

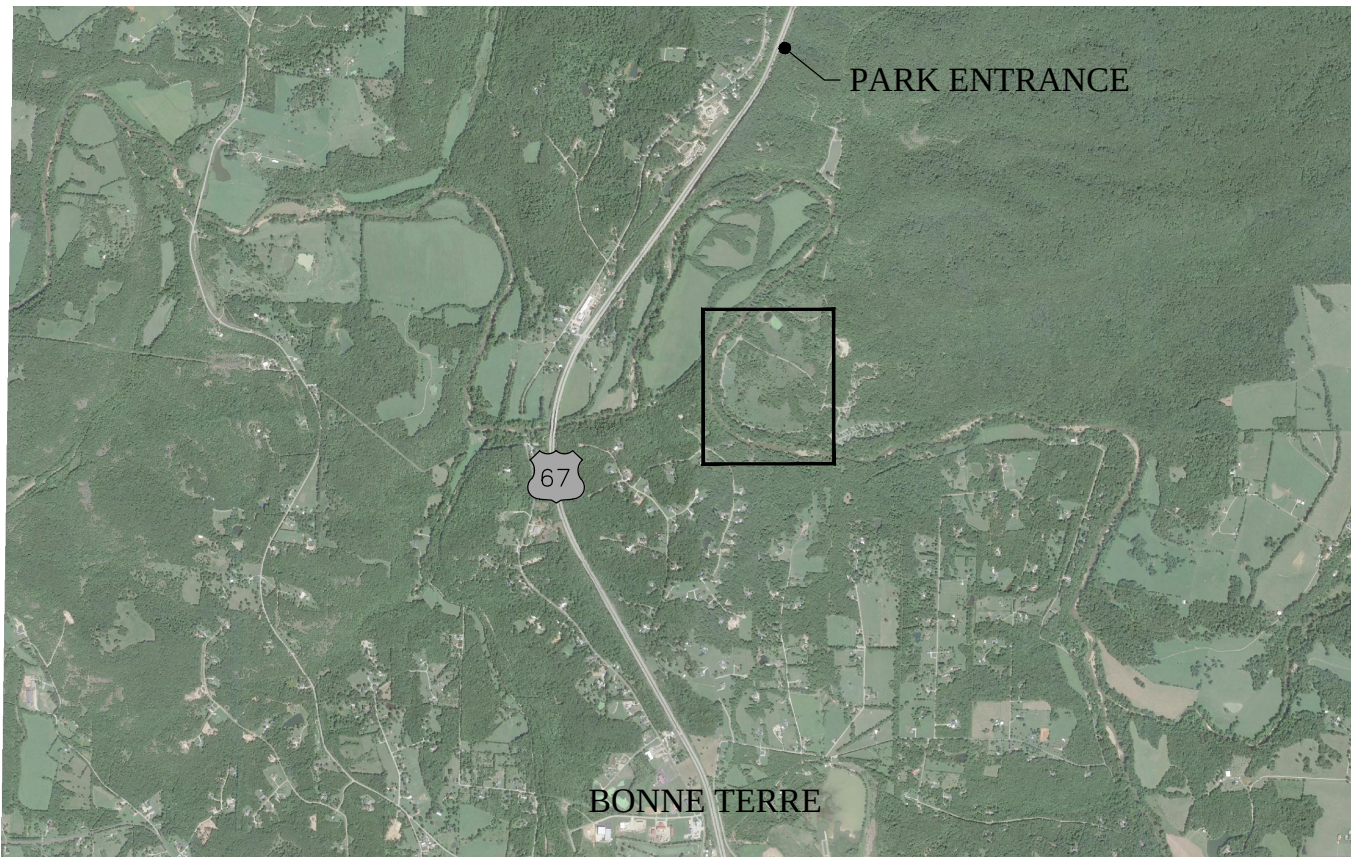
NEW PREMIUM 63 SITE LOOP CAMPGROUND

ST. FRANCOIS STATE PARK

BONNE TERRE, MISSOURI

ASSET NUMBER: 7815216025

SITE NUMBER: 5216



OWNER: STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR

DEPARTMENT OF
NATURAL RESOURCES
MISSOURI STATE PARKS

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

PROJECT NUMBER: X2317-01

CIVIL ENGINEER & ARCHITECT
COCHRAN
530A E. INDEPENDENCE DR.
UNION, MO 63084
PHONE: (636)-584-0540

MECHANICAL, ELECTRICAL,
& STRUCTURAL ENGINEER
CASE ENGINEERING INC.
796 MERUS COURT
ST. LOUIS, MO 63026
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SHEET INDEX

G-001 - COVER SHEET
C-101 - GENERAL NOTES
C-102 - EXISTING CONDITIONS
C-103 - OVERALL SITE PLAN
C-104 - SITE PLAN
C-105 - SITE PLAN
C-106 - SITE PLAN
C-107 - OVERALL UTILITY PLAN
C-108 - UTILITY PLAN
C-109 - UTILITY PLAN
C-110 - UTILITY PLAN
C-111 - GRADING PLAN
C-112 - GRADING PLAN
C-113 - GRADING PLAN
C-114 - EROSION & SEDIMENT CONTROL PLAN
C-115 - EROSION & SEDIMENT CONTROL PLAN
C-116 - EROSION & SEDIMENT CONTROL PLAN
C-117 - EROSION & SEDIMENT DETAIL SHEET
C-118 - STORM SEWER PLAN & PROFILE LINE A, B, & C
C-119 - STORM SEWER PLAN & PROFILE LINE D, E, & F
C-120 - SANITARY SEWER PROFILE LINE #1 STA. 0+00 TO 5+40
C-121 - SANITARY SEWER PROFILE LINE #1 STA. 5+40 TO 9+20
C-122 - SANITARY SEWER PROFILE LINE #1-1
C-123 - SANITARY SEWER PROFILE LINE #1-2
C-124 - SANITARY SEWER PROFILE LINE #2 & #3
C-125 - SANITARY SEWER PLAN & PROFILE LINE #4 & #4-1
C-125A - SANITARY SEWER PLAN & PROFILE LINE #5
C-126 - ROAD PLAN ENTRANCE ROAD STA. 0+00 TO 7+80
C-127 - ROAD PLAN ENTRANCE ROAD STA. 7+80 TO 15+60
C-128 - ROAD PLAN ENTRANCE ROAD STA. 15+60 TO 23+40
C-129 - ROAD PLAN ENTRANCE ROAD STA. 23+40 TO 28+27
C-130 - ROAD PLAN CENTER ROAD STA. 0+00 TO 5+75
C-131 - ROAD PLAN NORTH ROAD STA. 0+00 TO 7+80
C-132 - ROAD PLAN NORTH ROAD STA. 7+80 TO 13+25
E-101 - ELECTRICAL DETAILS & ONE-LINE
E-102 - ELECTRICAL DETAILS
E-201 - ELECTRICAL SITE PLAN
E-202 - ELECTRICAL SITE PLAN
C-501 - DETAIL SHEET
C-502 - DETAIL SHEET
C-503 - DETAIL SHEET

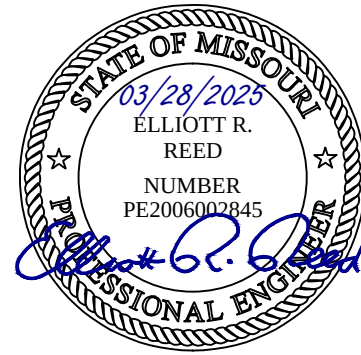
SHOWER HOUSE

A1 - FLOOR PLAN & ELEVATIONS
A2 - WALL SECTIONS
A3 - INTERIOR ELEVATIONS
A4 - DETAILS
S1.1 - GENERAL NOTES
S1.2 - GENERAL NOTES
S1.3 - TYPICAL DETAILS
S1.4 - TYPICAL DETAILS
S2.1 - FOUNDATION & FRAMING PLAN
S2.2 - FOUNDATION & FRAMING SECTIONS
M1.0 - MECHANICAL PLAN & SCHEDULES
P1.0 - PLUMBING DWV PLAN
P2.0 - PLUMBING SUPPLY PLAN
P3.0 - PLUMBING RISERS & DETAILS
E1.0 - ELECTRICAL POWER & LIGHTING PLAN

SHEET NUMBER:

G-001

1 OF 56 SHEETS
03/28/2025



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• Civil Engineering
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• Architecture
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• Master Planning



Missouri State Certificate
of Authority Numbers:
Survey : 000350
Engineering : 001655
Architecture: 2002014240

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF
NATURAL RESOURCES
MISSOURI STATE PARKS

NEW PREMIUM 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N
BONNE TERRE, MO 63628

PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____

ISSUE DATE: 03/28/2025

CAD DWG FILE: X2317-GN-101
DRAWN BY: LJR
CHECKED BY: ERR
DESIGNED BY: ERR

SHEET TITLE:

GENERAL
NOTES

SHEET NUMBER:

C-101

2 OF 56 SHEETS
03/28/2025

EROSION CONTROL NOTES

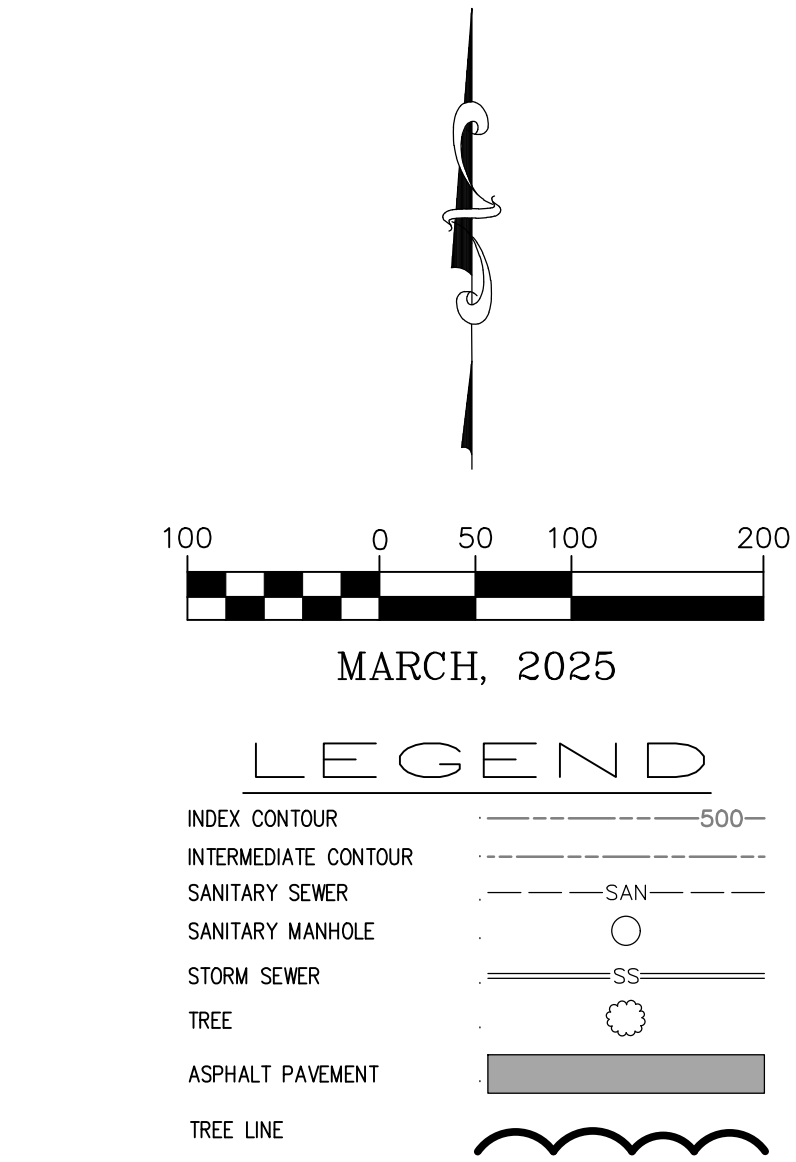
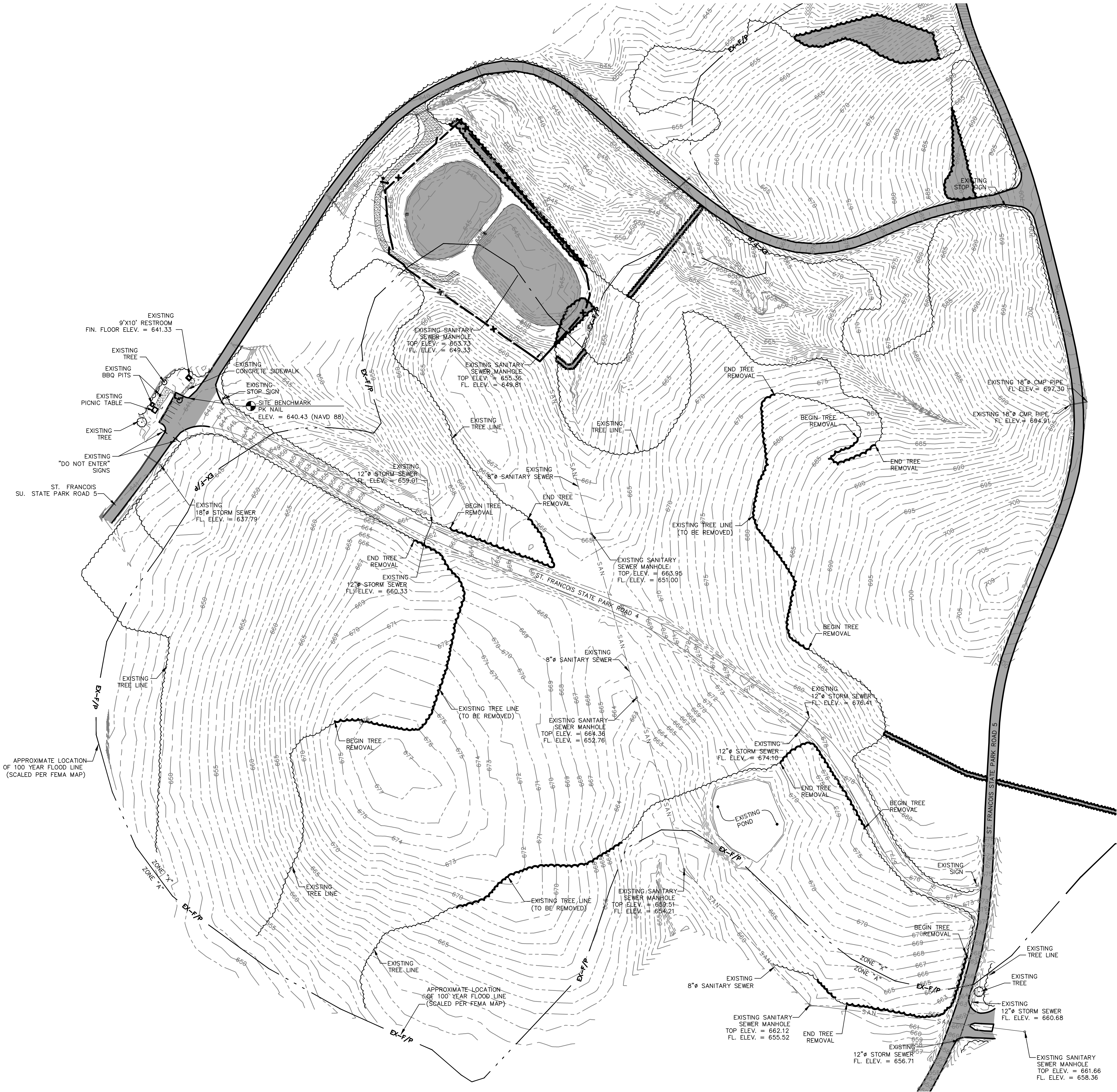
- Land disturbing activities shall not commence until approval to do so has been received by governing agencies and until all erosion control measures have been taken.
- Contractor shall assure positive drainage from buildings for all natural & paved areas.
- No land clearing or grading shall begin until all erosion control measures have been installed.
- Site grading shall not proceed until erosion control measures have been taken.
- Should construction stop for longer than 14 days, the site shall be seeded as specified by temporary seeding mix.
- Maintain erosion control measures after each rain and at least once a week.
- This plan shall not be considered all inclusive as the contractor shall take all necessary precautions to prevent soil sediment from leaving the site.
- Contractor shall comply with all state and local ordinances that apply.
- Additional erosion and sediment control measures will be installed if deemed necessary by on site inspection.
- If installation of storm drainage system should be interrupted by weather or nightfall, the pipe ends shall be covered with filter fabric.
- Contractor shall be responsible to take whatever means necessary to establish permanent soil stabilization.
- The contractor is responsible for keeping stormwater run-off and siltation under control during construction.
- Contractor shall maintain the site in a well-drained manner in order to assume the shortest possible drying time after each rainfall. This will mean that pumping of standing water in low areas on the site will most likely be required during construction.
- It shall be the contractor's responsibility to keep mud and silt on site off of streets.
- In areas where french drain & storm sewer share the same trench, backfill shall be clean to allow for proper drainage.

GENERAL PLAN NOTES

- The sitework on this project shall meet or exceed the State of Missouri Office of Administration standards and specifications.
- Bearings referenced to grid north of the Missouri Coordinate System OF 1983, East Zone per GPS Observations utilizing THE MODOT VRS RTK Network and Monuments for Station "LEAD".
- Project Benchmark is GRS LEAD. ELEV. = 827.82 (NAVD 88).
- Flood Zones: Portions of this property lie within "ZONE X"(UNSHADED), areas determined to be outside the 0.2% annual chance floodplain and "ZONE A" determined to be inside the 1% chance flood area (100 PER YEAR) per Flood Insurance Rate Map for St. Francois County, Missouri & Incorporated Areas, per Panel 135 OF 450, Community Panel Number 29187C01350, effective date June 16, 2011
- The contractor is encouraged to visit the site prior to submitting their bid for this project.
- This property is in accordance with generally accepted construction practices, the Contractor will be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours. Contractor will be responsible for providing and maintaining all barricades, warning signs, flashing lights and traffic control devices during construction. Contractor to comply with all OSHA regulation requirements and safety meeting requirement.
- All survey monuments disturbed during construction shall be replaced by a licensed land surveyor licensed in the state in which this project is located at the Contractor's expense.
- Underground structures, facilities and utilities have been plotted from available surveys and records. Therefore, their locations must be considered approximate only. There may be others, the existence of which is presently not known.
- No investigation has been performed by Cochran regarding hazardous waste, underground conditions or utilities affecting the tract shown hereon.
- Contractor to contact telephone, electric, gas, water and cable companies to have underground utilities located on this site and adjacent to this site prior to doing any excavating.
- The Contractor is specifically cautioned that the location and/or elevation of existing utilities as shown on these plans is based on records of the various utility companies and, where possible, measurements taken in the field. The information is not to be relied on as being exact or complete. The Contractor must call the appropriate utility company to request exact field location of utilities. It shall be the responsibility of the Contractor to relocate all existing utilities, which conflict with the new improvements shown on plans.
- All trenching, pipe laying, and backfilling shall be in accordance with Federal OSHA Regulations.
- Contractor shall coordinate adjustments to existing utilities with appropriate utility company as work progresses.
- Contractor shall coordinate the scheduling and location of the demolition and installation of all utilities, including stakeout, conduit required, trenching required, etc. Contractor shall contact each utility provider with at least 30 days advance notice of any work to be done.
- If any existing structures to remain are damaged during construction it shall be the Contractor's responsibility to repair and/or replace the existing structure as necessary to return it to existing conditions or better.
- All trenches under paved areas shall be backfilled with granular material and compacted to meet compaction requirements for the road/parking lot.
- Contractor shall provide a minimum of 18" of clearance between sanitary sewer and waterlines and a minimum of 18" of clearance between storm sewers and waterlines. This may mean that lowering of waterlines may be necessary. City must approve any lowering of waterlines prior to work. Contractor shall provide a minimum of 10' of horizontal separation between waterlines and sanitary sewer lines.
- Precast structures may be used at Contractor's option.
- Storm and sanitary sewer plan information depicts pipe lengths and grades calculated from the center of all structures.
- All storm pipe entering structures shall be grouted to assure connection at structure is watertight.
- Utility Contractor shall provide 2' x 2' x 8" thick concrete apron at all sanitary and storm cleanouts outside of building, see details.
- All unsurfaced areas are to receive 4 inches of topsoil. Contractor to seed, mulch, fertilize, and maintain all areas outside of paved areas that were disturbed during construction until an acceptable stand of grass is established. The Contractor shall be responsible to take whatever means necessary to establish permanent soil stabilization.
- Existing grade contours shown at 1 foot intervals. New grade contours shown at 1 foot intervals.
- All cut or fill slopes shall be 3:1 or flatter unless otherwise noted.
- TP = Top of pavement
TC = Top of curb
TG = Top of grade
TW = Top of wall
EX = Existing
- Contractor shall saw cut all curb and gutter sections, concrete medians and along pavement where new construction ties into existing areas. Contractor shall adjust and/or cut existing pavement as necessary to assure a smooth fit and continuous grade. Contractor shall maintain traffic flow and provide traffic control throughout construction.
- Contractor shall be responsible to remove any basements, wells, utility lines, foundations, cisterns, cellars, etc. on site which exist and are within the projects construction area.
- All existing structures unless otherwise noted to remain, (i.e. fencing, trees, concrete, asphalt pavement, utilities, etc.) within the construction area shall be removed and disposed off-site in a manner meeting local and state regulations. Any burning on site shall be subject to local and state ordinances and the Owner's Specifications.
- All demolition, disposal, etc. fees are to be paid by the Contractor.
- Parking is to be striped with 4" wide painted yellow lines as indicated.
- Storm sewer and sanitary sewer shall be constructed from the lowest point to the highest point. (Downstream to Upstream)

PIPE MATERIAL NOTES

- Storm sewer pipe shall be reinforced concrete pipe, Class III per ASTM C-76, with flexible plastic bitumen gaskets at joints. Pipe shall be installed in accordance with pipe manufacturer's installation guidelines.
- Sanitary sewer pipe shall be SDR 21 PVC.
- Storm sewer downspout collector pipe shall be SDR 35 PVC pipe. Storm sewer downspout laterals shall be Schedule 40 PVC pipe.
- Storm sewer flared ends shall be reinforced concrete.
- Water lines shall be SDR 21, class 200 PVC pipe. Water lines 2" and smaller shall be SDR 9 PE tubing. All water lines constructed shall have a minimum of 42 inches of cover below finish grade, unless otherwise indicated on the plans.



- NOTES:
1. BEARINGS REFERENCED TO GRID NORTH OF THE MISSOURI COORDINATE SYSTEM OF 1983, EAST ZONE AND ELEVATIONS REFERENCED TO NAVD 1988 PER GPS OBSERVATIONS UTILIZING THE MODOT VRS RTK NETWORK AND GRS MONUMENT "LEAD"
 2. UNDERGROUND STRUCTURES, FACILITIES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS. THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN.
 3. PORTIONS OF THIS PROPERTY LIE WITHIN "ZONE X"(UNSHADED), AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN AND "ZONE A" DETERMINED TO BE INSIDE THE 1% CHANCE FLOOD AREA (100 PER YEAR) PER FLOOD INSURANCE RATE MAP FOR ST. FRANCOIS COUNTY, MISSOURI & INCORPORATED AREAS, PER PANEL 135 OF 450, COMMUNITY PANEL NUMBER 29187C01350, EFFECTIVE DATE JUNE 16, 2011
 4. PROJECT BENCHMARK IS GRS LEAD ELEV. = 827.82
 5. SITE BENCHMARK: IS A P.K. NAIL LOCATED AT THE SOUTHEAST OF THE EXISTING ACCESSIBLE PARKING SPACE ELEV. = 640.43 (NAVD 88)
 6. FIELDWORK WAS PERFORMED BY J.L.W. MAY 2, 2023

STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR



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03/28/2025
Dr. ELLIOTT R. REED
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Professional Engineer

6304 E. Independence Dr.
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UCHRAN

Civil Engineering
Land Surveying
Architecture
Site Development
General Consulting
Master Planning

Missouri State Certificate of Authority Numbers:
Survey : 000350
Engineering : 001655
Architecture : 2002014240

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF
NATURAL RESOURCES
MISSOURI STATE PARKS

NEW PREMIUM 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N
BONNE TERRE, MO 63628

PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
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ISSUE DATE: 03/28/2025

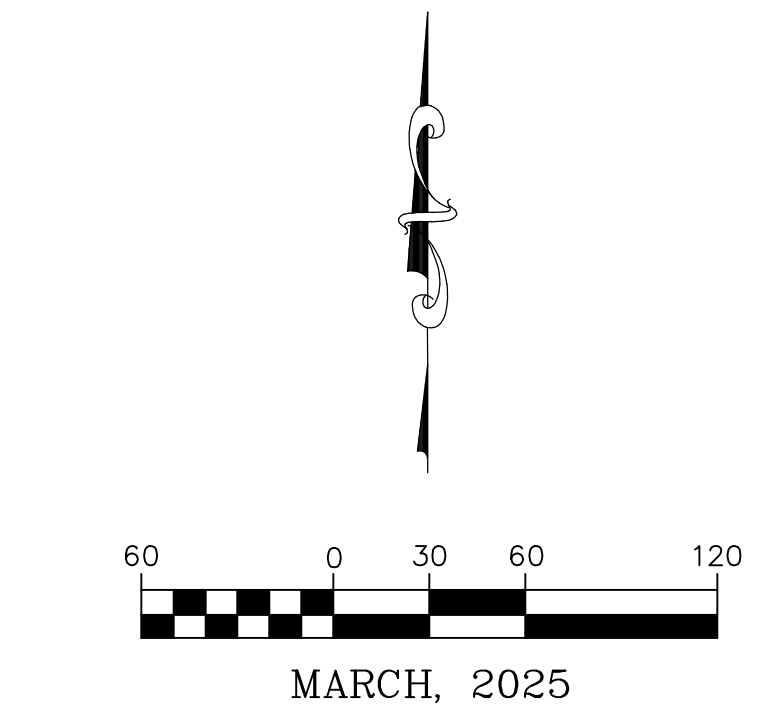
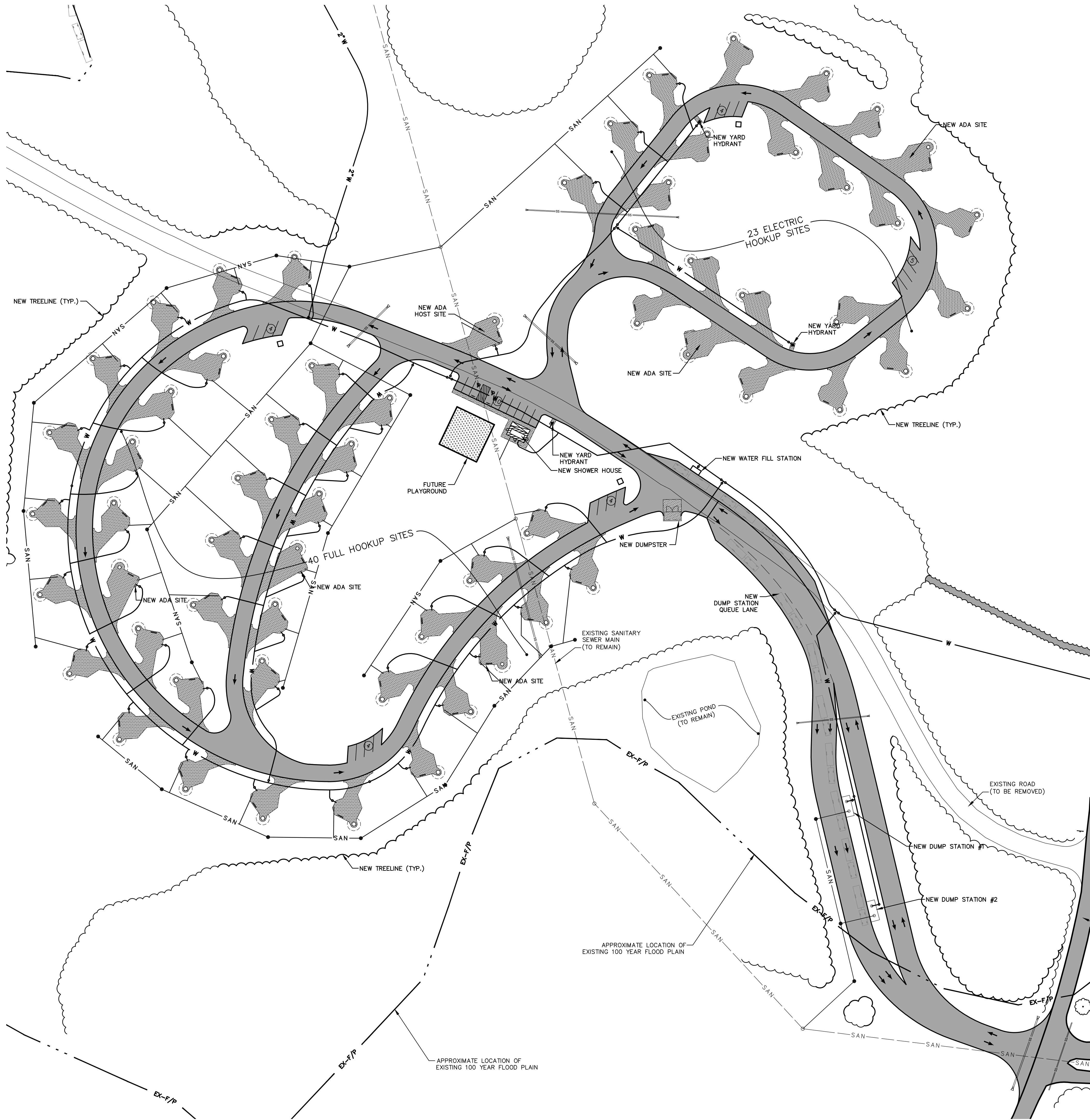
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DRAWN BY: JRG
CHECKED BY: ERR
DESIGNED BY: ERR

SHEET TITLE:
EXISTING
CONDITIONS

SHEET NUMBER:

C-102

3 OF 56 SHEETS
03/28/2025



LEGEND	
EXISTING	PROPOSED
---500---	INDEX CONTOUR
---SAN---	INTERMEDIATE CONTOUR
---SAN---	SANITARY SEWER
○	SANITARY MANHOLE
○	TREE
---TREELINE---	TREELINE
▨	ASPHALT PAVEMENT
▩	CONCRETE PAVEMENT

STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR



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Missouri State Certificate
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Survey : 000350
Engineering : 001655
Architecture : 2002014240

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NATURAL RESOURCES
MISSOURI STATE PARKS

NEW PREMIUM 63 SITE
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ST. FRANCOIS STATE PARK
8920 US-67N
BONNE TERRE, MO 63628

PROJECT # X2317-01
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REVISION:	_____
DATE:	_____
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DATE:	_____
REVISION:	_____
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ISSUE DATE:	03/28/2025

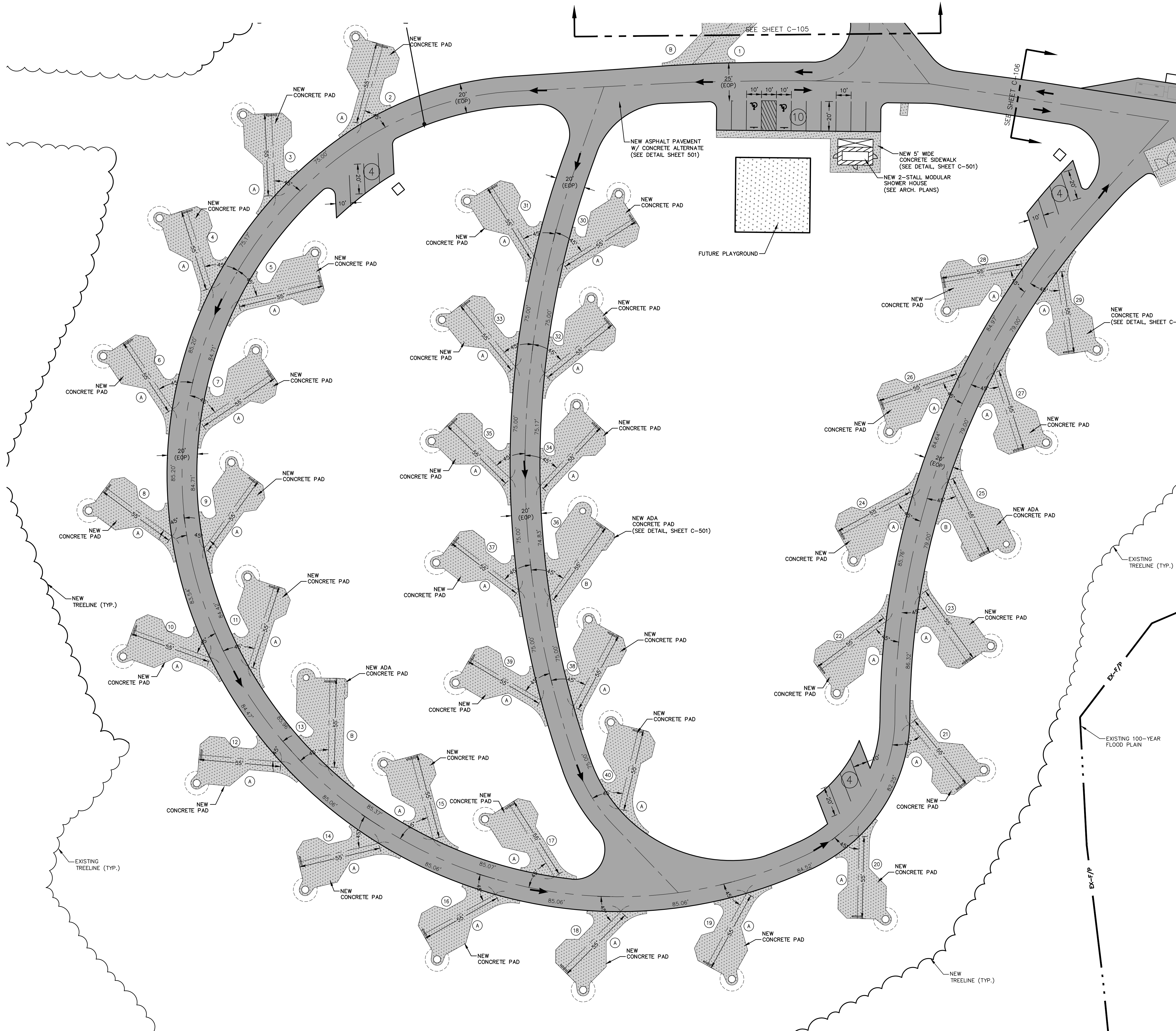
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DRAWN BY: JRG
CHECKED BY: ERR
DESIGNED BY: ERR

SHEET TITLE:
**OVERALL
SITE PLAN**

SHEET NUMBER:

C-103

4 OF 56 SHEETS
03/28/2025



MARCH, 2025

LEGEND

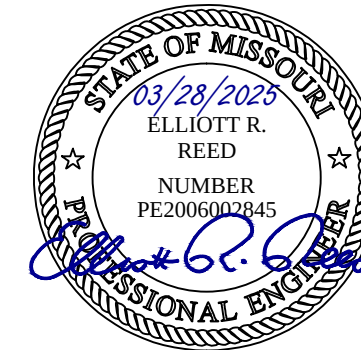
EXISTING	PROPOSED
— PL —	— PL —
— R/W —	— R/W —
— EX-F/P —	— EX-F/P —
— CENTERLINE —	— CENTERLINE —
— ASPHALT PAVEMENT —	— ASPHALT PAVEMENT —
— CONCRETE PAVEMENT —	— CONCRETE PAVEMENT —

SITE LEGEND

(A) STALL STYLE A - BACK-IN STANDARD
(B) STALL STYLE B - ADA BACK-IN STANDARD

NOTE: ALL TREE CLEARING SHALL OCCUR BETWEEN NOVEMBER 1ST AND MARCH 31ST.

STATE OF MISSOURI
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Survey : 0003580
Engineering : 001655
Architecture : 2002014240

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
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DESIGN AND CONSTRUCTION

DEPARTMENT OF
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MISSOURI STATE PARKS

NEW PREMIUM 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N
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PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____

ISSUE DATE: 03/28/2025

CAD DWG FILE: X2317-SP-104
DRAWN BY: LJR
CHECKED BY: ERR
DESIGNED BY: ERR

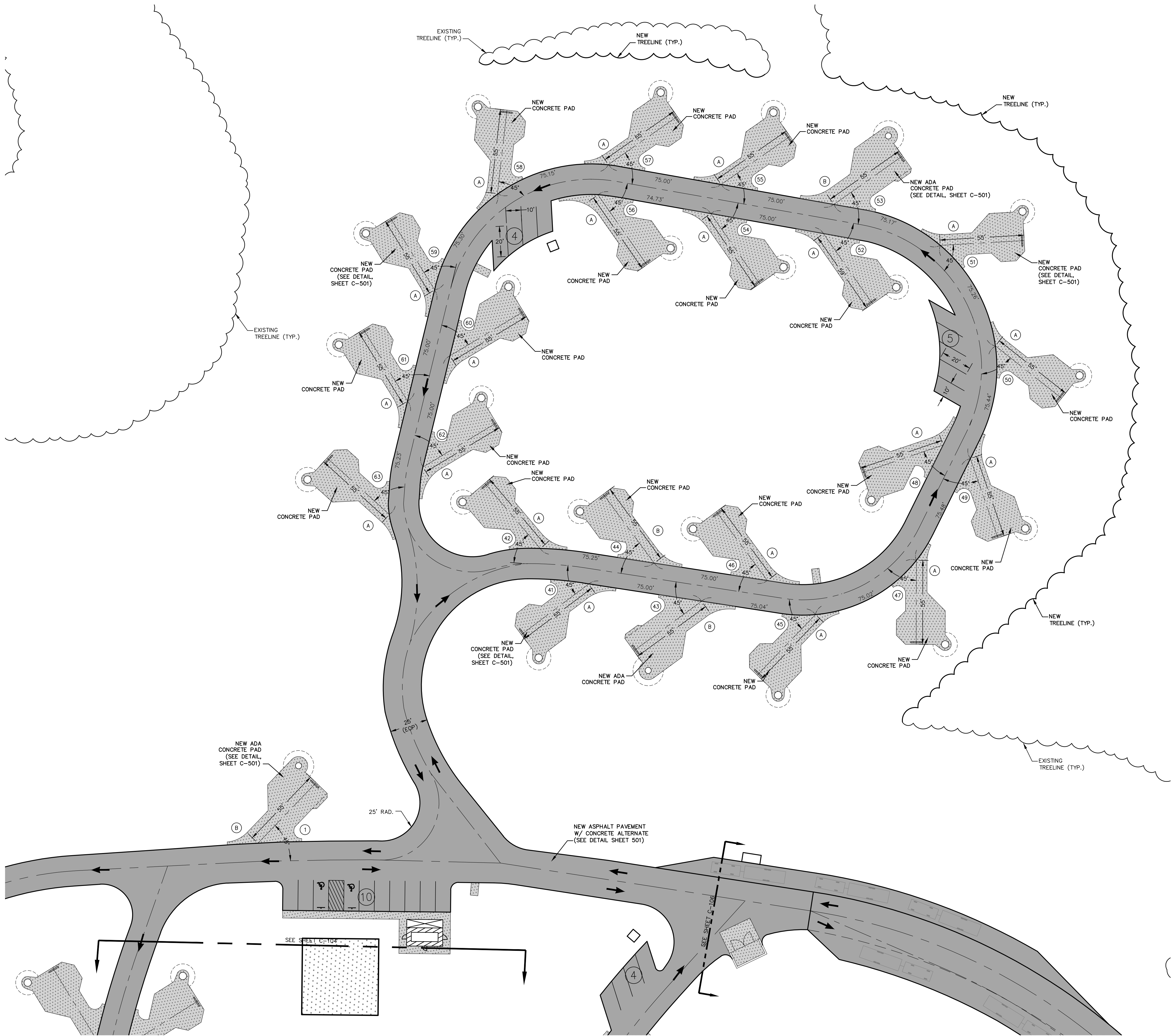
SHEET TITLE:

SITE
PLAN

SHEET NUMBER:

C-104

5 OF 56 SHEETS
03/28/2025



STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR

03/28/2025
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Survey : 000350
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8920 US-67N
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ISSUE DATE: 03/28/2025

CAD DWG FILE: X2317-SP-105
DRAWN BY: LJR
CHECKED BY: ERR
DESIGNED BY: ERR

SHEET TITLE:
SITE
PLAN

SHEET NUMBER:
C-105

6 OF 56 SHEETS
03/28/2025

MARCH, 2025

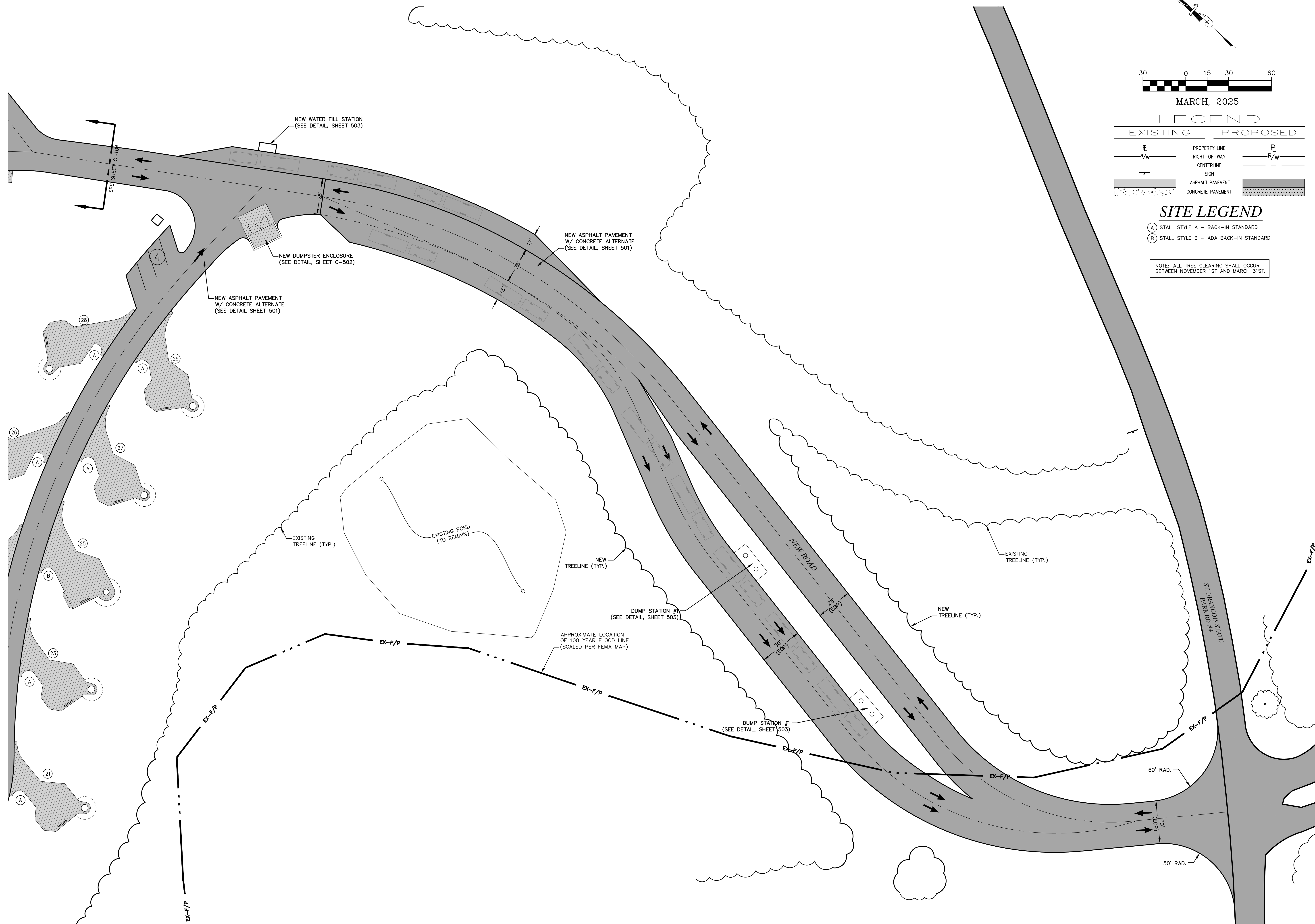
LEGEND

EXISTING	PROPOSED
—P—	—P—
—R/W—	—R/W—
—C—	—C—
—A/P—	—A/P—
—C/P—	—C/P—

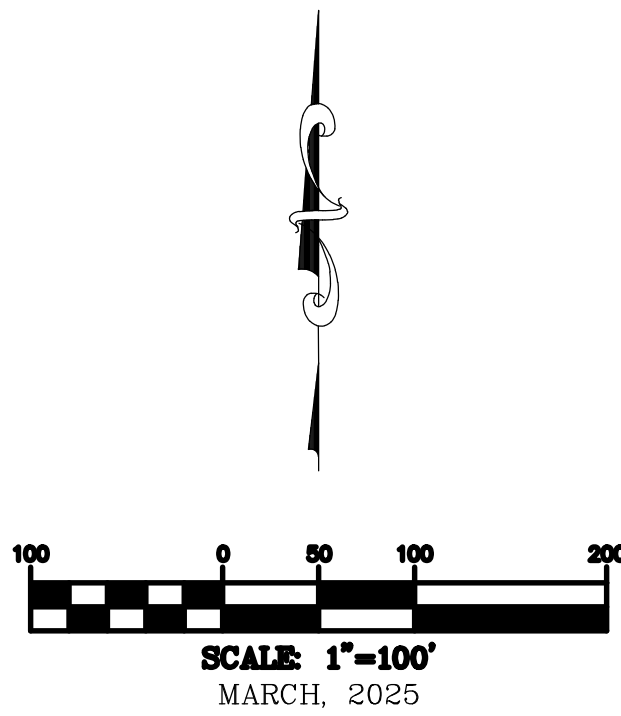
SITE LEGEND

A STALL STYLE A - BACK-IN STANDARD
B STALL STYLE B - ADA BACK-IN STANDARD

NOTE: ALL TREE CLEARING SHALL OCCUR
BETWEEN NOVEMBER 1ST AND MARCH 31ST.



OVERALL UTILITY PLAN

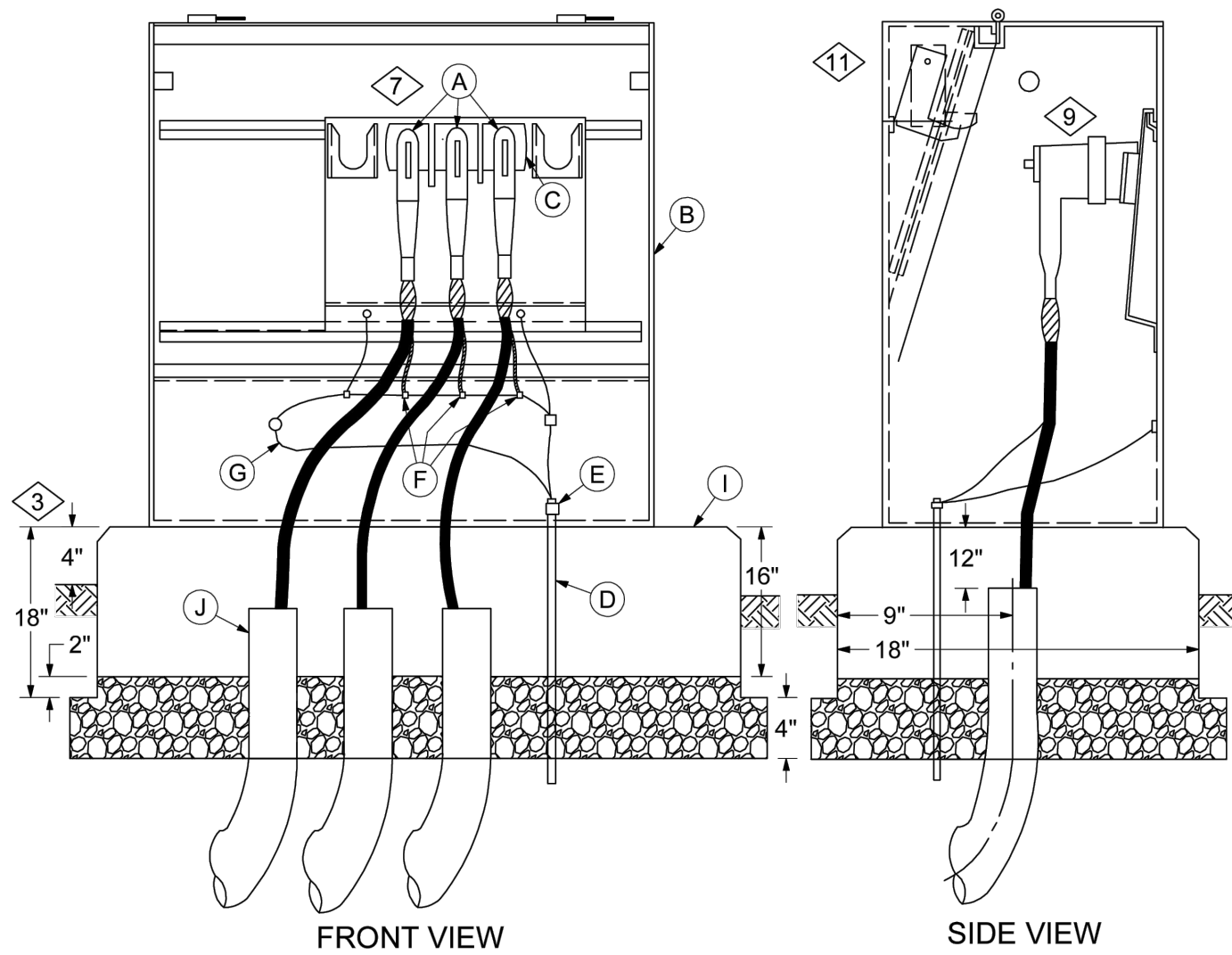


① NEW TRANSFORMER PAD
(AMEREN WILL PROVIDE PAD
CONTRACTOR WILL INSTALL PAD)



UG PRIMARY EQUIPMENT
Primary Pedestal Single Phase
2-3-4 Way 200A Loadbreak

51 11 06 **
5kV, 15kV
1 of 2



CONSTRUCTION NOTE(s):

1. An initial depth of 18" shall be excavated and all loose soil shall be removed or tamped. The length and width of the hole should be sized to allow a minimum of 6" of clearance on all sides.
2. To install the 36" radius bends, an increase in the initial excavation depth will be required. After the bends have been installed, crushed stone screening shall be placed and tamped to the level shown.
- ③ 3. The final depth should be adjusted to provide 4" of exposed ground sleeve pad at final grade.
4. Stabilize the ground sleeve pad over the conduits before backfilling so that there will be no shifting. Provide 12" of space between the load bearing surface of the ground sleeve pad and the end of each conduits.
5. To further stabilize the ground sleeve pad and the bends, place additional screening inside the ground sleeve pad and hand tamp in place.
6. Backfill with loose material, **DO NOT** backfill next to the ground sleeve pad with chunks of material or rocks. Pack loose backfill by foot tamping and do not tamp excessively close to the ground sleeve pad sides.

DISTRIBUTION
CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
16	01/01/23	JMW	Converted to new format
18	08/14/17	JMW	

STATE OF MISSOURI
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DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____

ISSUE DATE: 03/28/2025

CAD DWG FILE: X2317-UP-107

DRAWN BY: JNP
CHECKED BY: ERR
DESIGNED BY: ERR

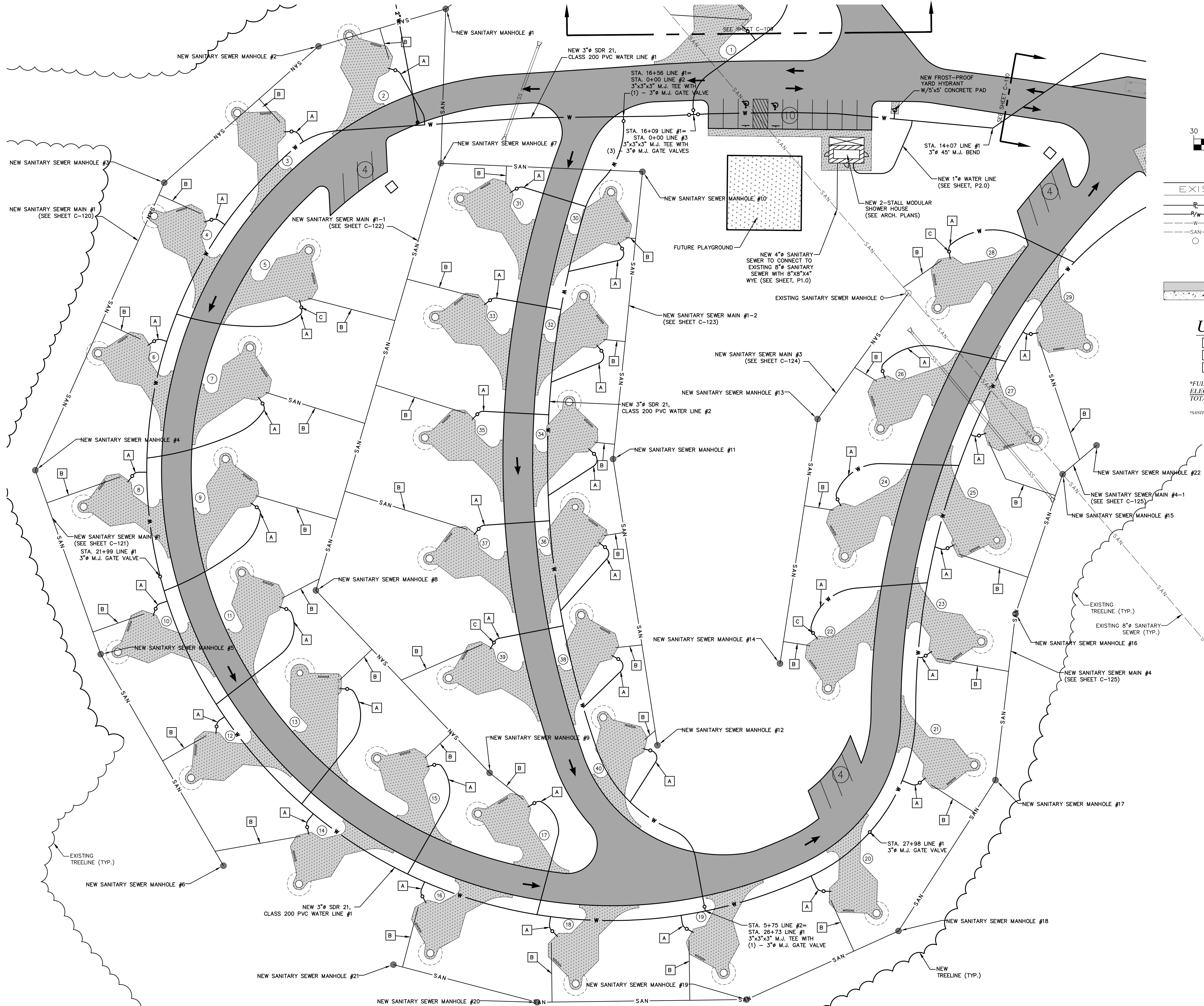
SHEET TITLE:

OVERALL
UTILITY PLAN

SHEET NUMBER:

C-107

8 OF 56 SHEETS
03/28/2025



MARCH, 2025

LEGEND	
EXISTING	PROPOSED
PROPERTY LINE	PROPERTY LINE
RIGHT-OF-WAY	RIGHT-OF-WAY
WATER	WATER
SANITARY SEWER	SANITARY SEWER
SANITARY MANHOLE	SANITARY MANHOLE
YARD HYDRANTS	YARD HYDRANTS
STORM SEWER	STORM SEWER
AREA INLET	AREA INLET
FLARED END	FLARED END
ASPHALT PAVEMENT	ASPHALT PAVEMENT
CONCRETE PAVEMENT	CONCRETE PAVEMENT

UTILITY LEGEND

A	1" WATER SERVICE LINE
B	4" SANITARY SEWER LATERAL
C	VALVE BOX (TYP.)

*FULL HOOKUPS
ELECTRIC ONLY HOOKUPS
TOTAL CAMPSITES

43 CAMPSITES
20 CAMPSITES
63 CAMPSITES

*SANITARY SEWER, WATER, & ELECTRIC HOOKUPS

FULL HOOKUP SITES
CAMPSITES 1-40, 50, 61, & 63

ELECTRIC ONLY SITES
CAMPSITES 41-50, 60, & 62

STATE OF MISSOURI
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DR. OCHRAN

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Survey : 000350
Engineering : 001655
Architecture : 2002014240

PE
ELLIOTT R. REED
NUMBER
PE2006002845

Civil Engineering
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Architecture
Site Development
General Consulting
Master Planning

Missouri State Certificate
of Authority Numbers:
Survey : 000350
Engineering : 001655
Architecture : 2002014240

**OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION**

**DEPARTMENT OF
NATURAL RESOURCES
MISSOURI STATE PARKS**

NEW PREMIUM 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N
BONNE TERRE, MO 63628

PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

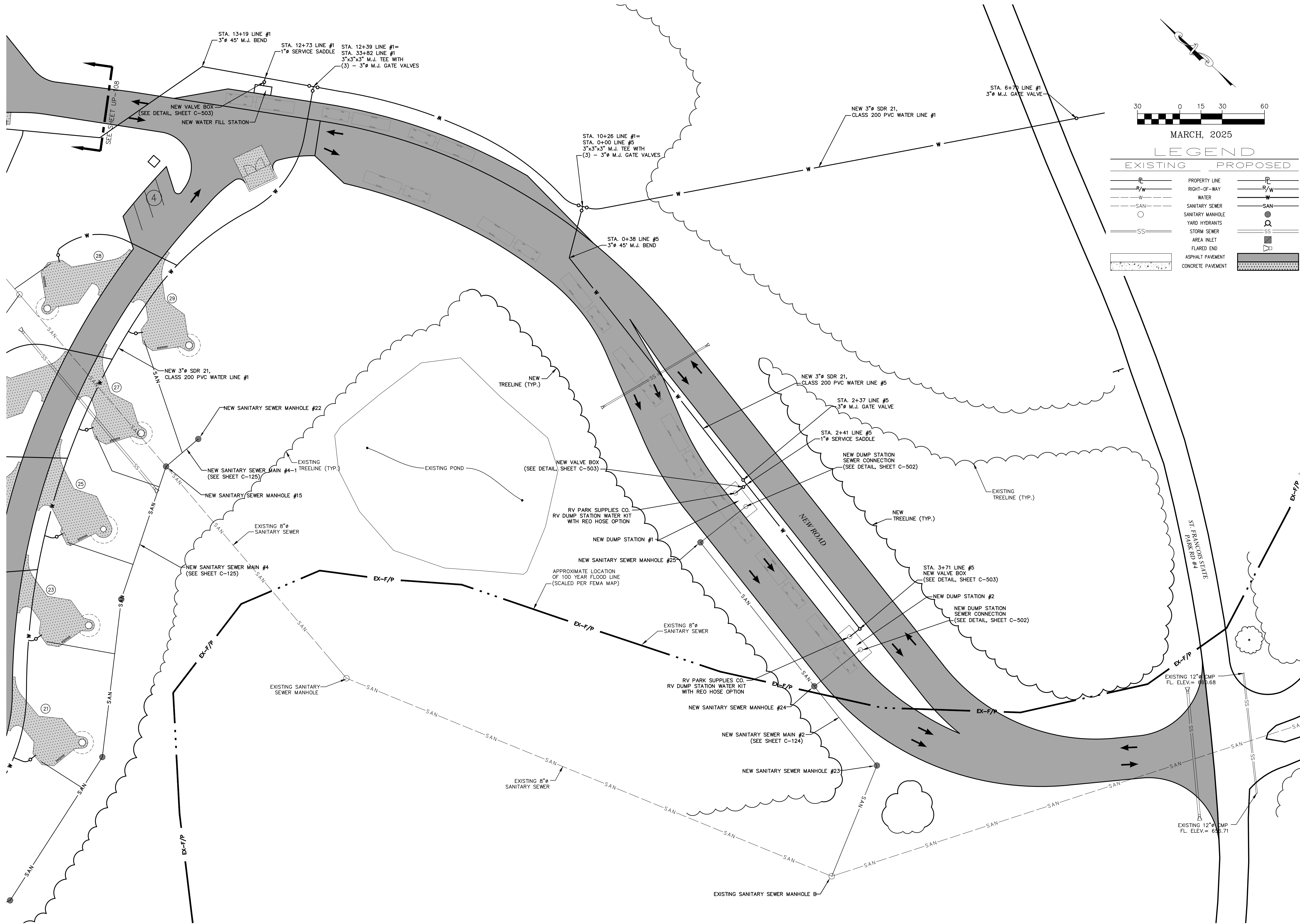
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DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 03/28/2025

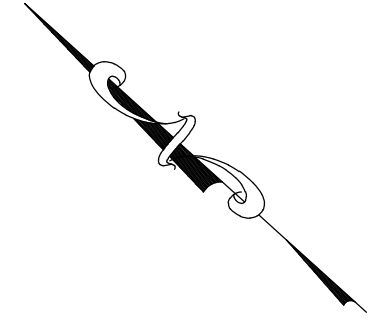
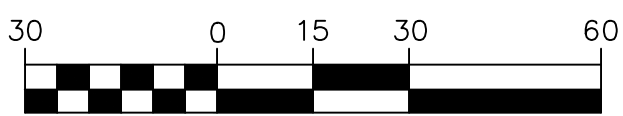
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DRAWN BY: LJR
CHECKED BY: ERR
DESIGNED BY: ERR

SHEET TITLE:
**UTILITY
PLAN**

SHEET NUMBER:
C-108
9 OF 56 SHEETS
03/28/2025







MARCH, 2025

LEGEND	
EXISTING	PROPOSED
PROPERTY LINE	PROPERTY LINE
RIGHT-OF-WAY	RIGHT-OF-WAY
WATER	WATER
SANITARY SEWER	SANITARY SEWER
SANITARY MANHOLE	SANITARY MANHOLE
YARD HYDRANTS	YARD HYDRANTS
STORM SEWER	STORM SEWER
AREA INLET	AREA INLET
FLARED END	FLARED END
ASPHALT PAVEMENT	ASPHALT PAVEMENT
CONCRETE PAVEMENT	CONCRETE PAVEMENT

STATE OF MISSOURI
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BONNE TERRE, MO 63628

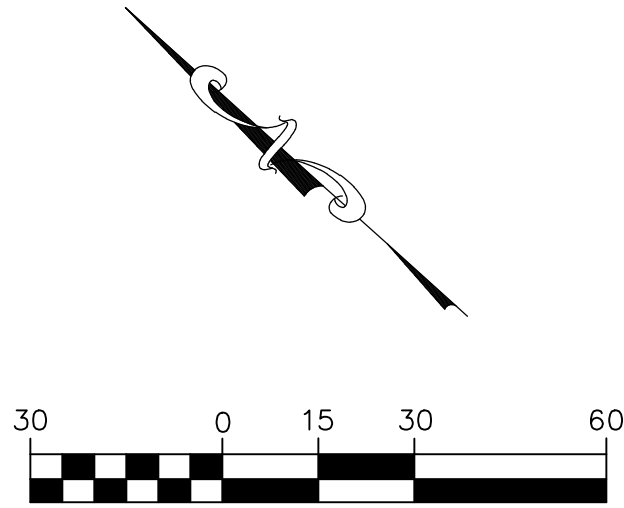
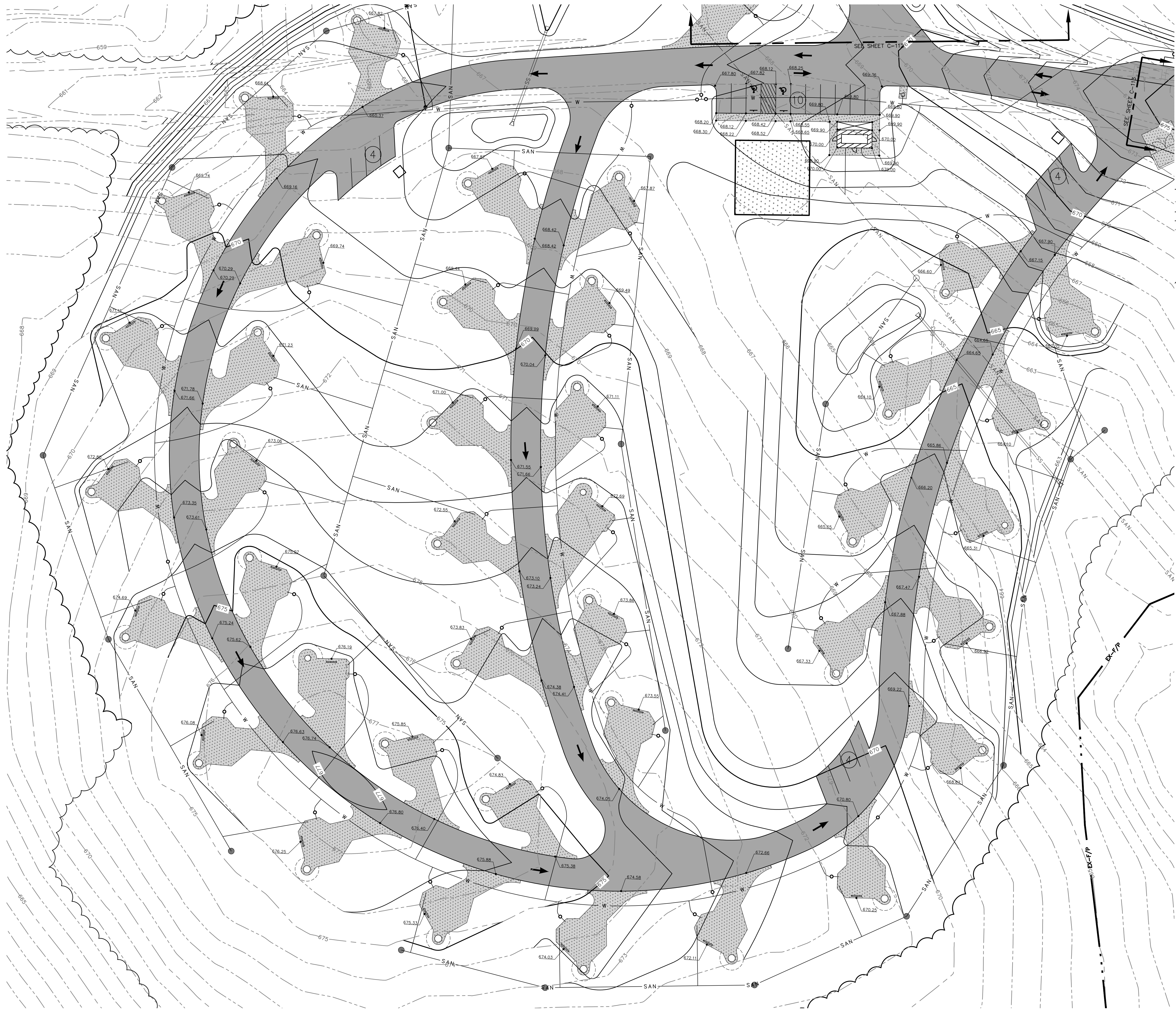
PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 03/28/2025

CAD DWG FILE: X2317-UP-110
DRAWN BY: LJR
CHECKED BY: ERR
DESIGNED BY: ERR

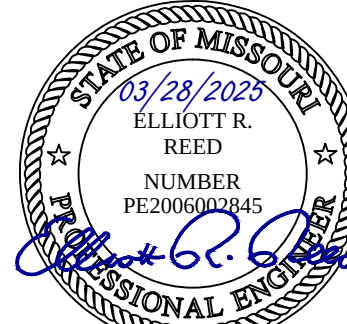
SHEET TITLE:
UTILITY
PLAN

SHEET NUMBER:
C-110
11 OF 56 SHEETS
03/28/2025



LEGEND	
EXISTING	PROPOSED
PROPERTY LINE	PROPERTY LINE
RIGHT-OF-WAY	RIGHT-OF-WAY
SANITARY SEWER	SANITARY SEWER
SANITARY MANHOLE	SANITARY MANHOLE
STORM SEWER	STORM SEWER
FLARED END SECTIONS	FLARED END SECTIONS
WATER LINE	WATER LINE
FIRE HYDRANTS	FIRE HYDRANTS
TREE LINE	TREE LINE
CONCRETE PAVEMENT	CONCRETE PAVEMENT
ASPHALT PAVEMENT	ASPHALT PAVEMENT

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PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION:	_____
DATE:	_____
REVISION:	_____
DATE:	_____
REVISION:	_____
DATE:	_____
ISSUE DATE: 03/28/2025	

CAD DWG FILE: X2317-GP-111
DRAWN BY: LJR
CHECKED BY: ERR
DESIGNED BY: ERR

SHEET TITLE:
**GRADING
PLAN**

SHEET NUMBER:
C-111
12 OF 56 SHEETS
03/28/2025

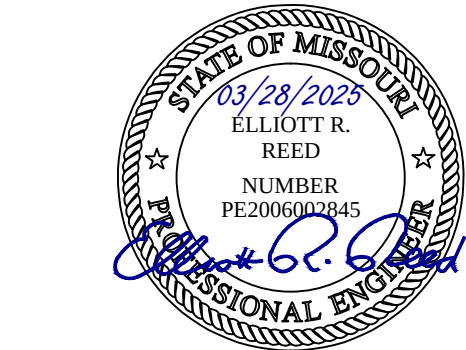


MARCH, 2025

LEGEND

EXISTING	PROPOSED
PROPERTY LINE	PROPERTY LINE
RIGHT-OF-WAY	RIGHT-OF-WAY
SANITARY SEWER	SANITARY SEWER
SANITARY MANHOLE	SANITARY MANHOLE
STORM SEWER	STORM SEWER
FLARED END SECTIONS	FLARED END SECTIONS
WATER LINE	WATER LINE
FIRE HYDRANTS	FIRE HYDRANTS
TREELINE	TREELINE
CONCRETE PAVEMENT	CONCRETE PAVEMENT
ASPHALT PAVEMENT	ASPHALT PAVEMENT

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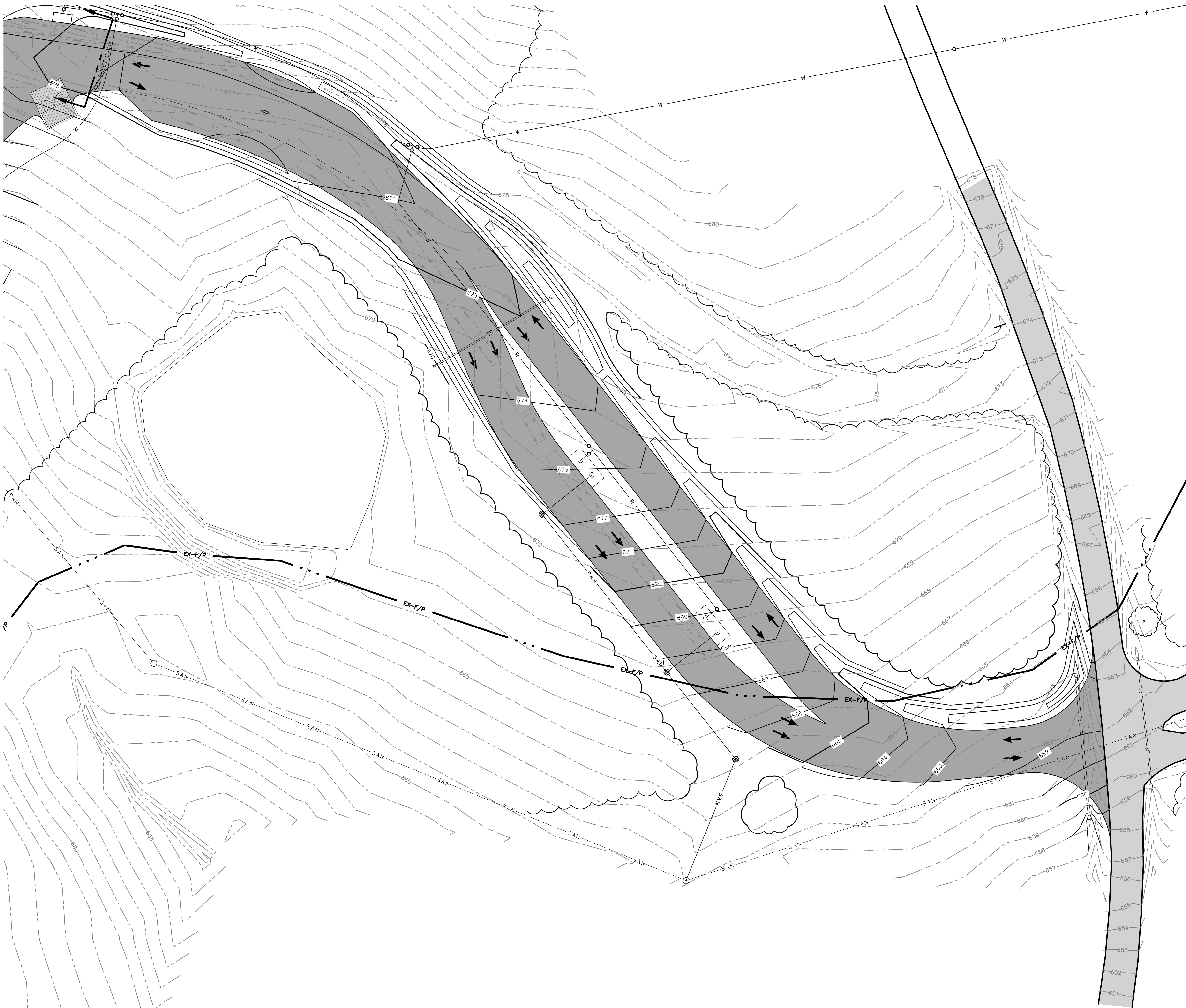
PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 03/28/2025

CAD DWG FILE: X2317-GP-112
DRAWN BY: LJR
CHECKED BY: ERR
DESIGNED BY: ERR

SHEET TITLE:
GRADING
PLAN

SHEET NUMBER:
C-112
13 OF 56 SHEETS
03/28/2025



MARCH, 2025

LEGEND

EXISTING		PROPOSED
—P—	PROPERTY LINE	—P—
—R/W—	RIGHT-OF-WAY	—R/W—
---SAN---	SANITARY SEWER	---SAN---
○	SANITARY MANHOLE	●
===SS===	STORM SEWER	===SS===
FLARED END SECTIONS		FLARED END SECTIONS
—W—	WATER LINE	—W—
—F—	FIRE HYDRANTS	—F—
—T—	TREELINE	—T—
CONCRETE PAVEMENT		CONCRETE PAVEMENT
ASPHALT PAVEMENT		ASPHALT PAVEMENT

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NEW PREMIUM 63 SITE
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ST. FRANCOIS STATE PARK
8920 US-67N
BONNE TERRE, MO 63628

PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

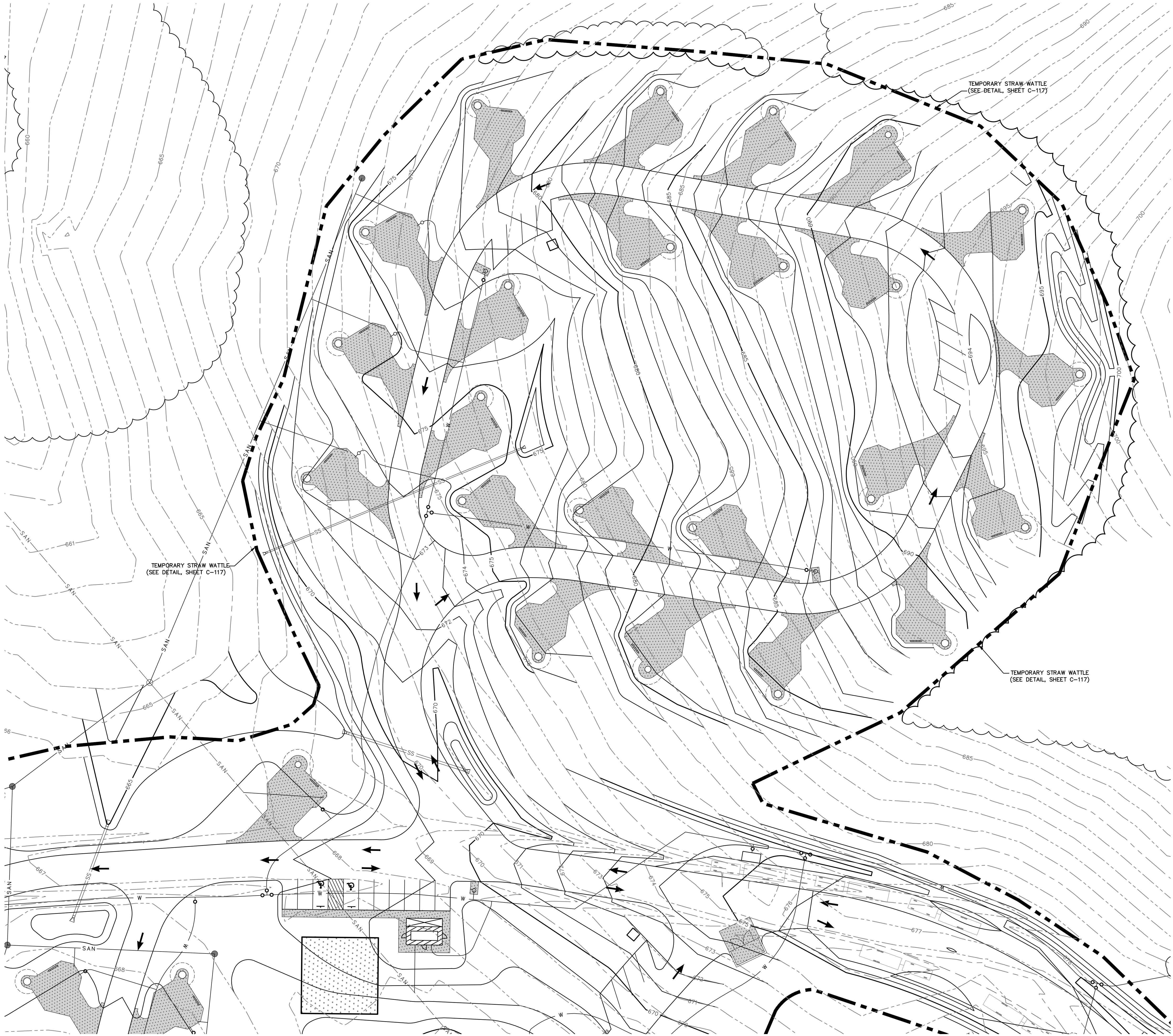
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DATE: _____
ISSUE DATE: 03/28/2025

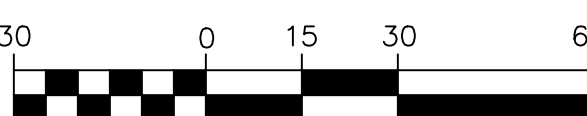
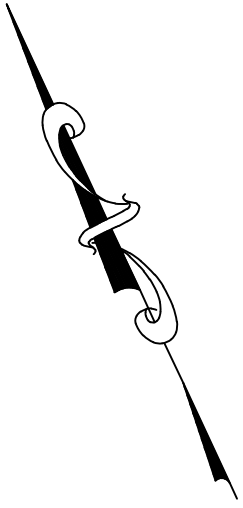
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DRAWN BY: LJR
CHECKED BY: ERR
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SHEET TITLE:
GRADING
PLAN

SHEET NUMBER:
C-113
14 OF 56 SHEETS
03/28/2025





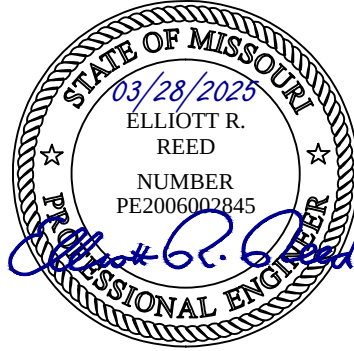


MARCH, 2025

LEGEND

EXISTING		PROPOSED
500	INDEX CONTOUR	500
500	INTERMEDIATE CONTOUR	500
SAN	SANITARY SEWER	SAN
O	SANITARY MANHOLE	O
SS	STORM SEWER	SS
W	FLARED END	W
W	WATER LINE	W
W	STRAW WATTLE	W
W	TREELINE	W
W	ASPHALT PAVEMENT	W
W	CONCRETE PAVEMENT	W

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Architecture : 2002014240



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BONNE TERRE, MO 63628

PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 03/28/2025

CAD DWG FILE: X2317-ES-115
DRAWN BY: LJR
CHECKED BY: ERR
DESIGNED BY: ERR

SHEET TITLE:
EROSION & SEDIMENT
CONTROL PLAN

SHEET NUMBER:
C-115
16 OF 56 SHEETS
03/28/2025



MARCH, 2025

LEGEND

EXISTING	PROPOSED
---500---	---500---
---INTERMEDIATE CONTOUR---	---INTERMEDIATE CONTOUR---
---SAN---	---SAN---
○ SANITARY MANHOLE	● SANITARY MANHOLE
---SS---	---SS---
FLARED END	FLARED END
WATER LINE	WATER LINE
STRAW WATTLE	STRAW WATTLE
TREELINE	TREELINE
ASPHALT PAVEMENT	ASPHALT PAVEMENT
CONCRETE PAVEMENT	CONCRETE PAVEMENT

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of Authority Numbers:
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Engineering : 001655
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DEPARTMENT OF
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MISSOURI STATE PARKS

NEW PREMIUM 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N
BONNE TERRE, MO 63628

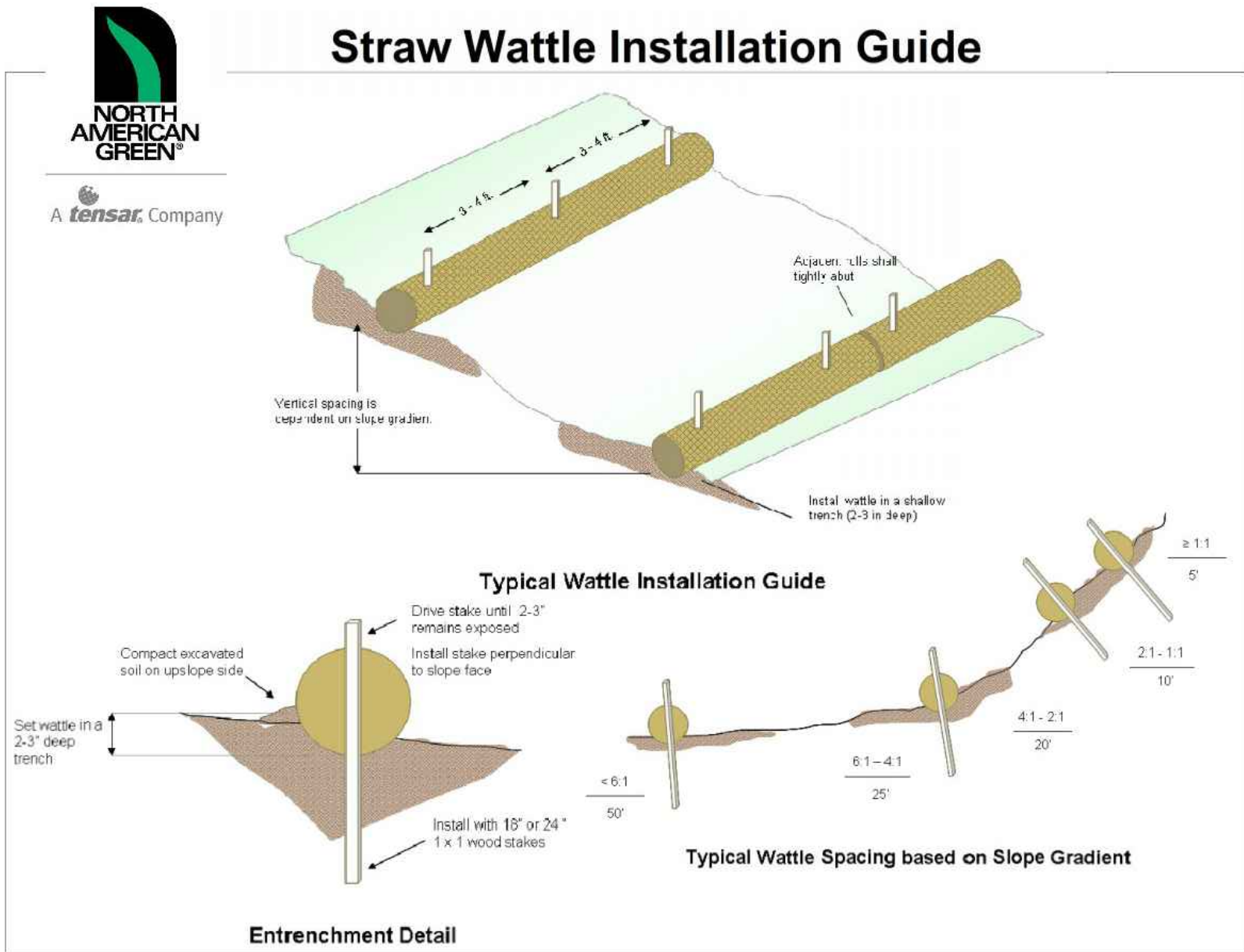
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SITE # 5216
ASSET # 7815216025

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 03/28/2025

CAD DWG FILE: X2317-ES-116
DRAWN BY: LJR
CHECKED BY: ERR
DESIGNED BY: ERR

SHEET TITLE:
EROSION & SEDIMENT
CONTROL PLAN

SHEET NUMBER:
C-116
17 OF 56 SHEETS
03/28/2025



1. BEGIN AT THE LOCATION WHERE THE WATTLE IS TO BE INSTALLED BY EXCAVATING A 2-3" (5-7.5 CM) DEEP X 9" (22.9 CM) WIDE TRENCH ALONG THE CONTOUR OF THE SLOPE. EXCAVATED SOIL SHOULD BE PLACED UP-SLOPE FROM THE ANCHOR TRENCH.
2. PLACE THE WATTLE IN THE TRENCH SO THAT IT CONTOURS TO THE SOIL SURFACE. COMPACT SOIL FROM THE EXCAVATED TRENCH AGAINST THE WATTLE ON THE UPHILL SIDE. ADJACENT WATTLES SHOULD TIGHTLY ABUT.
3. SECURE THE WATTLE WITH 18-24" (45.7-61 CM) STAKES EVERY 3-4' (0.9 - 1.2 M) AND WITH A STAKE ON EACH END. STAKES SHOULD BE DRIVEN THROUGH THE MIDDLE OF THE WATTLE LEAVING AT LEAST 2-3" (5-7.5 CM) OF STAKE EXTENDING ABOVE THE WATTLE. STAKES SHOULD BE DRIVEN PERPENDICULAR TO SLOPE FACE.

North American Green Straw Wattles are a Best Management Practice (BMP) that offers an effective and economical alternative to silt fence and straw bales for sediment control and storm water runoff.

Guidelines are provided to assist in design, installation, and structure spacing. The guidelines may require modification due to variation in soil type, rainfall intensity or duration, and amount of runoff affecting the application site.

To maximize sediment containment with the Straw Wattle, place the initial structure at the top/crest of the slope if significant runoff is expected from above. If no runoff from above is expected, the initial Straw Wattle can be installed at the appropriate distance downhill from the top/crest of the slope. The final structure should be installed at or just beyond the bottom/toe of the slope. Wattles should be installed perpendicular to the primary direction of overland flow.

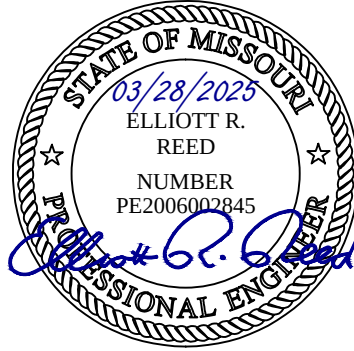
Straw Wattles are a temporary sediment control device and are not intended to replace rolled erosion control products (RECPs) or hydraulic erosion control products (HECPs). If vegetation is desired for permanent erosion control, North American Green recommends that RECPs or HECPs be used to provide effective immediate erosion control until vegetation is established. Straw Wattles may be used in conjunction with blankets, mats, and mulches as supplemental sediment and runoff control for these applications. Like all sediment control devices, the effectiveness of the Straw Wattle is dependent on storage capacity.

For additional installation assistance, please contact North American Green's Technical Services Department at 1-800-772-2040

5401 St. Wendel – Cynthiana Road, Poseyville, IN 47633
1-800-772-2040 www.nagreen.com

Rev. 1/2011

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MISSOURI STATE PARKS

NEW PREMIUM 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N
BONNE TERRE, MO 63628

PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION: _____
DATE: _____
REVISION: _____
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REVISION: _____
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CAD DWG FILE: X2317-ES-117
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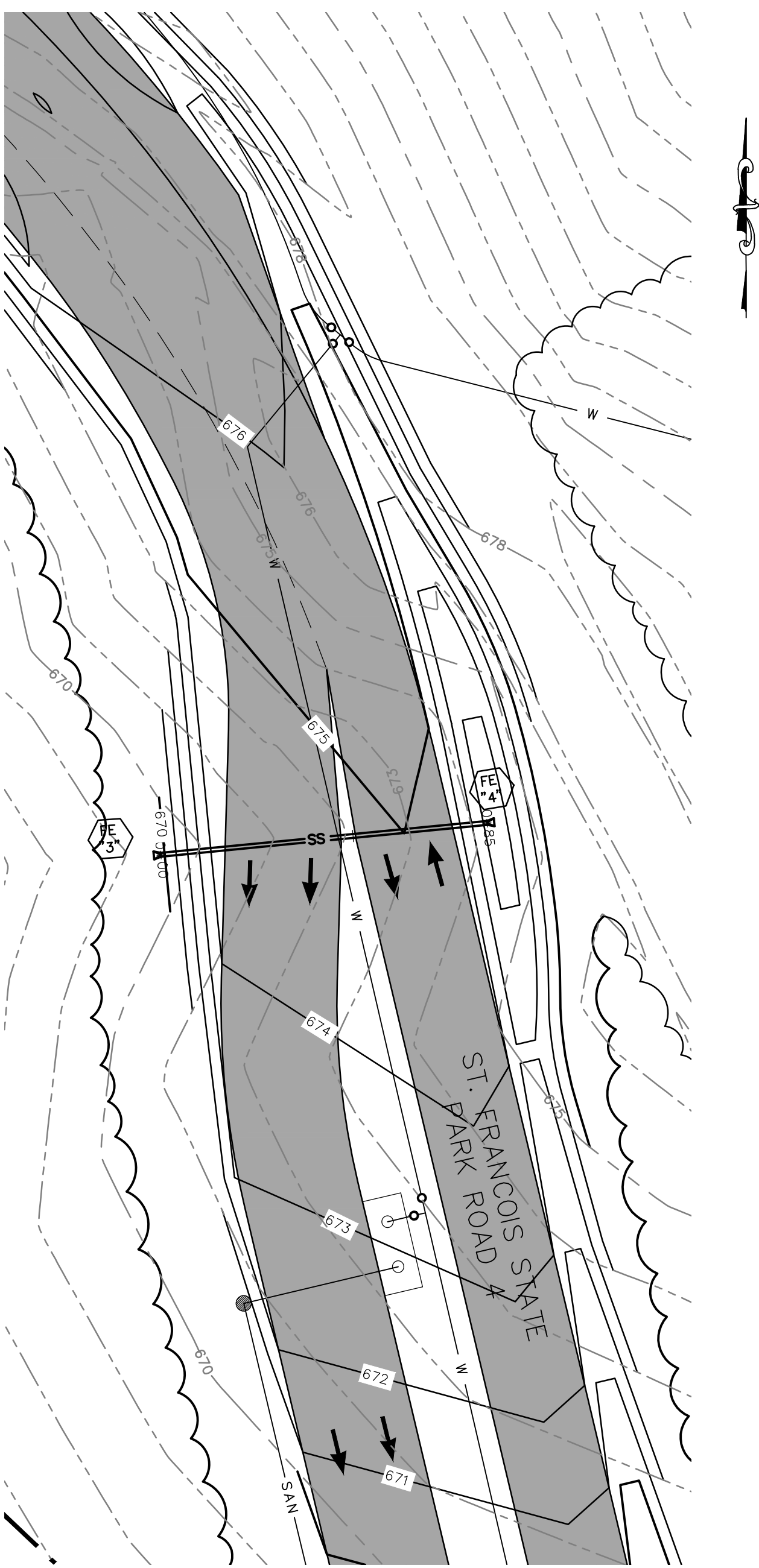
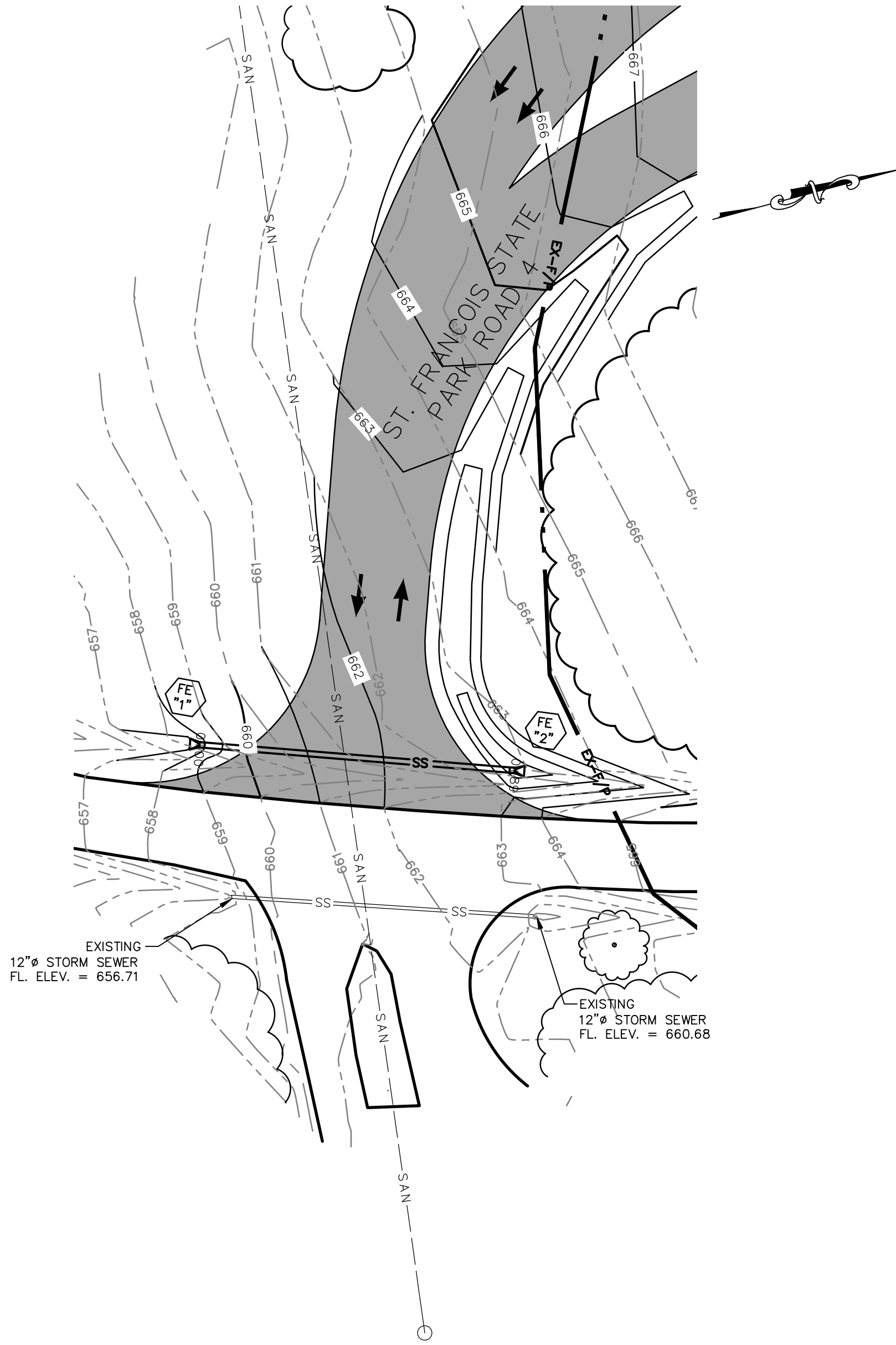
SHEET TITLE:

EROSION & SEDIMENT
DETAIL SHEET

SHEET NUMBER:

C-117

18 OF 56 SHEETS
03/28/2025



30

0

15

30

60

MARCH, 2025

LEGEND

EXISTING

PROPOSED

R/W

R/W

SAN

SAN

W

W

PROPERTY LINE

RIGHT-OF-WAY

SANITARY SEWER

SANITARY MANHOLE

WATER LINE (SIZE)

HYDRANTS

CONCRETE PAVEMENT

ASPHALT PAVEMENT

R/W

R/W

SAN

SAN

W

W

LINE A

LINE B

LINE C

STATE OF MISSOURI
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REVISION: _____
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DATE: _____
ISSUE DATE: 03/28/2025

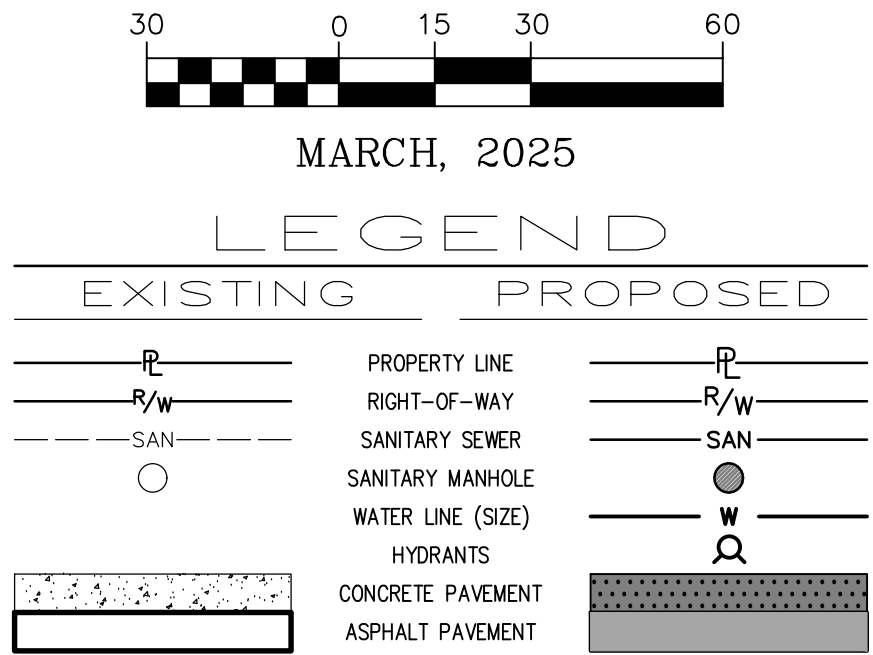
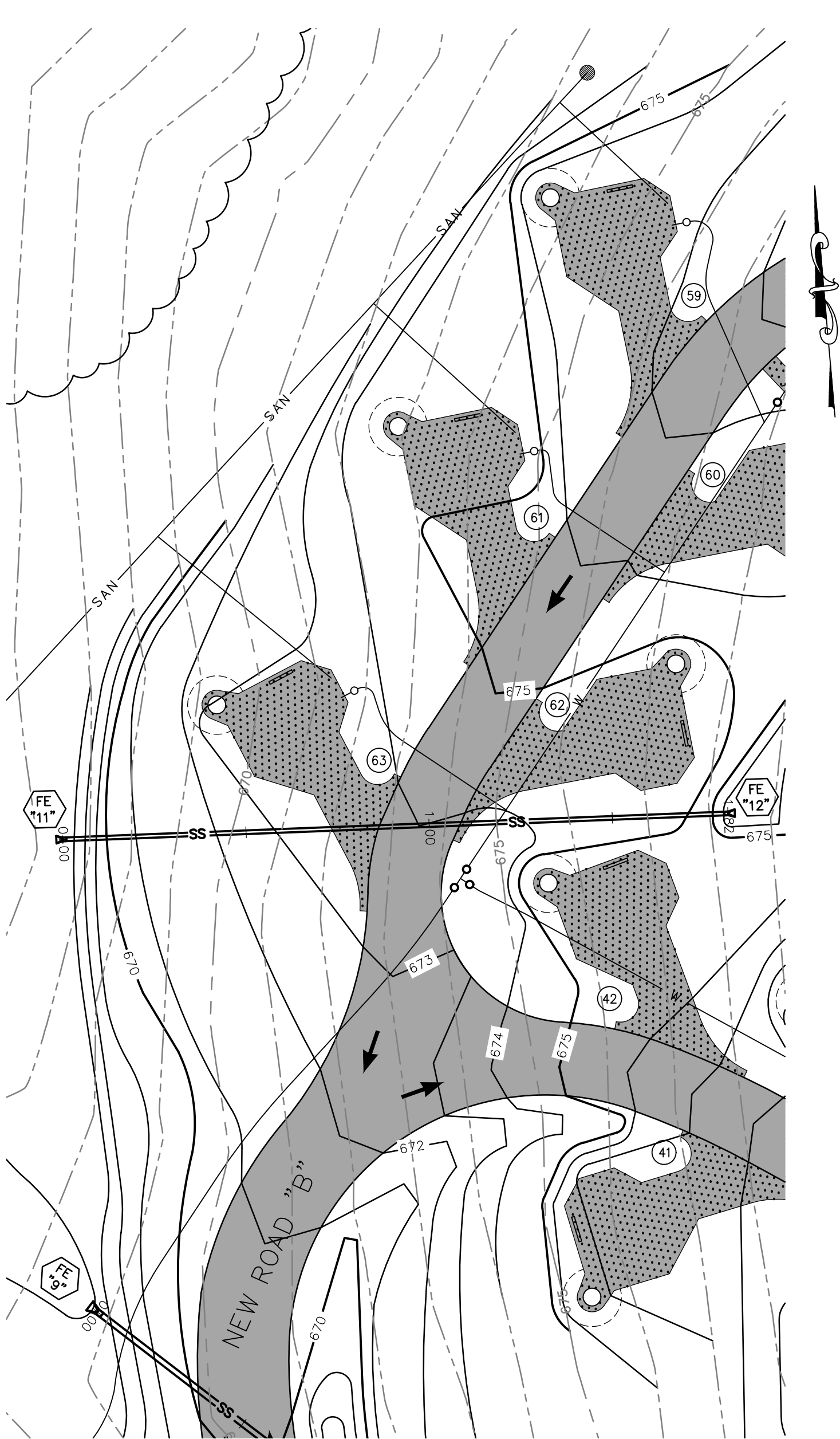
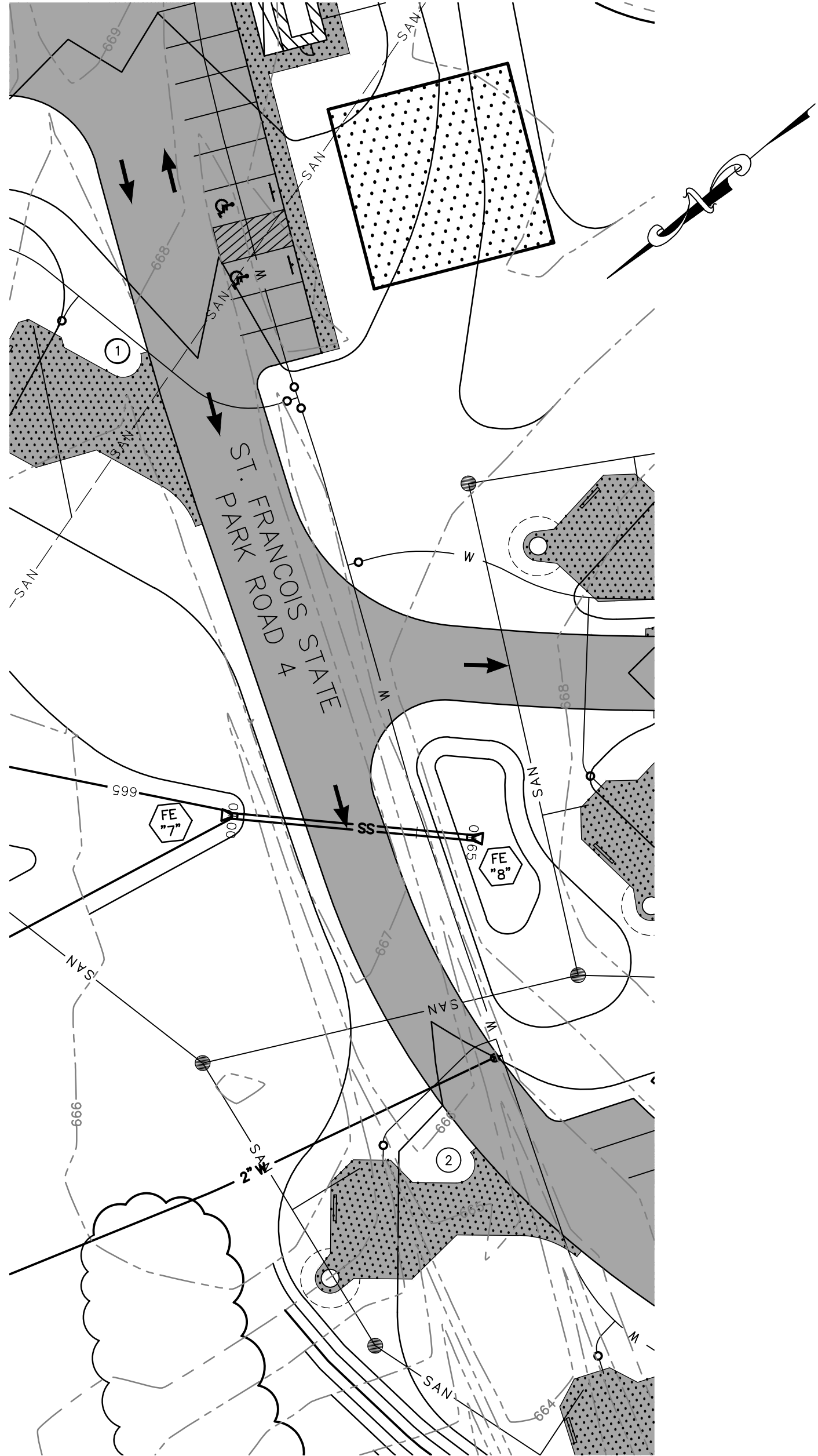
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DESIGNED BY: ERR

SHEET TITLE:
STORM SEWER
PLAN & PROFILE
LINE A, B, & C

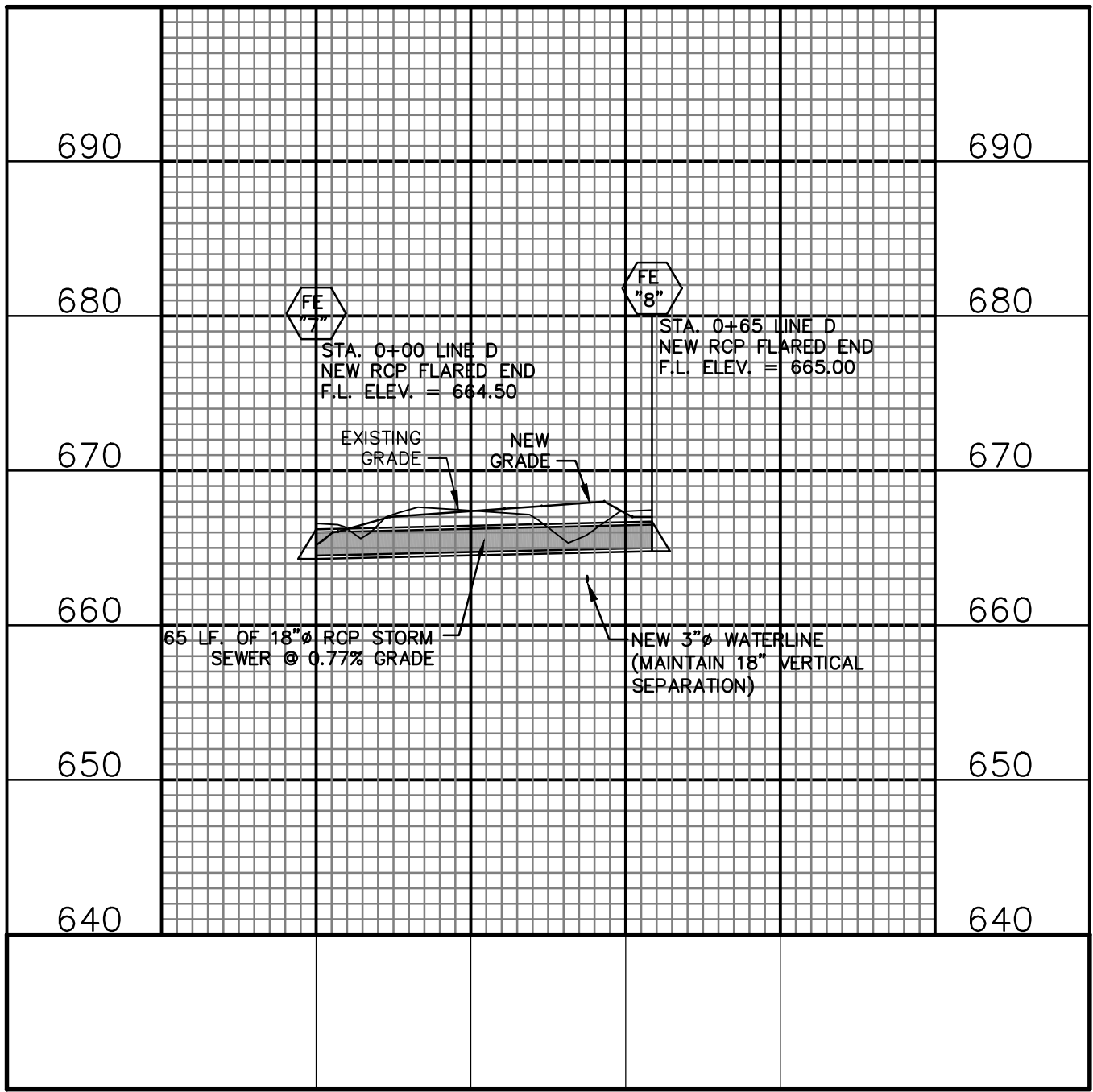
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C-118

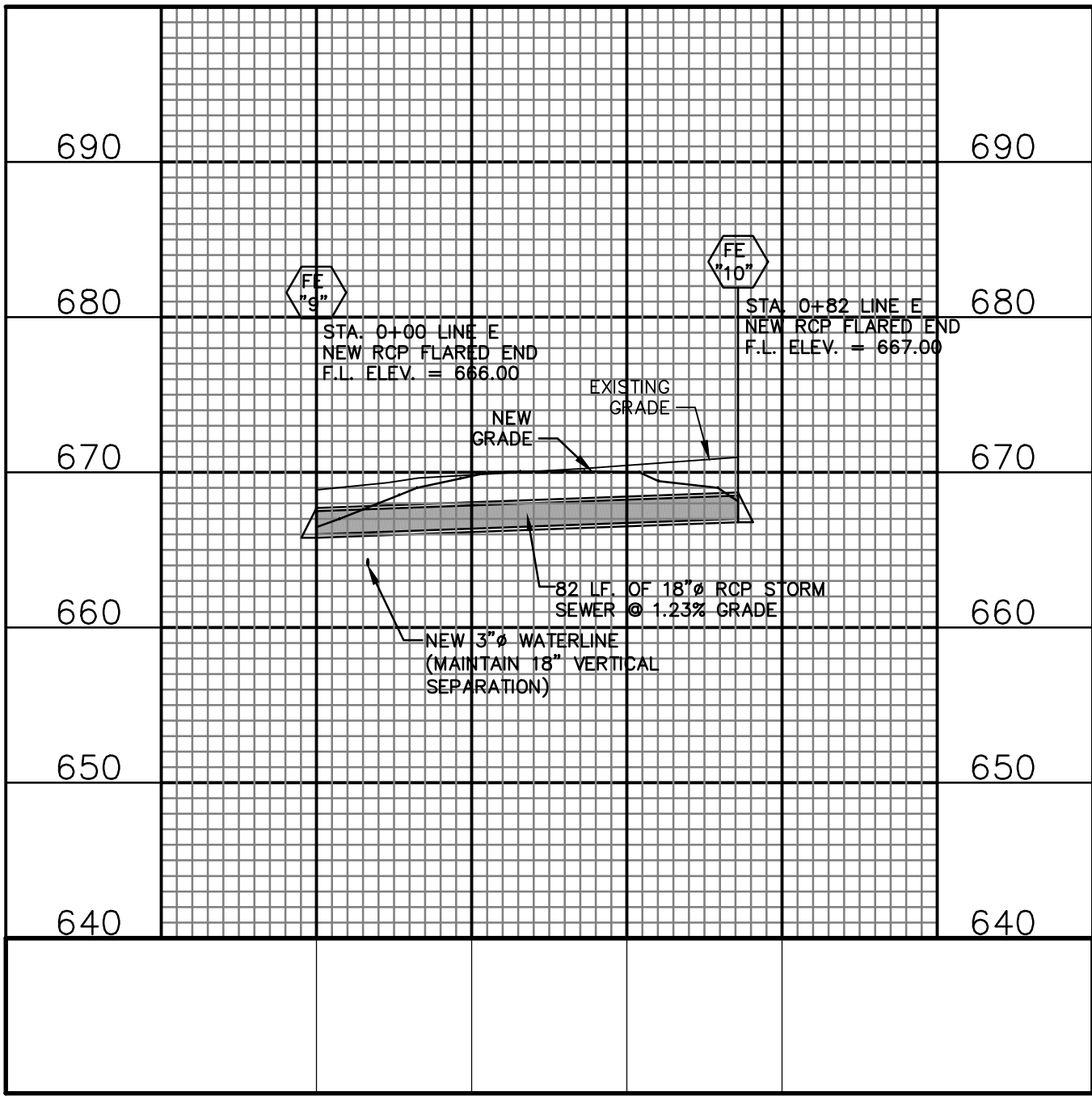
19 OF 56 SHEETS
03/28/2025



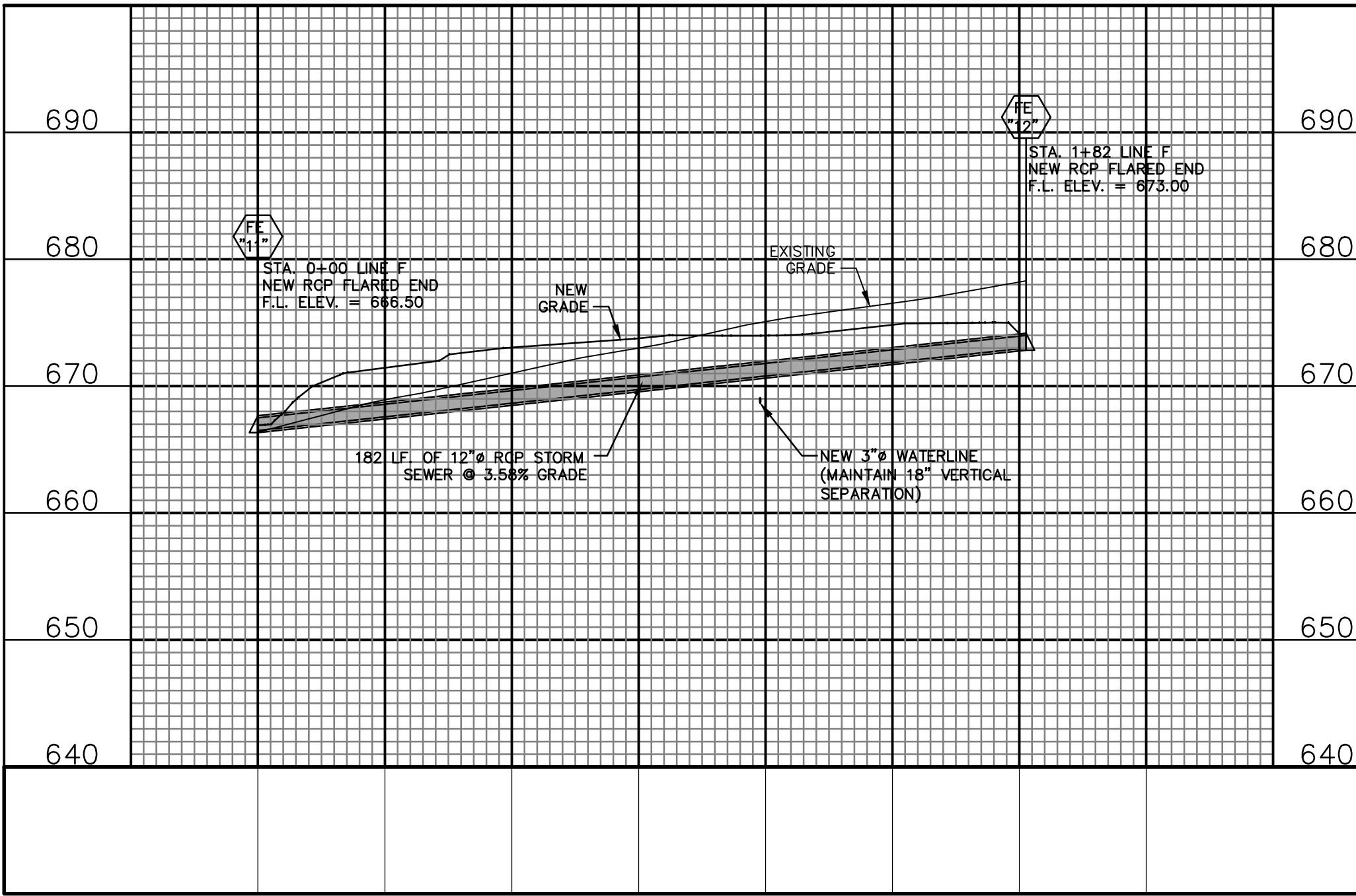
LINE D



LINE E



LINE F



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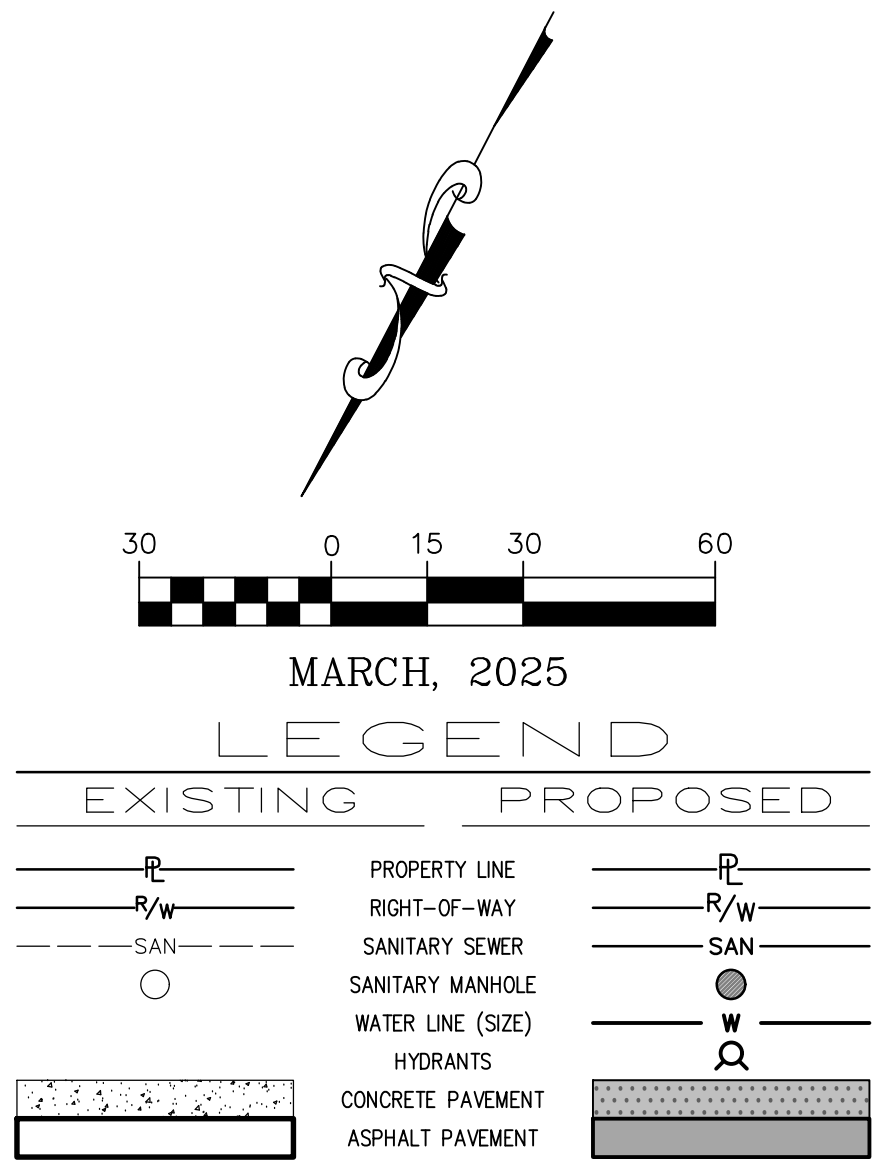
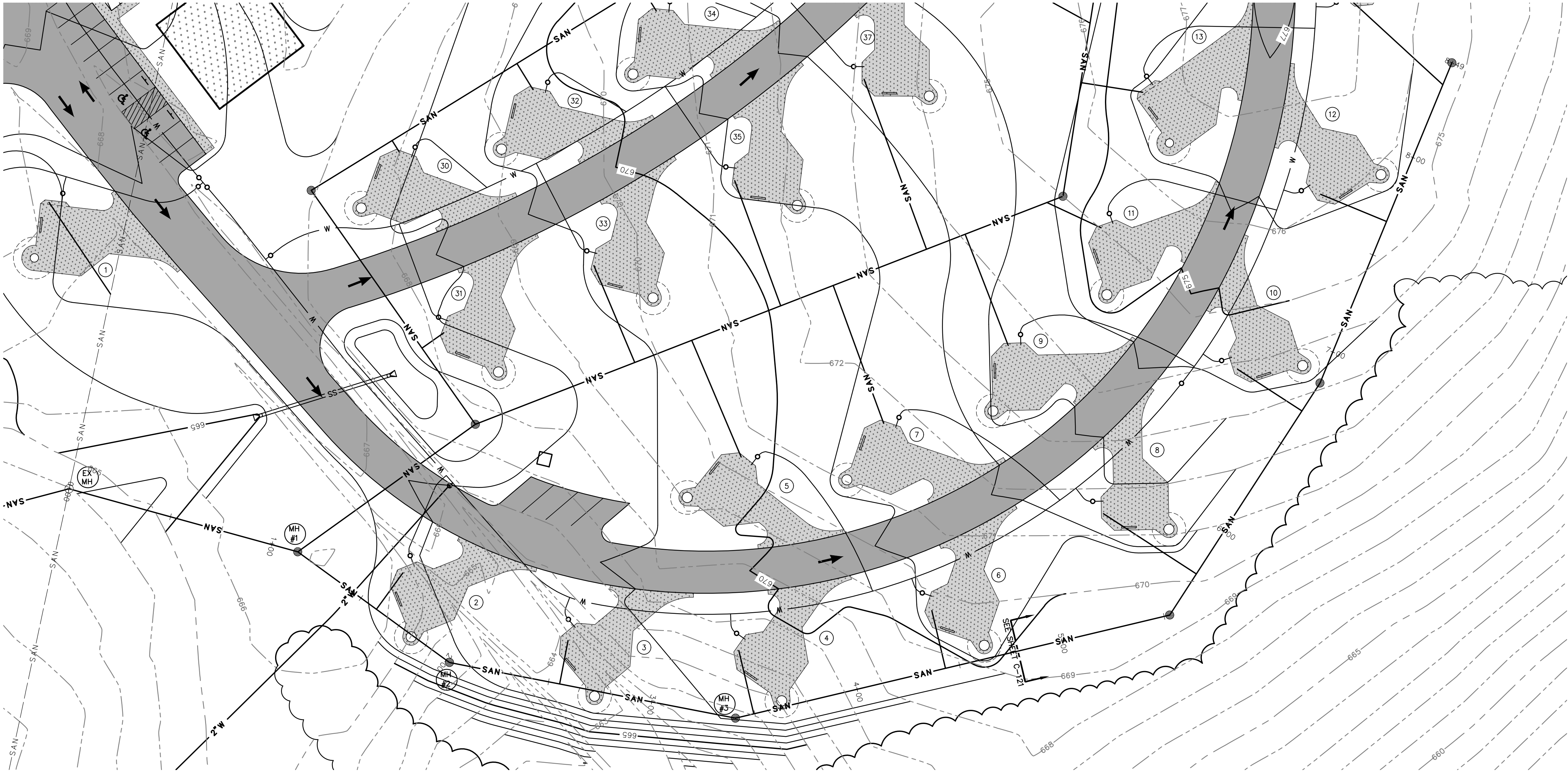
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SHEET TITLE:
STORM SEWER
PLAN & PROFILE
LINE D, E, & F

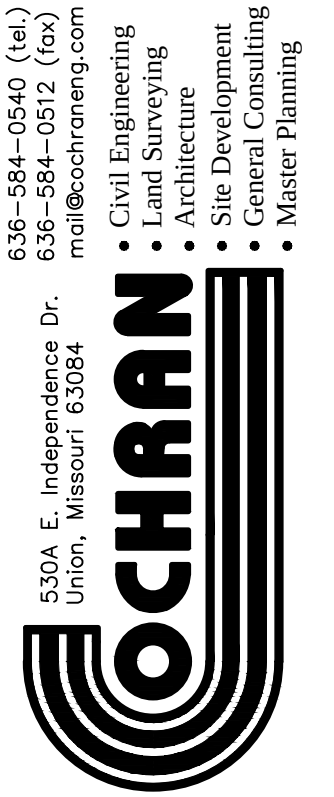
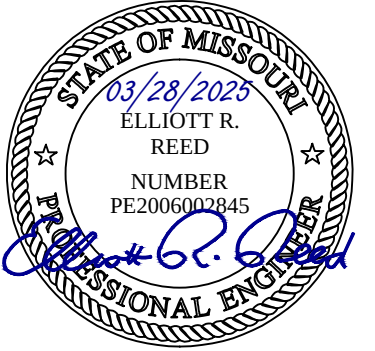
SHEET NUMBER:

C-119

20 OF 56 SHEETS
03/28/2025



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REVISION: _____
DATE: _____

ISSUE DATE: 03/28/2025

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DRAWN BY: LJR
CHECKED BY: ERR
DESIGNED BY: ERR

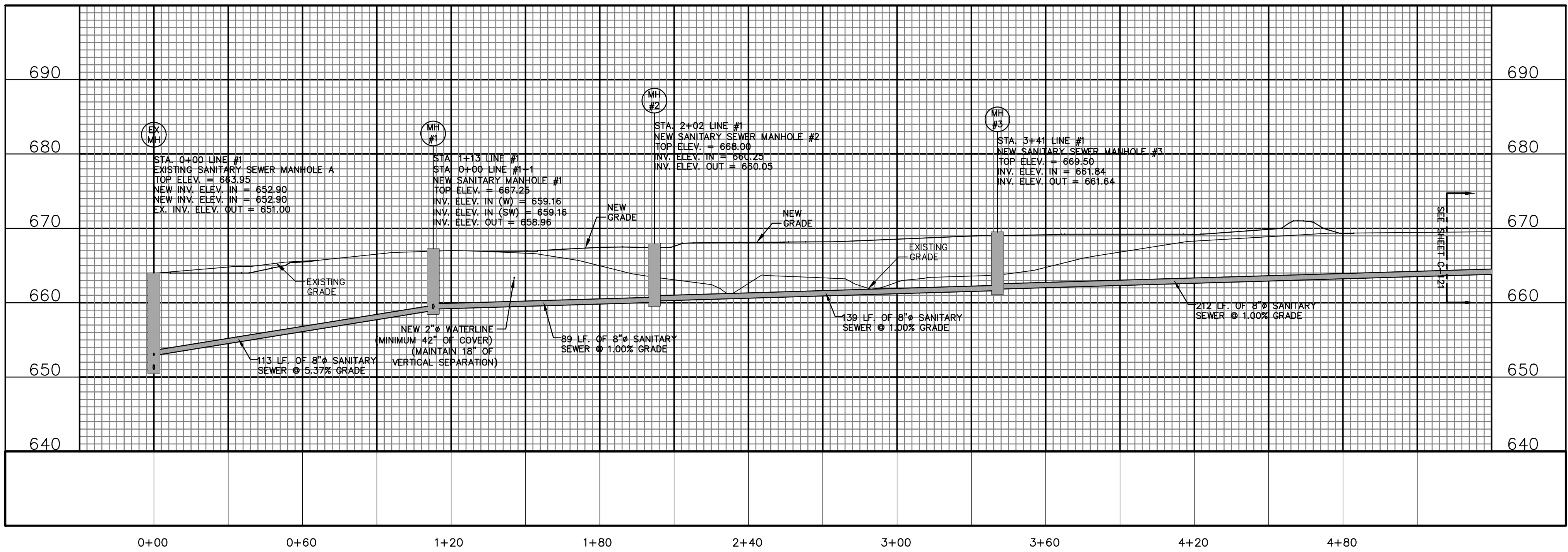
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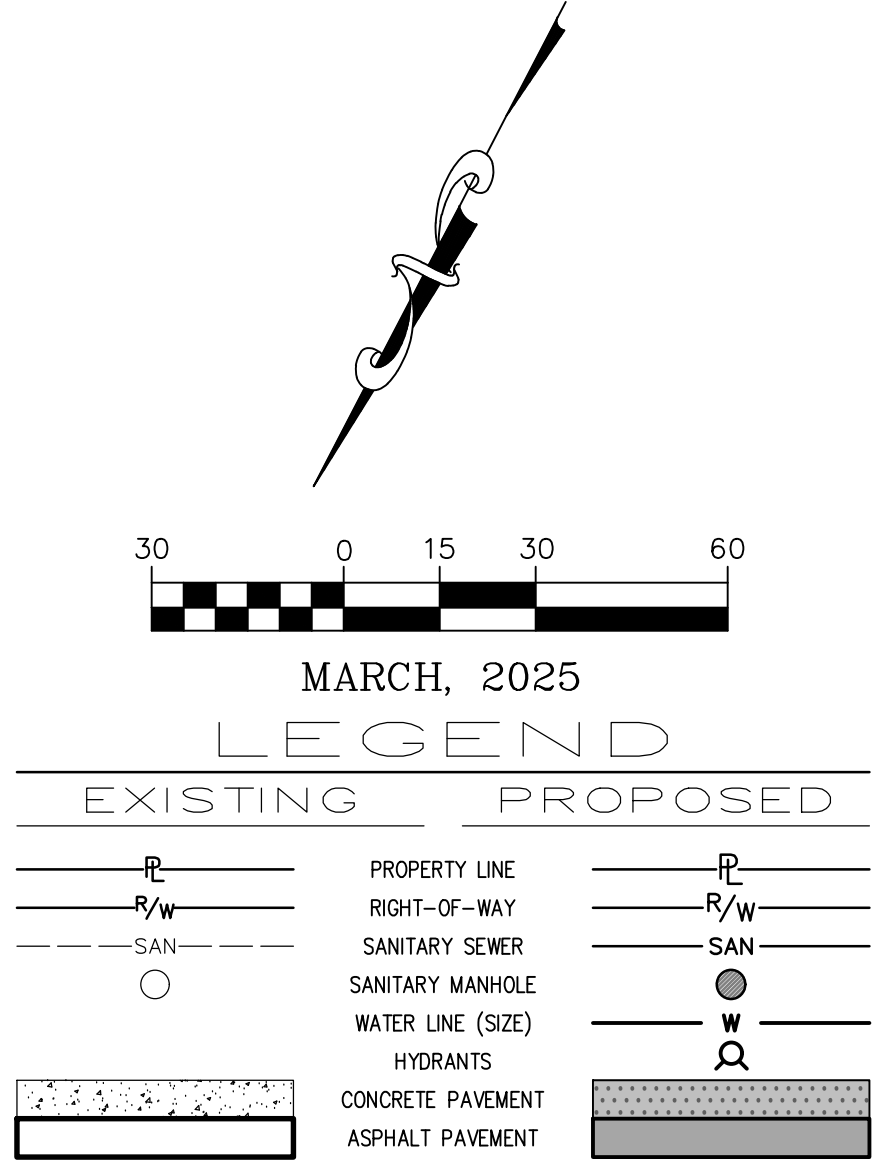
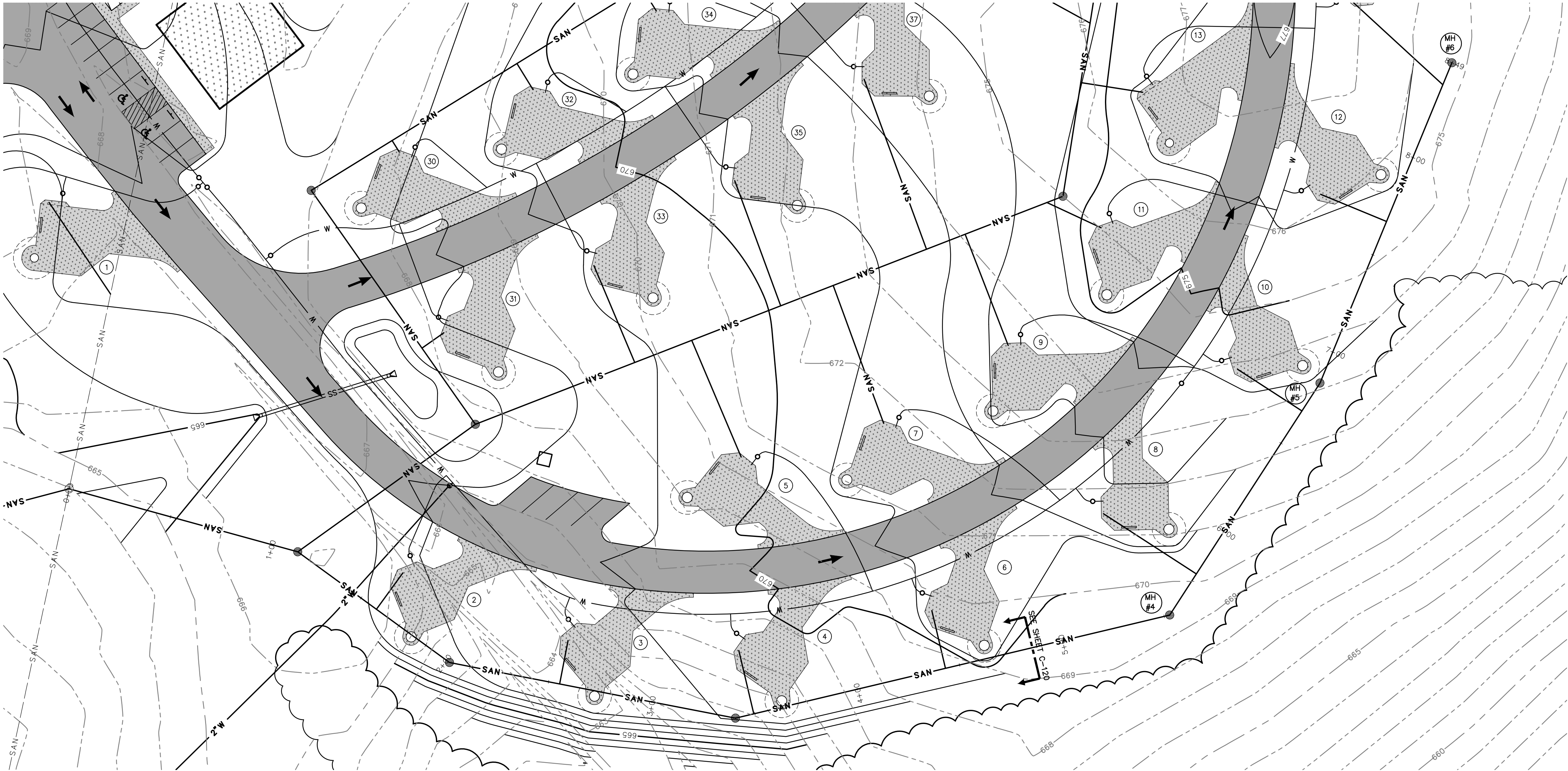
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PROFILE LINE #1
STA. 0+00 TO 5+40

SHEET NUMBER:

C-120

21 OF 56 SHEETS
03/28/2025





STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR



Missouri State Certificate
of Authority Numbers:
Survey : 000350
Engineering : 001655
Architecture : 2002014240

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
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DESIGN AND CONSTRUCTION

DEPARTMENT OF
NATURAL RESOURCES
MISSOURI STATE PARKS

NEW PREMIUM 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N
BONNE TERRE, MO 63628

PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____

ISSUE DATE: 03/28/2025

CAD DWG FILE: X2317-SANS-121
DRAWN BY: LJR
CHECKED BY: ERR
DESIGNED BY: ERR

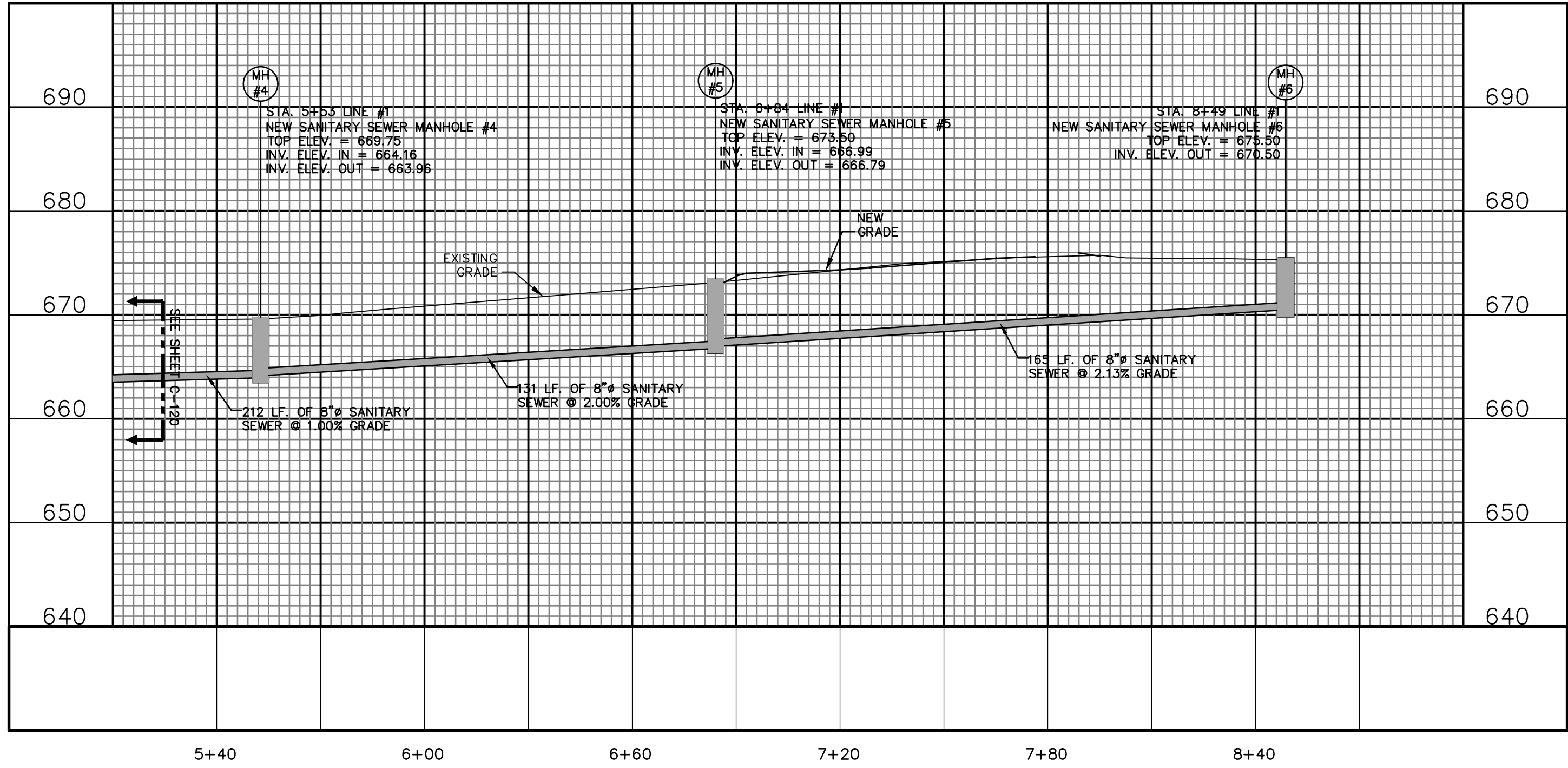
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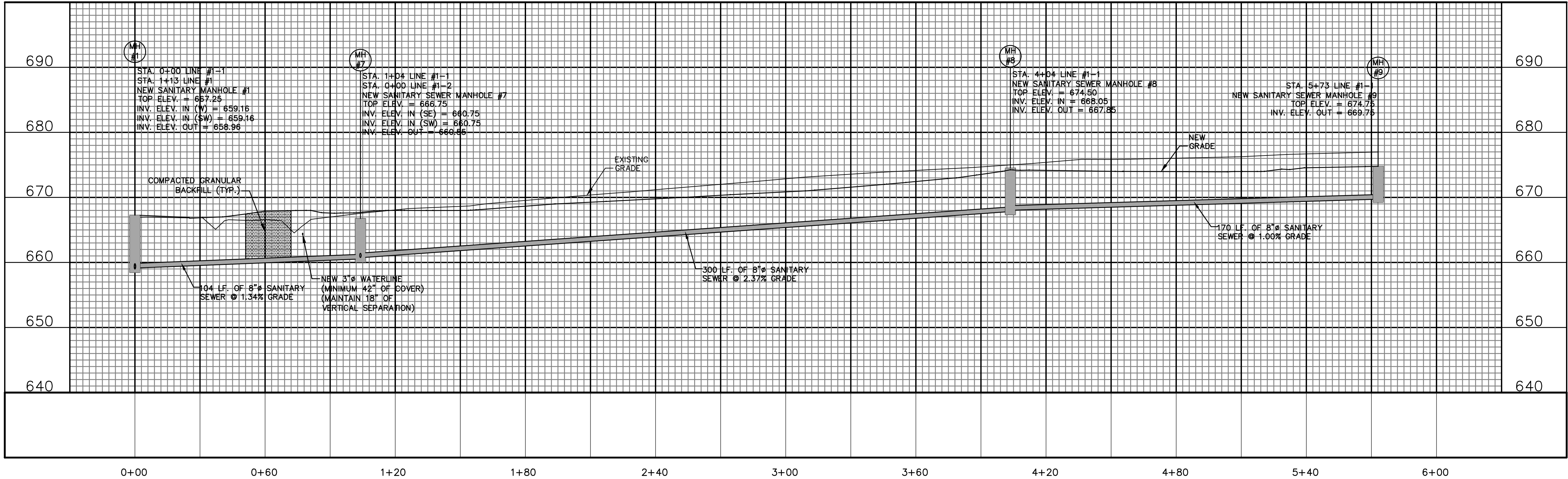
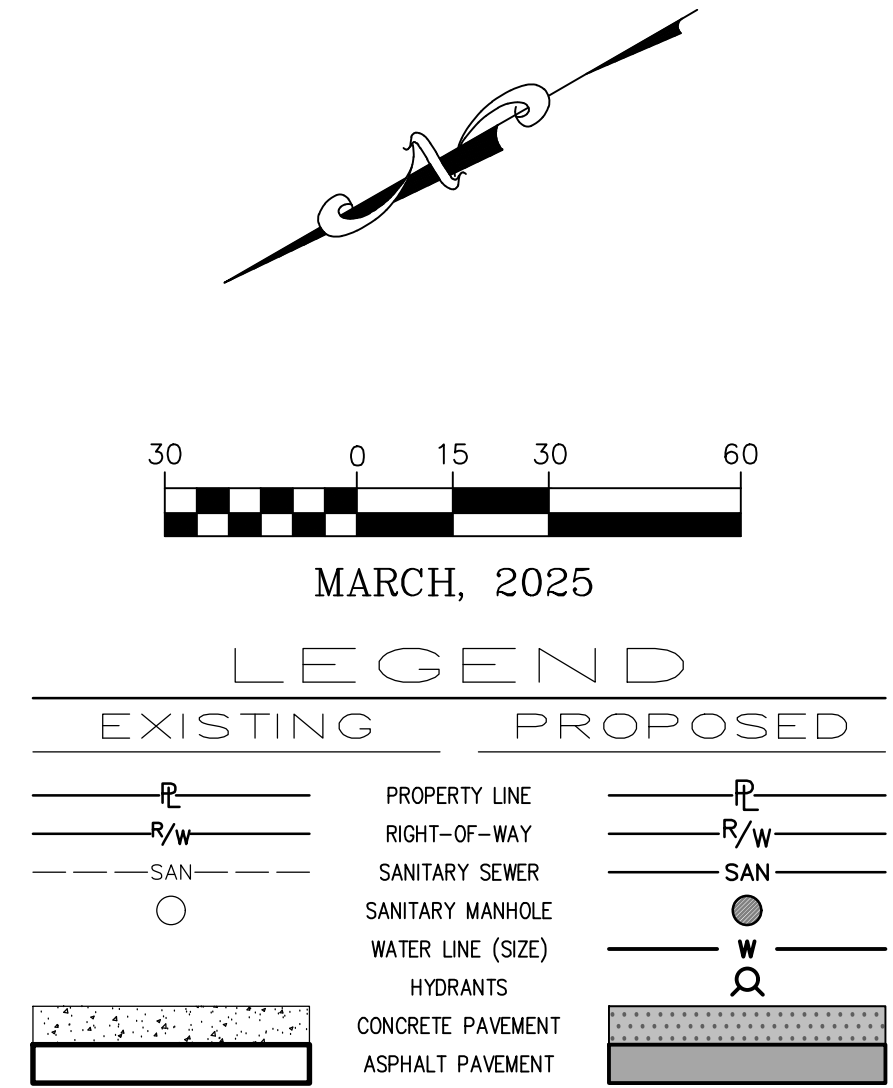
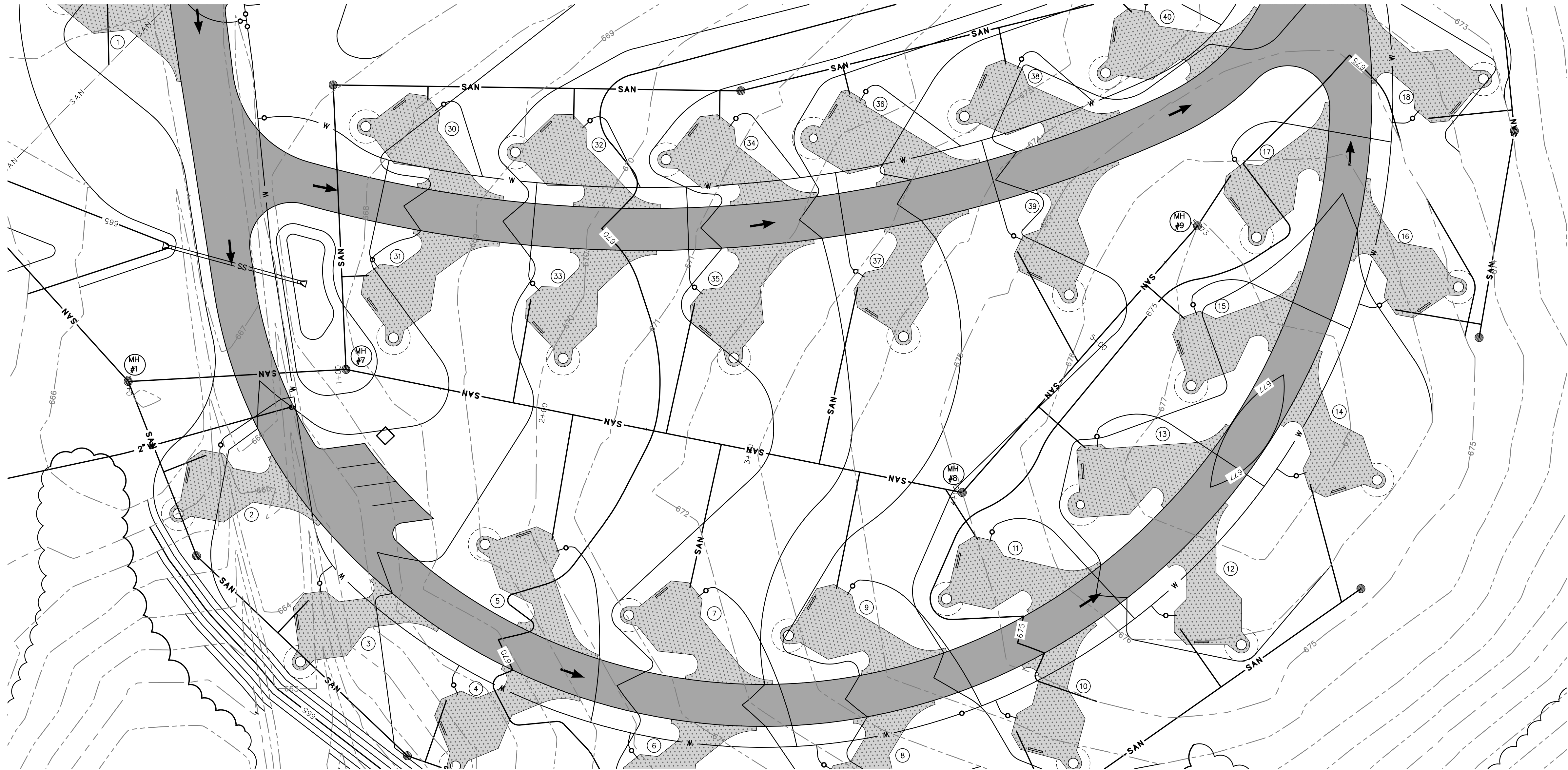
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PROFILE LINE #1
STA. 5+40 TO 9+20

SHEET NUMBER:

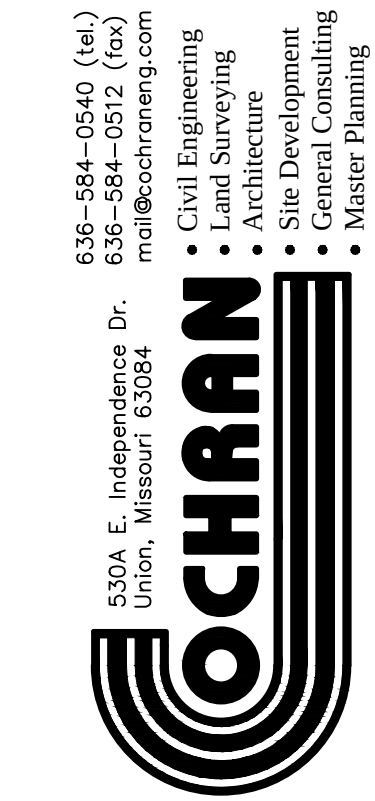
C-121

22 OF 56 SHEETS
03/28/2025





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of Authority Numbers:
Survey : 000350
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MISSOURI STATE PARKS

NEW PREMIUM 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N
BONNE TERRE, MO 63628

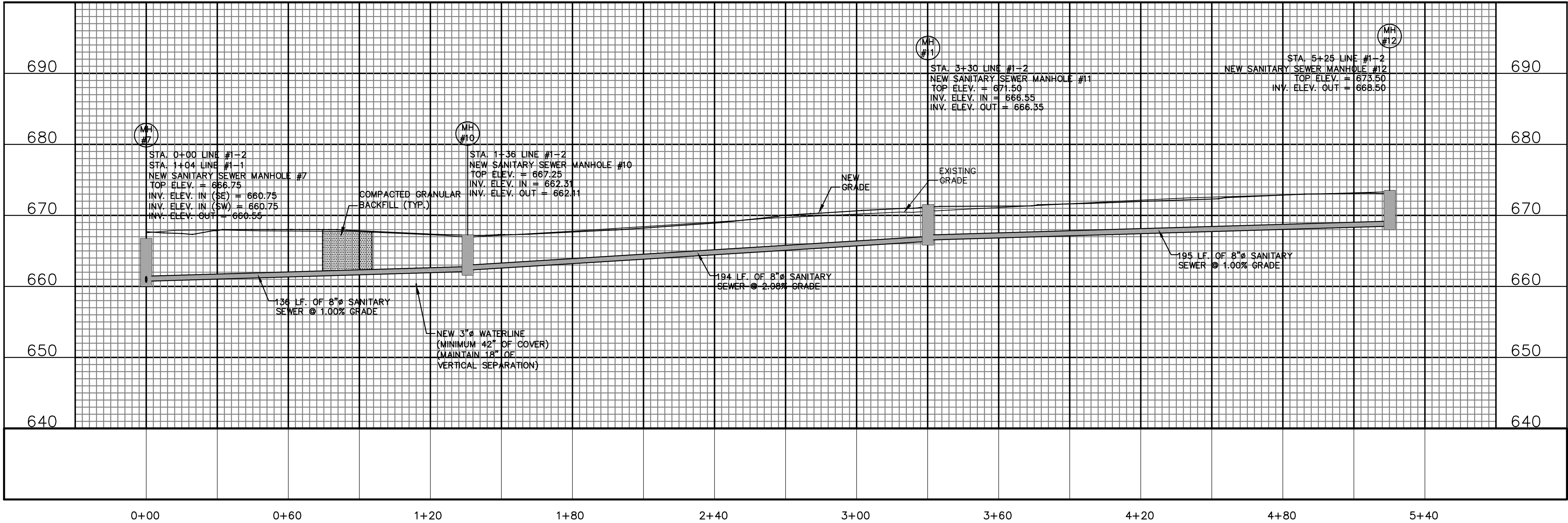
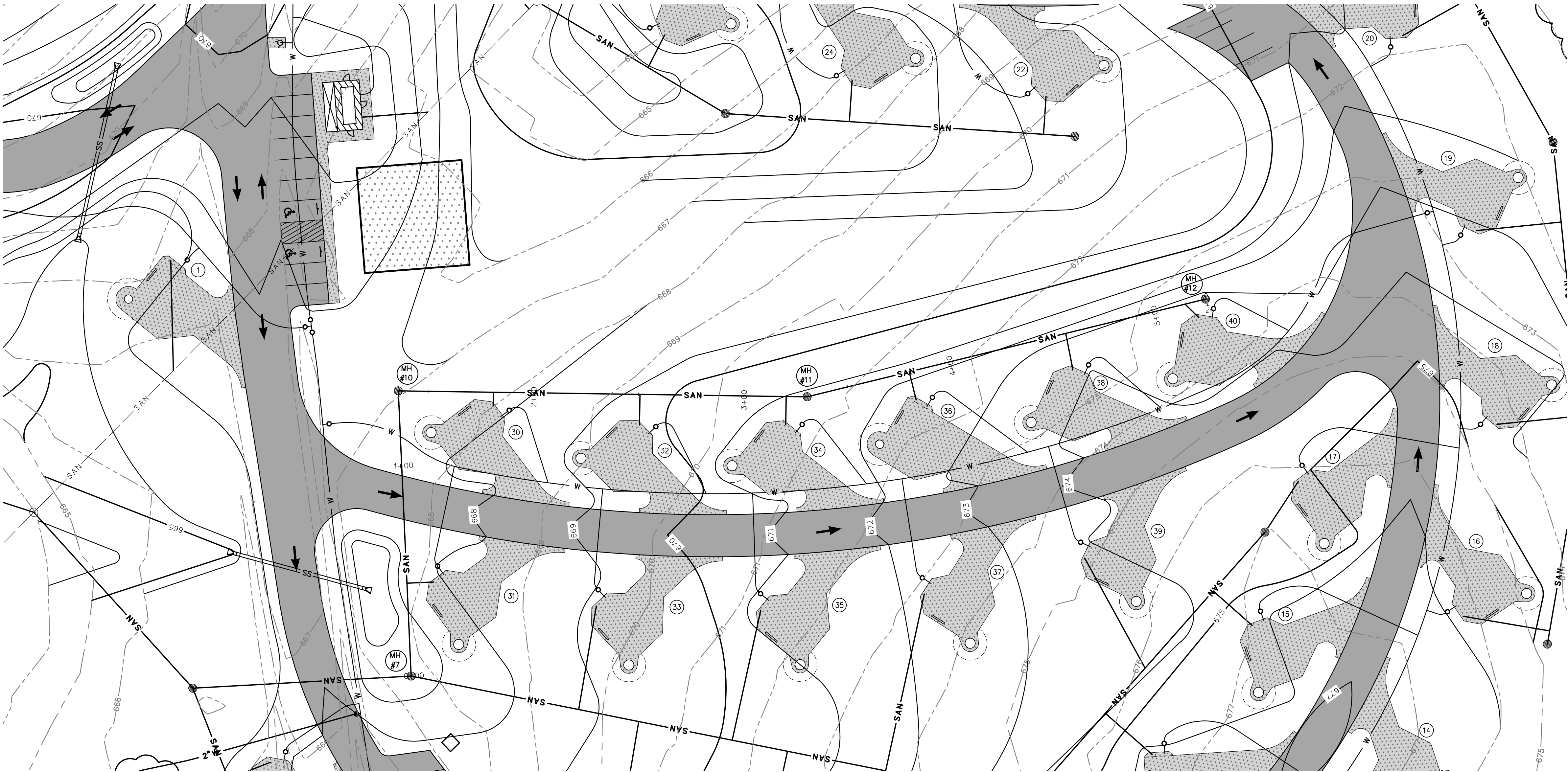
PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 03/28/2025

CAD DWG FILE: X2317-SANS-122
DRAWN BY: LJR
CHECKED BY: ERR
DESIGNED BY: ERR

SHEET TITLE:
SANITARY SEWER
PROFILE LINE #1-1

SHEET NUMBER:
C-122
23 OF 56 SHEETS
03/28/2025



STATE OF MISSOURI
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Missouri State Certificate
of Authority Numbers:
Survey : 000350
Engineering : 001655
Architecture : 2002014240

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MISSOURI STATE PARKS

NEW PREMIUM 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N
BONNE TERRE, MO 63628

PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____

ISSUE DATE: 03/28/2025

CAD DWG FILE: X2317-SANS-123
DRAWN BY: LJR
CHECKED BY: ERR
DESIGNED BY: ERR

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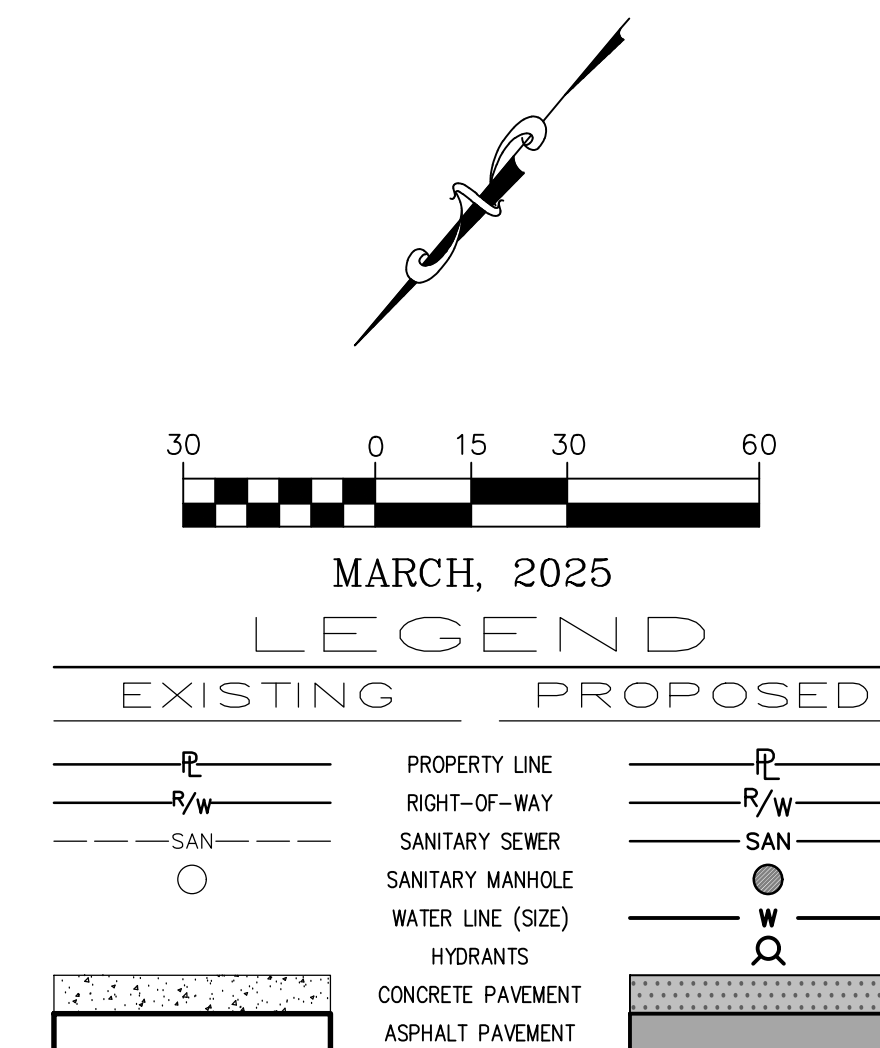
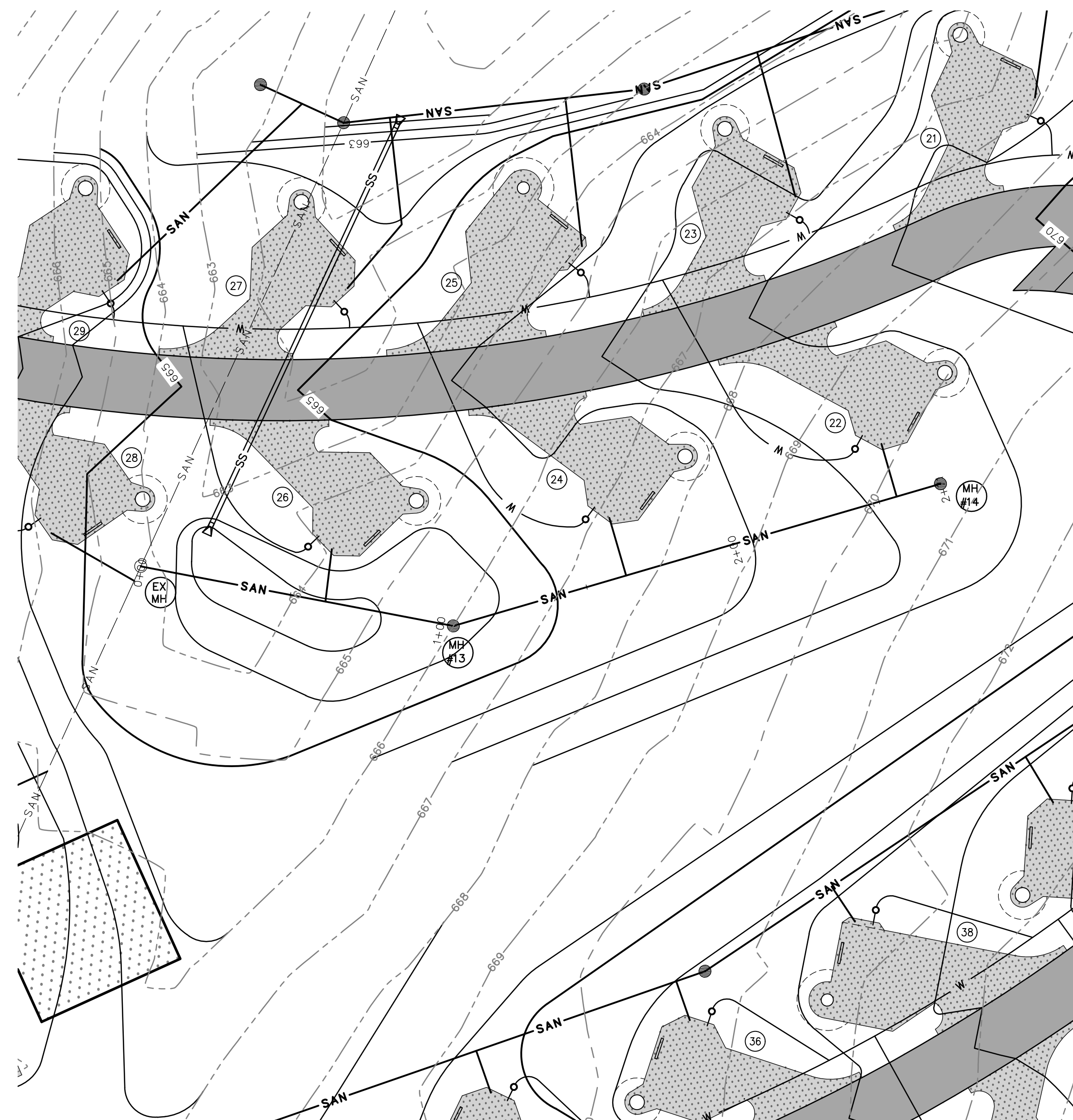
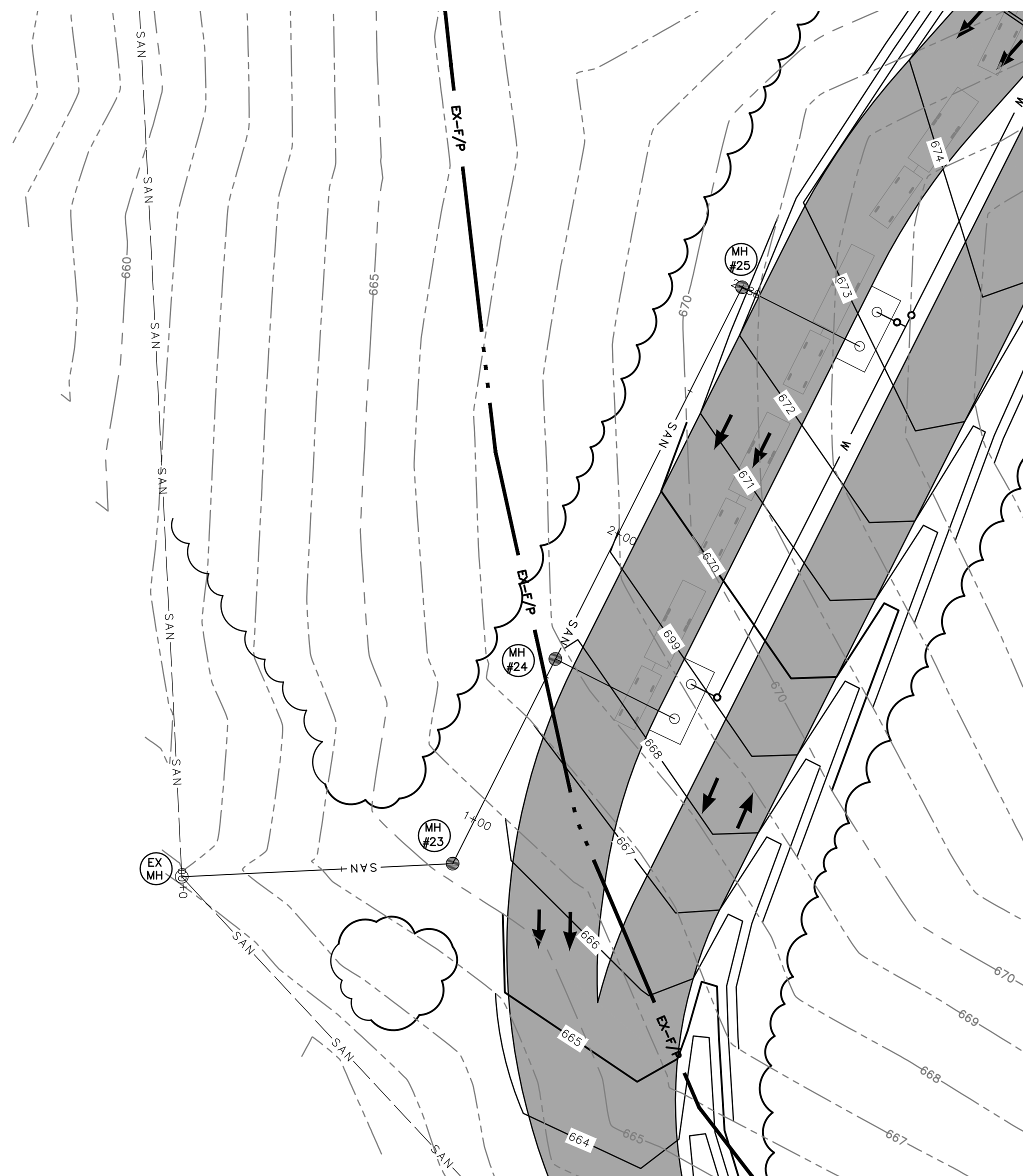
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PROFILE LINE #1-2

SHEET NUMBER:

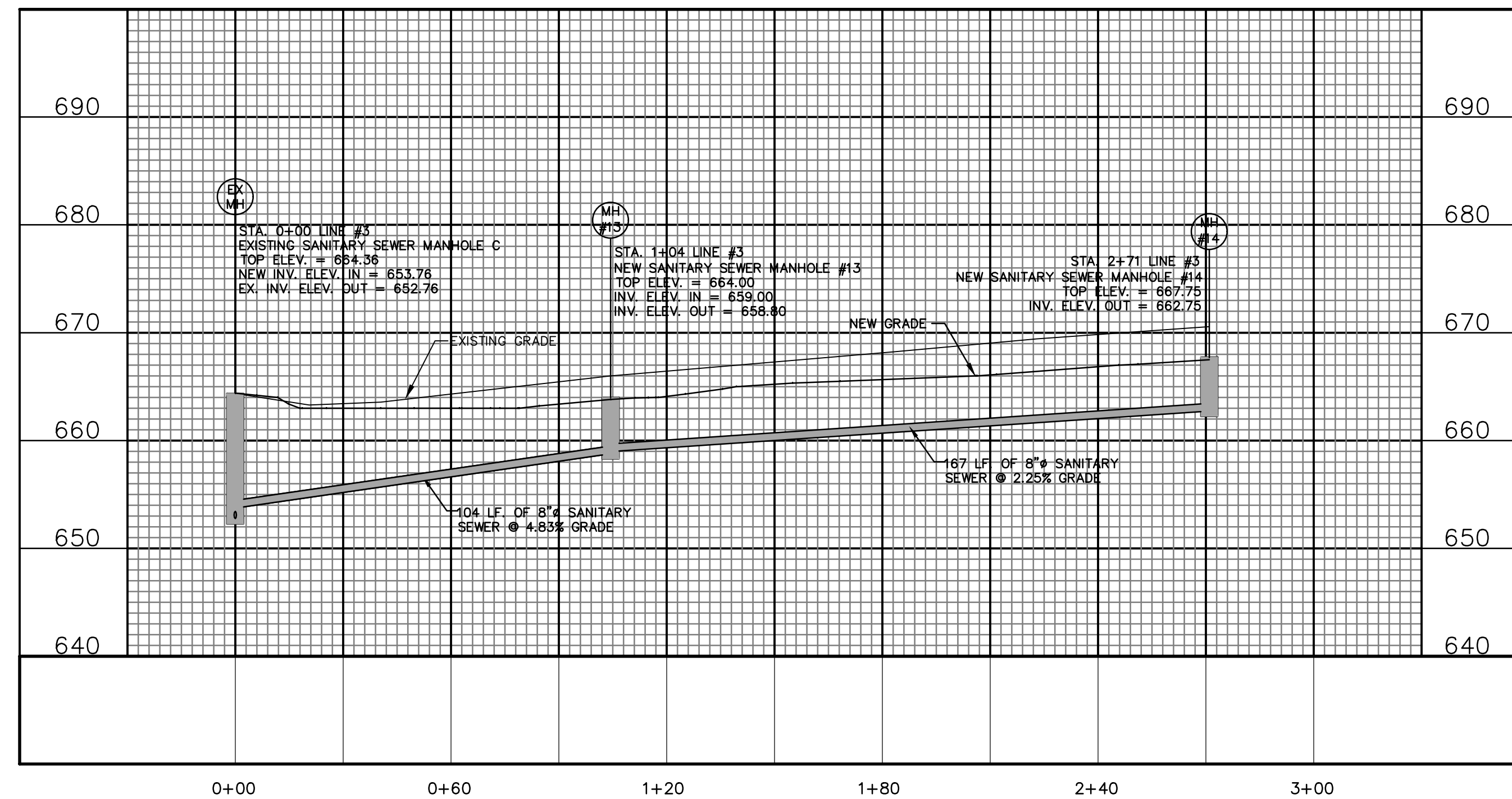
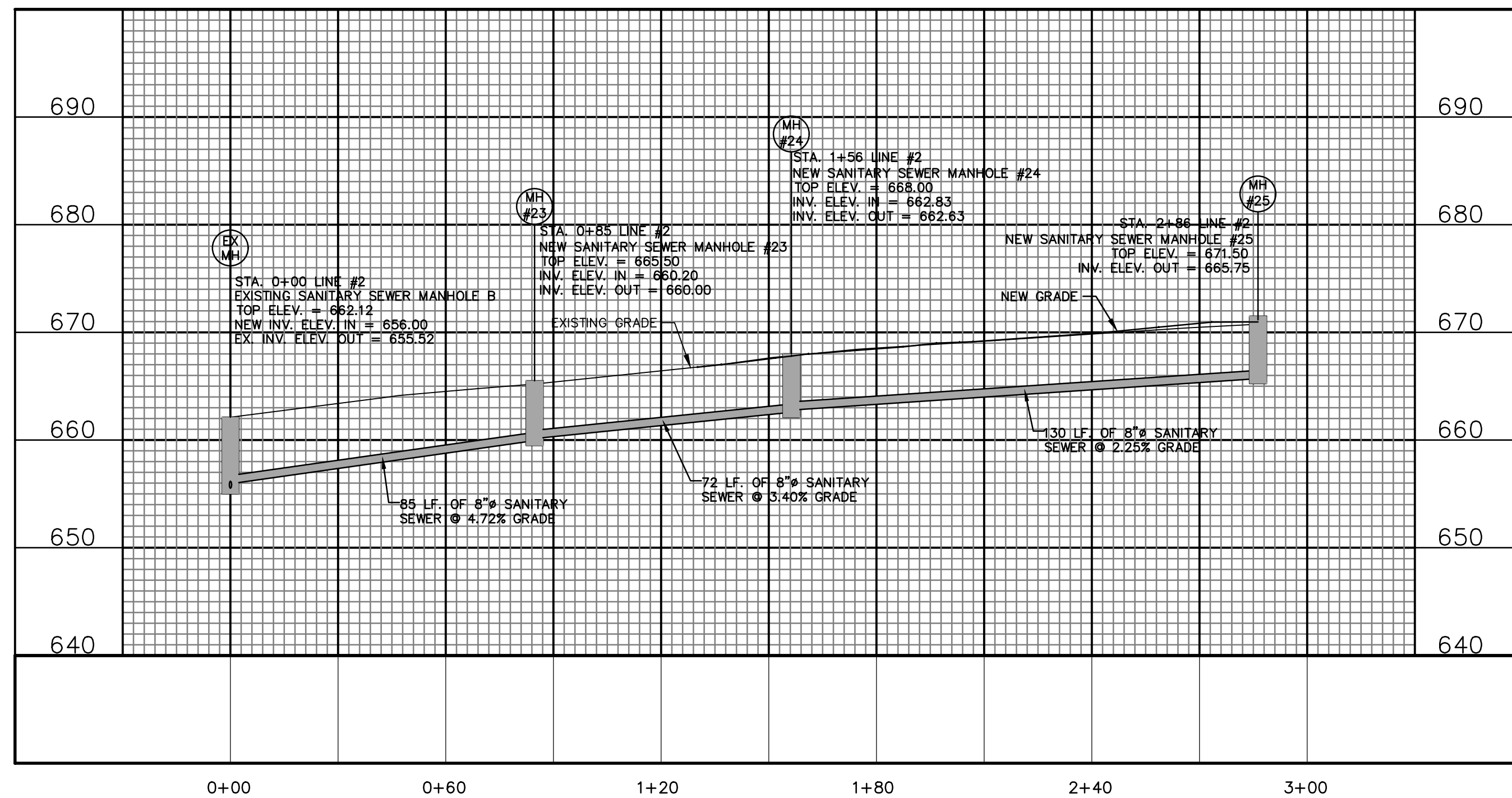
C-123

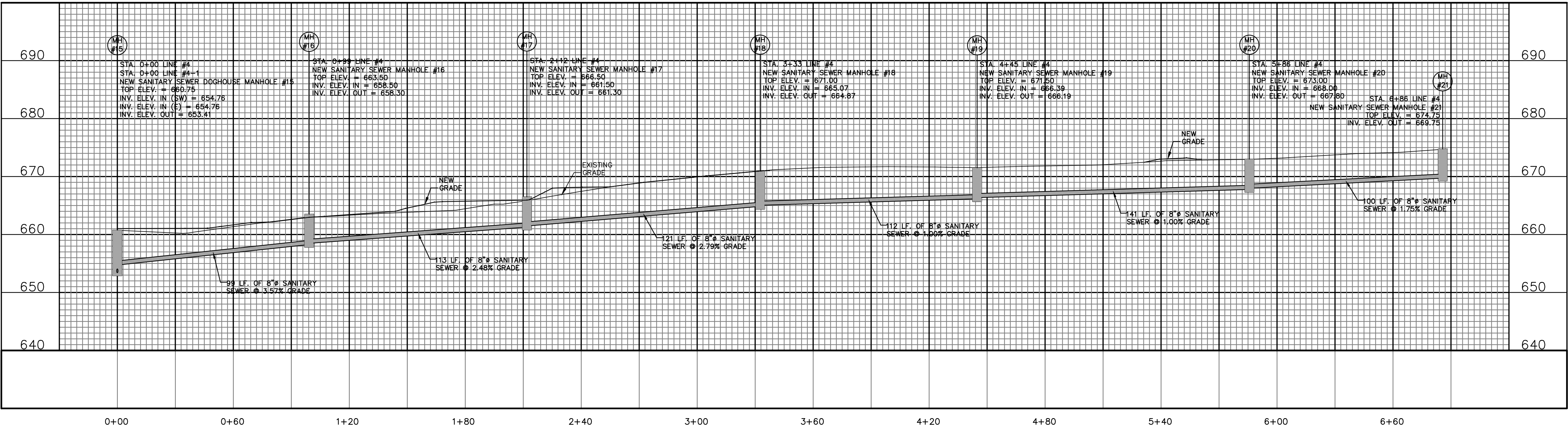
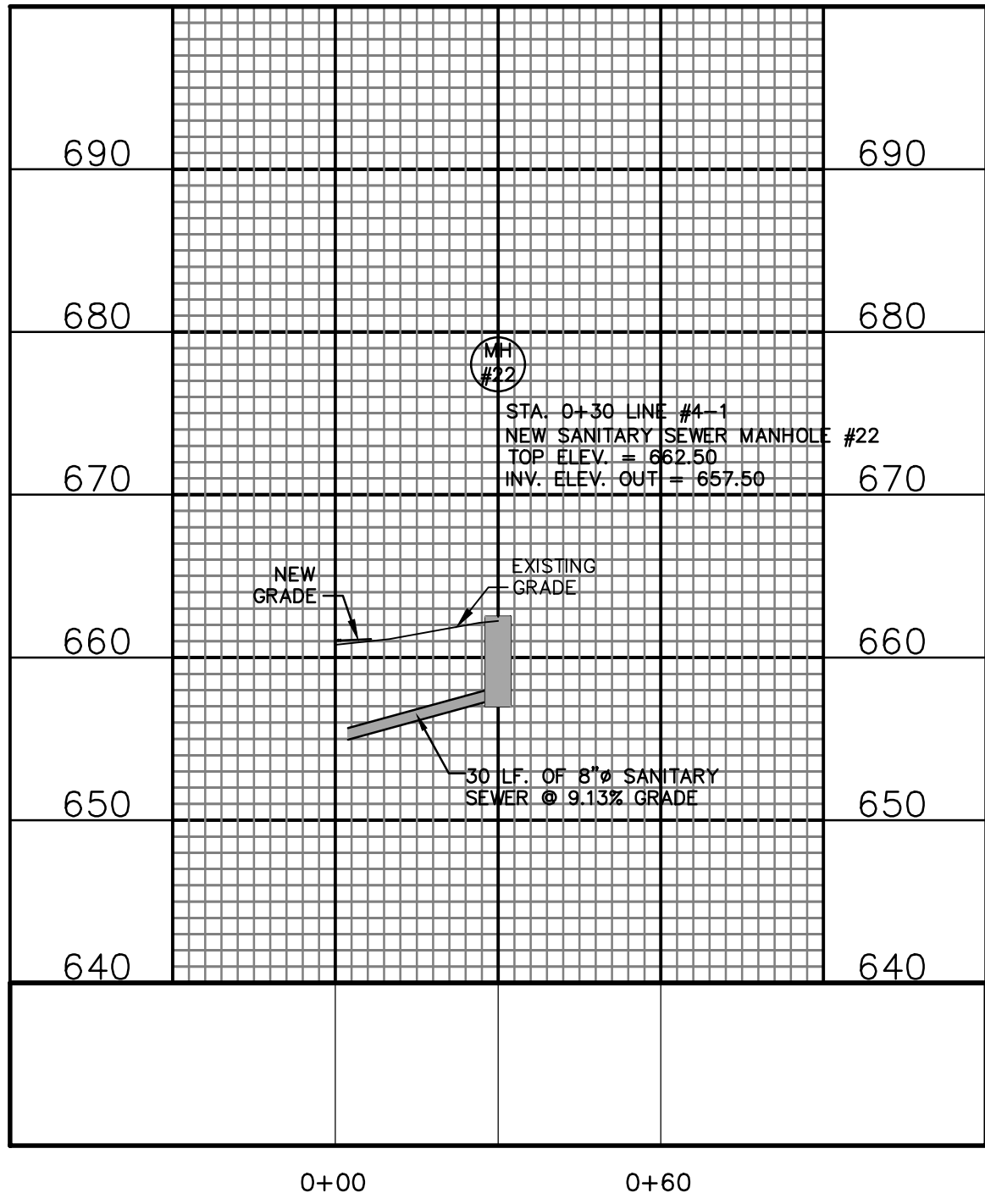
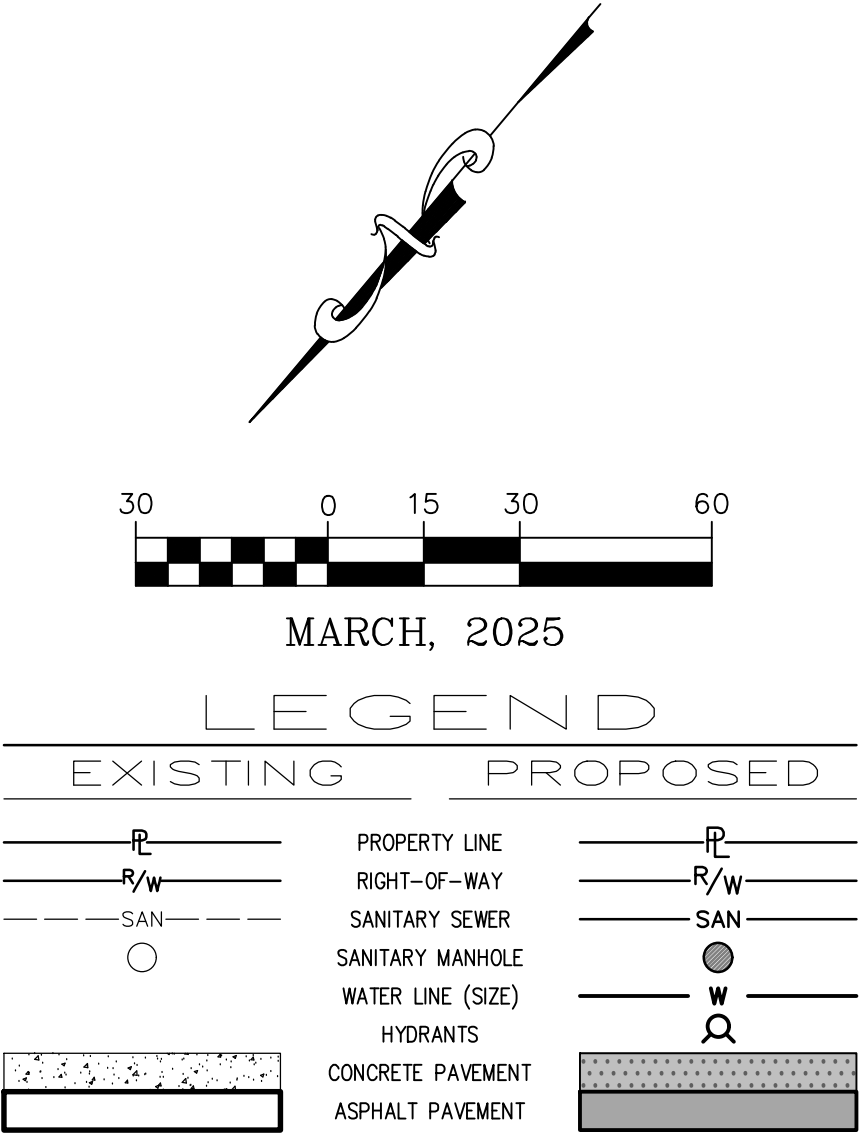
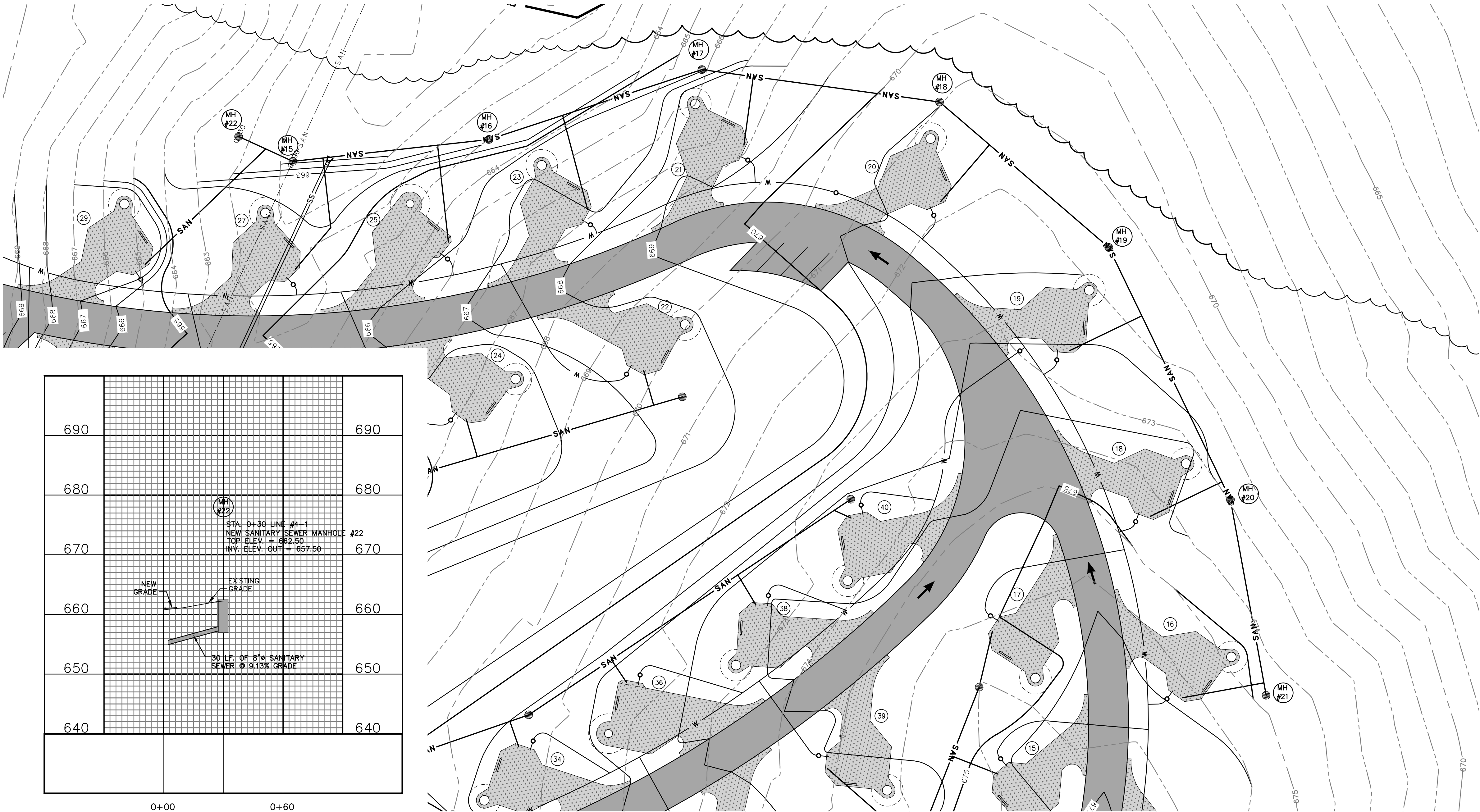
24 OF 56 SHEETS
03/28/2025

SANITARY SEWER LINE #3

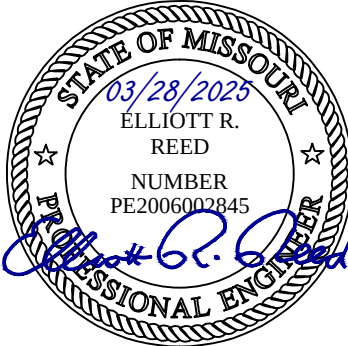


SANITARY SEWER LINE #3





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of Authority Numbers:
Survey : 0003580
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MISSOURI STATE PARKS

NEW PREMIUM 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N
BONNE TERRE, MO 63628

PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 03/28/2025

CAD DWG FILE: X2317-SANS-125
DRAWN BY: LJR
CHECKED BY: ERR
DESIGNED BY: ERR

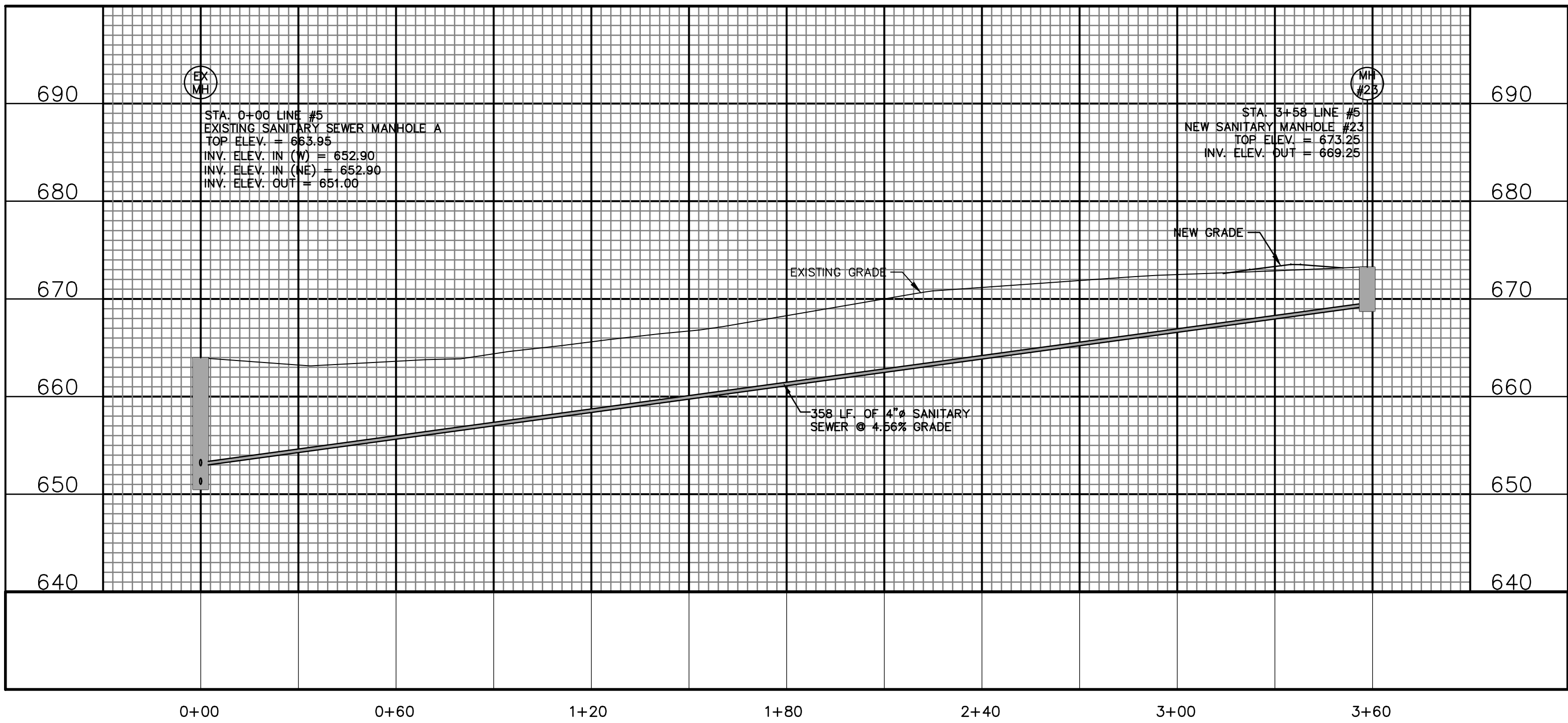
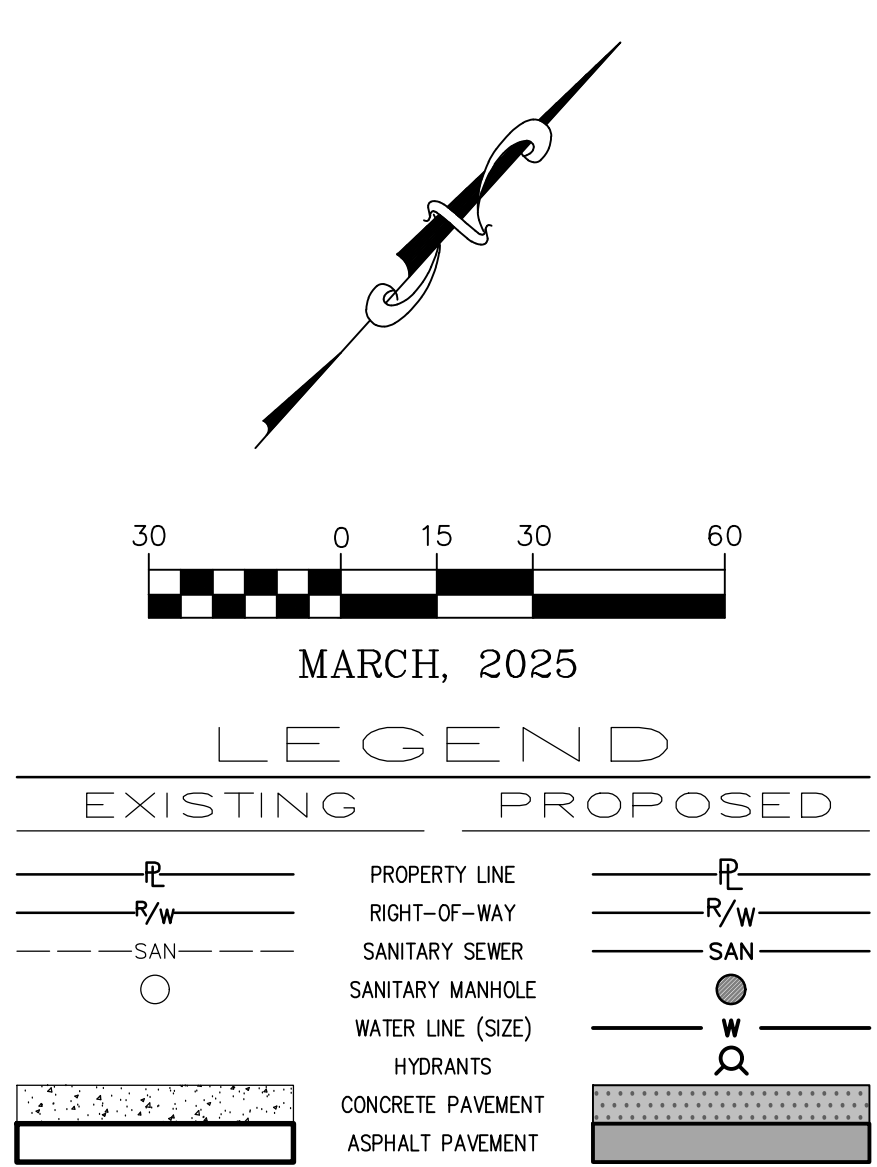
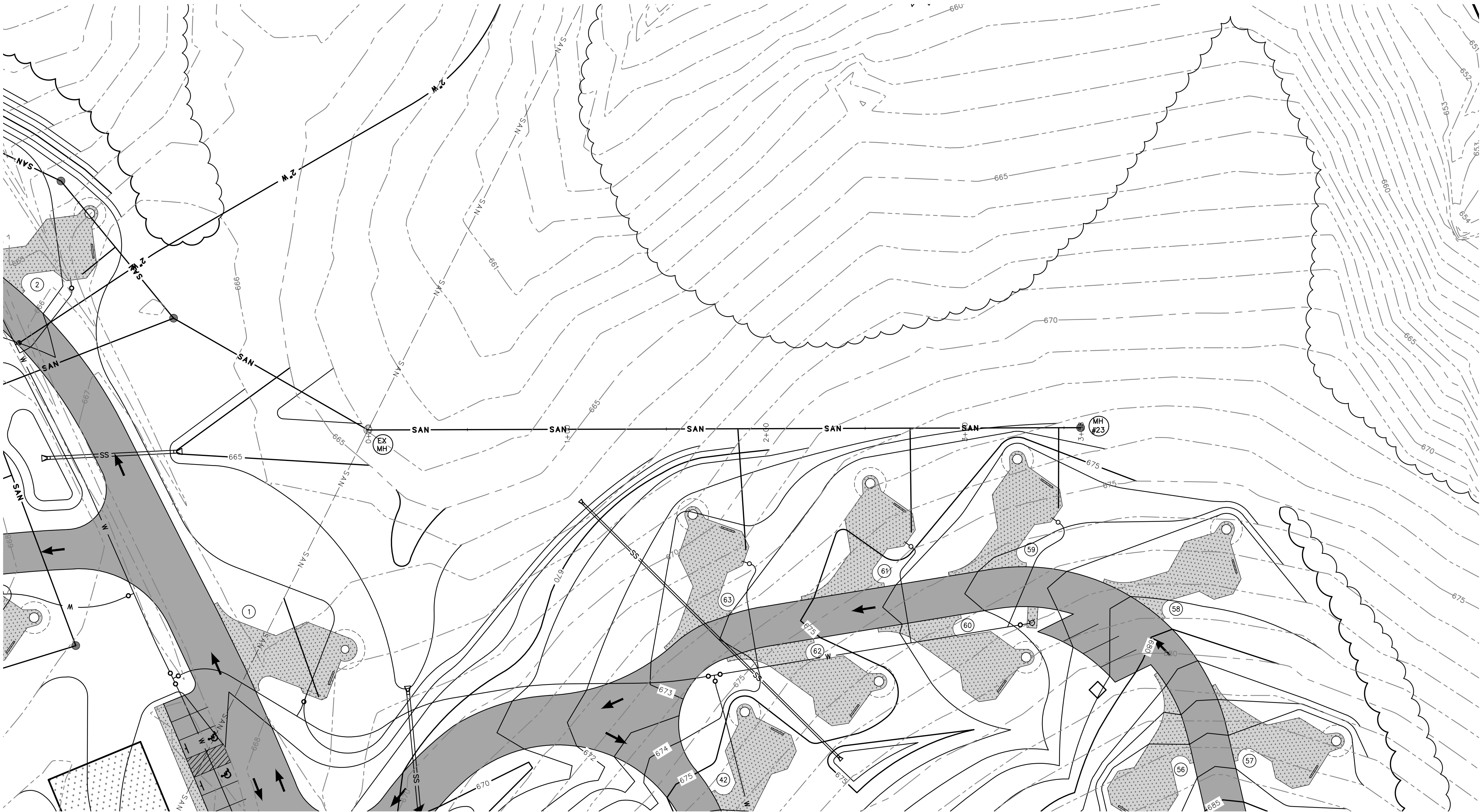
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SANITARY SEWER
PLAN & PROFILE
LINE #4 & #4-1

SHEET NUMBER:

C-125

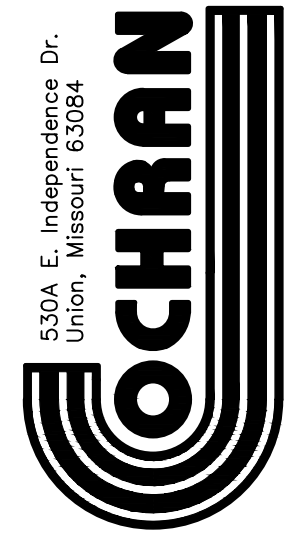
26 OF 56 SHEETS
03/28/2025



STATE OF MISSOURI
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Architecture : 2002014240

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MISSOURI STATE PARKS

NEW PREMIUM 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N
BONNE TERRE, MO 63628

PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____

ISSUE DATE: 03/28/2025

CAD DWG FILE: X2317-SANS-125A
DRAWN BY: LJR
CHECKED BY: ERR
DESIGNED BY: ERR

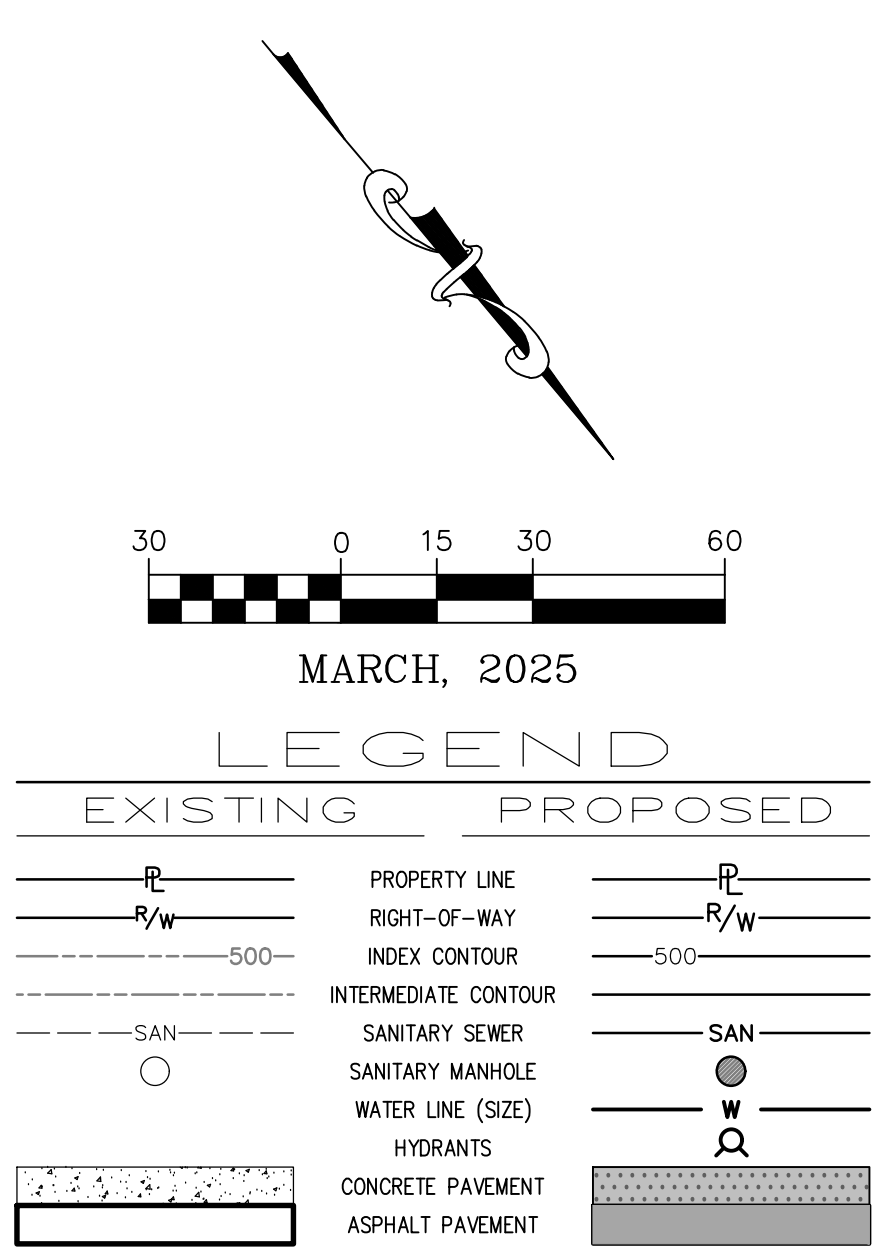
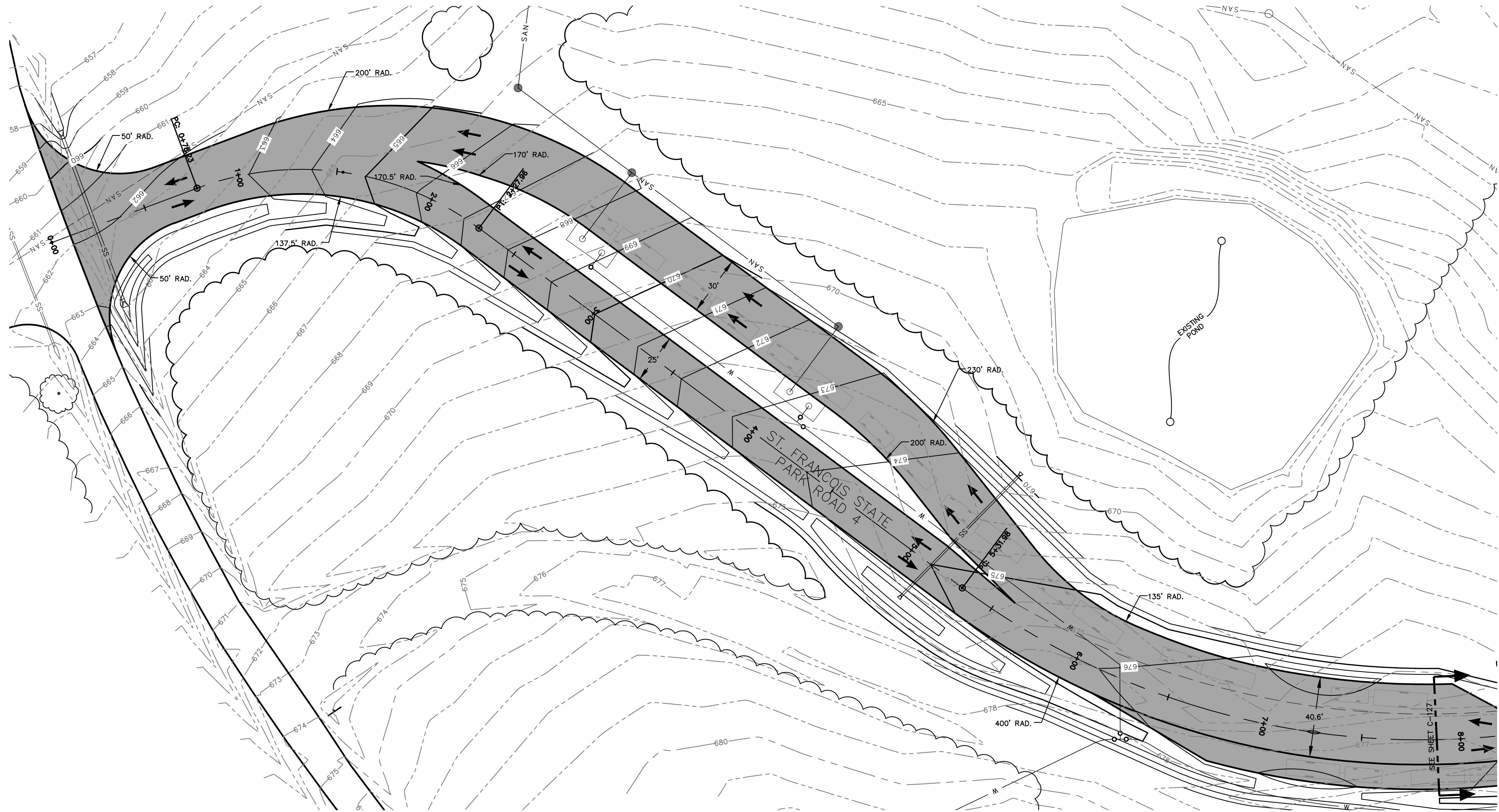
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SANITARY SEWER
PLAN & PROFILE
LINE #5

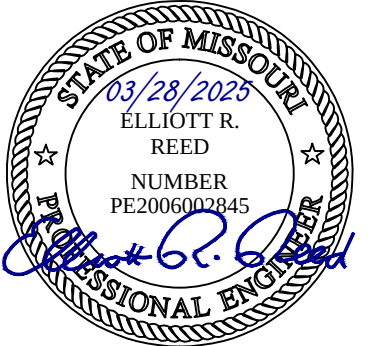
SHEET NUMBER:

C-125A

27 OF 56 SHEETS
03/28/2025



STATE OF MISSOURI
MICHAEL L. PARSON,
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Missouri State Certificate
of Authority Numbers:
Survey : 0003580
Engineering : 001655
Architecture : 2002014240

OFFICE OF ADMINISTRATION
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DEPARTMENT OF
NATURAL RESOURCES
MISSOURI STATE PARKS

NEW PREMIUM 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N
BONNE TERRE, MO 63628

PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 03/28/2025

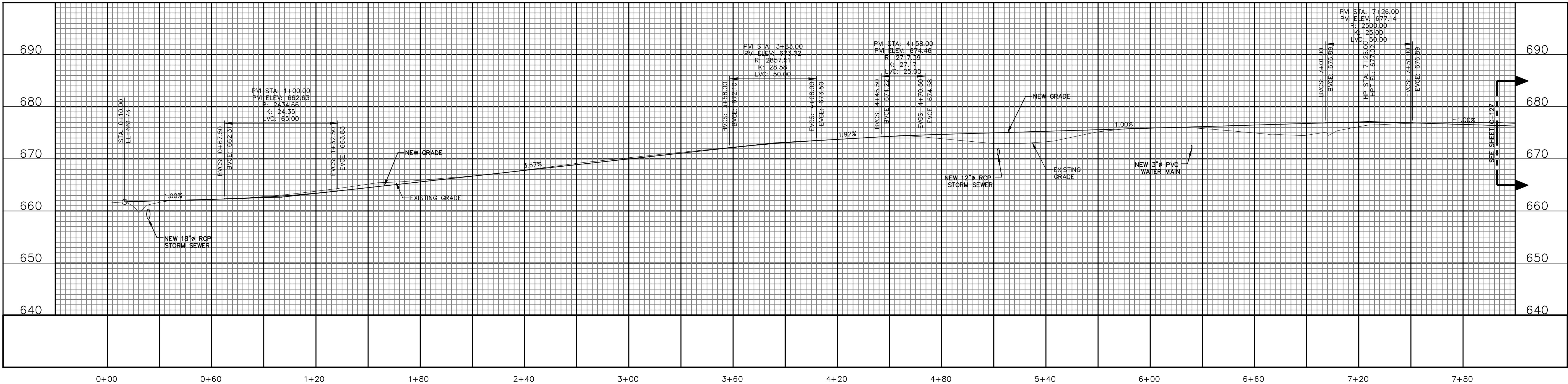
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DRAWN BY: LJR
CHECKED BY: ERR
DESIGNED BY: ERR

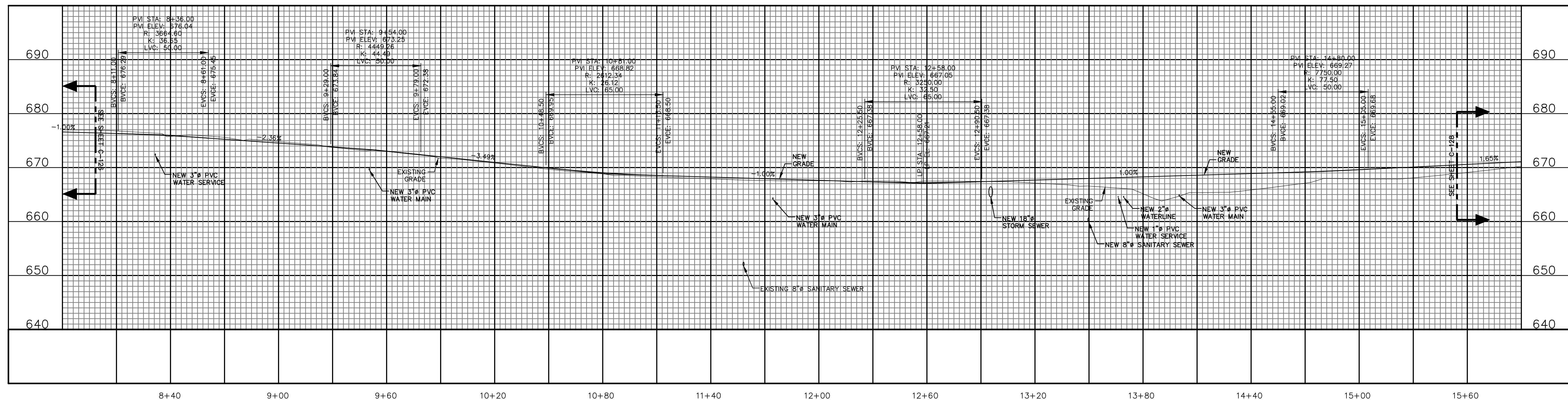
SHEET TITLE:
ROAD PLAN
ENTRANCE ROAD
STA. 0+00 TO 7+80

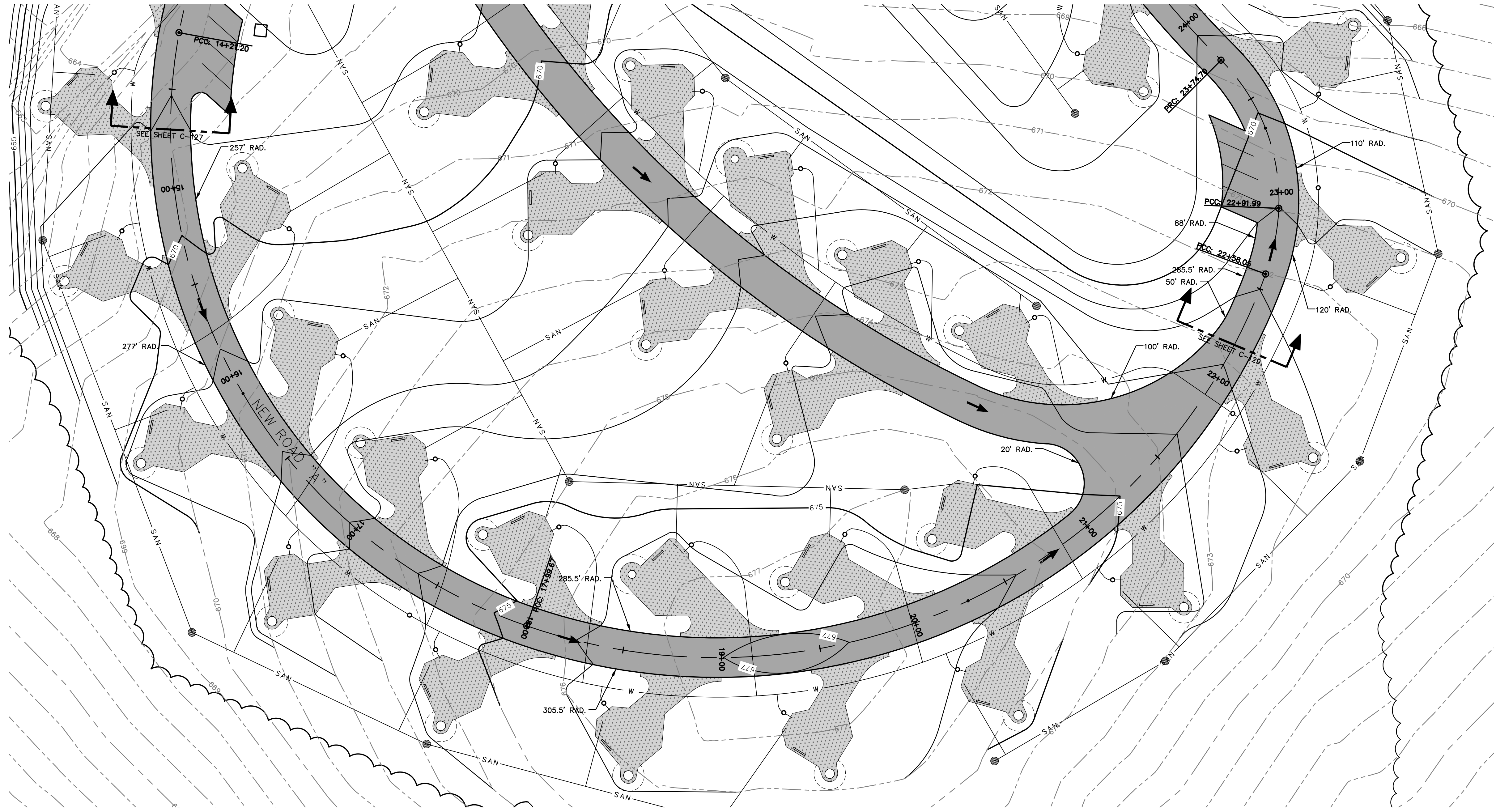
SHEET NUMBER:

C-126

28 OF 56 SHEETS
03/28/2025





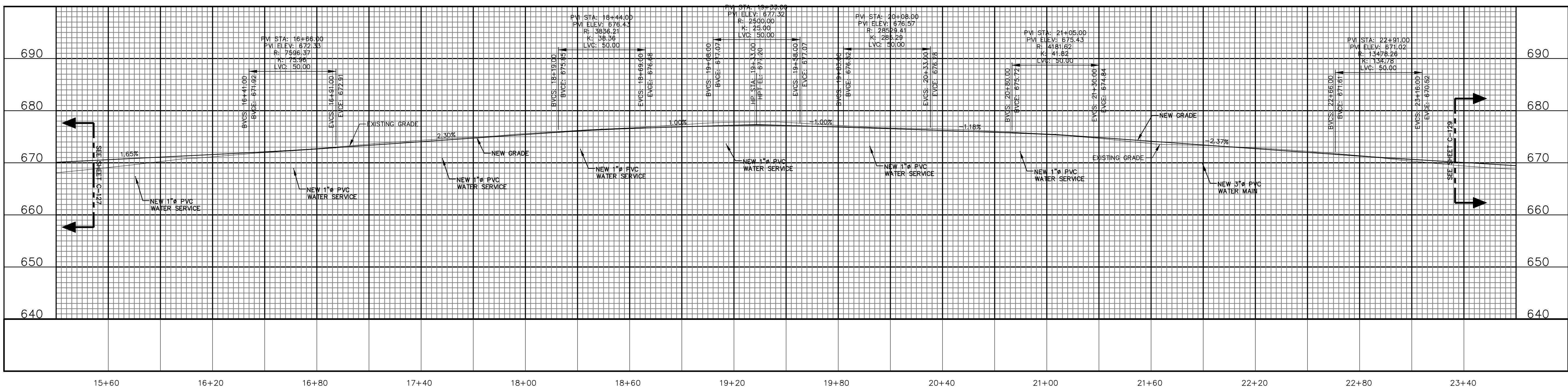


300 0 150 300 600

MARCH, 2025

LEGEND

EXISTING	PROPOSED
PROPERTY LINE	PROPERTY LINE
RIGHT-OF-WAY	RIGHT-OF-WAY
INDEX CONTOUR	INDEX CONTOUR
INTERMEDIATE CONTOUR	INTERMEDIATE CONTOUR
SANITARY SEWER	SANITARY SEWER
SANITARY MANHOLE	SANITARY MANHOLE
WATER LINE (SIZE)	WATER LINE (SIZE)
HYDRANTS	HYDRANTS
CONCRETE PAVEMENT	CONCRETE PAVEMENT
ASPHALT PAVEMENT	ASPHALT PAVEMENT



STATE OF MISSOURI
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Architecture
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General Consulting
Master Planning

MISSOURI STATE CERTIFICATE
OF AUTHORITY NUMBERS:
Survey : 0003580
Engineering : 001655
Architecture : 2002014240

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF
NATURAL RESOURCES
MISSOURI STATE PARKS

NEW PREMIUM 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N
BONNE TERRE, MO 63628

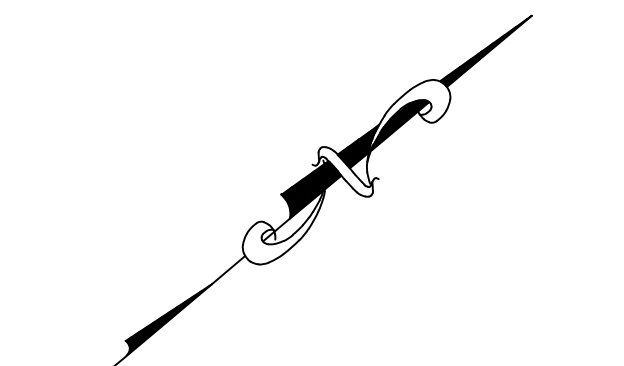
PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 03/28/2025

CAD DWG FILE: X2317-RP-128
DRAWN BY: LJR
CHECKED BY: ERR
DESIGNED BY: ERR

SHEET TITLE:
ROAD PLAN
ENTRANCE ROAD
STA. 15+60 TO 23+40

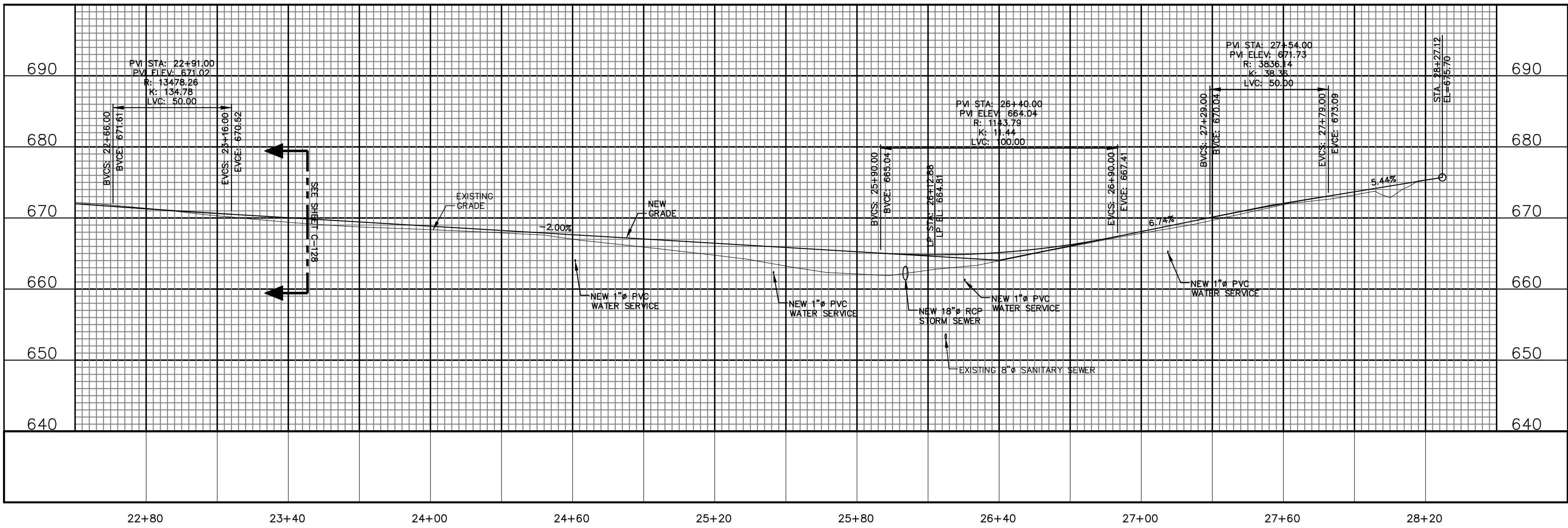
SHEET NUMBER:
C-128
30 OF 56 SHEETS
03/28/2025



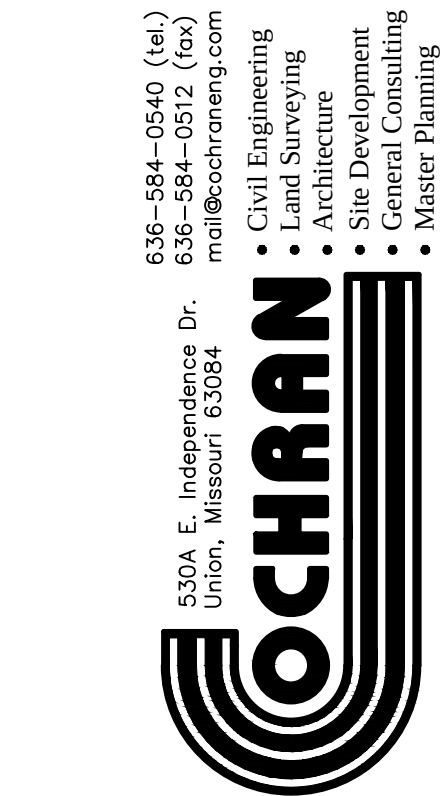
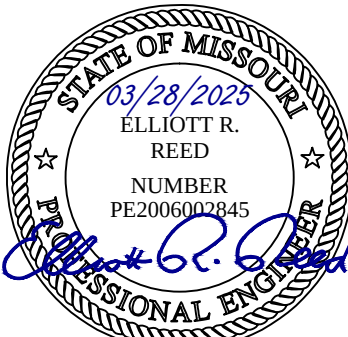
MARCH, 2025

LEGEND

EXISTING	PROPOSED
PROPERTY LINE	PROPERTY LINE
RIGHT-OF-WAY	RIGHT-OF-WAY
INDEX CONTOUR	INDEX CONTOUR
INTERMEDIATE CONTOUR	INTERMEDIATE CONTOUR
SANITARY SEWER	SANITARY SEWER
SANITARY MANHOLE	SANITARY MANHOLE
WATER LINE (SIZE)	WATER LINE (SIZE)
HYDRANTS	HYDRANTS
CONCRETE PAVEMENT	CONCRETE PAVEMENT
ASPHALT PAVEMENT	ASPHALT PAVEMENT



STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR



Missouri State Certificate
of Authority Numbers:
Survey : 000350
Engineering : 001655
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OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
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DEPARTMENT OF
NATURAL RESOURCES
MISSOURI STATE PARKS

NEW PREMIUM 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N
BONNE TERRE, MO 63628

PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____

ISSUE DATE: 03/28/2025

CAD DWG FILE: X2317-RP-129
DRAWN BY: LJR
CHECKED BY: ERR
DESIGNED BY: ERR

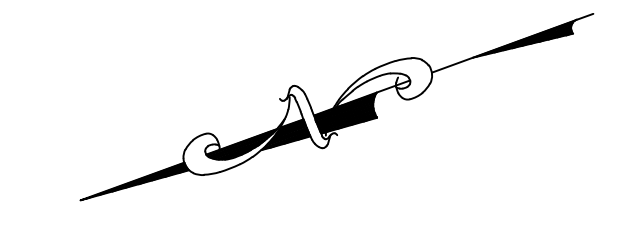
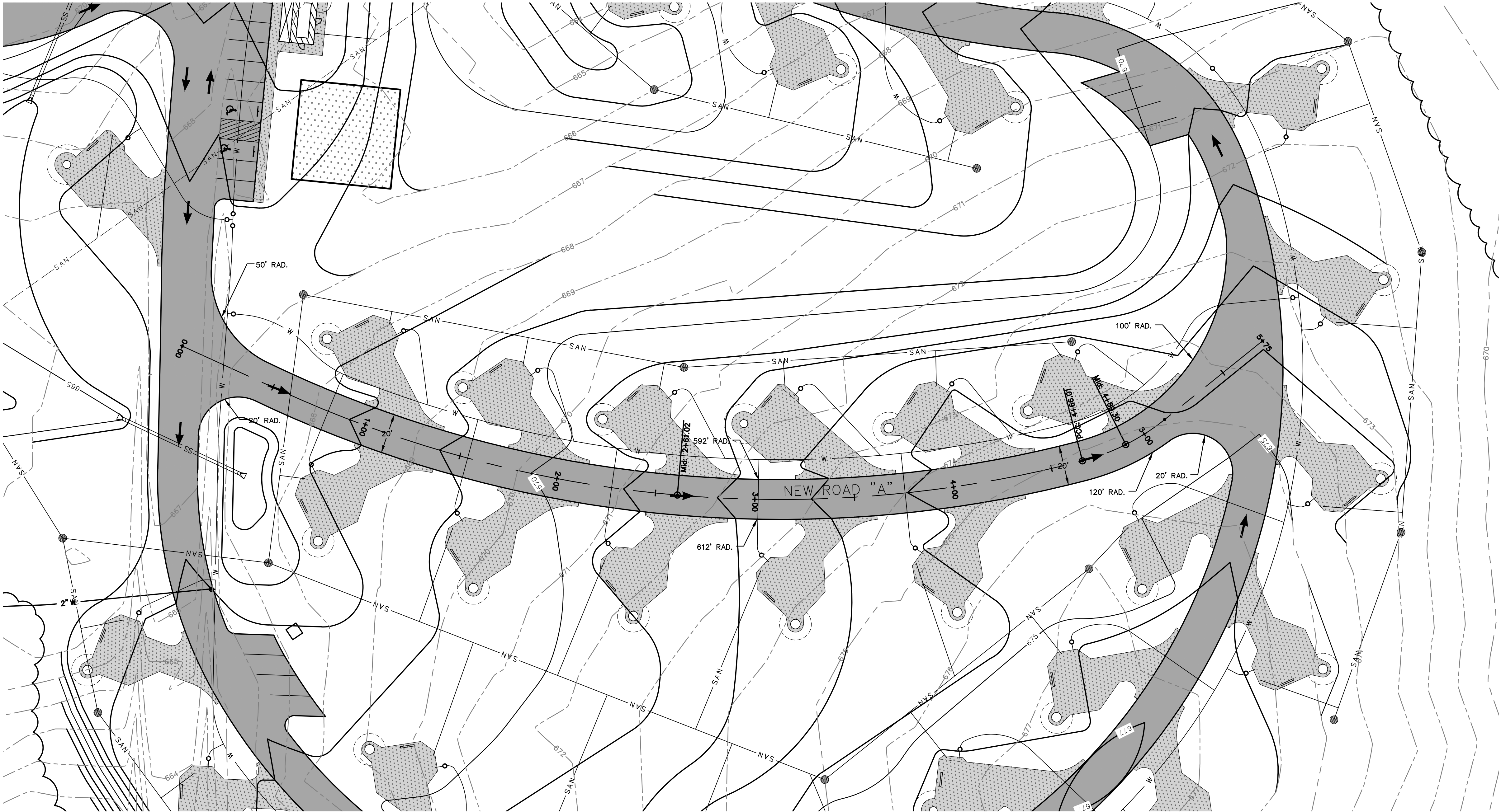
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ROAD PLAN
ENTRANCE ROAD
STA. 23+40 TO 28+27

SHEET NUMBER:

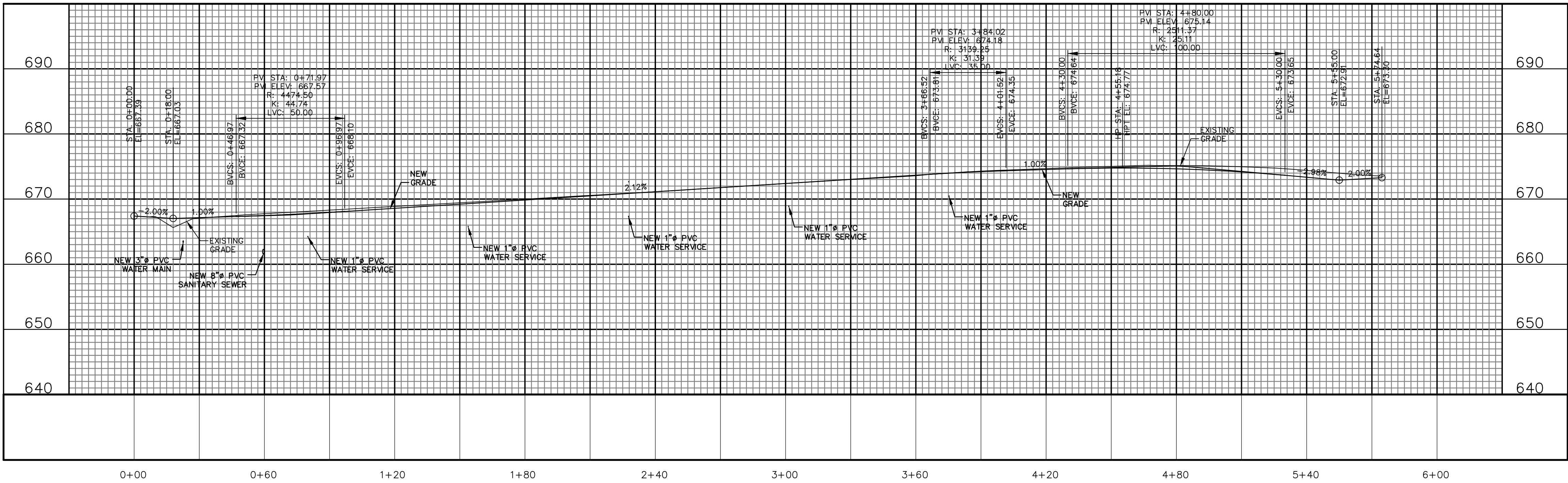
C-129

31 OF 56 SHEETS
03/28/2025

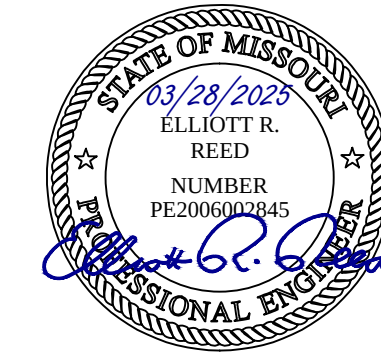


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MARCH, 2025

LEGEND	
EXISTING	PROPOSED
PROPERTY LINE	PROPERTY LINE
RIGHT-OF-WAY	RIGHT-OF-WAY
INDEX CONTOUR	INDEX CONTOUR
INTERMEDIATE CONTOUR	INTERMEDIATE CONTOUR
SANITARY SEWER	SANITARY SEWER
SANITARY MANHOLE	SANITARY MANHOLE
WATER LINE (SIZE)	WATER LINE (SIZE)
HYDRANTS	HYDRANTS
CONCRETE PAVEMENT	CONCRETE PAVEMENT
ASPHALT PAVEMENT	ASPHALT PAVEMENT



STATE OF MISSOURI
MICHAEL L. PARSON,
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OFFICE OF ADMINISTRATION
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MISSOURI STATE PARKS

NEW PREMIUM 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N
BONNE TERRE, MO 63628

PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

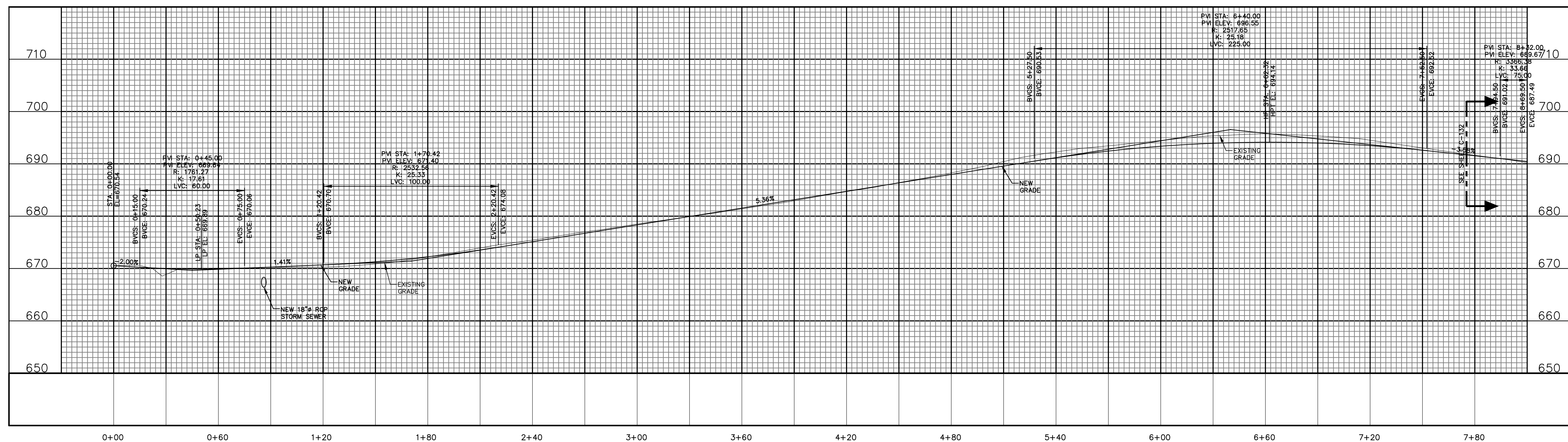
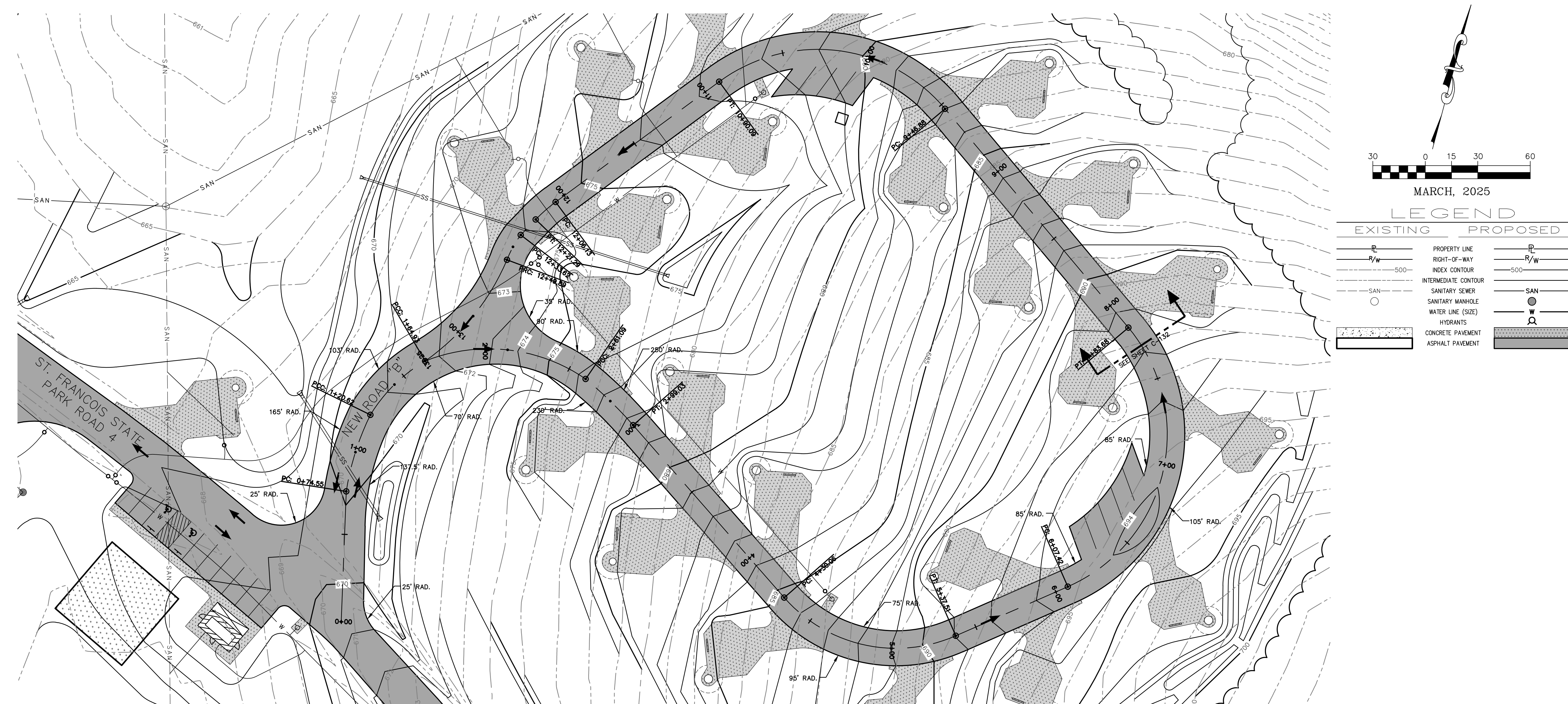
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DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 03/28/2025

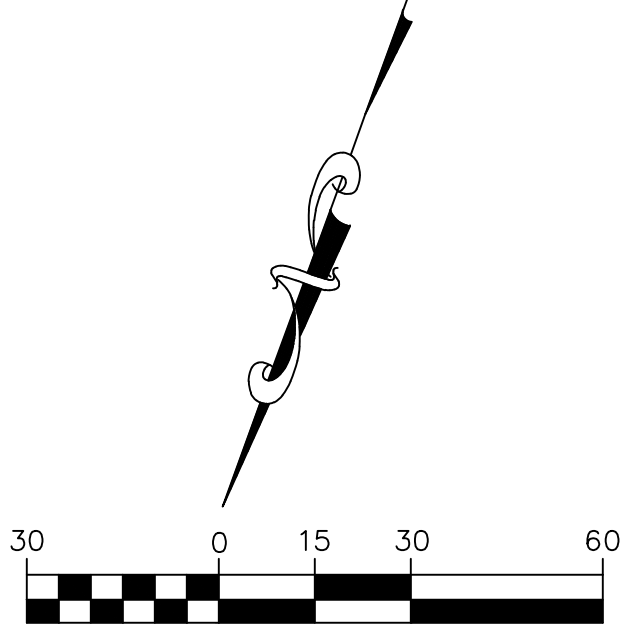
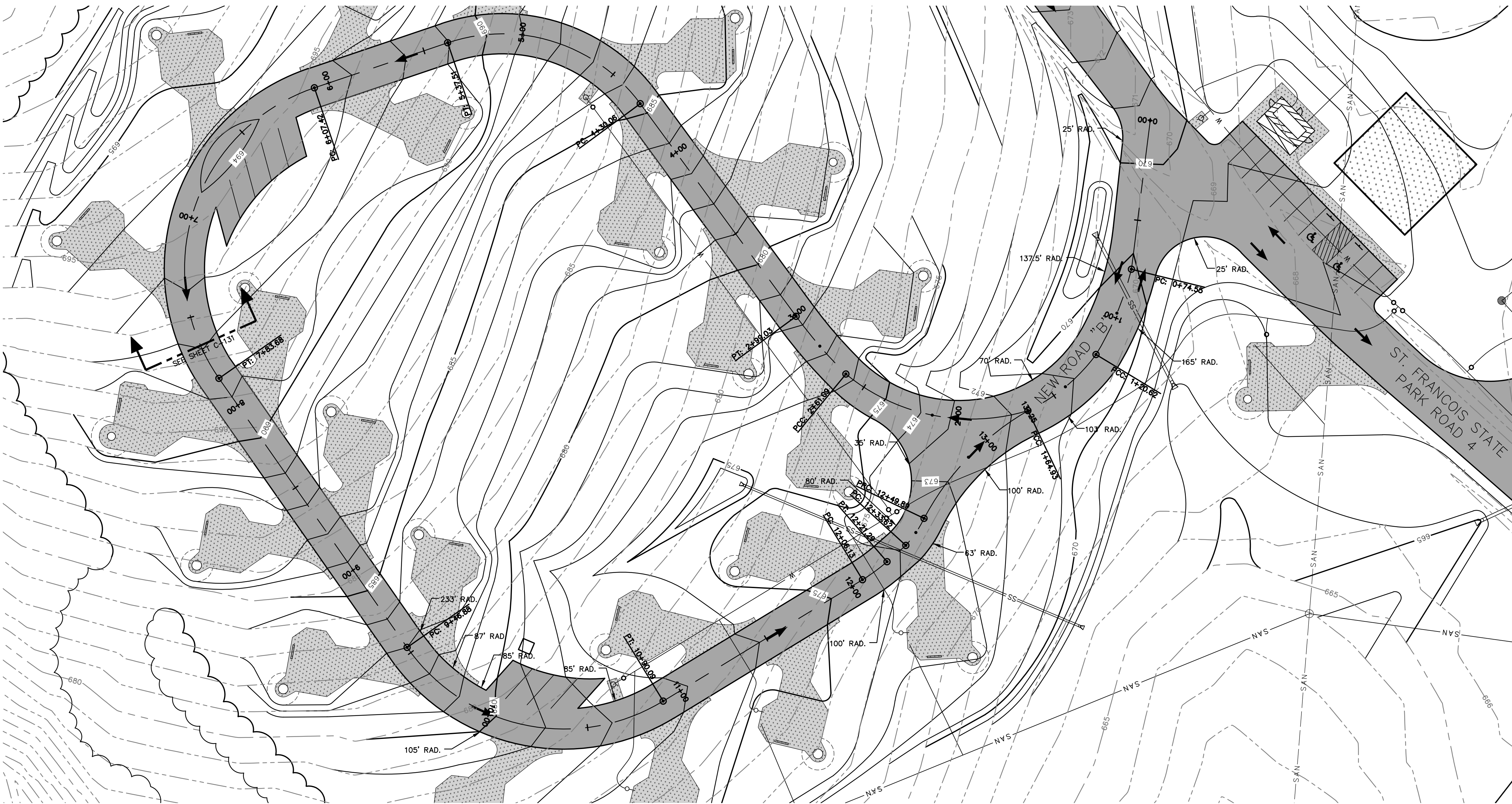
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DRAWN BY: LJR
CHECKED BY: ERR
DESIGNED BY: ERR

SHEET TITLE:
ROAD PLAN
CENTER ROAD
STA. 0+00 TO 5+75

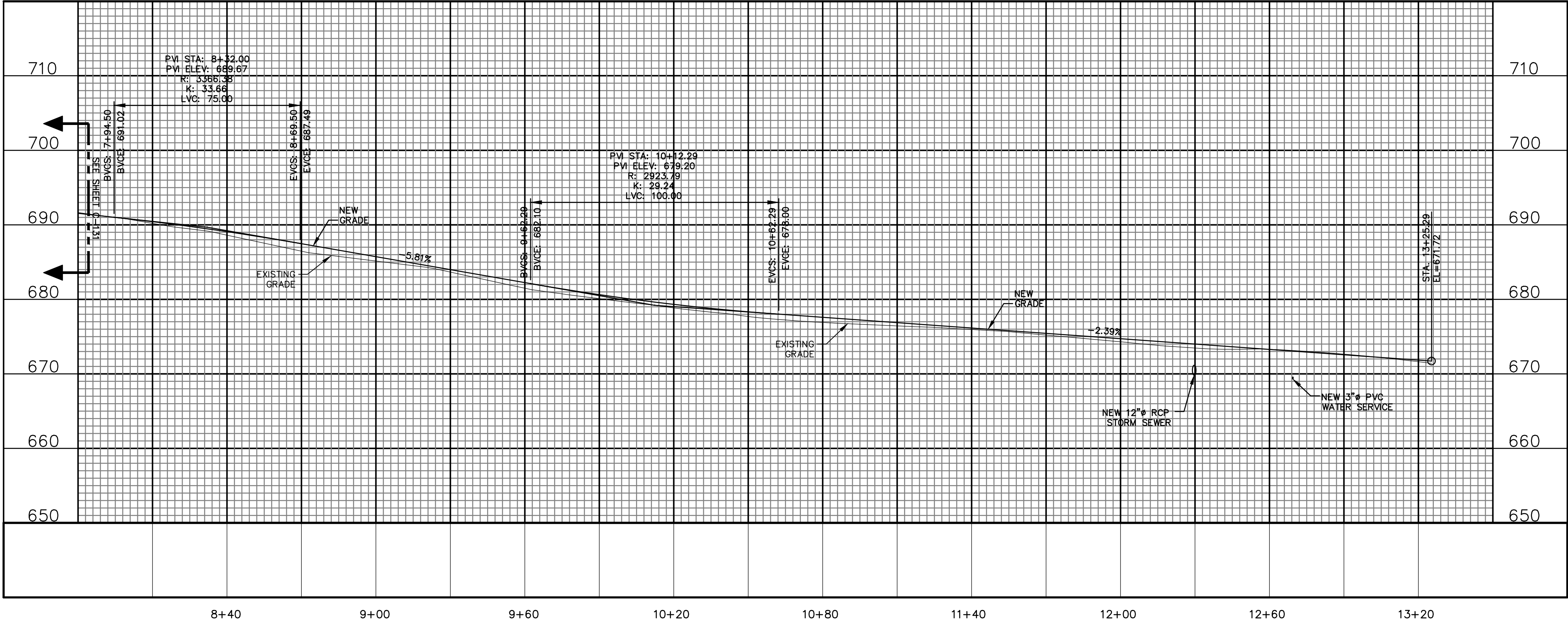
SHEET NUMBER:
C-130

32 OF 56 SHEETS
03/28/2025

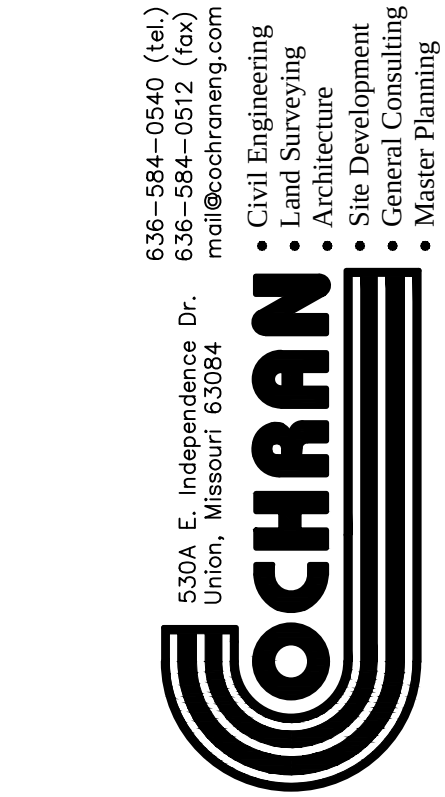
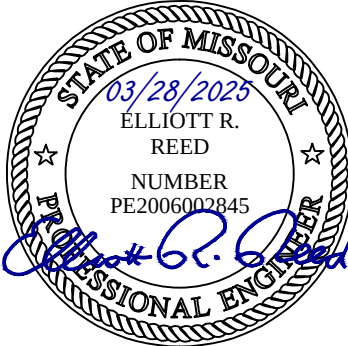




LEGEND	
EXISTING	PROPOSED
PROPERTY LINE	PROPERTY LINE
RIGHT-OF-WAY	RIGHT-OF-WAY
INDEX CONTOUR	INDEX CONTOUR
INTERMEDIATE CONTOUR	INTERMEDIATE CONTOUR
SANITARY SEWER	SANITARY SEWER
SANITARY MANHOLE	SANITARY MANHOLE
WATER LINE (SIZE)	WATER LINE (SIZE)
HYDRANTS	HYDRANTS
CONCRETE PAVEMENT	CONCRETE PAVEMENT
ASPHALT PAVEMENT	ASPHALT PAVEMENT



STATE OF MISSOURI
MICHAEL L. PARSON,
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MISSOURI STATE PARKS

NEW PREMIUM 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N
BONNE TERRE, MO 63628

PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

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REVISION: _____
DATE: _____
REVISION: _____
DATE: _____

ISSUE DATE: 03/28/2025

CAD DWG FILE: X2317-RP-132
DRAWN BY: LJR
CHECKED BY: ERR
DESIGNED BY: ERR

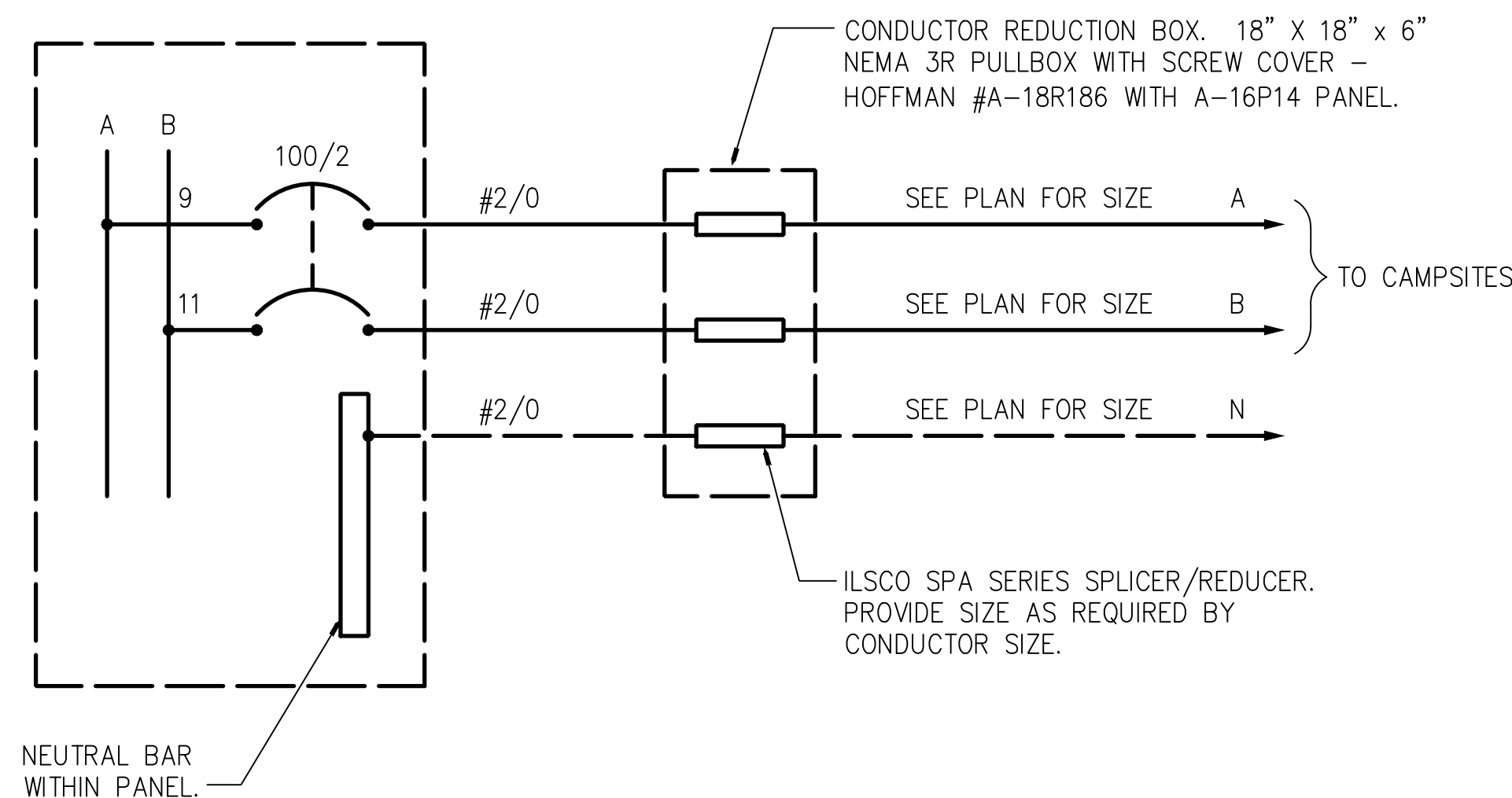
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ROAD PLAN
NORTH ROAD
STA. 7+80 TO 13+25

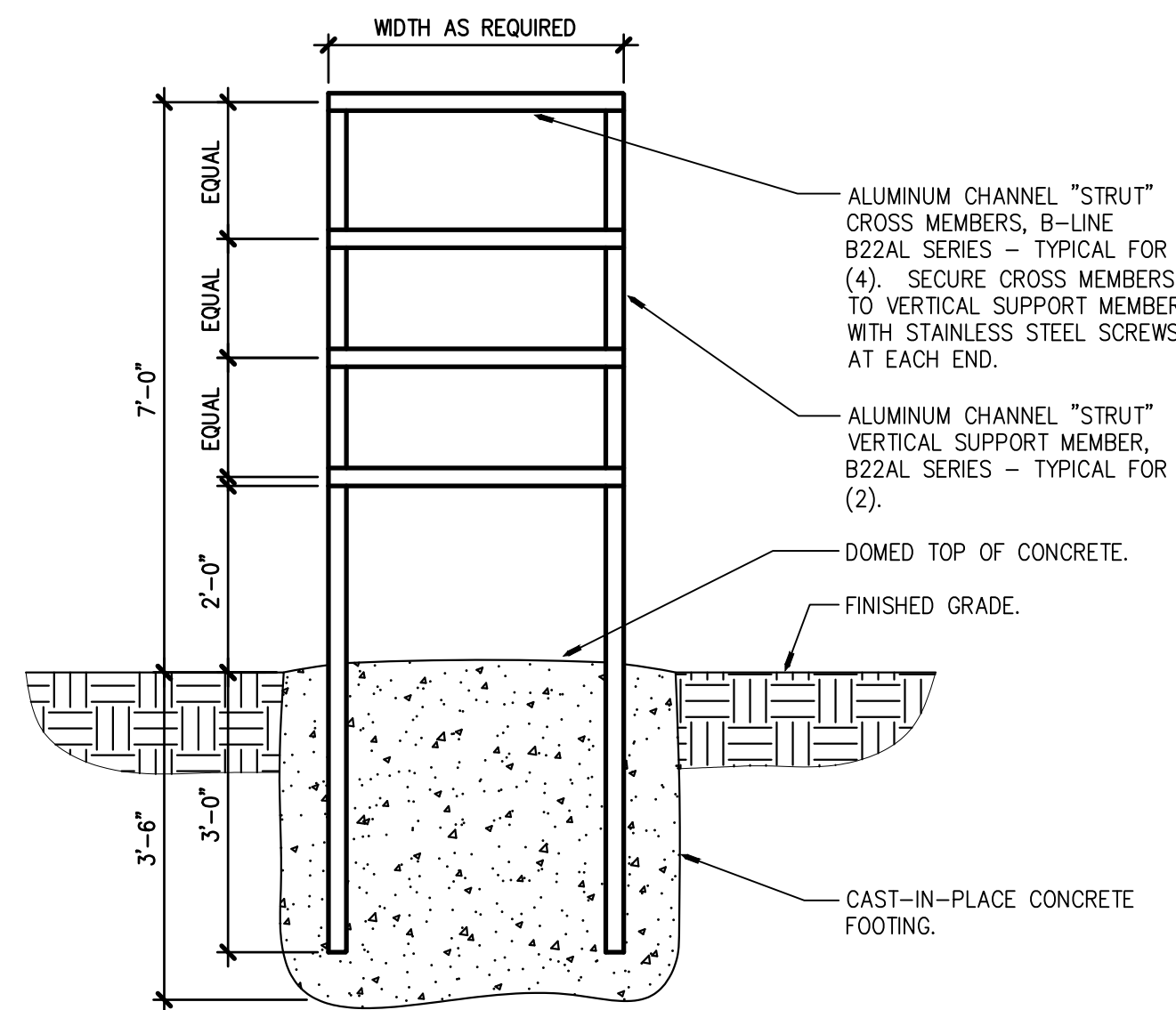
SHEET NUMBER:

C-132

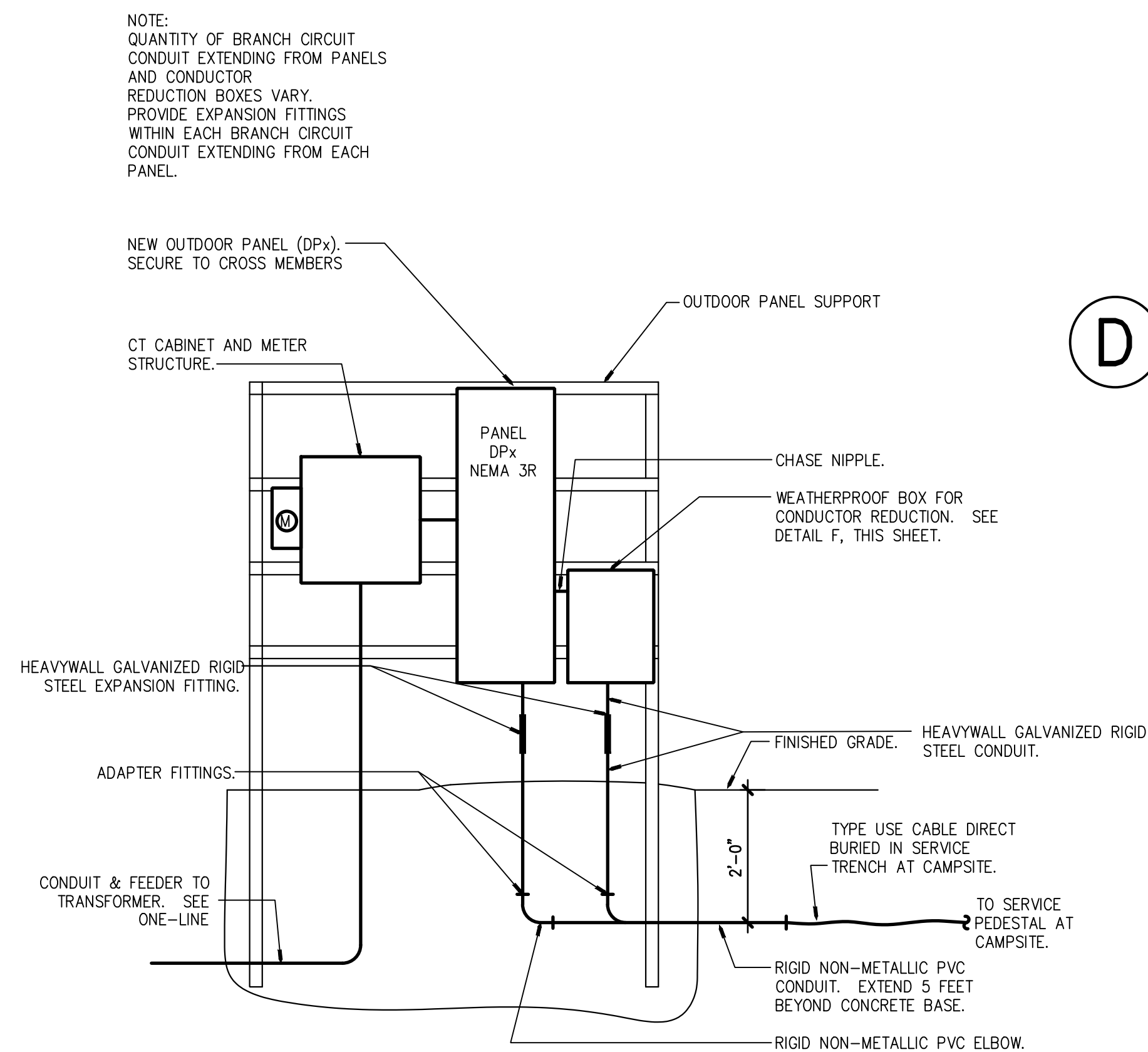
34 OF 56 SHEETS
03/28/2025



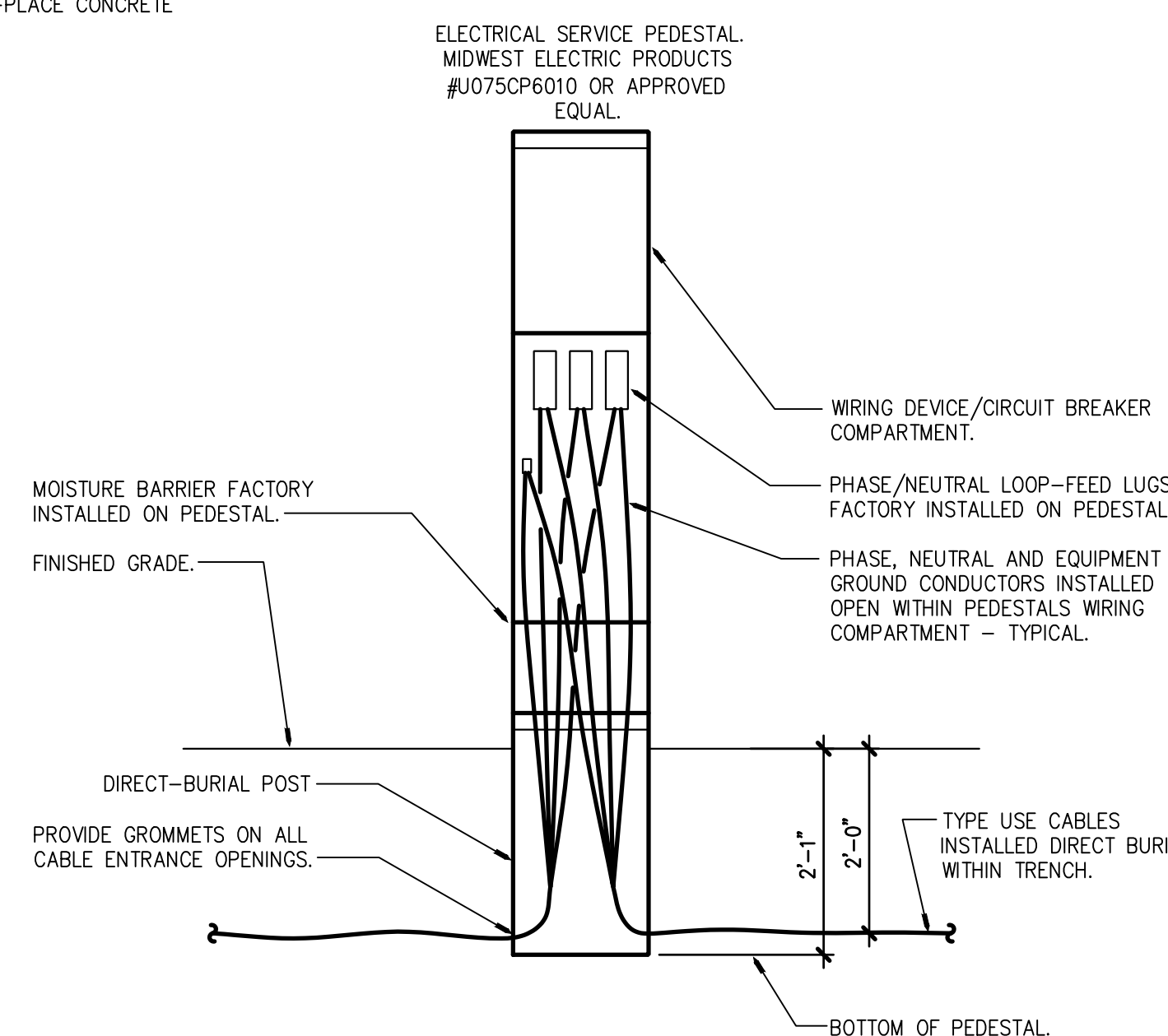
F TYPICAL CONDUCTOR REDUCTIONS AT DPx
NO SCALE



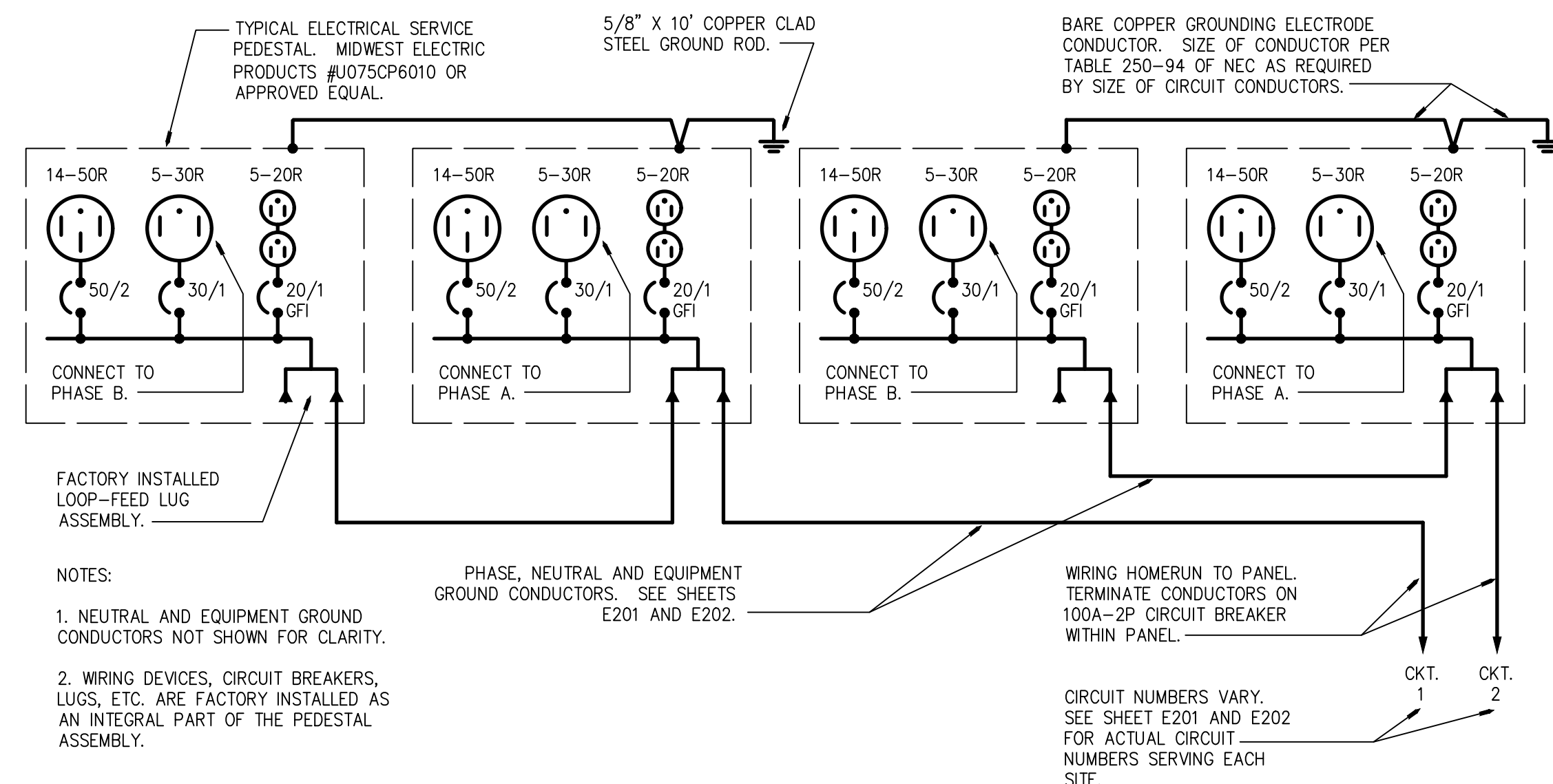
D EXTERIOR PANELBOARD SUPPORT STRUCTURE
NO SCALE



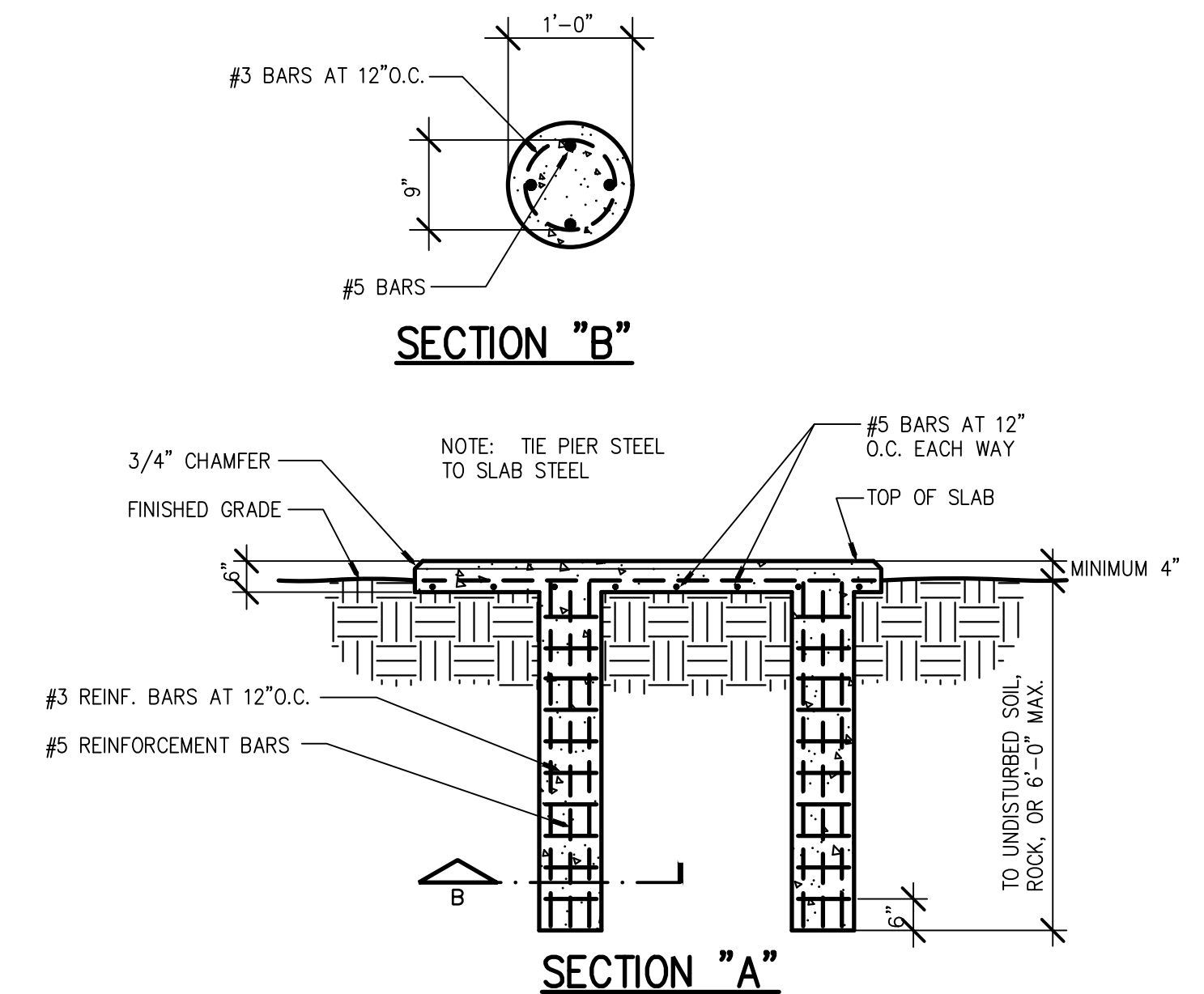
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NO SCALE



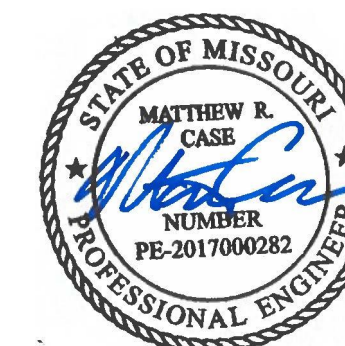
E ELECTRICAL SERVICE PEDESTAL
NO SCALE



B CAMPSITE SERVICE PEDESTAL POWER SUPPLY
NO SCALE



A TRANSFORMER PAD DETAIL
NO SCALE



03/28/25

CASE
Engineering Inc.

T 636.349.1600
F 636.349.1730
796 Merus Court
St. Louis, MO 63026
CERTIFICATE OF AUTHORITY NO. 001498

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF
NATURAL RESOURCES
MISSOURI STATE PARKS

NEW 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N

ST. FRANCOIS COUNTY, MISSOURI

PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____

ISSUE DATE: 03/28/2025

CAD DWG FILE: COC-MO-16-23
DRAWN BY: BDW
CHECKED BY: DRC
DESIGNED BY: BDW

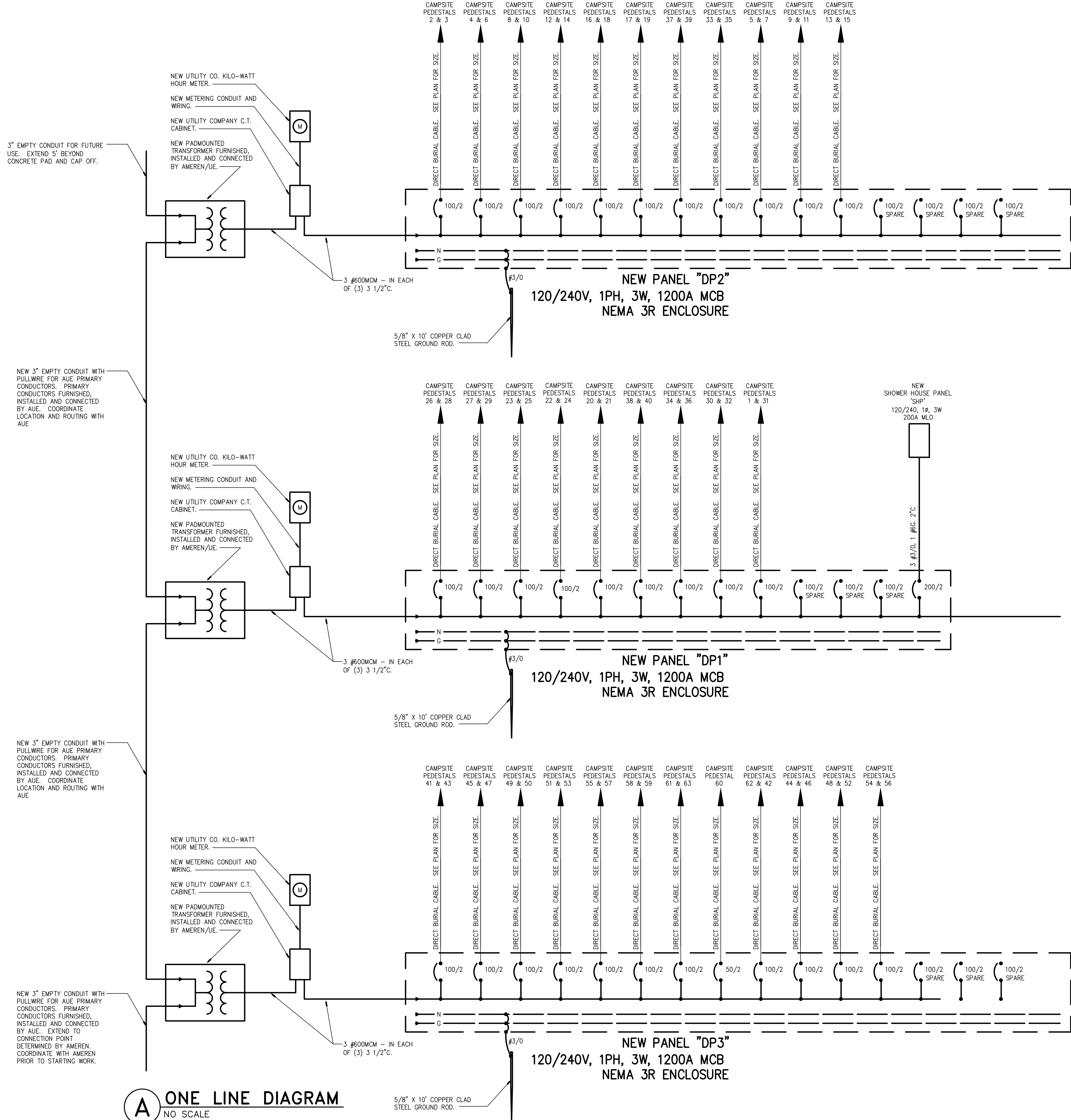
SHEET TITLE:

ELECTRICAL
DETAILS &
ONE-LINE

SHEET NUMBER:

E101

35 OF 56 SHEETS
03/28/2025



A ONE LINE DIAGRAM
NO SCALE

STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR



03/28/25

CASE
Engineering Inc.

T 636.349.1600
F 636.349.1730
796 Merus Court
St. Louis, MO 63026
CERTIFICATE OF AUTHORITY NO. 001498

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
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DESIGN AND CONSTRUCTION

DEPARTMENT OF
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MISSOURI STATE PARKS

NEW 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N
ST.FRANCOIS COUNTY, MISSOURI

PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION: _____
DATE: _____
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DATE: _____

ISSUE DATE: 03/28/2025

CAD DWG FILE: COC-MO-16-23
DRAWN BY: BDW
CHECKED BY: DRC
DESIGNED BY: BDW

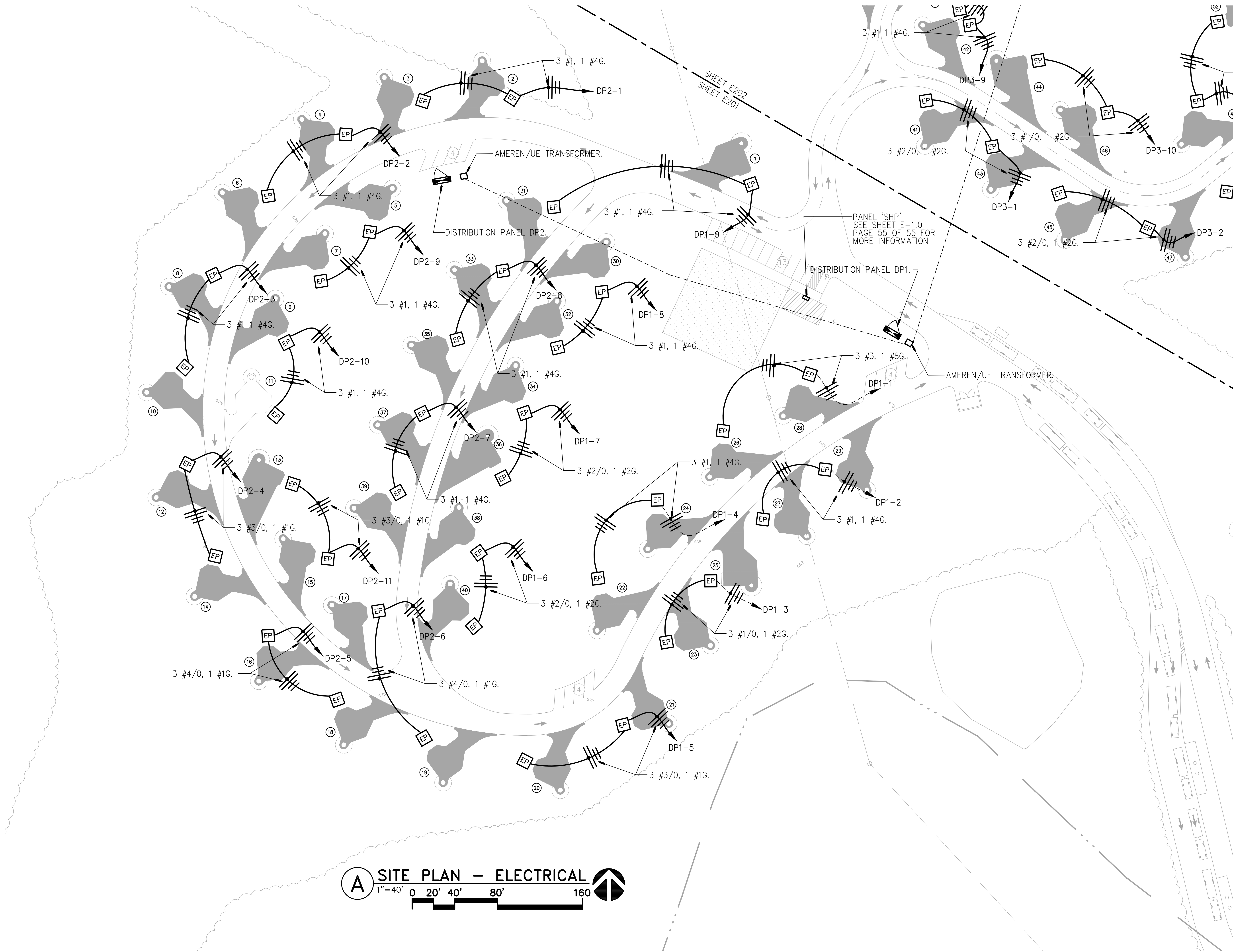
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**ELECTRICAL
DETAILS**

SHEET NUMBER:

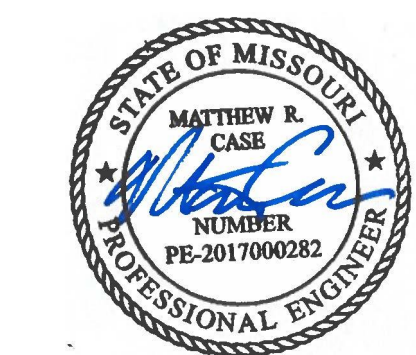
E102

36 OF 56 SHEETS
03/28/2025



A SITE PLAN – ELECTRICAL
1"=40' 0 20' 40' 80' 160

STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR



03/28/25

CASE
Engineering Inc.
T 636.349.1600
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796 Merus Court
St. Louis, MO 63026
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OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
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DEPARTMENT OF
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MISSOURI STATE PARKS

NEW 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N
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REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____

ISSUE DATE: 03/28/2025

CAD DWG FILE: COC-MO-16-23
DRAWN BY: BDW
CHECKED BY: DRC
DESIGNED BY: BDW

SHEET TITLE:
**ELECTRICAL
SITE PLAN**

SHEET NUMBER:

E201

37 OF 56 SHEETS
03/28/2025



03/28/25

CASE
Engineering Inc.

T 636.349.1600
F 636.349.1730
796 Merus Court
St. Louis, MO 63026
CERTIFICATE OF AUTHORITY NO. 001498

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF
NATURAL RESOURCES
MISSOURI STATE PARKS

NEW 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N
ST.FRANCOIS COUNTY, MISSOURI

PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____

ISSUE DATE: 03/28/2025

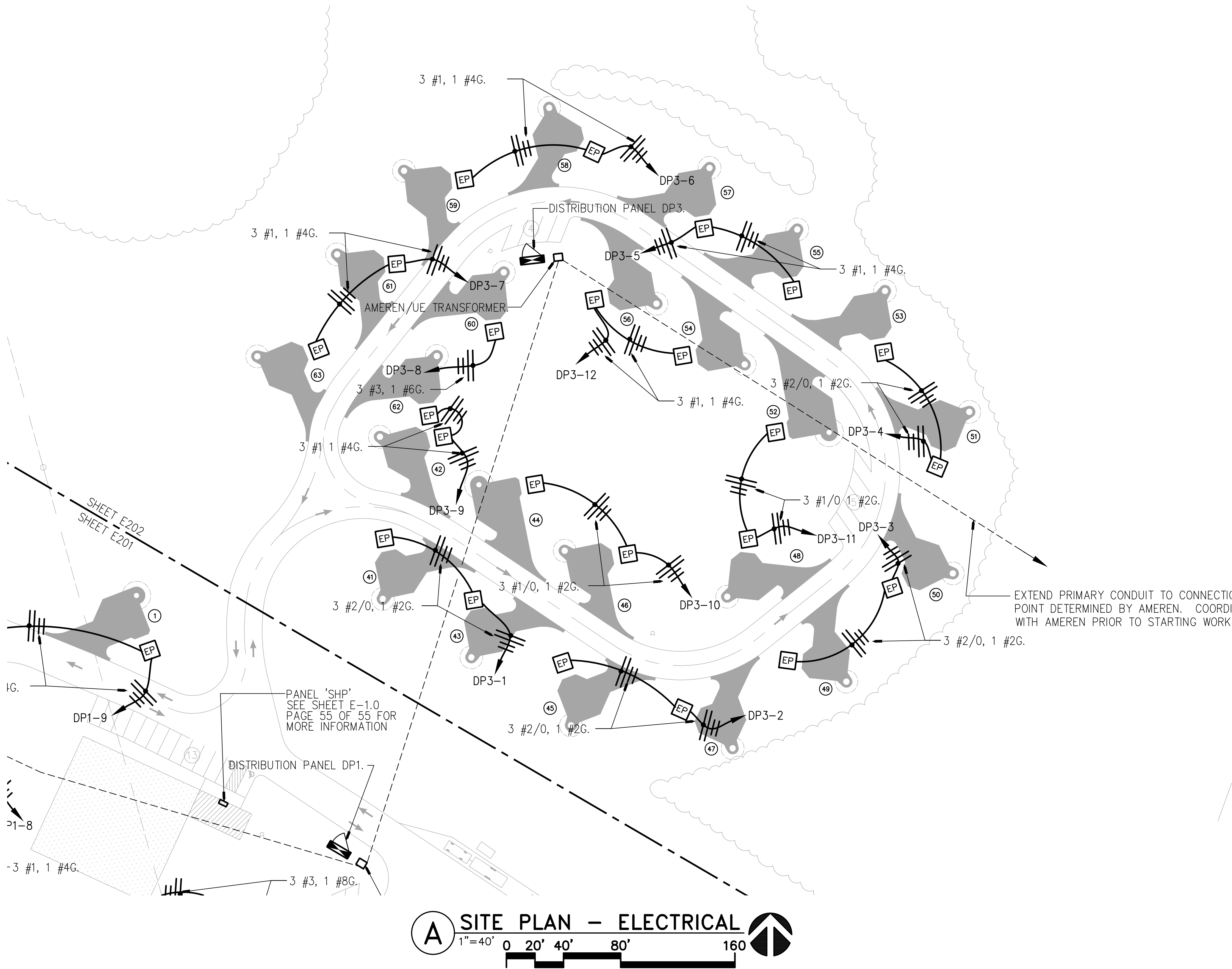
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CHECKED BY: DRC
DESIGNED BY: BDW

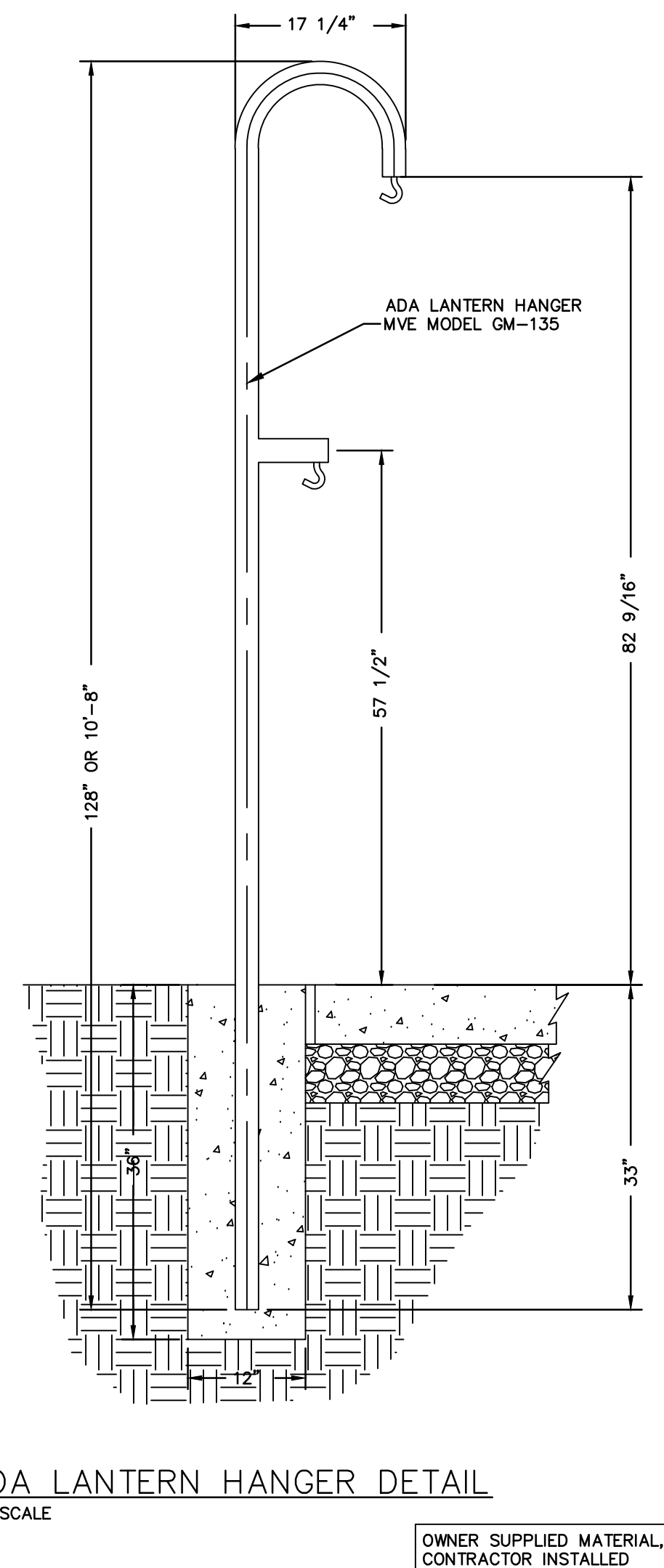
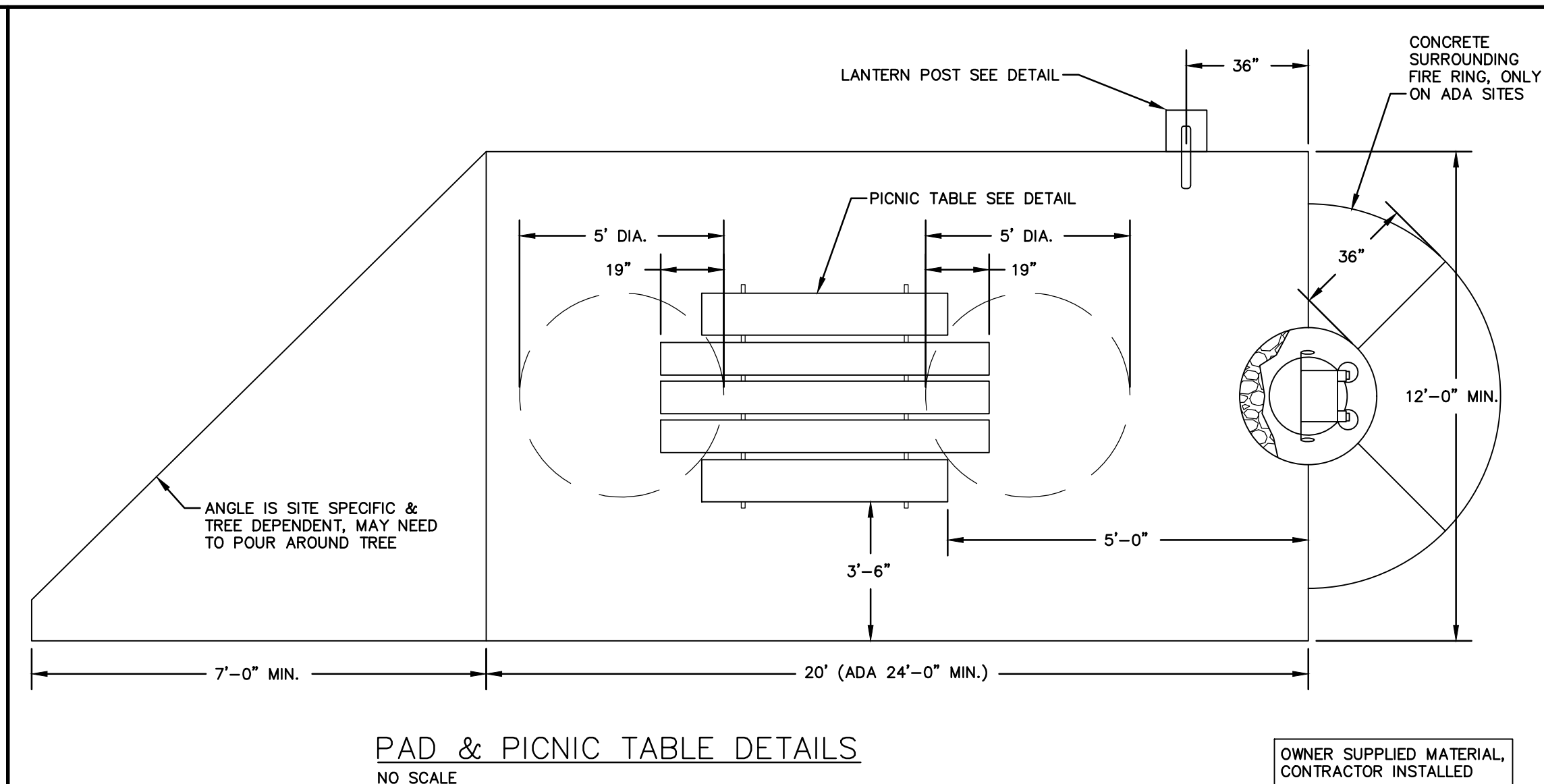
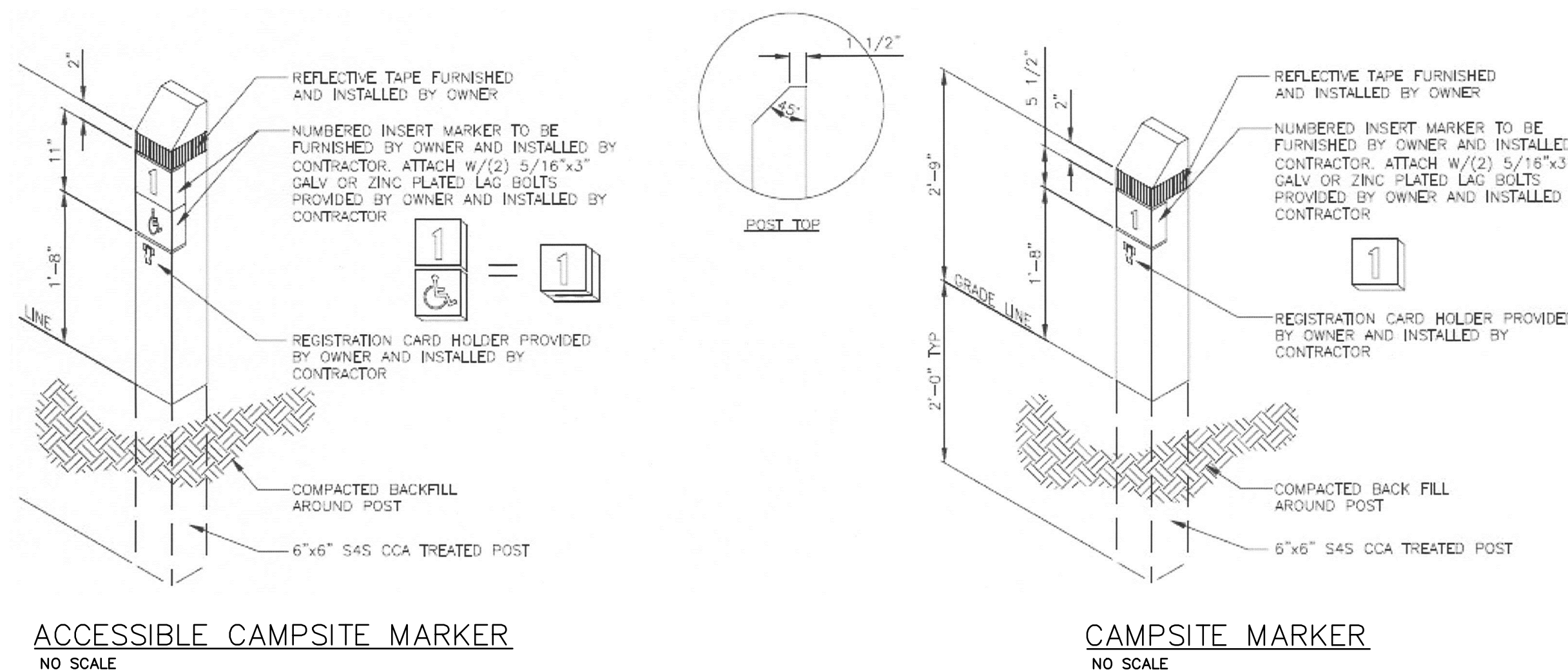
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**ELECTRICAL
SITE PLAN**

SHEET NUMBER:

E202

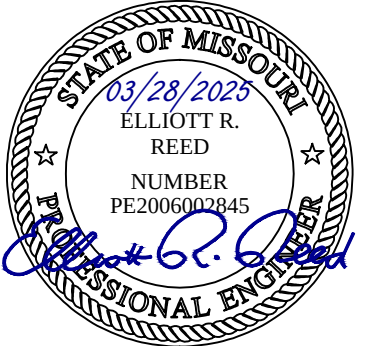
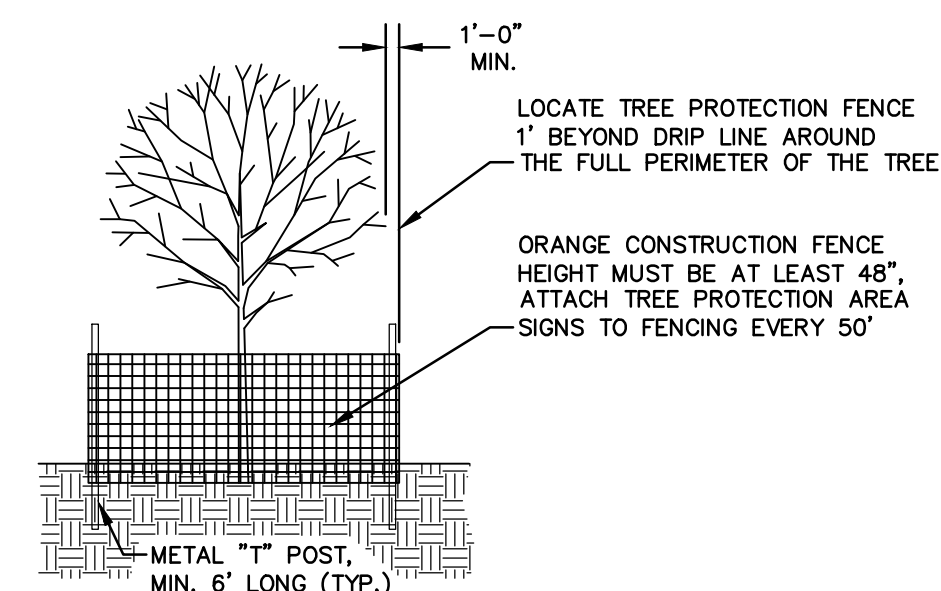
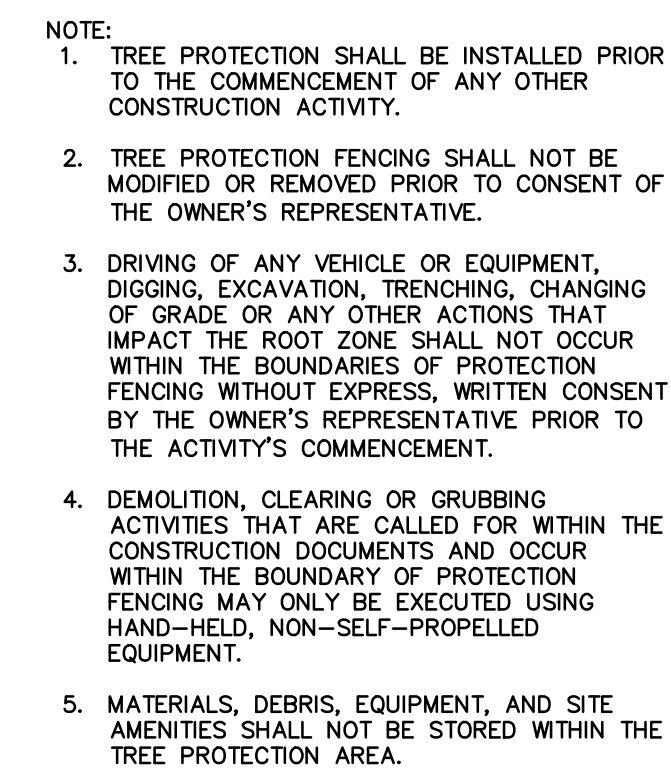
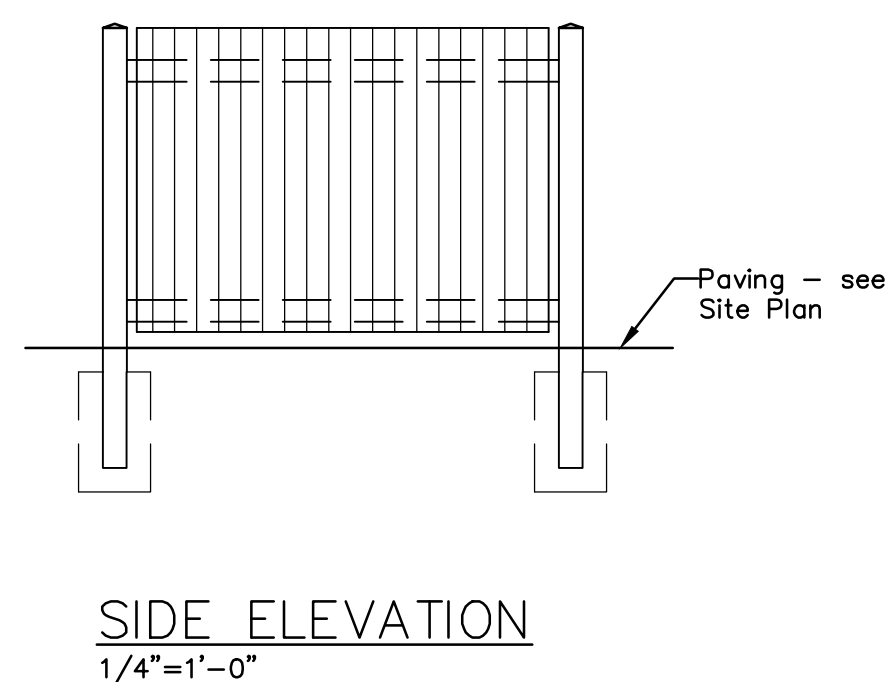
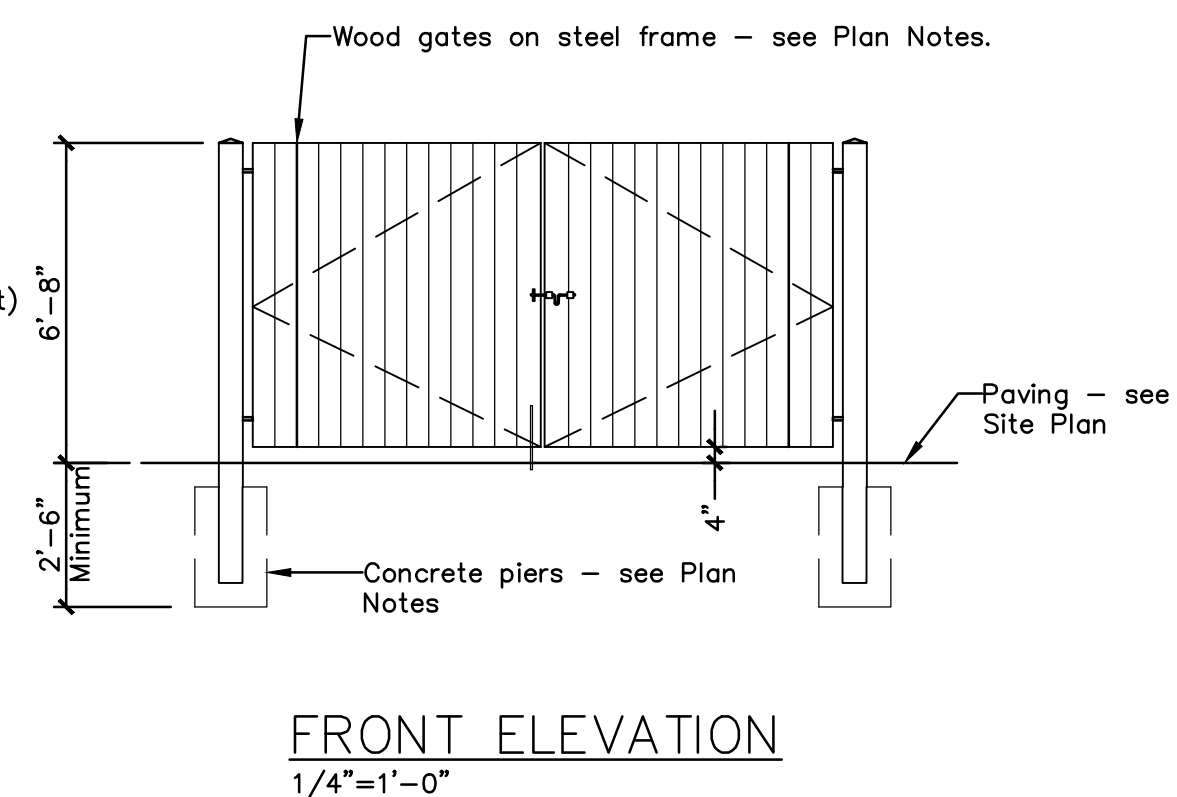
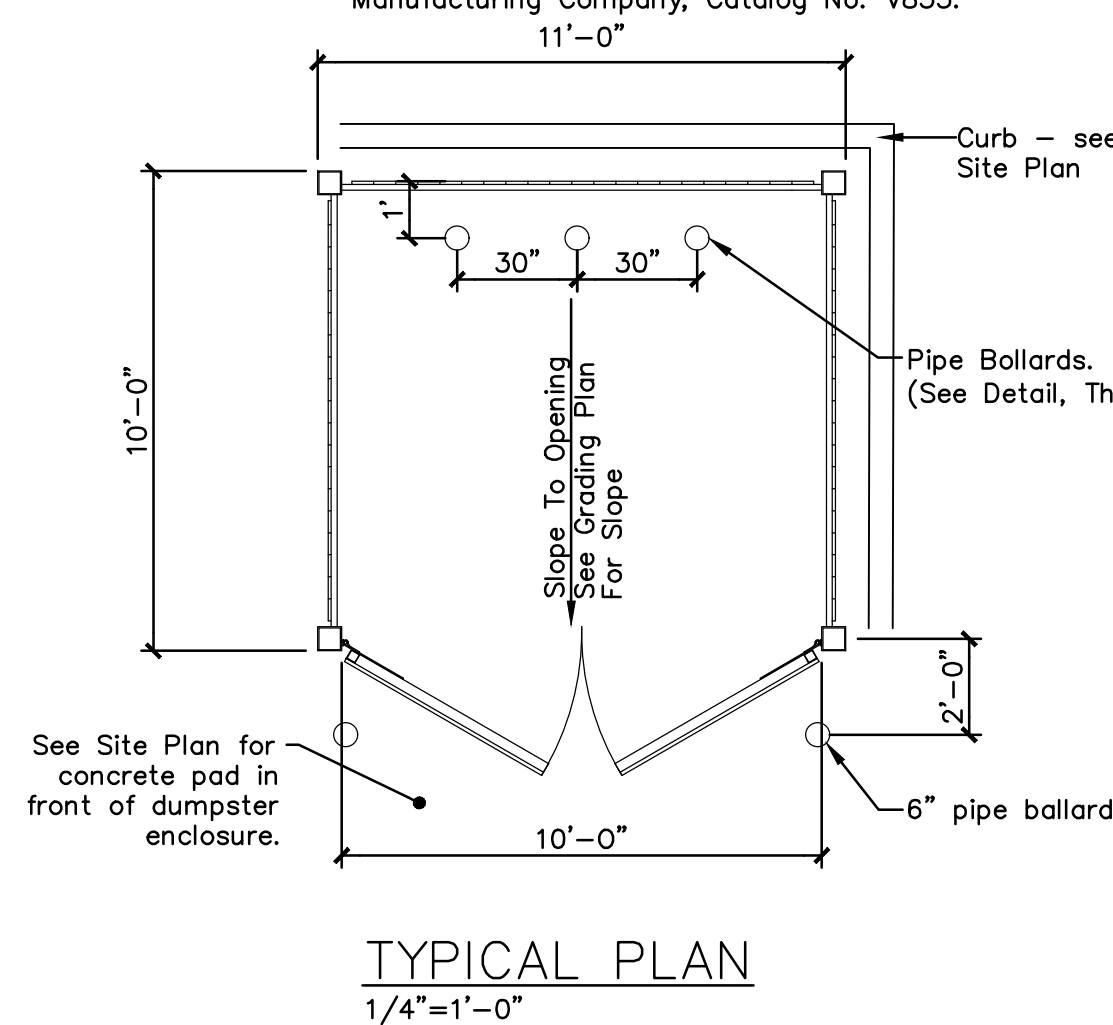
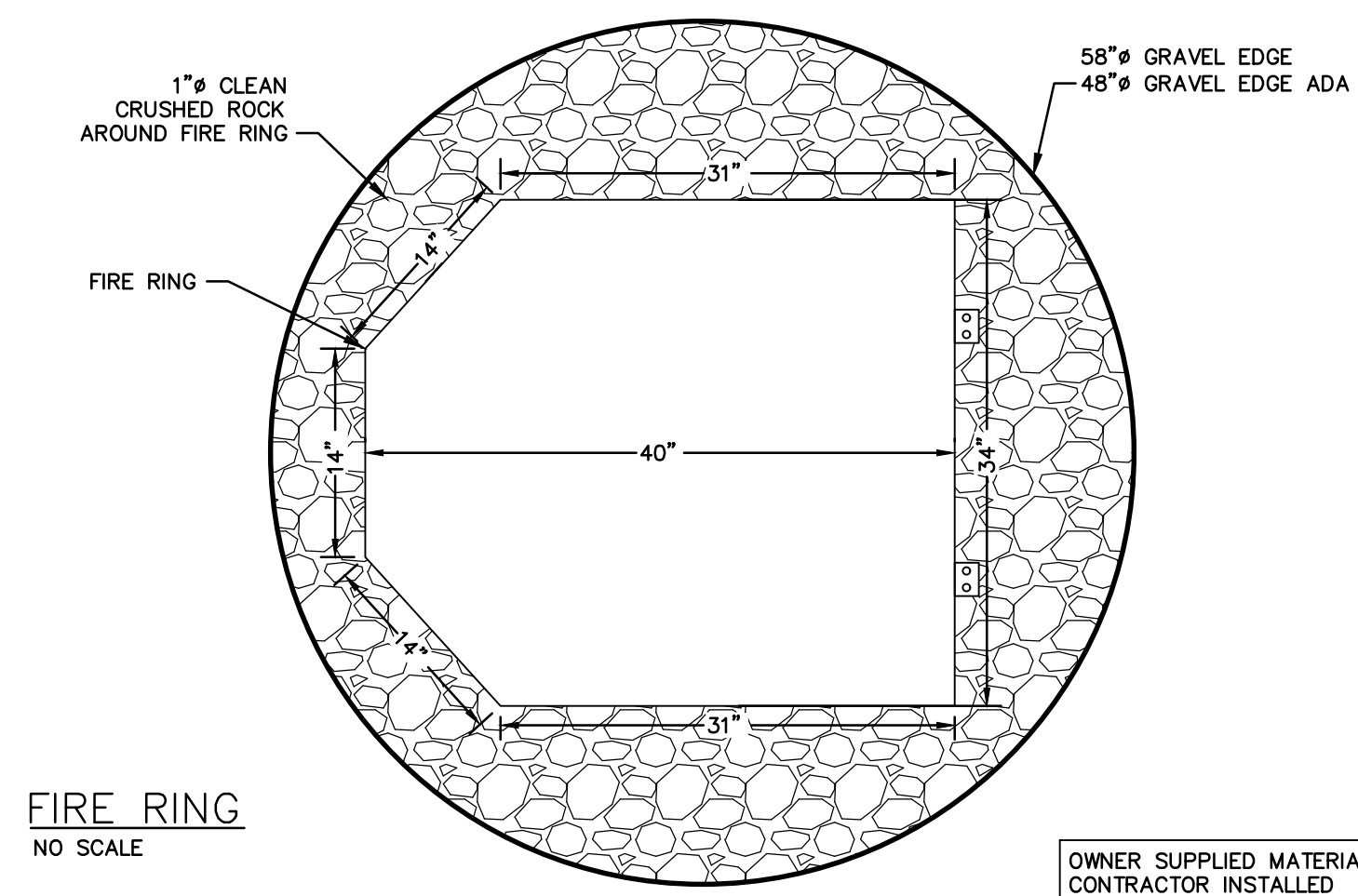
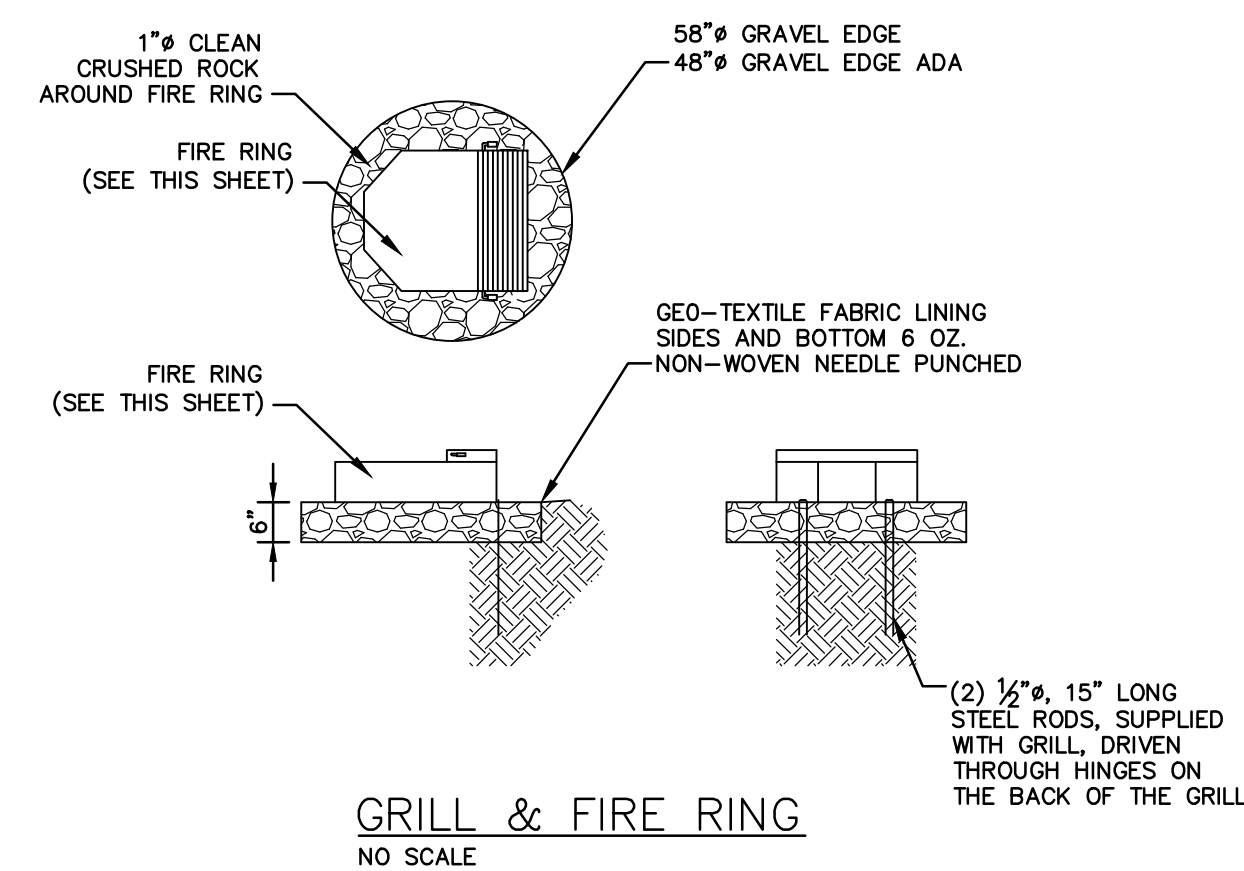
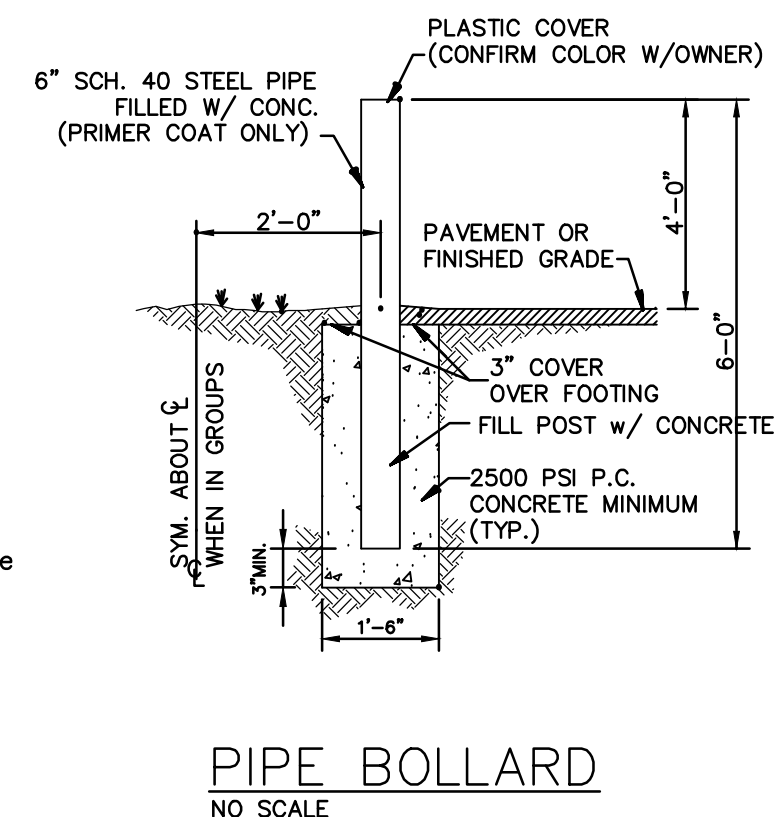
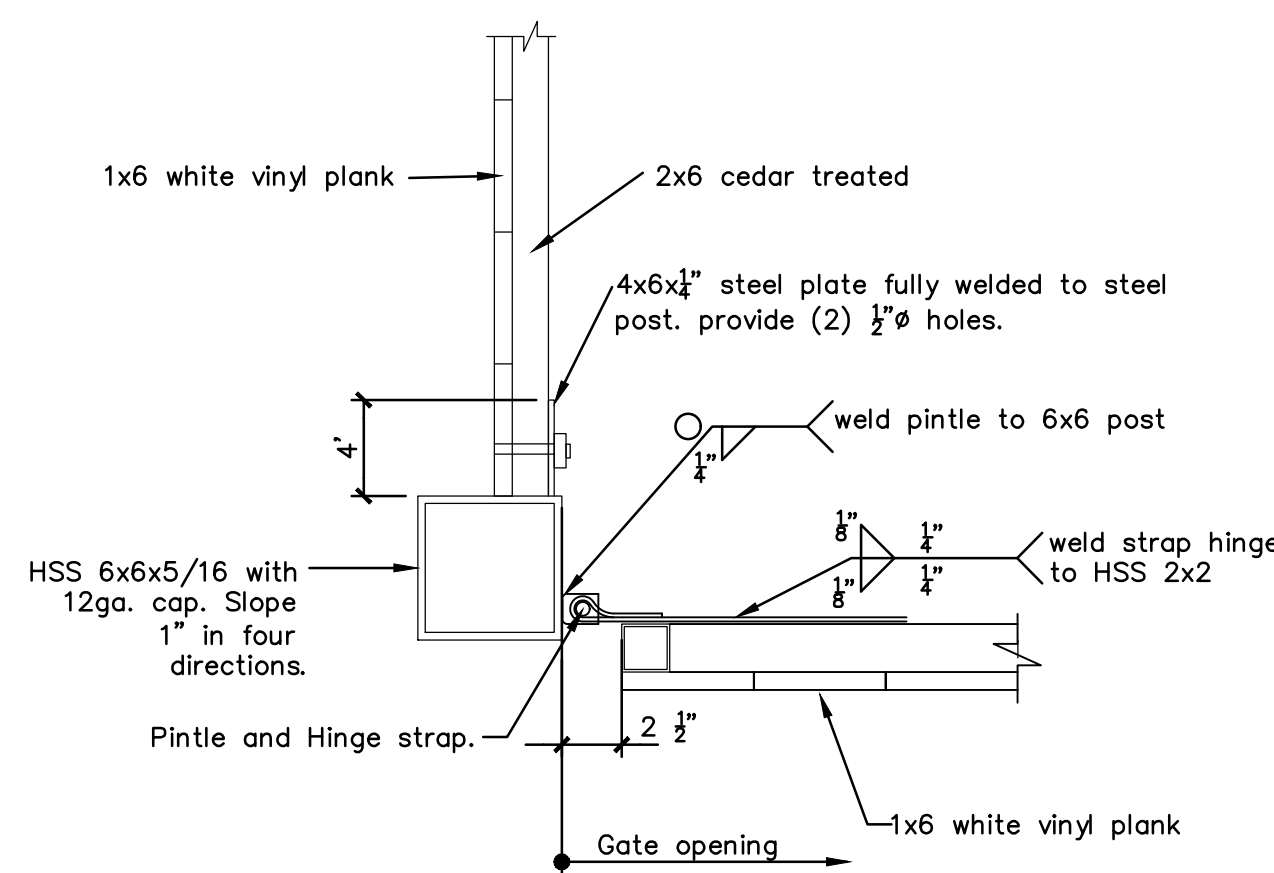
38 OF 56 SHEETS
03/28/2025





PLAN NOTES

1. Concrete Pier: 18" wide x 2'-6" deep concrete pier with Bottom of foundation to be 2'-6" minimum below finish grade. Extend foundation 1'-0" past the centerline of the gate post. Embed post in pier 2'-0".
2. Floor Construction : 7" concrete slab reinforced with #6 welded wire mesh, place mesh 2" clear of top of slab, over 4" minimum of compacted 1" minus granular base. Light broom finish, seal and cure slab with "VOCOMP - 30" as manufactured by W. R. Meadows. Apply per manufacturer's written instructions. Provide 1 1/2" deep sawcut control joints @ 15'-0" o.c. maximum (equally spaced).
3. Wall Construction: Each section shall have (2) 2x6 treated horizontal members with vertical 1x6 vinyl planks attached with galvanized exterior screws. Attach panels to steel tabs with 1/2" galvanized carriage bolts with nuts and washers. paint.
4. Gate Construction:
Gate Leaf : 1x6 vinyl on 2"x2"x1/8" galvanized steel frame with cross members to prevent rocking and sag. White in color. Screw planks to steel frame with corrosion resistant fasteners.



Missouri State Certificate
of Authority Numbers:
Survey : 000380
Engineering : 001655
Architecture : 2002014240

**OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION**

**DEPARTMENT OF
NATURAL RESOURCES
MISSOURI STATE PARKS**

NEW PREMIUM 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N
BONNE TERRE, MO 63628

PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 03/28/2025

CAD DWG FILE: X2317-DS-502
DRAWN BY: LJR
CHECKED BY: ERR
DESIGNED BY: ERR

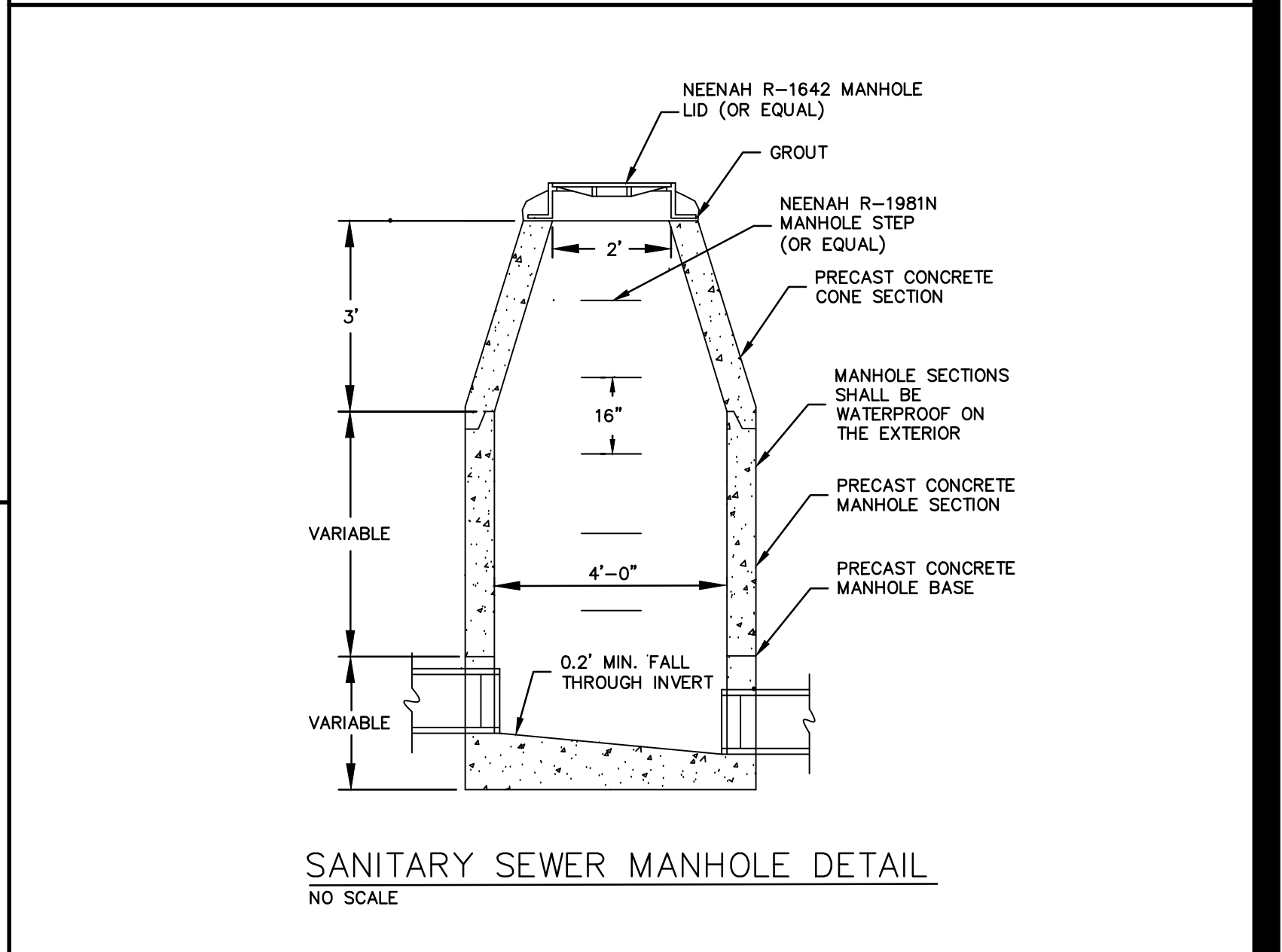
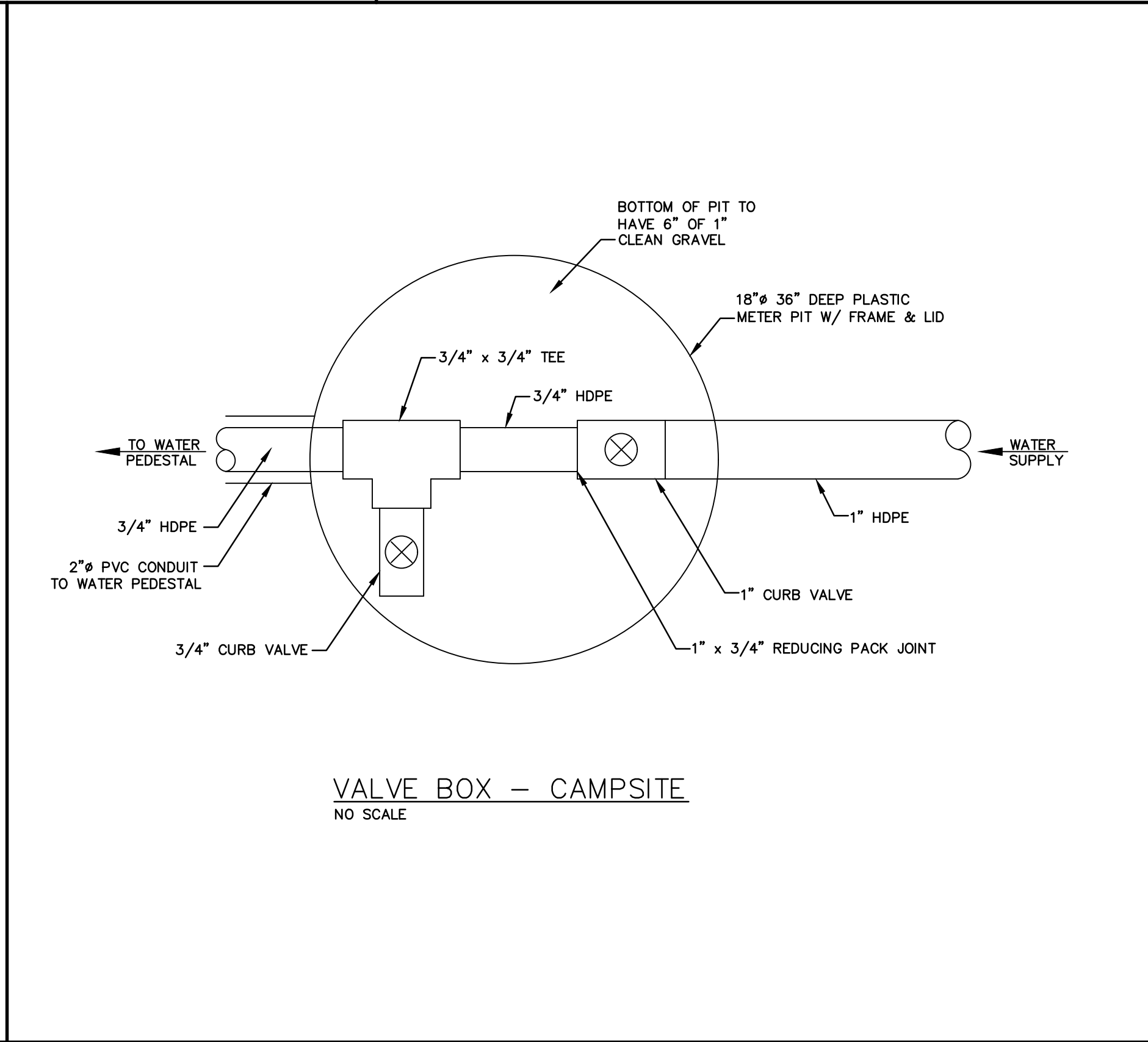
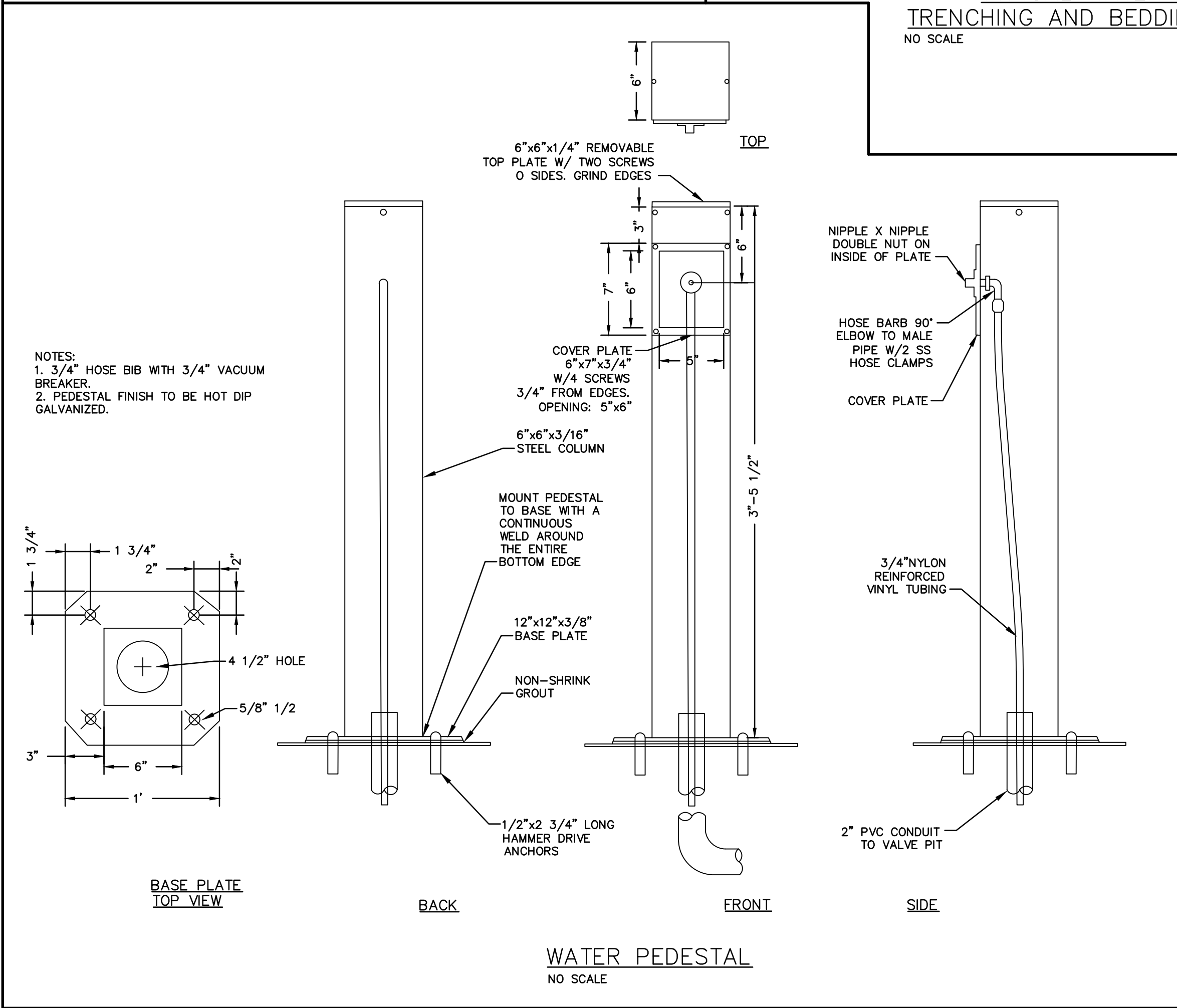
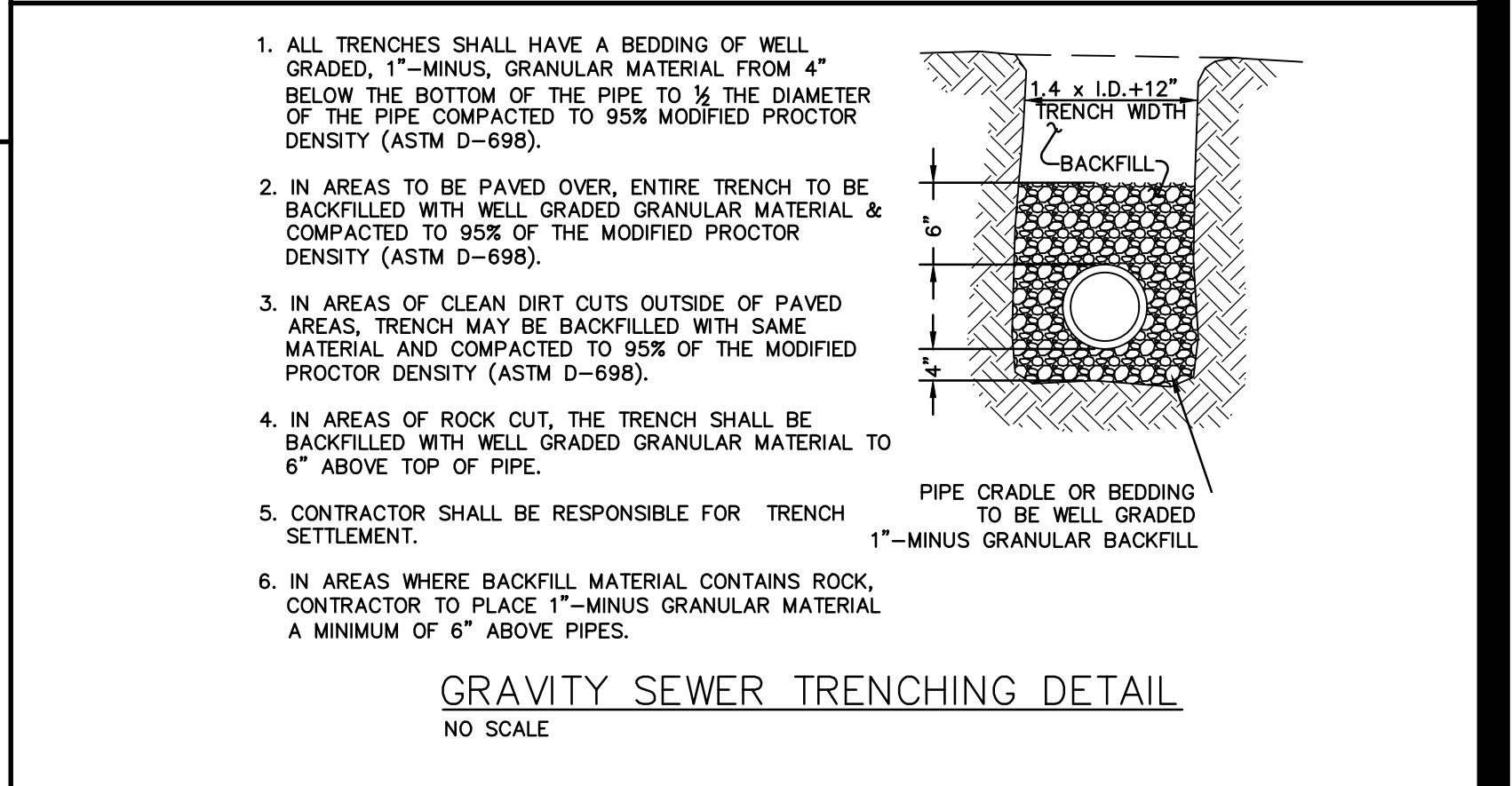
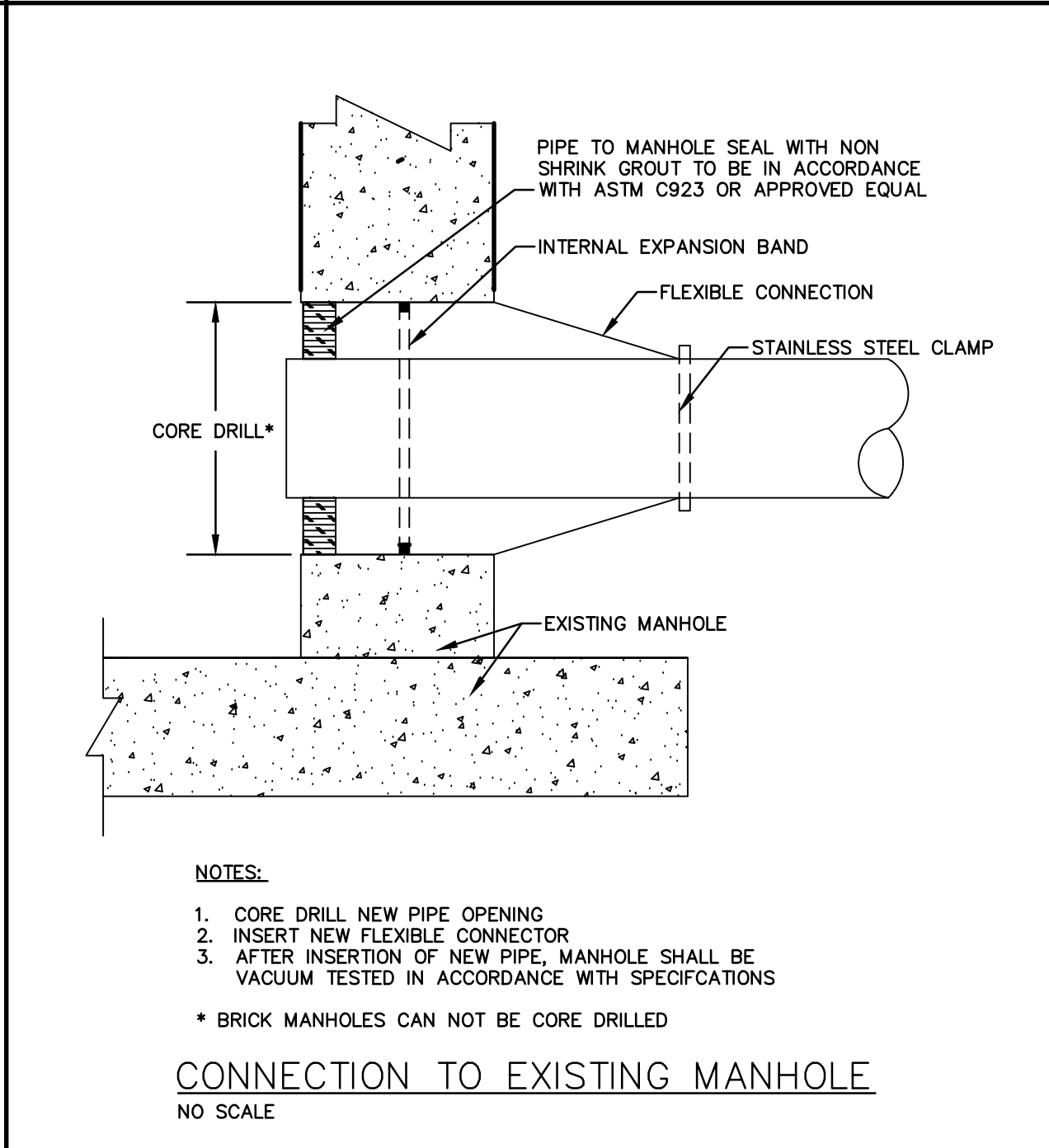
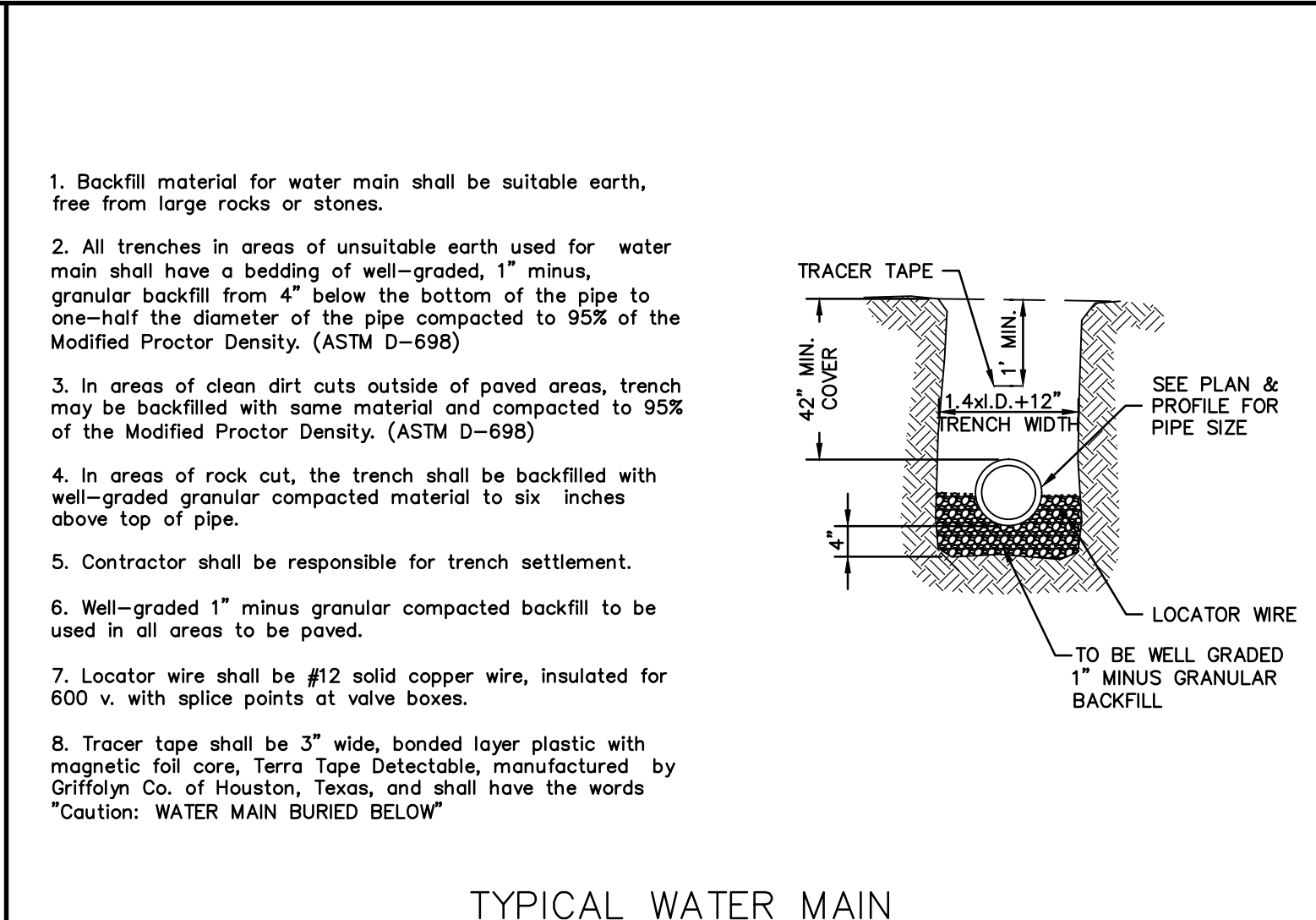
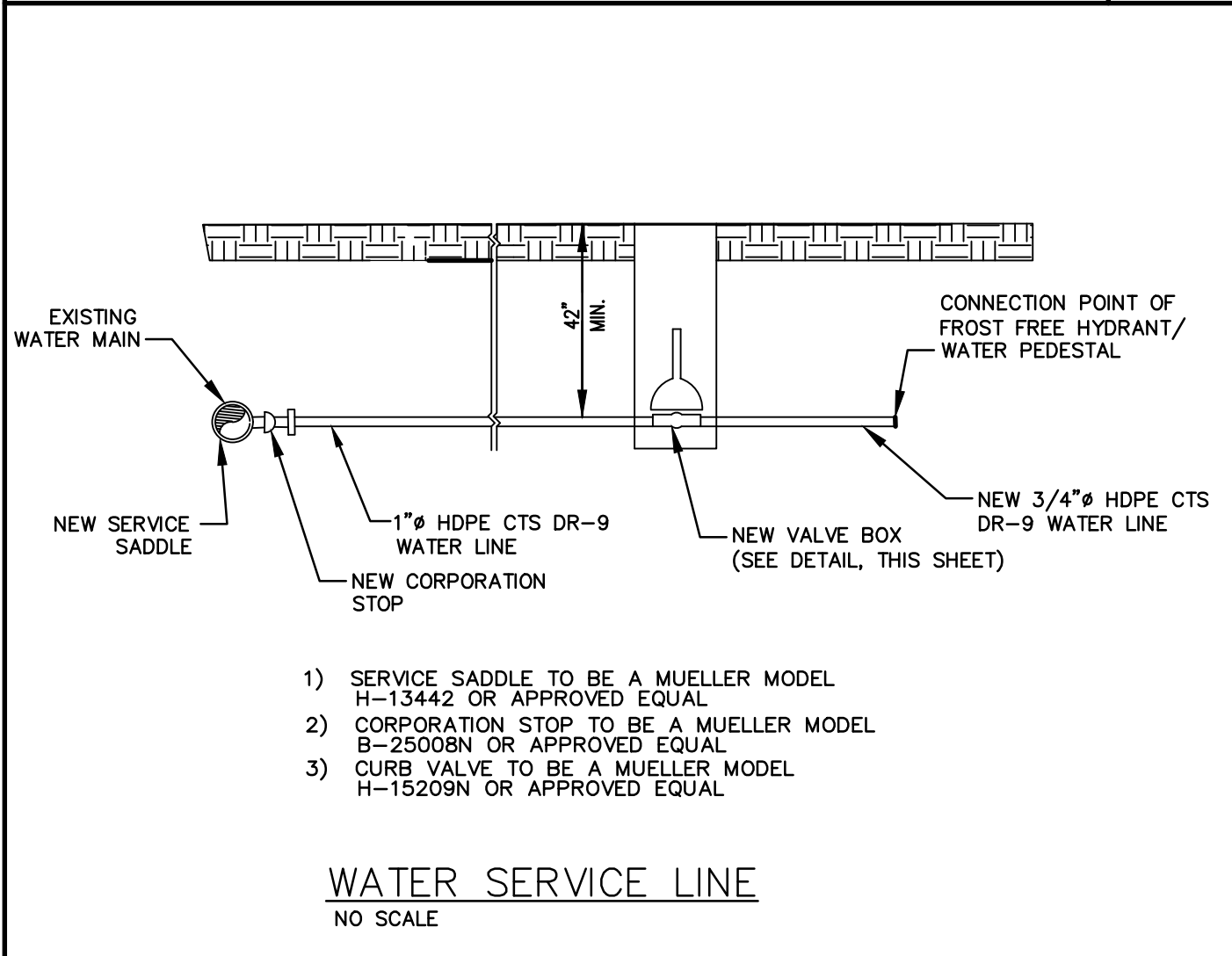
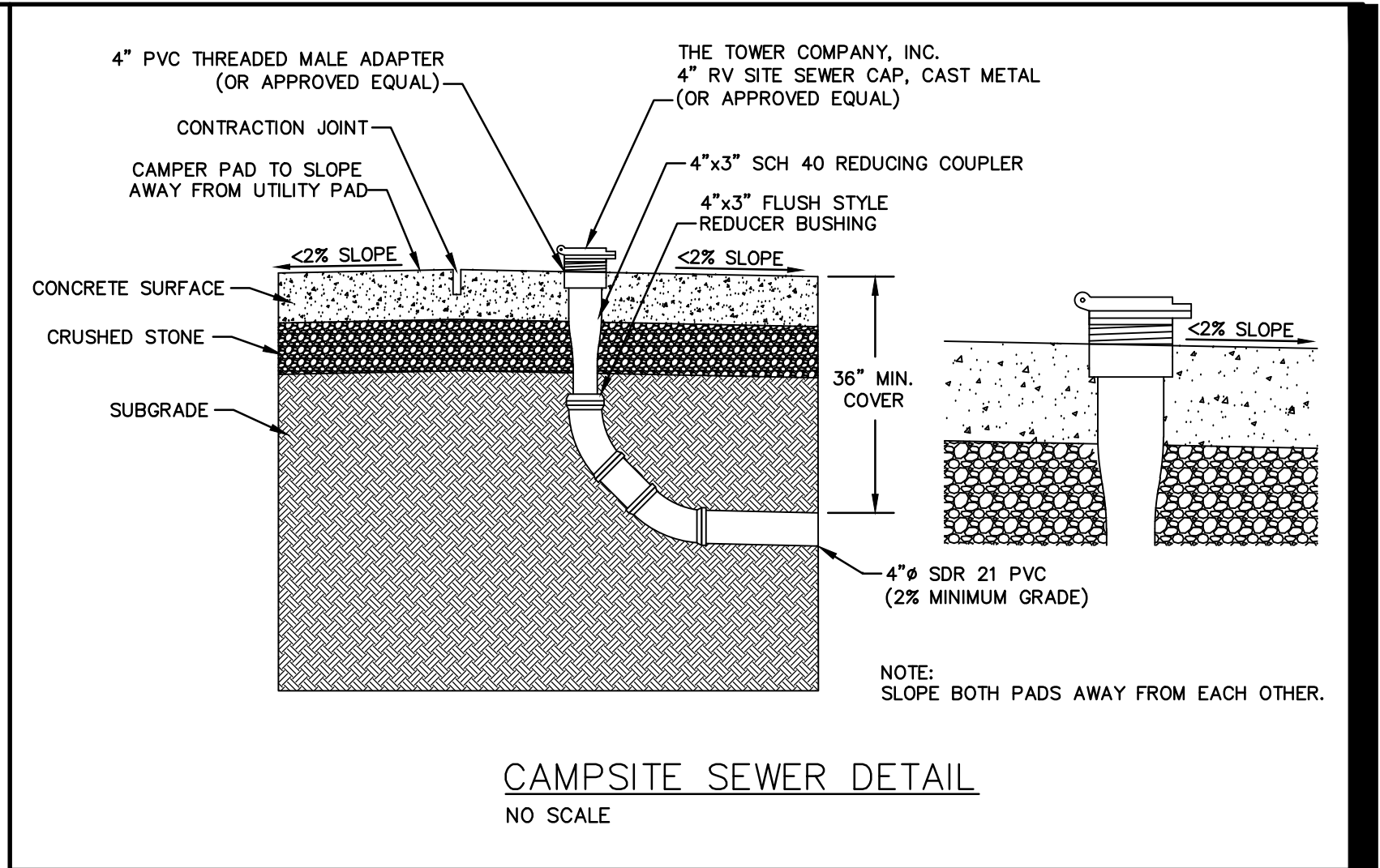
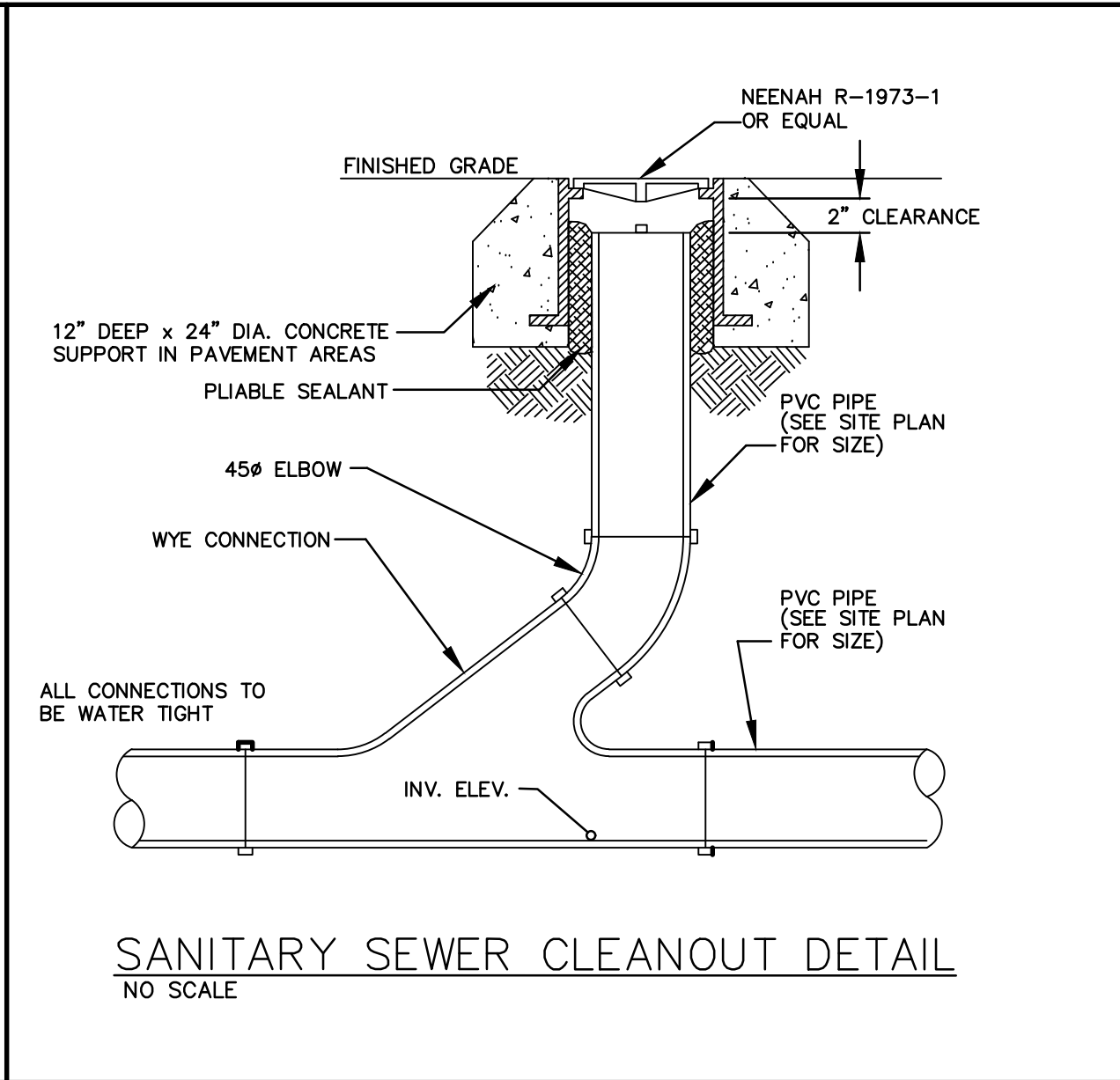
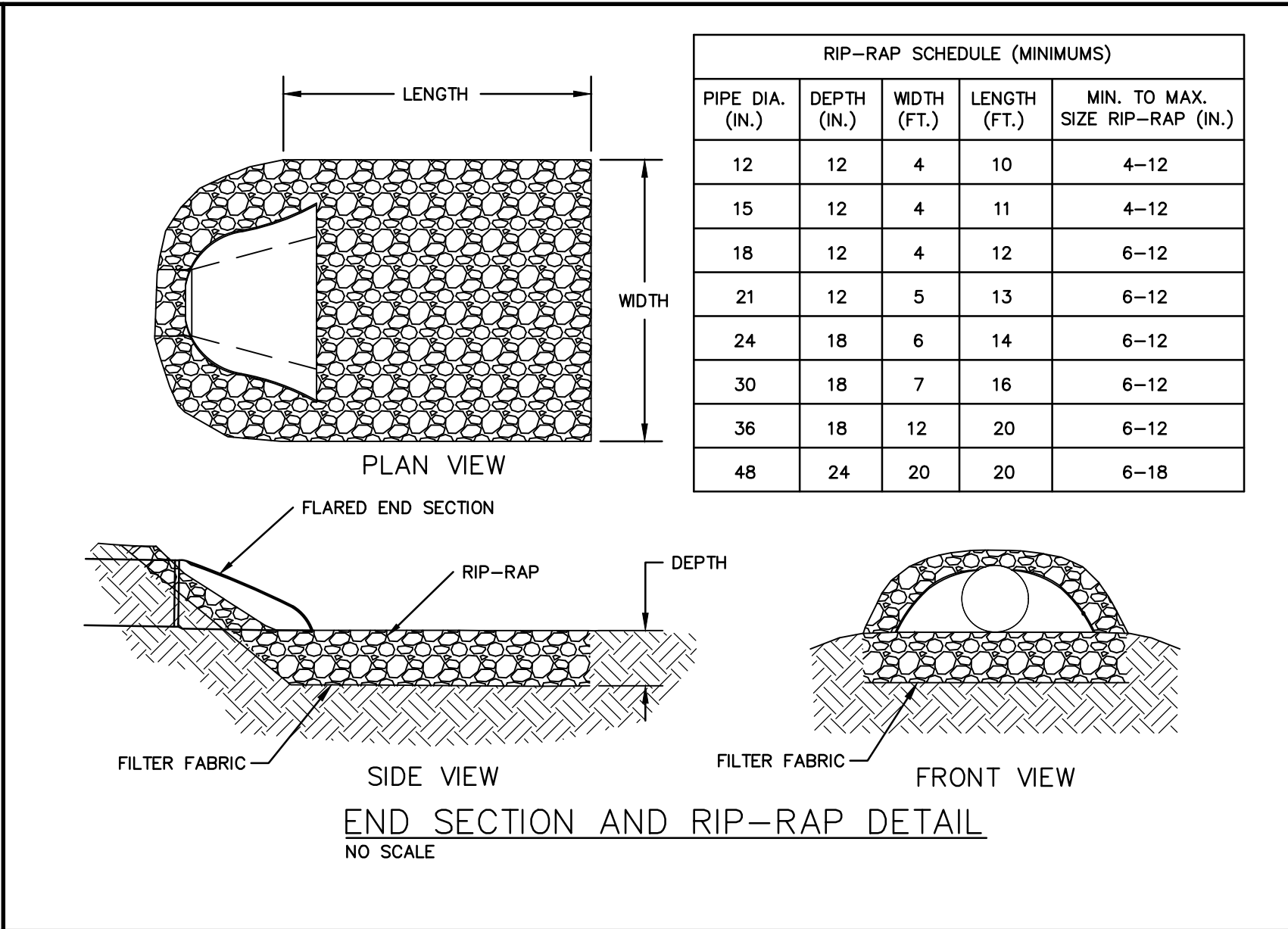
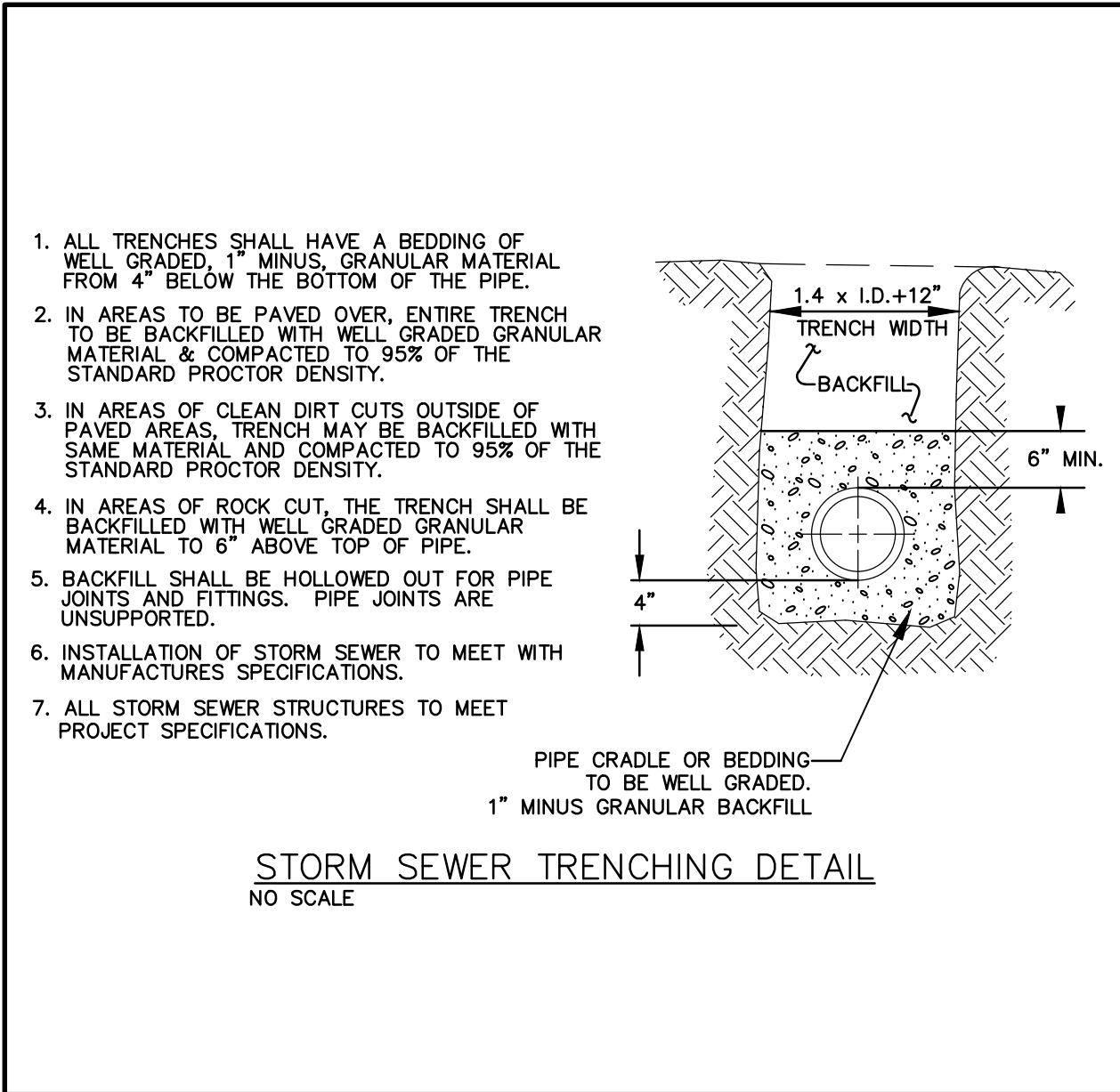
SHEET TITLE:
DETAIL
SHEET

SHEET NUMBER:

C-502

40 OF 56 SHEETS

03/28/2025



STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR



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636-564-0512 (fax)
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Architecture
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Master Planning

Dr. E. Independence
Union, Missouri 63084

Missouri State Certificate of Authority Numbers:
Survey : 000350
Engineering : 001655
Architecture : 2002014240

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF
NATURAL RESOURCES
MISSOURI STATE PARKS

NEW PREMIUM 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N
BONNE TERRE, MO 63628

PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
ISSUE DATE: 03/28/2025

CAD DWG FILE: X2317-DS-503
DRAWN BY: BAB
CHECKED BY: RKS
DESIGNED BY: RKS

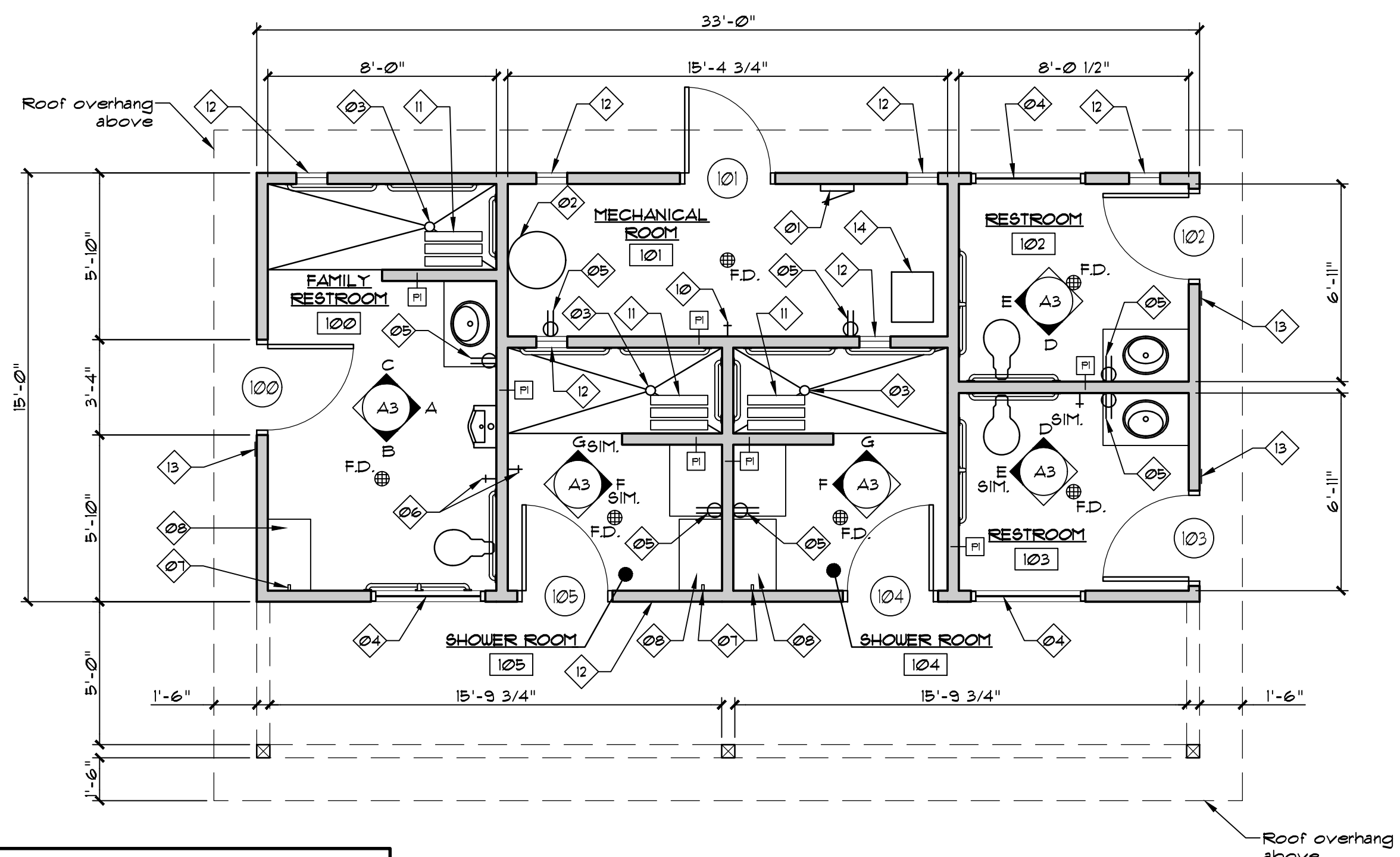
SHEET TITLE:
DETAIL
SHEET

SHEET NUMBER:
C-503
41 OF 56 SHEETS
03/28/2025

ACT	Acoustical Ceiling Tile	HVAC	Heating, Ventilating, and Air
AFB	Above Finish Floor		
Alum	Aluminum	Horiz.	Horizontal
Al	Al	HM	Hollow Metal
Anod.	Anodized		
By Owner	Furnished & delivered by Owner, installed by Contractor	Insul	Insulation
		Jt.	Joint
Cpt	Carpent	M.O.	Masonry Opening
CJ	Control Joint	MBB	Metal Building Supplier
CMU	Concrete Block Unit Masonry	MUP	Metal Wall Panel
Conc	Concrete	NIC	Not In Contract Installed and Furnished by owner (shown dashed)
¢	Centerline		
D&S	Downspout	oc	On center
Dwg.	Drawings	OH	Opposite hand
¢	Diameter	opp	Opposite
EIFS	Exterior Insulation Finishing System	Pa	Paint
EJ	Expansion Joint	Pl	Plate
EI	Elevation		
		#	Square
FD	Floor Drain	\$F	Square Foot
Fdn	Foundation		
FEC	Fire Extinguisher Cabinet	Typ	Typical
FRP	Fiberglass Panel	TW	Top of wall
Ga	Gauge	UNO	Unless noted otherwise
Galv	Galvanized		
GB	Gypsum Board	w/	With
GC	General Contractor	Wd	Wood
		WUF	Welded Wire Fabric

1. The General Contractor shall verify the existing conditions and dimensions and shall notify the Architect of any discrepancies that may affect the work prior to commencing construction.
2. All dimensions are to the finish face of new walls.
3. Install reducer strips between different floor finish levels and finishes.
4. The General Contractor shall install required wall blocking for all new casework, shelving, or equipment. See the drawings for exact locations.
5. Unless otherwise indicated, all materials and equipment shown on the drawings or schedules that are existing is to be furnished and installed by the Contractor.
6. Install portable fire extinguishers per the International Fire Code (By Owner NIC).
7. Colors and Finishes as selected by Owner.

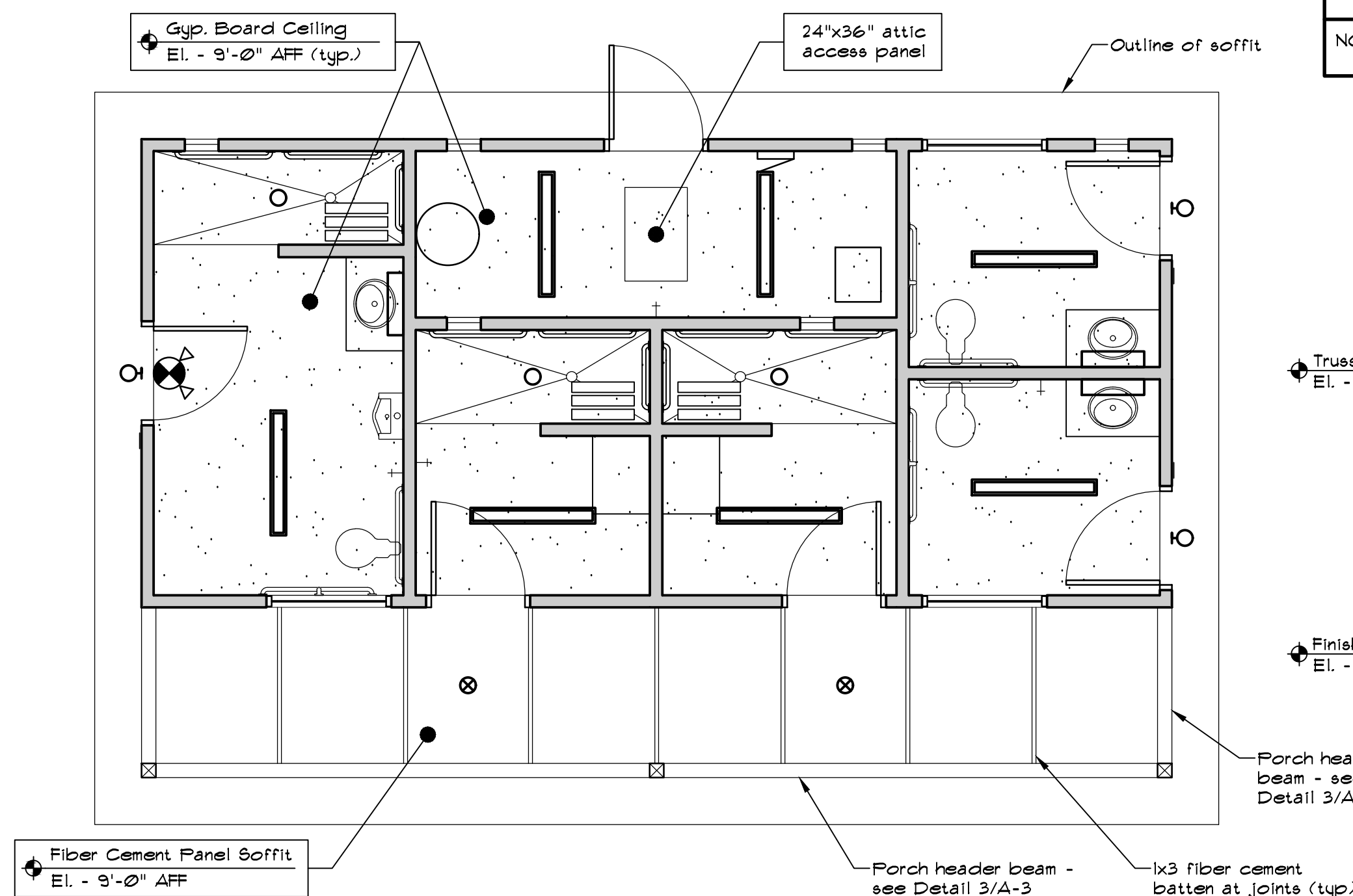
①	Electrical panel - see Electrical Drawings
②	New hot water heater - see Plumbing Drawings
③	ADA accessible shower, slope concrete to drain
④	4'-0"x11'-6" fixed vinyl window with obscure glass
⑤	Duplex electrical outlet - see Electrical Drawings
⑥	Key operated hose bibb - see Plumbing Drawings
⑦	Towel hook
⑧	Bench (N.I.C.)
⑨	Not Used
⑩	Hose bibb - see Plumbing Drawings
⑪	Folding shower seat - see Interior Elevations
⑫	Wall mounted exhaust fan - see Mechanical Drawings
⑬	Unisex accessible restroom sign with Braille
⑭	Furnace - see Mechanical Drawings



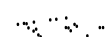
<u>MATERIAL INDICATIONS</u>	<u>SYMBOLS</u>
	BATT INSULATION
	DEMO WALL
	EXISTING WALL
	STUD PARTITION
	WOOD BLOCKING OR FRAMING
	RATED PARTITION

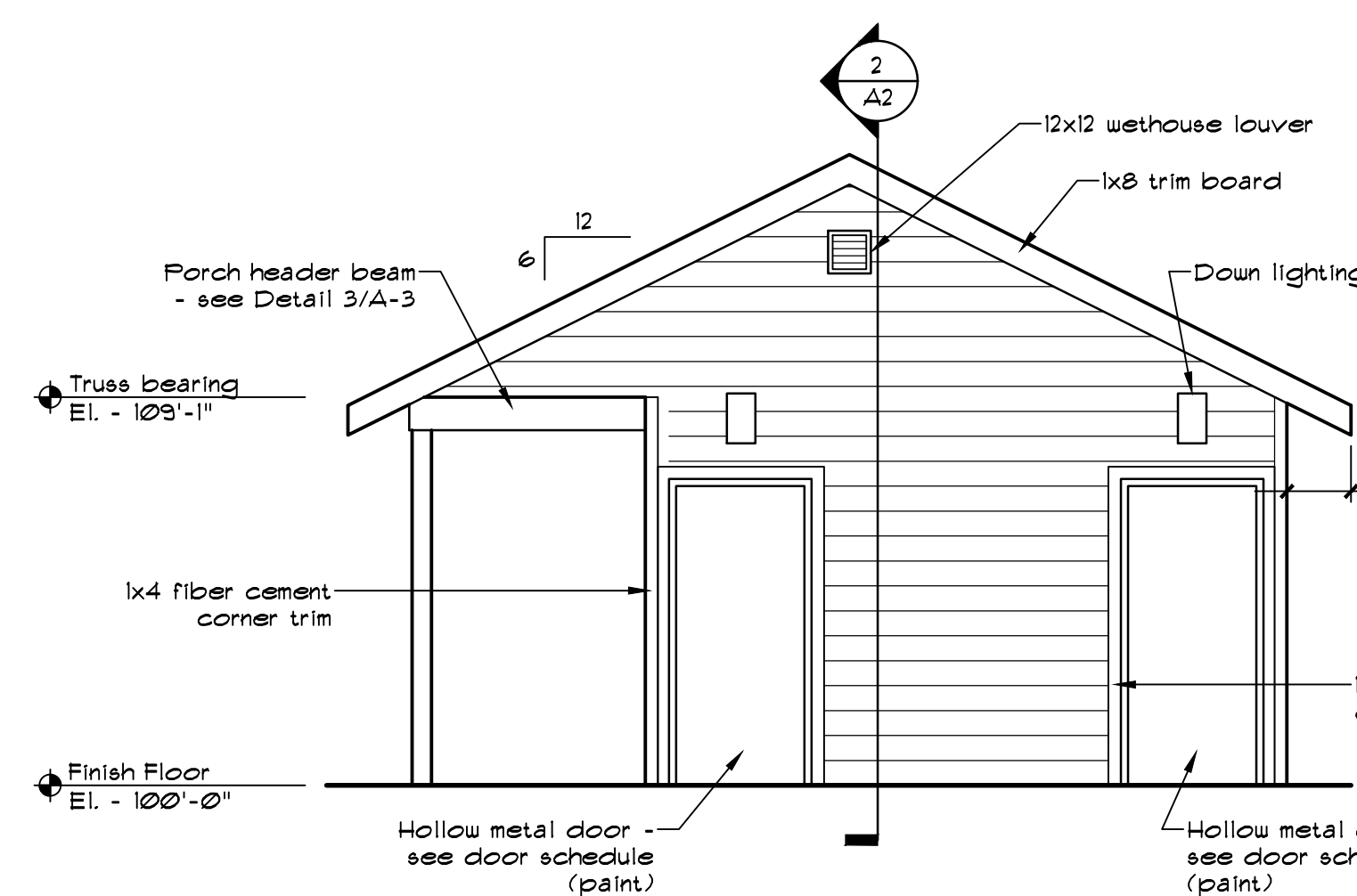
EXTERIOR PRODUCT FINISH SCHEDULE			
MATERIAL	DESCRIPTION	MANUFACTURER	NOTES
Asphalt Shingle Roof	30-year architectural grade shingles, Color: As selected by Owner	CertainTeed	
Window	200 series 48"x18" picture windows Color: As selected by Owner	Andersen Windows	
Fiber cement lap siding	Select Cedarmill 1½" wide, 6" exposure Color: As selected by Owner	James Hardie	
Trim	All 1x trim indicated to be fiber cement Color: As selected by Owner	James Hardie	
NOTE: Provide products indicated or approved equal			

1/4" = 1'-0"

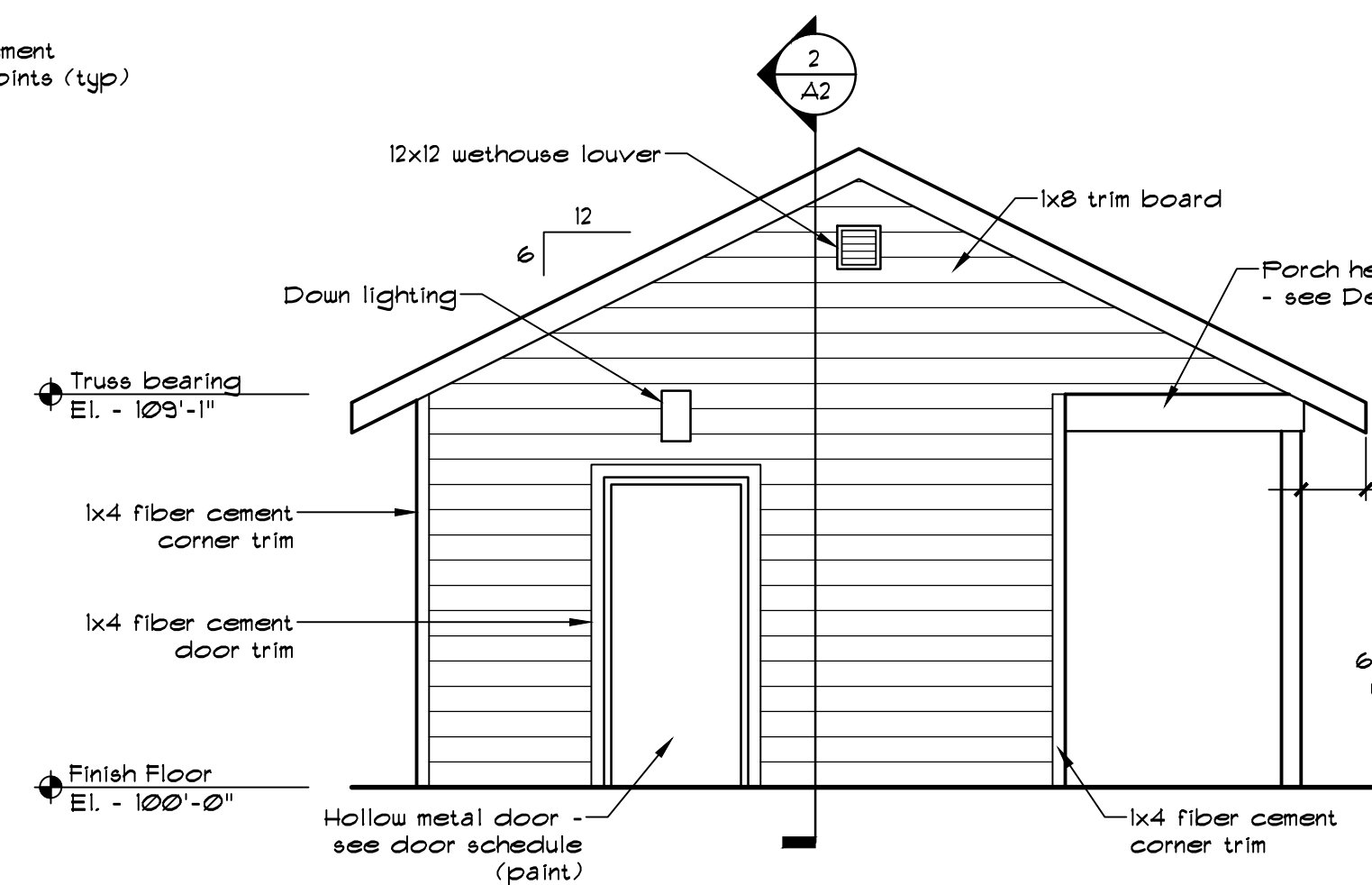


1/4" = 1'-0"

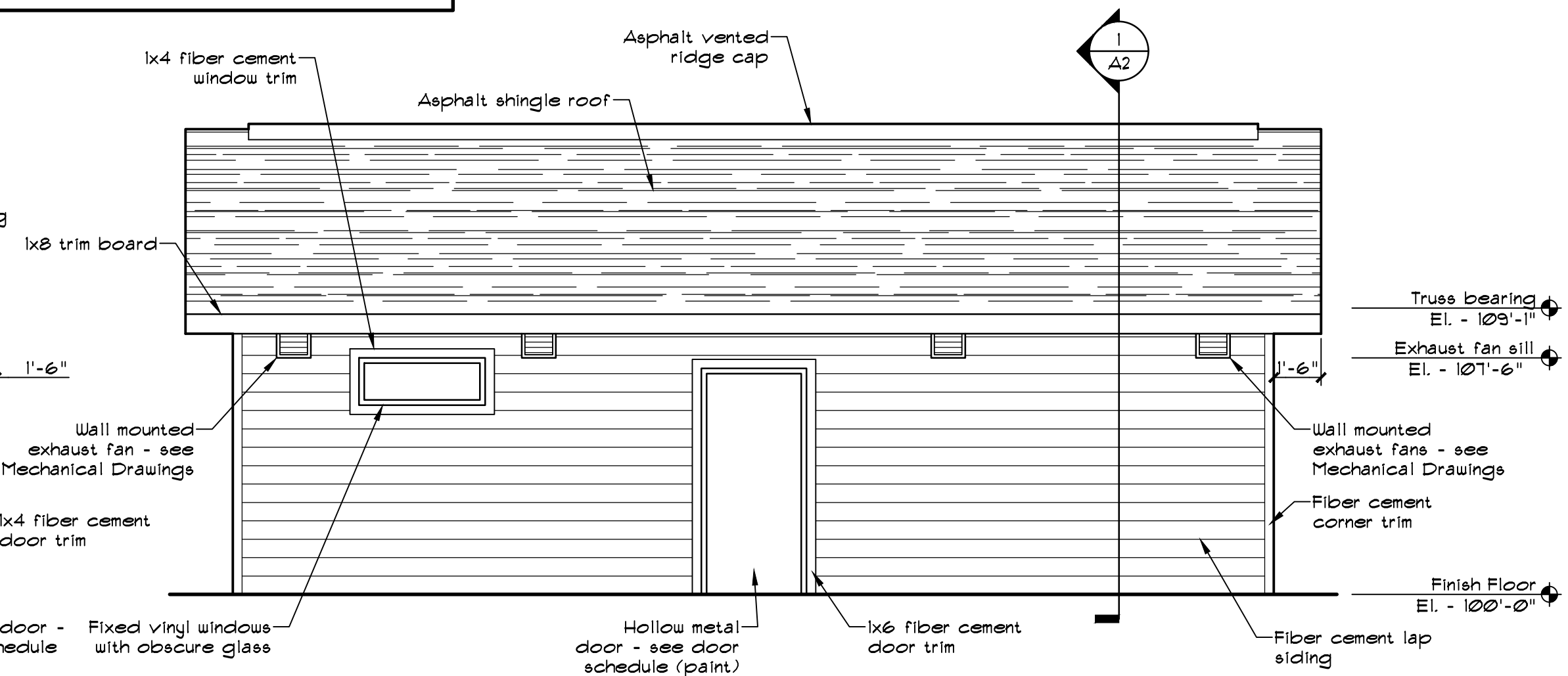
CEILING LEGEND	
EXIT/EMERGENCY LIGHT	
EXTERIOR SOFFIT LIGHT	
GYP. BOARD CEILING	
EXTERIOR DOWN LIGHT	
SURFACE MOUNT STRIP FIXTURE	
WALL MOUNTED STRIP FIXTURE	
SURFACE MOUNTED FLUSH LIGHT	



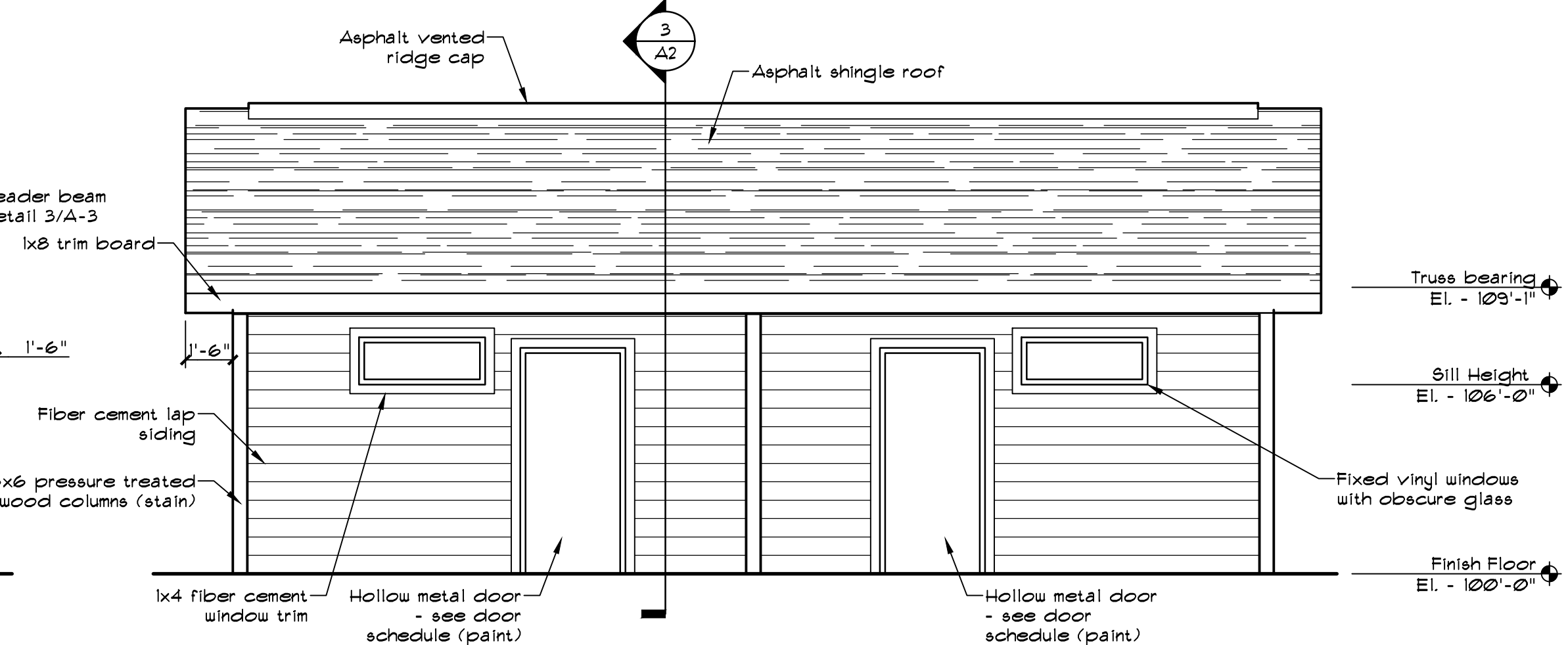
1/4" = 1'-0"



1/4" = 1'-0"



1/4" = 1'-0"



1/4" = 1'-0"



636-584-0540 (tel.)
636-584-0512 (fax)
mailto:cochraneng.com
• Civil Engineering
• Land Surveying
• Architecture
• Site Development
• General Consulting
• Master Planning



Missouri State Certificate
of Authority Numbers:
Survey : 000350
Engineering : 001655
Architecture : 2002014240

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
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DESIGN AND CONSTRUCTION

DEPARTMENT OF
NATURAL RESOURCES
MISSOURI STATE PARKS

NEW PREMIUM 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N
BONNE TERRE, MO 63628

PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____

ISSUE DATE: 03/28/25

CAD DWG FILE: X2317-A-A1
DRAWN BY: AMS
CHECKED BY: JAM
DESIGNED BY: JAM

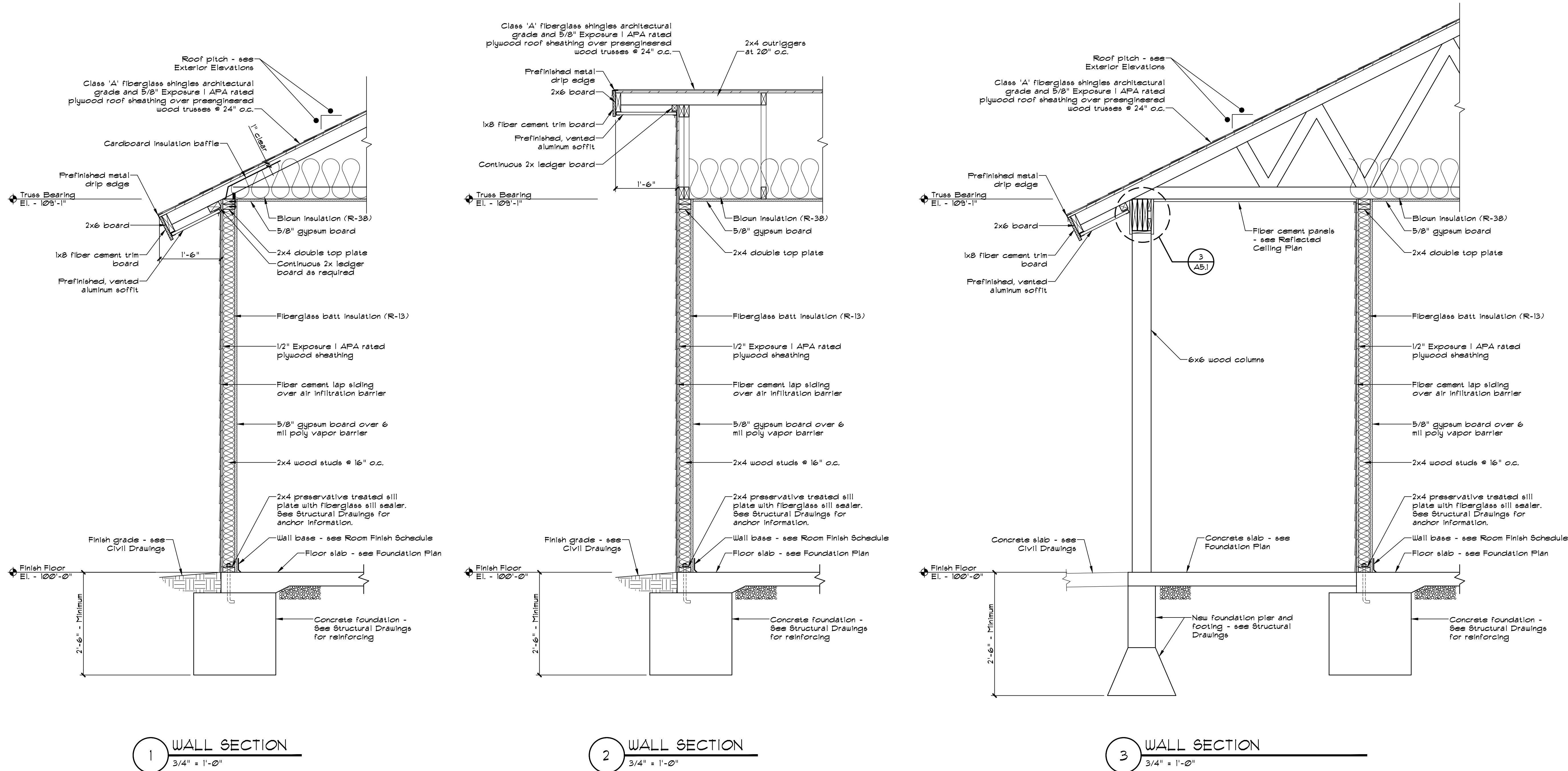
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FLOOR PLAN
& ELEVATIONS

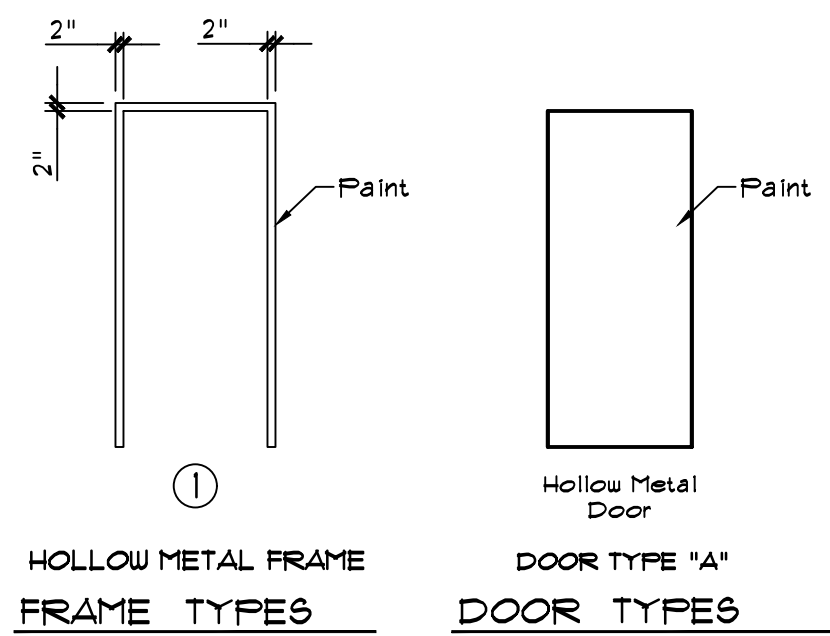
SHEET NUMBER:

A-2

43 OF 56 SHEETS
03/28/2025



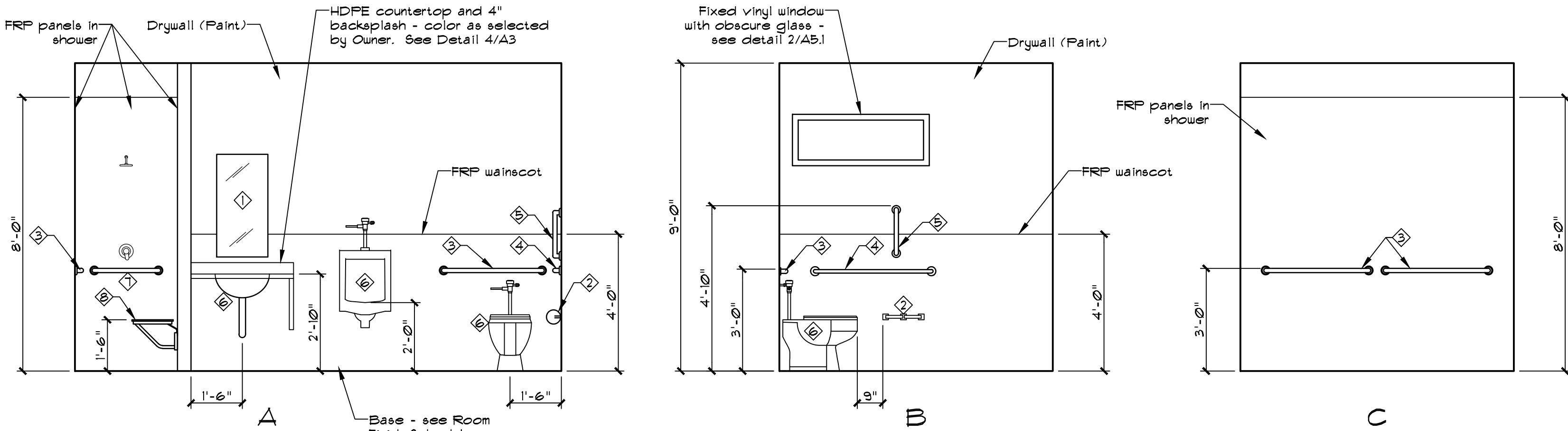
HARDWARE SCHEDULE		
Group 1	Manufacturer	
3 Butt hinges 5-BB-1-45x45-652	Ives	
1 Mortise Lockset LV3456 x ATH x 626	Schlage	
1 Seal FK33BL	Pemko	
1 Closer 1461-30496CNS x D91 x US26D x thru-bolt (9PRING HCU5H Arm)	LCN	
1 Weatherstripping 332CR	Pemko	
1 Door sweep 315CN	Pemko	
1 1/2" tall thermally broken ADA compliant threshold	Pemko	
1 Lockguard LG13	Ives	
1 Drip edge	Pemko	
Group 2	Manufacturer	
3 Butt hinges 5-PB-1-45x45-652	Ives	
1 Storeroom Lockset ND80PD x ATH x 626	Schlage	
1 Weatherstripping 332CR	Pemko	
1 Door sweep 315CN	Pemko	
1 1/2" tall thermally broken ADA compliant threshold	Pemko	
1 Lockguard LG13	Ives	
1 Door holder & stop 494R	Rockwood	
1 Drip edge	Pemko	
NOTES		
1. All hardware shall be lever type, handicap accessible.		
2. Locksets with keys shall be keyed as directed by the Owner. The		
hardware supplier shall coordinate keying with the Owner.		
3. See Specifications for additional requirements and acceptable		
alternate manufacturers.		



DOOR SCHEDULE									
Door Number	Door Type	Door Size	Door Mat'l	HDUE Group	Frame Type	Frame Finish	Door Finish	UL Rating	Notes:
100	A	3'-0" x 7'-0" x 1 3/4"	HM	1	1	P	P		Note 1
101	A	3'-0" x 7'-0" x 1 3/4"	HM	2	1	P	P		Note 1
102	A	3'-0" x 7'-0" x 1 3/4"	HM	1	1	P	P		Note 1
103	A	3'-0" x 7'-0" x 1 3/4"	HM	1	1	P	P		Note 1
104	A	3'-0" x 7'-0" x 1 3/4"	HM	1	1	P	P		Note 1
105	A	3'-0" x 7'-0" x 1 3/4"	HM	1	1	P	P		Note 1
NOTES							ABBREVIATION LEGEND		
1. Galvanized and insulated door							P	Paint (field)	EX Existing
							HM	Hollow Metal	

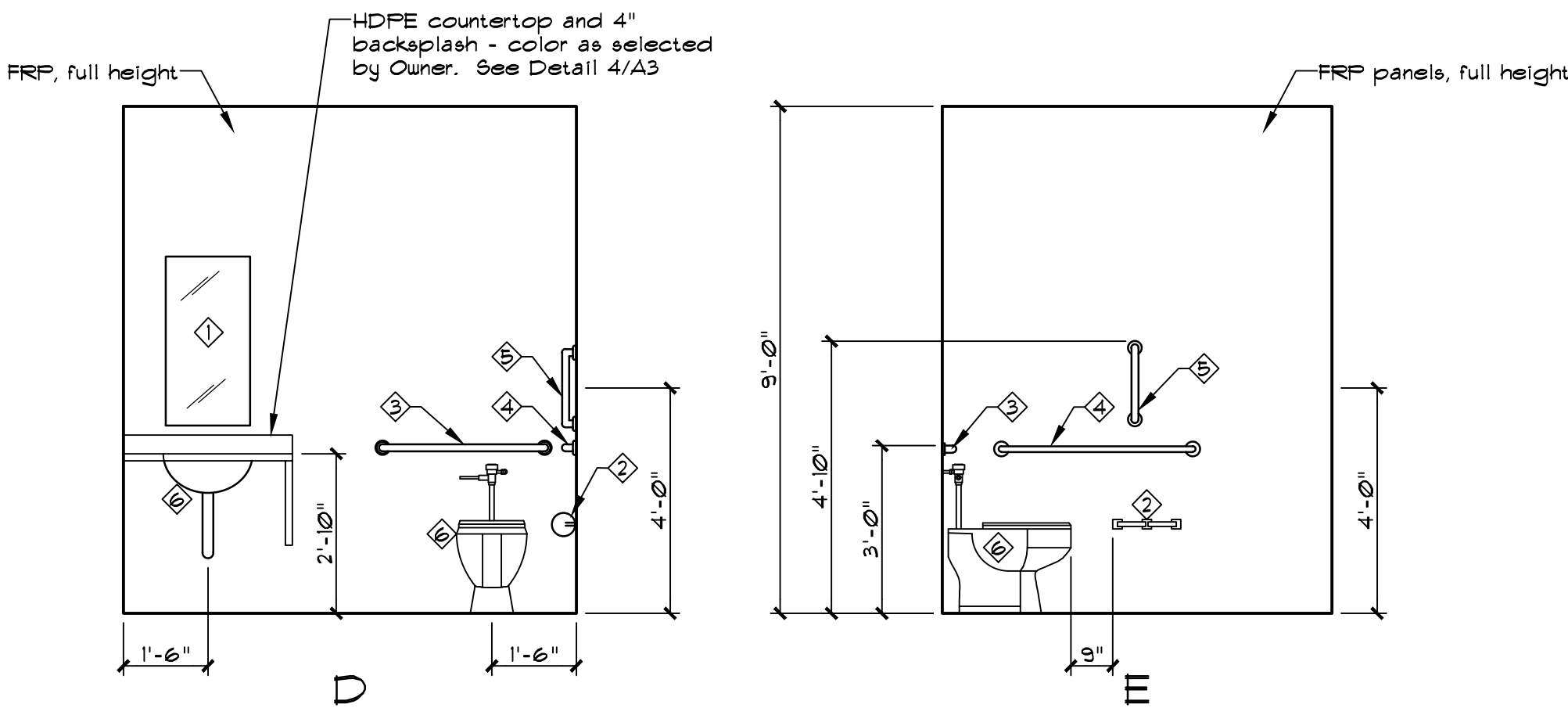
ROOM FINISH SCHEDULE									
ROOM NO.	ROOM NAME	FLOOR	BASE	WALLS				CEILING MAT'L	REMARKS
				NORTH	EAST	WEST	SOUTH		
100	Family Restroom	Conc	-	FRP	FRP	FRP	FRP	GB	
101	Mechanical Room	Conc	VB	FRP	FRP	FRP	FRP	GB	
102	Restroom	Conc	-	FRP	FRP	FRP	FRP	GB	
103	Restroom	Conc	-	FRP	FRP	FRP	FRP	GB	
104	Shower Room	Conc	-	FRP	FRP	FRP	FRP	GB	
105	Shower Room	Conc	-	FRP	FRP	FRP	FRP	GB	
NOTES				ABBREVIATION LEGEND					
1. All colors and finishes as selected by Owner.				GB	Gypsum Board	EX	Existing		
				Conc	Concrete	P	Paint		
				FRP	Fiberglass Reinforced Plastic Panels	VB	Vinyl Base		

TOILET ACCESSORY SCHEDULE				
NO.	DESCRIPTION	MATERIAL	FINISH	REMARKS
1	Mirror - with metal frame	---	---	Surface mount, by Owner (N.I.C.)
2	Toilet Paper Dispenser	---	---	Surface mount, by Owner (N.I.C.)
3	Grab Bar, 1 1/2" x 36"	stainless steel	satn	36" mounting height
4	Grab Bar, 1 1/2" x 42"	stainless steel	satn	36" mounting height
5	Grab Bar, 1 1/2" x 18"	stainless steel	satn	See elevations
6	Handicapped Accessible Plumbing Fixture - See PLUMBING DRAWINGS			
7	Grab Bar, 1 1/2" x 24"	stainless steel	satn	36" mounting height
8	Folding Shower Seat - 24"x16" - Barrier Free or approved equal	Teakwood	--	18" seat height
NOTES				
1. Provide solid blocking where toilet partitions, grab bars, dispensers, lavatories, etc., are mounted to walls. Coordinate locations with owner provided equipment. 2. Soap & paper towel dispensers shall be mounted such that access point is located 44" above the finish floor. 3. Refer to Plumbing Drawings for fixture information. 4. All grab bars in accessible areas to be mounted to resist a 250 lbs force in any direction. 5. Coordinate each toilet accessory mounting with each wall type and finish schedule.				



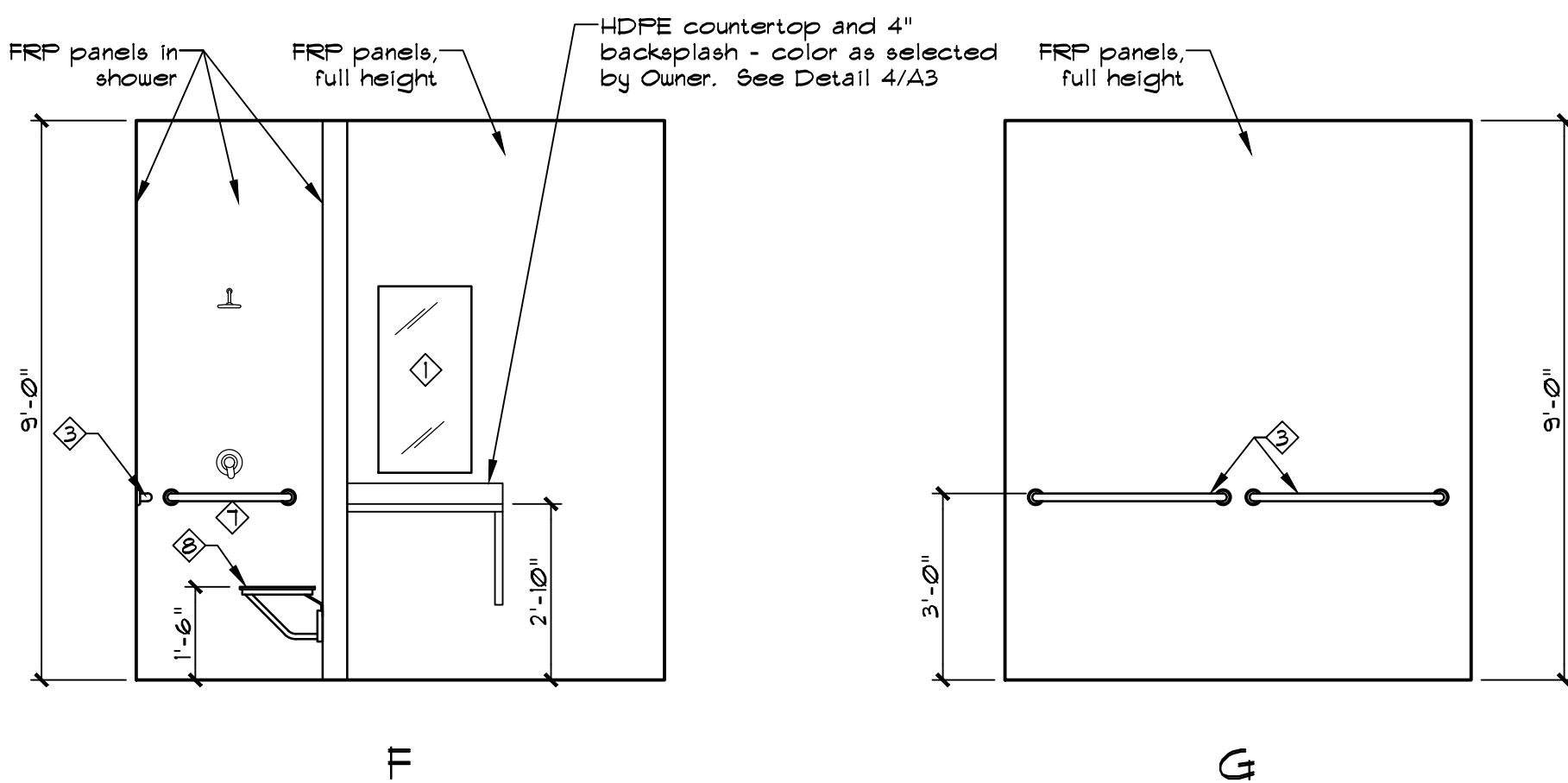
ELEVATIONS - FAMILY RESTROOM (100)

3/8" = 1'-0"



ELEVATIONS - RESTROOM (102)

3/8" = 1'-0"



ELEVATIONS - SHOWER ROOM (104)

3/8" = 1'-0"

STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR



Missouri State Certificate
of Authority Numbers:
Survey : 000350
Engineering : 001655
Architecture : 2002014240

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF
NATURAL RESOURCES
MISSOURI STATE PARKS

NEW PREMIUM 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N
BONNE TERRE, MO 63628

PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 03/28/2025

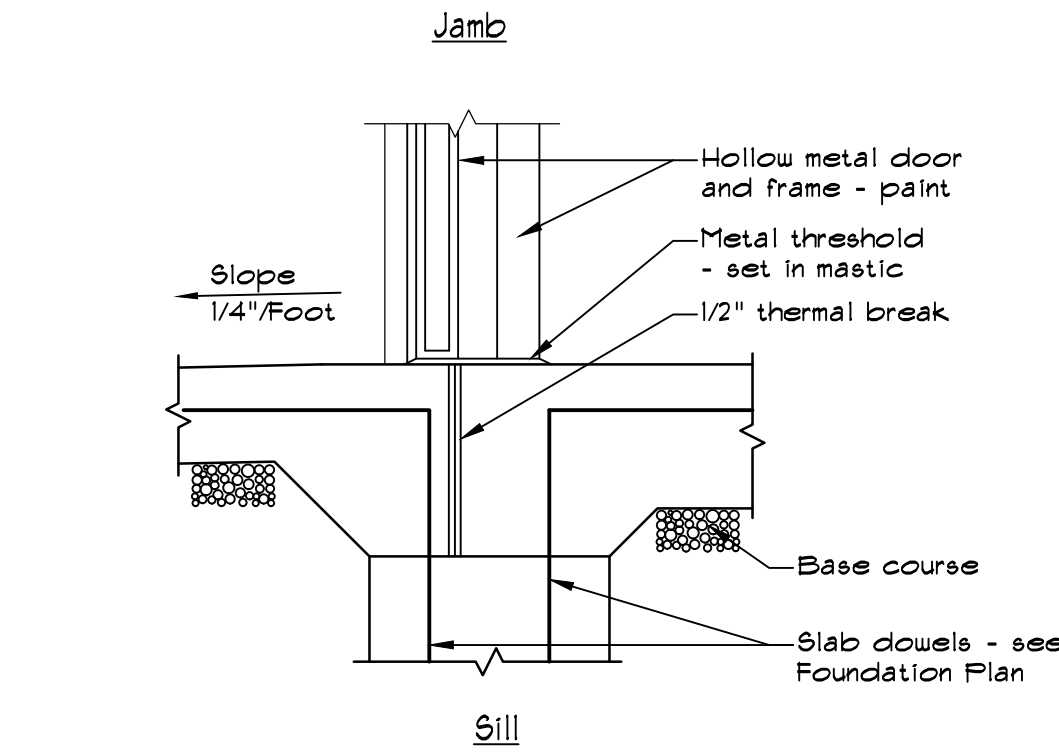
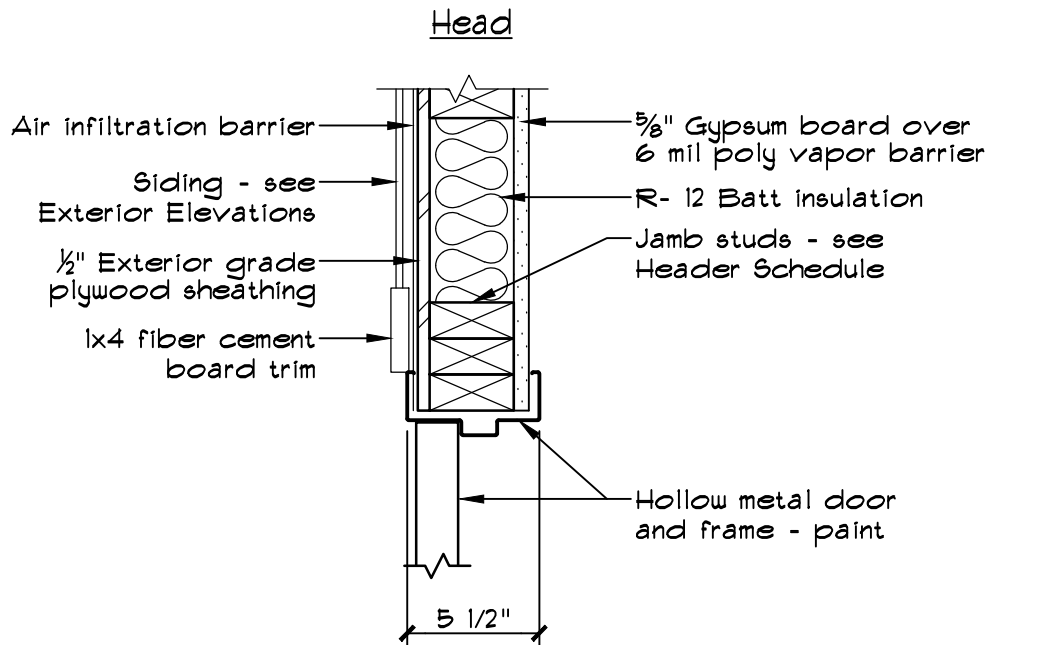
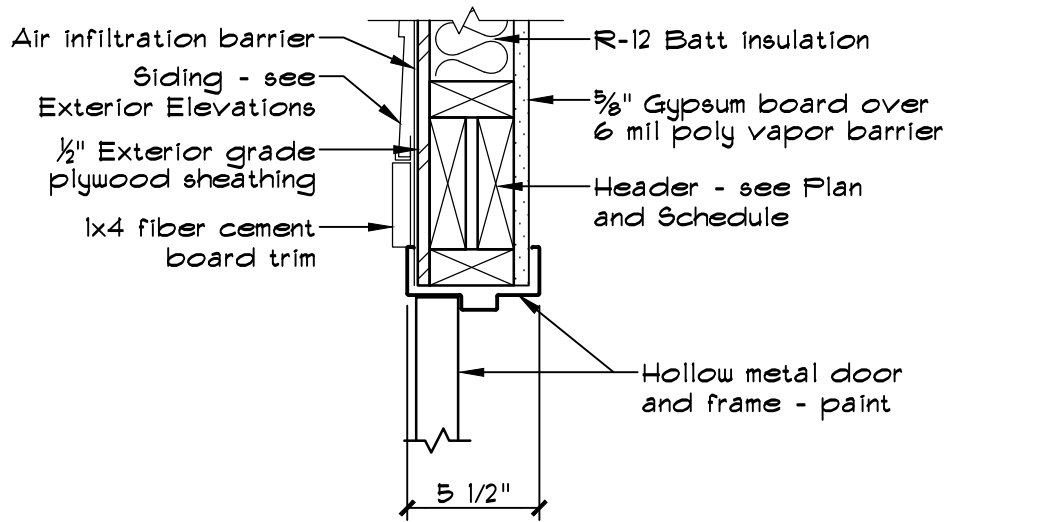
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DRAWN BY: AMS
CHECKED BY: JAM
DESIGNED BY: JAM

SHEET TITLE:
INTERIOR
ELEVATIONS

SHEET NUMBER:

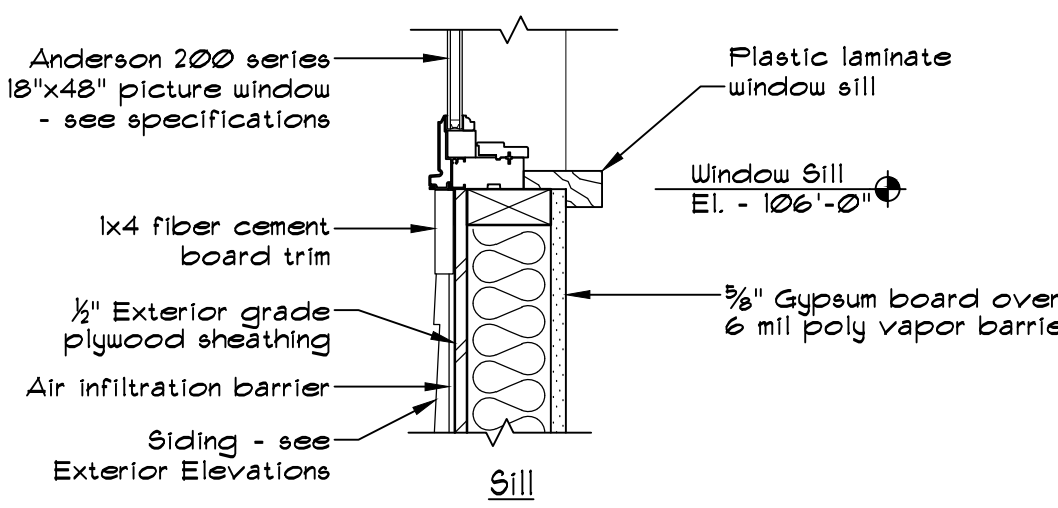
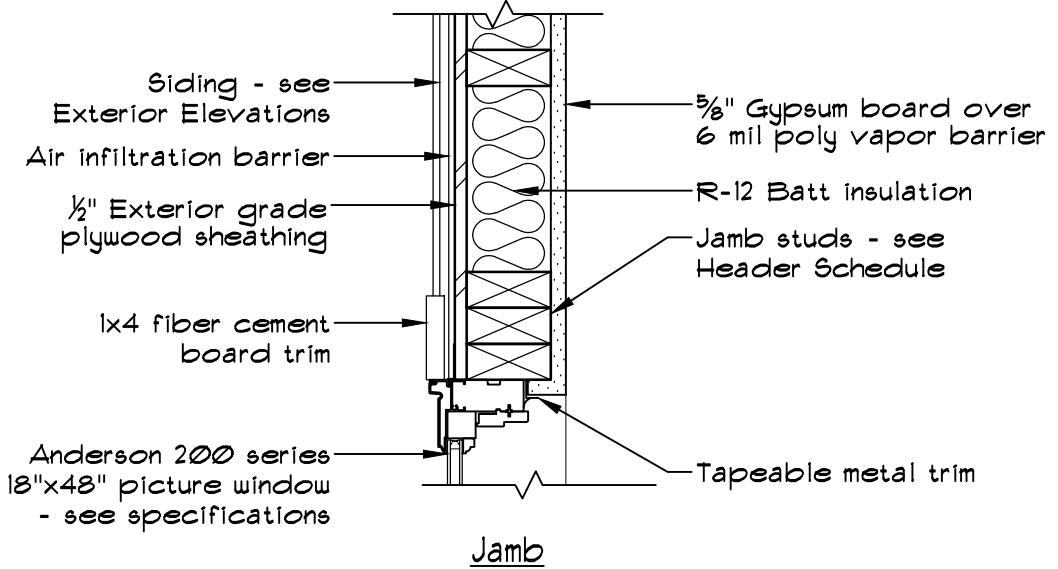
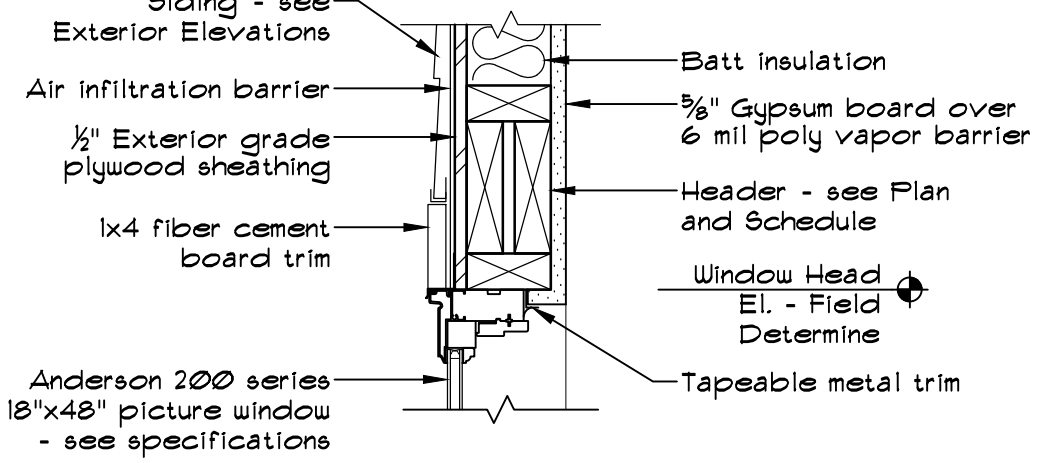
A-3

44 OF 56 SHEETS
03/28/2025



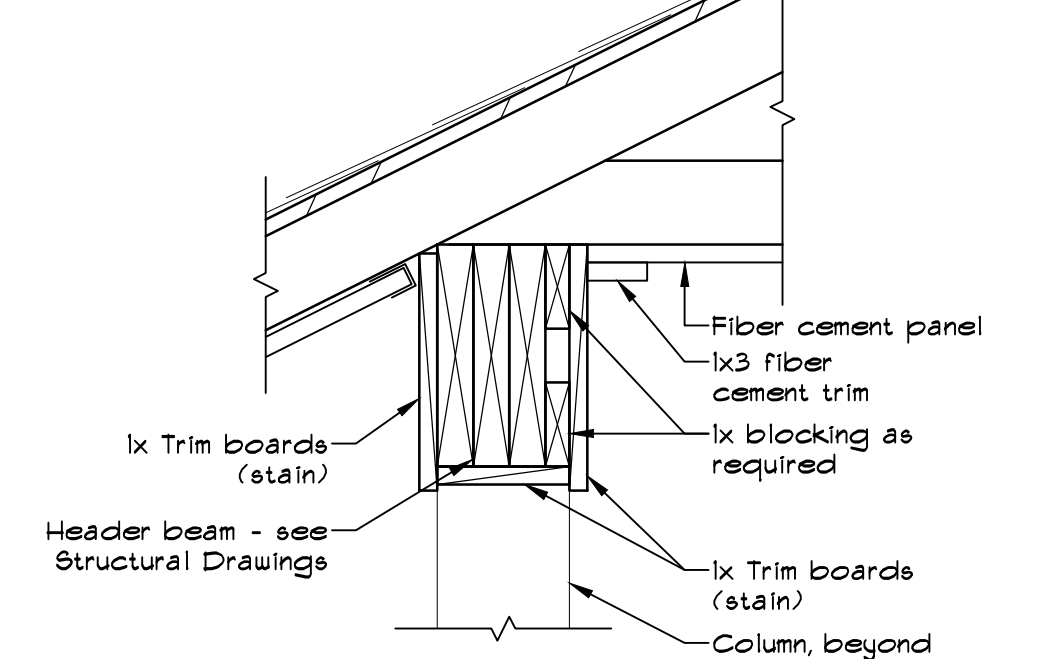
1
1 1/2" = 1'-0"

EXTERIOR HOLLOW METAL DOOR DETAILS



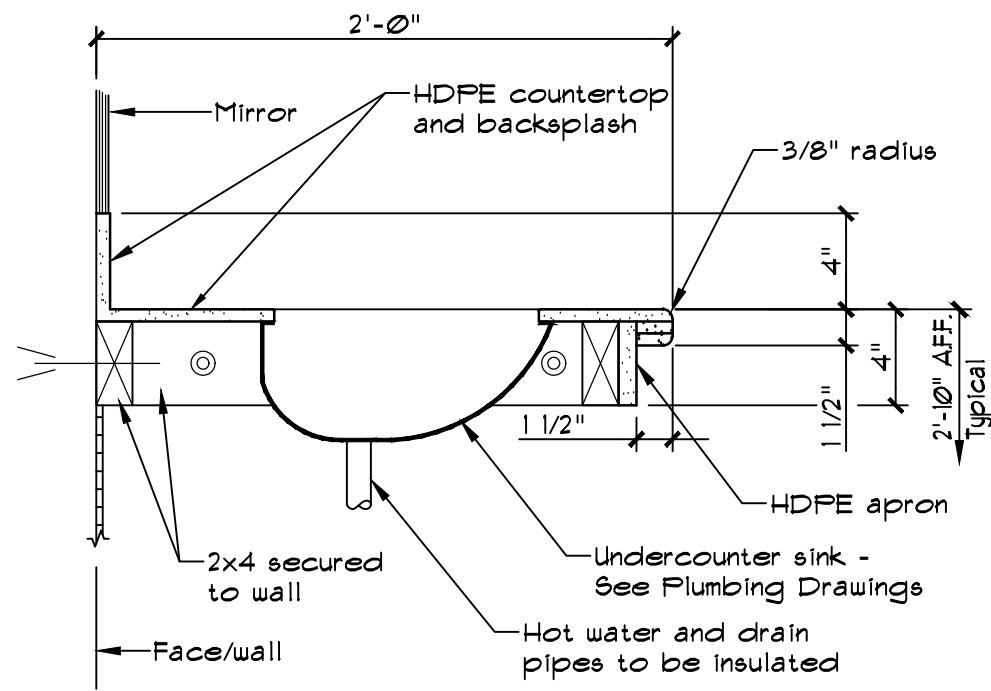
2
1 1/2" = 1'-0"

WINDOW DETAILS



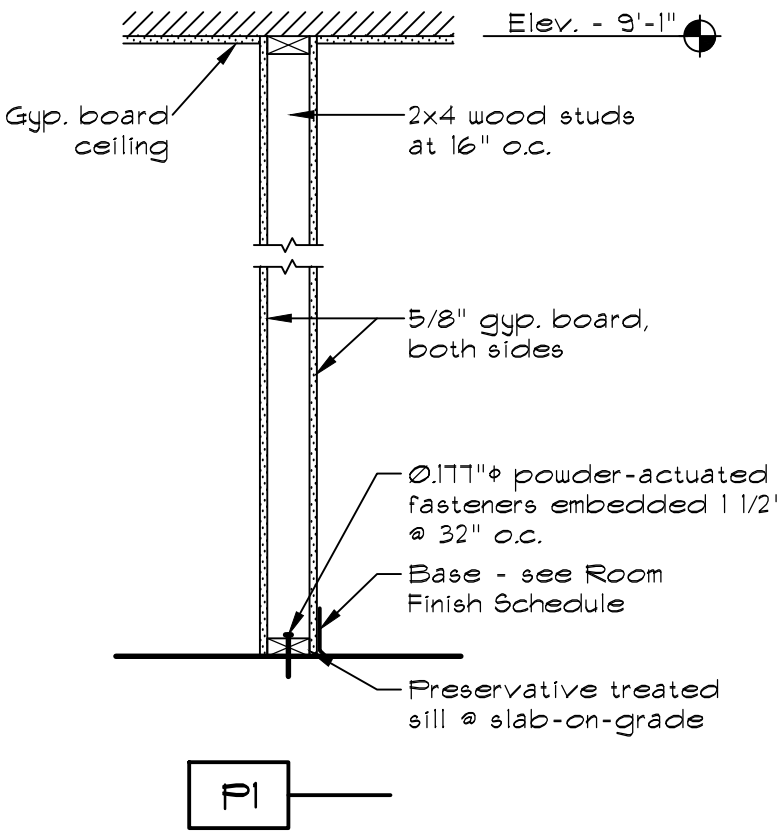
3
1 1/2" = 1'-0"

PORCH HEADER DETAIL



4
1 1/2" = 1'-0"

LAVATORY SECTION



PARTITION TYPES

3/4" = 1'-0"



636-584-0540 (tel.)
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mail@cochraneng.com
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• Architecture
• Site Development
• General Consulting
• Master Planning



Missouri State Certificate
of Authority Numbers:
Survey : 0003580
Engineering : 001655
Architecture : 2002014240

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CAD DWG FILE: X2317-A-A1
DRAWN BY: AMS
CHECKED BY: JAM
DESIGNED BY: JAM

SHEET TITLE:

DETAILS

SHEET NUMBER:

STRUCTURAL ABBREVIATIONS

#	POUND(S), NUMBER	INT	INTERIOR
&	AND	ISF	INSIDE FACE
(E)	EXISTING	J/BRG	JOIST BEARING
@	AT	JG	JOIST GIRDER
AB	ANCHOR BOLT (S)	JG/BRG	JOIST GIRDER BEARING
ADDL	ADDITIONAL	JST	JOIST
ALT	ALTERNATE	JT	JOINT
ARCH	ARCHITECT(URAL)	kfp	1,000 POUNDS
B/FTG	BOTTOM OF FOOTING	ksi	kips PER SQUARE INCH
BLDG	BUILDING	LB	POUND
BLKG	BLOCKING	LLH	LONG LEG HORIZONTAL
BM	BEAM	LLV	LONG LEG VERTICAL
BMD	BOTTOM OF METAL DECK	MAX	MAXIMUM
BN	BOUNDARY NAIL	MECH	MECHANICAL
BOT	BOTTOM	MEZZ	MEZZANINE
BP	BASE PLATE	MFR	MANUFACTURER
BRG	BEARING	MIN	MINIMUM
BS	BOUNDARY SCREW	MISC	MISCELLANEOUS
BTWN	BETWEEN	MTL	METAL
CANT	CANTILEVER(ED)	NS	NEAR SIDE
CFS	COLD-FORMED STEEL	NTS	NOT TO SCALE
CIP	CAST-IN-PLACE	oc	ON CENTER
CJ	CONTROL OR CONST JOINT	OH	OPPOSITE HAND
CL	CENTER LINE	OPNG	OPENING
CLR	CLEAR	OSF	OUTSIDE FACE
CMU	CONCRETE MASONRY UNIT	PAF	POWER-ACTUATED
COL	COLUMN		FASTENER
CONC	CONCRETE	PARA	PARAPET
CONN	CONNECTION	PEMB	PRE-ENGINEERED METAL
CONST	CONSTRUCTION		BUILDING (MANUFACTURER)
CONT	CONTINUOUS	PIL	PILASTER
CTR	CENTER	PL	PLATE
DBA	DEAD BAR ANCHOR	PLBG	PLUMBING
DBL	DOUBLE	PLYWD	PLYWOOD
DC	DEMAND CRITICAL (WELD)	psf	POUNDS PER SQUARE FOOT
deg	DEGREE	psi	POUNDS PER SQUARE INCH
DET	DETAIL(S)	PTDF	PRESSURE TREATED
DF	DOUGLAS FIR		DOUGLAS FIR
DFL	DOUGLAS FIR LARCH	PTDFL	PRESSURE TREATED
dia	DIAMETER		DOUGLAS FIR LARCH
DIM	DIMENSION	PTSPF	PRESSURE TREATED
DWG	DRAWING		SPRUCE PINE FIR
DWL	DOWEL	PTSYP	PRESSURE TREATED
EA	EACH		SOUTHERN YELLOW PINE
EE	EACH END	QT	QUANTITY
EF	EACH FACE	REINF	REINFORCED, REINFORCING
EL	ELEVATION	REQD	REQUIRED
ELEV	ELEVATOR	RTU	ROOF TOP UNIT
EMB	EMBEDMENT	SCHED	SCHEDULE
EN	EDGE NAIL	SD	SNOW DRIFT
EOJ	END OF JOIST	SHTG	SHEATHING
EOS	EDGE OF SLAB	SIM	SIMILAR
EQ	EQUAL	SL	SNOW LOAD
ETC	ET CETERA	SPF	SPRUCE PINE FIR
EW	EACH WAY	STD	STANDARD
EXP	EXPANSION	STL	STEEL
EXT	EXTERIOR	STRUC	STRUCTURAL
FDN	FOUNDATION	SYP	SOUTHERN YELLOW PINE
FF	FINISH FLOOR	T&B	TOP AND BOTTOM
FIN FLR	FINISH FLOOR	T&G	TONGUE AND GROOVE
FLR	FLOOR	T/BRG	TRUSS BEARING
FRMG	FRAMING	T/CONC	TOP OF CONCRETE
FRT	FIRE-RETARDENT TREATED	T/FTG	TOP OF FOOTING
FS	FAR SIDE	T/PAN	TOP OF PANEL
FTG	FOOTING	T/PARA	TOP OF PARAPET
FV	FIELD VERIFY	T/PIL	TOP OF PILASTER
ga	GAUGE	T/S	TOP OF SLAB
GALV	GALVANIZE(D)	T/STL	TOP OF STEEL
GLB	GLULAM BEAM	TYP	TYPICAL
HDR	HEADER	UNO	UNLESS NOTED OTHERWISE
HGR	HANGER	USGS	US GEOLOGICAL SURVEY
HK	HOOK	VAR	VARIES
HORIZ	HORIZONTAL	VERT	VERTICAL
HSS	HOLLOW STRUCTURAL SECTION	w/	WITH
		WHS	WELDED HEADED STUD(S)
		WP	WORK POINT
		WWR	WELDED WIRE REINFORCEMENT

SHOP DRAWING AND SUBMITTAL NOTES

- SHOP DRAWINGS AND/OR SUBMITTALS SHALL BE FURNISHED FOR ALL STRUCTURAL COMPONENTS. UNLESS OTHERWISE NOTED, THESE SHALL BE SUBMITTED FOR REVIEW PRIOR TO FABRICATION IN ACCORDANCE WITH THESE CONTRACT DRAWINGS AND PROJECT SPECIFICATIONS (IF APPLICABLE). CONTRACTOR SHALL ALLOW A MINIMUM OF 2 WEEKS FROM RECEIPT OF SHOP DRAWINGS FOR CASE ENGINEERING INC. TO PROVIDE RESPONSE.
- PRIOR TO SUBMITTAL TO THE ENGINEER, THE CONTRACTOR AND ARCHITECT SHALL HAVE REVIEWED THE SHOP DRAWINGS AND MADE ANY CORRECTIONS REQUIRED. THE CONTRACTOR AND ARCHITECT SHALL STAMP THE DRAWINGS, INDICATING THE SUBMITTAL HAS BEEN REVIEWED.
- STRUCTURAL DRAWINGS ARE THE SOLE PROPERTY OF CASE ENGINEERING. REPRODUCTION OF STRUCTURAL DRAWINGS FOR USE IN SHOP DRAWING SUBMITTALS IS NOT ACCEPTABLE WITHOUT OUR WRITTEN AGREEMENT.

STRUCTURAL ABBREVIATIONS

INT	INTERIOR
ISF	INSIDE FACE
J/BRG	JOIST BEARING
JG	JOIST GIRDER
JG/BRG	JOIST GIRDER BEARING
JST	JOIST
JT	JOINT
kfp	1,000 POUNDS
ksi	kips PER SQUARE INCH
LB	POUND
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
MAX	MAXIMUM
MECH	MECHANICAL
MEZZ	MEZZANINE
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MTL	METAL
NS	NEAR SIDE
NTS	NOT TO SCALE
oc	ON CENTER
OH	OPPOSITE HAND
OPNG	OPENING
OSF	OUTSIDE FACE
PAF	POWER-ACTUATED FASTENER
PARA	PARAPET
PEMB	PRE-ENGINEERED METAL BUILDING (MANUFACTURER)
PIL	PILASTER
PL	PLATE
PLBG	PLUMBING
PLYWD	PLYWOOD
psf	POUNDS PER SQUARE FOOT
psi	POUNDS PER SQUARE INCH
PTDF	PRESSURE TREATED DOUGLAS FIR
PTDFL	PRESSURE TREATED DOUGLAS FIR LARCH
PTSPF	PRESSURE TREATED SPRUCE PINE FIR
PTSYP	PRESSURE TREATED SOUTHERN YELLOW PINE
QT	QUANTITY
REINF	REINFORCED, REINFORCING
REQD	REQUIRED
RTU	ROOF TOP UNIT
SCHED	SCHEDULE
SD	SNOW DRIFT
SHTG	SHEATHING
SIM	SIMILAR
SL	SNOW LOAD
SPF	SPRUCE PINE FIR
STD	STANDARD
STL	STEEL
STRUC	STRUCTURAL
SYP	SOUTHERN YELLOW PINE
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
T/BRG	TRUSS BEARING
T/CONC	TOP OF CONCRETE
T/FTG	TOP OF FOOTING
T/PAN	TOP OF PANEL
T/PARA	TOP OF PARAPET
T/PIL	TOP OF PILASTER
T/S	TOP OF SLAB
T/STL	TOP OF STEEL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
USGS	US GEOLOGICAL SURVEY
VAR	VARIES
VERT	VERTICAL
w/	WITH
WHS	WELDED HEADED STUD(S)
WP	WORK POINT
WWR	WELDED WIRE REINFORCEMENT

BUILDING CODES AND STANDARDS USED FOR DESIGN

- INTERNATIONAL BUILDING CODE 2018 EDITION
ASCE 7-16
OCCUPANCY CATEGORY: II
- DESIGN LOADS
 - DESIGN LOADS
 - ROOF LIVE LOAD: 20 psf
 - ROOF DEAD LOAD: 20 psf
 - SNOW LOAD DESIGN CRITERIA
 - SNOW LOAD IMPORTANCE FACTOR, I: 1.0
 - GROUND SNOW LOAD, Pg: 20 psf
 - FLAT ROOF SNOW LOAD, Pf: 13.6 psf
 - THERMAL FACTOR, Ct: 1.0
 - EXPOSURE FACTOR, Ce: 1.0
 - MINIMUM FROST DEPTH: 2'-6"
 - WIND LOAD DESIGN CRITERIA
 - WIND IMPORTANCE FACTOR, I: 1.0
 - ULTIMATE WIND SPEED: 108 MPH (3 SEC GUST)
 - WIND EXPOSURE CATEGORY: C
 - WIND ENCLOSURE CLASSIFICATION: ENC
 - Gcpi: +/- 0.18
 - SEISMIC LOAD DESIGN CRITERIA
 - REDUNDANCY FACTOR, ρ: 1.3
 - SEISMIC IMPORTANCE FACTOR, I: 1.0
 - SITE CLASS: D
 - SPECTRAL RESPONSE ACCELERATIONS: Ss=0.510g, S1=0.192g, Sds=0.473g, Sd1=0.284g
- SEISMIC DESIGN CATEGORY: BASIC SEISMIC-FORCE RESISTING SYSTEM: RESPONSE MODIFICATION FACTOR, R: 6.5
SYSTEM OVER-STRENGTH FACTOR, Ωo: 2.5
DEFLECTION AMPLIFICATION FACTOR, Cd: 4
SEISMIC RESPONSE COEFFICIENT, Cs: 0.073
ANALYSIS PROCEDURE USED: EQUIVALENT LATERAL FORCE

GENERAL STRUCTURAL NOTES

- THIS DRAWING SET IS TO BE VIEWED AS A WHOLE AND COORDINATED WITH ARCHITECTURAL, MECHANICAL, CIVIL, AND OTHER DISCIPLINES. ALL WORK PERTAINING TO A SPECIFIC CONTRACTOR MAY OR MAY NOT BE SHOWN ON SPECIFIC DRAWING SECTIONS. IT IS EACH SUBCONTRACTOR'S RESPONSIBILITY TO PREPARE HIS BID FROM A COMPLETE SET OF PLANS.
- THE CONTRACTOR SHALL FOLLOW WRITTEN DIMENSIONS ONLY. DO NOT SCALE DRAWINGS. DIMENSIONS NOT SHOWN ON PLAN TO BE COORDINATED WITH ARCHITECTURAL PLANS.
- ALL DETAILS AND SECTIONS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY AT ANY SIMILAR SITUATION ELSEWHERE ON THE JOB, EXCEPT WHERE A DIFFERENT DETAIL OR SECTION IS SHOWN.
- THE STRUCTURE SHALL BE ADEQUATELY BRACED AND SHORED DURING ERECTION AGAINST WIND AND ERECTION LOADS. STRUCTURAL MEMBERS ARE DESIGNED FOR "IN-PLACE" LOADS ONLY.
- THE GENERAL CONTRACTOR SHALL VERIFY ALL OPENING SIZES, PAD SIZES, AND LOCATIONS WITH THE RESPECTIVE CONTRACTORS.
- THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER IMMEDIATELY OF ANY DISCREPANCIES BETWEEN CONSTRUCTION DOCUMENTS AND ACTUAL FIELD CONDITIONS.
- THE VARIOUS SUBCONTRACTORS ARE RESPONSIBLE FOR PLACING SLEEVES, OUTLET BOXES, ANCHORS, VENT OPENINGS, ETC. THAT MAY BE REQUIRED IN FOUNDATION WALLS. CONSTRUCTION MANAGER SHALL COORDINATE ALL PLACEMENT OF ITEMS IN FOUNDATION WALLS.
- SEE ARCHITECTURAL PLANS FOR ADDITIONAL DETAILS AND INFORMATION.
- ALL ELEVATIONS GIVEN ARE REFERENCED TO FINISHED FLOOR ELEVATIONS AT 100'-0", UNLESS SHOWN AS USGS ELEVATIONS.
- WHERE GENERAL NOTES OR TYPICAL DETAILS CONTRADICT INFORMATION PROVIDED IN BUILDING SECTIONS, THE BUILDING SECTIONS TAKE PRECEDENCE.
- WHERE INFORMATION PROVIDED IN THESE STRUCTURAL DRAWINGS CONTRADICTS INFORMATION PROVIDED IN PROJECT SPECIFICATIONS, THE SPECIFICATIONS SHALL TAKE PRECEDENCE.
- FOR ARCHITECTURAL, MEP, & STRUCTURAL COORDINATION: MODELED ELEMENTS SHOWN ON STRUCTURAL DRAWINGS SUCH AS TRUSSES, OPEN-WEB JOISTS, AND JOIST GIRDERS, ARE NOT THE FINAL CONFIGURATION. ALL COORDINATION SHALL BE PERFORMED BETWEEN THE VARIOUS TRADES AND THE SUPPLIERS OF THESE ELEMENTS FOR THE STRUCTURE, NOT WITH THE STRUCTURAL MODEL.
- THIS DRAWING SET IS TO BE VIEWED AS A WHOLE. ALL TYPICAL DETAILS AND GENERAL NOTES SHOWN IN THESE DRAWINGS ARE APPLICABLE TO THE PROJECT EVEN IF THEY ARE NOT SHOWN ON PLANS OR SECTIONS.
- DESIRED ALTERATIONS TO ANY DETAIL, MEMBER SIZE, MEMBER TYPE, OR ANY OTHER STRUCTURAL COMPONENT SHOWN ON THE DRAWINGS, SHALL BE SUBMITTED AS A REQUEST IN WRITING TO CASE ENGINEERING. CASE ENGINEERING WILL NOT BE RESPONSIBLE FOR CHANGES TO THE DESIGN OR DETAILS MADE DURING SHOP DRAWINGS DEVELOPMENT, DURING CONSTRUCTION, OR AT ANY OTHER TIME WITHOUT WRITTEN CONSENT.

DEFERRED SUBMITTALS

- THE FOLLOWING DESIGN ELEMENTS MUST BE SIGNED & SEALED BY A PROFESSIONAL ENGINEER (PE/SE) REGISTERED IN THE STATE WHERE THIS PROJECT IS LOCATED, AND SUBMITTED TO THE ARCHITECT AND ENGINEER OF RECORD. DESIGNED DRAWINGS AND CALCULATIONS SHALL BE SUBMITTED FOR REVIEW AND RECORD.
- PRE-FABRICATED WOOD TRUSS CALCULATIONS AND FABRICATION DRAWINGS INCLUDING:
 - ALL TRUSS-TO-TRUSS CONNECTIONS
 - PLAN AND DETAILS FOR THE LOCATIONS OF ALL ERECTION/TEMPORARY AND PERMANENT LATERAL AND DIAGONAL BRACING AND/OR BLOCKING.
 - FRAMING PLAN LAYOUT (DIMENSIONED AND TO SCALE).
 - EACH TRUSS SHALL BE LEGIBLY BRANDED, MARKED, OR OTHERWISE HAVE PERMANENTLY AFFIXED THERETO THE FOLLOWING INFORMATION LOCATED WITHIN 2 FEET OF THE CENTER OF THE SPAN ON THE FACE OF THE BOTTOM CHORD.
 - IDENTITY OF THE COMPANY MANUFACTURING THE TRUSS
 - DESIGN LOADS
 - TRUSS SPACING

EXCAVATION AND EARTHWORK NOTES

- THE BEARING VALUE AND LATERAL EARTH PRESSURES OF THE SOILS IS PER CONSERVATIVE VALUES FROM IBC. THE FOUNDATION DESIGN IS BASED ON THE FOLLOWING NET ALLOWABLE BEARING AND LATERAL EARTH PRESSURES:
 - SPREAD FOOTINGS 1,500 psf
 - CONT. WALL FOOTINGS 1,500 psf
 - ACTIVE PRESSURE 35 psf/ft
 - AT-REST PRESSURE 60 psf/ft
 - PASSIVE PRESSURE 250psf/ft
 - FRICTION COEFFICIENT 0.25
- ALL FOOTING EXCAVATIONS SHALL BE INSPECTED, PRIOR TO CONCRETE PLACEMENT, BY A SOILS ENGINEER TO VERIFY SUITABLE BEARING MATERIAL OF CAPACITY AS SPECIFIED.
- NOTIFY THE OWNER'S REPRESENTATIVE WHEN ADDITIONAL EXCAVATION IS REQUIRED TO REACH SUITABLE BEARING MATERIAL.
- THE SOILS ENGINEER SHALL CERTIFY IN WRITING THAT ALL FOUNDATIONS WERE PLACED ON SOIL WITH THE BEARING VALUE AS SPECIFIED.
- WITHIN THE EXCAVATION AREA OF FOUNDATIONS, ALL VEGETATION, TOPSOIL, PREVIOUSLY PLACED FILL AND UNSUITABLE SOILS SHALL BE REMOVED. ALL FOOTINGS TO BEAR ON VIRGIN SOIL OR PROPERLY PLACED AND COMPACTED ENGINEERED FILL. FOUNDATION DESIGN DOES NOT ACCOUNT FOR WINTER CONSTRUCTION. ANY UNENCLOSED / UNHEATED SPACES SHALL BE ADEQUATELY PROTECTED AGAINST FROST DURING WINTER CONSTRUCTION BY THE CONTRACTOR.
- IF ANY SOFT SPOTS, OR AREAS QUESTIONABLE FOR ANY REASONS ARE ENCOUNTERED BY THE CONTRACTOR, ARCHITECT/ENGINEER SHALL BE NOTIFIED IMMEDIATELY SO THAT ANY REQUIRED ACTION MAY BE TAKEN PRIOR TO CONTINUATION OF CONSTRUCTION IN THAT AREA.

POST-INSTALLED ANCHOR NOTES

- POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER OF RECORD PRIOR TO INSTALLING POST-INSTALLED ANCHORS IN PLACE OF MISSING OR MISPLACED CAST-IN-PLACE ANCHORS. CARE SHALL BE TAKEN IN PLACING POST-INSTALLED ANCHORS TO AVOID CONFLICTS WITH EXISTING REBAR. HOLES SHALL BE DRILLED AND CLEANED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS. SUBSTITUTION REQUESTS FOR PRODUCTS OTHER THAN THOSE SPECIFIED ON THESE DRAWINGS SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER OF RECORD ALONG WITH CALCULATIONS THAT ARE PREPARED & SEALED BY A REGISTERED PROFESSIONAL ENGINEER. THE CALCULATIONS SHALL DEMONSTRATE THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING, AT A MINIMUM, THE PERTINENT EQUIVALENT PERFORMANCE VALUES OF THE SPECIFIED PRODUCT USING THE BUILDING CODE.
- TYPICAL POST-INSTALLED ANCHORS IN CONCRETE AND CMU SHALL COMPLY WITH THE LATEST OF THEIR RESPECTIVE ICC EVALUATION REPORTS.
 - WHEN INSTALLING ANCHORS IN CONCRETE AND CMU, CONTRACTOR SHALL LOCATE EXISTING REINFORCING STEEL, CONDUITS, ETC, PRIOR TO DRILLING FOR ANCHORS. CONTRACTOR SHALL USE CARE AND CAUTION TO PREVENT DAMAGE TO EXISTING REINFORCING BARS.
 - CONTRACTOR SHALL PROVIDE 1" MINIMUM CLEARANCE BETWEEN EDGES OF ANY HOLES FOR POST-INSTALLED ANCHORS AND EXISTING REINFORCING STEEL.
 - CONTRACTOR SHALL PROVIDE INSPECTION AND TESTING AS REQUIRED PER THE "SPECIAL INSPECTIONS" SECTION OF THESE GENERAL STRUCTURAL NOTES.
 - CONTRACTOR SHALL USE A HOLLOW DRILL BIT AND VACUUM SYSTEM WHEN DRILLING INTO CEMENTITIOUS MATERIALS.

WOOD FRAMING NOTES

- WOOD FRAMING SHALL CONFORM TO THE "LUMBER TABLE" UNLESS NOTED OTHERWISE.
- FOR WOOD FASTENING REQUIREMENTS, REFER TO TABLE 2304.9.1 FOR IBC 2012 AND OLDER, OR TABLE 2304.10.1 FOR IBC 2015 AND NEWER.
- ALL NAILS SHALL BE GALVANIZED COMMON WIRE NAILS UNLESS OTHERWISE NOTED. SEE "WOOD FASTENER TYPES SCHEDULE" FOR MINIMUM FASTENER DIMENSIONS. NAILS IN CONTACT WITH FIRE RETARDANT TREATED OR PRESSURE TREATED WOOD SHALL BE HOT-DIP GALVANIZED (ASTM A153) OR STAINLESS STEEL (TYPE 304 OR 316). WHEN REQUIRED TO PREVENT SPLITTING, PRE-DRILL FOR NAILS WITH 1/8" DIAMETER DRILL BIT.
- BOLTS AND LAG SCREWS SHALL CONFORM TO ASTM A307 AND ANSI/ASME STANDARD B18.2.1-1981, AND SHALL BE GALVANIZED. BOLTS AND LAG SCREWS IN CONTACT WITH FIRE RETARDANT TREATED OR PRESSURE TREATED WOOD SHALL BE HOT-DIP GALVANIZED (ASTM A153) OR STAINLESS STEEL (TYPE 304 OR 316). STANDARD WASHERS SHALL BE PROVIDED UNDER HEAD AND NUT OF ALL BOLTS IN WOOD FRAMING. BOLT THREADS SHALL NOT BEAR ON WOOD. DRILLED HOLES FOR BOLTS SHALL BE 1/16" LARGER IN DIAMETER THAN BOLT.
- ALL BOLTS SHALL BE RETIGHTENED IMMEDIATELY PRIOR TO CLOSING IN FRAMING.
- METAL FRAMING CONNECTORS SHALL BE "SIMPSON" BRAND OR ENGINEERED APPROVED EQUIVALENT AND SHALL BE GALVANIZED. METAL FRAMING CONNECTORS IN CONTACT WITH FIRE RETARDANT TREATED OR PRESSURE TREATED WOOD SHALL BE HOT-DIP GALVANIZED (ASTM A123) OR STAINLESS STEEL (TYPE 316L). METAL FRAMING CONNECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S LATEST PUBLISHED INSTALLATION INSTRUCTIONS USING THE LARGER SIZE AND QUANTITY OF FASTENERS INDICATED, UNLESS OTHERWISE NOTED.
- WASHERS USED IN SHEAR WALLS AND ANCHOR HOLD DOWNS SHALL BE SQUARE WASHERS OF SIZE AND THICKNESS INDICATED IN "SHEAR WALL SHEATHING AND FASTENER SCHEDULE". ROUND WASHERS ARE NOT ACCEPTABLE FOR SHEAR WALL APPLICATIONS.
- ALL BOLTS, WASHERS, NAILS, METAL FRAMING CONNECTORS AND OTHER FASTENERS IN CONTACT WITH PRESERVATIVE OR FIRE RETARDANT TREATED LUMBER SHALL BE HOT-DIPPED GALVANIZED (ASTM A153) OR STAINLESS STEEL (TYPE 304 OR 316).
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT WOOD USED FOR STRUCTURAL PURPOSES IS KEPT AS DRY AS POSSIBLE BEFORE AND DURING CONSTRUCTION. A MAXIMUM MOISTURE CONTENT SHALL BE MAINTAINED UNTIL THE BUILDING ENVELOPE IS CLOSED IN AND WATER-PROOFED AS FOLLOWS:
 - KILN-DRIED LUMBER: 19%
 - TIMBERS: 19%
 - GLULAM BEAMS: 16%
 - LVL & PSL: 12%
 - PLYWOOD: 8%
 - OSB: 4%
- ALL WOOD IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE-TREATED. ALL WOOD EXPOSED TO WEATHER SHALL BE PRESSURE-TREATED. PRESSURE TREATMENT OF WOOD THAT IS CUT SHALL BE REINSTATED ON CUT EDGES.

PRE-FABRICATED WOOD TRUSS NOTES

- DESIGN AND FABRICATION SHALL BE IN ACCORDANCE WITH THE TRUSS PLATE INSTITUTE PUBLICATION "DESIGN SPECIFICATION FOR METAL PLATE CONNECTED WOOD TRUSSES", LATEST EDITION.
- PROVIDE ALL PERMANENT TRUSS BRACING INDICATED ON DRAWINGS OR SPECIFIED BY TRUSS MANUFACTURER. IN ADDITION, PROVIDE TEMPORARY BRACING AS INDICATED IN THE TRUSS PLATE INSTITUTE BOOKLET "BRACING WOOD TRUSSES: COMMENTARY AND RECOMMENDATIONS BWT-76".
- NO FIELD MODIFICATIONS OF TRUSSES ARE PERMITTED UNLESS FABRICATOR PROVIDES CALCULATIONS AND DRAWINGS SHALL BE SIGNED AND SEALED BY A REGISTERED ENGINEER (REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED).
- REFER TO "DEFERRED SUBMITTALS" FOR ADDITIONAL REQUIREMENTS.

PRE-FABRICATED WOOD ROOF TRUSSES - DESIGN CRITERIA TABLE	
TOP CHORD	20 psf LIVE LOAD 15 psf DEAD LOAD SNOW LOAD AND WIND LOAD PER ROOF PLAN AND NOTES
BOTTOM CHORD	10 psf LIVE LOAD (NOT CONCURRENT WITH TOP CHORD LIVE LOAD) 5 psf DEAD LOAD
WIND UPLIFT	PER "DESIGN LOADS" ON THESE GENERAL NOTES
LOAD DURATION FACTOR	AS REQUIRED
TRUSS SPACING	PER PLAN
DEFLECTION LIMITS	L/180 MAXIMUM TOTAL LOAD L/240 MAXIMUM LIVE LOAD
CAMBER	75 PERCENT OF DEAD LOAD

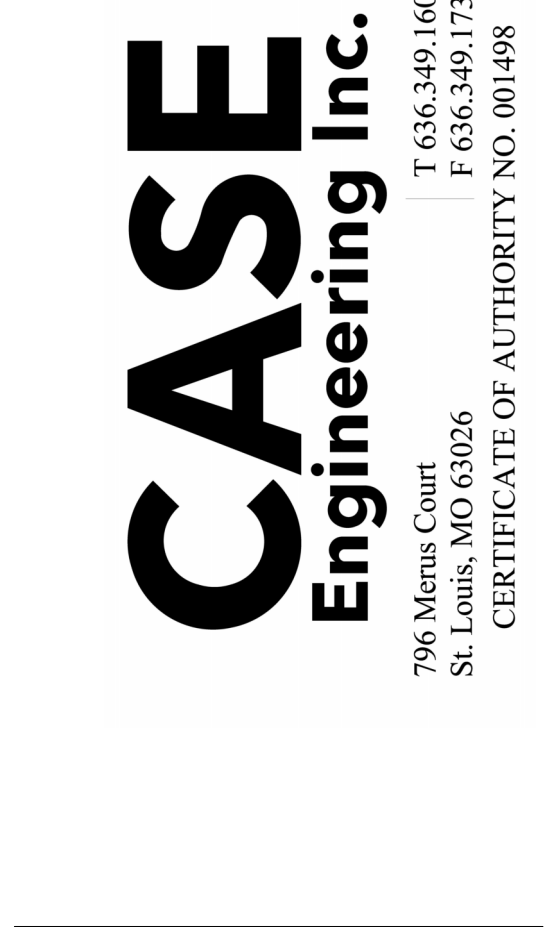
LUMBER TABLE		
MEMBER	SPECIES	GRADE
2x PLATES, STRIPPING, MISC CONCEALED FRAMING, BLKG, & FIRE STOPPING	SOUTHERN PINE	NO 2
SILLS ON CONCRETE OR MASONRY	PRESSURE TREATED SOUTHERN PINE	NO 2
2x LUMBER	SOUTHERN PINE	NO 2
TIMBER 5x5 AND LARGER	SOUTHERN PINE	NO 1
SHEAR WALL SHEATHING	PER MANUFACTURER	APA RATED SHEATHING, EXPOSURE 1 (PS 1 OR PS 2)
ROOF SHEATHING	PER MANUFACTURER	APA RATED SHEATHING, EXPOSURE 1 (PS 1 OR PS 2)

WOOD FASTENER TYPES SCHEDULE		
NOTE: 1.-"SD" AND "SDS" SCREWS ARE MANUFACTURED BY SIMPSON STRONG-TIE. 2.-ALL SCREWS SHALL BE INSTALLED SO THAT HEADS ARE FLUSH WITH OUTSIDE MATERIAL. DO NOT OVERDRIVE SCREWS. SCREWS WITH WING-TIPS ARE NOT PERMITTED IN SHEAR WALLS OR DIAPHRAGMS.		
TYPE	DIAMETER	LENGTH
16d COMMON	0.162"	3 1/2"
10d COMMON	0.148"	3"
8d COMMON	0.131"	2 1/2"
#9 SD SCREW	0.131"	1 1/2" OR 2 1/2"
#10 SD SCREW	0.161"	1 1/2" OR 2 1/2"
SDS SCREW	0.25"	VARIES 1 1/2"-8"

STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR



PROFESSIONAL SEAL



OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT, DESIGN AND
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DEPARTMENT OF
NATURAL RESOURCES
MISSOURI STATE PARKS

NEW PREMIUM 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N
BONNE TERRE, MO 63628

PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 03/28/2025

CAD DWG FILE: COC-MO-16-23 RV22
DRAWN BY: AEM
CHECKED BY: SIS
DESIGNED BY: AEM

SHEET TITLE:

GENERAL NOTES

SHEET NUMBER:

S1.1

CONCRETE NOTES

1.

ALL CONCRETE WORK INCLUDING FORMING, REINFORCING, MIXING, PLACING, FINISHING AND CURING SHALL BE DONE IN ACCORDANCE WITH THE ACI MANUAL OF CONCRETE PRACTICE INCLUDING "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", ACI 318, AND "SPECIFICATIONS FOR STRUCTURAL CONCRETE", ACI 301 LATEST EDITIONS.
2.

IT SHALL BE THE RESPONSIBILITY OF THE MIX DESIGN SUPPLIER TO PROPORTION MIXES APPROPRIATELY TO REACH THE REQUIRED PROPERTIES NOTED, AND SHALL BE APPROPRIATE FOR THEIR INTENDED USE. ADMXTURES MEETING ASTM C494 ARE OPTIONAL. HOWEVER, AIR-ENTRAINING ADMIXTURES MEETING ASTM C260 SHALL BE USED FOR CONCRETE EXPOSED TO THE EXTERIOR OR FREEZE-THAW CYCLES.
3.

CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGNS FOR EACH INTENDED USE ON THE PROJECT FOR REVIEW AND APPROVAL BY THE ENGINEER OF RECORD. CONTENTS OF THE MIX DESIGN SHALL COMPLY WITH, AND INCLUDE ALL INFORMATION REQUIRED BY, ACI 318, CHAPTER 5 (FOR 2011 AND EARLIER CODE EDITIONS), & CHAPTER 26 (FOR 2014 CODE EDITION). THIS INCLUDES, BUT IS NOT LIMITED TO NUMBER OF TESTS AND AGE OF TESTS INCLUDED IN THE MIX DESIGN REPORT.
4.

ALL CONCRETE DENSITY SHALL BE NORMAL WEIGHT (145 pcf +/- 5) UNLESS OTHERWISE INDICATED. LIGHT WEIGHT CONCRETE SHALL BE 110 pcf +/- 5, UNO.
5.

FLY ASH ALLOWANCES:

•

20% MAXIMUM BY WEIGHT OF CEMENTITIOUS IN FOOTINGS

•

15% MAXIMUM BY WEIGHT OF CEMENTITIOUS MATERIAL IN SLABS
6.

COORDINATE CONCRETE WORK WITH THAT OF OTHER TRADES TO ALLOW FOR SETTING OF SLEEVES, ACCESSORIES, ETC.
7.

ALL REINFORCING STEEL, ANCHOR RODS, DOWELS, AND INSERTS SHALL BE WELL- SECURED IN POSITION PRIOR TO PLACING CONCRETE. DO NOT "WET SET" OR "FLOAT" INTO CONCRETE.
8.

TEST CYLINDERS WILL BE REQUIRED, AND RECORDS OF RESULTS SHALL BE SUBMITTED TO ENGINEER OF RECORD. PROVIDE A MINIMUM OF (4) 6"x12" CYLINDERS FOR TESTING (1 AT 7 DAYS, 2 AT 28 DAYS, ONE SPARE). ALTERNATIVELY, PROVIDE A MINIMUM (5) 4"x8" CYLINDERS FOR TESTING (1 AT 7 DAYS, 3 AT 28 DAYS, ONE SPARE). SLUMP TESTS ARE RECOMMENDED.
9.

CONSTRUCTION JOINTS IN CONCRETE INDICATED WITH A ROUGH, CLEAN SURFACE SHALL HAVE A 1/4" AVERAGE AMPLITUDE.
10.

ALL COLD JOINTS SHALL BE ROUGHENED AND CLEANED PRIOR TO PLACING CONCRETE.
11.

SLUMP: CONCRETE MIXES SHALL BE PROPORTIONED TO ACHIEVE A MAXIMUM SLUMP OF 8" FOR CONCRETE CONTAINING HIGH RANGE WATER REDUCING ADMIXTURE. 6" FOR CONCRETE CONTAINING A MID-RANGE WATER REDUCING ADMIXTURE PRE-ADDITIVE. MIXES SHALL HAVE A WATER SLUMP OF 2'-3" (3" TO 4" FOR CONCRETE RECEIVING A "DRY-SHAKE" HARDENER). MAXIMUM 4" WATER SLUMP FOR ALL OTHER CONCRETE NOT CONTAINING A WATER REDUCER.
12.

SELF-CONSOLIDATING CONCRETE MAY BE USED FOR ALL ARCHITECTURAL CONCRETE AND HEAVILY REINFORCED MEMBERS AS SHOWN ON THE DRAWINGS. ALL SELF- CONSOLIDATING CONCRETE SHALL CONTAIN THE SPECIFIED HIGH-RANGE WATER- REDUCING ADMIXTURE AND VISCOSITY-MODIFYING ADMIXTURE WHERE REQUIRED. MINIMUM SPREAD OF 22"-30" WHEN MEASURED IN ACCORDANCE WITH ASTM C1611 OR AS REQUIRED BY THE SUCCESSFUL TEST PLACEMENT. THE WORKABILITY, PUMPABILITY, FINISHABILITY, AND SETTING TIME OF THE PROPOSED MIX DESIGN SHALL BE VERIFIED WITH A SUCCESSFUL TEST PLACEMENT ONSITE. COMPRESSIVE STRENGTH: 5000 PSI AT 28 DAYS OR AS NOTED ON THE DRAWINGS.
13.

AIR CONTENT: ALL CONCRETE EXPOSED TO FREEZING AND THAWING AND/OR REQUIRED TO BE WATER TIGHT SHALL HAVE AN AIR CONTENT OF 4.5% TO 7.5%. ALL INTERIOR SLABS AND ALL SLABS TO RECEIVE DRY-SHAKE SHALL HAVE A MAXIMUM AIR CONTENT OF 3%.
14.

DEPOSIT AND CONSOLIDATE CONCRETE FOR FLOORS AND SLABS IN A CONTINUOUS OPERATION, WITHIN LIMITS OF CONSTRUCTION JOINTS, UNTIL PLACEMENT OF A PANEL OR SECTION IS COMPLETE.

A.

CONSOLIDATE CONCRETE DURING PLACEMENT OPERATIONS, SO CONCRETE IS THOROUGHLY WORKED AROUND REINFORCEMENT AND OTHER EMBEDDED ITEMS AND INTO CORNERS.

B.

MAINTAIN REINFORCEMENT IN POSITION ON CHAIRS DURING CONCRETE PLACEMENT.

C.

SCREED SLAB SURFACES WITH A STRAIGHT EDGE AND STRIKE OFF TO CORRECT ELEVATIONS.

D.

UTILIZE A VIBRATORY SCREED FOR CONCRETE THAT WILL RECEIVE DIAMOND POLISH FINISH. KEEP VIBRATING SCREED MOVING CONTINUOUSLY ACROSS SURFACE. DO NOT STOP SCREED IN ANY ONE PLACE WHILE VIBRATING.

E.

SLOPE SURFACES UNIFORMLY TO DRAINS WHERE REQUIRED.

F.

BEGIN INITIAL FLOATING USING BULL FLOATS OR DARBIES TO FORM A UNIFORM AND OPEN-TEXTURED SURFACE PLANE BEFORE EXCESS BLEED WATER APPEARS ON THE SURFACE. DO NOT FURTHER DISTURB SLAB SURFACES BEFORE STARTING FINISHING OPERATIONS.

G.

THE USE OF HIGHWAY STRAIGHT EDGES OR "BUMP CUTTERS" ON CONCRETE SLABS TO BE POLISHED IS PROHIBITED.
15.

CONCRETE TO BE POLISHED SHALL RECEIVE A HARD STEEL TROWEL FINISH WITH A MINIMUM OF (3) SEPARATE PASSES WITH POWER TROWEL TO ACHIEVE CLASS 5 FINISH AS DESCRIBED IN ACI 302R. HAND TROWELLING SHALL BE LIMITED TO ONLY THOSE AREAS NECESSARY. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.

A.

INSPECT TROWELLING MACHINE AND REMOVE ACCUMULATED MORTAR PRIOR TO EACH PASS.

B.

FINISH SURFACE SHALL BE FREE OF TROWEL MARKS, BURN MARKS AND MOTTLING.
16.

ALL CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH IN ACCORDANCE WITH THE FOLLOWING:

A.

AIR ENTRAINMENT IS NOT RECOMMENDED FOR SURFACES TO BE GIVEN A SMOOTH, DENSE, HARD-TROWELED FINISH. COORDINATE FINISH REQUIREMENTS WITH ARCHITECTURAL DRAWINGS AND/ OR SPECIFICATIONS.

REINFORCING STEEL NOTES

1.

NON-WELDED STEEL BAR REINFORCING SHALL CONFORM TO ASTM A615, GRADE 60.
2.

WELDED STEEL BAR REINFORCING SHALL CONFORM TO ASTM A706.
3.

WELDING OF REINFORCING STEEL SHALL BE PERFORMED BY AWS QUALIFIED WELDERS IN CONFORMANCE WITH AWS D1.1 USING E90 ELECTRODES FOR ASTM A615 REBAR, AND E80 ELECTRODES FOR ASTM A706 REBAR UNLESS OTHERWISE NOTED ON THE DRAWINGS.
4.

WELDED WIRE REINFORCEMENT (WWR) SHALL BE SMOOTH WIRE PER ASTM A185 WITH MINIMUM YIELD STRENGTH, fy = 65 ksi, OR DEFORMED WIRE PER ASTM A497 WITH MINIMUM YIELD STRENGTH, fy = 70 ksi, UNLESS NOTED OTHERWISE.
5.

MINIMUM CONCRETE COVER FOR REINFORCING STEEL IN CAST-IN-PLACE (NON- PRESTRESSED) CONCRETE SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED ON THE DRAWINGS:

A.

CONCRETE CAST AGAINST EARTH = 3"

B.

CONCRETE EXPOSED TO EARTH OR WEATHER:

•

#6 BAR AND LARGER = 2"

•

#5 BAR AND SMALLER = 1 1/2"

C.

CONCRETE NOT EXPOSED TO EARTH OR WEATHER (SLABS, WALLS, & JOISTS):

•

#14 BARS AND LARGER = 1 1/2"

•

#11 BARS AND SMALLER = 3/4"

D.

CONCRETE NOT EXPOSED TO EARTH OR WEATHER (BEAMS & COLUMNS):

•

PRIMARY REINFORCEMENT, TIES, STIRRUPS, & SPIRALS = 1 1/2"
6.

ALL DETAILING, FABRICATION, AND ERECTION OF REINFORCING STEEL SHALL CONFORM TO THE LATEST EDITION OF ACI 315 (SP-66), DETAILS AND DETAILING OF CONCRETE REINFORCEMENT.
7.

LAP SPICE LENGTHS FOR BARS INSTALLED IN CONCRETE AND CMU SHALL BE IN ACCORDANCE WITH THE TABLE.

DEVELOPMENT LENGTH OF STANDARD HOOKS IN CONCRETE NOTES

1.

VALUES IN TABLE ARE BASED ON 60ksi REBAR. FOR OTHER REBAR YIELD STRENGTHS, MULTIPLY VALUES IN THE TABLE BY THE SPECIFIED YIELD STRENGTH DIVIDED BY 60.
2.

SEE ACI 318 SECTION 12.5 FOR ALLOWABLE REDUCTIONS IN DEVELOPMENT LENGTH. IT SHALL NOT BE LESS THAN 8 BAR DIAMETERS OR 6 INCHES.
3.

HOOKED BARS ARE NOT CONSIDERED EFFECTIVE IN DEVELOPING BARS IN COMPRESSION.
4.

REBAR IN ALL CONCRETE MEMBERS SHALL HAVE STANDARD HOOKS WHERE SHOWN ON SECTIONS IN ACCORDANCE WITH "DEVELOPMENT LENGTH OF STANDARD HOOKS IN TENSION" TABLE, UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS.

DEVELOPMENT LENGTH OF STANDARD HOOKS IN CONCRETE - 60 ksi...			
BAR SIZE	f'c = 4,000 psi	f'c = 4,500 psi	f'c = 5,000 psi
#3	8	7	7
#4	10	9	9
#5	12	12	11
#6	15	14	13
#7	17	16	15
#8	19	18	17
#9	22	21	20
#10	25	23	22
#11	27	26	24

TENSION LAP SPlice LENGTH IN CONCRETE NOTES

1.

FOR HORIZONTAL BARS, VALUES IN THE TABLE SHALL BE MULTIPLIED BY 1.3 WHERE MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST BELOW THE BAR.
2.

WHERE CLEAR SPACING OF BARS BEING SPLICED IS AT LEAST 2 BAR DIAMETERS AND CLEAR COVER AT LEAST 1 BAR DIAMETER, USE CASE 1. FOR ALL OTHER BAR ARRANGEMENTS, USE CASE 2.
3.

VALUES IN THE TABLE ARE BASED ON 60ksi REBAR. FOR OTHER REBAR YIELD STRENGTHS, MULTIPLY VALUES IN THE TABLE BY THE SPECIFIED YIELD STRENGTH DIVIDED BY 60.
4.

WHERE BARS OF DIFFERENT SIZES ARE SPLICED, PROVIDE THE LAP LENGTH OF THE LARGER BAR.
5.

WELDED WIRE REINFORCEMENT (DEFORMED OR PLAIN WIRE) SHALL BE LAPPED ONE FULL MESH SQUARE PLUS 2 INCHES MINIMUM, BUT NOT LESS THAN 12 INCHES.
6.

REBAR IN ALL CONCRETE MEMBERS SHALL BE SPLICED IN ACCORDANCE WITH "TENSION LAP SPlice LENGTH" TABLE, UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS.

TENSION LAP SPlice LENGTH IN CONCRETE - 60 KSI REBAR TABLE (INCHES)								
f'c =	3,500psi	3,500psi	4,000psi	4,000psi	4,500psi	4,500psi	5,000psi	5,000psi
BAR SIZE	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2
#3	20	30	19	28	18	27	17	25
#4	27	40	25	37	24	35	23	34
#5	33	50	31	47	30	44	28	42
#6	40	60	37	56	35	53	34	50
#7	58	87	54	81	51	77	49	73
#8	66	99	62	93	59	88	56	83
#9	75	112	70	105	66	99	63	94
#10	84	126	79	118	74	111	71	106
#11	93	140	87	131	82	123	78	117

SPECIAL INSPECTIONS

1.

REFER TO THE SPECIAL INSPECTION TABLES FOR THE LIST OF ELEMENTS OF CONSTRUCTION THAT SHALL REQUIRE SPECIAL INSPECTION. THIS SHALL BE CONSIDERED A GUIDE, AND THE CONTRACTOR AND INSPECTOR SHALL REFER TO THE IBC FOR COMPLETE REQUIREMENTS, QUALIFICATIONS, EXCEPTIONS, AND SUBMITTALS. REFER TO IBC CHAPTER 17, THE OWNER SHALL BE RESPONSIBLE FOR EMPLOYING THE SPECIAL INSPECTION AGENCY. ANY "OBSERVATIONS" BY THE EOR WILL NOT BE TO PERFORM SPECIAL INSPECTIONS AND SHALL NOT BE INTERPRETED AS SUCH.
2.

COPIES OF ALL INSPECTION REPORTS THAT REPORT COMPLIANCE SHALL BE SUBMITTED TO THE ARCHITECT OF RECORD, STRUCTURAL ENGINEER OF RECORD, AND BUILDING INSPECTOR WITHIN 7 CALENDAR DAYS OF COMPLETION OF THAT PORTION OF WORK. A MINIMUM OF ONE (1) PROGRESS REPORT PER MONTH FOR EACH TYPE OF CONSTRUCTION REQUIRING SPECIAL INSPECTION SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER OF RECORD.
3.

SPECIAL INSPECTOR SHALL INFORM ENGINEER OF RECORD IMMEDIATELY OF NON- COMPLIANCE WITH CONSTRUCTION DOCUMENTS OR APPROVED SUBMITTALS. CONTACT ENGINEER OF RECORD THE SAME DAY NON-COMPLIANCE IS DISCOVERED AND FOLLOW UP WITH AN OFFICIAL REPORT WITHIN 2 BUSINESS DAYS.
4.

THE SPECIAL INSPECTIONS IDENTIFIED ON THE PLANS ARE IN ADDITION TO, AND NOT A SUBSTITUTE FOR THOSE INSPECTIONS REQUIRED TO BE PERFORMED BY A BUILDING INSPECTOR.
5.

SPECIAL INSPECTIONS ARE NOTED AS EITHER "CONTINUOUS" OR "PERIODIC". A "CONTINUOUS" INSPECTION REQUIRES THE PRESENCE OF A QUALIFIED INSPECTOR IN THE VICINITY OF THE WORK BEING PERFORMED FOR 100% OF THAT WORK. A "PERIODIC" INSPECTION REQUIRES PART-TIME OBSERVATION OF THE WORK BEING PERFORMED. THE INSPECTOR SHALL ALSO OBSERVE THE FINAL CONDITION OF THE WORK BEFORE IT IS CLOSED FROM VIEW.
6.

WHEN WORK IN MORE THAN ONE CATEGORY OF WORK REQUIRING SPECIAL INSPECTION IS TO BE PERFORMED SIMULTANEOUSLY, OR THE GEOGRAPHIC LOCATION OF THE WORK IS SUCH THAT IT CANNOT BE CONTINUOUSLY OBSERVED, IT SHALL BE THE RESPONSIBILITY OF THE AGENT TO EMPLOY A SUFFICIENT NUMBER OF SPECIAL INSPECTORS TO ASSURE THAT ALL WORK IS CONTINUOUSLY INSPECTED IN ACCORDANCE WITH THOSE PROVISIONS.
7.

SPECIAL INSPECTIONS AND TESTS ARE NOT REQUIRED FOR PORTIONS OF STRUCTURES DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE COLD- FORMED STEEL LIGHT-FRAME CONSTRUCTION PROVISIONS OF SECTION 2211 OF THE IBC OR THE CONVENTIONAL LIGHT-FRAME CONSTRUCTION PROVISIONS OF SECTION 2308 OF THE IBC.

SPECIAL INSPECTIONS - CONCRETE TABLE		
ITEM	INSPECTION FREQUENCY	SCOPE
REINFORCEMENT	PERIODIC	INSPECT REINFORCEMENT AND PLACEMENT; VERIFY CONFORMANCE WITH CONSTRUCTION DOCUMENTS, AND THAT BARS ARE FREE FROM MATERIALS THAT COULD PREVENT BOND, ARE ADEQUATELY LAPPED, SPLICED, TIED, AND SUPPORTED
ANCHOR INSTALLATION	PERIODIC	INSPECT CAST-IN-PLACE ANCHORS AND BOLTS
ANCHOR INSTALLATION	CONTINUOUS	INSPECT POST-INSTALLED MECHANICAL AND ADHESIVE ANCHORS PER THE REQUIREMENTS IN THEIR RESPECTIVE ICC-ES REPORTS
MIX DESIGN	PERIODIC	VERIFY USE OF APPROVED MIX DESIGN
SAMPLING AND TESTING	CONTINUOUS	PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTING; PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE TEMPERATURE OF THE CONCRETE
CONCRETE PLACEMENT	PERIODIC	VERIFY MAINTENANCE OF CURING TEMPERATURE AND TECHNIQUES
CONCRETE PLACEMENT	PERIODIC	VERIFY STRENGTH OF CONCRETE PRIOR TO STRESSING TENDONS IN POST-TENSIONED CONCRETE, AND PRIOR TO REMOVAL OF SHORES
CONCRETE PLACEMENT	PERIODIC	INSPECT FORMWORK FOR SHAPE, LOCATION, AND DIMENSIONS OF CONCRETE MEMBER BEING FORMED
CONCRETE PLACEMENT	CONTINUOUS	CONCRETE PLACEMENT

SPECIAL INSPECTIONS - SOILS AND FOUNDATIONS TABLE		
ITEM	INSPECTION FREQUENCY	SCOPE
SOILS	PERIODIC	VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY; VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL; PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS; PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY
SOILS	CONTINUOUS	VERIFY USE OF PROPER MATERIALS, DENSITIES, LIFT THICKNESSES, AND COMPACTION OF FILL; VERIFY MATERIALS AND PROCEDURES COMPLY WITH THE GEOTECHNICAL REPORT

SPECIAL INSPECTIONS - WOOD TABLE		
ITEM	INSPECTION FREQUENCY	SCOPE
DIAPHRAGM AND SHEAR WALL	PERIODIC	WOOD SHEAR WALLS, SHEAR PANELS, AND DIAPHRAGMS, INCLUDING NAILING, BOLTING, ANCHORING, AND OTHER FASTENING TO COMPONENTS OF THE MAIN LATERAL SYSTEM WHEN THE FASTENER SPACING IS LESS THAN OR EQUAL TO 4 INCHES ON CENTER
METAL PLATE CONNECTED WOOD TRUSSES WITH CLEAR SPAN OF 60FT OR GREATER	PERIODIC	VERIFY TEMPORARY, ERECTION, AND PERMANENT BRIDGING AND BRACING IS INSTALLED IN ACCORDANCE WITH THE APPROVED TRUSS SUBMITTAL PACKAGE

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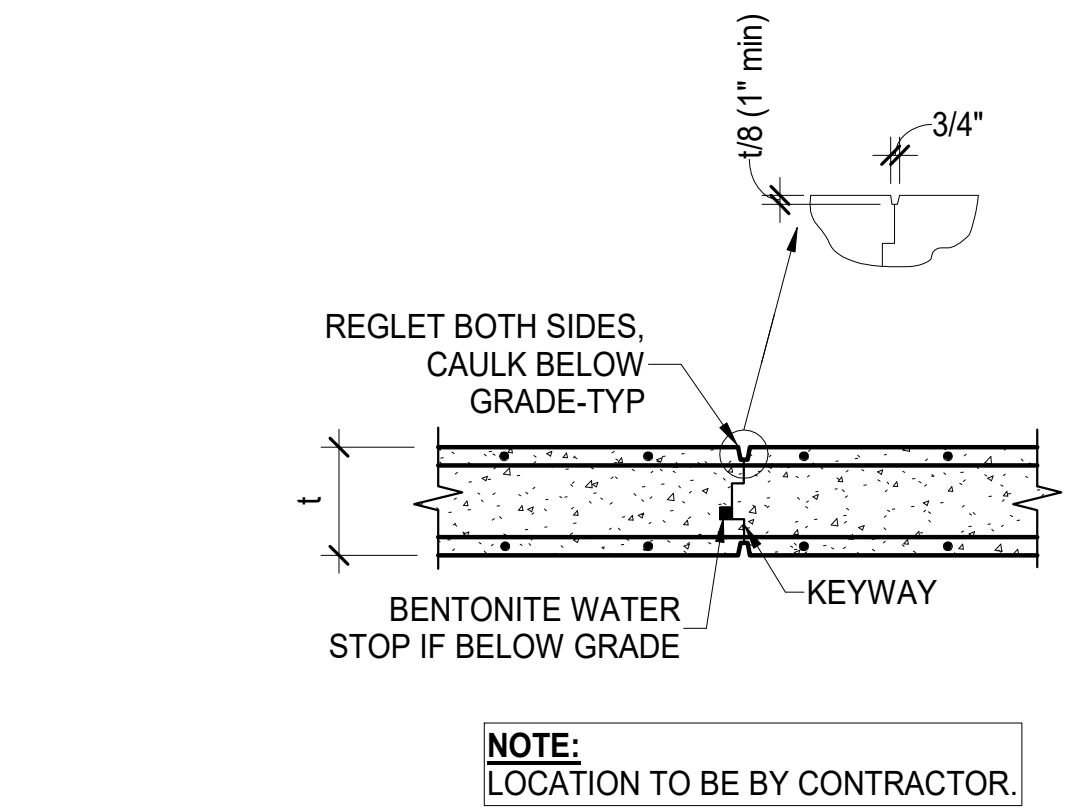
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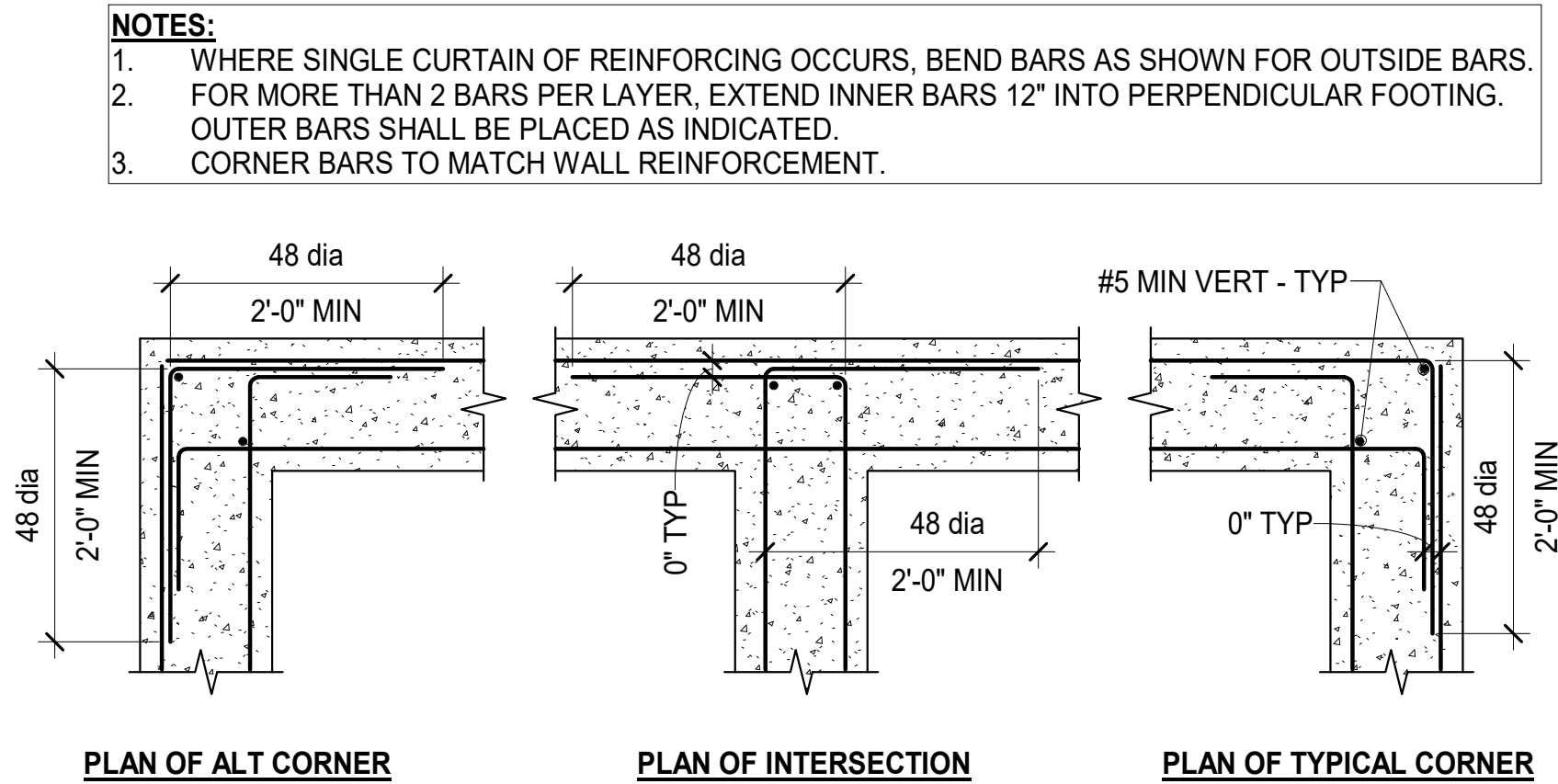
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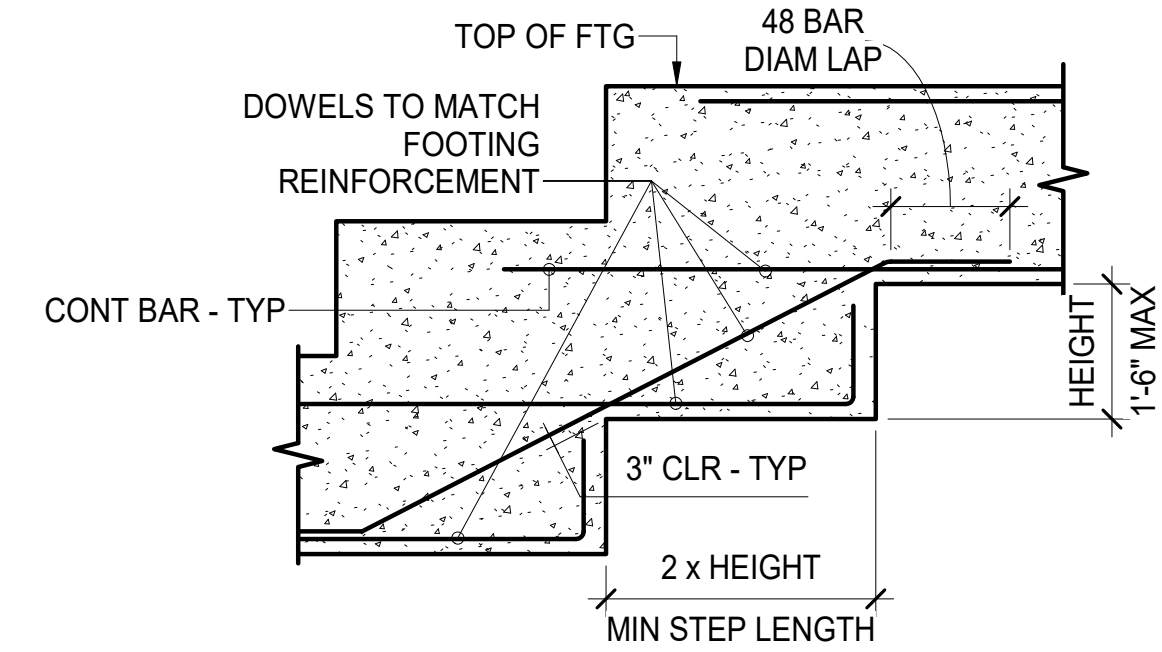
47 OF 56 SHEETS
03/28/2025



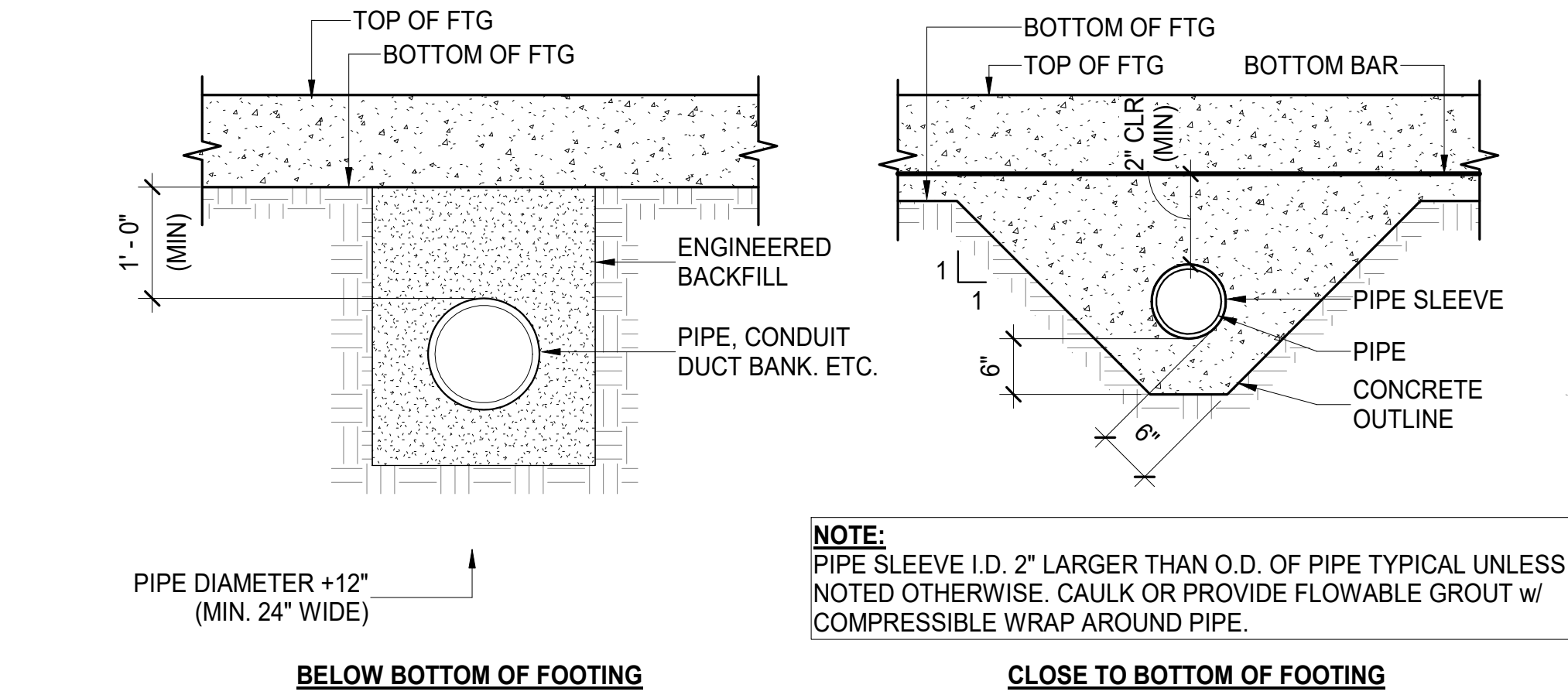
A TYP CONCRETE WALL CONSTRUCTION JOINT DETAILS
S1.3 N.T.S.



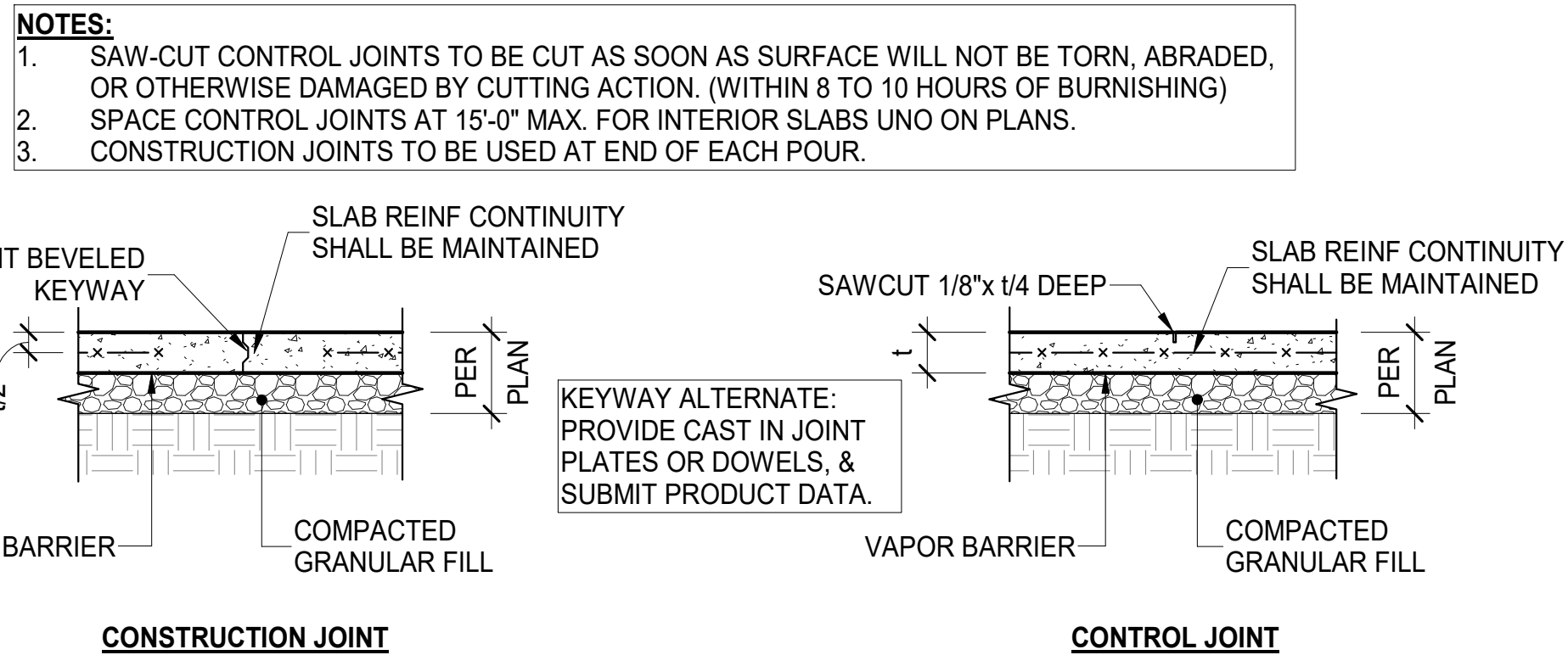
B TYP CONCRETE WALL REINFORCEMENT
S1.3 N.T.S.



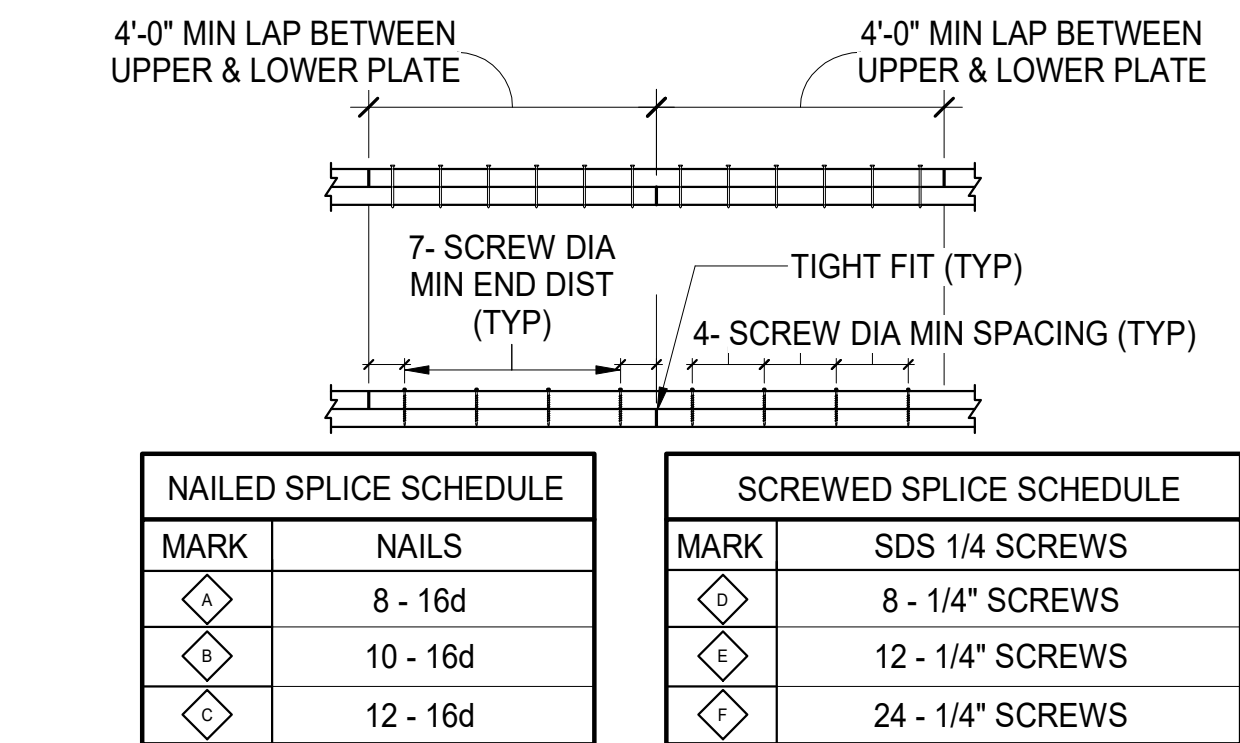
C TYP FOOTING STEP
S1.3 N.T.S.



D TYP FOUNDATION PIPE PENETRATION DETAILS
S1.3 N.T.S.

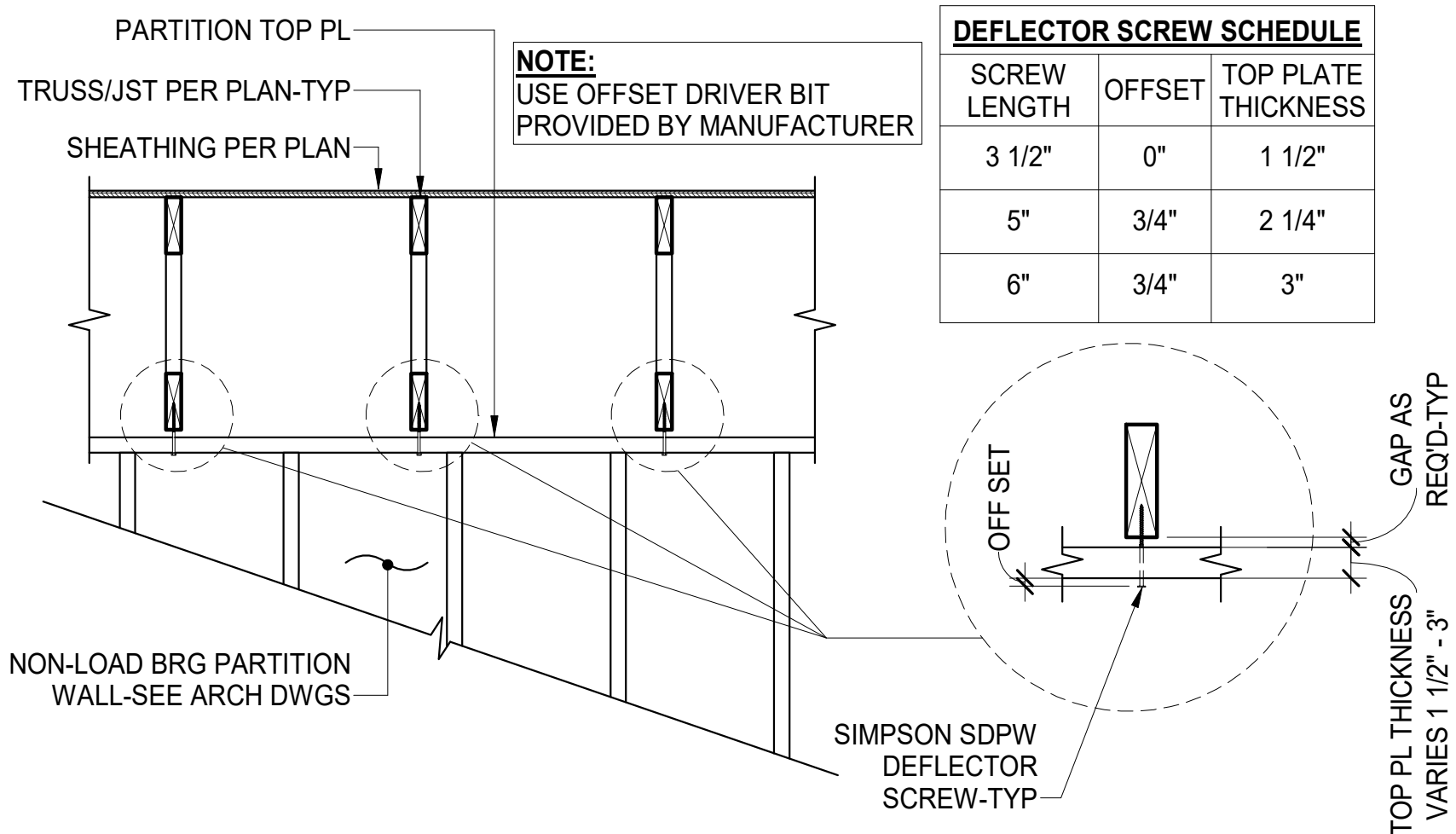


E TYP SLAB-ON-GRADE CONSTRUCTION JOINT DETAILS
S1.3 N.T.S.

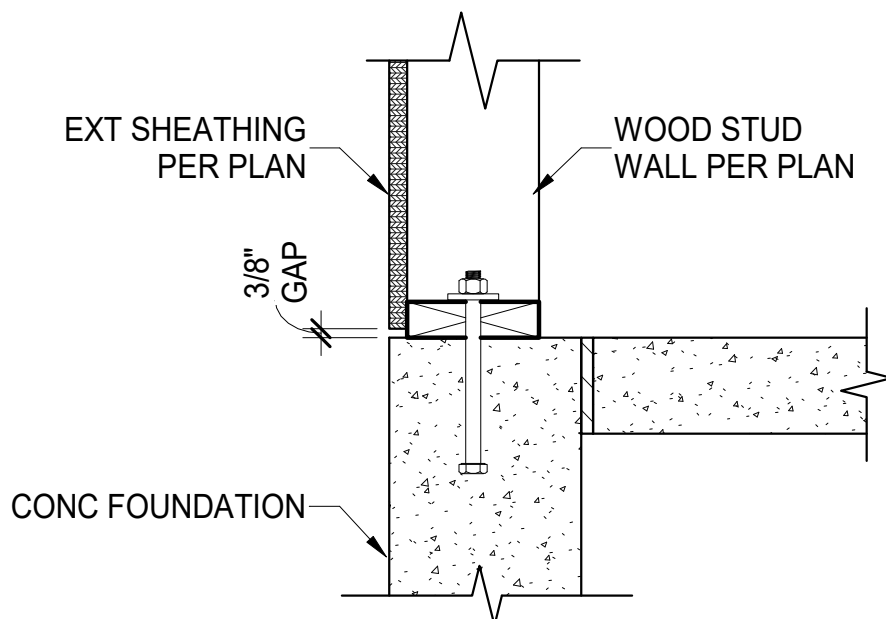


- NOTES:**
- SPLICE 2x DOUBLE TOP PLATES PER MARK "A" AND 3x DOUBLE TOP PLATES PER MARK "D" OF THE ABOVE SCHEDULE, UNLESS OTHERWISE INDICATED.
 - SCREWS SHALL BE 3" LONG FOR 2x PLATES AND 5" LONG FOR 3x PLATES.
 - JOINTS IN UPPER AND LOWER PLATE SHALL BE CENTERED OVER STUD OR MULLION.
 - ALL NAILS SHALL BE COMMON WIRE NAILS.
 - SCHEDULE INDICATES NUMBER OF NAILS OR SCREWS ON EACH SIDE OF EACH JOINT.

F TYPICAL TOP PLATE SPLICE DETAIL
S1.3 N.T.S.

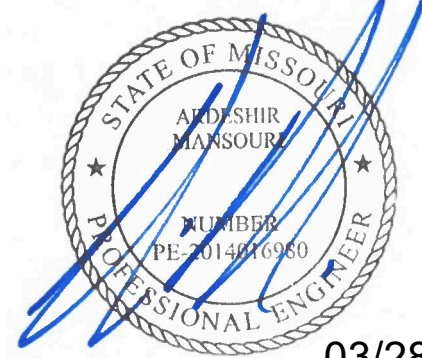


G TYP SLIP CONNECTION @ NON LOAD-BEARING WOOD PARTITION WALL
S1.3 N.T.S.



H TYPICAL SHEATHING GAP DETAIL
S1.3 N.T.S.

STATE OF MISSOURI
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DEPARTMENT OF
NATURAL RESOURCES
MISSOURI STATE PARKS

NEW PREMIUM 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N
BONNE TERRE, MO 63628

PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 03/28/2025

CAD DWG FILE: COC-MO-16-23 RV22
DRAWN BY: AEM
CHECKED BY: SJS
DESIGNED BY: AEM

SHEET TITLE:

TYPICAL DETAILS

SHEET NUMBER:

S1.3

48 OF 56 SHEETS
03/28/2025

SILL PL BOLTS & SOLE PL SCREWS SCHEDULE			
MARK	WALL SIDES SHEATHED	FASTENER SPACING "B" (NOTES #5-6)	
		BOLT	SCREW
⑥	1	34"	5"
	2	16"	2"
④	1	22"	3"
	2	10"	1.5"
③	1	16"	2"
	2	8"	1"

WALL SHEATHING AND NAILING SCHEDULE			
MARK	SHTG SPEC	NAIL SIZE	EN SPCG "E"
⑥	15/32" *	10d	6"
④	15/32" *	10d	4"
③	15/32" *	10d	3"

* PANELS SHALL BE **SHEATHING** GRADE, SEE LUMBER SCHEDULE FOR REQUIREMENTS.

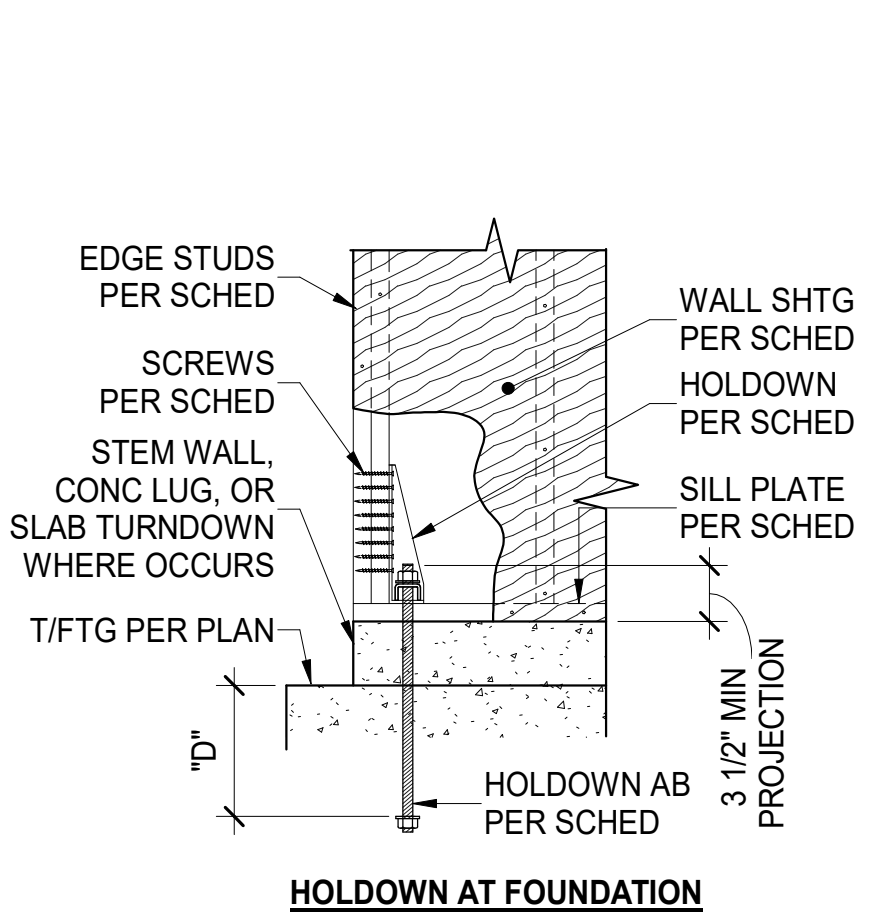
- NOTES:**
- FIELD NAILING (FN): 10d @ 12"oc.
 - ALL NAILS SHALL BE COMMON OR BOX WIRE NAILS.
 - MINIMUM DIMENSION OF ANY SHEATHING SHEET EQUALS 16" OR STUD SPACING, WHICHEVER IS GREATER.
 - ALL SHEAR WALL SHEATHING PANEL EDGES SHALL BE FULLY BLOCKED WITH FULL DEPTH 2x STUD BLOCKING-TYP-UNO.
 - SILL PLATES SHALL BE FASTENED WITH 5/8"dia x 7"LG EMBED ANCHOR BOLTS PER FASTENER SPACING "B" IN SCHEDULE ABOVE. ALTERNATIVELY, USE 5/8" x 8"LG SIMPSON TITEN HD SCREW ANCHORS. BOTH OPTIONS REQUIRE 3"x3"x0.229" PLATE WASHERS AT EACH AB.
 - SOLE PLATES SHALL BE FASTENED WITH 1/4"dia (#14) x 4 1/2"LG WOOD SCREWS PER SCREW FASTENERS SPACING "B" IN SCHEDULE ABOVE. PRE-DRILL HOLES FOR #14 WOOD SCREWS PER NDS 12.1.5.3 ALTERNATIVELY, CONTRACTOR MAY USE SIMPSON STRONG-TIE SDS25412 STRONG-DRIVE SCREWS AND DOUBLE THE SCREW SPACING PER THE SCHEDULE ABOVE. NO PRE-DRILLING REQUIRED FOR SDS SCREWS. REFER TO ARCH DRAWINGS/ SPECIFICATIONS FOR FIRE-RETARDANT AND PRESERVATIVE TREATMENT, IF REQUIRED.

A

S1.4

TYP SHEAR WALL SHEATHING AND FASTENER SCHEDULE - WOOD CONSTRUCTION

N.T.S.

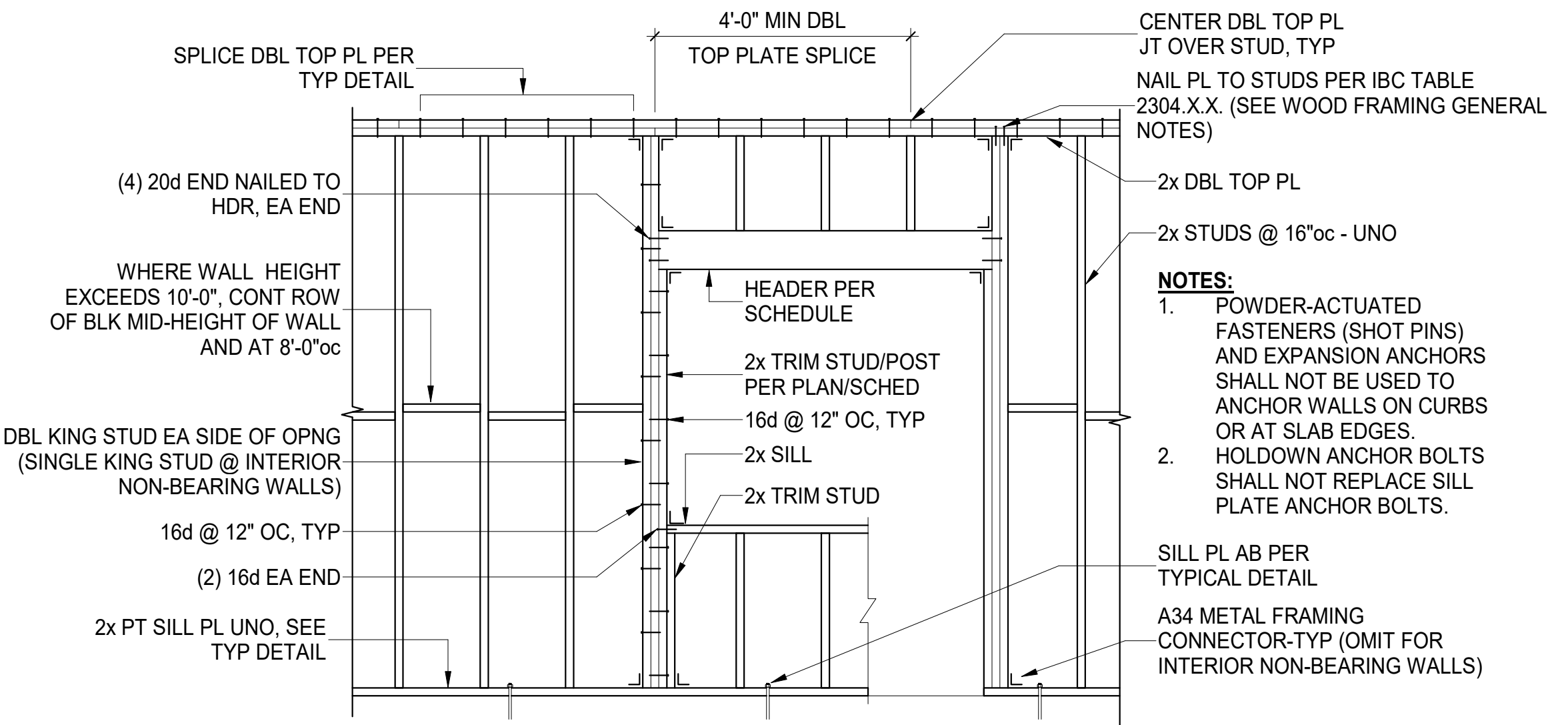


C

S1.4

TYP HOLDOWN SCHEDULE & DETAILS

N.T.S.



E

S1.4

TYP STRUCTURAL WALL PANEL FRAMING ELEVATION

N.T.S.

HOLDOWN SCHEDULE							
MARK	EDGE STUDS	SIMPSON HOLDOWN	SDS 1/4"x2.5" STUD SCWS	SIMPSON AB (CIP)	"D" (CIP)	HILTI AB (POST-INSTALLED)	"D" (POST-INSTALLED)
(A)	2 - 2x	HDU2-SDS2.5	6	SSTB16	12 5/8"	5/8" GR.36	8"
(B)	2 - 2x	HDU4-SDS2.5	10	SSTB20	16 5/8"	5/8" GR.36	10"
(C)	2 - 2x	HDU5-SDS2.5	14	SSTB24	20 5/8"	5/8" GR.36	12"
(D)	3 - 2x	HDU8-SDS2.5	20	SSTB28	24 7/8"	7/8" GR.36	14"
(E)	6x	HHDU11-SDS2.5	30	SSTB34	28 7/8"	1" GR.36	16"
(F)	6x	HHDU14-SDS2.5	36	SSTB36	28 7/8"	1" GR.36	16"

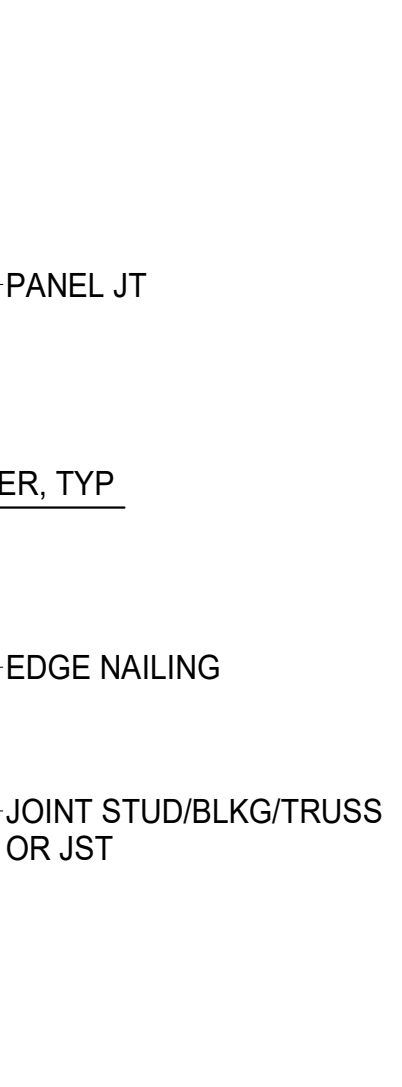
- NOTES:**
- HOLDOWN ANCHOR BOLTS SHALL BE HOT-DIPPED GALVANIZED (ASTM A153). CONTRACTOR MAY CHOOSE CAST-IN-PLACE OR POST-INSTALLED OPTION. ADHERE WITH HILTI HIT-HY 200 SAFE SET SYSTEM ADHESIVE FOR POST-INSTALLED OPTION. IF "N/A" IS SHOWN, POST-INSTALLED OPTION IS NOT ALLOWED.
 - THICKENED FOOTING WHERE REQUIRED TO ACHIEVE MINIMUM ANCHOR BOLT EMBEDMENT.
 - WHERE HOLDOWN OCCURS ADJACENT TO A POST ON THE PLAN, USE THE LARGER OF THE INDICATED POST OR THE SCHEDULE EDGE STUDS.

D

S1.4

TYPICAL SILL PLATE ANCHOR BOLT DETAIL

N.T.S.

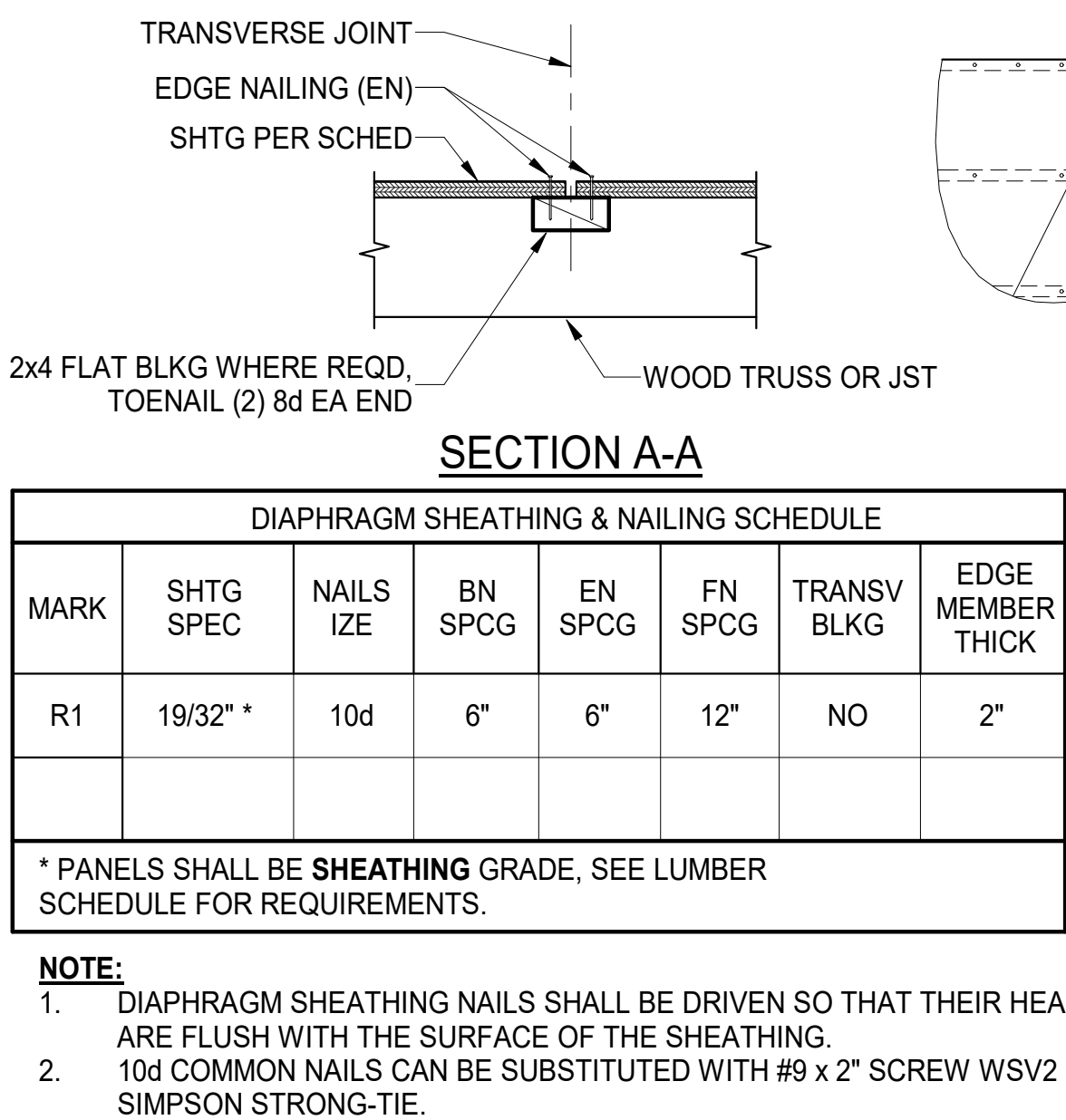


F

S1.4

TYP STAGGERED EDGE NAILING DETAIL

N.T.S.



DIAPHRAGM SHEATHING & NAILING SCHEDULE							
MARK	SHTG SPEC	NAILS IZE	BN SPCG	EN SPCG	FN SPCG	TRANSV BLKG	EDGE MEMBER THICK
R1	19/32" *	10d	6"	6"	12"	NO	2"

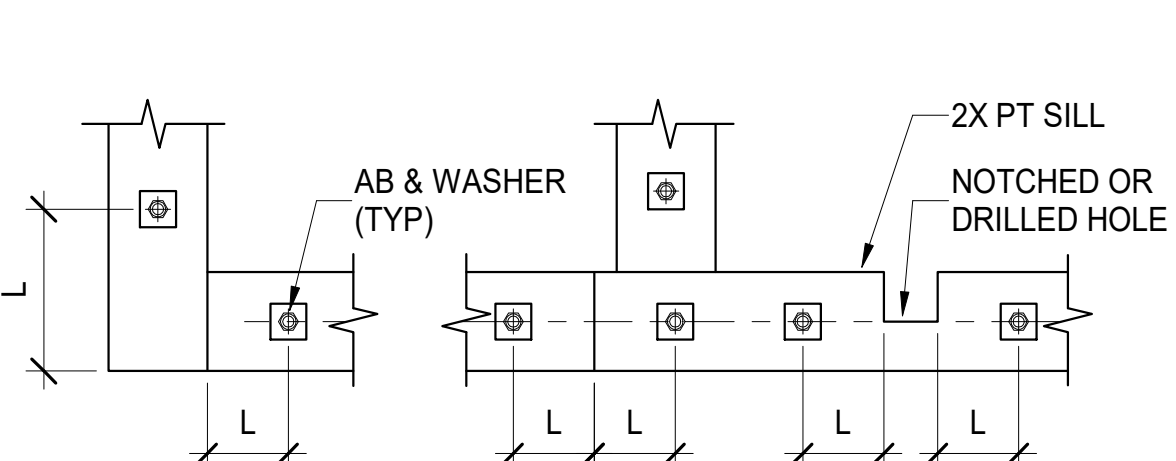
- * PANELS SHALL BE **SHEATHING** GRADE, SEE LUMBER SCHEDULE FOR REQUIREMENTS.
- NOTE:**
- DIAPHRAGM SHEATHING NAILS SHALL BE DRIVEN SO THAT THEIR HEADS ARE FLUSH WITH THE SURFACE OF THE SHEATHING.
 - 10d COMMON NAILS CAN BE SUBSTITUTED WITH #9 x 2" SCREW WSV2 BY SIMPSON STRONG-TIE.

B

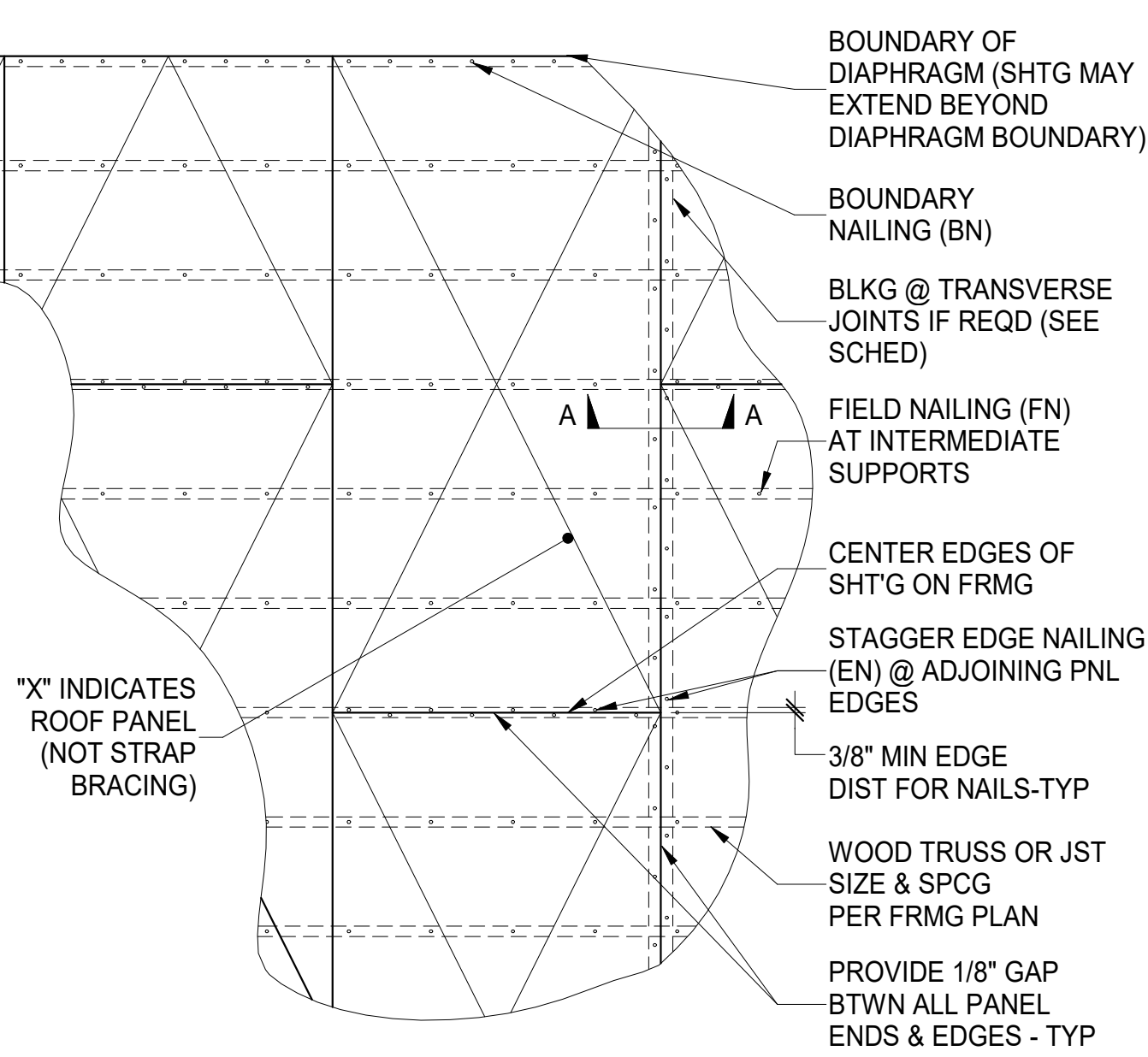
S1.4

TYP ROOF SHEATHING DETAIL - WOOD CONSTRUCTION

N.T.S.



- NOTES:**
- TYPICAL ANCHOR BOLT END DISTANCE L = 4 1/2" MIN, 12" MAX.
 - ANCHOR BOLTS SHALL BE INSTALLED AT 12" MAXIMUM FROM EACH END OF EACH SILL PLATE PIECE, AND SHALL BE SPACED AT 48" ON CENTER MAXIMUM. SEE TYPICAL SHEAR WALL DETAIL FOR ANCHOR BOLT SPACING AT SHEAR WALLS.
 - WHERE SILL PLATE IS NOTCHED, DRILLED OR CUT MORE THAN ONE THIRD OF ITS WIDTH, INSTALL ANCHOR BOLT EACH SIDE AS SHOWN. NOTCHES, CUTS AND HOLES SHALL BE TREATED WITH A PRESERVATIVE SOLUTION CONFORMING TO AWWA STANDARD M4.
 - ANCHOR BOLTS SHALL BE 5/8" DIAMETER FULLY THREADED WITH 3"x3" x 0.229" PLATE WASHERS, UNLESS OTHERWISE NOTED.
 - MINIMUM ANCHOR BOLT EMBEDMENT SHALL BE 7", MEASURED FROM TOP OF THE CONCRETE SLAB. FOR ANCHOR BOLTS EMBEDDED IN CONCRETE CURBS **NOT** POURED MONOLITHICALLY WITH THE FOUNDATION (NON-INTEGRAL CURBS), THE LENGTH OF ANCHOR BOLT IN CONCRETE CURBS SHALL NOT APPLY TO THIS MINIMUM EMBEDMENT.
 - ANCHOR BOLTS WITH DAMAGED THREADS SHALL NOT BE USED.
 - WHERE SILL PLATE ANCHORS MUST BE POST-INSTALLED, PROVIDE 3/4"dia x 8 1/2" SIMPSON TITEN HD STAINLESS STEEL SCREW ANCHORS (INTEGRAL CURBS ONLY, OR NO CURB), OR 5/8"dia x (8 1/2" + CURB HEIGHT) STAINLESS STEEL THREADED ROD ANCHORS INSTALL w/ HILTI HIT-HY 200 ADHESIVE OR EQUIVALENT. POST-INSTALLED ANCHORS SHALL NOT REPLACE HOLDOWN ANCHOR BOLTS UNLESS ALLOWED IN THE HOLDOWN SCHEDULE.



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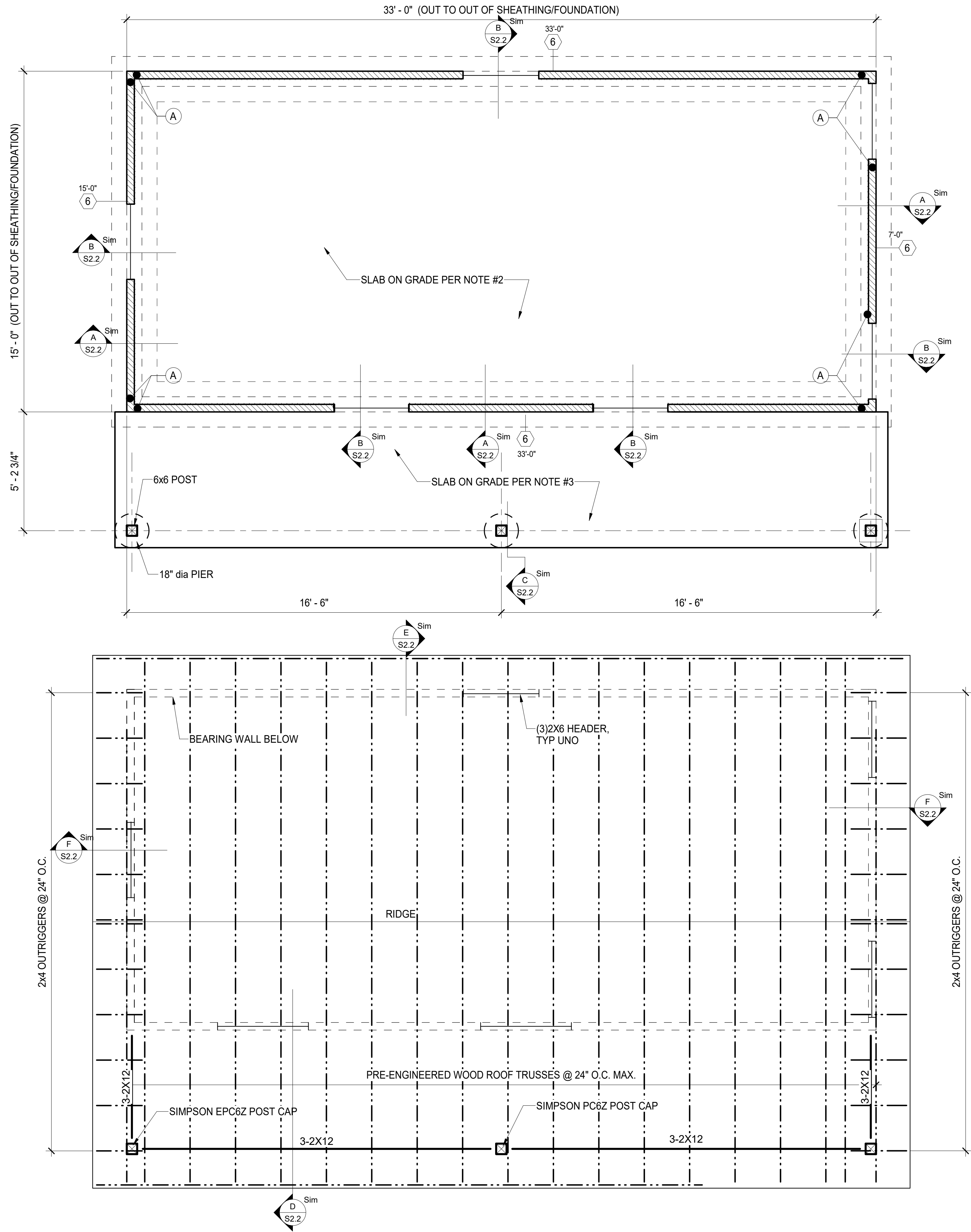
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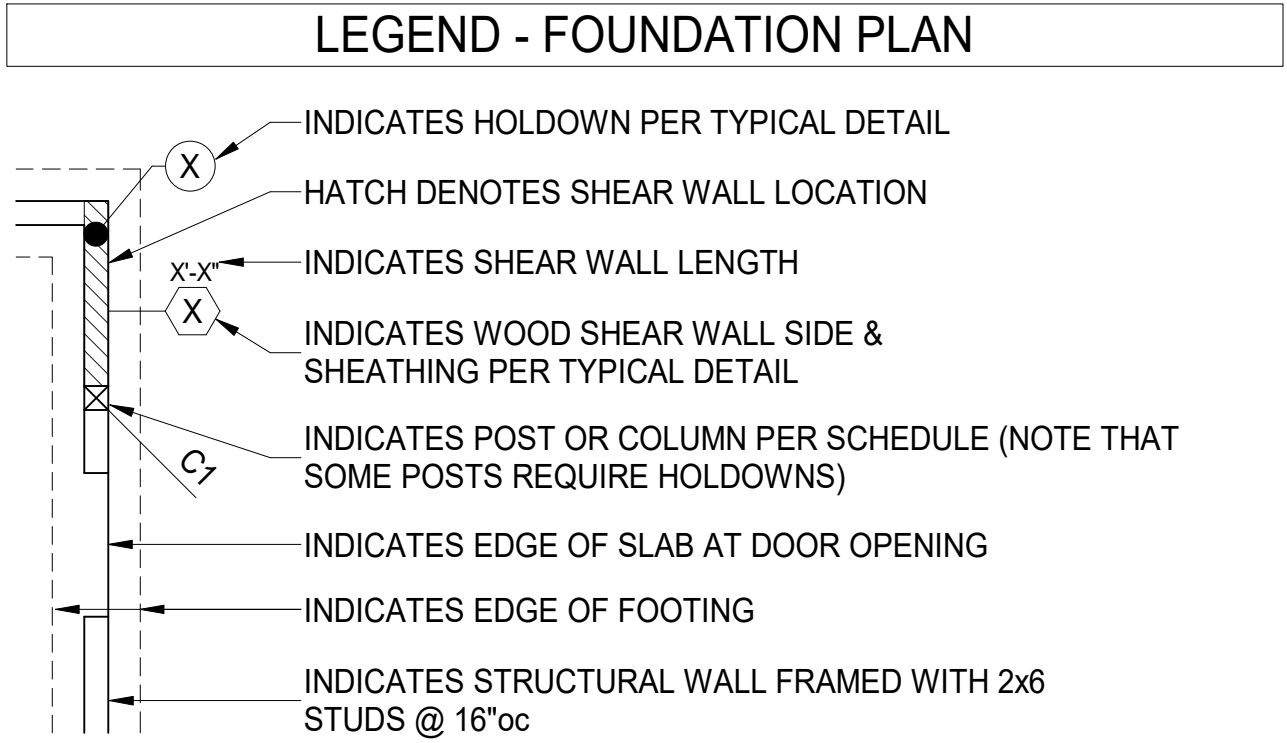
S1.4

49 OF 56 SHEETS
03/28/2025



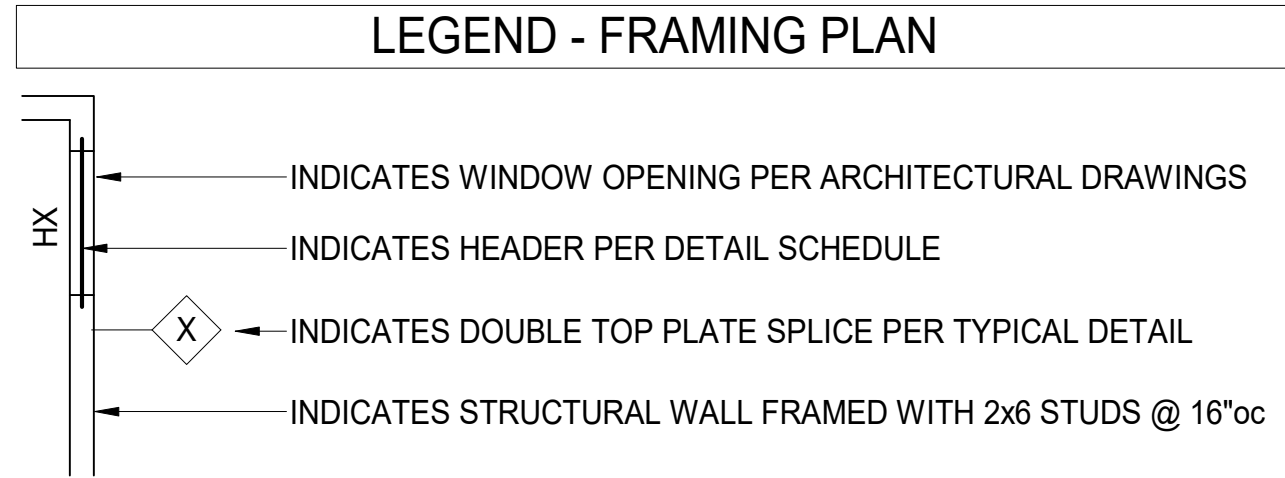
FOUNDATION PLAN

- PLAN NOTES** SCALE: 3/8" = 1'-0"
- SEE SHEETS S1.1 - S1.4 FOR GENERAL NOTES AND TYPICAL DETAILS.
 - 4" CONCRETE SLAB REINFORCED WITH ONE LAYER OF 6x6 - W1.4xW1.4 WWR ON 10 MIL. POLY VAPOR BARRIER OVER 6" MINIMUM COMPACTED FREE-DRAINING GRANULAR MATERIAL. REINFORCEMENT TO BE LOCATED IN THE MIDDLE OF THE SLAB.
 - 4" CONCRETE SLAB REINFORCED WITH ONE LAYER OF 6x6 - W1.4xW1.4 WWR OVER 6" MINIMUM COMPACTED FREE-DRAINING GRANULAR MATERIAL. REINFORCEMENT TO BE LOCATED IN THE MIDDLE OF THE SLAB.
 - SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS, SECTIONS, AND ELEVATIONS NOT SHOWN HEREON.
 - COORDINATE SIZE AND LOCATION OF ROUGH OPENINGS IN FLOOR OR WALLS WITH ARCHITECTURAL DRAWINGS.
 - FOOTING STEP LOCATIONS (IF SHOWN) ARE GIVEN AS APPROXIMATE. GENERAL CONTRACTOR TO COORDINATE FINAL FOOTING STEP LOCATIONS WITH THE CIVIL DRAWINGS.
 - ALL ELEVATIONS ARE REFERENCED FROM FINISHED MAIN FLOOR = 100'-0"
 - T/FTG = TOP OF FOOTING = PER SECTIONS
 - T/CONC = TOP OF CONCRETE = PER SECTIONS
 - ALL EXTERIOR WALL SHEATHING NOT SPECIFIED AS "SHEAR WALL SHEATHING" IS TO BE 1/2" OSB SHEATHING AND ATTACHED PER IBC TABLE 2304.9.1 UNLESS OTHERWISE INDICATED BY ARCHITECT.



ROOF FRAMING PLAN - WOOD

- PLAN NOTES** SCALE: 3/8" = 1'-0"
- SEE SHEETS S1.1 - S1.4 FOR GENERAL NOTES AND TYPICAL DETAILS.
 - ROOF CONSTRUCTION: 5/8" PLYWOOD ROOF SHEATHING, ATTACHED TO SUPPORTS PER LUMBER NOTES, SCHEDULE, AND DETAILS.
 - PROVIDE TRUSS BRIDGING AND SPACING PER TRUSS SUPPLIER.
 - TRUSS MANUFACTURER TO COORDINATE WITH CONTRACTORS TO DETERMINE RTU AND TRANSFORMER LAYOUTS, WEIGHTS, AND FOOTPRINTS. RTU AND EXHAUST HOOD LOADS ARE TO BE IN ADDITION TO OTHER DESIGN LOADS.
 - MAXIMUM TRUSS SPACING = 2'-0" UNO
 - SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS, SECTIONS, AND ELEVATIONS NOT SHOWN HEREON.
 - ALL ELEVATIONS ARE REFERENCED FROM FINISHED MAIN FLOOR = 100'-0"
 - TRUSS/BRG = TRUSS BEARING = 109'-1"



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SHEET TITLE:

FOUNDATION &
FRAMING PLAN

SHEET NUMBER:

S2.1

50 OF 56 SHEETS
03/28/2025



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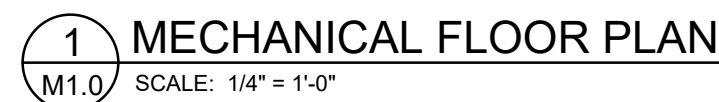
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8920 US-67N
ST. FRANCOIS COUNTY, MISSOURI

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CAD DWG FILE: COC-MO-16-23
DRAWN BY: ATP
CHECKED BY: MC
DESIGNED BY: ATP

MECHANICAL PLAN AND SCHEDULES

M1.0



KEYED NOTES

- ① FURNISH AND INSTALL FURNACE (F-1) AS SPECIFIED IN LOCATION SHOWN. SEE FURNACE SCHEDULE FOR MORE INFORMATION.
- ② FURNISH AND INSTALL SEVEN-24 PROGRAMMABLE THERMOSTAT AND RELATED WIRING TO CONTROL FURNACE. THERMOSTAT TO BE HONEYWELL MODEL T87220. MOUNT AT 48" AFF. VERIFY LOCATION OF THERMOSTAT WITH ELEVATION ON ARCHITECTURAL DRAWINGS. VERIFY PROPER OPERATION IN FIELD.
- ③ INSTALL INDOOR TEMPERATURE SENSOR FOR THERMOSTAT IN LOCATION INDICATED ON PLANS.
- ④ NEW WALL-MOUNTED EXHAUST FAN (EF-1,2,3,4) WITH INTEGRAL LOUVERED EXTERIOR WALL CAP/GRILLE AS SCHEDULED AND SPECIFIED TO SERVE RESTROOMS. FAN SHALL BE WIRED AND OPERATED THROUGH THE LIGHT SWITCH. COORDINATE WITH ELECTRICAL CONTRACTOR. SEE EXHAUST FAN SCHEDULE FOR MORE INFORMATION.
- ⑤ UNDERCUT MECHANICAL ROOM DOOR MINIMUM 1/4" FOR RETURN AIR TO FURNACE.

GRILLE & DIFFUSER SCHEDULE						
MARK	MFR	MODEL	TYPE	FACE SIZE	MATL	REMARKS
S1	TITUS	OMNI	SUPPLY	12"x12"	STL	CEILING 1,2,3
1. FRAME AND FACE BLADES SHALL HAVE BAKED ENAMEL OFF-WHITE FINISH. 2. COORDINATE EXACT FRAME MOUNTING TYPE WITH ARCHITECTURAL CEILING PLAN. 3. AIR DEVICE RUN-OUT SHALL BE SAME SIZE AS DIFFUSER NECK. FLEX DUCT MAXIMUM LENGTH 5'-0".						
NOTE: MANUFACTURER LISTED FOR EXAMPLE PURPOSES ONLY, SEE MECHANICAL SPECIFICATIONS SECTION 233713 FOR FULL LIST OF APPROVED MANUFACTURERS.						

EXHAUST FAN SCHEDULE								
MARK	MANUFACTURER	MODEL NO.	HP	RPM	CFM	WEIGHTS	VOLTS/PH	REMARKS
EF-1	BROAN	512M	0.7 A	1550	75	3	120/1	1,2
EF-2	BROAN	512M	0.7 A	1550	75	3	120/1	1,2
EF-3	BROAN	509	1.8 A	1550	150	3	120/1	1,2
EF-4	BROAN	512M	0.7 A	1550	75	3	120/1	1,2
1. VERIFY ELECTRICAL VOLTAGE AND PHASE WITH ELECTRICAL CONTRACTOR PRIOR TO ORDERING UNIT.								
2. FAN TO BE CONTROLLED BY LIGHT SWITCH.								
NOTE: MANUFACTURER LISTED FOR EXAMPLE PURPOSES ONLY. SEE MECHANICAL SPECIFICATIONS SECTION 233423 FOR FULL LIST OF APPROVED MANUFACTURERS.								

MARK	MFG.	MODEL NO.	CFM	HEATING KW	VOLTS/ PHASE	MCA/MOCP	REMARKS
F-1	GOODMAN	MBVC1201AA-1	400	10.0	240/1	5/15	1,2,3,4
1. PROVIDE UNIT WITH 7-DAY PROGRAMMABLE THERMOSTAT. 2. VERIFY ELECTRICAL VOLTAGE WITH ELECTRICAL CONTRACTOR PRIOR TO ORDERING. 3. PROVIDE WITH ELECTRIC HEAT KIT, INSTALL IN FIELD. 4. PROVIDE WITH SUMMER FAN SWITCH.							
NOTE: MANUFACTURER LISTED FOR APPROVED PURPOSES ONLY. SEE MECHANICAL SPECIFICATIONS SECTION 235400 FOR FULL LIST OF APPROVED MANUFACTURERS.							



PLUMBING GENERAL NOTES

1. PLUMBING CONTRACTOR SHALL ABIDE BY THE LOCAL CODES AND ORDINANCES.
2. PLUMBING CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATIONS AND SIZES OF ALL UTILITIES, INCLUDING THE DEPTHS OF ALL BELOW GRADE SANITARY SEWERS, PRIOR TO START OF WORK. THIS DRAWING IS NOT INTENDED TO INDICATE ALL EXISTING UTILITIES.
3. CONTRACTOR SHALL BE FAMILIAR WITH LANDLORD'S STANDARDS, RULES AND REGULATIONS. ALL LANDLORD'S CRITERIA SHALL BE COMPILED WITH AND INCLUDED IN THIS BID.
4. CONTRACTOR SHALL VISIT SITE PRIOR TO SUBMITTING BID AND FIELD VERIFY EXISTING CONDITIONS TO ENSURE THAT THE WORK REPRESENTED ON THE DRAWINGS AND IN THESE SPECIFICATIONS CAN BE INSTALLED AS INDICATED. CONTRACTOR SHALL TAKE ALL INTERFERENCES INTO CONSIDERATION. PROVIDE ALL NECESSARY OFFSETS TO SUIT FIELD CONDITIONS AS REQUIRED.
5. CONTRACTOR SHALL VERIFY AND COORDINATE ALL UTILITY CONNECTION POINTS, INCLUDING SIZES AND INVERTS WITH EXISTING FIELD CONDITIONS PRIOR TO START OF WORK.
6. MAKE ALL UTILITY CONNECTIONS AND INSTALLATIONS IN FULL ACCORDANCE WITH ALL UTILITY REGULATIONS. PROVIDE ALL ADDITIONAL APPURTENANCES AS REQUIRED BY UTILITY COMPANY. THE COMPLETED INSTALLATION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE INDUSTRY STANDARDS OF GOOD PRACTICE AND SAFETY, AND THE MANUFACTURER'S STRICTEST RECOMMENDATIONS FOR EQUIPMENT AND PRODUCT APPLICATION AND INSTALLATION.
7. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS RELATED TO THE INSTALLATION OF THE WORK.
8. ALL WORK SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES, LAWS, ACTS AND ALL AUTHORITIES HAVING JURISDICTION AND LANDLORD'S CRITERIA.
9. MAINTAIN ALL MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES FOR ALL FIXTURES AND EQUIPMENT. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF PLUMBING FIXTURES.
10. CUTTING OF ROOF AND FLASHING OF PIPE CURBS, SANITARY VENT THROUGH ROOF, ETC. SHALL BE COORDINATED WITH AND PERFORMED BY LANDLORD'S ROOFING CONTRACTOR, AT THIS CONTRACTOR'S EXPENSE, TO MAINTAIN ROOF WARRANTY. ALL VENT OUTLETS SHALL BE A MINIMUM OF 10'-0" AWAY FROM OR 3'-0" ABOVE ANY AIR INTAKES ON HVAC EQUIPMENT.
11. CONTRACTOR SHALL COORDINATE TIMES TO WORK IN SPECIFIC AREA OF THE EXISTING BUILDING WITH THE BUILDING MANAGER AND WITH THE OCCUPANTS OF THE AREA AFFECTED BY THE WORK.
12. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES WITH THE CONTRACT DOCUMENTS BEFORE COMMENCING ANY WORK.
13. SLEEVE AND SEAL ALL PIPE PENETRATIONS O WALLS AND FLOORS. APPLY INTUMESCENT FIRE SAFING COMPOUND AT PENETRATIONS AT FIRE RATED WALLS AND FLOORS, MAINTAINING INTEGRITY AND RATING OF FIRE SEPARATION. SLEEVES THROUGH FLOORS SHALL EXTEND 2" ABOVE FLOOR, BE GROUTED INTO PLACE AND WATERPROOFED. PIPING THROUGH EXTERIOR WALLS SHALL BE SLEEVED AND SEALED WEATHER TIGHT WITH SILICONE CAULK.
14. ALL DOMESTIC COLD, HOT AND TEMPERED WATER PIPING TO BE INSULATED WITH RIGID FIBERGLASS INSULATION WITH TYPE "ASJ" JACKET. COLD WATER PIPES TO HAVE 3/8" THICK INSULATION. DOMESTIC HOT AND TEMPERED WATER PIPES TO HAVE 1" THICK INSULATION.
15. THE P.C. IS TO INSPECT THE EXISTING SANITARY DRAIN TO VERIFY THAT IT HAS SUFFICIENT DEPTH FOR THE NEW WORK AND TO VERIFY THE DIRECTION OF FLOW. PRESSURE TEST THE EXISTING SANITARY DRAIN PRIOR TO THE START OF WORK. VERIFY THAT SEWER IS ACTIVE BY FLUSHING WITH WATER, A MINIMUM OF FIVE GALLONS PER MINUTE FOR FOUR HOURS PRIOR TO START OF WORK.

SANITARY SEWER CONDITIONS NOTE:

SANITARY SEWER PIPING SHOWN ON DRAWINGS IS DIAGRAMMATIC AND MAY DIFFER SLIGHTLY FROM ACTUAL FIELD CONDITIONS. PLUMBING CONTRACTOR (PC) SHALL COORDINATE WITH EXISTING FIELD CONDITIONS VIA A SANITARY VIDEO SURVEY/SCOPE TO DETERMINE THE EXACT SIZE, LOCATION, INVERT ELEVATIONS AT THE PROPOSED CONNECTIONS TO EXISTING PLUMBING SERVICES PRIOR TO BID/CONSTRUCTION. IF ACTUAL FIELD FINDINGS VARY SIGNIFICANTLY FROM THOSE AS INDICATED ON PLANS, PC SHALL NOTIFY GENERAL CONTRACTOR (GC) IMMEDIATELY PRIOR TO STARTING ANY WORK. THE OWNER SHALL NOT BE RESPONSIBLE FOR ADDITIONAL COSTS INCURRED BY FAILED COORDINATION AFTER CONSTRUCTION HAS BEGUN. PC SHALL BE RESPONSIBLE FOR UTILIZING A REPUTABLE UTILITY LOCATING SERVICE PRIOR TO ANY EXCAVATION.

TABLE TO CALCULATE DRAINAGE FIXTURE UNITS

PLUMBING FIXTURE	DRAINAGE FIXTURE UNITS	NUMBER OF FIXTURES	TOTAL DRAINAGE FIXTURE UNITS
WATER CLOSET	3	3	9
LAVATORY	1	3	3
FLOOR DRAIN	2	3	6
TOTAL DRAINAGE UNITS			18.0
TOTAL DRAINAGE UNITS FOR ALL FIXTURES			4"

PLUMBING KEYED NOTES

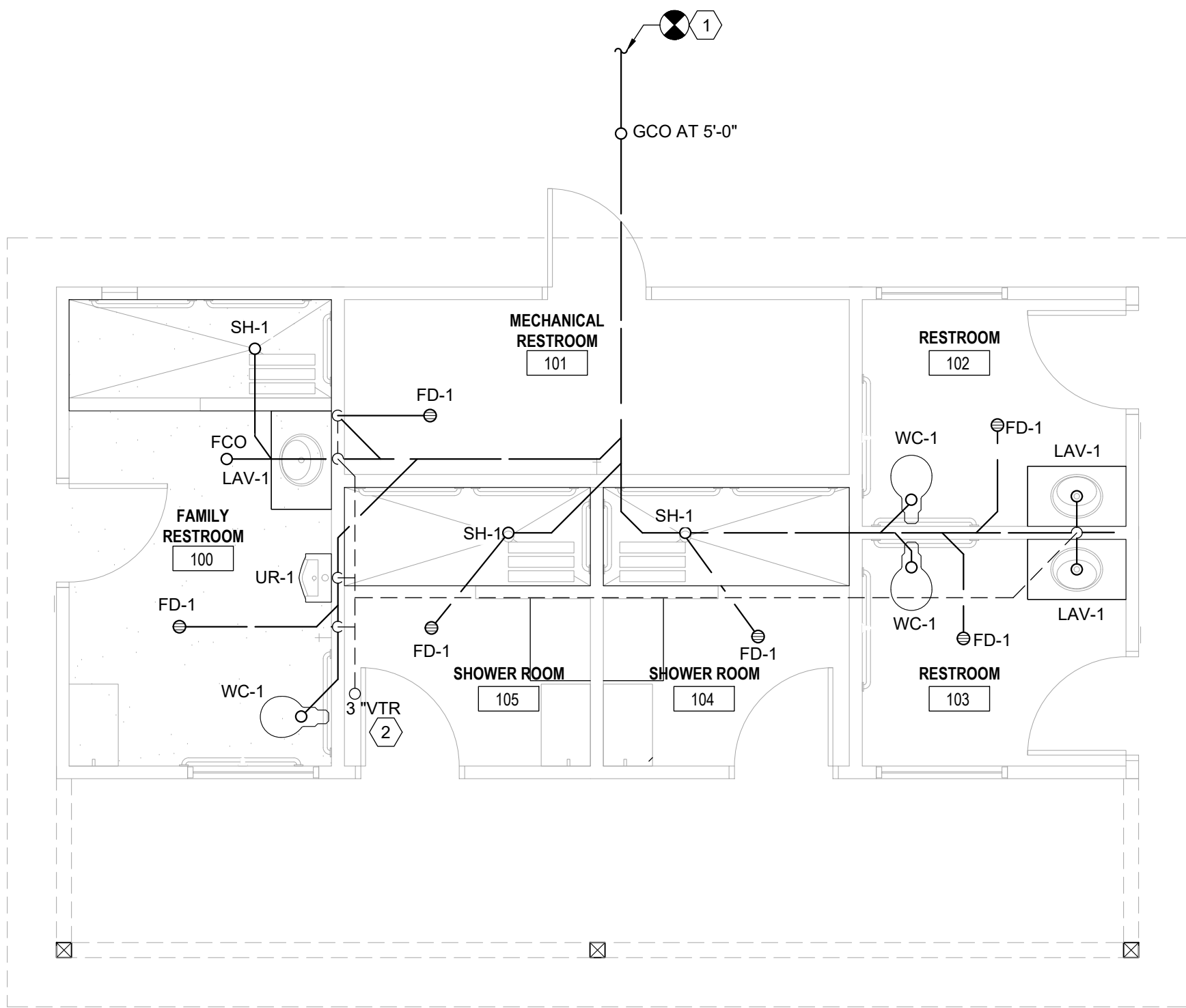
- 1 ROUTE NEW SANITARY WASTE PIPING TO CONNECT TO EXISTING WASTE PIPING, SEE SHEET C-108 FOR CONTINUATION.
- 2 ROUTE TO CONNECT TO EXISTING SANITARY VENT PIPING THROUGH ROOF, MAINTAIN MINIMUM 10'-0 OFFSET FROM OUTSIDE AIR INTAKES.

PLUMBING FIXTURE SCHEDULE

MARK	FIXTURE	SA N.	VENT	C.W.	H.W.	REMARKS
LAV-1	UNDER MOUNT SINGLE OVAL BOWL SINK STAINLESS STEEL ADA COMPLIANT 19"L X 16" W (OR EQUIVALENT)	2"	2"	1/2"	3/4"	MODEL K-2609-MU REQUIRED ACCESSORIES K-7114-A WITH GRID STRAINERS
UR-1	URINAL - TOTO - UT447E MOUNTED AT 17" AFF MAX. ADA COMPLIANT ELONGATED RIM WITH FLOOR PEDESTAL CARRIER (OR EQUIVALENT)	2"	2"	1/2"	-	TOTO - UT447E COMPACT URINAL WITH CONCEALED INTEGRAL TRAP WASHOUT FLUSH ACTION WITH 3/4" TOP OR BACK SPUD INLET 0.5 GPF WITH ANY FLUSH VALVE SHOWN BELOW
WC-1	WALL MOUNTED KOHLER K-4325-0 WATER CLOSET -ADA (OR EQUIVALENT)	4"	2"	1 1/2"	-	KOHLER K-4325-0 KINGSTON TOILET BOWL IS PRECISION-ENGINEERED TO DELIVER SUPERIOR PERFORMANCE AT EITHER 1.28 GPF OR 1.6GPF. DEPENDING ON FLUSHOMETER.
FD-1	FLOOR DRAIN - JR SMITH 2010-A (OR EQUIVALENT)	3"	2"	-	-	CAST IRON BODY - PROVIDE WITH VANDAL RESISTANT SCREWS MEDIUM DUTY STAINLESS STEEL GRATE
SH-1	KOHLER PURIST 1.5 GPM MULTI FUNCTION HAND SHOWER PACKAGE - INCLUDES SLIDE BAR AND HOSE (OR EQUIVALENT)	2"	2"	1/2"	3/4"	THE HIGHCLIFF ULTRA TOP SPUD IS LISTED FROM 1.0 TO 1.6 GPF AND PERFORMS WELL AT EVERY FLUSH INTERVAL, MAKING IT UNIQUELY EFFECTIVE WITH DUAL FLUSH VALVES.
HB-1	HOSE BIB INTERIOR WITH CHECK VALVE (OR EQUIVALENT)	2"	2"	1/2"	-	WOODFORD - MODEL 26
HB-2	ZURN HOSE BIB INTERIOR WITH CHECK VALVE (OR EQUIVALENT)	2"	2"	1/2"	-	ZURN - Z1321-CL - HYDRANT FURNISHED WITH TYPE 304 STAINLESS STEEL FACEPLATE AND INCLUDES OPERATING KEY.
RPZBFP	REDUCED PRESSURE ZONE ASSEMBLY WATTS LF-919-QT OR EQUAL (OR EQUIVALENT)	1"	-	-	-	LEAD FREE CAST COPPER WITH QUARTER TURN CONTROLS

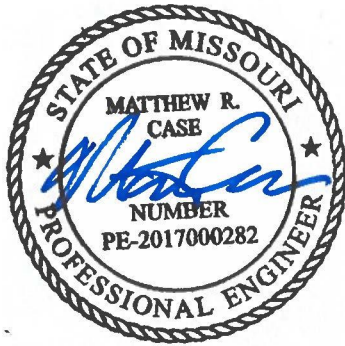
PLUMBING FIXTURE NOTE:

PLUMBING FIXTURE SCHEDULE MANUFACTURER AND CATALOG NUMBERS ARE SHOWN AS A DESIGN BASIS ONLY. REFER TO SPECIFICATION SECTION 220140. OTHER MANUFACTURERS MAY BE APPROVED AFTER SUBMITTAL OF A WRITTEN REQUEST.



1 DWV PLAN
SCALE : 1/4" = 1'-0"

STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR



03/28/25

CASE
Engineering Inc.

T 636.349.1600
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796 Merus Court
St. Louis, MO 63026
CERTIFICATE OF AUTHORITY NO. 001498

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF
NATURAL RESOURCES
MISSOURI STATE PARKS

NEW 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N

ST.FRANCOIS COUNTY, MISSOURI

PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____

ISSUE DATE: 03/28/2025

CAD DWG FILE: COC-MO-16-23
DRAWN BY: DMM
CHECKED BY: NH
DESIGNED BY: DMM

SHEET TITLE:

PLUMBING DWV
PLAN

SHEET NUMBER:

P1.0

53 OF 56 SHEETS
03/28/2025

PLUMBING GENERAL NOTES

1. PLUMBING CONTRACTOR SHALL ABIDE BY THE LOCAL CODES AND ORDINANCES.
2. PLUMBING CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATIONS AND SIZES OF ALL UTILITIES, INCLUDING THE DEPTHS OF ALL BELOW GRADE SANITARY SEWERS, PRIOR TO START OF WORK. THIS DRAWING IS NOT INTENDED TO INDICATE ALL EXISTING UTILITIES.
3. CONTRACTOR SHALL BE FAMILIAR WITH LANDLORD'S STANDARDS, RULES AND REGULATIONS. ALL LANDLORD'S CRITERIA SHALL BE COMPILED WITH AND INCLUDED IN THIS BID.
4. CONTRACTOR SHALL VISIT SITE PRIOR TO SUBMITTING BID AND FIELD VERIFY EXISTING CONDITIONS TO ENSURE THAT THE WORK REPRESENTED ON THE DRAWINGS AND IN THESE SPECIFICATIONS CAN BE INSTALLED AS INDICATED. CONTRACTOR SHALL TAKE ALL INTERFERENCES INTO CONSIDERATION. PROVIDE ALL NECESSARY OFFSETS TO SUIT FIELD CONDITIONS AS REQUIRED.
5. CONTRACTOR SHALL VERIFY AND COORDINATE ALL UTILITY CONNECTION POINTS, INCLUDING SIZES AND INVERTS WITH EXISTING FIELD CONDITIONS PRIOR TO START OF WORK.
6. MAKE ALL UTILITY CONNECTIONS AND INSTALLATIONS IN FULL ACCORDANCE WITH ALL UTILITY REGULATIONS. PROVIDE ALL ADDITIONAL APPURTENANCES AS REQUIRED BY UTILITY COMPANY. THE COMPLETED INSTALLATION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE INDUSTRY STANDARDS OF GOOD PRACTICE AND SAFETY, AND THE MANUFACTURER'S STRICTEST RECOMMENDATIONS FOR EQUIPMENT AND PRODUCT APPLICATION AND INSTALLATION.
7. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS RELATED TO THE INSTALLATION OF THE WORK.
8. ALL WORK SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES, LAWS, ACTS AND ALL AUTHORITIES HAVING JURISDICTION AND LANDLORD'S CRITERIA.
9. MAINTAIN ALL MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES FOR ALL FIXTURES AND EQUIPMENT. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF PLUMBING FIXTURES.
10. CUTTING OF ROOF AND FLASHING OF PIPE CURBS, SANITARY VENT THROUGH ROOF, ETC. SHALL BE COORDINATED WITH AND PERFORMED BY LANDLORD'S ROOFING CONTRACTOR. AT THIS CONTRACTOR'S EXPENSE TO MAINTAIN ROOF WARRANTY. ALL VENT OUTLETS SHALL BE A MINIMUM OF 10'-0" AWAY FROM OR 3'-0" ABOVE ANY AIR INTAKES ON HVAC EQUIPMENT.
11. CONTRACTOR SHALL COORDINATE TIMES TO WORK IN SPECIFIC AREA OF THE EXISTING BUILDING WITH THE BUILDING MANAGER AND WITH THE OCCUPANTS OF THE AREA AFFECTED BY THE WORK.
12. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES WITH THE CONTRACT DOCUMENTS BEFORE COMMENCING ANY WORK.
13. SLEEVE AND SEAL ALL PIPE PENETRATIONS O WALLS AND FLOORS. APPLY INTUMESCENT FIRE SAFING COMPOUND AT PENETRATIONS AT FIRE RATED WALLS AND FLOORS. MAINTAINING INTEGRITY AND RATING OF FIRE SEPARATION. SLEEVES THROUGH FLOORS SHALL EXTEND 2" ABOVE FLOOR, BE GROUTED INTO PLACE AND WATERPROOFED. PIPING THROUGH EXTERIOR WALLS SHALL BE SLEEVED AND SEALED WEATHER TIGHT WITH SILICONE CAULK.
14. ALL DOMESTIC COLD, HOT AND TEMPERED WATER PIPING TO BE INSULATED WITH RIGID FIBERGLASS INSULATION WITH TYPE "ASJ" JACKET. COLD WATER PIPES TO HAVE 3/4" THICK INSULATION. DOMESTIC HOT AND TEMPERED WATER PIPES TO HAVE 1" THICK INSULATION.
15. THE P.C. IS TO INSPECT THE EXISTING SANITARY DRAIN TO VERIFY THAT IT HAS SUFFICIENT DEPTH FOR THE NEW WORK AND TO VERIFY THE DIRECTION OF FLOW. PRESSURE TEST THE EXISTING SANITARY DRAIN PRIOR TO THE START OF WORK. VERIFY THAT SEWER IS ACTIVE BY FLUSHING WITH WATER, A MINIMUM OF FIVE GALLONS PER MINUTE FOR FOUR HOURS PRIOR TO START OF WORK.

WATER SERVICE CONDITIONS NOTE:

WATER PRESSURE IS SHOWN AS DIAGRAMMATIC ONLY. CONTRACTOR SHALL VERIFY EXISTING WATER PRESSURE IN FIELD PRIOR TO ANY WORK AND PIPING ROUGH IN. IF DISCOVERED ON SITE THAT EXISTING WATER PRESSURE IS LESS THAN 68 PSI, CONTACT ENGINEER IMMEDIATELY FOR PIPING DESIGN CHANGES. IF PRESSURE IS GREATER THAN 80 PSI PROVIDE PRESSURE REDUCING VALVE AND REDUCE DOWN TO 77 PSI.

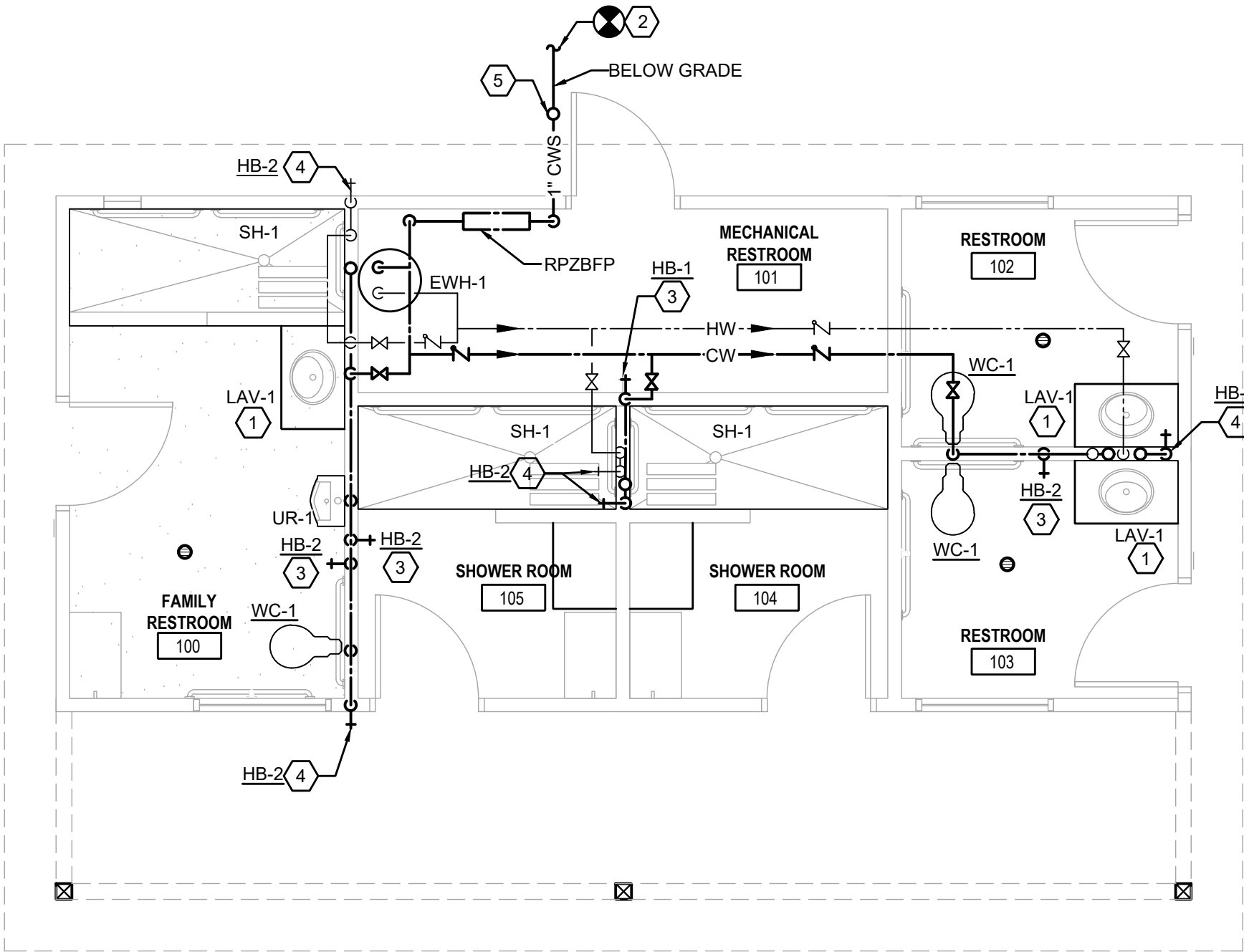
PRIOR TO WORK VERIFY INCOMING WATER QUALITY TO SPACE. WHEN INCOMING WATER IS ABOVE 3.5 GRAINS PER GALLON (60 PARTS PER MILLION) SCALE BUILD-UP WILL FORM INSIDE THE PLUMBING SYSTEM CAUSING DAMAGE TO SYSTEM COMPONENTS AND COPPER PIPE. TO AVOID DAMAGE DUE TO SCALE BUILD-UP, EITHER A WATER SOFTENER OR ANTI-SCALE DEVICE SHOULD BE INSTALLED AT POINT-OF-ENTRY. APPLICATIONS WHERE THERE IS A CONCERN FOR WATER SPOTS ON GLASS SHOWER DOORS, GLASS DISHES, VEHICLES IN CARWASHES, ETC., AND/OR THE EFFECTS OF HARD WATER ON HUMAN SKIN, A WATER SOFTENER SHOULD BE USED INSTEAD OF AN ANTI-SCALE DEVICE. ANTI-SCALE DEVICES REDUCE THE FORMATION OF SCALE IN A PLUMBING SYSTEM BUT DO NOT REMOVE THE CALCIUM AND MAGNESIUM FROM THE WATER, WHICH WILL REMAIN ONCE THE WATER HAS EVAPORATE LEAVING WATER SPOTS AND/OR DRYING OUT HUMAN SKIN. WATER SOFTENERS REMOVE CALCIUM AND MAGNESIUM FROM THE WATER BUT REQUIRE ROUTINE REFILLING OF SALT LEVELS IN THE BRINE TANK.

TABLE TO CALCULATE HOT WATER GPH			
PLUMBING FIXTURE	WATER GALLONS PER HOUR	NO. OF FIXTURES	TOTAL HOT WATER GPH
SINKS / LAVATORIES	5	3	15
SHOWER	30	3	90
TOTAL HOT WATER GALLONS PER HOUR FOR ALL FIXTURES:			105 GPH
50	GALLONS USABLE STORAGE (75% TOTAL STORAGE)		38 GALLONS
TOTAL HOT WATER GALLONS PER HOUR NEEDED FOR RECOVERY:			67.5 GPH
TEMPERATURE RISE (°F)			100 °F
<u>GPH RECOVERY x 8.33 x TEMP. RISE</u> THERMAL EFFICIENCY		X (DEMAND FACTOR %)	TOTAL BTU NEEDED FOR RECOVERY
58,570 BTU		0.75	43,928 BTU
BTU -> KW CONVERSION		3,413 BTU / KW	12.9 KW

TABLE TO CALCULATE SUPPLY FIXTURE UNITS			
PLUMBING FIXTURE	SUPPLY FIXTURE UNITS	NUMBER OF FIXTURES	TOTAL SUPPLY FIXTURE UNITS
WATER CLOSET FLUSH VALVE	2.5	3	7.5
LAVATORIES	1.0	3	3.0
SINKS	1.0	1	1.0
URINAL	0.0	1	.0
HOSE BIB	2.5	2	5.0
		TOTAL SUPPLY FIXTURE UNITS	16.50
WATER PIPE SIZE = 1"			

WATER HEATER SCHEDULE								
MARK	MFR	MODEL	STORAGE	RECOVERY	F. RISE	VOLT/PHASE	HEAT INPUT	REMARKS
EWH-1	AO SMITH (OR EQUIVALENT)	DRE-62-13.5	50	55	100	240/1	13.5 KW	1,2,3
1: SET WATER HEATER TEMPERATURE TO 110°F. 2: CONSULT MANUFACTURER PRIOR TO PURCHASE FOR EXACT MODEL AND ALL ACCESSORIES FOR A COMPLETE SYSTEM. 3: CONFIRM VOLTAGE WITH ELECTRICAL CONTRACTOR PRIOR TO PURCHASE AND ROUGH IN.								

PLUMBING FIXTURE NOTE:
PLUMBING FIXTURE SCHEDULE MANUFACTURER AND CATALOG NUMBERS ARE SHOWN AS A DESIGN BASIS ONLY. REFER TO SPECIFICATION SECTION 223300. OTHER MANUFACTURERS MAY BE APPROVED AFTER SUBMITTAL OF A WRITTEN REQUEST.

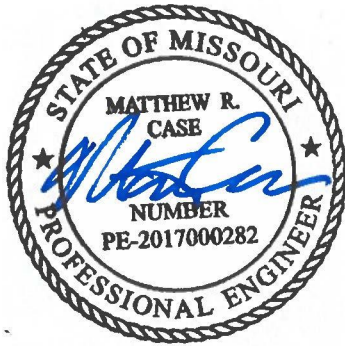


1 SUPPLY PLAN

PLUMBING KEYED NOTES

- 1 INSTALL THERMOSTATIC MIXING VALVE (TMV-1) ON THIS PLUMBING FIXTURE. SEE PLUMBING FIXTURE SCHEDULE.
- 2 ROUTE TO CONNECT TO NEW WATER SUPPLY FOR SPACE BELOW GRADE. GC TO VERIFY SIZE AND UPSIZE AS REQUIRED. VERIFY EXACT LOCATION, DELIVERY PRESSURE, AND SIZE IN FIELD PRIOR TO ANY WORK AND WITH CIVIL DRAWINGS. WATER PIPING SIZE BASED ON 60 PSI INCOMING STATIC WATER PRESSURE. PROVIDE PRESSURE REDUCING VALVE IF PRESSURE IS OVER 80 PSI. CONTACT ENGINEER IMMEDIATELY IF LOW PRESSURE (BELOW 60 PSI) OR DISCREPANCIES ARE FOUND FOR PIPING CHANGES.
- 3 1/2" CW HOSE BID.
- 4 HOSE BID AT LOW POINT IN PIPING FOR FREEZE PROTECTION AND WINTER DRAIN DOWN.
- 5 VALVE BOX AT GRADE.

STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR



03/28/25

CASE
Engineering Inc.

796 Merus Court
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CERTIFICATE OF AUTHORITY NO. 001498

OFFICE OF ADMINISTRATION
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DEPARTMENT OF
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MISSOURI STATE PARKS

NEW 63 SITE
LOOP CAMPGROUND

ST. FRANCOIS STATE PARK
8920 US-67N

ST.FRANCOIS COUNTY, MISSOURI

PROJECT # X2317-01
SITE # 5216
ASSET # 7815216025

REVISION: _____
DATE: _____
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ISSUE DATE: 03/28/2025

CAD DWG FILE: COC-MO-16-23
DRAWN BY: DMM
CHECKED BY: NH
DESIGNED BY: DMM

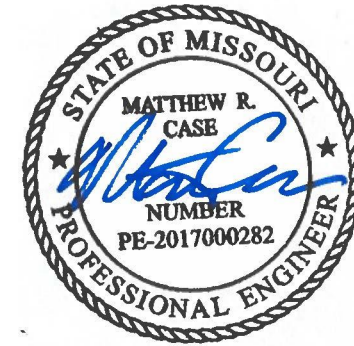
SHEET TITLE:

PLUMBING SUPPLY
PLAN

SHEET NUMBER:

P2.0

54 OF 56 SHEETS
03/28/2025



03/28/25

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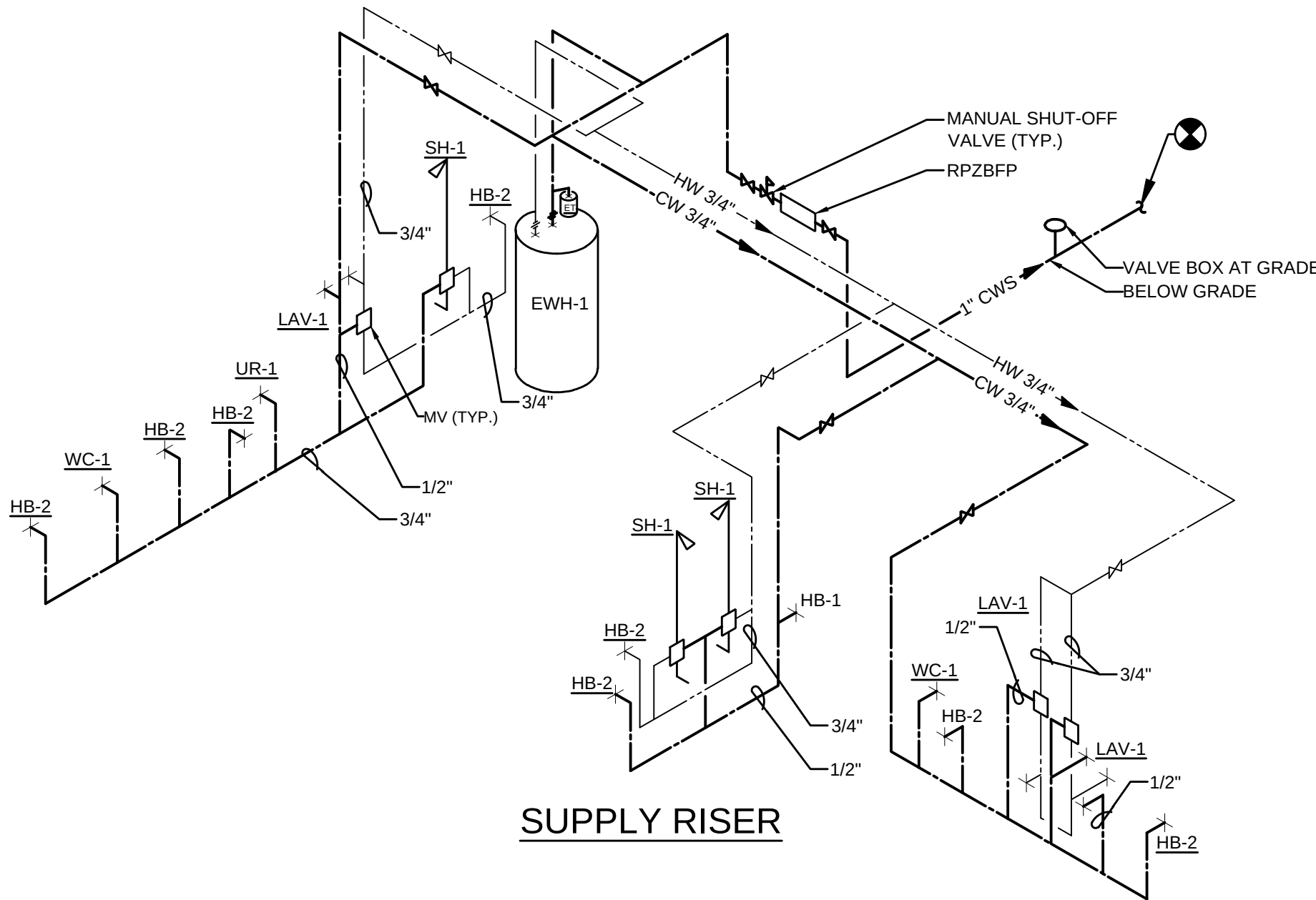
CAD DWG FILE: COC-MO-16-23
DRAWN BY: DMM
CHECKED BY: NH
DESIGNED BY: DMM

SHEET TITLE:
PLUMBING RISERS
AND DETAILS

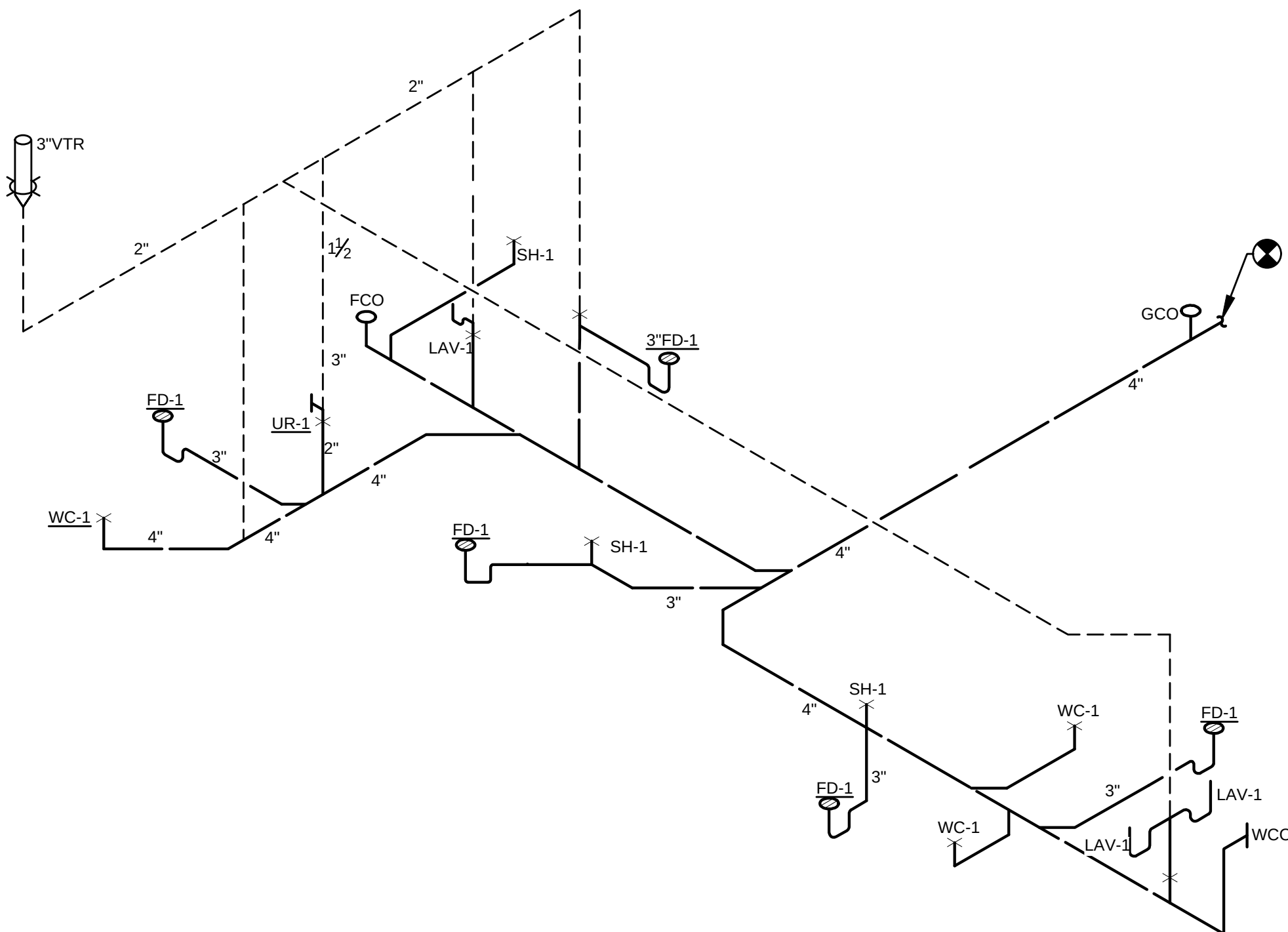
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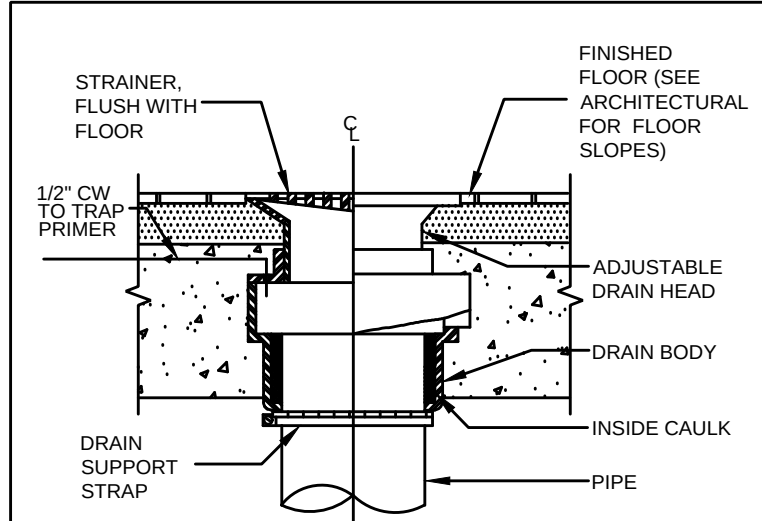
55 OF 56 SHEETS
03/28/2025



SUPPLY RISER

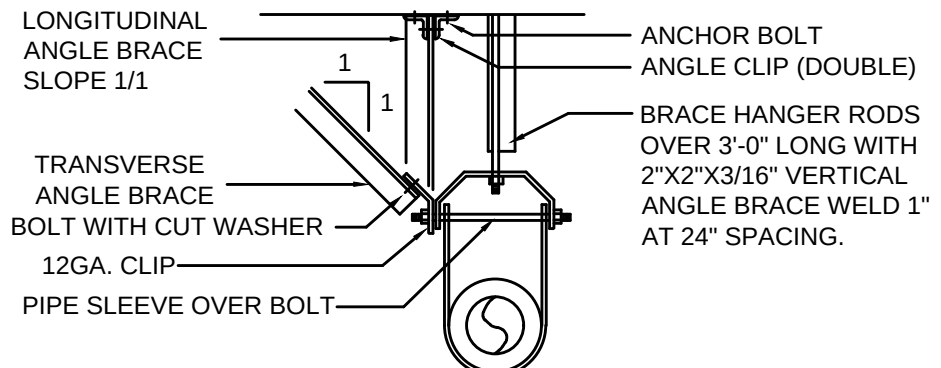


DWV RISER



FLOOR DRAIN DETAIL

SCALE: NONE

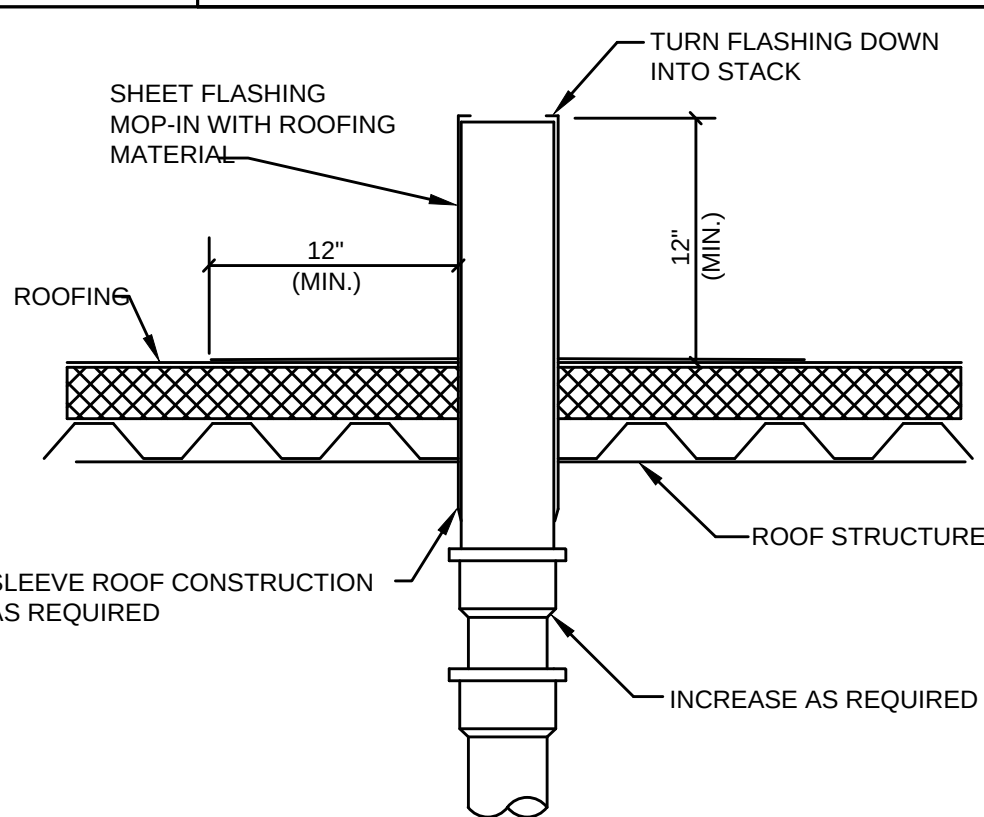


PIPE SIZE	ANGLE BRACE	BOLT TO ANGLE	ANGLE CLIPS	CON. ANCHOR OR INSERT
2-1/2"	2"X2" 16GA.	3/8"	3"X3"X1/4"	3/8"
3", 4"	2-1/2"X2-1/2" 16GA.	3/8"	3"X3"X1/4"	1/2"
5", 6"	2-1/2"X2-1/2" 16GA.	1/2"	5"X3"X1/2"	3/4"
8"	3"X3" 12GA.	5/8"	2-5"X3"X1/2"	2-5/8"
10"	3"X3" 12GA.	3/4"	2-5"X3"X1/2"	2-3/4"

* 1 "X1 "X12GA. CHANNEL MAY BE USED.

SEISMIC BRACING

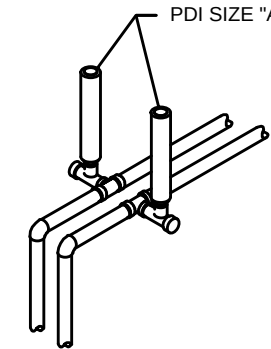
SCALE: NONE



VENT THROUGH ROOF DETAIL

SCALE: NONE

INSTALL PER PDI STANDARDS
AND MANUFACTURER'S
INSTRUCTIONS



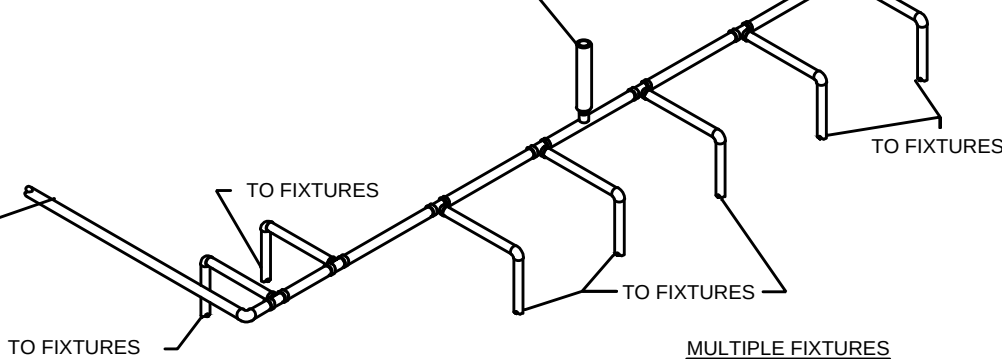
SINGLE FIXTURE

PDI SIZE	PIPE SIZE	FIXTURE UNIT LOAD
A	1/2"	1-11
B	3/4"	12-32
C	1"	33-40
D	1-1/4"	61-113
E	1-1/2"	114-154
F	2"	155-330

FIXTURE UNIT TABULATION		
FIXTURE	COLD	HOT
VALVE WATER CLOSET	10	--
TANK WATER CLOSET	5	--
URNAL	5	--
LAVATORY/SINK	1.5	1.5
JANITOR'S SINK	3	3
SHOWER/BATHTUB	2	2

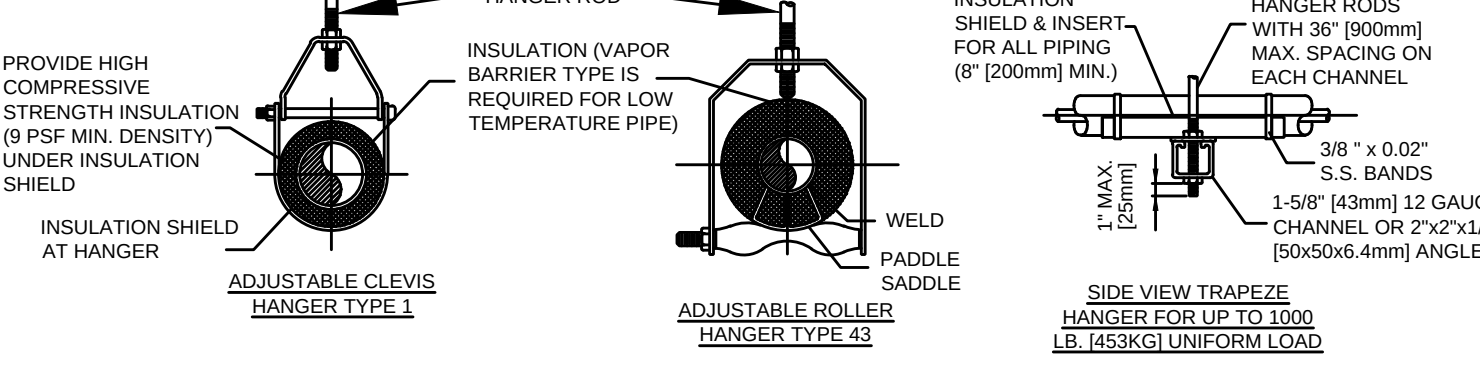
IF HORIZONTAL
BRANCH IS LESS THAN
20' LONG, PROVIDE
ONE WHA AT END OF
LINE

IF BRANCH IS GREATER THAN
20' LONG, PROVIDE ANOTHER
WHA IN MIDDLE, EACH SIZED
FOR HALF THE FIXTURE UNITS



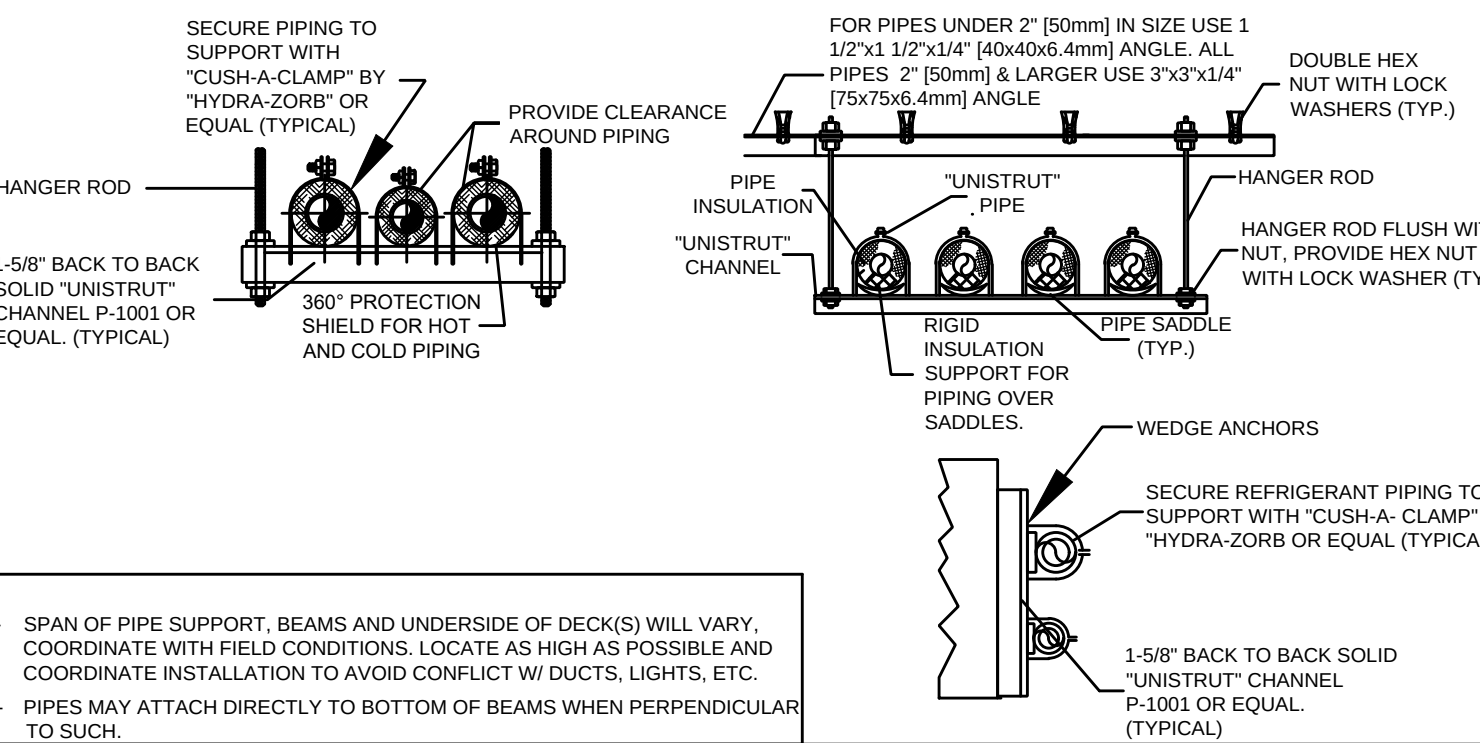
PLUMBING CONTRACTOR SHALL PROVIDE WATER HAMMER ARRESTERS BY SIOUX CHIEF, PRECISION PLUMBING PRODUCTS, WATTS OR APPROVED EQUIVALENT WITH PISTON AND O-RING CONSTRUCTION, HAVING PDI #WH-201, ASSE #1010 AND ANSI #A112.26.1M CERTIFICATION. INSTALL IN HORIZONTAL OR VERTICAL POSITION, BUT NEVER UPSIDE DOWN. INSTALL IN LINE WITH WATER FLOW DIRECTION IF POSSIBLE. SIZE THE UNITS AS SHOWN ON THE DRAWINGS AND/OR PER THE TABLES SHOWN ABOVE.

WATER HAMMER ARRESTERS

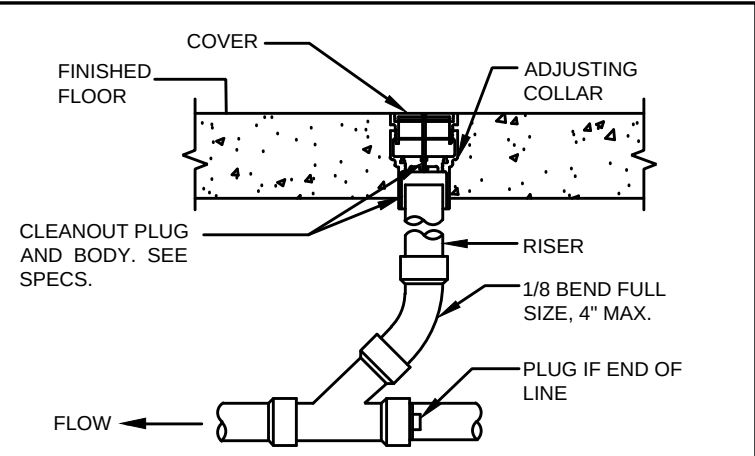


MAXIMUM PIPE/TUBING SUPPORT SPACING																							
PIPE SIZE	IN.	THRU 3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24				
INCH.	SIZE	THRU 3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24				
PIPE	FT.	[2100]	[2100]	[2100]	[2100]	[2100]	[2100]	[2100]	[2100]	[2100]	[2100]	[2100]	[2100]	[2100]	[2100]	[2100]	[2100]	[2100]	[2100]				
TUBING	CT.	[1500]	[1500]	[1500]	[1500]	[1500]	[1500]	[1500]	[1500]	[1500]	[1500]	[1500]	[1500]	[1500]	[1500]	[1500]	[1500]	[1500]	[1500]				

NOTE: FOR TRAPEZE HANGER TAKE SPACING OF SMALLEST SIZE ON TRAPEZE.

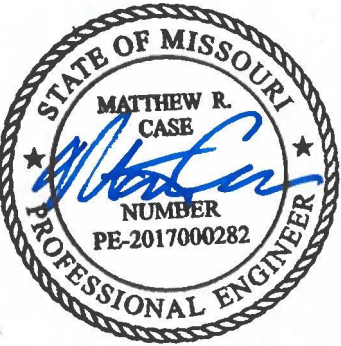


PIPE HANGER DETAILS



FLOOR CLEAN-OUT DETAIL

NOTE:
CLEANOUT COVER FLUSH WITH TILE OR
FLUSH WITH CONCRETE FLOOR IN AREA
WITH NO TILE.



03/28/25

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DRAWN BY: BDW
CHECKED BY: DRC
DESIGNED BY: BDW

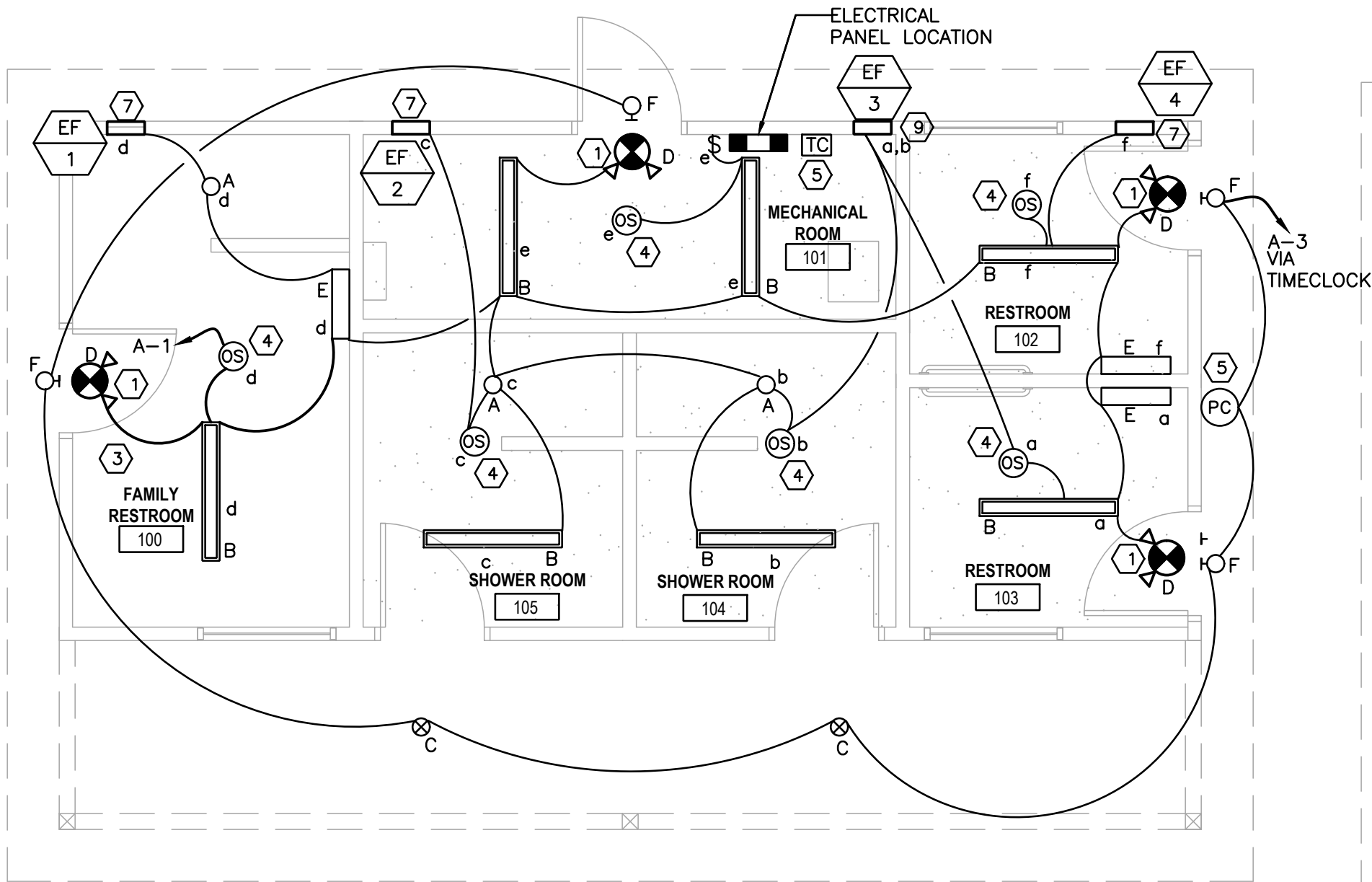
SHEET TITLE:

ELECTRICAL POWER
& LIGHTING PLAN

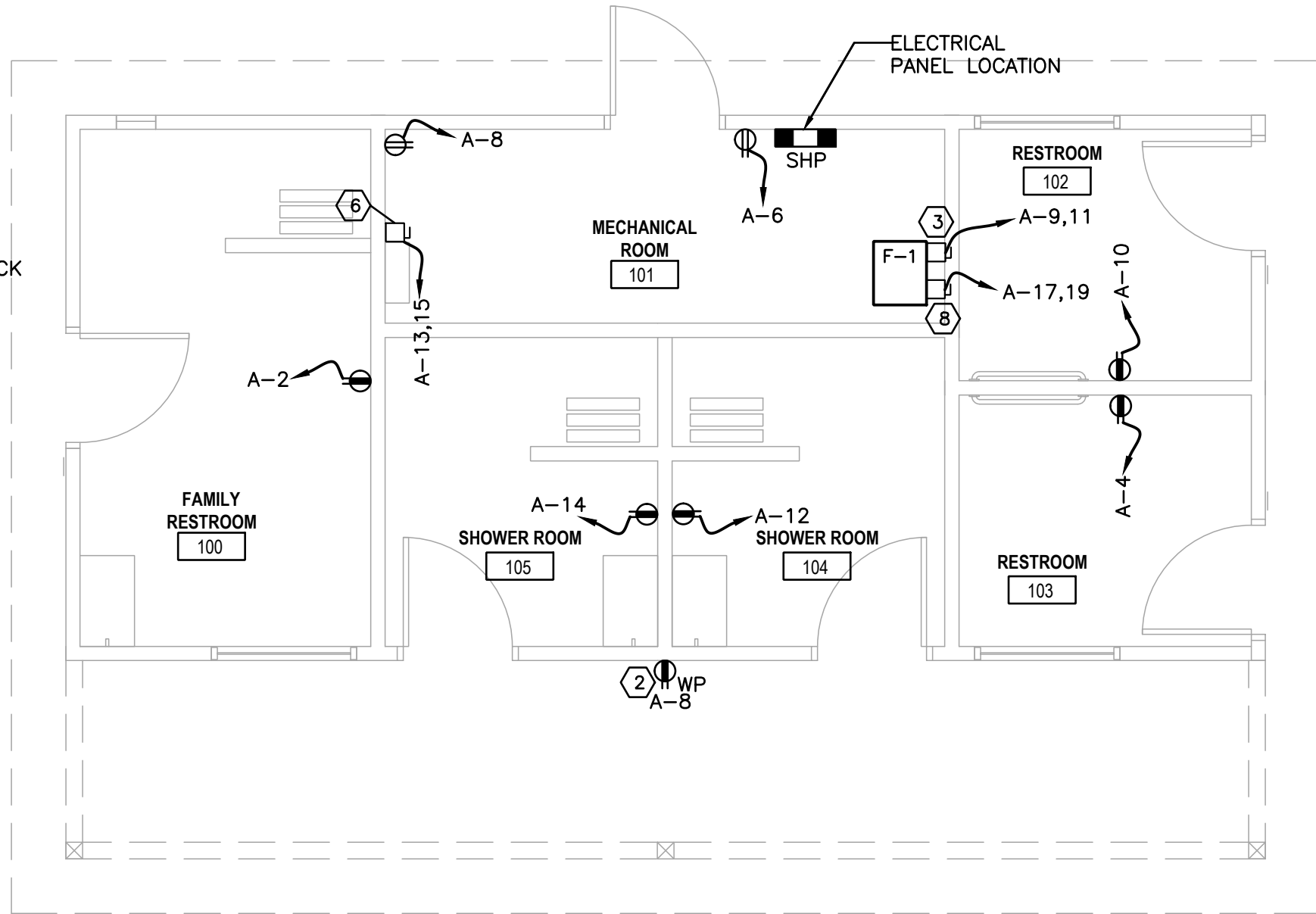
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E-1.0

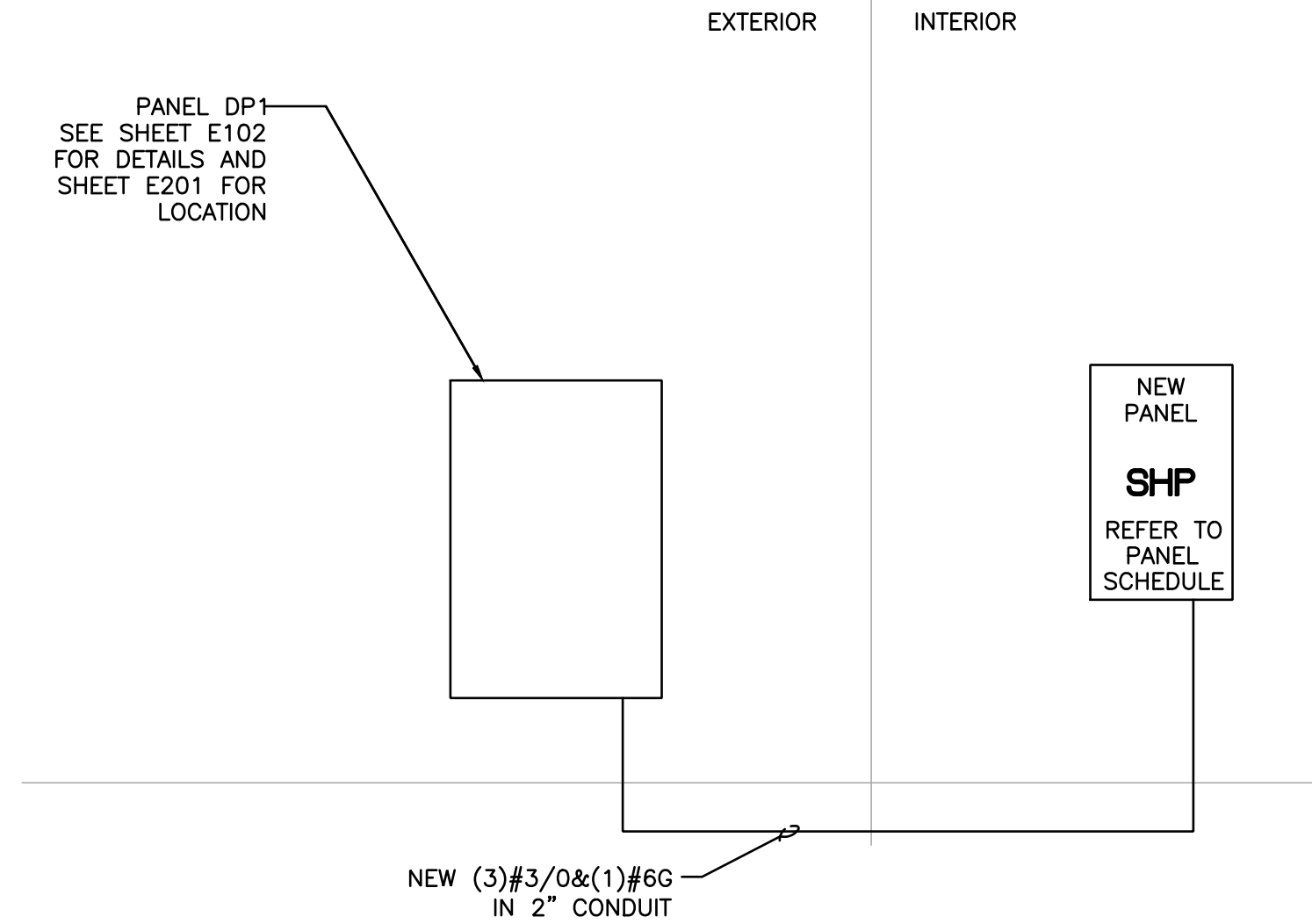
56 OF 56 SHEETS
03/28/2025



2 ELECTRICAL LIGHTING PLAN
E1-0 SCALE: 1/4" = 1'-0"



1 ELECTRICAL POWER PLAN
E1-0 SCALE: 1/4" = 1'-0"



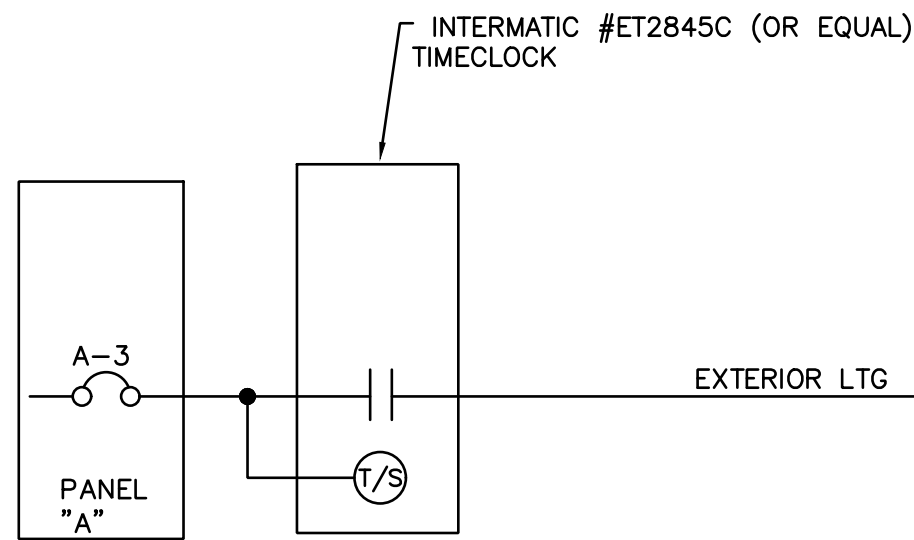
3 ONE LINE DIAGRAM
E1-0 SCALE: NTS

NEW PANEL BOARD SHP									
120/240VOLTS 1 PHASE 3 WIRE 200 AMP. BUS 42k A/C FULLY RATED									
200 AMP. MAIN CIRCUIT BREAKER FED FROM SERVICE SWITCH									
CKT. NO.	TRIP AMP.	NO. POLE	LOAD SERVED	LOAD- V. A.	LOAD SERVED	NO. POLE	TRIP AMP.	NO. CKT.	
1	20	1	GENERAL LTG	300	RESTROOM REC	1	20	2	
3	20	1	OUTDOOR LTG	180	RESTROOM REC	1	20	4	
5	20	1	SPARE	180	MAINTENANCE REC	1	20	6	
7	20	1	SPARE	180	RECEPTACLE	1	20	8	
9	15	2	FURNACE UNIT	600	RESTROOM REC	1	20	10	
11	15	2	FURNACE UNIT	600	RESTROOM REC	1	20	12	
13	80	2	ELECTRIC WATER HEATER	6750	RECEPTACLE	1	20	14	
15	15	2	FURNACE UNIT	6750	SPARE	1	20	16	
17	60	2	ELECTRIC HEAT	5000	SPARE	1	20	18	
19	19	1	SPARE	5000	SPARE	1	20	20	
21	20	1	SPARE	---	SPARE	1	20	22	
23	20	1	SPARE	---	SPARE	1	20	24	
				13570	12990				

LOAD DESCRIPTION	DEMAND FACTOR D.F.	VOLT - AMPS	
LIGHTING	1.25	CONNECTED	DEMAND
RECEPTACLES	NEC	400	500
MOTORS	NEC	720	720
MISC. EQUIPMENT	1.00	200	200
WATER HEATER	1.00	13500	13500
HVAC EQUIPMENT	1.00	11200	11200
TOTAL -		26020	26120

PANELBOARD LOAD = 26120 V.A.
FULL LOAD AMPS = 109 A.

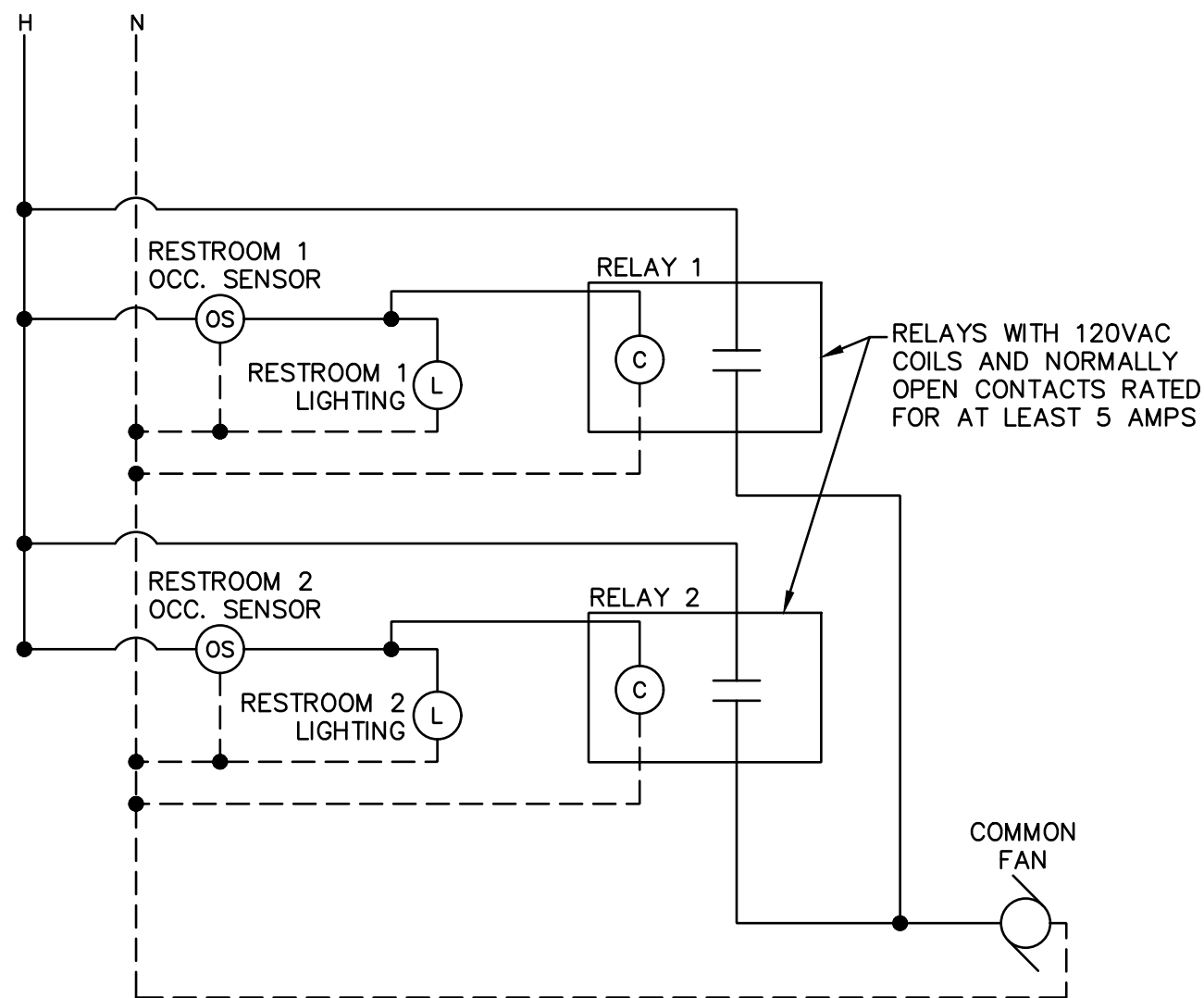
LO PROVIDE LOCK-ON DEVICE TS CIRCUIT VIA TIMESWITCH
CL VIA TRACK CURRENT LIMITER (SEE LIGHT FIXTURE SCHEDULE)
G GFI RECEPTACLE
A PROVIDE PAD-LOCK



4 LIGHTING CONTROL DIAGRAM
E1-0 SCALE: NONE

LIGHTING FIXTURE SCHEDULE							
TYPE	MANUFACTURER	CATALOG NUMBER	LAMPS	VOLTAGE	MOUNTING	WATTS	FIXTURE DESCRIPTION
A	LITHONIA	LDN6-40-15-L06-AR-LSS-MVOLT-GZ10	LED	120V	SURFACE MOUNTED	18	DOWNLIGHT
B	RAB	SEAL4- 40W-4000K	LED	120V	SURFACE MOUNTED	40	LED SURFACE WRAP
C	RAB	Disk34-6 4K	LED	120V	SURFACE MOUNTED	14.8	ROUND CANOPY DOWNLIGHT
D	BEST	EZXTU2RWEM , MV, NON DIM, 4W	LED	120V	WALL MOUNTED	4	EXIT, SELF POWERED SINGLE/DOUBLE FACE, UNIVERSAL MOUNT
E	LUMINAIRE LED	VPF8-2FT-HP-4000K-120-CP-WHT-WET-TX/SD	LED	120V	WALL MOUNTED	20	2FT WALL MOUNTED LED
F	RAB	Brik17FS20 4K	LED	120V	WALL MOUNTED	20	EXTERIOR DECORATIVE WALLPACK

LIGHTING FIXTURE NOTE:
FIXTURE SCHEDULE MANUFACTURER AND CATALOG NUMBERS ARE SHOWN AS A DESIGN BASIS ONLY. EQUAL FIXTURES FROM COOPER, ACUITY, PHILLIPS, HUBBELL ARE APPROVED. OTHER MANUFACTURERS MAY BE APPROVED AFTER SUBMITTAL OF A WRITTEN REQUEST.



5 COMMON EXHAUST FAN WIRING DIAGRAM
E1-0 SCALE: NONE

POWER PLAN KEYED NOTES NOTES

- CONNECT EXIT SIGN / REMOTE EGRESS DUAL HEAD FIXTURE AHEAD OF ALL LIGHTING CONTROLS OF GENERAL LIGHTING CIRCUIT SERVING THIS AREA.
- EC TO PROVIDE WEATHER RESISTANT TYPE, GFI RECEPTACLE IN WEATHERPROOF WHILE IN USE COVER AT EQUIPMENT, COVER SHALL BE EXTRA DUTY RATED PER SECTION 406.9(B). CONNECT TO CIRCUIT NOTED.
- EC TO PROVIDE 240V, 1PH, 30A DISCONNECT SWITCH FOR FURNACE MOTOR. PROVIDE (2)#12 & (1)#12G IN 3/4" CONDUIT.
- EC TO PROVIDE CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR FOR AUTOMATIC LIGHTING CONTROLS IN AREA SHOWN. ACUITY CMR-PDT-9 OR EQUAL
- EC TO PROVIDE NEW ASTRONOMICAL TIMECLOCK FOR CONTROL OF EXTERIOR LIGHTING. SEE DETAIL #4 ON THIS SHEET FOR MORE INFORMATION.
- 240V, 1P, 13.5KVA ELECTRIC WATER HEATER, EC TO COORDINATE ALL POWER REQUIREMENT WITH MANUFACTURER PRIOR TO BID. PROVIDE (2)#4 & (1)#8G IN 1" CONDUIT. EC TO PROVIDE 240V, 1P, 100A DISCONNECT SWITCH.
- EC TO CONNECT THE RESTROOM EXHAUST FANS TO THE LOCAL LIGHTING CIRCUIT AND CONTROLS.
- EC TO PROVIDE 240V, 1PH, 60A DISCONNECT SWITCH FOR FURNACE ELECTRIC HEAT. PROVIDE (2)#6 & (1)#8G IN 1" CONDUIT.
- EF-3 SHALL BE WIRED SO THAT EITHER OCCUPANCY SENSOR IN SHOWER ROOM 104 OR RESTROOM 103 WILL TURN ON FAN. DETAIL #5 ON THIS SHEET.