total of seventy (70) pounds of fertilizer solids for each 100 gallons of water. The discharge line shall be equipped with a set of hydraulic spray nozzles which provide even distribution of the slurry on the area to be seeded. The slurry tank shall have a minimum capacity of eight hundred (800) gallons. The Landscape Architect may authorize equipment with a smaller tank capacity. Apply a visibly uniform coat of slurry mixture to the prepared seed bed.

D. Keep hydromulched areas moist during germination period. Adjust watering schedule as needed or as directed by the Landscape Architect.

E. After first cutting water hydromulched areas twice the first week to a minimum depth of six (6) inches with a fine spray and once per week thereafter as necessary to supplement natural rain to the equivalent of one (1) inch or to a six (6) inch depth.

F. Water for watering purposes shall be provided by the Owner at no cost to the Contractor. The Contractor shall provide equipment needed to connect to source, transport and distribute water.

G. After germination period all areas that fail to show a uniform stand of grass shall be re-hydromulched and shall be done repeatedly until a uniform stand of grass has been has been approved by the Landscape Architect.

3.4 INSTALLATION - SOD

A. The Contractor shall obtain approval of sod area from Landscape Architect prior to installation. Immediately after approval begin sod installation to reduce potential for erosion and excessive weed growth.

B. Always lay sod perpendicular to the slope and abut tightly together. Stagger strips of sod so that transverse joints are offset a minimum of eight (8) inches.

C. Roll all sod with a weighted roller weighing approximately three hundred (300) lbs. to sufficiently set sod roots into underlying soil.

D. Water the sod with an irrigation system only. Monitor the health of the sod material and adjust water needs accordingly or as directed by Landscape Architect.

E. Sodded areas shall have fertilizer applied in two (2) applications with a thorough watering immediately following each application. The first application shall be one (1) week before the sod install at the rate of 35 pounds per 1,000 square feet harrowed into the top two (2) inches of seed bed. The second application shall be done at the rate of 25 pounds per 1,000 square feet, immediately following the second mowing.

3.5 CLEANING AND PROTECTION

A. The Contractor shall perform all necessary cleaning and removal of excess soil, debris, equipment, etc., during installation and upon completion of the work. The Contractor shall immediately repair any damage resulting from turf establishment operations without cost to the Owner.

B. The Contractor shall protect turf areas from damage, theft, erosion, washout, settlement or other causes until final acceptance. The above damages shall be repaired by the Contractor at no cost to the Owner.

PART 4 - METHOD OF MEASUREMENT

MEASUREMENT:

Turfgrass as described in this section will be paid for on a lump sum basis wherein no measurement will be made.

PART 5 - BASIS OF PAYMENT

PAYMENT:

A. Turfgrass will be paid for at the Contract lump sum, which price will be full compensation f or furnishing and installing equipment; shop drawings; providing all submittals and warranties; furnishing all labor, materials, tools, equipment; and incidentals necessary to complete the work as described in this section and related other sections of these Contract Documents, as well as maintenance until final acceptance.

END OF SECTION 329200.

SECTION 329300

PLANTS

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK AND RELATED DOCUMENTS

A. Furnish all work and materials, appliances, tools, equipment, facilities, transportation and services required and incidental thereto, as shown on the Drawings and/or specified herein including but not limited to; the procurement and transportation of living plants, the excavation and preparation of all planting beds and planting of all materials, mulching, watering, protection, maintenance guarantee period, bed edging, planting soil/mixes, fertilizer, mulch, trees, palms, shrubs, groundcovers, plant material replacements for all Contractor supplied plant materials, miscellaneous landscape materials.

B. Related Work Specified Elsewhere:

1. Turf and Grasses: 329200

1.2 QUALITY ASSURANCE

A. The following Codes, Regulations, Reference Standards, and Specifications apply to work included in this section:

1. "Hortus Third," 1976.
2. Texas Association of Nurserymen, Grades and Standards for Nursery Stock
3. "American Standard for Nursery Stock," ANSI Z60.1-1900.
4. National Arborist Association Standards
5. "Plants of Deep South Texas - A Field Guide to the Woody and Flowering Species"

B. Landscape work to be performed by a single firm specializing in commercial landscape work of similar size and quality with a minimum of five (5) years experience. The Landscape Architect shall review qualifications and approve subcontractor prior to commencing work.

1.3 WARRANTY AND MAINTENANCE

A. The Contractor shall warranty groundcover/shrubs for three months and trees/palms for one year after final acceptance. If plant material is deemed dead or unrecoverable by the Landscape Architect the Contractor will be notified in writing as such. The Contractor shall remove and replace the plant material within two weeks of the notification.

B. The Contractor shall maintain all plant material described in this Section for ninety days after written approval of substantial completion is received from the Landscape Architect.

C. Maintenance period work shall include the following tasks completed weekly:

1. Remove and replace dead plant material. Prune plants to remove dead wood and to maintain health of plants.
2. Maintain all mulched areas at a 3 in. depth. Remove weeds and grass from shrub and ground cover areas and from watering basins.
3. Provide insect and disease control to maintain health of plants.
4. Adjust or replace staking as required.
5. Dispose of all maintenance debris/clippings off-site. Owner's dumpsters shall not be used for disposal.
6. Keep all paved areas clear and free of grass clippings, mulch or other foreign materials.
7. Remove staking materials at end of maintenance period and deliver to Owner.

1.4 SUBMITTALS

A. The Contractor shall submit manufacturer's specifications for fertilizers, soil amendments, seed mixtures/percentages; all sources for plant materials; a one foot section of edging (as specified on the Drawings); and one pound bag samples each of topsoil, mulch and compost. The submittal shall include the manufacturer's name, model number, and manufacturer's installation recommendation, if applicable, for each proposed item in accordance with Section 01300.

B. No partial submittal will be accepted and submittals shall be neatly bound into a brochure and logically organized. After the submittal has been approved, substitutions will not be allowed except by written consent of the Landscape Architect.

C. Approval of the submittals are required prior to delivery of any materials to the job site.

D. Shop drawings shall include dimensions, elevations, construction details, arrangements, and capacity of equipment, as well as manufacturer's installation recommendations.

1.5 PROTECTION OF ITEMS TO REMAIN

A. Prior to commencing work the Contractor shall furnish and install orange construction fencing as indicated on the Drawings. Fencing shall be 60" in height, continuous and staked as needed to provide a stable and secure barrier around plant material. No work under this contract may begin until this fencing is in place and approved in writing by the Landscape Architect.

B. Trees that are to remain on site but be transplanted to a new location shall have orange construction fencing installed at the tree's dripline.

C. No trucks, machinery, stockpiled or staged material shall be placed or driven within the drip line of any plant material unless that drip line extends over an imperviously surfaced area. The Landscape Architect will determine if plant replacement or other repair is needed to restore the affected area to pre-construction conditions at the sole cost to the Contractor.

D. The Contractor shall adjust depth of earthwork and loaming when working immediately adjacent to any of the aforementioned features in order to prevent disturbing tree roots, undermining walks and pavements, and damage in general to any existing or newly incorporated item.

E. Where excavating, fill or grading is required within the branch spread of trees that are to remain, the work shall be performed as follows:

1. TRENCHING: When trenching occurs around trees to remain, the tree roots shall not be cut but the trench shall be tunneled under or around the roots by careful hand digging and without injury to the roots.
2. RAISING GRADES: When the existing grade at a tree is below the new finished grade, and fill not exceeding 16 inches (16") is required, clean, washed gravel graded from one to two inches (1" - 2") in size shall be placed directly around the tree trunk. The gravel shall extend out from trunk on all sides a minimum of 18 inches (18") and finish approximately two inches (2") above the finished grade at tree. Install gravel before any earth fill is placed. New earth fill shall not be left in contact with the trunks of any trees requiring fill. Where fill exceeding 16 inches (16") is required, a dry laid tree well shall be constructed around the trunk of the tree. The tree well shall extend out from the trunk on all sides a minimum of three feet (3') and to three inches (3") above finish grade. Coarse grade rock shall be placed directly around the tree well extending out to the drip line of the tree. Clean, washed gravel graded from one to two inches (1" - 2") in size shall be placed directly over the coarse rock to a depth of three inches (3"). Approved backfill material shall be placed directly over the washed gravel to desired finished grade.
3. LOWERING GRADES: Existing trees in areas where the now finished grade is to be lowered shall have regrading work done by hand to elevation as indicated. Roots as required shall be cut cleanly three inches (3") below finished grade and scars covered with tree paint.
4. Trees that are to remain that are located more than six inches (6") above proposed grades shall stand on broad rounded mounds and be graded smoothly into the lower level. Trees located more than 16 inches (16") above proposed grades shall have a retaining structure as detailed on the Drawings, constructed a minimum of five feet (5') from the trunk. Exposed or broken roots shall be cut clean and covered with topsoil.

1.6 APPROVAL OF PLANT MATERIAL

A. All plant material shall be approved by the Landscape Architect prior to installation. At no time shall any approval impair the right of further inspection and rejection during the progress of the work or contract life for failure to conform to the listed size and condition requirements or latent defects, diseases or injuries. Rejected plant materials shall be promptly removed from the site by the Contractor.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Plant materials shall conform to the following requirements:

1. Plants shall be true to name. The standard names are those adopted by the American Joint Committee on Horticultural Nomenclature. No substitution of species or varieties shall be accepted without the written consent of the Landscape Architect.
2. Plants shall have a normal habit of growth and shall be typical of their species unless the general shape and overall character of a particular plant is specifically noted in the Plant List on the Contract Documents.
3. Plants shall be certified healthy, freshly dug, vigorous and free from defects, decay, disfiguring roots, sun scale injuries, abrasions of the bark, plant diseases insect pests, eggs, or larvae.
4. All plants shall have been grown under climatic conditions similar to those in the locality of the project for at lease two (2) years and shall have normal healthy root systems, having been subjected to proper transplanting.
5. Plants shall not be pruned prior to delivery.
6. Balled and burlapped ("B & B") plants shall have firm, natural balls of soil of a diameter to conform to the above standards, but large enough to encompass sufficient fibrous feeding roots to insure full recovery and development of the plants. Plants grown in sand are not acceptable.
7. All precautions, which are customary in good nursery practice, shall be taken to insure the arrival of the plant material in good condition for successful growth. Plant material which arrives to the construction site poorly packed, with roots in a dry condition and/or leaves in a dehydrated condition will not be accepted.
8. All plants shall be freshly dug. All plants shall be typical of their species or variety and shall have a normal habit of growth unless otherwise specified. Trees shall have straight trunks and all old abrasions and cuts shall be completely calloused over.
9. Plants shall have a well-developed fibrous root system.
10. Measurement: Trees and shrubs shall be measured when their branches are in normal position. Height and spread dimensions specified refer to the main body of the plant, and not from branch or root tip to tip. Caliper of trees shall be taken 6' above tree root flare.
11. Palms: All new palms shall be field dug or containerized material in specified sizes shown on the Contract Documents. All palms shall have good form (straight trunks) consistent of its species, free of scares/abrasions/burn marks and disease and insects, with large healthy root systems. Rootballs sizes for B&B material must meet the following minimum specifications:
    a. Sabal Palms - 12" greater than trunk O.D., 24" height
    b. Washingtonia Palms - 8" greater than trunk O.D., 24" height
    c. Chinese Fan, Mediterranean Fan Palms, Others - 30" diameter, 30" height

B. Fertilizer: 13-13-13 Osmocote slow release fertilizer granules or approved equal.

C. Planting tablets: Agriform (20-10-15) 21 gram slow release fertilizer tablets or approved equal.

D. Compost: Premium grade compost

E. Topsoil: Fertile, agricultural soil, typical for locality, capable of sustaining vigorous plant growth, taken from drained site; free of subsoil, clay or impurities, plants, weeds and roots; minimum pH value of 5.4 and maximum 7.0; organic matter to exceed 1.5%, magnesium to exceed 100 units; phosphorus to exceed 150 units; potassium to exceed 120 units; soluble salts/conductivity not to exceed 900 ppm/0.9 mmhos/cm in soil.

F. Wood Mulch: Double Shredded Cedar.

G. Staking material:

1. Commercial grade rubber chain-locks.
2. Commercial grade T-Posts, 1.25 ga., 8' Ht., black (do not drive through rootball). Include plastic cap on all T-posts, cap color to match T-Post color.

H. Edging:

1 .4"x36" commercial grade aluminum edging. All edging that terminates at a walkway shall have the top edge rounded.

I. Planting Mix: 75 percent sandy-loam topsoil; 25 percent premium compost; (3:1 ratio by volume); and specified fertilizer or planting tablets. Provide a mix with a uniform texture without lumps and containing no stones, sticks, roots or other foreign material.

PART 3 - INSTALLATION

3.1 EXAMINATION

A. Examine the areas and conditions under which work of this Section will be performed. Notify the Landscape Architect of unsatisfactory conditions. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected and the Landscape Architect has provided written acceptance. Beginning work indicates acceptance of the site as satisfactory by the installer.

3.2 EXECUTION

A. Site Preparation: Compacted or unsuitable soils and sub-soils from construction activities must be ripped and tilled until a loose, friable and free-draining condition is met. All existing weeds, grass, stabilized sub-base material, rubble, excavated soil and other material shall be removed from the site and disposed of by the contractor prior to starting any new landscape work. Soil conditions around entire site must be approved by Landscape Architect prior to rough and finish grading operations. The Contractor shall not install any fill or topsoil in landscape areas prior to site condition approval by Landscape Architect.

B. Bed Preparation and Herbicide Application: All planting areas shall be free of weeds, grass, insects, or any other deleterious material prior to bed preparation. Contractor shall herbicide all planting areas with "RoundUp" or approved equal at least two times prior to installation of any new plants. Pre-emergent herbicide shall be applied after planting and before placement of mulch.

C. Planting Beds Adjacent to buildings and inside parking lot landscape islands: Excavate 12" of existing soil within planting beds and replace with 8" of planting mix. Final grades within all planting beds shall be 3" below adjacent curbs to allow for mulch. Contractor to ensure positive drainage throughout all landscape areas. Adjust grades as necessary to direct water away from planting beds. Report any discrepancies on all drainage issues in writing to the Landscape Architect. The Landscape Architect shall approve planting bed grades prior to planting operations.

D. Edging: Edging shall be installed as shown on the Drawings. Edging shall allow for drainage points to ensure free drainage away from all structures and walkways. Edging shall be set flush with adjacent paving, sidewalks or driveways.

E. Turf Areas: Scarify, float and fine grade all areas to receive sod or hydromulch for approval by Landscape Architect prior to placement of sod or application of hydromulch. Supply additional topsoil as necessary to fill any/all low areas and ensure positive drainage away from planting beds.

F. Berms and Mounding: Supply topsoil and construct berms as indicated on the Drawings.

G. Berms shall have a maximum slope of 1:4. Landscape Architect to approve berming and mounding prior to planting operations. Berms shall be compacted in 6" lifts.

H. Planting Operations:

1. Installation:
    a. Excavate planting pit to depth and width indicated on Contract Documents.
    b. Set root ball on puddle/settled bottom of planting pit. Remove burlap, rope, wire, and all other wrapping material from top of ball. Completely remove any binding rope which is not biodegradable.
    c. Fill planting pit 2/3 full with planting mix, soak with water and allow to settle, and add fertilizer tablets as detailed. Finish filling pit with planting mix and tamp lightly. Do not place fertilizer tablets at bottom of planting pit.
    d. Construct a watering basin as detailed on the Drawings and described below. Water-in to completely saturate the root ball and planting mix. Add planting mix where any settling or air pockets occur and saturate with water.
    e. Stake all trees/palms immediately after planting as detailed. Staking to be maintained throughout the maintenance period.
    f. Palms: New Washingtonia palms shall be cleaned (skinned) completely of their leafstem bases and fibers to a height 4 feet below the crown. Sabal palms shall be planted with their leafstem bases remaining but cleaned and trimmed evenly. All palms shall be planted with several petioles or fronds tied up straight with natural twine. Remaining fronds shall be trimmed or "hurricane cut" to lighten wind load on terminal bud. Contractor is responsible for removing or cutting the twine supporting the fronds as directed by the Landscape Architect.

I. Watering Basins: Watering basins for all trees/palms shall be constructed in a ring shape around each tree or palm trunk. This earthen berm shall be constructed 6" in height and 36" in diameter so as to hold water and allow infiltration around root ball. A minimum of 4 inches of cypress mulch shall be placed within the watering basin. Watering basins must be maintained and kept free of weeds during the entire maintenance period. No mulch shall come in contact with the tree trunk.

J. Pruning Operations:

1. After planting, the branches of deciduous stock shall be pruned to balance the loss of roots while retaining the natural form of the plant type according to best horticultural practice.
2. Trees shall be pruned by removing all dead wood, all surplus, badly formed and interfering limbs. In general, 1/5 of the branches shall be removed but the proportion shall, in all cases, be subject to the approval of the Landscape Architect. Broken, damaged and unsymmetrical branches shall be removed or cut back to ensure healthy and symmetrical growth of new wood. In the case of multiple leaders, the one which will best promote the symmetry of the trees shall be preserved and the remainder shall be removed or cut back so that they will not compete with the selected leader. Surrounding top branches shall be cut back to conform to the leader trimming. Branches to be cut back shall be cut off at the point beyond a lateral shoot or bud a distance of not less than 1/2 the diameter of the supporting branch. The cut shall be made on an angle slopping in the direction of the lateral shoot and in no case shall stubs be left. All cut surfaces over one inch in diameter shall be painted with tree wound dressing.

K. During excavation, material suitable for backfilling shall be stockpiled in an orderly manner a sufficient distance back from edge of trenches to avoid overloading and prevent slides or cave_ins. Material unsuitable for backfilling shall be wasted as directed by the Landscape Architect. When excavated material is of a rocky nature and the topsoil or any other layer of excavated material is suitable for pipe bedding and backfill in the vicinity of the pipe, such material shall be separately stockpiled for use in such bedding and pipe backfill operations, unless satisfactory imported material is used.

L. All excavations and backfill shall be unclassified and covered in the base bid. No additional compensation will be allowed for rock encountered.

M. Restore all surfaces, existing underground installations, etc., damaged or cut as a result of the excavations to their original conditions in a manner acceptable to the Landscape Architect.

3.3 CLEANING AND PROTECTION

A. The Contractor shall perform all necessary cleaning and removal of excess soil, debris, equipment, etc., during installation and upon completion of the work. The Contractor shall immediately repair any damage resulting from planting operations without cost to the Owner.

B. The Contractor shall protect landscape plants from damage or theft until final acceptance.

PART 4 - METHOD OF MEASUREMENT MEASUREMENT:

Landscape Planting as described in this section will be paid for on a lump sum basis wherein no measurement will be made.

PART 5 - BASIS OF PAYMENT

PAYMENT:

A. Landscape Planting will be paid for at the Contract lump sum, which price will be full compensation for furnishing and installing equipment; shop drawings; providing all submittals and warranties; furnishing all labor, materials, tools, equipment; and incidentals necessary to complete the work as described in this section and related other sections of these Contract Documents, as well as maintenance until final acceptance.

END OF SECTION 329300

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San Antonio, TX 78217
(210) 820-2677

REGISTERED LANDSCAPE ARCHITECT
ANDREW T. HEFFNER
2528
STATE OF TEXAS

DATE: 02-07-2024

PROJECT:

SHARM DRIVE WAREHOUSE

941 W. SHARM DR.,
PHARR, TEXAS, 78577

DATE	DESCRIPTION
02-07-2024	PERMIT SET

SHEET TITLE:

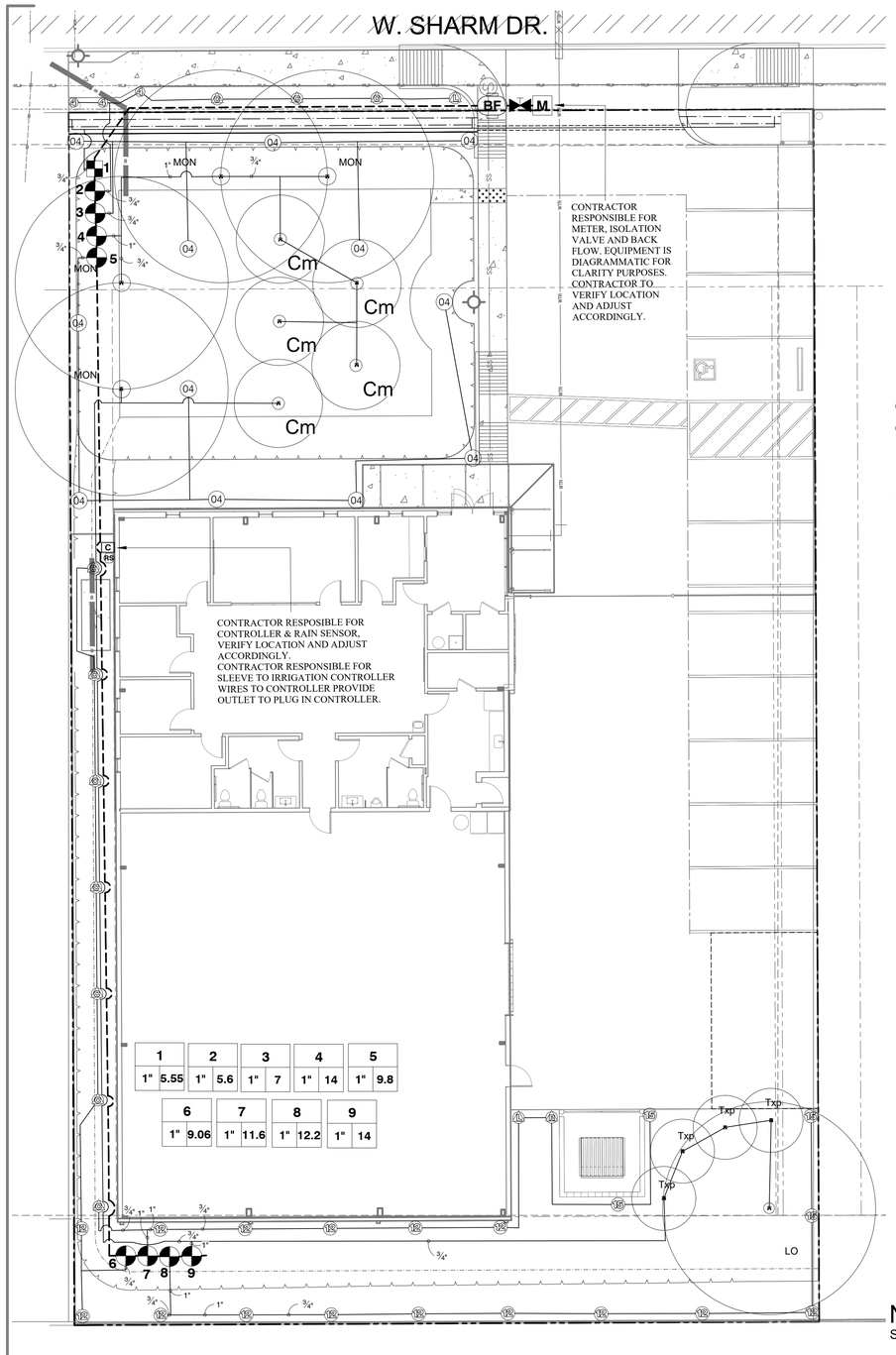
SPECIFICATIONS

PROJECT NUMBER:

24-03 K.L.S.

SHEET NUMBER:

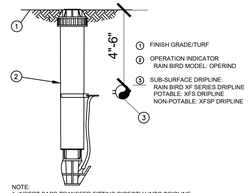
L3



1	2	3	4	5
1" 5.55	1" 5.6	1" 7	1" 14	1" 9.8

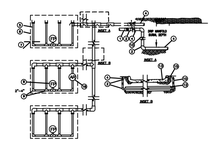
6	7	8	9
1" 9.06	1" 11.6	1" 12.2	1" 14

NORTH
SCALE 1" = 10'



NOTE:
1. INSERT BARB TRANSFER FITTING DIRECTLY INTO DRIPLINE TUBING.
2. VAN NOZZLE MAY BE SET TO CLOSED, OR IF IT IS DESIRED TO SEE SPRAY FROM THE NOZZLE, SET THE ARC TO ZE PATTERN. THE FLOW FROM THE NOZZLE, 0.3 GPM, SHOULD BE ACCOUNTED FOR IN THE SYSTEM DESIGN.

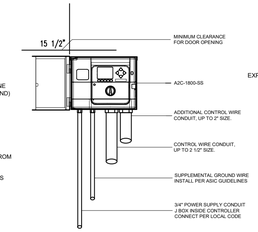
A RAINBIRD XFS DRIP INDICATOR
N.T.S.



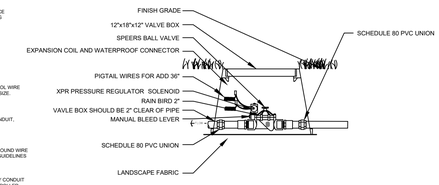
1. PVC SUPPLY HEADER
2. PVC SCH 40 TEE OR EL (TYPICAL)
3. BARB X MALE FITTING: RAIN BIRD XFF-MA FITTING (TYPICAL)
4. PVC DRIP MANIFOLD FROM RAIN BIRD CONTROL ZONE VALVE KIT (SIZED TO MEET LATERAL FLOW DEMAND)
5. SUB-SURFACE DRIPLINE: RAIN BIRD XF SERIES DRIPLINE (TYPICAL) POTABLE: XFS DRIPLINE NON-POTABLE: XFSP DRIPLINE
6. PERIMETER OF AREA
7. PERIMETER DRIPLINE PIPE TO BE INSTALLED 2"-4" FROM PERIMETER OF AREA
8. FLUSH POINT (TYPICAL) - SEE RAIN BIRD XFS DETAILS FOR FLUSH POINT INSTALLATION
9. BARB X BARB INSERT TEE OR EL: RAIN BIRD XFF-TEE OR RAIN BIRD XFF-ELBOW (TYPICAL)
10. PVC RISER PIPE
11. PVC SUPPLY MANIFOLD
12. PVC SCH 40 SLEEVE PIPE SIZED TWICE THE SIZE OF MANIFOLD PIPE SIZE
13. PAVEMENT AND CURB
14. TURF OR MULCH
15. FINISH GRADE
16. ½" AIR RELIEF VALVE: RAIN BIRD MODEL: ARV050 SEE RAIN BIRD XFS DETAILS FOR AIR RELIEF INSTALLATION

NOTES:
1. DISTANCE BETWEEN LATERAL ROWS AND EMITTER SPACING TO BE BASED ON SOIL TYPE, PLANT MATERIALS AND CHANGES IN ELEVATION. SEE INSTALLATION SPECIFICATIONS ON RAIN BIRD WEB SITE (WWW.RAINBIRD.COM) FOR SUGGESTED SPACING.
2. LENGTH OF LONGEST DRIPLINE LATERAL SHOULD NOT EXCEED THE MAXIMUM SPACING SHOWN IN THE ACCOMPANYING TABLE.
3. INSTALL AIR RELIEF VALVE AT HIGH POINTS IN DRIP LATERAL.
4. WHEN USING 17MM INSERT FITTINGS WITH DESIGN PRESSURE OVER 50PSI, IT IS RECOMMENDED THAT STAINLESS STEEL CLAMPS BE INSTALLED ON EACH FITTING.
5. DRIP SHALL BE PLACED UNDER LANDSCAPE FABRIC IN LANDSCAPE BEDS WITH DECOMPOSED GRANITE.

B RAINBIRD XFS-CV DRIP LINE
N.T.S.



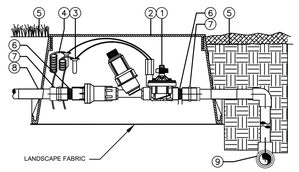
C HUNTER A2C-1200-SS
N.T.S.



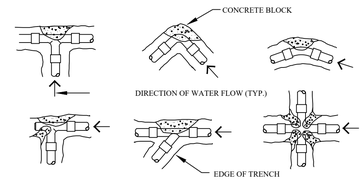
NOTES:
1. MAINTAIN A 2"-3" GAP BETWEEN THE BOTTOM OF THE VALVE AND THE TOP OF THE PATIO STONE.
2. PROVIDE 36" OF SLACK FOR CONTROL WIRES AND NEATLY COIL.
3. PROVIDE ONE EXTRA 14 GA. RED WIRE AT EACH VALVE FOR FUTURE USE.

D HUNTER PGV-101G
N.T.S.

1. HUNTER REMOTE CONTROL VALVE (ICZ) WITH FILTER REGULATOR
2. IRRIGATION VALVE BOX; HEAT STAMP LID WITH 'ROV' IN 2" LETTERS
3. WATERPROOF CONNECTORS (2)
4. 18"-24" COILED WIRE TO CONTROLLER
5. FINISH GRADE AT ADJACENT SURFACE (TURF OR MULCH)
6. SCH. 80 CLOSE NIPPLE, MATCH SIZE TO VALVE
7. PVC SLIP X FPT ADAPTOR
8. IRRIGATION LATERAL
9. MAINLINE LATERAL AND FITTINGS



E HUNTER ICZ-101-25
N.T.S.

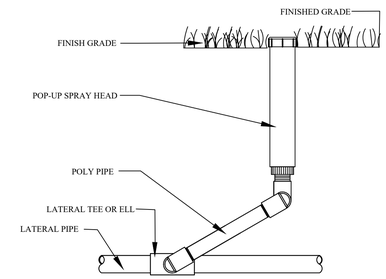


C

THRUST BLOCK REQUIREMENTS VS. FITTING TYPE				
	1 1/4" – 2 1/2"	3"	4"	6"
TEES/ELLS	1.00	1.00	1.40	3.2
90° BEND	1.00	1.25	2.00	4.5
45° BEND	1.00	1.00	1.00	2.4

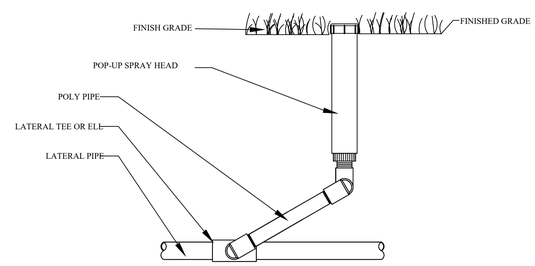
NOTES:
1. THRUST BLOCKING TO BE PLACED AT ALL DEAD ENDS, TEES, BENDS, WYES AND REDUCERS AND ANY OTHER AREA AS DETERMINED BY THE ENGINEER/ARCHITECT.
2. MINIMUM AREAS SHOWN ARE IN SQUARE FEET.
3. BEARING MUST BE ON UNDISTURBED EARTH.
4. THRUST BLOCK SHALL BEAR ON FULL 180° OF PIPE CIRCUMFERENCE.
5. USE A MINIMUM OF ONE (1) CU. FT OF 3000 PSI CONCRETE.

F THRUST BLOCKS
N.T.S.



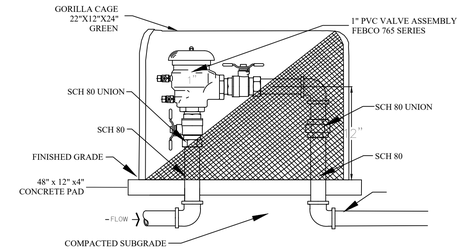
NOTE:
1. SEE PLAN FOR NOZZLE TYPE.

G HUNTER PRO SPRAYS
N.T.S.



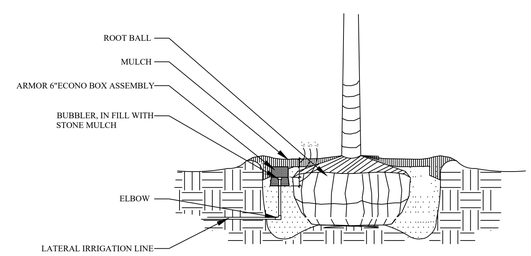
NOTE:
1. SEE PLAN FOR NOZZLE TYPE.

H HUNTER SPRAY
N.T.S.



NOTES:
1. INSTALL PVB 12" ABOVE THE HIGHEST DOWNSTREAM OUTLET AND THE HIGHEST POINT IN THE DOWNSTREAM PIPING.
2. CENTER PVB ON 4" CONCRETE PAD. VERIFY CONCRETE FORMS WITH OWNER PRIOR TO POUR.

I FEBCO PVB
N.T.S.



J HUNTER MSBN BUBBLER
N.T.S.

HEFFNER DESIGN TEAM, PLLC

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STATE OF TEXAS
ROBERT DURAN
10116
LICENSED IRRIGATOR
DATE: 02-07-24

PROJECT:

SHARM DRIVE WAREHOUSE
941 W. SHARM DR.,
PHARR, TEXAS, 78577

DATE	DESCRIPTION
02-07-2024	PERMIT SET

SHEET TITLE:
IRRIGATION PLAN

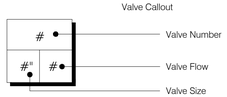
PROJECT NUMBER:
24-03 K.L.S.

SHEET NUMBER:
IR1

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL	QTY	ARC	PSI	GPM	RADIUS
30	Hunter PROS-04 CS-530	10	CST	30	1.3	5'x30'
15	Hunter PROS-04 LCS-515	2	LCS	30	0.65	5'x15'
15	Hunter PROS-04 RCS-515	1	RCS	30	0.65	5'x15'
4	Hunter PROS-04 04A	3	Adj	30	≤ 0.9	4'
12	Hunter PROS-04 12A	15	Adj	30	≤ 2.52	12'
15	Hunter PROS-04 15A	4	Adj	30	≤ 3.71	15'
	Hunter PROS-04-MSBN 20F	14	360	30	2	2'
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY		PSI	GPM	RADIUS
04	Hunter PGP-ADJ-LA 04 Turf Rotor, 4in. Pop-Up. Adjustable and Full Circle. Low Angle Nozzle.	12		30	1.4	22'
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY				
	Hunter ICZ-101-25 1" Drip Control Zone Kit. 1in. ICV Globe Valve with 1in. HY100 filter system. Pressure Regulation: 25psi. Flow Range: 2 GPM to 20 GPM. 150 mesh stainless steel screen.	1				
	Area to Receive Dripline Rain Bird XFS-09-12 XFS Sub-Surface Pressure Compensating Dripline w/Copper Shield Technology. 0.9 GPH emitters at 12" O.C. Laterals spaced at 12" apart, with emitters offset for triangular pattern. UV Resistant. Specify XF insert fittings.	370.2 l.f.				
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY				
	Hunter PGV-101G 1" 1in. Plastic Electric Remote Control Valve, for Residential/Light Commercial Use. Female NPT Inlet/Outlet. Globe Configuration, With Flow Control.	8				
	Shut Off Valve	1				
BF	Febco 765 3/4" Pressure Vacuum Breaker, brass with ball valve SOV. Install 12in. above highest downstream outlet and the highest point in the downstream piping.	1				
C	Hunter A2C-1200-SS 12-Station controller in an outdoor stainless steel wall mount enclosure.	1				
RS	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.	1				
M	Water Meter 5/8"	1				
	Irrigation Lateral Line: PVC Class 200 SDR 21 3/4"	1,113 l.f.				
	Irrigation Lateral Line: PVC Class 200 SDR 21 1"	52.5 l.f.				
	Irrigation Mainline: PVC Schedule 40 1 1/4"	235.3 l.f.				
	Pipe Sleeve: PVC Schedule 40 4"	29.4 l.f.				

Valve Callout



VALVE SCHEDULE

NUMBER	MODEL	SIZE	TYPE	GPM	HEADS	PIPE 3/4"	PIPE 1"	WIRE	DESIGN PSI	FRICTION LOSS	VALVE LOSS	PSI	PRECIP
1	Hunter ICZ-101-25	1"	Area for Dripline	5.55	370.2 l.f.	111.9		56.5	20	0.54	5.33	25.9	2.54 in/h
2	Hunter PGV-101G	1"	Turf Spray	5.6	7	74.3		53.3	30	0.58	1.9	32.5	2.49 in/h
3	Hunter PGV-101G	1"	Turf Rotor	7	5	100.0		50.2	30	0.65	1.9	32.6	0.68 in/h
4	Hunter PGV-101G	1"	Bubbler	14	7	65.4	25.8	47.0	30	1.6	1.66	33.3	27.23 in/h
5	Hunter PGV-101G	1"	Turf Rotor	9.8	7	141.5		43.9	30	2.48	1.9	34.4	0.92 in/h
6	Hunter PGV-101G	1"	Turf Spray	9.06	8	119.4		144.8	30	2.04	1.9	33.9	1.25 in/h
7	Hunter PGV-101G	1"	Turf Spray	11.63	10	124.7	5.8	147.9	30	1.88	1.8	33.7	0.79 in/h
8	Hunter PGV-101G	1"	Turf Spray	12.21	10	111.2	18.9	150.9	30	2.45	1.77	34.2	0.82 in/h
9	Hunter PGV-101G	1"	Bubbler	14	7	264.5	2.1	154.1	30	4.55	1.66	36.2	27.23 in/h
	Common Wire							235.3					

NOTES

1.- ALL IRRIGATION WORK TO BE PERFORMED BY A TEXAS LICENSED IRRIGATOR.
2.- INSTALL ALL VALVES IN AN ARMOR VALVE BOX WITH COVER OR EQUAL. VALVE SHOULD BE CENTERED IN BOX TO FACILITATE ACCESS TO SOLENOID ASSEMBLY AND MANUAL OPERATORS.
3.- PIPE AS SHOWN IS DIAGRAMMATIC BUT SHOULD BE REASONABLY FOLLOWED. LOCATION OF SPRINKLER HEADS SHALL BE ESTABLISHED BY THE CONTRACTOR BUT DESIGN SPACING MAY NOT BE EXCEEDED WITHOUT AUTHORIZATION FROM THE OWNER.
4.- ALLOW A MINIMUM OF 6" CLEARANCE FROM ANY STRUCTURE, INCLUDING SIDEWALKS, CURBS, BUILDINGS, ETC. WHEN INSTALLING SPRINKLER HEADS
5.- ALL SLEEVES SHALL BE SCH. 40 PVC, SHALL EXTEND 12" BEYOND EDGE OF PAVEMENT OR STRUCTURE, SHALL BE PLACED 24" BELOW TOP OF PAVEMENT AND SHALL BE CAPPED WITH PVC CAPS. DO NOT PENETRATE STRUCTURES WITHOUT PRIOR APPROVAL. LOCATION OF SLEEVES TO BE MARKED IN PAVEMENT WITH AN "S" CONCRETE STAMP.
6.- AFTER INSTALLATION, SYSTEM MUST BE BALANCED BY ADJUSTING PRESSURE REGULATOR CONTROLS ON VALVES.
7.- SYSTEM SHALL REQUIRE A MINIMUM OF 50 LBS. STATIC PRESSURE FOR SYSTEM TO OPERATE PROPERLY. IRRIGATION CONTRACTOR SHALL NOTIFY THE OWNER OF PRESSURE DEFICIENCIES OR IF THE PRIMARY WATER SUPPLY LINES ARE SMALLER THAN 4" AND/OR LONGER THAN 120' FROM THE SOURCE. NOTIFY THE OWNER OF ANY OTHER SITE PROBLEMS THAT MAY ALTER THE EFFECTIVENESS OF THE SYSTEM.
8.- THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE SPECIFICATIONS FOR THE LANDSCAPE IRRIGATION SYSTEM.
9.- THE CONTRACTOR SHALL PREPARE "AS-BUILT" DRAWINGS IN AN AUTOCAD FORMAT WHICH SHALL SHOW LOCATIONS OF MAIN LINES, VALVES, CONTROLLERS AND SLEEVES. THE AUTOCAD DRAWINGS SHALL BE DELIVERED ON DISC TO THE OWNERS REPRESENTATIVE FOR REVIEW AND APPROVAL.
10.- ALL SPLICES ARE TO BE CAPPED WITH TAN KING LOW VOLTAGE CONNECTORS. NO FIELD SPLICES WILL BE PERMITTED. WHERE SPLICES ARE NECESSARY ALL MUST BE IN VALVE BOXES.
11.- NO PIPE CROSSES ARE PERMITTED.
12.- HAND DIG TRENCHES WITHIN THE DRIP LINE OF EXISTING TREES.
13.- ALL MAIN & LATERAL LINES SHALL BE SET AT A MINIMUM DEPTH OF 18" TO THE TOP OF THE PIPE. ALL LATERAL LINES SHALL BE SET AT A MINIMUM DEPTH OF 18" TO THE TOP OF THE PIPE. ALL ELECTRIC VALVES SHALL BE SET TO A DEPTH OF 18" TO THE TOP OF ADJACENT PIPE.
14.- ALL PIPING TO BE LAID WITH LETTERING UP.
15.- ALL 3/4" - 2" LATERAL PIPING SHALL BE CLASS 200 SOLVENT WELD PVC.
16.- PROVIDE THRUST BLOCKS AS PER DETAILS . ALL THRUST BLOCKING SHALL BE INSPECTED AND APPROVED BY THE OWNER PRIOR TO BACKFILL.
17.- ALL VALVE WIRING SHALL BE #14 UF.
18.- PROVIDE PRESSURE GAUGE ON INLET AND OUTLET.
19.- PROVIDE QUICK COUPLERS AS INDICATED.
20.- DO NOT LOCATE VALVE BOXES IN MULTI-USE ATHLETIC FIELD AREAS. ALL PIPES GOING TO AND FROM RP AND PUMP SHALL BE SCH. 80 PVC PIPE. WRAP PIPE WITH 1/8"x2" INSULATION TAPE #4217-W3 BY NU-CALGON WHOLESALE INC. ST. LOUIS, MO. 63146.
21.- ALL SPRINKLER HEADS SHALL BE SET LEVEL TO FINISH GRADES, PLACED VERTICAL IN THE GROUND, ADJUSTED TO COVER HEAD TO HEAD WITH MINIMAL SPRAY IN AREAS NOT IRRIGATED.
22.- TEN (10) DAYS PRIOR TO START OF CONSTRUCTION THE CONTRACTOR SHALL VERIFY THE WATER STATIC PRESSURE. CONFIRM WITH OWNER THE WATER STATIC PRESSURE BEFORE COMMENCING WORK.
23.- THE CONTRACTOR SHALL PROVIDE TWO QUICK COUPLER KEYS TO MATCH QUICK COUPLER SPECIFIED.
24.- THE CONTRACTOR SHALL OBTAIN THE PROPER PERMIT FOR IRRIGATION WORK PRIOR TO COMMENCING WORK.
25.- ALL MATERIAL SHOULD BE CONSIDERED OR APPROVED EQUAL.
26.- OWNER/OPERATOR TO FOLLOW MANUFACTURER'S WINTERIZATION METHODS.

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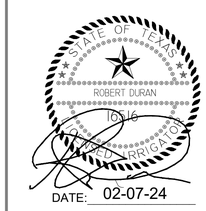

DATE: 02-07-24

PROJECT:

SHARM DRIVE WAREHOUSE

941 W. SHARM DR.,
PHARR, TEXAS, 78577

DATE	DESCRIPTION
02-07-2024	PERMIT SET

SHEET TITLE:

IRRIGATION SCHEDULE & NOTES

PROJECT NUMBER:
24-03 K.L.S.

SHEET NUMBER:

IR2