

IRRIGATION NOTES AND SPECIFICATIONS

Irrigation design based on the Brooks + Scarpa Landscape plan. Contractor shall refer to these plans to coordinate sprinkler and pipe locations.

The system has been designed to conform with the requirements of all applicable codes, laws, ordinances, rules, regulations and conventions. Should any conflict exist, the requirements of the codes shall prevail. It is the responsibility of the owner/installation contractor to ensure the entire system is installed as designed.

The scope of work is shown on the plans, notes and details. The Irrigation Contractor shall be certified as a CERTIFIED IRRIGATION CONTRACTOR by the Irrigation Association and a CERTIFIED TWO-WIRE IRRIGATION SYSTEM INSTALLER by Hunter Industries.

THE WORK

The work specified in this section consists of furnishing all components necessary for the installation, testing, and delivery of a complete, fully functional automatic landscape irrigation system that complies with the irrigation plans, specifications, notes, and details.

All irrigated areas shall provide 100% head-to-head coverage from a fully automatic irrigation system with a rain/freeze shut off device. The rain sensor shall be installed to prevent activation by adjacent heads and in a visually unobtrusive location approved by owner.

These plans have been designed to satisfy/exceed the Florida Building Code (FBC) Appendix F and the Florida Irrigation Society Standards and Specifications for Turf and Landscape Irrigation Systems, fourth edition.

It is the responsibility of the irrigation contractor to familiarize themselves with all grade differences, location of walls, retaining walls, structures and utilities. Do not willfully install the sprinkler system as shown on the drawings when it is obvious in the field that unknown obstruction, grade differences or differences in the area dimensions exist that might not have been considered in the engineering.

Irrigation contractor shall repair or replace all items damaged by their work. Irrigation contractor shall coordinate their work with other contractors for the location and installation of pipe sleeves and laterals through walls, under roadways and paving, etc.

The contractor shall take immediate steps to repair, replace, or restore all services to any utilities which are disrupted due to their operations. All costs involved in disruption of service and repairs due to negligence on the part of the contractor shall be their responsibility.

POINT OF CONNECTION (P.O.C.)

The P.O.C. is a new line size X 3/4" tap, maximum of 10' of 3" polyethylene service line, a new 2" potable meter (by others) and a 2" reduced pressure backflow assembly.

Contractor to verify these minimum conditions can be met prior to ordering of materials and the beginning of installation. If the conditions can not be met, the contractor must notify the designer prior to proceeding with the work.

THE PIPE

Pipe locations shown on the plan are schematic and shall be adjusted in the field. When laying out mainlines place a minimum of 18" away from either the back of curb, front of walk, back of walk, or other hardscape to allow for ease in locating and protection from physical damage.

All pipes are to be placed in planting beds. If it is necessary to have piping under hardscapes, such as roads, walks, and patios, the pipes must be sleeved using Class 200 PVC with the sleeve diameter being twice the size of the pipe it is carrying with a minimum sleeve size of 2".

Pipe sizes shall conform to those shown on the drawings. No substitutions of smaller pipe sizes shall be permitted, but substitutions of larger sizes may be approved.

Mainline shall be DR11 4710 IPS H.D.P.E. with fusion-weld fittings, with a parallel run of 1-1/2" gray SCH 40 electrical conduit with SCH 40 PVC solvent-weld fittings installed with mainline for two-wire path (install junction/pull boxes for two-wire path per plan details and manufacturer guidelines).

Contractor to ensure all mainline piping is properly restrained using mechanical joint fittings, restraining collars, threaded rods, thrust blocks, etc., as and where required. Contractor shall refer to pipe manufacturers recommended installation practices for further direction.

PVC pipe joint compound and primer: The PVC cement shall be Weld-On 711 (grey, slow-drying, heavy duty) and the primer shall be Weld-On P70 (purple tinted, compatible with cement), or approved equals.

ELECTRICAL POWER SUPPLY

Electrical supply for irrigation pumps, controllers and sensors to be provided by irrigation contractor. Contractor to coordinate with local utilities for the installation of, and connection to, site available power supplies for required electrical components as set forth in the irrigation plans.

All electrical work is to comply with the National Electrical Code and any, and all, other applicable electrical codes, laws and regulations. A licensed electrician shall perform all electrical hook-ups. Power for each controller shall be a dedicated 120 volt, 20 amp circuit unless otherwise specified in the plans.

WIRING

Refer to Hunter ACC2 two-wire notes and details.

Install all electrical conduit for control/sensor wires with long-radius sweeps at turns in direction to facilitate pulling wire through conduits.

Label all wires in all valve boxes, junction boxes and at the controller.

SPARE WIRES

This is a two-wire system, no spare wires are required.

TWO-WIRE PATH GROUNDING

Refer to Hunter ACC2 two-wire notes and details.

CONTROLLER GROUNDING

Refer to Hunter ACC2 two-wire notes and details.

PUMP STATION CONTROL PANEL GROUNDING

Contractor to utilize 4"X96"X0.0625" copper grounding plates, 5/8"X10" copper clad grounding rods, Cadweld "One-Shot" at all connection points, #6 insulated copper wire, and earth contact material.

SOIL MOISTURE SENSOR

Place all soil moisture sensor/sensor decoder wiring in 1" SCH 40 PVC conduit to two-wire path or controller. Soil moisture sensor should be placed in the middle of a spray or drip area as per manufacturer's recommendations.

LAYOUT

Lay out irrigation system mainlines and lateral lines. Make the necessary adjustments as required to take into account all site obstructions and limitations prior to excavating trenches.

Stake all sprinkler head locations. Adjust location and make the necessary modifications to nozzle types, etc. required to ensure 100% head to head coverage. Refer to the Edge of Pavement Detail on the Irrigation Detail Sheet.

Spray heads shall be installed 4" from sidewalks or curbed roadways and 12" from uncurbed roadways and building foundations. Rotors shall be installed 4" from sidewalks or curbed roadways, 12" from building foundations, and 36" from uncurbed roadways.

Shrub heads shall be installed on 3/4" Sch 40 PVC risers. The risers shall be set at a minimum of 18" off sidewalks, roadway curbing, building foundations, and/or any other hardscaped areas. Shrub heads shall be installed to a standard height of 4" below maintained height of plants and shall be installed a minimum of 6" within planted masses to be less visible and offer protection.

Locate valves prior to excavation. Ensure that their location provides for easy access and that there is no interference with physical structures, plants, trees, poles, etc. Valve boxes must be placed a minimum of 12" and a maximum of 18" from the edge of pavement, curbs, etc. and the top of the box must be 2" above finish grade.

VALVES

Sequence all valves so that the farthest valve from the P.O.C. operates first and the closest to the P.O.C. operates last. The closest valve to the P.O.C. should be the last valve in the programmed sequence.

Adjust the flow control on each RCV to ensure shut off in 10 seconds after deactivation by the irrigation controller.

Using an electric branding iron, brand the valve I.D. letter/number on the lid of each valve box. This brand must be 2"-3" tall and easily legible.

EQUIPMENT

All pop-up heads and shrub risers shall be pressure compensating. All pop-up heads shall be mounted on flex-type swing joints. All rotors shall be installed with PVC triple swing joints unless otherwise detailed.

All sprinkler equipment, not otherwise detailed or specified on these plans, shall be installed as per manufacturer's recommendations and specifications, and according to local and state laws.

TRENCHING

Excavate straight and vertical trenches with smooth, flat or sloping bottoms. Trench width and depth should be sufficient to allow for the proper vertical and horizontal separation between piping as shown in the pipe installation detail on the detail sheet.

Protect existing landscaped areas. Remove and replant any damaged plant material upon job completion. The replacement material shall be of the same genus and species, and of the same size as the material it is replacing.

INSTALLATION

Two-Wire System: Prior to installation the contractor shall have completed and received certification provided by Hunter Industries (refer to Hunter ACC2 two-wire notes).

Solvent Weld Pipe: Cut all pipe square and deburr. Clean pipe and fittings of foreign material; then apply a small amount of primer while ensuring that any excess is wiped off immediately.

Pipes must cure a minimum of 30 minutes prior to handling and placing into trenches. A longer curing time may be required; refer to the manufacturer's specifications. The pipe must cure a minimum of 24 hours prior to filling with water.

BACKFILL

The Backfill 6" below, 6" above, and around all piping shall be of clean sand and anything beyond that in the trench can be of native material but nothing larger than 2" in diameter.

Mainline pipe depth measured to the top of pipe shall be:

- 24" minimum for 3/4"-2 1/2" PVC with a 30" minimum at vehicular crossings;
30" minimum for 3" & 4" PVC with a 36" minimum at vehicular crossings.
36" minimum for 6" PVC with a 36" minimum at vehicular crossings.

Lateral line depths measured to top of pipe shall be:

- 18" minimum for 3/4"-3" PVC with a 30" minimum at vehicular crossings.
24" minimum for 4" PVC and above with a 30" minimum at vehicular crossings.

Contractor shall backfill all piping, both mainline and laterals, prior to performing any pressure tests. The pipe shall be backfilled with the exception of 2" on each side of every joint (bell fittings, 90's, tees, 45's, etc.).

FLUSHING

Prior to the placement of valves, flush all mainlines for a minimum of 10 minutes or until lines are completely clean of debris, whichever is longer.

Prior to the placement of heads, flush all lateral lines for a minimum of 10 minutes or until lines are completely clean of debris, whichever is longer.

Use screens in heads and adjust heads for proper coverage avoiding excess water on walls, walks and paving.

TESTING

Soil: At a minimum of 2 locations on the site, soil tests for infiltration and texture shall be performed according to the USDA Soil Quality Test Kit Guide. The tests shall be documented in a USDA Soil Worksheet.

Schedule testing with Owner's Representative a minimum of three (3) days in advance of testing.

Contractor to utilize soil test data to inform the irrigation scheduling at the project, using BMP's issued by the Irrigation Association which can be downloaded on line at: https://irrigation.org/IA/Advocacy/Standards-Best-Practices/Landscape-Irrigation-BMPs/IA/Advocacy/Landscape-Irrigation-BMPs.aspx?hkey=936546ad-c87a-41b8-b770-8c4fd2cf931

Read pages 47-52 in Appendix C for how to create irrigation schedules.

Mainline: For HDPE pipe, see HDPE notes.

If these parameters are exceeded, locate the problem; repair it; wait 24 hours and retry the test. This procedure must be followed until the mainline passes the test.

Lateral Lines: The lateral lines must be fully filled to operational pressure and visually checked for leaks. Any leaks detected must be repaired.

Operational Testing -Once the mainline and lateral lines have passed their respective tests, and the system is completely operational, a coverage test and demonstration of the system is required. The irrigation contractor must demonstrate to the owner and/or owner's representative, that proper coverage is obtained and the system works automatically from the controller.

Upon completion of the operational test, run each zone until water begins to puddle or run off. This will allow you to determine the number of irrigation start times necessary to meet the weekly evapotranspiration requirements of the planting material in each zone.

SUBMITTALS

Pre-Construction:

Prior to installation of two-wire irrigation system, a pre-construction meeting shall be conducted with the project owner's representative, installing contractor, and irrigation two-wire manufacturer at no additional cost from manufacturer.

Provide owner and/or owner's representative a PDF package of equipment cut sheet submittals within ten (10) working days from date of Notice to Proceed. PDF shall have a table of contents and index sheet.

After project completion:

As a condition of final acceptance, the Irrigation contractor shall provide the owner with:

- Irrigations As-Builts: shall be provided utilizing a sub-foot Global Navigation Satellite System (GNSS) to accurately locate all mainlines, sleeves, remote control valves, gate valves, independent wire runs, wire splice boxes, controllers, high voltage supply sources/conduit path, control mechanisms, sensors, wells and water source connections, including backflow (if applicable) in Florida East State Plans, MAD 83, and CORS 96 format.
Controller charts - Upon completion of "as-built" prepare controller charts; one per controller.
Grounding Certification - Provide ground certification results for each controller and pump panel grounding grid installed.
Turnover items as specified in Hunter ACC2 two-wire notes.

INSPECTIONS AND COORDINATION MEETINGS REQUIRED - Contractor is required to schedule, perform, and attend the following, and demonstrate to the owner and/or owner's representative to their satisfaction, as follows:

- Pre-construction meeting - Designer and contractor to review entire install process and schedule with owner/general contractor.
Mainline installation inspection(s) - All mainline must be inspected for proper pipe, fittings, depth of coverage, backfill, and installation method.
Mainline pressure test - All mainline shall be pressure tested according to design requirements.
Flow meter calibration - All flow meters must be calibrated.
USDA soil quality tests for infiltration/texture
Coverage and operational test

- Punch list inspection
Final inspection

FINAL ACCEPTANCE

Final acceptance of the irrigation system will be given after the following documents and conditions have been completed and approved. Final payment will not be released until these conditions are satisfied.

- All above inspections are completed, documented, and approved by owner.
Completion and acceptance of "as-built" drawings.
Acceptance of required controller charts and placement inside of controllers.
All other submittals have been made to the satisfaction of the owner.

GUARANTEE

The irrigation system shall be guaranteed for a minimum of one calendar year from the time of final acceptance.

MINIMUM RECOMMENDED IRRIGATION MAINTENANCE PROCEDURES

- Every irrigation zone should be checked monthly and have written reports generated describing the date(s) each zone was inspected, problems identified, date problems repaired, and a list of materials used in the repair.
Turn on each zone from the controller to verify automatic operation.
Check schedules to ensure they are appropriate for the season, plant type, soil type, and irrigation method.
Check setting on pressure regulators to verify proper setting, if present.
Check flow control and adjust as needed; ensure valve closure within 10-15 seconds after deactivation by controller.
Check for leaks - mainline, lateral lines, valves, heads, etc.
Check all heads as follows:
Set proper height (top of sprinkler is 1" below mow height).
Verify head pop-up height: 6" in turf, 12" in ground cover, and pop-up on riser in shrub beds.
Check wiper seal for leaks. If leaking, clean head and re-inspect. Replace head with an identical head if leaking cannot be stopped.
Check all nozzles for proper pattern, clogging, leaks, make/model, etc. Replace as needed.
Check for proper alignment (perfectly vertical), proper coverage area, and Ensure riser height is raised or lowered to accommodate plant growth patterns thereby providing proper coverage.
Verify the pop-up riser retracts after operation. Repair or replace as needed.
Check controller/decoder grounds for resistance (10 ohms or less) once per year. Submit written reports to owner and/or owner's representative.
Check rain shut off device monthly to ensure proper function.
Inspect all filters monthly. Clean, repair, or replace as needed.
Inspect backflow assembly by utilizing a licensed backflow inspector. Inspections should be done annually, at minimum.
Inspect all valve boxes to ensure they are in good condition, lids are in place and locked.
Exercise all gate valves per manufacturer guidelines and recommendations to prevent valves from seizing.
Check pump stations for proper operation, pressures, filtration, settings, etc. Refer to pump station operation manual as needed.
Check and clean intake screens on all suction lines quarterly, at minimum. Clean and/or repair, as needed.
Winterize as weather in your area dictates. Follow manufacturer recommendations and Perform seasonal startup of system as per manufacturer recommendations.
Conduct additional inspections, maintenance tasks, etc. that are particular for your site.

CONTROLLER SCHEDULING NOTE:

ZONES OF SAME TYPE (TURF, SHRUBS/DRIP AND TREE BUBBLERS) SHALL BE GROUPED AND SCHEDULED TO MAXIMIZE AVAILABLE PUMP FLOW AND ENSURE THE TOTAL SITE WATERING WINDOW IS LESS THAN TEN (10) HOURS.

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Table with project information including Miami Beach Office of Capital Improvement Projects, City Manager Alina T. Hudak, Director David Martinez, P.E., City Engineer Cristina Ortega Castineiras, P.E., Architect of Record Brooks + Scarpa, and Neighbourhood 41st St Corridor Revitalization.

THIS SPACE RESERVED FOR PROJECT MILESTONE

HIGH DENSITY POLYETHYLENE PIPE AND FITTINGS  
(DR 11 4710)

PART 1 - GENERAL

1. DESCRIPTION

A. The contractor shall provide solid wall high density polyethylene pipelines which conform to AWWA, and ASTM standards and other reference documents listed under Section 1.02 with flanged and thermal butt fusion joints complete in place.

1.2 REFERENCES

- A. To the extent referenced in this specification section, the standards and documents listed below are included, and made a part of this specification.
- B. In the event of a conflict, the requirements of this specification section prevail.
- C. Unless otherwise specified, references to documents shall mean the latest published edition of the referenced document in effect at the bid date of the project.
- D. ANS/AWWA (www.cwwa.org)
  - 1. ANS/AWWA C900-08 Polyethylene (PE) Pressure Pipe and Tubing, 1/2 in. (13 mm) Through 3 in. (76 mm) for Water Service
  - 2. ANS/AWWA C906-07 Polyethylene (PE) Pressure Pipe and Fittings, 4 in. (100 mm) Through 63 in. (1,600 mm), for Water Distribution and Transmission
  - 3. AWWA M55 Manual of Water Supply Practices, PE Pipe-Design and Installation
- E. Plastics Pipe Institute, PPI (www.plasticspipe.org)
  - 1. PPI Handbook of Polyethylene Pipe - 2009 (2nd Edition)
  - 2. PPI TR-33 Generic Butt Fusion Joining Procedure for Polyethylene Gas Pipe
  - 3. PPI TR-34 Disinfection of Newly Constructed Polyethylene Water Mains
  - 4. PPI TR-41 Generic Saddle Fusion Joining Procedure for Polyethylene Gas Piping
  - 5. PPI TN-42 Recommended Minimum Training Guidelines for PE Pipe Butt Fusion Joining Operators for Municipal and Industrial Projects (2009)
- F. ASTM (www.astm.org)
  - 1. ASTM F 714 Standard Specification for Polyethylene (PE) Plastic Pipe (SDR PR) Based on Outside Diameter
  - 2. ASTM F905 Standard Practice for Qualification of Polyethylene Saddle-Fused Joints
  - 3. ASTM F 1055 Standard Specification for Electrofusion Type Polyethylene Fittings for Outside Diameter Controlled Polyethylene Pipe and Tubing
  - 4. ASTM F 1290 Standard Practice for Electrofusion Joining Polyolefin Pipe and Fittings
  - 5. ASTM F 1412 Standard Specification for Polyolefin Pipe and Fittings for Corrosive Waste Drainage Systems
  - 6. ASTM F1417 Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low Pressure Air 4 December 2009
  - 7. ASTM F 2164 Standard Practice for Field Leak Testing of Polyethylene (PE) Pressure Piping Systems Using Hydrostatic Pressure
  - 8. ASTM F2206 Standard Specification for Fabricated Fittings of Butt Fused Polyethylene (PE) Plastic Pipe, Fittings, Sheet Stock, Plate Stock, or Block Stock
  - 9. ASTM D 2329 Standard Specification for Polyethylene (PE) Plastic Pipe (SDR PR) Based on Controlled Inside Diameter
  - 10. ASTM D 2321 Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
    - 11. ASTM F 2620 Standard Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings
    - 12. ASTM D 2683 Standard Specification for Socket-Type Polyethylene Fittings for Outside Diameter Controlled Polyethylene Pipe and Tubing
    - 13. ASTM D 2737 Standard Specification for Polyethylene (PE) Plastic Tubing
    - 14. ASTM D 2774 Standard Practice for Underground Installation of Thermoplastic Pressure Piping
    - 15. ASTM D 3261 Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing
    - 16. ASTM D 3350-08 Standard Specification for Polyethylene Plastics Pipe and Fittings Materials

1.3 SYSTEM DESIGN PARAMETERS

- A. The pipe system working pressure rating accommodates the normal operating pressure and the repetitive surges. The pressure rating applies at 80°F or less. Piping installed under this project may experience operating temperatures up to 95°F. Associated pressure rating at this elevated temperature shall not be less than 80% of the pressure rating at 90°F.
- B. Per AWWA 901 and C906, the repetitive surge pressure allowance is one half the pressure class of the pipe, and the occasional surge over pressure allowance is equal to the pressure class of the pipe. Allowable Total Pressure during Recurring Surge conditions equals 1.5 times the pipe's pressure class. Allowable Total Pressure during Occasional Surge conditions equals 2.0 times the pipe's pressure class.

Table 1 gives the Pressure Class per AWWA C906, Pressure Rating and Allowable Total Pressure during Recurring and Occasional Surge for PE4710 pipe at 80°F or less.

1.4 SUBMITTALS

- A. Quality Assurance / Control Submittals
  - 1. Affirmation that product shipped meets or exceeds the standards set forth in this specification. This shall be in the form of a written document from the manufacturer attesting to the manufacturing process meeting the standards.
  - 2. Manufacturers recommended fusion procedures for the products.

1.5 DELIVERY - STORAGE - HANDLING

- A. Handle the pipe in accordance with the PPI Handbook of Polyethylene Pipe (2nd Edition), Chapter 2 using approved strapping and equipment rated for the loads encountered. Do not use chains, wire rope, forklifts or other methods or equipment that may gouge or damage the pipe or endanger persons or property. Field storage is to be in compliance with AWWA Manual of Practice M55 Chapter 7, B. If any gouges, scrapes, or other damage to the pipe results in loss of 10% of the pipe wall thickness, cut out that section or do not use.

PART 2 - PRODUCTS FOR 4 INCH THROUGH 54 INCH PIPE, PER AWWA C906

2.1 PIPE

- A. Polyethylene pipe shall be made from HDPE material having a material designation code of PE4710. The material shall meet the requirements of ASTM D 3350. The pipe segments shall be joined using flanges or the thermal butt fusion method.
- B. The pipe and fittings shall meet the requirements of AWWA C906.
- C. Approved manufacturers are: One of the following, or approved equal:
  - 1. Performance Pipe
  - 2. Flying W
  - 3. J.M. Eagle
  - 4. Pipeline Plastics
  - 5. WL Plastics

2.2 FITTINGS

- A. Butt Fusion Fittings - Fittings shall be made of HDPE material with a minimum material designation code of PE4710 and with a minimum Cell Classification as noted in 2.01A. Butt Fusion Fittings shall meet the requirements of ASTM D3261. Molded and fabricated fittings shall have a pressure rating equal to the pipe unless otherwise specified on the plans. All fittings shall meet the requirements of AWWA C906. Markings for molded fittings shall comply with the requirements of ASTM D 3261. Fabricated fittings shall be marked in accordance with ASTM F 2206. Socket fittings shall meet ASTM D 2683.
- B. Electrofusion Fittings - Fittings shall be made of HDPE material with a minimum material designation code of PE4710 and with a minimum Cell Classification as noted in 2.01A. Electrofusion Fittings shall have a manufacturing standard of ASTM F1055. Fittings shall have a pressure rating equal to the pipe unless otherwise specified on the plans. All electrofusion fittings shall be suitable for use as pressure conduits, and have nominal burst values of four times the Working Pressure Rating (WPR) of the fitting. Markings shall be according to ASTM F 1055.
- C. Flanges and Mechanical Joint Adapters (MJ Adapters) - Flanges and Mechanical Joint Adapters shall have a material designation code of PE4710 and a minimum Cell Classification as noted in 2.01A. Flanges and MJ Adapters shall have a pressure rating equal to the pipe unless otherwise specified on the plans. Markings for molded or machined flange adapters or MJ Adapters shall be per ASTM D 3261. Fabricated (including machined) flange adapters shall be per ASTM F 2206.

Van-Stone style, metallic (including stainless steel), convoluted or flat-plate, back-up rings and bolt materials shall follow the guidelines of Plastics Pipe Institute Technical Note # 38, and shall have the bolt-holes and bolt-circles conforming to one of these standards: ASME B16.5 Class 150, ASME B16.47 Series A Class 150, ASME B16.1 Class 125, or AWWA C207 Class 150 Series B, D, or E. The back-up ring shall provide a long term pressure rating equal to or greater than the pressure class of the pipe with which the flange adapter assembly will be used, and each pressure rating shall be marked on the back-up ring. Flange assemblies shall be assembled and torqued according to PPI TN-38 Bolt Torque for Polyethylene Flanged Joints.

2.3 PIPE AND FITTING IDENTIFICATION

- A. The pipe shall be marked in accordance with the standards to which it is manufactured.
- B. Color identification by the use of stripes on pipe to identify pipe service shall be required. If used, stripes or colored exterior pipe product shall be blue for potable water, or green for wastewater/sewage, or purple (lavender) for reclaimed water.

PART 3 - EXECUTION

3.1 JOINING METHODS

- A. Butt Fusion: The pipe shall be joined by the butt fusion procedure outlined in ASTM F 2620 or PPI TR-33. All fusion joints shall be made in compliance with the pipe or fitting manufacturer's recommendations. Fusion joints shall be made by qualified fusion technicians per PPI TN-42.
- B. Saddle Fusion: Saddle fusion could be used to fuse branch saddles, tapping tees, and other HDPE constructs onto the wall of the main pipe. Saddle fusion shall be done in accordance with ASTM F 2620 or TR-41 or the fitting manufacturer's recommendations and PPI TR-41.
- C. Saddle fusion joints shall be made by qualified fusion technicians. Qualification of the fusion technician shall be demonstrated by evidence of fusion training within the past year on the equipment to be utilized on this project (ASTM F905).
- D. Socket Fusion: Socket fusion is not allowed on this project.
- E. Electrofusion joining shall be done in accordance with the manufacturers recommended procedure. Other sources of electrofusion joining information are ASTM F 1290 and PPI TN-34. The process of electrofusion requires an electric source, a transformer, commonly called an electrofusion box that has wire leads, a method to read electronically (by laser or otherwise input the barcode of the fitting, and a fitting that is compatible with the type of electrofusion box used. The electrofusion box must be capable of reading the input parameters and the fusion results for later download to a record file. Qualification of the fusion technician shall be demonstrated by evidence of electrofusion training within the past year on the equipment to be utilized

for this project.

- E. Mechanical:
  - 1. Mechanical connection of HDPE to auxiliary equipment such as valves, pumps, and fittings shall use mechanical joint adapters and other devices in conformance with the PPI Handbook of Polyethylene Pipe, Chapter 9 and AWWA Manual of Practice M55, Chapter 6.
  - 2. Mechanical connections on small pipe under 3" are available to connect HDPE pipe to other HDPE pipe, or to a fitting, or to a transition to another material. The use of stab-fit style couplings is allowed, along with the use of metallic couplings of brass and other materials. When a compression type or mechanical type of coupling is used, the use of a rigid tubular insert stiffener inside the end of the pipe is recommended.
  - 3. Mechanical couplings that wrap around the pipe and act as saddles are made by several manufacturers specifically for HDPE pipe. All such saddles, tapping saddles, couplings, clamps etc. shall be recommended by the manufacturer as being designed for use with HDPE pipe at the pressure class listed in this section.
  - 4. Unless specified by the fitting manufacturer, a restraint harness or concrete anchor is recommended with mechanical couplings to prevent pullout.
  - 5. Mechanical coupling shall be made by qualified technicians. Qualification of the field technician shall be demonstrated by evidence of mechanical coupling training within the past year. This training shall be on the equipment and pipe components to be utilized for this project.

F. Flanged: Flanged connections shall consist of the following:

- 1. A polyethylene flange shall be thermally butt-fused to the stub end of the pipe.
- 2. A back-up ring shall mate with another back-up ring or flange, as required.
- 3. Connections shall be made with bolts and nuts.
- 4. Flanged connections shall be provided with a full-face neoprene gasket.
- 5. All materials shall be compatible to the application.
- 6. Joint Recording - The critical parameters of each fusion joint, as required by the manufacturer and these specifications, shall be recorded either manually or by an electronic data logging device. All fusion joint data shall be included in the Fusion Technician's joint report.

3.2 INSTALLATION

- A. Buried HDPE pipe and fittings shall be installed in accordance with ASTM D2321 or ASTM D2774 for pressure systems and AWWA Manual of Practice M55 Chapter 7.
- B. For pipe buried in normal (dry) soils:
  - a. Pipe embedment - Embedment material shall be Class I, Class II, or Class III, materials as defined by ASTM D-2321 Section 6. The use of Class IV and Class V materials is not recommended, however it may be used only with the approval of the engineer and appropriate compaction.
  - b. Bedding: Pipe bedding shall be in conformance with ASTM D2321 Section 8. Compaction rates should be as specified in ASTM D2321. Deviations shall be approved by the engineer.
  - c. Haunching and backfill shall be as specified in ASTM D 2321 Section 9 with Class I, II, or III materials. Compaction shall be in excess of 95% Proctor.
- C. For pipe buried in saturated (wet) soils:
  - a. Pipe embedment - Embedment material shall be #57 stone compacted in excess of 95% Proctor.
  - b. Bedding: Bedding material shall be #57 stone compacted in excess of 95% Proctor.
  - c. Haunching and backfill shall be rip-rap or shot-rock from blasting activities compacted in excess of 95% Proctor.

3.3 INSPECTION

- A. Inspect the pipe for defects before installation and fusion. Defective, damaged or unsound pipe will be rejected.

3.4 TESTING

- A. Pressure testing shall be conducted in accordance with ASTM F2164, Field Leak Testing of Polyethylene Pressure Piping Systems Using Hydrostatic Pressure. The HDPE pipe shall be filled with water, raised to test pressure and allowed to stabilize. The test pressure shall be 1.5 times the operating pressure at the lowest point in the system. In accordance with section 9.5, the pipe shall pass if the final pressure is within 5% of the test pressure for 1 hour. For safety reasons, hydrostatic testing only will be used.
- B. Quality Control Testing ( On Site Bend Back Test )
  - Prior to HDPE pipe being installed in the trench, at the beginning of the job, the contractor shall cut out the first butt fusion of each pipe size. The contractor shall prepare the sample for the test in accordance with the 'Job Aid/ Bend Back Testing' procedure document prepared by ISCO Industries, or dated Oct. 26, 08 or revised, and in accordance with ASTM D 2637. The samples shall be tested in the presence of the owner's representative and / or the irrigation consultant, all in accordance with testing procedures outlined in the ISCO document. All samples shall be labeled and saved. Testing must be done at 73 degrees F plus or minus 5 degrees. The test temperature and sample size are critical to testing. The purpose of the test is to determine if a good weld was made. A pass means no failures during the bend back test. This means a good weld. A break means a bad weld. Any failure shall require additional testing.

C. Contractor Qualifications

The contractor shall have successfully installed high density polyethylene pipe in golf/turf irrigation projects. References will be required. These reference(s) must provide a satisfactory response or the experience will not be accepted.

If a contractor has not previously successfully installed HDPE pipe for golf/turf irrigation projects, he will be required to have a qualified fusion technician from the pipe supplier for a period of three to five day (at the expense of the contractor). The length of time required for HDPE pipe (fusion and mechanical) training shall be determined by the owner or his representative. The technician must have been trained and have fusion certification. The training must have been completed within the past twelve months. A designated person or persons will be trained by the technician. The training will include the following:

- 1. butt fusion
- 2. socket fusion
- 3. electrofusion
- 4. attachment of mechanical saddles.
- 5. If electrofused or side wall fusion is required, this training must also be complete while the technician is on site.

D. Contractor Equipment Qualifications

If the contractor owns butt fusion equipment, the equipment must be serviced prior to use for this project. The machine must be environmentally friendly and satisfactory working order. The hydraulic system must be leak free. The pressure gage must be checked for accuracy and the thermometer checked.

If a butt fusion machine is rented, it must be rented from company that has a fusion machine service center or centers certified by the butt fusion machine manufacturer. The machine must arrive with certification that the pressure gage and heater thermometer were accurate when shipped.

3.5 CONTRACTOR WARRANTY

LIMITED WARRANTY: Contractor warrants that, for a period of five years from the date of installation, it will re-fuse or repair a fusion connection that is defective in workmanship, provided that Buyer, upon discovery of a defect, promptly notifies Contractor of the defect and allows the Contractor to inspect at the place of installation. If it is determined the fused connection to be defective, Contractor will re-fuse or repair the connection at the jobsite. Contractor does not warrant the product itself, only the fused connection. This warranty does not cover labor or other costs, only the fused connection. Buyer's sole remedy for defective connection shall be to receive replacement fusion of the pipe or fitting as provided in this Limited Warranty.

Other than the above limited warranty, Contractor makes no warranty and expressly disclaims all other warranties, express or implied, including, but not limited to, the warranties of merchantability and fitness for a particular purpose. Contractor's liability arising out of or related to this contract or any product or service supplied by contractor (whether such liability is alleged as a breach of contract, breach of liability or otherwise) shall in no even exceed the original purchase price of the defective connection plus applicable freight costs actually paid by buyer. Contractor will not be liable for any consequential, incidental, special, indirect or punitive damages, loss of profits, loss of business opportunity or other loss even if contractor knew or should have known of the possibility of such damages or losses.

ACC2 TWO-WIRE IRRIGATION PLAN NOTES

DECODERS

CONTROLLER SHALL INTERFACE WITH HUNTER ICD DECODERS, EACH CAPABLE OF CONTROLLING 1, 2, 4, OR 6 VALVES (ICD-100, ICD-200, ICD-400, AND ICD-600)

PROVIDE AN ICD-SEN SENSOR DECODER FOR FLOW SENSOR(S) AND/OR CLIK SENSOR(S) ON TWO WIRE PATH

WIRE CONNECTIONS FROM DECODER OUTPUT TO SOLENOID SHALL BE 14 AWG, TYPE PE  
WIRE DISTANCE FROM DECODER OUTPUT TO SOLENOID UNDER NORMAL CONDITIONS SHALL NOT EXCEED 150-FT

INSTALL IN VALVE BOX ON DECODER STAKE KIT (DECSTAKE-10) WITH BOTTOM OF DECODER FACING UP

CONTRACTOR SHALL INDICATE ASSOCIATED VALVE NUMBER(S) ON MANUFACTURER PROVIDED LABEL ON DECODER WITH PERMANENT MARKER

WIRE

WIRE FOR TWO-WIRE PATH SHALL BE TWISTED AND JACKETED HUNTER IDWIRE, OR APPROVED EQUAL (PAIGE ELECTRIC P7354D). COATED WIRE SHALL NOT BE ACCEPTED AS AN EQUAL. ACCEPTABLE EQUAL PRODUCTS MUST CONSIST OF TWO SEPARATELY PE JACKETED WIRE TWISTED INSIDE OF A PE JACKET

CONTRACTOR SHALL INSTALL IDWIRE1 (14 AWG) FOR WIRE PATH LENGTH UP TO 10,000-FT AND IDWIRE2 (12 AWG) FOR WIRE PATH LENGTH UP TO 15,000-FT. WIRE PATH LENGTHS DECREASE WITH SUBSTITUTED WIRE

WIRE JACKET COLORS SHALL BE SUCH TO FACILITATE THE IDENTIFICATION OF VARIOUS WIRE PATH ZONES; SEE WIRE JACKET CHART FOR WIRE TYPE, COLOR AND ASSOCIATED VALVES

THE CONTROLLER ALLOWS UP TO THREE (3) TWO-WIRE PATHS PER OUTPUT MODULE, CONTRACTOR SHALL NOT CONNECT ANY TWO-WIRE PATH FROM ONE OUTPUT MODULE TO ANOTHER OUTPUT MODULE

WIRE CONNECTION FROM DECODER OUTPUT TO SOLENOID SHALL BE COLORED TO MATCH THE ASSOCIATED DECODER OUTPUT STATION COLOR; RED AND BLUE COLORED WIRES SHALL NOT BE USED FOR CONNECTION BETWEEN DECODER OUTPUT AND SOLENOID

SPICES

ALL CONNECTIONS AND SPICES IN THE RED/BLUE TWO-WIRE PATH MUST BE MADE WITH 3M DBR/Y-6 WATERPROOF CONNECTORS INSTALLED PER MANUFACTURERS INSTRUCTIONS IN VALVE BOX WITH OPEN END OF CONNECTOR FACING DOWN

CONTRACTOR SHALL PROVIDE 36-IN LOOP OF SLACK WIRE, MEASURED FROM TOP OF VALVE BOX, NEATLY COILED INSIDE ALL SPICE BOXES AND VALVE BOXES

ANY SPICES IN THE TWO-WIRE PATH NOT ASSOCIATED WITH A DECODER SHALL BE HOUSED IN SEPARATE VALVE BOXES WITH 36-IN LOOP OF SLACK WIRE

CONTRACTOR SHALL INDICATE TWO-WIRE PATH DIRECTIONS IN PERMANENT MARKER WITHIN 6-IN OF TWO-WIRE SPICE ON WIRE JACKET OR ID TAG ZIP TIED TO WIRE:

INCOMING WIRE SHALL BE MARKED 'CONTROLLER' ON WIRE JACKET OR ID TAG AND MUST INCLUDE ZIP-TIE ATTACHED TO WIRE JACKET

EACH OUTGOING TWO-WIRE PATH SHALL BE MARKED WITH CONNECTED VALVES ON WIRE JACKET

CONTRACTOR SHALL ENSURE ALL CONNECTIONS TO BE WATERTIGHT WITH NO ELECTRICAL LEAKAGE TO GROUND OR SHORTING BETWEEN CONDUCTORS

GROUNDING

ALL GROUNDING AND INSTALLATION OF EQUIPMENT SPECIFIED SHALL BE INSTALLED IN STRICT COMPLIANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS

BOTH THE CONTROLLER AND THE DECODERS SHALL BE GROUND TO GROUND RODS OR PLATES WITH LESS THAN 10 OHMS RESISTANCE

IRRIGATION CONTROLLER AND PAD SHALL NOT FALL WITHIN THE SPHERE OF INFLUENCE OF A GROUND ROD OR PLATE

AT A MINIMUM, EARTH GROUND SHALL BE CONNECTED AT THE FIRST DECODER OF EACH WIRE PATH LEAVING THE CONTROLLER, AND EVERY 12TH VALVE/DECODER OR 1,000-FT OF TWO-WIRE RUN (WHICHEVER IS SHORTER), AND AT THE LAST VALVE/DECODER IN ANY WIRE RUN EXCEEDING 50' FROM MAIN WIRE PATH. IN LIGHTNING PRONE AREAS, GROUNDING EVERY 6TH VALVE/DECODER OR 500-FT OF TWO-WIRE RUN (WHICH EVER IS SHORTER) IS RECOMMENDED

FOR USE OF GROUNDING PLATE:  
SOLID COPPER GROUNDING PLATE SHALL HAVE A PRE-WELDED #6 AWG INSULATED GREEN-YELLOW WIRE

GROUND PLATES ARE TO BE INSTALLED TO A MINIMUM DEPTH OF 30-IN  
GROUND PLATES SHALL BE MADE OF A COPPER ALLOY INTENDED FOR GROUNDING APPLICATIONS AND HAVE MINIMUM DIMENSIONS AS FOLLOWS:

A. FOR GROUNDING CONTROLLERS - 4-IN X 8-FT X 0.0625-IN SOLID COPPER GROUNDING PLATE, A 25-FT CONTINUOUS LENGTH OF 6 AWG, GREEN INSULATED, WITH EXTRUDED YELLOW STRIPE, SOLID BARE COPPER WIRE WELDED TO THE PLATE (PAIGE ELECTRIC 182199IC) AND TWO 50-LB BAGS OF POWER SET EARTH CONTACT MATERIAL OR TWO 50-LB BAGS OF POWERFILL EARTH CONTACT MATERIAL (PAIGE ELECTRIC 1820059) FOR NON-POROUS SOILS

B. FOR GROUNDING DECODERS - 4-IN X 36-UB X 0.0625-IN SOLID COPPER GROUNDING PLATE, A 15-FT CONTINUOUS LENGTH OF 10 AWG, GREEN INSULATED, WITH EXTRUDED YELLOW STRIPE, SOLID BARE COPPER WIRE IS WELDED TO THE PLATE (PAIGE ELECTRIC 182201C) AND ONE 50-LB BAG OF POWER SET EARTH CONTACT MATERIAL OR ONE 50-LB BAGS OF POWERFILL EARTH CONTACT MATERIAL (PAIGE ELECTRIC 1820059) FOR NON-POROUS SOILS

FOR USE OF GROUNDING ROD:  
GROUND ROD SHALL BE 5/8-IN DIAMETER X 10-FT LONG COPPER CLAD STEEL GROUND RODS WITH 15-FT PRE-WELDED #6 AWG INSULATED GREEN-YELLOW WIRE (PAIGE ELECTRIC PART # 182000IC6)

GROUND ROD SHALL BE DRIVEN INTO THE GROUND IN A VERTICAL POSITION OR AN OBLIQUE ANGLE NOT TO EXCEED 45 DEGREES AT A LOCATION 10-FT FROM THE ELECTRONIC EQUIPMENT, THE GROUND PLATE, OR THE WIRES AND CABLES CONNECTED TO EQUIPMENT BEING GROUND

ADDITIONAL GROUND ROD IN DAISY CHAIN INSTALLATION SHALL BE 5/8-IN DIAMETER X 10-FT LONG COPPER CLAD STEEL GROUND RODS WITH 25-FT PRE-WELDED #6 AWG INSULATED GREEN-YELLOW WIRE (PAIGE ELECTRIC PART #182007IC6)

GROUND RODS SHALL BE COVERED BY A VALVE BOX

ALL CIRCUIT COMPONENTS SHALL BE INSTALLED IN STRAIGHT LINES

GROUND ROD AND PLATE LOCATION

CONTRACTOR SHALL LOCATE AND INSTALL GROUND ROD AND/OR PLATE IN AREA OF REGULAR MOIST SOIL TO MAXIMIZE ELECTRICAL CONDUCTIVITY

GROUND ROD AND PLATE CONNECTIONS

CONTRACTOR SHALL USE GADWELD (ERICO) ONE SHOT KITS (PG111) FOR ALL CONNECTIONS (KIT PER MANUFACTURER SPECIFICATIONS AND GUIDELINES)

SURGE PROTECTION (LIGHTNING ARRESTOR)

CONTRACTOR SHALL INSTALL PAIGE ELECTRIC 250090LED LIGHTNING ARRESTOR PER MANUFACTURERS SPECIFICATIONS AS CLOSE TO POWER SOURCE AS POSSIBLE TO PROTECT THE IRRIGATION CONTROLLER FROM SURGES THROUGH 120 OR 240 VAC WIRES

TURNOVER ITEMS

CONTRACTOR SHALL PROVIDE PROJECT OWNER WITH THE FOLLOWING AT COMPLETION AND TURN OVER:  
ACC-2 SD CARD WITH SAVED STATION AND IRRIGATION PROGRAM INFORMATION

PRODUCT MANUALS

IN ADDITION TO IRRIGATION AS-BUILT REQUIREMENTS, THE CONTRACTOR SHALL INCLUDE IN THE AS-BUILT DRAWINGS OF IRRIGATION SYSTEM GRAPHICALLY DEPICTING LOCATION OF TWO-WIRE PATH(S), GROUNDING LOCATION AND TYPE, DECODERS, NON-DECODER WIRE SPICES, INDICATION OF TWO-WIRE SPICE TYPES (1-WAY, 2-WAY, 3-WAY, ETC), AND TERMINATION OF TWO-WIRE PATHS

ICD-HP HANDHELD PROGRAMMER AND DIAGNOSTIC TOOL

ROAM XL HANDHELD REMOTE AND RECEIVER

MANUFACTURER TRAINING

PRIOR TO INSTALLATION THE CONTRACTOR SHALL HAVE COMPLETED AND RECEIVED CERTIFICATION FOR THE FOLLOWING TRAINING MODULES PROVIDED BY HUNTER INDUSTRIES:  
DECODER SPECIALIST PROGRAM

MULTIMETER BASICS COURSE

EXPERT PROGRAM

PRE-CONSTRUCTION MEETING

PRIOR TO INSTALLATION OF TWO-WIRE IRRIGATION SYSTEM, A PRE-CONSTRUCTION MEETING SHALL BE CONDUCTED WITH PROJECT OWNER'S REPRESENTATIVE AND INSTALLING CONTRACTOR

Masuen Consulting LLC  
Water Management Consultants  
301 S. Washington, Suite F  
Newport, WA 99156  
Telephone (866) 928-1533  
Fax (800) 928-1534

PROUDLY DESIGNED AND PRODUCED IN THE USA

MIAMI BEACH  
OFFICE OF CAPITAL IMPROVEMENT PROJECTS  
1701 MERIDIAN AVENUE, MIAMI BEACH, FL 33139

CITY MANAGER: ALINA T. HUDAK	5			
DIRECTOR: DAVID MARTINEZ, P.E.	4			
CITY ENGINEER: CRISTINA ORTEGA CASTINEIRAS, P.E.	3			
	2			
	1			
NO. DATE	REVISION		APPD. BY	

BROOKS + SCARPA  
1147 NE 7th Ave  
Fort Lauderdale, FL 33304

ARCHITECT OF RECORD:  
Jeffrey Huber  
#AR65514  
#LA6667547

ARCHITECT OF RECORD:  
DESIGN ARCHITECT: TFP  
DRAWN BY: TFP  
CHECKER: JS/MO  
SCALE: N.T.S.

NEIGHBORHOOD:  
41ST ST CORRIDOR REVITALIZATION

TITLE:  
GENERAL NOTES

File Name: 2024\_0501\_41STCORR - IRR - 60%DD UP.dwg  
Date: 5/3/2024

Drawing:  
IR0-01

THIS SPACE RESERVED FOR PROJECT MILESTONE

IRRIGATION HEAD LEGEND					
SYMBOL QUANTITY	SYMBOL	DESCRIPTION	DETAIL DESIGN	PSI	GPM PER SYMBOL
338	■	EACH SYMBOL DENOTES TWO (2) RAIN BIRD 1804-SAM-1401 FLOOD BUBBLERS	Q	30	0.50
19	Ⓣ	RAIN BIRD 1806-SAM-PRS-30 W/ HUNTER MPCORNER NOZZLE ADJ ARC 0-90	R	30	VAR
38	Ⓣ	RAIN BIRD 1812-SAM-PRS-30 W/ HUNTER MPCORNER NOZZLE ADJ ARC 0-90	S	30	VAR
90	Ⓣ	RAIN BIRD 1806-SAM-PRS-30 W/ HUNTER MP1000 NOZZLE MAROON ADJ ARC 90-210	R	30	VAR
1	Ⓣ	RAIN BIRD 1806-SAM-PRS-30 W/ HUNTER MP1000 NOZZLE LIGHT BLUE ADJ ARC 210-270	R	30	VAR
98	Ⓣ	RAIN BIRD 1812-SAM-PRS-30 W/ HUNTER MP1000 NOZZLE MAROON ADJ ARC 90-210	S	30	VAR
9	Ⓣ	RAIN BIRD 1812-SAM-PRS-30 W/ HUNTER MP2000 NOZZLE BLACK FULL	S	30	VAR
1	Ⓣ	RAIN BIRD 1812-SAM-PRS-30 W/ HUNTER MP2000 NOZZLE GREEN ADJ ARC 210-270	S	30	VAR
7	Ⓣ	RAIN BIRD 1812-SAM-PRS-30 W/ HUNTER MP3000 NOZZLE ADJ ARC 210-270	S	30	VAR
4	Ⓣ	RAIN BIRD 1806-SAM-PRS-30 W/ HUNTER MP3000 NOZZLE ADJ ARC 90-210	R	30	VAR
15	Ⓣ	RAIN BIRD 1806-SAM-PRS-30 W/ HUNTER MPCORNER NOZZLE RST	R	30	VAR
14	Ⓣ	RAIN BIRD 1806-SAM-PRS-30 W/ HUNTER MPCORNER NOZZLE LST	R	30	VAR
59	Ⓣ	RAIN BIRD 1806-SAM-PRS-30 W/ HUNTER MPCORNER NOZZLE SST	R	30	VAR
59	Ⓣ	RAIN BIRD 1812-SAM-PRS-30 W/ HUNTER MPCORNER NOZZLE RST	S	30	VAR
57	Ⓣ	RAIN BIRD 1812-SAM-PRS-30 W/ HUNTER MPCORNER NOZZLE LST	S	30	VAR
130	Ⓣ	RAIN BIRD 1812-SAM-PRS-30 W/ HUNTER MPSTRIP NOZZLE SST	S	30	VAR

IRRIGATION LEGEND			
QTY	SYM	DESCRIPTION	DET.
1	1" 1.00	STATION NUMBER GALLONS PER MINUTE-CATALOG FLOW VALVE SIZE	
	M	LINE SIZE BY 3" TAP, MAXIMUM 10' OF 3" POLYETHYLENE SERVICE LINE AND A PROPOSED 2" POTABLE WATER METER (ALL BY OTHERS)	A
1	P	2" FEBCO 825Y REDUCED PRESSURE BACKFLOW ASSEMBLY	A1 A2
13	⊙	RAIN BIRD PEB SERIES REMOTE CONTROL VALVE (SIZE PER PLAN) WITH A HUNTER ICD-100 SINGLE-STATION DECODER ON DECSTAKE-10 DECODER STAKE KIT, AND NIBCO T-113 GATE VALVE IN A CARSON 1220 JUMBO VALVE BOX WITH BOLT DOWN LID	B1 B2
1	C	HUNTER ACC2 DECODER 75-STATION CONTROLLER MODEL #AC2-75D-PP, WITH PLASTIC PEDESTAL MOUNT WITH GROUNDING GRID (INCLUDING BOTH GROUNDING ROD AND GROUNDING PLATE) WITH A HUNTER WIRELESS HAND-HELD PROGRAMMER MODEL #ICD-HP	C
1	R	POLE MOUNTED HUNTER ET/RAIN/FREEZE SENSOR MODEL #SOLAR SYNC, ROUTE SENSOR WIRES TO CONTROLLER IN 1" ELECTRICAL CONDUIT (WITH HUNTER ICD-SEN DECODER IF SENSOR CONNECTED TO TWO WIRE PATH AND NOT WIRED DIRECTLY TO ACC2 CONTROLLER)	C1
1	MS	IRROMETER WATERMARK SOIL MOISTURE SENSOR MODEL #200SS WITH WS-AC WATERSWITCH AND HUNTER ICD-SEN DECODER	C4
4	⊕	AQUAFUSE CONTROLFLO DUCTILE IRON HDPE WELD-ON GATE VALVE WITH POLYETHYLENE ENDS (LINE SIZE) IN A CARSON 1419 BOX	D
		CLASS 200 PVC LATERAL LINE W/ SCH 40 SOLVENT WELD PVC FITTINGS (SIZE PER PLAN, MINIMUM PIPE SIZE SHALL BE 3/4", NO 1/2" PIPES PERMITTED)	L
		DR11-4710 IPS H.D.P.E. MAINLINE (SIZE PER PLAN) WITH FUSION WELD FITTINGS, AND A PARALLEL RUN OF 1-1/2" GRAY SCH 40 ELECTRICAL CONDUIT WITH LONG-RADII SWEEPS AND SOLVENT WELD FITTINGS FOR CONTROL WIRE (WITH JUNCTION/PULL BOXES FOR TWO-WIRE PATH PER PLAN DETAILS AND MANUFACTURER GUIDELINES)	L
		(NOTE: H.D.P.E. MAINLINE TO REMAIN UNSLEEVED UNDER HARDSCAPES AND/OR ROADWAY CROSSINGS, TYP. FOR THE TWO-WIRE PATH IN CONDUIT, AT EVERY ROADWAY CROSSING INSTALL A JUNCTION/PULL BOX ON EITHER SIDE, TYP)	
		SCH 40 GRAY PVC ELECTRICAL CONDUIT, WITH SCH 40 PVC FITTINGS WITH LONG-RADII SWEEPS (SIZE PER PLAN)	L
		CLASS 200 PVC SLEEVES W/SCH 40 SOLVENT-WELD PVC FITTINGS (SIZE PER PLAN)	O
		NOTE: EVERY MAINLINE SLEEVE/SLEEVE LOCATION SHALL BE ACCOMPANIED BY AN ADDITIONAL 2" SLEEVE FOR IRRIGATION CONTROL WIRES	
QUANTITIES GIVEN ARE FOR CONTRACTOR CONVENIENCE ONLY. THE ACCURACY IS NOT GUARANTEED. ALL QUANTITIES SHALL BE VERIFIED.			
*DET (ON THE LEGEND) - THE LETTER IN THIS COLUMN DENOTES THE CORRESPONDING DETAIL SHOWN ON THE DETAIL SHEET.			
** PRESSURE REGULATORS: PRL30: 0.5-8.0 GPM PR30HF: 10.0-32.0 GPM PRU: 20-100 GPM			

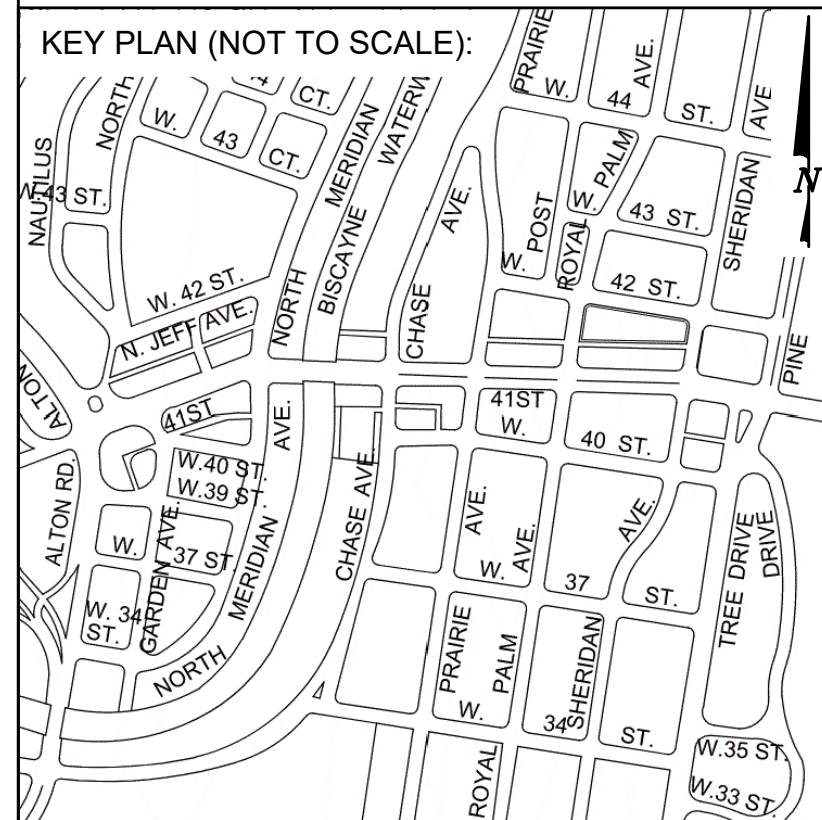
**MAINLINE LOCATION/ROUTING NOTE:**

MAINLINE LOCATION, LATERAL PIPES, CONDUITS, ETC., WHERE SHOWN/DRAWN ON THE IRRIGATION PLAN, ARE TO BE CONSIDERED "SCHEMATIC" AND ARE SHOWN FOR GRAPHIC, AND OVERALL DESIGN PLAN CLARITY, PURPOSES ONLY AND SHALL BE FILED-ADJUSTED AS REQUIRED. DO NOT WILLFULLY INSTALL THE MAINLINE (OR ANY SYSTEM COMPONENT) AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT AN OBSTRUCTION DICTATES MINIMAL LOCATION ADJUSTMENTS

IRRIGATION CONTRACTOR IS TO INSTALL MAINLINE AT THE BACK OF CURB, FRONT OF WALK, BACK OF WALK, OR ADJACENT TO OTHER HARDSCAPES TO FACILITATE FUTURE LOCATION AND TO PROTECT FROM DAMAGE. ENSURE MAINLINE IS INSTALLED ACCORDING TO THE IRRIGATION SPECIFICATIONS AND DETAILS



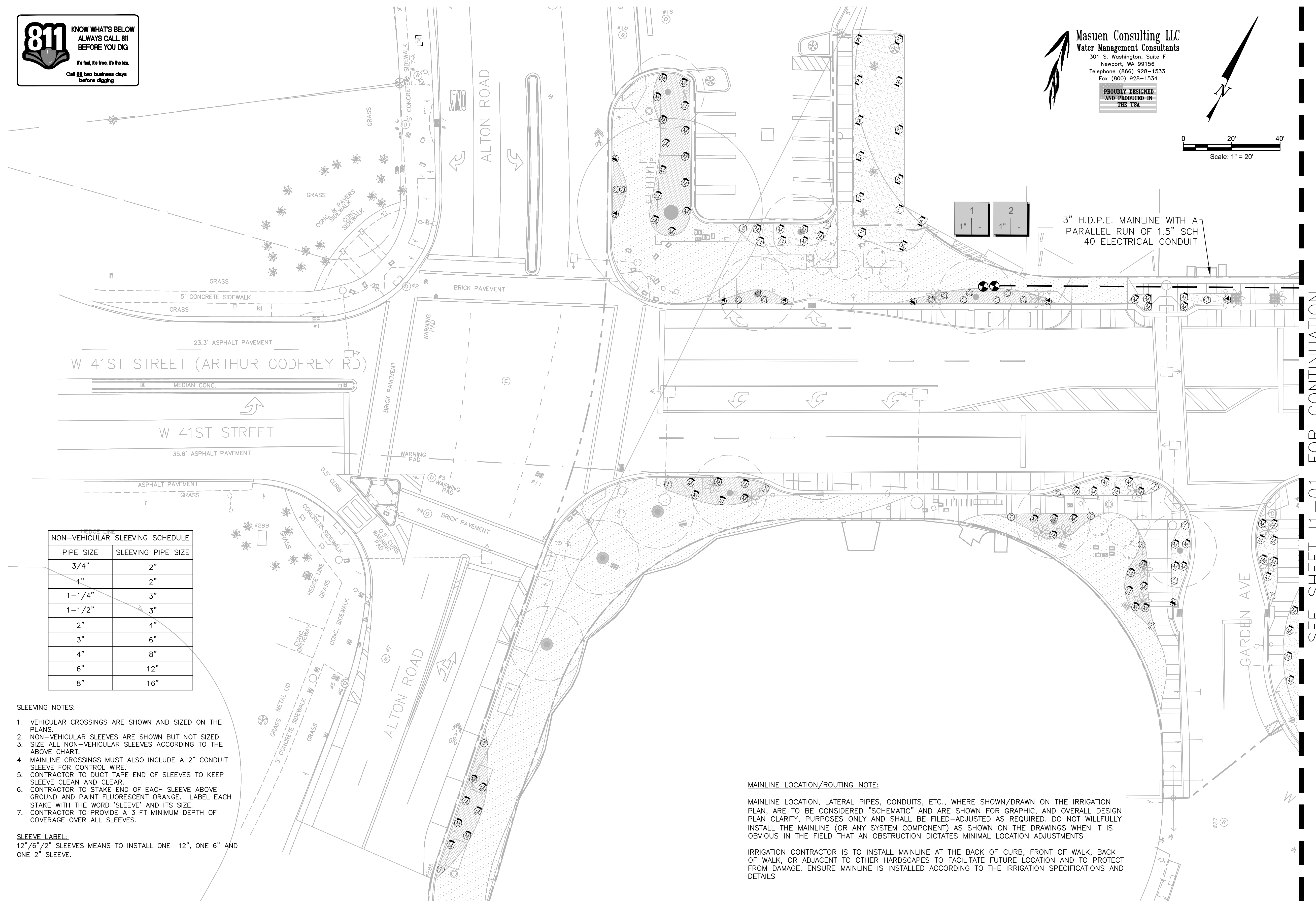
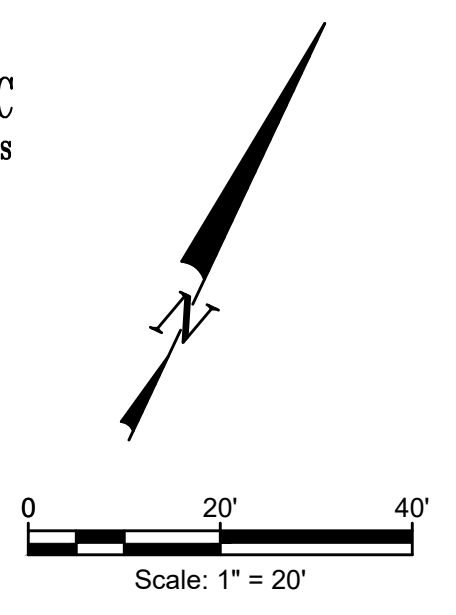
**NOTES:**



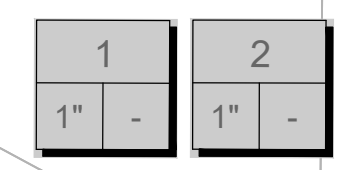


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PROUDLY DESIGNED AND PRODUCED IN THE USA



3" H.D.P.E. MAINLINE WITH A PARALLEL RUN OF 1.5" SCH 40 ELECTRICAL CONDUIT



NON-VEHICULAR SLEEVING SCHEDULE

PIPE SIZE	SLEEVING PIPE SIZE
3/4"	2"
1"	2"
1-1/4"	3"
1-1/2"	3"
2"	4"
3"	6"
4"	8"
6"	12"
8"	16"

- SLEEVING NOTES:**
- VEHICULAR CROSSINGS ARE SHOWN AND SIZED ON THE PLANS.
  - NON-VEHICULAR SLEEVES ARE SHOWN BUT NOT SIZED.
  - SIZE ALL NON-VEHICULAR SLEEVES ACCORDING TO THE ABOVE CHART.
  - MAINLINE CROSSINGS MUST ALSO INCLUDE A 2" CONDUIT SLEEVE FOR CONTROL WIRE.
  - CONTRACTOR TO DUCT TAPE END OF SLEEVES TO KEEP SLEEVE CLEAN AND CLEAR.
  - CONTRACTOR TO STAKE END OF EACH SLEEVE ABOVE GROUND AND PAINT FLUORESCENT ORANGE. LABEL EACH STAKE WITH THE WORD 'SLEEVE' AND ITS SIZE.
  - CONTRACTOR TO PROVIDE A 3 FT MINIMUM DEPTH OF COVERAGE OVER ALL SLEEVES.

**SLEEVE LABEL:**  
 12"/6"/2" SLEEVES MEANS TO INSTALL ONE 12", ONE 6" AND ONE 2" SLEEVE.

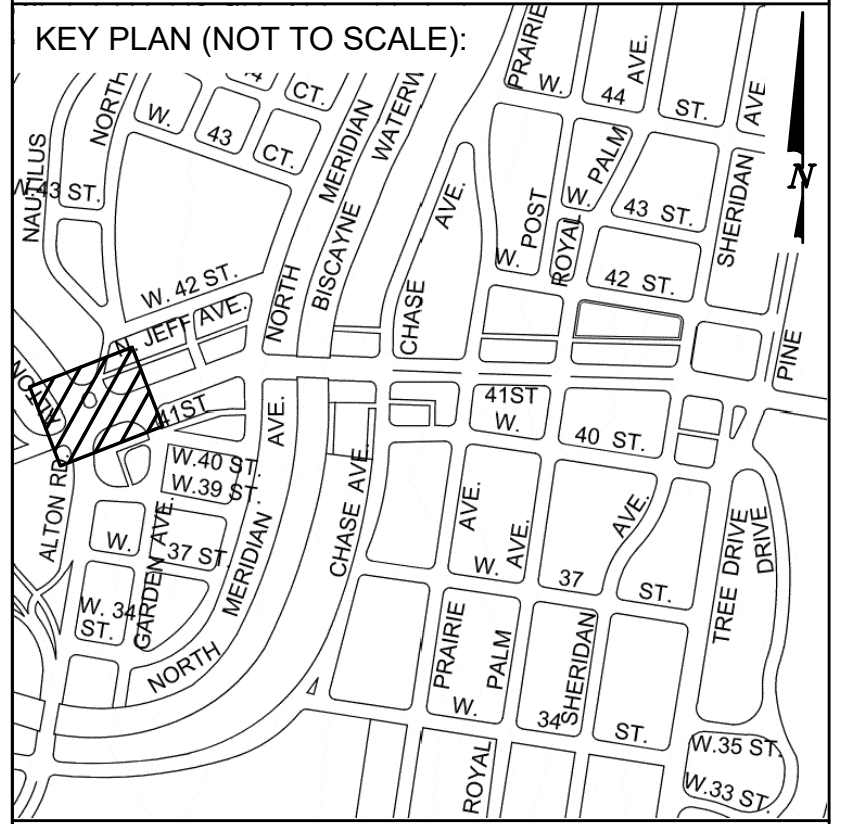
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SEE SHEET 11-01 FOR CONTINUATION

NOTES:



ARCH. SEAL:

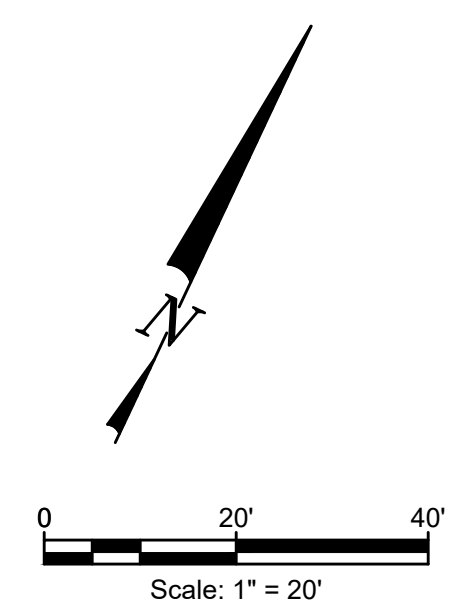
 OFFICE OF CAPITAL IMPROVEMENT PROJECTS <small>1701 MERIDIAN AVENUE, MIAMI BEACH, FL 33139</small>	CITY MANAGER: ALINA T. HUDAK DIRECTOR: DAVID MARTINEZ, P.E. PUBLIC WORK DIRECTOR: JOE GOMEZ, P.E. CITY ENGINEER: CRISTINA ORTEGA CASTINEIRAS, P.E.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>5</td><td></td><td></td><td></td></tr> <tr><td>4</td><td></td><td></td><td></td></tr> <tr><td>3</td><td></td><td></td><td></td></tr> <tr><td>2</td><td></td><td></td><td></td></tr> <tr><td>1</td><td></td><td></td><td></td></tr> <tr><td>NO.</td><td>DATE</td><td>REVISION</td><td>APPD. BY</td></tr> </table>	5				4				3				2				1				NO.	DATE	REVISION	APPD. BY	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="text-align: center;"></td></tr> <tr><td style="text-align: center;">BROOKS + SCARPA 1147 NE 7th Ave Fort Lauderdale, FL 33304</td></tr> </table>		BROOKS + SCARPA 1147 NE 7th Ave Fort Lauderdale, FL 33304	ARCHITECT OF RECORD: Jeffrey Huber #AR05514 #LA6667547	ARCHITECT OF RECORD: DESIGN ARCHITECT: JFP DRAWN BY: JFP CHECKER: JS/MO SCALE: 1"=20'	NEIGHBORHOOD: <p style="text-align: center;"><b>41ST ST CORRIDOR REVITALIZATION</b></p> TITLE: <p style="text-align: center;"><b>IRRIGATION PLAN</b></p>	File Name: 2024_0501_41STCORR - IRR - 60%DD UP.dwg Drawing: <p style="text-align: center;"><b>IR1-01</b></p>
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BROOKS + SCARPA 1147 NE 7th Ave Fort Lauderdale, FL 33304																																	
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NON-VEHICULAR SLEEVING SCHEDULE	
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3/4"	2"
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2"	4"
3"	6"
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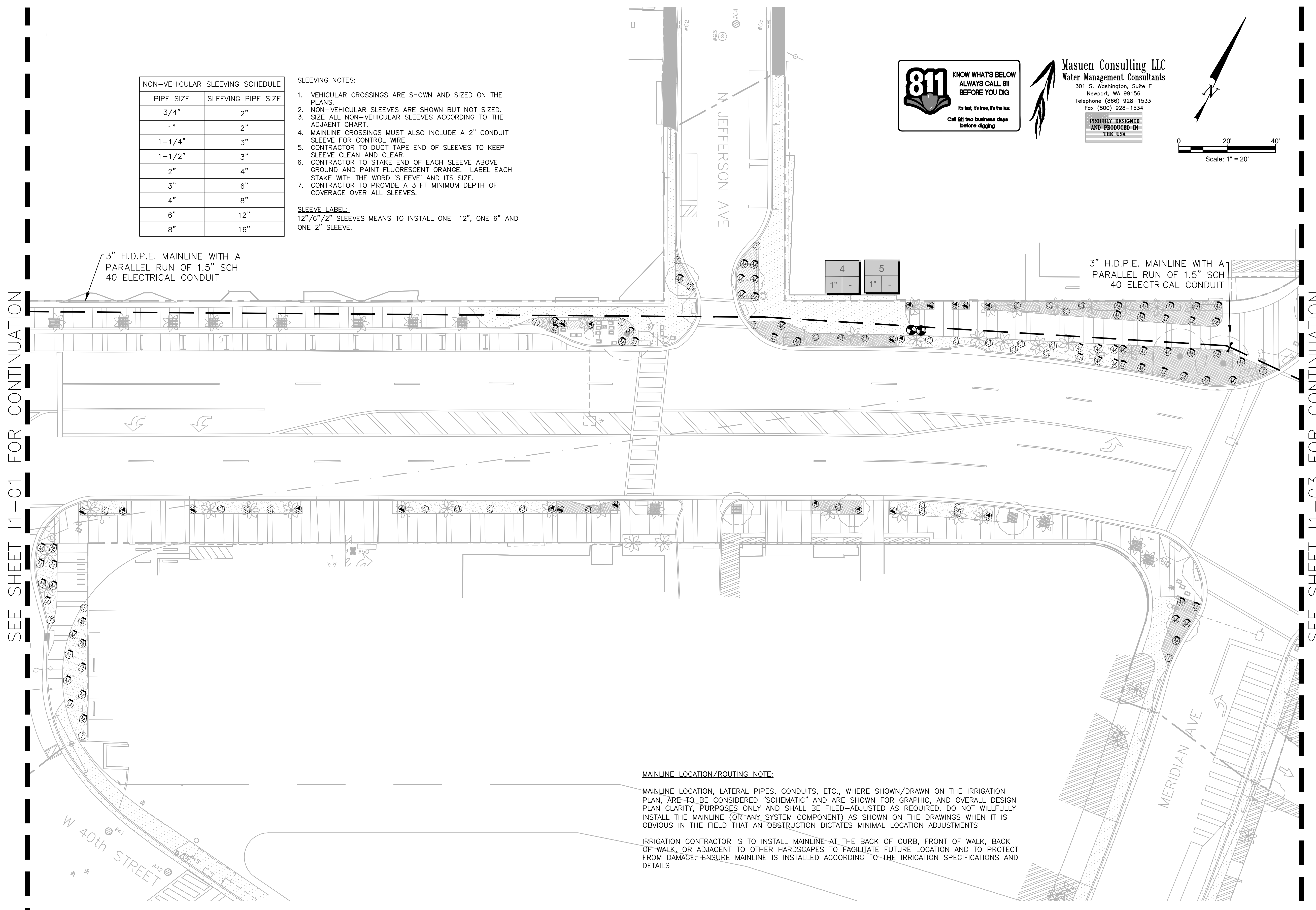


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SEE SHEET 11-01 FOR CONTINUATION

SEE SHEET 11-03 FOR CONTINUATION

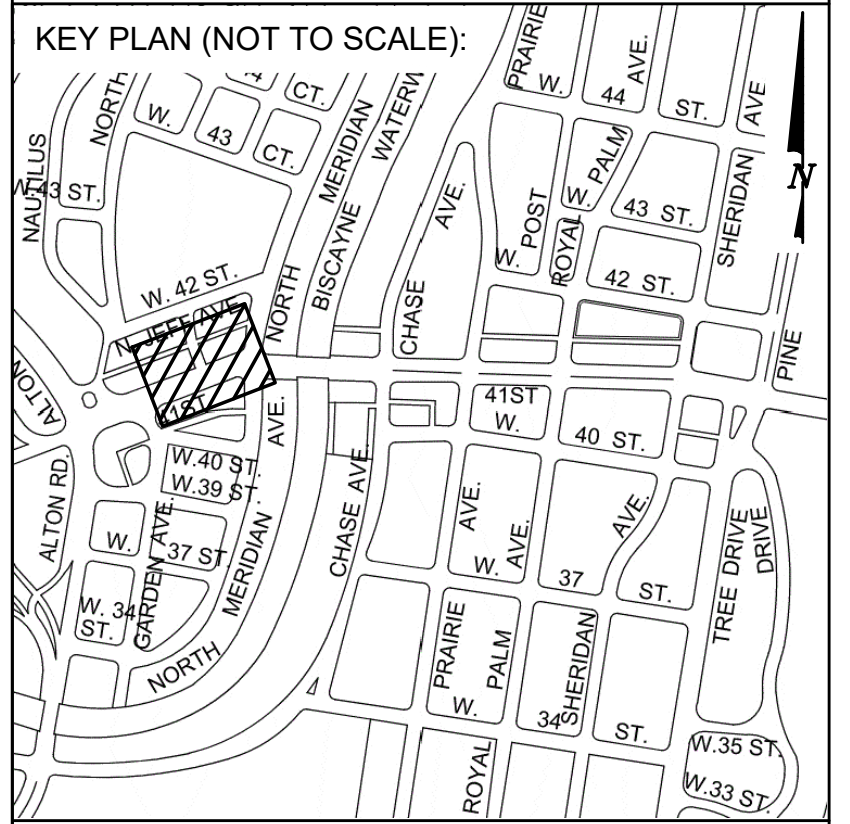


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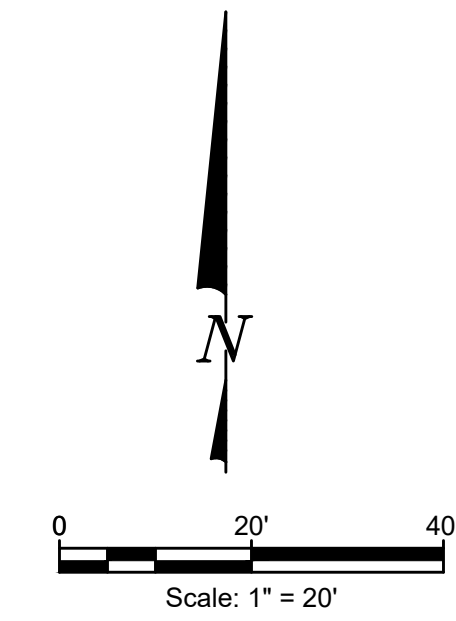
NOTES:



ARCH. SEAL:

 <b>OFFICE OF CAPITAL IMPROVEMENT PROJECTS</b> <small>1701 MERIDIAN AVENUE, MIAMI BEACH, FL 33139</small>	CITY MANAGER: ALINA T. HUDAK DIRECTOR: DAVID MARTINEZ, P.E. PUBLIC WORK DIRECTOR: JOE GOMEZ, P.E. CITY ENGINEER: CRISTINA ORTEGA CASTINEIRAS, P.E.	5				 BROOKS + SCARPA 1147 NE 7th Ave Fort Lauderdale, FL 33304	ARCHITECT OF RECORD: ARCHITECT OF RECORD: DESIGN ARCHITECT: JFP DRAWN BY: JFP CHECKER: JS/MO SCALE: 1"=20'	NEIGHBORHOOD: <b>41ST ST CORRIDOR REVITALIZATION</b>	FILE NAME: 2024_0501_41STCORR - IRR - 60%DD UP.dwg DRAWING: <b>IR1-02</b>
		NO.	DATE	REVISION	APPD. BY				

NOTES:



NON-VEHICULAR SLEEVING SCHEDULE	
PIPE SIZE	SLEEVING PIPE SIZE
3/4"	2"
1"	2"
1-1/4"	3"
1-1/2"	3"
2"	4"
3"	6"
4"	8"
6"	12"
8"	16"

**SLEEVING NOTES:**

1. VEHICULAR CROSSINGS ARE SHOWN AND SIZED ON THE PLANS.
2. NON-VEHICULAR SLEEVES ARE SHOWN BUT NOT SIZED.
3. SIZE ALL NON-VEHICULAR SLEEVES ACCORDING TO THE ADJACENT CHART.
4. MAINLINE CROSSINGS MUST ALSO INCLUDE A 2" CONDUIT SLEEVE FOR CONTROL WIRE.
5. CONTRACTOR TO DUCT TAPE END OF SLEEVES TO KEEP SLEEVE CLEAN AND CLEAR.
6. CONTRACTOR TO STAKE END OF EACH SLEEVE ABOVE GROUND AND PAINT FLUORESCENT ORANGE. LABEL EACH STAKE WITH THE WORD 'SLEEVE' AND ITS SIZE.
7. CONTRACTOR TO PROVIDE A 3 FT MINIMUM DEPTH OF COVERAGE OVER ALL SLEEVES.

**SLEEVE LABEL:**

12"/6"/2" SLEEVES MEANS TO INSTALL ONE 12", ONE 6" AND ONE 2" SLEEVE.

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CORRIDOR MAP SR 112, FROM SR 907 (ALTON ROAD) TO STATE ROAD NO. A-1-A (COLLINS AVENUE) SECTION 87016, DATE 10-18-06

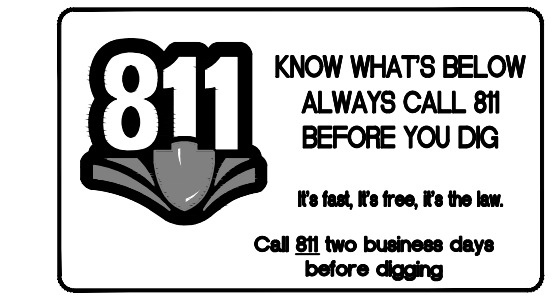
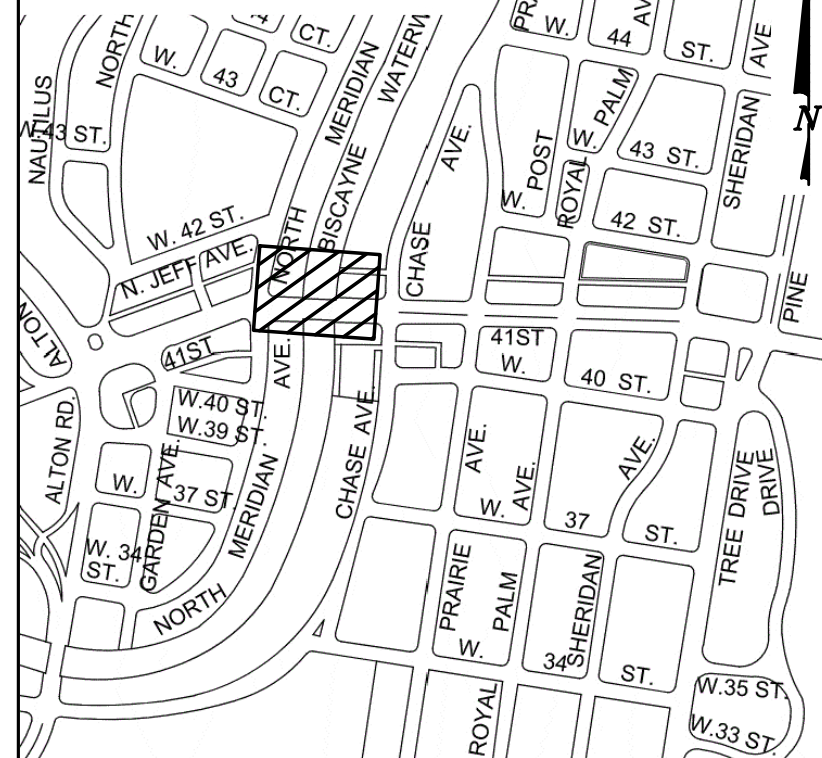
3" H.D.P.E. MAINLINE WITH A PARALLEL RUN OF 1.5" SCH 40 ELECTRICAL CONDUIT

3" H.D.P.E. MAINLINE WITH A PARALLEL RUN OF 1.5" SCH 40 ELECTRICAL CONDUIT

SEE SHEET 11-02 FOR CONTINUATION

SEE SHEET 11-04 FOR CONTINUATION

**KEY PLAN (NOT TO SCALE):**



**Masuen Consulting LLC**  
 Water Management Consultants  
 301 S. Washington, Suite F  
 Newport, WA 99156  
 Telephone (866) 928-1533  
 Fax (800) 928-1534

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ARCH. SEAL:

**MIAMI BEACH**

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 1701 MERIDIAN AVENUE, MIAMI BEACH, FL 33139

CITY MANAGER: ALINA T. HUDAK  
 DIRECTOR: DAVID MARTINEZ, P.E.  
 PUBLIC WORK DIRECTOR: JOE GOMEZ, P.E.  
 CITY ENGINEER: CRISTINA ORTEGA CASTINEIRAS, P.E.

NO.	DATE	REVISION	APP'D. BY
5			
4			
3			
2			
1			

**BROOKS + SCARPA**  
 BROOKS + SCARPA  
 1147 NE 7th Ave  
 Fort Lauderdale, FL 33304

ARCHITECT OF RECORD:  
 Jeffrey Huber  
 #AR6514  
 #LA6667547

ARCHITECT OF RECORD:  
 DESIGN ARCHITECT: JFP  
 DRAWN BY: JFP  
 CHECKER: JS/MO  
 SCALE: 1"=20'

NEIGHBORHOOD: 41ST ST CORRIDOR REVITALIZATION

TITLE: IRRIGATION PLAN

File Name: 2024\_0501\_41STCORR - IRR - 60%DD UP.dwg

Date: 4/17/2023

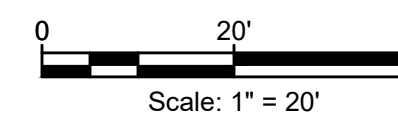
Drawing: **IR1-03**

NOTES:

PIPE SIZE	SLEEVING PIPE SIZE
3/4"	2"
1"	2"
1-1/4"	3"
1-1/2"	3"
2"	4"
3"	6"
4"	8"
6"	12"
8"	16"

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**SLEEVE LABEL:**  
12"/6"/2" SLEEVES MEANS TO INSTALL ONE 12", ONE 6" AND ONE 2" SLEEVE.



P.O.C.: 2" POTABLE WATER METER AND 2" REDUCED PRESSURE BACKFLOW ASSEMBLY (ALL BY OTHERS, SEE CIVIL PLAN)

CONTROLLER, SOLAR SYNC SENSOR AND GROUNDING

3" H.D.P.E. MAINLINE WITH A PARALLEL RUN OF 1.5" SCH 40 ELECTRICAL CONDUIT

3" H.D.P.E. MAINLINE WITH A PARALLEL RUN OF 1.5" SCH 40 ELECTRICAL CONDUIT

2" SLEEVE

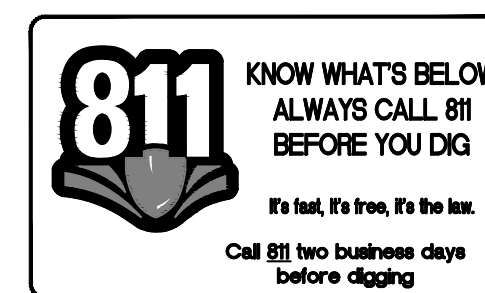
SEE SHEET 11-03 FOR CONTINUATION

SEE SHEET 11-05 FOR CONTINUATION

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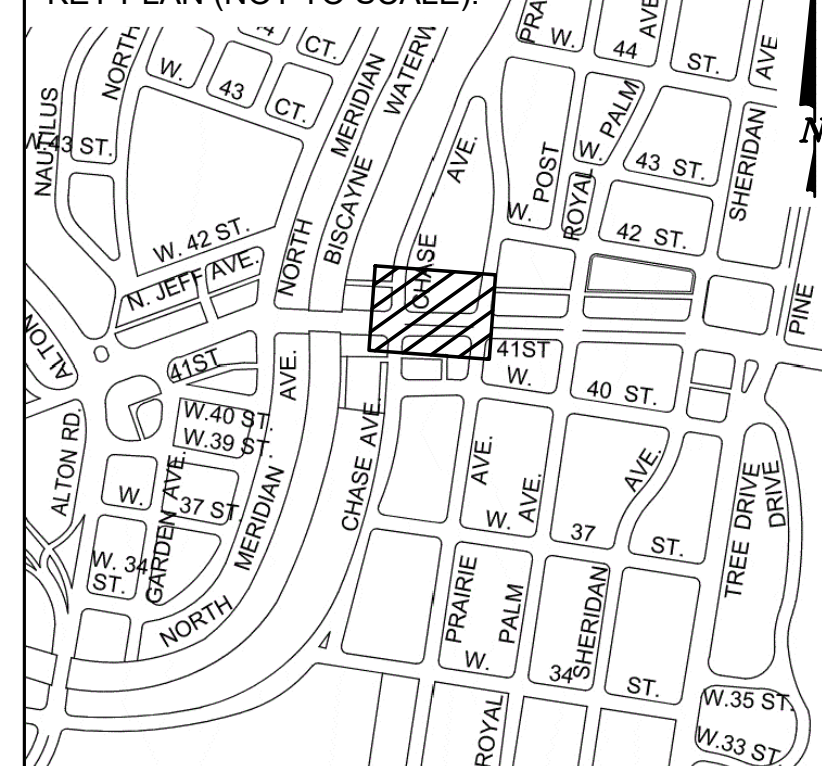
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Fax (800) 928-1534

PROUDLY DESIGNED AND PRODUCED IN THE USA

**KEY PLAN (NOT TO SCALE):**



ARCH. SEAL:

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1701 MERIDIAN AVENUE, MIAMI BEACH, FL 33139

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PUBLIC WORK DIRECTOR: JOE GOMEZ, P.E.  
CITY ENGINEER: CRISTINA ORTEGA CASTINEIRAS, P.E.

NO.	DATE	REVISION	APPD. BY
5			
4			
3			
2			
1			



BROOKS + SCARPA  
1147 NE 7th Ave  
Fort Lauderdale, FL 33304

ARCHITECT OF RECORD:  
Jeffrey Huber  
#AR0514  
#LA667547

ARCHITECT OF RECORD:  
DESIGN ARCHITECT: JFP  
DRAWN BY: JFP  
CHECKER: JS/MO  
SCALE: 1"=20'

NEIGHBORHOOD: 41ST ST CORRIDOR REVITALIZATION

TITLE: IRRIGATION PLAN

File Name: 2024\_0501\_41STCORR - IRR - 60%DD UP.dwg

Date: 4/17/2023

Drawing: **IR1-04**

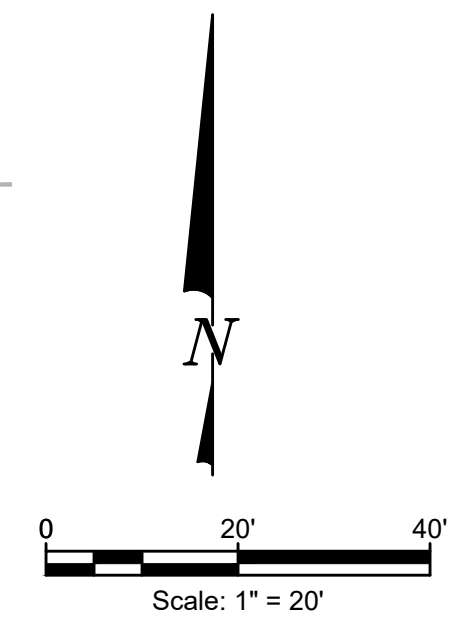
NON-VEHICULAR SLEEVING SCHEDULE	
PIPE SIZE	SLEEVING PIPE SIZE
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SEE SHEET 11-04 FOR CONTINUATION

SEE SHEET 11-06 FOR CONTINUATION

3" H.D.P.E. MAINLINE WITH A PARALLEL RUN OF 1.5" SCH 40 ELECTRICAL CONDUIT

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**MAINLINE LOCATION/ROUTING NOTE:**

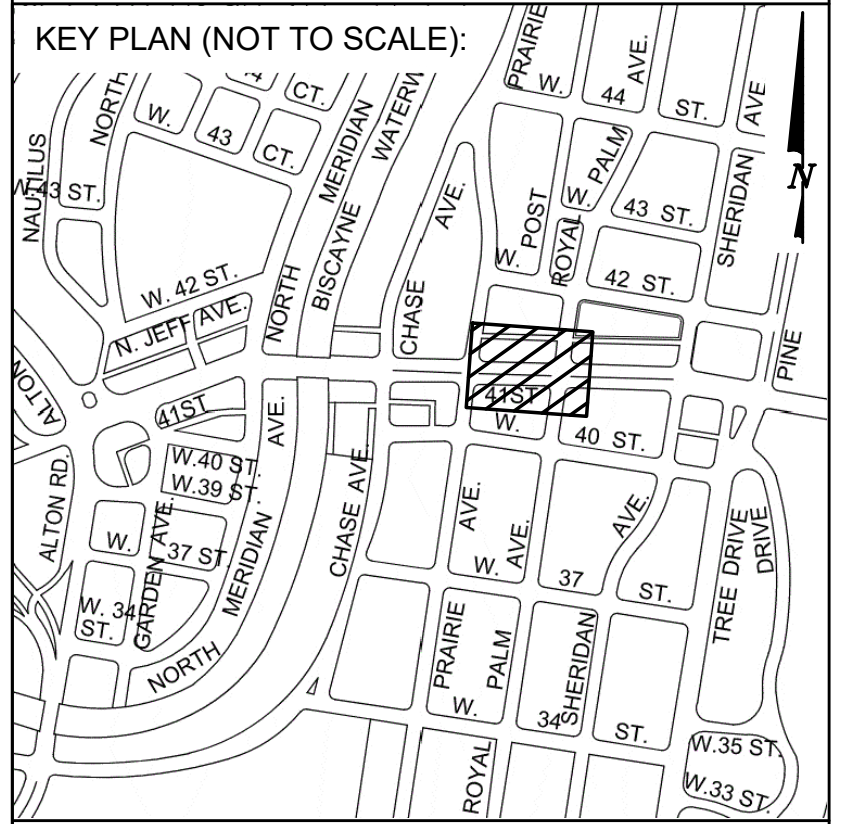
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		NO.	DATE	REVISION	APPD. BY					

NON-VEHICULAR SLEEVING SCHEDULE	
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**SLEEVING NOTES:**

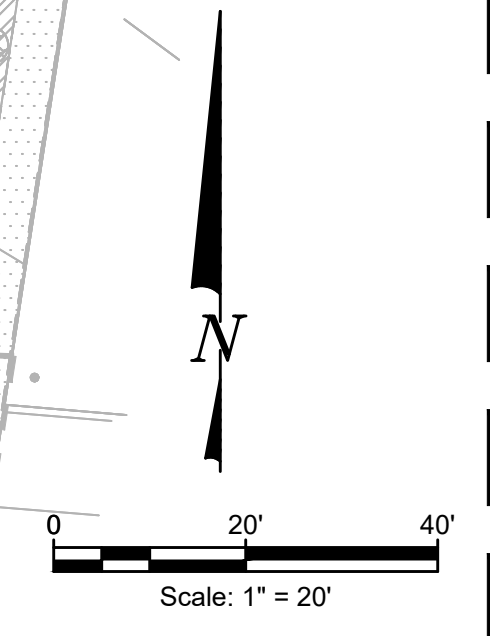
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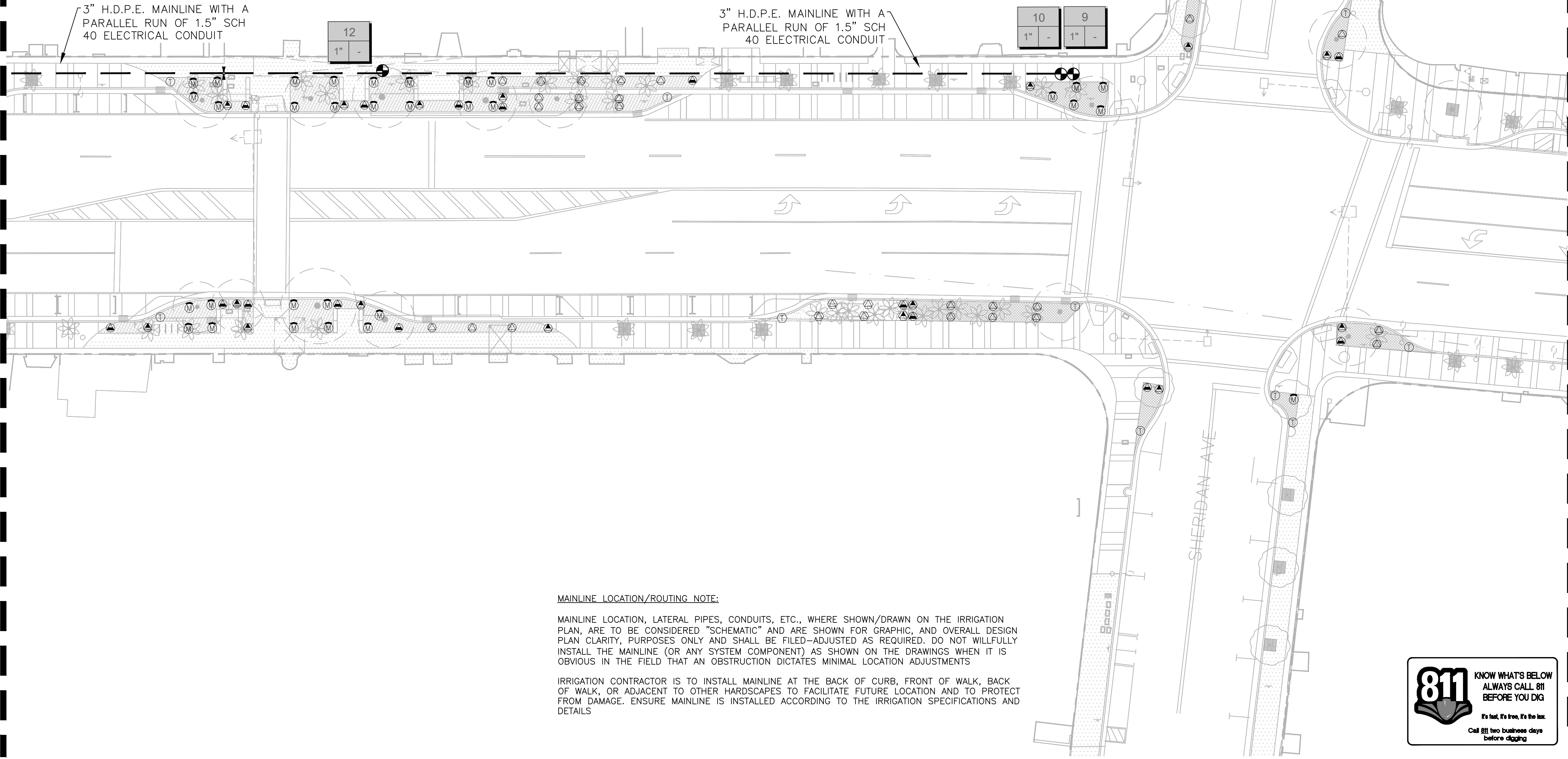
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SEE SHEET 11-05 FOR CONTINUATION

SEE SHEET 11-07 FOR CONTINUATION

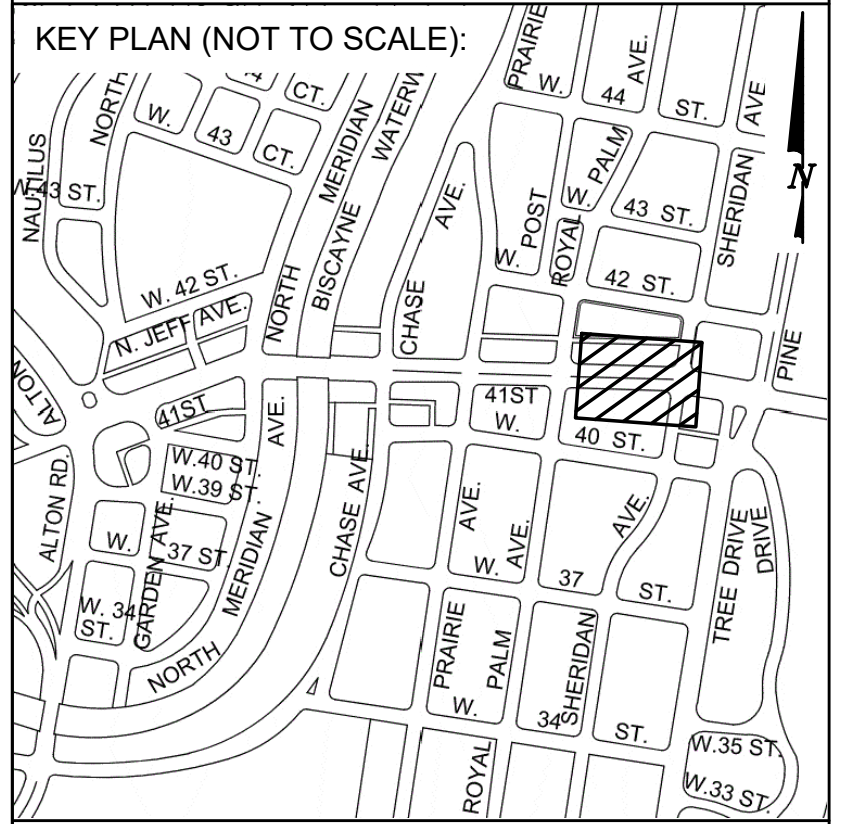


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**NOTES:**



ARCH. SEAL:



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SEE SHEET 11-06 FOR CONTINUATION



NON-VEHICULAR SLEEVING SCHEDULE	
PIPE SIZE	SLEEVING PIPE SIZE
3/4"	2"
1"	2"
1-1/4"	3"
1-1/2"	3"
2"	4"
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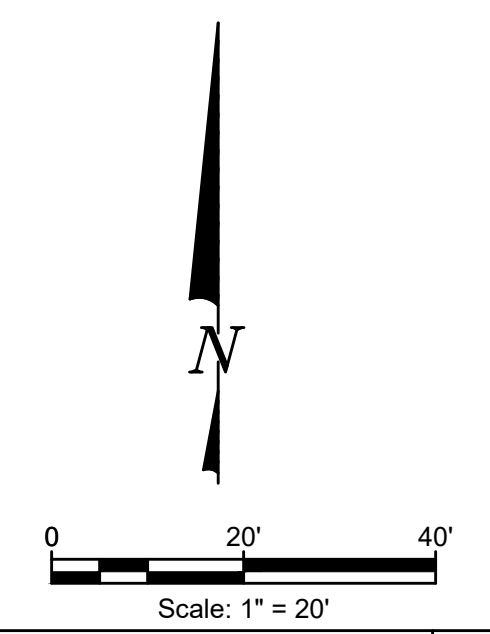
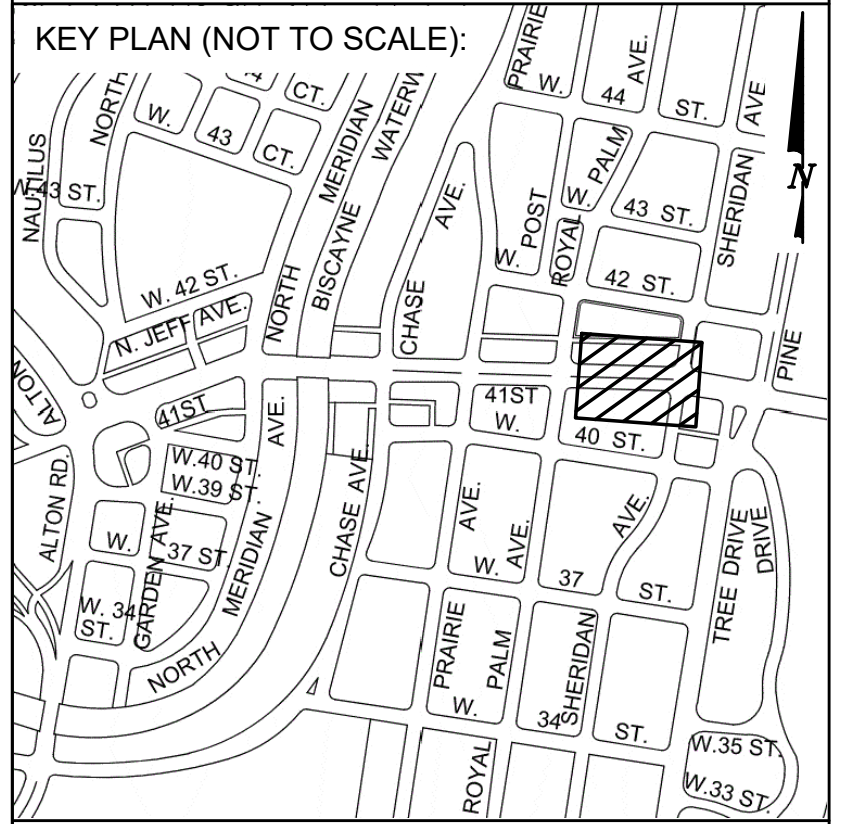
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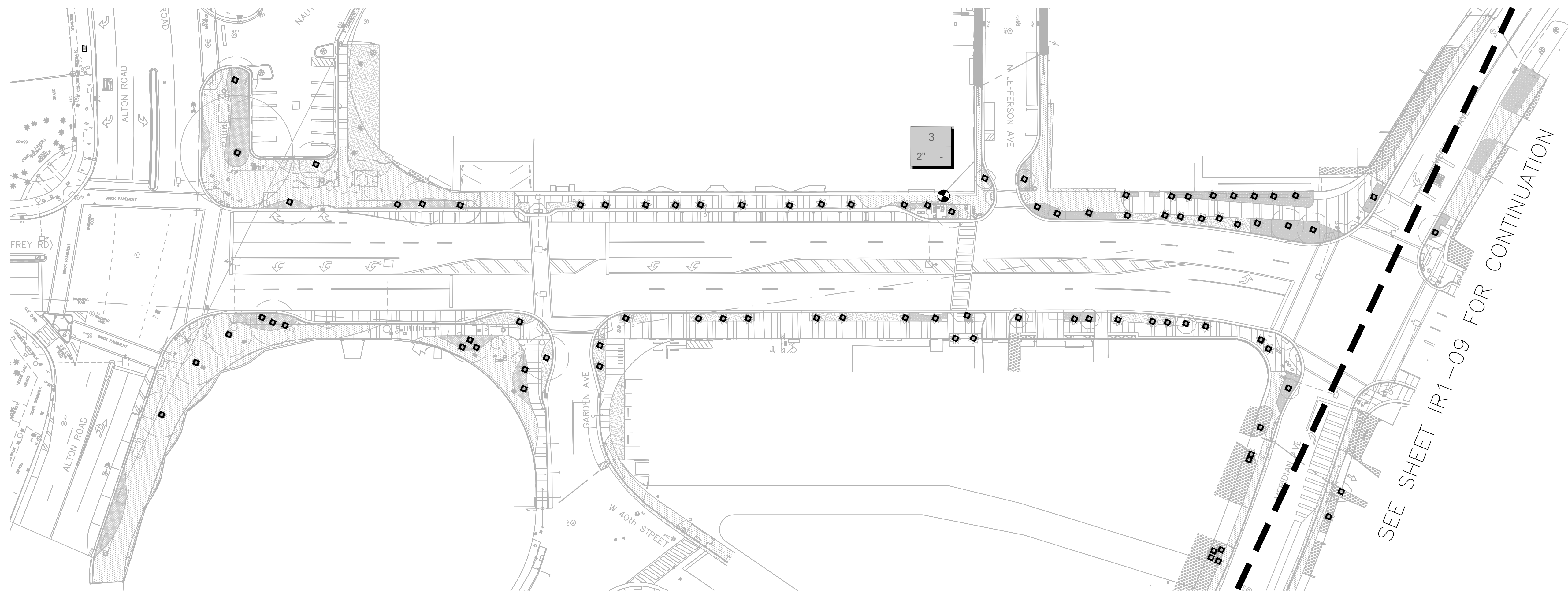
**NOTES:**



ARCH. SEAL:

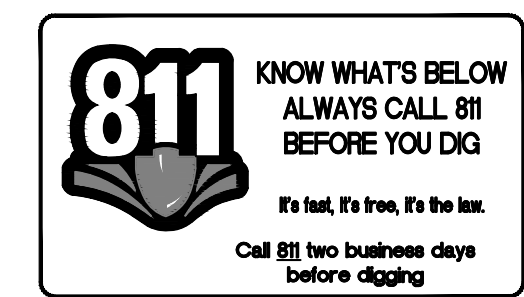
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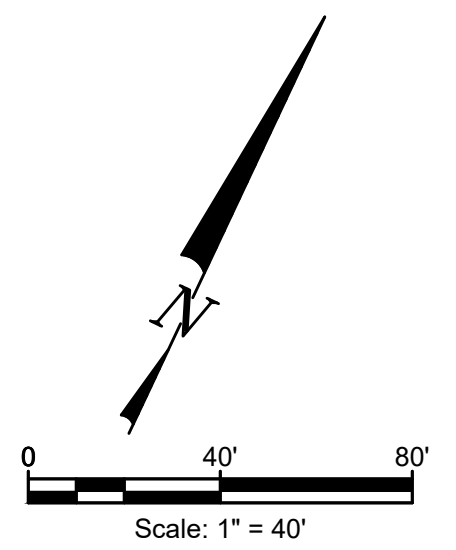
SEE SHEET IR1-09 FOR CONTINUATION

NON-VEHICULAR SLEEVING SCHEDULE	
PIPE SIZE	SLEEVING PIPE SIZE
3/4"	2"
1"	2"
1-1/4"	3"
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8"	16"



**Masuen Consulting LLC**  
 Water Management Consultants  
 301 S. Washington, Suite F  
 Newport, WA 99156  
 Telephone (866) 928-1533  
 Fax (800) 928-1534

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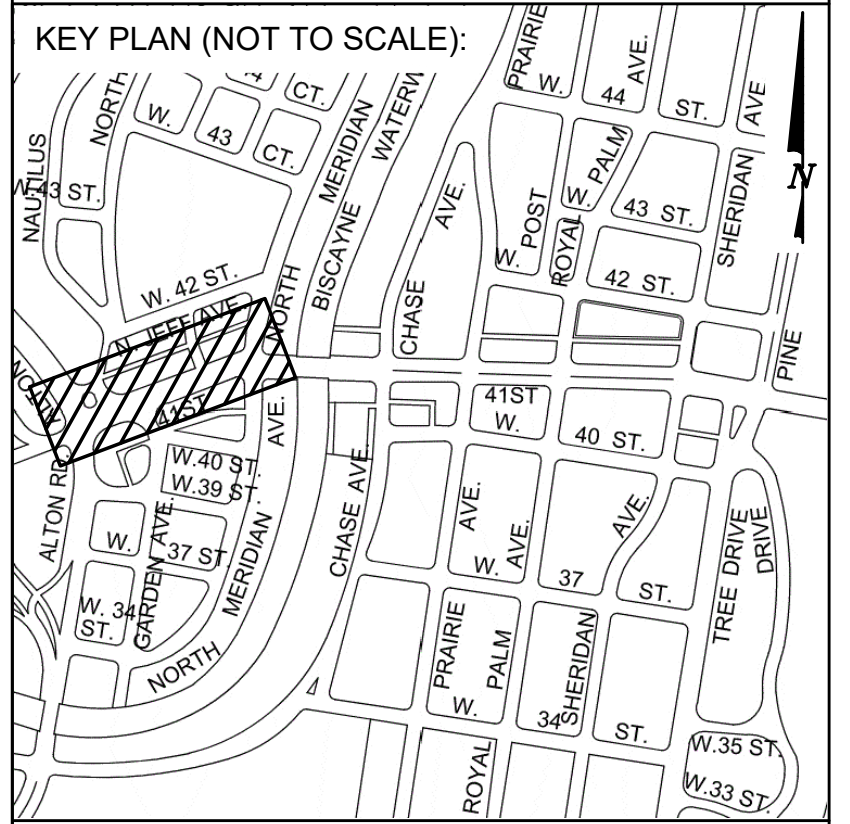
NOTES:

- SLEEVING NOTES:**
- VEHICULAR CROSSINGS ARE SHOWN AND SIZED ON THE PLANS.
  - NON-VEHICULAR SLEEVES ARE SHOWN BUT NOT SIZED.
  - SIZE ALL NON-VEHICULAR SLEEVES ACCORDING TO THE ABOVE CHART.
  - MAINLINE CROSSINGS MUST ALSO INCLUDE A 2" CONDUIT SLEEVE FOR CONTROL WIRE.
  - CONTRACTOR TO DUCT TAPE END OF SLEEVES TO KEEP SLEEVE CLEAN AND CLEAR.
  - CONTRACTOR TO STAKE END OF EACH SLEEVE ABOVE GROUND AND PAINT FLUORESCENT ORANGE. LABEL EACH STAKE WITH THE WORD 'SLEEVE' AND ITS SIZE.
  - CONTRACTOR TO PROVIDE A 3 FT MINIMUM DEPTH OF COVERAGE OVER ALL SLEEVES.
- SLEEVE LABEL:**  
 12"/6"/2" SLEEVES MEANS TO INSTALL ONE 12", ONE 6" AND ONE 2" SLEEVE.

**MAINLINE LOCATION/ROUTING NOTE:**

MAINLINE LOCATION, LATERAL PIPES, CONDUITS, ETC., WHERE SHOWN/DRAWN ON THE IRRIGATION PLAN, ARE TO BE CONSIDERED "SCHEMATIC" AND ARE SHOWN FOR GRAPHIC, AND OVERALL DESIGN PLAN CLARITY, PURPOSES ONLY AND SHALL BE FILED-ADJUSTED AS REQUIRED. DO NOT WILLFULLY INSTALL THE MAINLINE (OR ANY SYSTEM COMPONENT) AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT AN OBSTRUCTION DICTATES MINIMAL LOCATION ADJUSTMENTS

IRRIGATION CONTRACTOR IS TO INSTALL MAINLINE AT THE BACK OF CURB, FRONT OF WALK, BACK OF WALK, OR ADJACENT TO OTHER HARDSCAPES TO FACILITATE FUTURE LOCATION AND TO PROTECT FROM DAMAGE. ENSURE MAINLINE IS INSTALLED ACCORDING TO THE IRRIGATION SPECIFICATIONS AND DETAILS



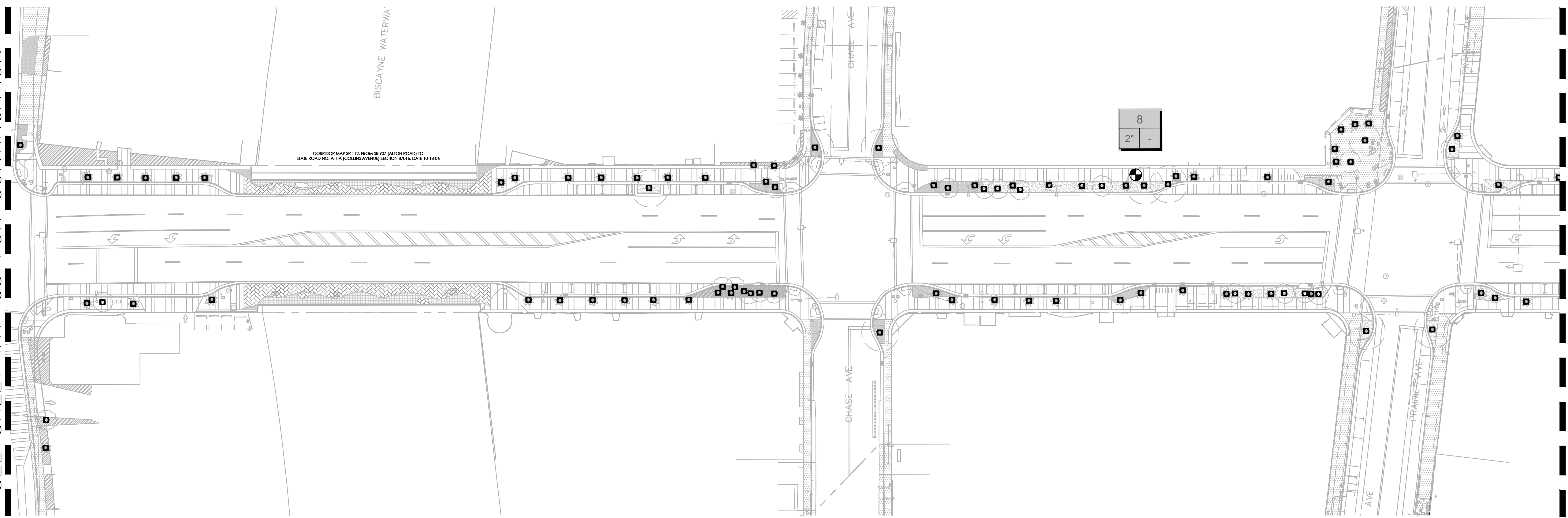
ARCH. SEAL:

	CITY MANAGER: ALINA T. HUDAK DIRECTOR: DAVID MARTINEZ, P.E. PUBLIC WORK DIRECTOR: JOE GOMEZ, P.E. CITY ENGINEER: CRISTINA ORTEGA CASTINEIRAS, P.E.	5				 BROOKS + SCARPA 1147 NE 7th Ave Fort Lauderdale, FL 33304	ARCHITECT OF RECORD: ARCHITECT OF RECORD: _____ DESIGN ARCHITECT: TFP DRAWN BY: TFP CHECKER: JS/MO SCALE: 1"=40'	NEIGHBORHOOD: <b>41ST ST CORRIDOR REVITALIZATION</b>	FILE NAME: 2024_0501_41STCORR - IRR - 60%DD UP.dwg DRAWING: <b>IR1-08</b>
		NO.	DATE	REVISION	APPD. BY				

THIS SPACE RESERVED FOR PROJECT MILESTONE

SEE SHEET IR1-08 FOR CONTINUATION

SEE SHEET IR1-10 FOR CONTINUATION



CORRIDOR MAP SR 112, FROM SR 907 (ALTON ROAD) TO STATE ROAD NO. A-1-A (COLLING AVENUE) SECTION B0716, DATE 10/18/04

8  
2" -

NON-VEHICULAR SLEEVING SCHEDULE	
PIPE SIZE	SLEEVING PIPE SIZE
3/4"	2"
1"	2"
1-1/4"	3"
1-1/2"	3"
2"	4"
3"	6"
4"	8"
6"	12"
8"	16"

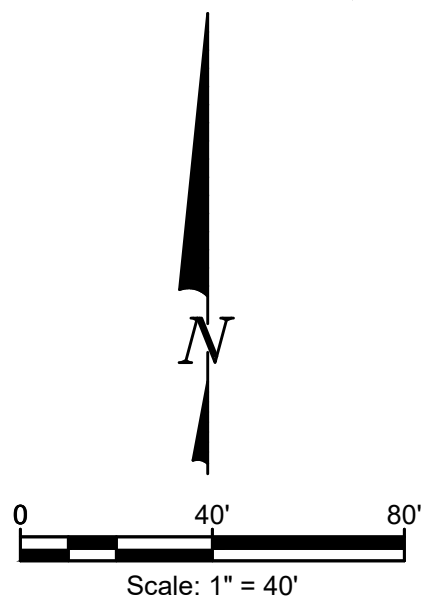
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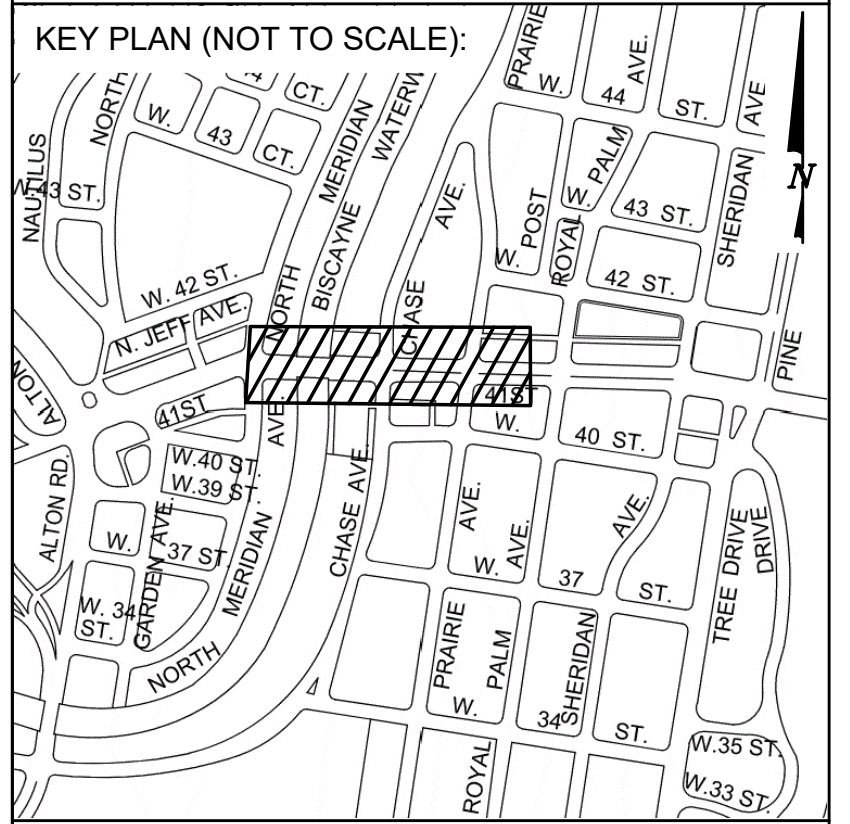


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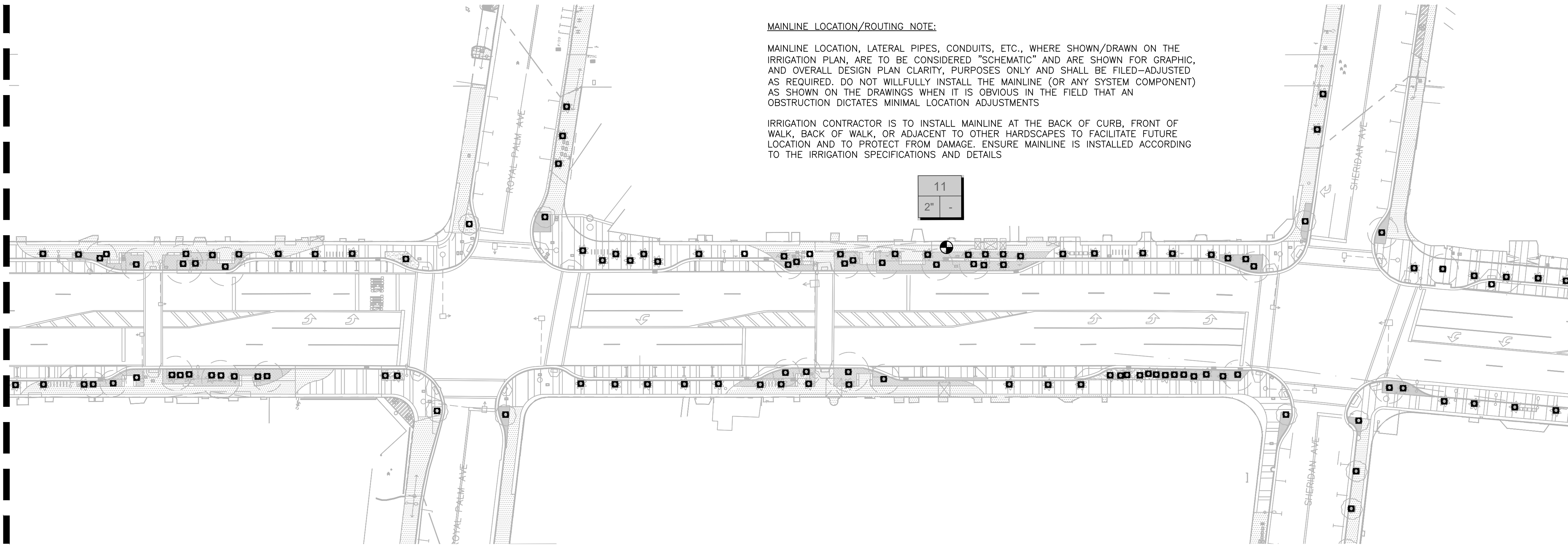
NOTES:



ARCH. SEAL:

 <b>OFFICE OF CAPITAL IMPROVEMENT PROJECTS</b> <small>1701 MERIDIAN AVENUE, MIAMI BEACH, FL 33139</small>	CITY MANAGER: ALINA T. HUDAK DIRECTOR: DAVID MARTINEZ, P.E. PUBLIC WORK DIRECTOR: JOE GOMEZ, P.E. CITY ENGINEER: CRISTINA ORTEGA CASTINEIRAS, P.E.	5 4 3 2 1	NO. DATE REVISION APPD. BY	 BROOKS + SCARPA 1147 NE 7th Ave Fort Lauderdale, FL 33304	ARCHITECT OF RECORD: ARCHITECT OF RECORD: _____ DESIGN ARCHITECT: JFP DRAWN BY: JFP CHECKER: JS/MO SCALE: 1"=40'	NEIGHBORHOOD: 41ST ST CORRIDOR REVITALIZATION	TITLE: IRRIGATION PLAN - BUBBLERS	File Name: 2024_0501_41STCORR - IRR - 60%DD UP.dwg Date: 4/17/2023	Drawing: <b>IR1-09</b>
		THIS SPACE RESERVED FOR PROJECT MILESTONE							

SEE SHEET IR1-09 FOR CONTINUATION



**MAINLINE LOCATION/ROUTING NOTE:**

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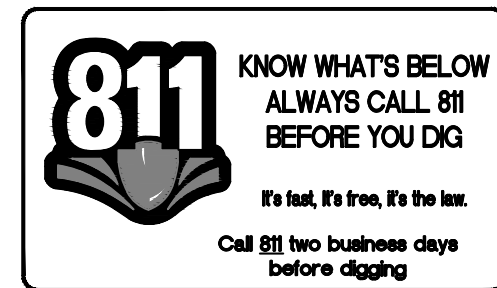
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11  
2" -

SEE BELOW-LEFT, THIS SHEET FOR CONTINUATION

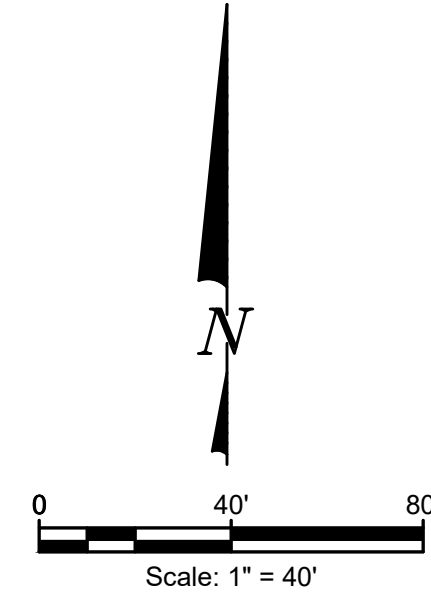
NOTES:

NON-VEHICULAR SLEEVING SCHEDULE	
PIPE SIZE	SLEEVING PIPE SIZE
3/4"	2"
1"	2"
1-1/4"	3"
1-1/2"	3"
2"	4"
3"	6"
4"	8"
6"	12"
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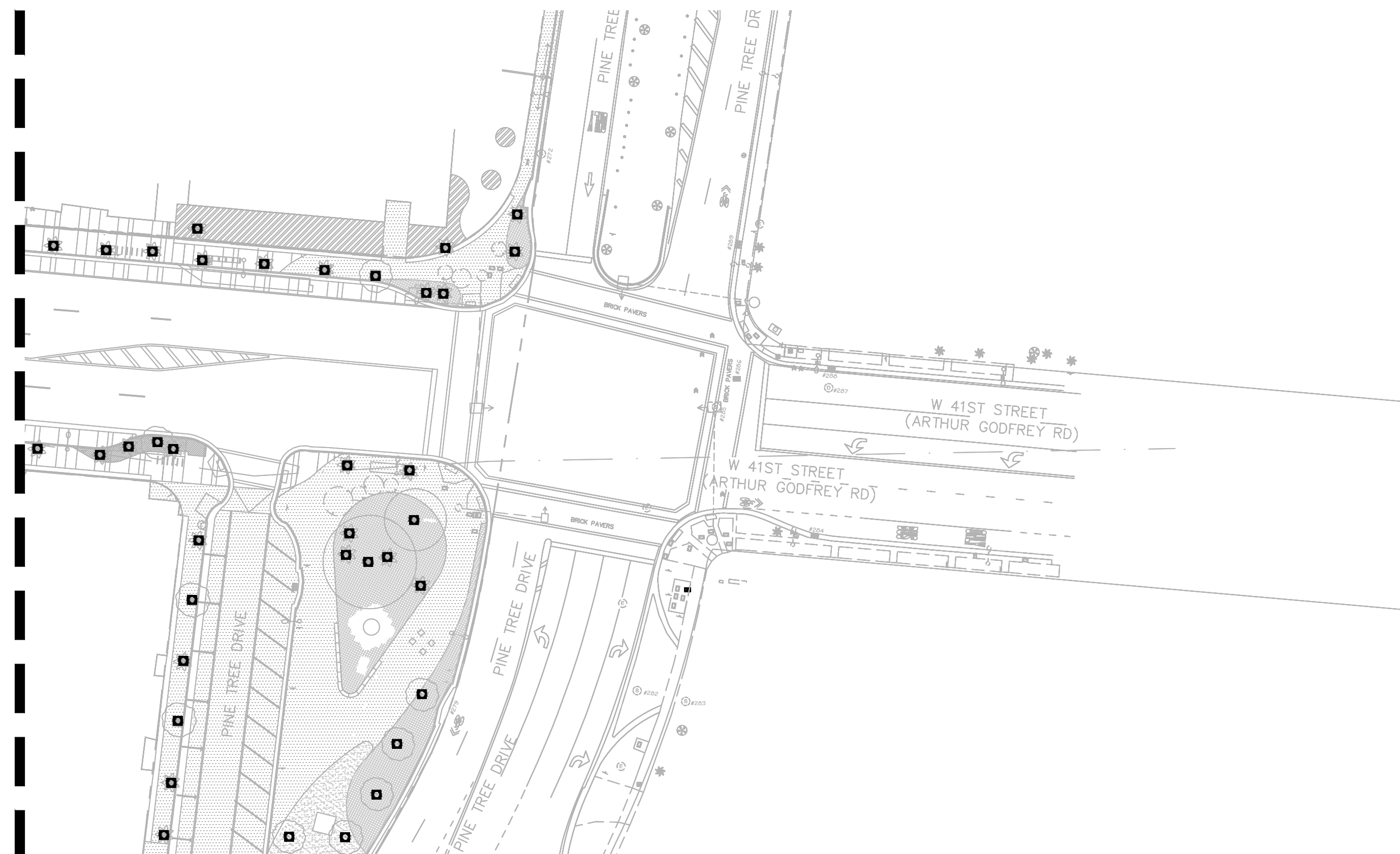
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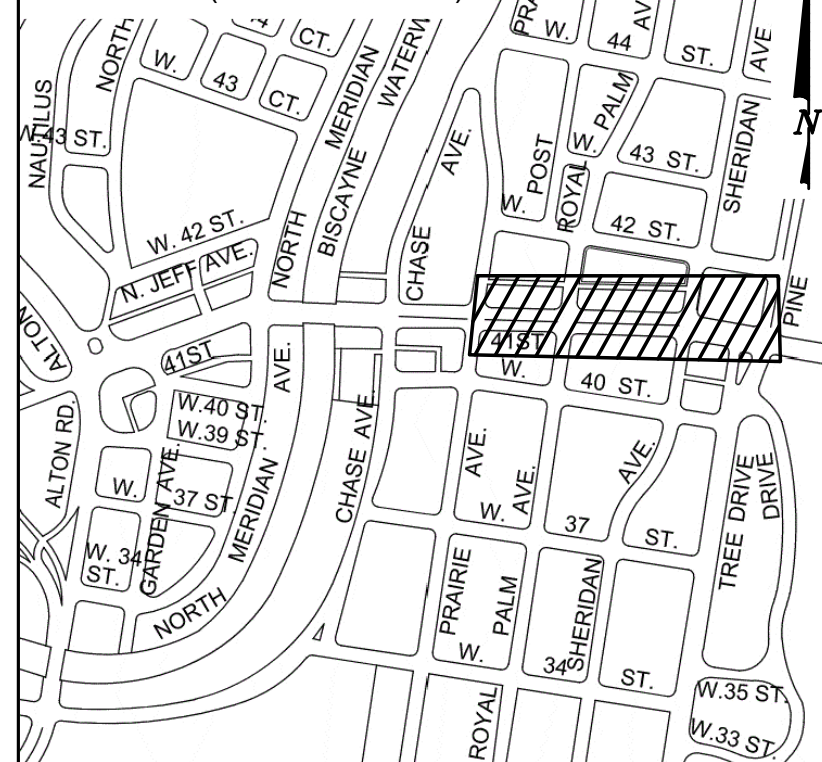
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SEE ABOVE-RIGHT, THIS SHEET FOR CONTINUATION



**KEY PLAN (NOT TO SCALE):**



ARCH. SEAL:

**MIAMI BEACH**

OFFICE OF CAPITAL IMPROVEMENT PROJECTS  
 1701 MERIDIAN AVENUE, MIAMI BEACH, FL 33139

CITY MANAGER: ALINA T. HUDAK  
 DIRECTOR: DAVID MARTINEZ, P.E.  
 PUBLIC WORK DIRECTOR: JOE GOMEZ, P.E.  
 CITY ENGINEER: CRISTINA ORTEGA CASTINEIRAS, P.E.

NO.	DATE	REVISION	APPD. BY
5			
4			
3			
2			
1			

**BROOKS + SCARPA**  
 BROOKS + SCARPA  
 1147 NE 7th Ave  
 Fort Lauderdale, FL 33304

ARCHITECT OF RECORD:  
 ARCHITECT OF RECORD:  
 DESIGN ARCHITECT: JFP  
 DRAWN BY: JFP  
 CHECKER: JS/MO  
 SCALE: 1"=40'

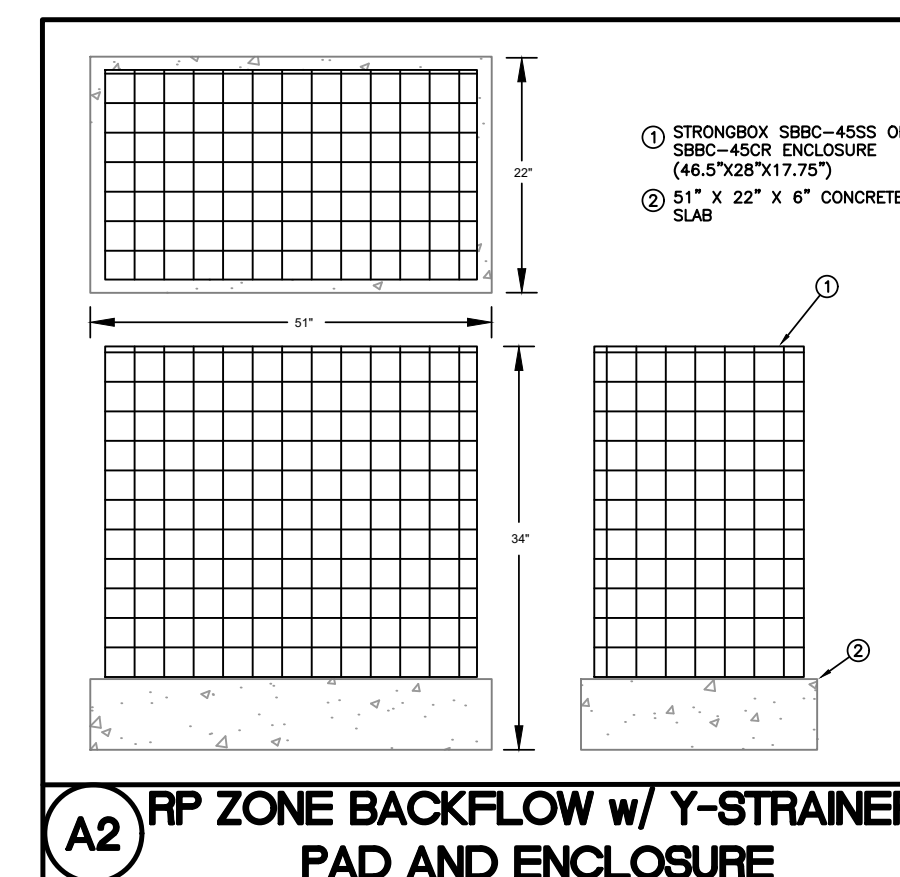
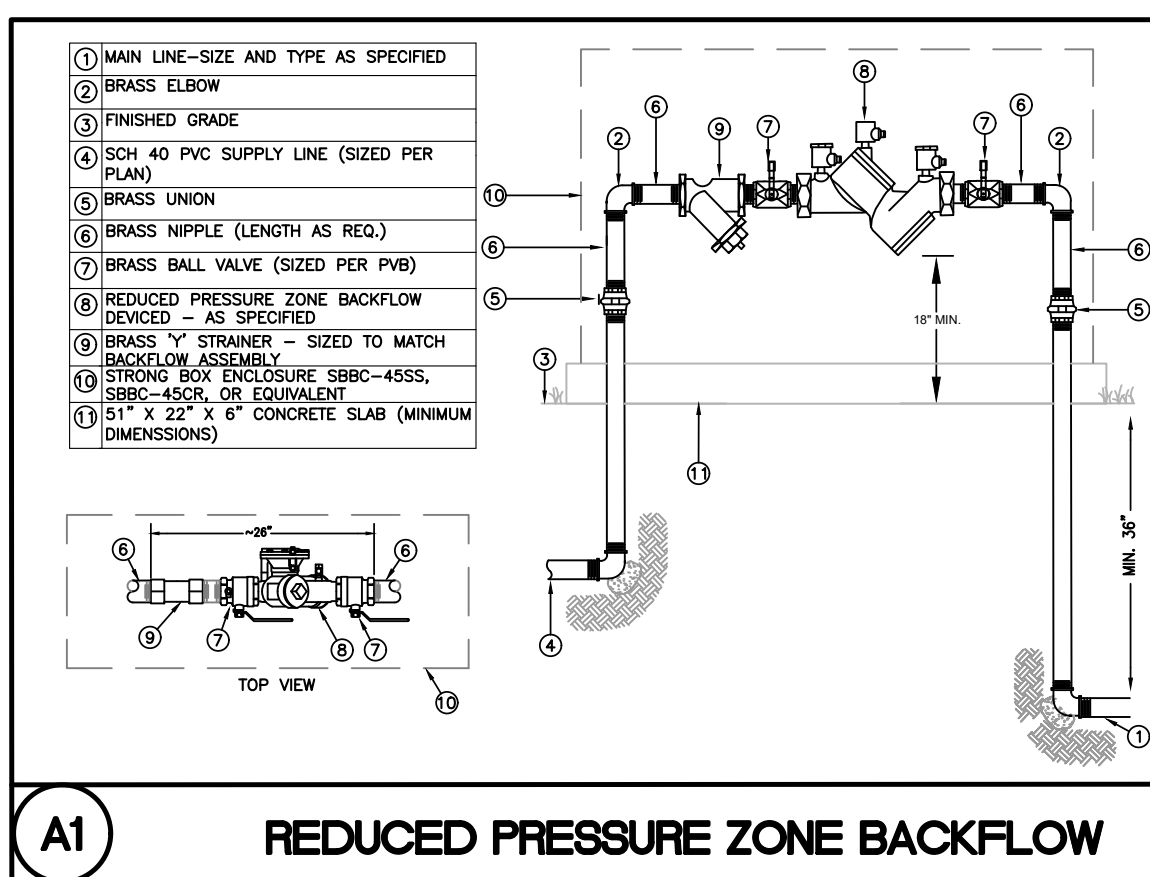
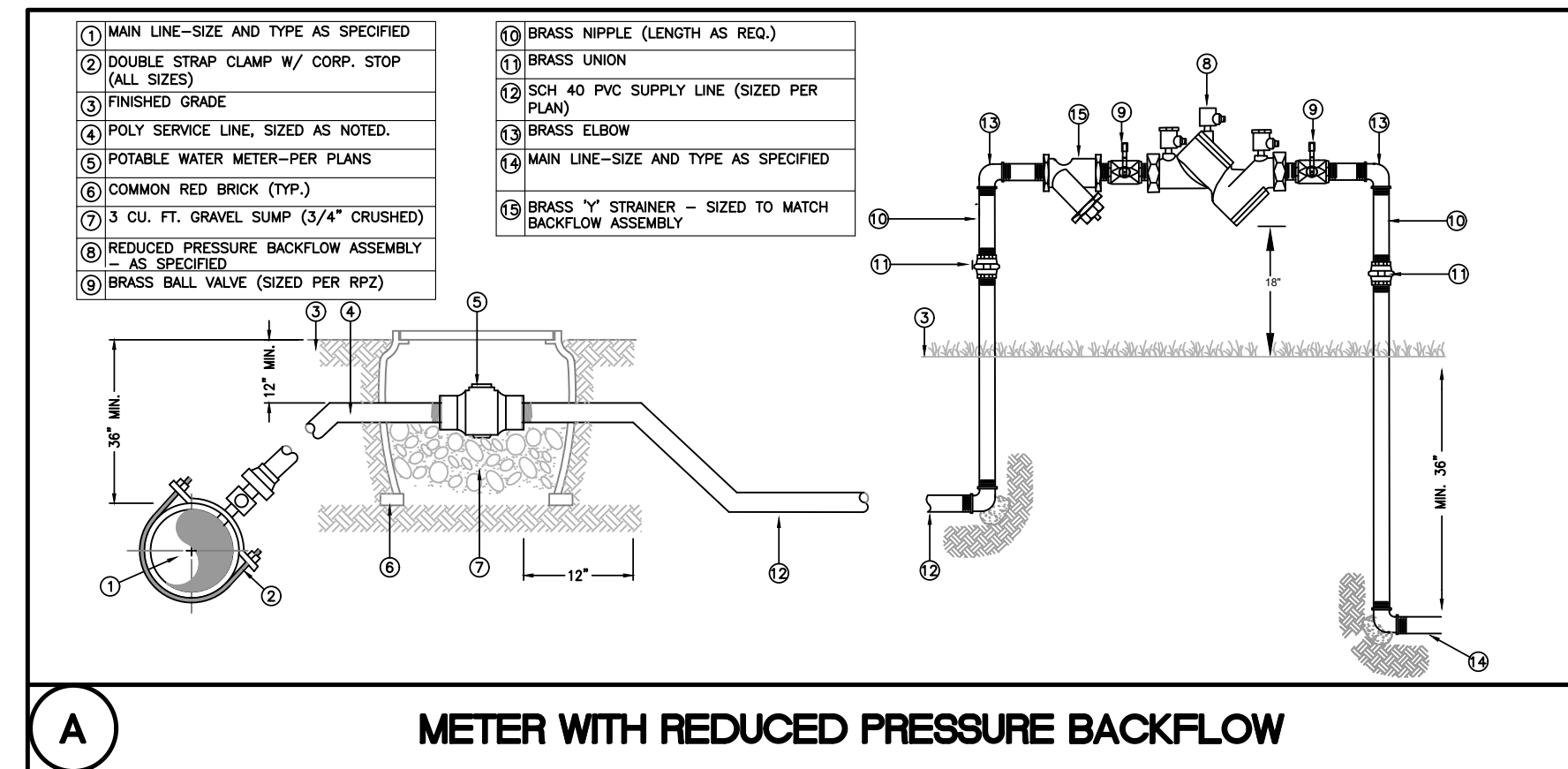
NEIGHBORHOOD:  
 41ST ST CORRIDOR REVITALIZATION

TITLE:  
 IRRIGATION PLAN - BUBBLERS

File Name: 2024\_0501\_41STCORR - IRR - 60%DD UP.dwg  
 Date: 4/17/2023

Drawing:  
**IR1-10**

NOTES:



ARCH. SEAL:

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5			
4			
3			
2			
1			
NO.	DATE	REVISION	APP'D. BY



BROOKS + SCARPA  
1147 NE 7th Ave  
Fort Lauderdale, FL 33304

ARCHITECT OF RECORD:  
Jeffrey Huber  
#AR95514  
#LA6667547

ARCHITECT OF RECORD:  
DESIGN ARCHITECT: JFP  
DRAWN BY: JFP  
CHECKER: JS/MO  
SCALE: N.T.S.

NEIGHBORHOOD: 41ST ST CORRIDOR REVITALIZATION

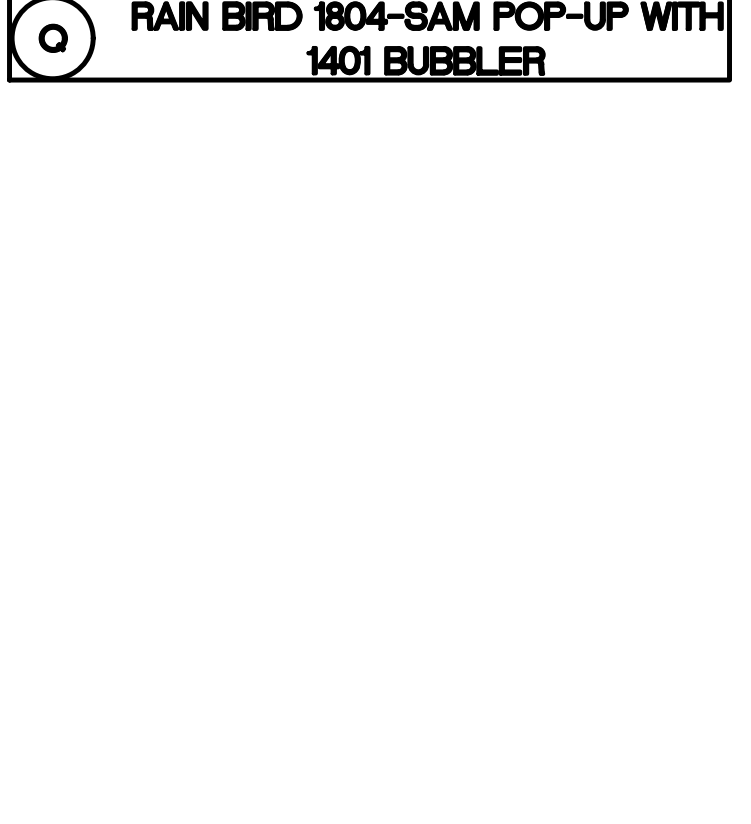
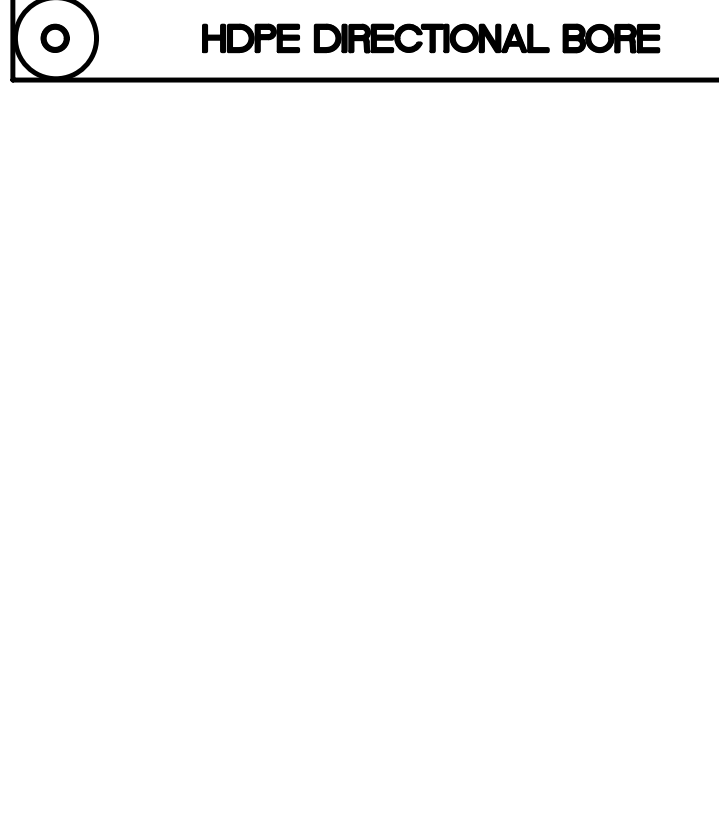
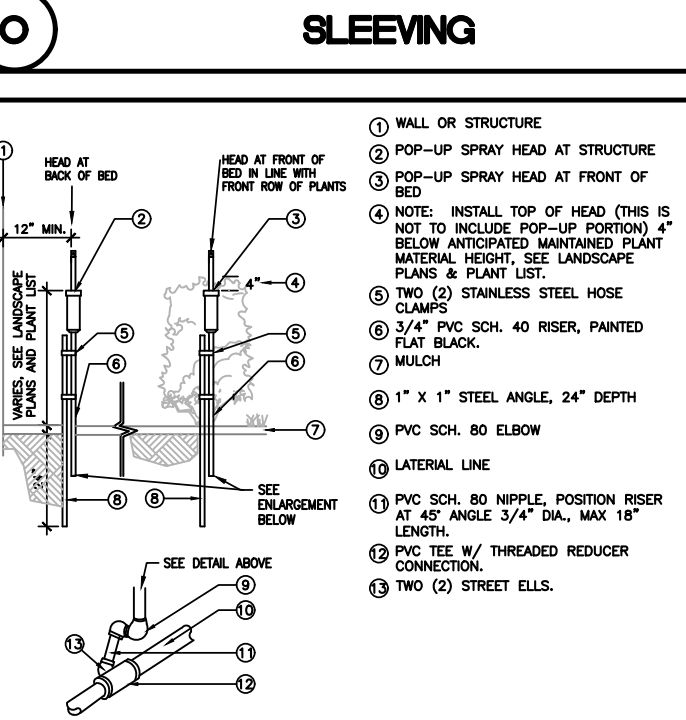
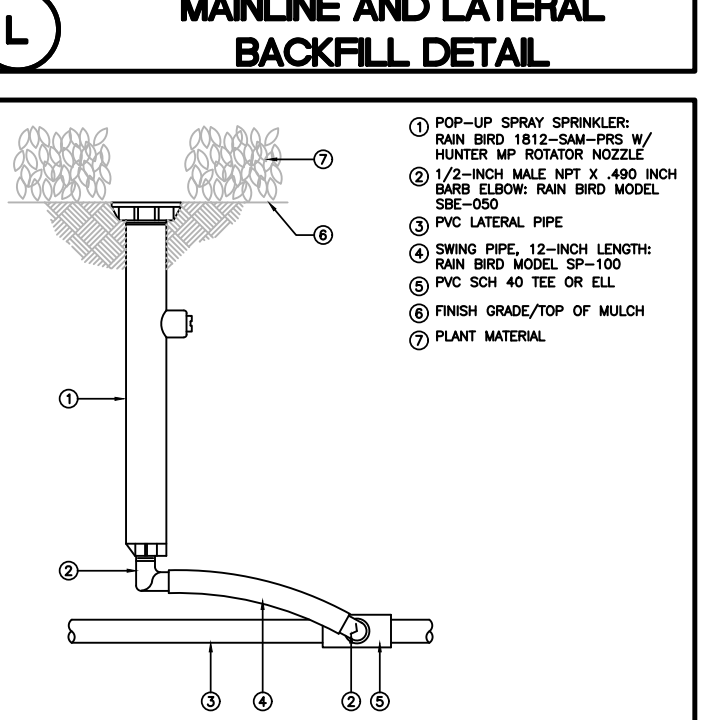
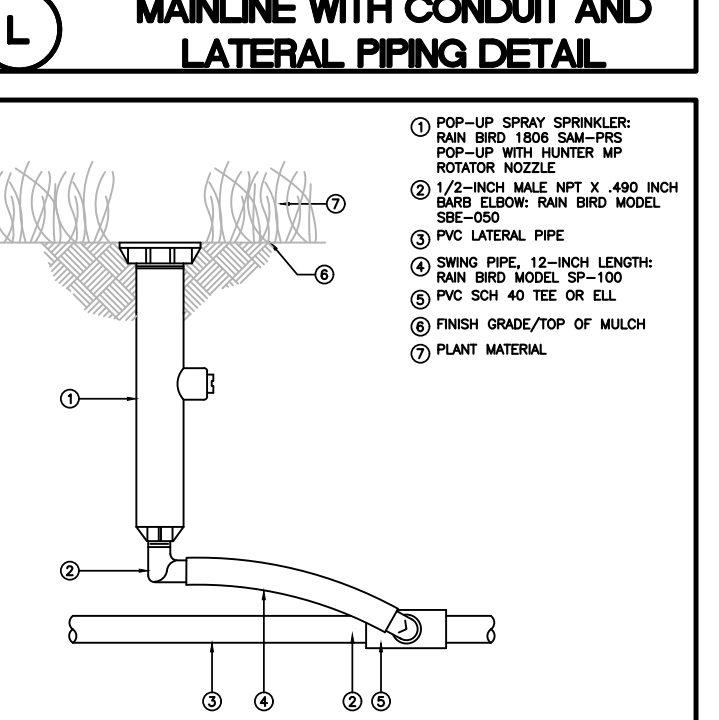
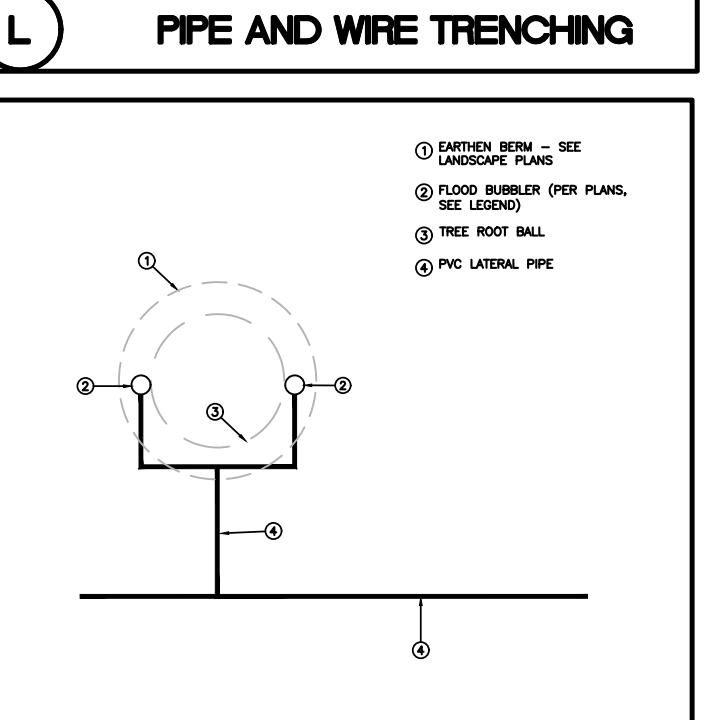
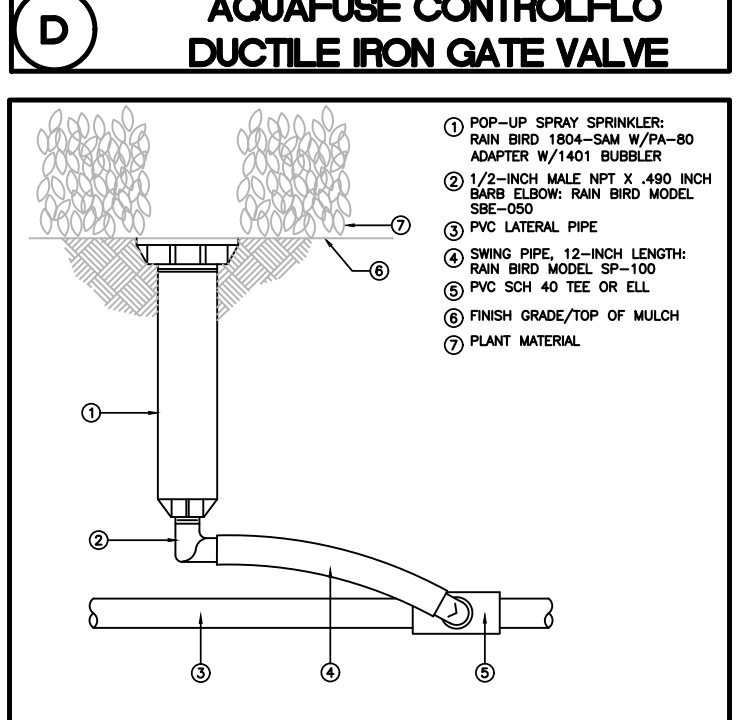
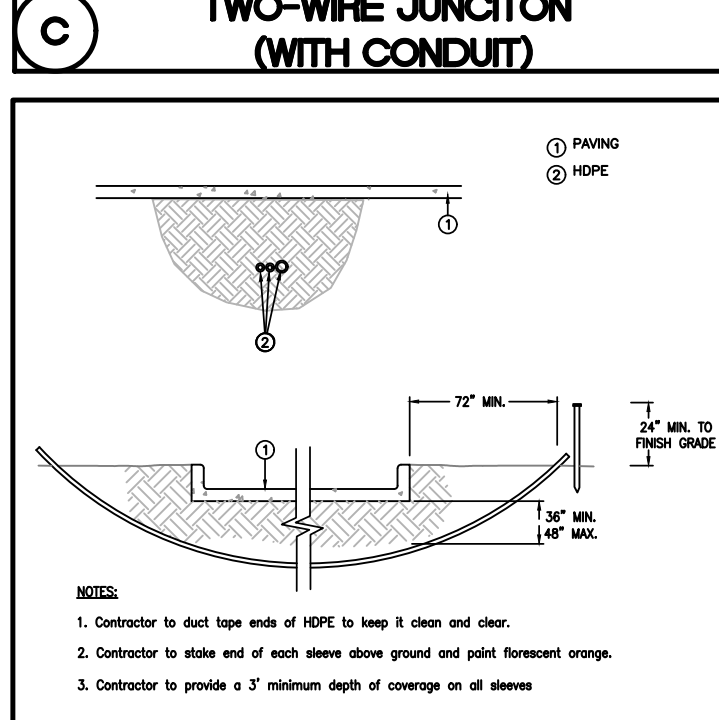
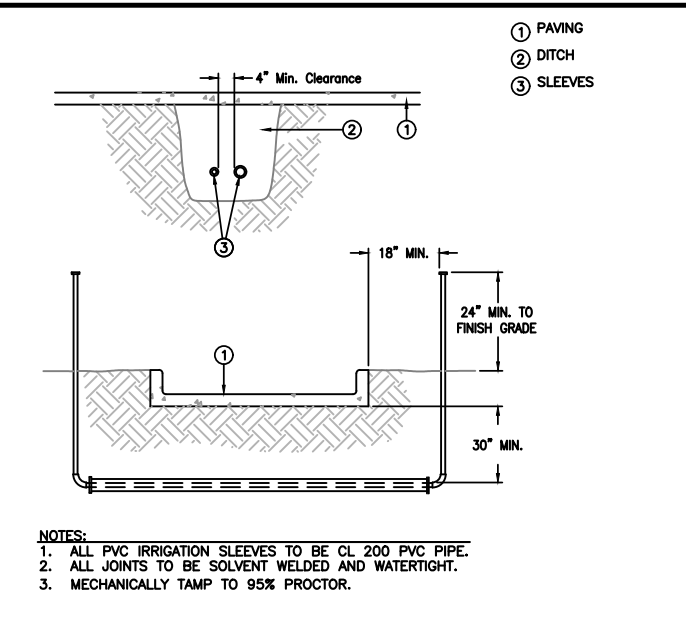
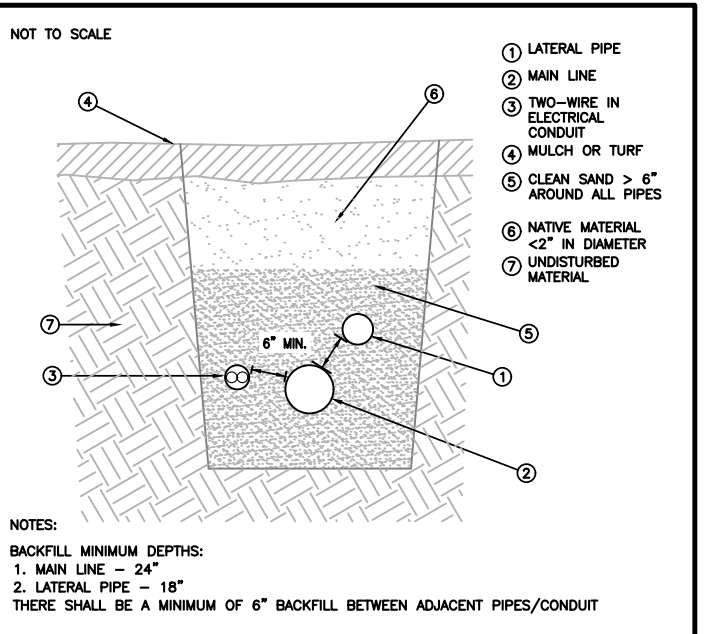
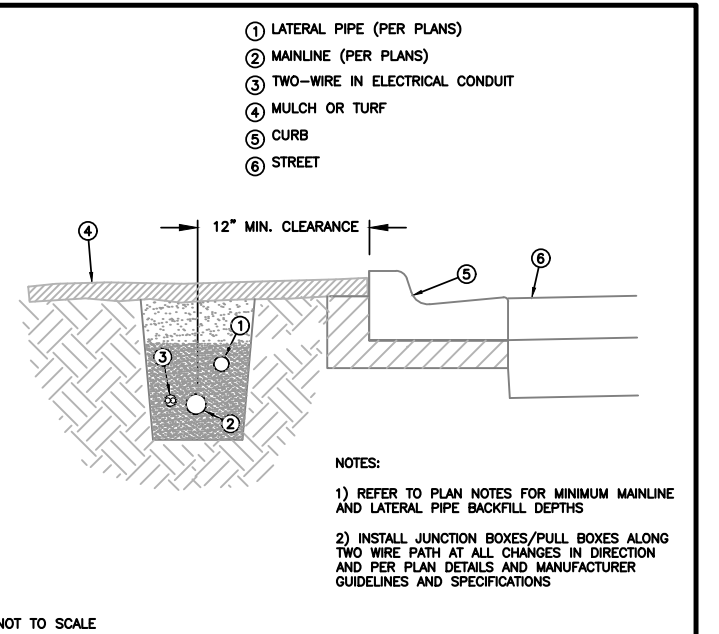
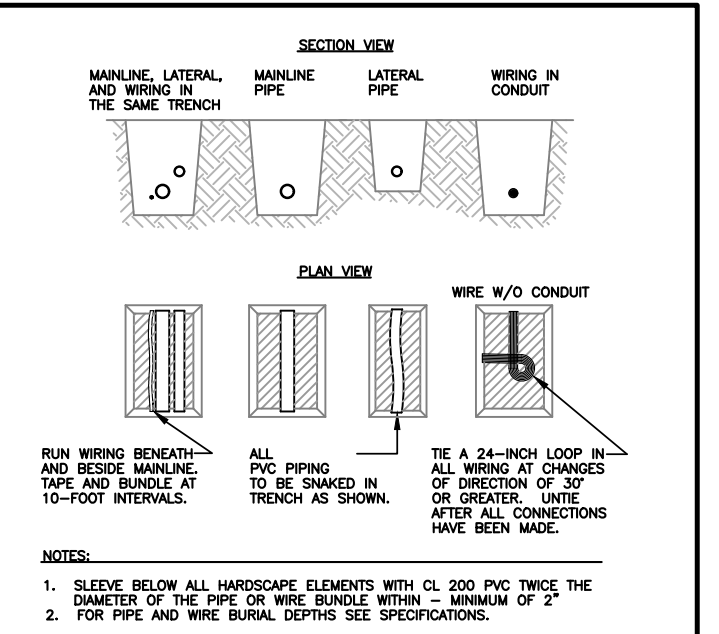
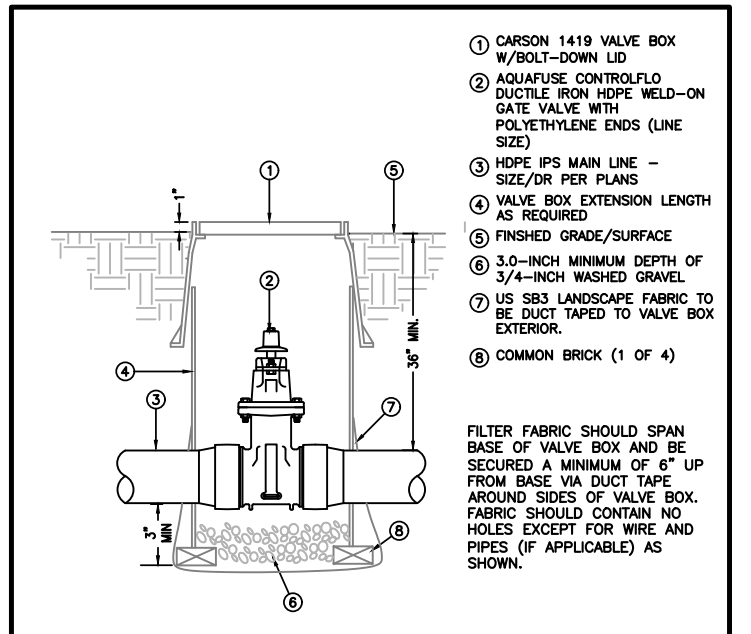
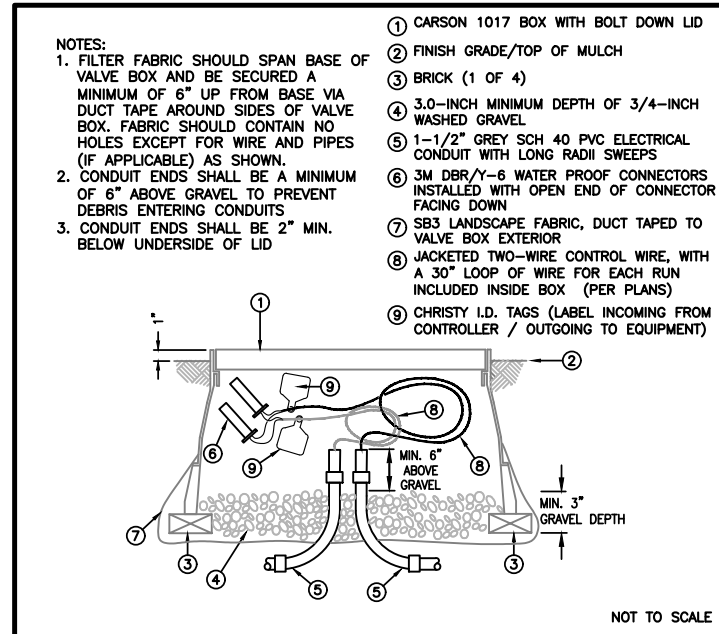
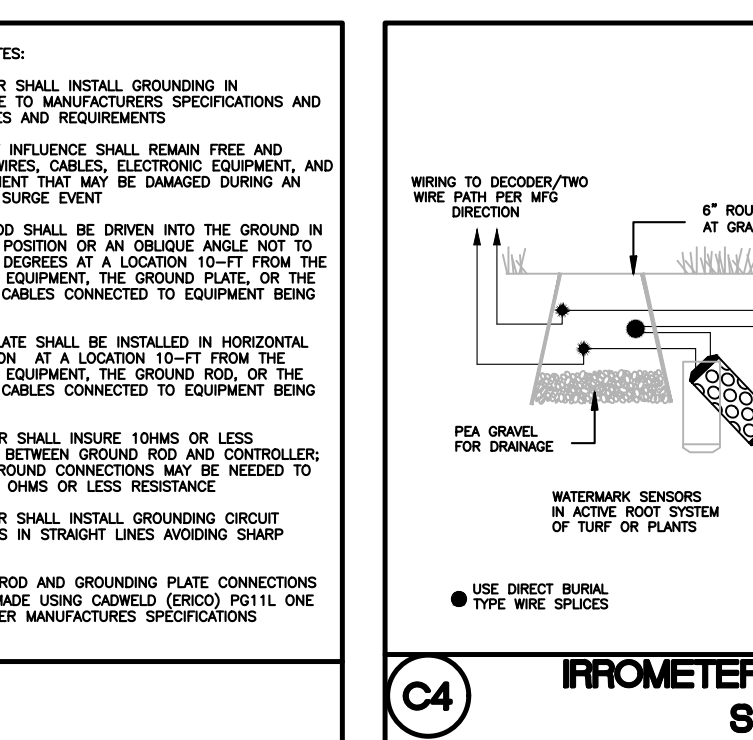
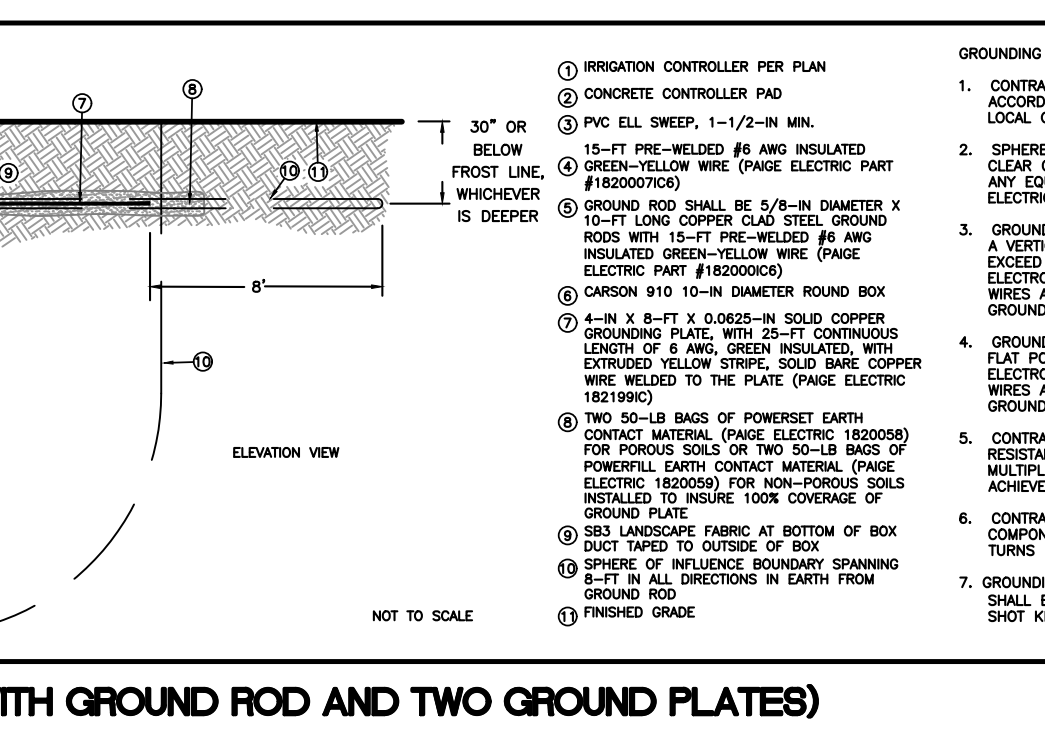
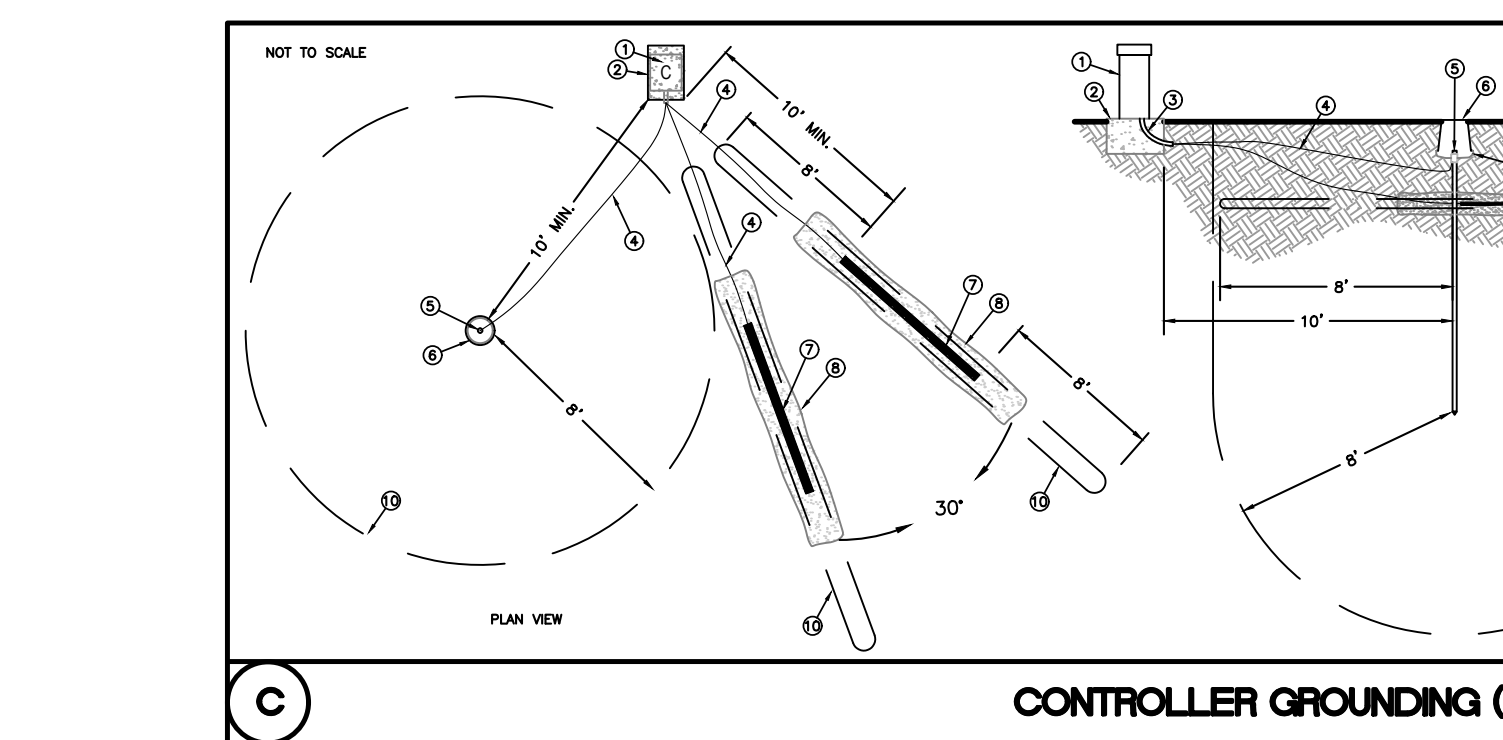
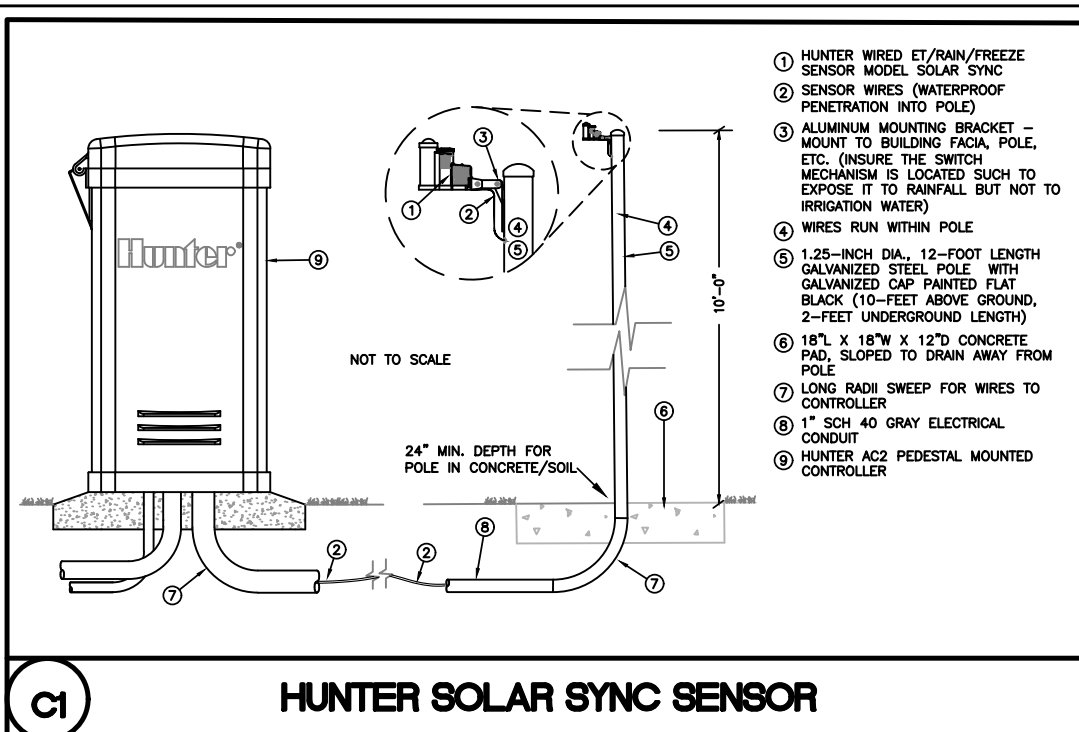
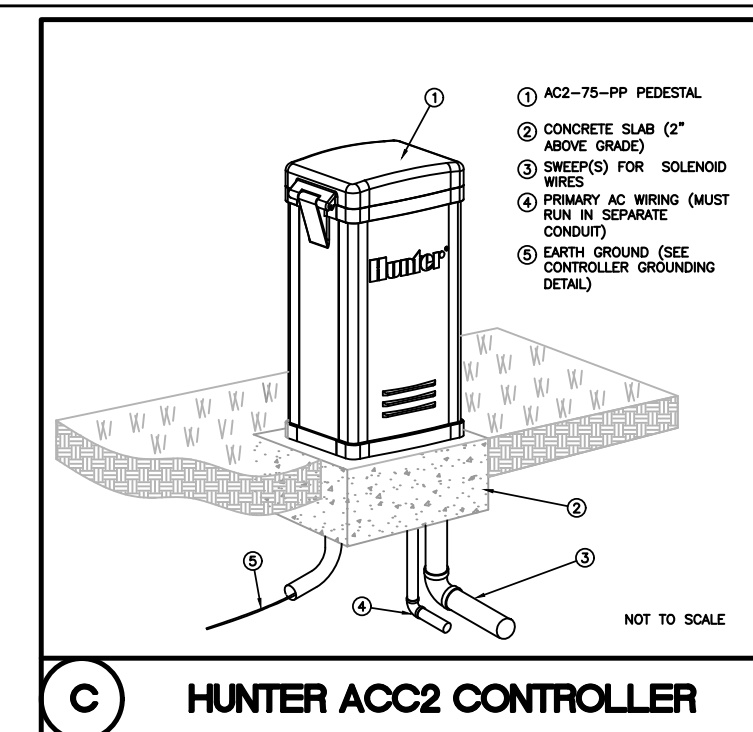
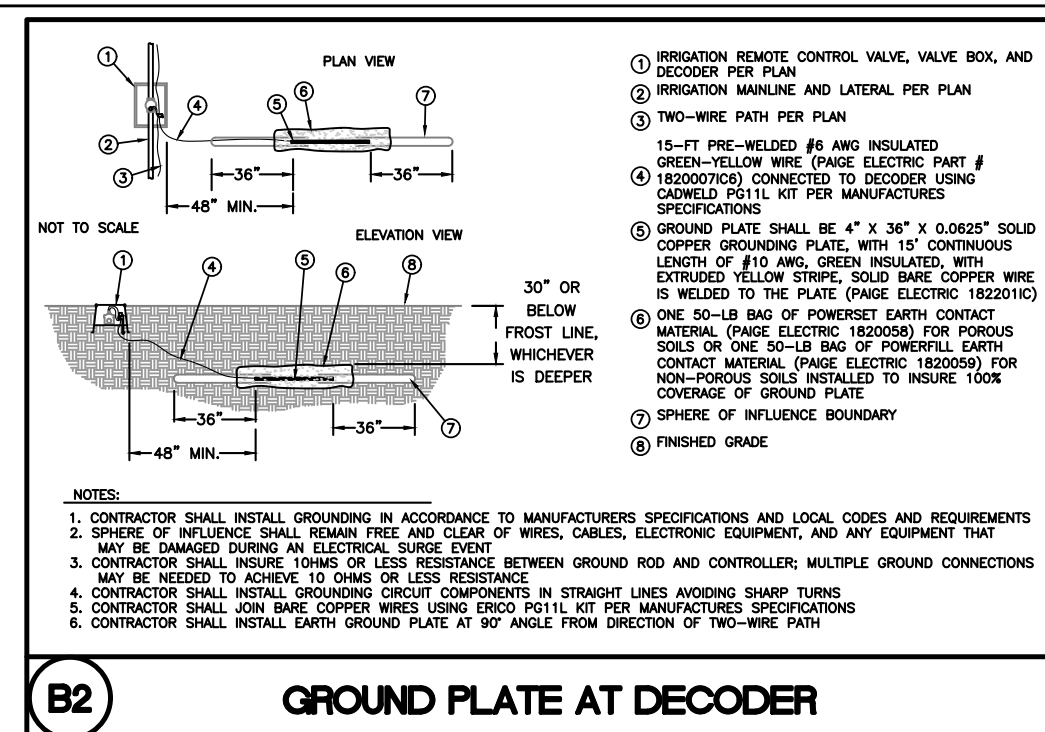
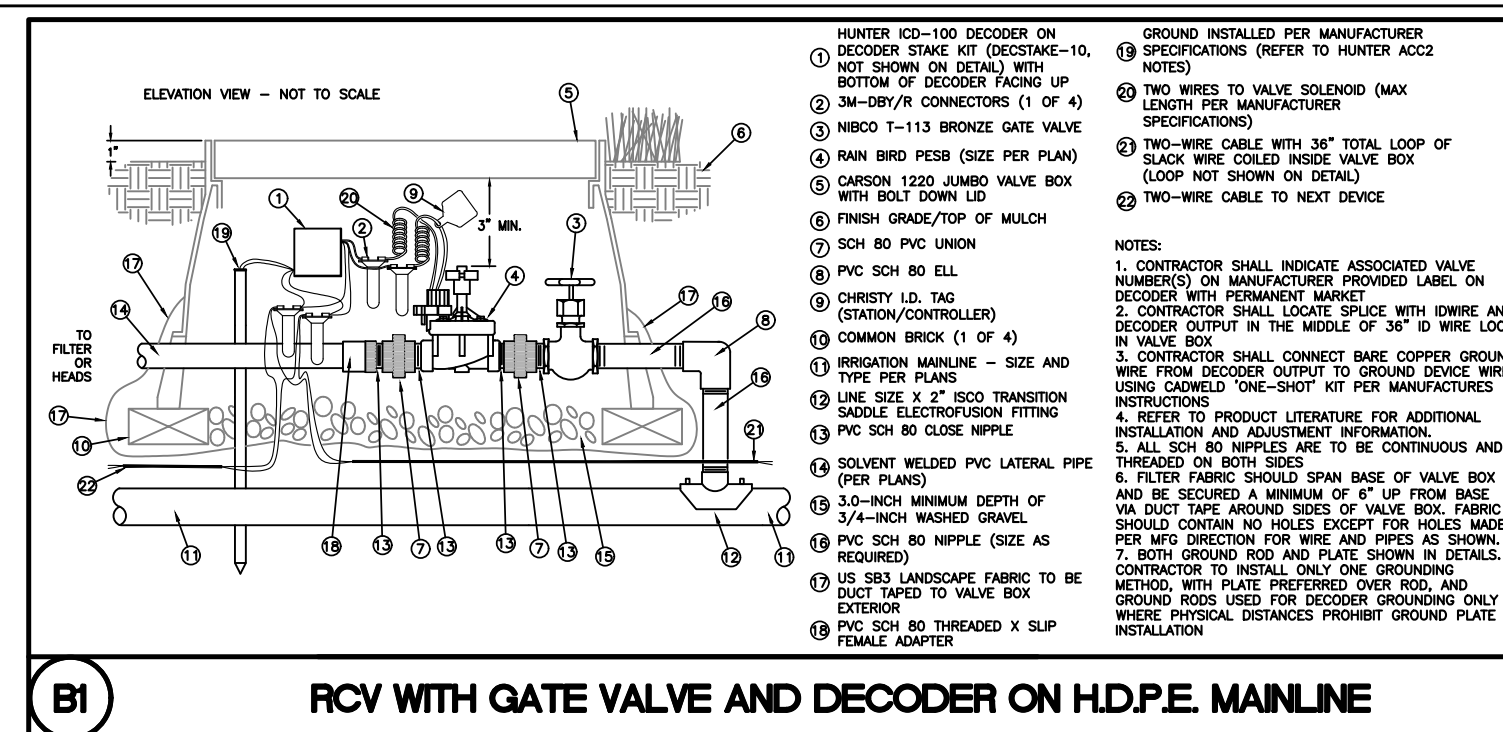
TITLE: IRRIGATION DETAILS

File Name: 2024\_0501\_41STCORR - IRR - 60%DD UP.dwg

Date: 4/17/2023

Drawing:

**IR5-00**



**NOTES:**

1. CONTRACTOR SHALL INSTALL GROUNDING IN ACCORDANCE TO MANUFACTURER'S SPECIFICATIONS AND LOCAL CODES AND REQUIREMENTS

2. SPHERE OF INFLUENCE SHALL REMAIN FREE AND CLEAR OF WIRES, CABLES, ELECTRONIC EQUIPMENT, AND ANY EQUIPMENT THAT MAY BE DAMAGED DURING AN ELECTRICAL SURGE EVENT

3. CONTRACTOR SHALL INSURE 10OHMS OR LESS RESISTANCE BETWEEN GROUND ROD AND CONTROLLER. MULTIPLE GROUND CONNECTIONS MAY BE NEEDED TO ACHIEVE 10 OHMS OR LESS RESISTANCE

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5. CONTRACTOR SHALL INSTALL GROUNDING CIRCUIT COMPONENTS IN STRAIGHT LINES AVOIDING SHARP TURNS

6. CONTRACTOR SHALL INSTALL GROUNDING CIRCUIT COMPONENTS IN STRAIGHT LINES AVOIDING SHARP TURNS

7. GROUNDING ROD AND GROUNDING PLATE CONNECTIONS SHALL BE MADE USING CABLED ONE-SHOT KIT PER MANUFACTURER'S SPECIFICATIONS

8. CONTRACTOR SHALL INSTALL EARTH GROUND PLATE AT 30° ANGLE FROM DIRECTION OF TWO-WIRE PATH

9. CONTRACTOR SHALL INSURE 10OHMS OR LESS RESISTANCE BETWEEN GROUND ROD AND CONTROLLER. MULTIPLE GROUND CONNECTIONS MAY BE NEEDED TO ACHIEVE 10 OHMS OR LESS RESISTANCE

10. CONTRACTOR SHALL INSURE 10OHMS OR LESS RESISTANCE BETWEEN GROUND ROD AND CONTROLLER. MULTIPLE GROUND CONNECTIONS MAY BE NEEDED TO ACHIEVE 10 OHMS OR LESS RESISTANCE

11. CONTRACTOR SHALL INSTALL GROUNDING CIRCUIT COMPONENTS IN STRAIGHT LINES AVOIDING SHARP TURNS

12. CONTRACTOR SHALL INSTALL GROUNDING CIRCUIT COMPONENTS IN STRAIGHT LINES AVOIDING SHARP TURNS

13. GROUNDING ROD AND GROUNDING PLATE CONNECTIONS SHALL BE MADE USING CABLED ONE-SHOT KIT PER MANUFACTURER'S SPECIFICATIONS

14. CONTRACTOR SHALL INSTALL EARTH GROUND PLATE AT 30° ANGLE FROM DIRECTION OF TWO-WIRE PATH

15. CONTRACTOR SHALL INSURE 10OHMS OR LESS RESISTANCE BETWEEN GROUND ROD AND CONTROLLER. MULTIPLE GROUND CONNECTIONS MAY BE NEEDED TO ACHIEVE 10 OHMS OR LESS RESISTANCE

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17. CONTRACTOR SHALL INSTALL GROUNDING CIRCUIT COMPONENTS IN STRAIGHT LINES AVOIDING SHARP TURNS

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19. GROUNDING ROD AND GROUNDING PLATE CONNECTIONS SHALL BE MADE USING CABLED ONE-SHOT KIT PER MANUFACTURER'S SPECIFICATIONS

20. CONTRACTOR SHALL INSTALL EARTH GROUND PLATE AT 30° ANGLE FROM DIRECTION OF TWO-WIRE PATH

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25. GROUNDING ROD AND GROUNDING PLATE CONNECTIONS SHALL BE MADE USING CABLED ONE-SHOT KIT PER MANUFACTURER'S SPECIFICATIONS

26. CONTRACTOR SHALL INSTALL EARTH GROUND PLATE AT 30° ANGLE FROM DIRECTION OF TWO-WIRE PATH

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31. GROUNDING ROD AND GROUNDING PLATE CONNECTIONS SHALL BE MADE USING CABLED ONE-SHOT KIT PER MANUFACTURER'S SPECIFICATIONS

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35. CONTRACTOR SHALL INSTALL GROUNDING CIRCUIT COMPONENTS IN STRAIGHT LINES AVOIDING SHARP TURNS

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37. GROUNDING ROD AND GROUNDING PLATE CONNECTIONS SHALL BE MADE USING CABLED ONE-SHOT KIT PER MANUFACTURER'S SPECIFICATIONS

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