

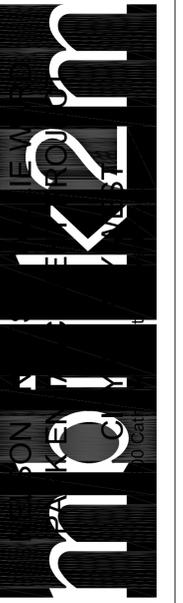
Seal:

Consultants:

CIVIL ENGINEER:
Meridian Engineering, LLC
LANDSCAPE ARCHITECT:
Craig Reynolds, RLA
IRRIGATION DESIGN:
Crawford Irrigation Design, Inc.

Submissions:

July 28, 2011 - Public Meeting #1
August 18, 2011 - Public Meeting #2
September 30, 2011 - HARC Tree
Commission, DRC and Planning
January 4, 2012 - TIF Application
January 18, 2012 - Revised Planning
Board Submission
January 27, 2012 - Revised Planning
Board Submission
June 5, 2012 - City Review Submission
July 25, 2012 - City Review Submission
August 17, 2012 - 100% Construction
Documents
October 01, 2012 - 100% Construction
Documents



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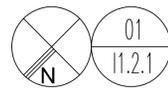
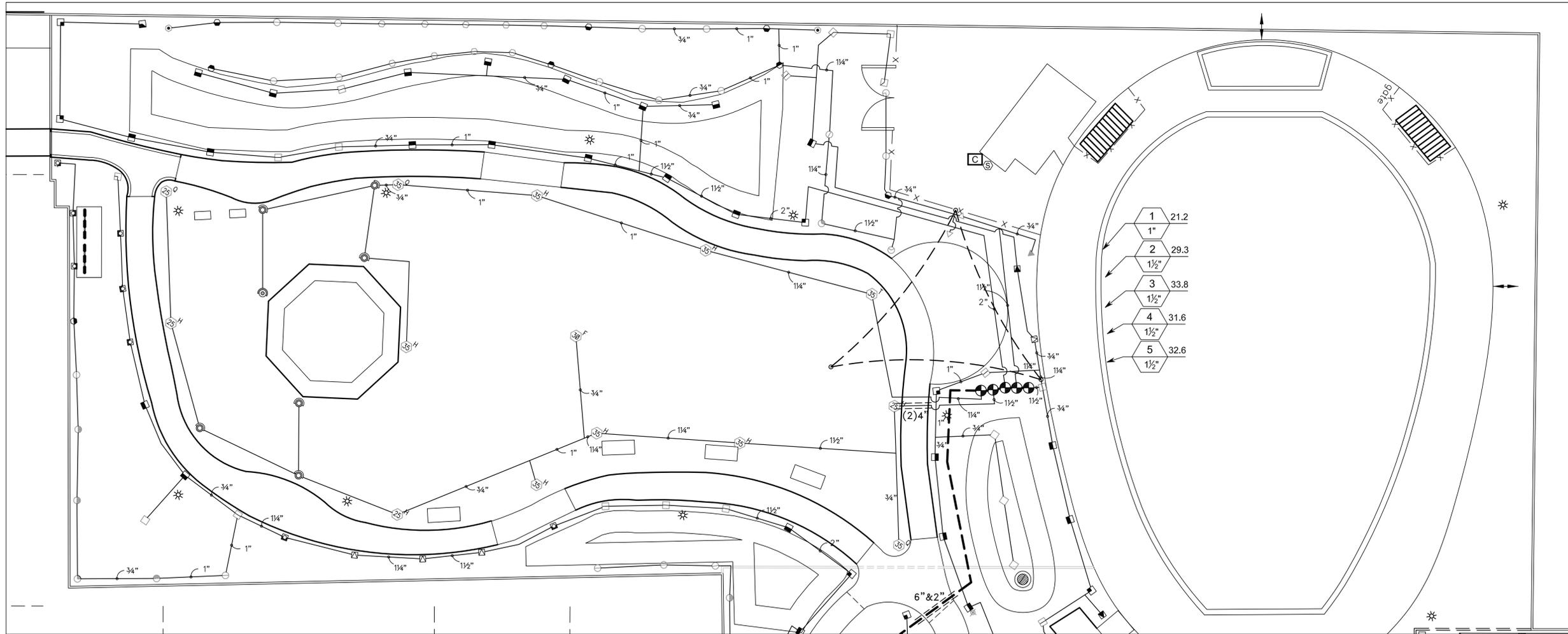
Drawing Size 24x36	Project #: MK-11035
Drawn By: JC	Checked By: JC

Title:
**IRRIGATION PLAN
ZONE A**

Sheet Number:

11.2.1

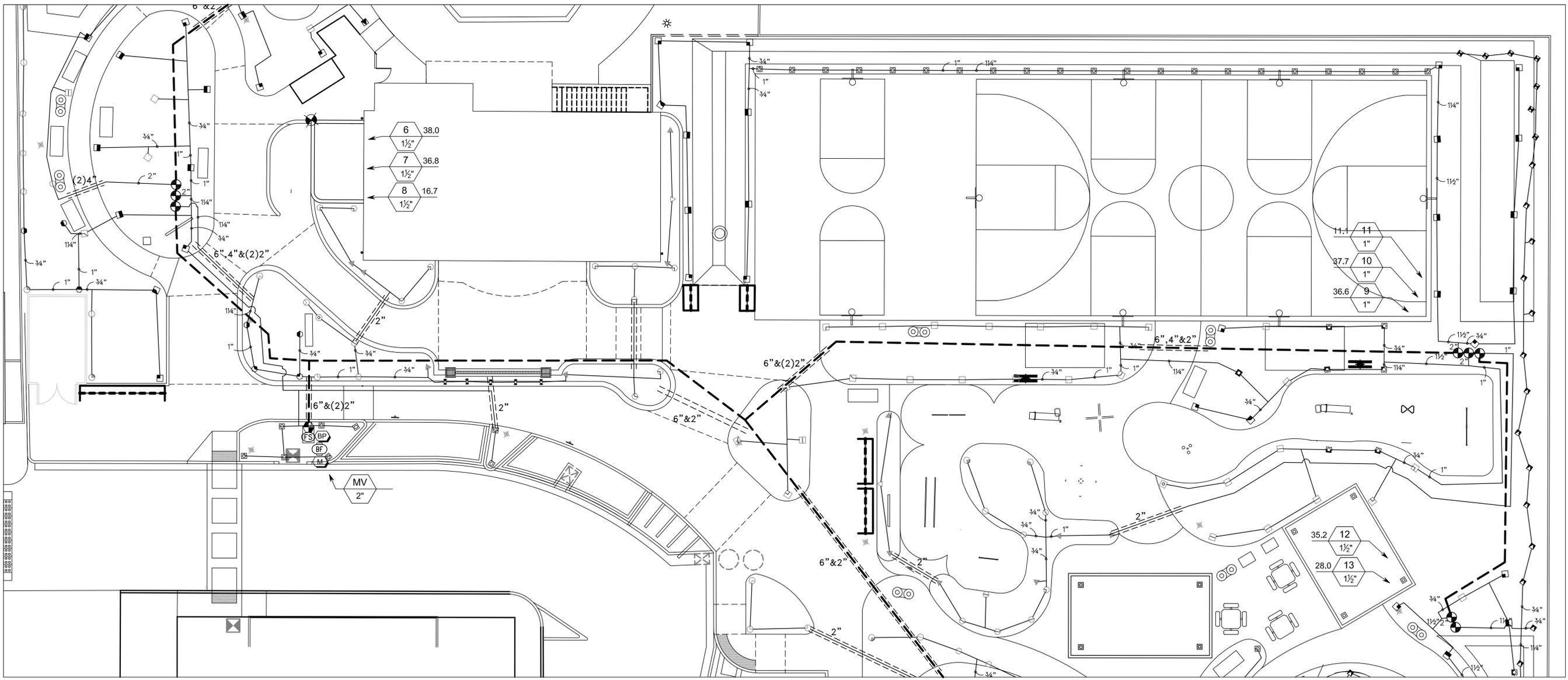
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IRRIGATION PLAN - ZONE A

SCALE: 1"=10'-0"

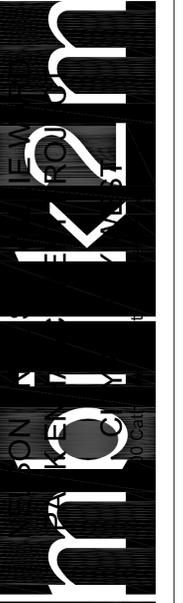




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 Drawing Size | Project #:
 24x36 | MK-11035
 Drawn By: | Checked By:
 jc | jc
 Title:
 IRRIGATION PLAN
 ZONE B
 Sheet Number:
11.2.2
 Date: October 01, 2012
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 01
 11.2.2
IRRIGATION PLAN - ZONE B
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Drawn By: JC	Checked By: JC

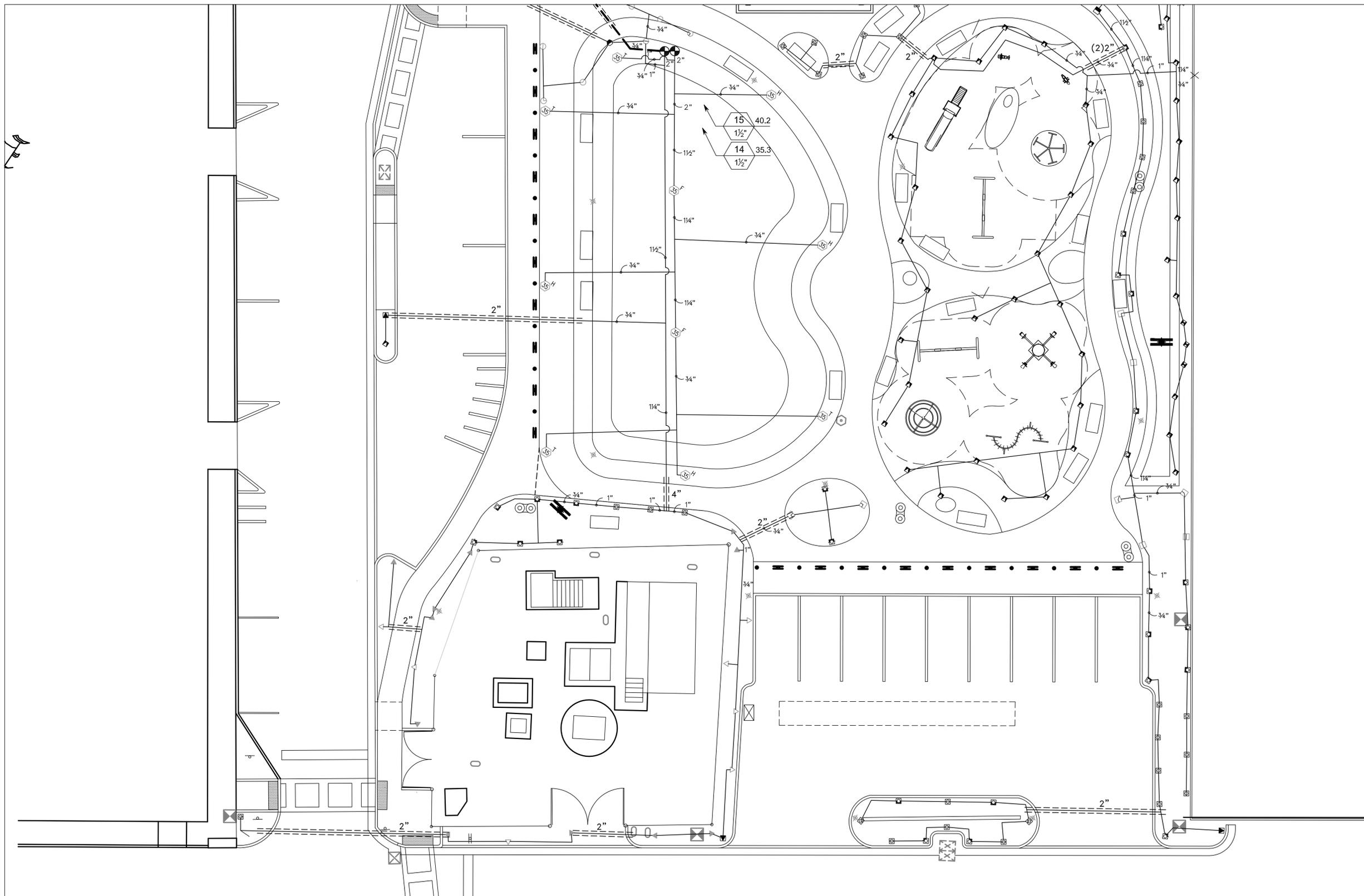
Title:
IRRIGATION PLAN
ZONE C

Sheet Number:

11.2.3

Date: October 01, 2012

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IRRIGATION PLAN - ZONE C

SCALE: 1"=10'-0"



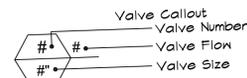
IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL	QTY	ARC	PSI	GPM	RADIUS
■	Rain Bird 1806-PRS 15 Strip Series	5	EST	30	0.61	4x15'
■	Rain Bird 1806-PRS 15 Strip Series	4	SST	30	1.21	4x30'
■	Rain Bird 1806-PRS 8 Series MPR	42	180	30	0.52	8'
■	Rain Bird 1806-PRS 8 Series MPR	11	90	30	0.26	8'
■	Rain Bird 1806-PRS 8 Series MPR	2	120	30	0.35	8'
■	Rain Bird 1806-PRS 10 Series MPR	1	360	30	1.58	10'
■	Rain Bird 1806-PRS 10 Series MPR	29	180	30	0.79	10'
■	Rain Bird 1806-PRS 10 Series MPR	9	90	30	0.39	10'
■	Rain Bird 1806-PRS 10 Series MPR	2	120	30	0.53	10'
■	Rain Bird 1806-PRS 12 Series MPR	6	360	30	2.60	12'
■	Rain Bird 1806-PRS 12 Series MPR	33	180	30	1.30	12'
■	Rain Bird 1806-PRS 12 Series MPR	11	90	30	0.65	12'
■	Rain Bird 1806-PRS 12 Series MPR	8	120	30	0.87	12'
■	Rain Bird 1806-PRS 15 Series MPR	41	180	30	1.85	15'
■	Rain Bird 1806-PRS 15 Series MPR	22	90	30	0.92	15'
■	Rain Bird 1806-PRS 15 Series MPR	4	120	30	1.23	15'
■	Rain Bird 1806-PRS 8 Series VAN	2	Adj	30		8'
■	Rain Bird 1806-PRS 12 Series VAN	1	Adj	30		12'
■	Rain Bird 1812-PRS 15 Strip Series	24	EST	30	0.61	4x15'
■	Rain Bird 1812-PRS 15 Strip Series	11	SST	30	1.21	4x30'
■	Rain Bird 1812-PRS 8 Series MPR	26	180	30	0.52	8'
■	Rain Bird 1812-PRS 8 Series MPR	8	90	30	0.26	8'
■	Rain Bird 1812-PRS 8 Series MPR	2	120	30	0.35	8'
■	Rain Bird 1812-PRS 10 Series MPR	14	180	30	0.79	10'
■	Rain Bird 1812-PRS 10 Series MPR	1	90	30	0.39	10'
■	Rain Bird 1812-PRS 10 Series MPR	1	120	30	0.53	10'
■	Rain Bird 1812-PRS 12 Series MPR	21	180	30	1.30	12'
■	Rain Bird 1812-PRS 12 Series MPR	7	90	30	0.65	12'
■	Rain Bird 1812-PRS 12 Series MPR	3	120	30	0.87	12'
■	Rain Bird 1812-PRS 15 Series MPR	4	180	30	1.85	15'
■	Rain Bird 1812-PRS 15 Series MPR	5	90	30	0.92	15'
■	Rain Bird 1812-PRS 15 Series MPR	2	120	30	1.23	15'
■	Rain Bird 1812-PRS 15 Series MPR	1	Adj	30		12'
■	Rain Bird 1812-PRS 10 Series VAN	2	Adj	30		10'
■	Rain Bird 1806-SAM-P45-R13-18	3	180	45	0.98	18'
■	Rain Bird 1806-SAM-P45-R13-18	1	120	45	0.65	18'
■	Rain Bird 1806-SAM-P45-R13-18	2	240	45	1.31	18'
■	Rain Bird 1806-SAM-P45-R17-24	1	240	45	2.45	23'
■	Rain Bird 1806-5 Series Stream	5	180	30	0.50	1x10'
■	Rain Bird 1806-PRS w/MaxJet ARC6HF609H	10	90	30	0.25	5'
■	Rain Bird 1806-PRS w/MaxJet ARC6HF609H	52	90	30	0.40	1'

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI	GPM	RADIUS
ARC 25	Rain Bird 5004-MPR	4	45	25'	
ARC 30	Rain Bird 5004-MPR	1	45	30'	
ARC 35	Rain Bird 5004-MPR	19	45	35'	

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
⊕	Rain Bird PGA in 12" Valve Box	15
⊕	Rain Bird PGA Connect into master valve	1
BF	Wilkins 975XL 1-1/2" Backflow Preventer	1
C	Rain Bird ESP-LXD Two Wire Controller	1
S	Rain Bird RSD-BEX Rain Sensor	1
FS	Rain Bird FS-150-P Flow Sensor	1
M	Water Meter 1-1/2" to produce 45 gpm @ 55 psi	1
BP	Booster Pump see notes	1

Irrigation Lateral Line: PVC Class 160 6,000 l.f.
 Irrigation Mainline: PVC 2-1/2" Schedule 40 560 l.f.
 Pipe Sleeve: PVC Schedule 40
 Extend sleeves 18 inches beyond edges of paving or construction.
 IRRIGATION CONTRACTOR RESPONSIBLE FOR THEIR OWN TAKE OFF



UNDERGROUND IRRIGATION SPECIFICATIONS

1.0 GENERAL

- 1.1 SUMMARY: Includes but not limited to:
 A. Furnishing and installing sprinkler system as described in Contract Documents complete with accessories necessary for proper functioning.
- 1.2 SYSTEM DESCRIPTION:
 A. Design Requirements:
 1. Layout of Irrigation Heads:
 a. Location of heads shown on Drawings is approximate. Actual placement may vary slightly as is required to achieve full, even coverage without spraying onto buildings, sidewalks, fences, etc.
 b. During layout, consult with Landscape Architect to verify proper placement and make recommendations, where revisions are advisable.
- 1.3 QUALITY ASSURANCE:
 A. Regulatory Requirements:
 1. Work and materials shall be in accordance with latest rules and regulations, and other applicable state or local laws. Nothing in Contract Documents is to be construed to permit work not conforming to these codes.
 B. Pre-Installation Conference:
 1. Meet with Owner and Landscape Architect to discuss and clarify all aspects of job requirements prior to commencing work of this Section.
 C. System Adjustments:
 1. Minor adjustments in system will be permitted to avoid existing fixed obstructions.
 2. Mainlines, laterals, and valves are shown for clarity purposes only. All irrigation equipment to be with landscape area. Mainline, laterals and valves to be installed as far away from existing and new specimen trees as possible.
 D. 1. Documentation and submittal of actual water supply performance prior to commencing installation.
- 1.4 SUBMITTALS:
 A. Record Drawings:
 1. Prepare an accurate as-built drawing as installation proceeds to be submitted prior to final inspection. Drawing shall include:
 a. Detail and dimension changes made during construction.
 b. Significant details and dimensions not shown in original Bidding Documents.
 2. Maintain, at job site, one copy of Contract Documents (as defined in General Conditions) and relevant shop drawings.
 3. Clearly mark each document "PROJECT RECORD COPY" and maintain in good condition for use of the Landscape Architect and Owner.
 4. As-built drawing shall be clearly drawn on reproducible mylar.
 5. Submit product literature for all sprinklers, valves, pipe, wire, wire connectors and controller.
 6. Final payment for system will not be authorized until accurate and complete submittals are delivered to the Landscape Architect.
- B. Instruction Manual:
 1. Provide instruction manual which lists complete instructions for system operation and maintenance.
- 1.5 PRODUCT STORAGE:
 A. During construction and storage, protect materials from damage and prolonged exposure to sunlight.
- 1.6 WARRANTY:
 A. Standard one (1) year warranty stipulated in General Conditions shall include:
 1. Completed system including parts and labor.
 2. Filling and repairing depressions and replacing plantings due to settlement of irrigation trenches for one (1) year following final acceptance.
 3. System adjustment to supply proper coverage to areas to receive water.
- 1.7 MAINTENANCE:
 A. Extra Materials:
 1. In addition to installed system, furnish Owner with the following items at close-out:
 a. Two sprinkler head bottles of each size and type.
 b. Two nozzles for each size and type.
 c. Two adjusting keys for each sprinkler head cover type.

2.0 PRODUCTS:

- 2.1 PIPE, PIPE FITTINGS, AND CONNECTIONS:
 A. Pipe shall be continuously and permanently marked with Manufacturer's name, size, schedule, type, and working pressure.
 B. Pipe:
 1. Pressure Lines: as indicated on plans.
 2. Lateral Lines: as indicated on plans.
 3. Risers: sch. 80 PVC, gray
 C. Fittings:
 1. Schedule 40 PVC.
- 2.2 SPRINKLER HEADS:
 A. Conform to requirements shown on Drawings as to type, radius of throw, pressure, and discharge.
- 2.3 AUTOMATIC SPRINKLER SYSTEM:
 A. Control valves shall be of size and type indicated on Drawings.
 B. Control wire shall be Rain Bird Maxi 14-2. Install FD-Turf decoders at all valve locations. Install SD210 Turf sensor decoder for flow sensor connection. All connections into Maxi 14-2 wire shall be made with DBR6 wire connectors. All connections from decoders to valve control wire to be made with DBY connectors.
- 2.4 VALVES:
 A. Electric Valves:
 1. Make and model shown on Drawings.
 B. Gate valves:
 1. Bronze construction, angle type, 150 pound class, threaded connections, with cross-type operating handle designed to receive operating key.
 C. Automatic Controller:
 1. Make and model shown on Drawings.
 D. Backflow Preventer:
 1. Make and model shown on Drawings.
- 2.5 VALVE ACCESSORIES:
 A. Valve Boxes:
 1. Ametek or Brooks rectangular heavy duty valve box with locking lid or Landscape Architect approved equal.
 2. Do not install more than one (1) valve in a single box.
 3. Valve boxes shall be large enough for easy removal or maintenance of valves.

3.0 EXECUTION:

- 3.1 PREPARATION:
 A. Protection:
 1. Work of others damaged by this Section during course of its work shall be replaced or repaired by original installer at this Section's expense.
- 3.2 INSTALLATION:
 A. Trenching and Backfilling:
 1. Over-excavate trenches by two (2") inches and bring back to indicated depth by filling with fine, rock-free soil or sand.
 2. Cover pipe both top and sides with two (2") inches of material specified in paragraph above. In no case shall there be less than two (2") inches of rock-free soil or sand surrounding pipe.

BOOSTER PUMP NOTES

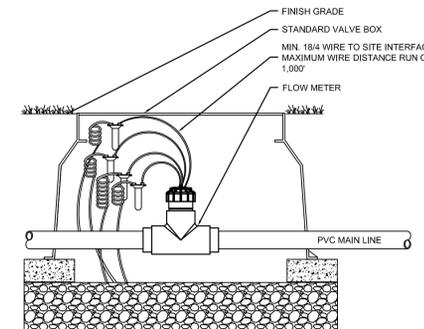
- The water source shall be water meter with booster pump. Irrigation contractor responsible for supplying booster pump as part of the irrigation contract. The system shall include all labor, equipment, materials for the pump/motor, control box, pressure tank, pressure gauge valves, plumbing fitting, etc. to provide a complete and properly operating system meeting the following performance requirements and provisions:
- Provide Starite DS2HF or approved equal pump to produce 40 gpm min @ 80 TDH
 - Include Cycle Stop CSV3b 2" 50 PSI and pressure tank
 - Provide complete submittals for approval prior to commencing work
 - Warranty all work for 1 year minimum
 - Electrical connection by licensed electrical contractor
 - Install in Lok Box LB3E Enclosure

PRODUCT NOTES

IRRIGATION CONTRACTOR TO PROVIDE SUBMITTALS FOR APPROVAL TO CITY OF KEY WEST COMMUNITY SERVICES DEPARTMENT PRIOR TO INSTALLATION. LOCATION OF CONTROLLER AND BOOSTER PUMP TO BE DETERMINED BY CITY OF KEY WEST COMMUNITY SERVICES DEPARTMENT.

- B. Installation of Plastic Pipe:
 1. Install plastic pipe in a manner to provide for expansion and contraction as recommended by Manufacturer.
 2. All irrigation piping to be installed prior to the installation of the multi-flow drain system.
 3. Unless otherwise Indicated on Drawings, install main lines with a minimum cover of twenty four (24") inches based on finish grade. Install lateral lines with a minimum cover of twenty four (24") inches based on finish grade.
 4. Drawings show arrangement of piping. Should local conditions necessitate rearrangement, obtain approval of Landscape Architect prior to proceeding with work.
 5. Cut plastic pipe square. Remove burrs at cut ends prior to installation so unobstructed flow will result.
 6. Make solvent weld joints in the following manner:
 a. Clean mending pipe and fitting with clean, dry cloth and apply one (1) coat of P-70 primer to each.
 b. Apply uniform coat of 711 solvent to outside of pipe.
 c. Apply solvent to fitting in similar manner.
 d. Reapply a light coat of solvent to pipe and quickly insert into fitting.
 e. Give pipe or fitting a quarter turn to insure even distribution of solvent and make sure pipe is inserted to full depth of fitting socket.
 f. Hold in position for fifteen (15) seconds minimum or long enough to secure joint.
 g. Wipe off solvent appearing on outer shoulder of fitting.
 h. Do not use an excessive amount of solvent thereby causing an obstruction to form on the inside of pipe.
 i. Allow joints to set at least 24 hours before applying pressure to PVC pipe.
 7. Tape threaded connection with teflon tape.
 8. Install concrete thrust blocks wherever change of direction occurs a PVC main pressure lines unless otherwise detailed on Drawings.
- C. Control Valves and Controller:
 1. Install controller, control wires, and valves in accordance with Manufacturer's recommendations and according to applicable electrical code.
 2. Install valves in plastic boxes with reinforced heavy duty plastic covers. Locate valve box tops at finish grade.
 3. Install remote control valves in valve boxes positioned over valve so all parts of valve can be reached for service. Set cover of valve box even with finish grade.
 4. Install all valve boxes over nine (9") inches of gravel for drainage.
- D. Sprinkler Heads:
 1. Prior to the installation of sprinkler heads, open control valves and use full head of water to flush out system.
 2. Set sprinkler heads perpendicular to finish grade.
- 3.3 FIELD QUALITY CONTROL:
 A. Flushing and Testing:
 1. Test pressure lines at a minimum sustained pressure of 100 psi for two (2) hours. Maximum loss shall be 0.8 gallons/inch pipe diameter/1000'. Testing shall be witnessed by the Irrigation Designer. Notify Landscape Architect 48 hours prior to test.
- 3.4 ADJUSTMENT AND CLEANING:
 A. Adjust heads to proper grade when turf is sufficiently established to allow walking on it without appreciable harm. Such lowering or raising of heads shall be part of the original contract with no additional charge to the Owner.
 B. Adjust sprinkler heads for proper distribution and trim to ensure spray does not fall on building.
 C. Adjust watering time of valves to provide proper amounts of water to all plants.
- 3.5 DEMONSTRATION:
 A. After system is installed and approved, instruct Owners Representative in complete operation and maintenance.

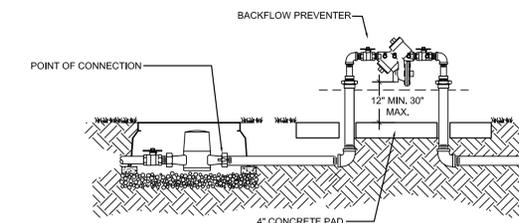
END OF SECTION



NOTE INLET PIPE LENGTH OF SENSOR MUST BE MIN. 10X PIPE DIA. STRAIGHT, CLEAN RUN OF PIPE, NO FITTINGS OR TURNS. OUTLET PIPE LENGTH OF SENSOR MUST BE MIN. 5X PIPE DIA. OF STRAIGHT CLEAN RUN OF PIPE, NO FITTINGS OR TURNS.

FLOW SENSOR INSTALLATION DETAIL

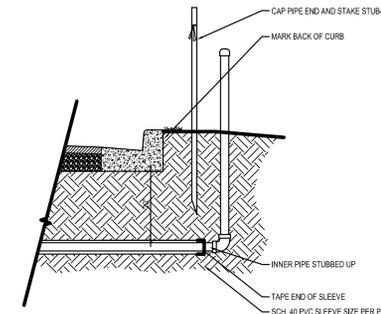
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IRRIGATION SYSTEM CONNECTION DETAIL

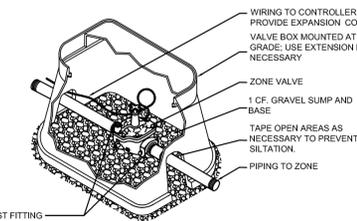
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PROVIDE MEASUREMENTS FROM 2 REFERENCE POINTS TO STUB UP ON THE AS-BUILT DRAWING.



SLEEVING ROUGH-IN DETAIL

SCALE: NTS

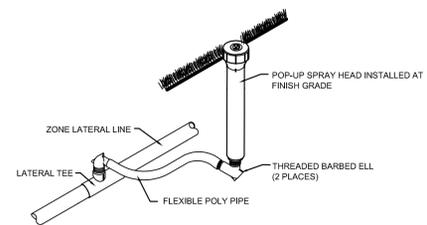


2" NIPPLES TO FIRST FITTING

INSTALL TOP OF VALVE A MAXIMUM OF 15" FROM FINISHED GRADE.
 INSTALL REDUCERS AND ALL-THREAD AS NECESSARY AT EACH VALVE LOCATION.
 INSTALL EACH VALVE TAP IN A VERTICAL ORIENTATION TO ASSURE THE PROPER VALVE DEPTH.

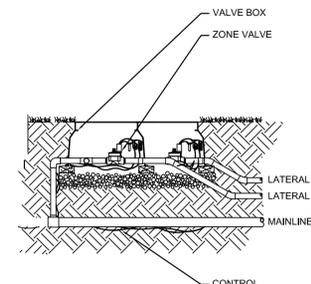
ZONE VALVE INSTALLATION DETAIL

SCALE: NTS



SPRAY HEAD INSTALLATION DETAIL

SCALE: NTS



ARCHITECT:

mbi | k2m
 ARCHITECTURE, INC.

Architecture, Interior Design,
 Procurement,
 Owner Representation,
 Specialty Consulting

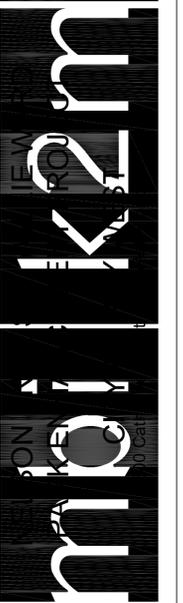
1001 Whitehead Street
 Key West, Florida 33040
 Tel: 305.292.7722
 Fax: 305.292.2162
 Email: infokw@mbi-k2m.com
 www.mbi-k2m.com
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 LEGEND AND DETAILS

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Date: October 01, 2012

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