

SEWER AND WATER LINE IMPROVEMENTS

WESTON BEND STATE PARK

Weston, Missouri



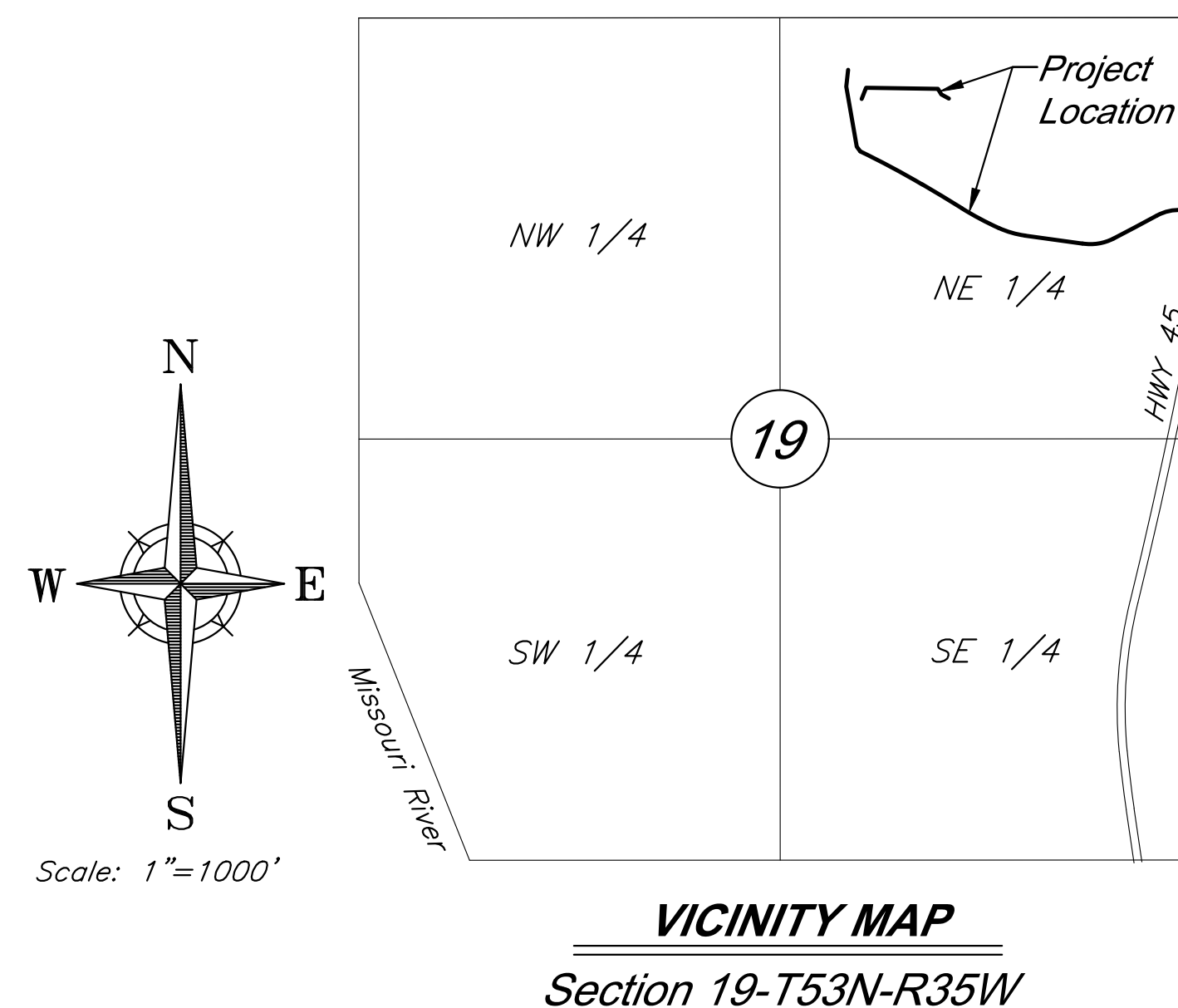
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C-101	Cover Sheet
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OWNER: STATE OF MISSOURI
 MICHAEL L. PARSON,
 GOVERNOR

DEPARTMENT OF
 NATURAL RESOURCES
 DIVISION OF STATE PARKS



DESIGNER: GBA

PREPARED & SUBMITTED BY:
 GEORGE BUTLER ASSOCIATES, INC.
 9801 RENNER BOULEVARD
 LENEXA, KANSAS 66219
 CONTACT: JAY HEALY P.E.
 EMAIL: JHEALY@GBATEAM.COM
 PHONE: 913-577-8440
 FAX: 913-577-8312



PROJECT MANAGEMENT: OFFICE OF ADMINISTRATION
 DIVISION OF FACILITIES MANAGEMENT,
 DESIGN AND CONSTRUCTION

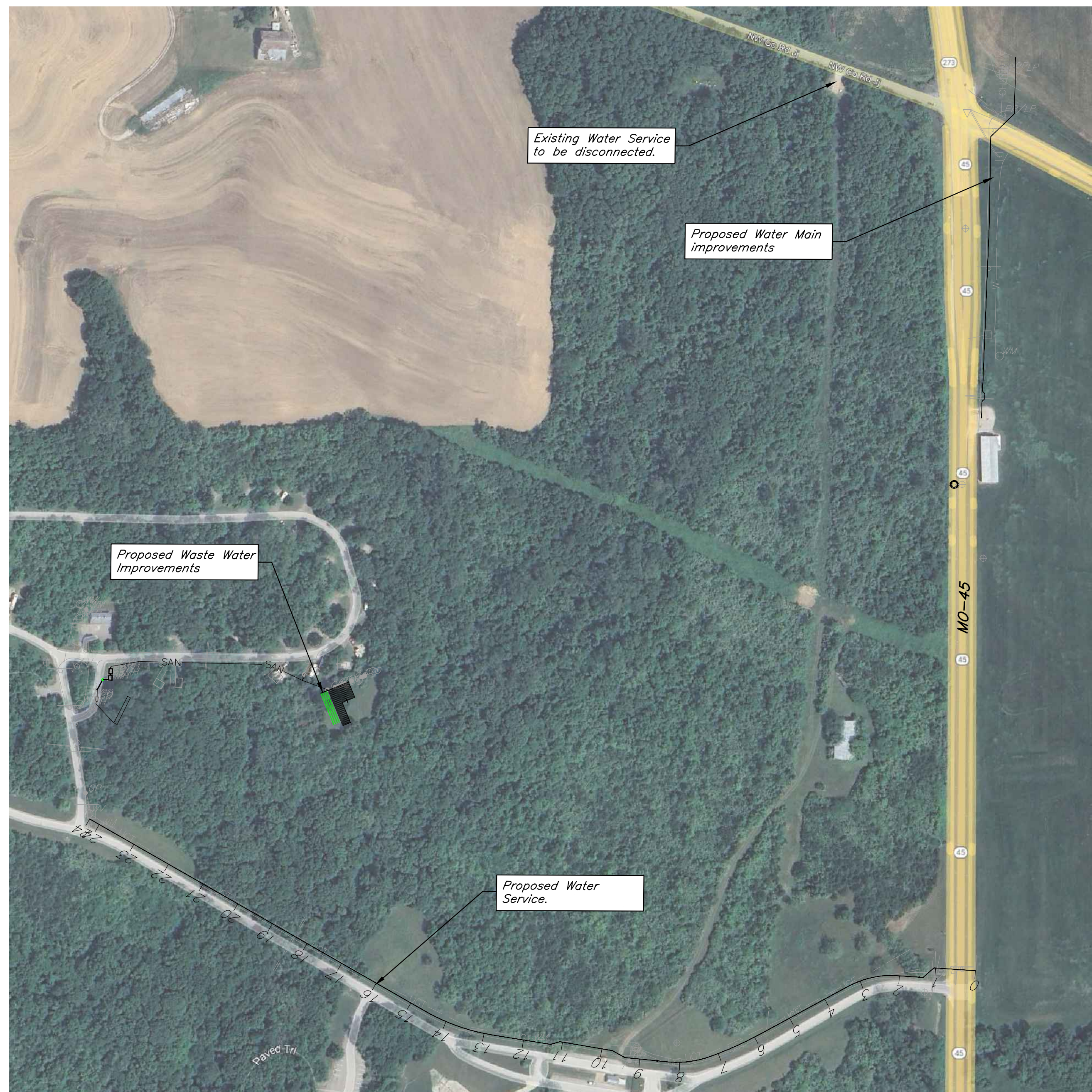
PROJECT NUMBER: X232203

SITE NUMBER: 5118
 ASSET NUMBER: 7815118029



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SHEET NUMBER:
C-101
 1 OF 7 SHEETS
 MAY 1, 2024



GENERAL NOTES:

1. All work shall be done in accordance with the most recent version of the Standards and Specifications for Water Main Extensions and Relocations of the Platte County Water District No. 3.
 2. The Contractor shall pothole and expose all tie-in and crossing locations. The Contractor shall furnish and install all fittings required to provide proper horizontal and vertical alignment for new water mains, connections to existing water mains and installation of fire hydrants at the proper location and elevation, whether or not the proper fittings, location or elevations are called out on the drawings, including modification of existing infrastructure required to make all of the work conform to the current Standards and Specifications for Water Main Extensions and Relocations of Platte County Water District No. 3.
 3. The Contractor shall furnish and install all temporary blow-off assemblies, fittings, thrust blocking, and restraining devices required for temporary connections for flushing, pressure testing, chlorination, and de-chlorination of the new water mains. Prior to placing new mains in service the Contractor shall remove any corporation cocks used for testing or chlorination and replace them with tapered brass plugs.
 4. The Contractor shall install polyethylene encasement on all water mains, valves, fittings, and other appurtenances for the full length of the project in accordance with the Standards and Specifications for Water Main Extensions and Relocations of Platte County Water District No. 3.
 5. Scheduling of water main shuts and connection to existing mains shall be at the discretion of Platte County Water District No. 3.
 6. All fire hydrant branches shall be restrained using approved restraining devices. Hydrants shall be installed so that the centerline of the outlet nozzle is between eighteen and twenty-one inches (18 inches - 21 inches) above finished grade, and so that there is a minimum clear area of 5 feet in each direction to allow operation of the hydrant.
 7. Sections of water main requiring multiple bends, such as cul-de-sacs, shall be restrained with approved joint restraining devices and straddle blocks in lieu of backing blocks.
 8. The locations of existing utilities, as shown, are approximate. It shall be the responsibility of the Contractor to verify the locations and elevations of all existing utilities. Contractors shall pothole and expose all utilities (indicated on the drawings, located at grade by a utility locating service, or evident from utility company information) at least 500 feet in advance of water main construction, determining the depth, size, and material of the utilities in proximity to the proposed water main alignment. Deflect pipe to maintain minimum 5 feet horizontal and 18 inch vertical clearances between proposed water main and all existing utilities.
 9. The Contractor shall comply with state law requiring any person or firm doing excavation on the public right-of-way do so only after giving notice to and obtaining information from utility companies.
 10. Streets and parking areas are to be to grade and curbs in place prior to construction of water mains. Water mains shall be installed with a minimum ground cover of 42 inches below finished grade. Sixteen (16)-inch and larger water mains shall be installed with a minimum ground cover of 60 inches below finished grade.
 11. Water mains shall be laid at least 10 feet, horizontally from any sewer. When local conditions prevent a horizontal separation of 10 feet, a water main may be laid closer than 10 feet to a sewer, provided that the water main is laid in a separate trench, or on an undisturbed earth shelf located on one side of the sewer, at such an elevation that the bottom of the water main is at least 18 inches above the top of the sewer. Water mains shall be laid such that there is a minimum of 18 inches clearance between the pipe wall and the exterior of any manhole and/or inlet on the sewer line.
- Whenever a water main must cross above a sewer, a vertical separation of 18 inches between the bottom of the water main and the top of the sewer shall be maintained. Whenever a water main must cross under a sewer, a vertical separation of 18 inches between the bottom of the sewer and the top of the water main shall be maintained. A full length of water main pipe shall be centered on the sewer to be crossed so that the joints will be equally distant from the sewer and as far away as possible. The 18-inch vertical separation shall be maintained for that portion of the water main located within 10 feet, horizontally, of any sewer it crosses.
- When it is impossible to obtain proper horizontal separation as stipulated above, or when a water main must cross under a sewer, the sewer must be reconstructed of ductile iron pipe meeting the requirements of Section 02618 of the Standards and Specifications for Water Main Extensions and Relocations; pre-stressed concrete cylinder pipe meeting the requirements of Section 02619, or PVC pressure pipe conforming to AWWA C-900 or C-905, and shall be pressure tested to assure water tightness before backfilling. The required length of sewer to be replaced or constructed of pressure pipe will be the length necessary to achieve 10 feet horizontal separation.
- Where these conditions cannot be met, Platte County Water District No. 3 shall be consulted as to the precautions to be taken to protect the public water supply. For all sanitary and storm sewer crossings refer to Standards and Specifications for Water Main Extensions and Relocations: Standard details #01016-1, #01016-2, #01016-3, #01016-4, and #01016-5 as required.
12. An excavation permit must be obtained from the City Engineer prior to commencing construction within the public right-of-way. Contact the Public Works Department permit counter at City Hall.
 13. A street closure permit may be required for this work. Contact the Street and Traffic Division at City Hall.
 14. All work shall conform to the latest revision of the MoDOT Standards for Erosion and Sediment Control Specifications, which are made a part hereof by reference. Erosion Control Plans shall be submitted to the Engineer, for review and approval prior to the start of this project. The following notes shall be added to all water main relocation drawings:
 15. The Contractor shall verify the outside diameter (O.D.) of the existing water main prior to scheduling connection. Provide solid sleeves as required.
 16. Contractors shall protect existing power poles and light poles from damage and shall provide bracing, shoring, or other work necessary for such protection. Any structures removed during construction operations shall be replaced.
 17. Proposed fire hydrants shall be installed at the station and offset locations as shown on the plans. Fire hydrant connection to the main shall be constructed per construction detail drawing number 02645-1.



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PROJECT OWNER:
JIM KUNCE

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

Department of Natural
Resources Missouri
State Parks

Water and Sewer
System Improvements

Weston Bend State Park
16600 Hwy 45 North
Weston, MO 64098

PROJECT # X232203
SITE # 5118
ASSET # 7815118029

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: MAY 1, 2024

CAD DWG FILE: _____
DRAWN BY: DRV/JS
CHECKED BY: _____
DESIGNED BY: JRH

SHEET TITLE:
General Layout

SHEET NUMBER:

C-102

SHEET 2 OF 7
MAY 1, 2024

15551-Weston Bend State Park

Coordinates Shown Hereon:

Modified State Plane (Project Ground Coordinates), NAD83
2403 - Missouri West, U.S. Feet
Vertical - NAVD83, U.S. Feet

CAF = 0.99991334
To get to State Plane:
Coordinates x CAF = State Plane

CP #100 - Set 5/8" rebar on North side of access road to park, just East of main gate entrance to park

- Ties:
1. 134.80 feet Southwest to the centerline of flag pole
 2. 99.30 feet West to the centerline of electrical transformer
 3. 56.20 feet South to the North edge of road

Coordinates:
N: 1174918.36
E: 2685563.82
EL: 945.54

CP #101 - Set plus cut on Southwest corner of drop inlet on the North side of road, next to R6 campsite

- Ties:
1. 14.00 feet Northeast to the centerline of the sewer cleanout
 2. 29.20 feet West Northwest to the centerline of wood post sign "R6"
 3. 3.00 feet South to the North edge of the road

Coordinates:
N: 1175901.36
E: 2684593.91
EL: 907.87

CP #102 - Set 5/8" rebar on the West side of the road, Southwest more or less 130 feet from the Southwest corner of restroom and shower building

- Ties:
1. 1.50 feet East to the West edge of the road
 2. 15.30 feet West Northwest to the centerline of wood sign "Campground Trail"
 3. 59.00 feet North Northwest to the centerline of electrical sectionalizer

Coordinates:
N: 1175870.85
E: 2683983.46
EL: 932.57

CP #103 - Set 5/8" rebar at the Northeast corner of the intersection of access road

- Ties:
1. 27.20 feet East to the centerline of water meter
 2. 25.00 feet North Northeast to the centerline of telephone pedestal
 3. 46.60 feet West Northwest to the centerline of stop sign
 4. 2.30 feet South to the North edge of road

Coordinates:
N: 1175466.32
E: 2684089.29
EL: 923.86

CP #104 - Set 5/8" rebar in grass island, just West of main gate entrance to the park

- Ties:
1. 121.60 feet East Southeast to the centerline of mailboxes
 2. 13.80 feet North to the South edge of road
 3. 15.60 feet West to the North edge of road
 4. 20.60 feet Southeast to the East face of triple sycamore trees

Coordinates:
N: 1174907.92
E: 2685080.69
EL: 932.28

CP #105 - Set 5/8" rebar at the Southwest corner of Highway 45 and access road to the park

- Ties:
1. 7.70 feet North to the South edge of access road
 2. 25.30 feet East Southeast to the centerline of stop sign
 3. 20.60 feet Southeast to the top of centerline of 30" CMP

Coordinates:
N: 1175045.54
E: 2686184.72
EL: 897.53

CP #106 - Set 5/8" rebar on the East side of Highway 45, just South of big red barn

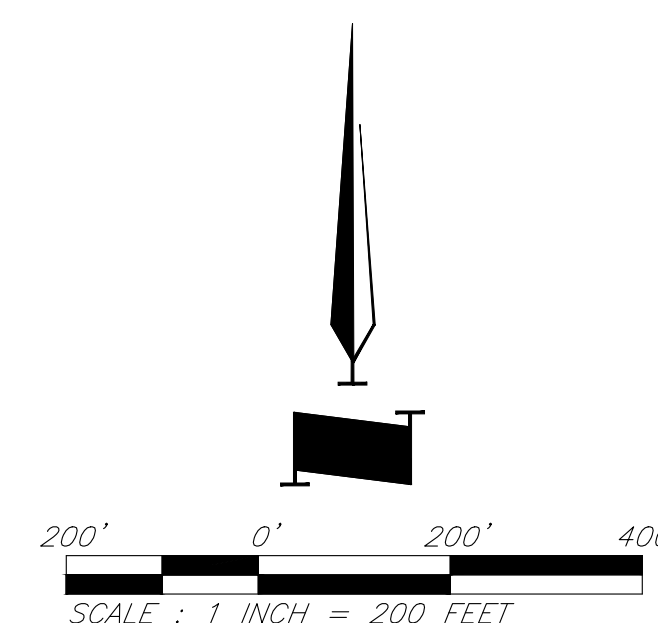
- Ties:
1. 197.50 feet North Northeast to the Southwest corner of red barn
 2. 204.00 feet Northeast to the Southeast corner of red barn
 3. 24.60 feet West to the East edge of Highway 45

Coordinates:
N: 1175132.90
E: 2686331.44
EL: 939.72

CP #107 - Set 5/8" rebar on the West side of the Highway 45, more or less 350 feet South of JJ Highway

- Ties:
1. 14.00 feet East to the West edge of Highway 45
 2. 101.10 feet North Northwest to the South face of power pole
 3. 75.70 feet South Southwest to the North face of power pole

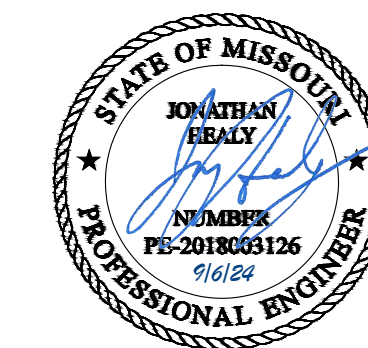
Coordinates:
N: 1176859.40
E: 268687.03
EL: 952.88





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DEPARTMENT OF NATURAL
RESOURCES MISSOURI
STATE PARKS

WATER AND SEWER
SYSTEM IMPROVEMENTS

WESTON BEND STATE PARK

16600 HWY 45 NORTH
WESTON, MO 64098

PROJECT # X232203
SITE # 5118
ASSET # 7815118029

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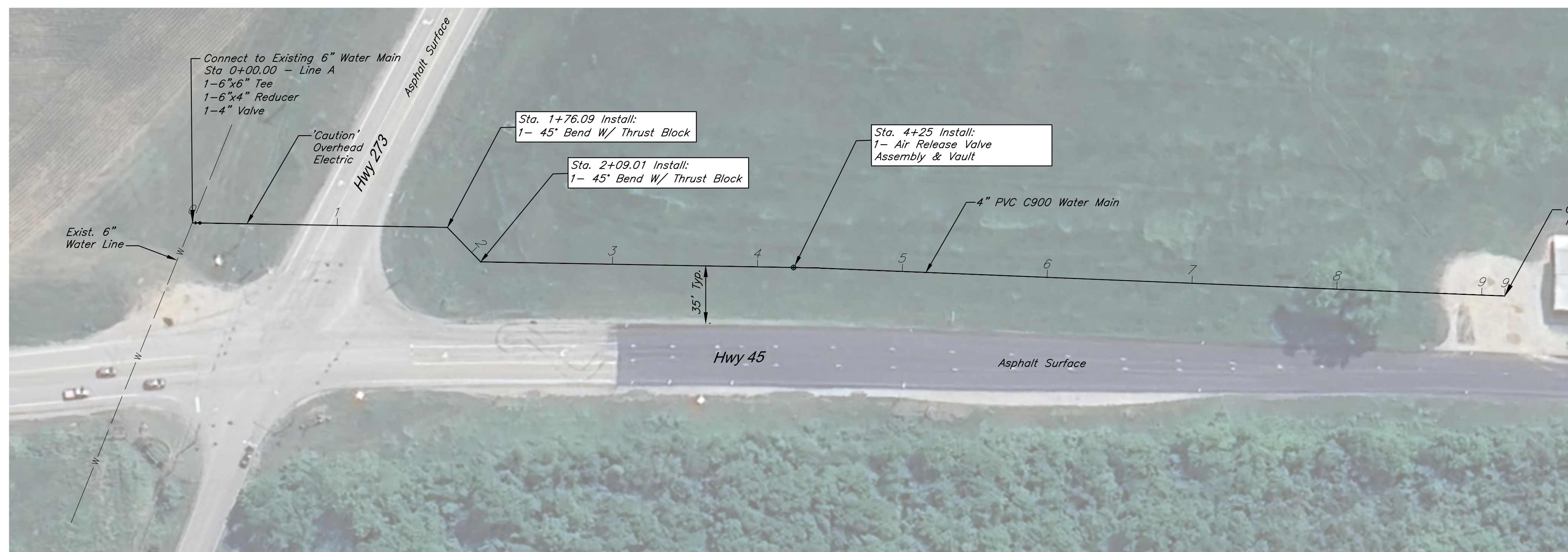
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DRAWN BY: DRV/JS
CHECKED BY: _____
DESIGNED BY: JRH

SHEET TITLE:
**Public Water Main Plan
and Profile**

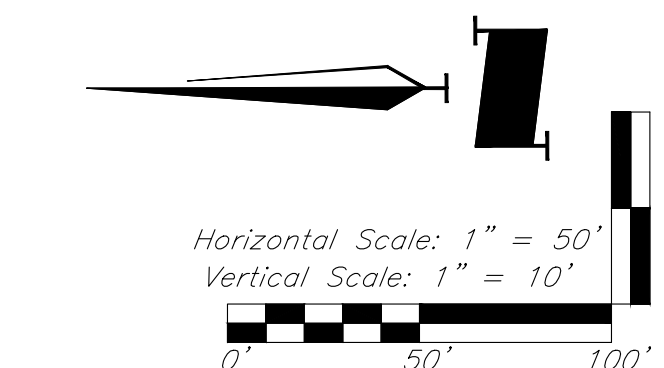
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C-103

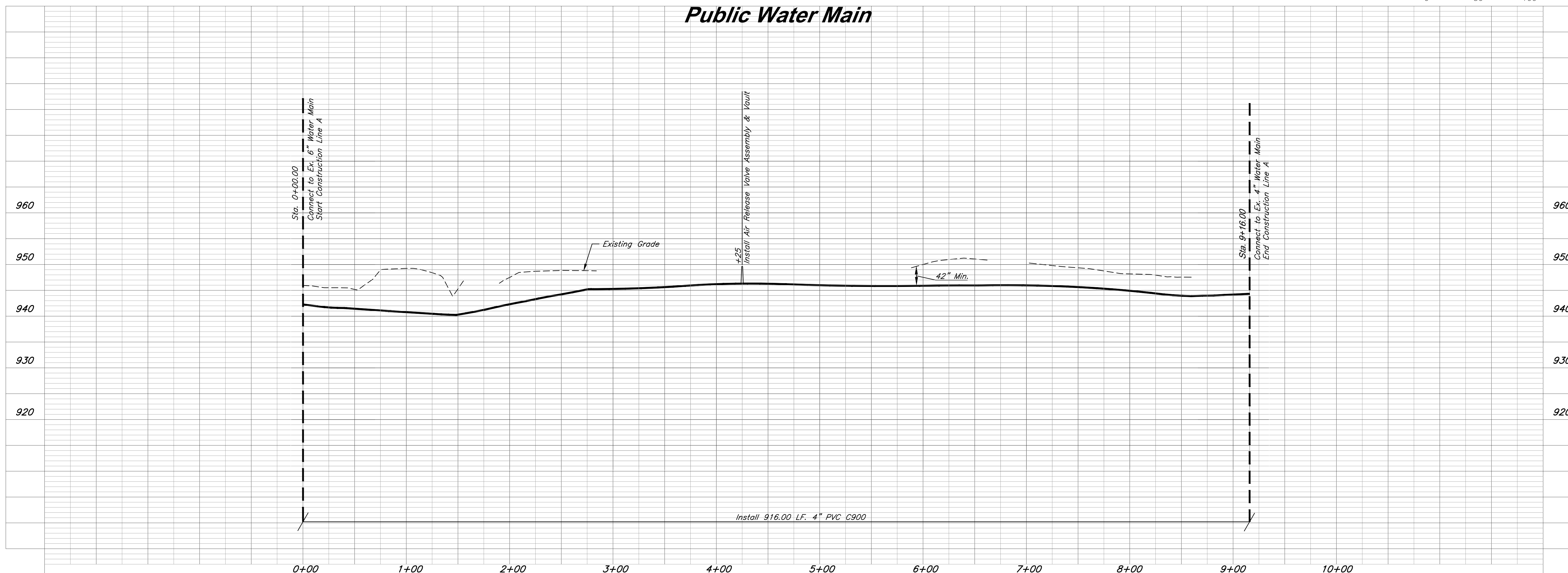
SHEET 3 OF 7
MAY 1, 2024



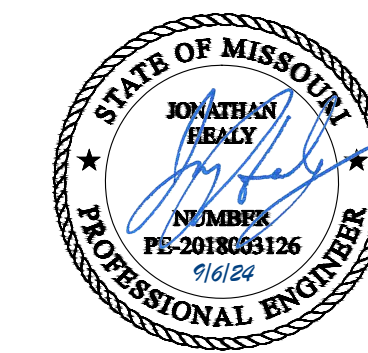
"CAUTION"
Many park utilities located on site.
It is the contractor's responsibility to
locate utilities prior to construction.



Public Water Main



Install 916.00 LF, 4" PVC C900



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DESIGNED BY: JRH

SHEET TITLE:
Sewer Plan and Profile

SHEET NUMBER:

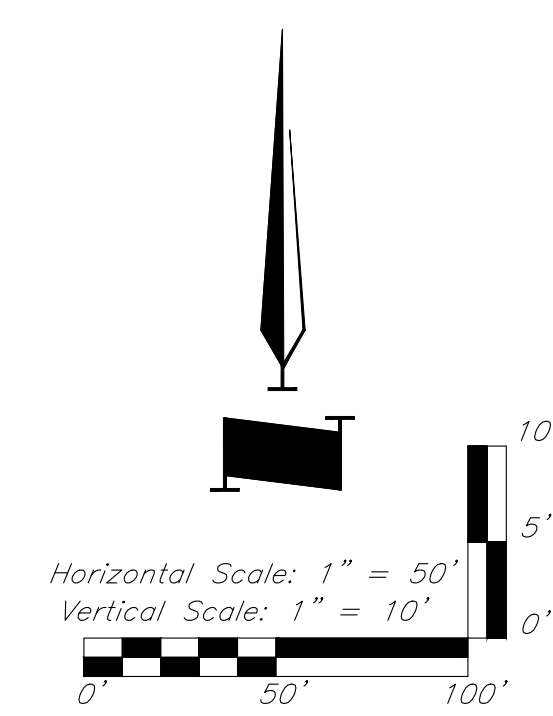
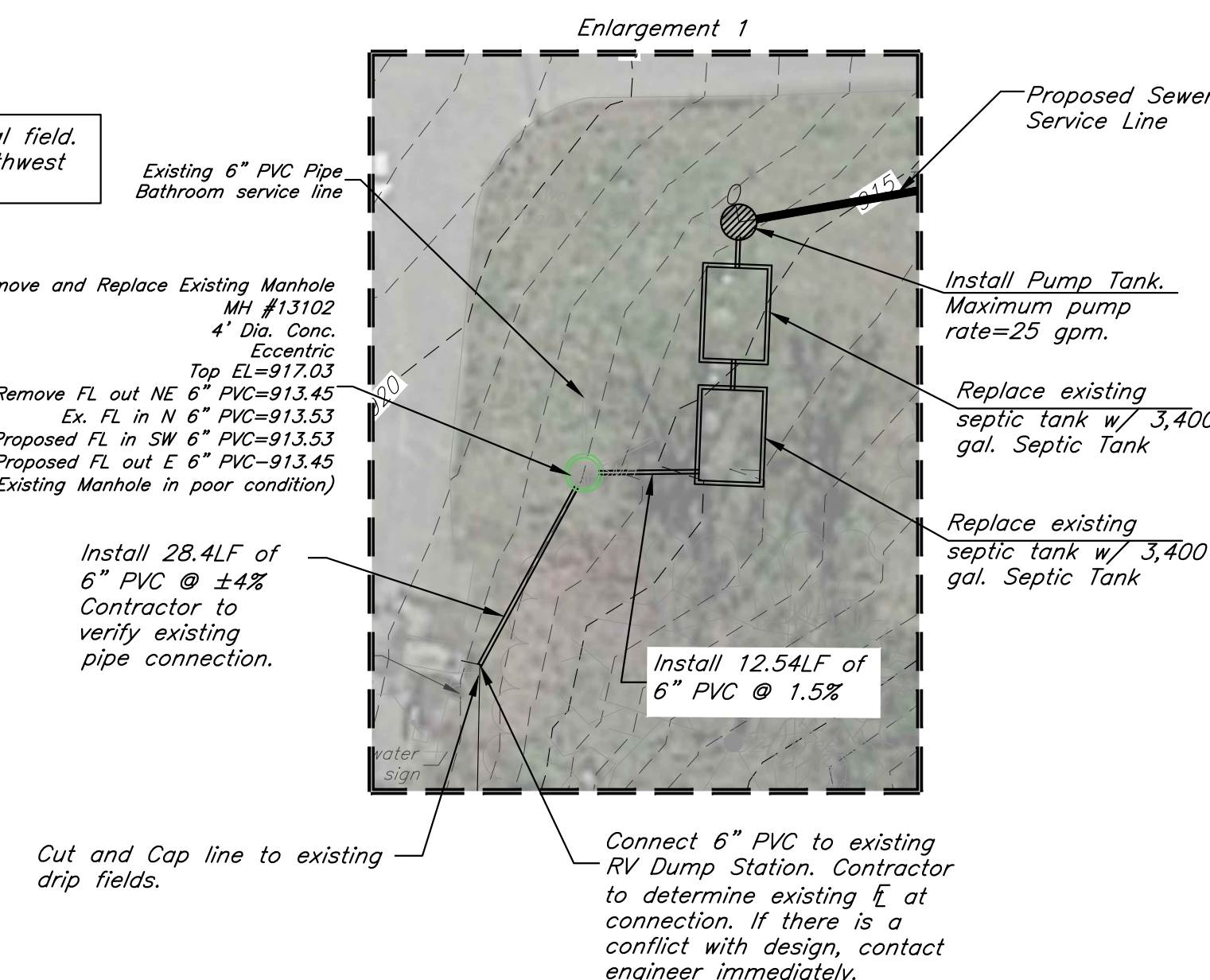
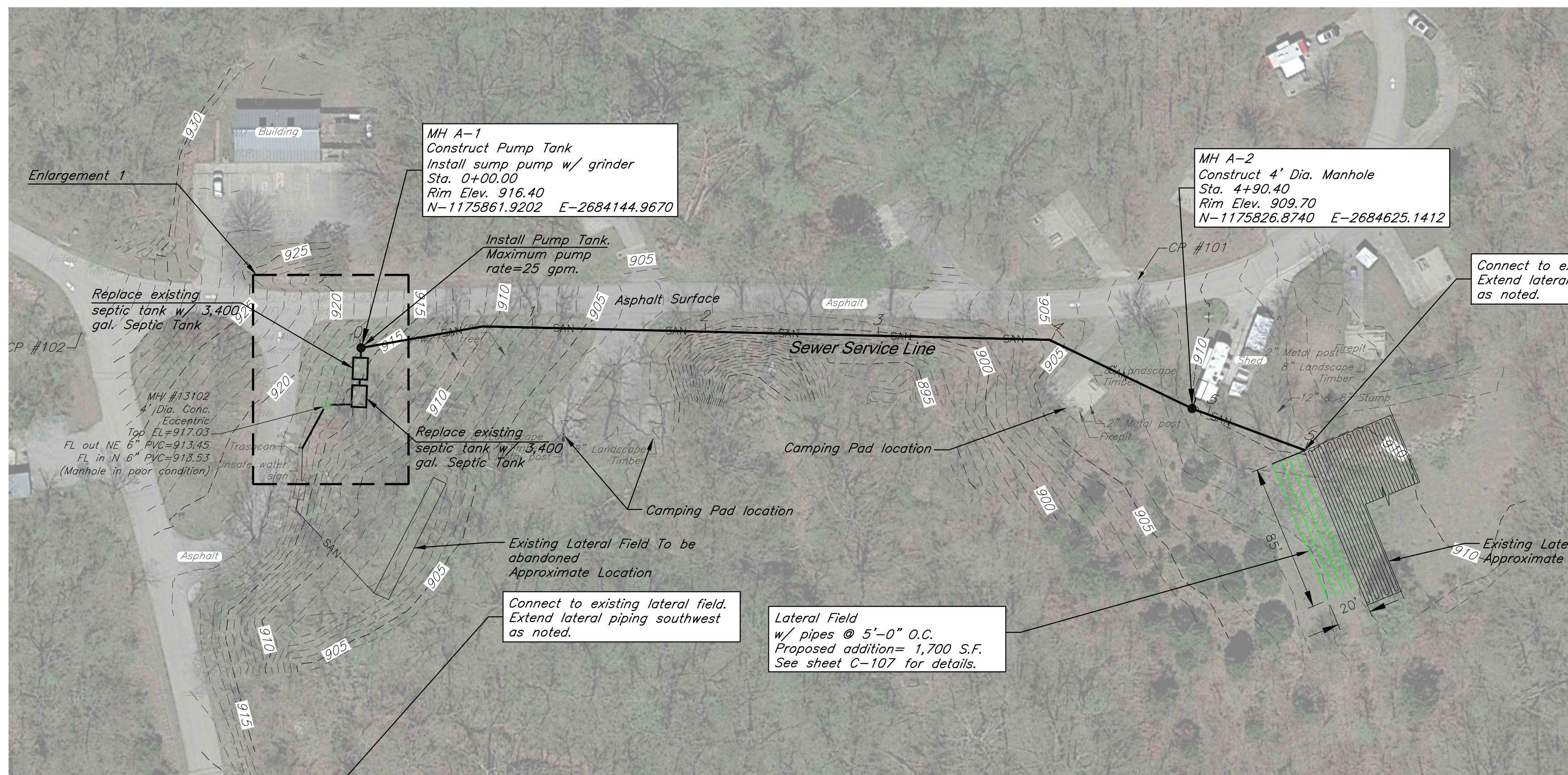
C-104

SHEET 4 OF 7
MAY 1, 2024

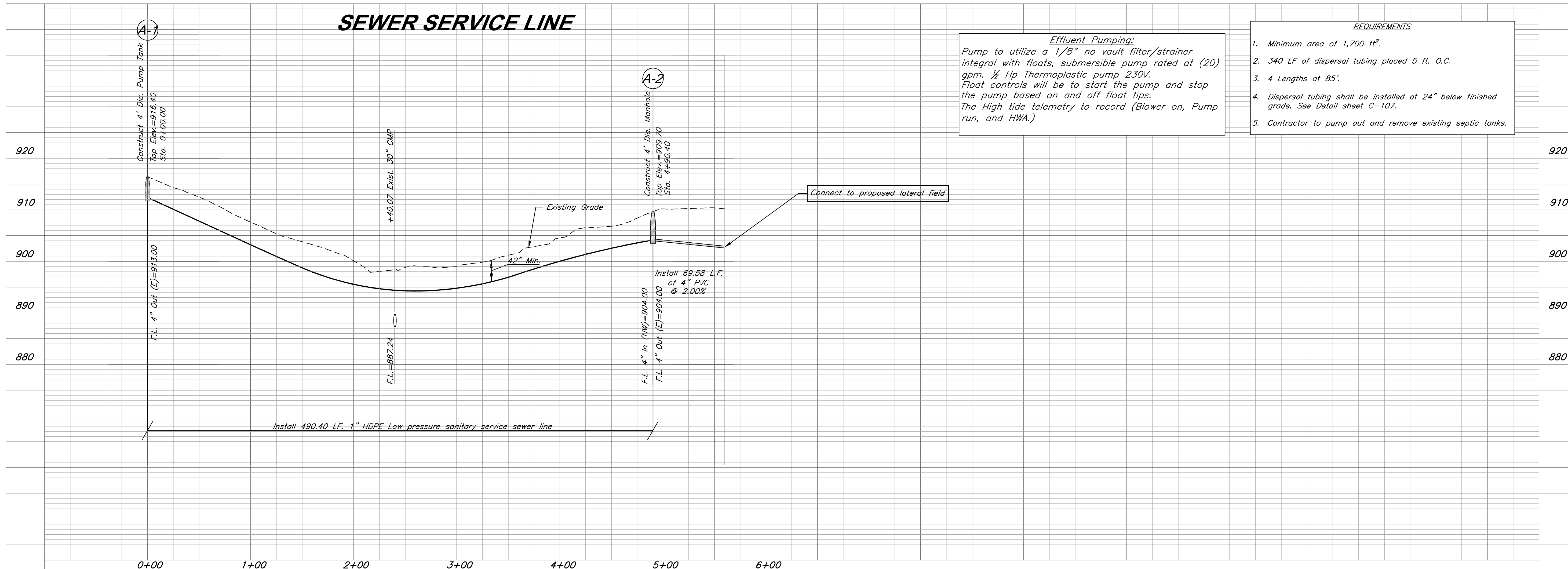
"CAUTION"
Many park utilities located on site.
It is the contractor's responsibility to
locate utilities prior to construction.

Sanitary Sewer Note
Contractor to minimize sanitary sewer
service impacts and shall coordinate
with parks department any disruptions
to service.

Construction Note
Submit a closure plan to the MDNR
Kansas City Regional Office prior to
removing the existing treatment
structures.

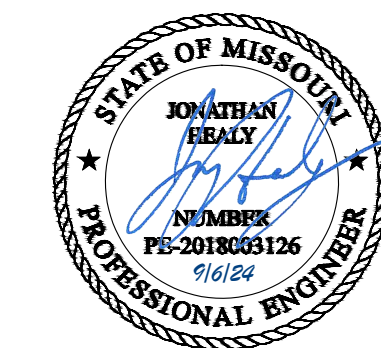


SEWER SERVICE LINE



Effluent Pumping:
Pump to utilize a 1/8" no vault filter/strainer
integral with floats, submersible pump rated at (20)
gpm. 1/2 Hp Thermoplastic pump 230V.
Float controls will be to start the pump and stop
the pump based on and off float tips.
The High tide telemetry to record (Blower on, Pump
run, and HWA.)

- REQUIREMENTS**
1. Minimum area of 1,700 ft².
 2. 340 LF of dispersal tubing placed 5 ft. O.C.
 3. 4 Lengths at 85'.
 4. Dispersal tubing shall be installed at 24" below finished grade. See Detail sheet C-107.
 5. Contractor to pump out and remove existing septic tanks.



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Department of Natural
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Water and Sewer
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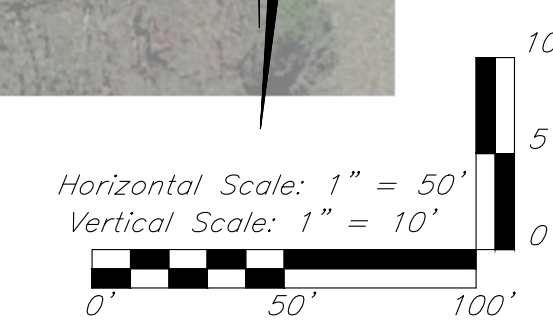
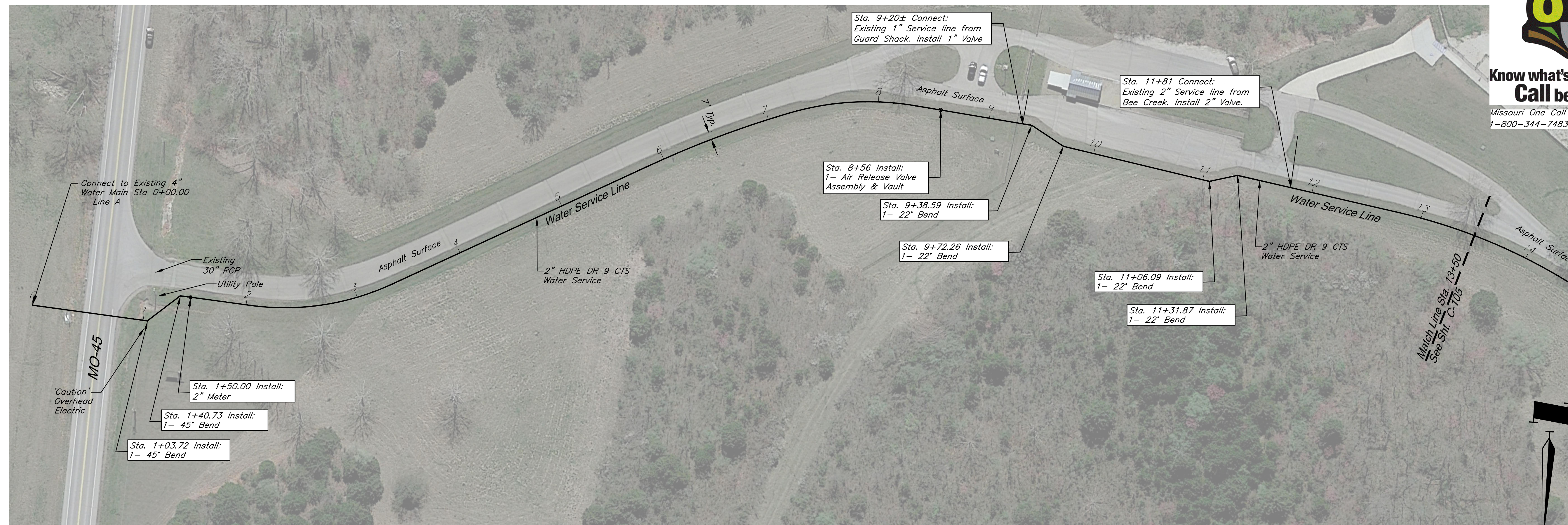
CAD DWG FILE: _____
DRAWN BY: DRV/JS
CHECKED BY: _____
DESIGNED BY: JRH

SHEET TITLE:
Water Service Plan and
Profile

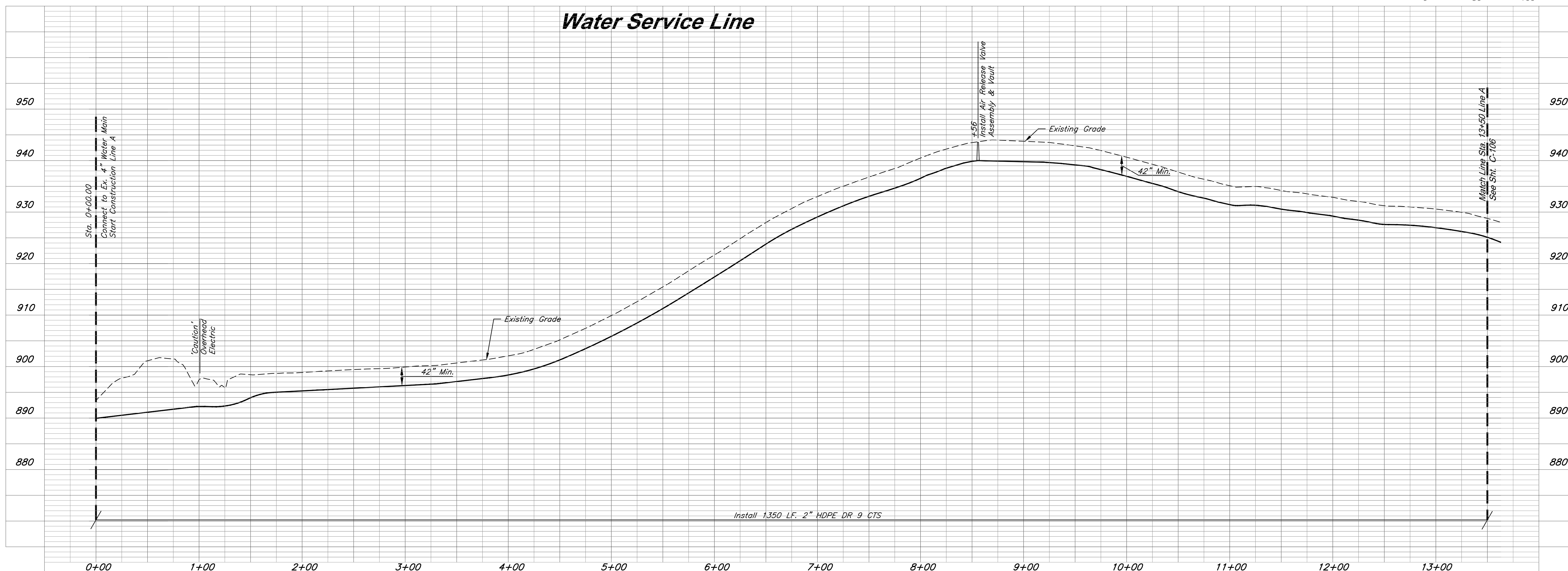
SHEET NUMBER:

C-105

SHEET 5 OF 7
MAY 1, 2024



Water Service Line



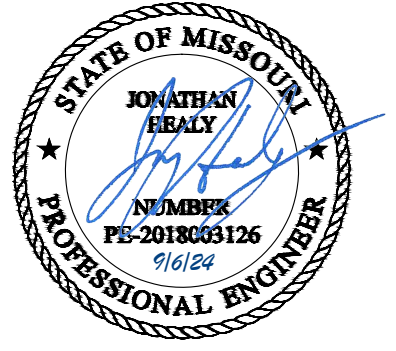
Install 1,350 LF. 2" HDPE DR 9 CTS



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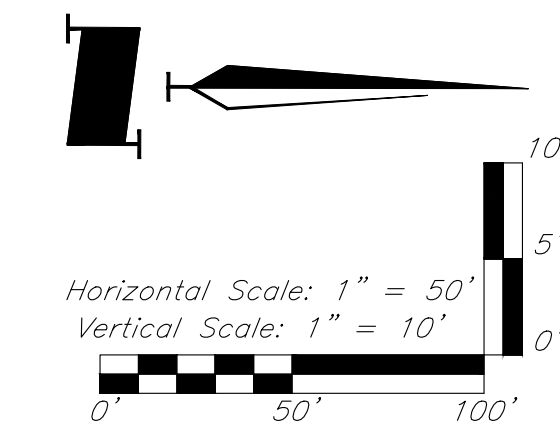
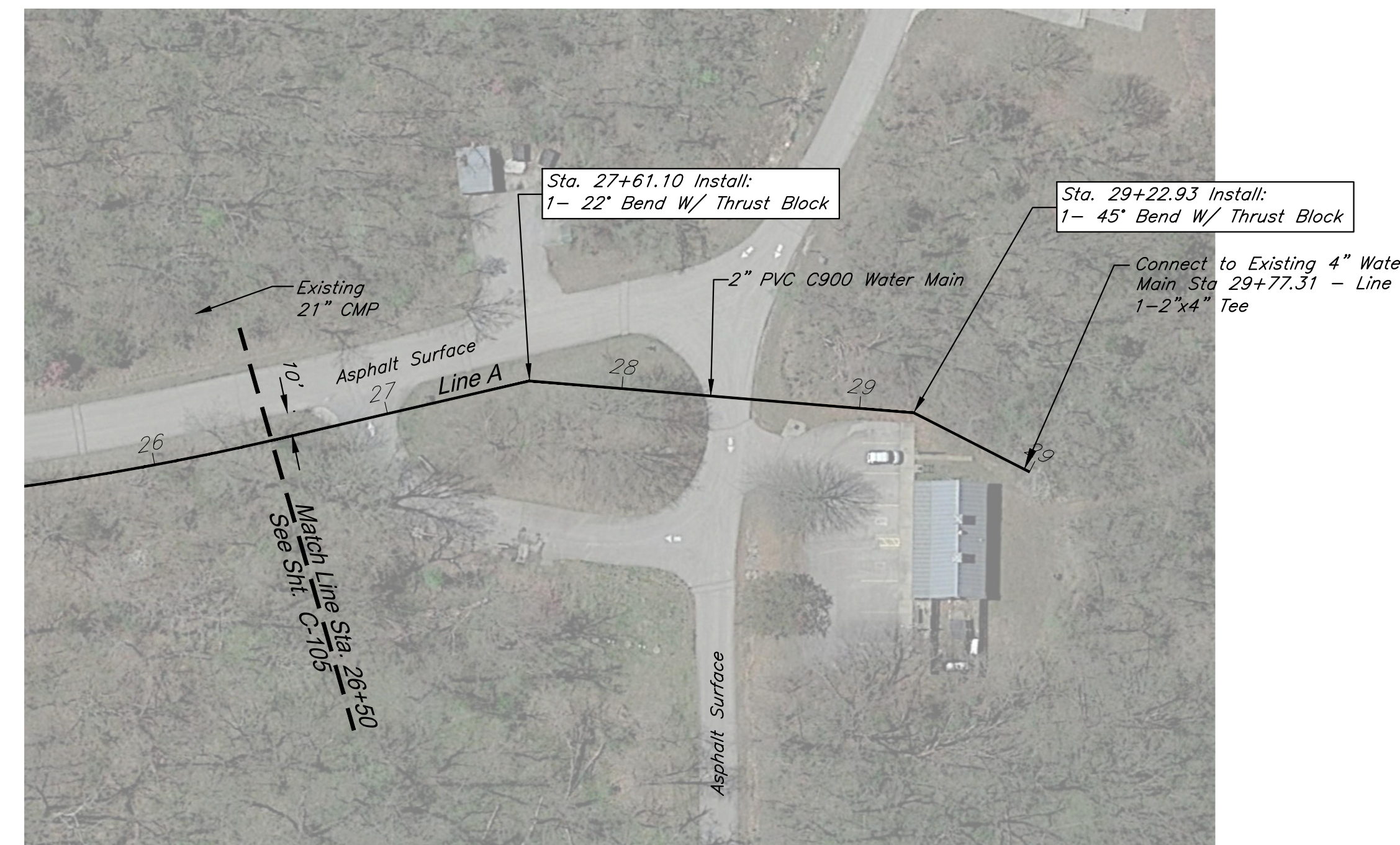
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Water Service Plan and
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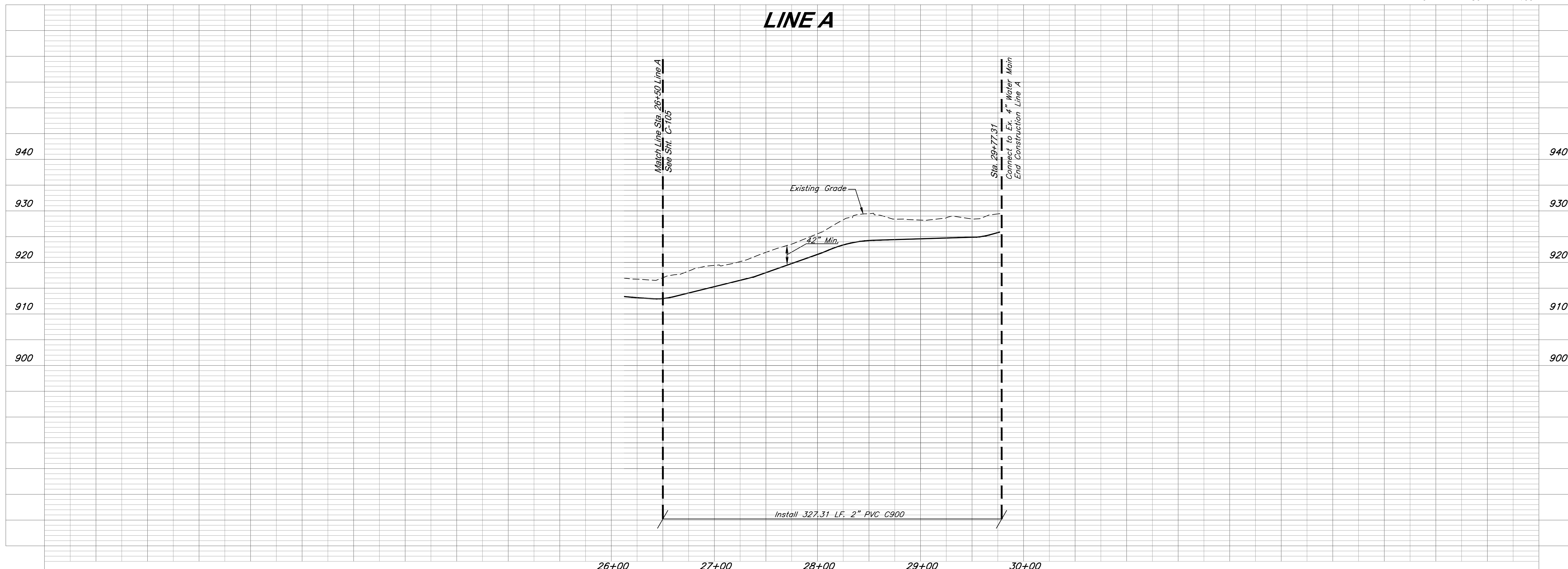
SHEET NUMBER:

C-106

SHEET 6 OF 7
MAY 1, 2024



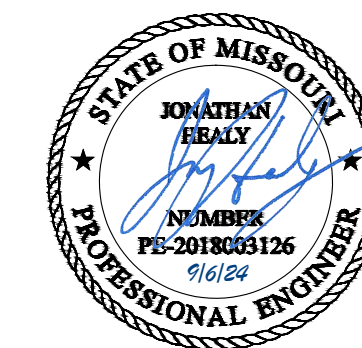
LINE A



SHEET NUMBER:

C-106

SHEET 6 OF 7
MAY 1, 2024



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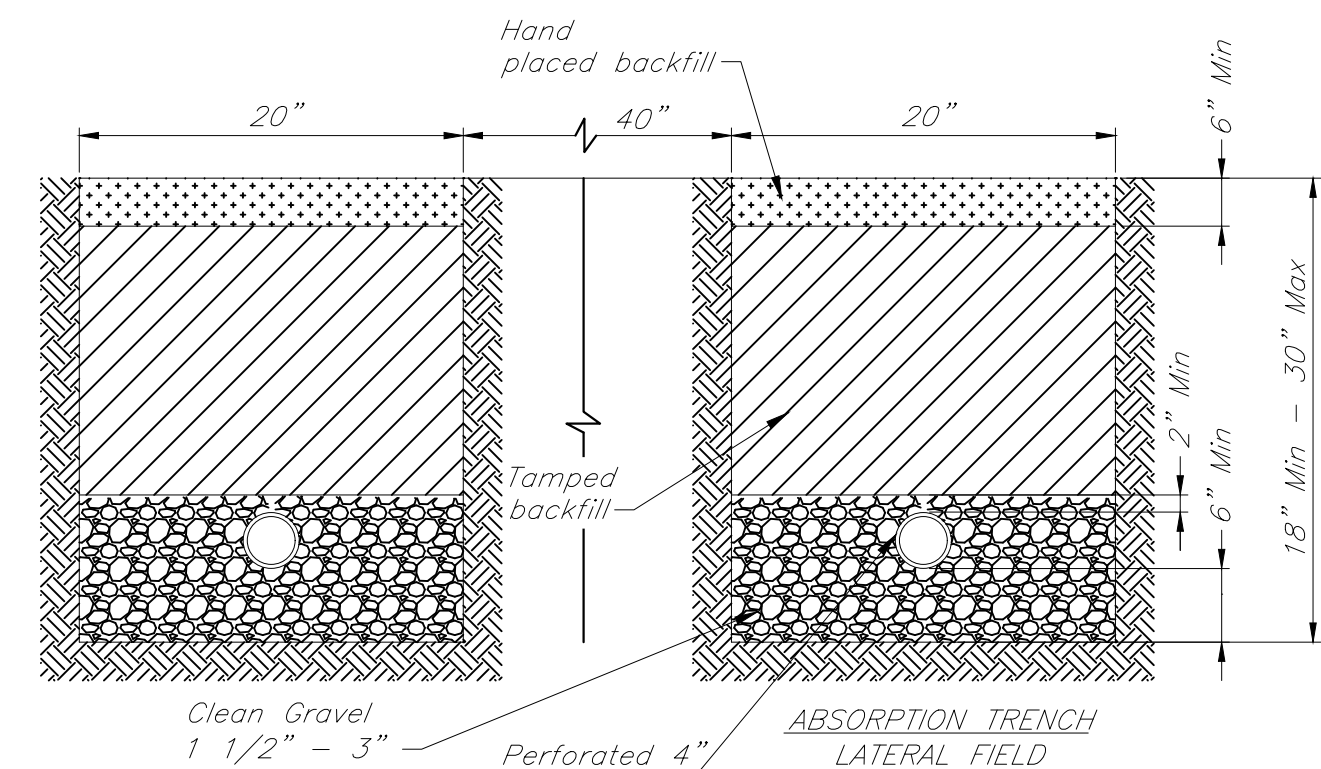
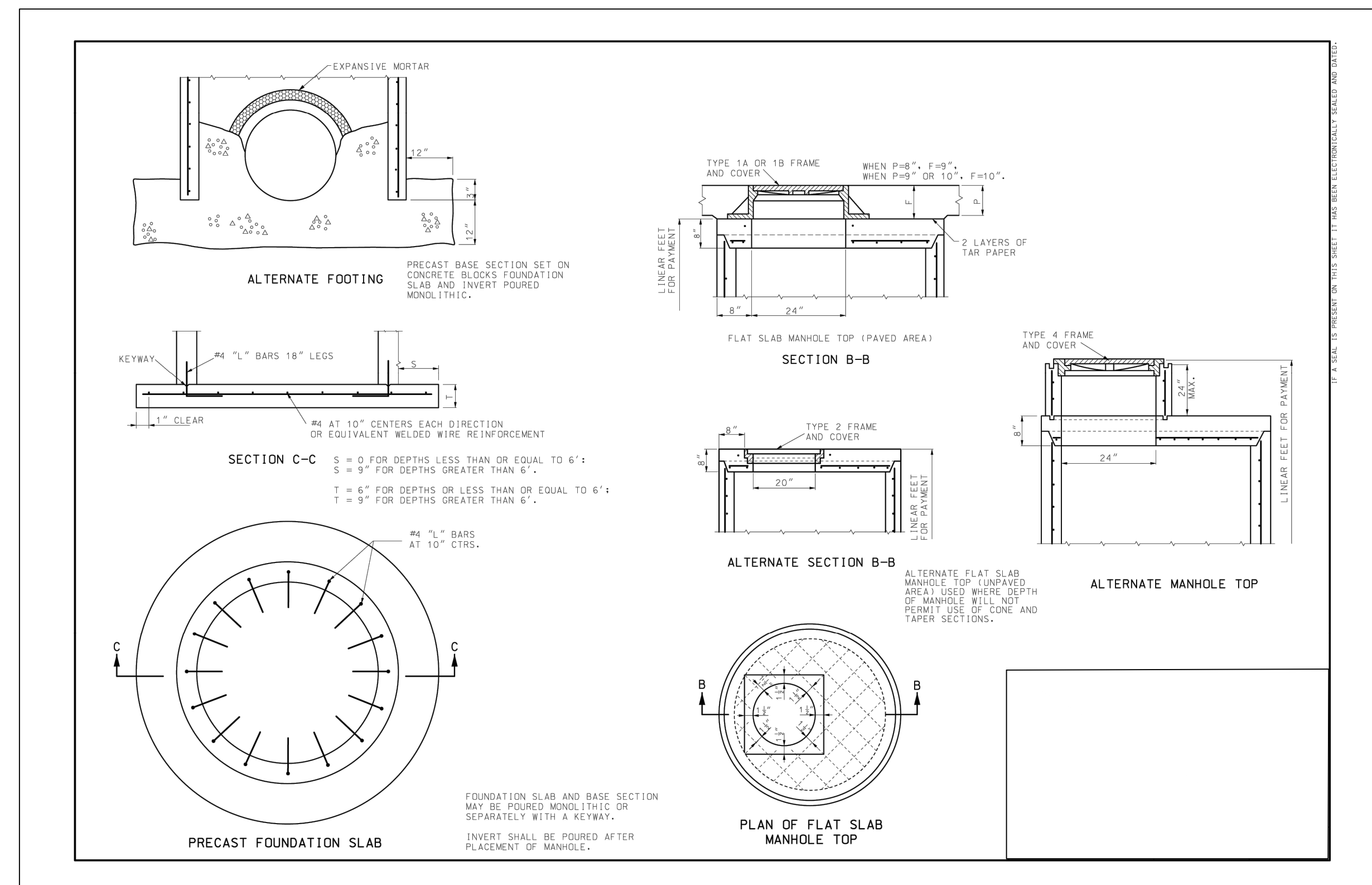
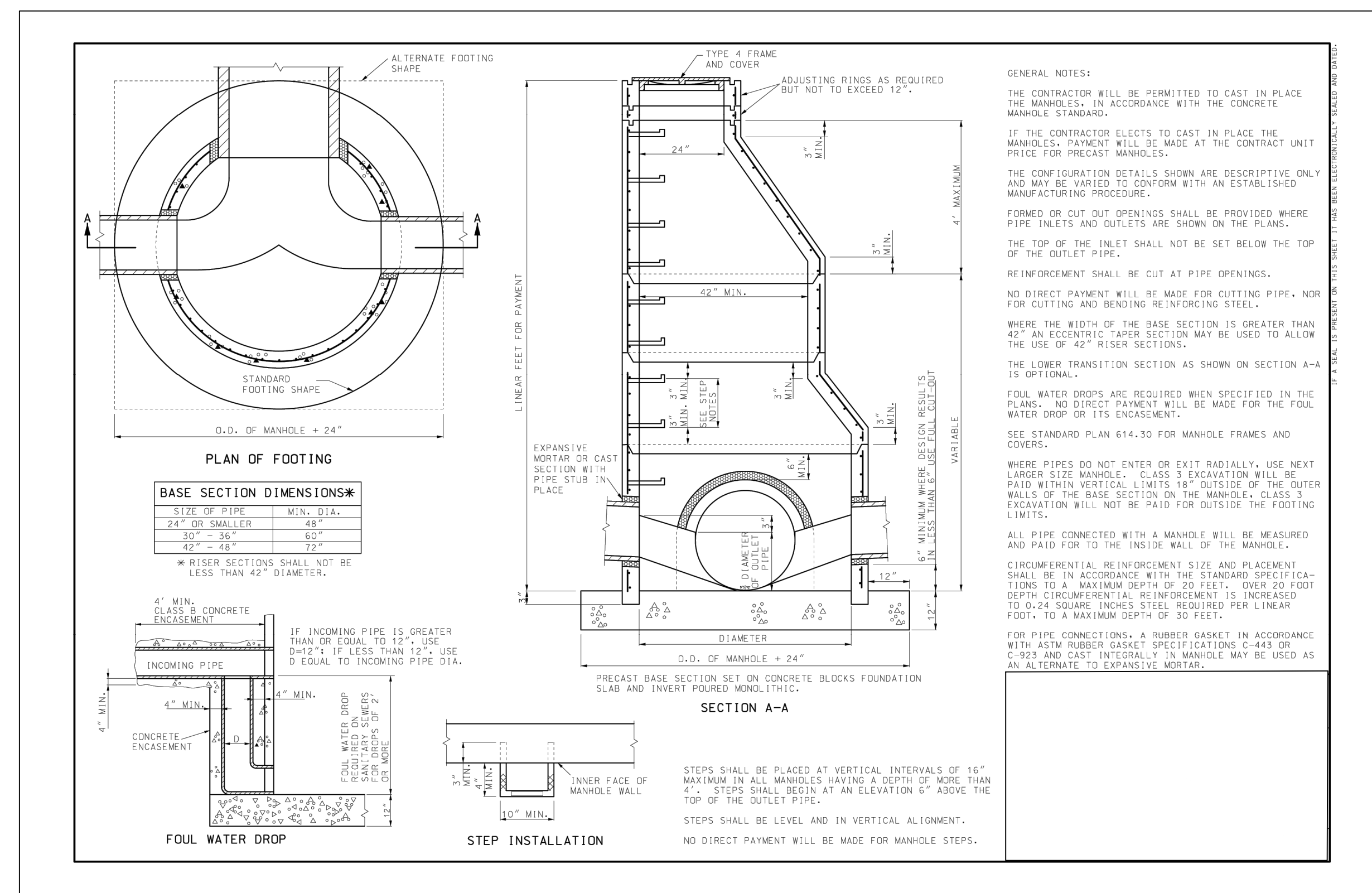
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DESIGNED BY: JRH

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Construction Details

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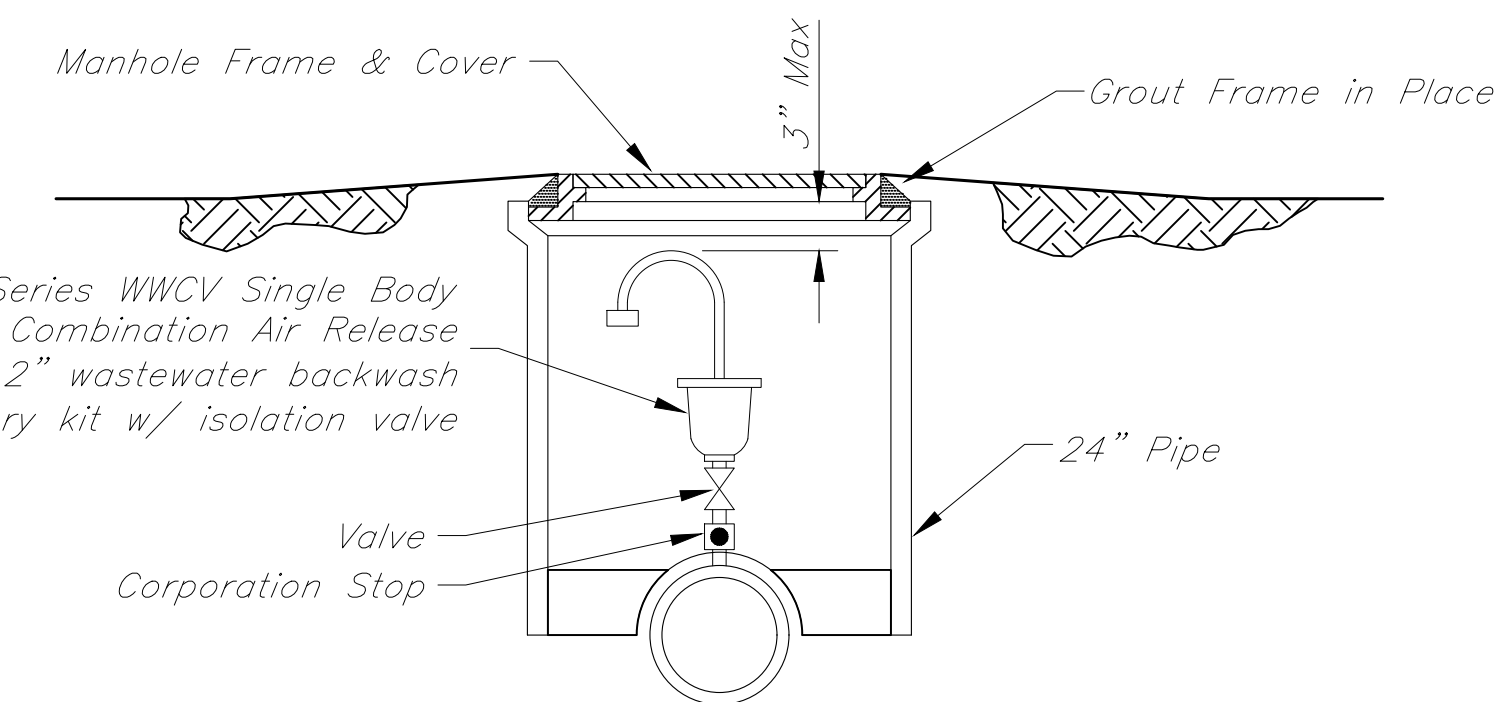
C-107

SHEET 7 OF 7
MAY 1, 2024



Lateral Field Notes:

- Granular fill shall be 1 1/2" - 3" clean rock, placed in 6" lifts and compacted by slicing with a shovel.
- Tamped fill shall be finely divided, job excavated material free of debris, organic material, and stones, and compacted to 95% standard density.
- Hand placed fill shall be finely divided material, free of debris and stones, and compacted to 95% standard density.
- Each adsorption trench system shall have a minimum of two (2) trenches with no one trench longer than one hundred feet (100') unless approved by the administrative authority on a case-by-case basis. The absorption trenches shall be located not less than three (3) times the trench width on centers with a minimum spacing of five feet (5') on centers.
- Gravity-fed adsorption field distribution lines shall be at least four inches (4") in diameter. Perforated distribution line shall have holes at least one-half inch (1/2") and no more than three-fourths inch (3/4") in diameter.
- Longitudinal slope of the pipe system shall not exceed one quarter inch (1/4") in ten feet (10'), ends of line at equal elevations shall be connected, otherwise capped and plugged.
- Contractor shall refer to MODNR 19 CSR 20-3.060 (5) for trench and field construction.

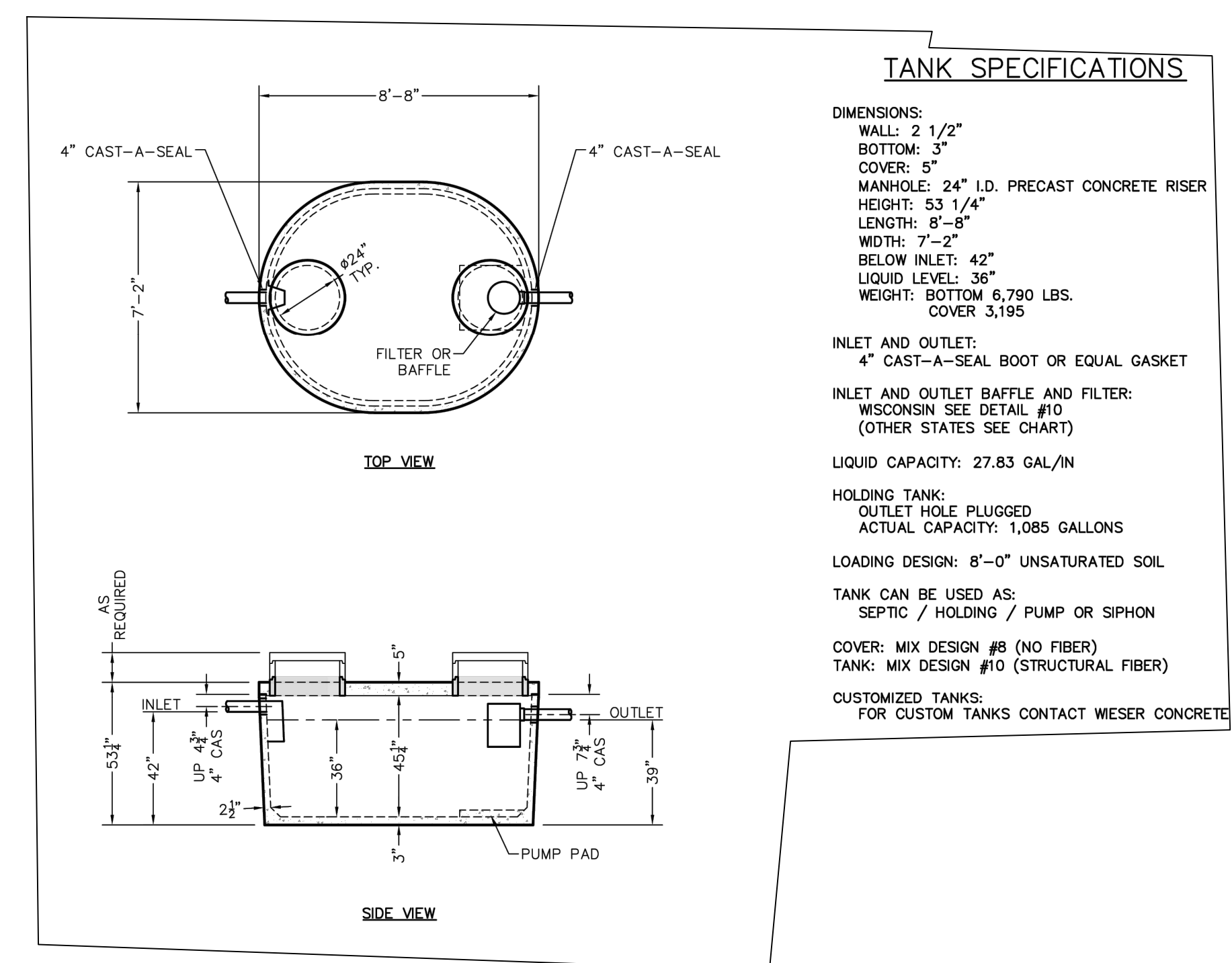


AIR RELEASE VALVE

No Scale

Notes:

- All nipples and valves between pipe and air valve shall be nonferrous.
- If noted on plans, a bolt down cover with gasket shall be installed.



PUMP TANK DETAIL

No Scale