

**CITY OF BRANSON, MISSOURI
PURCHASING DEPARTMENT**

**REQUEST FOR BID 2860-05A, 2860-05B, 2860-05C, 2860-05D
W 76 Country Blvd Streetscape – Segments 1 and 2**

**James Morris, Bid Coordinator
City of Branson, Purchasing Office
110 W. Maddux St., Suite 200
Branson, MO 65616**

**Date Issued: 7/14/2026
Buyer's Email: jmorris@bransonmo.gov
Telephone: (417) 337-8553 Ext. 1407
DUE DATE: 7/31/2026 at 9:00 AM**

Addendum No. 3

Vendors are directed to the documents attached following this Addendum Acknowledgement. Vendors are solely responsible for reviewing all attached materials in their entirety and ensuring their bid submission reflects any applicable changes contained therein.

**ALL BIDDERS ARE REQUESTED TO SIGN THE ACKNOWLEDGMENT BELOW AND
INCLUDE WITH BIDS TO CONFIRM RECEIPT OF ADDENDUM #3**

**Signature
Acknowledged by Bidder**

End of Addendum No. 3

Addendum No. 3

Issued: **Great River Engineering**
2826 S. Ingram Mill Rd.
Springfield, Missouri 65804
417-886-7171
417886-7591 ----FAX



Date: **July 14, 2026**

FOR: **W 76 Country Boulevard Streetscape Improvements,**
Contracts EN7622, SNS0032 &
W 76 Country Boulevard Median Improvements
Contracts TAP – 9901-886, and STP -0761-023
GRE Project 4515.000

The attached revisions hereby supersede any and all data with which they may conflict or indicate on the Drawings, Specifications and related documents issued in the original set. Each trade is responsible for changes in its work caused by changes in the work of other trades. This addendum is a part of and shall be attached to the original sets of plants and specifications for the work.

Notification. There has been two addendums issued prior to this addendum. See Addendums 1 and Addendum. 2.

Changes: To Contracts EN7622

1. Addition of Irrigation Plans

See attached Irrigation Plans to be included with the **EN7622** contract work. Irrigation Plans are **IR00 of 14, IR09 of 14, AND IR10 of 14.**

2. Addition of Landscaping Plans

3. See attached Irrigation Plans to be included with the **EN7622** contract work. Landscaping Plans are **LP34 of 39.**

4. JSP – Viero – 044313.13 and 323119

Changes: Contracts EN7622, SNS0032, TAP-9901 (886), STP -0761(023)

Bid Date Extension Time - Change first paragraph of advertisement for bids. Advertisement to read as follows

RFB 2860-05 sealed electronic bids for W. 76 country BLVD Segments 1 & 2 will be received by the City of Branson using the city's designate electronic bidding platform, Demandstar until 9:00 a.m. local time July 31st, 2026, and th2026, publicly open and read aloud via teleconference

C:\hines Inc Dropbox\Design\Projects\Ireol\W_ 76 Country Blvd Streetscape Segments 1-2\ACAD\IR-W_76 Final.dwg PLOT DATE: 7/13/2026 1:15:10 PM LAST SAVE: 7/13/2026 12:46:06 PM

INSTALLATION GENERAL NOTES

1.

THE SYSTEM DESIGN ASSUMES A MINIMUM DYNAMIC PRESSURE FOR THE IRRIGATION SYSTEM OF 45 PSI, AT A DESIGN FLOW OF 20 GPM AT THE 1 INCH IRRIGATION POINT-OF-CONNECTIONS (POC'S) #1, #2, #5 & #6. THE SYSTEM DESIGN ASSUMES A MINIMUM DYNAMIC PRESSURE FOR THE IRRIGATION SYSTEM OF 65 PSI, AT A DESIGN FLOW OF 25 GPM AT THE 1 INCH IRRIGATION POINT-OF-CONNECTIONS (POC'S) #3 & #4. TAP, METER, BACKFLOW PREVENTER, MASTER VALVE AND FLOW METER SHALL BE SIZED AS INDICATED IN THE DRAWING LEGEND. VERIFY PRESSURE AND FLOW ON SITE PRIOR TO CONSTRUCTION.
2.

READ THOROUGHLY AND BECOME FAMILIAR WITH THE SPECIFICATIONS AND INSTALLATION DETAILS FOR THIS AND RELATED WORK PRIOR TO CONSTRUCTION.
3.

COORDINATE UTILITY LOCATES ("CALL BEFORE YOU DIG") OF UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
4.

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. IF DISCREPANCIES IN CONSTRUCTION DETAILS, LEGEND, NOTES, OR SPECIFICATIONS ARE DISCOVERED, BRING ALL SUCH OBSTRUCTIONS OR DISCREPANCIES TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE.
5.

THE DRAWINGS ARE DIAGRAMMATIC. THEREFORE, THE FOLLOWING SHOULD BE NOTED:

A.

ALTHOUGH IRRIGATION COMPONENTS MAY BE SHOWN OUTSIDE PLANTING AREAS FOR CLARITY, INSTALL IRRIGATION PIPE AND WIRING IN LANDSCAPED AREAS WHENEVER POSSIBLE.

B.

TREE AND SHRUB LOCATIONS AS SHOWN ON LANDSCAPE PLANS TAKE PRECEDENCE OVER IRRIGATION EQUIPMENT LOCATIONS. AVOID CONFLICTS BETWEEN THE IRRIGATION SYSTEM, PLANTING MATERIALS, AND ARCHITECTURAL FEATURES.

C.

USE ONLY STANDARD TEES AND ELBOW FITTINGS. USE OF TEES IN THE BULLNOSE CONFIGURATION, OR USE OF CROSS TYPE FITTINGS IS NOT ALLOWED.
6.

PROVIDE THE FOLLOWING COMPONENTS TO THE OWNER PRIOR TO THE COMPLETION OF THE PROJECT:

A.

TWO (2) OPERATING KEYS FOR EACH TYPE OF MANUALLY OPERATED VALVES.

B.

TWO (2) OF EACH SERVICING WRENCH OR TOOL NEEDED FOR COMPLETE ACCESS, ADJUSTMENT, AND REPAIR OF ALL ROTARY SPRINKLERS.
7.

SELECT NOZZLES FOR SPRAY AND ROTARY SPRINKLERS WITH ARCS WHICH PROVIDE COMPLETE AND ADEQUATE COVERAGE WITH MINIMUM OVERSPRAY FOR THE SITE CONDITIONS. CAREFULLY ADJUST THE RADIUS OF THROW AND ARC OF COVERAGE OF EACH ROTARY SPRINKLER TO PROVIDE THE BEST PERFORMANCE.
8.

THE IRRIGATION CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF IRRIGATION SLEEVING. SLEEVES ARE REQUIRED FOR BOTH PIPING AND ELECTRICAL WIRING AT EACH HARDSCAPE CROSSING. COORDINATE INSTALLATION OF SLEEVING WITH OTHER TRADES. ANY PIPE OR WIRE WHICH PASSES BENEATH EXISTING HARDSCAPE WHERE SLEEVING WAS NOT INSTALLED WILL REQUIRE HORIZONTAL BORING BY THE IRRIGATION CONTRACTOR. PIPE SLEEVES SHALL BE SIZED TWICE THE NOMINAL SIZE OF THE PIPE PASSING THROUGH.
9.

INSTALL ALL ELECTRICAL POWER TO THE IRRIGATION CONTROL SYSTEM IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND ALL APPLICABLE LOCAL ELECTRIC UTILITY CODES.
10.

THE FOLLOWING SHOULD BE NOTED REGARDING PIPE SIZING: 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.
11.

INSTALL TWO (2) #14 AWG CONTROL WIRES ON STANDARD WIRE SYSTEMS OR ONE (1) #14 AWG TWO-WIRE PAIR ON TWO-WIRE SYSTEMS. FOR USE AS SPARES. INSTALL SPARE WIRES FROM CONTROLLER LOCATION TO EACH DEAD-END OF MAINLINE. COIL 3 FEET OF WIRE IN VALVE BOX.
12.

IRRIGATION CONTRACTOR TO INSTALL PAIGE DECODER CABLE FUSE DEVICES (DCFD), AT ALL DECODER CABLE DIRECTIONAL SPLITS AND/OR CHANGES. INSTALL ALL SPLICES WITHIN A 10" VALVE BOX.
13.

AS-BUILT DRAWINGS ARE REQUIRED AND SHALL BE SUBMITTED TO THE PUBLIC WORKS AND ENGINEERING DEPARTMENT FOLLOWING THE COMPLETION OF THE PROJECT.
14.

BMC94-102.H-IRRIGATION. WHERE A PROPERTY OWNER OR TENANT OPTS TO INSTALL AN IN-GROUND IRRIGATION SYSTEM, THE FOLLOWING STANDARDS SHALL APPLY:

(1)

THE LANDSCAPE PLAN SHALL IDENTIFY THE AREA OF APPROXIMATE INSTALLATION OF AN AUTOMATIC IRRIGATION SYSTEM, ITS MAINTENANCE, AND INTENDED USES. THE LANDSCAPE PLAN MUST NOTE AND DELINIATE ALL IRRIGATED AND SOD AREAS.

(2)

IRRIGATION SYSTEMS MUST BE INSTALLED PRIOR TO PLANT MATERIALS.

(3)

SMART CONTROLLERS WITH RAIN SENSORS (E.G., WEATHER-BASED CONTROLLERS THAT LIMIT IRRIGATION IF RAINING) SHALL BE INSTALLED ON ALL IRRIGATION SYSTEMS.

(4)

LOW-FLOW IRRIGATION DEVICES SHALL BE USED IN ALL NARROW OR IRREGULARLY SHAPED LANDSCAPE AREAS LESS THAN EIGHT FEET WIDE IN ANY DIRECTION TO AVOID OVERSPRAY AND RUNOFF.

(5)

IRRIGATION SYSTEMS WITH A PRECIPITATION RATE EXCEEDING 0.75 INCHES PER HOUR SHALL BE PROHIBITED ON AREAS EXCEEDING 1,000 SQUARE FEET WITH A SLOPE GREATER THAN 30 PERCENT UNLESS: (1) INFILTRATION TRENCHES, VEGETATED SWALES, STORMWATER TREATMENT AND STORAGE AREA, AND SIMILAR FACILITIES AS APPROVED BY THE CITY ARE EMPLOYED TO REDUCE RUNOFF, OR (2) THE LANDSCAPE DESIGNER SPECIFIES AN ALTERNATIVE DESIGN OR TECHNOLOGY THAT CLEARLY DEMONSTRATES TO THE CITY'S SATISFACTION NO RUNOFF OR EROSION WILL OCCUR. PREVENTION OF RUNOFF AND EROSION MUST BE CONFIRMED DURING THE FINAL LANDSCAPE INSPECTION.

CONSTRUCTION NOTES

- 1

THE IRRIGATION SYSTEM POINT-OF-CONNECTIONS (POCS) SHALL BE DOWNSTREAM OF THE IRRIGATION WATER TAP AND METER INSTALLED BY OTHERS AT THE APPROXIMATE LOCATIONS SHOWN. INSTALL BACKFLOW PREVENTION UNIT AND MASTER VALVE ASSEMBLY AS INDICATED. VERIFY EXACT LOCATION OF POCS WITH OWNER'S REPRESENTATIVE.
- 2

PEDESTAL MOUNT THE IRRIGATION CONTROLLERS AT THE APPROXIMATE LOCATIONS SHOWN. COORDINATE ELECTRICAL POWER TO THE CONTROLLERS WITH THE OWNER'S REPRESENTATIVE. CARE SHOULD BE TAKEN TO INSTALL THE IRRIGATION CONTROLLERS IN A LOCATION THAT IS ACCESSIBLE FOR MAINTENANCE, AND SCREENED FROM VIEW EITHER BEHIND ENTRY WALLS, NEXT TO BUILDINGS, OR BEHIND PLANT MATERIAL. FINAL LOCATIONS TO BE APPROVED BY OWNER'S REPRESENTATIVE.
- 3

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

IRRIGATION LEGEND

-  SLEEVES: CLASS 200 PVC

 POINT-OF-CONNECTION ASSEMBLY

 MAINLINE PIPE: CLASS 200 PVC
SIZE PER PLAN

 LATERAL PIPE TO SPRINKLERS: CLASS 200 PVC
1-INCH SIZE UNLESS OTHERWISE INDICATED

 LATERAL PIPE TO INLINE DRIP HEADER: CLASS 200 PVC
1-INCH SIZE UNLESS OTHERWISE INDICATED

 UNCONNECTED PIPE CROSSING

 INLINE DRIP TUBING: RAIN BIRD XFS-06-12 WITH RAINBIRD XQF DRIPLINE HEADER
0.6 GPH EMITTERS, 12" EMITTER SPACING, 12" ROW SPACING

 REMOTE CONTROL VALVE ASSEMBLY FOR SPRINKLER LATERALS:
RAIN BIRD PEB (SIZED PER PLAN)

 QUICK COUPLING VALVE ASSEMBLY: RAIN BIRD 5RC

 ISOLATION GATE VALVE ASSEMBLY: MATCO 514

 FLOW SENSOR ASSEMBLY: RAIN BIRD UFS100 W/ESPLXIVMSEN

 BACKFLOW PREVENTION ASSEMBLY: FEBCO 850 (1")

 WATER METER AND CURB STOP ASSEMBLY: BY OTHERS

 MASTER VALVE ASSEMBLY: RAIN BIRD PEBIVM (1") W/ IVM-SOL SOLENOID

 IRRIGATION CONTROLLER UNIT
WITH RAIN BIRD WR2 RAIN FREEZE SENSOR
IQ4 CELL CARTRIDGE
RAIN BIRD ESP-LXIVM TWO WIRE CONTROLLER/ 240V INTERNATIONAL MODEL

 GROUNDING AND SURGE ARRESTOR ASSEMBLY: RAIN BIRD LSP-1TURF

 POP-UP SPRAY SPRINKLER: RAIN BIRD 1806-SAM W/U-SERIES 8 NOZZLE
PRESSURE: 30 PSI RADIUS: 8 FEET
FLOW (GPM): Q-0.26 H-0.52 F-1.05

 POP-UP SPRAY SPRINKLER: RAIN BIRD 1806-SAM W/U-SERIES 10 NOZZLE
PRESSURE: 30 PSI RADIUS: 10 FEET
FLOW (GPM): Q-0.41 H-0.82 F-1.64

 POP-UP SPRAY SPRINKLER: RAIN BIRD 1806-SAM W/U-SERIES 12 NOZZLE
PRESSURE: 30 PSI RADIUS: 12 FEET
FLOW (GPM): Q-0.65 H-1.30 F-2.60

 POP-UP SPRAY SPRINKLER: RAIN BIRD 1806-SAM W/U-SERIES 15 NOZZLE
PRESSURE: 30 PSI RADIUS: 15 FEET
FLOW (GPM): Q-0.92 H-1.85 F-3.70

 POP-UP SPRAY SPRINKLER: RAIN BIRD 1806-SAM W/MPR SERIES NOZZLE
PRESSURE: 30 PSI RADIUS: 4 FEET X 15 FEET
FLOW (GPM): HEVAN08-1.17 HEVAN10-1.78 HEVAN12-2.37 HEVAN15-3.70

 POP-UP SPRAY SPRINKLER: RAIN BIRD 1806-SAM W/MPR SERIES NOZZLE
PRESSURE: 30 PSI RADIUS: 4 FEET X 15 FEET
FLOW (GPM): EST-0.61 SST-1.21

 POP-UP ROTATING SPRAY SPRINKLER: RAIN BIRD 1812-SAM
W/RVAN14 SERIES NOZZLE
PRESSURE: 45 PSI RADIUS: 8 FEET TO 14 FEET
FLOW (GPM): Q-0.32 H-0.63 F-1.27

 POP-UP ROTATING SPRAY SPRINKLER: RAIN BIRD 1812-SAM
W/RVAN18 SERIES NOZZLE
PRESSURE: 45 PSI RADIUS: 13 FEET TO 18 FEET
FLOW (GPM): Q-0.50 H-1.02 F-1.85

 POP-UP ROTATING SPRAY SPRINKLER: RAIN BIRD 1812-SAM
W/RVAN24 SERIES NOZZLE
PRESSURE: 45 PSI RADIUS: 17 FEET TO 24 FEET
FLOW (GPM): Q-0.92 H-1.84 F-3.67

 POP-UP ROTATING SPRAY SPRINKLER: RAIN BIRD 1812-SAM
W/RVAN STRIP SERIES NOZZLE
PRESSURE: 45 PSI RADIUS: ADJUSTABLE RECTANGULAR SPRAY
FLOW (GPM): SST-5'x30' 0.48 LCS/RCS 5'x15' 0.24

 POP-UP SPRAY SPRINKLER: RAIN BIRD 1812-SAM W/ HE-VAN NOZZLES
PRESSURE: 30 PSI RADIUS: AS SHOWN

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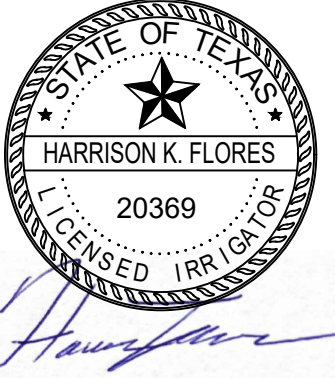
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 POP-UP SPRAY SPRINKLER: RAIN BIRD 1812-SAM W/ MPR 15 STRIP NOZZLE
PRESSURE: 30 PSI RADIUS: 4 FEET X 15 FEET

Date

Revision/Issue

No.



Hines Inc



SITE WATER ENGINEERING SERVICES

323 W. DRAKE RD. SUITE 204

FORT COLLINS, COLORADO 80526

Telephone: 970.282.1800

Web: www.hinesinc.com

W. 76 COUNTRY BLVD STREETSCAPE
SEGMENTS 1 & 2
CITY OF BRANSON, MISSOURI

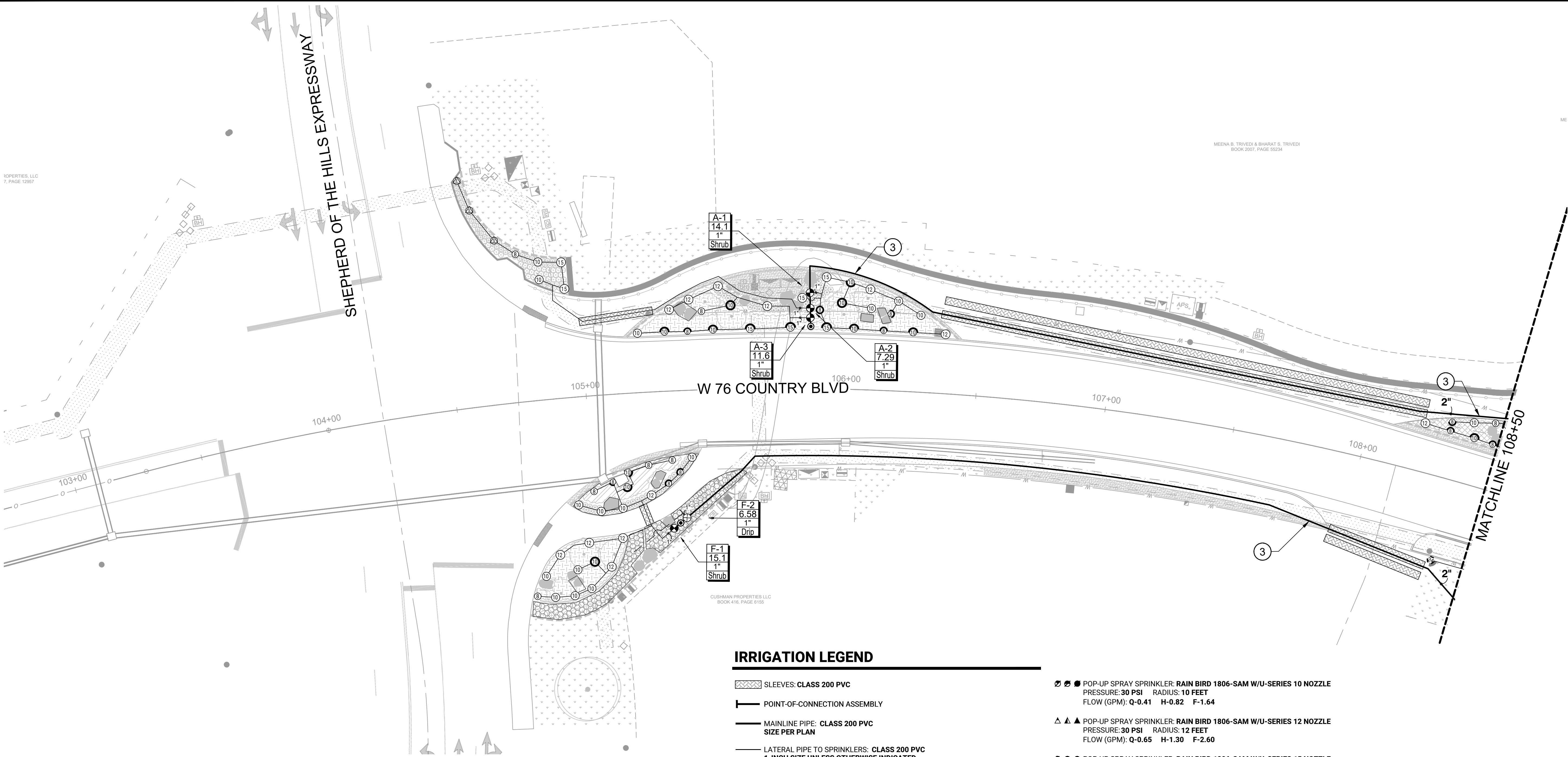
IRRIGATION NOTES

DATE: 07/13/2026

JOB NUMBER: 4515

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BOOK 2007, PAGE 55234

CUSHMAN PROPERTIES LLC
BOOK 416, PAGE 6155

CONSTRUCTION NOTES

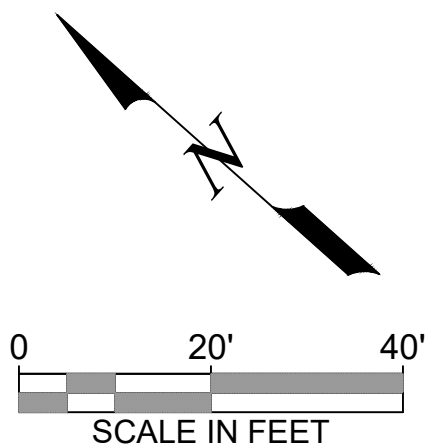
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IRRIGATION LEGEND

- SLEEVES: CLASS 200 PVC
- POINT-OF-CONNECTION ASSEMBLY
- MAINLINE PIPE: CLASS 200 PVC
SIZE PER PLAN
- LATERAL PIPE TO SPRINKLERS: CLASS 200 PVC
1-INCH SIZE UNLESS OTHERWISE INDICATED
- LATERAL PIPE TO INLINE DRIP HEADER: CLASS 200 PVC
1-INCH SIZE UNLESS OTHERWISE INDICATED
- UNCONNECTED PIPE CROSSING
- INLINE DRIP TUBING: RAIN BIRD XFS-06-12 WITH RAINBIRD XQF DRIPLINE HEADER
0.6 GPH EMITTERS, 12" EMITTER SPACING, 12" ROW SPACING
- REMOTE CONTROL VALVE ASSEMBLY FOR SPRINKLER LATERALS:
RAIN BIRD PEB (SIZED PER PLAN)
- QUICK COUPLING VALVE ASSEMBLY: RAIN BIRD 5RC
- ISOLATION GATE VALVE ASSEMBLY: MATCO 514
- FLOW SENSOR ASSEMBLY: RAIN BIRD UFS100 W/ESPLXIVMSN
- BACKFLOW PREVENTION ASSEMBLY: FEBCO 850 (1")
- WATER METER AND CURB STOP ASSEMBLY: BY OTHERS
- MASTER VALVE ASSEMBLY: RAIN BIRD PEBVM (1") W/ IVM-SOL SOLENOID
- IRRIGATION CONTROLLER UNIT
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IQ4 CELL CARTRIDGE
RAIN BIRD ESP-LXIVM TWO WIRE CONTROLLER/ 240V INTERNATIONAL MODEL
- GROUNDING AND SURGE ARRESTOR ASSEMBLY: RAIN BIRD LSP-1TURF
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W. 76 COUNTRY BLVD STREETSCAPE
SEGMENTS 1 & 2
CITY OF BRANSON, MISSOURI

IRRIGATION PLAN

W 76 COUNTRY BLVD - 103+00.00 TO 108+50.00

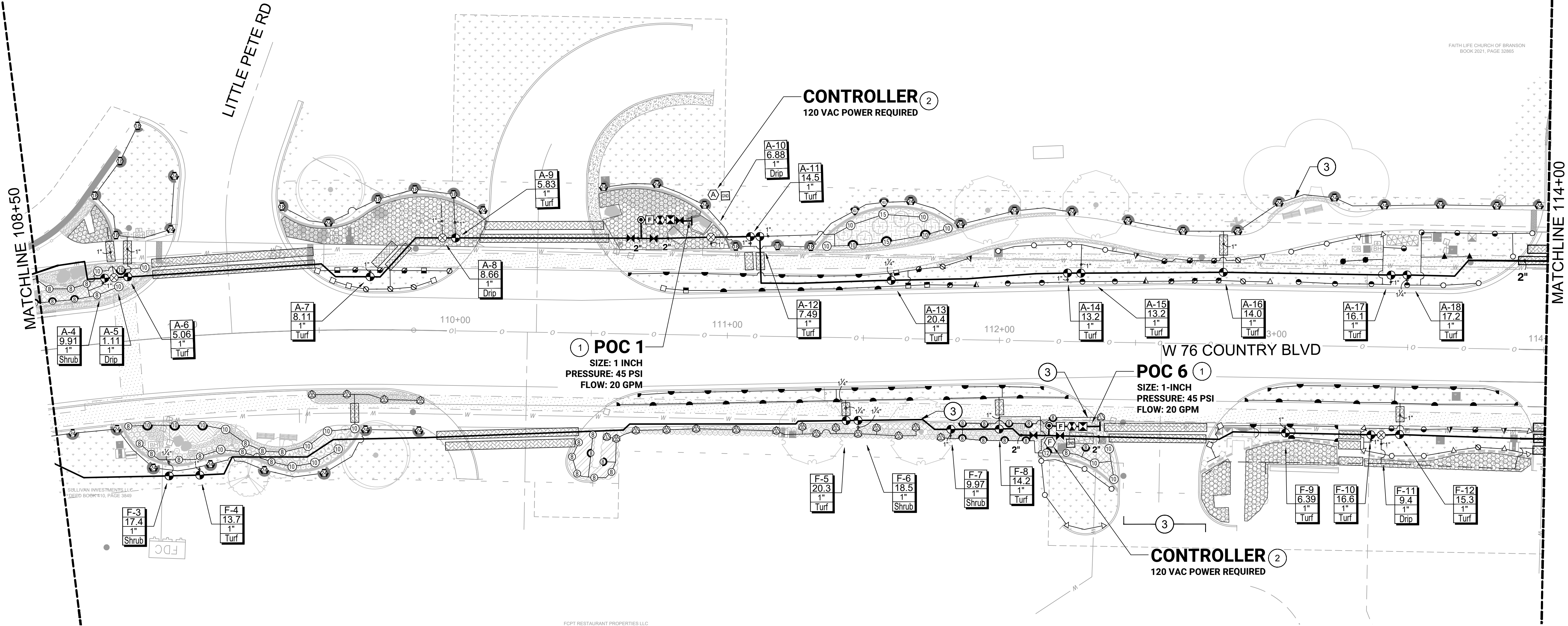
DATE: 10/17/2025

JOB NUMBER: 4515

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C:\hines Inc Dropbox\Design\Projects\Irrigation\W_76 Country Blvd Streetscape Segments 1-2\ACAD\IR-W_76 Final.dwg PLOT DATE: 10/17/2025 3:21:12 PM LAST SAVE: 10/17/2025 3:05:24 PM

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10/17, PAGE 55234



IRRIGATION LEGEND

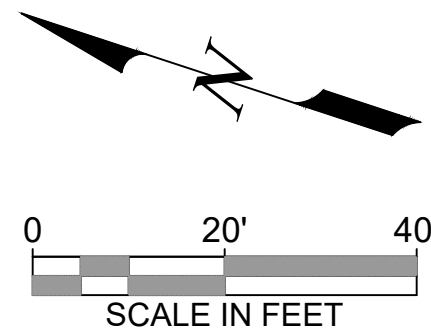
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RAIN BIRD PEB (SIZED PER PLAN)
- QUICK COUPLING VALVE ASSEMBLY: RAIN BIRD 5RC
- ISOLATION GATE VALVE ASSEMBLY: MATCO 514
- FLOW SENSOR ASSEMBLY: RAIN BIRD UFS100 W/ESPLXIVMSEN
- BACKFLOW PREVENTION ASSEMBLY: FEBCO 850 (1")
- WATER METER AND CURB STOP ASSEMBLY: BY OTHERS
- MASTER VALVE ASSEMBLY: RAIN BIRD PEBIVM (1") W/ IVM-SOL SOLENOID
- IRRIGATION CONTROLLER UNIT
WITH RAIN BIRD WR2 RAIN FREEZE SENSOR
IQ4 CELL CARTRIDGE
RAIN BIRD ESP-LXIVM TWO WIRE CONTROLLER/ 240V INTERNATIONAL MODEL
- GROUNDING AND SURGE ARRESTOR ASSEMBLY: RAIN BIRD LSP-1TURF
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PRESSURE: 30 PSI RADIUS: 8 FEET
FLOW (GPM): Q-0.26 H-0.52 F-1.05
- POP-UP SPRAY SPRINKLER: RAIN BIRD 1806-SAM W/U-SERIES 10 NOZZLE
PRESSURE: 30 PSI RADIUS: 10 FEET
FLOW (GPM): Q-0.41 H-0.82 F-1.64
- POP-UP SPRAY SPRINKLER: RAIN BIRD 1806-SAM W/U-SERIES 12 NOZZLE
PRESSURE: 30 PSI RADIUS: 12 FEET
FLOW (GPM): Q-0.65 H-1.30 F-2.60
- POP-UP SPRAY SPRINKLER: RAIN BIRD 1806-SAM W/U-SERIES 15 NOZZLE
PRESSURE: 30 PSI RADIUS: 15 FEET
FLOW (GPM): Q-0.92 H-1.85 F-3.70
- POP-UP SPRAY SPRINKLER: RAIN BIRD 1806-SAM W/MPR SERIES NOZZLE
PRESSURE: 30 PSI RADIUS: 4 FEET X 15 FEET
FLOW (GPM): HEVAN08-1.17 HEVAN10-1.78 HEVAN12-2.37 HEVAN15-3.70
- POP-UP SPRAY SPRINKLER: RAIN BIRD 1806-SAM W/MPR SERIES NOZZLE
PRESSURE: 30 PSI RADIUS: 4 FEET X 15 FEET
FLOW (GPM): EST-0.61 SST-1.21

- POP-UP ROTATING SPRAY SPRINKLER: RAIN BIRD 1812-SAM
W/RVAN14 SERIES NOZZLE
PRESSURE: 45 PSI RADIUS: 8 FEET TO 14 FEET
FLOW (GPM): Q-0.32 H-0.63 F-1.27
- POP-UP ROTATING SPRAY SPRINKLER: RAIN BIRD 1812-SAM
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PRESSURE: 45 PSI RADIUS: 13 FEET TO 18 FEET
FLOW (GPM): Q-0.50 H-1.02 F-1.85
- POP-UP ROTATING SPRAY SPRINKLER: RAIN BIRD 1812-SAM
W/RVAN24 SERIES NOZZLE
PRESSURE: 45 PSI RADIUS: 17 FEET TO 24 FEET
FLOW (GPM): Q-0.92 H-1.84 F-3.67
- POP-UP ROTATING SPRAY SPRINKLER: RAIN BIRD 1812-SAM
W/RVAN STRIP SERIES NOZZLE
PRESSURE: 45 PSI RADIUS: ADJUSTABLE RECTANGULAR SPRAY
FLOW (GPM): SST-5'x30' 0.48 LCS/RCS 5'x15' 0.24
- POP-UP SPRAY SPRINKLER: RAIN BIRD 1812-SAM W/ HE-VAN NOZZLES
PRESSURE: 30 PSI RADIUS: AS SHOWN
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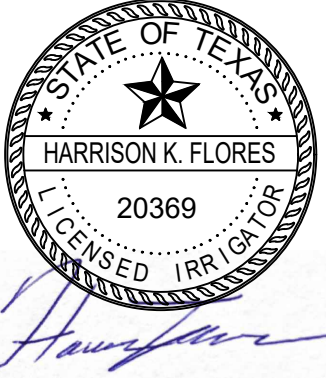
CONSTRUCTION NOTES

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- PEDESTAL MOUNT THE IRRIGATION CONTROLLERS AT THE APPROXIMATE LOCATIONS SHOWN. COORDINATE ELECTRICAL POWER TO THE CONTROLLERS WITH THE OWNER'S REPRESENTATIVE. CARE SHOULD BE TAKEN TO INSTALL THE IRRIGATION CONTROLLERS IN A LOCATION THAT IS ACCESSIBLE FOR MAINTENANCE, AND SCREENED FROM VIEW EITHER BEHIND ENTRY WALLS, NEXT TO BUILDINGS, OR BEHIND PLANT MATERIAL. FINAL LOCATIONS TO BE APPROVED BY OWNER'S REPRESENTATIVE.
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- POP-UP SPRAY SPRINKLER: RAIN BIRD 1812-SAM W/ FIXED U-SERIES 12 NOZZLE
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PRESSURE: 30 PSI RADIUS: 15 FEET
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PRESSURE: 30 PSI RADIUS: 4 FEET X 15 FEET



Date	
Revision/Issue	
No.	



HARRISON K. FLORES
20369
LICENSED IRRIGATOR



Hines Inc
SITE WATER ENGINEERING SERVICES
323 W. DRAKE RD. SUITE 204
FORT COLLINS, COLORADO 80526
Telephone: 970.282.1800
Web: www.hinesinc.com

W. 76 COUNTRY BLVD STREETSCAPE
SEGMENTS 1 & 2
CITY OF BRANSON, MISSOURI

IRRIGATION PLAN

W 76 COUNTRY BLVD - 108+50.00 TO 114+00.00

DATE: 10/17/2025

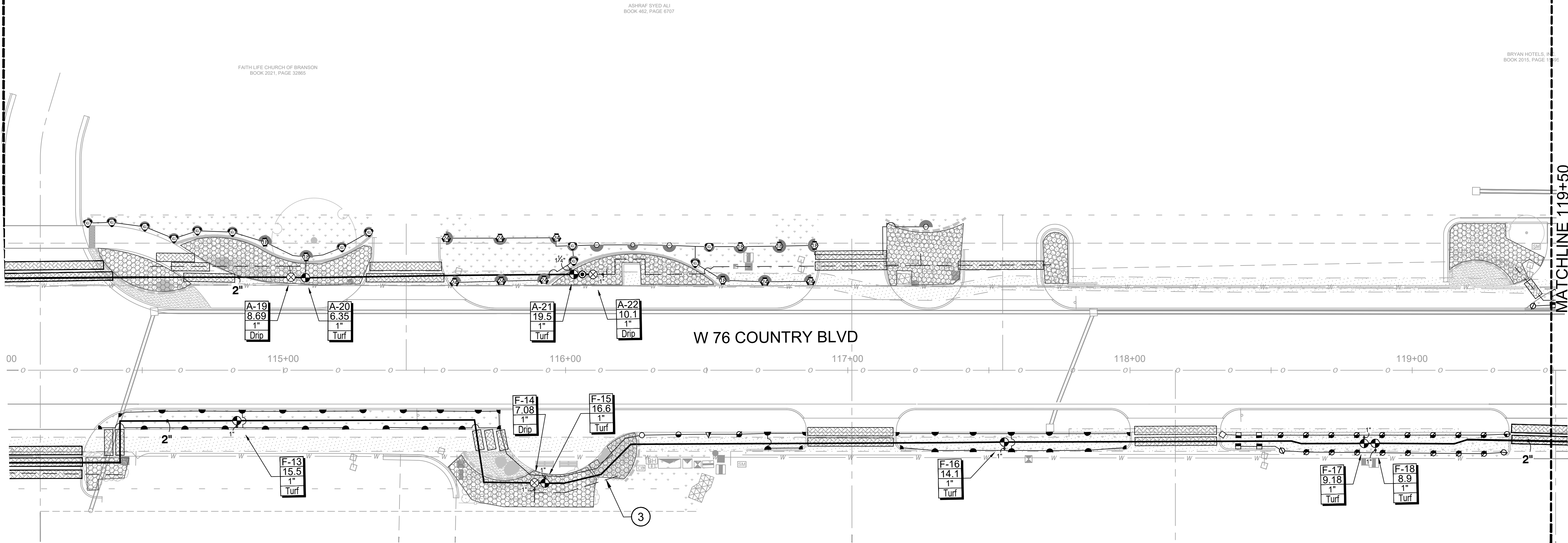
JOB NUMBER: 4515

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MATCHLINE 114+00

MATCHLINE 119+50



IRRIGATION LEGEND

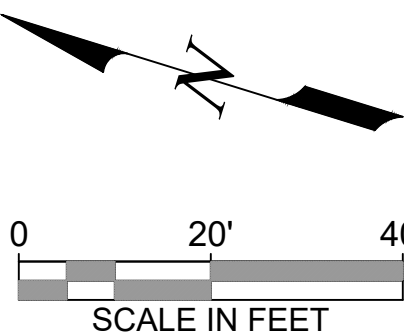
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- POINT-OF-CONNECTION ASSEMBLY
- MAINLINE PIPE: CLASS 200 PVC
SIZE PER PLAN
- LATERAL PIPE TO SPRINKLERS: CLASS 200 PVC
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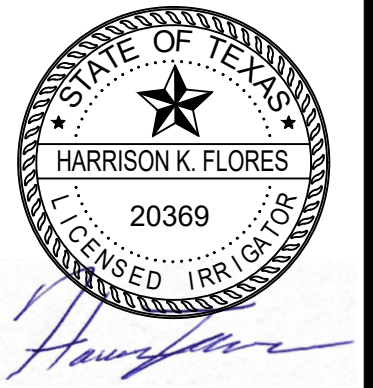
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PRESSURE: 30 PSI RADIUS: 4 FEET X 15 FEET



No.	Revision/Issue	Date



Hines Inc

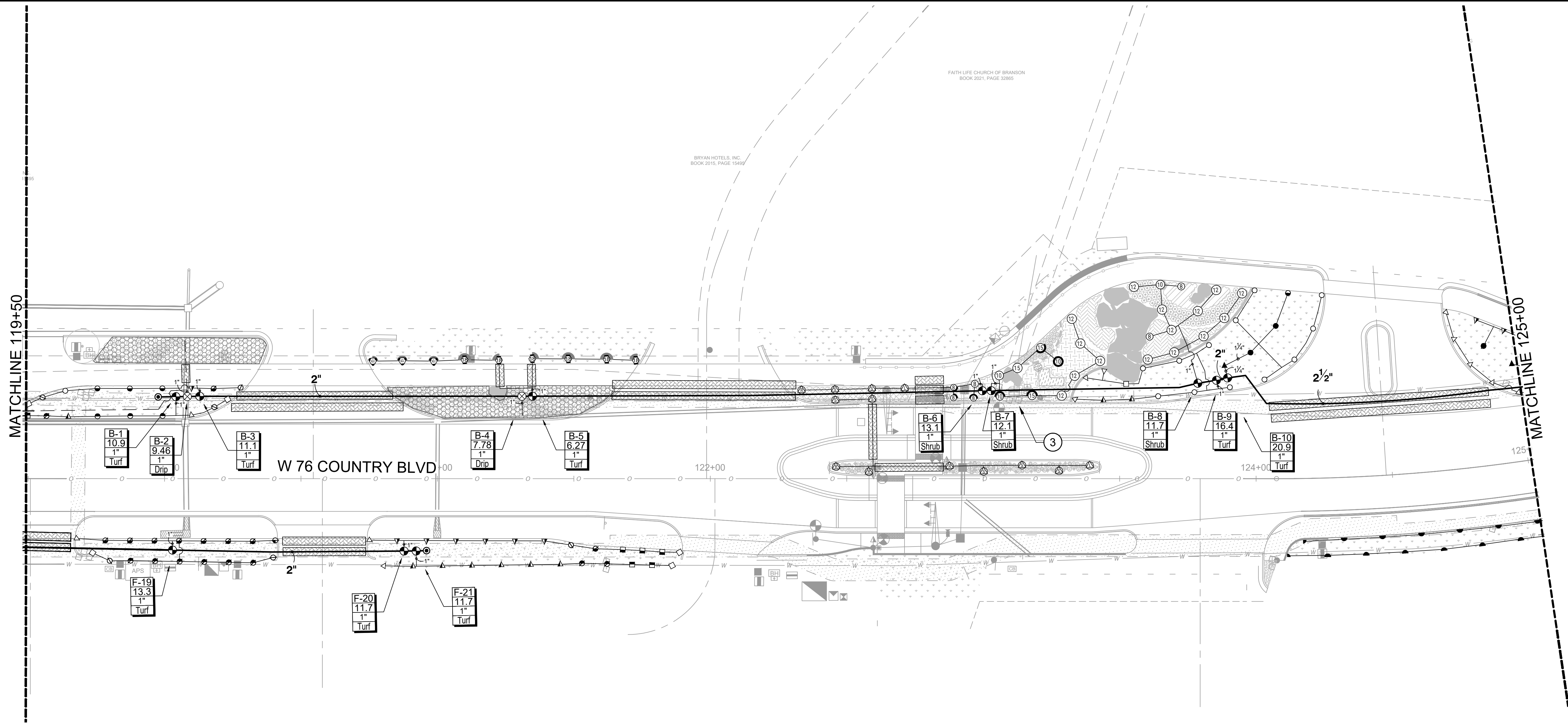
SITE WATER ENGINEERING SERVICES
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W. 76 COUNTRY BLVD STREETSCAPE
SEGMENTS 1 & 2
CITY OF BRANSON, MISSOURI

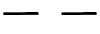
IRRIGATION PLAN

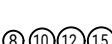
W 76 COUNTRY BLVD - 114+00.00 TO 119+50.00

DATE: 10/17/2025
JOB NUMBER: 4515
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IRRIGATION LEGEND

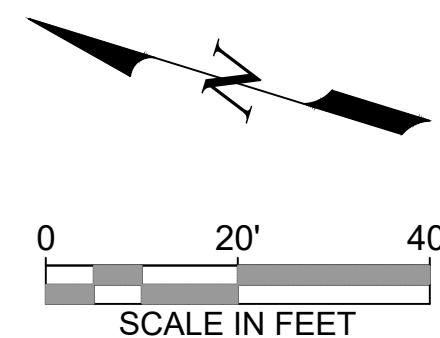
- | | | | |
|---|---|---|--|
|  | SLEEVES: CLASS 200 PVC |  | IRRIGATION CONTROL UNIT
WITH RAIN BIRD WR2 RAIN FREEZE SENSOR
IQ4 CELL CARTRIDGE
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CONSTRUCTION NOTES

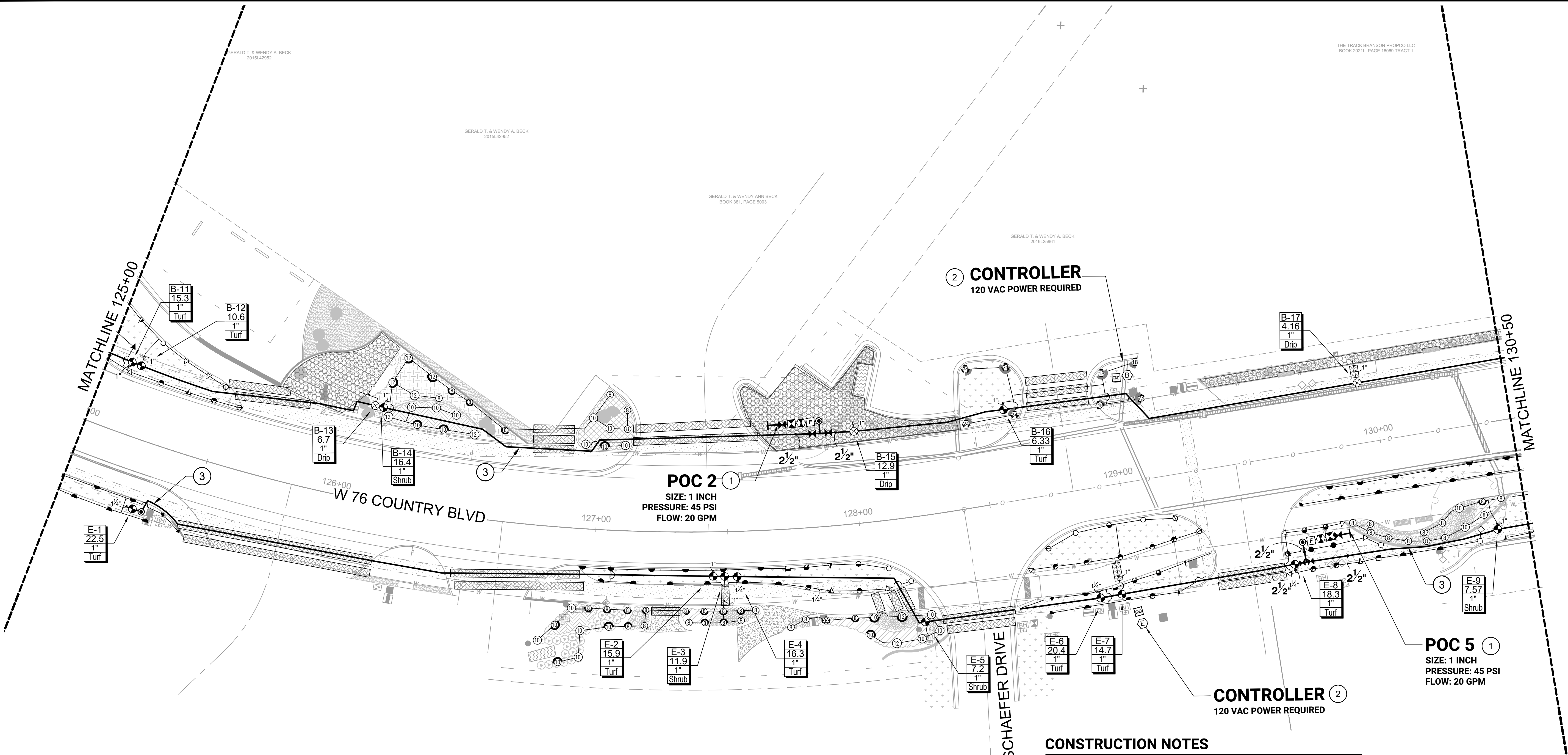
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- 
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W. 76 COUNTRY BLVD STREETSCAPE SEGMENTS 1 & 2 CITY OF BRANSON, MISSOURI		Hines Inc SITE WATER ENGINEERING SERVICES 323 W. DRAKE RD, SUITE 204 FORT COLLINS, COLORADO 80526 Telephone: 970.282.1800 Web: www.hinesinc.com				No.	Revision/Issue	Date
DATE: 10/17/2025								
JOB NUMBER: 4515								
SHEET IR 04 OF 14								

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IRRIGATION LEGEND

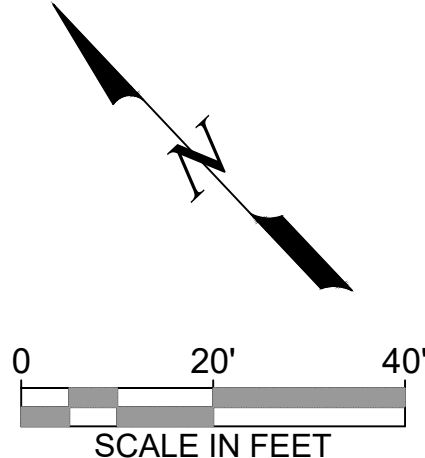
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Date

Revision/Issue

No.

STATE OF TEXAS

HARRISON K. FLORES

20369

2019.25961

Hines Inc

SITE WATER ENGINEERING SERVICES

323 W. DRAKE RD. SUITE 204

FORT COLLINS, COLORADO 80526

Telephone: 970.282.1800

Web: www.hinesinc.com

W. 76 COUNTRY BLVD STREETSCAPE
SEGMENTS 1 & 2
CITY OF BRANSON, MISSOURI

IRRIGATION PLAN

W 76 COUNTRY BLVD - 125+00.00 TO 130+50.00

DATE: 10/17/2025

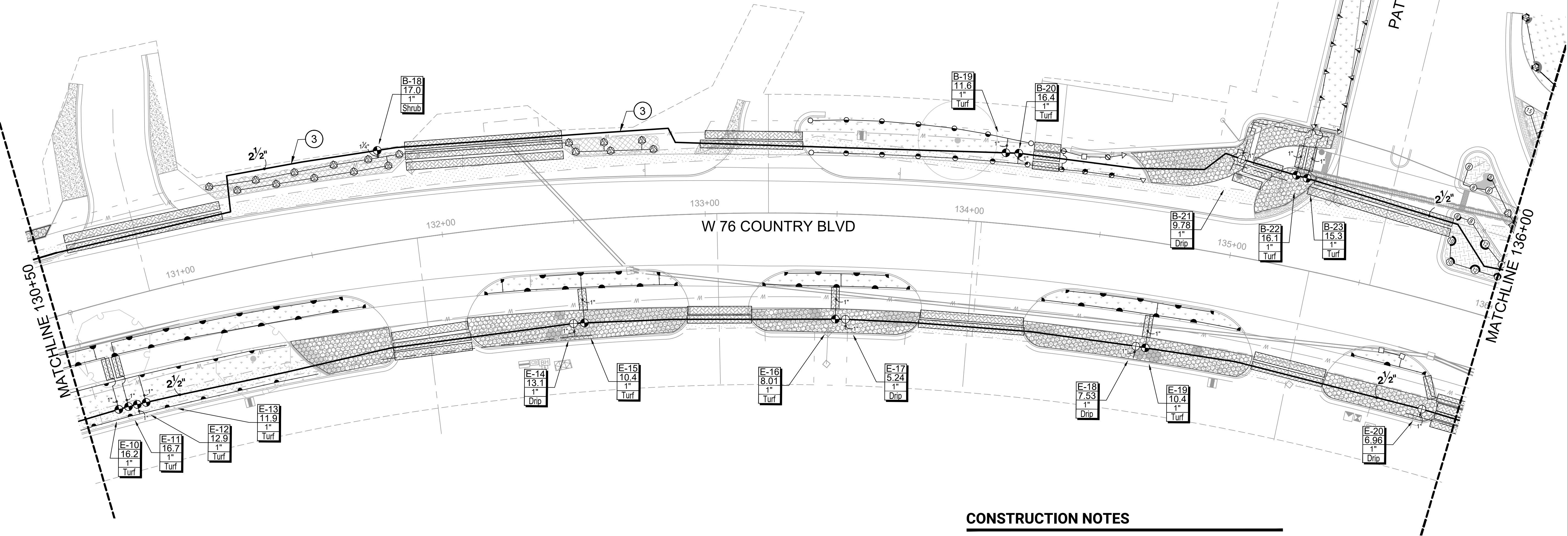
JOB NUMBER: 4515

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THE TRACK BRANDSON PROPO LLC
BOOK 2021L, PAGE 16089 TRACT 1

BS AND 248 LLC
BOTANAS SUB LOT 1
BOOK 2024, PAGE 17887
ENCUMBERED BY BLANKET WATER LINE
EASEMENT, BOOK 194, PAGE 125



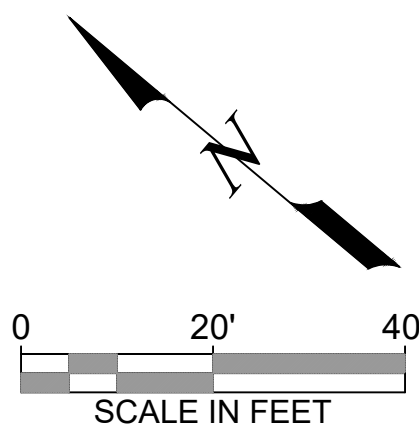
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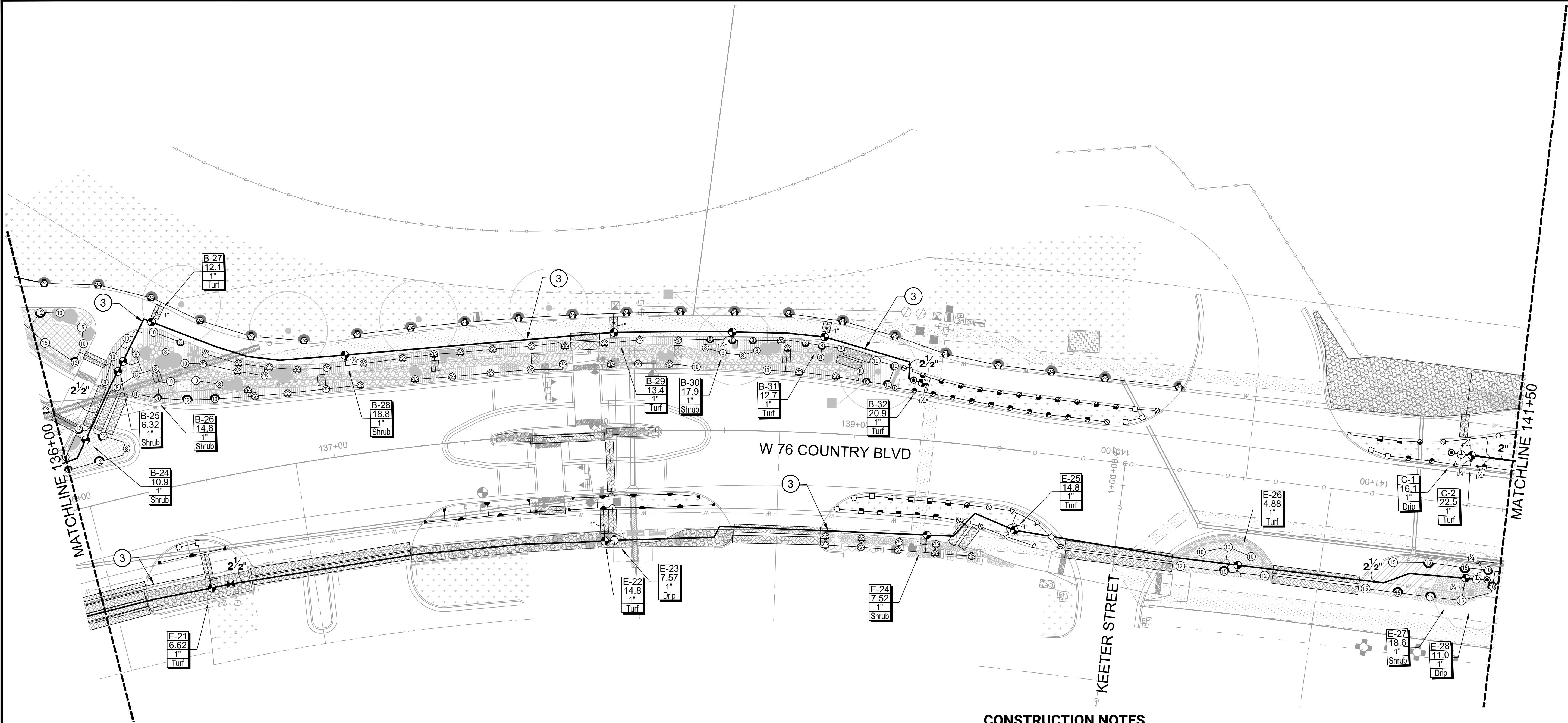
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STATE OF TEXAS HARRISON K. FLORES 20369 LICENSED IRRIGATOR <i>Haines</i>	
Hines Inc SITE WATER ENGINEERING SERVICES 323 W. DRAKE RD. SUITE 204 FORT COLLINS, COLORADO 80526 Telephone: 970.282.1800 Web: www.hinesinc.com	
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IRRIGATION PLAN W 76 COUNTRY BLVD - 130+50.00 TO 136+00.00	
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SHEET IR 06 OF 14	

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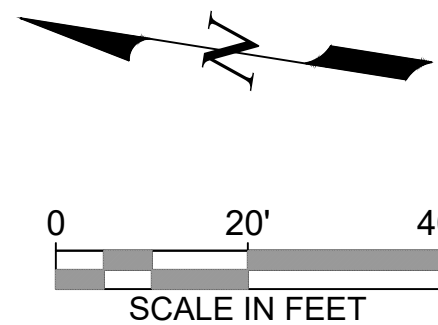


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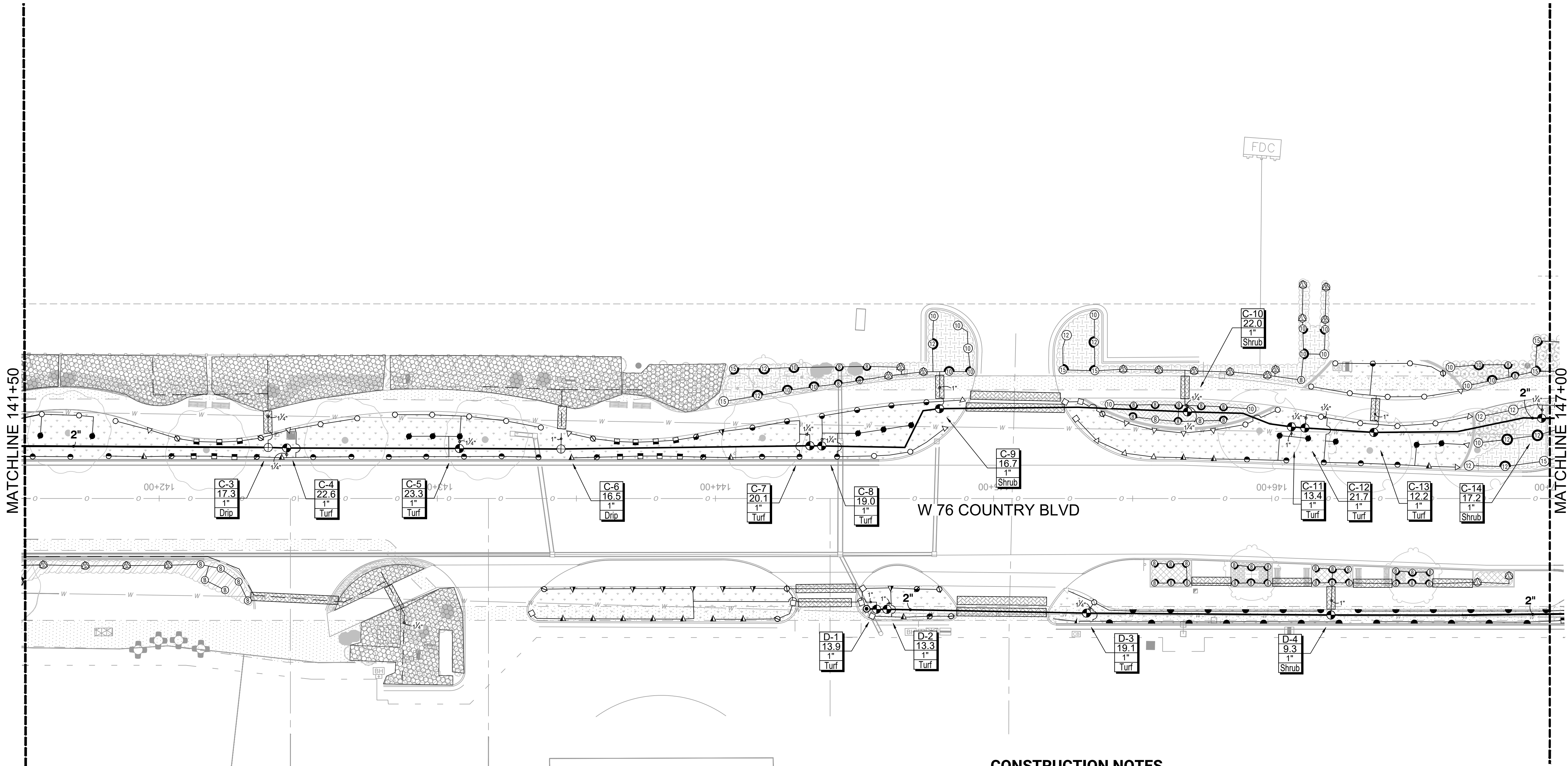
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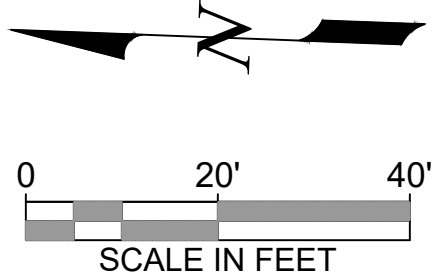
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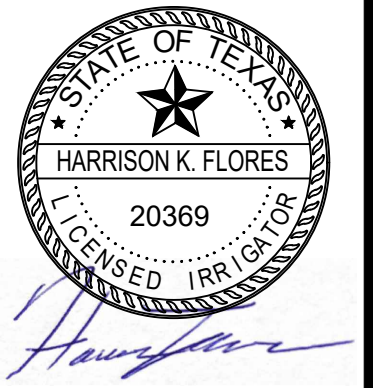
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PRESSURE: 30 PSI RADIUS: 4 FEET X 15 FEET



No.	Revision/Issue	Date

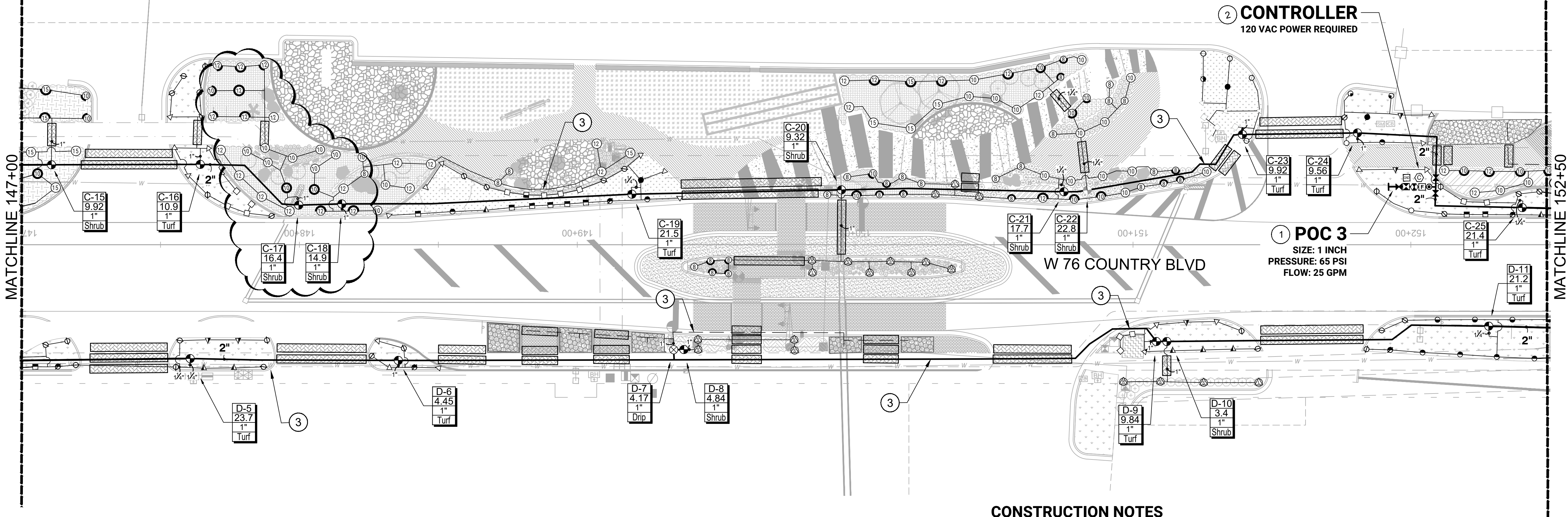


Hines Inc
SITE WATER ENGINEERING SERVICES
323 W. DRAKE RD. SUITE 204
FORT COLLINS, COLORADO 80526
Telephone: 970.282.1800
Web: www.hinesinc.com

W. 76 COUNTRY BLVD STREETSCAPE
SEGMENTS 1 & 2
CITY OF BRANSON, MISSOURI
IRRIGATION PLAN
W 76 COUNTRY BLVD - 141+50.00 TO 147+00.00

DATE: 10/17/2025
JOB NUMBER: 4515
SHEET
IR 08 OF 14

C:\Hines Inc\Dropbox\Design\Projects\W\W 76 Country Blvd Streetscape Segments 1-2\ACAD\IR-W 76 Final.dwg PLOT DATE: 7/13/2026 1:13:55 PM LAST SAVE: 7/13/2026 12:46:06 PM



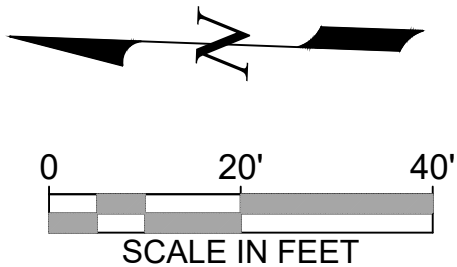
IRRIGATION LEGEND

- SLEEVES: CLASS 200 PVC
- POINT-OF-CONNECTION ASSEMBLY
- MAINLINE PIPE: CLASS 200 PVC
SIZE PER PLAN
- LATERAL PIPE TO SPRINKLERS: CLASS 200 PVC
1-INCH SIZE UNLESS OTHERWISE INDICATED
- LATERAL PIPE TO INLINE DRIP HEADER: CLASS 200 PVC
1-INCH SIZE UNLESS OTHERWISE INDICATED
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- INLINE DRIP TUBING: RAIN BIRD XFS-06-12 WITH RAINBIRD XQF DRIPLINE HEADER
0.6 GPH EMITTERS, 12" EMITTER SPACING, 12" ROW SPACING
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RAIN BIRD PEB (SIZED PER PLAN)
- QUICK COUPLING VALVE ASSEMBLY: RAIN BIRD 5RC
- ISOLATION GATE VALVE ASSEMBLY: MATCO 514
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PRESSURE: 30 PSI RADIUS: 15 FEET
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PRESSURE: 45 PSI RADIUS: 17 FEET TO 24 FEET
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PRESSURE: 45 PSI RADIUS: ADJUSTABLE RECTANGULAR SPRAY
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HARRISON K. FLORES
20369
LICENSED IRRIGATOR

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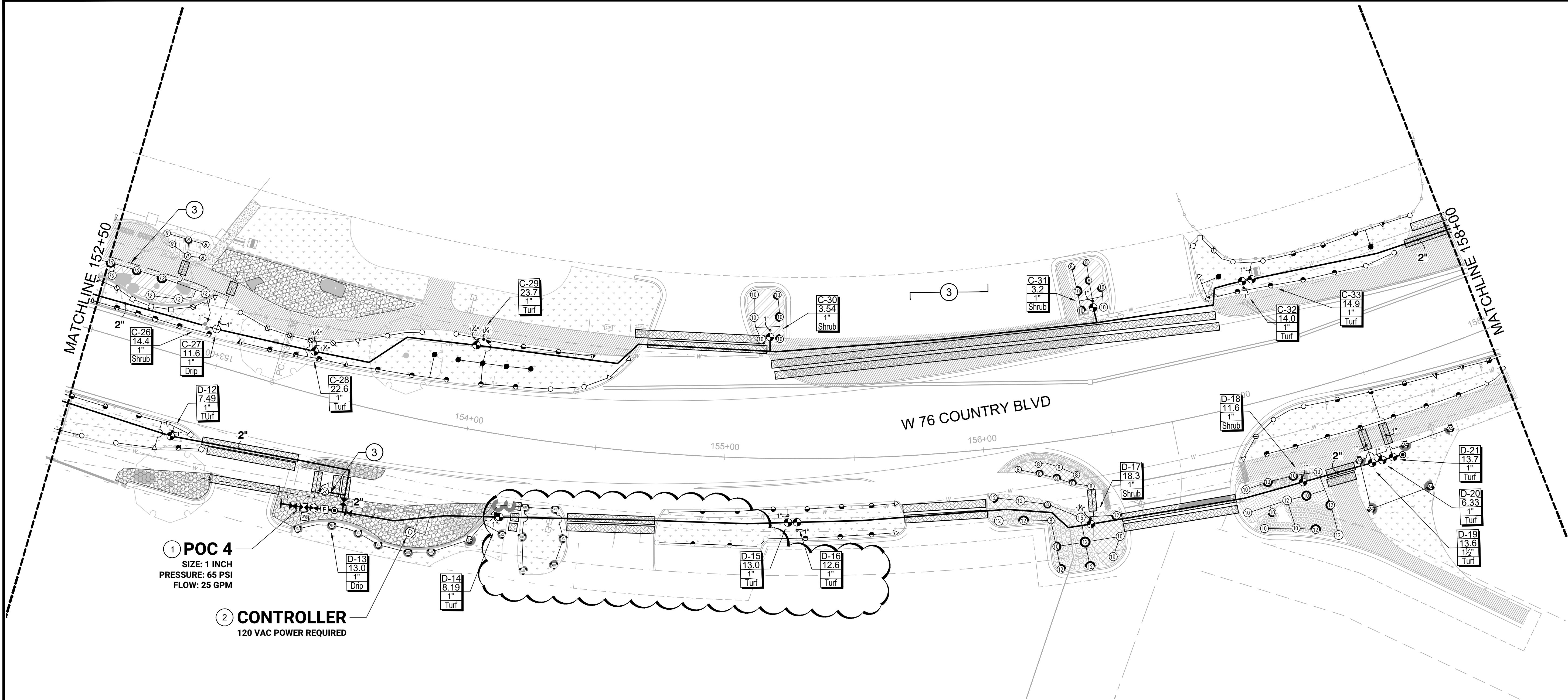
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IRRIGATION PLAN

W 76 COUNTRY BLVD - 147+00.00 TO 152+50.00

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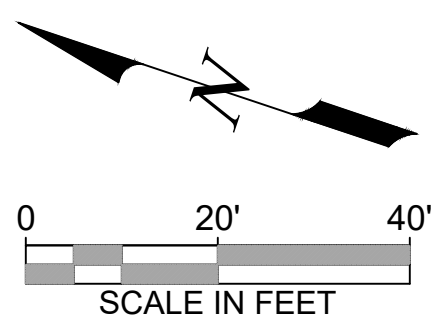
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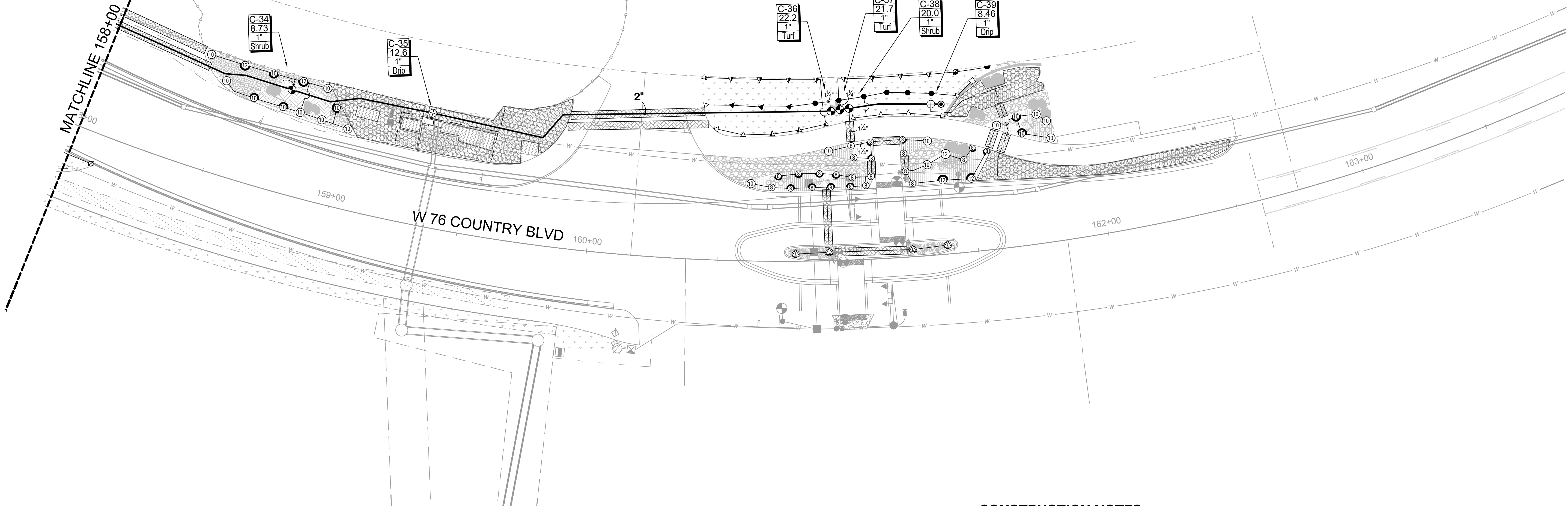


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Hines Inc
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W. 76 COUNTRY BLVD STREETSCAPE SEGMENTS 1 & 2 CITY OF BRANSON, MISSOURI	IRRIGATION PLAN W 76 COUNTRY BLVD - 152+50.00 TO 158+00.00
DATE: 07/13/2026	JOB NUMBER: 4515
SHEET IR 10 OF 14	

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IRRIGATION LEGEND

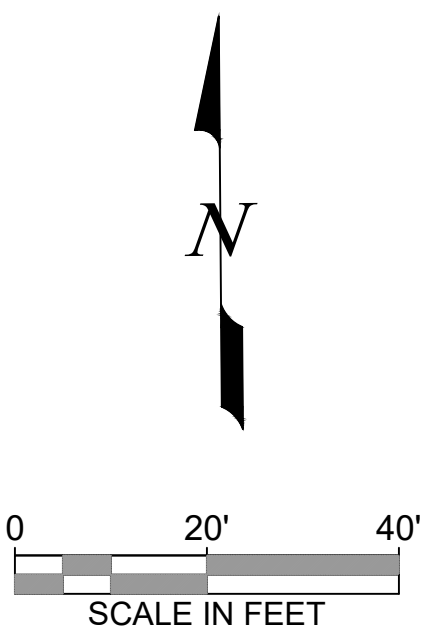
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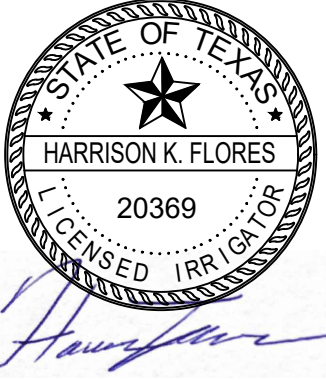
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CONSTRUCTION NOTES

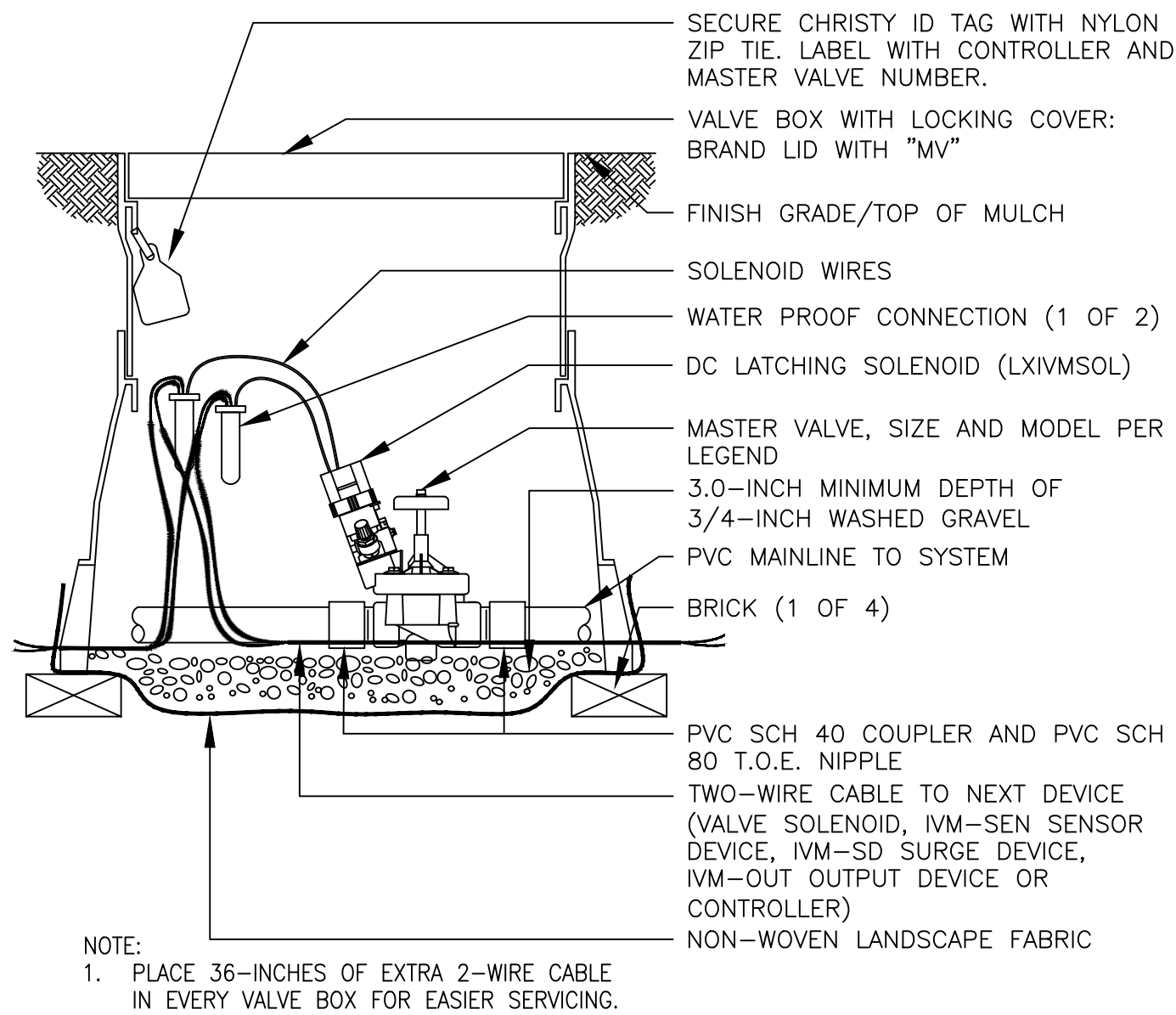
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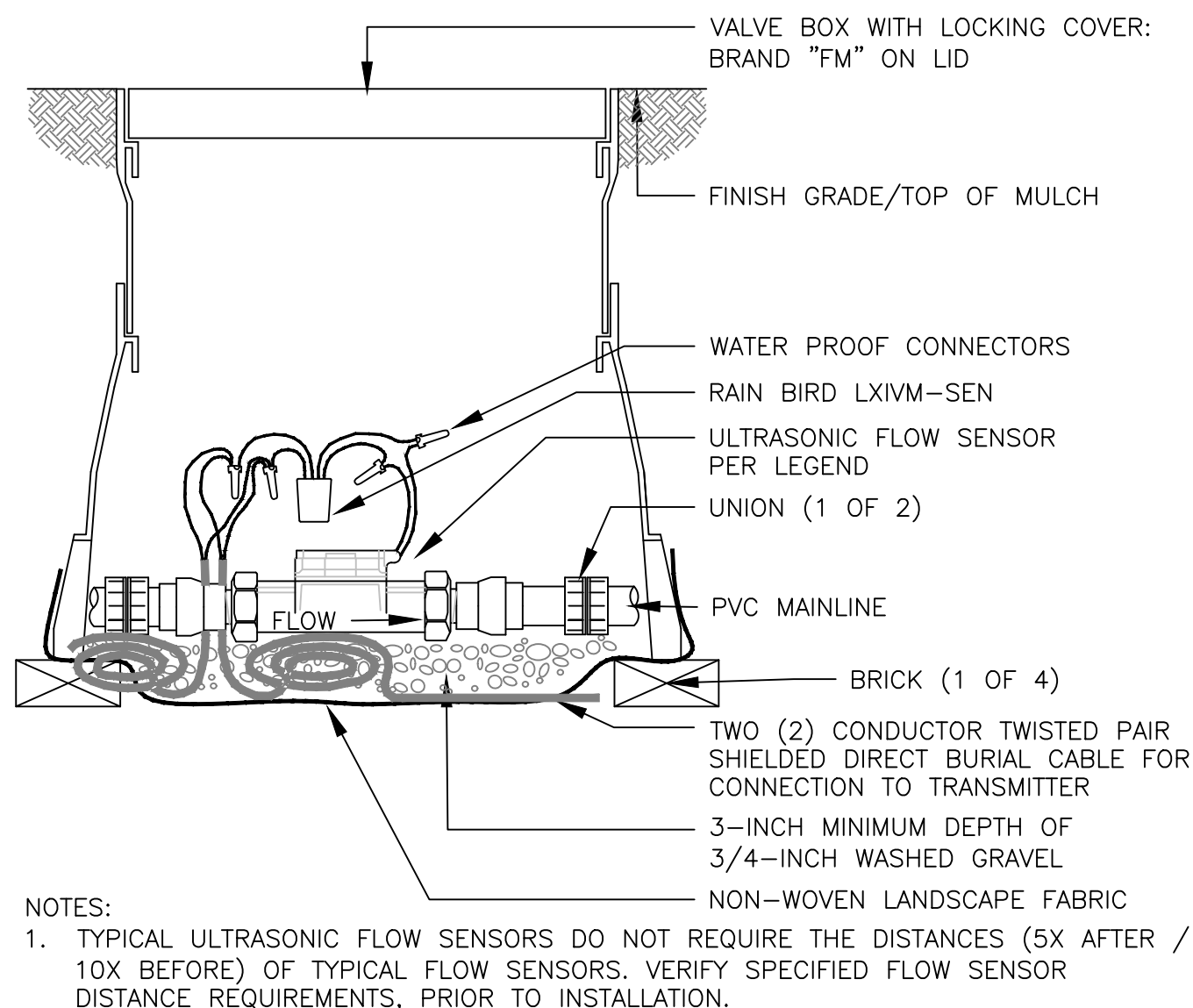


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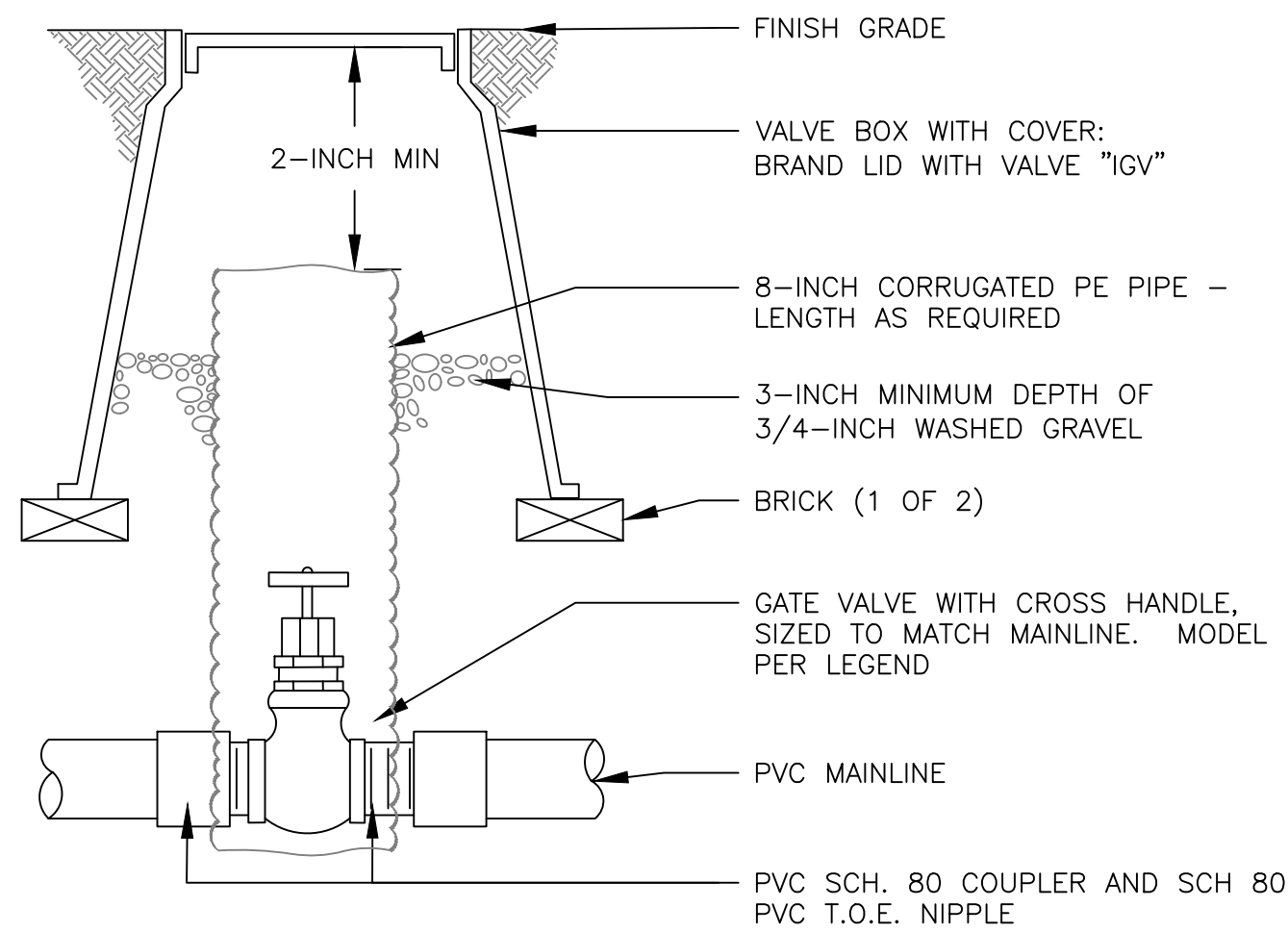
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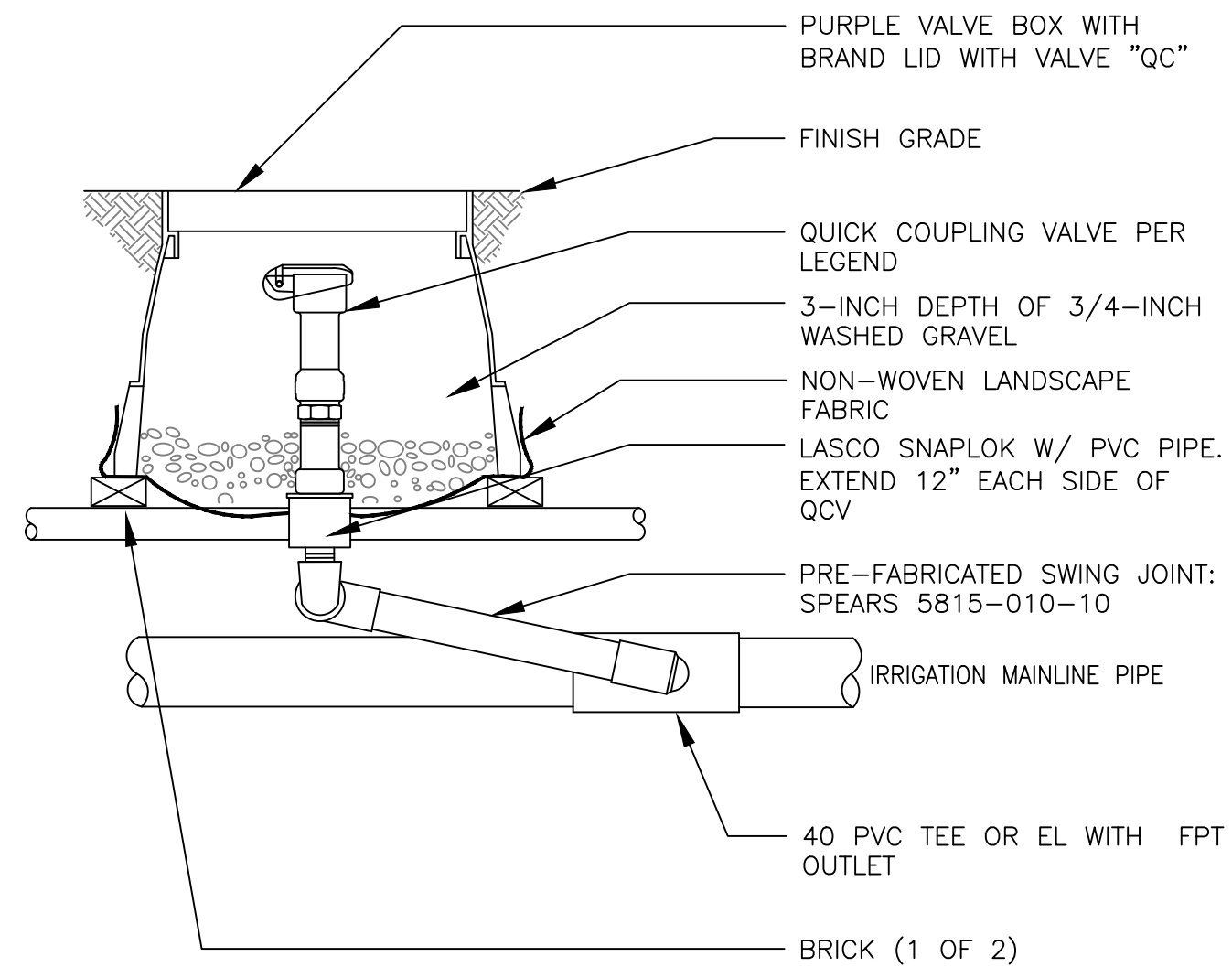
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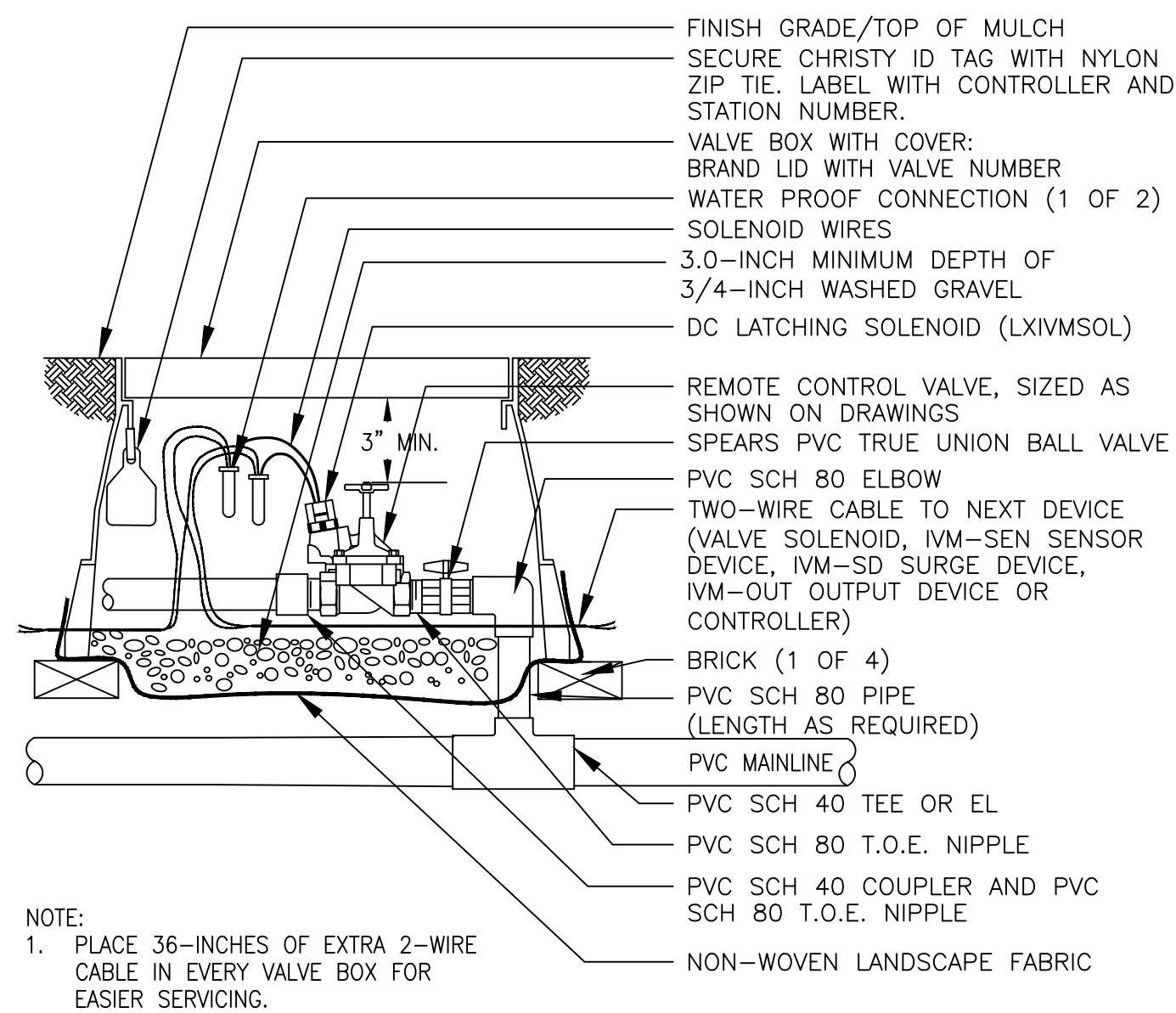
2 ULTRASONIC FLOW SENSOR ASSEMBLY - 2-WIRE LXIVM



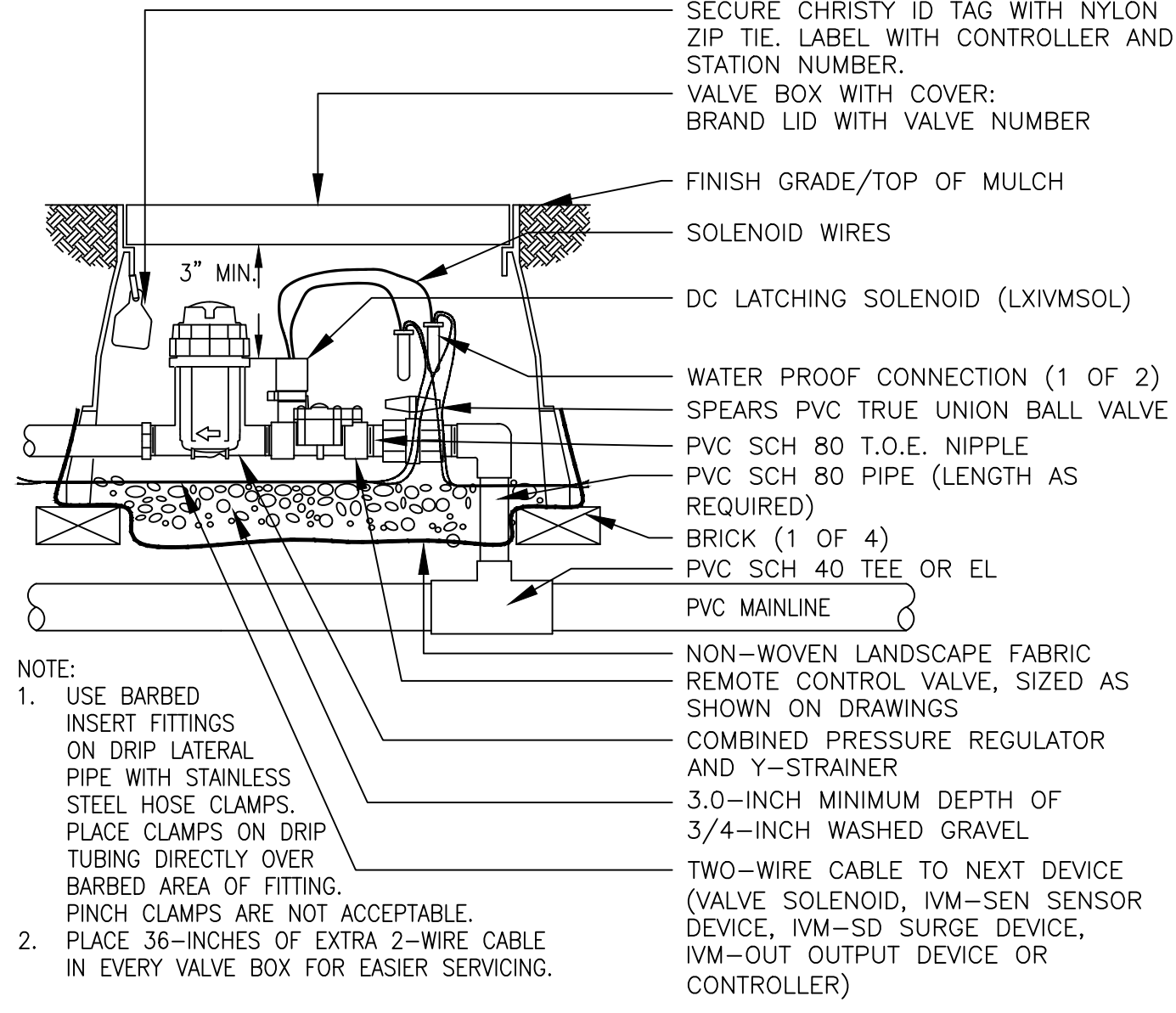
3 ISOLATION GATE VALVE ASSEMBLY 1.5-INCH MAINLINE AND SMALLER



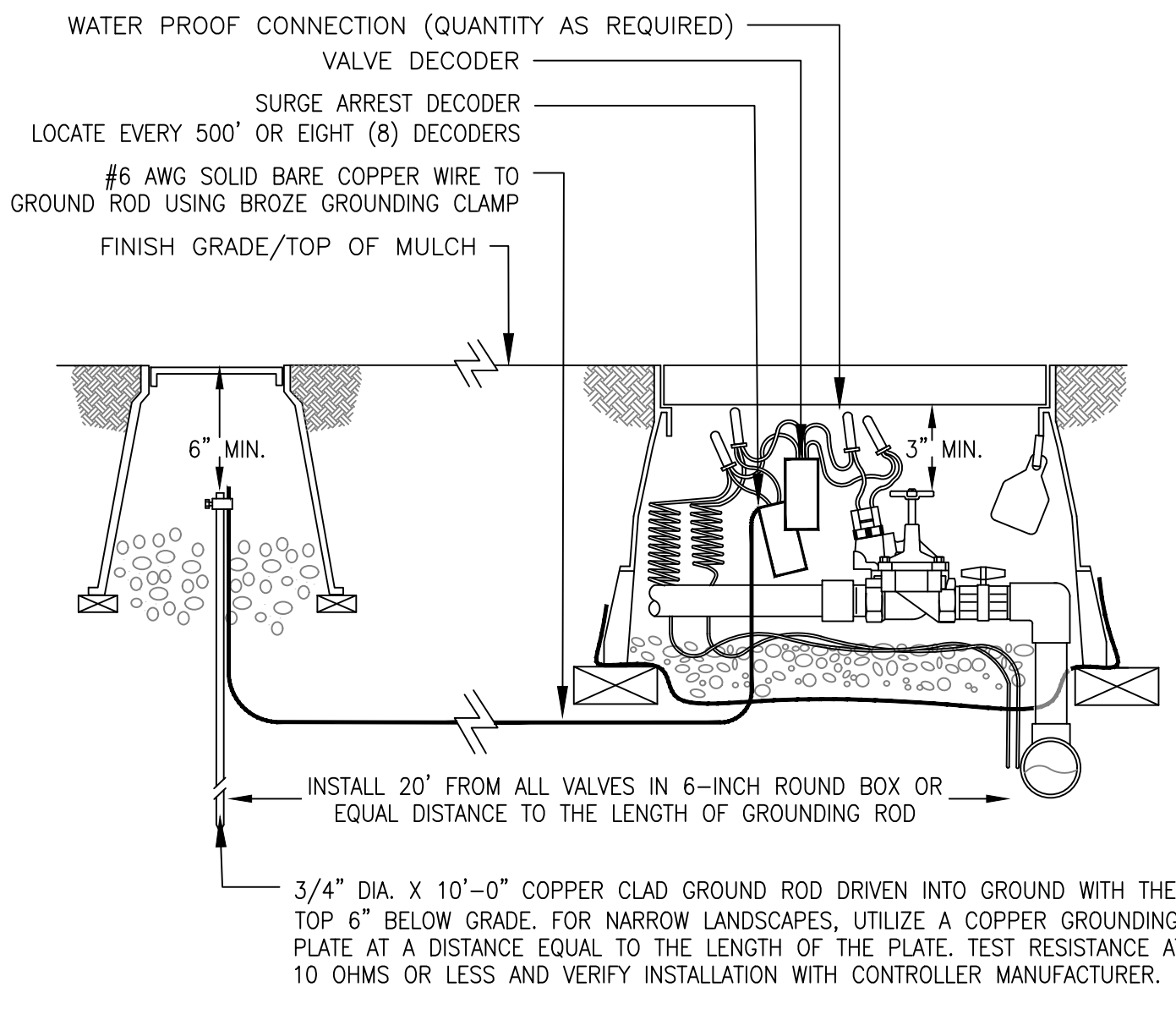
4 QUICK COUPLING VALVE ASSEMBLY



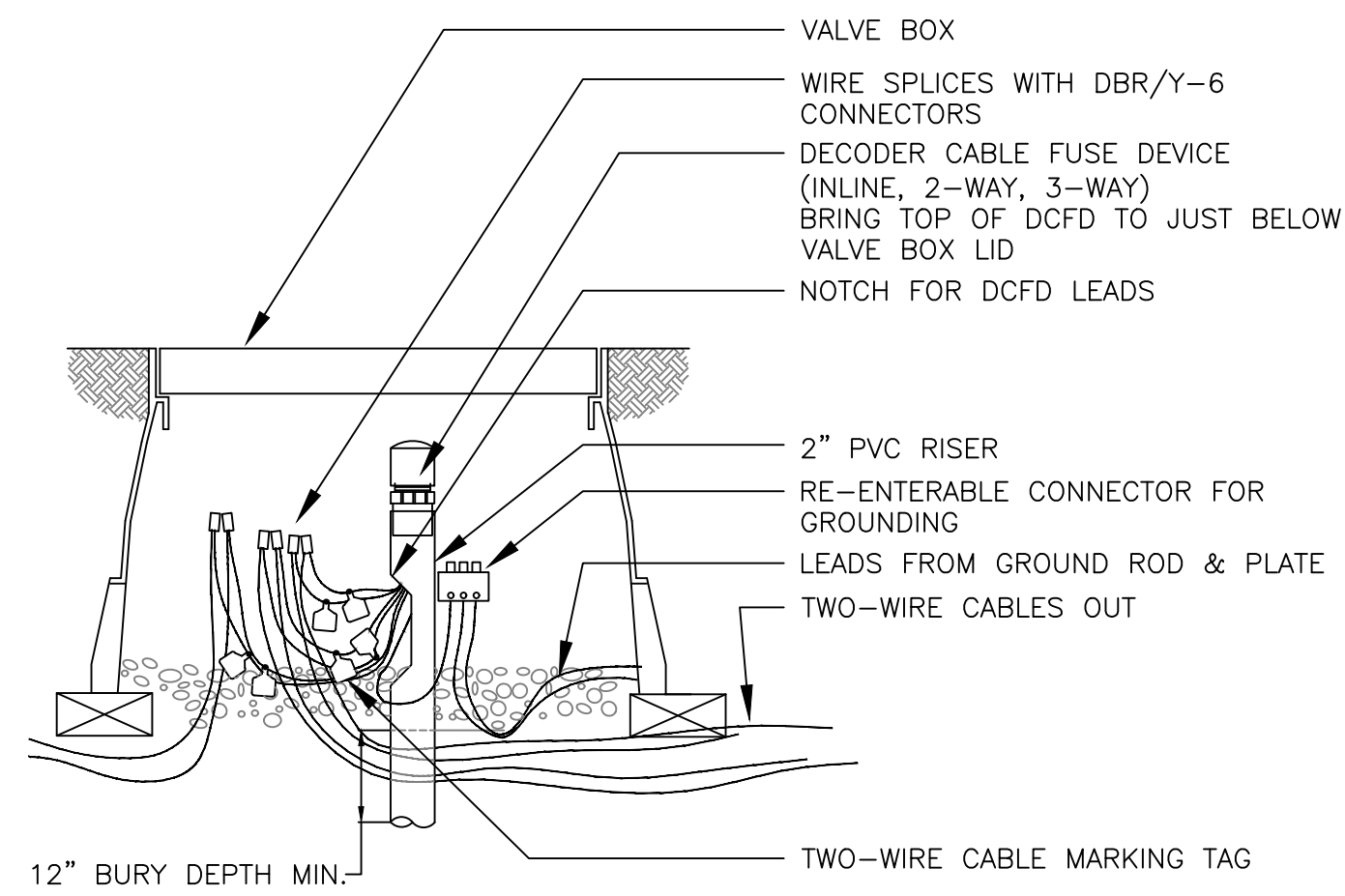
5 REMOTE CONTROL SPRINKLER VALVE ASSEMBLY



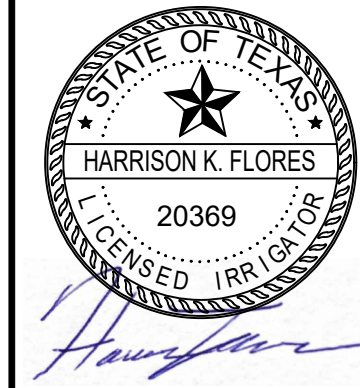
6 REMOTE CONTROL DRIP VALVE ASSEMBLY



7 TYPICAL GROUNDING (AT VALVE) ASSEMBLY



8 DECODER CABLE FUSE DEVICE DETAIL



Hines Inc
SITE WATER ENGINEERING SERVICES
323 W. DRAKE RD. SUITE 204
FORT COLLINS, COLORADO 80526
Telephone: 970.282.1800
Web: www.hinesinc.com

W. 76 COUNTRY BLVD STREETSCAPE
SEGMENTS 1 & 2
CITY OF BRANSON, MISSOURI

IRRIGATION DETAILS

DATE: 10/17/2025
JOB NUMBER: 4515
SHEET
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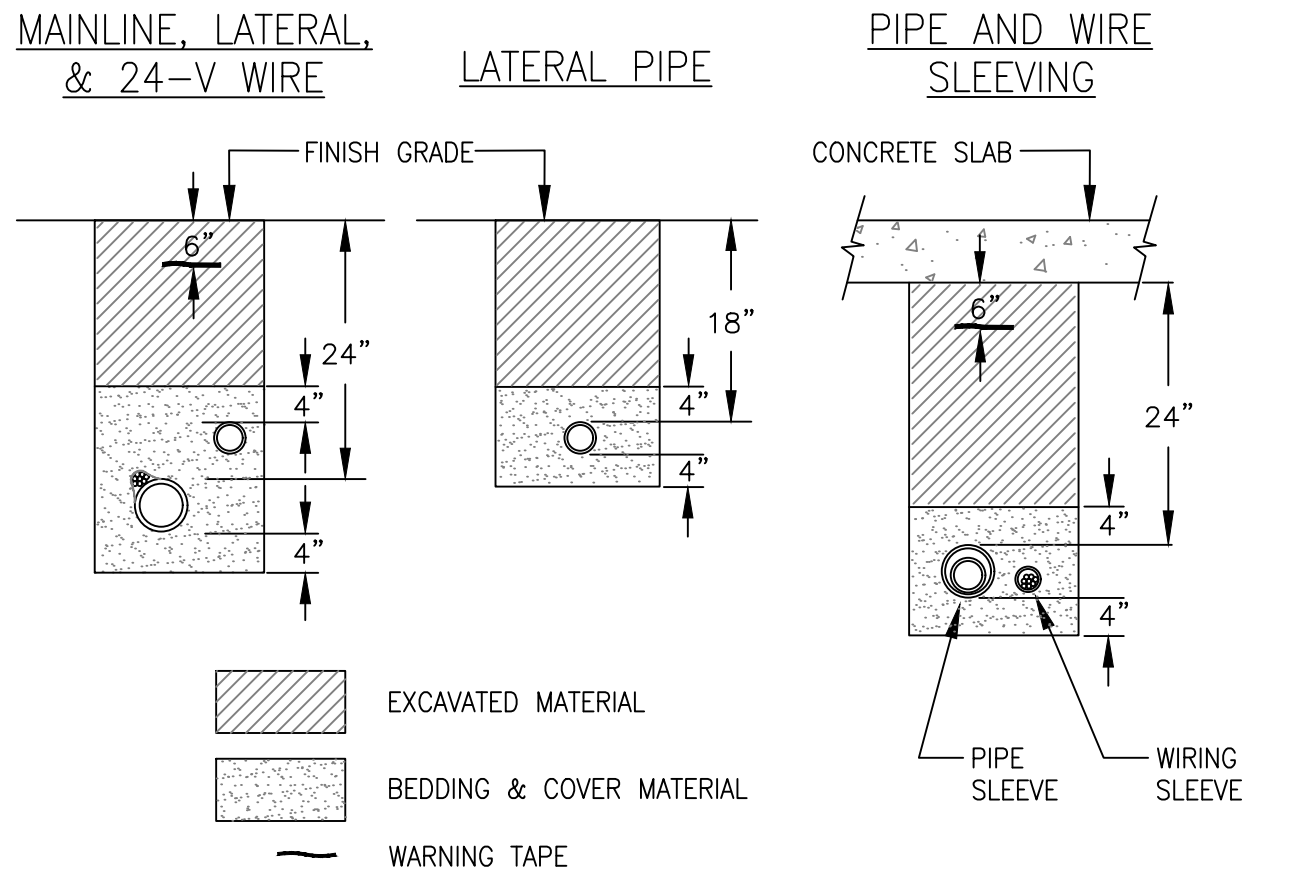


DATE: 10/17/2025

JOB NUMBER: 4515

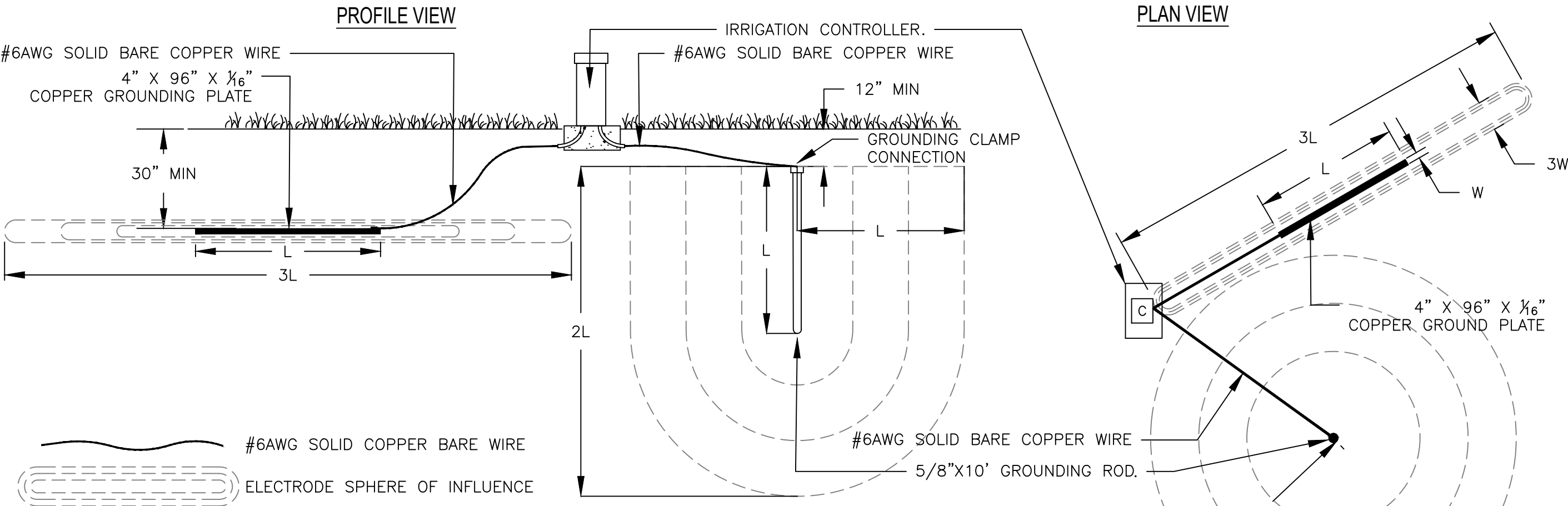
SHEET
IR 13 OF 14

C:\Hines Inc\Dropbox\Design\Projects\Irrigation\W_76 Country Blvd Streetscape Segments 1-2\ACAD\IR-W_76 Final.dwg PLOT DATE: 10/17/2025 3:22:11 PM LAST SAVE: 10/17/2025 3:05:24 PM



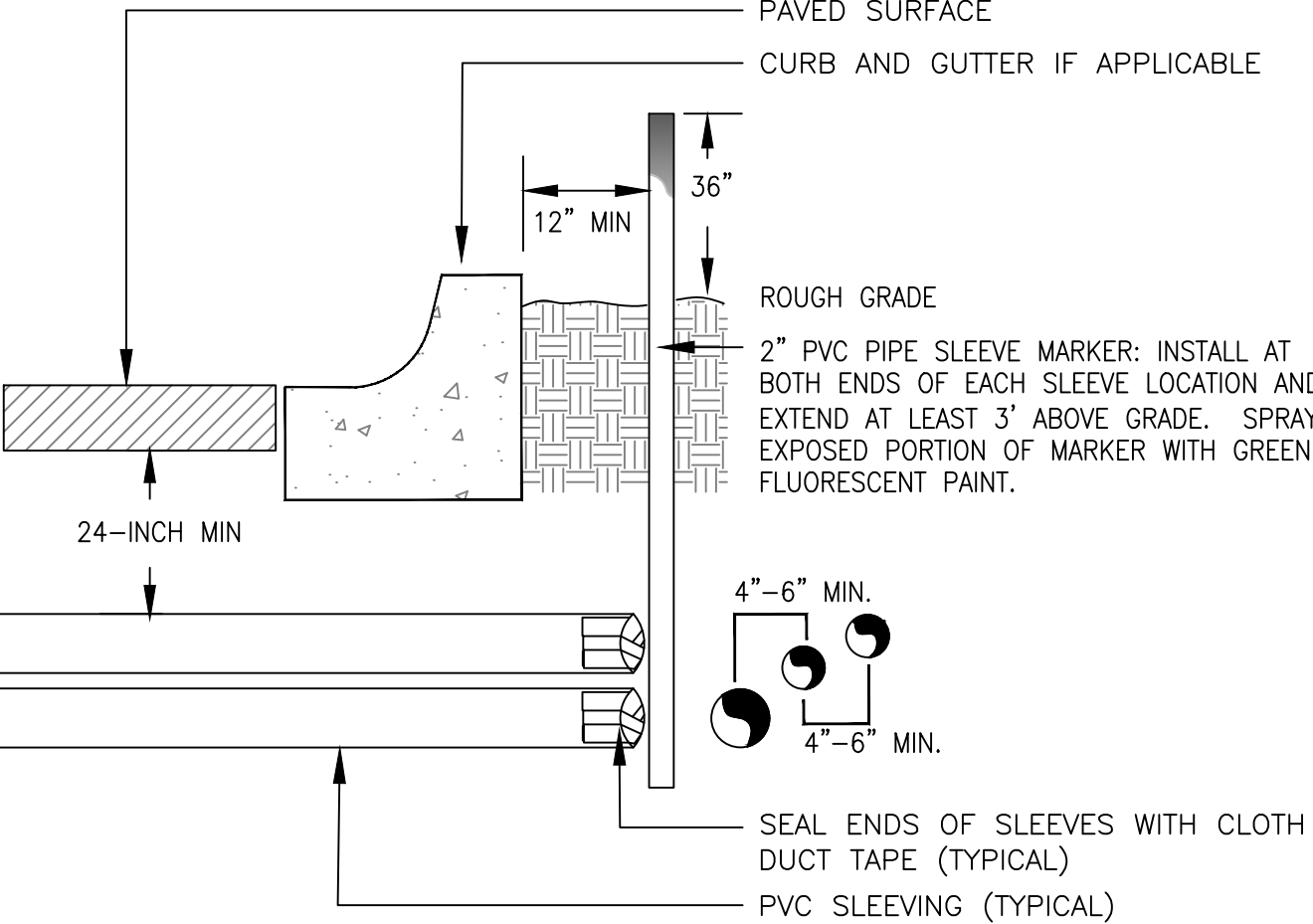
- NOTES:
1. SLEEVE ALL PIPE AND WIRE SEPARATELY.
 2. ALL PIPE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. "SNAKE" UNSLEEVED PLASTIC PIPE IN TRENCH. PROVIDE A MINIMUM OF 2" CLEARANCE TO SIDE OF TRENCH AND BETWEEN PIPES.
 3. ALL 120-V WIRING SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS. PROVIDE LOOSE 20" LOOP OF 2-WIRE CABLE AT ALL CHANGES OF DIRECTION OVER 30 DEGREES.

16 TYPICAL TRENCHING DETAIL



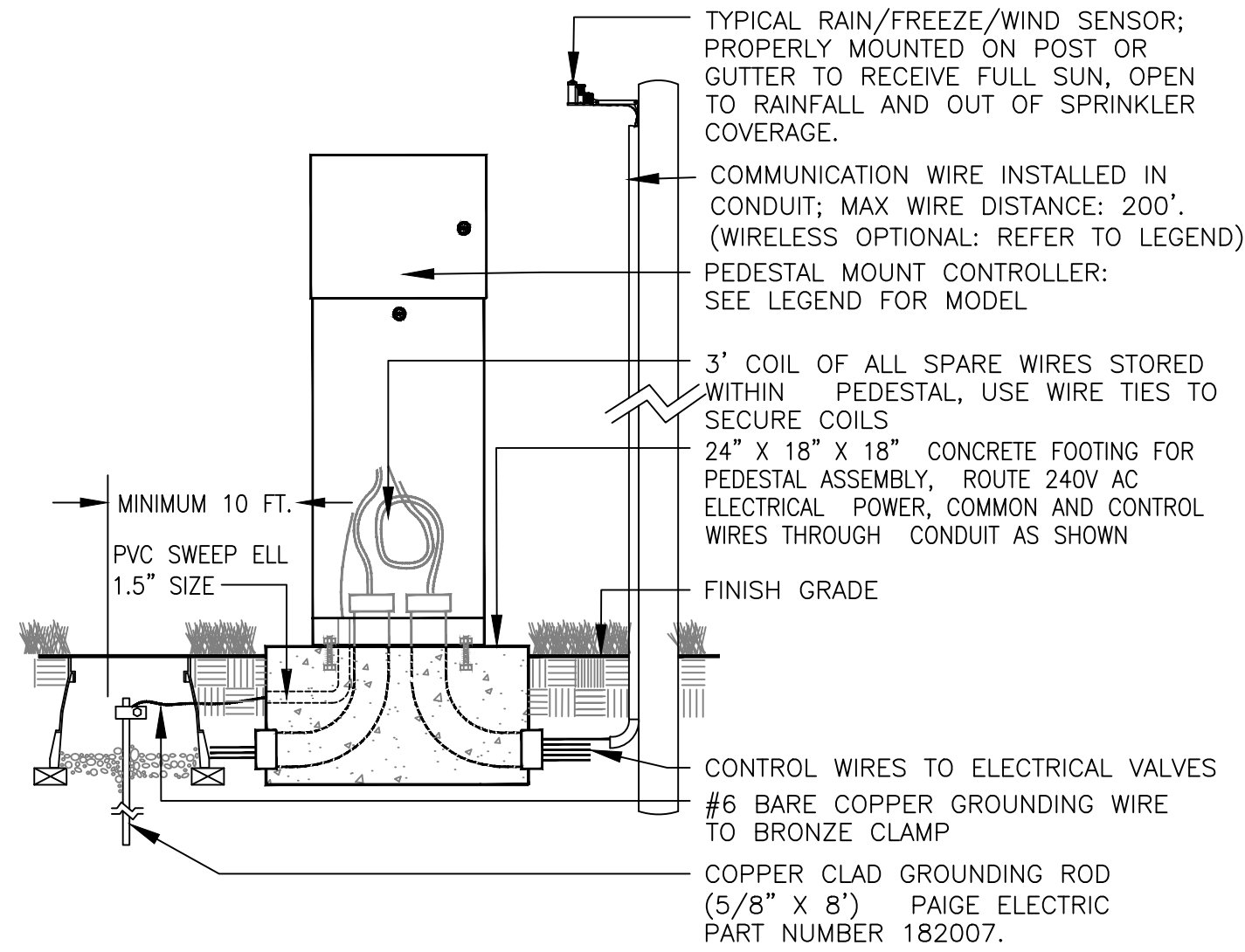
- NOTES:
1. INSTALL GROUNDING ROD OR PLATE BASED ON SITE CONDITIONS, DO NOT INSTALL BOTH.
 2. DO NOT INSTALL ANY OTHER WIRE OR CABLES INSIDE THE SPHERE OF INFLUENCE.
 3. INSTALL GROUNDING PLATE AT A MINIMUM OF 30-INCHES BELOW GRADE OR BELOW FROST-LINE, WHICHEVER IS DEEPER.
 4. TYPICAL INSTALLATION SHOWN FOR AN IRRIGATION CONTROLLER CAPACITY OF 64 STATIONS OR LESS, INSTALL AN ADDITIONAL GROUNDING ROD/PLATE PER 64 STATIONS.

20 TYPICAL IRRIGATION CONTROLLER GROUNDING ROD OR PLATE INSTALLATION



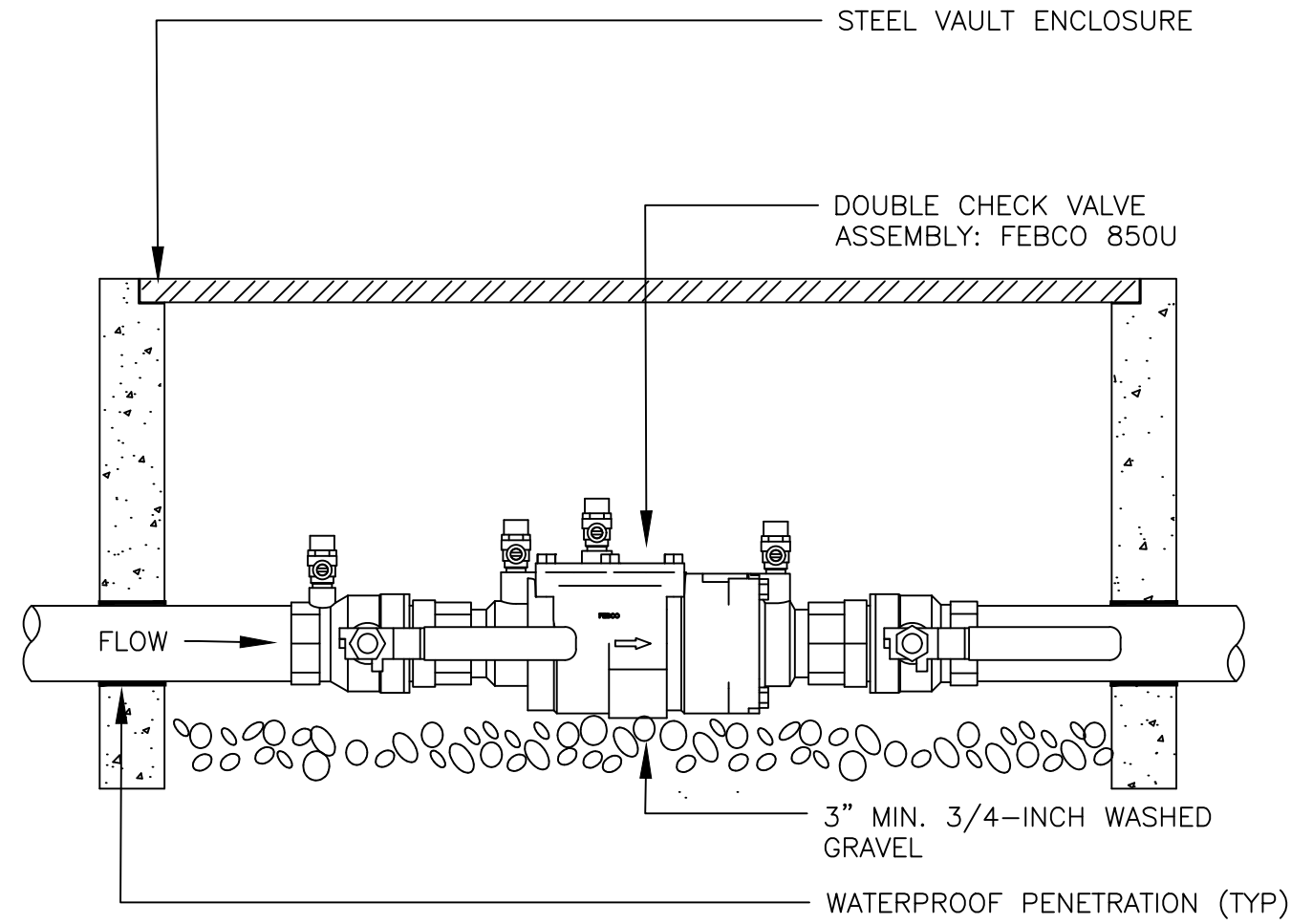
- NOTE:
- 1) ALL SLEEVING TO BE CLASS 200 BE PVC, SIZED AS NOTED.
 - 2) INSTALL SLEEVES IN SIDE-BY-SIDE CONFIGURATION WHERE MULTIPLE SLEEVES ARE TO BE INSTALLED. SPACE SLEEVES 4" TO 6" APART. DO NOT STACK SLEEVES VERTICALLY.

17 TYPICAL SLEEVING DETAIL



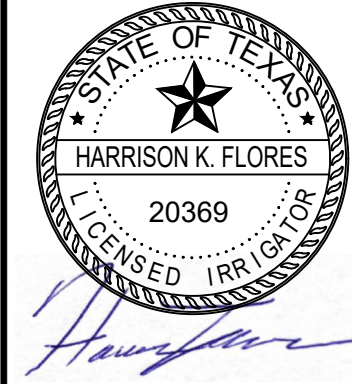
- NOTES:
1. INSTALL RAIN SENSOR ON TREATED 4X4 POST IF CONTROLLER IS IN TURF AREA. POST TO BE MOUNTED IN SHRUB BED TO AVOID BEING IRRIGATED BY OVERHEAD SPRINKLERS.

18 PEDESTAL MOUNTED CONTROLLER ASSEMBLY



- NOTES:
1. INSTALL BACKFLOW DEVICE IN ACCORDANCE WITH ALL STATE AND LOCAL CODE REQUIREMENTS.
 3. ALL HINGED CONNECTION LOCATIONS AND HARDWARE TO BE TAMPER PROOF.
 4. ALL WELD JOINTS SHALL BE CONTINUOUS AND GROUND SMOOTH.

19 DOUBLE CHECK VALVE ASSEMBLY



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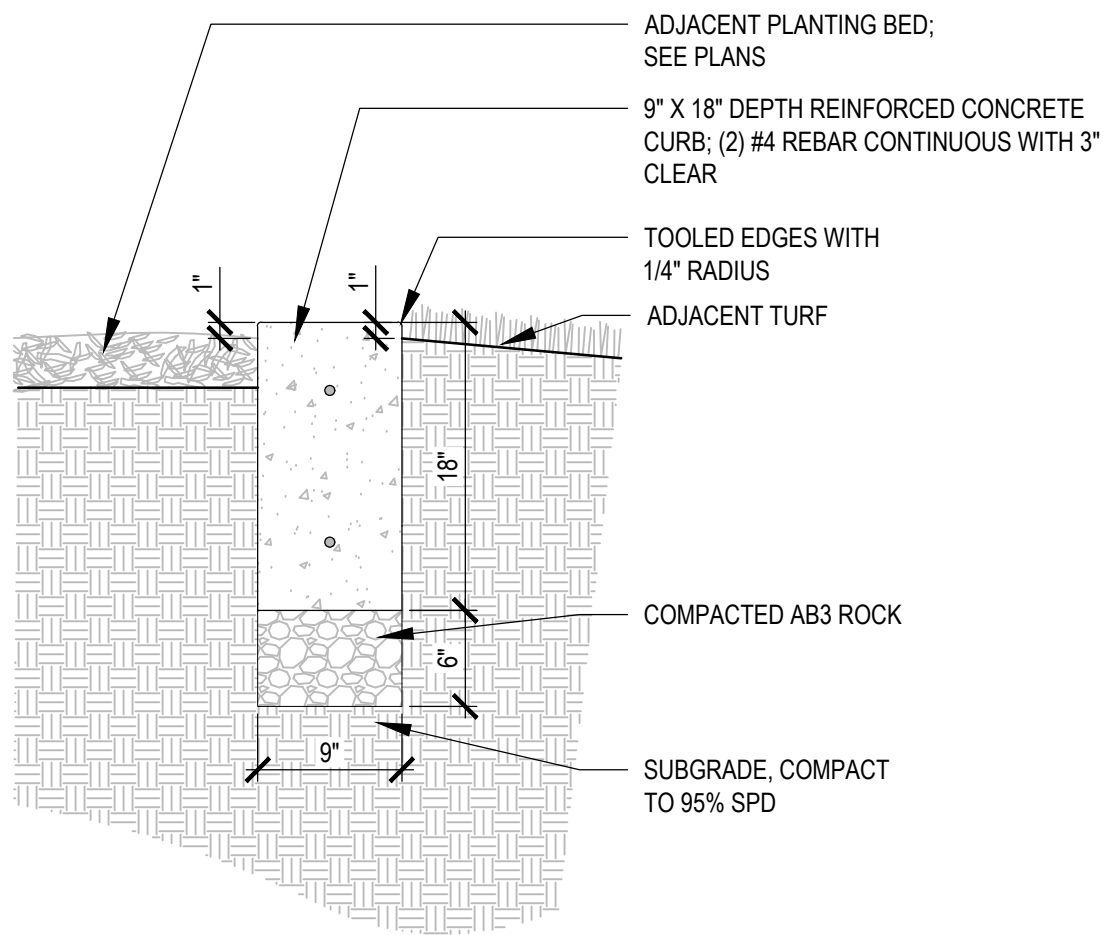
W. 76 COUNTRY BLVD STREETSCAPE
SEGMENTS 1 & 2
CITY OF BRANSON, MISSOURI

IRRIGATION DETAILS

DATE: 10/17/2025

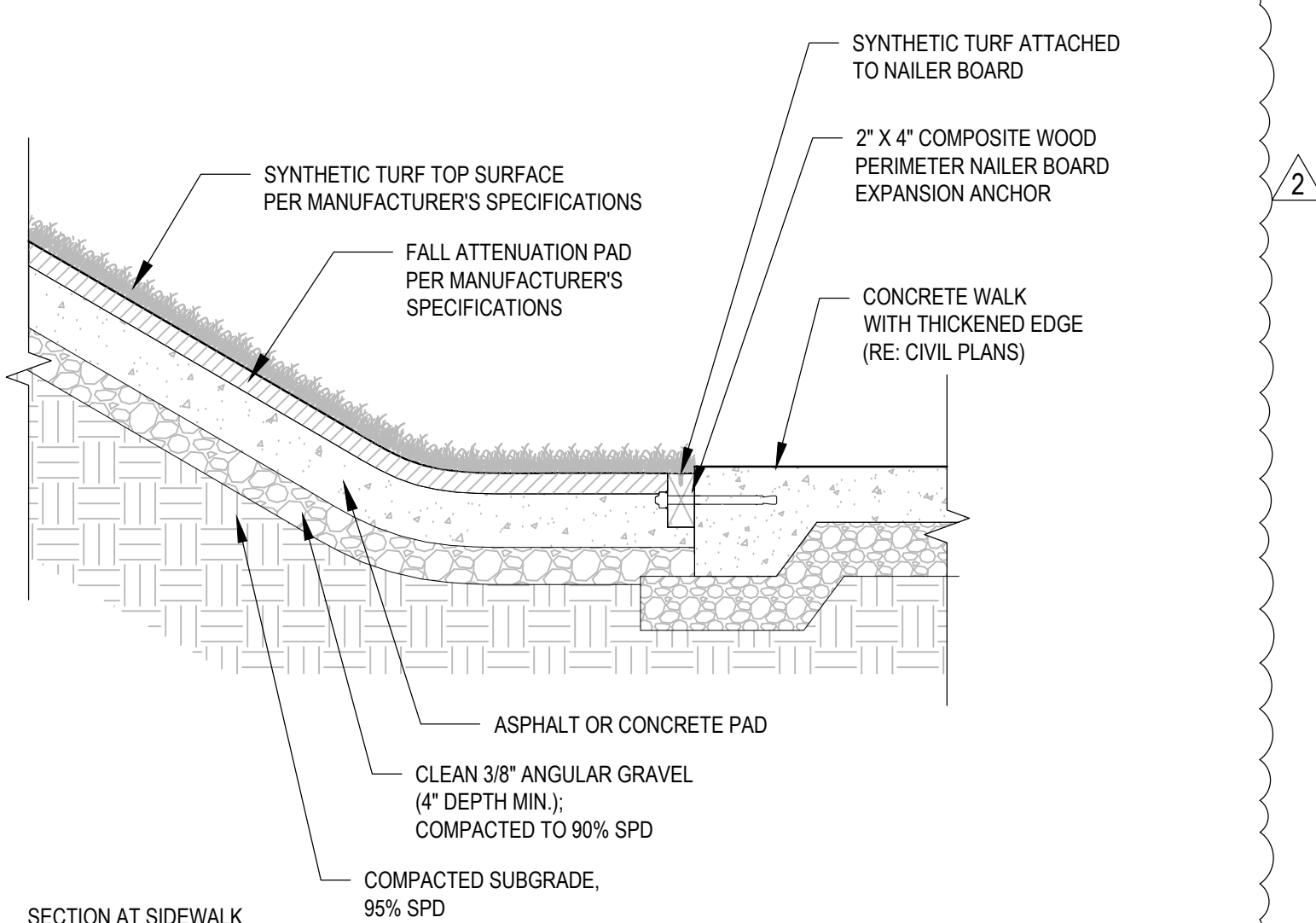
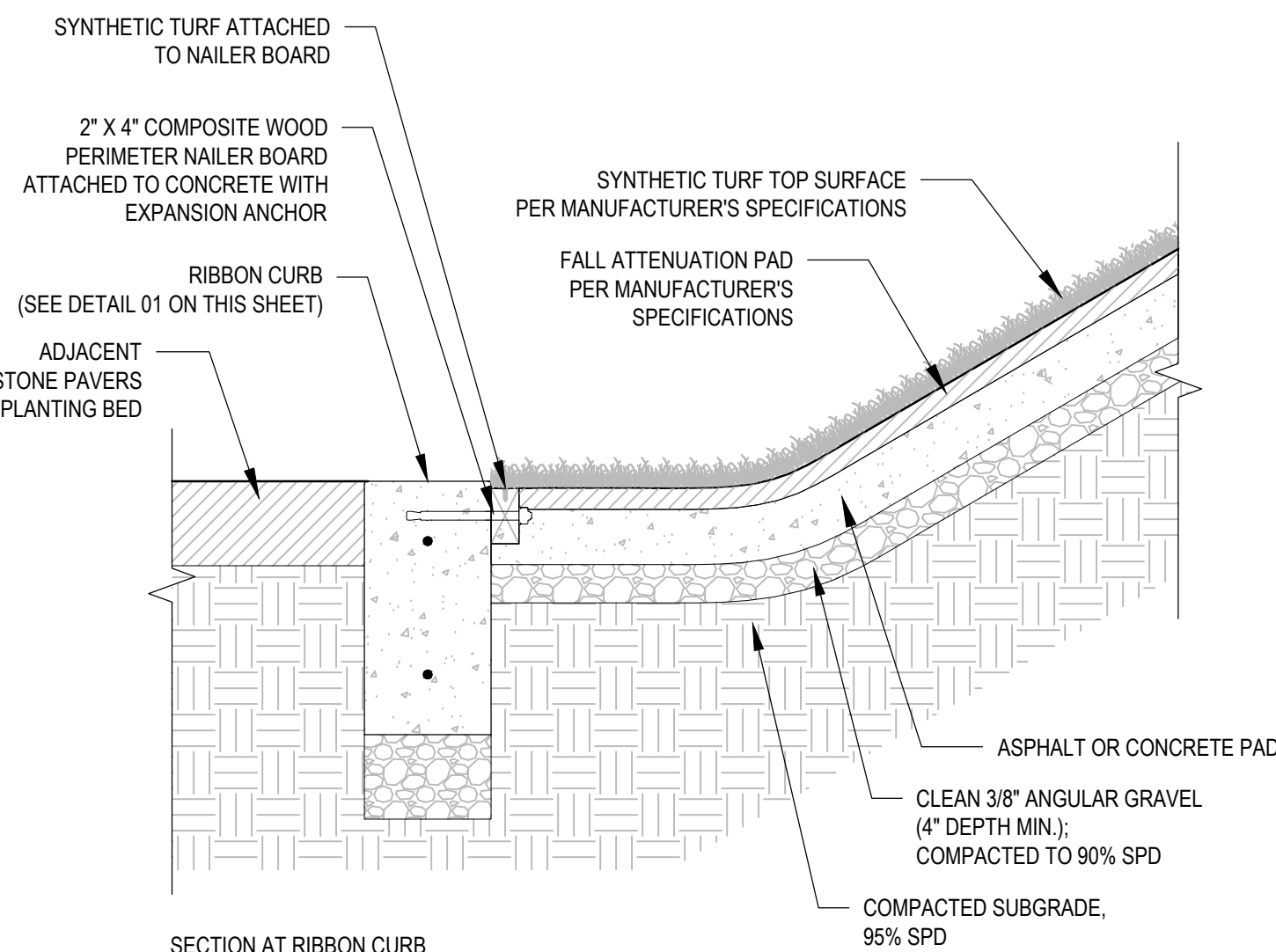
JOB NUMBER: 4515

SHEET
IR 14 OF 14



RIBBON CURB 01
N.T.S.

- NOTES:**
1. INFORMATION SHOWN FOR BASIS OF DESIGN IS FOR BID PURPOSES ONLY.
 2. SYNTHETIC TURF MOUNDS TO BE DESIGNED AND CONSTRUCTED BY SYNTHETIC TURF SURFACE INSTALLER. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION AND/OR INSTALLATION.
 3. SYNTHETIC TURF SURFACING MUST BE INSTALLED AND SEAMED WITH ADJACENT PIECES RUNNING IN THE SAME DIRECTION; SEAMS SHOULD BE GLUED WITH SUITABLE SEAMING GLUE AND SEAMING CLOTH, NOT ADHESIVE TAPE.
 4. SYNTHETIC TURF SURFACING SHALL BE INSTALLED IN COMPLETE ACCORDANCE WITH SPECIFICATIONS BY FACTORY AUTHORIZED INSTALLERS.



SYNTHETIC TURF WITH PLAY MOUND 02
N.T.S.

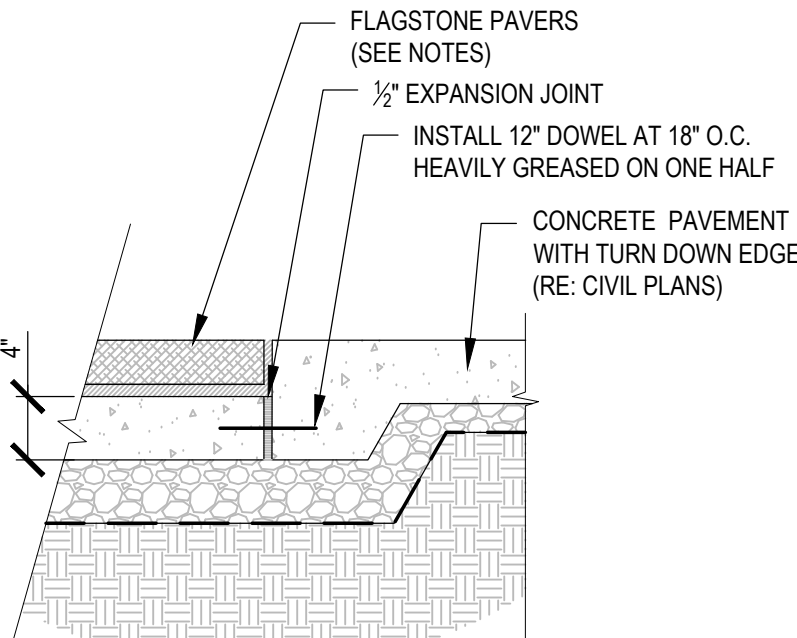
NOTES:

1. 2" THICKNESS 'ARKANSAS CHERRY' FLAGSTONE PAVERS, AS PROVIDED BY:

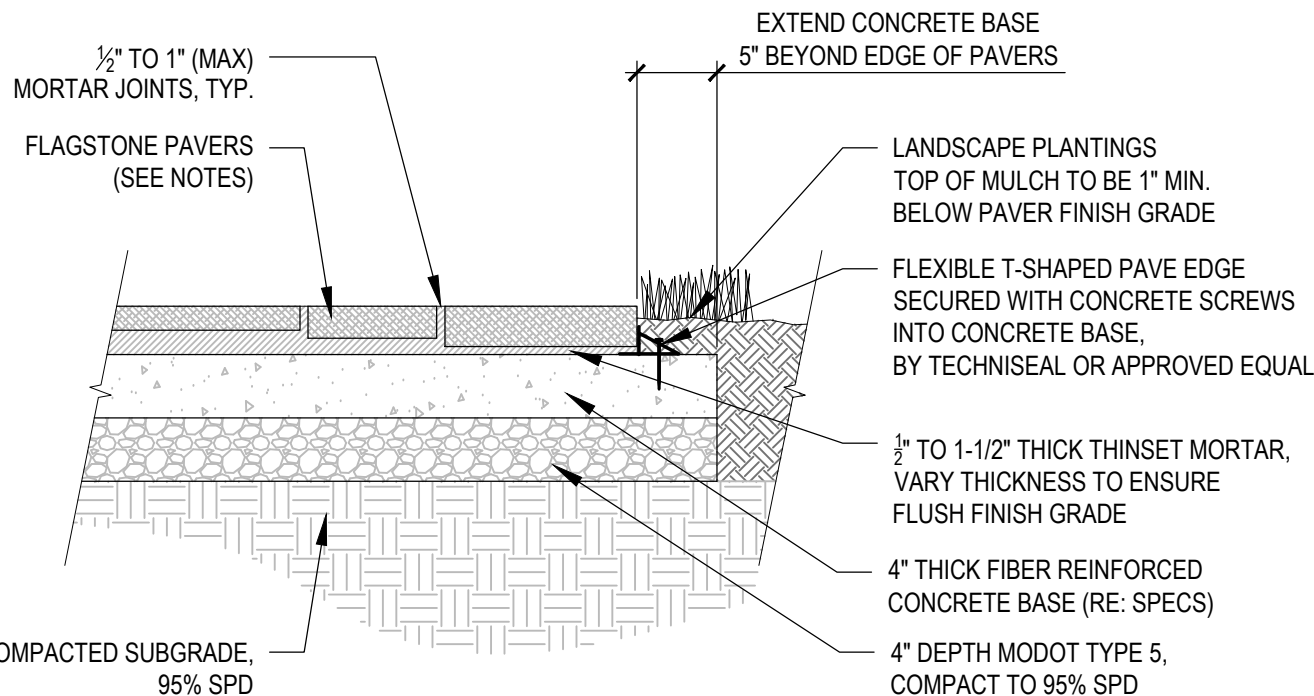
SITEONE STONE CENTER
2515 SEMCO DR
BELTON, MO 64012
PHONE: (816) 318-1203
(OR APPROVED EQUAL)

- PAVERS SHALL CONSIST OF IRREGULAR FLAGSTONE MATERIAL RANGING IN SIZE FROM 18" TO 36" IN LENGTH AND WIDTH.
2. FLAGSTONE PAVING JOINTS TO BE 1/2" TO 1" (MAX), MORTAR COLOR TO MATCH ADJACENT STONE.
3. CONTRACTOR SHALL PROVIDE A 8' X 8' MOCK-UP AT THE PLANNED LOCATION OF FLAGSTONE PAVING FOR REVIEW AND APPROVAL BY OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.

ARKANSAS CHERRY FLAGSTONE
DESIGN INTENT EXAMPLE



PAVERS AT CONCRETE PAVEMENT



PAVERS AT PLANTING BED EDGE

FLAGSTONE PAVERS 03
N.T.S.

NOTES:

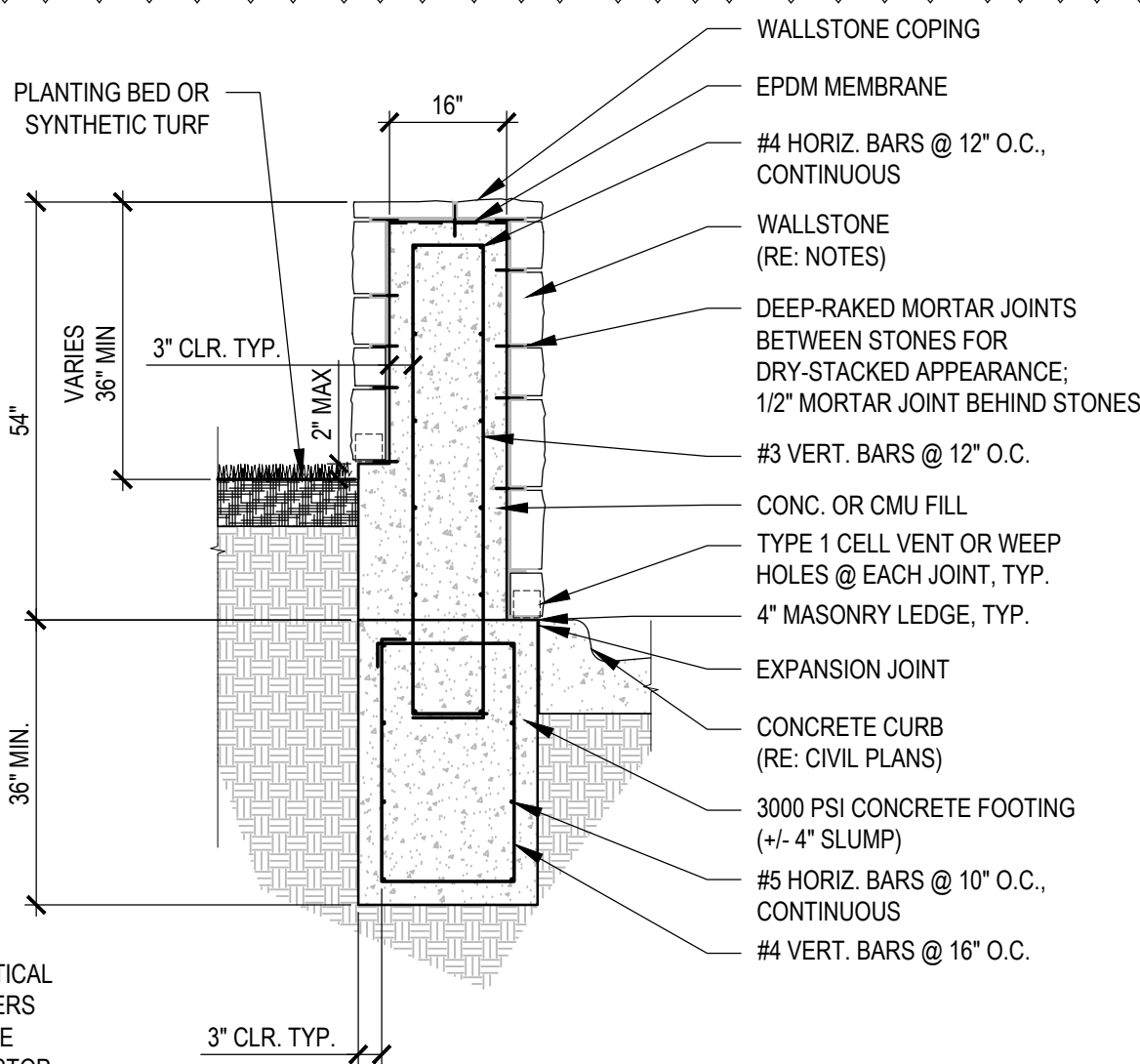
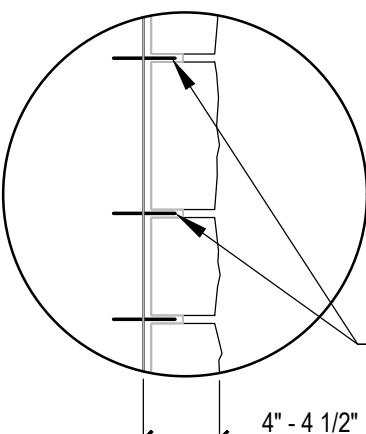
1. WALLSTONE SHALL BE 4" (BED DEPTH) IRREGULAR SHAPED CHESTNUT/OZARK CUT LIMESTONE, AS SUPPLIED BY: PALISADES STONE
1350 E COMMERCIAL STREET
SPRINGFIELD, MO 65803
P: 417-831-5048
(OR APPROVED EQUIVALENT)
2. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS AND STONE SAMPLES FOR REVIEW AND APPROVAL BY THE OWNER'S REPRESENTATIVE.
3. SET STONE WITH DOVETAIL SLOTS AND ANCHORS AT 16" CENTERS EACH WAY. STONE SHALL HAVE A DRY-STACKED APPEARANCE. SEE SPECIFICATIONS FOR ANCHORED STONE MASONRY VENEER AND CONCRETE CONSTRUCTION. ALL ITEMS TO BE SUBSIDIARY TO 'STONE WALL.'
4. ALL REINFORCING SHALL BE 3" CLEAR UNLESS OTHERWISE NOTED.
5. USE LARGER STONES FOR COPING, APPROXIMATELY 10" TO 12" WIDE.
6. SEE CIVIL PLANS FOR ELEVATIONS BEHIND AND IN FRONT OF WALLS.

STONE WALL
BASIS OF DESIGN INTENT EXAMPLE



NOTES:

APPLY DAMP PROOFING TO ALL CIP CONCRETE BELOW FINISHED GRADE. BEGIN DAMP PROOFING 3' BELOW FINISHED GRADE & EXTEND TO TOP OF FOOTING.



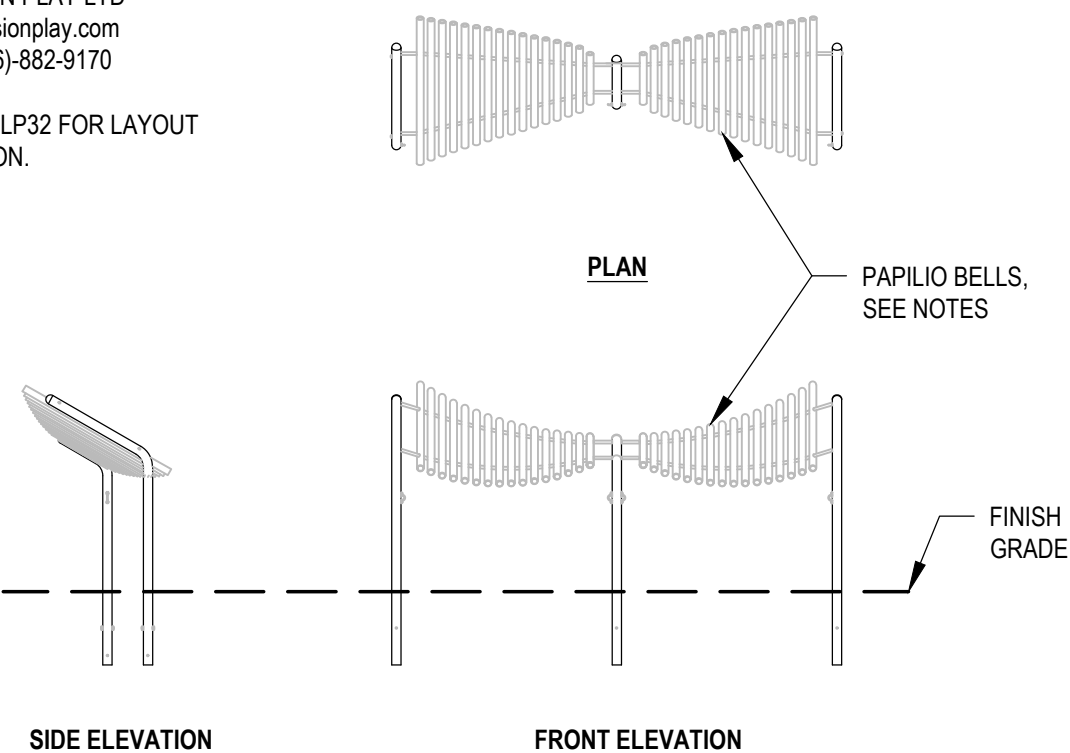
STONE WALL 04
N.T.S.

NOTES:

1. MODEL: PAPILO BELLS (PP-PAPL-GF)
GROUND MOUNTED PER MANUFACTURER'S RECOMMENDATIONS

AS MANUFACTURED BY:
PERCUSSION PLAY LTD
www.percussionplay.com
PHONE: (866)-882-9170

2. SEE SHEET LP32 FOR LAYOUT INFORMATION.



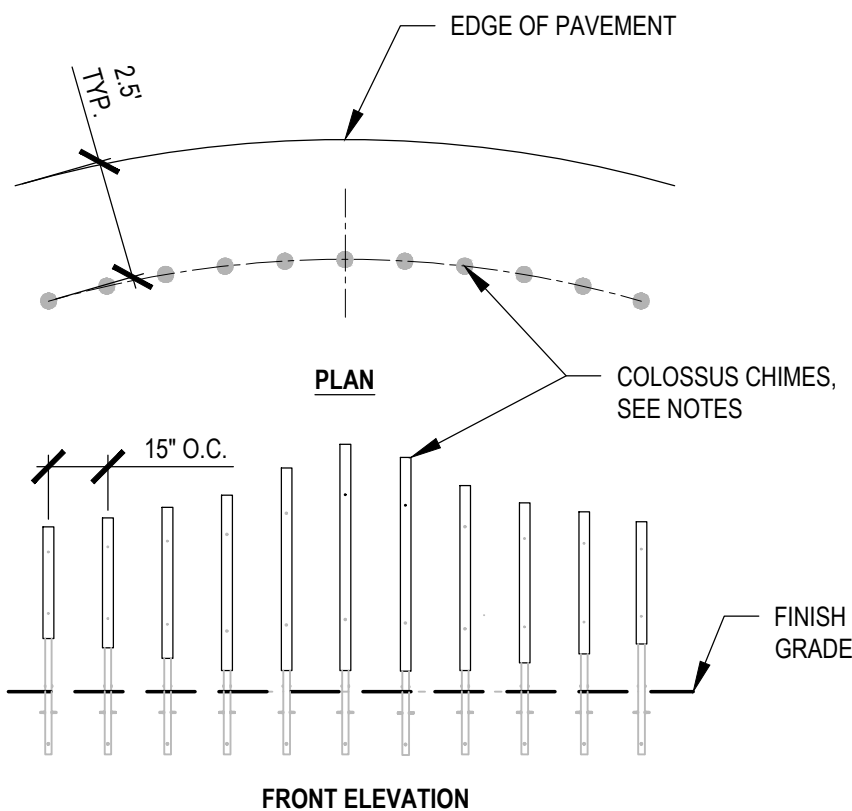
PAPILO BELLS 05
N.T.S.

NOTES:

1. MODEL: COLOSSUS CHIMES (PP-COLO-ST-11-GF)
GROUND MOUNTED PER MANUFACTURER'S RECOMMENDATIONS

AS MANUFACTURED BY:
PERCUSSION PLAY LTD
www.percussionplay.com
PHONE: (866)-882-9170

2. SEE SHEET LP32 FOR LAYOUT INFORMATION.



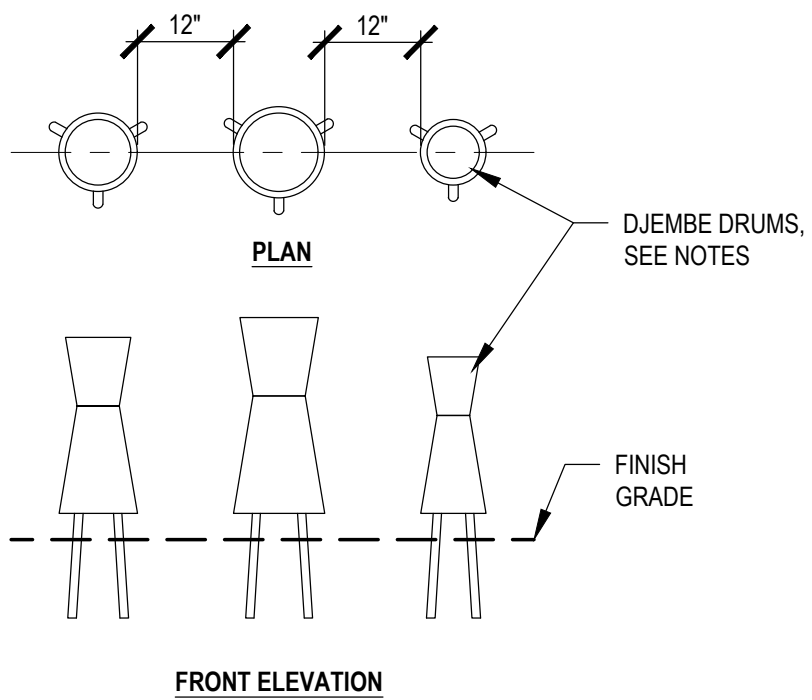
COLOSSUS CHIMES 06
1/4" = 1'-0"

NOTES:

1. MODEL: DJEMBE DRUMS (PP-DJEM-ST-03-GF)
GROUND MOUNTED PER MANUFACTURER'S RECOMMENDATIONS

AS MANUFACTURED BY:
PERCUSSION PLAY LTD
www.percussionplay.com
PHONE: (866)-882-9170

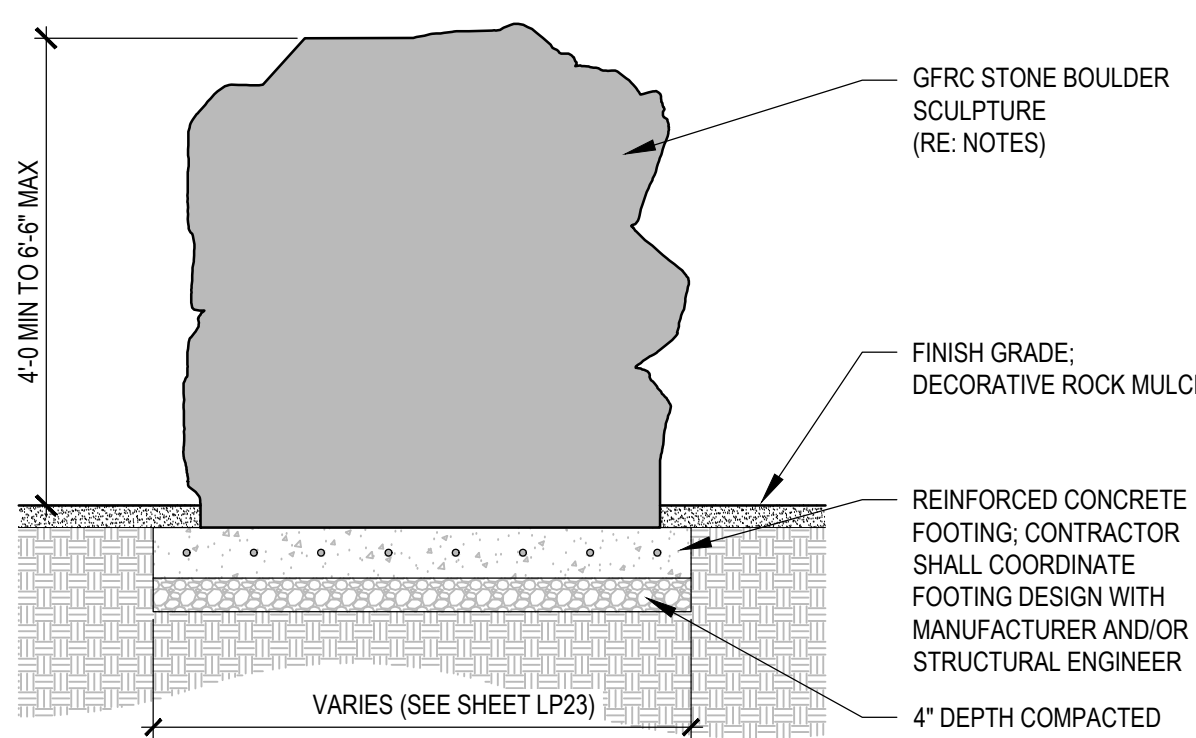
2. SEE SHEET LP32 FOR LAYOUT INFORMATION.



DJEMBE DRUMS 07
N.T.S.

NOTES:

1. DESIGN OF ROCK STRUCTURE AND CONCRETE FOOTING SHALL BE BY CONTRACTOR. SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL BY OWNER'S REPRESENTATIVE. SUBMITTAL SHALL INCLUDE STRUCTURAL DRAWINGS SEALED BY A STATE OF MISSOURI LICENSED ENGINEER.
2. CONTRACTOR SHALL PROVIDE MOCK-UP FOR OWNER ACCEPTANCE PRIOR TO COMMENCING WORK.
3. REFER TO SPECIFICATION 0337.15 'ARTIFICIAL ROCK WORK' FOR OTHER REQUIREMENTS.



GFRC STONE BOULDER SCULPTURE 08
N.T.S.

Date	7/9/2026
Revision/Issue	
Addendum #2	
No.	A
IF A SEAL IS PRESENT ON THIS SHEET, IT HAS BEEN ELECTRONICALLY SEALED AND DATED	
CRAIG A. RHODES MISSOURI L.A. NO. 1999140495	

414 Oak Street, Suite 101
Kansas City, Missouri
64106
P 816-756-5890

vireo

Missouri State Certificate of Authority Numbers:
Landscape Architecture: 2002023826

76 DESIGN COLLECTIVE

W. 76 COUNTRY BLVD STREETSCAPE SEGMENTS 1 & 2 CITY OF BRANSON, MISSOURI	SITE DETAILS	
	DATE: 6/30/2026	
	JOB NUMBER: 4515	
SHEET LP34 OF 39		

SECTION 044313.13 – ANCHORED STONE MASONRY VENEER

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Stone masonry anchored to concrete or unit masonry backup.

1.2 ACTION SUBMITTALS

- A. Product Data: For each variety of stone, stone accessory, and manufactured product.
- B. Samples for Verification:
 - 1. For each stone type indicated. Include at least five Samples in each set and show the full range of color and other visual characteristics in completed Work.
 - 2. For each color of mortar required.

1.3 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. List of Materials Used in Constructing Mock-ups: List generic product names together with manufacturers, manufacturers' product names, supply sources, and other information as required to identify materials used. Include mix proportions for mortar and source of aggregates.
 - 1. Neither receipt of list nor approval of mock-ups constitutes approval of deviations from the Contract Documents contained in mock-ups unless Owner's Representative approves such deviations in writing.
- C. Material Test Reports:
 - 1. Stone Test Reports: For each stone variety proposed for use on Project, by a qualified testing agency, indicating compliance with required physical properties, other than abrasion resistance, according to referenced ASTM standards. Base reports on testing done within previous three years.
 - 2. Sealant Compatibility and Adhesion Test Report: From sealant manufacturer indicating that sealants will not stain or damage stone. Include interpretation of test results and recommendations for primers and substrate preparation needed for adhesion

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer who employs experienced stonemasons and stone fitters.

- B. Mock-ups: Build stone wall mock-up, 72 inches long by 54 inches high, to demonstrate aesthetic effects and to set quality standards for materials and execution for review and approval by Owner's Representative.
 - 1. Approval of mock-ups does not constitute approval of deviations from the Contract Documents contained in mock-ups unless Owner's Representative specifically approves such deviations in writing.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- B. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- C. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.6 FIELD CONDITIONS

- A. Protection of Stone Masonry: During construction, cover tops of walls with waterproof sheeting at end of each day's work. Cover partially completed stone masonry when construction is not in progress.
- B. Stain Prevention: Immediately remove mortar and soil to prevent them from staining stone masonry face.
 - 1. Protect base of walls from rain-splashed mud and mortar splatter using coverings spread on the ground and over the wall surface.
 - 2. Protect sills, ledges, and projections from mortar droppings.
- C. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace stone masonry damaged by frost or freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
 - 1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F (4 deg C) and above and will remain so until masonry has dried, but not less than seven days after completing cleaning.
- D. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

1.7 COORDINATION

- A. Advise installers of adjacent Work about specific requirements for placement of reinforcement, veneer anchors and similar items to be built into stone masonry.
- B. Coordinate locations of dovetail slots installed in concrete that are to receive stone anchors.

PART 2 - PRODUCTS

2.1 LIMESTONE

- A. Material Standard: Comply with ASTM C 568.
 - 1. Classification: III High Density
- B. Description: Dolomitic limestone.
- C. Material: Subject to compliance with requirements, available stone varieties that may be incorporated into the Work include, but are not limited to the following:
 - 1. Basis of Design: Cut Limestone Veneer, Chestnut/Ozark Blend, as distributed by Palisade Stone (1350 E. Commercial St., Springfield, MO, 417-831-5084), or approved equal.

2.2 MORTAR MATERIALS

- A. Portland Cement: ASTM C150/C150M, Type I or Type II, except Type III may be used for cold-weather construction; natural color or white cement may be used as required to produce mortar color indicated.
 - 1. Low-Alkali Cement: Not more than 0.60 percent total alkali when tested according to ASTM C 114.
- B. Hydrated Lime: ASTM C 207, Type S.
- C. Masonry Cement: ASTM C91/C91M.
- D. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes and complying with ASTM C 979. Use only pigments with a record of satisfactory performance in stone masonry mortar.
- E. Aggregate: ASTM C144 and as follows:
 - 1. For pointing mortar, use aggregate graded with 100 percent passing No. 16 sieve.
 - 2. Colored Aggregates: Natural-colored sand or ground marble, granite, or other sound stone; of color necessary to produce required mortar color.
- F. Water: Potable.

2.3 VENEER ANCHORS

- A. Materials:
 - 1. Stainless-Steel Stone Anchors: ASTM A 580/A 580M, Type 316.

2.4 MISCELLANEOUS MASONRY ACCESSORIES

- A. Cementitious Damp-proofing for Limestone: Cementitious formulation recommended by ILI and nonstaining to stone, compatible with joint sealants, and noncorrosive to veneer anchors and attachments.
- B. Weep/Vent Products: Type 1 Cell Vent or weep holes, as indicated on drawings.

2.5 MASONRY CLEANERS

- A. Manufacturer's standard-strength cleaner designed for removing mortar and grout stains, efflorescence, and other new construction stains from stone masonry surfaces without discoloring or damaging masonry surfaces; expressly approved for intended use by cleaner manufacturer and stone producer.

2.6 FABRICATION

- A. General: Fabricate stone units in sizes and shapes required to comply with requirements indicated. For limestone, comply with recommendations in ILI's "Indiana Limestone Handbook."
- B. Cut, split, or select stone to produce pieces of thickness, size, and shape indicated, including details on Drawings and pattern specified in "Setting Stone Masonry" Article.
 - 1. Shape stone specified to be laid in three-course, random range ashlar pattern with split beds.
- C. Dress joints (bed and vertical) straight and at right angle to face unless otherwise indicated. Shape beds to fit supports.
- D. Thickness of Stone: Provide thickness indicated, but not less than the following:
 - 1. Thickness: 4 inches plus or minus 1/2 inch (13mm).
- E. Finish exposed stone faces and edges to comply with requirements indicated for finish and to match approved samples.
 - 1. Finish: Split-face.
 - 2. Finish for Copings: Split-face.
 - a. Finish exposed ends of copings same as front and back faces.

2.7 MORTAR MIXES

- A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water replant agents, antifreeze compounds, or other admixtures, unless otherwise indicated.
 - 1. Do not use calcium chloride.
 - 2. Use masonry cement or mortar cement mortar unless otherwise indicated.
 - 3. Mixing Pointing Mortar: Thoroughly mix cementitious and aggregate materials together before adding water. Then mix again, adding only enough water to produce a damp, unworkable mix that will retain its form when pressed into a ball. Maintain mortar in this dampened condition for one to two hours. Add remaining water in small portions until

mortar reaches required consistency. Use mortar within 30 minutes of final mixing; do not retemper or use partially hardened material.

- B. Mortar for Stone Masonry: Comply with ASTM C 270, Proportion Specification.
 - 1. Mortar for Setting Stone: Type S.
 - 2. Mortar for Pointing Stone: Type N.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine surfaces indicated to receive stone masonry, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of stone masonry.
- B. Examine substrate to verify that dovetail slots, inserts, reinforcement, veneer anchors, and other items installed in substrates and required for or extending into stone masonry are correctly installed.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Coat concrete and unit masonry backup with asphalt damp-proofing.
- B. Clean dirty or stained stone surfaces by removing soil, stains, and foreign materials before setting. Clean stone by thoroughly scrubbing with fiber brushes and then drenching with clear water. Use only mild cleaning compounds that contain no caustic or harsh materials or abrasives.

3.3 INSTALLATION OF STONE MASONRY

- A. Perform necessary field cutting and trimming as stone is set.
 - 1. Use power saws to cut stone that is fabricated with saw-cut surfaces.
 - 2. Use hammer and chisel to split stone that is fabricated with split surfaces.
 - 3. Pitch face at field-split edges as needed to match stones that are not field split.
- B. Sort stone before it is placed in wall to remove stone that does not comply with requirements relating to aesthetic effects, physical properties, or fabrication, or that is otherwise unsuitable for intended use.
- C. Arrange stones in broken-range ashlar pattern with uniform course heights, random lengths, and uniform joint widths.
- D. Arrange stones with color and size variations uniformly dispersed for an evenly blended appearance.

- E. Install supports, fasteners, and other attachments indicated or necessary to secure stone masonry in place.
- F. Maintain uniform joint widths except for variations due to different stone sizes and where minor variations are required to maintain bond alignment if any. Lay walls with joints not less than 1/4 inch at narrowest points or more than 3/4 inch at widest points.
- G. Provide sealant joints of widths and at locations indicated.
 - 1. Keep sealant joints free of mortar and other rigid materials.
- H. Coat limestone with cementitious damp-proofing as follows:
 - 1. Stone at Grade: Beds, joints, and back surfaces to at least 12 inches above finish-grade elevations.
 - 2. Stone Extending below Grade: None.

3.5 CONSTRUCTION TOLERANCES

- A. Variation from Plumb: For vertical lines and surfaces, do not exceed 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2 inch in 40 feet or more. For external corners, expansion joints, control joints, and other conspicuous lines, do not exceed 1/4 inch in 20 feet or 1/2 inch in 40 feet or more.
- B. Variation from Level: For bed joints and other conspicuous lines, do not exceed 1/4 inch in 20 feet or 1/2 inch in 40 feet or more.
- C. Measure variation from level, plumb, and position shown in plan as a variation of the average plane of each stone face from level, plumb, or dimensioned plan.

3.6 INSTALLATION OF ANCHORED STONE MASONRY

- A. Anchor stone masonry to concrete with stainless steel veneer anchors unless otherwise indicated. Secure anchors by inserting dovetailed ends into dovetail slots in concrete.
- B. Embed veneer anchors in mortar joints of stone masonry at least halfway, but not less than 1-1/2 inches, through stone masonry and with at least a 5/8-inch cover on exterior face.
- C. Space anchors not more than 16 inches o.c. vertically and 16 inches o.c. horizontally, with not less than one anchor per 2.67 sq. ft. of wall area. Install additional anchors within 12 inches of openings, sealant joints, and perimeter at intervals not exceeding 12 inches.
- D. Set stone in full bed of mortar with full head joints unless otherwise indicated. Build anchors into mortar joints as stone is set.
- E. Fill space between back of stone masonry with mortar as stone is set.
- F. Rake out joints for pointing with mortar to depth of not less than 3/4 inch before setting mortar has hardened. Rake joints to uniform depths with square bottoms and clean sides.

3.7 POINTING

- A. Prepare stone-joint surfaces for pointing with mortar by removing dust and mortar particles. Where setting mortar was removed to depths greater than surrounding areas, apply pointing mortar in layers not more than 3/8 inch deep until a uniform depth is formed.
- B. Point stone joints by placing and compacting pointing mortar in layers of not more than 3/8 inch deep. Compact each layer thoroughly and allow it to become thumbprint hard before applying next layer.
- C. Tool joints, when pointing mortar is thumbprint hard, with a smooth jointing tool to produce the following joint profile:
 - 1. Joint Profile: Deep-raked for dry-stack appearance.

3.8 ADJUSTING AND CLEANING

- A. Remove and replace stone masonry of the following description:
 - 1. Broken chipped, stained, or otherwise damaged stone. Stone may be repaired if methods and results are approved by Owner's Representative.
 - 2. Defective joints.
 - 3. Stone masonry not matching approved samples and mockups.
 - 4. Stone masonry not complying with other requirements indicated.
- B. Replace in a manner that results in stone masonry matching approved samples and mockups, complying with other requirements, and showing no evidence of replacement.
- C. In-Progress Cleaning: Clean stone masonry as work progresses. Remove mortar fins and smears before tooling joints.
- D. Final Cleaning: After mortar is thoroughly set and cured, clean stone masonry as follows:
 - 1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
 - 2. Test cleaning methods on mock-up; leave one-half of panel uncleaned for comparison purposes. Obtain Owner's Representative approval of sample cleaning before cleaning stone masonry.
 - 3. Protect adjacent stone and nonmasonry surfaces from contact with cleaner by covering them with liquid strippable masking agent, polyethylene film, or waterproof masking tape.
 - 4. Wet wall surfaces with water before applying cleaner; remove cleaner promptly by rinsing thoroughly with clear water.
 - 5. Clean stone masonry by bucket and brush hand-cleaning method described in BIA Technical Note No. 20, Revised II, using job-mixed detergent solution.
 - 6. Clean stone masonry with cleaner according to manufacturer's written instructions.
 - 7. Clean limestone masonry to comply with recommendations in ILI's "Indiana Limestone Handbook."

END OF SECTION 044313.13

SECTION 323119 – PEDESTRIAN GUARDRAIL AND BARRIER SCREENS

1.1 SUMMARY

A. Section Includes:

1. Pedestrian Guardrail.
2. Barrier Screens.

B. Related Requirements:

1. City of Branson Technical Specifications and Job Special Provisions for cast-in-place concrete.

1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at project site.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

- B. Shop Drawings: For pedestrian guardrail and barrier screens.

1. Include plans, elevations, sections, post spacing, and mounting attachment details.

- C. Samples: For each fence material and for each color specified.

1. Provide Samples for each pattern, material, and color.

1.4 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Fabricator of products.

- B. Mock-ups: Build mock-ups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation.

1. Include 8-foot length, complying with requirements.
2. Subject to compliance with requirements, approved mock-ups may become part of the completed Work if undisturbed at time of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Wind Loading:

1. Pedestrian Guardrail Height: 42 inches, as indicated on drawings.
2. Barrier Screen Height: 51 inches, as indicated on drawings.
3. Wind Exposure Category: B
4. Design Wind Speed: 120 mph (193 kph) or higher.
5. Design Wind Pressure: 15.98 psf or higher.

2.2 PEDESTRIAN GUARDRAIL AND BARRIER SCREEN

- A. Posts: Square steel tubing, 4 by 4 inches, 3/16-inch wall thickness, as indicated on drawings.
- B. Post Caps: 4" square steel weld-on post cap.
- C. Framing: As recommended by fence manufacturer.
- D. Infill Panel: Perforated or Laser Cut aluminum sheet, as indicated on drawings.
- E. Fasteners: Manufacturer's standard, corrosion-resistant, color-coated fasteners matching fence components.
- F. Fabrication: Assemble pedestrian guardrail and barrier screens into sections by welding or fastening panels to framing.
 1. Fabricate sections with clips welded to frame for field fastening to posts.
 2. Drill posts and clips for fasteners before finishing to maximum extent possible.
- G. Finish exposed welds to comply with NOMMA Guideline 1, Finish #2 - completely sanded joint, some undercutting and pinholes okay.
- H. Finish and Color: Powdercoated, Rust color, as indicated on drawings.

2.3 ALUMINUM

- A. Aluminum, General: Provide alloys and tempers with not less than the strength and durability properties of alloy and temper designated in paragraphs below for each aluminum form required.
- B. Extrusions: ASTM B221 (ASTM B221M), Alloy 6063-T5.
- C. Tubing: ASTM B429/B429M, Alloy 6063-T6.
- D. Plate and Sheet: ASTM B209 (ASTM B209M), Alloy 6061-T6.
- E. Die and Hand Forgings: ASTM B247 (ASTM B247M), Alloy 6061-T6.

- F. Castings: ASTM B26/B26M, Alloy A356.0-T6.

2.4 STEEL

- A. Plates, Shapes, and Bars: ASTM A36/A36M.
- B. Tubing: ASTM A500/A500M, cold-formed steel tubing.

2.5 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
 - 1. For aluminum, provide type and alloy as recommended by producer of metal to be welded and as required for strength and compatibility in fabricated items.
- B. Concrete: Normal-weight, air-entrained, ready-mix concrete complying with requirements in Job Special Provisions and City of Branson Technical Specifications with a minimum 28-day compressive strength of 3000 psi (20 MPa), 3-inch (75-mm) slump, and 1-inch (25-mm) maximum aggregate size or dry, packaged, normal-weight concrete mix complying with ASTM C387/C387M mixed with potable water according to manufacturer's written instructions.
- C. Nonshrink Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107/C1107M and specifically recommended by manufacturer for exterior applications.

2.6 ALUMINUM FINISHES

- A. Powdercoat Finish: AAMA 2603 except with a minimum dry film thickness of 2 mils (0.05 mm). Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.
 - 1. Color: As indicated on drawings and to match approved color sample.

2.7 STEEL FINISHES

- A. Surface Preparation: Clean surfaces according to SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning." After cleaning, apply a conversion coating compatible with the organic coating to be applied over it.
- B. Powdercoating: Immediately after cleaning, apply manufacturer's standard two-coat finish consisting of epoxy primer and TGIC polyester topcoat to a minimum total dry film thickness of not less than 8 mils (0.20 mm). Comply with coating manufacturer's written instructions.
 - 1. Color: As indicated on drawings and to match approved color sample.

2.8 METALLIC-COATED-STEEL FINISHES

- A. Surface Preparation: Clean surfaces of oil and other contaminants. Use cleaning methods that do not leave residue. After cleaning, apply a zinc-phosphate conversion coating compatible with the organic coating to be applied over it. Clean welds, mechanical connections, and abraded areas and apply galvanizing repair paint, complying with SSPC-Paint 20, to comply with ASTM A780/A780M.
- B. Powdercoating: Immediately after cleaning and pretreating, apply manufacturer's standard TGIC polyester powdercoated finish to a minimum dry film thickness of 2 mils (0.05 mm).
 - 1. Color: As indicated on drawings and to match approved color sample.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for pavement work, construction layout, and other conditions affecting performance of the Work.
- B. Do not begin installation before final grading is completed unless otherwise permitted by Owner's Representative.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Mark locations of pedestrian guardrail and barrier screen lines and terminal posts. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

3.3 INSTALLATION

- A. Install pedestrian guardrail and barrier screen according to manufacturer's written instructions.
- B. Post Excavation and Setting: Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or surface mounted brackets. Space posts uniformly as indicated on drawings.

END OF SECTION 323119