

### IRRIGATION SYSTEM DESIGN APPROACH

THE EXISTING IRRIGATION SYSTEM WILL BE MODIFIED TO PROVIDE NEW MAINLINE ROUTING AND AUTOMATED IRRIGATION FOR THE CEMETERY EXPANSION. NEW MAINLINE PIPE, LATERAL PIPE AND SPRINKLERS WILL BE INSTALLED TO IRRIGATE THE NEW AREAS. NEW EQUIPMENT WILL MATCH THE EXISTING.

THE POINTS-OF-CONNECTION ARE THE EXISTING IRRIGATION MAINLINE PIPE.

A NEW TWO-WIRE CONTROLLER WILL BE INSTALLED UNDER THIS CONTRACT TO CONTROL ALL NEW ZONES SOUTH OF MARINE CORPS DRIVE. SPARE STATIONS FROM EXISTING CONTROLLER LOCATED AT THE MAINTENANCE BUILDING WILL BE USED FOR THE NEW ZONES NORTH OF MARINE CORPS DRIVE.

ALL NEW IRRIGATION EQUIPMENT MUST MATCH EXISTING EQUIPMENT. VALVE-IN-HEAD ROTOR SPRINKLERS WILL NOT BE USED FOR THIS EXPANSION.

MAINLINE WILL BE HDPE WITH FUSION WELDED JOINTS.

LARGE RADIUS ROTORS WILL BE USED FOR BURIAL AREAS. BLOCK STYLE SPRINKLERS WITH ROTOR HEADS OR SPRAYS ON LATERAL PIPE OPERATED BY A REMOTE CONTROL VALVE WILL BE USED FOR TURF AND BUBBLER ZONES.

ISOLATION GATE VALVES PERMIT THE ISOLATION OF SECTIONS OF THE SYSTEM FOR REPAIRS OR MAINTENANCE. IRRIGATION WATER WILL BE PROVIDED TO FLOWER WATER STATION LOCATIONS AND AREA PRESSURE REGULATED. QUICK COUPLING VALVES HAVE BEEN PROVIDED FOR INCIDENTAL WATERING NEEDS.

THE IRRIGATION BOOSTER PUMP STATION WILL BE REPLACED TO PROVIDE THE DESIGN PRESSURE AND FLOW.

SPRINKLERS AND VALVES REMOVED WILL NOT BE REUSED BUT WILL BE SALVAGED AND TURNED OVER TO THE RE/COR.

### GENERAL NOTES

- THE SYSTEM DESIGN ASSUMES A MINIMUM DYNAMIC PRESSURE FOR THE IRRIGATION SYSTEM OF 80 PSI. CONTRACTOR TO VERIFY NEW PUMP OPERATION AND PRESSURE AT POINT-OF-CONNECTION, REPORT ANY DISCREPANCIES TO COR PRIOR TO CONSTRUCTION.
- READ THOROUGHLY AND BECOME FAMILIAR WITH THE SPECIFICATIONS AND INSTALLATION DETAILS FOR THIS AND RELATED WORK PRIOR TO CONSTRUCTION. CONFIRM EXACT LIMITS OF IRRIGATED AREA AND ALL EXISTING AND FUTURE HARDSCAPE AND BURIAL AREAS PRIOR TO CONSTRUCTION.
- COORDINATE UTILITY LOCATES (CALL BEFORE YOU DIG) OF UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND CONDITIONS BEFORE EXCAVATING.
- DO NOT PROCEED WITH THE INSTALLATION OF THE IRRIGATION SYSTEM WHEN IT IS OBVIOUS IN THE FIELD THAT OBSTRUCTIONS OR GRADE DIFFERENCES EXIST THAT MIGHT NOT HAVE BEEN CONSIDERED IN THE ENGINEERING, OR IF DISCREPANCIES IN CONSTRUCTION DETAILS, LEGEND, NOTES, OR SPECIFICATIONS ARE DISCOVERED. BRING ALL SUCH OBSTRUCTIONS OR DISCREPANCIES TO THE ATTENTION OF THE COR.
- THE DRAWINGS ARE DIAGRAMMATIC. THEREFORE, THE FOLLOWING SHOULD BE NOTED:
  - IRRIGATION COMPONENTS MAY BE SHOWN OUTSIDE PLANTING AREAS FOR CLARITY.
  - AVOID CONFLICTS BETWEEN THE IRRIGATION SYSTEM, PLANTING MATERIALS, ARCHITECTURAL FEATURES, STORM DRAINS, AND SIGNS.
  - INSTALL IRRIGATION PIPE AND WIRING IN LANDSCAPED AREAS WHENEVER POSSIBLE.
- SELECT NOZZLES FOR ROTARY SPRINKLERS WHICH PROVIDE COMPLETE AND ADEQUATE COVERAGE IF SITE CONDITIONS ARE NOT AS SHOWN. CAREFULLY ADJUST THE RADIUS OF THROW AND ARC OF EACH ROTARY SPRINKLER TO PROVIDE THE BEST PERFORMANCE AND MINIMIZE OVERSPRAY.
- WITH REGARD TO PIPE SIZING, THE FOLLOWING SHOULD BE NOTED:
 

IF A SECTION OF UNSIZED PIPE IS LOCATED BETWEEN TWO IDENTICALLY SIZED SECTIONS, THE UNSIZED PIPE IS THE SAME NOMINAL SIZE AS THE TWO SIZED SECTIONS. THE UNSIZED PIPE SHOULD NOT BE CONFUSED WITH THE DEFAULT PIPE SIZE NOTED IN THE LEGEND.
- PROVIDE THE FOLLOWING COMPONENTS TO THE OWNER PRIOR TO THE COMPLETION OF THE PROJECT:
  - TWO OPERATING KEYS FOR EACH TYPE OF MANUALLY OPERATED VALVE.
  - TWO OF EACH SERVICING WRENCH OR TOOL NEEDED FOR COMPLETE ACCESS, ADJUSTMENT, AND REPAIR OF ALL ROTARY SPRINKLERS.
  - FIVE OF EACH TYPE OF SPRINKLER. (5 EACH ROTOR, 5 POP-UP WITH NOZZLES)
  - TWO QUICK COUPLING KEYS FOR MANUAL QUICK COUPLING VALVES.
  - ONE PRESSURE ADJUSTMENT GAUGES WITH SCHRADER VALVE CONNECTION.
- CONTRACTOR IS RESPONSIBLE FOR FINAL VALVE BOX AND SPRINKLER ELEVATION IN RELATION TO THE SURROUNDING FINAL GRADE. INSTALL VALVE BOXES IN SOD AREAS WITH THE THE LID TOP 1-1/2 INCHES ABOVE SURROUNDING FINAL GRADE IN SODDED AREAS.
- CONTRACTOR IS RESPONSIBLE FOR PROTECTING EXISTING IRRIGATION EQUIPMENT. ANY EXISTING IRRIGATION EQUIPMENT INCLUDING VALVES, WIRES, PIPES AND FITTINGS THAT ARE DISTURBED DURING CONSTRUCTION WILL BE REPLACED AT THE CONTRACTORS EXPENSE WITH MATCHING EQUIPMENT. PRIOR TO CONSTRUCTION LOCATE THE EXISTING IRRIGATION EQUIPMENT AND PIPE IN THE CONSTRUCTION AREA AND MARK EXISTING PIPE AND EQUIPMENT LOCATIONS USING MARKING SPRAY PAINT FOR PIPE AND WIRE STAKE FLAGS FOR VALVE BOXES WITH THE COR.
- DO NOT INSTALL ANY ROTOR SPRINKLERS WITHIN 8- FEET OF TREE TRUNKS.

### DEMOLITION FLAG NOTES

- EXCAVATE AND EXPOSE EXISTING LATERAL PIPE AT APPROXIMATE LOCATION INDICATED. CUT LATERAL PIPE AND CAP USING A PVC SCH 40 SOLVENT WELD CAP. BACKFILL HOLES AND COMPACT TO MATCH EXISTING CONDITIONS. MARK LOCATION WITH 6-INCH ROUND VALVE BOX.
- EXCAVATE AND EXPOSE EXISTING SPRINKLER ASSEMBLIES AT APPROXIMATE LOCATION SHOWN. REMOVE SPRINKLER ASSEMBLY AND TURN OVER TO COR. IF SPRINKLER IS WITHIN THE SPRINKLER DEMOLITION BOUNDARY, PIPE IS TO BE ABANDONED IN PLACE. BACKFILL HOLES AND COMPACT TO EXISTING CONDITIONS.
- VERIFY OPERATION OF ALL REMOTE CONTROL VALVES AND SPRINKLERS IN THIS AREA PRIOR TO DEMOLITION OR CONSTRUCTION. EXCAVATE AND EXPOSE EXISTING SPRINKLERS, REMOTE CONTROL VALVE ASSEMBLIES, AND VALVE BOXES WITHIN DEMOLITION BOUNDARY INDICATED. REMOVE ASSEMBLIES AND TURN OVER TO COR. CAP PVC RISER ON SUPPLY SIDE OF REMOTE CONTROL VALVE WITH PVC SCH 40 CAP. ABANDON LATERAL PIPE IN PLACE. VERIFY WHICH IRRIGATION CONTROLLER OPERATES THE REMOTE CONTROL VALVES AND PROTECT WIRING FOR FUTURE USE. REPAIR ANY EXISTING IRRIGATION SYSTEM COMPONENT DAMAGED BY THE NEW CONSTRUCTION.
- EXCAVATE AND EXPOSE EXISTING HDPE MAINLINE PIPE AT APPROXIMATE LOCATION SHOWN. ABANDON EXISTING UNUSED MAINLINE IN PLACE. REMOVE UNUSED CONTROL WIRE.
- REMOVE EXISTING BOOSTER PUMP STATION FROM THE INLET UNDERGROUND FLANGE TO THE OUTLET UNDERGROUND FLANGE. TURN COMPONENTS OVER TO CEMETERY STAFF. REMOVE EXISTING CONCRETE PAD AND DISPOSE OF OF SITE, KEEP INLET AND OUTLET COVERED AND FREE OF SOIL INTRUSION DURING CONSTRUCTION.
- EXCAVATE AND EXPOSE EXISTING 2.5-INCH HDPE SUBMAINLINE PIPE. CUT PIPE AND CAP USING ELECTROFUSION WELD CAP. BACKFILL HOLE TO MATCH EXISTING CONDITIONS AND REPAIR SOD.

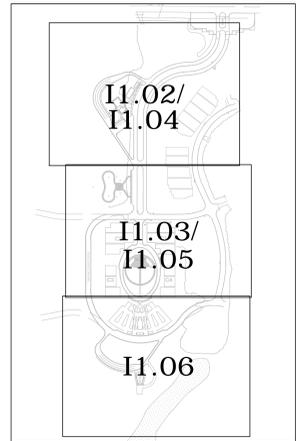
### FLAG NOTES

- EXCAVATE AND EXPOSE THE EXISTING HDPE MAINLINE PIPE AT THE APPROXIMATE LOCATION SHOWN. CONNECT TO THE EXISTING MAINLINE PIPE USING ELECTROFUSION REPAIR COUPLINGS. INSTALL JOINT RESTRAINTS, BACKFILL HOLES, AND COMPACT TO MATCH EXISTING CONDITIONS. PRIOR TO CONSTRUCTION PROVIDE COR WITH SHOP DRAWING OF POINT OF CONNECTION. USE EXISTING TWO WIRE PATH FOR SOLENOID CONNECTION.
- CONNECT TO EXISTING CAPPED LATERAL AT APPROXIMATE LOCATION INDICATED. USE SOLVENT WELD PVC SCH 40 FITTINGS. INSTALL NEW SPRINKLERS AS SHOWN. BACKFILL AND COMPACT TO MATCH EXISTING CONDITIONS.
- EXCAVATE AND EXPOSE THE EXISTING MAINLINE PIPE STUB-OUT AT THE APPROXIMATE LOCATION SHOWN. CONNECT TO THE EXISTING MAINLINE PIPE USING ELECTROFUSION TEE AND REPAIR COUPLINGS. INSTALL NEW REMOTE CONTROL VALVES, BACKFILL HOLES, AND COMPACT TO MATCH EXISTING CONDITIONS.
- IRRIGATION COMPONENTS MAY BE SHOWN OUTSIDE OF THE PLANTING AREA FOR CLARITY ONLY. INSTALL ALL IRRIGATION COMPONENTS IN LANDSCAPED AREA AND NOT IN GRAVE SITES OR HARDSCAPE.
- INSTALL NEW IRRIGATION CONTROLLER AT THE APPROXIMATE LOCATION IDENTIFIED ON PLANS. COORDINATE THE EXACT PLACEMENT OF THE CONTROLLER WITH THE COR ON SITE PRIOR TO CONSTRUCTION. COORDINATE 120 VAC POWER TO CONTROLLER.
- AIR VACUUM RELIEF VALVE ASSEMBLY LOCATION SHOWN IS APPROXIMATE. VERIFY THE LOCATION OF THE HIGHEST ELEVATION ON THE MAINLINE AND INSTALL THE AIR VACUUM RELIEF VALVE ASSEMBLY AT THE HIGH POINT IN THIS AREA.
- INSTALL TWO WIRE GROUNDING AND SURGE PROTECTION AT LOCATIONS INDICATED.
- ROUTE 1-INCH CL PVC WITH SOLVENT WELD FITTINGS FROM IRRIGATION MAINLINE TO FLOWER WATER STATION LOCATION SHOWN. REFER TO CIVIL DRAWINGS FOR CONNECTION TO FLOWER WATER STATION.
- INSTALL NEW 2-INCH REMOTE CONTROL VALVE ASSEMBLY INDICATED, STUB OUT 24-INCHES OF 3-INCH PVC LATERAL PIPE AND CAP FOR FUTURE IRRIGATION.

### LEGEND

	MAINLINE PIPE *TYPE: HDPE *SIZE: PER PLANS															
	COMMUNICATION CABLE *TYPE: PVC CL 200															
	SLEEVING *TYPE: PVC CL 200															
	LATERAL PIPE TO SPRINKLERS *TYPE: CL 200 PVC *SIZE: 3/4-INCH UNLESS OTHERWISE INDICATED BUBBLER LATERALS *SIZE: 1-INCH UNLESS OTHERWISE INDICATED FOR SPRINKLER LATERALS															
	POINT-OF-CONNECTION (P.O.C.)															
	ISOLATION GATE VALVE ASSEMBLY *MODEL: REFER TO SPECIFICATIONS *SIZE OF GATE VALVE TO MATCH NOMINAL MAINLINE SIZE															
	REMOTE CONTROL VALVE ASSEMBLY *MODEL: HUNTER ICV-FS-DC *SIZE AS SHOWN															
	QUICK COUPLING VALVE ASSEMBLY *MODEL: RAIN BIRD 44NP															
	AIR VACUUM RELIEF VALVE ASSEMBLY *MODEL: REFER TO SPECIFICATIONS															
	TWO WIRE PATH GROUNDING AND SURGE PROTECTION															
	TWO WIRE PATH DECODER CABLE FUSE DEVICE															
	BUBBLER ON POP-UP SPRAY SPRINKLER HUNTER PRS-40: PRESSURE: 40 PSI FLOW: 0.5 GPM RADIUS: 5- FEET *NOTE: INSTALL ONE BUBBLER PER TREE/SHRUB ON 12-INCH POP-UP HEIGHT. LOCATE BUBBLER ON DOWNHILL SIDE OF TREE AND 6-INCHES FROM ROOT BALL.															
	POP-UP ROTOR SPRINKLER HUNTER I-25-06-SS @ 60 PSI *NUMBER WITHIN IS NOZZLE															
<table border="1"><tr><th>FC</th><th>PC</th><th>NOZZLE</th><th>FLOW(GPM)</th><th>RADIUS(FEET)</th></tr><tr><td></td><td></td><td>4</td><td>4.7</td><td>42</td></tr><tr><td></td><td></td><td>5</td><td>5.3</td><td>45</td></tr></table>	FC	PC	NOZZLE	FLOW(GPM)	RADIUS(FEET)			4	4.7	42			5	5.3	45	
FC	PC	NOZZLE	FLOW(GPM)	RADIUS(FEET)												
		4	4.7	42												
		5	5.3	45												
	POP-UP ROTOR SPRINKLER: HUNTER I-20-06-SS WITH MPR SERIES NOZZLES @ 45 PSI RADIUS: 25' FLOW (GPM): Q - 1.00 H - 1.98 F - 3.82 RADIUS: 30' FLOW (GPM): Q - 1.40 H - 2.96 F - 5.78 RADIUS: 35' FLOW (GPM): Q - 1.92 H - 3.81 F - 7.58															
	POP-UP SPRINKLER: RAIN BIRD MPR SERIES ON 1804-SAM-PRS @ 30 PSI RADIUS: 5' FLOW (GPM): Q - 0.10 H - 0.20 F - 0.41 RADIUS: 8' FLOW (GPM): Q - 0.26 H - 0.52 F - 1.05 RADIUS: 10' FLOW (GPM): Q - 0.39 H - 0.79 F - 1.58 RADIUS: 12' FLOW (GPM): Q - 0.65 H - 1.30 F - 2.60 RADIUS: 15' FLOW (GPM): Q - 0.92 H - 1.85 F - 3.70															
	NEW TWO-WIRE IRRIGATION CONTROL UNIT: 99 STATION CAPACITY, 64 STATIONS USED															
	INDICATES CONTROLLER STATION NUMBER															
	INDICATES LATERAL DISCHARGE IN GPM															
	INDICATES REMOTE CONTROL VALVE SIZE IN INCHES															
	BOOSTER PUMP STATION TO BE REPLACED															
	EXISTING HDPE IRRIGATION MAINLINE PIPE															
	EXISTING HDPE SUB-MAINLINE PIPE TO VIH SPRINKLERS															
	EXISTING PVC LATERAL PIPE TO SPRINKLERS															
	EXISTING MAINLINE ISOLATION GATE VALVE ASSEMBLY															
	EXISTING ISOLATION GATE VALVE FOR SPRINKLER SUB-MAINLINE															
	EXISTING QUICK COUPLING VALVE ASSEMBLY															
	EXISTING REMOTE CONTROL VALVE ASSEMBLY															
	POP-UP GEAR-DRIVEN ROTOR SPRINKLER: NOZZLE 3.0															
	EXISTING BUBBLER															
	VALVE-IN-HEAD ROTOR SPRINKLER: NOZZLE 18															
	DEMOLITION BOUNDARY															
	CAPPED LATERAL FOR FUTURE USE															

NOTE: ALL SHADED IRRIGATION COMPONENTS ARE EXISTING. PRIOR TO CONSTRUCTION A CLEAN SET OF RECORD DRAWINGS THAT THESE PLANS HAVE REFERENCED WILL BE AVAILABLE IN PDF FORMAT. THESE DEMOLITION DRAWINGS HAVE BEEN PREPARED BASED ON INFORMATION PROVIDED BY THE VA. THE INFORMATION PROVIDED BY THE VA IS BELIEVED TO BE RELIABLE AND CORRECT. AQUA ENGINEERING IS NOT RESPONSIBLE FOR ITS ACCURACY.



KEYMAP N.T.S.

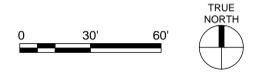
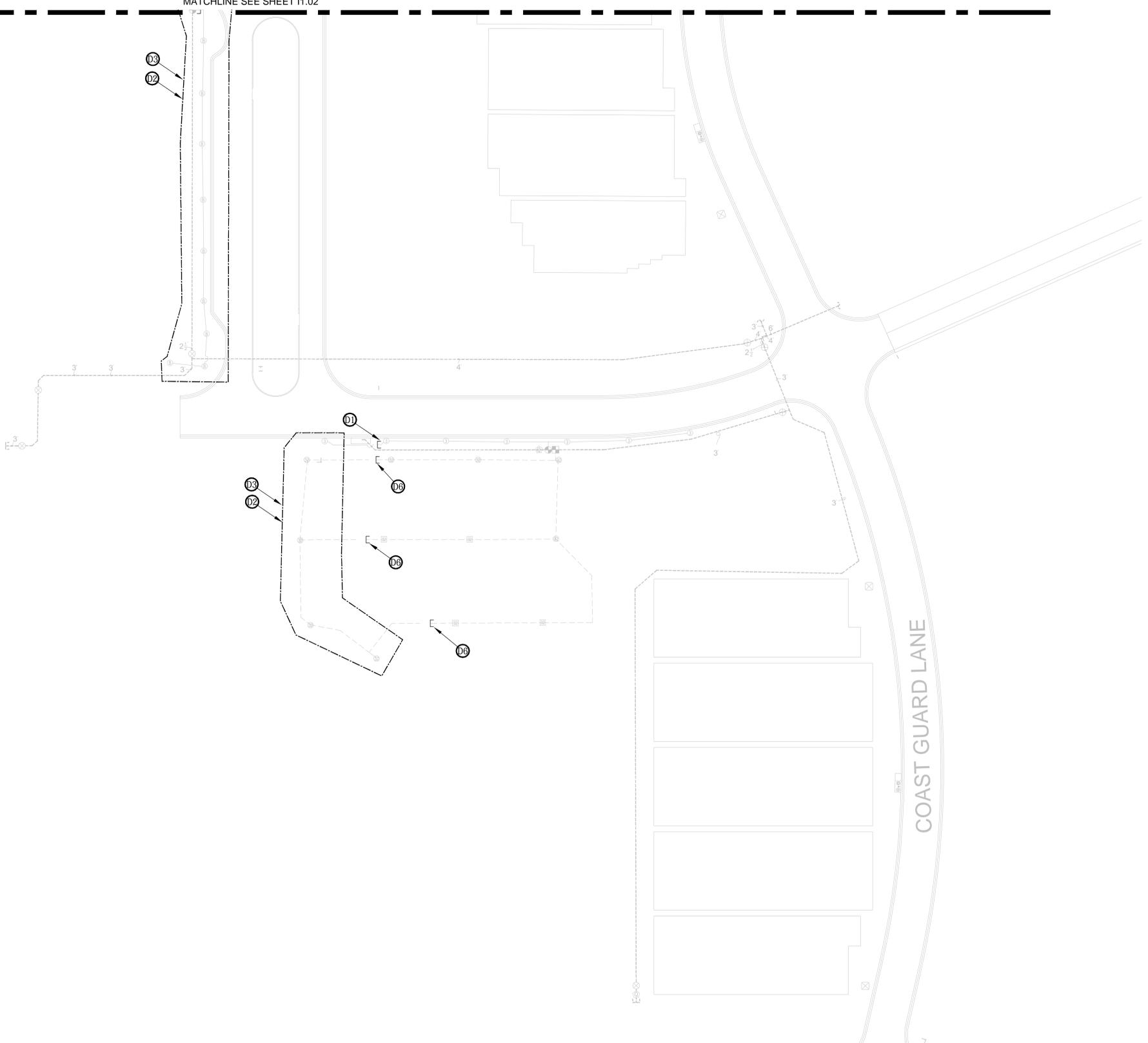
# 05/17/2018 BID DOCUMENTS

<b>CONSULTANTS</b> 		<b>ARCHITECT/ENGINEER OF RECORD</b>  Project Management, Architecture, Landscape Architecture, Cemetery Planning, Civil Engineering, Land Survey. Anderson Engineering of MN, LLC 13605 1st Ave. N., Ste. 100 Plymouth, MN 55441 (763) 412-4000 Gary Johnson, Project Manager		<b>STAMP</b> 	<b>DESIGN &amp; CONSTRUCTION</b> U.S. Department of Veterans Affairs	Drawing Title <b>IRRIGATION NOTES AND LEGEND</b> Approved: Project Director	Phase <b>PHASE 1B EXPANSION</b>	Project Title <b>LOUISIANA NATIONAL CEMETERY AE DESIGN PROJECT</b>	Project Number <b>870CM3028</b> Building Number
Revisions: _____ Date: _____		<b>ANDERSON ENGINEERING</b> ENGINEERING • ARCHITECTURE • LAND SURVEYING ENVIRONMENTAL SERVICES • LANDSCAPE ARCHITECTURE		Approved: Project Director		Location <b>LOUISIANA NATIONAL CEMETERY ZACHARY, LOUISIANA</b>		Drawing Number <b>11.01</b> DWG: 75 OF 133	



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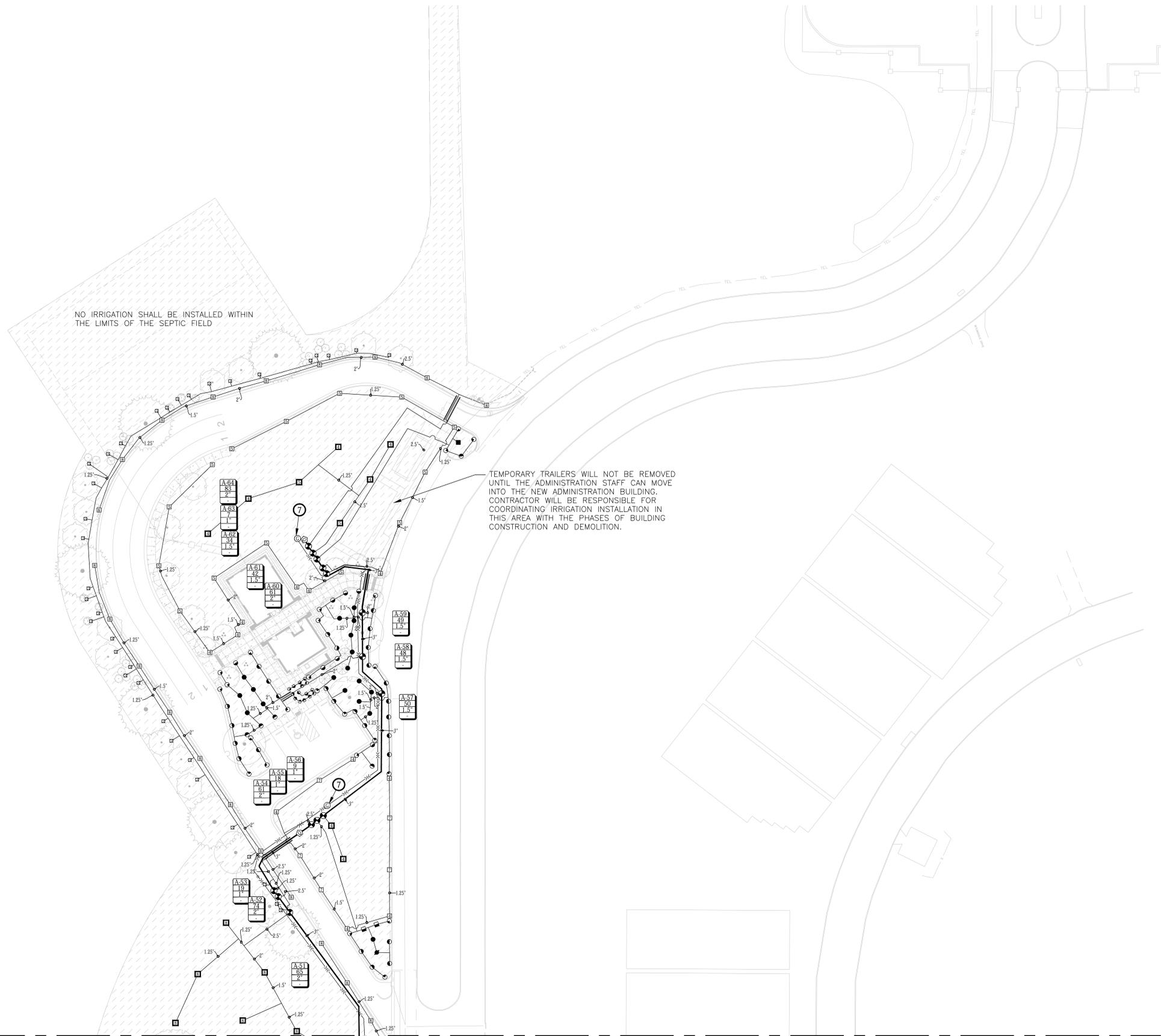
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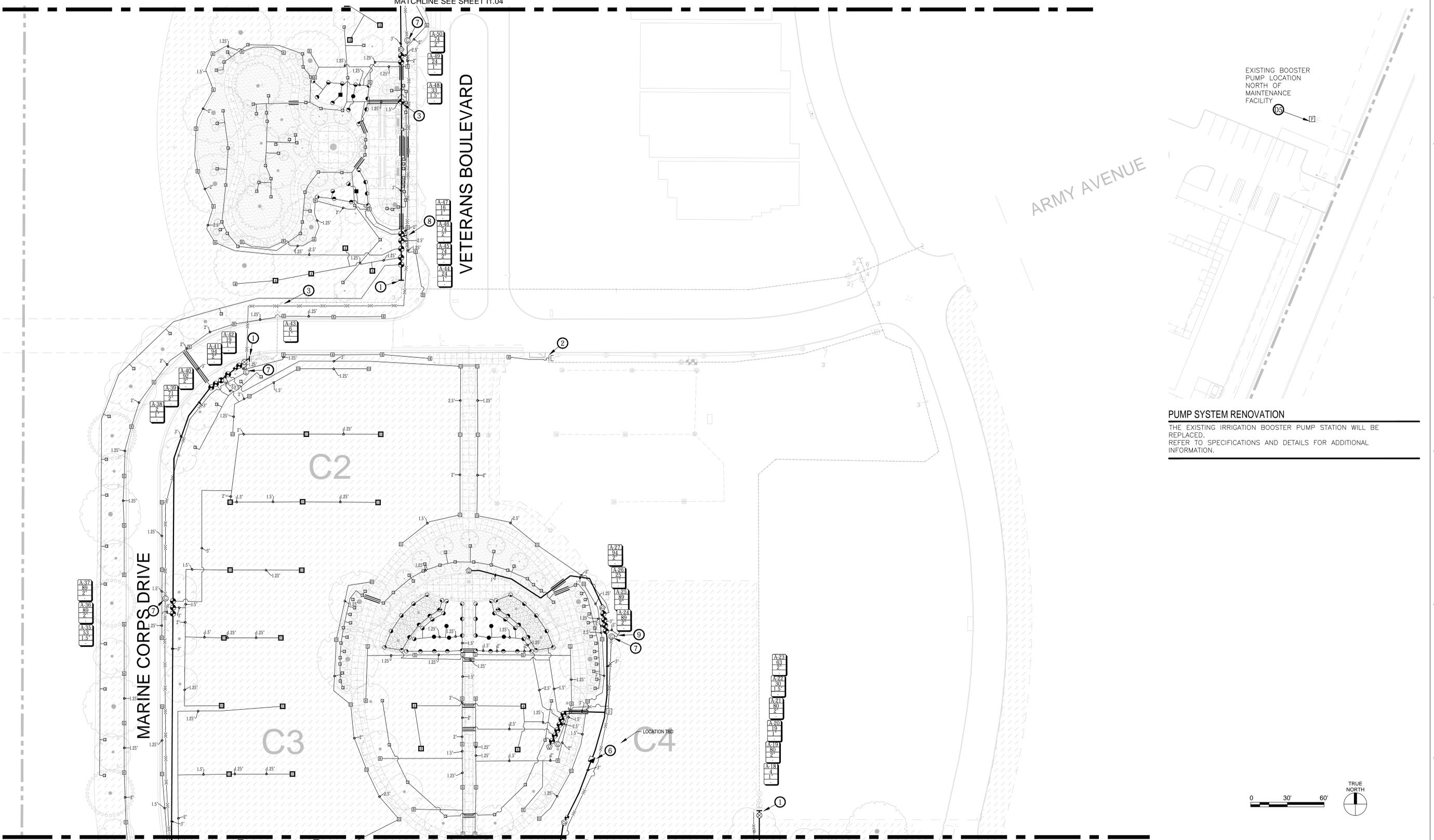
<p>Revisions:</p>		<p>Date:</p>		<p><b>CONSULTANTS</b></p> <p> </p> <p>                     IMEG Corp.                      623 26th Ave.                      Rock Island, IL 61201                      (309) 793-3404                 </p> <p>                     Aqua Engineering, Inc.                      375 Horsewood Rd.,                      Bldg. 2-202                      Fort Collins, CO 80525                      (970) 372-6104                 </p> <p>                     CPMI, Inc.                      2885 Northwood Cir.,                      Ste. 170                      Eagan, MN 55121                      (952) 854-3663                 </p> <p>                     Terracon Consultants, Inc.                      50 Goldenland Ct.,                      Ste. 100                      Sacramento, CA 95834                      (916) 924-4690                 </p> <p>                     Seyptic / Erosion Control                      National Facility Solutions, LLC                      42333 DeLuxe Plaza,                      Suite 8                      Hammond, LA 70403                      (851) 391-0170                 </p> <p>                     Commissioning                      National Facility Solutions, LLC                      42333 DeLuxe Plaza,                      Suite 8                      Hammond, LA 70403                      (851) 391-0170                 </p>				<p><b>ARCHITECT/ENGINEER OF RECORD</b></p> <p> </p> <p>                     Project Management, Architecture, Landscape Architecture,                      Cemetery Planning, Civil Engineering, Land Surveying                      Anderson Engineering of MN, LLC                      13605 1st Ave. N., Ste. 100                      Plymouth, MN 55441                      (763) 412-4000                      Gary Johnson, Project Manager                 </p>		<p>STAMP</p>	<p><b>DESIGN &amp; CONSTRUCTION</b></p> <p>                      U.S. Department of Veterans Affairs                 </p>	<p>Drawing Title</p> <p><b>IRRIGATION PLAN</b></p> <p>Approved: Project Director</p>	<p>Phase</p> <p><b>PHASE 1B EXPANSION</b></p>	<p>Project Title</p> <p><b>LOUISIANA NATIONAL CEMETERY                      ZACHARY, LOUISIANA                      AE DESIGN PROJECT</b></p>	<p>Project Number</p> <p><b>870CM3028</b></p> <p>Building Number</p>	<p>Location</p> <p><b>LOUISIANA NATIONAL CEMETERY                      ZACHARY, LOUISIANA</b></p>	<p>Issue Date</p> <p><b>MAY 17, 2018</b></p>	<p>Checked</p> <p><b>JDL/RWB</b></p>	<p>Drawn</p> <p><b>EGK</b></p>	<p>Drawing Number</p> <p><b>11.03</b></p> <p>DWG: 77 OF 133</p>
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MATCHLINE SEE SHEET I1.04

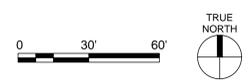
three inches = one foot  
 one and one-half inch = one foot  
 one inch = one foot  
 three-quarters inch = one foot  
 one-half inch = one foot  
 three-eighths inch = one foot  
 one-quarter inch = one foot  
 one-eighth inch = one foot  
 one-sixteenth inch = one foot



MATCHLINE SEE SHEET I1.06

EXISTING BOOSTER PUMP LOCATION NORTH OF MAINTENANCE FACILITY

**PUMP SYSTEM RENOVATION**  
 THE EXISTING IRRIGATION BOOSTER PUMP STATION WILL BE REPLACED.  
 REFER TO SPECIFICATIONS AND DETAILS FOR ADDITIONAL INFORMATION.



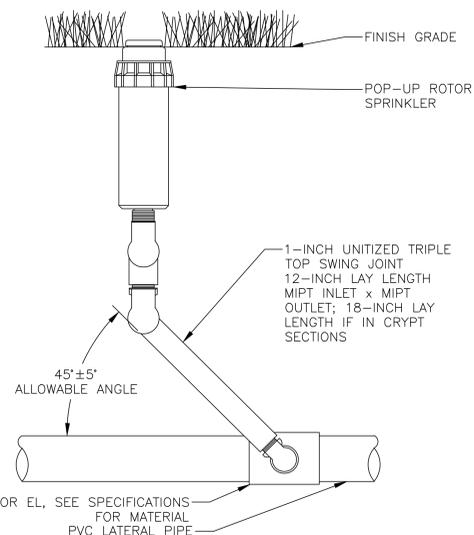
**05/17/2018**  
**BID DOCUMENTS**

Revisions: Date:	<b>CONSULTANTS</b> 				<b>ARCHITECT/ENGINEER OF RECORD</b> Project Management, Architecture, Landscape Architecture, Cemetery Planning, Civil Engineering, Land Surveying. <b>ANDERSON ENGINEERING</b> ENGINEERING • ARCHITECTURE • LAND SURVEYING ENVIRONMENTAL SERVICES • LANDSCAPE ARCHITECTURE		STAMP 	<b>DESIGN &amp; CONSTRUCTION</b> 	Drawing Title <b>IRRIGATION PLAN - FLAG ASSEMBLY REA</b>	Phase <b>PHASE 1B EXPANSION</b>	Project Title <b>LOUISIANA NATIONAL CEMETERY AE DESIGN PROJECT</b>	Project Number <b>870CM3028</b>
	Approved: Project Director								Location <b>LOUISIANA NATIONAL CEMETERY ZACHARY, LOUISIANA</b>	Drawing Number <b>11.05</b>	DWG: 79 OF 133	



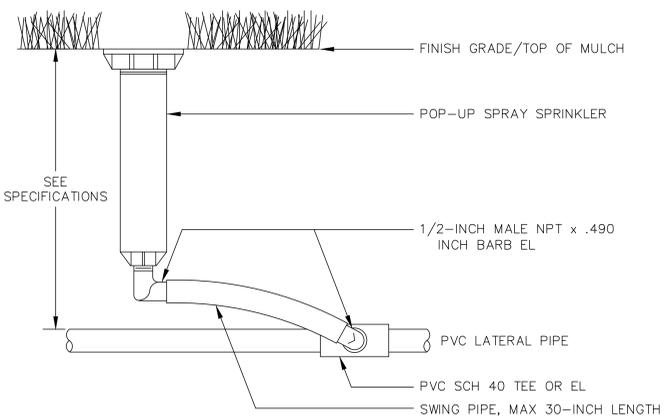


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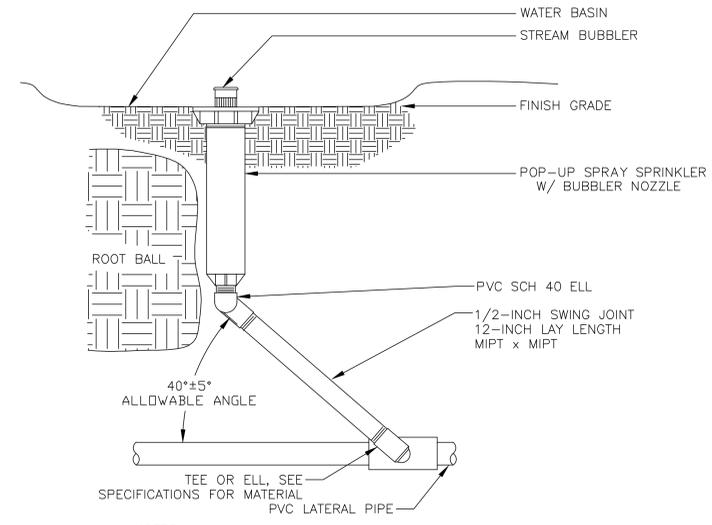
NOTES:  
 1. INSTALL SWING JOINT LAY ARM BETWEEN 30° AND 45° OF LATERAL PIPE IN ORDER TO ABSORB DOWNWARD IMPACT. IF SWING JOINT CAN NOT BE INSTALLED AT SPECIFIED ANGLE, CONSULT RE/COR PRIOR TO INSTALLATION OF SWING JOINT.

**1** POP-UP ROTOR ASSEMBLY N.T.S.



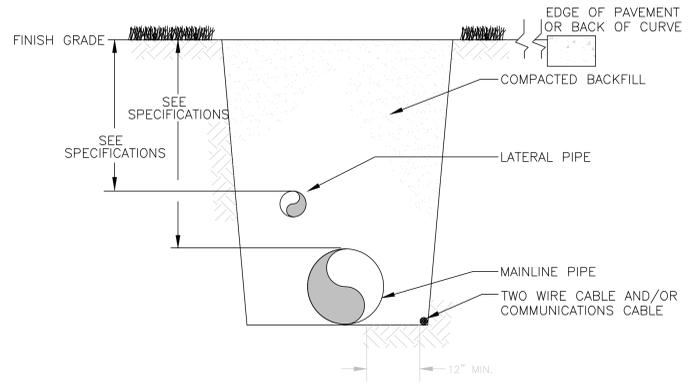
NOTES:  
 1. INSTALL 4-INCH POP-UP HEIGHT IN TURF AREAS.  
 2. INSTALL 12-INCH POP-UP HEIGHT IN LANDSCAPED AREAS.  
 3. USE NO MORE THAN 30 INCHES OF SWING PIPE PER SPRINKLER.

**2** POP-UP SPRAY SPRINKER ASSEMBLY N.T.S.

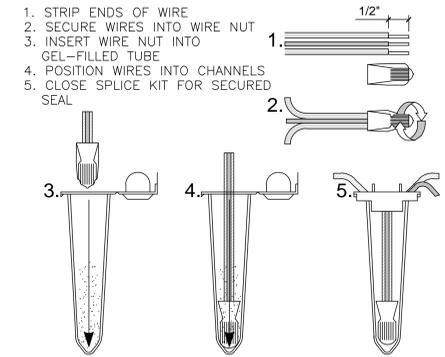


NOTES:  
 1. INSTALL 4-INCH POP-UP HEIGHT IN TURF AREAS.  
 2. INSTALL 12-INCH POP-UP HEIGHT IN LANDSCAPED AREAS.  
 3. INSTALL 4-INCH POP-UP HEIGHT FOR BUBBLERS.

**3** BUBBLER ASSEMBLY N.T.S.



**4** TRENCH DETAIL N.T.S.



NOTE:  
 1. VISUALLY CHECK THAT CONNECTOR IS BELOW LOCKING "FINGERS".

**5** WIRE SPLICE DETAIL N.T.S.

**05/17/2018**  
**BID DOCUMENTS**

Revisions:	Date:

**CONSULTANTS**

<b>IMEG</b> Mechanical, Electrical, Structural Engineering IMEG Corp. 623 20th Ave. Rock Island, IL 61201 (309) 793-3404	<b>Agua Engineering, Inc.</b> Irrigation 375 Horsewood Rd., Bldg. 2-202 Fort Collins, CO 80525 (970) 372-6104	<b>CPMI</b> Cost Estimating CPMI, Inc. 2985 Northwood Cir., Ste. 170 Eagan, MN 55121 (952) 854-3663	<b>Terracon</b> Geotechnical Engineering Terracon Consultants, Inc. 50 Goldenland Ct., Ste. 100 Sacramento, CA 95834 (916) 929-4990	<b>Septic / Erosion Control</b> Barrilleaux Inc. 42333 DeLuxe Plaza, Suite 5 Hammond, LA 70403 (851) 391-0170	<b>Commissioning:</b> National Facility Solutions, LLC 220 Ramsey Street Hastings, MN 55033 (651) 391-0170
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**ARCHITECT/ENGINEER OF RECORD**

Project Management, Architecture, Landscape Architecture, Cemetery Planning, Civil Engineering, Land Surveying.

Anderson Engineering of MN, LLC  
13605 1st Ave. N., Ste. 100  
Plymouth, MN 55441  
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Gary Johnson, Project Manager

**ANDERSON ENGINEERING**  
 ENGINEERING • ARCHITECTURE • LAND SURVEYING  
 ENVIRONMENTAL SERVICES • LANDSCAPE ARCHITECTURE

STAMP

**DESIGN & CONSTRUCTION**

**VA** U.S. Department of Veterans Affairs

Drawing Title: **IRRIGATION DETAILS 2**

Phase: **PHASE 1B EXPANSION**

Approved: Project Director

Project Title: **LOUISIANA NATIONAL CEMETERY AE DESIGN PROJECT**

Location: **LOUISIANA NATIONAL CEMETERY ZACHARY, LOUISIANA**

Issue Date: **MAY 17, 2018**

Checked: **JDL/RWB**

Drawn: **EGK**

Project Number: **870CM3028**

Building Number:

Drawing Number: **15.02**

DWG: **82 OF 133**



