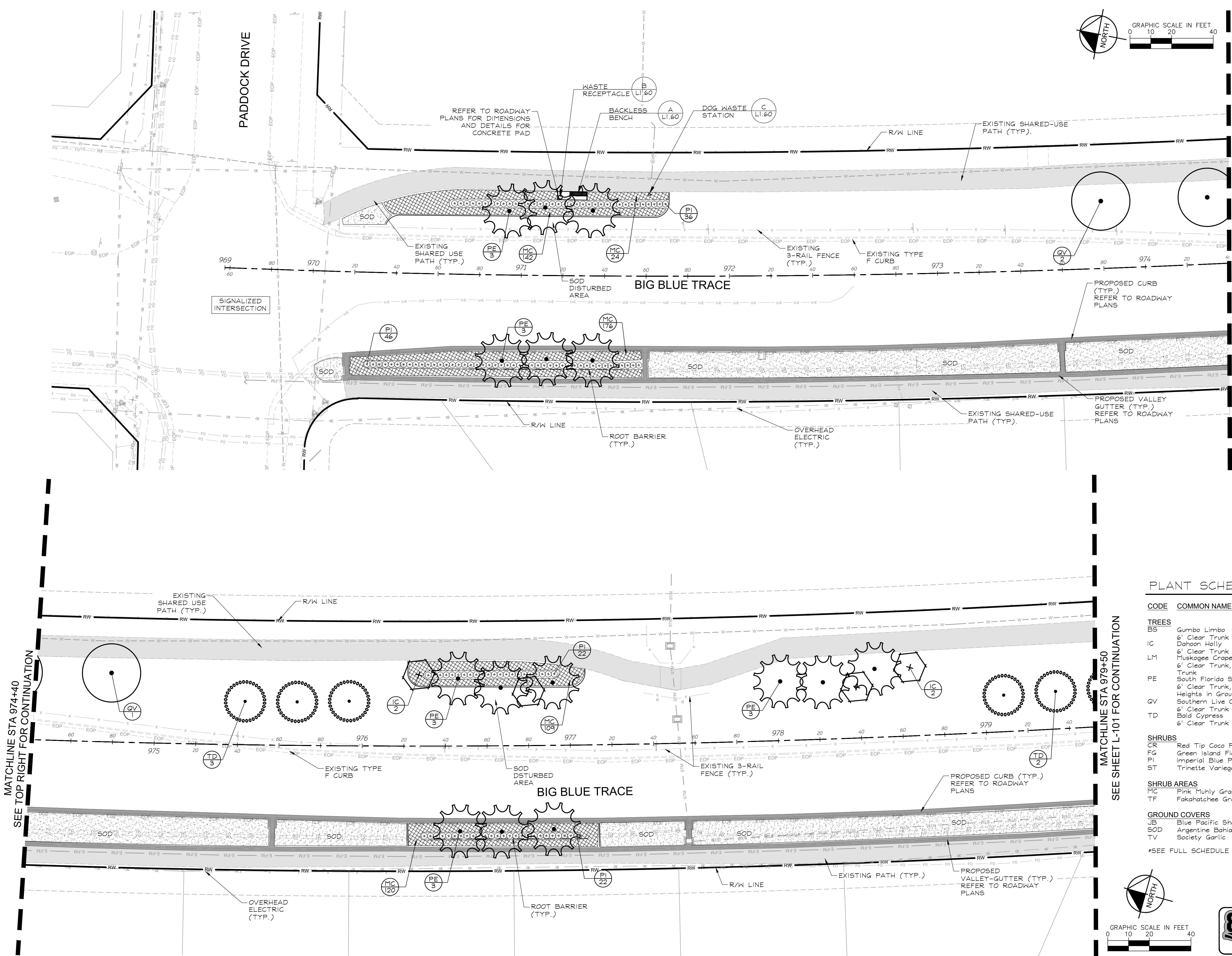


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SEE BOTTOM LEFT FOR CONTINUATION

MATCHLINE STA 974+40

PLANT SCHEDULE

CODE	COMMON NAME
TREES	
BS	Gumbo Limbo
IC	6' Clear Trunk Dahoon Holly
LM	6' Clear Trunk Tussock Grape Myrtle
PE	6' Clear Trunk, Standard Trunk South Florida Slash Pine
QV	6' Clear Trunk, Stagger Heights in Groupings
TD	Southern Live Oak 6' Clear Trunk Bald Cypress 6' Clear Trunk
SHRUBS	
CR	Red Tip Coco Plum
FG	Green Island Ficus
PI	Imperial Blue Plumbago
ST	Trinette Variegated Schefflera
SHRUB AREAS	
MC	Pink Muhly Grass
TF	Fakahatchee Grass
GROUND COVERS	
JB	Blue Pacific Shore Juniper
SOD	Argentine Bahiagrass
TV	Society Garlic

*SEE FULL SCHEDULE ON SHEET L-104.

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BIG BLUE TRACE LANDSCAPE PHASE 1

PREPARED FOR
VILLAGE OF WELLINGTON

WELLINGTON FL

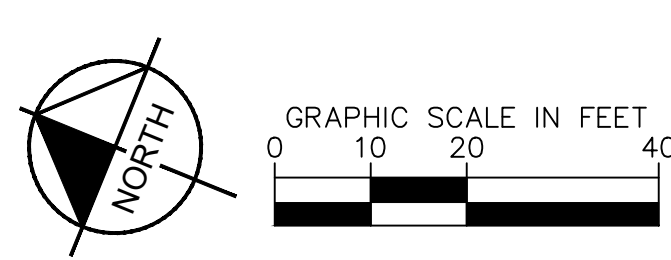
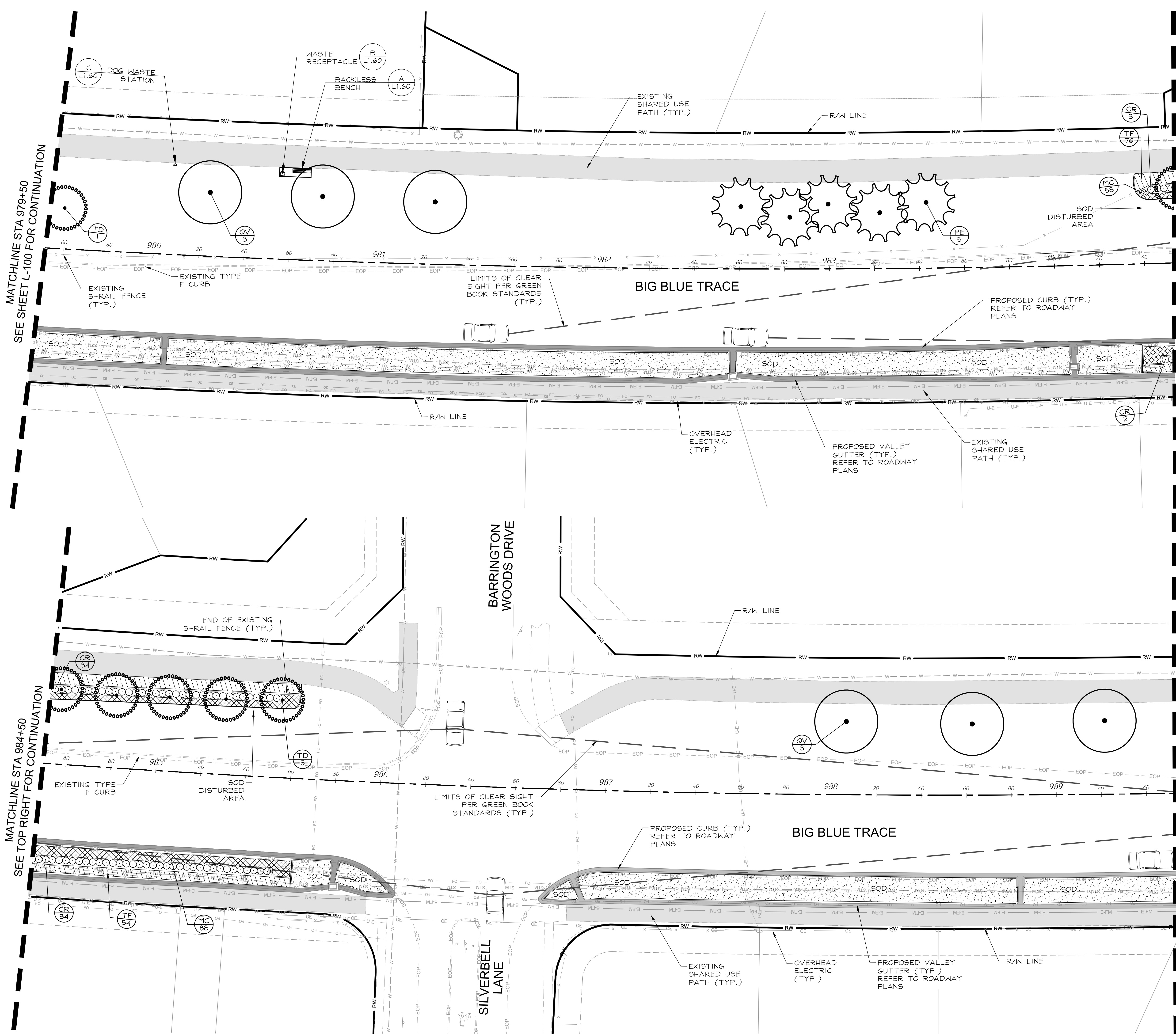
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LICENSED PROFESSIONAL	TRICIA C. RICHTER, PLA
KHA PROJECT 144957079	DATE DEC. 2023
SCALE AS SHOWN	DESIGNED BY BS
DRAWN BY BS	CHECKED BY KA
FL LICENSE NUMBER #6667244	DATE 12/19/23

SHEET NUMBER
L-100

NO.	REVISIONS	DATE	BY

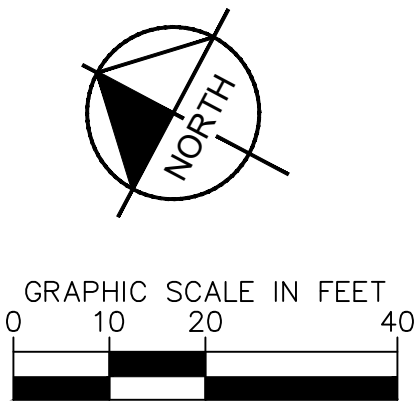
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PLANT SCHEDULE

CODE	COMMON NAME
TREES	
BS	Gumbo Limbo
IC	6' Clear Trunk Dahoon Holly
LM	6' Clear Trunk Muskogee Grape Myrtle
PE	6' Clear Trunk, Standard Trunk South Florida Slash Pine
QV	6' Clear Trunk, Stagger Heights in Groupings Southern Live Oak
TD	6' Clear Trunk Bald Cypress
SHRUBS	
CR	Red Tip Coco Plum
FG	Green Island Ficus
PI	Imperial Blue Plumbago
ST	Trinette Variegated Schefflera
SHRUB AREAS	
MC	Pink Muhly Grass
TF	Fakahatchee Grass
GROUND COVERS	
JB	Blue Pacific Shore Juniper
SOD	Argentine Bahiagrass
TV	Society Garlic

*SEE FULL SCHEDULE ON SHEET L-104.



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BIG BLUE TRACE
LANDSCAPE

PREPARED FOR
VILLAGE OF WELLINGTON

LANDSCAPE PLAN -
PHASE 1

KHA PROJECT 144957079	LICENSED PROFESSIONAL	
	DATE DEC. 2023	TRICIA C. RICHTER, PLA
SCALE AS SHOWN	FL LICENSE NUMBER #6667244	
	DESIGNED BY BS	REGISTERED NO. 35106
DRAWN BY BS	DATE 12/19/23	
	CHECKED BY KA	

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REVISIONS		BY
No.	DATE	

SHEET NUMBER
L-101

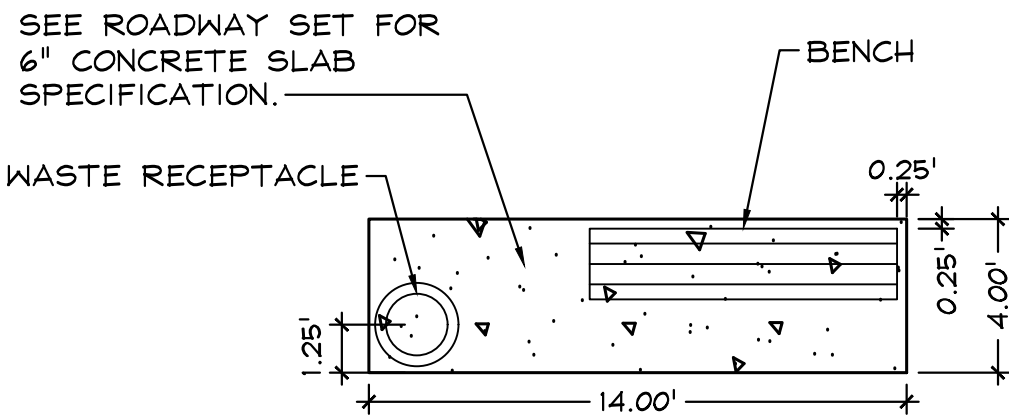
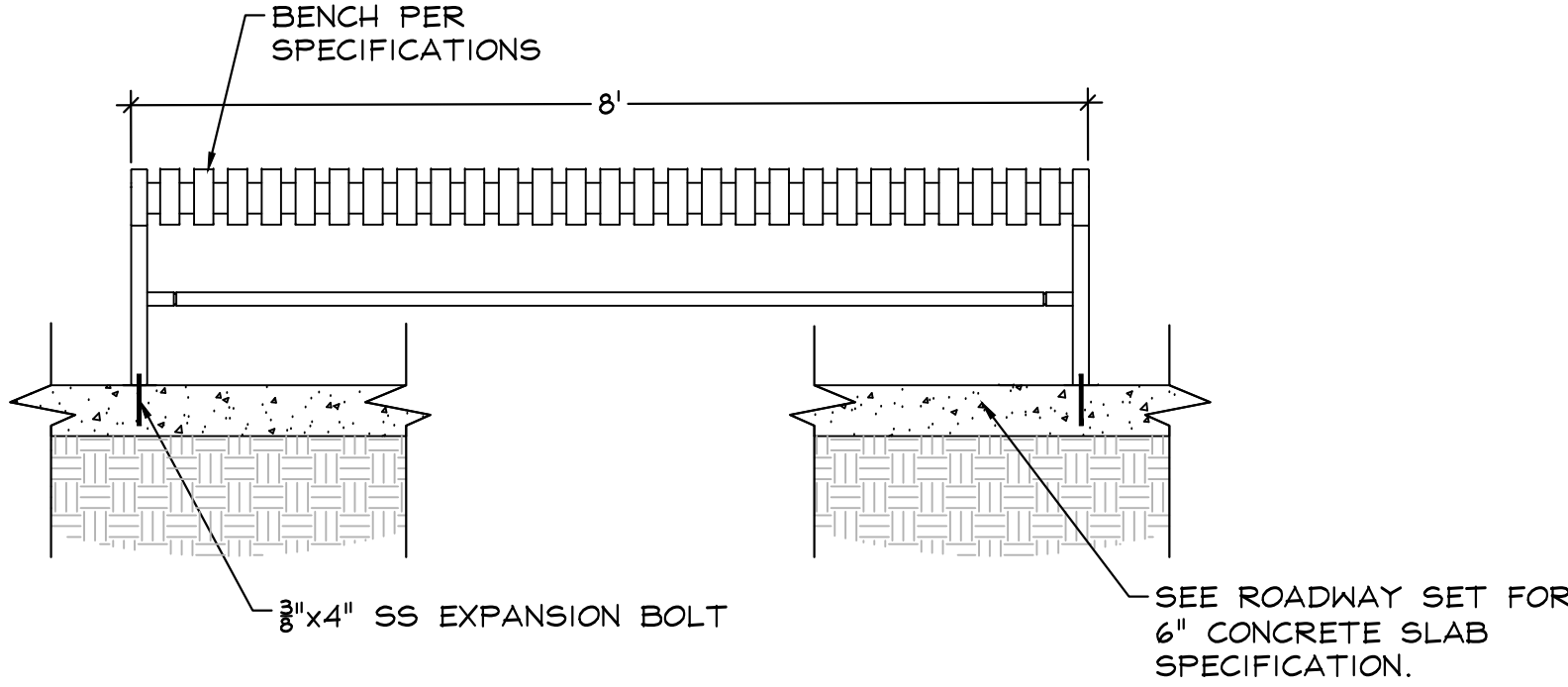
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DUMOR BENCH 92 WITH CENTER AND END ARMRESTS
COLOR: TEXTURED BLACK
MANUFACTURER: DUMOR
URL: (WWW.DUMOR.COM)

ESTIMATED QUANTITY: 4
INSTALLATION:
SURFACE MOUNT PER
MANUFACTURER'S SPECIFICATION

NOTES:
1. CONTRACTOR TO PROVIDE
AND INSTALL BENCH.



SITE FURNISHINGS PLAN

A BENCH

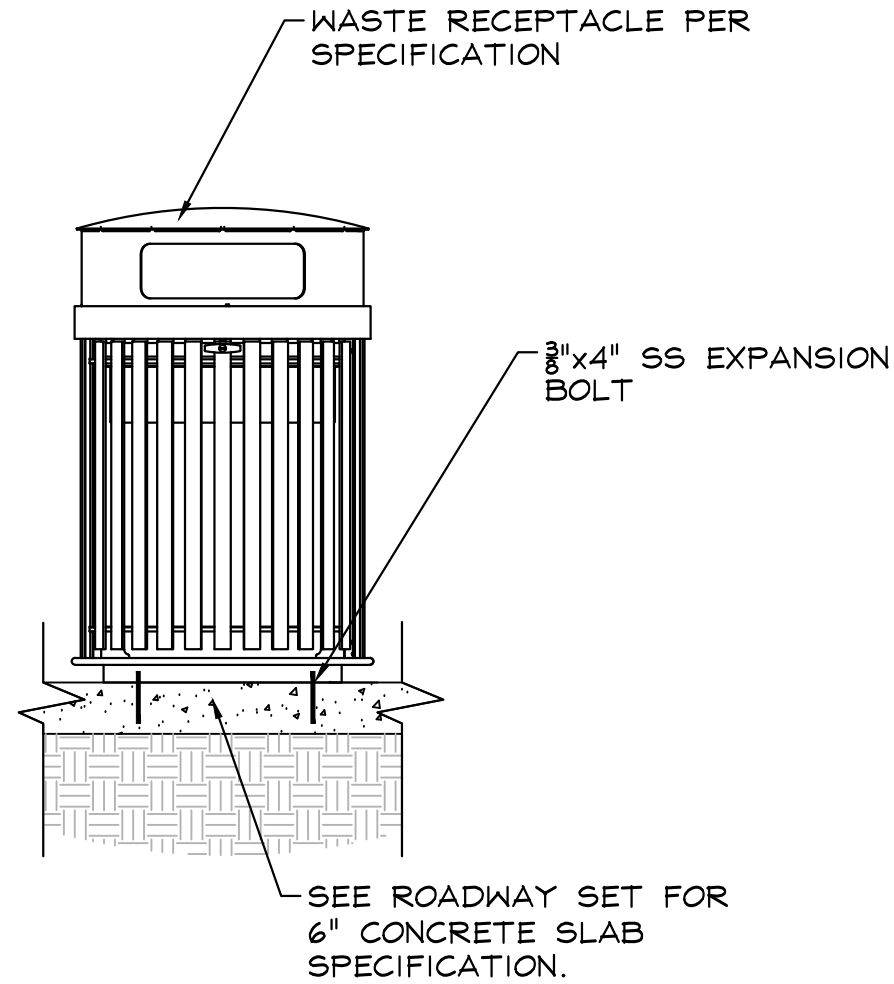


DUMOR RECEPTACLE 287
COLOR: TEXTURED BLACK
MANUFACTURER: DUMOR
URL: (WWW.DUMOR.COM)

ESTIMATED QUANTITY: 4

INSTALLATION:
SURFACE MOUNT PER
MANUFACTURER'S SPECIFICATION

NOTES:
1. CONTRACTOR TO PROVIDE AND
INSTALL WASTE RECEPTACLE.



B WASTE RECEPTACLE



1. MANUFACTURER:
TERRA BOUND
(WWW.TERRABOUNDSOLUTIONS.COM)
PHONE: (877) 857-2915
(OR APPROVED EQUAL)
2. MODEL: THE SENTRY DOG WASTE
STATION W/ ONE PULL BAGS
3. COLOR/FINISH: GREEN
4. INSTALL PER MANUFACTURER'S SPEC.
COORDINATE WITH OWNER'S REP FOR
LOCATIONS.
5. ESTIMATED QUANTITY: 4

C DOG WASTE RECEPTACLE

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BIG BLUE TRACE
LANDSCAPE
PREPARED FOR
VILLAGE OF WELLINGTON
FL

HARDSCAPE DETAILS
- PHASE 1

KHA PROJECT
144957079
DATE
DEC 2023
SCALE AS SHOWN
DESIGNED BY BS
DRAWN BY BS
CHECKED BY KA
DATE: 12/19/23

LICENSED PROFESSIONAL
TRICIA C. RICHTER, PLA
FL LICENSE NUMBER
#6667244

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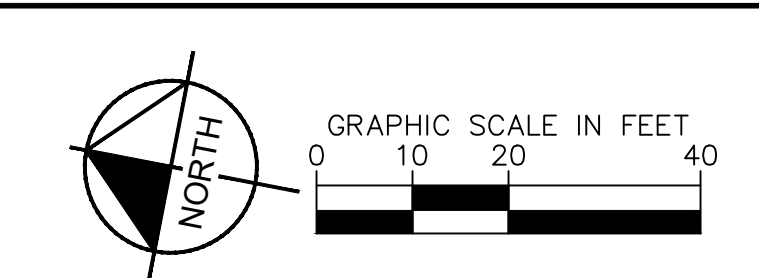
BY
DATE

REVISIONS

No.



SHEET NUMBER
L-160



MATCHLINE STA 974+40

Valve Callout

Valve Number

Valve Flow

Sleeve Callout

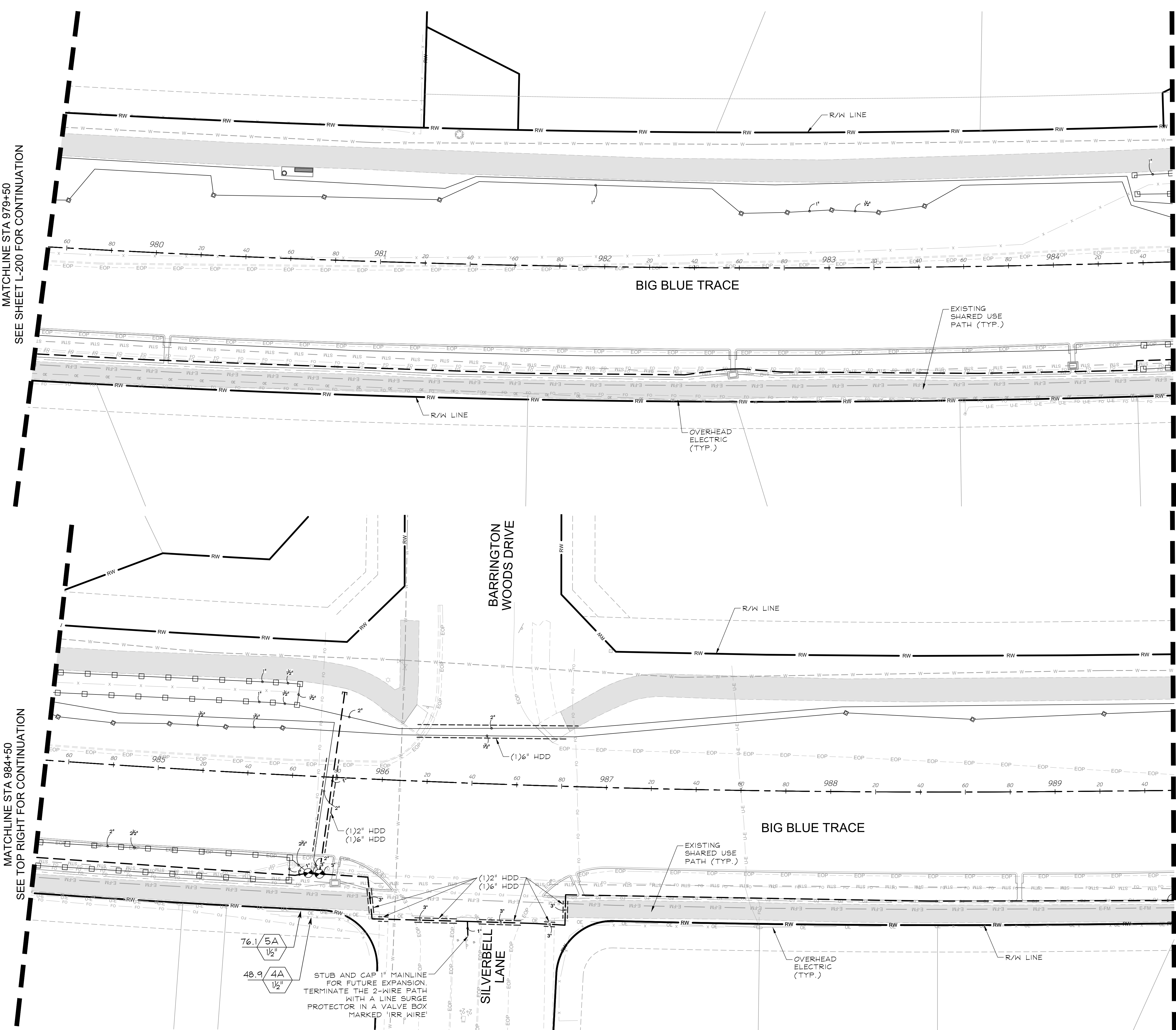
Size

Number of Sleeves

Sleeve Size

[illegible]

Plotted By: Bogenfiet, Alex Sheet Set: Big Blue Trace Landscape Layout: L-201 IRRIGATION PLAN - PHASE 1 December 20, 2023 03:22:15pm K:\WPB_LURC\144957079 - Big Blue Trace Landscape\CAD\plansheets\L-200 IRRIGATION PLAN - PH1.dwg
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GRAPHIC SCALE IN FEET
0 10 20 40

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL
	Hunter PROS-12 8 Series
	Hunter PROS-12 10 Series
	Hunter PROS-12 12 Series
	Hunter PROS-12 Adj Series
	Hunter PROS-12 8 Series
	Hunter PROS-12 12 Series
	Hunter PROS-12 Adj Series
	Hunter PCB
	Hunter PGV-151 Globe
	Toro TRS
	Toro ESBTW204
	Toro TFS
	Point of Connection

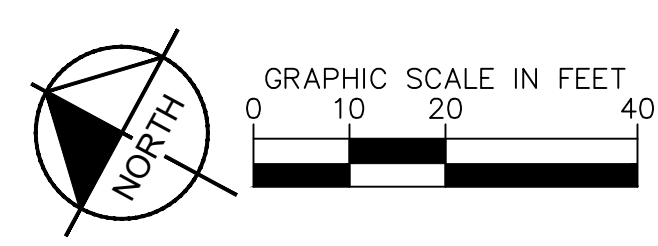
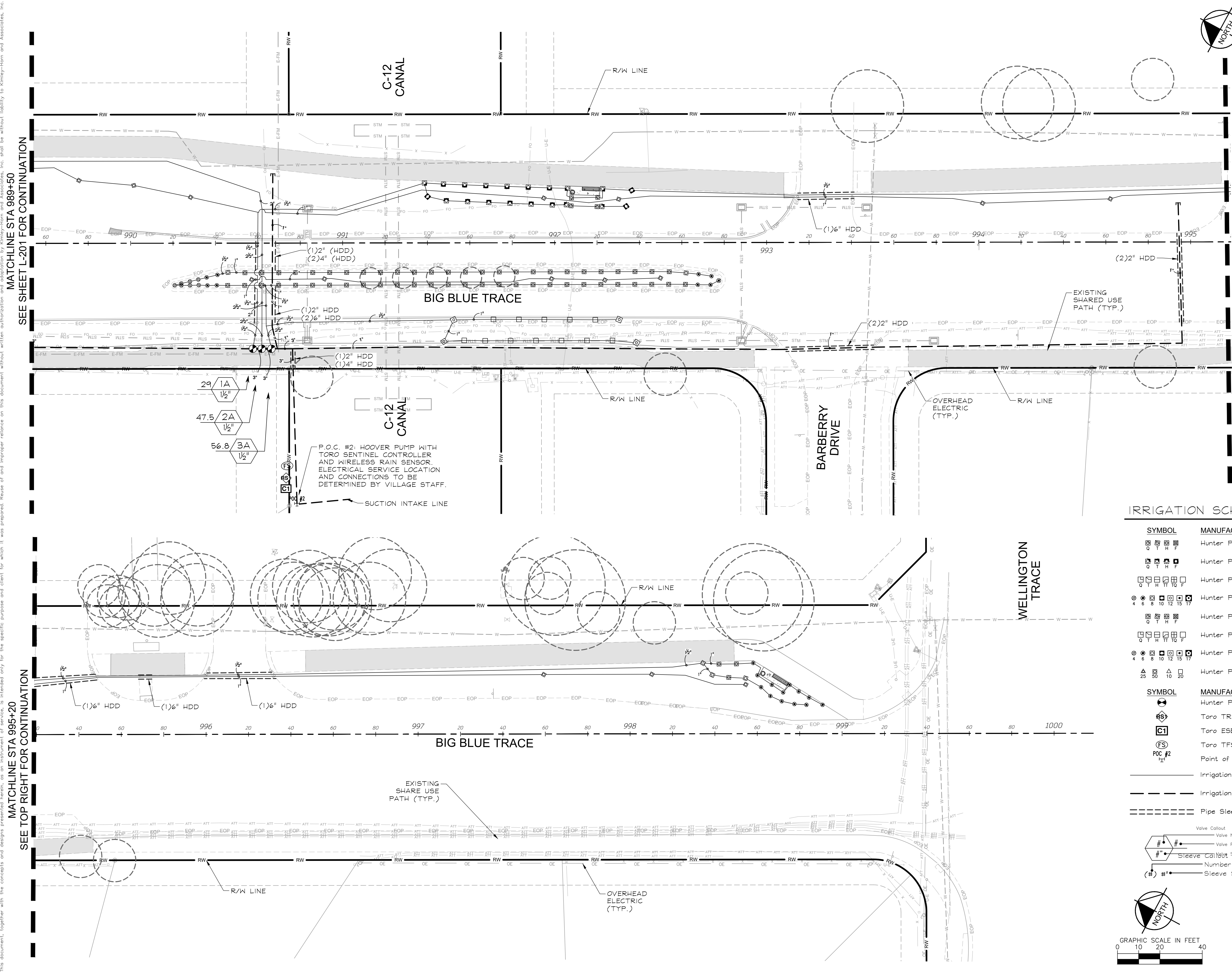
— Irrigation Lateral Line: PVC Class 200
--- Irrigation Mainline: PVC Schedule 40
- - - - - Pipe Sleeve: HDPE PE3408 DR 11

Valve Callout:
Valve Number
Valve Flow
Sleeve Callout:
Valve Size
Number of Sleeves
Sleeve Size

GRAPHIC SCALE IN FEET
0 10 20 40

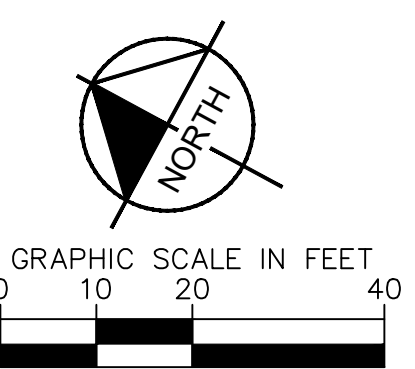
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IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL
	Hunter PROS-12 8 Series
	Hunter PROS-12 10 Series
	Hunter PROS-12 12 Series
	Hunter PROS-12 Adj Series
	Hunter PROS-12 8 Series
	Hunter PROS-12 12 Series
	Hunter PROS-12 Adj Series
	Hunter PCB
	Hunter PGV-151 Globe
	Toro TRS
	Toro ESBT204
	Toro TFS
	Point of Connection
	Irrigation Lateral Line: PVC Class 200
	Irrigation Mainline: PVC Schedule 40
	Pipe Sleeve: HDPE PE3408 DR 11
	Valve Callout
	Valve Number
	Sleeve Callout
	Number of Sleeves
	Sleeve Size



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LICENSED PROFESSIONAL
TRICIA C. RICHTER, PLA
FL LICENSE NUMBER
#6667244
DATE: 12/19/23

**IRRIGATION PLAN -
PHASE 1**

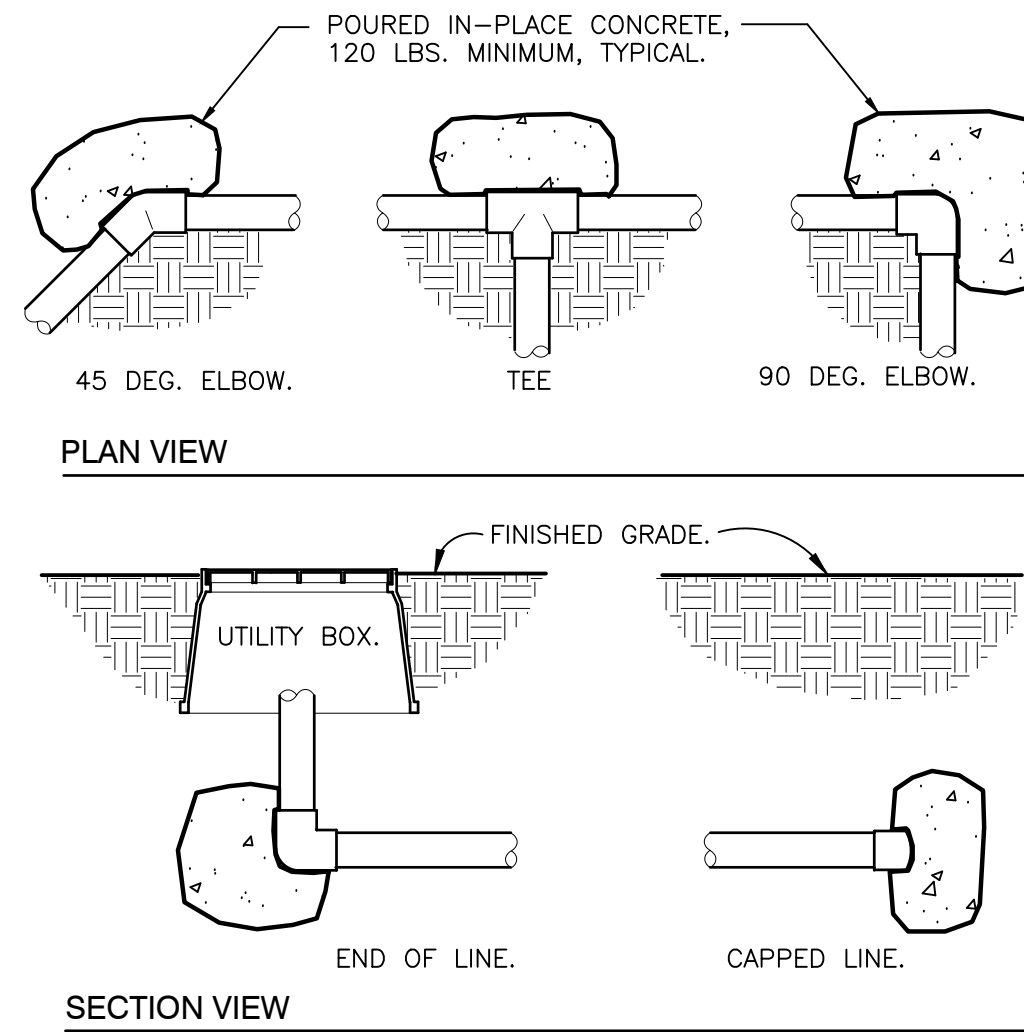
**BIG BLUE TRACE
LANDSCAPE**
PREPARED FOR
VILLAGE OF WELLINGTON
WELLINGTON, FL

NOT FOR CONSTRUCTION - PROGRESS SET

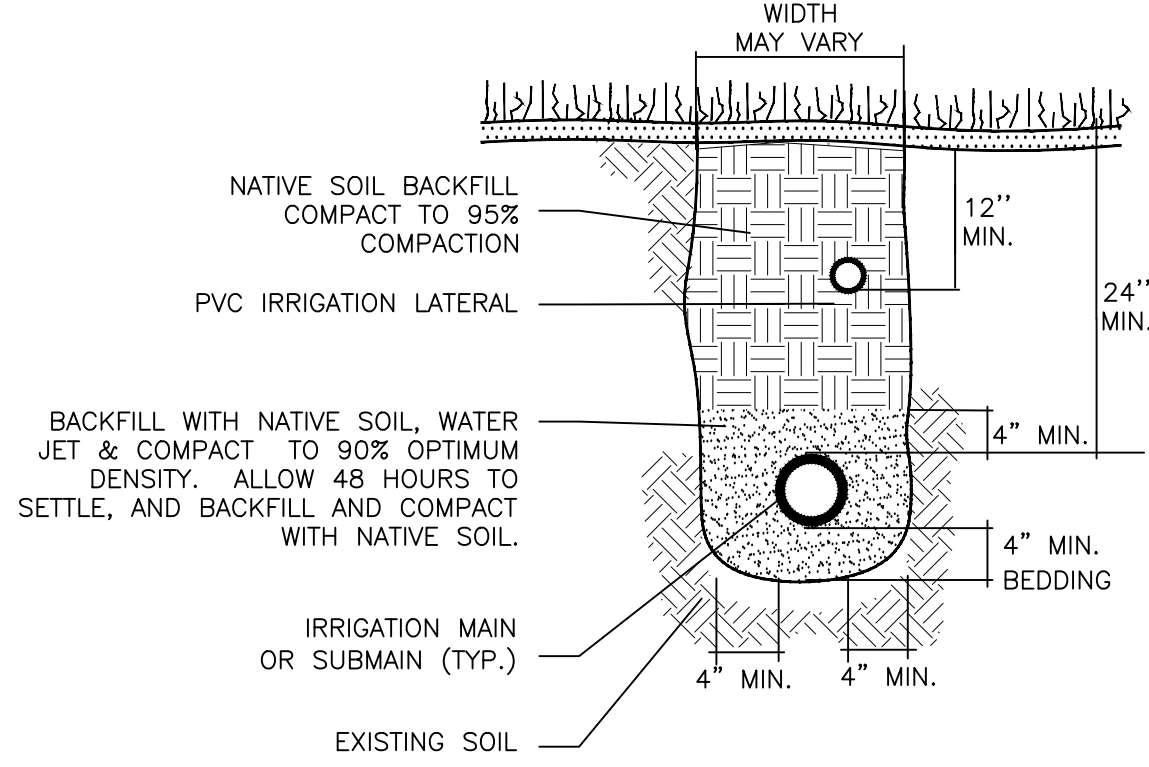
SHEET NUMBER
L-202

BY	DATE	REVISIONS	No.

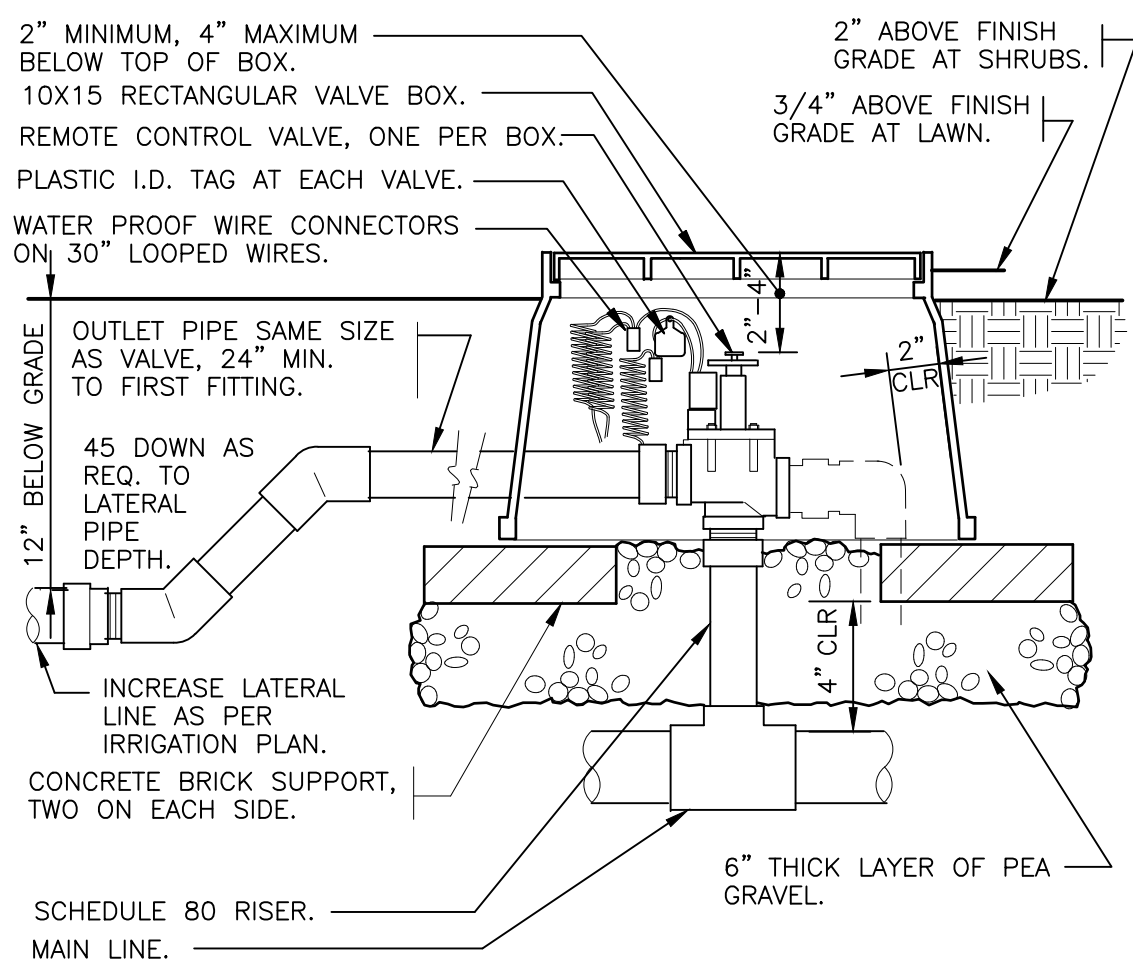
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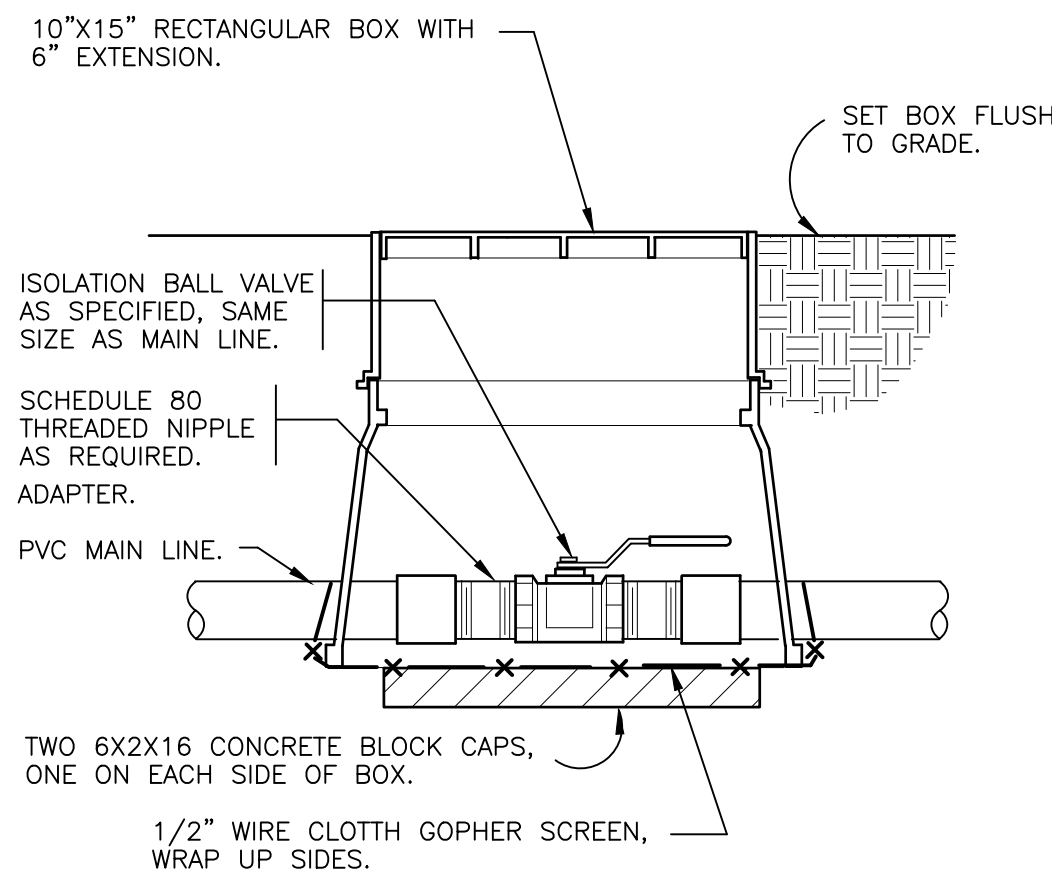
1 THRUST BLOCKING
3/4" = 1'-0"
32 8409.76-01



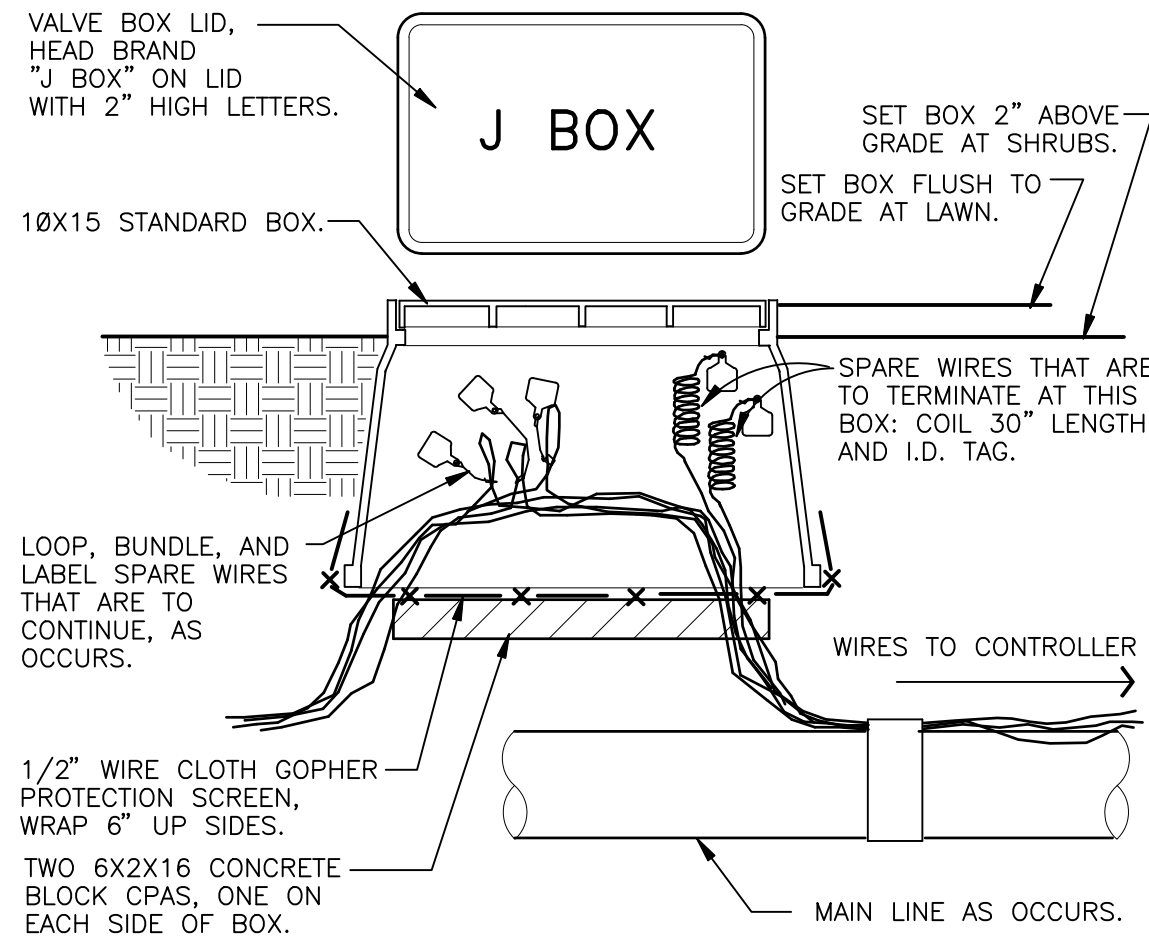
2 TRENCHING DETAIL
NOT TO SCALE
32 8409.76-03



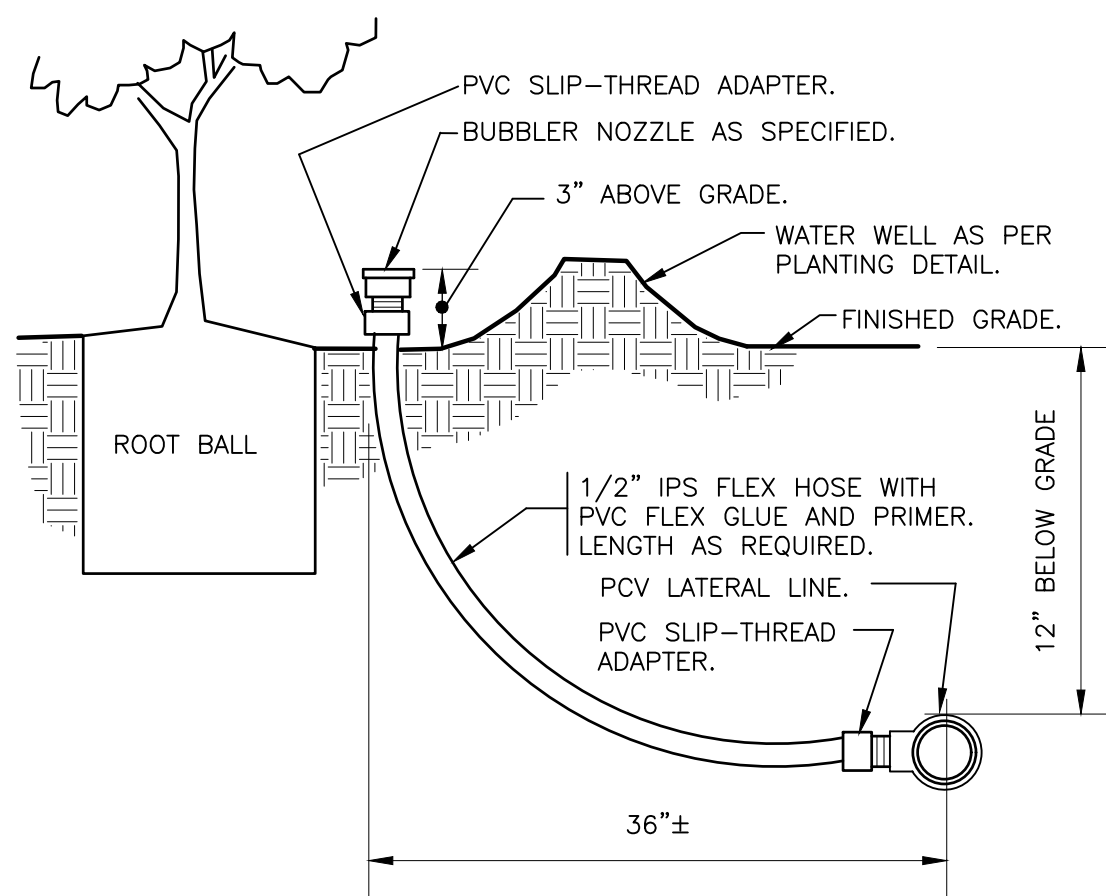
3 ELECTRIC REMOTE CONTROL VALVE
1 1/2" = 1'-0"
32 8406.13-01



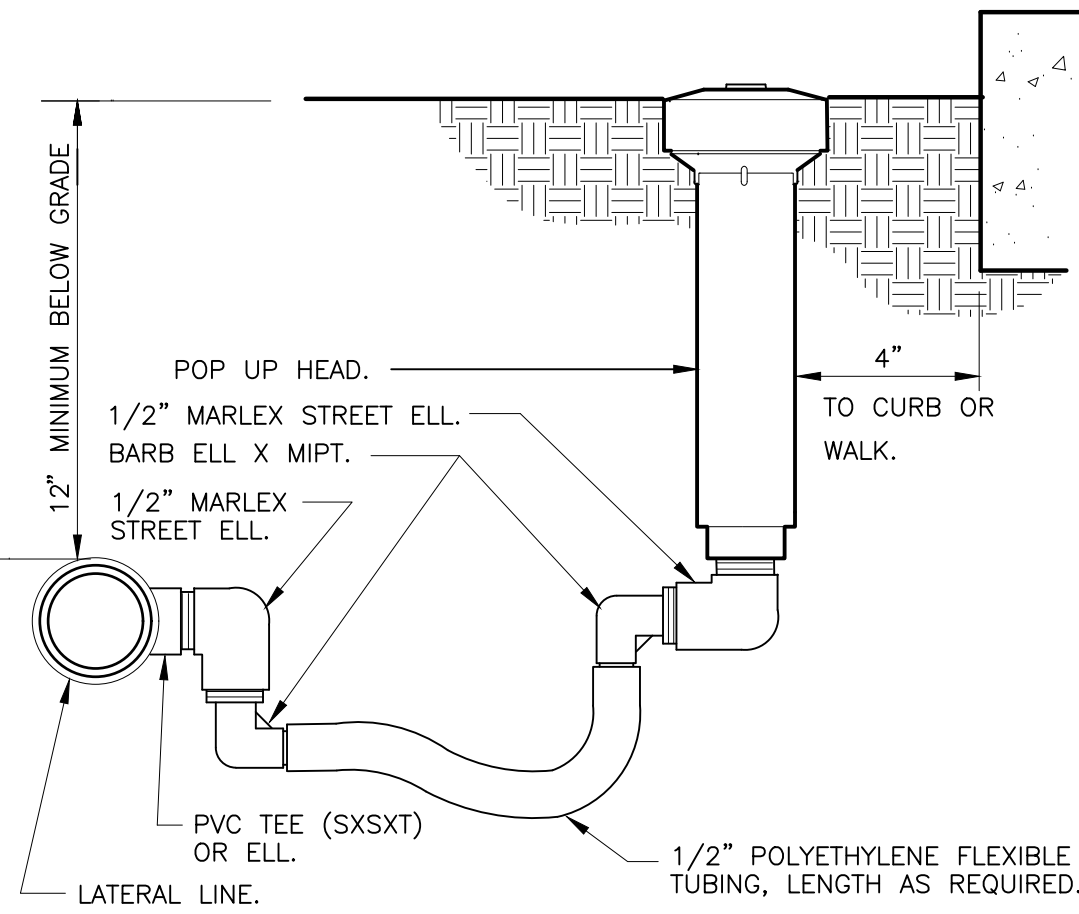
4 BRASS BALL ISOLATION VALVE
1 1/2" = 1'-0"
32 8406.33-02



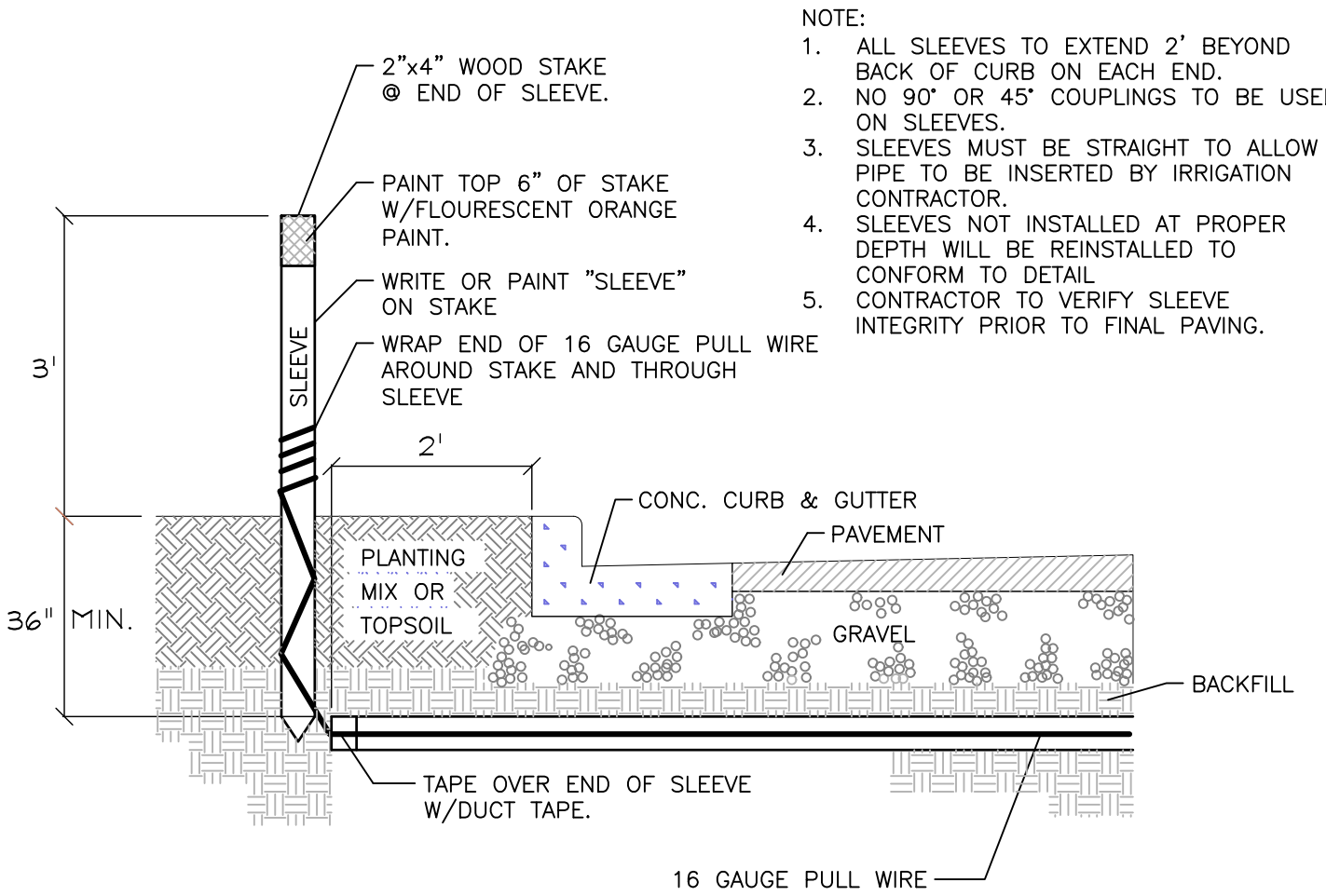
5 WIRE BUNDLE JUNCTION BOX
1 1/2" = 1'-0"
32 8409.79-01



6 BUBBLER ON FLEX HOSE RISER
3" = 1'-0"
DETAIL-FILE



7 POP-UP SPRAY FLEX ASSEMBLY
3" = 1'-0"
32 8403.13-02



8 IRRIGATION SLEEVING
NTS

REVISIONS		BY
No.	DATE	

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LICENSED PROFESSIONAL		TRICIA C. RICHTER, P.E.	
KHA PROJECT	144957079	DATE	DEC. 2023
SCALE	AS SHOWN	DESIGNED BY	BS
DRAWN BY	BS	CHECKED BY	KA
		DATE:	12/19/23

BIG BLUE TRACE LANDSCAPE
PREPARED FOR
VILLAGE OF WELLINGTON
WELLINGTON, FL

IRRIGATION DETAILS
- PHASE 1

SHEET NUMBER
L-250

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Irrigation Pump Station Specification

A. Purpose:
To provide a complete prefabricated variable drive skid mounted fiberglass enclosed pressure demand centrifugal pump system from a sole source company, herein after referred to as the "manufacturer", whose primary business is the manufacturer of prefabricated pump systems. The manufacturer will manufacture, flow test, install and watant the system to meet all specified operating requirements described below in the system detail. The system shall be a Model HCF-10PDV-230/I-H,M,R3,L,Z as manufactured by Hoover Pumping Systems of Pompano Beach Florida USA 954-971-7350 specified below and shown on the plan details. This specification describes the general components and minimal operating requirements and shall not be constructed as a manufacturing guide or complete list of required system components and appurtenances.

The contractor shall submit seven (7) complete copies of the shop drawings to the designer for approval, prior to system order placement. The submittal shall contain cut sheets for all system components. To be considered an equal, the contractor must submit the following 12 days prior to bid opening: manufacturer brochure showing prefabricated pump systems manufacturing is the primary business of the manufacturer or division proposed to manufacture the system, written specifications, dimensioned layout detail, electrical schematic, product sheets for all main components, Underwriters Laboratory electrical control panel and @Packaged Pumping System" manufacturer's file numbers, list of 6 projects with similar operating systems with current name and phone number of person responsible for system operation, manufacturer's insurance certificate for general liability showing minimum coverage of \$1 million, and written certification from the manufacturer stating the proposed system meets all requirements described in this specification, the detail and the bid documents.

If the data submitted is determined to be an equal by the designer the bidder will be notified prior to the bid date.

B. Fiberglass Enclosure:
The pump station shall be protected by a fiberglass enclosure with chemical and ultraviolet resistant open mold resin with exterior finish that is uniform in color and texture, reinforced with fiberglass and stiffeners for rigidity. The enclosure shall open clear of the equipment for ease of service with the aid of gas filled struts, a stainless steel hinge and latching lockable handle. The enclosure shall be of dimensions adequate to contain the pump system mounted on the skid as shown on the system detail.

C. Mounting Assembly:
The pump station shall be mounted on a prefabricated aluminum or hot dipped galvanized skid. Pedestals shall be provided to mount the pump motor and control panel assemblies. The entire station shall be installed on a reinforced concrete slab sized as noted on the system detail.

D. Pump & Motor
The pump shall be a centrifugal type pump with flanged suction and discharge connections (threaded connections are not acceptable). A thermal sensor for pump overheat protection shall be mounted into the pump volute.
The motor specifications shall include:
-NEMA Premium Efficiency
-Inverter Rated (MGI Part 31)
-VPI Impregnated
-EISA Compliant
_Totally Enclosed Fan Cooled (TEFC) (IP55). Open Drip Proof (ODP) morots are not acceptable.
-UL 1004 Approved
-1.25 Service Factor

The main motor shall be rated at 15 HP at 60Hz
E. Pump Station Performance:
The required pump performance as noted on the pump system detail.

F. Irrigation Pump Control Panel:
The control panel assembly shall be Underwriters Laboratories listed in accordance with section 508A for "enclosed industrial control panels." All control devices and electronic auto-sensory circuitry shall be housed in a self-contained weather-resistant stainless steel control cabinet. The control panel shall be identified with a permanent label approved by Underwriters Laboratories Inc. containing the word "LISTED", the name and / or symbol of Underwriters Laboratories Inc., a control number and the product name "Enclosed Industrial Control Panel". An electrical schematic shall be permanently mounted inside the cabinet. The control cabinet shall contain the following protection and control equipment:

Operation
This station operates as a Variable Frequency Drive (VFD) pressure demand start, reduced-flow retirements system. The station automatically maintains a constant discharge pressure from a pressure transducer input regardless of varying flow demands within the station operating range. The system is equipped with a remote 'Hand-Off-Auto' (H-O-A) selector switch. The self-diagnostic control panel assembly includes a remote 'Alarm' indicator light, and a remote operator interface for display of status and diagnostic messages, event lists, and operation history. The remote operator interface also allows for viewing of system setup parameters.

Hoover-Flow Software features include flow control of pump starts, sequencing and retirement; automatic pump alternation; Loss of Prime/No-flow protection, Pump Overheat protection time stamping; Phase Loss protection, Phase Unbalance protection, Voltage monitoring and protection, operation mode meters, Service required alerts; Remote Communication Link interface; Hoover Drive control; emergency bypass operation, cooling system control, self-cleaning intake screen control; Booster bypass control; fail-safe data protection.

Pressure Demand
The main pump starts when the mainline pressure drops below the setting of the start pressure switch.

No-Flow Retirement
The pump shuts off if water stops flowing for 15 seconds.

Loss of Prime Protection
If the system remains below the start pressure, and there is no flow of water through the system during pump operation for 45 secinds, the pump will shut off and the 'Loss of Prime' indicator will display. The system will remain off until 'Reset'.

Thermal Protection
If the temperature at the pump colute exceeds 43C after at least 3 minutes of pump operation, the pump will shut off, and the 'Pump Overheat' indicator will display. The system will remain off until 'Reset'.

Drive Fault
In case of a drive fault, including under or over voltage, over current, heat sink thermal, and ground fault, the affected pump will shut off, and the remote operator interface will display 'Drive Fault'. The pump will remain off until the system is 'Reset'.

Hand-Off-Auto Switch
The pump is equipped with a remote H-O-A selector switch that operates as follows:

Position	Function
Hand	Manual pump start. This position overrides all protective features and start controls.
Off	Pump will not run.
Auto	Pump will start automatically. In this position, all start controls and protective features are active.

Operator Interface
A mobile device of PC HMI (Human Machine Interface) shall be provided with statue display and control of operating mode, I/O status, system pressure, system flow, pressure and flow setpoints, elapsed run times, fault timer values and presets, display brightness, clock time, alarm and event logs with date and time stamps, and diagnostic information including counters and alarm indicators.

Protection Equipment
-Front operated main power disconnect
-Motor fuses for motor and drive short circuit and ground fault protection
-Metal oxide varistors (MOV) for transient voltage suppression per phase
-Fused control circuitry with blown fuse lighted indicator for each circuit.

Specification
Electric service to be, in order of preference:
460V 3-Phase (A, B, C, Ground)
230V Closed-Delta 3-Phase (A, B, C, Neutral, Ground)
208V Wye 3-Phase (A, B, C, Neutral, Ground)
230V 1-Phase (A, B, C, Neutral, Ground)
208V 1-Phase (A, B, C, Neutral, Ground)
230V Open-Delta 3-Phase (A, B, C, Neutral, Ground)
Selection of 230V Open-Delta 3-Phase may require an increase in electrical equipment size to meet desired performance criteria.

G. Penetration Standard Requirements:
All control panel penetrations shall be performed by a licensed electrician to minimum NEMA 4X requirements, and complaint with International Electro technical Commissions (IEC) IP56 rating under its IP code, to protect against duct ingression and against any harmful effects from water projected in powerful jets from any direction and protection against corrosion.
H. Variable Frequency Drives (VFD):
The pump motor is controlled by an individual dedicated Variable Frequency Drive (VFD) that is environmentally sealed against water, insects and dust infiltration. The VFD is properly sized to match pump, motor, and site power requirements.

The Variable Frequency Drive provided for the pump motor shall have the following characteristics: Variable Frequency Drive with the following characteristics shall be provided for the pump motor: 32-bit microprocessor controlled Pulse Width Modulated output, IGBT transistors, line reactors, built-in adjustable PID control, and acceleration reamp up and down, single pump VFD systems 25 hp or less NEMA 12 or NEMA 2 VFD with forced-air cooling over heat-sink (outside airflow over electronics not acceptable). All other VFD system cooling is by industrial air conditioner. Variable torque control, 32 character alphanumeric English full text parameter display, single function keys, block parameter access, dual analog outputs, automatic and manual reset, opto-isolated outputs, log of last 30 events retained in memory.

I. Shutoff Valve:
The valve shall be 230 psi working pressure with the following features:
-Continuous duty industrial solenoid
-Large capacity disk filter on pilot control tubing
-220 psi polyethylene control tubing with prest-o-lock fittings
-Cast iron body and bonnet with polymer coating
-316 Stainless steel nuts, bolts, washers, shaft and spring
-Stainless steel seat

For irrigation controller use, the solenoid shall be energized to open., the valve wires will be stubbed into a NEMA 4X junction box on the back of the pump system for connection to the controller by the irrigation contractor. For Hoover Flowguard the solenoid shall be energized to close.

J. Magnetic Flow Meter:
A full-bore magnetic flow sensor shall be provided to control pump retirement and allow display of flow rate and total flow (insertion type flow meters are not acceptable). The flow sensors shall have the following characteristics: no moving parts, unobstructed bore (no pressure loss), NEMA 5/IP 67 protection, international standard traceable calibration, stainless steel 1.4301 flow tube, 316 stainless steel electrodes, overall system accuracy for flows >1.5 fps of better than +/- 0.5% of actual rate, and for flows <1.5 fps of better than +/- 0.32/v [fps] % of actual rate.

K. Pressure Transmitter:
A 4-20mA-pressure transmitter shall provide a feedback signal to drive PID loops and for system pressure control. The transmitter shall be CE & UL recognized and built with an all stainless steel housing and pressure port, rated to NEMA 4, and able to withstand shock and vibration labels to MIL-STD-810E.

L. Discharge Manifold:
The pipe discharge manifold shall be constructed of galvanized steel pipe with galvanized roll groove fittings. A wafer type butterfly valve will be provided on headers 3" or greater and bronze ball valve on smaller headers at the pump station discharge. A hydro pneumatic pressure tank with isolation valve will be installed on the pump system skid inside the enclosure connected to the discharge header.

M. Self-Cleaning Discharge Filter:
1. All pump discharge water will flow through the 110 psi working pressure, 120 mesh disc filter assembly, and discharge into the irrigation main. The filter housing and disk assembly is a minimum 8" depth filtration. Screen or fabric type filters are not acceptable. Inlet and range pressure differential and/or adjustable timer. The backflush is done without the introduction of compressed air or use of electric motors or gears. During the backflush mode one filter battery is cleaned with filtered water and the remaining filter battery continue to supply clean water for the irrigation system. The filter discs will separate during the backflush cycle for optimal cleaning.
2. Flowguard manages the following filtration operations: Complete filtration operation, remote adjustments based on seasonal operating conditions, remote reporting of proactive filter system operating diagnostic warning and alarms. The discharge filter backwash water returning to the lake for accurate water management CUP reporting.

N. Suction Line:
The minimum size suction line shall be 3" diameter or larger as required for a maximum of 5 feet per second velocity flow. If a reducing fitting is required at the pump suction, an eccentric reducer shall be installed. Any above ground pipe at the pump system exposed to sunlight shall be schedule 40 galvanized steel with galvanized roll groove fittings. Suction pipe and fittings shall be HDPE heat fused. Lake Source: Suction screen assembly shall be 316 stainless steel 10 mesh, supported 18" off the lake/canal bottom with a case iron roll groove swing check valve and have a minimum of 4' water cover. The suction pipe from the screen assemble to the pump station shall be high density polyethylene HDPE piping.

O. Flowguard Communication Link:
Hoover supplied communication
High speed modem, antenna and broadband Data communication plans.

P. System Control Power Supply Protection:
Combination UL listed power supply and 24 VDC industrial uninterruptible power supply (UPS), includes:
-Minimum 1/2 Amp-hour rechargeable 24 VDC battery to power control electronics and modem
-Signaling for charging process, operational readiness, buffer mode, and alarm messages
-Temperature-compensated charging protection for battery module at high ambient temperatures
-Residual ripple <50 mVpp
-Operating temperature -25°C to 70°C
-Electronic protection against short-circuit and reverse feed
-Integrated timeout

Q. The Hoover Flowguard:
An easy to use Internet based irrigation system management tool providing real time monitoring and control that include:
-Proactive Troubleshooting Tools
Solve minor irrigation problems before they escalate into major landscape issues.
-Landscape Management Tool
Supplement random "wet check" expense with specifically identified irrigation repairs. Evaluate data that can be effectively used for troubleshooting performance issues.
Field manually bypass button to override a closed Flowguard shutoff valve in two (2) hour increments each time pressed by field service personnel.
Rain sensor
-Automated Compliance Tool
Daily municipal water use restrictions.
Water management district water usage reporting
Budget water usage to assure compliance with Consumptive Water Use Permit.
-Automatic E-mail Alarms & Warnings
Receive automatic e-mail alarms & warnings when irrigation system problems occur. Automatic Adjustable alarm shut-downs with time delay between restarts.

-Reports
Daily water usage
Specific events, a comprehensive list of alarms, warnings and pump operations
-Communication
Hoover High Speed Modem and Cellular Broadband service.
-Remote Control
Access to pump control and protection features, including sequencing and retirement controls and setup parameters.
-Diagnostic Data
Real time and historical graphing of flow, pressure, source water level, water salinity, booster water source pressure, rain sensor, system status and maintenance alerts, and power supply interruption.
-Water Use Monitoring
Set an automatically monitor Daily, Monthly, and Annual water use volumes per Water Management District Use Permit. User - set alarms and warning with automatic and/or manual restarts
-Water Use Reports
Print Reports for Daily, Monthly, and Annual flow volume history, View and print reports for graphing, logs, usage, audit trails, and maintenance status.
-Security Access Control
Multi-user capability with User ID and password protection.
-User Training
Provides new user classes, support and phone assistance to set up initial parameters such as Water Windows, budgets and other user-set functions.

R. Warranties:
Prior to shipping, the manufacturer shall flow test the system and submit a certified report to the designer stating the system is within 1% + or - of the specified flow rate and pressure, and meets the operational requirements.
The manufacturer of the pumping station shall warrant all components for a period of one (1) year from date of manufacture.

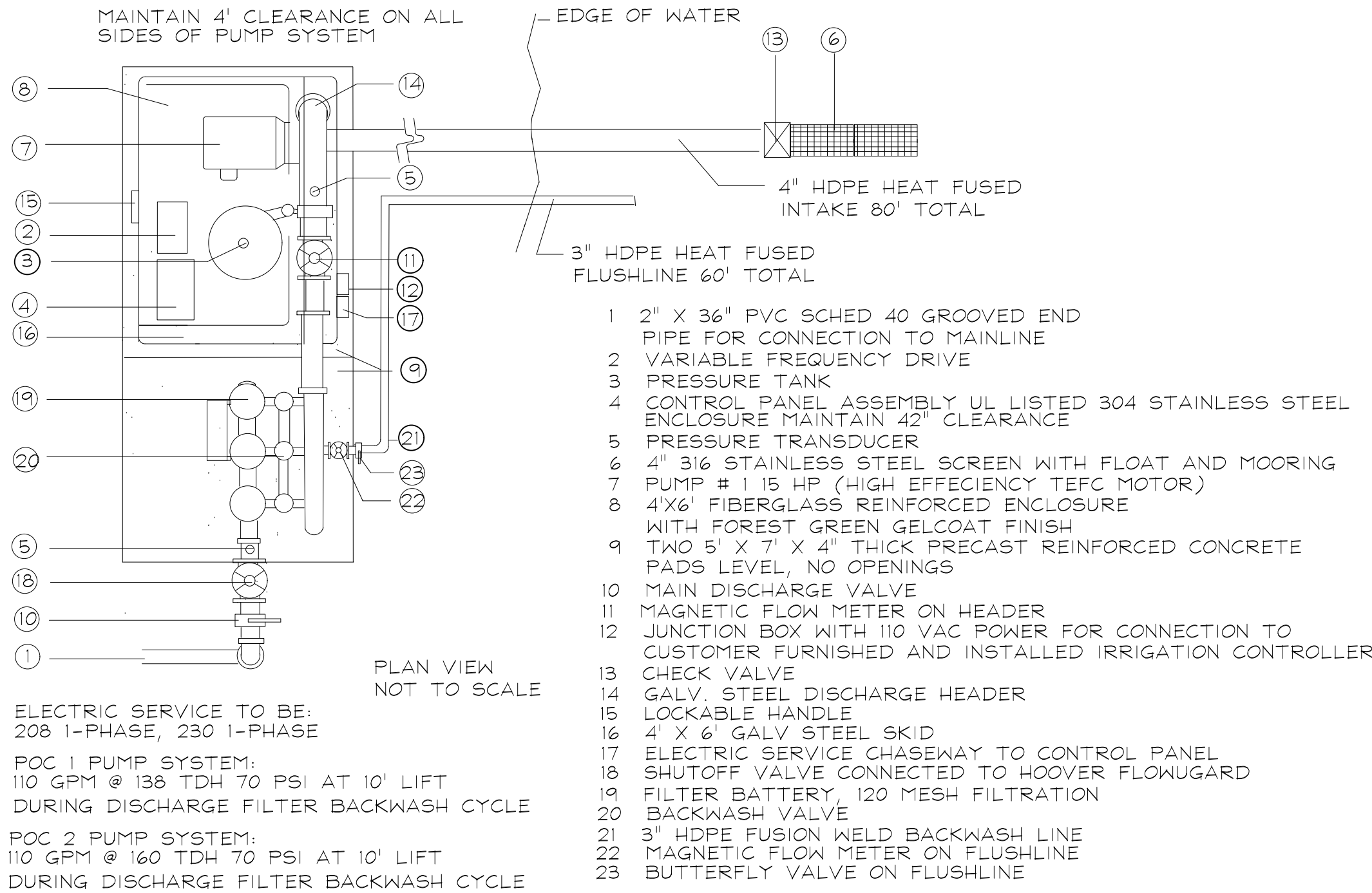
NOTE: SUCTION PIPE AND FITTINGS SHALL BE HDPE HEAT FUSED. CHECK VALVES 3" LARGER SHALL BE SWING TYPE, 2" AND SMALLER SHALL BE POPPET STYLE. ALL EXPOSED SUCTION & DISCHARGE PIPE SHALL BE GALVANIZED STEEL.

SYSTEM MANAGEMENT: HOOVER FLOWGUARD
COMMUNICATION VIA CELLULAR MODEM OR 10/100 BASE T DIRECT ETHERNET CONNECTION. USER DEFINED INTERNET BASED CONTROL PARAMETERS USING STANDARD WEB BROWSER WITH EVENT LOGGING AND EMAIL ALERTS FOR WARNINGS AND ALARMS AS FOLLOWS:

X MAXIMUM GALLON PER MINUTE USAGE WITH ADJUSTABLE TIME DELAY AND NUMBER OF RESTART ATTEMPTS
X MINIMUM TOTAL DAILY WATER USAGE
X DAILY, MONTHLY AND ANNUAL WATER USAGE BUDGETS
X GRAPHING OF REAL TIME AND HISTORICAL FLOW AND PRESSURE AND SYSTEM EVENTS EVENTS WITH TIME AND DATE SHOWN
X RAIN SENSOR STATUS
X HISTORIC WATER USAGE BY DAY AND MONTH
X LOSS OF PRIME
X VFD FAULT
X PUMP HIGH TEMPERATURE
X PUMP RAPID CYCLE
X SHUT OFF VALVE STATUS
X DISCHARGE FILTER CONTROL AND MANAGEMENT

* FEATURES ARE INCLUDED IF MARKED WITH AN "X"
X VARIABLE FREQUENCY DRIVE
X PRESSURE TANKS FOR PRESSURE DEMAND SYSTEM

SAFETY FEATURES
PRESSURE DEMAND:
-TRANSIENT SURGE
-LOSS OF PRIME
-PUMP OVERHEAT
-HIGH FLOW



HOOVER MODEL: HCF-10PDV-230/I-H,M,R3,L,Z
Pompano Beach, Florida, Tel 954-971-7350
FILE PNI6633.DWG 03/23

VILLAGE OF WELLINGTON BIG BLUE TRACE RD.
BETWEEN SOUTH SHORE/PADDOCK DR.
CENTRIFUGAL PUMP SYSTEM DETAIL
FIBERGLASS ENCLOSED SINGLE LAKE SUCTION
PRESSURE DEMAND VARIABLE FREQUENCY DRIVE,
SELF-CLEANING DISCHARGE FILTER, HOOVER FLOWGUARD®

IRRIGATION PUMP STATION
PLAN

NOT FOR CONSTRUCTION - PROGRESS SET

BIG BLUE TRACE
LANDSCAPE
PREPARED FOR
VILLAGE OF WELLINGTON
WELLINGTON FL

IRRIGATION DETAILS
- PHASE 1

KHA PROJECT
144957079
DATE
DEC 2023
SCALE AS SHOWN
DESIGNED BY BS
DRAWN BY BS
CHECKED BY KA
DATE
12/19/23

LICENSED PROFESSIONAL
TRICIA C. RICHTER, PLA
FL LICENSE NUMBER
#6667244

© 2023 KIMLEY-HORN AND ASSOCIATES, INC.
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Kimley»Horn

SHEET NUMBER
L-251



Plotted By: Bowerrier, Alex Sheet Set: Big Blue Trace Landscape Layout: L-252 IRRIGATION NOTES - PHASE 1 December 20, 2023 03:22:32pm K:\WPB\URG\144857079 - Big Blue Trace Landscape\CAD\Layouts\L-252 IRRIGATION DETAILS - PH1.dwg This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

UNDERGROUND IRRIGATION SYSTEM

PART I: GENERAL
1.01 SCOPE

- A. The work covered by this specification shall include the furnishing of all labor, materials, tools and equipment necessary to perform and complete the installation of an automatic irrigation system as specified herein and as shown on the drawings and any incidental work not shown or specified which can reasonably be determined to be part of the work and necessary to provide a complete and functional system.
- B. The work covered by this specification also includes all permits, federal, state and local taxes and all other costs, both foreseeable and unforeseeable at the time of construction.
- C. No deviation from these specifications, the accompanying drawings, or agreement is authorized or shall be made without prior written authorization signed by the Owner or his duly appointed representative.

1.02 QUALITY ASSURANCE

- A. Installer Qualifications: A firm specializing in irrigation work with not less than five (5) years of experience in installing irrigation systems similar to those required for this project.
- B. Coordination: Coordinate and cooperate with other contractors to enable the work to proceed as rapidly and efficiently as possible.
- C. Inspection of Site: The Contractor shall acquaint himself with all site conditions, including underground utilities before construction is to begin. Contractor shall coordinate placement of underground materials with contractors previously working underground in the vicinity or those scheduled to do underground work in the vicinity. Contractor is responsible for minor adjustments in the layout of the work to accommodate existing facilities.
- D. Protection of Existing Plants and Site Conditions: The Contractor shall take necessary precautions to protect site conditions to remain. Should damages be incurred, this Contractor shall repair the damage to its original condition at his own expense. Any disruption, destruction, or disturbance of any existing plant, tree, shrub, or turf, or any structure shall be completely restored to the satisfaction of the Owner and his representatives, solely at the Contractor's expense.
- E. Protection of Work and Property: The Contractor shall be liable for and shall take the following actions as required with regard to damage to any of the Owner's property.

1. Any existing building, equipment, piping, pipe coverings, electrical systems, sewers, sidewalks, roads, grounds, landscaping or structure of any kind (including without limitation, damage from leaks in the piping system being installed or having been installed by Contractor) damaged by the Contractor, or by his agents, employees, or subcontractors, during the course of his work, whether through negligence or otherwise, shall be replaced or repaired by Contractor at his own expense in a manner satisfactory to Owner, which repair or replacement shall be a condition precedent to Owner's obligation to make final payment under the Contract.

2. Contractor shall also be responsible for damage to any work covered by these specifications before final acceptance of the work. He shall securely cover all openings into the systems and cover all apparatus, equipment and appliances, both before and after being set in place to prevent obstructions on the pipes and the breakage, misuse or disfigurement of the apparatus, equipment or appliance.

3. All trenching or other work under the leaf canopy of any and all trees shall be done by hand or by other methods so that no branches are damaged in any way.
- Buildings, walks, walls, and other property shall be protected from damage. Open ditches left exposed shall be flagged and barricaded by the Contractor by approved means. The Contractor shall restore disturbed areas to their original condition.

4. The Contractor shall be responsible for requesting the proper utility company to stake the exact location of any underground lines including but not limited to electric, gas, telephone service, water, and cable.

The Contractor shall take whatever precautions are necessary to protect these underground lines from damage. In the event damage does occur, all damage shall be completely repaired to its original condition, at no additional cost to the Owner.

5. The Contractor shall request the Owner, in writing, to locate any private utilities (i.e., electrical service to outside lighting) before proceeding with any excavation. If, after such requests and necessary staking, private utilities which were not staked are encountered and damaged by the Contractor, they shall be repaired by the Owner at no cost to the Contractor. If the Contractor damages staked or located utilities, they shall be repaired at the Contractor's expense.

- F. Codes and Inspections: The entire installation shall comply fully with all local and state laws and ordinances and with all established codes arrange for all necessary inspections and shall pay all fees and expenses in connection with same, as part of the work under this Contract. Upon completion of the work, he shall furnish to the "Owner" all inspection certificates customarily issued in connection with the class of work involved.
- G. The Contractor shall keep on his work, during its progress, a competent superintendent and any necessary assistants, all satisfactory to the Owner, or Owner's representative.
- H. The superintendent shall represent the Contractor in his absence and all directions given to him shall be as binding as if given to the Contractor.
- I. The Owner's Landscape Architect or designated individual shall have full authority to approve or reject work performed by the Contractor. The Owner's Authorized Representative shall also have full authority to make field changes that are deemed necessary.
- J. Final Acceptance: Final acceptance of the work may be obtained from the Owner upon the satisfactory completion of all work. Acceptance by the Landscape Architect and/or Owner in no way removes the Contractor of his responsibility to make further repairs, corrections and adjustments to eliminate any deficiencies which may later be discovered.
- K. Guarantee: All work shall be guaranteed for one year from date of final acceptance against all defects in material, equipment and workmanship to the satisfaction of the Owner. Repairs, if required, shall be done promptly at no cost to the Owner.

1. The guarantee shall also cover repair of damage to any part of the premises resulting from leaks or workmanship, to the satisfaction of the Owner. The Contractor shall not be responsible for work damaged by others. Repairs, if required, shall be done promptly. The guarantee shall state the name of the Owner, provide full guarantee terms, effective and termination date, name and license number of Contractor providing guarantee, address, and telephone number. It shall be signed by the chief executive of the Contractor of his liability under the guarantee. Such warranties shall only supplement the guarantee.

2. If, within ten (10) days after mailing of written notice by the Owner to the Contractor requesting repairs or replacement resulting from a breach of warranty, the Contractor shall neglect to make or undertake with due diligence to make the same, the Owner may make such repairs at the Contractor's expense; provided, however, that in the case of emergency where, in the judgment of the Owner, delay would cause serious loss or damage, repairs or replacement may be made without notice being sent to the Contractor, and Contractor shall pay the cost thereof.

- L. The Contractor shall provide full, 100% irrigation coverage in all areas designed with proposed plantings, in accordance with the site's governing permitting requirements and as designed.
- M. On-site Observation: At any time during the installation of the irrigation system by the Contractor, the Owner or Landscape Architect may visit the site to observe work underway. Upon request, the Contractor shall be required to uncover specified work as directed by the Owner or material, workmanship or method of installation not meet the standards specified herein, the Contractor shall replace the work at his own expense.
- N. Workmanship: All work shall be installed by qualified, skilled personnel, proficient in the trades required, in a neat, orderly, and responsible manner with recognized standards of workmanship. The Contractor shall have had considerable experience and demonstrated ability in the installation of sprinkler irrigation systems of this type.

1.04 SUBMITTALS

All materials shall be those specified and/or approved by the Landscape Architect.

- A. Product Data: After the award of the Contract and prior to beginning work, the Contractor shall submit for approval by the Owner and Landscape Architect, two copies of the complete list of materials, manufacturer's technical data, and installation instructions which he proposes to install.
- B. Commence no work before approval of material list and descriptive material by the Landscape Architect.
- C. Record Drawings: The Contractor shall record on reproducible, all changes that may be made during actual installation of the system. Provide controller sequencing and control valve locations.

1. Immediately upon installation of any piping, valves, wiring, sprinklers, etc., in locations other than shown on the original drawings or of sizes other than indicated, the Contractor shall clearly indicate such changes on a set of blueline prints. Records shall be made on a daily basis. All records shall be neat and subject to the approval of the Owner.
2. The Contractor shall also indicate on the record prints the location of all wire splices, original or due to repair, that are installed underground in a location other than the controller pedestal, remote control valve box, power source or connection to a valve-in-head sprinkler.

3. These drawings shall also serve as work progress sheets. The Contractor shall make neat and legible notations thereon daily as the work proceeds, showing the work as actually installed. These drawings shall be available at all times for review and shall be kept in a location designated by the Owner's Representative.

4. Progress payment request and record drawing information must be approved by Landscape Architect before payment is made.

5. If in the opinion of the Owner or his representative, the record drawing information is not being properly or promptly recorded, construction payment may be stopped until the proper information has been recorded and submitted.

6. Before the date of the final site observation and approval, the Contractor shall deliver one set (copies) of reproducible record drawing plans and notes to the Landscape Architect. Record drawing information shall be approved by the Landscape Architect prior to submittal to Owner for final payments, including retentions.

- D. Operations and Maintenance Manuals: The Contractor shall prepare and deliver to the Owner, or his designated representative within ten (10) calendar days prior to completion of construction, a hard cover binder with three rings containing the following information:

1. Index sheet stating the Contractor's address and business telephone number, list of equipment with name(2) and address(es) of local manufacturer's representative(s).
2. Catalog and parts sheets on every material and equipment installed under this Contract.
3. Complete operating and maintenance instruction on all major equipment. Include initial controller schedule and recommended schedule after establishment period.
4. Demonstrate to and provide the Owner's maintenance personnel with instructions for major equipment and show evidence in writing to the Owner, or his designated representative at the conclusion of the project that this service has been rendered.

1.05 EXPLANATION OF DRAWINGS

- A. Due to the scale of the drawings, it is not possible to indicate all offsets, fittings and sleeves which may be required. The Contractor shall carefully investigate the structural and finished conditions affecting all of the work and plan his work accordingly, furnishing such offsets, fittings and sleeves as may be required to meet such conditions.
- B. The drawings are generally diagrammatic and indicative of the work to be installed. The work shall be installed in such a manner as to avoid conflicts between irrigation systems, planting and architectural features. Deviations shall be brought to the Landscape Architects attention.
- C. All work called for a on the drawings by notes or details shall be furnished and installed whether or not specifically mentioned in the specifications.
- D. 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 area dimensions exist that might not have been known in engineering. Such obstructions or differences should be brought to the attention of the Landscape Architect. In the event that notification is not performed, the Contractor shall assume full responsibility for any revision necessary.
- E. If, in the opinion of the Landscape Architect, the labor furnished by the Contractor is incompetent, unskilled, or unreliable, his equipment inadequate, improper or unsafe, or if the Contractor shall fail to continuously and diligently execute the construction, the Landscape Architect or Owner shall, in writing, instruct the Contractor to remove all such causes of noncompliance and the Contractor shall promptly comply.
- F. The Contractor shall be responsible for full and complete coverage of all irrigation areas. The Landscape Architect shall be notified of any necessary adjustments at no additional cost to the Owner. Any revisions to the irrigation system must be submitted and answered in written form, along with any change in Contract price. Layout may be modified, if necessary to obtain coverage. Spacing not to exceed 60% of the diameter.

PART II: PRODUCTS

2.01 MATERIALS

Material and equipment shall be supplied by the Contractor. No substitutions shall be allowed without the prior written approval of the Owner/Landscape Architect. The Contractor shall inspect all materials and equipment prior to installation, and defective materials shall be replaced with the proper materials and equipment. Those items used in the installation found to be defective, improperly installed or not as specified, shall be removed and the proper materials and equipment installed in the proper manner, as interpreted by the Owner/Landscape Architect. The Contractor shall remove all damaged and defective pipe and equipment from the site.

2.02 PIPING

- A. General Provisions: All materials throughout the system shall be new and in perfect condition unless otherwise directed by the Landscape Architect.
- B. Polyvinyl Chloride Pipe (PVC): (Where indicated on plan, use non-potable purple piping.)
1. Laterals: PVC shall conform to the requirements of ASTM Designation D 2241, Class 1120 or 1220. All lateral piping less than 3" in diameter shall be Class 200 SDR-21.

2. Main Line Under Pressure: PVC shall conform to the requirements of ASTM Designation D 2241, Class 1120 or 1220, Schedule 40 with belled end for solvent weld connection.

3. Pipe Markings: All PVC pipe shall bear the following markings:
- o Manufacturer's Name
 - o Nominal Pipe Size
 - o Schedule or Class
 - o Pressure Rating of PSI
 - o NSF (National Sanitation Foundation) Approval
 - o Date of Extrusion

2.04 PVC JOINTS

Joints in PVC pipe smaller than 3" shall be solvent welded in accordance with the recommendations of the pipe manufacturer; the solvent cleaner and welding compound furnished with the pipe.

2.05 THREADED CONNECTIONS

- A. Threaded PVC connections shall be made up using Teflon tape only.
- B. Connection between mainline pipe fittings and automatic or manual control valves shall be made using Schedule 80 threaded fittings and nipples.

2.06 SOLVENT CEMENT

- A. General: Provide solvent cement and primer for PVC solvent weld pipe and fittings recommended by the manufacturer. Pipe joints for solvent weld pipe to be belled end. Pipe joints for gasketed pipe to be intrical ring type. Insert gaskets will not be accepted.
- B. Thrust Blocks: Main line piping 3" or greater in diameter shall have thrust blocks sized and placed in accordance with the pipe manufacturer's recommendations or, in the absence of specified recommendations by the pipe manufacturer. 3000 PSI concrete thrusts shall be properly installed at tees, elbows, 45's, crosses, reducers, plugs, caps and valves.

2.07 PIPE AND WIRE SLEEVES

- A. Sleeves to be installed:
1. The Contractor shall install irrigation system pipe and wire sleeves conforming to the following:
- a. All pipe sleeves shall extend a minimum of 24" beyond the edges of pavement.
 - b. All pipe sleeves to be installed beneath future/existing road surfaces shall be with directional boring per standards on sheet L-210, and as shown on plans.
 - c. All irrigation system wires shall be sleeved separately from main or lateral lines.
 - d. All pipe sleeves shall be installed at the minimum depth specified for main lines, lateral lines, and electric wire.
 - e. Contractor shall coordinate all pipe sleeve locations and depths prior to initiating installation of the irrigation system.

2.08 SPRINKLER HEADS

- A. Spray Sprinklers: The sprinkler shall be a fixed spray type designed for in-ground installation. The nozzle shall elevate 6" (or as designated on plan) when in operation. The body of the sprinkler shall be constructed of non-corrosive heavy duty Gyaloc. A filter screen shall be in the nozzle piston. All sprinkler parts shall be removable through the tip of the unit by removal of a threaded cap.

Riser mounted spray shall be as indicated on the plans. The sprinkler shall consist of a nozzle and body. The body of the riser-mount sprinkler shall be constructed of non-corrosive materials. A cone strainer shall be a separate part with the nozzle assembly to allow for easy flushing of the sprinkler. Maximum working pressure at the base of the sprinkler shall be 40 PSI.

(continued...)

NOT FOR CONSTRUCTION - PROGRESS SET

BIG BLUE TRACE
LANDSCAPE
PREPARED FOR
VILLAGE OF WELLINGTON
WELLINGTON FL

IRRIGATION NOTES -
PHASE 1

LICENSED PROFESSIONAL
TRICIA C. RICHTER, PLA
FL LICENSE NUMBER
#6667244
DATE: 12/19/23

Kimley»Horn

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SHEET NUMBER
L-252



BY
DATE
REVISIONS
No.

