GENERAL DIRECTION

THE LANDSCAPE IRRIGATION SYSTEM DESIGN OF THE DAYTON NATIONAL CEMETERY GRAVESITE EXPANSION SHALL INCLUDE FULLY FUNCTIONAL AUTOMATIC IRRIGATION INCLUDING AMENDMENT, REPLACEMENT AND REINSTALLATION OF THE ALREADY IN-PLACE EQUIPMENT AND NEW INSTALLATION CONSISTENT WITH THE ORIGINAL MANUFACTURER AND PERFORMANCE INTENT OF THE EXISTING SYSTEM.

SHEET NOTES CODE 1– MEMORIAL WALL AND COLUMBARIA

LOCATED AT THE NORTHWEST AREA OF THE CEMETERY, SOUTH OF WEST THIRD STREET AND NORTH OF MCMAHON AVENUE, THIS RE-DESIGN AREA IS CURRENTLY IRRIGATED BY SIX STATIONS OF TURF SPRINKLERS CONTROLLED BY THE SYSTEM A CONTROLLER. TO COMPLEMENT THE REDESIGNED AREA, THE LANDSCAPE IRRIGATION DISTRIBUTION EQUIPMENT (CONTROL VALVES, DECODERS, QUICK COUPLERS, LATERAL PIPING AND SPRINKLERS) WILL BE AMENDED TO ACCOMMODATE THE LANDSCAPE CHANGES AND ADDITIONAL COLUMBARIA SECTION. THE EXISTING IRRIGATION PRESSURE MAIN AND DECODER WIRE PATH SERVING THE AREA WILL BE PRESERVED FOR REUSE WHEREVER PRACTICAL.

THE SELECTED IRRIGATION INSTALLER SHALL SALVAGE AND CATALOGUE EXISTING SURFACE-BASED IRRIGATION EQUIPMENT THAT MAY BE REMOVED FOR TURNOVER TO THE OWNER. SURFACE-BASED EQUIPMENT TO BE SALVAGED INCLUDES SERVICE BOXES, ELECTRIC AND MANUAL VALVES, DECODERS, QUICK COUPLERS AND SPRINKLERS. OBSOLETE UNDERGROUND IRRIGATION EQUIPMENT IN SECTIONS 36-42 SHALL BE ABANDONED IN-PLACE.

THE EXISTING SYSTEM A IRRIGATION SPRINKLER AND CONTROL EQUIPMENT WILL BE SPECIFIED FOR NEW INSTALLATION IN THIS AREA. THERE SHALL BE APPROXIMATELY SIX REPLACEMENT STATIONS OF TURF SPRINKLER IRRIGATION AND APPROXIMATELY THREE NEW STATIONS OF IRRIGATION TO WATER PLANTING BEDS. SPRINKLER MODELS SPECIFIED WILL BE AMENDED FROM THE ORIGINALLY INSTALLED MODELS TO INCLUDE CONTEMPORARY WATER-EFFICIENT FEATURES AND WILL BE PLACED IN THE DESIGN AREA TO COMPLIMENT THE LANDSCAPE BEING IRRIGATED.

SHEET NOTE CODE 2– NORTH PRIMARY ENTRY AND ENTRY MONUMENT

LOCATED AT THE INTERSECTION OF WEST THIRD AVENUE AND WISCONSIN AVENUE, THE NORTH PRIMARY ENTRY TO THE CEMETERY IS CURRENTLY IRRIGATED BY FOUR STATIONS OF TURF SPRINKLERS CONTROLLED BY THE SYSTEM B CONTROLLER. TO COMPLEMENT THE REDESIGNED AREA, THE LANDSCAPE IRRIGATION DISTRIBUTION EQUIPMENT (CONTROL VALVES, DECODERS, QUICK COUPLERS, LATERAL PIPING AND SPRINKLERS) WILL BE AMENDED TO ACCOMMODATE THE LANDSCAPE CHANGES. THE EXISTING IRRIGATION PRESSURE MAIN AND DECODER WIRE PATH SERVING THE AREA WILL BE PRESERVED FOR REUSE WHEREVER PRACTICAL.

THE SELECTED IRRIGATION INSTALLER SHALL SALVAGE AND CATALOGUE EXISTING SURFACE-BASED IRRIGATION EQUIPMENT THAT MAY BE REMOVED FOR TURNOVER TO THE OWNER. SURFACE-BASED EQUIPMENT TO BE SALVAGED INCLUDES SERVICE BOXES, ELECTRIC AND MANUAL VALVES, DECODERS, QUICK COUPLERS AND SPRINKLERS. OBSOLETE UNDERGROUND IRRIGATION EQUIPMENT IN SECTIONS 36-42 SHALL BE ABANDONED IN-PLACE.

THE EXISTING SYSTEM B IRRIGATION SPRINKLER AND CONTROL EQUIPMENT BRANDS WILL BE SPECIFIED FOR NEW INSTALLATION IN THIS AREA. THERE WILL BE APPROXIMATELY FOUR REPLACEMENT STATIONS OF TURF SPRINKLER IRRIGATION PLUS APPROXIMATELY FOUR NEW STATIONS OF IRRIGATION TO WATER PLANTING BEDS. SPRINKLER MODELS SPECIFIED WILL BE AMENDED FROM THE ORIGINALLY INSTALLED MODELS TO INCLUDE CONTEMPORARY WATER-EFFICIENT FEATURES AND WILL BE PLACED IN THE DESIGN AREA TO COMPLIMENT THE LANDSCAPE BEING IRRIGATED.

SHEET NOTES CODE 3–INGROUND CREMAINS

LOCATED ALONG THE SOUTH SIDE OF OHIO AVENUE AND WEST OF THE INTERSECTION OF PENNSYLVANIA AVENUE, A NEW AREA OF TURF IRRIGATION WILL COVER APPROXIMATELY 1.25 ACRES (NEW SECTION 45) AND 2,473 INGROUND CREMAINS. THE AREA IS ADJACENT TO ANOTHER SECTION THAT IS CONTROLLED BY SYSTEM C CONTROLLER LOCATED ON THE NORTH SIDE OF OHIO AVENUE. SYSTEM C SHALL BE DESIGNATED TO OPERATE THE NEW MP4 AREA IRRIGATION.

THE SELECTED IRRIGATION INSTALLER SHALL CONNECT NEW IRRIGATION PRESSURE PIPING AND SYSTEM C DECODER CONTROL WIRE LOCATED IN THE ADJACENT SECTION 46 AND INSTALL ALONG THE SOUTH SIDE OF OHIO AVENUE TO AREA 4 AND PROCEED TO INSTALL NEW LANDSCAPE IRRIGATION DISTRIBUTION EQUIPMENT IN THE AREA TO BE IRRIGATED.

THE EXISTING SYSTEM C IRRIGATION SPRINKLER AND CONTROL EQUIPMENT BRANDS WILL BE SPECIFIED FOR NEW INSTALLATION IN THIS AREA. THERE SHALL BE APPROXIMATELY SIX NEW TURF SPRINKLER IRRIGATION STATIONS INSTALLED AND ADDED TO SYSTEM C CONTROLLER. SPRINKLER MODELS SPECIFIED WILL INCLUDE CONTEMPORARY WATER-EFFICIENT FEATURES AND WILL BE PLACED IN THE DESIGN AREA TO COMPLIMENT THE LANDSCAPE BEING IRRIGATED.

SYSTEM C SHALL BE CONFIGURED TO ENABLE THE AREA TO BE FLOW MANAGED. THE DESIGN SHALL INCLUDE A POINT OF CONNECTION THAT SHALL DISTRIBUTE SYSTEM C PRODUCT WATER TO SYSTEM C CONTROL VALVES. THE POINT OF CONNECTION SHALL INCLUDE A THREE-INCH RAIN BIRD 300BPES MASTER VALVE IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-D-1 SINGLE VALVE DECODER, BADGER DYNASONICS RS-900W POLYMER MODEL D8-C-020NAAP9SS-BMXX TWO-INCH PULSE ULTRASONIC FLOW SENSOR IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-DAC-FLOW PULSE DECODER AND A QUICK COUPLER IN AN APPROPRIATELY SIZED SERVICE BOX DOWNSTREAM OF THE FLOW SENSOR ON THE SYSTEM C SUB MAINLINE.

SHEET NOTES CODE 4–SECTION 33A, TRADITIONAL BURIAL

LOCATED SOUTH OF SECTION 33, AT THE NORTHCENTRAL INTERSECTION OF MICHIGAN AVENUE AND OHIO AVENUE, NEW SECTION 33A WILL COVER APPROXIMATELY 0.30 ACRES AND INCLUDE SPACE FOR 75 SINGLE BURIAL PLOTS. THE AREA IS CURRENTLY IRRIGATED BY CONTROLLER D, A 24-VOLT CONVENTIONAL WIRE CONTROLLER LOCATED APPROXIMATELY 300 FEET TO THE NORTHWEST OF NEW SECTION 33A.

THE NEW SECTION 33A AREA WILL BE REDESIGNED TO ACCOMMODATE THE PLANNED USE. TO COMPLEMENT THE REDESIGNED AREA, THE LANDSCAPE IRRIGATION DISTRIBUTION EQUIPMENT (CONTROL VALVES, DECODERS, QUICK COUPLERS, LATERAL PIPING AND SPRINKLERS) WILL BE REPLACED. THE EXISTING IRRIGATION PRESSURE MAIN AND DECODER WIRE PATH SERVING THE AREA WILL BE PRESERVED FOR REUSE WHEREVER PRACTICAL.

THE SELECTED IRRIGATION INSTALLER SHALL SALVAGE AND CATALOGUE EXISTING SURFACE-BASED IRRIGATION EQUIPMENT THAT MAY BE REMOVED FOR TURNOVER TO THE OWNER. SURFACE-BASED EQUIPMENT TO BE SALVAGED INCLUDES SERVICE BOXES, MANUAL AND ELECTRIC VALVES, DECODERS, QUICK COUPLERS AND SPRINKLERS. OBSOLETE UNDERGROUND IRRIGATION EQUIPMENT IN NEW SECTION 33A SHALL BE ABANDONED IN-PLACE.

THE EXISTING SYSTEM D IRRIGATION SPRINKLER AND CONTROL EQUIPMENT BRANDS WILL BE SPECIFIED FOR NEW INSTALLATION IN THIS AREA. THERE WILL BE APPROXIMATELY TWO REPLACEMENT STATIONS OF TURF SPRINKLER IRRIGATION TO SERVE NEW SECTION 33A. SPRINKLER MODELS SPECIFIED WILL BE AMENDED FROM THE ORIGINALLY INSTALLED MODELS TO INCLUDE CONTEMPORARY WATER-EFFICIENT FEATURES AND WILL BE PLACED IN THE DESIGN AREA TO COMPLIMENT THE LANDSCAPE BEING IRRIGATED.

SHOULD NEW 24-VOLT FIELD WIRE BE REQUIRED TO OPERATE THE NEW REPLACEMENT SECTION 33A IRRIGATION FIELD CONTROLS, THE SELECTED IRRIGATION INSTALLER SHALL INSTALL THE APPROXIMATELY TWO 24-VOLT FIELD WIRES, A COMMON WIRE AND ONE SPARE SIGNAL WIRE FROM THE SYSTEM D CONTROLLER TO THE NEW SECTION 33A IRRIGATION CONTROL VALVE LOCATIONS. THE SELECTED IRRIGATION INSTALLER SHALL MAKE ALL TERMINAL CONNECTIONS AND TAG EACH NEW CONTROL VALVE IN ITS RESPECTIVE SERVICE BOX. THE SELECTED IRRIGATION INSTALLER SHALL NEATLY COIL THE SPARE WIRE, IDENTITY TAG THE WIRE AT BOTH ENDS PLACING ONE END IN ONE OF THE TWO NEW CONTROL VALVE SURFACE BOXES AND THE OTHER END PLACED NEATLY INSIDE THE SYSTEM D CONTROL CABINET.

IT REMAINS UNCLEAR IF THE EXISTING SYSTEM D CONVENTIONAL 24-VOLT FIELD WIRE IS CONTAINED IN CONDUIT. IF SO, THE SELECTED IRRIGATION INSTALLER SHALL CONTAIN NEW REPLACEMENT 24-VOLT FIELD WIRE IN SCHEDULE 40PVC CONDUIT SIZED NOT LESS THAN 1.25-INCH, FROM THE SYSTEM D CONTROLLER TO THE NEW SECTION 33A IRRIGATION CONTROL VALVE LOCATIONS INCLUDING PULL BOXES EVERY 200 FEET. THE SELECTED IRRIGATION INSTALLER SHALL REPAIR ALL DAMAGE CAUSED BY THE INSTALLATION OF NEW 24-VOLT IRRIGATION FIELD WIRE FROM THE SYSTEM D CONTROLLER TO THE NEW SECTION 33A IRRIGATION CONTROL VALVE LOCATIONS.

SYSTEM D SHALL BE CONFIGURED TO ENABLE THE AREA TO BE FLOW MANAGED. THE DESIGN SHALL INCLUDE A POINT OF CONNECTION THAT SHALL DISTRIBUTE SYSTEM D PRODUCT WATER TO SYSTEM D CONTROL VALVES. THE POINT OF CONNECTION SHALL INCLUDE A THREE-INCH RAIN BIRD 300BPES MASTER VALVE IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-D-1 SINGLE VALVE DECODER, BADGER DYNASONICS RS-900W POLYMER MODEL D8-C-020NAAP9SS-BMXX TWO-INCH PULSE ULTRASONIC FLOW SENSOR IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-DAC-FLOW PULSE DECODER AND A QUICK COUPLER IN AN APPROPRIATELY SIZED SERVICE BOX DOWNSTREAM OF THE FLOW SENSOR ON THE SYSTEM D SUB MAINLINE.

SHEET NOTES CODE 5–SECTONS 48-52 PREPLACED CRYPTS

LOCATED ALONG SOUTH GETTYSBURG AVENUE AND EAST OF KENESAW AVENUE, A NEW AREA OF IRRIGATION WILL COVER APPROXIMATELY 8.11 ACRES (NEW SECTIONS 48-52) AND 7,912 PREPLACED CRYPTS. THERE SHALL BE APPROXIMATELY 30 NEW TURF SPRINKLER IRRIGATION STATIONS INSTALLED BY THE SELECTED IRRIGATION INSTALLER. A NEW PEDESTAL-BASED IRRIGATION CONTROLLER SHALL BE INSTALLED, PROGRAMMED AND PLACED INTO SERVICE BY THE SELECTED IRRIGATION INSTALLER TO OPERATE THE NEW SPRINKLER IRRIGATION STATIONS SERVING AREA 5. THE CONTROLLER AND SYSTEM SHALL BE DESIGNATED AS SYSTEM F. SYSTEM F CONTROLLER SHALL BE SET NEAR AND SHALL DERIVE 115VOLT POWER FROM THE ELECTRIC SERVICE SERVING THE NEARBY IRRIGATION BOOSTER PUMP STATION.

SYSTEM F SHALL BE CONFIGURED TO ENABLE THE AREA TO BE FLOW MANAGED. THE DESIGN SHALL INCLUDE A POINT OF CONNECTION FROM THE NEARBY EXISTING 10-INCH IRRIGATION PIPELINE TO A SUB MAINLINE THAT SHALL DISTRIBUTE SYSTEM F PRODUCT WATER TO SYSTEM F CONTROL VALVES. THE POINT OF CONNECTION SHALL INCLUDE A FOUR-INCH MANUAL ISOLATION VALVE WITH BLOW POINT FOR WINTERIZATION, THREE-INCH RAIN BIRD 300BPES MASTER VALVE IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-D-1 SINGLE VALVE DECODER, BADGER DYNASONICS RS-900W POLYMER MODEL D8-C-020NAAP9SS-BMXX TWO-INCH PULSE ULTRASONIC FLOW SENSOR IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-DAC-FLOW PULSE DECODER AND A QUICK COUPLER IN AN APPROPRIATELY SIZED SERVICE BOX DOWNSTREAM OF THE FLOW SENSOR ON THE SYSTEM F SUB MAINLINE.

SHEET NOTES CODE 6–SECTIONS 36 THROUGH 42

THE NON-FUNCTIONAL AND OBSOLETE IRRIGATION EQUIPMENT IN SECTIONS 36-42 IS RE-DESIGNED AND SPECIFIED FOR RE-INSTALLATION BY THE SELECTED IRRIGATION INSTALLER. THE REPLACEMENT EQUIPMENT INCLUDES PRESSURE PIPE, DECODER CONTROL WIRE, QUICK COUPLERS, ELECTRIC AND MANUAL VALVES AND DECODERS IN SERVICE BOXES, LATERAL PIPING AND SPRINKLER EMISSION DEVICES. THERE SHALL BE APPROXIMATELY 45 STATIONS OF REPLACEMENT IRRIGATION. THE EXISTING 24-VOLT CONVENTIONAL WIRE SYSTEM E CONTROLLER SHALL BE REPLACED WITH A NEW DECODER-BASED SYSTEM E CONTROLLER CONSISTENT WITH ALL OTHER CONTROLLERS (SEE THE FIELD CONTROLLER INTERCOMMUNICATION AND CENTRAL CONTROL SECTION BELOW).

THE SELECTED IRRIGATION INSTALLER SHALL SALVAGE AND CATALOGUE EXISTING SURFACE-BASED IRRIGATION EQUIPMENT FOR TURNOVER TO THE OWNER. SURFACE-BASED EQUIPMENT TO BE SALVAGED INCLUDES SERVICE BOXES, MANUAL AND ELECTRIC VALVES, QUICK COUPLERS AND SPRINKLERS. OBSOLETE UNDERGROUND IRRIGATION EQUIPMENT IN SECTIONS 36-42 SHALL BE ABANDONED IN-PLACE. EXISTING IRRIGATION CORRIDORS IN SECTIONS 36-42 SHALL BE RE-UTILIZED FOR RE-INSTALLATION OF NEW REPLACEMENT IRRIGATION EQUIPMENT.

SYSTEM E SHALL BE CONFIGURED TO ENABLE THE AREA TO BE FLOW MANAGED. THE DESIGN SHALL INCLUDE A POINT OF CONNECTION THAT SHALL DISTRIBUTE SYSTEM E PRODUCT WATER TO SYSTEM D CONTROL VALVES. THE POINT OF CONNECTION SHALL INCLUDE A THREE-INCH RAIN BIRD 300BPES MASTER VALVE IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-D-1 SINGLE VALVE DECODER, BADGER DYNASONICS RS-900W POLYMER MODEL D8-C-020NAAP9SS-BMXX TWO-INCH PULSE ULTRASONIC FLOW SENSOR IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-DAC-FLOW PULSE DECODER AND A QUICK COUPLER IN AN APPROPRIATELY SIZED SERVICE BOX DOWNSTREAM OF THE FLOW SENSOR ON THE SYSTEM E SUB MAINLINE.

SHEET CODE 7–HAWAII PLACE FLOWER WATERING STATIONS

THE IRRIGATION SUPPLY PIPELINE ALONG HAWAII PLACE IDENTIFIED AS NON-FUNCTIONAL SHALL BE REPLACED FROM A POINT OF KNOWN OPERATION OF THE EXISTING IRRIGATION SUPPLY PIPELINE NEAR THE INTERSECTION OF WISCONSIN AVENUE/NEW MEXICO PLACE AND HAWAII PLACE AND SHALL EXTEND APPROXIMATELY 400 FEET SOUTHWEST ALONG HAWAII PLACE. EXISTING OUT OF SERVICE FLOWER WATERING STATION PIPING SHALL BE ABANDONED IN PLACE. THE SELECTED IRRIGATION INSTALLER SHALL RECONNECT THREE (3) FLOWER WATER STATIONS ALONG HAWAII PLACE.

THE REPLACEMENT PIPELINE AND FITTINGS ALONG HAWAII PLACE SHALL BE OF HDPE SDR11 CLASS 200 BUTT FUSE WELD POLYETHYLENE AND SHALL BE ASSOCIATED TO SYSTEM B CONTROLLER PRESSURE PIPELINE. TRACE WIRE AND WARNING TAPE SHALL BE INSTALLED ABOVE THE NEW PIPELINE FEEDING THE FLOWER WATERING STATIONS PER APPLICABLE NCA IRRIGATION PIPELINE INSTALLATION GUIDELINES. THE EXISTING IRRIGATION PIPELINE CORRIDOR ALONG HAWAII AVENUE SHALL BE RE-UTILIZED FOR RE-INSTALLATION OF THE NEW REPLACEMENT EQUIPMENT. THE SELECTED IRRIGATION INSTALLER SHALL RECONNECT THREE (3) FLOWER WATERING STATIONS ALONG HAWAII PLACE.

SHEET NOTES CODE 8–BOOSTER PUMP STATION AUGMENTATION

THE EXISTING IRRIGATION MUNICIPAL WATER SUPPLY AND BOOSTER PUMP STATION SHALL CONTINUE TO BE UTILIZED TO FURNISH PRODUCT WATER TO ALL LANDSCAPE IRRIGATION.

SOLE SOURCE DUTY TO BE PERFORMED BY A FACTORY AUTHORIZED WATERTRONICS SERVICING AGENT.

THE SELECTED IRRIGATION INSTALLER SHALL CONTACT MIKE GREEN OF WATERTRONICS, HARLAND, WI MIKE.GREEN@WATERTRONICS.COM, 262-337-3318 TO FACILITATE THE DISPATCHING OF A FACTORY AUTHORIZED WATERTRONICS SERVICING AGENT.

PROVIDE FOR NOT LESS THAN FIVE BUSINESS DAYS FOR A COMPLETE REVIEW, REPAIR, ADJUSTMENT, TESTING, DOCUMENTATION AND PLACEMENT INTO SERVICE OF THE EXISTING MUNICIPAL WATER IRRIGATION BOOSTER PUMP STATION PER THE MANUFACTURER PROGRAMMING AND FEATURES RECORDS. UPON VERIFICATION OF PROPER OPERATION AND BASE PROGRAMMING, ADJUST THE BOOSTER PUMP STATION PERFORMANCE AS NEEDED TO ACCOMMODATE IRRIGATION EXPANSION.

ADDITIONALLY, THE WATERTRONICS SERVICING AGENT SHALL INSTALL, PROGRAM, TEST, DOCUMENT AND PLACE INTO SERVICE:

- WATERTRONICS WATERVISION PUMP STATION MONITORING HARDWARE AND SOFTWARE ONTO THE NEW IRRIGATION SYSTEM LAPTOP FURNISHED BY THE SELECTED IRRIGATION INSTALLER.
- AN OPTOCOUPLER TO ENABLE SHARING OF THE BOOSTER PUMP STATION FLOW SENSOR SIGNAL AND COORDINATION WITH THE SELECTED IRRIGATION INSTALLER WHO SHALL HARDWIRE THE CONNECTION OF THE FLOW SENSOR TO NEW SATELLITE IRRIGATION CONTROLLER F USING PE-39 SIX PAIR SHIELDED TELECOM CABLE, PROPERLY GROUNDED PER MANUFACTURER RECOMMENDATIONS.

THE SELECTED IRRIGATION INSTALLER SHALL REMOVE AND DISPOSE OF THE EXISTING NON-FUNCTIONAL WALL MOUNT TORO SENTINEL→ RADIO-BASED BOOSTER PUMP PERFORMANCE TRANSMITTER. PROFESSIONALLY PATCH WALL PENETRATIONS AGAINST WEATHER AND INSECT INTRUSION. THE SELECTED IRRIGATION INSTALLER SHALL COORDINATE WITH THE WATERTRONICS SERVICING AGENT TO HARDWIRE THE CONNECTION OF THE FLOW SENSOR TO NEW SATELLITE IRRIGATION CONTROLLER F USING PE-39 SIX PAIR SHIELDED TELECOM CABLE PROPERLY GROUNDED PER MANUFACTURER RECOMMENDATIONS. THE SELECTED IRRIGATION INSTALLER SHALL PERFORM THE REQUIRED TORO DXI IRRIGATION DATABASE TASKS TO FULLY INTEGRATE AND ACTIVATE THE PUMP STATION FLOW SENSOR SIGNAL INTO THE TORO SENTINEL DXI IRRIGATION SOFTWARE DATABASE. SEE FIELD CONTROLLER INTERCOMMUNICATION AND CENTRAL CONTROL SECTION.

THE WATERTRONICS SERVICING AGENT SHALL FURNISH NOT LESS THAN THREE HOURS OF DETAILED BOOSTER PUMP STATION HARDWARE, SOFTWARE AND WATERVISION TRAINING TO THE OWNER'S DESIGNATED PERSONNEL. THE TRAINING SHALL INCLUDE ORIENTATION OF THE PUMP STATION COMPONENTS AND FEATURES, SEQUENCE OF OPERATION, USER INTERPHASE, STATUS INTERPRETATIONS AND RESET PROCEDURES, MALFUNCTION AND ALARM CONDITION DETECTION AND REMEDIES, USER APPROPRIATE MAINTENANCE AND CONTACT INFORMATION TO RECEIVE LIVE OFFSITE SUPPORT AND ONSITE SERVICE BY A MANUFACTURER-AUTHORIZED SERVICING AGENT. THE BOOSTER PUMP STATION TRAINING SHALL BE CLEAR AND UNDERSTANDABLE AND SHALL INCLUDE VIDEO AND AUDIO RECORDING. THE RECORDING SHALL BE EDITED TO INCLUDE SEARCHABLE CHAPTERS/TOPICS AND SHALL BE DELIVERED TO THE OWNER FOR FUTURE REFERENCE AS A CONDITION OF PROJECT CLOSEOUT.

FIELD CONTROLLER INTERCOMMUNICATION AND CENTRAL CONTROL

THE OBSOLETE IRRIGATION CONTROLS, INCLUDING THE CENTRAL COMPUTER, SOFTWARE AND FIELD CONTROLLERS SHALL BE REPLACED BY THE SELECTED IRRIGATION INSTALLER WITH NEW TORO SENTINEL DXI CELLULAR INTERNET CONNECTED REMOTE CENTRAL CONTROL HARDWARE AND SOFTWARE INCLUDING:

CONTROLLERSPECIFIED MODELTYPECell SERVICE & HDWR WARRANTYMASTER VALVEFLOW SENSORController A (decoder controller)DXI-PPED-TW-M8C
DXI-CELL-KIT
DXI-FMW-WMS
5Y-EXT-WARRANTYDecoder 200 stations10-yearNONEBooster pump station shared flow signalController B (decoder controller)DXI-PPED-TW-M8C
DXI-CELL-KIT
DXI-FMW-WMS
5Y-EXT-WARRANTYDecoder 200 stations10-yearNONEBooster pump station shared flow signalController C
(decoder controller)DXI-PPED-TW-M8C
DXI-CELL-KIT
DXI-FMW-WMS
5Y-EXT-WARRANTYDecoder 200 stations10-yearRAIN BIRD 300BPES with
TORO TW-D-1 DecoderBadger Dynasonics RS-900W MODEL D8-C-020NAAP9SS-BMXX with Toro TW-DAC-FLOW DecoderController D
(conventional controller) DXI-PWM-48-M8C
DXI-CELL-KIT
DXI-FMW-WMS
5Y-EXT-WARRANTY24-volt 48 stations10-yearRAIN BIRD 300BPES with
TORO TW-D-1 DecoderBadger Dynasonics RS-900W MODEL D8-C-020NAAP9SS-BMXX with Toro TW-DAC-FLOW DecoderController E (decoder controller)DXI-PPED-TW-M8C
DXI-CELL-KIT
DXI-FMW-WMS
5Y-EXT-WARRANTYDecoder 200 stations10-yearRAIN BIRD 300BPES with
TORO TW-D-1 DecoderBadger Dynasonics RS-900W MODEL D8-C-020NAAP9SS-BMXX with Toro TW-DAC-FLOW DecoderController F
(decoder controller)DXI-PPED-TW-M8C
DXI-CELL-KIT
DXI-FMW-WMS
5Y-EXT-WARRANTYDecoder 200 stations10-yearRAIN BIRD 300BPES with
TORO TW-D-1 DecoderBadger Dynasonics RS-900W MODEL D8-C-020NAAP9SS-BMXX with Toro TW-DAC-FLOW DecoderRain CanTexas Instruments TR-525Use pulse decoder. Connect to Controller F. Signal to be relayed to Sentinel software1-yearTablet PCMicrosoft Surface Pro 10 for Business Intel Core Ultra 7 165U-5g-32GB RAM 256GB SSD MS Complete 2yr exchange warranty, Thunderbolt 4 Dock, Surface USB-C Travel Hub, Type Cover w/PenOr approved equal with Toro WMS software installed via free licensed installation from the Toro Company. Consult authorized Toro Sentinel Servicing Agent.One-year cell service, two year equipment warrantyTablet PC Bump Case URBAN ARMOR GEAR UAG Designed for Microsoft Surface Pro 10 Case with Built-in Kickstand Hand & Shoulder Strap Pen Holder Compatible with Type Cover Keyboard
Or approved equal1-year

THE SELECTED IRRIGATION INSTALLER SHALL INSTALL AND CONNECT ALL IRRIGATION CONTROLLERS, TEST, TROUBLESHOOT, PLACE INTO SERVICE AND ENTER BASIC IRRIGATION STATION DATA AND IRRIGATION SCHEDULES THAT ENABLE COORDINATED IRRIGATION OPERATIONS WITHIN 10-HOUR WATER WINDOWS AND WITHOUT HYDRAULIC OVERLOADING INCLUDING AVOIDANCE OF EXCEEDING FIVE FEET PER SECOND WATER VELOCITY THROUGH PIPES AND AVOIDING EXCEEDING WATER SUPPLY CAPABILITY OF THE MUNICIPAL IRRIGATION BOOSTER PUMP STATION.

THE SELECTED IRRIGATION INSTALLER SHALL CONTACT CHRIS NAGY OF THE TORO COMPANY CHRIS.NAGY@TORO.COM, 248-342-4570 TO ARRANGE FOR THE CORRECT CONFIGURATION OF THE NEW TABLET PC AND SOFTWARE REGISTRATION IN THE OWNER'S NAME INCLUDING ADMINISTRATOR AND LOWER USER CREDENTIALS, SATELLITE CONTROLLER COMMUNICATIONS AND COMMUNICATION WITH THE PUMP STATION MONITOR.

JIM LAICHE OF THE TORO COMPANY JIM.LAICHE@TORO.COM , 804-334-2225 SHALL ARRANGE FOR A FACTORY AUTHORIZED TORO SENTINEL SERVICING AGENT TO DELIVER TO DESIGNATED OWNER PERSONNEL, EXTENSIVE IRRIGATION COMPUTER CENTRAL CONTROL HARDWARE AND SOFTWARE TRAINING.

THE FACTORY AUTHORIZED TORO SENTINEL SERVICING AGENT SHALL PROVIDE FOR NOT LESS THAN FOUR BUSINESS DAYS FOR A COMPLETE REVIEW, ADJUSTMENT, TESTING, DOCUMENTATION AND PLACEMENT INTO SERVICE OF THE NEW TORO SENTINEL DXI WITH WMS REMOTE CENTRAL CONTROL SOFTWARE INCLUDING:

- INSTALL ANY REQUIRED UPDATES TO THE LAPTOP FIRMWARE, DRIVERS AND OPERATING SYSTEM
- CONFIRM HARDWARE AND SOFTWARE WARRANTY AND SUPPORT REGISTRATION WITH TORO NATIONAL SERVICE NETWORK (NSN)
- ENTER ADMINISTRATOR AND SUBORDINATE USER PRIVILEGES DESIGNATED BY THE OWNER
- CONFIRM ADEQUATE COMMUNICATION WITH REQUIRED INTERNET RESOURCES AND FIELD DEVICES
- INSTALL, PROGRAM, TEST, DOCUMENT AND PLACE INTO SERVICE:
- TORO AUTHORIZED INTERNET-BASED WEATHER SERVICE
- ALARM CONDITION NOTIFICATIONS TO DESIGNATED OWNER REPRESENTATIVE
- CELLULAR PHONE/FIELD TABLET-BASED REMOTE-CONTROL APPLICATION
- OTHER FEATURES AND/OR SERVICES THAT WILL MAXIMIZE THE OWNER'S EFFICIENT USE OF THE TORO SENTINEL REMOTE CONTROL HARDWARE AND SOFTWARE.
- PROGRAM, TEST, DOCUMENT AND PLACE INTO SERVICE:
- AVAILABLE INTEGRATION(S) WITH THE WATERTRONICS WATERVISION PUMP MONITORING SOFTWARE, COORDINATE WITH WATERTRONICS
- TIPPING RAIN BUCKET
- SHARED BOOSTER PUMP FLOW SIGNAL
- FLOW SENSORS ADDED TO SUBSYSTEMS SYSTEMS C (FSC, D (FSD), E (FDE), F (FSF)
- FLOW ZONES ASSOCIATED WITH FLOW SENSORS C, D, E, F. SUBSYSTEMS A AND B SHALL HAVE FLOW DATA ASSIGNED FROM THE BOOSTER PUMP STATION SHARED FLOW SIGNAL.
- FLOW TESTING AND DATA ENTRY FOR ALL IRRIGATION STATIONS.
- FLOW WATCH FOR ALL IRRIGATION STATIONS – HIGH AND LOW FLOW ALARM NOTIFICATIONS
- FLOW OPTOMIZATION OF IRRIGATION SCHEDULES
- SELECTABLE WEATHER-BASED IRRIGATION SCHEDULES
- SELECTABLE FIXED IRRIGATION SCHEDULES
- FURNISH AND DOCUMENT NOT LESS THAN FOUR HOURS OF TRAINING TO THE OWNER OF TORO SENTINEL REMOTE CONTROL SOFTWARE, BASIC THROUGH ADVANCED, TRAINING IN THE INSTALLATION AND USE OF THE CELLULAR PHONE/FIELD TABLET APPLICATION, ADMINISTRATOR TRAINING IN THE ASSIGNMENT AND REVOCATION OF SUBORDINATE USER PRIVILEGES.

THE IRRIGATION COMPUTER CENTRAL CONTROL HARDWARE AND SOFTWARE TRAINING SHALL BE CLEARLY AND UNDERSTANDABLY VIDEO AND AUDIO RECORDED. THE RECORDING SHALL BE EDITED TO INCLUDE SEARCHABLE CHAPTERS/TOPICS AND SHALL BE DELIVERED TO THE OWNER FOR FUTURE REFERENCE AS A CONDITION OF PROJECT CLOSEOUT.

BID DOCUMENTS

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Office of Design and Construction Services

VA U.S. Department of Veterans Affairs

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Approved: Project Director		Location: 4400 W THIRD ST, DAYTON, OH 45428	Building Number: --
		Issue Date: FEBRUARY 5, 2026 / Checked: TM / Drawn: CJC	Drawing Number: IR100 OF 133

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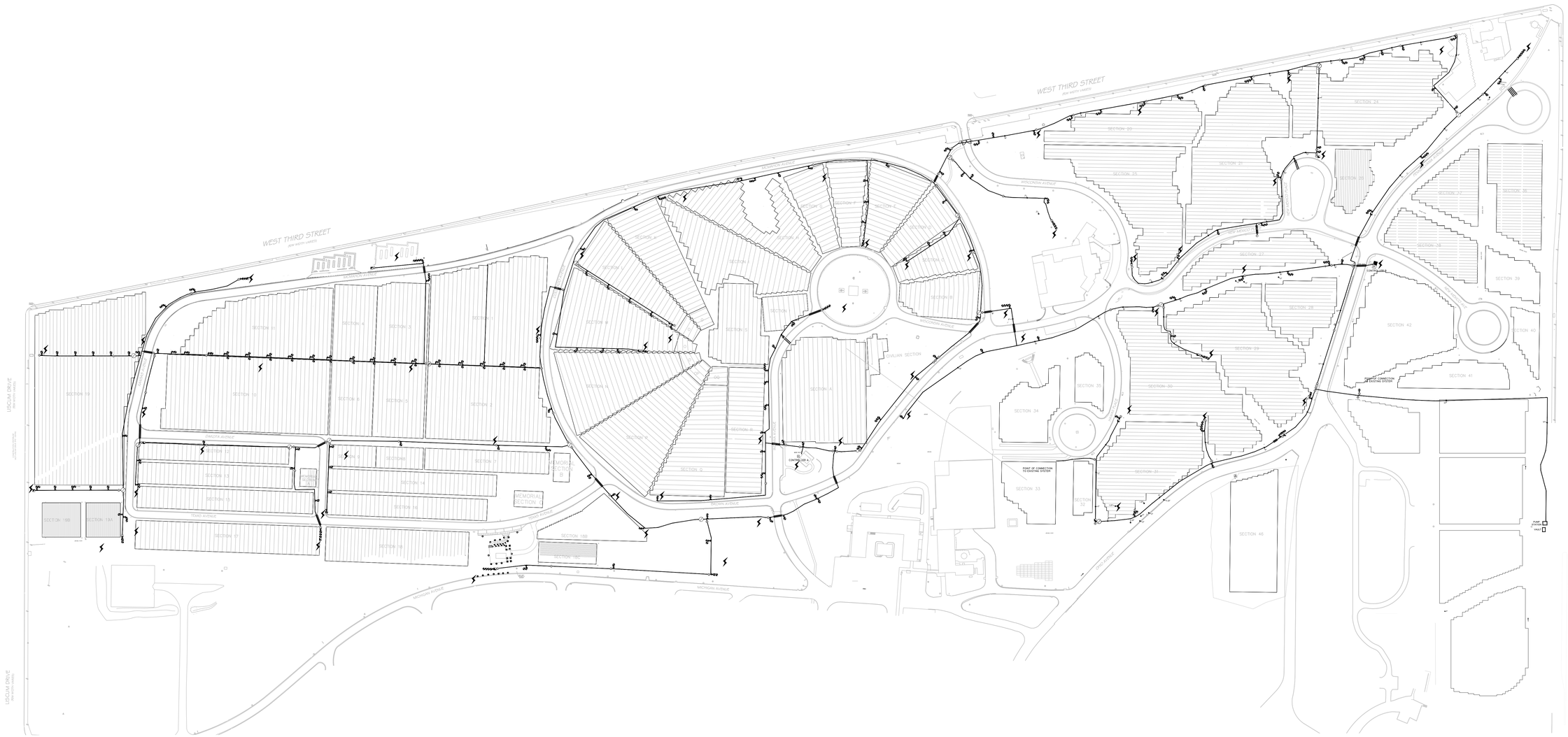

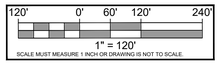

BID DOCUMENTS

Revisions:	Date:

CONSULTANTS

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STAMP

Certified Irrigation Designer CID Irrigation Association
EPA WaterSense 2008 Partner Certified Firm

Timothy R. Malooly CID, CIC, CLIA
#012894

Office of Design and Construction Services

VA U.S. Department of Veterans Affairs

Drawing Title: EXISTING IRRIGATION CONITIONS	Phase: BID DOCUMENTS	Project Title: DAYTON NATIONAL CEMETERY GRAVESITE EXPANSION	Project Number: 810-CM3-033
Approved: Project Director			Building Number: --
		Location: 4400 W THIRD ST, DAYTON, OH 45428	Drawing Number: IR101 OF 133
		Issue Date: FEBRUARY 5, 2026 / Checked: TM / Drawn: CJC	

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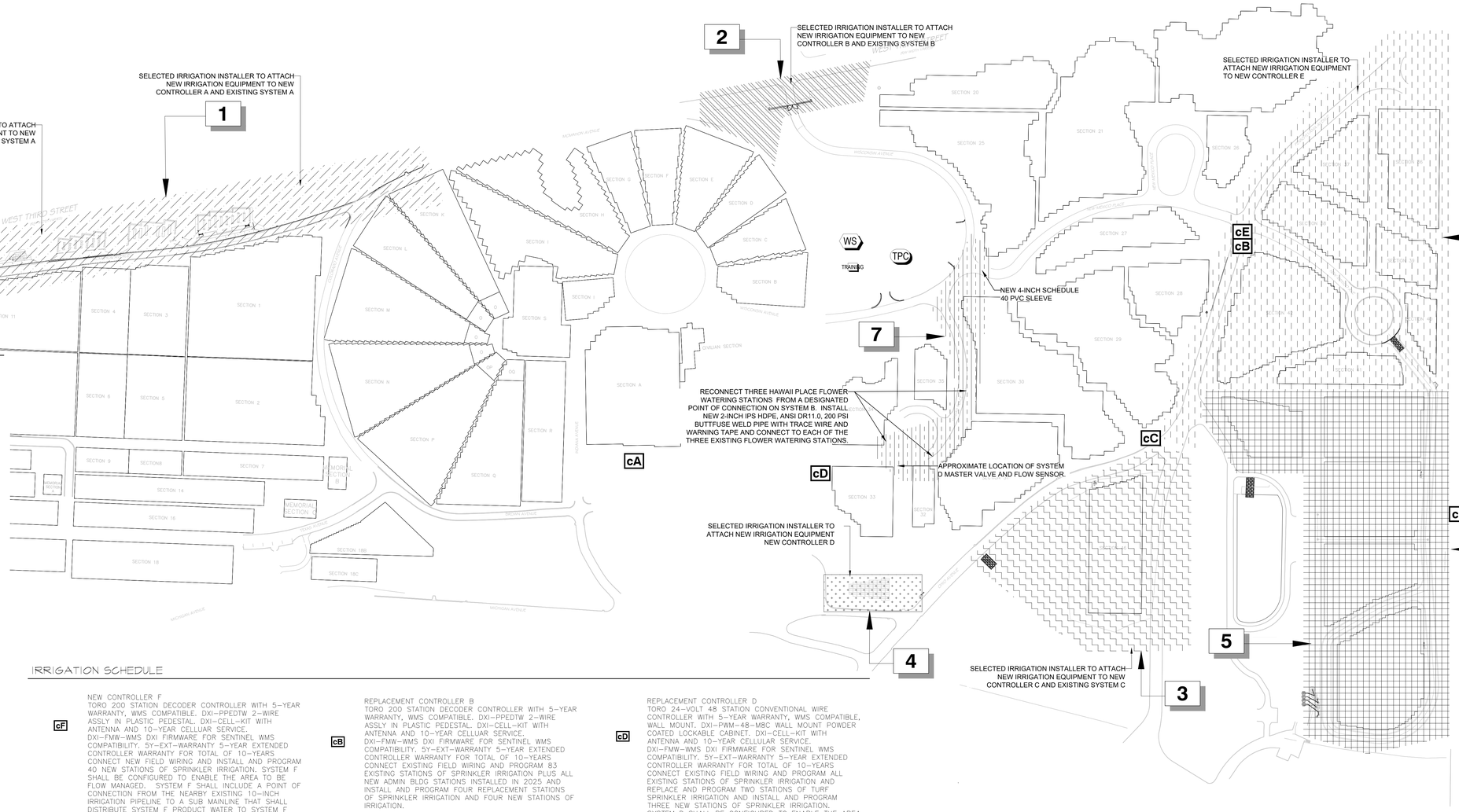

REFERENCE NOTES SCHEDULE

CODE	DESCRIPTION	DETAIL
1	MEMORIAL WALL AND COLUMBARIA. INSTALL IRRIGATION IN NEWLY DESIGNED AREAS. AMEND IRRIGATION IN UNALTERED AREAS TO ASSURE FULL AND COMPLETE COVERAGE. INSTALL NEW RAIN BIRD 1800, 3500, SERIES SPRINKLERS AND RAIN BIRD RWS 1400 SERIES ROOT WATERING SYSTEMS, RAIN BIRD PEB VALVES WITH TORO TW-D-1 SINGLE VALVE DECODERS. SOLVENT WELD OR GASKET SDR21 PVC CLASS 200 ASTM D2241 LATERAL PIPES AND SDR21 PVC CLASS 200 ASTM D2241 MAINLINE PIPES. CONNECT TO REPLACEMENT CONTROLLER A.	
2	NORTH PRIMARY ENTRY AND MONUMENT. AUGMENT IRRIGATION IN NEWLY DESIGNED AREAS. REPLACE IRRIGATION IN UNALTERED AREAS. INSTALL NEW RAIN BIRD 1800, 3500, AND 5000 SERIES SPRINKLERS, RAIN BIRD PEB VALVES WITH TORO TW-D-1 SINGLE VALVE DECODERS. SOLVENT WELD OR GASKET SDR21 PVC CLASS 200 ASTM D2241 LATERAL PIPES AND SDR21 PVC CLASS 200 ASTM D2241 MAINLINE PIPES. CONNECT TO REPLACEMENT CONTROLLER B.	
3	SECTION 46 IN-GROUND CREMAINS. INSTALL NEW RAIN BIRD 8000 SERIES SPRINKLERS IN BURIAL AREAS AND RAIN BIRD 1800, AND 3500 SERIES SPRINKLERS IN ADJACENT SPACES, RAIN BIRD PEB VALVES WITH TORO TW-D-1 SINGLE VALVE DECODERS. SOLVENT WELD OR GASKET SDR21 PVC CLASS 200 ASTM D2241 LATERAL PIPES AND SDR21 PVC CLASS 200 ASTM D2241 MAINLINE PIPES. CONNECT TO REPLACEMENT CONTROLLER C.	
4	SECTION 33A, TRADITIONAL BURIAL. INSTALL NEW RAIN BIRD 8000 SERIES SPRINKLERS IN BURIAL AREAS AND RAIN BIRD 1800 AND3500, SERIES SPRINKLERS IN ADJACENT SPACES, RAIN BIRD PEB VALVES WITH TORO TW-D-1 SINGLE VALVE DECODERS. SOLVENT WELD OR GASKET SDR21 PVC CLASS 200 ASTM D2241 LATERAL PIPES AND SDR21 PVC CLASS 200 ASTM D2241 MAINLINE PIPES, CONNECT TO CONTROLLER REPLACEMENT D.	
5	NEW SECTIONS 48-52, PRE-PLACED CRYPTS. INSTALL NEW RAIN BIRD 8000 SERIES SPRINKLERS IN BURIAL AREAS AND RAIN BIRD 3500, SERIES SPRINKLERS IN ADJACENT SPACES, RAIN BIRD PEB VALVES WITH TORO TW-D-1 SINGLE VALVE DECODERS. SOLVENT WELD OR GASKET SDR21 PVC CLASS 200 ASTM D2241 LATERAL PIPES AND SDR21 PVC CLASS 200 ASTM D2241 MAINLINES PIPES, CONNECT TO NEW CONTROLLER F.	
6	EXISTING BURIAL SECTIONS 36 THROUGH 42. REPLACE EXISTING IRRIGATION SYSTEM WITH NEW RAIN BIRD 8000 SERIES SPRINKLERS IN BURIAL AREAS AND RAIN BIRD 1800 AND 3500, SERIES SPRINKLERS IN ADJACENT SPACES, RAIN BIRD PEB VALVES WITH TORO TW-D-1 SINGLE VALVE DECODERS. SOLVENT WELD OR GASKET SDR21 PVC CLASS 200 ASTM D2241 LATERAL PIPES AND SDR21 PVC CLASS 200 ASTM D2241 MAINLINES PIPES, CONNECT TO REPLACEMENT CONTROLLER E.	
7	HAWAII PLACE FLOWER WATERING STATIONS. INSTALL NEW PRESSURE MAINLINE PIPE FROM A DESIGNATED POINT OF CONNECTION OF SYSTEM B. INSTALL NEW 2-INCH IPS HDPE ANSI SDR11 200 PSI BUTTFUSE WELD PIPE WITH TRACE WIRE AND WARNING TAPE AND CONNECT TO EACH OF THE THREE EXISTING FLOWER WATERING STATIONS.	
8	BOOSTER PUMP STATION. SOLE SOURCE DUTY TO BE PERFORMED BY A FACTORY AUTHORIZED WATERTRONICS SERVICING AGENT. PROVIDE FOR NOT LESS THAN FIVE BUSINESS DAYS FOR A COMPLETE REVIEW, REPAIR, ADJUSTMENT, TESTING, DOCUMENTATION AND PLACEMENT INTO SERVICE OF THE EXISTING MUNICIPAL WATER IRRIGATION BOOSTER PUMP STATION AND: • INSTALL, PROGRAM, TEST, DOCUMENT AND PLACE INTO SERVICE, WATERTRONICS WATERVISION PUMP STATION MONITORING HARDWARE AND SOFTWARE ONTO NEW IRRIGATION LAPTOP. • INSTALL, PROGRAM, TEST, DOCUMENT AND PLACE INTO SERVICE AN OPTOCOUPLER TO SHARE THE BOOSTER PUMP STATION FLOW SENSOR SIGNAL. • COORDINATE WITH THE SELECTED IRRIGATION INSTALLER, WIRED CONNECTION OF THE FLOW SENSOR OPTOCOUPLER TO NEW TORO CONTROLLER F. • FURNISH TO THE OWNER AND DOCUMENT NOT LESS THAN THREE HOURS OF IRRIGATION BOOSTER PUMP STATION OPERATIONS AND MAINTENANCE TRAINING INCLUDING USE OF THE WATERVISION PUMP STATION MONITORING SOFTWARE.	

IRRIGATION SCHEDULE

cF NEW CONTROLLER F
TORO 200 STATION DECODER CONTROLLER WITH 5-YEAR WARRANTY, WMS COMPATIBLE. DXI-PPEDTW 2-WIRE ASSLY IN PLASTIC PEDESTAL. DXI-CELL-KIT WITH ANTENNA AND 10-YEAR CELLUAR SERVICE. DXI-FMW-WMS DXI FIRMWARE FOR SENTINEL WMS COMPATIBILITY. SY-EXT-WARRANTY 5-YEAR EXTENDED CONTROLLER WARRANTY FOR TOTAL OF 10-YEARS CONNECT NEW FIELD WIRING AND INSTALL AND PROGRAM 40 NEW STATIONS OF SPRINKLER IRRIGATION. SYSTEM F SHALL BE CONFIGURED TO ENABLE THE AREA TO BE FLOW MANAGED. SYSTEM F SHALL INCLUDE A POINT OF CONNECTION FROM THE NEARBY EXISTING 10-INCH IRRIGATION PIPELINE TO A SUB MAINLINE THAT SHALL DISTRIBUTE SYSTEM F PRODUCT WATER TO SYSTEM F CONTROL VALVES. THE POINT OF CONNECTION SHALL INCLUDE A FOUR-INCH MANUAL ISOLATION VALVE WITH BLOW POINT FOR WINTERIZATION, THREE-INCH RAIN BIRD 300BPES MASTER VALVE IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-D-1 SINGLE VALVE DECODER, NETAFIM OCTAVE 3" MODEL 360CT 03GAL 0.1 PULSE HYDROMETER IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO DW-CAD-FLOW PULSE DECODER AND A QUICK COUPLER IN AN APPROPRIATELY SIZED SERVICE BOX DOWNSTREAM OF THE FLOW SENSOR ON THE SYSTEM F SUB MAINLINE.

cA REPLACEMENT CONTROLLER A
TORO 200 STATION DECODER CONTROLLER WITH 5-YEAR WARRANTY, WMS COMPATIBLE. DXI-PPEDTW 2-WIRE ASSLY IN PLASTIC PEDESTAL. DXI-CELL-KIT WITH ANTENNA AND 10-YEAR CELLUAR SERVICE. DXI-FMW-WMS DXI FIRMWARE FOR SENTINEL WMS COMPATIBILITY. SY-EXT-WARRANTY 5-YEAR EXTENDED CONTROLLER WARRANTY FOR TOTAL OF 10-YEARS CONNECT EXISTING FIELD WIRING AND PROGRAM 127 EXISTING STATIONS OF SPRINKLER IRRIGATION AND INSTALL AND PROGRAM FOUR REPLACEMENT STATIONS OF SPRINKLER IRRIGATION AND TEN NEW STATIONS OF IRRIGATION.

cB REPLACEMENT CONTROLLER B
TORO 200 STATION DECODER CONTROLLER WITH 5-YEAR WARRANTY, WMS COMPATIBLE. DXI-PPEDTW 2-WIRE ASSLY IN PLASTIC PEDESTAL. DXI-CELL-KIT WITH ANTENNA AND 10-YEAR CELLUAR SERVICE. DXI-FMW-WMS DXI FIRMWARE FOR SENTINEL WMS COMPATIBILITY. SY-EXT-WARRANTY 5-YEAR EXTENDED CONTROLLER WARRANTY FOR TOTAL OF 10-YEARS CONNECT EXISTING FIELD WIRING AND PROGRAM 83 EXISTING STATIONS OF SPRINKLER IRRIGATION. PLUS ALL NEW ADMIN BLDG STATIONS INSTALLED IN 2025 AND INSTALL AND PROGRAM FOUR REPLACEMENT STATIONS OF SPRINKLER IRRIGATION AND FOUR NEW STATIONS OF IRRIGATION.

cC REPLACEMENT CONTROLLER C
TORO 200 STATION DECODER CONTROLLER WITH 5-YEAR WARRANTY, WMS COMPATIBLE. DXI-PPEDTW 2-WIRE ASSLY IN PLASTIC PEDESTAL. DXI-CELL-KIT WITH ANTENNA AND 10-YEAR CELLUAR SERVICE. DXI-FMW-WMS DXI FIRMWARE FOR SENTINEL WMS COMPATIBILITY. SY-EXT-WARRANTY 5-YEAR EXTENDED CONTROLLER WARRANTY FOR TOTAL OF 10-YEARS CONNECT EXISTING FIELD WIRING AND PROGRAM XX EXISTING STATIONS OF SPRINKLER IRRIGATION AND INSTALL AND PROGRAM THREE NEW STATIONS OF SPRINKLER IRRIGATION. SYSTEM C SHALL BE CONFIGURED TO ENABLE THE AREA TO BE FLOW MANAGED. SYSTEM C SHALL INCLUDE A POINT OF CONNECTION THAT SHALL INCLUDE A THREE-INCH RAIN BIRD 300BPES MASTER VALVE IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-D-1 SINGLE VALVE DECODER, BADGER DYNASONICS RS-900W POLYMER MODEL D8-C-020NAAP9SS-BMXX TWO-INCH PULSE ULTRASONIC FLOW SENSOR IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-DAC-FLOW PULSE DECODER AND A QUICK COUPLER IN AN APPROPRIATELY SIZED SERVICE BOX DOWNSTREAM OF THE FLOW SENSOR ON THE SYSTEM C SUB MAINLINE.

cD REPLACEMENT CONTROLLER D
TORO 24-VOLT 48 STATION CONVENTIONAL WIRE CONTROLLER WITH 5-YEAR WARRANTY, WMS COMPATIBLE, WALL MOUNT. DXI-FWM-48-MBC WALL MOUNT POWDER COATED LOCKABLE CABINET. DXI-CELL-KIT WITH ANTENNA AND 10-YEAR CELLULAR SERVICE. DXI-FMW-WMS DXI FIRMWARE FOR SENTINEL WMS COMPATIBILITY. SY-EXT-WARRANTY 5-YEAR EXTENDED CONTROLLER WARRANTY FOR TOTAL OF 10-YEARS CONNECT EXISTING FIELD WIRING AND PROGRAM ALL EXISTING STATIONS OF SPRINKLER IRRIGATION AND REPLACE AND PROGRAM TWO STATIONS OF TURF SPRINKLER IRRIGATION AND INSTALL AND PROGRAM THREE NEW STATIONS OF SPRINKLER IRRIGATION. SYSTEM D SHALL BE CONFIGURED TO ENABLE THE AREA TO BE FLOW MANAGED. SYSTEM D SHALL INCLUDE A POINT OF CONNECTION THAT SHALL INCLUDE A THREE-INCH RAIN BIRD 300BPES MASTER VALVE IN AN APPROPRIATELY SIZED SERVICE BOX, BADGER DYNASONICS RS-900W POLYMER MODEL D8-C-020NAAP9SS-BMXX TWO-INCH PULSE ULTRASONIC FLOW SENSOR IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-DAC-FLOW PULSE DECODER AND A QUICK COUPLER IN AN APPROPRIATELY SIZED SERVICE BOX DOWNSTREAM OF THE FLOW SENSOR ON THE SYSTEM D SUB MAINLINE. FURNISH AND INSTALL PE39 SIX PAIR SHIELDED COMMUNICATION CABLE FROM THE FLOW SENSOR TO SYSTEM D CONTROLLER. FURNISH AND INSTALL A 12ga. 24-VOLT MASTER VALVE SIGNAL WIRE AND 12ga. COMMON WIRE FROM THE MASTER VALVE TO THE CONTROLLER.

cE REPLACEMENT CONTROLLER E
TORO 200 STATION DECODER CONTROLLER WITH 5-YEAR WARRANTY, WMS COMPATIBLE. DXI-PPEDTW 2-WIRE ASSLY IN PLASTIC PEDESTAL. DXI-CELL-KIT WITH ANTENNA AND 10-YEAR CELLUAR SERVICE. DXI-FMW-WMS DXI FIRMWARE FOR SENTINEL WMS COMPATIBILITY. SY-EXT-WARRANTY 5-YEAR EXTENDED CONTROLLER WARRANTY FOR TOTAL OF 10-YEARS CONNECT NEW FIELD WIRING AND INSTALL AND PROGRAM 45 NEW REPLACEMENT STATIONS OF SPRINKLER IRRIGATION. SYSTEM E SHALL BE CONFIGURED TO ENABLE THE AREA TO BE FLOW MANAGED. SYSTEM E SHALL INCLUDE A POINT OF CONNECTION THAT SHALL INCLUDE A THREE-INCH RAIN BIRD 300BPES MASTER VALVE IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-D-1 SINGLE VALVE DECODER, BADGER DYNASONICS RS-900W POLYMER MODEL D8-C-020NAAP9SS-BMXX TWO-INCH PULSE ULTRASONIC FLOW SENSOR IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-DAC-FLOW PULSE DECODER AND A QUICK COUPLER IN AN APPROPRIATELY SIZED SERVICE BOX DOWNSTREAM OF THE FLOW SENSOR ON THE SYSTEM E SUB MAINLINE.

SHEET INDEX

SHEET	DESCRIPTION
IR100	IRRIGATION GENERAL DIRECTION
IR101	EXISTING IRRIGATION CONDITIONS
IR102	IRRIGATION OVERVIEW
IR103	MEMORIAL WALL IRRIGATION PLAN
IR104	COLUMBARIUM IRRIGATION PLAN 1
IR105	COLUMBARIUM IRRIGATION PLAN 2
IR106	ENTRY WALL IRRIGATION PLAN
IR107	EXISTING SECTIONS 36-42 IRRIGATION PLAN 1
IR108	EXISTING SECTIONS 36-42 IRRIGATION PLAN 2
IR109	NEW SECTIONS 48-52 IRRIGATION PLAN 1
IR110	NEW SECTIONS 48-52 IRRIGATION PLAN 2
IR111	NEW SECTIONS 33A AND 46 IRRIGATION PLAN
IR200	IRRIGATION SCHEDULE
IR500	IRRIGATION DETAILS
IR501	IRRIGATION DETAILS AND GENERAL NOTES

N W E S

120' 0' 60' 120' 240'
1" = 120'
SCALE MUST MEASURE 1 INCH OR DRAWING IS NOT TO SCALE.

BID DOCUMENTS

Revisions: Date:

CONSULTANTS

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Office of Design and Construction Services
VA U.S. Department of Veterans Affairs

Drawing Title: IRRIGATION OVERVIEW	Phase: BID DOCUMENTS	Project Title: DAYTON NATIONAL CEMETERY GRAVESITE EXPANSION	Project Number: 810-CM3-033
Approved: Project Director		Location: 4400 W THIRD ST, DAYTON, OH 45428	Building Number: --
		Issue Date: FEBRUARY 5, 2026 / Checked: TM / Drawn: CJC	Drawing Number: IR102 OF 133

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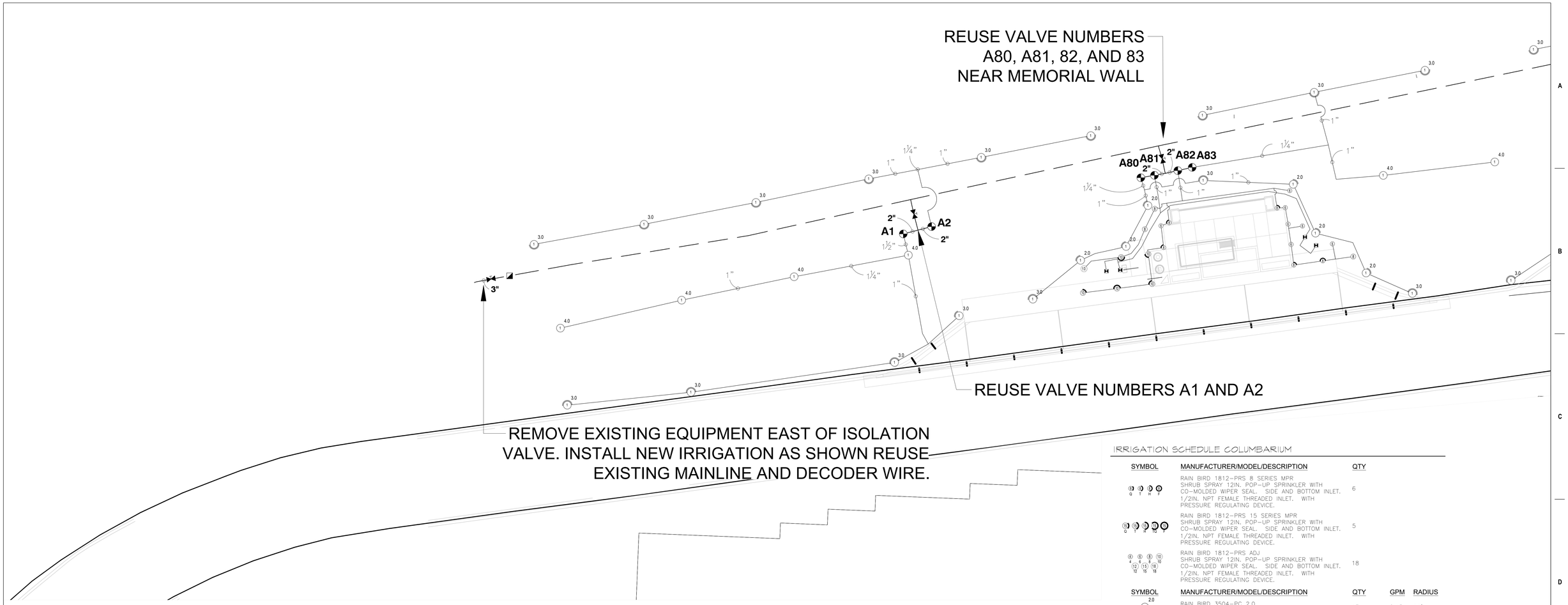

IRRIGATION SCHEDULE COLUMBARIUM

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
Q T H F	RAIN BIRD 1812-PRS 8 SERIES MPR SHRUB SPRAY 12IN. POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. SIDE AND BOTTOM INLET. 1/2IN. NPT FEMALE THREADED INLET. WITH PRESSURE REGULATING DEVICE.	6
Q T H F	RAIN BIRD 1812-PRS 15 SERIES MPR SHRUB SPRAY 12IN. POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. SIDE AND BOTTOM INLET. 1/2IN. NPT FEMALE THREADED INLET. WITH PRESSURE REGULATING DEVICE.	5
4 6 8 10 12 15 18	RAIN BIRD 1812-PRS ADJ SHRUB SPRAY 12IN. POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. SIDE AND BOTTOM INLET. 1/2IN. NPT FEMALE THREADED INLET. WITH PRESSURE REGULATING DEVICE.	18

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	GPM	RADIUS
2.0	RAIN BIRD 3504-PC 2.0 TURF ROTOR, 4IN. POP-UP. ADJUSTABLE AND FULL CIRCLE.	13	2.15	25'
3.0	RAIN BIRD 3504-PC 3.0 TURF ROTOR, 4IN. POP-UP. ADJUSTABLE AND FULL CIRCLE.	50	3.25	29'
4.0	RAIN BIRD 3504-PC 4.0 TURF ROTOR, 4IN. POP-UP. ADJUSTABLE AND FULL CIRCLE.	21	4.6	32'

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	RAIN BIRD PESB-R 1-1/2" 1IN., 1-1/2IN., AND 2IN. DURABLE CHLORINE-RESISTANT VALVES FOR RECLAIMED WATER APPLICATIONS. WITH SCRUBBER MECHANISM TECHNOLOGY, AND PURPLE FLOW CONTROL HANDLE. WITH TORO DW-D-1 SINGLE VALVE DECODERS	10
	RAIN BIRD 44-RC 1" 1IN. BRASS QUICK-COUPLING VALVE, WITH CORROSION-RESISTANT STAINLESS STEEL SPRING, THERMOPLASTIC RUBBER COVER, AND 2-PIECE BODY.	1
	BOSHART 0818 SERIES BOSHART 0818 SERIES -BRASS FULL PORT GATE VALVE (THREADED)	6
	IRRIGATION LATERAL LINE: ROLL POLYETHYLENE INSERT PRESSURE PIPE 1" SIDR-19 NSF-14 P	1,707 LF
	IRRIGATION LATERAL LINE: ROLL POLYETHYLENE INSERT PRESSURE PIPE 1 1/4" SIDR-19 NSF-14 P	726.3 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 1 1/2" SDR26 PVC CLASS 160 ASTM D2241	46.9 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 2" SDR26 PVC CLASS 160 ASTM D2241	90.9 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE SDR21 PVC CLASS 200 ASTM D22	19.4 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 2" SDR21 PVC CLASS 200 ASTM D22	21.0 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 3" SDR21 PVC CLASS 200 ASTM D22	1,046 LF

SHOULD ANY ON-SITE ACTIVITY, INCIDENT, EMERGENCY OR DISASTER RESULT IN EXPOSURE AND/OR DAMAGE TO ANY REMAINS (I.E. CASKET OR URN), OR OUTER BURIAL CONTAINER, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CEMETERY DIRECTOR, THE COR AND/OR THE C.O.; TAKE IMMEDIATE STEPS TO PROTECT AND RENDER SAFE ANY EXPOSED REMAINS AND STOP ANY FURTHER WORK THAT COULD AFFECT THOSE REMAINS OR GRAVESITE UNTIL THE CEMETERY DIRECTOR PROVIDES THE CONTRACTOR GUIDANCE REGARDING DISPOSITION OF THE REMAINS AND PERMISSION TO PROCEED.

N W E S

10' 0' 5' 10' 20'
1" = 10'
SCALE MUST MEASURE 1 INCH OR DRAWING IS NOT TO SCALE.

IRRIGATION SCHEDULE MEMORIAL WALL

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
Q T H F	RAIN BIRD 1812-PRS 8 SERIES MPR SHRUB SPRAY 12IN. POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. SIDE AND BOTTOM INLET. 1/2IN. NPT FEMALE THREADED INLET. WITH PRESSURE REGULATING DEVICE.	5
Q T H F	RAIN BIRD 1812-PRS 10 SERIES MPR SHRUB SPRAY 12IN. POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. SIDE AND BOTTOM INLET. 1/2IN. NPT FEMALE THREADED INLET. WITH PRESSURE REGULATING DEVICE.	5
4 6 8 10 12 15 18	RAIN BIRD 1812-PRS ADJ SHRUB SPRAY 12IN. POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. SIDE AND BOTTOM INLET. 1/2IN. NPT FEMALE THREADED INLET. WITH PRESSURE REGULATING DEVICE.	11
1401 1402 1404	RAIN BIRD RWS-B-C 1400 SERIES ROOT WATERING SYSTEM WITH 4.0IN. DIAMETER X 36.0IN. LONG WITH LOCKING GRATE, SEMI-RIGID MESH TUBE, AND CHECK VALVE. RAIN BIRD BUBBLER OPTION AS INDICATED: 1401 0.25 GPM, 1402 0.5 GPM, 1404 1.0 GPM, 1408 2.0 GPM.	4

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	GPM	RADIUS
2.0	RAIN BIRD 3504-PC 2.0 TURF ROTOR, 4IN. POP-UP. ADJUSTABLE AND FULL CIRCLE.	6	2.15	25'
3.0	RAIN BIRD 3504-PC 3.0 TURF ROTOR, 4IN. POP-UP. ADJUSTABLE AND FULL CIRCLE.	16	3.25	29'
4.0	RAIN BIRD 3504-PC 4.0 TURF ROTOR, 4IN. POP-UP. ADJUSTABLE AND FULL CIRCLE.	4	4.6	32'

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	RAIN BIRD PESB-PRS-D 1-1/2" 1IN., 1-1/2IN., 2IN., 3IN., 3IN. PLASTIC INDUSTRIAL REMOTE CONTROL VALVE. WITH TORO DW-D-1 SINGLE VALVE DECODER. LOW FLOW OPERATING CAPABILITY, GLOBE CONFIGURATION. WITH PRESSURE REGULATING MODULE, AND SCRUBBER TECHNOLOGY FOR RELIABLE PERFORMANCE IN DIRTY WATER IRRIGATION APPLICATIONS.	6
	RAIN BIRD 44-RC 1" 1IN. BRASS QUICK-COUPLING VALVE, WITH CORROSION-RESISTANT STAINLESS STEEL SPRING, THERMOPLASTIC RUBBER COVER, AND 2-PIECE BODY.	1
	BOSHART 0818 SERIES BOSHART 0818 SERIES -BRASS FULL PORT GATE VALVE (THREADED)	3
	IRRIGATION LATERAL LINE: ROLL POLYETHYLENE INSERT PRESSURE PIPE 1" SIDR-19 NSF-14 P	789.3 LF
	IRRIGATION LATERAL LINE: ROLL POLYETHYLENE INSERT PRESSURE PIPE 1 1/4" SIDR-19 NSF-14 P	87.3 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 1 1/2" SDR26 PVC CLASS 160 ASTM D2241	5.6 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 2" SDR21 PVC CLASS 200 ASTM D22	20.8 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 3" SDR21 PVC CLASS 200 ASTM D22	194.7 LF

VALVE SCHEDULE COLUMBARIUM

NUMBER	MODEL	SIZE	TYPE	GPM	WIRE	PSI	PSI @ POC	PRECIP
A175	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	16.25		59.8		0.97 in/h
A176	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	30.2		61.4		1.3 in/h
A177	RAIN BIRD PESB-R	1-1/2"	SHRUB SPRAY	22.67		38.9		3.5 in/h
A178	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	38.1		61.4		0.95 in/h
A179	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	35.75		63.8		0.81 in/h
A180	RAIN BIRD PESB-R	1-1/2"	SHRUB SPRAY	10.37		37.0		1.73 in/h
A181	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	41.4		61.4		0.46 in/h
A182	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	39		63.5		0.77 in/h
A183	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	41.4		61.8		0.53 in/h
A184	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	35.75		63.9		0.81 in/h

VALVE SCHEDULE MEMORIAL WALL

NUMBER	MODEL	SIZE	TYPE	GPM	WIRE	PSI	PSI @ POC	PRECIP
A1	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	31.4		60.9		0.79 in/h
A2	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	19.5		61.3		0.8 in/h
A80	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	22.65		60.5		1.54 in/h
A81	RAIN BIRD PESB-R	1-1/2"	BUBBLER	2		33.9		2.37 in/h
A82	RAIN BIRD PESB-R	1-1/2"	SHRUB SPRAY	12.64		34.7		2.52 in/h
A83	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	18.95		60.6		0.65 in/h

BID DOCUMENTS

Revisions: Date:

CONSULTANTS

IRRIGATION
WATER IN MOTION, INC.
175 James Avenue North
Minneapolis, MN 55405
952.229.1911
TIMOTHY MALOOLY

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KYLE VEATER

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Anderson Engineering of Minnesota, LLC | Proj # 18125

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Certified Irrigation Designer CID IRRIGATION ASSOCIATION
EPA WaterSense 2008 PARTNER OF THE YEAR
Timothy R. Malooly CID, CIC, CLIA
#012894

Office of Design and Construction Services
VA U.S. Department of Veterans Affairs

Drawing Title: MEMORIAL WALL - IRRIGATION PLAN
Phase: BID DOCUMENTS
Project Title: DAYTON NATIONAL CEMETERY GRAVESITE EXPANSION
Project Number: 810-CM3-033
Building Number: --
Approved: Project Director
Location: 4400 W THIRD ST, DAYTON, OH 45428
Issue Date: FEBRUARY 5, 2026
Checked: TM
Drawn: CJC
Drawing Number: IR103
OF 133

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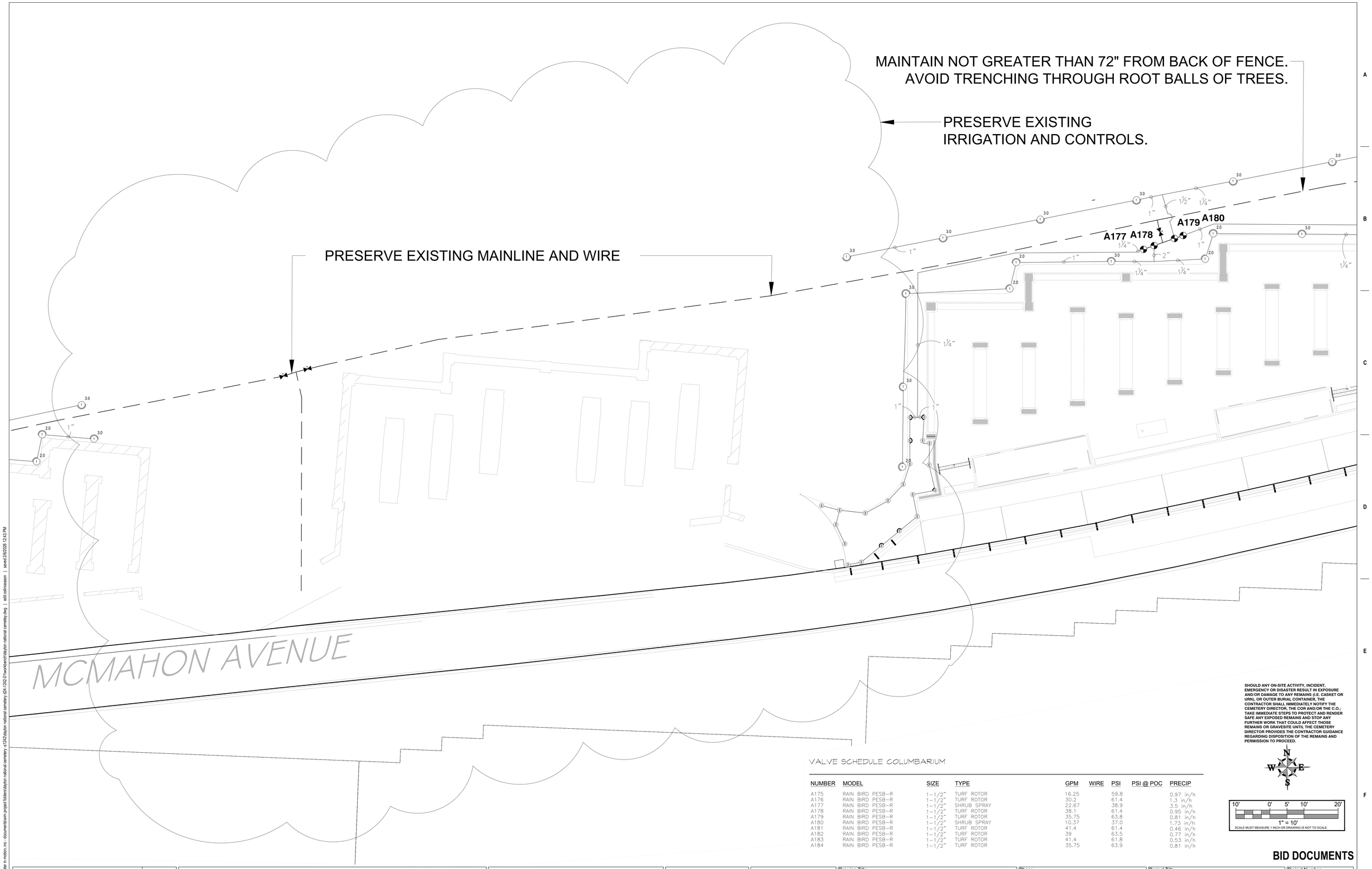

VALVE SCHEDULE COLUMBARIUM

NUMBER	MODEL	SIZE	TYPE	GPM	WIRE	PSI	PSI @ POC	PRECIP
A175	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	16.25		59.8		0.97 in/h
A176	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	30.2		61.4		1.3 in/h
A177	RAIN BIRD PESB-R	1-1/2"	SHRUB SPRAY	22.67		38.9		3.5 in/h
A178	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	38.1		61.4		0.95 in/h
A179	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	35.75		63.8		0.81 in/h
A180	RAIN BIRD PESB-R	1-1/2"	SHRUB SPRAY	10.37		37.0		1.73 in/h
A181	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	41.4		61.4		0.46 in/h
A182	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	39		63.5		0.77 in/h
A183	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	41.4		61.8		0.53 in/h
A184	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	35.75		63.9		0.81 in/h

SHOULD ANY ON-SITE ACTIVITY, INCIDENT, EMERGENCY OR DISASTER RESULT IN EXPOSURE AND/OR DAMAGE TO ANY REMAINS (I.E. CASKET OR URN), OR OUTER BURIAL CONTAINER, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CEMETERY DIRECTOR, THE COR AND/OR THE C.O.; TAKE IMMEDIATE STEPS TO PROTECT AND RENDER SAFE ANY EXPOSED REMAINS AND STOP ANY FURTHER WORK THAT COULD AFFECT THOSE REMAINS OR GRAVESITE UNTIL THE CEMETERY DIRECTOR PROVIDES THE CONTRACTOR GUIDANCE REGARDING DISPOSITION OF THE REMAINS AND PERMISSION TO PROCEED.

N W E S

10' 0' 5' 10' 20'
1" = 10'
SCALE MUST MEASURE 1 INCH OR DRAWING IS NOT TO SCALE.

BID DOCUMENTS

Revisions:	Date:

CONSULTANTS

IRRIGATION	GEOTECHNICAL	COST ESTIMATING
WATER IN MOTION, INC.	**TERRACON**	**OCMI**
175 James Avenue North Minneapolis, MN 55405 952.229.1911	611 Lunken Park Drive Cincinnati, Ohio 45226 513.612.9020	2100 North Greenville Ave. Richardson, Texas 75082 469.431.0571
TIMOTHY MALOOLY	**JEFF DUNLAP, PE**	**KYLE VEATER**

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Certified Irrigation Designer CID IRRIGATION ASSOCIATION
WaterSense 2008 EPA PARTNER

Timothy R. Maloolly CID, CIC, CLIA
#012894

Office of Design and Construction Services

VA U.S. Department of Veterans Affairs

Drawing Title	Phase	Project Title	Project Number
IRRIGATION PLAN - 1	BID DOCUMENTS	DAYTON NATIONAL CEMETERY GRAVESITE EXPANSION	810-CM3-033
Approved: Project Director		Location: 4400 W THIRD ST, DAYTON, OH 45428	Building Number: --
		Issue Date: FEBRUARY 5, 2026 / Checked: TM / Drawn: CJC	Drawing Number: IR104 OF 133

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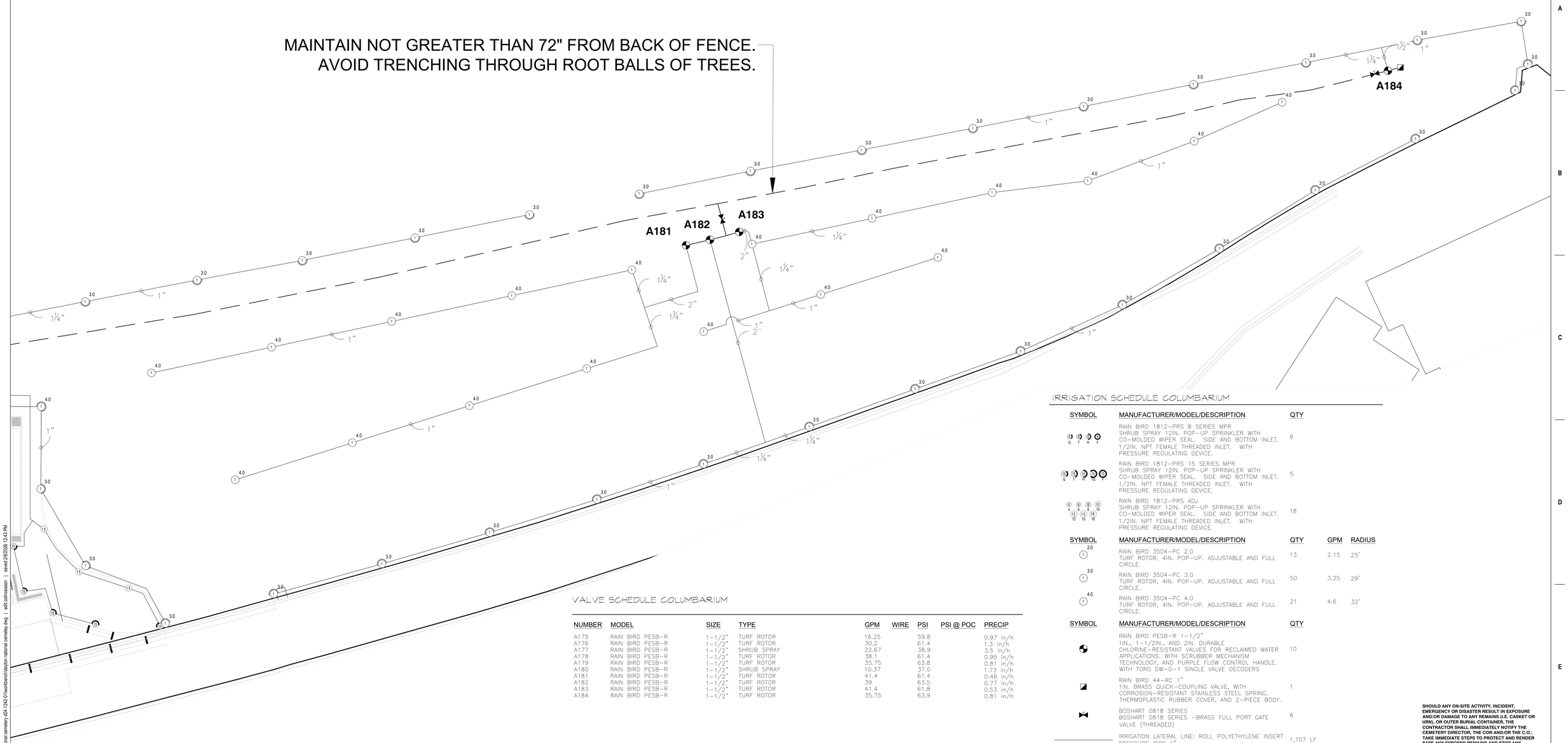

IRRIGATION SCHEDULE COLUMBARIUM

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
6 Q 6 T 6 H 6 F	RAIN BIRD 1812–PRS 8 SERIES MPR SHRUB SPRAY 12IN. POP–UP SPRINKLER WITH CO–MOLDED WIPER SEAL. SIDE AND BOTTOM INLET. 1/2IN. NPT FEMALE THREADED INLET. WITH PRESSURE REGULATING DEVICE.	6
15 Q 15 T 15 H 15 HQ 15 F	RAIN BIRD 1812–PRS 15 SERIES MPR SHRUB SPRAY 12IN. POP–UP SPRINKLER WITH CO–MOLDED WIPER SEAL. SIDE AND BOTTOM INLET. 1/2IN. NPT FEMALE THREADED INLET. WITH PRESSURE REGULATING DEVICE.	5
4 Q 6 T 8 H 10 F 12 Q 15 T 18 F	RAIN BIRD 1812–PRS ADJ SHRUB SPRAY 12IN. POP–UP SPRINKLER WITH CO–MOLDED WIPER SEAL. SIDE AND BOTTOM INLET. 1/2IN. NPT FEMALE THREADED INLET. WITH PRESSURE REGULATING DEVICE.	18

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	GPM	RADIUS
2.0	RAIN BIRD 3504–PC 2.0 TURF ROTOR, 4IN. POP–UP. ADJUSTABLE AND FULL CIRCLE.	13	2.15	25'
3.0	RAIN BIRD 3504–PC 3.0 TURF ROTOR, 4IN. POP–UP. ADJUSTABLE AND FULL CIRCLE.	50	3.25	29'
4.0	RAIN BIRD 3504–PC 4.0 TURF ROTOR, 4IN. POP–UP. ADJUSTABLE AND FULL CIRCLE.	21	4.6	32'

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	RAIN BIRD PESB–R 1–1/2" 1IN., 1–1/2IN., AND 2IN. DURABLE CHLORINE–RESISTANT VALVES FOR RECLAIMED WATER APPLICATIONS. WITH SCRUBBER MECHANISM TECHNOLOGY, AND PURPLE FLOW CONTROL HANDLE. WITH TORO DW–D–1 SINGLE VALVE DECODERS	10
	RAIN BIRD 44–RC 1 " 1IN. BRASS QUICK–COUPLING VALVE, WITH CORROSION–RESISTANT STAINLESS STEEL SPRING, THERMOPLASTIC RUBBER COVER, AND 2–PIECE BODY.	1
	BOSHART 0818 SERIES BOSHART 0818 SERIES –BRASS FULL PORT GATE VALVE (THREADED)	6
	IRRIGATION LATERAL LINE: ROLL POLYETHYLENE INSERT PRESSURE PIPE 1" SIDR–19 NSF–14 P	1,707 LF
	IRRIGATION LATERAL LINE: ROLL POLYETHYLENE INSERT PRESSURE PIPE 1 1/4" SIDR–19 NSF–14 P	726.3 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 1 1/2" SDR26 PVC CLASS 160 ASTM D2241	46.9 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 2" SDR26 PVC CLASS 160 ASTM D2241	90.9 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE SDR21 PVC CLASS 200 ASTM D22	19.4 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 2" SDR21 PVC CLASS 200 ASTM D22	21.0 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 3" SDR21 PVC CLASS 200 ASTM D22	1,046 LF

VALVE SCHEDULE COLUMBARIUM

NUMBER	MODEL	SIZE	TYPE	GPM	WIRE	PSI	PSI @ POC	PRECIP
A175	RAIN BIRD PESB–R	1–1/2"	TURF ROTOR	16.25		59.8		0.97 in/h
A176	RAIN BIRD PESB–R	1–1/2"	TURF ROTOR	30.2		61.4		1.3 in/h
A177	RAIN BIRD PESB–R	1–1/2"	SHRUB SPRAY	22.67		38.9		3.5 in/h
A178	RAIN BIRD PESB–R	1–1/2"	TURF ROTOR	38.1		61.4		0.95 in/h
A179	RAIN BIRD PESB–R	1–1/2"	TURF ROTOR	35.75		63.8		0.81 in/h
A180	RAIN BIRD PESB–R	1–1/2"	SHRUB SPRAY	10.37		37.0		1.73 in/h
A181	RAIN BIRD PESB–R	1–1/2"	TURF ROTOR	41.4		61.4		0.46 in/h
A182	RAIN BIRD PESB–R	1–1/2"	TURF ROTOR	39		63.5		0.77 in/h
A183	RAIN BIRD PESB–R	1–1/2"	TURF ROTOR	41.4		61.8		0.53 in/h
A184	RAIN BIRD PESB–R	1–1/2"	TURF ROTOR	35.75		63.9		0.81 in/h

SHOULD ANY ON-SITE ACTIVITY, INCIDENT, EMERGENCY OR DISASTER RESULT IN EXPOSURE AND/OR DAMAGE TO ANY REMAINS (I.E. CASKET OR URN), OR OUTER BURIAL CONTAINER, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CEMETERY DIRECTOR, THE COR AND/OR THE C.O.; TAKE IMMEDIATE STEPS TO PROTECT AND RENDER SAFE ANY EXPOSED REMAINS AND STOP ANY FURTHER WORK THAT COULD AFFECT THOSE REMAINS OR GRAVESITE UNTIL THE CEMETERY DIRECTOR PROVIDES THE CONTRACTOR GUIDANCE REGARDING DISPOSITION OF THE REMAINS AND PERMISSION TO PROCEED.

N W E S

10' 0' 5' 10' 20'
1" = 10'
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BID DOCUMENTS

Revisions:	Date:

CONSULTANTS

IRRIGATION	GEOTECHNICAL	COST ESTIMATING
WATER IN MOTION, INC.	**TERRACON**	**OCMI**
175 James Avenue North Minneapolis, MN 55405 952.229.1911	611 Lunken Park Drive Cincinnati, Ohio 45226 513.612.9020	2100 North Greenville Ave. Richardson, Texas 75082 469.431.0571
TIMOTHY MALOOLY	**JEFF DUNLAP, PE**	**KYLE VEATER**

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Anderson Engineering of Minnesota, LLC | Proj # 18125

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Certified Irrigation Designer CID IRRIGATION ASSOCIATION
EPA WaterSense 2008 PARTNER OF THE YEAR

Timothy R. Malooly CID, CIC, CLIA
#012894

Office of Design and Construction Services

VA U.S. Department of Veterans Affairs

Drawing Title	Phase	Project Title	Project Number
COLUMBARIUM IRRIGATION PLAN 2	BID DOCUMENTS	DAYTON NATIONAL CEMETERY GRAVESITE EXPANSION	810-CM3-033
Approved: Project Director		Location: 4400 W THIRD ST, DAYTON, OH 45428	Building Number: --
		Issue Date: FEBRUARY 5, 2026 / Checked: TM / Drawn: CJC	Drawing Number: IR105 OF 133

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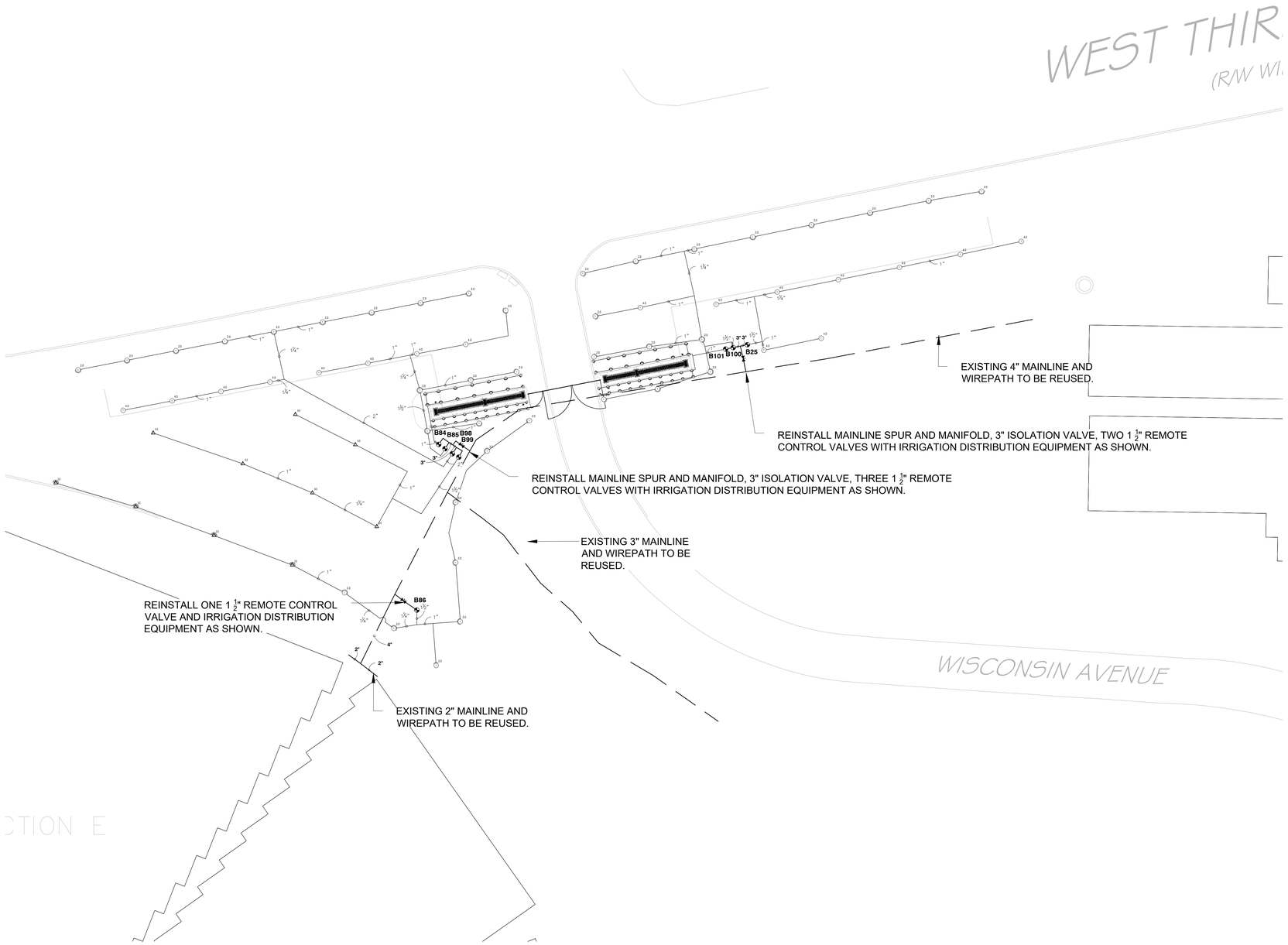

IRRIGATION SCHEDULE ENTRY WALL

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
Q H F	RAIN BIRD 1812-PRS 5 SERIES MPR SHRUB SPRAY 12IN. POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. SIDE AND BOTTOM INLET. 1/2IN. NPT FEMALE THREADED INLET. WITH PRESSURE REGULATING DEVICE.	40
Q T H F	RAIN BIRD 1812-PRS 8 SERIES MPR SHRUB SPRAY 12IN. POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. SIDE AND BOTTOM INLET. 1/2IN. NPT FEMALE THREADED INLET. WITH PRESSURE REGULATING DEVICE.	28

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	GPM	RADIUS
2.0	RAIN BIRD 3504-PC 2.0 TURF ROTOR, 4IN. POP-UP. ADJUSTABLE AND FULL CIRCLE.	38	2.15	25'
4.0	RAIN BIRD 3504-PC 4.0 TURF ROTOR, 4IN. POP-UP. ADJUSTABLE AND FULL CIRCLE.	17	4.6	32'
3.0	RAIN BIRD 5006-PL-PC-SAM-R-SS 3.0 TURF ROTOR, 6IN. POP-UP WITH STAINLESS STEEL RISER. ADJUSTABLE TO FULL CIRCLE. STANDARD ANGLE NOZZLE, IN-STEM PRESSURE REGULATOR, AND FLOW SHUT-OFF DEVICE. WITH SEAL-A-MATIC CHECK VALVE.	4	3.2	35'
6.0	RAIN BIRD 5006-PL-PC-SAM-R-SS 6.0 TURF ROTOR, 6IN. POP-UP WITH STAINLESS STEEL RISER. ADJUSTABLE TO FULL CIRCLE. STANDARD ANGLE NOZZLE, IN-STEM PRESSURE REGULATOR, AND FLOW SHUT-OFF DEVICE. WITH SEAL-A-MATIC CHECK VALVE.	6	6.22	40'

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	RAIN BIRD PESB-PRS-D 1-1/2" 1IN., 1-1/2IN., 2IN., 3IN., 3IN. PLASTIC INDUSTRIAL REMOTE CONTROL VALVE. WITH TORO DW-D-1 SINGLE VALVE DECODER. LOW FLOW OPERATING CAPABILITY, GLOBE CONFIGURATION. WITH PRESSURE REGULATING MODULE, AND SCRUBBER TECHNOLOGY FOR RELIABLE PERFORMANCE IN DIRTY WATER IRRIGATION APPLICATIONS.	8
	BOSHART 0818 SERIES BOSHART 0818 SERIES -BRASS FULL PORT GATE VALVE (THREADED)	3
	IRRIGATION LATERAL LINE: ROLL POLYETHYLENE INSERT PRESSURE PIPE 1" SIDR-19 NSF-14 P	1,573 LF
	IRRIGATION LATERAL LINE: ROLL POLYETHYLENE INSERT PRESSURE PIPE 1 1/4" SIDR-19 NSF-14 P	213.3 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 1 1/2" SDR26 PVC CLASS 160 ASTM D2241	157.0 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 2" SDR26 PVC CLASS 160 ASTM D2241	83.2 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE SDR21 PVC CLASS 200 ASTM D22	
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 2" SDR21 PVC CLASS 200 ASTM D22	15.2 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 3" SDR21 PVC CLASS 200 ASTM D22	182.3 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 4" SDR21 PVC CLASS 200 ASTM D22	379.6 LF

VALVE SCHEDULE ENTRY WALL

NUMBER	MODEL	SIZE	TYPE	GPM	WIRE	PSI	PSI @ POC	PRECIP
B25	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	36.8		61.2		0.52 in/h
B84	RAIN BIRD PESB-R	1-1/2"	SHRUB SPRAY	10.56		34.4		1.74 in/h
B85	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	31.3		60.0		0.73 in/h
B86	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	30		62.1		1.0 in/h
B98	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	37.75		60.7		0.69 in/h
B99	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	37.32		62.4		0.42 in/h
B100	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	36.85		61.7		0.81 in/h
B101	RAIN BIRD PESB-R	1-1/2"	SHRUB SPRAY	10.56		34.5		1.76 in/h

SHOULD ANY ON-SITE ACTIVITY, INCIDENT, EMERGENCY OR DISASTER RESULT IN EXPOSURE AND/OR DAMAGE TO ANY REMAINS (I.E. CASKET OR URN), OR OUTER BURIAL CONTAINER, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CEMETERY DIRECTOR, THE COR AND/OR THE C.O.; TAKE IMMEDIATE STEPS TO PROTECT AND RENDER SAFE ANY EXPOSED REMAINS AND STOP ANY FURTHER WORK THAT COULD AFFECT THOSE REMAINS OR GRAVESITE UNTIL THE CEMETERY DIRECTOR PROVIDES THE CONTRACTOR GUIDANCE REGARDING DISPOSITION OF THE REMAINS AND PERMISSION TO PROCEED.

N W E S

20' 0' 10' 20' 40'
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BID DOCUMENTS

Revisions: Date:

CONSULTANTS

IRRIGATION	GEOTECHNICAL	COST ESTIMATING
WATER IN MOTION, INC.	**TERRACON**	**OCMI**
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Certified Irrigation Designer CID Irrigation Association WaterSense 2008 Partner of the Year
Timothy R. Malooly CID, CIC, CLIA #012894

Office of Design and Construction Services

VA U.S. Department of Veterans Affairs

Drawing Title: ENTRY WALL IRRIGATION PLAN

Phase: BID DOCUMENTS

Project Title: DAYTON NATIONAL CEMETERY GRAVESITE EXPANSION

Project Number: 810-CM3-033

Building Number: --

Approved: Project Director

Location: 4400 W THIRD ST, DAYTON, OH 45428

Issue Date: FEBRUARY 5, 2026 | Checked: TM | Drawn: CJC

Drawing Number: IR106 OF 133

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IRRIGATION SCHEDULE EXISTING 36-42

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	GPM	RADIUS
25	RAIN BIRD 5006-PL-PC-SAM-R-MPR 25 TURF ROTOR, 6IN. POP-UP, PLASTIC RISER, WITH FLOW SHUT-OFF DEVICE, MATCHED PRECIPITATION ROTOR (MPR NOZZLE), ARC AND RADIUS AS PER SYMBOL. 25 FT=RED, 30 FT=GREEN, 35FT=BEIGE. WITH SEAL-A-MATIC CHECK VALVE, AND IN-STEM PRESSURE REGULATOR.	85		25'
12	RAIN BIRD 8005 12 TURF ROTOR, 5.0IN. POP-UP, PLASTIC RISER, STANDARD NOZZLE, WITH SEAL-A-MATIC CHECK VALVE, ADJUSTABLE 50-330 ARC, AND 360 NON-REVERSING FULL-CIRCLE. 1IN. (26/34) NPT FEMALE THREADED INLET. EXTENDED RADIUS IS IDEAL FOR LARGE TURF APPLICATIONS.	1	13.2	53'
14	RAIN BIRD 8005 14 TURF ROTOR, 5.0IN. POP-UP, PLASTIC RISER, STANDARD NOZZLE, WITH SEAL-A-MATIC CHECK VALVE, ADJUSTABLE 50-330 ARC, AND 360 NON-REVERSING FULL-CIRCLE. 1IN. (26/34) NPT FEMALE THREADED INLET. EXTENDED RADIUS IS IDEAL FOR LARGE TURF APPLICATIONS.	1	15.3	57'
20	RAIN BIRD 8005 20 TURF ROTOR, 5.0IN. POP-UP, PLASTIC RISER, STANDARD NOZZLE, WITH SEAL-A-MATIC CHECK VALVE, ADJUSTABLE 50-330 ARC, AND 360 NON-REVERSING FULL-CIRCLE. 1IN. (26/34) NPT FEMALE THREADED INLET. EXTENDED RADIUS IS IDEAL FOR LARGE TURF APPLICATIONS.	96	22	64'

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	RAIN BIRD PESB-R 2" 1IN., 1-1/2IN., AND 2IN. DURABLE CHLORINE-RESISTANT VALVES FOR RECLAIMED WATER APPLICATIONS. WITH SCRUBBER MECHANISM TECHNOLOGY, AND PURPLE FLOW CONTROL HANDLE. WITH TORO DW-D-1 SINGLE VALVE DECODERS	30
	RAIN BIRD 44-RC 1" 1IN. BRASS QUICK-COUPLING VALVE, WITH CORROSION-RESISTANT STAINLESS STEEL SPRING, THERMOPLASTIC RUBBER COVER, AND 2-PIECE BODY.	5
	BOSHART D818 SERIES BOSHART D818 SERIES -BRASS FULL PORT GATE VALVE (THREADED)	5
MVS	RAIN BIRD PEB 3" 1IN., 1-1/2IN., 2IN. PLASTIC INDUSTRIAL SMART VALVES W/ FACTORY INSTALLED IVM-SOL. LOW FLOW OPERATING CAPABILITY, GLOBE CONFIGURATION. WITH TORO TW-D-1 SINGLE VALVE DECODER.	1
FSE	DYNASONICS FLOW SENSOR RS-900W POLYMER UNTRASONIC FLOW SENSOR WITH TORO TW-DAC-FLOW DECODER.	1
	IRRIGATION LATERAL LINE: ROLL POLYETHYLENE INSERT PRESSURE PIPE 1" SIDR-19 NSF-14 P	1,394 LF
	IRRIGATION LATERAL LINE: ROLL POLYETHYLENE INSERT PRESSURE PIPE 1 1/4" SIDR-19 NSF-14 P	2,935 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 1 1/2" SDR26 PVC CLASS 160 ASTM D2241	553.6 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 2" SDR26 PVC CLASS 160 ASTM D2241	1,843 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 2 1/2" SDR26 PVC CLASS 160 ASTM D2241	1,153 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 3" SDR26 PVC CLASS 160 ASTM D2241	889.4 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 4" SDR26 PVC CLASS 160 ASTM D2241	72.6 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 1 1/2" SDR21 PVC CLASS 200 ASTM D22	177.5 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 2" SDR21 PVC CLASS 200 ASTM D22	5.3 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 3" SDR21 PVC CLASS 200 ASTM D22	782.7 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 4" SDR21 PVC CLASS 200 ASTM D22	1,640 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 8" SDR21 PVC CLASS 200 ASTM D22	437.8 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 10" SDR21 PVC CLASS 200 ASTM D22	593.7 LF

VALVE SCHEDULE EXISTING 36-42

NUMBER	MODEL	SIZE	TYPE	GPM	WIRE	PSI	PSI @ POC	PRECIP
E1	RAIN BIRD PESB-R	2"	TURF ROTOR	73.58		77.9		0.71 in/h
E2	RAIN BIRD PESB-R	2"	TURF ROTOR	88		78.0		0.74 in/h
E3	RAIN BIRD PESB-R	2"	TURF ROTOR	93.78		78.9		0.74 in/h
E4	RAIN BIRD PESB-R	2"	TURF ROTOR	88		79.1		0.76 in/h
E5	RAIN BIRD PESB-R	2"	TURF ROTOR	57.11		54.5		0.76 in/h
E6	RAIN BIRD PESB-R	2"	TURF ROTOR	52.8		78.0		1.55 in/h
E7	RAIN BIRD PESB-R	2"	TURF ROTOR	44		78.8		0.58 in/h
E8	RAIN BIRD PESB-R	2"	TURF ROTOR	22		76.6		0.52 in/h
E9	RAIN BIRD PESB-R	2"	TURF ROTOR	66		78.7		2.33 in/h
E10	RAIN BIRD PESB-R	2"	TURF ROTOR	88		78.0		0.75 in/h
E11	RAIN BIRD PESB-R	2"	TURF ROTOR	88		76.9		0.52 in/h
E12	RAIN BIRD PESB-R	2"	TURF ROTOR	66		78.4		0.53 in/h
E13	RAIN BIRD PESB-R	2"	TURF ROTOR	110		80.5		1.01 in/h
E14	RAIN BIRD PESB-R	2"	TURF ROTOR	57.06		57.0		0.73 in/h
E15	RAIN BIRD PESB-R	2"	TURF ROTOR	60.8		52.7		0.67 in/h
E16	RAIN BIRD PESB-R	2"	TURF ROTOR	58.71		55.7		0.87 in/h
E17	RAIN BIRD PESB-R	2"	TURF ROTOR	103.3		78.9		0.55 in/h
E18	RAIN BIRD PESB-R	2"	TURF ROTOR	123.2		83.8		0.58 in/h
E19	RAIN BIRD PESB-R	2"	TURF ROTOR	26.67		54.0		0.64 in/h
E20	RAIN BIRD PESB-R	2"	TURF ROTOR	132		82.4		0.58 in/h
E21	RAIN BIRD PESB-R	2"	TURF ROTOR	40.56		56.0		0.67 in/h
E22	RAIN BIRD PESB-R	2"	TURF ROTOR	88		78.7		0.56 in/h
E23	RAIN BIRD PESB-R	2"	TURF ROTOR	110		79.5		0.8 in/h
E24	RAIN BIRD PESB-R	2"	TURF ROTOR	110		79.5		0.57 in/h
E25	RAIN BIRD PESB-R	2"	TURF ROTOR	110		80.2		0.85 in/h
E26	RAIN BIRD PESB-R	2"	TURF ROTOR	66		77.7		1.12 in/h
E27	RAIN BIRD PESB-R	2"	TURF ROTOR	66		77.9		0.56 in/h
E28	RAIN BIRD PESB-R	2"	TURF ROTOR	132		82.5		0.61 in/h
E29	RAIN BIRD PESB-R	2"	TURF ROTOR	110		81.2		1.3 in/h
E30	RAIN BIRD PESB-R	2"	TURF ROTOR	132		82.2		0.62 in/h
E31	RAIN BIRD PESB-R	2"	TURF ROTOR	49.94		54.0		0.71 in/h

SHOULD ANY ON-SITE ACTIVITY, INCIDENT, EMERGENCY OR DISASTER RESULT IN EXPOSURE AND/OR DAMAGE TO ANY REMAINS (I.E. CASKET OR URN), OR OUTER BURIAL CONTAINER, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CEMETERY DIRECTOR, THE COR AND/OR THE C.O.; TAKE IMMEDIATE STEPS TO PROTECT AND RENDER SAFE ANY EXPOSED REMAINS AND STOP ANY FURTHER WORK THAT COULD AFFECT THOSE REMAINS OR GRAVESITE UNTIL THE CEMETERY DIRECTOR PROVIDES THE CONTRACTOR GUIDANCE REGARDING DISPOSITION OF THE REMAINS AND PERMISSION TO PROCEED.

N W E S

20' 0' 10' 20' 40'
1" = 20'
SCALE MUST MEASURE 1 INCH OR DRAWING IS NOT TO SCALE.

BID DOCUMENTS

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Revisions: Date:

CONSULTANTS

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WATER IN MOTION, INC.	**TERRACON**	**OCMI**
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Certified Irrigation Designer CID Irrigation Association
WaterSense 2008 Partner of the Year

Timothy R. Malooly CID, CIC, CLIA #012894

Office of Design and Construction Services

VA U.S. Department of Veterans Affairs

Drawing Title: EXISTING SECTIONS 36-42 IRRIGATION PLAN 1

Phase: BID DOCUMENTS

Approved: Project Director

Project Title: DAYTON NATIONAL CEMETERY GRAVESITE EXPANSION

Project Number: 810-CM3-033

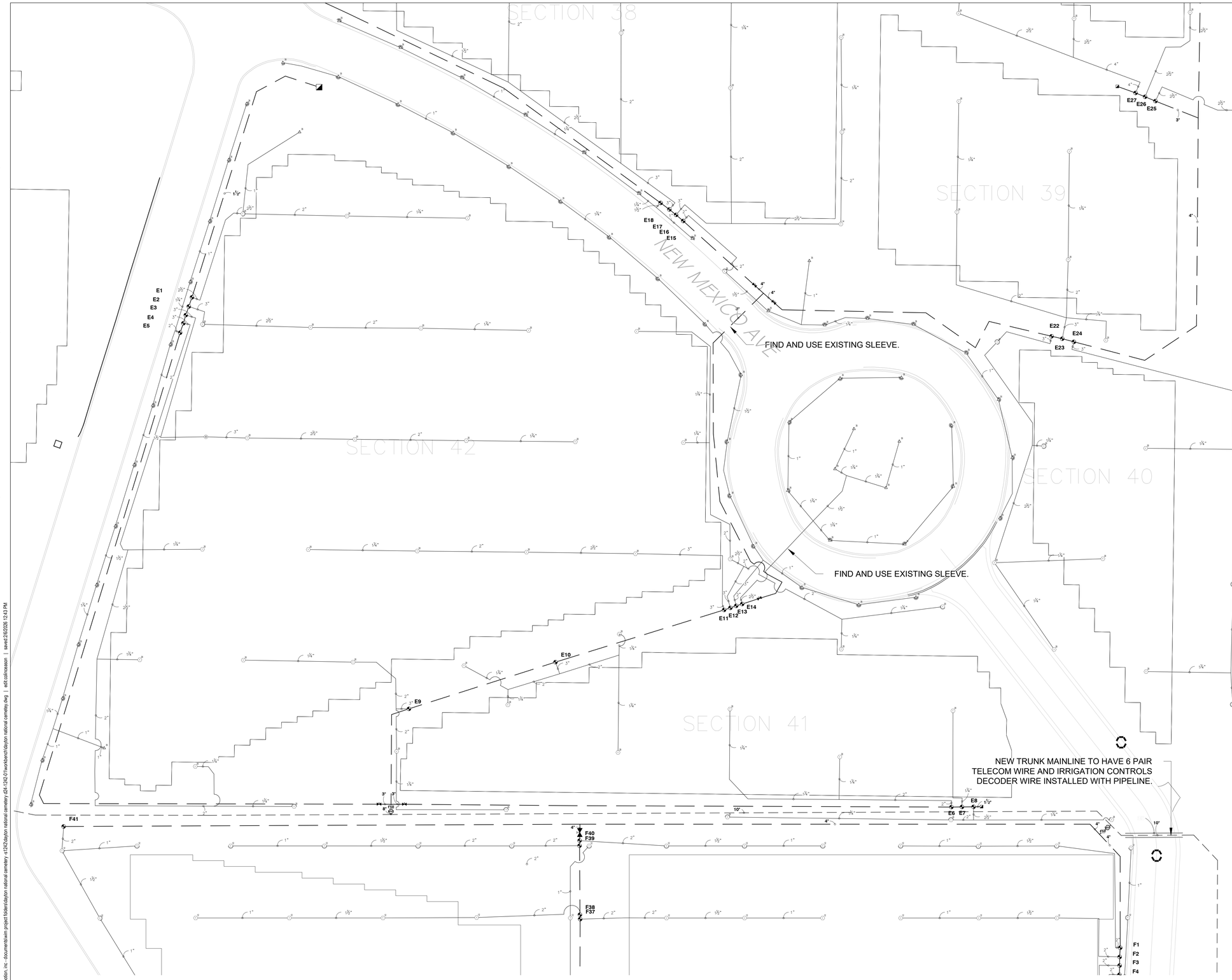
Building Number: --

Location: 4400 W THIRD ST, DAYTON, OH 45428

Drawing Number: IR107 OF 133

Issue Date: FEBRUARY 5, 2026 | Checked: TM | Drawn: CJC

VA FORM 08 - 6231



IRRIGATION SCHEDULE EXISTING 36-42

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	GPM	RADIUS
25	RAIN BIRD 5006-PL-PC-SAM-R-MPR 25 TURF ROTOR, 6IN. POP-UP, PLASTIC RISER, WITH FLOW SHUT-OFF DEVICE, MATCHED PRECIPITATION ROTOR (MPR NOZZLE), ARC AND RADIUS AS PER SYMBOL. 25 FT=RED, 30 FT=GREEN, 35FT=BEIGE. WITH SEAL-A-MATIC CHECK VALVE, AND IN-STEM PRESSURE REGULATOR.	85		25'
12	RAIN BIRD 8005 12 TURF ROTOR, 5.0IN. POP-UP, PLASTIC RISER, STANDARD NOZZLE, WITH SEAL-A-MATIC CHECK VALVE, ADJUSTABLE 50-330 ARC, AND 360 NON-REVERSING FULL-CIRCLE. 1IN. (26/34) NPT FEMALE THREADED INLET. EXTENDED RADIUS IS IDEAL FOR LARGE TURF APPLICATIONS.	1	13.2	53'
14	RAIN BIRD 8005 14 TURF ROTOR, 5.0IN. POP-UP, PLASTIC RISER, STANDARD NOZZLE, WITH SEAL-A-MATIC CHECK VALVE, ADJUSTABLE 50-330 ARC, AND 360 NON-REVERSING FULL-CIRCLE. 1IN. (26/34) NPT FEMALE THREADED INLET. EXTENDED RADIUS IS IDEAL FOR LARGE TURF APPLICATIONS.	1	15.3	57'
20	RAIN BIRD 8005 20 TURF ROTOR, 5.0IN. POP-UP, PLASTIC RISER, STANDARD NOZZLE, WITH SEAL-A-MATIC CHECK VALVE, ADJUSTABLE 50-330 ARC, AND 360 NON-REVERSING FULL-CIRCLE. 1IN. (26/34) NPT FEMALE THREADED INLET. EXTENDED RADIUS IS IDEAL FOR LARGE TURF APPLICATIONS.	96	22	64'

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	RAIN BIRD PESB-R 2" 1IN., 1-1/2IN., AND 2IN. DURABLE CHLORINE-RESISTANT VALVES FOR RECLAIMED WATER APPLICATIONS. WITH SCRUBBER MECHANISM TECHNOLOGY, AND PURPLE FLOW CONTROL HANDLE. WITH TORO DW-D-1 SINGLE VALVE DECODERS	30
	RAIN BIRD 44-RC 1" 1IN. BRASS QUICK-COUPLING VALVE, WITH CORROSION-RESISTANT STAINLESS STEEL SPRING, THERMOPLASTIC RUBBER COVER, AND 2-PIECE BODY.	5
	BOSHART 0818 SERIES BOSHART 0818 SERIES -BRASS FULL PORT GATE VALVE (THREADED)	5
MVS	RAIN BIRD PEB 3" 1IN., 1-1/2IN., 2IN. PLASTIC INDUSTRIAL SMART VALVES W/ FACTORY INSTALLED IVM-SOL, LOW FLOW OPERATING CAPABILITY, GLOBE CONFIGURATION. WITH TORO TW-D-1 SINGLE VALVE DECODER.	1
FSE	DYNASONICS FLOW SENSOR RS-900W POLYMER UNTRASONIC FLOW SENSOR WITH TORO TW-DAC-FLOW DECODER.	1
	IRRIGATION LATERAL LINE: ROLL POLYETHYLENE INSERT PRESSURE PIPE 1" SIDR-19 NSF-14 P	1,394 LF
	IRRIGATION LATERAL LINE: ROLL POLYETHYLENE INSERT PRESSURE PIPE 1 1/4" SIDR-19 NSF-14 P	2,935 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 1 1/2" SDR26 PVC CLASS 160 ASTM D2241	553.6 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 2" SDR26 PVC CLASS 160 ASTM D2241	1,843 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 2 1/2" SDR26 PVC CLASS 160 ASTM D2241	1,153 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 3" SDR26 PVC CLASS 160 ASTM D2241	889.4 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 4" SDR26 PVC CLASS 160 ASTM D2241	72.6 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 1 1/2" SDR21 PVC CLASS 200 ASTM D22	177.5 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 2" SDR21 PVC CLASS 200 ASTM D22	5.3 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 3" SDR21 PVC CLASS 200 ASTM D22	782.7 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 4" SDR21 PVC CLASS 200 ASTM D22	1,640 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 6" SDR21 PVC CLASS 200 ASTM D22	437.8 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 10" SDR21 PVC CLASS 200 ASTM D22	593.7 LF

VALVE SCHEDULE EXISTING 36-42

NUMBER	MODEL	SIZE	TYPE	GPM	WIRE	PSI	PSI @ POC	PRECIP
E1	RAIN BIRD PESB-R	2"	TURF ROTOR	73.58		77.9		0.71 in/h
E2	RAIN BIRD PESB-R	2"	TURF ROTOR	88		78.0		0.74 in/h
E3	RAIN BIRD PESB-R	2"	TURF ROTOR	93.78		78.9		0.6 in/h
E4	RAIN BIRD PESB-R	2"	TURF ROTOR	88		79.1		0.76 in/h
E5	RAIN BIRD PESB-R	2"	TURF ROTOR	57.11		54.0		0.75 in/h
E6	RAIN BIRD PESB-R	2"	TURF ROTOR	52.8		76.5		1.55 in/h
E7	RAIN BIRD PESB-R	2"	TURF ROTOR	44		78.9		0.56 in/h
E8	RAIN BIRD PESB-R	2"	TURF ROTOR	22		76.6		0.52 in/h
E9	RAIN BIRD PESB-R	2"	TURF ROTOR	66		78.7		2.33 in/h
E10	RAIN BIRD PESB-R	2"	TURF ROTOR	88		78.0		0.53 in/h
E11	RAIN BIRD PESB-R	2"	TURF ROTOR	88		76.9		0.53 in/h
E12	RAIN BIRD PESB-R	2"	TURF ROTOR	66		78.4		0.52 in/h
E13	RAIN BIRD PESB-R	2"	TURF ROTOR	110		80.5		1.01 in/h
E14	RAIN BIRD PESB-R	2"	TURF ROTOR	57.06		57.0		0.73 in/h
E15	RAIN BIRD PESB-R	2"	TURF ROTOR	60.8		52.7		0.67 in/h
E16	RAIN BIRD PESB-R	2"	TURF ROTOR	58.71		55.7		0.87 in/h
E17	RAIN BIRD PESB-R	2"	TURF ROTOR	103.3		78.9		0.55 in/h
E18	RAIN BIRD PESB-R	2"	TURF ROTOR	123.2		83.8		0.58 in/h
E19	RAIN BIRD PESB-R	2"	TURF ROTOR	26.67		54.0		0.64 in/h
E20	RAIN BIRD PESB-R	2"	TURF ROTOR	132		82.4		0.58 in/h
E21	RAIN BIRD PESB-R	2"	TURF ROTOR	40.56		56.0		0.67 in/h
E22	RAIN BIRD PESB-R	2"	TURF ROTOR	88		78.7		0.56 in/h
E23	RAIN BIRD PESB-R	2"	TURF ROTOR	110		79.5		0.8 in/h
E24	RAIN BIRD PESB-R	2"	TURF ROTOR	110		79.5		0.57 in/h
E25	RAIN BIRD PESB-R	2"	TURF ROTOR	110		80.2		0.85 in/h
E26	RAIN BIRD PESB-R	2"	TURF ROTOR	66		77.7		1.12 in/h
E27	RAIN BIRD PESB-R	2"	TURF ROTOR	66		77.9		0.56 in/h
E28	RAIN BIRD PESB-R	2"	TURF ROTOR	132		82.5		0.61 in/h
E29	RAIN BIRD PESB-R	2"	TURF ROTOR	110		81.2		1.3 in/h
E30	RAIN BIRD PESB-R	2"	TURF ROTOR	132		82.2		0.62 in/h
E31	RAIN BIRD PESB-R	2"	TURF ROTOR	49.94		54.0		0.71 in/h

SHOULD ANY ON-SITE ACTIVITY, INCIDENT, EMERGENCY OR DISASTER RESULT IN EXPOSURE AND/OR DAMAGE TO ANY REMAINS (I.E. CASKET OR URN), OR OUTER BURIAL CONTAINER, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CEMETERY DIRECTOR, THE COR AND/OR THE C.O.; TAKE IMMEDIATE STEPS TO PROTECT AND RENDER SAFE ANY EXPOSED REMAINS AND STOP ANY FURTHER WORK THAT COULD AFFECT THOSE REMAINS OR GRAVESITE UNTIL THE CEMETERY DIRECTOR PROVIDES THE CONTRACTOR GUIDANCE REGARDING DISPOSITION OF THE REMAINS AND PERMISSION TO PROCEED.

N W E S

40' 0' 10' 20' 40'
1" = 20'
SCALE MUST MEASURE 1 INCH OR DRAWING IS NOT TO SCALE.

BID DOCUMENTS

Revisions:	Date:

CONSULTANTS

IRRIGATION	GEOTECHNICAL	COST ESTIMATING
WATER IN MOTION, INC.	**TERRACON**	**OCMI**
175 James Avenue North Minneapolis, MN 55405 952.229.1911	611 Lunken Park Drive Cincinnati, Ohio 45226 513.612.9020	2100 North Greenville Ave. Richardson, Texas 75082 469.431.0571
TIMOTHY MALOOLY	**JEFF DUNLAP, PE**	**KYLE VEATER**

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Certified Irrigation Designer CID IRRIGATION ASSOCIATION
EPA WaterSense 2008 PARTNER OF THE YEAR

Timothy R. Malooly CID, CIC, CLIA
#012894

Office of Design and Construction Services

VA U.S. Department of Veterans Affairs

Drawing Title	Phase	Project Title	Project Number
EXISTING SECTIONS 36-42 IRRIGATION PLAN 2	BID DOCUMENTS	DAYTON NATIONAL CEMETERY GRAVESITE EXPANSION	810-CM3-033
Approved: Project Director		Location: 4400 W THIRD ST, DAYTON, OH 45428	Building Number: --
		Issue Date: FEBRUARY 5, 2026 / Checked: TM / Drawn: CJC	Drawing Number: IR108 OF 133

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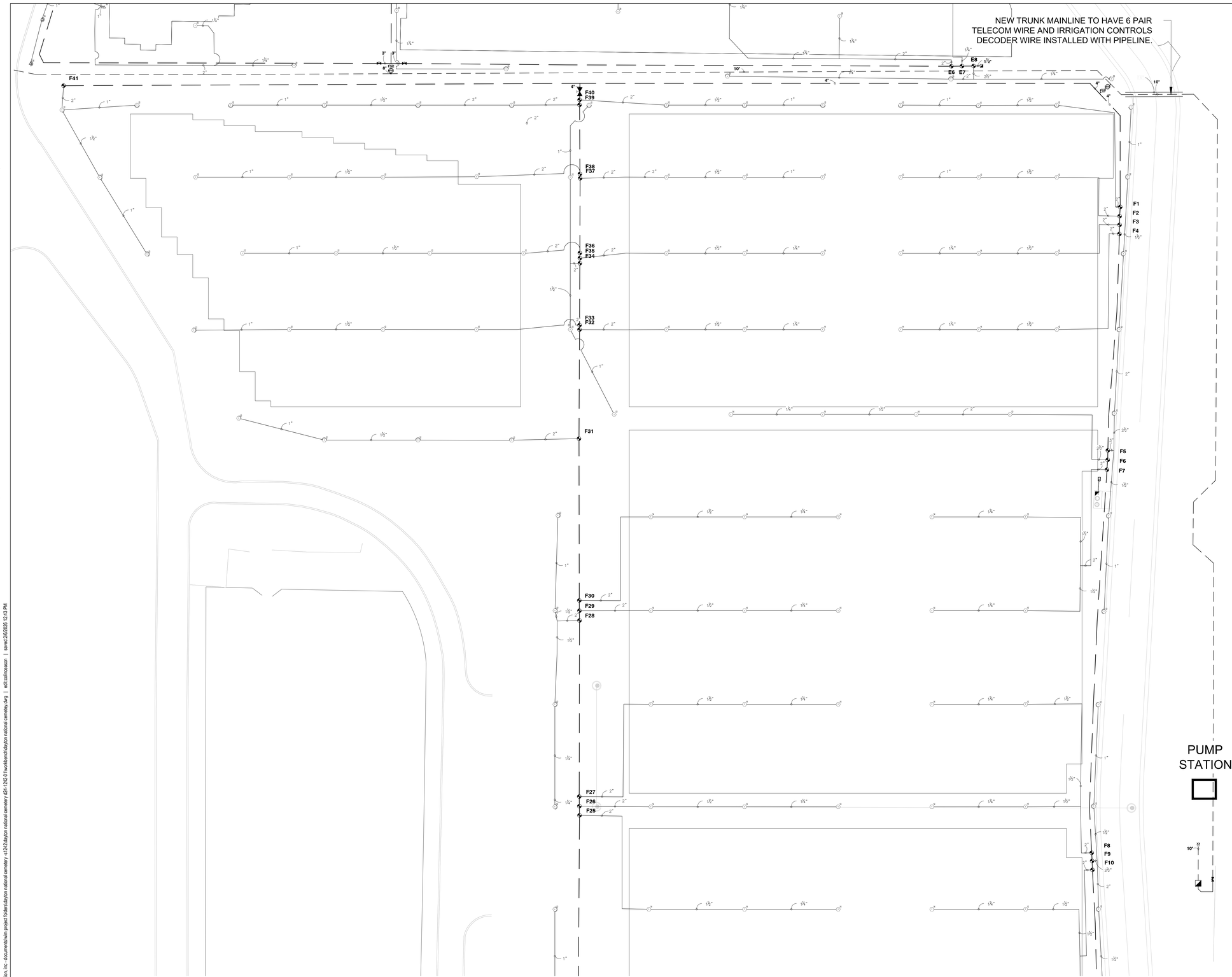

IRRIGATION SCHEDULE NEW SECTIONS 48-52

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	GPM	RADIUS
1	RAIN BIRD 8005 12 TURF ROTOR, 5.0IN. POP-UP, PLASTIC RISER, STANDARD NOZZLE. WITH SEAL-A-MATIC CHECK VALVE, ADJUSTABLE 50-330 ARC, AND 360 NON-REVERSING FULL-CIRCLE. 1IN. (26/34) NPT FEMALE THREADED INLET. EXTENDED RADIUS IS IDEAL FOR LARGE TURF APPLICATIONS.	92	13.2	53'
1	RAIN BIRD 8005 14 TURF ROTOR, 5.0IN. POP-UP, PLASTIC RISER, STANDARD NOZZLE. WITH SEAL-A-MATIC CHECK VALVE, ADJUSTABLE 50-330 ARC, AND 360 NON-REVERSING FULL-CIRCLE. 1IN. (26/34) NPT FEMALE THREADED INLET. EXTENDED RADIUS IS IDEAL FOR LARGE TURF APPLICATIONS.	58	15.3	57'
1	RAIN BIRD 8005 20 TURF ROTOR, 5.0IN. POP-UP, PLASTIC RISER, STANDARD NOZZLE. WITH SEAL-A-MATIC CHECK VALVE, ADJUSTABLE 50-330 ARC, AND 360 NON-REVERSING FULL-CIRCLE. 1IN. (26/34) NPT FEMALE THREADED INLET. EXTENDED RADIUS IS IDEAL FOR LARGE TURF APPLICATIONS.	5	22	64'

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	RAIN BIRD PESB-R 1-1/2" 1IN., 1-1/2IN., AND 2IN. DURABLE CHLORINE-RESISTANT VALVES FOR RECLAIMED WATER APPLICATIONS. WITH SCRUBBER MECHANISM TECHNOLOGY, AND PURPLE FLOW CONTROL HANDLE. WITH TORO DW-D-1 SINGLE VALVE DECODERS	16
	RAIN BIRD PESB-R 2" 1IN., 1-1/2IN., AND 2IN. DURABLE CHLORINE-RESISTANT VALVES FOR RECLAIMED WATER APPLICATIONS. WITH SCRUBBER MECHANISM TECHNOLOGY, AND PURPLE FLOW CONTROL HANDLE. WITH TORO DW-D-1 SINGLE VALVE DECODERS	25
	BOSHART 0818 SERIES BOSHART 0818 SERIES -BRASS FULL PORT GATE VALVE (THREADED)	3
MV	RAIN BIRD PEB 3" 1IN., 1-1/2IN., 2IN. PLASTIC INDUSTRIAL SMART VALVES W/ FACTORY INSTALLED IVM-SOL. LOW FLOW OPERATING CAPABILITY, GLOBE CONFIGURATION. WITH TORO TW-D-1 SINGLE VALVE DECODER.	
FSF	NETAFIM OCTAVE NETAFIM OCTAVE 3" MODEL 360CT 03GAL 0.1 PULSE HYDROMETER IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO DW-CAD-FLOW PULSE DECODER.	1
	IRRIGATION LATERAL LINE: ROLL POLYETHYLENE INSERT PRESSURE PIPE 1" SDR-19 NSF-14 P	1,182 LF
	IRRIGATION LATERAL LINE: ROLL POLYETHYLENE INSERT PRESSURE PIPE 1 1/4" SDR-19 NSF-14 P	1,285 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 1 1/2" SDR26 PVC CLASS 160 ASTM D2241	2,177 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 2" SDR26 PVC CLASS 160 ASTM D2241	2,154 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 2 1/2" SDR26 PVC CLASS 160 ASTM D2241	519.8 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 3" SDR26 PVC CLASS 160 ASTM D2241	3.1 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 3" SDR21 PVC CLASS 200 ASTM D22	934.7 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 4" SDR21 PVC CLASS 200 ASTM D22	1,629 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 6" SDR21 PVC CLASS 200 ASTM D22	32.7 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 8" SDR21 PVC CLASS 200 ASTM D22	8.6 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 10" SDR21 PVC CLASS 200 ASTM D22	62.5 LF
	PIPE SLEEVE: PVC SCHEDULE 40 12"	58.7 LF

VALVE SCHEDULE NEW SECTIONS 48-52

NUMBER	MODEL	SIZE	TYPE	GPM	WIRE	PSI	PSI @ POC	PRECIP
F1	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	39.6		76.8		0.92 in/h
F2	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	39.6		76.5		0.49 in/h
F3	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	43.8		75.4		0.61 in/h
F4	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	43.8		75.8		0.61 in/h
F5	RAIN BIRD PESB-R	2"	TURF ROTOR	92.4		78.6		1.1 in/h
F6	RAIN BIRD PESB-R	2"	TURF ROTOR	59.1		77.5		0.47 in/h
F7	RAIN BIRD PESB-R	2"	TURF ROTOR	57		77.5		0.5 in/h
F8	RAIN BIRD PESB-R	2"	TURF ROTOR	57		77.3		0.48 in/h
F9	RAIN BIRD PESB-R	2"	TURF ROTOR	74.8		78.6		1.23 in/h
F10	RAIN BIRD PESB-R	2"	TURF ROTOR	57		77.3		0.5 in/h
F11	RAIN BIRD PESB-R	2"	TURF ROTOR	74.8		77.6		1.33 in/h
F12	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	30.6		75.0		0.78 in/h
F13	RAIN BIRD PESB-R	2"	TURF ROTOR	61.2		77.3		0.64 in/h
F14	RAIN BIRD PESB-R	2"	TURF ROTOR	68.1		77.9		1.05 in/h
F15	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	61.2		77.1		0.51 in/h
F16	RAIN BIRD PESB-R	2"	TURF ROTOR	65.8		77.1		0.75 in/h
F17	RAIN BIRD PESB-R	2"	TURF ROTOR	79.2		78.9		1.17 in/h
F18	RAIN BIRD PESB-R	2"	TURF ROTOR	61.2		77.5		0.53 in/h
F19	RAIN BIRD PESB-R	2"	TURF ROTOR	74		77.9		1.13 in/h
F20	RAIN BIRD PESB-R	2"	TURF ROTOR	61.2		77.3		0.51 in/h
F21	RAIN BIRD PESB-R	2"	TURF ROTOR	61.6		79.3		1.02 in/h
F22	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	43.8		75.5		0.68 in/h
F23	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	45.9		76.2		0.48 in/h
F24	RAIN BIRD PESB-R	2"	TURF ROTOR	61.6		77.7		1.31 in/h
F25	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	45.9		76.3		0.48 in/h
F26	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	45.9		75.7		0.48 in/h
F27	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	45.9		76.2		0.48 in/h
F28	RAIN BIRD PESB-R	2"	TURF ROTOR	54.9		77.4		0.89 in/h
F29	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	45.9		75.7		0.5 in/h
F30	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	45.9		76.2		0.47 in/h
F31	RAIN BIRD PESB-R	2"	TURF ROTOR	52.8		78.7		1.23 in/h
F32	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	43.8		75.4		0.54 in/h
F33	RAIN BIRD PESB-R	2"	TURF ROTOR	52.8		79.2		0.63 in/h
F34	RAIN BIRD PESB-R	2"	TURF ROTOR	52.8		77.7		0.63 in/h
F35	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	43.8		75.4		0.57 in/h
F36	RAIN BIRD PESB-R	2"	TURF ROTOR	52.8		78.8		0.55 in/h
F37	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	39.6		76.4		0.49 in/h
F38	RAIN BIRD PESB-R	2"	TURF ROTOR	52.8		79.2		0.52 in/h
F39	RAIN BIRD PESB-R	2"	TURF ROTOR	52.8		78.8		1.11 in/h
F40	RAIN BIRD PESB-R	2"	TURF ROTOR	39.6		77.7		1.0 in/h
F41	RAIN BIRD PESB-R	2"	TURF ROTOR	52.8		77.8		1.55 in/h

SHOULD ANY ON-SITE ACTIVITY, INCIDENT, EMERGENCY OR DISASTER RESULT IN EXPOSURE AND/OR DAMAGE TO ANY REMAINS (I.E. CASKET OR URN), OR OUTER BURIAL CONTAINER, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CEMETERY DIRECTOR, THE COR AND/OR THE C.O.; TAKE IMMEDIATE STEPS TO PROTECT AND RENDER SAFE ANY EXPOSED REMAINS AND STOP ANY FURTHER WORK THAT COULD AFFECT THOSE REMAINS OR GRAVESITE UNTIL THE CEMETERY DIRECTOR PROVIDES THE CONTRACTOR GUIDANCE REGARDING DISPOSITION OF THE REMAINS AND PERMISSION TO PROCEED.

N W E S

20' 0' 10' 20' 40'
1" = 20'
SCALE MUST MEASURE 1 INCH OR DRAWING IS NOT TO SCALE.

BID DOCUMENTS

Revisions:	Date:

CONSULTANTS

IRRIGATION	GEOTECHNICAL	COST ESTIMATING
WATER IN MOTION, INC.	**TERRACON**	**OCMI**
175 James Avenue North Minneapolis, MN 55405 952.229.1911	611 Lunken Park Drive Cincinnati, Ohio 45226 513.612.9020	2100 North Greenville Ave. Richardson, Texas 75082 469.431.0571
TIMOTHY MALOOLY	**JEFF DUNLAP, PE**	**KYLE VEATER**

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Certified Irrigation Designer CID IRRIGATION ASSOCIATION
EPA WaterSense 2008 PARTNER OF THE YEAR

Timothy R. Malooly CID, CIC, CLIA
#012894

Office of Design and Construction Services

VA U.S. Department of Veterans Affairs

Drawing Title	Phase	Project Title	Project Number
NEW SECTIONS 48-52 IRRIGATION PLAN 1	BID DOCUMENTS	DAYTON NATIONAL CEMETERY GRAVESITE EXPANSION	810-CM3-033
Approved: Project Director		Location: 4400 W THIRD ST, DAYTON, OH 45428	Building Number: --
		Issue Date: FEBRUARY 5, 2026 / Checked: TM / Drawn: CJC	Drawing Number: IR109 OF 133

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VA FORM 08 - 6231

IRRIGATION SCHEDULE NEW SECTIONS 48-52

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	GPM	RADIUS
12	RAIN BIRD 8005 12 TURF ROTOR, 5.0IN. POP-UP, PLASTIC RISER, STANDARD NOZZLE. WITH SEAL-A-MATIC CHECK VALVE, ADJUSTABLE 50-330 ARC, AND 360 NON-REVERSING FULL-CIRCLE. 1IN. (26/34) NPT FEMALE THREADED INLET. EXTENDED RADIUS IS IDEAL FOR LARGE TURF APPLICATIONS.	92	13.2	53'
14	RAIN BIRD 8005 14 TURF ROTOR, 5.0IN. POP-UP, PLASTIC RISER, STANDARD NOZZLE. WITH SEAL-A-MATIC CHECK VALVE, ADJUSTABLE 50-330 ARC, AND 360 NON-REVERSING FULL-CIRCLE. 1IN. (26/34) NPT FEMALE THREADED INLET. EXTENDED RADIUS IS IDEAL FOR LARGE TURF APPLICATIONS.	58	15.3	57'
20	RAIN BIRD 8005 20 TURF ROTOR, 5.0IN. POP-UP, PLASTIC RISER, STANDARD NOZZLE. WITH SEAL-A-MATIC CHECK VALVE, ADJUSTABLE 50-330 ARC, AND 360 NON-REVERSING FULL-CIRCLE. 1IN. (26/34) NPT FEMALE THREADED INLET. EXTENDED RADIUS IS IDEAL FOR LARGE TURF APPLICATIONS.	5	22	64'

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	RAIN BIRD PESB-R 1-1/2" 1IN., 1-1/2IN., AND 2IN. DURABLE CHLORINE-RESISTANT VALVES FOR RECLAIMED WATER APPLICATIONS. WITH SCRUBBER MECHANISM TECHNOLOGY, AND PURPLE FLOW CONTROL HANDLE. WITH TORO DW-D-1 SINGLE VALVE DECODERS	16
	RAIN BIRD PESB-R 2" 1IN., 1-1/2IN., AND 2IN. DURABLE CHLORINE-RESISTANT VALVES FOR RECLAIMED WATER APPLICATIONS. WITH SCRUBBER MECHANISM TECHNOLOGY, AND PURPLE FLOW CONTROL HANDLE. WITH TORO DW-D-1 SINGLE VALVE DECODERS	25
	BOSHART 0818 SERIES BOSHART 0818 SERIES -BRASS FULL PORT GATE VALVE (THREADED)	3
MVF	RAIN BIRD PEB 3" 1IN., 1-1/2IN., 2IN. PLASTIC INDUSTRIAL SMART VALVES W/ FACTORY INSTALLED IVM-SOL. LOW FLOW OPERATING CAPABILITY, GLOBE CONFIGURATION. WITH TORO TW-D-1 SINGLE VALVE DECODER.	
FSF	NETAFIM OCTAVE NETAFIM OCTAVE 3" MODEL 360CT 03GAL 0.1 PULSE HYDROMETER IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO DW-CAD-FLOW PULSE DECODER.	1
	IRRIGATION LATERAL LINE: ROLL POLYETHYLENE INSERT PRESSURE PIPE 1" SIDR-19 NSF-14 P	1,182 LF
	IRRIGATION LATERAL LINE: ROLL POLYETHYLENE INSERT PRESSURE PIPE 1 1/4" SIDR-19 NSF-14 P	1,285 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 1 1/2" SDR26 PVC CLASS 160 ASTM D2241	2,177 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 2" SDR26 PVC CLASS 160 ASTM D2241	2,154 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 2 1/2" SDR26 PVC CLASS 160 ASTM D2241	519.8 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 3" SDR26 PVC CLASS 160 ASTM D2241	3.1 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 3" SDR21 PVC CLASS 200 ASTM D22	934.7 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 4" SDR21 PVC CLASS 200 ASTM D22	1,629 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 6" SDR21 PVC CLASS 200 ASTM D22	32.7 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 8" SDR21 PVC CLASS 200 ASTM D22	8.6 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 10" SDR21 PVC CLASS 200 ASTM D22	62.5 LF
	PIPE SLEEVE: PVC SCHEDULE 40 12"	58.7 LF

VALVE SCHEDULE NEW SECTIONS 48-52

NUMBER	MODEL	SIZE	TYPE	GPM	WIRE	PSI	PSI @ POC	PRECIP
F1	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	39.6		76.8		0.92 in/h
F2	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	39.6		76.5		0.49 in/h
F3	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	43.8		75.4		0.61 in/h
F4	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	43.8		75.8		0.61 in/h
F5	RAIN BIRD PESB-R	2"	TURF ROTOR	92.4		78.6		1.1 in/h
F6	RAIN BIRD PESB-R	2"	TURF ROTOR	59.1		77.5		0.47 in/h
F7	RAIN BIRD PESB-R	2"	TURF ROTOR	57		77.5		0.5 in/h
F8	RAIN BIRD PESB-R	2"	TURF ROTOR	57		77.3		0.48 in/h
F9	RAIN BIRD PESB-R	2"	TURF ROTOR	74.8		78.6		1.23 in/h
F10	RAIN BIRD PESB-R	2"	TURF ROTOR	57		77.3		0.5 in/h
F11	RAIN BIRD PESB-R	2"	TURF ROTOR	74.8		77.6		1.33 in/h
F12	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	30.6		75.0		0.78 in/h
F13	RAIN BIRD PESB-R	2"	TURF ROTOR	61.2		77.3		0.64 in/h
F14	RAIN BIRD PESB-R	2"	TURF ROTOR	68.1		77.9		1.05 in/h
F15	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	61.2		77.1		0.51 in/h
F16	RAIN BIRD PESB-R	2"	TURF ROTOR	65.8		77.1		0.75 in/h
F17	RAIN BIRD PESB-R	2"	TURF ROTOR	79.2		78.9		1.17 in/h
F18	RAIN BIRD PESB-R	2"	TURF ROTOR	61.2		77.5		0.53 in/h
F19	RAIN BIRD PESB-R	2"	TURF ROTOR	66		77.7		1.13 in/h
F20	RAIN BIRD PESB-R	2"	TURF ROTOR	61.2		77.3		0.51 in/h
F21	RAIN BIRD PESB-R	2"	TURF ROTOR	61.6		79.3		1.02 in/h
F22	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	43.8		75.5		0.68 in/h
F23	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	45.9		76.2		0.47 in/h
F24	RAIN BIRD PESB-R	2"	TURF ROTOR	61.6		77.7		1.31 in/h
F25	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	45.9		76.3		0.48 in/h
F26	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	45.9		75.7		0.46 in/h
F27	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	45.9		76.2		0.48 in/h
F28	RAIN BIRD PESB-R	2"	TURF ROTOR	54.9		77.4		0.89 in/h
F29	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	45.9		75.7		0.5 in/h
F30	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	45.9		76.2		0.47 in/h
F31	RAIN BIRD PESB-R	2"	TURF ROTOR	52.8		78.7		1.23 in/h
F32	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	43.8		75.4		0.54 in/h
F33	RAIN BIRD PESB-R	2"	TURF ROTOR	52.8		79.2		0.63 in/h
F34	RAIN BIRD PESB-R	2"	TURF ROTOR	52.8		77.7		0.63 in/h
F35	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	43.8		75.4		0.57 in/h
F36	RAIN BIRD PESB-R	2"	TURF ROTOR	52.8		78.8		0.55 in/h
F37	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	39.6		76.4		0.49 in/h
F38	RAIN BIRD PESB-R	2"	TURF ROTOR	52.8		79.2		0.52 in/h
F39	RAIN BIRD PESB-R	2"	TURF ROTOR	52.8		78.8		1.11 in/h
F40	RAIN BIRD PESB-R	2"	TURF ROTOR	39.6		77.7		1.0 in/h
F41	RAIN BIRD PESB-R	2"	TURF ROTOR	52.8		77.8		1.55 in/h

SHOULD ANY ON-SITE ACTIVITY, INCIDENT, EMERGENCY OR DISASTER RESULT IN EXPOSURE AND/OR DAMAGE TO ANY REMAINS (I.E. CASKET OR URN), OR OUTER BURIAL CONTAINER, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CEMETERY DIRECTOR, THE COR AND/OR THE C.O.; TAKE IMMEDIATE STEPS TO PROTECT AND RENDER SAFE ANY EXPOSED REMAINS AND STOP ANY FURTHER WORK THAT COULD AFFECT THOSE REMAINS OR GRAVESITE UNTIL THE CEMETERY DIRECTOR PROVIDES THE CONTRACTOR GUIDANCE REGARDING DISPOSITION OF THE REMAINS AND PERMISSION TO PROCEED.

N W E S

20' 0' 10' 20' 40'
1" = 20'
SCALE MUST MEASURE 1 INCH OR DRAWING IS NOT TO SCALE.

BID DOCUMENTS

File Path: C:\users\cdunlap\anderson\melooly properties\water in motion, inc. - documents\wim project folders\dayton national cemetery - s1242\dayton national cemetery d24-1242-01\work\dwg\ir\dayton national cemetery.dwg | edit:cdunlap\anderson | saved:2/6/2026 12:43 PM

Revisions:	Date:

CONSULTANTS

IRRIGATION	GEOTECHNICAL	COST ESTIMATING
WATER IN MOTION, INC.	**TERRACON**	**OCMI**
175 James Avenue North Minneapolis, MN 55405 952.229.1911	611 Lunken Park Drive Cincinnati, Ohio 45226 513.612.9020	2100 North Greenville Ave. Richardson, Texas 75082 469.431.0571
TIMOTHY MALOOLY	**JEFF DUNLAP, PE**	**KYLE VEATER**

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Certified Irrigation Designer CID IRRIGATION ASSOCIATION
EPA WaterSense 2008 PARTNER OF THE YEAR

Timothy R. Malooly CID, CIC, CLIA
#012894

Office of Design and Construction Services

VA U.S. Department of Veterans Affairs

Drawing Title	Phase	Project Title	Project Number
NEW SECTIONS 48-52 IRRIGATION PLAN 2	BID DOCUMENTS	DAYTON NATIONAL CEMETERY GRAVESITE EXPANSION	810-CM3-033
Approved: Project Director		Location: 4400 W THIRD ST, DAYTON, OH 45428	Building Number: --
		Issue Date: FEBRUARY 5, 2026 / Checked: TM / Drawn: CJC	Drawing Number: IR110 OF 133

VA FORM 08 - 6231

IRRIGATION SCHEDULE SECTION 33A

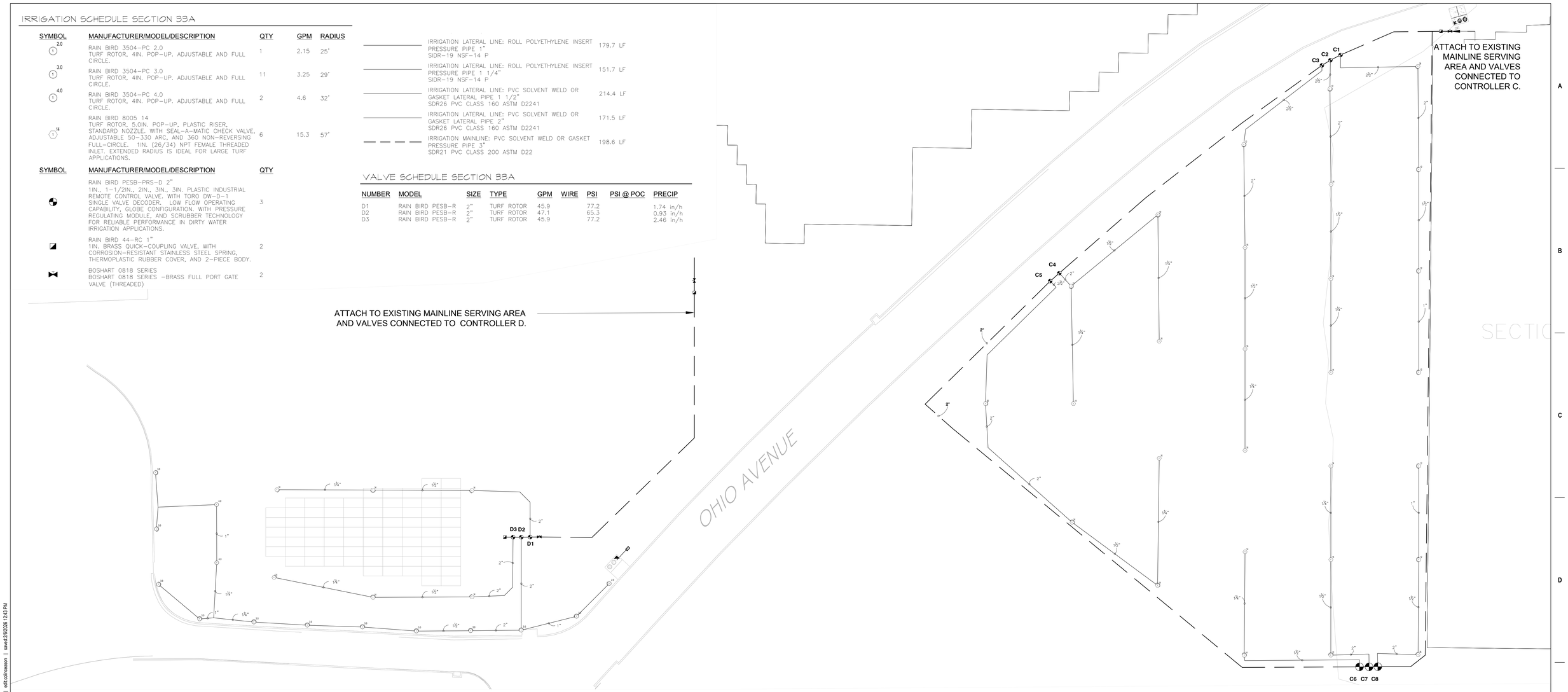
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	GPM	RADIUS
2.0	RAIN BIRD 3504–PC 2.0 TURF ROTOR, 4IN. POP–UP. ADJUSTABLE AND FULL CIRCLE.	1	2.15	25'
3.0	RAIN BIRD 3504–PC 3.0 TURF ROTOR, 4IN. POP–UP. ADJUSTABLE AND FULL CIRCLE.	11	3.25	29'
4.0	RAIN BIRD 3504–PC 4.0 TURF ROTOR, 4IN. POP–UP. ADJUSTABLE AND FULL CIRCLE.	2	4.6	32'
14	RAIN BIRD 8005 14 TURF ROTOR, 5.0IN. POP–UP, PLASTIC RISER, STANDARD NOZZLE. WITH SEAL–A–MATIC CHECK VALVE, ADJUSTABLE 50–330 ARC, AND 360 NON–REVERSING FULL–CIRCLE. 1IN. (26/34) NPT FEMALE THREADED INLET. EXTENDED RADIUS IS IDEAL FOR LARGE TURF APPLICATIONS.	6	15.3	57'

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	RAIN BIRD PESB–PRS–D 2" 1IN., 1–1/2IN., 2IN., 3IN., 3IN. PLASTIC INDUSTRIAL REMOTE CONTROL VALVE, WITH TORO DW–D–1 SINGLE VALVE DECODER. LOW FLOW OPERATING CAPABILITY, GLOBE CONFIGURATION, WITH PRESSURE REGULATING MODULE, AND SCRUBBER TECHNOLOGY FOR RELIABLE PERFORMANCE IN DIRTY WATER IRRIGATION APPLICATIONS.	3
	RAIN BIRD 44–RC 1" 1IN. BRASS QUICK–COUPLING VALVE, WITH CORROSION–RESISTANT STAINLESS STEEL SPRING, THERMOPLASTIC RUBBER COVER, AND 2–PIECE BODY.	2
	BOSHART 0818 SERIES BOSHART 0818 SERIES –BRASS FULL PORT GATE VALVE (THREADED)	2

	IRRIGATION LATERAL LINE: ROLL POLYETHYLENE INSERT PRESSURE PIPE 1" SIDR–19 NSF–14 P	179.7 LF
	IRRIGATION LATERAL LINE: ROLL POLYETHYLENE INSERT PRESSURE PIPE 1 1/4" SIDR–19 NSF–14 P	151.7 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 1 1/2" SDR26 PVC CLASS 160 ASTM D2241	214.4 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 2" SDR26 PVC CLASS 160 ASTM D2241	171.5 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 3" SDR21 PVC CLASS 200 ASTM D22	198.6 LF

VALVE SCHEDULE SECTION 33A

NUMBER	MODEL	SIZE	TYPE	GPM	WIRE	PSI	PSI @ POC	PRECIP
D1	RAIN BIRD PESB–R	2"	TURF ROTOR	45.9		77.2		1.74 in/h
D2	RAIN BIRD PESB–R	2"	TURF ROTOR	47.1		65.3		0.93 in/h
D3	RAIN BIRD PESB–R	2"	TURF ROTOR	45.9		77.2		2.46 in/h



IRRIGATION SCHEDULE SECTION 46

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	GPM	RADIUS
12	RAIN BIRD 8005 12 TURF ROTOR, 5.0IN. POP–UP, PLASTIC RISER, STANDARD NOZZLE. WITH SEAL–A–MATIC CHECK VALVE, ADJUSTABLE 50–330 ARC, AND 360 NON–REVERSING FULL–CIRCLE. 1IN. (26/34) NPT FEMALE THREADED INLET. EXTENDED RADIUS IS IDEAL FOR LARGE TURF APPLICATIONS.	10	13.2	53'
14	RAIN BIRD 8005 14 TURF ROTOR, 5.0IN. POP–UP, PLASTIC RISER, STANDARD NOZZLE. WITH SEAL–A–MATIC CHECK VALVE, ADJUSTABLE 50–330 ARC, AND 360 NON–REVERSING FULL–CIRCLE. 1IN. (26/34) NPT FEMALE THREADED INLET. EXTENDED RADIUS IS IDEAL FOR LARGE TURF APPLICATIONS.	10	15.3	57'
16	RAIN BIRD 8005 16 TURF ROTOR, 5.0IN. POP–UP, PLASTIC RISER, STANDARD NOZZLE. WITH SEAL–A–MATIC CHECK VALVE, ADJUSTABLE 50–330 ARC, AND 360 NON–REVERSING FULL–CIRCLE. 1IN. (26/34) NPT FEMALE THREADED INLET. EXTENDED RADIUS IS IDEAL FOR LARGE TURF APPLICATIONS.	5	17.2	60'
20	RAIN BIRD 8005 20 TURF ROTOR, 5.0IN. POP–UP, PLASTIC RISER, STANDARD NOZZLE. WITH SEAL–A–MATIC CHECK VALVE, ADJUSTABLE 50–330 ARC, AND 360 NON–REVERSING FULL–CIRCLE. 1IN. (26/34) NPT FEMALE THREADED INLET. EXTENDED RADIUS IS IDEAL FOR LARGE TURF APPLICATIONS.	1	22	64'
26	RAIN BIRD 8005 26 TURF ROTOR, 5.0IN. POP–UP, PLASTIC RISER, STANDARD NOZZLE. WITH SEAL–A–MATIC CHECK VALVE, ADJUSTABLE 50–330 ARC, AND 360 NON–REVERSING FULL–CIRCLE. 1IN. (26/34) NPT FEMALE THREADED INLET. EXTENDED RADIUS IS IDEAL FOR LARGE TURF APPLICATIONS.	2	29.4	68'

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	RAIN BIRD PESB–R 1–1/2" 1IN., 1–1/2IN., AND 2IN. DURABLE CHLORINE–RESISTANT VALVES FOR RECLAIMED WATER APPLICATIONS. WITH SCRUBBER MECHANISM TECHNOLOGY, AND PURPLE FLOW CONTROL HANDLE. WITH TORO DW–D–1 SINGLE VALVE DECODERS	1
	RAIN BIRD PESB–R 2" 1IN., 1–1/2IN., AND 2IN. DURABLE CHLORINE–RESISTANT VALVES FOR RECLAIMED WATER APPLICATIONS. WITH SCRUBBER MECHANISM TECHNOLOGY, AND PURPLE FLOW CONTROL HANDLE. WITH TORO DW–D–1 SINGLE VALVE DECODERS	7
	RAIN BIRD 44–RC 1" 1IN. BRASS QUICK–COUPLING VALVE, WITH CORROSION–RESISTANT STAINLESS STEEL SPRING, THERMOPLASTIC RUBBER COVER, AND 2–PIECE BODY.	1
	BOSHART 0818 SERIES BOSHART 0818 SERIES –BRASS FULL PORT GATE VALVE (THREADED)	1
MVC	RAIN BIRD PEB 3" 1IN., 1–1/2IN., 2IN. PLASTIC INDUSTRIAL SMART VALVES W/ FACTORY INSTALLED IVM–SOL. LOW FLOW OPERATING CAPABILITY, GLOBE CONFIGURATION. WITH TORO TW–D–1 SINGLE VALVE DECODER.	1
FSC	DYNASONICS FLOW SENSOR RS–900W POLYMER ULTRASONIC FLOW SENSOR WITH	1

	IRRIGATION LATERAL LINE: ROLL POLYETHYLENE INSERT PRESSURE PIPE 1" SIDR–19 NSF–14 P	100.0 LF
	IRRIGATION LATERAL LINE: ROLL POLYETHYLENE INSERT PRESSURE PIPE 1 1/4" SIDR–19 NSF–14 P	394.8 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 1 1/2" SDR26 PVC CLASS 160 ASTM D2241	428.3 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 2" SDR26 PVC CLASS 160 ASTM D2241	300.5 LF
	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 2 1/2" SDR26 PVC CLASS 160 ASTM D2241	198.7 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE SDR21 PVC CLASS 200 ASTM D22	4.5 LF
	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 2" SDR21 PVC CLASS 200 ASTM D22	955.5 LF

VALVE SCHEDULE SECTION 46

NUMBER	MODEL	SIZE	TYPE	GPM	WIRE	PSI	PSI @ POC	PRECIP
C1	RAIN BIRD PESB–R	2"	TURF ROTOR	69		78.8		1.5 in/h
C2	RAIN BIRD PESB–R	2"	TURF ROTOR	59.1		77.1		0.67 in/h
C3	RAIN BIRD PESB–R	2"	TURF ROTOR	64.8		78.2		0.63 in/h
C4	RAIN BIRD PESB–R	2"	TURF ROTOR	58.9		77.2		0.69 in/h
C5	RAIN BIRD PESB–R	2"	TURF ROTOR	69.8		78.9		1.38 in/h
C6	RAIN BIRD PESB–R	2"	TURF ROTOR	55.8		78.3		1.9 in/h
C7	RAIN BIRD PESB–R	2"	TURF ROTOR	43.8		76.8		0.65 in/h
C8	RAIN BIRD PESB–R	1–1/2"	TURF ROTOR	30.6		76.8		0.9 in/h

SHOULD ANY ON-SITE ACTIVITY, INCIDENT, EMERGENCY OR DISASTER RESULT IN EXPOSURE AND/OR DAMAGE TO ANY REMAINS (I.E. CASKET OR URN), OR OUTER BURIAL CONTAINER, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CEMETERY DIRECTOR, THE COR AND/OR THE C.O.; TAKE IMMEDIATE STEPS TO PROTECT AND RENDER SAFE ANY EXPOSED REMAINS AND STOP ANY FURTHER WORK THAT COULD AFFECT THOSE REMAINS OR GRAVESITE UNTIL THE CEMETERY DIRECTOR PROVIDES THE CONTRACTOR GUIDANCE REGARDING DISPOSITION OF THE REMAINS AND PERMISSION TO PROCEED.

N W E S

20' 0' 10' 20' 40'
1" = 20'
SCALE MUST MEASURE 1 INCH OR DRAWING IS NOT TO SCALE.

BID DOCUMENTS

Revisions:	Date:

CONSULTANTS

IRRIGATION	GEOTECHNICAL	COST ESTIMATING
WATER IN MOTION, INC.	**TERRACON**	**OCMI**
175 James Avenue North Minneapolis, MN 55405 952.229.1911	611 Lunken Park Drive Cincinnati, Ohio 45226 513.612.9020	2100 North Greenville Ave. Richardson, Texas 75082 469.431.0571
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Certified Irrigation Designer CID IRRIGATION ASSOCIATION — EPA WaterSense 2008 PARTNER OF THE YEAR

Timothy R. Malooly CID, CIC, CLIA #012894

Office of Design and Construction Services

VA U.S. Department of Veterans Affairs

Drawing Title: NEW SECTIONS 33A AND 46 IRRIGATION PLAN

Phase: BID DOCUMENTS

Project Title: DAYTON NATIONAL CEMETERY GRAVESITE EXPANSION

Project Number: 810-CM3-033

Building Number: --

Approved: Project Director

Location: 4400 W THIRD ST, DAYTON, OH 45428

Issue Date: FEBRUARY 5, 2026 | Checked: TM | Drawn: CJC

Drawing Number: IR111 OF 133

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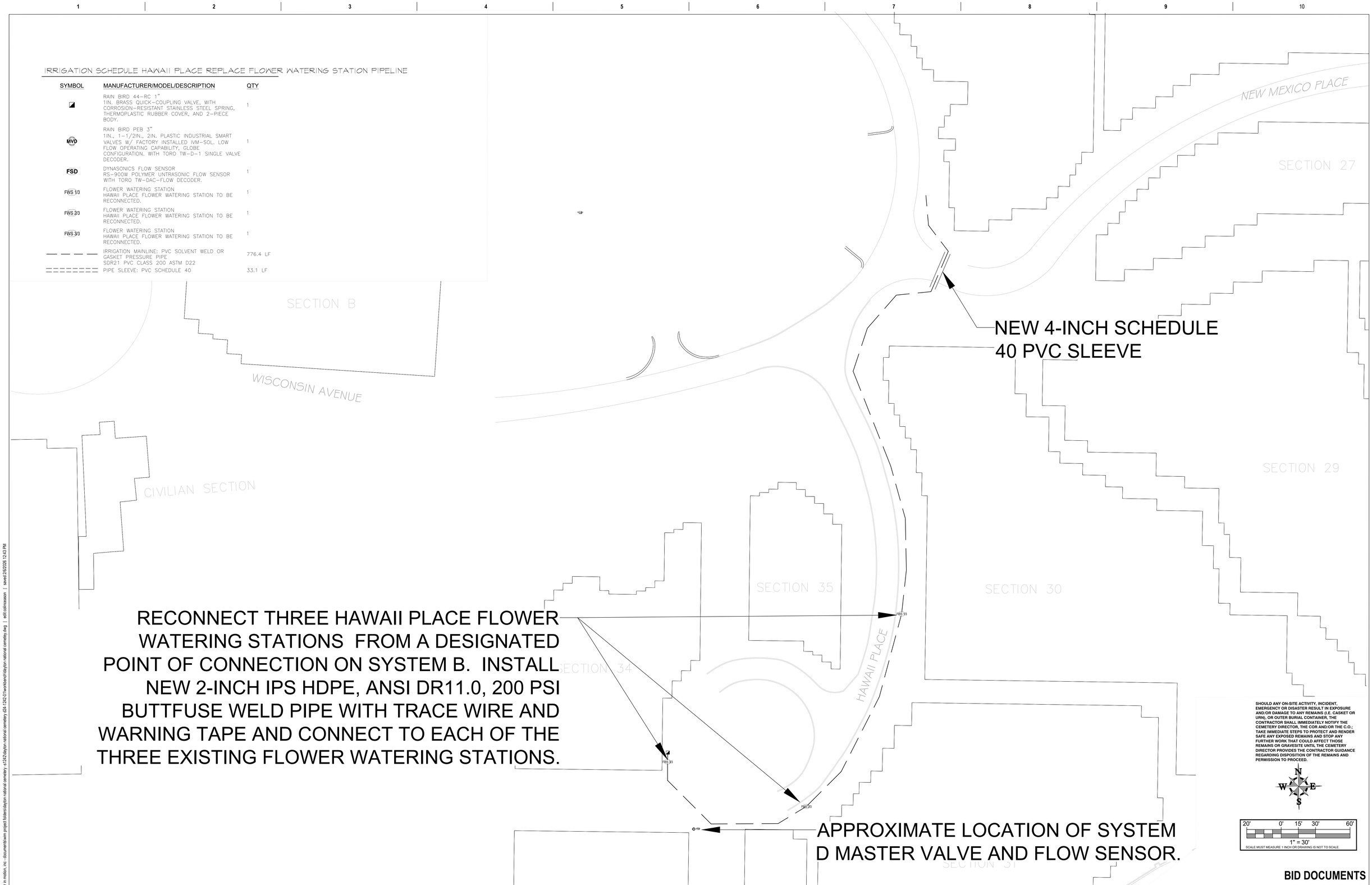
VA FORM 08 - 6231

IRRIGATION SCHEDULE HAWAII PLACE REPLACE FLOWER WATERING STATION PIPELINE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
◪	RAIN BIRD 44-RC 1" 1IN. BRASS QUICK-COUPLING VALVE, WITH CORROSION-RESISTANT STAINLESS STEEL SPRING, THERMOPLASTIC RUBBER COVER, AND 2-PIECE BODY.	1
MVD	RAIN BIRD PEB 3" 1IN., 1-1/2IN., 2IN. PLASTIC INDUSTRIAL SMART VALVES W/ FACTORY INSTALLED IVM-SOL. LOW FLOW OPERATING CAPABILITY, GLOBE CONFIGURATION. WITH TORO TW-D-1 SINGLE VALVE DECODER.	1
FSD	DYNASONICS FLOW SENSOR RS-900W POLYMER UNTRASONIC FLOW SENSOR WITH TORO TW-DAC-FLOW DECODER.	1
FWS 1/3	FLOWER WATERING STATION HAWAII PLACE FLOWER WATERING STATION TO BE RECONNECTED.	1
FWS 2/3	FLOWER WATERING STATION HAWAII PLACE FLOWER WATERING STATION TO BE RECONNECTED.	1
FWS 3/3	FLOWER WATERING STATION HAWAII PLACE FLOWER WATERING STATION TO BE RECONNECTED.	1
— — — —	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE SDR21 PVC CLASS 200 ASTM D22	776.4 LF
========	PIPE SLEEVE: PVC SCHEDULE 40	33.1 LF



SHOULD ANY ON-SITE ACTIVITY, INCIDENT, EMERGENCY OR DISASTER RESULT IN EXPOSURE AND/OR DAMAGE TO ANY REMAINS (I.E. CASKET OR URN), OR OUTER BURIAL CONTAINER, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CEMETERY DIRECTOR, THE COR AND/OR THE C.O.; TAKE IMMEDIATE STEPS TO PROTECT AND RENDER SAFE ANY EXPOSED REMAINS AND STOP ANY FURTHER WORK THAT COULD AFFECT THOSE REMAINS OR GRAVESITE UNTIL THE CEMETERY DIRECTOR PROVIDES THE CONTRACTOR GUIDANCE REGARDING DISPOSITION OF THE REMAINS AND PERMISSION TO PROCEED.

N W E S

20' 0' 15' 30' 60'
1" = 30'
SCALE MUST MEASURE 1 INCH OR DRAWING IS NOT TO SCALE.

BID DOCUMENTS

Revisions:	Date:

CONSULTANTS

IRRIGATION	GEOTECHNICAL	COST ESTIMATING
WATER IN MOTION, INC.	**TERRACON**	**OCMI**
175 James Avenue North Minneapolis, MN 55405 952.229.1911	611 Lunken Park Drive Cincinnati, Ohio 45226 513.612.9020	2100 North Greenville Ave. Richardson, Texas 75082 469.431.0571
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Certified Irrigation Designer CID Irrigation Association
EPA WaterSense 2008 PARTNER OF THE YEAR
Timothy R. Malooly CID, CIC, CLIA #012894

Office of Design and Construction Services

VA U.S. Department of Veterans Affairs

Drawing Title: HAWAII PLACE REPLACE FLOWER WATERING STATION PIPELINE

Approved: Project Director

Phase: BID DOCUMENTS

Project Title: DAYTON NATIONAL CEMETERY GRAVESITE EXPANSION

Location: 4400 W THIRD ST, DAYTON, OH 45428

Issue Date: FEBRUARY 5, 2026 | Checked: TM | Drawn: CJC

Project Number: 810-CM3-033

Building Number: --

Drawing Number: IR112 OF 133

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VA FORM 08 - 6231

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
10 10 10 10 Q T H F	RAIN BIRD 1806-PRS 10 SERIES MPR TURF SPRAY 6.0IN. POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. SIDE AND BOTTOM INLET. 1/2IN. NPT FEMALE THREADED INLET. PRESSURE REGULATING.	1
10 10 10 Q T H	RAIN BIRD 1812-PRS 5 SERIES MPR SHRUB SPRAY 12IN. POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. SIDE AND BOTTOM INLET. 1/2IN. NPT FEMALE THREADED INLET. WITH PRESSURE REGULATING DEVICE.	40
10 10 10 10 Q T H F	RAIN BIRD 1812-PRS 8 SERIES MPR SHRUB SPRAY 12IN. POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. SIDE AND BOTTOM INLET. 1/2IN. NPT FEMALE THREADED INLET. WITH PRESSURE REGULATING DEVICE.	39
10 10 10 10 Q T H F	RAIN BIRD 1812-PRS 10 SERIES MPR SHRUB SPRAY 12IN. POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. SIDE AND BOTTOM INLET. 1/2IN. NPT FEMALE THREADED INLET. WITH PRESSURE REGULATING DEVICE.	5
10 10 10 10 10 Q T H T Q	RAIN BIRD 1812-PRS 15 SERIES MPR SHRUB SPRAY 12IN. POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. SIDE AND BOTTOM INLET. 1/2IN. NPT FEMALE THREADED INLET. WITH PRESSURE REGULATING DEVICE.	5
6 8 8 10 4 8 8 10 12 15 18 12 15 18	RAIN BIRD 1812-PRS ADJ SHRUB SPRAY 12IN. POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. SIDE AND BOTTOM INLET. 1/2IN. NPT FEMALE THREADED INLET. WITH PRESSURE REGULATING DEVICE.	29
1401 1402 1404	RAIN BIRD RWS-B-C 1400 SERIES ROOT WATERING SYSTEM WITH 4.0IN. DIAMETER X 36.0IN. LONG WITH LOCKING GRATE, SEMI-RIGID MESH TUBE, AND CHECK VALVE. RAIN BIRD BUBBLER OPTION AS INDICATED: 1401 0.25 GPM, 1402 0.5 GPM, 1404 1.0 GPM, 1408 2.0 GPM.	4

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	GPM	RADIUS
2.0 1	RAIN BIRD 3504-PC 2.0 TURF ROTOR, 4IN. POP-UP. ADJUSTABLE AND FULL CIRCLE.	58	2.15	25'
3.0 1	RAIN BIRD 3504-PC 3.0 TURF ROTOR, 4IN. POP-UP. ADJUSTABLE AND FULL CIRCLE.	77	3.25	29'
4.0 1	RAIN BIRD 3504-PC 4.0 TURF ROTOR, 4IN. POP-UP. ADJUSTABLE AND FULL CIRCLE.	44	4.6	32'
25	RAIN BIRD 5006-PL-PC-SAM-R-MPR 25 TURF ROTOR, 6IN. POP-UP, PLASTIC RISER, WITH FLOW SHUT-OFF DEVICE. MATCHED PRECIPITATION ROTOR (MPR NOZZLE), ARC AND RADIUS AS PER SYMBOL. 25 FT=RED, 30 FT=GREEN, 35FT=BEIGE. WITH SEAL-A-MATIC CHECK VALVE, AND IN-STEM PRESSURE REGULATOR.	85		25'
3.0	RAIN BIRD 5006-PL-PC-SAM-R-SS 3.0 TURF ROTOR, 6IN. POP-UP WITH STAINLESS STEEL RISER. ADJUSTABLE TO FULL CIRCLE. STANDARD ANGLE NOZZLE, IN-STEM PRESSURE REGULATOR, AND FLOW SHUT-OFF DEVICE. WITH SEAL-A-MATIC CHECK VALVE.	4	3.2	35'
6.0	RAIN BIRD 5006-PL-PC-SAM-R-SS 6.0 TURF ROTOR, 6IN. POP-UP WITH STAINLESS STEEL RISER. ADJUSTABLE TO FULL CIRCLE. STANDARD ANGLE NOZZLE, IN-STEM PRESSURE REGULATOR, AND FLOW SHUT-OFF DEVICE. WITH SEAL-A-MATIC CHECK VALVE.	6	6.22	40'
12 1	RAIN BIRD 8005 12 TURF ROTOR, 5.0IN. POP-UP, PLASTIC RISER, STANDARD NOZZLE. WITH SEAL-A-MATIC CHECK VALVE, ADJUSTABLE 50-330 ARC, AND 360 NON-REVERSING FULL-CIRCLE. 1IN. (26/34) NPT FEMALE THREADED INLET. EXTENDED RADIUS IS IDEAL FOR LARGE TURF APPLICATIONS.	103	13.2	53'
14 1	RAIN BIRD 8005 14 TURF ROTOR, 5.0IN. POP-UP, PLASTIC RISER, STANDARD NOZZLE. WITH SEAL-A-MATIC CHECK VALVE, ADJUSTABLE 50-330 ARC, AND 360 NON-REVERSING FULL-CIRCLE. 1IN. (26/34) NPT FEMALE THREADED INLET. EXTENDED RADIUS IS IDEAL FOR LARGE TURF APPLICATIONS.	75	15.3	57'
16 1	RAIN BIRD 8005 16 TURF ROTOR, 5.0IN. POP-UP, PLASTIC RISER, STANDARD NOZZLE. WITH SEAL-A-MATIC CHECK VALVE, ADJUSTABLE 50-330 ARC, AND 360 NON-REVERSING FULL-CIRCLE. 1IN. (26/34) NPT FEMALE THREADED INLET. EXTENDED RADIUS IS IDEAL FOR LARGE TURF APPLICATIONS.	5	17.2	60'
20 1	RAIN BIRD 8005 20 TURF ROTOR, 5.0IN. POP-UP, PLASTIC RISER, STANDARD NOZZLE. WITH SEAL-A-MATIC CHECK VALVE, ADJUSTABLE 50-330 ARC, AND 360 NON-REVERSING FULL-CIRCLE. 1IN. (26/34) NPT FEMALE THREADED INLET. EXTENDED RADIUS IS IDEAL FOR LARGE TURF APPLICATIONS.	102	22	64'
26 1	RAIN BIRD 8005 26 TURF ROTOR, 5.0IN. POP-UP, PLASTIC RISER, STANDARD NOZZLE. WITH SEAL-A-MATIC CHECK VALVE, ADJUSTABLE 50-330 ARC, AND 360 NON-REVERSING FULL-CIRCLE. 1IN. (26/34) NPT FEMALE THREADED INLET. EXTENDED RADIUS IS IDEAL FOR LARGE TURF APPLICATIONS.	2	29.4	68'

— — — —	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE SDR21 PVC CLASS 200 ASTM D22	797.3 LF
— — — —	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 1 1/2" SDR21 PVC CLASS 200 ASTM D22	177.5 LF
— — — —	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 2" SDR21 PVC CLASS 200 ASTM D22	1,018 LF
— — — —	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 3" SDR21 PVC CLASS 200 ASTM D22	3,350 LF
— — — —	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 4" SDR21 PVC CLASS 200 ASTM D22	3,654 LF
— — — —	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 6" SDR21 PVC CLASS 200 ASTM D22	32.7 LF
— — — —	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 8" SDR21 PVC CLASS 200 ASTM D22	446.4 LF
— — — —	IRRIGATION MAINLINE: PVC SOLVENT WELD OR GASKET PRESSURE PIPE 10" SDR21 PVC CLASS 200 ASTM D22	1,092 LF
= = = = = = = =	PIPE SLEEVE: ESTIMATED EXISTING	33.1 LF
= = = = = = = =	PIPE SLEEVE: PVC SCHEDULE 40 12"	58.7 LF

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	RAIN BIRD PESB-R 1-1/2" 1IN., 1-1/2IN., AND 2IN. DURABLE CHLORINE-RESISTANT VALVES FOR RECLAIMED WATER APPLICATIONS. WITH SCRUBBER MECHANISM TECHNOLOGY, AND PURPLE FLOW CONTROL HANDLE. WITH TORO DW-D-1 SINGLE VALVE DECODERS	41
	RAIN BIRD PESB-R 2" 1IN., 1-1/2IN., AND 2IN. DURABLE CHLORINE-RESISTANT VALVES FOR RECLAIMED WATER APPLICATIONS. WITH SCRUBBER MECHANISM TECHNOLOGY, AND PURPLE FLOW CONTROL HANDLE. WITH TORO DW-D-1 SINGLE VALVE DECODERS	65
	RAIN BIRD 44-RC 1" 1IN. BRASS QUICK-COUPLING VALVE, WITH CORROSION-RESISTANT STAINLESS STEEL SPRING, DISTRIBUTE SYSTEM F PRODUCT WATER TO SYSTEM F CONTROL VALVES. THE POINT OF CONNECTION SHALL INCLUDE A FOUR-INCH MANUAL ISOLATION VALVE WITH BLOW POINT FOR WINTERIZATION, THREE-INCH RAIN BIRD 300BPES MASTER VALVE IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-D-1 SINGLE VALVE DECODER, NETAFIM OCTAVE 3" MODEL 360CT 03GAL 0.1 PULSE HYDROMETER IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO DW-CAD-FLOW PULSE DECODER AND A QUICK COUPLER IN AN APPROPRIATELY SIZED SERVICE BOX DOWNSTREAM OF THE FLOW SENSOR ON THE SYSTEM F SUB MAINLINE.	12
	BOSHART 0818 SERIES BOSHART 0818 SERIES -BRASS FULL PORT GATE VALVE (THREADED)	24
MVC	RAIN BIRD BPES 3" RAIN BIRD 300BPES MASTER VALVE IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-D-1 SINGLE VALVE DECODER	1
MVD	RAIN BIRD BPES 3" RAIN BIRD 300BPES MASTER VALVE IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-D-1 SINGLE VALVE DECODER	1
MVE	RAIN BIRD BPES 3" RAIN BIRD 300BPES MASTER VALVE IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-D-1 SINGLE VALVE DECODER	1
MVF	RAIN BIRD BPES 3" RAIN BIRD 300BPES MASTER VALVE IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-D-1 SINGLE VALVE DECODER	1
FSC	DYNASONICS RS-900W POLYMER MODEL D8-C-020NAAP9SS-BMXX TWO-INCH PULSE ULTRASONIC FLOW SENSOR IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-DAC-FLOW PULSE DECODER AND A QUICK COUPLER IN AN APPROPRIATELY SIZED SERVICE BOX DOWNSTREAM OF THE FLOW SENSOR	1
FSD	DYNASONICS RS-900W POLYMER MODEL D8-C-020NAAP9SS-BMXX TWO-INCH PULSE ULTRASONIC FLOW SENSOR IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-DAC-FLOW PULSE DECODER AND A QUICK COUPLER IN AN APPROPRIATELY SIZED SERVICE BOX DOWNSTREAM OF THE FLOW SENSOR	1
FSE	DYNASONICS RS-900W POLYMER MODEL D8-C-020NAAP9SS-BMXX TWO-INCH PULSE ULTRASONIC FLOW SENSOR IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-DAC-FLOW PULSE DECODER AND A QUICK COUPLER IN AN APPROPRIATELY SIZED SERVICE BOX DOWNSTREAM OF THE FLOW SENSOR	1
FSF	NETAFIM OCTAVE NETAFIM OCTAVE 3" MODEL 360CT 03GAL 0.1 PULSE HYDROMETER IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO DW-CAD-FLOW PULSE DECODER.	1
FWS 1/3	FLOWER WATERING STATION HAWAII PLACE FLOWER WATERING STATION TO BE RECONNECTED.	1
FWS 2/3	FLOWER WATERING STATION HAWAII PLACE FLOWER WATERING STATION TO BE RECONNECTED.	1
FWS 3/3	FLOWER WATERING STATION HAWAII PLACE FLOWER WATERING STATION TO BE RECONNECTED.	1
TRAINING	TRAINING SOLE SOURCE DUTY TO BE PERFORMED BY A FACTORY AUTHORIZED TORO SENTINEL SERVICING AGENT. PROVIDE FOR NOT LESS THAN FOUR BUSINESS DAYS FOR A COMPLETE REVIEW, ADJUSTMENT, TESTING, DOCUMENTATION AND PLACEMENT INTO SERVICE OF THE NEW TORO SENTINEL DXI WITH WMS REMOTE CENTRAL CONTROL SOFTWARE INCLUDING: * INSTALL ANY REQUIRED UPDATES TO THE LAPTOP FIRMWARE, DRIVERS AND OPERATING SYSTEM * CONFIRM HARDWARE AND SOFTWARE WARRANTY AND SUPPORT REGISTRATION WITH TORO NSN (NATIONAL SERVICE NETWORK) * ENTER ADMINISTRATOR AND SUBORDINATE USER PRIVLEGES DESIGNATED BY THE OWNER * CONFIRM ADEQUATE COMMUNICATION WITH REQUIRED INTERNET RESOURCES AND TORO SENTINEL FIELD DEVICES * INSTALL, PROGRAM, TEST, DOCUMENT AND PLACE INTO SERVICE; * TORO AUTHORIZED INTERNET BASED WEATHER SERVICE * ALARM CONDITION NOTIFICATIONS TO DESIGNATED OWNER REPRESENTATIVE * CELLULAR PHONE/FIELD TABLET-BASED REMOTE CONTROL APPLICATION * OTHER FEATURES AND/OR SERVICES	1

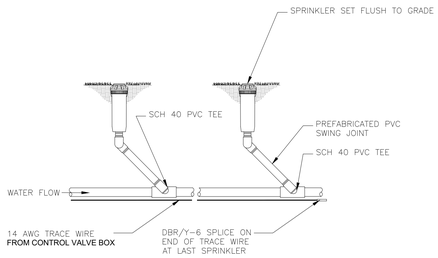
— — — —	IRRIGATION LATERAL LINE: ROLL POLYETHYLENE INSERT PRESSURE PIPE 1" SIDR-19 NSF-14 P	6,924 LF
— — — —	IRRIGATION LATERAL LINE: ROLL POLYETHYLENE INSERT PRESSURE PIPE 1 1/4" SIDR-19 NSF-14 P	5,793 LF
— — — —	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 1 1/2" SDR26 PVC CLASS 160 ASTM D2241	3,583 LF
— — — —	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 2" SDR26 PVC CLASS 160 ASTM D2241	4,643 LF
— — — —	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 2 1/2" SDR26 PVC CLASS 160 ASTM D2241	1,872 LF
— — — —	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 3" SDR26 PVC CLASS 160 ASTM D2241	892.4 LF
— — — —	IRRIGATION LATERAL LINE: PVC SOLVENT WELD OR GASKET LATERAL PIPE 4" SDR26 PVC CLASS 160 ASTM D2241	72.6 LF

IRRIGATION SCHEDULE

cF	NEW CONTROLLER F TORO 200 STATION DECODER CONTROLLER WITH 5-YEAR WARRANTY, WMS COMPATIBLE. DXI-PPEDTW 2-WIRE ASSLY IN PLASTIC PEDESTAL. DXI-CELL-KIT WITH ANTENNA AND 10-YEAR CELLUAR SERVICE. DXI-FMW-WMS DXI FIRMWARE FOR SENTINEL WMS COMPATIBILITY. 5Y-EXT-WARRANTY 5-YEAR EXTENDED CONTROLLER WARRANTY FOR TOTAL OF 10-YEARS CONNECT NEW FIELD WIRING AND INSTALL AND PROGRAM 40 NEW STATIONS OF SPRINKLER IRRIGATION. SYSTEM F SHALL BE CONFIGURED TO ENABLE THE AREA TO BE FLOW MANAGED. SYSTEM F SHALL INCLUDE A POINT OF CONNECTION FROM THE NEARBY EXISTING 10-INCH IRRIGATION PIPELINE TO A SUB MAINLINE THAT SHALL DISTRIBUTE SYSTEM F PRODUCT WATER TO SYSTEM F CONTROL VALVES. THE POINT OF CONNECTION SHALL INCLUDE A FOUR-INCH MANUAL ISOLATION VALVE WITH BLOW POINT FOR WINTERIZATION, THREE-INCH RAIN BIRD 300BPES MASTER VALVE IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-D-1 SINGLE VALVE DECODER, NETAFIM OCTAVE 3" MODEL 360CT 03GAL 0.1 PULSE HYDROMETER IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO DW-CAD-FLOW PULSE DECODER AND A QUICK COUPLER IN AN APPROPRIATELY SIZED SERVICE BOX DOWNSTREAM OF THE FLOW SENSOR ON THE SYSTEM F SUB MAINLINE.
cA	REPLACEMENT CONTROLLER A TORO 200 STATION DECODER CONTROLLER WITH 5-YEAR WARRANTY, WMS COMPATIBLE. DXI-PPEDTW 2-WIRE ASSLY IN PLASTIC PEDESTAL. DXI-CELL-KIT WITH ANTENNA AND 10-YEAR CELLUAR SERVICE. DXI-FMW-WMS DXI FIRMWARE FOR SENTINEL WMS COMPATIBILITY. 5Y-EXT-WARRANTY 5-YEAR EXTENDED CONTROLLER WARRANTY FOR TOTAL OF 10-YEARS CONNECT EXISTING FIELD WIRING AND PROGRAM 127 EXISTING STATIONS OF SPRINKLER IRRIGATION AND INSTALL AND PROGRAM FOUR REPLACEMENT STATIONS OF SPRINKLER IRRIGATION AND TEN NEW STATIONS OF IRRIGATION.
cB	REPLACEMENT CONTROLLER B TORO 200 STATION DECODER CONTROLLER WITH 5-YEAR WARRANTY, WMS COMPATIBLE. DXI-PPEDTW 2-WIRE ASSLY IN PLASTIC PEDESTAL. DXI-CELL-KIT WITH ANTENNA AND 10-YEAR CELLUAR SERVICE. DXI-FMW-WMS DXI FIRMWARE FOR SENTINEL WMS COMPATIBILITY. 5Y-EXT-WARRANTY 5-YEAR EXTENDED CONTROLLER WARRANTY FOR TOTAL OF 10-YEARS CONNECT EXISTING FIELD WIRING AND PROGRAM 83 EXISTING STATIONS OF SPRINKLER IRRIGATION PLUS ALL NEW ADMIN BLDG STATIONS INSTALLED IN 2025 AND INSTALL AND PROGRAM FOUR REPLACEMENT STATIONS OF SPRINKLER IRRIGATION AND FOUR NEW STATIONS OF IRRIGATION.
cC	REPLACEMENT CONTROLLER C TORO 200 STATION DECODER CONTROLLER WITH 5-YEAR WARRANTY, WMS COMPATIBLE. DXI-PPEDTW 2-WIRE ASSLY IN PLASTIC PEDESTAL. DXI-CELL-KIT WITH ANTENNA AND 10-YEAR CELLUAR SERVICE. DXI-FMW-WMS DXI FIRMWARE FOR SENTINEL WMS COMPATIBILITY. 5Y-EXT-WARRANTY 5-YEAR EXTENDED CONTROLLER WARRANTY FOR TOTAL OF 10-YEARS CONNECT EXISTING FIELD WIRING AND PROGRAM ALL EXISTING STATIONS OF SPRINKLER IRRIGATION AND INSTALL AND PROGRAM THREE NEW STATIONS OF SPRINKLER IRRIGATION. SYSTEM C SHALL BE CONFIGURED TO ENABLE THE AREA TO BE FLOW MANAGED. SYSTEM C SHALL INCLUDE A POINT OF CONNECTION THAT SHALL INCLUDE A THREE-INCH RAIN BIRD 300BPES MASTER VALVE IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-D-1 SINGLE VALVE DECODER, BADGER DYNASONICS RS-900W POLYMER MODEL D8-C-020NAAP9SS-BMXX TWO-INCH PULSE ULTRASONIC FLOW SENSOR IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-DAC-FLOW PULSE DECODER AND A QUICK COUPLER IN AN APPROPRIATELY SIZED SERVICE BOX DOWNSTREAM OF THE FLOW SENSOR ON THE SYSTEM C SUB MAINLINE.
cD	REPLACEMENT CONTROLLER D TORO 24-VOLT 48 STATION CONVENTIONAL WIRE CONTROLLER WITH 5-YEAR WARRANTY, WMS COMPATIBLE, WALL MOUNT. DXI-PWM-48-MBC WALL MOUNT POWDER COATED LOCKABLE CABINET. DXI-CELL-KIT WITH ANTENNA AND 10-YEAR CELLULAR SERVICE. DXI-FMW-WMS DXI FIRMWARE FOR SENTINEL WMS COMPATIBILITY. 5Y-EXT-WARRANTY 5-YEAR EXTENDED CONTROLLER WARRANTY FOR TOTAL OF 10-YEARS CONNECT EXISTING FIELD WIRING AND PROGRAM ALL EXISTING STATIONS OF SPRINKLER IRRIGATION AND REPLACE AND PROGRAM TWO STATIONS OF TURF SPRINKLER IRRIGATION AND INSTALL AND PROGRAM THREE NEW STATIONS OF SPRINKLER IRRIGATION. SYSTEM D SHALL BE CONFIGURED TO ENABLE THE AREA TO BE FLOW MANAGED. SYSTEM D SHALL INCLUDE A POINT OF CONNECTION THAT SHALL INCLUDE A THREE-INCH RAIN BIRD 300BPES MASTER VALVE IN AN APPROPRIATELY SIZED SERVICE BOX, BADGER DYNASONICS RS-900W POLYMER MODEL D8-C-020NAAP9SS-BMXX TWO-INCH PULSE ULTRASONIC FLOW SENSOR IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-DAC-FLOW PULSE DECODER AND A QUICK COUPLER IN AN APPROPRIATELY SIZED SERVICE BOX DOWNSTREAM OF THE FLOW SENSOR ON THE SYSTEM D SUB MAINLINE. FURNISH AND INSTALL PE39 SIX PAIR SHIELDED COMMUNICATION CABLE FROM THE FLOW SENSOR TO SYSTEM D CONTROLLER. FURNISH AND INSTALL A 12ga. 24-VOLT MASTER VALVE SIGNAL WIRE AND 12ga. COMMON WIRE FROM THE MASTER VALVE TO THE CONTROLLER.
cE	REPLACEMENT CONTROLLER E TORO 200 STATION DECODER CONTROLLER WITH 5-YEAR WARRANTY, WMS COMPATIBLE. DXI-PPEDTW 2-WIRE ASSLY IN PLASTIC PEDESTAL. DXI-CELL-KIT WITH ANTENNA AND 10-YEAR CELLUAR SERVICE. DXI-FMW-WMS DXI FIRMWARE FOR SENTINEL WMS COMPATIBILITY. 5Y-EXT-WARRANTY 5-YEAR EXTENDED CONTROLLER WARRANTY FOR TOTAL OF 10-YEARS CONNECT NEW FIELD WIRING AND INSTALL AND PROGRAM 45 NEW REPLACEMENT STATIONS OF SPRINKLER IRRIGATION. SYSTEM E SHALL BE CONFIGURED TO ENABLE THE AREA TO BE FLOW MANAGED. SYSTEM E SHALL INCLUDE A POINT OF CONNECTION THAT SHALL INCLUDE A THREE-INCH RAIN BIRD 300BPES MASTER VALVE IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-D-1 SINGLE VALVE DECODER, BADGER DYNASONICS RS-900W POLYMER MODEL D8-C-020NAAP9SS-BMXX TWO-INCH PULSE ULTRASONIC FLOW SENSOR IN AN APPROPRIATELY SIZED SERVICE BOX WITH TORO TW-DAC-FLOW PULSE DECODER AND A QUICK COUPLER IN AN APPROPRIATELY SIZED SERVICE BOX DOWNSTREAM OF THE FLOW SENSOR ON THE SYSTEM E SUB MAINLINE.

VALVE SCHEDULE

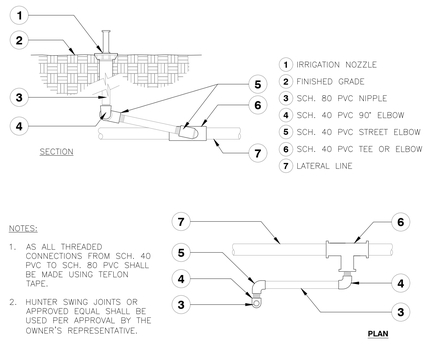
NUMBER	MODEL	SIZE	TYPE	GPM	WIRE	PSI	PSI @ POC	PRECIP
A1	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	31.4		60.9		0.79 in/h
A2	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	19.5		61.3		0.8 in/h
A80	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	22.65		60.5		1.54 in/h
A81	RAIN BIRD PESB-R	1-1/2"	BUBBLER	2		33.9		2.37 in/h
A82	RAIN BIRD PESB-R	1-1/2"	SHRUB SPRAY	12.64		34.7		2.52 in/h
A83	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	18.95		60.6		0.65 in/h
A175	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	16.25		59.8		0.97 in/h
A176	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	30.2		61.4		1.3 in/h
A177	RAIN BIRD PESB-R	1-1/2"	SHRUB SPRAY	22.67		38.9		3.5 in/h
A178	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	38.1		61.4		0.95 in/h
A179	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	35.75		63.8		0.81 in/h
A180	RAIN BIRD PESB-R	1-1/2"	SHRUB SPRAY	10.37		37.0		1.73 in/h
A181	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	41.4		61.4		0.46 in/h
A182	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	39		63.5		0.77 in/h
A183	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	41.4		61.8		0.53 in/h
A184	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	35.75		63.9		0.81 in/h
B25	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	36.8		61.2		0.52 in/h
B84	RAIN BIRD PESB-R	1-1/2"	SHRUB SPRAY	10.56		34.4		1.74 in/h
B85	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	31.3		60.0		0.73 in/h
B86	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	30		62.1		1.0 in/h
B98	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	37.75		60.7		0.69 in/h
B99	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	37.32		62.4		0.42 in/h
B100	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	36.85		61.7		0.81 in/h
B101	RAIN BIRD PESB-R	1-1/2"	SHRUB SPRAY	10.56		34.5		1.76 in/h
C1	RAIN BIRD PESB-R	2"	TURF ROTOR	69		78.8		1.5 in/h
C2	RAIN BIRD PESB-R	2"	TURF ROTOR	59.1		77.1		0.67 in/h
C3	RAIN BIRD PESB-R	2"	TURF ROTOR	64.8		78.2		0.63 in/h
C4	RAIN BIRD PESB-R	2"	TURF ROTOR	58.9		77.2		0.69 in/h
C5	RAIN BIRD PESB-R	2"	TURF ROTOR	69.8		78.9		1.38 in/h
C6	RAIN BIRD PESB-R	2"	TURF ROTOR	55.8		78.3		1.9 in/h
C7	RAIN BIRD PESB-R	2"	TURF ROTOR	43.8		76.8		0.65 in/h
C8	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	30.6		76.8		0.9 in/h
D1	RAIN BIRD PESB-R	2"	TURF ROTOR	45.9		77.2		1.74 in/h
D2	RAIN BIRD PESB-R	2"	TURF ROTOR	47.1		65.3		0.93 in/h
D3	RAIN BIRD PESB-R	2"	TURF ROTOR	45.9		77.2		2.46 in/h
E1	RAIN BIRD PESB-R	2"	TURF ROTOR	73.58		77.9		0.71 in/h
E2	RAIN BIRD PESB-R	2"	TURF ROTOR	88		78.0		0.74 in/h
E3	RAIN BIRD PESB-R	2"	TURF ROTOR	93.78		78.9		0.6 in/h
E4	RAIN BIRD PESB-R	2"	TURF ROTOR	88		79.1		0.76 in/h
E5	RAIN BIRD PESB-R	2"	TURF ROTOR	57.11		54.5		0.75 in/h
E6	RAIN BIRD PESB-R	2"	TURF ROTOR	44		78.8		0.56 in/h
E7	RAIN BIRD PESB-R	2"	TURF ROTOR	22		76.6		0.53 in/h
E8	RAIN BIRD PESB-R	2"	TURF ROTOR	66		78.7		2.35 in/h
E9	RAIN BIRD PESB-R	2"	TURF ROTOR	88		78.1		0.75 in/h
E10	RAIN BIRD PESB-R	2"	TURF ROTOR	88		77.0		0.52 in/h
E11	RAIN BIRD PESB-R	2"	TURF ROTOR	88		78.4		0.56 in/h
E12	RAIN BIRD PESB-R	2"	TURF ROTOR	110		80.5		1.02 in/h
E13	RAIN BIRD PESB-R	2"	TURF ROTOR	57.06		57.0		0.73 in/h
E14	RAIN BIRD PESB-R	2"	TURF ROTOR	60.8		52.7		0.67 in/h
E15	RAIN BIRD PESB-R	2"	TURF ROTOR	58.71		55.7		0.87 in/h
E16	RAIN BIRD PESB-R	2"	TURF ROTOR	103.3		78.9		0.55 in/h
E17	RAIN BIRD PESB-R	2"	TURF ROTOR	123.2		83.8		0.58 in/h
E18	RAIN BIRD PESB-R	2"	TURF ROTOR	26.67		54.0		0.64 in/h
E19	RAIN BIRD PESB-R	2"	TURF ROTOR	132		82.4		0.58 in/h
E20	RAIN BIRD PESB-R	2"	TURF ROTOR	40.56		56.0		0.67 in/h
E21	RAIN BIRD PESB-R	2"	TURF ROTOR	88		78.7		0.56 in/h
E22	RAIN BIRD PESB-R	2"	TURF ROTOR	110		79.6		0.8 in/h
E23	RAIN BIRD PESB-R	2"	TURF ROTOR	110		79.5		0.57 in/h
E24	RAIN BIRD PESB-R	2"	TURF ROTOR	110		80.2		0.85 in/h
E25	RAIN BIRD PESB-R	2"	TURF ROTOR	66		77.7		1.12 in/h
E26	RAIN BIRD PESB-R	2"	TURF ROTOR	66		77.9		0.56 in/h
E27	RAIN BIRD PESB-R	2"	TURF ROTOR	132		82.5		0.61 in/h
E28	RAIN BIRD PESB-R	2"	TURF ROTOR	110		81.2		1.3 in/h
E29	RAIN BIRD PESB-R	2"	TURF ROTOR	132		82.2		0.62 in/h
E30	RAIN BIRD PESB-R	2"	TURF ROTOR	30.48		54.0		0.66 in/h
F1	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	39.6		76.8		0.92 in/h
F2	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	39.6		76.5		0.49 in/h
F3	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	43.8		75.4		0.61 in/h
F4	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	43.8		75.8		0.61 in/h
F5	RAIN BIRD PESB-R	2"	TURF ROTOR	92.4		78.6		1.1 in/h
F6	RAIN BIRD PESB-R	2"	TURF ROTOR	59.1		77.5		0.47 in/h
F7	RAIN BIRD PESB-R	2"	TURF ROTOR	57		77.5		0.5 in/h
F8	RAIN BIRD PESB-R	2"	TURF ROTOR	57		77.3		0.48 in/h
F9	RAIN BIRD PESB-R	2"	TURF ROTOR	74.8		78.6		1.23 in/h
F10	RAIN BIRD PESB-R	2"	TURF ROTOR	57		77.3		0.5 in/h
F11	RAIN BIRD PESB-R	2"	TURF ROTOR	74.8		77.6		1.33 in/h
F12	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	30.6		75.0		0.78 in/h
F13	RAIN BIRD PESB-R	2"	TURF ROTOR	61.2		77.3		0.64 in/h
F14	RAIN BIRD PESB-R	2"	TURF ROTOR	68.1		77.9		1.05 in/h
F15	RAIN BIRD PESB-R	1-1/2"	TURF ROTOR	61.2		77.1		0.51 in/h
F16	RAIN BIRD PESB-R	2"	TURF ROTOR	65.8		77.1		0.75 in/h
F17	RAIN BIRD PESB-R	2"	TURF ROTOR	79.2		78.9		1.17 in/h
F18	RAIN BIRD PESB-R	2"	TURF ROTOR	61.2	



NOTE:
1. INSTALLER SHALL INCLUDE TRACE WIRE FROM VALVE BOX ALONG LATERAL AND FEED PIPES IN SENSITIVE AREAS SUCH AS BURIAL IRRIGATION UTILITY AISLES, TO LAST SPRINKLER.

10 SPRINKLER INSTALLATION

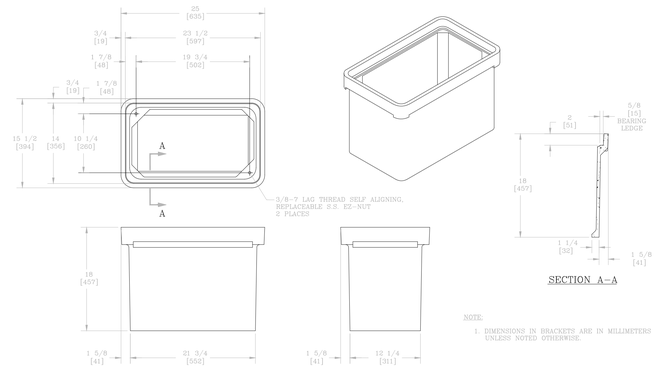
NTS — P-DE-DYNC-90



NOTES:
1. AS ALL THREADED CONNECTIONS FROM SCH. 40 PVC TO SCH. 80 PVC SHALL BE MADE USING TEFLON TAPE.
2. HUNTER SWING JOINTS OR APPROVED EQUAL SHALL BE USED PER APPROVAL BY THE OWNER'S REPRESENTATIVE.

9 SWING JOINT

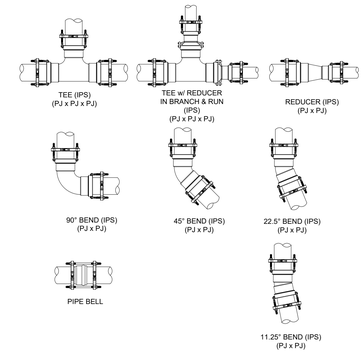
3" = 1'-0" — P-DE-DYNC-28



NOTE:
1. DIMENSIONS IN BRACKETS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.

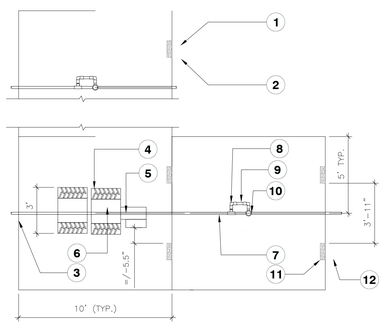
8 13 X 24 QUAZITE ENCLOSURE

nts — P-DE-DYNC-87

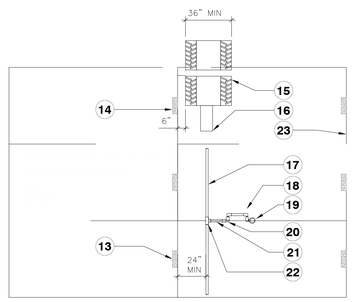


7 TYPICAL JOINT RESTRAINT ASSEMBLIES

N.T.S. — P-DE-DYNC-08



NOTE:
1. CONTRACTOR RESPONSIBLE FOR STAKING TRENCH LOCATION IN THE CORRECT LOCATION BETWEEN GRAVE MARKERS.

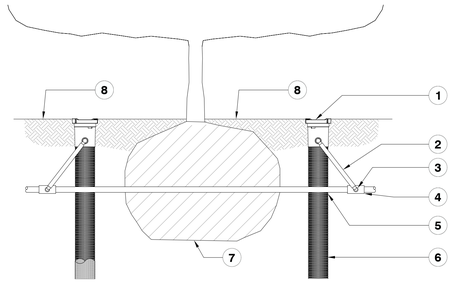


NOTE:
1. CONTRACTOR RESPONSIBLE FOR STAKING TRENCH LOCATION IN THE CORRECT LOCATION BEHIND GRAVE MARKERS.

1. HEADSTONE IDENTIFIER LOCATED ON THE BACK OF EACH HEADSTONE. EACH HEADSTONE IS INDIVIDUALLY NUMBERED
2. DIRECTION FROM SPRINKLER TO HEADSTONE SHOULD BE PLACED SO THAT IT IS EQUIDISTANT BETWEEN THE 4 SURROUNDING HEADSTONES
3. BOUNDARY OF BURIAL AREA (TYP.)
4. PLOW TIRE (TYP.)
5. VIBRATORY PLOW
6. VIBRATORY PLOW 36-INCH WHEEL BASE MAXIMUM
7. CL 160 PVC LATERAL PIPE
8. SCH 40 STREET EL
9. PRE-FABRICATED SWING JOINT
10. POP-UP ROTOR SPRINKLER
11. UPRIGHT HEADSTONE (TYP.)
12. HEADSTONE IDENTIFIER AND DIRECTION OF DIRECTION OF SPRINKLER (TYP.)
13. FRONT OF MONUMENT, ENGRAVED SIDE
14. UPRIGHT HEADSTONE
15. PLOW TIRE (TYP.)
16. VIBRATORY PLOW
17. CL 160 PVC LATERAL PIPE WITH 15-INCHES OF COVER
18. PRE-FABRICATED TRIPLE TOP SWING JOINT 8-INCH LAY LENGTH
19. POP-UP ROTOR SPRINKLER
20. SCH 40 STREET EL
21. PVC CL 160 3'-5' PIPE SECTION EXCAVATED BY HAND
22. PVC SCH 40 REDUCING EL OR TEE (SLIP X FIPT)
23. OUTLINE OF BURIAL (TYP.)

5 SPRINKLER PLACEMENT IN BURIAL SECTION

N.T.S. — P-DE-DYNC-13



1. ROOT WATERING SYSTEM: RAIN BIRD RWS-B-C-1401-SOCK
2. SWING ASSEMBLY (INCLUDED)
3. 1/2 MALE NPT INLET (INCLUDED)
4. PVC SCH 40 TEE OR ELL
5. PVC OR POLYETHYLENE LATERAL PIPE
6. 4" WIDE X 36" LONG RIGID BASKET WEAVE CANISTER (INCLUDED)
7. ROOT BALL
8. FINISH GRADE

NOTES:
1. POSITION 2 UNITS (OR MORE) EVENLY SPACED AROUND PLANT. FOR NEW TREES PLACE NEAR ROOT BALL. FOR EXISTING TREES PLACE HALF THE DISTANCE BETWEEN CANOPY EDGE AND TREE TRUNK.
2. INSTALL PRODUCT WITH TOP EVEN WITH GROUND SURFACE.
3. RWS SERIES MODEL: RWS-B-C-1401-SOCK: 0.25 GPM (0.95 L/M), CHECK VALVE, ROOT WATERING SAND SOCK
4. WHEN INSTALLING IN EXTREMELY HARD OR CLAY SOILS, ADD 3/4" (1.9 CM) GRAVEL UNDER AND AROUND THE UNIT TO ALLOW FASTER WATER INFILTRATION AND ROOT PENETRATION.
5. ONCE RWS HAS BEEN INSTALLED FILL THE BASKET WITH PEA GRAVEL BEFORE LOCKING LID.
6. OPTIONAL RWS-SOCK FOR USE IN SANDY SOILS.

6 RAIN BIRD ROOT WATERING SYSTEM - TREE INSTALLATION

NTS — P-DE-DYNC-20

SERVICE BOX SIZE CHART

	6" ROUND	10" ROUND	15" STANDARD	17" LARGE
DRIP AIR RELIEF VALVE	X			
DRIP FLUSH VALVE	X			
WIRE SPLICE MARKER	X			
GROUND ROD	X			
ISOLATION VALVE		X		
QUICK COUPLER		X		
1" CONTROL VALVE W/ DECODER - SINGLE		X	X	
1" CONTROL VALVE W/ DECODER - MANIFOLD 2 VALVES			X	X
1" CONTROL VALVE W/ DECODER - MANIFOLD 3 VALVES				X
DRIP GRID CONTROL VALVE KIT W/ DECODER				X
MASTER VALVE			X	X
MASTER VALVE W/ FILTER				X
DRIP GRID CONTROL VALVE KIT W/ DECODER (1 OR 2 ASSEMBLIES)				X

NOTE: ADD EXTENSIONS AS NECESSARY

4 SERVICE BOX SIZE CHART

P-DE-DYNC-36 — P-DE-DYNC-36

STRAIGHT LINE CONFIGURATION, I.E. WIRE DISTANCE TO FURTHEST DECODER, NO LOOP:

Wire Size (Guage)	#18	#16	#14	#12
Wire Length (ft)	1,000	2,000	4,000	6,000
Wire Length (m)	300	600	1,200	1,800

NOTE:

MAXIMUM TOTAL WIRE PATH LENGTH IS 10,000 FEET (3,000 M).

3 DECODER WIRE SIZING CHART

3" = 1'-0" — P-DE-DYNC-32

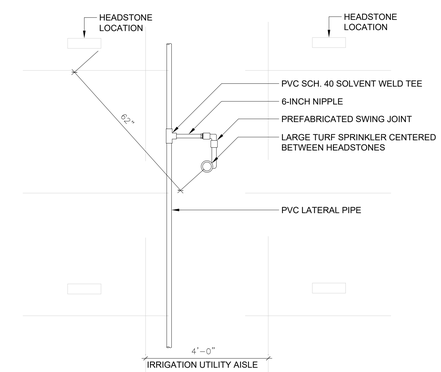
IRRIGATION WIRE COLOR ROTATION

24VOLT "CONVENTIONAL" IRRIGATION STATION WIRE SHALL BE 14 GA. SINGLE STRAND, IRRIGATION WIRE, UL LISTED FOR DIRECT BURIAL. THERE SHALL BE ONE 14 GA. SINGLE STRAND COLOR-CODED WIRE PER STATION VALVE, HOMERUN TO THE CORRESPONDING IRRIGATION CONTROLLER. A COLOR ROTATION VALVE SHALL BE AS FOLLOWS:

ZONE/STATION	COLOR
1, 13, 25, 37	BROWN
2, 14, 26, 38	RED
3, 15, 27, 39	ORANGE
4, 16, 28, 40	YELLOW
5, 17, 29	GREEN
6, 18, 30	BLUE
7, 19, 31	PURPLE
8, 20, 32	GRAY
9, 21, 33	BLACK
10, 22, 34	TAN
11, 23, 35	PINK
12, 24, 36	WHITE
COMMON	WHITE WITH GREEN STRIPE 12 GA.

2 IRRIGATION WIRE COLOR ROTATION

1" = 1" — P-DE-DYNC-37



1 SPRINKLER PLACEMENT DETAIL FOR IN-GROUND CREMAINS

N.T.S. — P-DE-DYNC-80

BID DOCUMENTS

Revisions:	Date:

CONSULTANTS

IRRIGATION	GEOTECHNICAL	COST ESTIMATING
WATER IN MOTION, INC.	TERRACON	OCMI
175 James Avenue North Minneapolis, MN 55405 952.229.1911	611 Lunken Park Drive Cincinnati, Ohio 45226 513.612.9020	2100 North Greenville Ave. Richardson, Texas 75082 469.431.0571
TIMOTHY MALOOLY	JEFF DUNLAP, PE	KYLE VEATER

ARCHITECT/ENGINEER OF RECORD

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Anderson Engineering of Minnesota, LLC | Proj # 18125

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Certified Irrigation Designer CID IRRIGATION ASSOCIATION — EPA WaterSense 2008 PARTNER

Timothy R. Malooly CID, CIC, CLIA #012894

Office of Design and Construction Services

VA U.S. Department of Veterans Affairs

Drawing Title	Phase	Project Title	Project Number
IRRIGATION DETAILS	BID DOCUMENTS	DAYTON NATIONAL CEMETERY GRAVESITE EXPANSION	810-CM3-033
Approved: Project Director		Location: 4400 W THIRD ST, DAYTON, OH 45428	Building Number: --
		Issue Date: FEBRUARY 5, 2026 / Checked: TM / Drawn: CJC	Drawing Number: IR500 OF 133

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VA FORM 08 - 6231

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2. BIDDING CONTRACTORS SHALL THOROUGHLY READ AND BECOME FAMILIAR WITH ALL FACETS OF THE PROPOSED IRRIGATION SYSTEM, INCLUDING DESIGN, SPECIFICATIONS, INSTALLATION DETAILS, AND RELATED SECTIONS.

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15. TOP OF MAINLINES SHALL BE AT LEAST (36)24-INCHES BELOW GRADE IN SOFTSCAPE AREAS.

16. TOP OF LATERAL LINES SHALL BE AT LEAST 18-INCHES BELOW GRADE.

16.1 MAINLINE PRESSURE PIPE FITTINGS 3-INCHES AND LARGER SHALL HAVE MECHANICAL JOINT RESTRAINTS AT TURNS AND FITTING THAT COMPRISE MAINLINE PRESSURE PIPE FITTINGS 2.5-INCHS AND SMALL ER SHALL BE GLUED AND SHALL HAVE CONCRETE THRUST BLOCKS AT FITTINGS CHANGE DIRECTION.

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20. PLUMBING AND ELECTRICAL WORK SHALL BE CONDUCTED AS PER LOCAL CODE.

21. ELECTRIC POWER TO OPERATE PEDESTAL-BASED IRRIGATION CONTROLLER(S) SHALL BE OBTAINED FROM THE SAME ELECTRIC CIRCUIT THAT OPERATES THE EXISTING NEARBY PEDESTAL-BASED IRRIGATION CONTROLLER(S). THE SELECTED IRRIGATION INSTALLER SHALL BE RESPONSIBLE FOR CONNECTION OF ELECTRICAL POWER TO OPERATE THE NEW PEDESTAL-BASED IRRIGATION CONTROLLER(S). FOLLOW ALL LOCAL CODES.

22. FURNISH, INSTALL AND CONNECT ALL PLUMBING AND ELECTRICAL WIRING IN ACCORDANCE WITH THE NATIONAL PLUMBING CODE, NATIONAL ELECTRIC CODE AND ALL APPLICABLE LOCAL CODES AND AS PER DEPARTMENT OF VETERANS AFFAIRS SPECIFICATIONS, INCLUDING:

22.1. ALL NEW LOW VOLTAGE IRRIGATION CONTROL WIRE SHALL BE INSTALLED WITH THE MAINLINE PIPE WHERE POSSIBLE. SEE SPECIFICATIONS, DETAILS AND RELATED SECTIONS.

22.2. DO NOT "LOOP" THE LOW VOLTAGE IRRIGATION CONTROL WIRE PATH.

22.3. CONTAIN DECODER WIRE IN SCHEDULE 40 PVC CONDUIT WITH SEALED UNDERGROUND-RATED PULL BOXES AT 200-FOOT INTERVALS.

22.4. WHERE NOT IN CONDUIT, PROVIDE 18-INCH LOOP OF CONTROL WIRE AT ALL CHANGES IN DIRECTION.

22.5. PROVIDE 24-INCH OF SLACK WIRE AT EACH REMOTE-CONTROL VALVE COILED INSIDE SERVICE BOX.

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22.8. ALL WIRING SHALL BE IDENTIFIED AT EACH END TO PROVIDE INDICATION AS TO WHICH LOCATION THE WIRE IS CONNECTED.

22.9. GROUNDING PER MANUFACTURERS RECOMMENDATION OR LOCAL ELECTRICAL CODE.

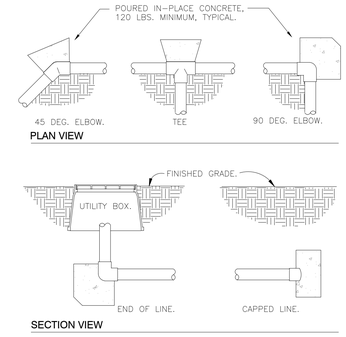
23. SCHEDULE AND PROGRAM CONTROLLER AND VALVES FOR APPROPRIATE REGIONAL LANDSCAPE WATER REQUIREMENTS.

23.1. SELECTED IRRIGATION INSTALLER SHALL FURNISH INSTALL AND PLACE INTO SERVICE, FLOWER WATERING STATION(S) CONNECTED TO THE NEW IRRIGATION PRESSURE PIPELINE. REFER TO RELATED SECTIONS AND SPECIFICATION SECTION.

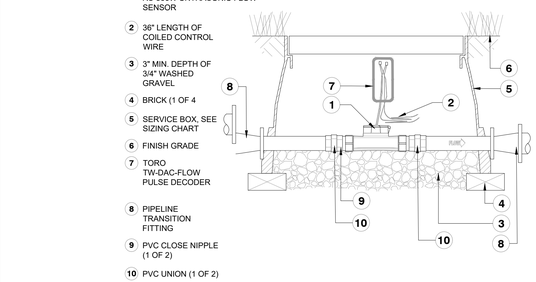
25. THE SELECTED IRRIGATION INSTALLER IS RESPONSIBLE FOR CLEANING STREETS, SIDEWALKS AND DRIVEWAYS DURING AND UPON COMPLETION OF INSTALLATION.

26. CONTRACTOR SHALL PROBE EACH VAULT OR BURIAL LOCATION AND VERIFY A CLEAR TRENCH PATH BEFORE CROSSING.

27. SHOULD ANY ON-SITE ACTIVITY, INCIDENT, EMERGENCY OR DISASTER RESULT IN EXPOSURE AND/OR DAMAGE TO ANY REMAINS (I.E. CASKET OR URN), OR OUTER BURIAL CONTAINER, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CEMETERY DIRECTOR, THE COR OR THE C.O. TAKE IMMEDIATE STEPS TO PROTECT AND RENDER SAFE ANY EXPOSED REMAINS AND STOP ANY FURTHER WORK THAT COULD AFFECT THOSE REMAINS OR GRAVESITE UNTIL THE CEMETERY DIRECTOR PROVIDES THE CONTRACTOR WITH GUIDANCE REGARDING DISPOSITION OF THE REMAINS AND PERMISSION TO PROCEED.

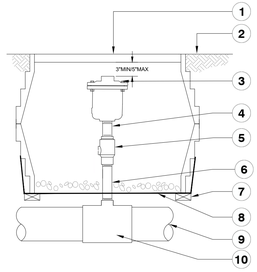


6 THRUST BLOCKING
3/4" = 1'-0"
P-DE-DYNC-22



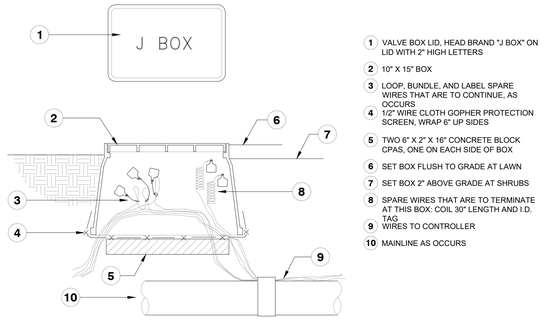
NOTES:
1. THE SENSOR CAN BE INSTALLED IN A VERTICAL POSITION WITH THE FLOW ARROW POINTING UPWARDS.
2. THE SENSOR SIZE MUST BE EQUAL TO OR SMALLER THAN THE INCOMING PIPE SIZE.
3. THE SENSOR DOES NOT REQUIRE STRAIGHT PIPE BEFORE OR AFTER SENSOR PLACEMENT.
4. FOLLOW LOCAL CODES AND MANUFACTURE RECOMMENDATIONS

5 BADGER DYNASONICS RS-900W FLOW SENSOR
NTS
P-DE-DYNC-103

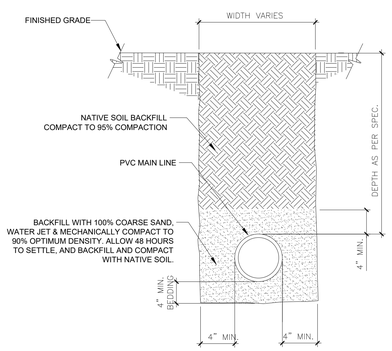


NOTES:
1. INSTALL VALVE BOX SO THERE IS A CLEARANCE OF 2" BETWEEN THE BOTTOM OF THE VALVE BOX AND THE MAINLINE PIPE.
2. INSTALL FILTER FABRIC AROUND EXTERIOR OF VALVE BOX. USE DUCT TAPE TO SECURE FABRIC TO PIPE AND VALVE BOX.
3. BRAND VALVE BOX COVER PER SPECIFICATIONS.

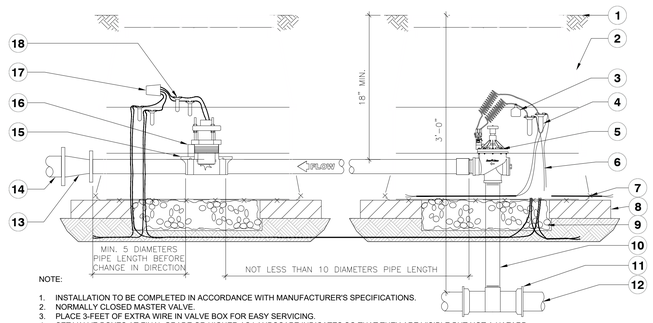
3 AIR VACCUM RELIEF VALVE ASSEMBLY
N.T.S.
P-DE-DYNC-02



4 WIRE BUNDLE JUNCTION BOX
1 1/2" = 1'-0"
P-DE-DYNC-78



2 SLEEVE AT ROAD
1 1/2" = 1'-0"
P-DE-DYNC-83



NOTE:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. NORMALLY CLOSED MASTER VALVE.
3. PLACE 3-FEET OF EXTRA WIRE IN VALVE BOX FOR EASY SERVICING.
4. SET VALVE BOXES AT FINAL GRADE OR HIGHER AS LANDSCAPE INDICATES SO THAT THEY ARE VISIBLE BUT NOT A HAZARD.
5. VALVE BOX BOTTOMS SHALL BE SUPPORTED ON CONTINUOUS BRICK SUPPORTS TO PREVENT BOXES FROM BEING PUSHED BELOW GRADE.
6. UTILIZE EXTENSION KITS AS NECESSARY TO ACHIEVE MINIMUM DIMENSIONS ABOVE ASSEMBLY. SEE SPECIFICATIONS.
7. BRAND VALVE BOX AND LID PER SPECIFICATIONS.
8. ADD 3-INCHES (MINIMUM) OF 3/4-INCH CRUSHED GRAVEL SUMP PER BOX.
9. SEAL ALL OPENINGS WITH EXPANDABLE FOAM TO PREVENT RODENT INTRUSION.
10. GROUNDING SHOULD BE 10 OHMS OR LESS.

1 FINISH GRADE
2 FIBRELYTE VALVE BOX WITH COVER FL-30 WITH 20 DEPTH
3 ID TAG AND DECODER. SEE IRRIGATION SCHEDULE.
4 WATERPROOF SPLICE CONNECTION
5 RAIN BIRD 300BPES MASTER VALVE WITH IVM DECORED/SOLENOID
6 DIGITAL IRRIGATION CONTROL WIRE
7 FABRIC TO PREVENT SOIL AND RODENT INSTRUCTION
8 CONTINUOUS BRICK SUPPORTS
9 3-INCH MIN. DEPTH OF 3/3-INCH GRAVEL
10 DUCTILE IRON NIPPLE
11 LEEMCO DUCTILE IRON GASKETED LATERAL TEE WITH JOINT RESTRAINTS
12 MAINLINE PIPE
13 CONNECTION REDUCER
14 MAINLINE PIPE
15 DOUBLE-STRAP SADDLE
16 FLOW SENSOR: SEE IRRIGATION SCHEDULE
17 FLOW SENSOR DECODER: SEE IRRIGATION SCHEDULE
18 WATERPROOF SPLICE CONNECTION

1 RAIN BIRD 300-BPES BOTTOM FEED MASTER VALVE WITH IVM-SOL AND FLOW SENSOR WITH IVM-SEN
1 1/2" = 1'-0"
P-DE-DYNC-111

BID DOCUMENTS

Revisions:	Date:

CONSULTANTS

IRRIGATION	GEOTECHNICAL	COST ESTIMATING
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Certified Irrigation Designer CID IRRIGATION ASSOCIATION — WaterSense 2008 PARTNER OF THE YEAR

Timothy R. Malooly CID, CIC, CLIA #012894

Office of Design and Construction Services

VA U.S. Department of Veterans Affairs

Drawing Title	Phase	Project Title	Project Number
IRRIGATION DETAILS AND GENERAL NOTES	BID DOCUMENTS	DAYTON NATIONAL CEMETERY GRAVESITE EXPANSION	810-CM3-033
Approved: Project Director		Location: 4400 W THIRD ST, DAYTON, OH 45428	Building Number: --
		Issue Date: FEBRUARY 5, 2026 / Checked: TM / Drawn: CJC	Drawing Number: IR501 OF 133

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VA FORM 08 - 6231

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22. NEW IRRIGATION CONTROL WIRE TO OPERATE FROM CONTROLLERS E AND F SHALL BE DECODER "TWO-WIRE", UL LISTED FOR DIRECT BURIAL AND AS SPECIFIED BY THE MANUFACTURER. EXISTING CONVENTIONAL IRRIGATION SIGNAL WIRE OPERATING FROM CONTROLLER D SHALL REMAIN CONVENTIONAL CONTROLLER D PROCESSOR SHALL BE UPDATED TO TORO SENTINEL WMS.

23. FURNISH, INSTALL AND CONNECT ALL PLUMBING AND ELECTRICAL WIRING IN ACCORDANCE WITH THE NATIONAL PLUMBING CODE, NATIONAL ELECTRIC CODE AND ALL APPLICABLE LOCAL CODES AND AS PER DEPARTMENT OF VETERANS AFFAIRS SPECIFICATIONS, INCLUDING:

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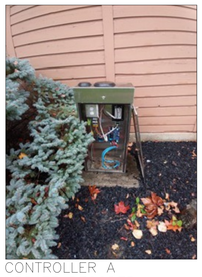
PUMP STATION AND CONTROLLERS

PUMP STATION AND ABANDONED CONTROLLER WITH RADIO
EXPAND PUMP STATION CONCRETE SLAB AND ENCLOSURE TO ACCOMMODATE ONE OR MORE PRESSURE TANK(S) TO MANAGE WATER HAMMER EFFECTS. ADJUST PUMP STATION CONTROL PARAMETERS FOR NEW EQUIPMENT AND PLACE INTO SERVICE.

PUMP STATION INTERIOR
REVIEW ALL EQUIPMENT AND CONTROLS PROGRAMMING AND ASSURE ALL PUMP STATION ELEMENTS ARE PROPERLY PROGRAMMED AND IN SERVICE.

PUMP STATION CONTROLS
INSTALL NEW TORO SENTINEL CONTROLLER WITH DXI AND CELLULAR COMMUNICATION. UPDATE PUMP STATION CONTROLS TO COMMUNICATE STATE. FLOW AND PRESSURE WITH TORO SENTINEL DXI CONTROL SYSTEM.



CONTROLLER A
UPDATE DECODER CONTROLLER A TORO SENTINEL DXI, INCORPORATE INTO CLOUD DATABASE AND PLACE INTO SERVICE.

TRADITIONAL CONTROLLER B AND DECODER CONTROLLER E.
REPLACE CONTROLLER E WITH NEW DECODER CONTROLLER E WITH TORO SENTINEL DXI.
UPDATE DECODER CONTROLLER B TO TORO SENTINEL DXI, INCORPORATE BOTH CONTROLLER INTO CLOUD DATABASE AND PLACE INTO SERVICE.

CONTROLLER C
UPDATE DECODER CONTROLLER C TO TORO SENTINEL DXI, INCORPORATE INTO CLOUD DATABASE AND PLACE INTO SERVICE.

CONTROLLER D
RETAIN CONVENTIONAL 24-VOLT FIELD COMMUNICATION AND UPDATE CONTROLLER D TO TORO SENTINEL DXI, INCORPORATE INTO CLOUD DATABASE AND PLACE INTO SERVICE.

BID DOCUMENTS

Revisions:	Date:

CONSULTANTS

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Office of Design and Construction Services

VA U.S. Department of Veterans Affairs

Drawing Title	Phase	Project Title	Project Number
GENERAL, PUMP STATION, AND CONTROLLER NOTES	BID DOCUMENTS	DAYTON NATIONAL CEMETERY GRAVESITE EXPANSION	810-CM3-033
Approved: Project Director		Location: 4400 W THIRD ST, DAYTON, OH 45428	Building Number: --
		Issue Date: FEBRUARY 5, 2026 / Checked: TM / Drawn: CJC	Drawing Number: IR502 OF 133

VA FORM 08 - 6231

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