

# MODIFY CAMPGROUND LOOP 1 LONG BRANCH STATE PARK

## Macon, Missouri

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OWNER:	STATE OF MISSOURI MIKE KEHOE, GOVERNOR	DESIGNER:	Klingner & Associates, P.C.
	DEPARTMENT OF NATURAL RESOURCES MISSOURI STATE PARKS	PROJECT NUMBER:	X2517-01
PROJECT MANAGEMENT:	OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION	SITE NUMBER: ASSET NUMBER:	5601 7815601031



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OFFICE OF  
ADMINISTRATION  
DIVISION OF FACILITIES  
MANAGEMENT, DESIGN  
AND CONSTRUCTION

DEPARTMENT OF  
NATURAL RESOURCES  
MISSOURI STATE PARKS

MODIFY CAMPGROUND  
LOOP 1

LONG BRANCH STATE PARK  
28615 VISITOR CENTER RD  
MACON, MO 63552

PROJECT # X2517-01  
SITE # 5601  
ASSET # 7815601031

REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
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SHEET NUMBER:

G002

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GENERAL NOTES

1. ALL DIMENSIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
2. ANY DISCREPANCIES BETWEEN SPECIFICATIONS, DRAWINGS, AND/OR SITE CONDITIONS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
3. ALL AREAS DESIGNATED TO REMAIN UNDISTURBED SHALL BE PROTECTED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR STAKING THE LOCATION OF ALL PROPOSED IMPROVEMENTS, INCLUDING ROUGH AND FINISHED ELEVATIONS AND ALL OTHER PROPOSED IMPROVEMENTS INDICATED ON THE DRAWINGS.
5. THE CONTRACTOR SHALL VERIFY THAT ALL APPLICABLE LOCAL, STATE, & FEDERAL CODES ARE FOLLOWED. ALL APPLICABLE LOCAL AND STATE NOTIFICATIONS AND PERMITS SHALL BE ACQUIRED PRIOR TO CONSTRUCTION, INCLUDING ALL NECESSARY UTILITY CONNECTION PERMITS FROM THE RESPECTIVE UTILITIES.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY UTILITIES AND SERVICES REQUIRED DURING CONSTRUCTION.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL REFERENCE POINTS, BENCHMARKS, MONUMENTS, STAKES, AND PROPERTY CORNERS DURING CONSTRUCTION. REPLACEMENT OF LOST REFERENCE POINTS SHALL BE AT THE CONTRACTORS EXPENSE.
8. REMOVE ALL STRUCTURES, FOUNDATIONS, PAVEMENTS, AND ALL OTHER ITEMS IN CONFLICT WITH PROPOSED IMPROVEMENTS IN ACCORDANCE WITH THE SPECIFICATIONS.
9. REFERENCES TO "STANDARD SPECIFICATIONS" SHALL MEAN THE MISSOURI DEPARTMENT OF TRANSPORTATION, "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION", LATEST ADDITION.
10. THE MEANS OF THE WORK AND THE SAFETY OF THE CONTRACTOR'S EMPLOYEES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
11. NO WORK SHALL BE PERFORMED BEYOND THE LIMITS OF CONSTRUCTION WITHOUT OWNER APPROVAL.
12. SITE CLEAN-UP SHALL BE PERFORMED ON A DAILY BASIS. SIDEWALKS, PARKING LOTS, ROADWAYS, AND THE PROJECT SITE SHALL BE KEPT CLEAN AT ALL TIMES. CONTROL DUST IN AND AROUND ALL WORK AND STAGING AREAS.
13. ALL OPEN EXCAVATIONS SHALL BE PROTECTED.
14. MAINTAIN POSITIVE DRAINAGE ON THE SITE THROUGHOUT THE PROJECT DURATION.
15. IF A DISCREPANCY IN THE SPOT ELEVATIONS IS NOTED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONSTRUCTING. IF THERE IS A DISCREPANCY BETWEEN THE SPOT ELEVATIONS AND CONTOURS, THE CONTOURS SHALL GOVERN.
16. IF SOIL OR GROUNDWATER IS ENCOUNTERED WHICH EMITS A PETROLEUM ODOR OR IS DISCOLORED THE CONTRACTOR SHALL STOP EXCAVATION AND NOTIFY THE OWNER IMMEDIATELY. THE OWNER WILL COORDINATE ENVIRONMENTAL EFFORTS TO HANDLE THE IMPACTED SOIL OR GROUNDWATER IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REQUIREMENTS. THE CONTRACTOR SHALL TAKE APPROPRIATE ACTION TO ENSURE PUBLIC AND EMPLOYEE SAFETY.
17. THE CONTRACTOR SHALL NOTIFY STAFF WHEN ON-SITE.

GRADING NOTES

1. TOPSOIL SHALL BE STRIPPED TO A DEPTH OF 6 INCHES WITHIN THE GRADING LIMITS AND STOCKPILED ON SITE FOR USE IN FINAL GRADING (COORDINATE WITH OWNER). IF ACCEPTABLE TOPSOIL IS NOT AVAILABLE ON SITE, THE CONTRACTOR SHALL PROVIDE IT TO A DEPTH OF 6 INCHES.
2. TOPSOIL SHALL BE LOAMY IN NATURE, FREE FROM HARD CLODS, STIFF CLAY, SOD, STONES, ROOTS, STICKS, AND OTHER DEBRIS OVER 1 INCH IN SIZE. TOPSOIL SHALL BE FREE OF TOXIC MATERIALS AND SHALL HAVE A pH RANGE BETWEEN 5.5 AND 7.0.
3. ALL EXCESS MATERIALS NOT USED FOR CONSTRUCTION OF THE PROJECT SHALL BE DISPOSED OFF SITE BY THE CONTRACTOR AT THE CONTRACTORS EXPENSE.
4. PROPOSED CONTOURS ARE INTENDED TO PROVIDE A MIN. 1% SLOPE IN PAVEMENT AREAS AND 2% IN TURFED AREAS. CONTRACTORS SHALL BE RESPONSIBLE FOR PROVIDING A SMOOTH UNIFORM DRAINING SURFACE THAT DOES NOT CREATE PONDING WATER OR SHARP BREAKS. CONTOURS OR ELEVATIONS THAT WILL NOT PROVIDE SUCH SURFACE SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER/ARCHITECT IMMEDIATELY.
5. FINAL ELEVATIONS INDICATED ARE THE FINISHED SURFACE ELEVATIONS, WHETHER GRASS, CONCRETE, PAVEMENT, OR MULCH. THE CONTRACTOR SHALL COORDINATE SUBGRADE ELEVATIONS TO ALLOW FOR PAVEMENT, CONCRETE OR MULCH DEPTHS.
6. ALL DISTURBED AREAS NOT WITHIN PAVEMENT & LANDSCAPE AREAS SHALL BE SEEDED PER THE SPECIFICATIONS. THE AREAS INDICATED TO BE SEEDED ON THIS PLAN ARE ESTIMATED DISTURBED AREAS. DISTURBED AREAS OUTSIDE OF THOSE INDICATED SHALL BE SEEDED REGARDLESS OF THE LIMITS INDICATED.
7. SLOPES 4:1 AND STEEPER SHALL RECEIVE A BIODEGRADABLE TEMPORARY EROSION CONTROL BLANKET TO PROVIDE EROSION PROTECTION FOR UP TO 12 MONTHS IN ACCORDANCE WITH SECTION 806 OF THE MoDOT STANDARD SPECIFICATIONS.

EROSION CONTROL NOTES

1. EROSION CONTROL SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, THE DETAILS IN THESE PLANS, AND THE MISSOURI DEPARTMENT OF NATURAL RESOURCES STANDARDS AND REQUIREMENTS FOR EROSION AND SEDIMENT CONTROL.
2. THE EROSION CONTROL SHOWN ON THIS SET OF PLANS SHALL BE CONSIDERED THE MINIMUM ACCEPTABLE FOR THIS PROJECT. THERE MAY BE ADDITIONAL EROSION CONTROL REQUIRED DUE TO THE VARIOUS CONSTRUCTION TECHNIQUES, WHICH MAY BE USED. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING AND MAINTAINING ALL THE RUNOFF FROM THE SITE, IN A MANNER WHICH KEEPS ALL SILT ON SITE.
3. A LAND DISTURBANCE PERMIT IS CURRENTLY IN PLACE FOR THIS SITE (PERMIT #MOR100038). THE CONTRACTOR WILL BE REQUIRED TO FOLLOW THE REQUIREMENTS OF THE PERMIT AND STORM WATER POLLUTION PREVENTION PLAN IN THE CONTRACT DOCUMENTS.
4. ALL INLET PROTECTION AND TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED UPON COMPLETION OF PAVING OPERATIONS AND FINAL STABILIZATION OF LANDSCAPED AND SEED AREAS.

PAVEMENT NOTES

1. PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, LATEST EDITION.
2. PROOF-ROLL SUBGRADE WITH A MINIMUM 25 TON G.V.W. TRUCK TO IDENTIFY AREAS OF SOFT OR UNSTABLE SUBGRADE. REMOVE AND REPLACE UNSTABLE AREAS WITH SUITABLE COMPACTED MATERIALS.
3. PAVEMENT MARKING SHALL NOT BEGIN UNTIL PAVEMENT SURFACE HAS BEEN POWER BROOMED AND HAND SWEEP AS NECESSARY TO REMOVE LOOSE MATERIALS AND DIRT; AND NOT BEFORE ADEQUATE CURING TIME HAS BEEN OBTAINED ON THE PAVEMENT.
4. ALL DIMENSIONS ARE TO EDGE OF PAVEMENT, EDGE OF BUILDING, OR PROPERTY LINES UNLESS OTHERWISE NOTED. ALL RADII ARE TO EDGE OF PAVEMENT.

UTILITY NOTES

1. CONTRACTOR WILL BE RESPONSIBLE FOR LOCATING ALL PUBLIC AND STATE OWNED UTILITIES THROUGHOUT THE PROJECT LIMITS.
2. THE LOCATION OF EXISTING UTILITIES IN CONSTRUCTION AREAS SHALL BE FIELD VERIFIED BY THE CONTRACTOR BY CONTACTING THE MISSOURI ONE CALL SYSTEM, INC. OR THE INDIVIDUAL UTILITIES NOT PARTICIPATING IN THIS SYSTEM.
3. EXISTING UTILITIES TO REMAIN SHALL BE PROTECTED. ANY REPAIR OR RELOCATION REQUIRED, AS A RESULT OF DAMAGE BY CONSTRUCTION ACTIVITIES SHALL BE AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL PAY UTILITY PERMIT AND/OR INSPECTION FEES.
4. UTILITY TRENCHES WITHIN PAVEMENT AREAS SHALL BE BACKFILLED WITH APPROVED COMPACTED GRANULAR BACKFILL.
5. ALL ELECTRIC SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE, CURRENT VERSION.
6. ADJUST ALL VALVES, MANHOLES, CASTINGS, GAS VENTS, ETC., TO MATCH THE NEW SURFACE. ADJUSTMENT SHALL BE COORDINATED WITH THE UTILITY COMPANIES AND THE COST FOR ALL ADJUSTMENTS SHALL BE INCIDENTAL TO THE CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER. REPAIR ANY DAMAGE TO SAID STRUCTURES AND APPURTENANCES THAT OCCUR DURING CONSTRUCTION.
7. THE DRAWINGS INDICATE THE BEST KNOWLEDGE OF THE OWNER AND ENGINEER/ARCHITECT ON THE GENERAL LOCATION AND NATURE OF THE EXISTING AND OR PROPOSED UNDERGROUND UTILITIES IN THE AREA OF CONSTRUCTION. EXPLORATORY EXCAVATIONS AT THE SITE TO DETERMINE INSITU LOCATIONS WERE NOT CONDUCTED. QUALITY LEVEL C IN ACCORDANCE WITH C/ASCE 38-02, STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA, WAS UTILIZED. REGARDLESS OF THE LEVEL OF INVESTIGATION, THE UTILITIES SHOWN SHOULD NOT BE CONSIDERED A WARRANTY OR GUARANTEE OF ACTUAL PRESENCE OR LOCATION AND THE CONTRACTOR REMAINS RESPONSIBLE FOR THE LOCATION, VERIFICATION, AND PROPER NOTIFICATION OF POTENTIAL UTILITIES. CONTRACTOR SHALL LOCATE STATE OWNED UTILITIES.

QUALITY LEVELS:

- QUALITY LEVEL A - PROVIDES THE HIGHEST LEVEL OF ACCURACY. BY LOCATING OR POTHOLING UTILITIES IN ADDITION TO QUALITY LEVELS B, C, AND D TASKS. THE LOCATED UTILITY INFRASTRUCTURE IS SURVEYED AND MAPPED TO DEVELOP PLAN AND PROFILE INFORMATION.
- QUALITY LEVEL B - INVOLVES DESIGNATING THE HORIZONTAL POSITION OF SUBSURFACE UTILITIES THROUGH SURFACE DETECTION METHODS AND RECORDING THE INFORMATION THROUGH A SURVEY METHOD. IN ADDITION TO QUALITY LEVEL C AND D TASKS.
- QUALITY LEVEL C - INVOLVES SURVEYING VISIBLE SUBSURFACE UTILITY STRUCTURES SUCH AS MANHOLES, HAND-HOLES, UTILITY VALVES AND METERS, FIRE HYDRANTS, PEDESTALS AND UTILITY MARKERS, AND THEN CORRELATING THE INFORMATION WITH EXISTING UTILITY RECORDS TO CREATE COMPOSITE DRAWINGS. IN ADDITION TO QUALITY LEVEL D TASKS
- QUALITY LEVEL D - INVOLVES COLLECTING DATA FROM EXISTING UTILITY RECORDS, THAT MAY INCLUDE AS-BUILT DRAWINGS, DISTRIBUTION AND SERVICE MAPS, EXISTING GEOGRAPHIC INFORMATION SYSTEM DATABASE, CONSTRUCTION PLANS, ETC. DATABASES, CONSTRUCTION PLANS, ETC.
- THE CONTRACTOR(S) SHALL COMPLY WITH THE LATEST EDITION OF APPLICABLE CODES AND STANDARDS INCLUDING BUT NOT LIMITED TO:
  - THE AMERICANS WITH DISABILITIES ACT (ADAAG)
  - INTERNATIONAL BUILDING CODE (IBC)
  - NATIONAL ELECTRIC CODE (NEC)
  - INTERNATIONAL PLUMBING CODE (IPC)
  - LIFE SAFETY CODE (NFPA 101)
  - AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)
  - AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
  - AMERICAN CONCRETE INSTITUTE (ACI)
  - MISSOURI DEPARTMENT OF TRANSPORTATION (MODOT)
  - MISSOURI DEPARTMENT OF NATURAL RESOURCES (MODNR)

SITE BENCHMARKS

1. CHISELED "□" SOUTH EDGE OF CONCRETE MANHOLE NORTH OF LAGOON - ELEVATION: 831.02
2. CHISELED "□" SOUTHEAST CORNER CONCRETE PAD WITH LIQUID PROPANE TANK WEST OF SHOWER HOUSE - ELEVATION: 846.13
3. TOP REBAR - CONTROL POINT 3 - ELEVATION: 845.67

ABBREVIATIONS

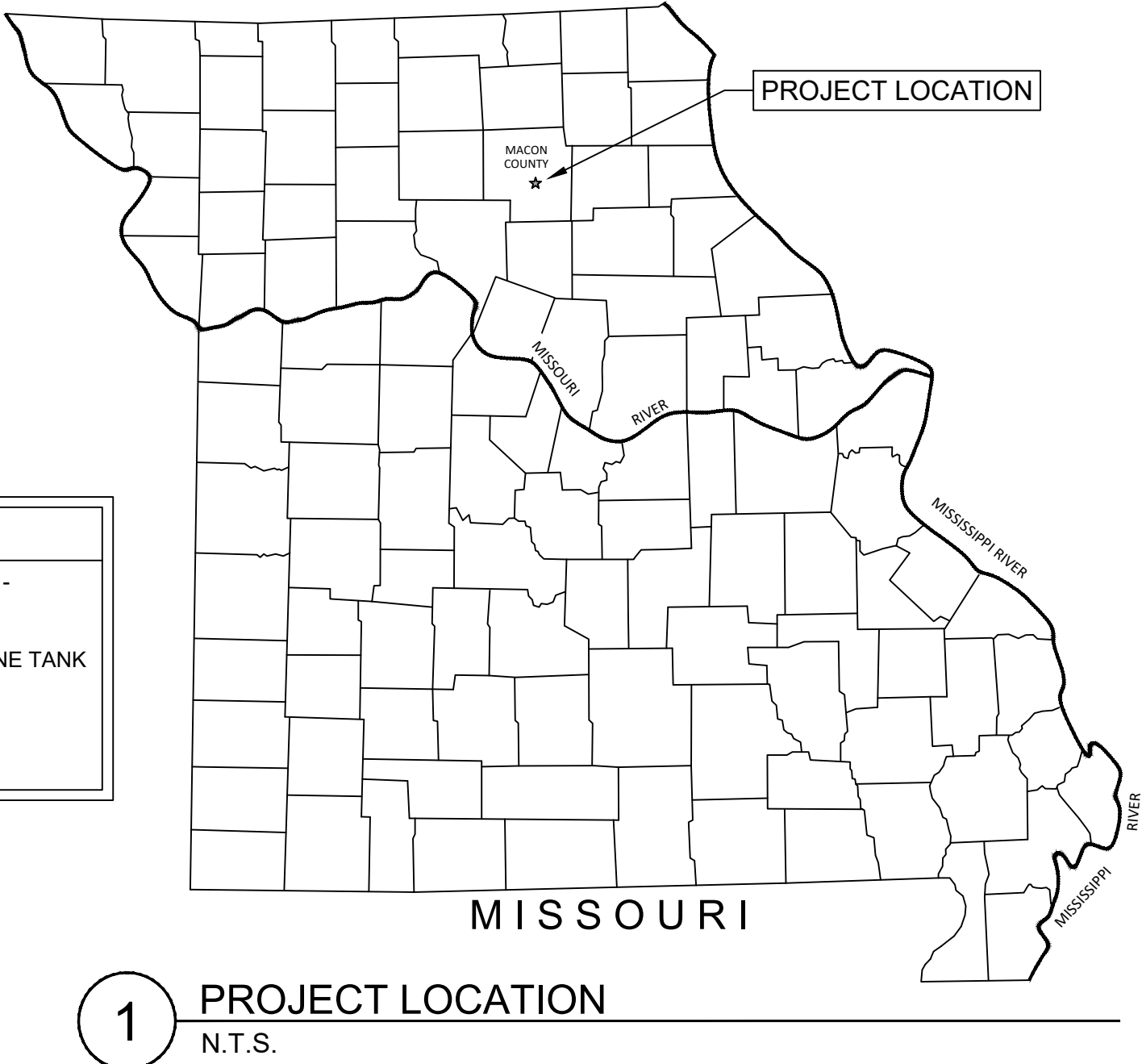
- FL FLOWLINE ELEVATION
- TC TOP OF CURB ELEVATION
- GL GUTTER LINE ELEVATION
- TG TOP OF GRATE ELEVATION
- STA STATION
- FES FLARED END SECTION
- SWI STORM WATER INLET
- FFE FINISH FLOOR ELEVATION
- HP HIGH POINT
- LP LOW POINT
- TW TOP OF WALL ELEVATION
- BW BOTTOM OF WALL ELEVATION
- DS DOWNSPOUT
- M MATCH EXISTING ELEVATION
- TYP TYPICAL
- NTS NOT TO SCALE

LEGEND

EXISTING	PROPOSED	
		PROPERTY LINE
		LOT LINE
		RIGHT OF WAY LINE
		CENTERLINE
		EASEMENT
		BUILDING SETBACK
		CONSTRUCTION LIMITS
		FENCE LINE
		CHAIN LINK FENCE
		FENCE W/ SQUARE POSTS
		STREAM
		STRUCTURE
		PAVEMENT MARKINGS
		EDGE OF PAVEMENT
		CURB AND GUTTER
		WATER LINE
		FIRE PROTECTION
		GAS LINE
		OVERHEAD ELECTRIC
		UNDERGROUND ELECTRIC
		OVERHEAD TELEPHONE
		UNDERGROUND TELEPHONE
		CABLE TELEVISION
		FIBER OPTIC
		COMMUNICATION LINE
		STORM SEWER
		SANITARY SEWER
		FORCE MAIN
		SIGN
		BOLLARD
		MANHOLE
		STORM WATER INLET
		CATCH BASIN
		CLEANOUT
		CULVERT
		BOX CULVERT
		WATER VALVE
		FIRE HYDRANT
		POST INDICATOR VALVE
		WATER METER
		GAS VALVE
		GAS METER
		TELEPHONE PEDESTAL
		CABLE TV PEDESTAL
		ELECTRIC METER
		UTILITY POLE
		LIGHT STANDARD
		LIGHT POLE
		GUY WIRE
		SUMMIT / HIGH POINT
		CONTOURS
		INDEX CONTOURS
		DIRECTION OF DRAINAGE
		SPOT ELEVATION
		DECIDUOUS SHRUB
		DECIDUOUS TREE
		CONIFEROUS SHRUB
		CONIFEROUS TREE

— NOTE —

UTILITY INFORMATION IS FOR THE CONVENIENCE OF THE CONTRACTOR. BEFORE CONSTRUCTION BEGINS THE CONTRACTOR SHALL CONTACT MISSOURI ONE CALL SYSTEM, INC. AT 811 OR 1-800-344-7483 AND THE INDIVIDUAL UTILITIES NOT INCLUDED IN THIS SYSTEM FOR THE LOCATION OF ALL EXISTING UTILITIES.



STATE OF MISSOURI  
MIKE KEHOE,  
GOVERNOR

BIDDING DOCUMENTS



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GENERAL NOTES &  
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C001

SHEET 3 OF 41  
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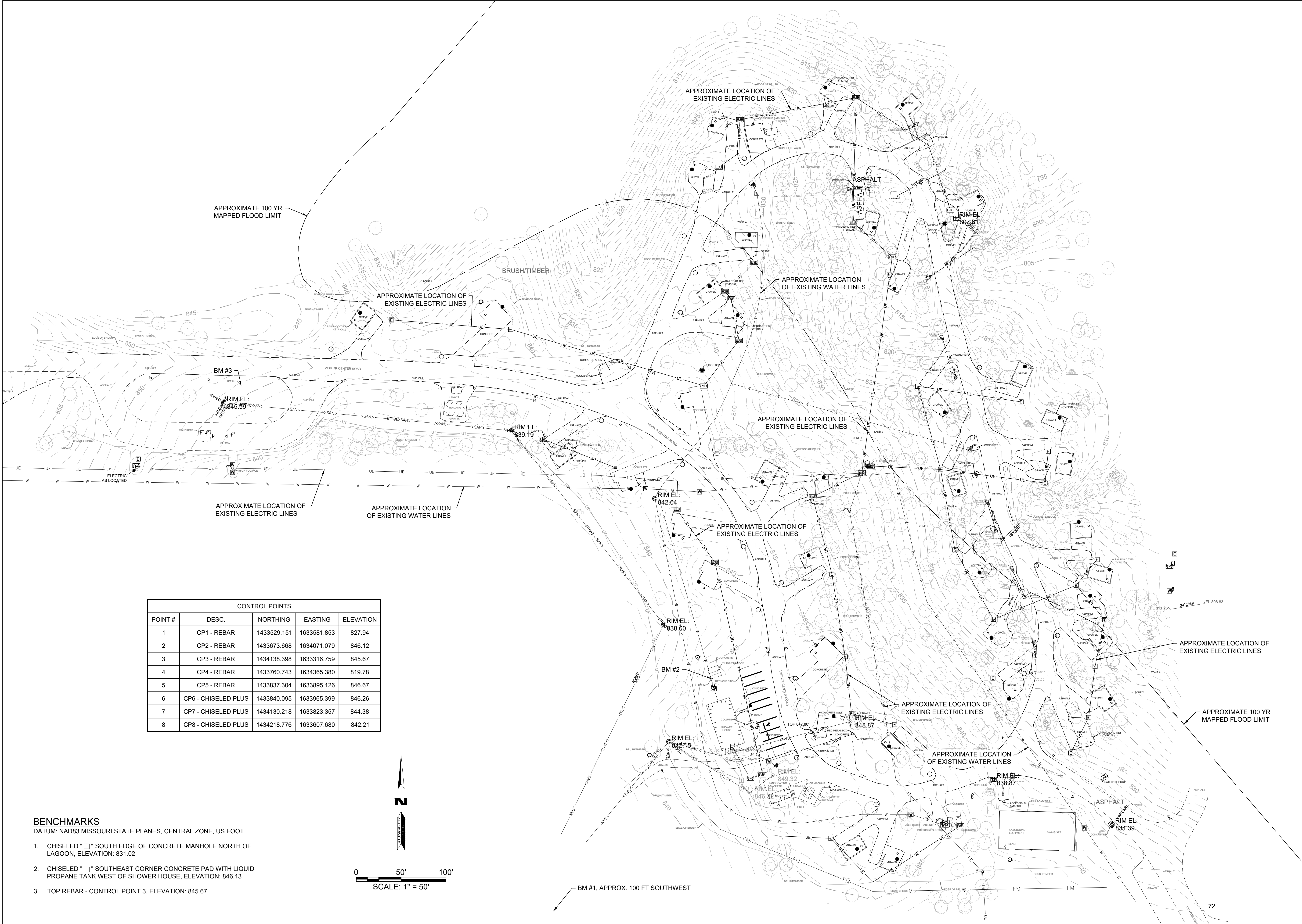
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EXISTING  
CONDITIONS SITE  
PLAN

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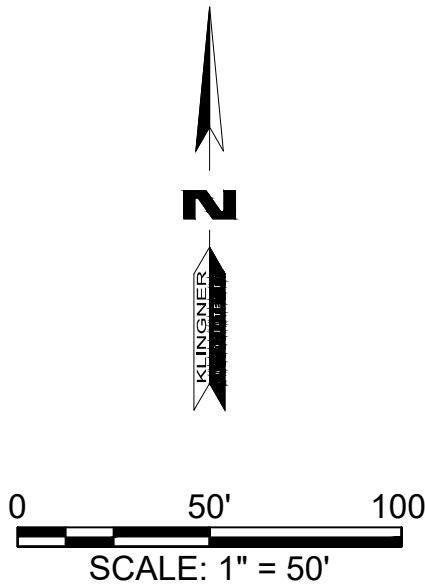
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SHEET 4 OF 41  
12/17/2025







CONTROL POINTS				
POINT #	DESC.	NORTHING	EASTING	ELEVATION
1	CP1 - REBAR	1433529.151	1633581.853	827.94
2	CP2 - REBAR	1433673.668	1634071.079	846.12
3	CP3 - REBAR	1434138.398	1633316.759	845.67
4	CP4 - REBAR	1433760.743	1634365.380	819.78
5	CP5 - REBAR	1433837.304	1633895.126	846.67
6	CP6 - CHISELED PLUS	1433840.095	1633965.399	846.26
7	CP7 - CHISELED PLUS	1434130.218	1633823.357	844.38
8	CP8 - CHISELED PLUS	1434218.776	1633607.680	842.21

- BENCHMARKS**  
DATUM: NAD83 MISSOURI STATE PLANES, CENTRAL ZONE, US FOOT
- CHISELED "□" SOUTH EDGE OF CONCRETE MANHOLE NORTH OF LAGOON, ELEVATION: 831.02
  - CHISELED "□" SOUTHEAST CORNER CONCRETE PAD WITH LIQUID PROPANE TANK WEST OF SHOWER HOUSE, ELEVATION: 846.13
  - TOP REBAR - CONTROL POINT 3, ELEVATION: 845.67





TRAFFIC CONTROL LEGEND

-  SIGN (SINGLE SIDED)
-  APPROXIMATE WORK AREA
-  TRAFFIC FLOW DIRECTION
-  TEMPORARY PANEL GATES & POST



WO20-3

1 ROAD CLOSED SIGN  
N.T.S.



R11-2

2 ROAD CLOSED SIGN  
N.T.S.



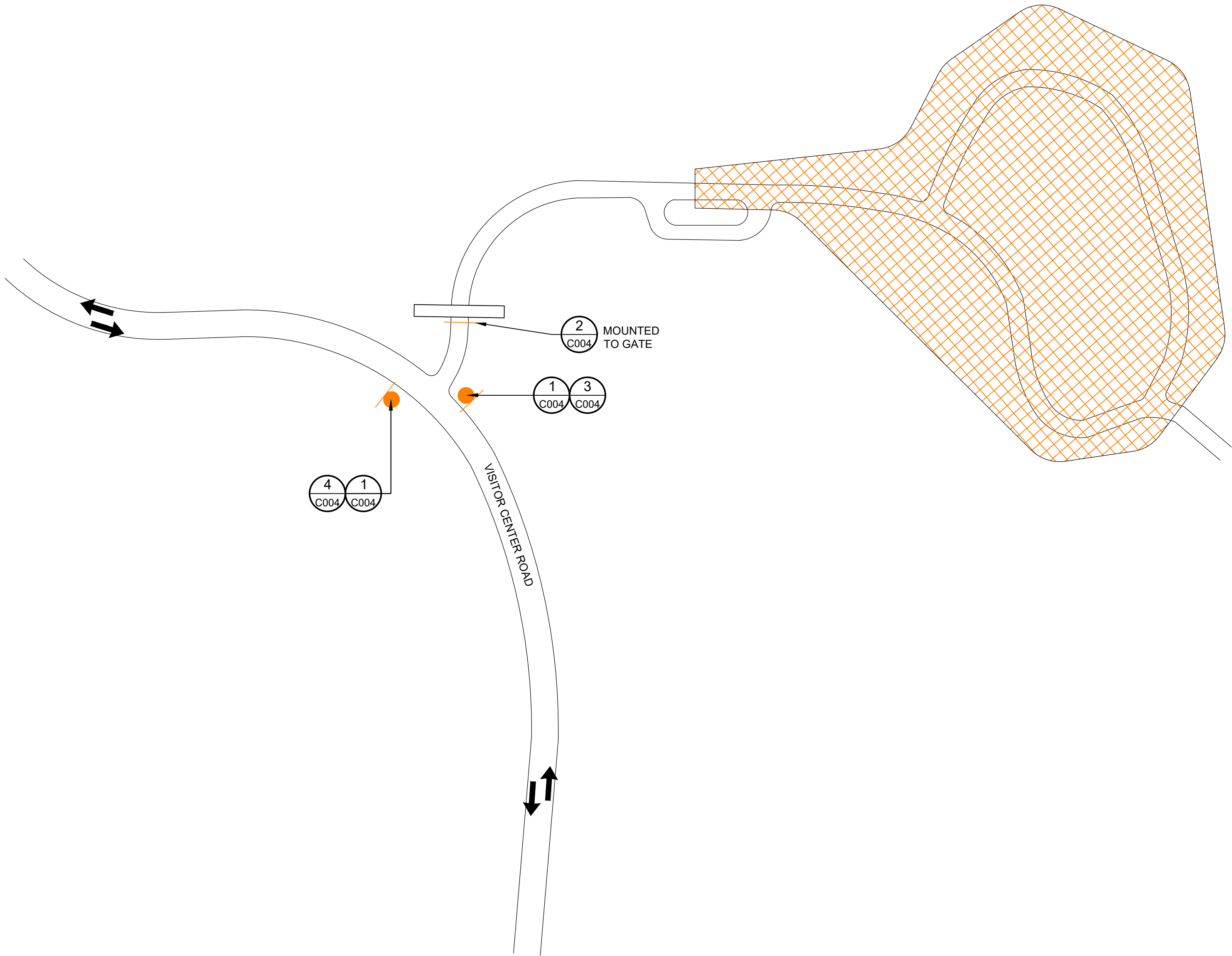
R3-1

3 NO RIGHT TURN SIGN  
N.T.S.



R3-2

4 NO LEFT TURN SIGN  
N.T.S.



NOTES:

SEE MODOT ENGINEERING POLICY GUIDE DOCUMENT "616.8.8B (TA-8B) ROAD CLOSURE WITH BARRIER" FOR FURTHER DETAILS.

COORDINATE TRAFFIC CONTROL WITH OWNER.

THIS DRAWING IS NOT TO SCALE.

THIS DRAWING IS A GENERALIZATION. SPACINGS MAY BE ADJUSTED AS NECESSARY TO MEET SPECIFIC FIELD CONDITIONS. ROAD CLOSED AHEAD SIGNS MUST PRECEDE CONSTRUCTION ZONE BY A MINIMUM OF 200 FT.

ALL EXISTING SIGNS THAT CONFLICT WITH THE PROPOSED TRAFFIC CONTROL PLAN SHALL BE TEMPORARILY COVERED, NO DIRECT PAY.

RELOCATION OF TRAFFIC CONTROL SIGNS AND DEVICES AT NO DIRECT PAY.

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DESIGNED BY: CSW/BAM

SHEET TITLE:

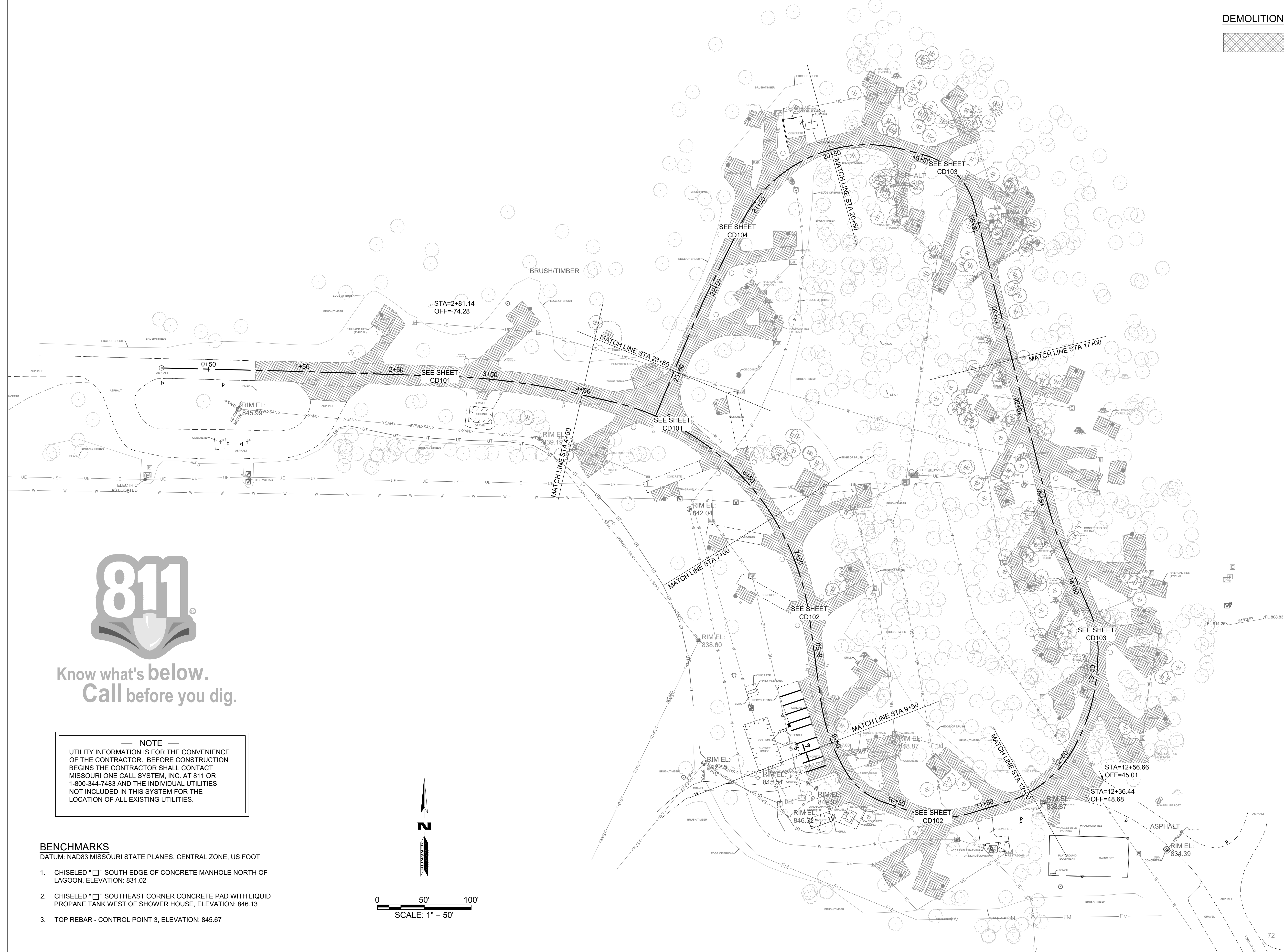
TRAFFIC CONTROL  
PLAN & DETAILS

SHEET NUMBER:

C003

SHEET 5 OF 41  
12/17/2025





**STATE OF MISSOURI**  
**MIKE KEHOE,**  
**GOVERNOR**

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Burlington, IA Pella, IA Davenport, IA  
573.355.5988  
[www.klingner.com](http://www.klingner.com)

KLINGNER & ASSOCIATES, P.C. - ENGINEERING  
MISSOURI STATE CERTIFICATE OF AUTHORITY #000866

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ADMINISTRATION  
DIVISION OF FACILITIES  
MANAGEMENT, DESIGN  
AND CONSTRUCTION**

**DEPARTMENT OF  
NATURAL RESOURCES  
MISSOURI STATE PARKS**

## MODIFY CAMPGROUND LOOP 1

**LONG BRANCH STATE PARK**  
**28615 VISITOR CENTER RD**  
**MACON, MO 63552**

PROJECT # X2517-01  
SITE # 5601  
ASSET # 7815601031

REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_

ISSUE DATE: 12-17-2025

CAD DWG FILE: CD100  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

SHEET TITLE:

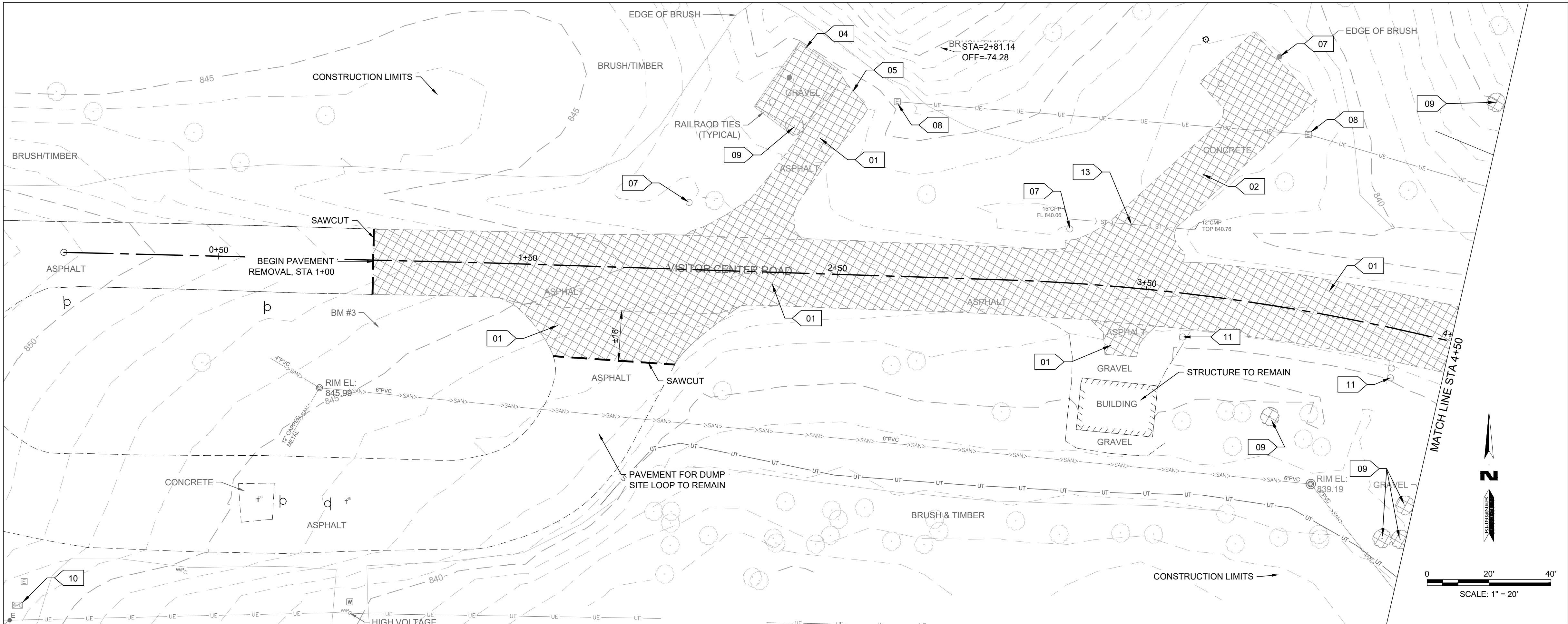
# OVERALL SITE DEMOLITION PLAN

SHEET NUMBER:

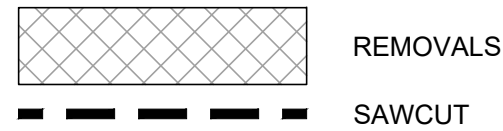
# CD 100

SHEET 6 OF 41  
12/17/2025





DEMOLITION LEGEND



DEMOLITION NOTES

- ALL REMOVALS & PHASING OF THE WORK SHALL BE COORDINATED WITH THE OWNER. COORDINATE UTILITY REMOVALS AND/OR RELOCATIONS WITH THE RESPECTIVE UTILITY COMPANIES AND THE OWNER.
- REMOVE ALL EXISTING PAVEMENTS, STRUCTURES, CURBS, LANDSCAPING AND ALL OTHER EXISTING SITE FEATURES IN CONFLICT WITH PROPOSED IMPROVEMENTS UNLESS CALLED OUT FOR PRESERVATION ON THIS SHEET.
- UTILITY LOCATIONS INDICATED ON THIS SHEET ARE APPROXIMATIONS AND ARE NOT INTENDED TO SERVE IN LIEU OF LOCATES PROVIDED BY THE RESPECTIVE UTILITY COMPANIES.
- DEMOLITIONS SHALL INCLUDE REMOVAL AND PROPER DISPOSAL OF MATERIALS. CONTRACTOR TO PAY ALL PERMIT AND DISPOSAL FEES.
- NO BURNING OF DEBRIS IS TO BE PERFORMED ON-SITE. TREE DEBRIS AND WASTE SHALL BE DISPOSED OF OFF-SITE.
- SALVAGE EXISTING FIRE PITS AND PICNIC TABLES TO OWNER FOR REINSTALLATION.
- CUT DOWN TREES SHOWN FOR REMOVAL PRIOR TO APRIL 1ST. IF CUTTING OF TREES IS COMPLETED BETWEEN APRIL 1ST AND OCTOBER 31ST, THE CONTRACTOR WILL BE REQUIRED TO CONTACT MISSOURI STATE PARKS TO COMPLETE A BAT STUDY ON A PER TREE BASIS.

DEMO KEY NOTES

- 01 REMOVE EXISTING ASPHALT PAVEMENT.
- 02 REMOVE EXISTING CONCRETE PAVEMENT.
- 03 REMOVE EXISTING AGGREGATE PAVEMENT.
- 04 REMOVE EXISTING RAILROAD TIES.
- 05 SALVAGE EXISTING CONCRETE PARKING BLOCKS TO OWNER.
- 06 REMOVE DUMPSTER AREA IMPROVEMENTS AND AGGREGATE SURFACE.
- 07 SALVAGE EXISTING GRILLS, POSTS, SIGNS AND VARIOUS CAMPSITE FEATURES TO OWNER.
- 08 SALVAGE JUNCTION BOX & PEDESTALS TO OWNER, REMOVE TO MINIMUM 1' BELOW PROPOSED GRADE, ABANDON REMAINING CONDUIT.
- 09 REMOVE TREE TO MINIMUM 1' BELOW PROPOSED GRADE. REMOVE ONLY TREES REQUIRED TO COMPLETE CONSTRUCTION, TREES TO REMAIN SHALL BE PROTECTED DURING CONSTRUCTION.
- 10 COORDINATE WITH UTILITY (MACON ELECTRIC COOPERATIVE) TO REMOVE EXISTING TRANSFORMER FOR REPLACEMENT.
- 11 SALVAGE SIGN AND POST FOR REINSTALLATION. NOTE SIGN TYPE AND LOCATION FOR FUTURE INSTALLATION.
- 12 PROTECT TREE TO REMAIN.
- 13 REMOVE STORM SEWER PIPE.

BENCHMARKS

DATUM: NAD83 MISSOURI STATE PLANES, CENTRAL ZONE, US FOOT

- CHISELED "□" SOUTH EDGE OF CONCRETE MANHOLE NORTH OF LAGOON, ELEVATION: 831.02
- CHISELED "□" SOUTHEAST CORNER CONCRETE PAD WITH LIQUID PROPANE TANK WEST OF SHOWER HOUSE, ELEVATION: 846.13
- TOP REBAR - CONTROL POINT 3, ELEVATION: 845.67

CONTROL POINTS				
POINT #	DESC.	NORTHING	EASTING	ELEVATION
1	CP1 - REBAR	1433529.151	1633581.853	827.94
2	CP2 - REBAR	1433673.668	1634071.079	846.12
3	CP3 - REBAR	1434138.398	1633316.759	845.67
4	CP4 - REBAR	1433760.743	1634365.380	819.78
5	CP5 - REBAR	1433837.304	1633895.126	846.67
6	CP6 - CHISELED PLUS	1433840.095	1633965.399	846.26
7	CP7 - CHISELED PLUS	1434130.218	1633823.357	844.38
8	CP8 - CHISELED PLUS	1434218.776	1633607.680	842.21

STATE OF MISSOURI  
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MODIFY CAMPGROUND  
LOOP 1

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MACON, MO 63552

PROJECT # X2517-01  
SITE # 5601  
ASSET # 7815601031

REVISION: \_\_\_\_\_  
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DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
ISSUE DATE: 12-17-2025

CAD DWG FILE: CD101  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

SHEET TITLE:

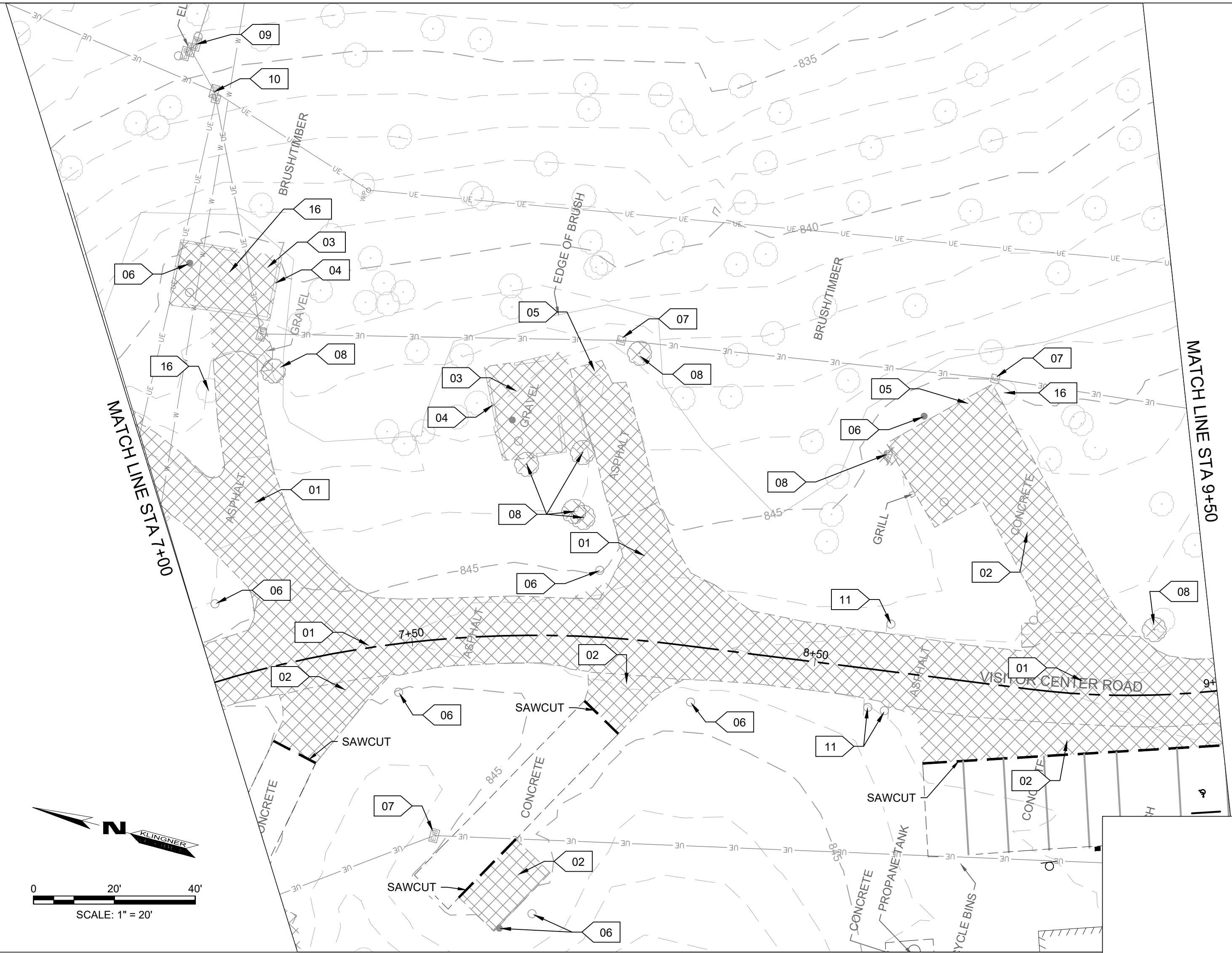
SITE DEMOLITION  
PLAN STA 1+00 TO  
STA 7+00

SHEET NUMBER:

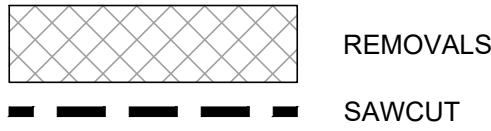
CD101

SHEET 7 OF 41  
12/17/2025





DEMOLITION LEGEND



DEMO KEY NOTES

- 01 REMOVE EXISTING ASPHALT PAVEMENT.
- 02 REMOVE EXISTING CONCRETE PAVEMENT.
- 03 REMOVE EXISTING AGGREGATE PAVEMENT.
- 04 REMOVE EXISTING RAILROAD TIES.
- 05 SALVAGE EXISTING CONCRETE PARKING BLOCK TO OWNER.
- 06 SALVAGE EXISTING GRILLS, POSTS, SIGNS AND VARIOUS CAMPSITE FEATURES TO OWNER.
- 07 SALVAGE JUNCTION BOX & PEDESTALS TO OWNER, REMOVE TO MINIMUM 1' BELOW PROPOSED GRADE, ABANDON REMAINING CONDUIT.
- 08 REMOVE TREE OR STUMP TO 1' MINIMUM BELOW PROPOSED GRADES. TREES NOT INDICATED FOR REMOVAL SHALL BE PROTECTED DURING CONSTRUCTION.
- 09 SALVAGE TWO (2) PANELS AND JUNCTION BOX. REMOVE WOOD SUPPORT & CONDUCTORS BACK TO TRANSFORMER.
- 10 COORDINATE WITH UTILITY (MACON ELECTRIC COOPERATIVE) TO REMOVE 100 KVA TRANSFORMER FOR REPLACEMENT.
- 11 SALVAGE SIGN AND POST FOR REINSTALLATION. NOTE SIGN TYPE AND LOCATION FOR FUTURE INSTALLATION.
- 12 REMOVE SANITARY SEWER CLEANOUT, CAP AND ABANDON SEWER PIPE.
- 13 REMOVE ABOVE GROUND WATER STRUCTURES, CAP WATER PIPE.
- 14 REMOVE STORM SEWER PIPE.
- 15 SALVAGE PARKING BLOCK FOR REINSTALLATION.
- 16 PROTECT TREE TO REMAIN.
- 17 CAP AND ABANDON WATER SERVICE LINE. VALVE AND DOWNSTREAM SERVICE TO REMAIN.

DEMOLITION NOTES

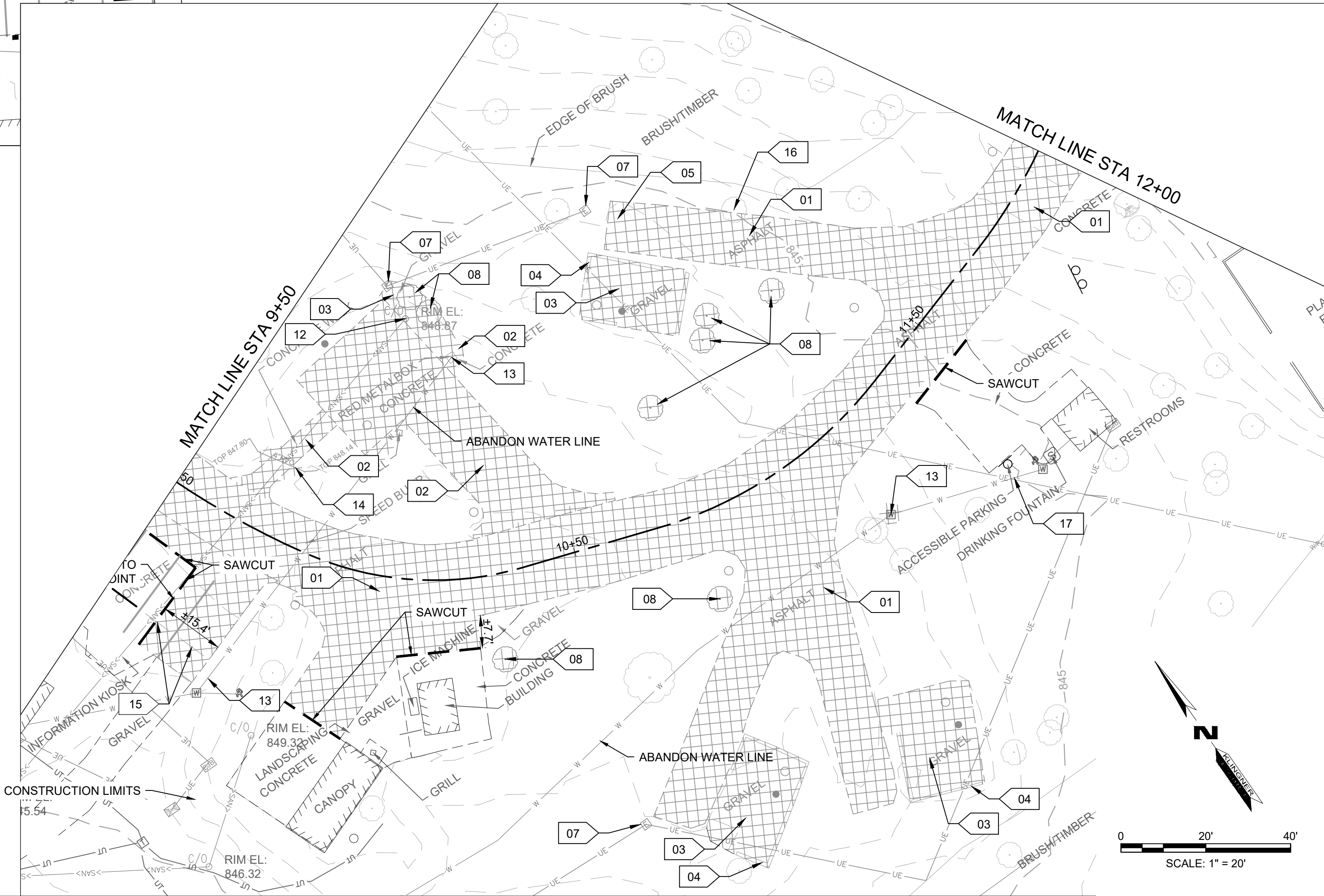
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BENCHMARKS

DATUM: NAD83 MISSOURI STATE PLANES, CENTRAL ZONE, US FOOT

- CHISELED "□" SOUTH EDGE OF CONCRETE MANHOLE NORTH OF LAGOON, ELEVATION: 831.02
- CHISELED "□" SOUTHEAST CORNER CONCRETE PAD WITH LIQUID PROPANE TANK WEST OF SHOWER HOUSE, ELEVATION: 846.13
- TOP REBAR - CONTROL POINT 3, ELEVATION: 845.67

CONTROL POINTS				
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Burlington, IA 50835

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DEPARTMENT OF  
NATURAL RESOURCES  
MISSOURI STATE PARKS

MODIFY CAMPGROUND  
LOOP 1

LONG BRANCH STATE PARK  
28615 VISITOR CENTER RD  
MACON, MO 63552

PROJECT # X2517-01  
SITE # 5601  
ASSET # 7815601031

REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
ISSUE DATE: 12-17-2025

CAD DWG FILE: CD102  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

SHEET TITLE:

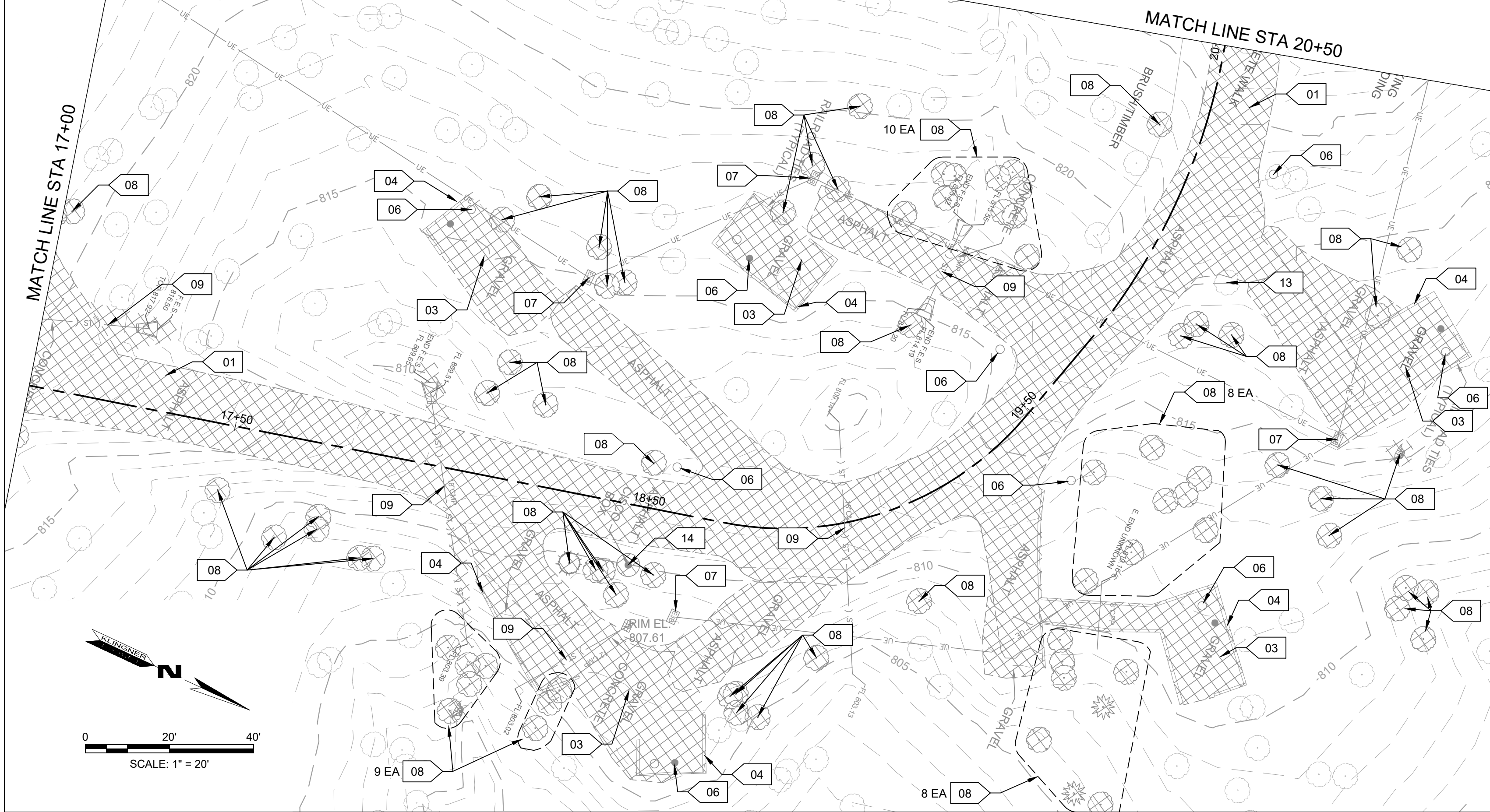
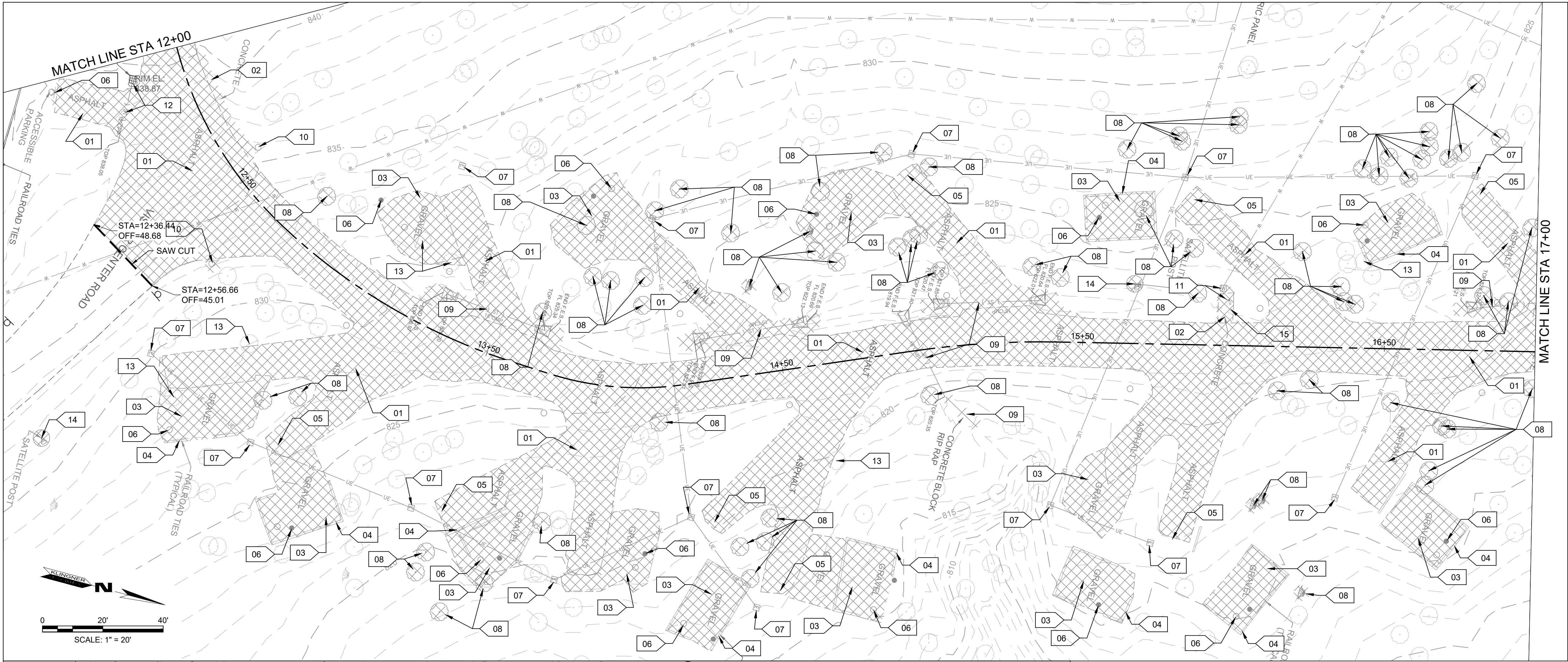
SITE DEMOLITION  
PLAN STA 7+00 TO  
STA 12+00

SHEET NUMBER:

CD102

SHEET 8 OF 41  
12/17/2025





DEMOLITION NOTES

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DEMO KEY NOTES

- |    |  |    |   |
|----|--|----|---|
| 01 | REMOVE EXISTING ASPHALT PAVEMENT.  | 08 | REMOVE TREE TO MINIMUM 1' BELOW PROPOSED GRADE. TREES NOT INDICATED FOR REMOVAL SHALL BE PROTECTED DURING CONSTRUCTION. |
| 02 | REMOVE EXISTING CONCRETE PAVEMENT.   | 09 | REMOVE EXISTING STORM SEWER PIPE, STRUCTURES AND RIPRAP.  |
| 03 | REMOVE EXISTING AGGREGATE PAVEMENT.  | 10 | SALVAGE SIGN AND POST FOR REINSTALLATION. NOTE SIGN TYPE AND LOCATION FOR FUTURE INSTALLATION.                          |
| 04 | REMOVE EXISTING RAILROAD TIES.   | 11 | REMOVE EXISTING WATER METER AND HOSE BIB, ABANDON WATER LINE.   |
| 05 | SALVAGE EXISTING CONCRETE PARKING BLOCK TO OWNER.  | 12 | PROTECT STORM SEWER INLET AND PIPE.   |
| 06 | SALVAGE EXISTING GRILLS, POSTS, SIGNS AND VARIOUS CAMPSITE FEATURES TO OWNER.                                    | 13 | PROTECT TREE TO REMAIN.   |
| 07 | SALVAGE JUNCTION BOX & PEDESTALS TO OWNER, REMOVE TO MINIMUM 1' BELOW PROPOSED GRADE, ABANDON REMAINING CONDUIT. | 14 | REMOVE WOODEN MAST, SALVAGE ELECTRONICS TO OWNER.   |
|    |  | 15 | REMOVE WATER STATION.   |

BENCHMARKS

DATUM: NAD83 MISSOURI STATE PLANES, CENTRAL ZONE, US FOOT

- CHISELED " " SOUTH EDGE OF CONCRETE MANHOLE NORTH OF LAGOON, ELEVATION: 831.02
- CHISELED " " SOUTHEAST CORNER CONCRETE PAD WITH LIQUID PROPANE TANK WEST OF SHOWER HOUSE, ELEVATION: 846.13
- TOP REBAR - CONTROL POINT 3, ELEVATION: 845.67

DEMOLITION LEGEND

- |  |          |
|--|----------|
|  | REMOVALS |
|  | SAWCUT   |

STATE OF MISSOURI  
MIKE KEHOE,  
GOVERNOR  
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MODIFY CAMPGROUND  
LOOP 1

LONG BRANCH STATE PARK  
28615 VISITOR CENTER RD  
MACON, MO 63552

PROJECT # X2517-01  
SITE # 5601  
ASSET # 7815601031

REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
ISSUE DATE: 12-17-2025

CAD DWG FILE: CD103  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

SHEET TITLE:

SITE DEMOLITION  
PLAN STA 12+00 TO  
STA 20+50

SHEET NUMBER:

CD103

SHEET 9 OF 41  
12/17/2025





DEMOLITION LEGEND

- REMOVALS
- SAWCUT

DEMOLITION NOTES

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DEMO KEY NOTES

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- 03 REMOVE EXISTING AGGREGATE PAVEMENT.
- 04 REMOVE EXISTING RAILROAD TIES.
- 05 SALVAGE EXISTING GRILLS, POSTS, SIGNS AND VARIOUS CAMPSITE FEATURES TO OWNER.
- 06 SALVAGE JUNCTION BOX & PEDESTALS TO OWNER, REMOVE TO MINIMUM 1' BELOW PROPOSED GRADE, ABANDON REMAINING CONDUIT.
- 07 REMOVE TREE TO MINIMUM 1' BELOW PROPOSED GRADE. TREES NOT INDICATED FOR REMOVAL SHALL BE PROTECTED DURING CONSTRUCTION.
- 08 ABANDON EXISTING WATER PIPE AND VALVE.
- 09 REMOVE WATER STATION.
- 10 REMOVE WOODEN MAST, SALVAGE ELECTRONICS TO OWNER.

BENCHMARKS

DATUM: NAD83 MISSOURI STATE PLANES, CENTRAL ZONE, US FOOT

- CHISELED " " SOUTH EDGE OF CONCRETE MANHOLE NORTH OF LAGOON, ELEVATION: 831.02
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4	CP4 - REBAR	1433760.743	1634365.380	819.78
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REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
ISSUE DATE: 12-17-2025

CAD DWG FILE: CD104  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

SHEET TITLE:

SIDE DEMOLITION  
PLAN STA 20+50 TO  
STA 23+50

SHEET NUMBER:

CD104

SHEET 10 OF 41  
12/17/2025

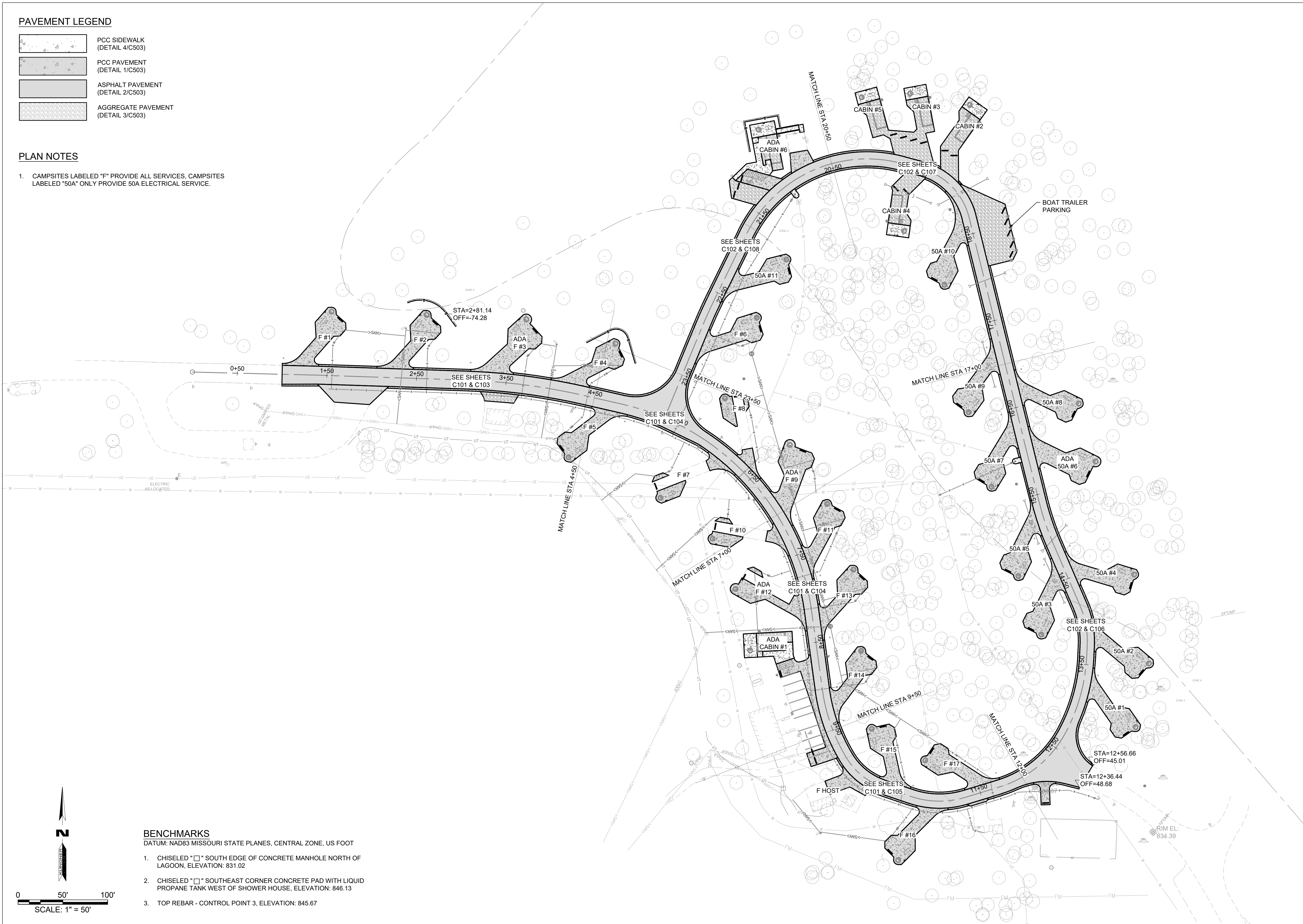


PAVEMENT LEGEND

	PCC SIDEWALK (DETAIL 4/C503)
	PCC PAVEMENT (DETAIL 1/C503)
	ASPHALT PAVEMENT (DETAIL 2/C503)
	AGGREGATE PAVEMENT (DETAIL 3/C503)

PLAN NOTES

1. CAMPSITES LABELED "F" PROVIDE ALL SERVICES. CAMPSITES LABELED "50A" ONLY PROVIDE 50A ELECTRICAL SERVICE.



BENCHMARKS

DATUM: NAD83 MISSOURI STATE PLANES, CENTRAL ZONE, US FOOT

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ISSUE DATE: 12-17-2025

CAD DWG FILE: C100  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

SHEET TITLE:

OVERALL SITE PLAN



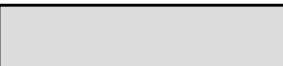

SHEET NUMBER:

C100

SHEET 11 OF 41  
12/17/2025

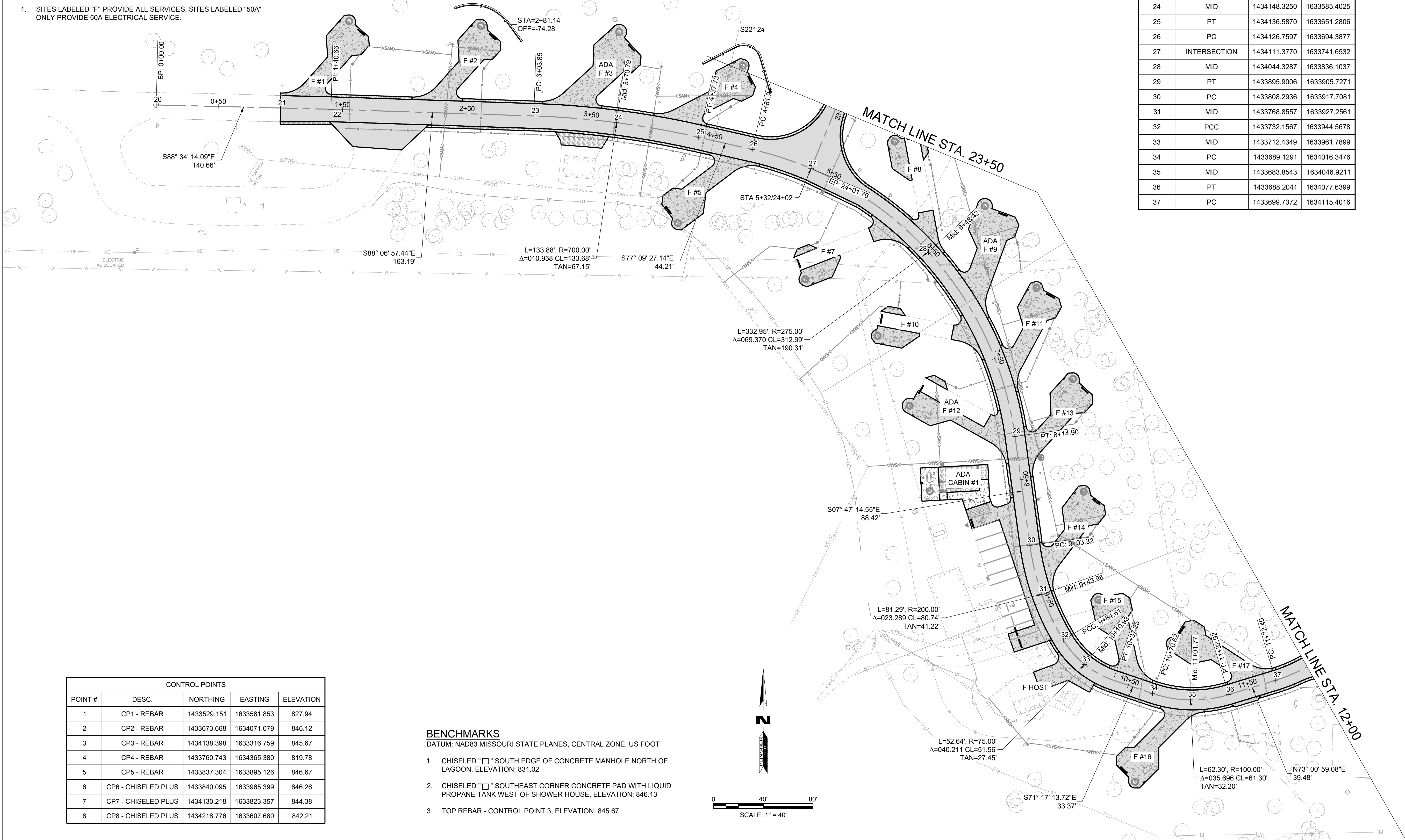


PAVEMENT LEGEND

	PCC SIDEWALK (DETAIL 4/C503)
	PCC PAVEMENT (DETAIL 1/C503)
	ASPHALT PAVEMENT (DETAIL 2/C503)
	AGGREGATE PAVEMENT (DETAIL 3/C503)

PLAN NOTES

1. SITES LABELED "F" PROVIDE ALL SERVICES, SITES LABELED "50A" ONLY PROVIDE 50A ELECTRICAL SERVICE.

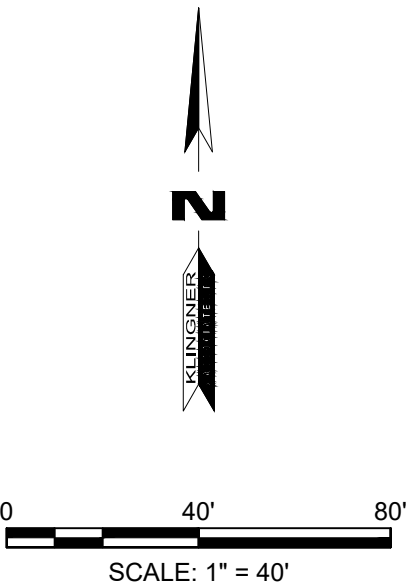


CONTROL POINTS				
POINT #	DESC.	NORTHING	EASTING	ELEVATION
1	CP1 - REBAR	1433529.151	1633581.853	827.94
2	CP2 - REBAR	1433673.668	1634071.079	846.12
3	CP3 - REBAR	1434138.398	1633316.759	845.67
4	CP4 - REBAR	1433760.743	1634365.380	819.78
5	CP5 - REBAR	1433837.304	1633895.126	846.67
6	CP6 - CHISELED PLUS	1433840.095	1633965.399	846.26
7	CP7 - CHISELED PLUS	1434130.218	1633823.357	844.38
8	CP8 - CHISELED PLUS	1434218.776	1633607.680	842.21

BENCHMARKS

DATUM: NAD83 MISSOURI STATE PLANES, CENTRAL ZONE, US FOOT

1. CHISELED "□" SOUTH EDGE OF CONCRETE MANHOLE NORTH OF LAGOON, ELEVATION: 831.02
2. CHISELED "□" SOUTHEAST CORNER CONCRETE PAD WITH LIQUID PROPANE TANK WEST OF SHOWER HOUSE, ELEVATION: 846.13
3. TOP REBAR - CONTROL POINT 3, ELEVATION: 845.67



COORDINATE POINTS			
POINT #	DESC.	NORTHING	EASTING
20	BEGIN ALIGNMENT	1434162.5931	1633214.9897
21	BEGIN PAVEMENT	1434160.0985	1633314.9586
22	PI	1434159.0843	1633355.6022
23	PC	1434153.7191	1633518.7046
24	MID	1434148.3250	1633585.4025
25	PT	1434136.5870	1633651.2806
26	PC	1434126.7597	1633694.3877
27	INTERSECTION	1434111.3770	1633741.6532
28	MID	1434044.3287	1633836.1037
29	PT	1433895.9006	1633905.7271
30	PC	1433808.2936	1633917.7081
31	MID	1433768.8557	1633927.2561
32	PCC	1433732.1567	1633944.5678
33	MID	1433712.4349	1633961.7899
34	PC	1433689.1291	1634016.3476
35	MID	1433683.8543	1634046.9211
36	PT	1433688.2041	1634077.6399
37	PC	1433699.7372	1634115.4016

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AND CONSTRUCTION

DEPARTMENT OF  
NATURAL RESOURCES  
MISSOURI STATE PARKS

MODIFY CAMPGROUND  
LOOP 1

LONG BRANCH STATE PARK  
28615 VISITOR CENTER RD  
MACON, MO 63552

PROJECT # X2517-01  
SITE # 5601  
ASSET # 7815601031

REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
ISSUE DATE: 12-17-2025

CAD DWG FILE: C101  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

SHEET TITLE:

OVERALL ROAD  
PLAN SOUTHWEST





SHEET NUMBER:

C101

SHEET 12 OF 41  
12/17/2025



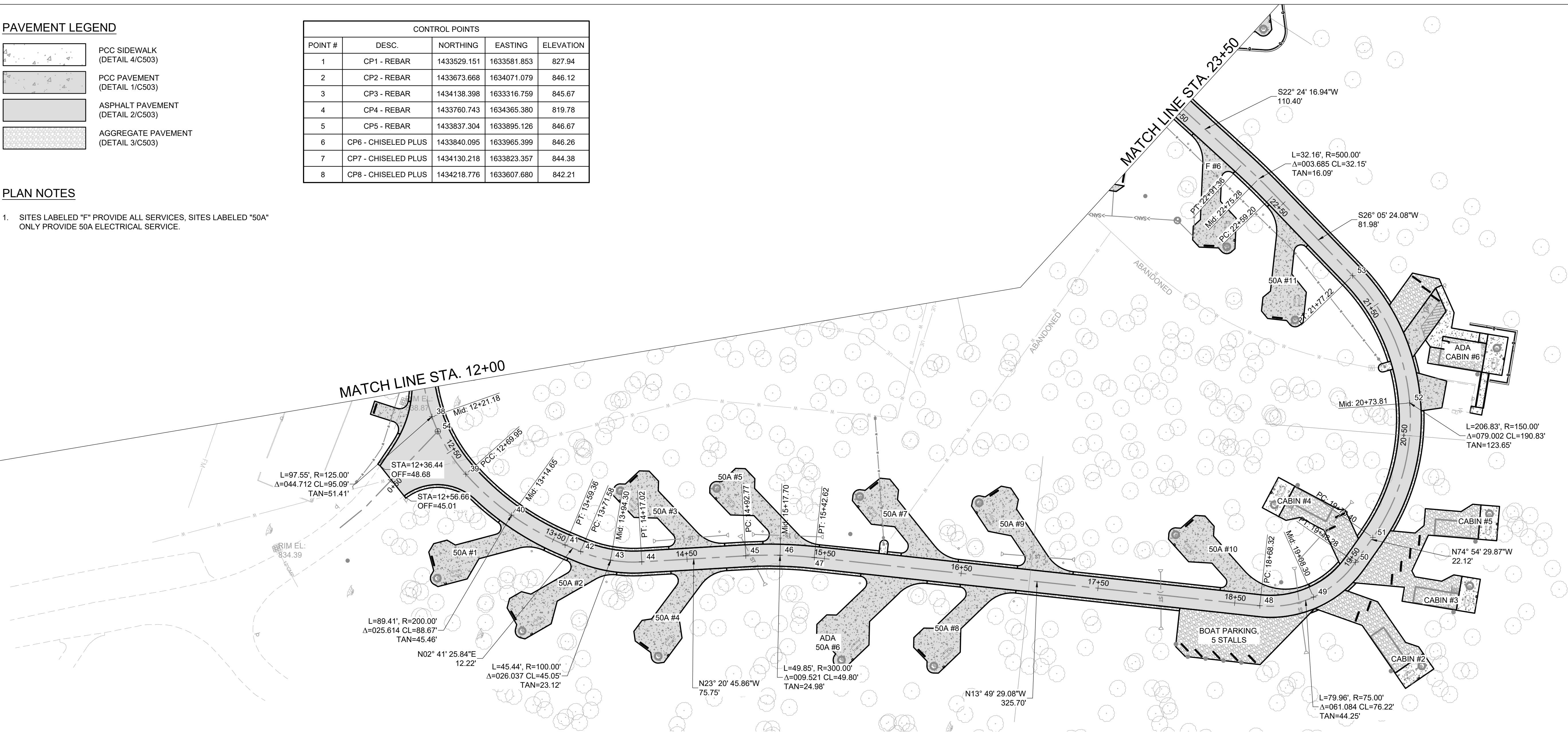
PAVEMENT LEGEND

	PCC SIDEWALK (DETAIL 4/C503)
	PCC PAVEMENT (DETAIL 1/C503)
	ASPHALT PAVEMENT (DETAIL 2/C503)
	AGGREGATE PAVEMENT (DETAIL 3/C503)

CONTROL POINTS				
POINT #	DESC.	NORTHING	EASTING	ELEVATION
1	CP1 - REBAR	1433529.151	1633581.853	827.94
2	CP2 - REBAR	1433673.668	1634071.079	846.12
3	CP3 - REBAR	1434138.398	1633316.759	845.67
4	CP4 - REBAR	1433760.743	1634365.380	819.78
5	CP5 - REBAR	1433837.304	1633895.126	846.67
6	CP6 - CHISELED PLUS	1433840.095	1633965.399	846.26
7	CP7 - CHISELED PLUS	1434130.218	1633823.357	844.38
8	CP8 - CHISELED PLUS	1434218.776	1633607.680	842.21

PLAN NOTES

1. SITES LABELED "F" PROVIDE ALL SERVICES, SITES LABELED "50A" ONLY PROVIDE 50A ELECTRICAL SERVICE.

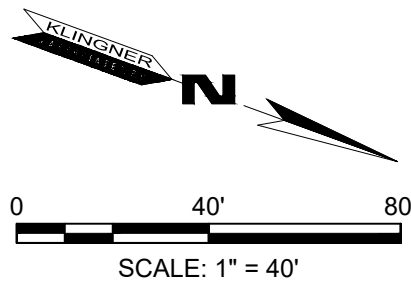


COORDINATE POINTS			
POINT #	DESC.	NORTHING	EASTING
38	MID	1433722.6103	1634158.1287
39	PCC	1433760.0159	1634188.9443
40	MID	1433801.4082	1634205.5848
41	PT	1433845.4594	1634212.6360
42	PC	1433857.6623	1634213.2095
43	MID	1433880.2843	1634211.6995
44	PT	1433901.9848	1634205.1325
45	PC	1433971.5348	1634175.1132
46	MID	1433994.8046	1634166.1967
47	PT	1434018.7342	1634159.2422
48	PC	1434334.9946	1634081.4164
49	MID	1434369.5166	1634062.2051
50	PT	1434389.4865	1634028.1164
51	PC	1434395.2456	1634006.7598
52	MID	1434387.0117	1633905.7177
53	PT	1434316.3864	1633832.9895
54	INTERSECTION	1433730.2960	1634166.6722

BENCHMARKS

DATUM: NAD83 MISSOURI STATE PLANES, CENTRAL ZONE, US FOOT

- CHISELED "□" SOUTH EDGE OF CONCRETE MANHOLE NORTH OF LAGOON, ELEVATION: 831.02
- CHISELED "□" SOUTHEAST CORNER CONCRETE PAD WITH LIQUID PROPANE TANK WEST OF SHOWER HOUSE, ELEVATION: 846.13
- TOP REBAR - CONTROL POINT 3, ELEVATION: 845.67



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MODIFY CAMPGROUND  
LOOP 1

LONG BRANCH STATE PARK  
28615 VISITOR CENTER RD  
MACON, MO 63552

PROJECT # X2517-01  
SITE # 5601  
ASSET # 7815601031

REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
ISSUE DATE: 12-17-2025

CAD DWG FILE: C102  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

SHEET TITLE:

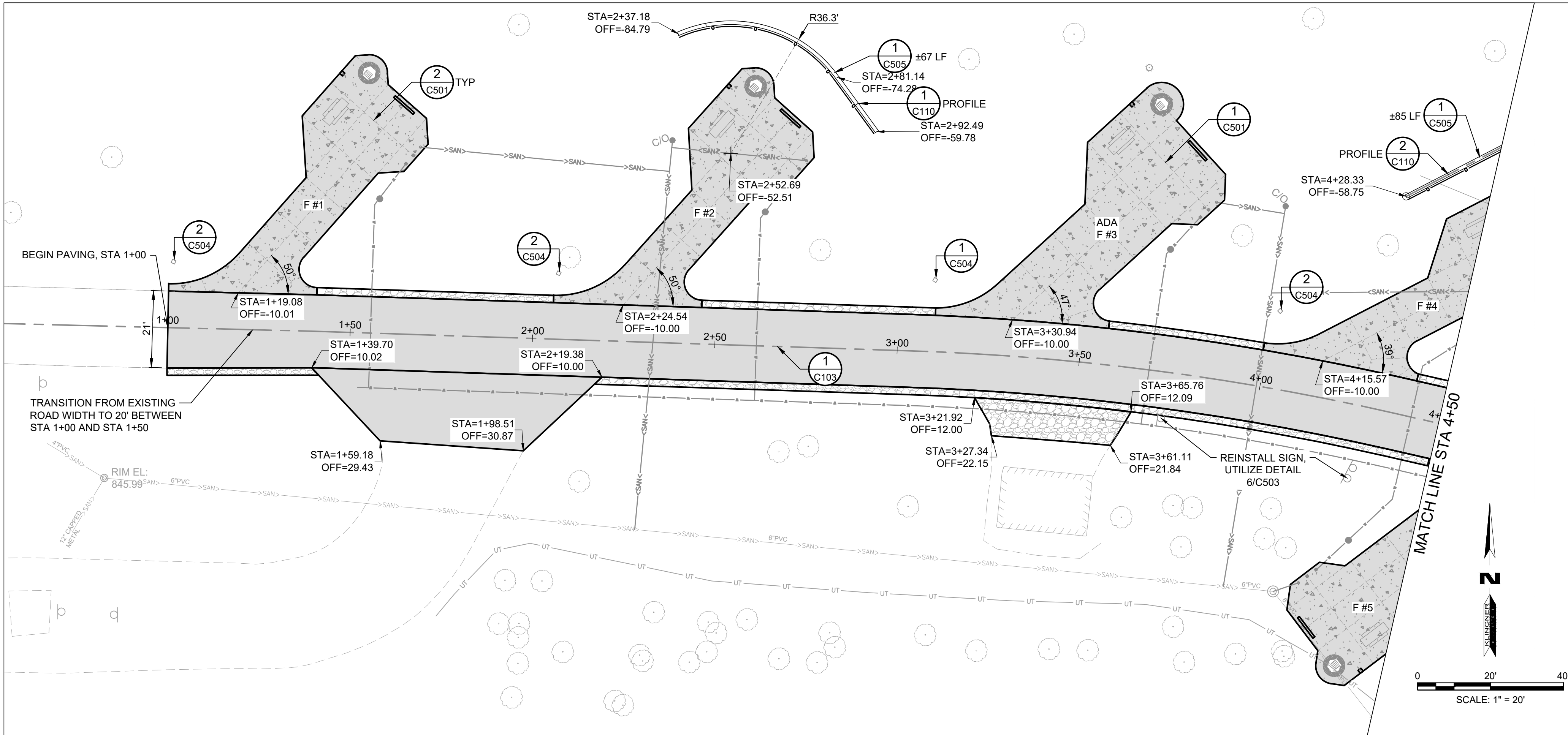
OVERALL ROAD  
PLAN NORTHEAST

SHEET NUMBER:

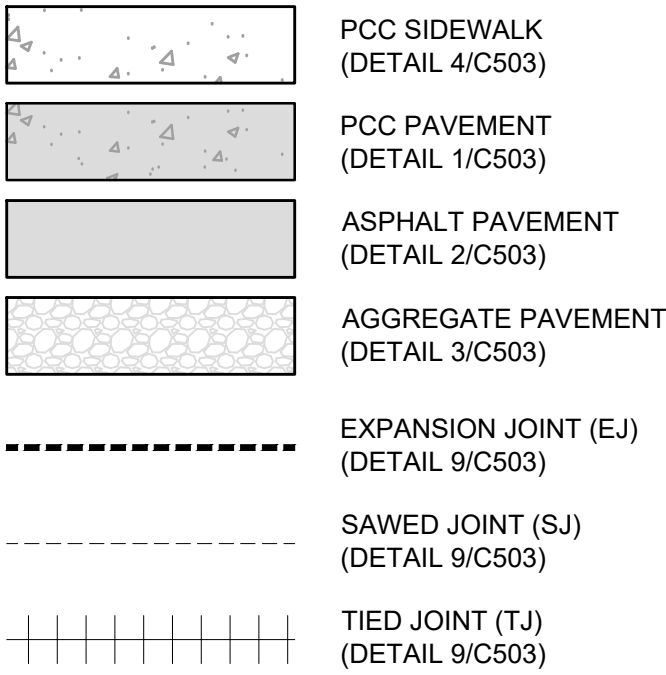
C102

SHEET 13 OF 41  
12/17/2025





PAVEMENT & JOINT LEGEND



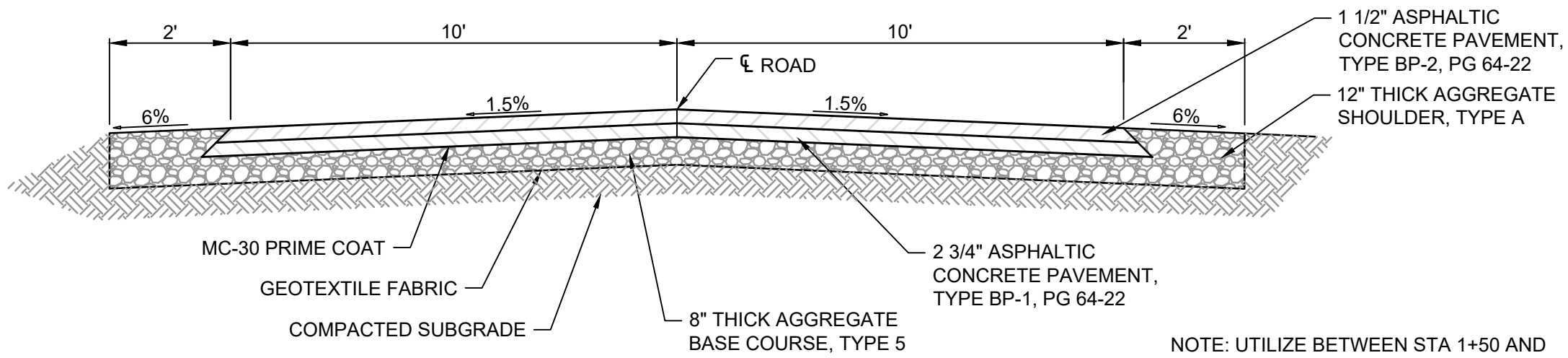
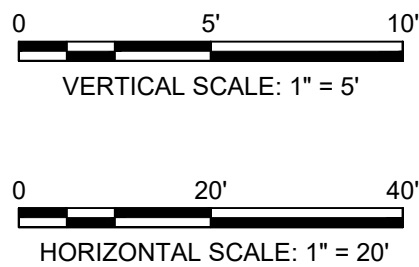
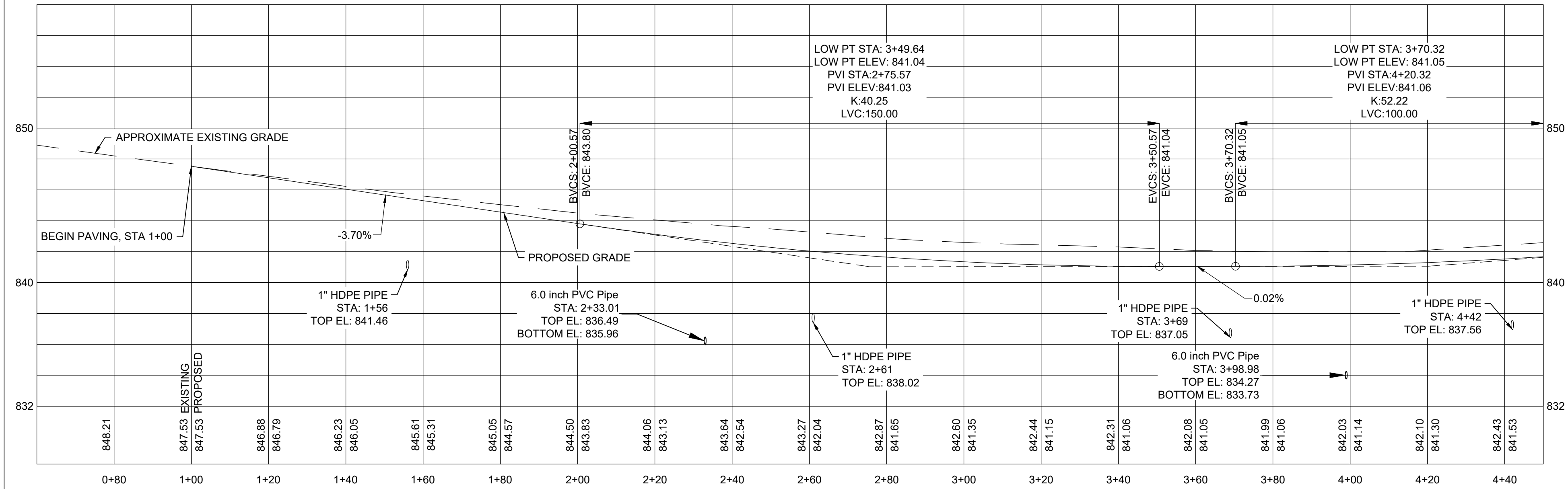
NOTE

SEE SHEET C101 FOR COORDINATE POINT TABLES AND HORIZONTAL ROAD GEOMETRY.

BENCHMARKS

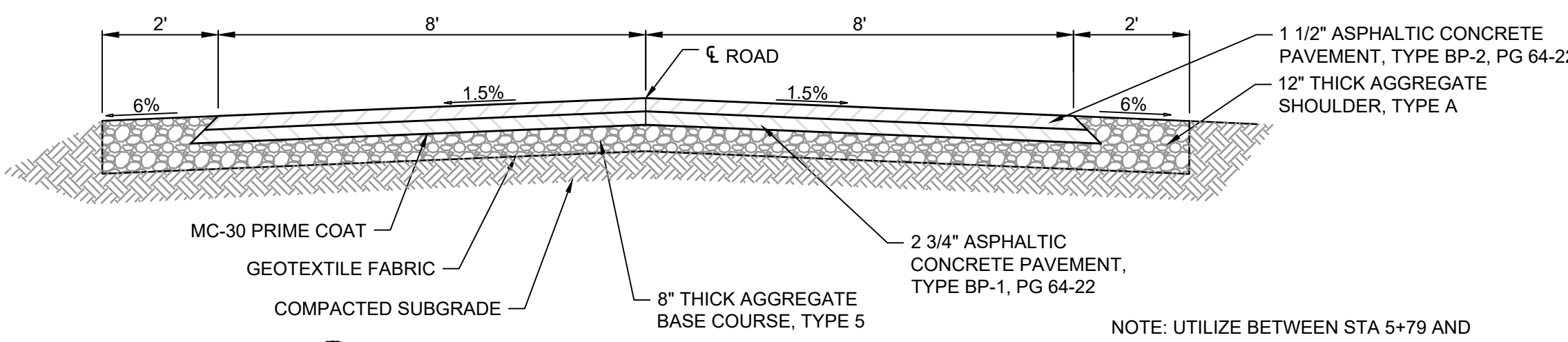
DATUM: NAD83 MISSOURI STATE PLANES, CENTRAL ZONE, US FOOT

- CHISELED "□" SOUTH EDGE OF CONCRETE MANHOLE NORTH OF LAGOON, ELEVATION: 831.02
- CHISELED "□" SOUTHEAST CORNER CONCRETE PAD WITH LIQUID PROPANE TANK WEST OF SHOWER HOUSE, ELEVATION: 846.13
- TOP REBAR - CONTROL POINT 3, ELEVATION: 845.67



1 TYPICAL TWO WAY BITUMINOUS ROAD SECTION  
N.T.S.

NOTE: UTILIZE BETWEEN STA 1+50 AND STA 4+82, SEE INTERSECTION DETAILS FOR TRANSITIONS.



2 TYPICAL ONE WAY BITUMINOUS ROAD SECTION  
N.T.S.

NOTE: UTILIZE BETWEEN STA 5+79 AND STA 11+89 AND BETWEEN STA 12+88 AND STA 23+46, SEE INTERSECTION DETAILS FOR TRANSITIONS.

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MODIFY CAMPGROUND  
LOOP 1

LONG BRANCH STATE PARK  
28615 VISITOR CENTER RD  
MACON, MO 63552

PROJECT # X2517-01  
SITE # 5601  
ASSET # 7815601031

REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
ISSUE DATE: 12-17-2025

CAD DWG FILE: C103  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

SHEET TITLE:

ROAD PLAN &  
PROFILE STA 1+00 TO  
STA 4+50

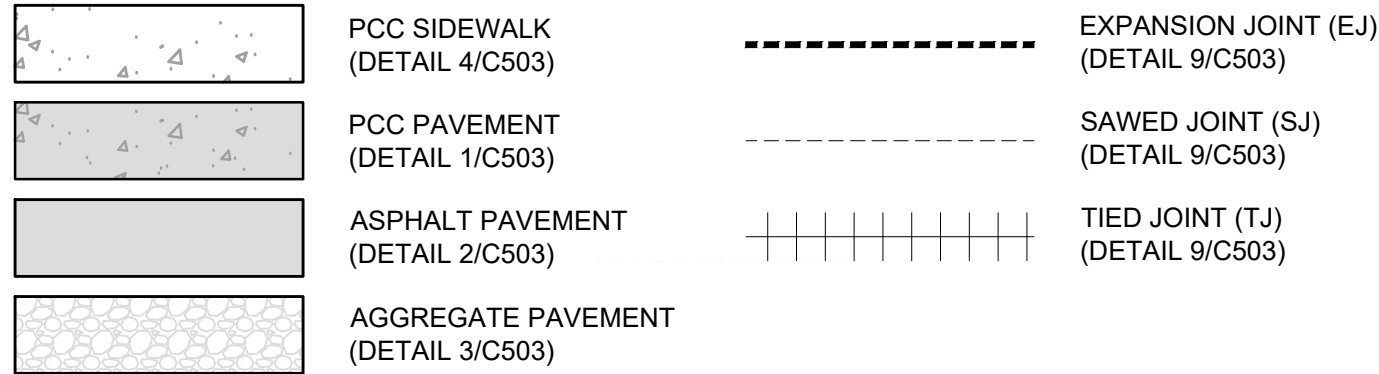
SHEET NUMBER:

C103

SHEET 14 OF 41  
12/17/2025

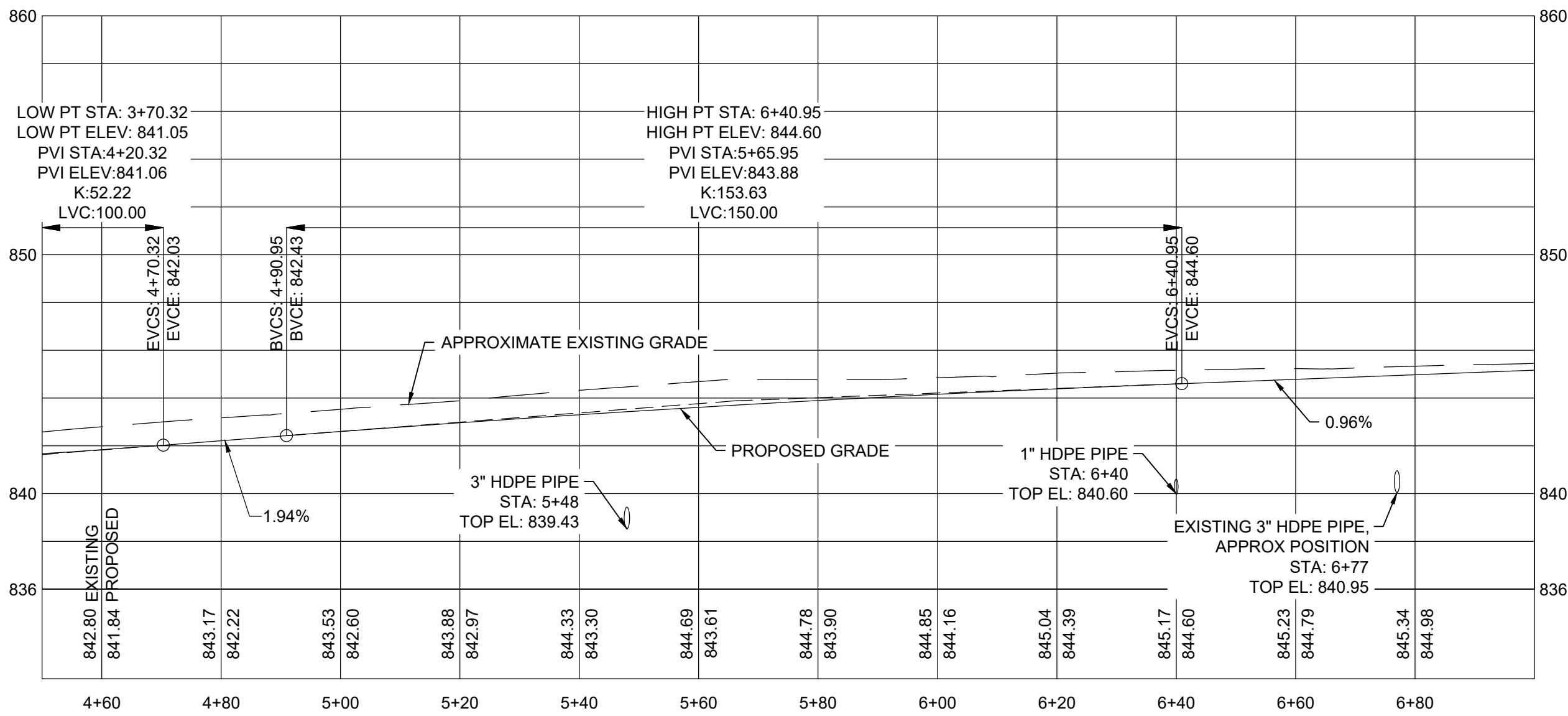
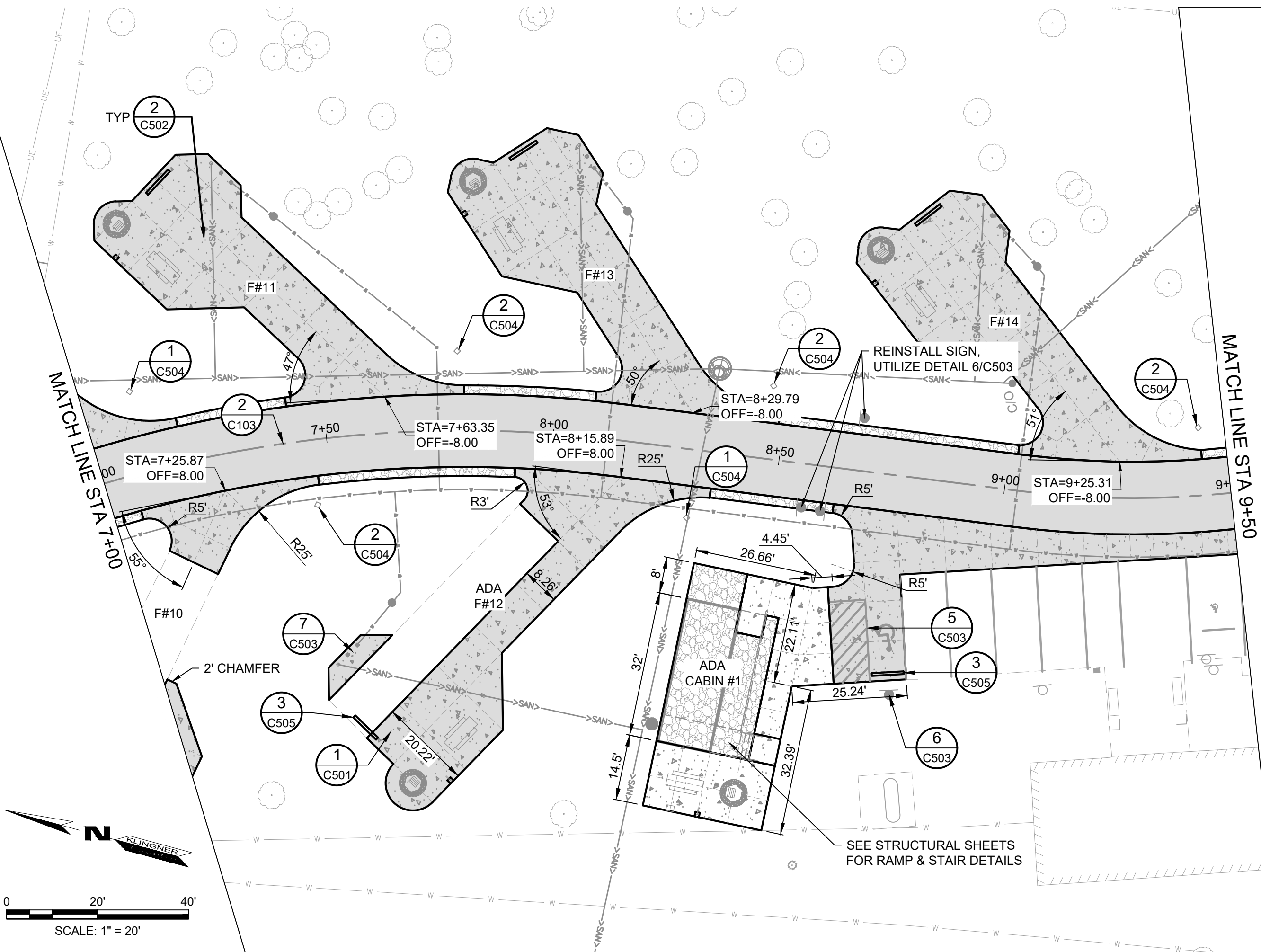
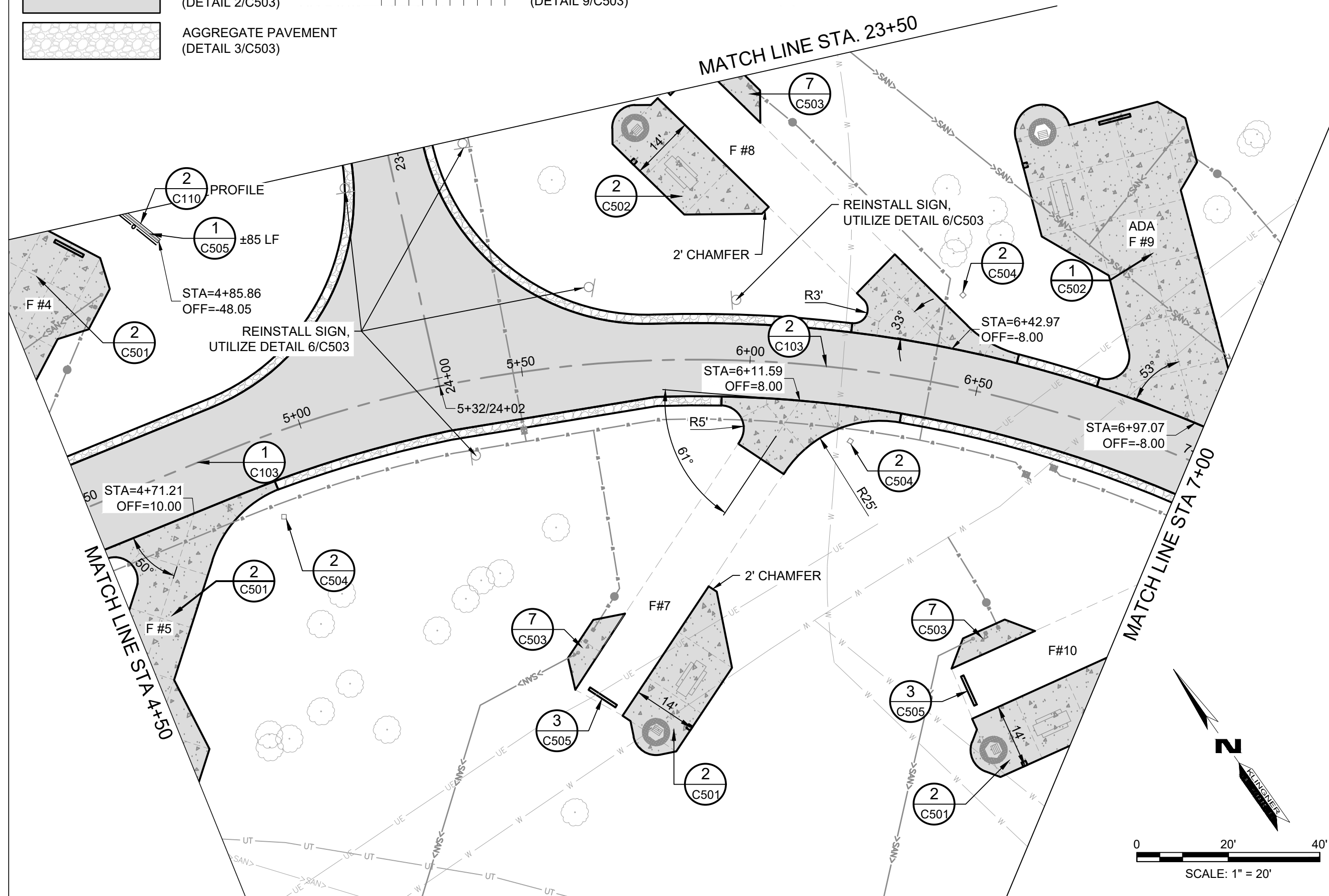


PAVEMENT & JOINT LEGEND



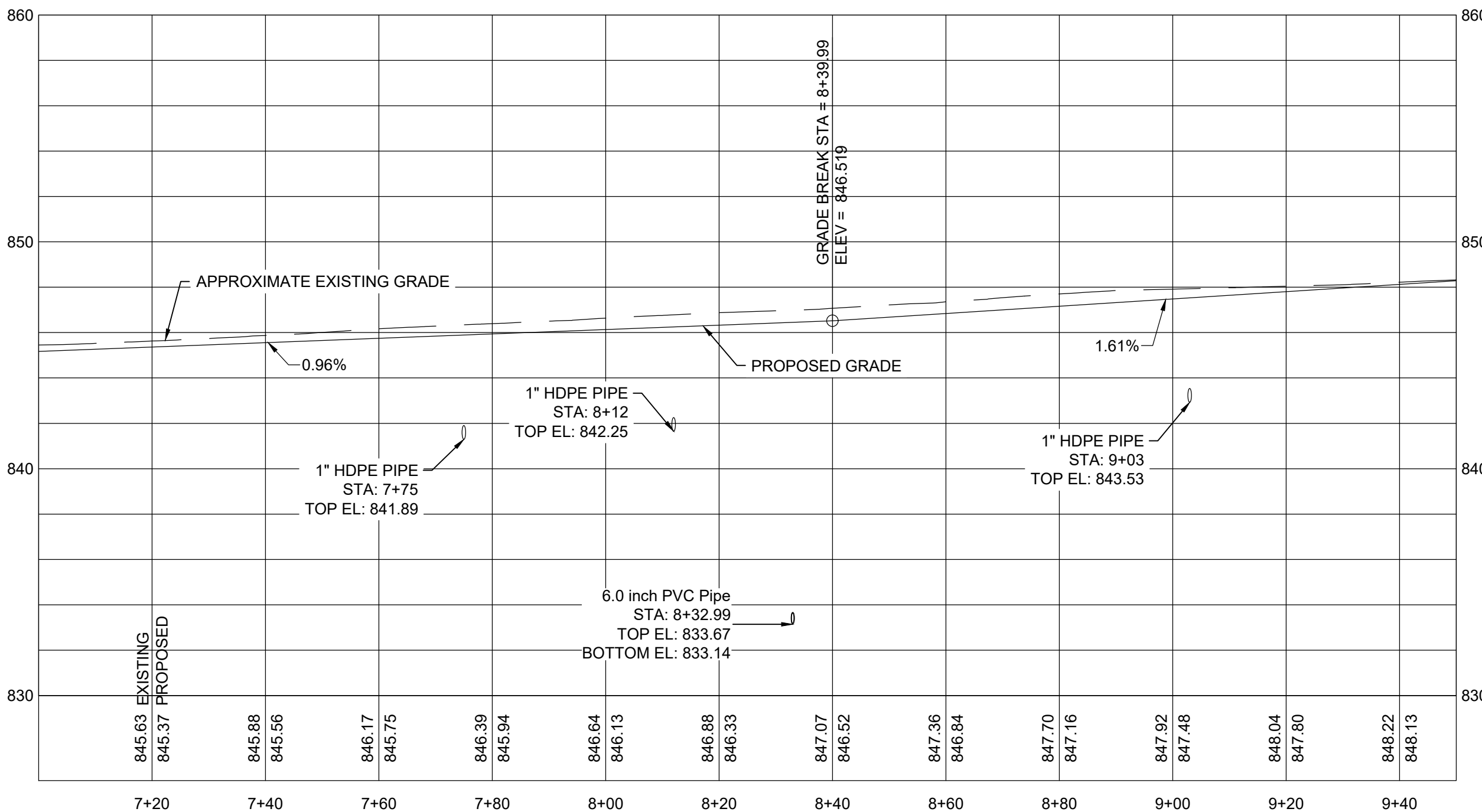
NOTES

1. SEE SHEET C103 FOR TYPICAL ROAD SECTIONS.
2. SEE SHEET C101 FOR COORDINATE POINT TABLES AND HORIZONTAL ROAD GEOMETRY.
3. SEE DETAIL 1/C109 FOR INTERSECTION INFORMATION.



BENCHMARKS

- DATUM: NAD83 MISSOURI STATE PLANES, CENTRAL ZONE, US FOOT
1. CHISELED "□" SOUTH EDGE OF CONCRETE MANHOLE NORTH OF LAGOON, ELEVATION: 831.02
  2. CHISELED "□" SOUTHEAST CORNER CONCRETE PAD WITH LIQUID PROPANE TANK WEST OF SHOWER HOUSE, ELEVATION: 846.13
  3. TOP REBAR - CONTROL POINT 3, ELEVATION: 845.67



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MODIFY CAMPGROUND  
LOOP 1

LONG BRANCH STATE PARK  
28615 VISITOR CENTER RD  
MACON, MO 63552

PROJECT # X2517-01  
SITE # 5601  
ASSET # 7815601031

REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
ISSUE DATE: 12-17-2025

CAD DWG FILE: C104  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

SHEET TITLE:

ROAD PLAN &  
PROFILE STA 4+50 TO  
STA 9+50


SHEET NUMBER:


C104


SHEET 15 OF 41  
12/17/2025




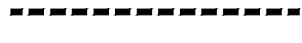
PAVEMENT & JOINT LEGEND

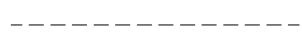
- 


PCC SIDEWALK  
(DETAIL 4/C503)
- 

PCC PAVEMENT  
(DETAIL 1/C503)
- 

ASPHALT PAVEMENT  
(DETAIL 2/C503)
- 

AGGREGATE PAVEMENT  
(DETAIL 3/C503)
- 

EXPANSION JOINT (EJ)  
(DETAIL 9/C503)
- 

SAWED JOINT (SJ)  
(DETAIL 9/C503)
- 

TIED JOINT (TJ)  
(DETAIL 9/C503)

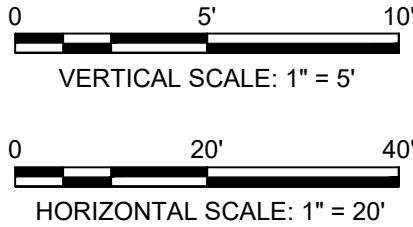
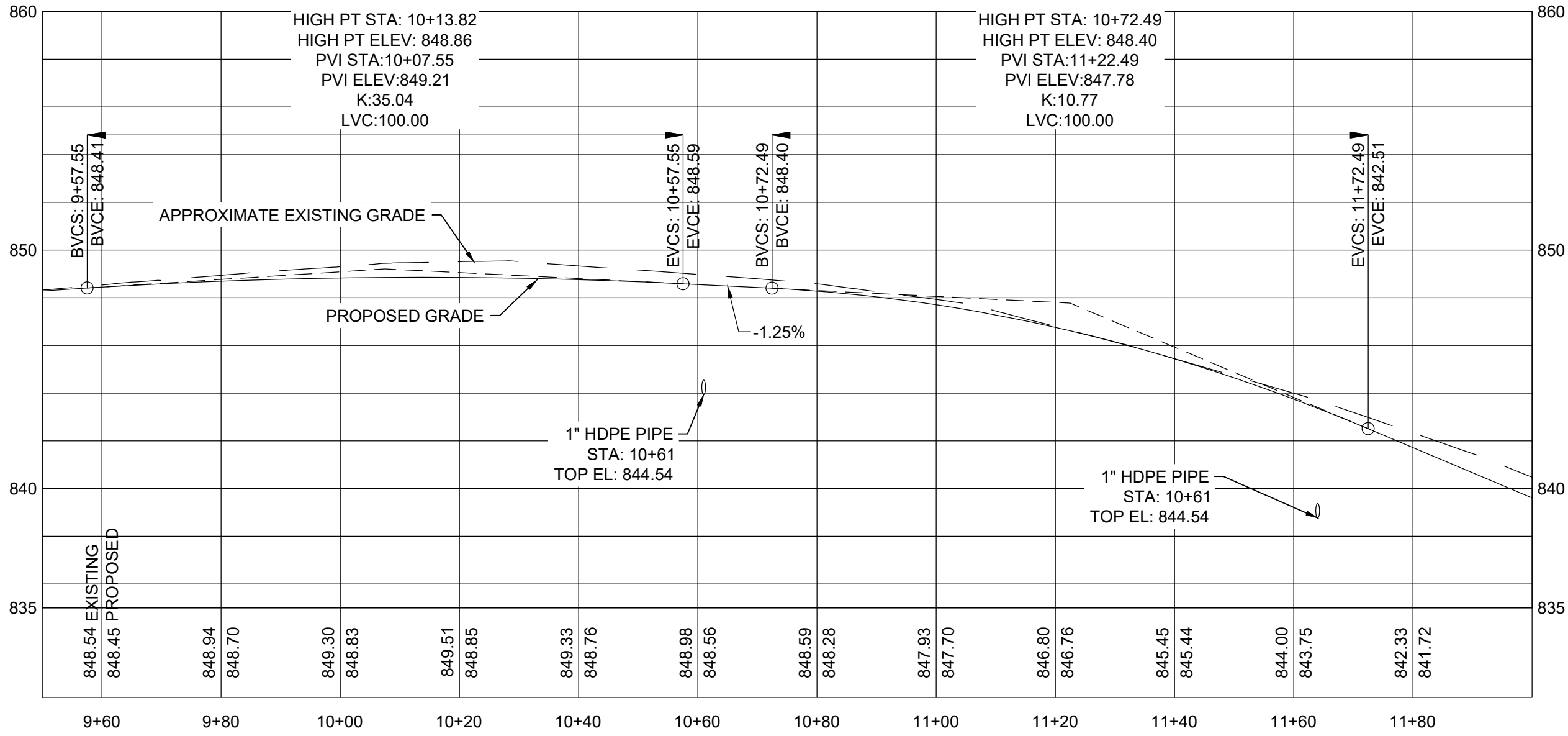
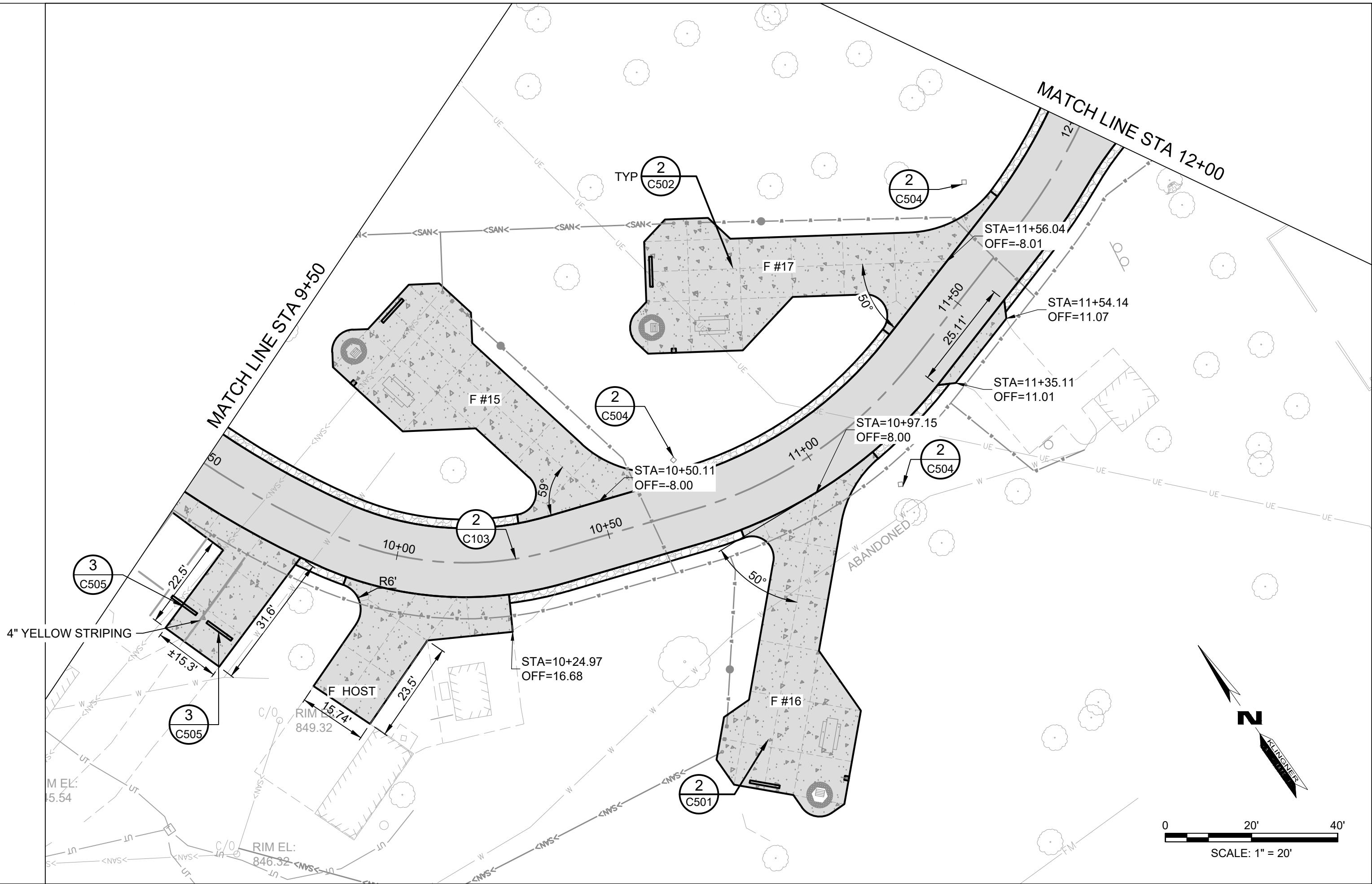
NOTES

1. SEE SHEET C103 FOR TYPICAL ROAD SECTIONS.
2. SEE SHEET C101 FOR COORDINATE POINT TABLES AND HORIZONTAL ROAD GEOMETRY.

BENCHMARKS

DATUM: NAD83 MISSOURI STATE PLANES, CENTRAL ZONE, US FOOT

1. CHISELED "□" SOUTH EDGE OF CONCRETE MANHOLE NORTH OF LAGOON, ELEVATION: 831.02
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3. TOP REBAR - CONTROL POINT 3, ELEVATION: 845.67



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MODIFY CAMPGROUND  
LOOP 1

LONG BRANCH STATE PARK  
28615 VISITOR CENTER RD  
MACON, MO 63552

PROJECT # X2517-01  
SITE # 5601  
ASSET # 7815601031

REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
ISSUE DATE: 12-17-2025

CAD DWG FILE: C105  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

SHEET TITLE:

ROAD PLAN &  
PROFILE STA 9+50 TO  
STA 12+00

SHEET NUMBER:

C105

SHEET 16 OF 41  
12/17/2025



PAVEMENT & JOINT LEGEND

- PCC SIDEWALK  
(DETAIL 4/C503)
- PCC PAVEMENT  
(DETAIL 1/C503)
- ASPHALT PAVEMENT  
(DETAIL 2/C503)
- AGGREGATE PAVEMENT  
(DETAIL 3/C503)
- EXPANSION JOINT (EJ)  
(DETAIL 9/C503)
- SAWED JOINT (SJ)  
(DETAIL 9/C503)
- TIED JOINT (TJ)  
(DETAIL 9/C503)

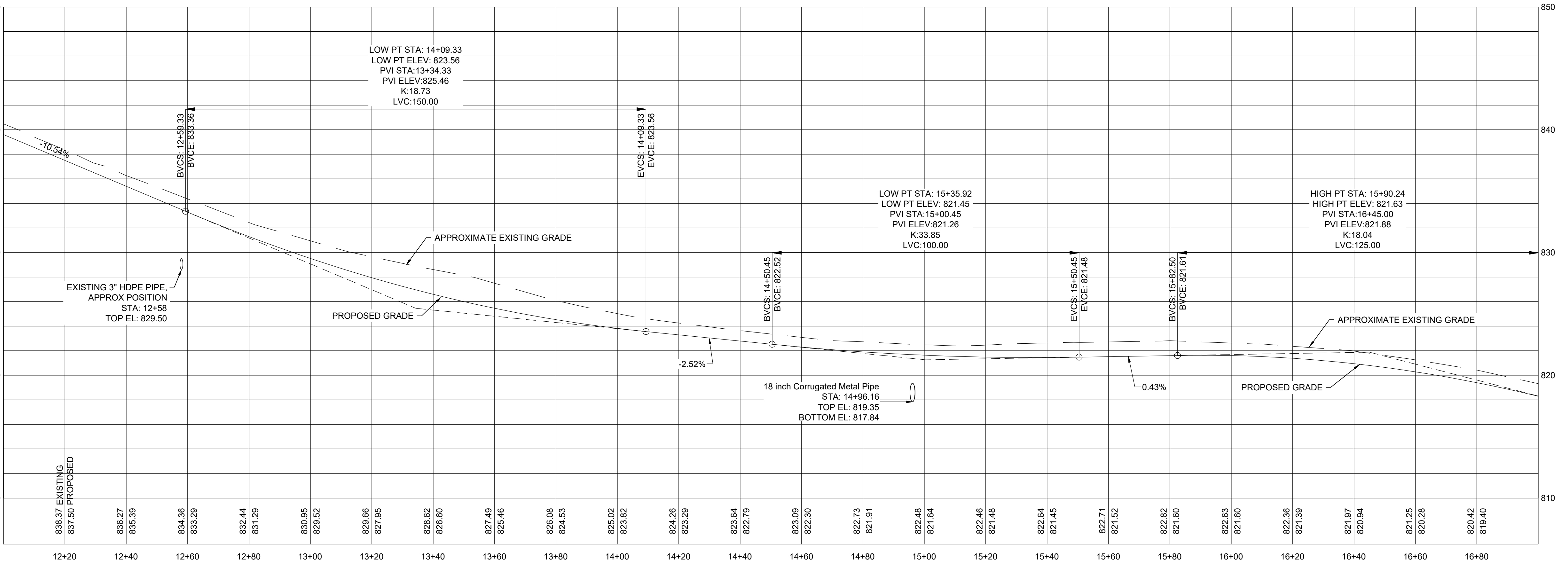
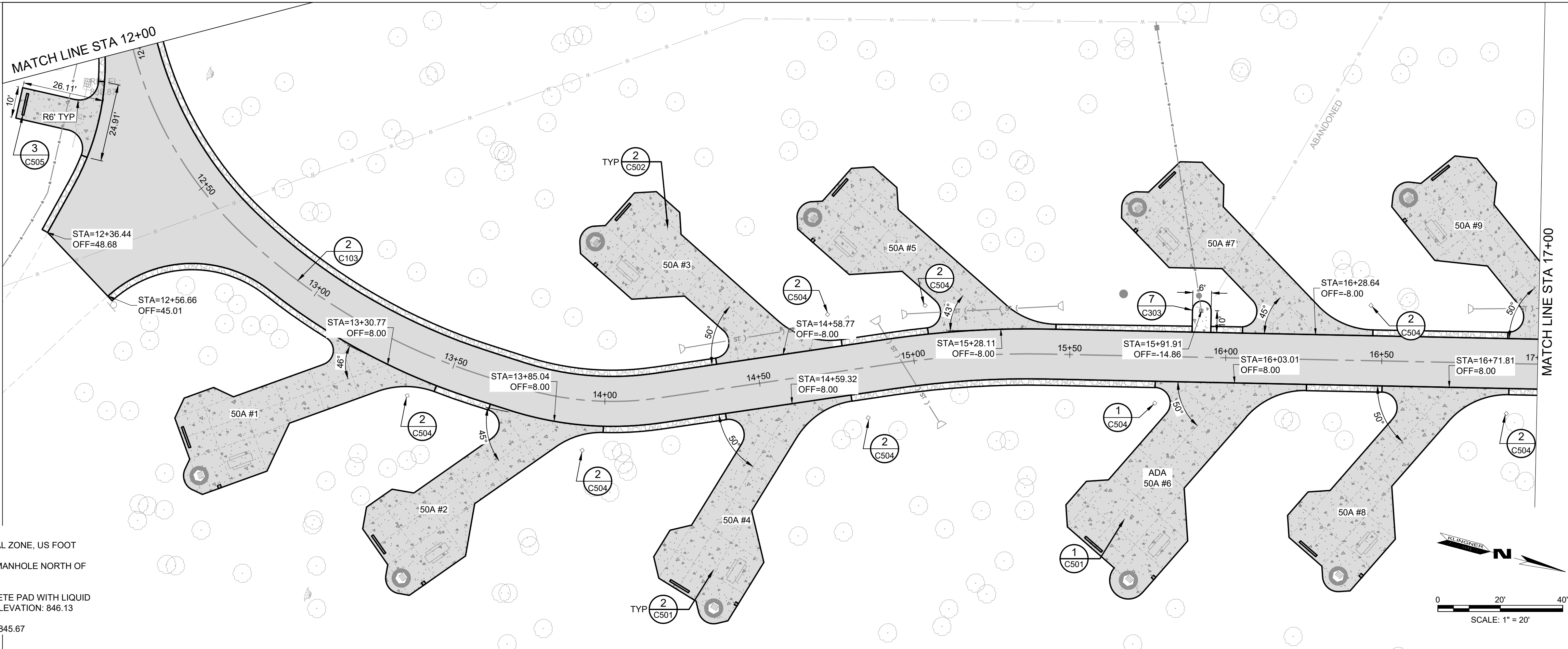
NOTES

1. SEE SHEET C103 FOR TYPICAL ROAD SECTIONS.
2. SEE SHEET C102 FOR COORDINATE POINT TABLES AND HORIZONTAL ROAD GEOMETRY.
3. SEE DETAIL 2/C109 FOR INTERSECTION INFORMATION.

BENCHMARKS

DATUM: NAD83 MISSOURI STATE PLANES, CENTRAL ZONE, US FOOT

1. CHISELED "□" SOUTH EDGE OF CONCRETE MANHOLE NORTH OF LAGOON, ELEVATION: 831.02
2. CHISELED "□" SOUTHEAST CORNER CONCRETE PAD WITH LIQUID PROPANE TANK WEST OF SHOWER HOUSE, ELEVATION: 846.13
3. TOP REBAR - CONTROL POINT 3, ELEVATION: 845.67



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MODIFY CAMPGROUND  
LOOP 1

LONG BRANCH STATE PARK  
28615 VISITOR CENTER RD  
MACON, MO 63552

PROJECT # X2517-01  
SITE # 5601  
ASSET # 7815601031

REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
ISSUE DATE: 12-17-2025

CAD DWG FILE: C106  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

SHEET TITLE:

ROAD PLAN &  
PROFILE STA 12+00  
TO STA 17+00

SHEET NUMBER:

C106

SHEET 17 OF 41  
12/17/2025

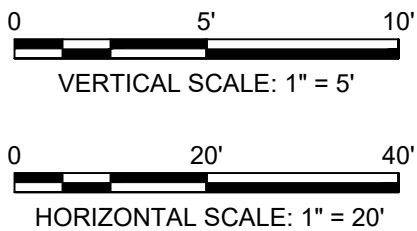
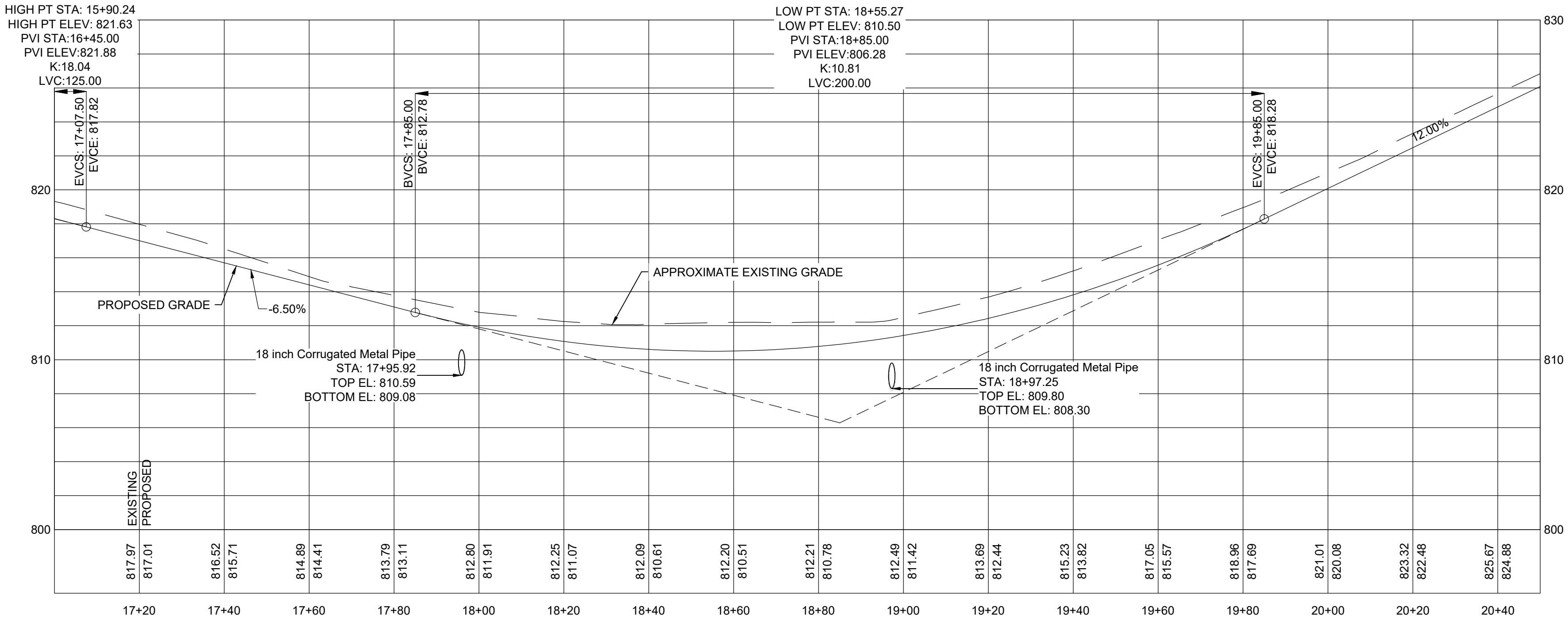
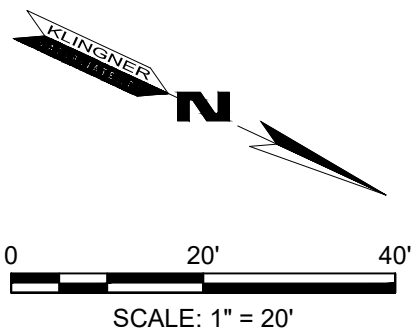
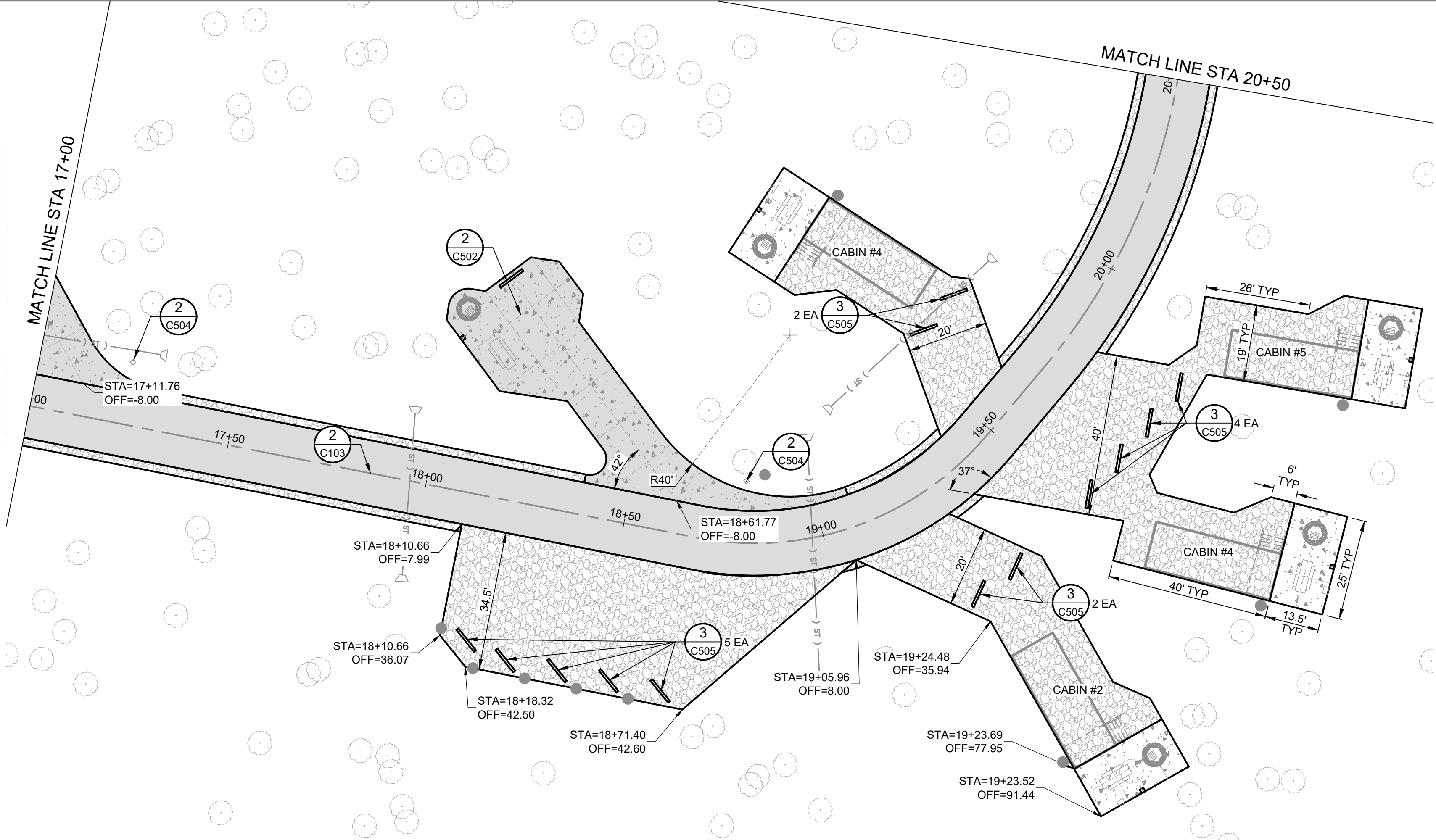


PAVEMENT & JOINT LEGEND

- PCC SIDEWALK  
(DETAIL 4/C503)
- PCC PAVEMENT  
(DETAIL 1/C503)
- ASPHALT PAVEMENT  
(DETAIL 2/C503)
- AGGREGATE PAVEMENT  
(DETAIL 3/C503)
- EXPANSION JOINT (EJ)  
(DETAIL 9/C503)
- SAWED JOINT (SJ)  
(DETAIL 9/C503)
- TIED JOINT (TJ)  
(DETAIL 9/C503)

NOTES

1. SEE SHEET C103 FOR TYPICAL ROAD SECTION.
2. SEE SHEET C102 FOR COORDINATE POINT TABLES AND HORIZONTAL ROAD GEOMETRY.



BENCHMARKS

DATUM: NAD83 MISSOURI STATE PLANES, CENTRAL ZONE, US FOOT

1. CHISELED "□" SOUTH EDGE OF CONCRETE MANHOLE NORTH OF LAGOON, ELEVATION: 831.02
2. CHISELED "□" SOUTHEAST CORNER CONCRETE PAD WITH LIQUID PROPANE TANK WEST OF SHOWER HOUSE, ELEVATION: 846.13
3. TOP REBAR - CONTROL POINT 3, ELEVATION: 845.67

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DEPARTMENT OF  
NATURAL RESOURCES  
MISSOURI STATE PARKS

MODIFY CAMPGROUND  
LOOP 1

LONG BRANCH STATE PARK  
28615 VISITOR CENTER RD  
MACON, MO 63552

PROJECT # X2517-01  
SITE # 5601  
ASSET # 7815601031

REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
ISSUE DATE: 12-17-2025

CAD DWG FILE: C107  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

SHEET TITLE:

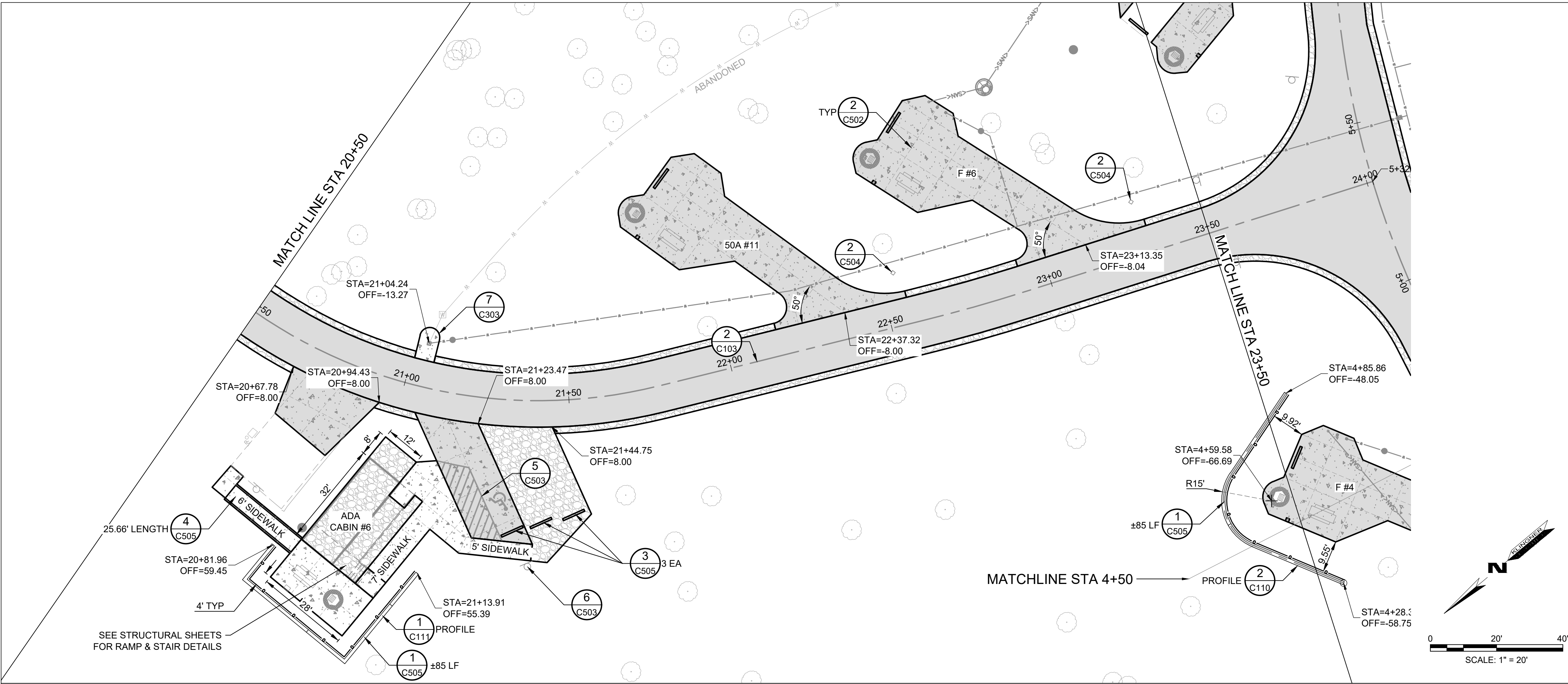
ROAD PLAN &  
PROFILE STA 17+00  
TO STA 20+50

SHEET NUMBER:

C107

SHEET 18 OF 41  
12/17/2025





PAVEMENT & JOINT LEGEND

- PCC SIDEWALK (DETAIL 4/C503)
- PCC PAVEMENT (DETAIL 1/C503)
- ASPHALT PAVEMENT (DETAIL 2/C503)
- AGGREGATE PAVEMENT (DETAIL 3/C503)
- EXPANSION JOINT (EJ) (DETAIL 9/C503)
- SAWED JOINT (SJ) (DETAIL 9/C503)
- TIED JOINT (TJ) (DETAIL 9/C503)

NOTES

- SEE SHEET C103 FOR TYPICAL ROAD SECTIONS.
- SEE SHEET C102 FOR COORDINATE POINT TABLES AND HORIZONTAL ROAD GEOMETRY.
- SEE DETAIL 1/C109 FOR INTERSECTION INFORMATION.

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PROJECT # X2517-01  
SITE # 5601  
ASSET # 7815601031

REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
ISSUE DATE: 12-17-2025

CAD DWG FILE: C108  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

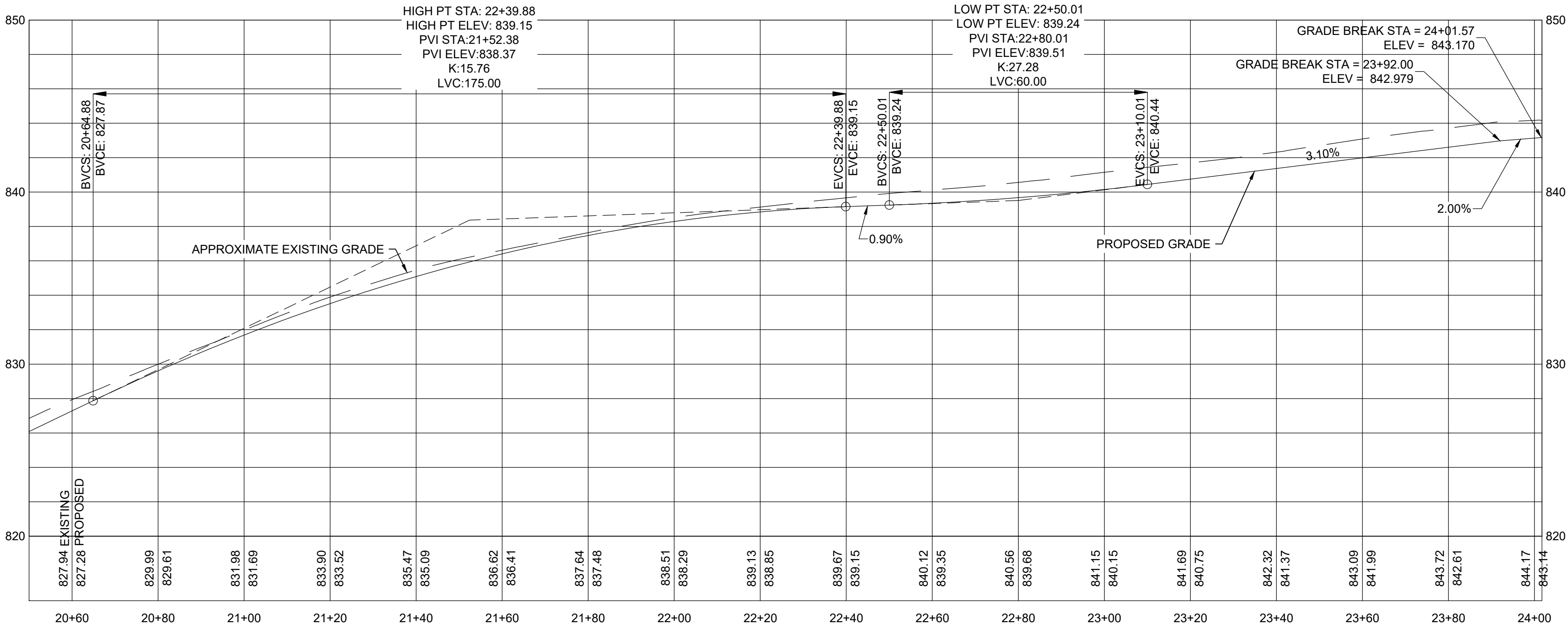
SHEET TITLE:

ROAD PLAN &  
PROFILE STA 20+50  
TO STA 23+50

SHEET NUMBER:

C108

SHEET 19 OF 41  
12/17/2025



BENCHMARKS

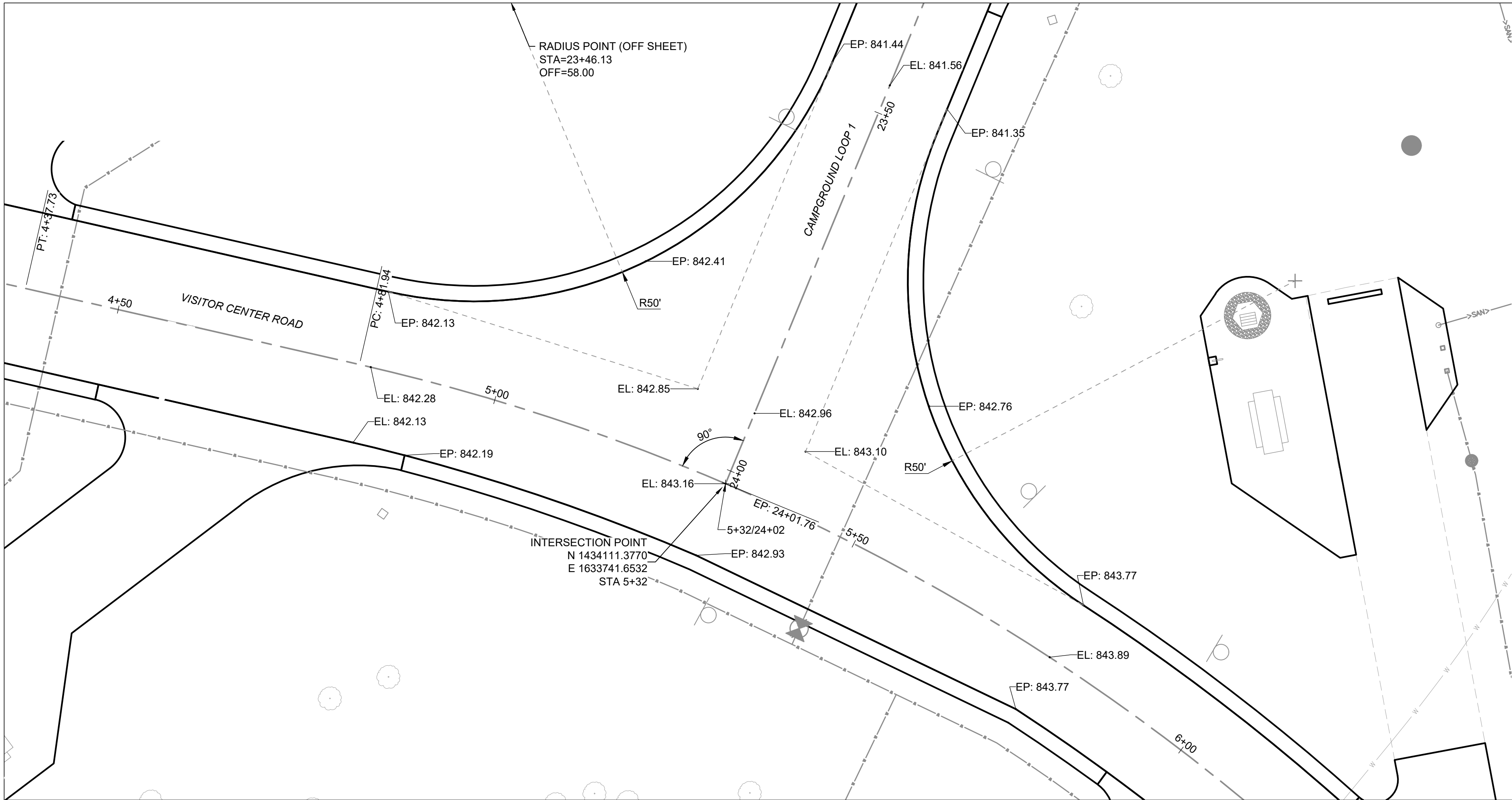
DATUM: NAD83 MISSOURI STATE PLANES, CENTRAL ZONE, US FOOT

- CHISELED "□" SOUTH EDGE OF CONCRETE MANHOLE NORTH OF LAGOON, ELEVATION: 831.02
- CHISELED "□" SOUTHEAST CORNER CONCRETE PAD WITH LIQUID PROPANE TANK WEST OF SHOWER HOUSE, ELEVATION: 846.13
- TOP REBAR - CONTROL POINT 3, ELEVATION: 845.67

0 5' 10'  
VERTICAL SCALE: 1" = 5'

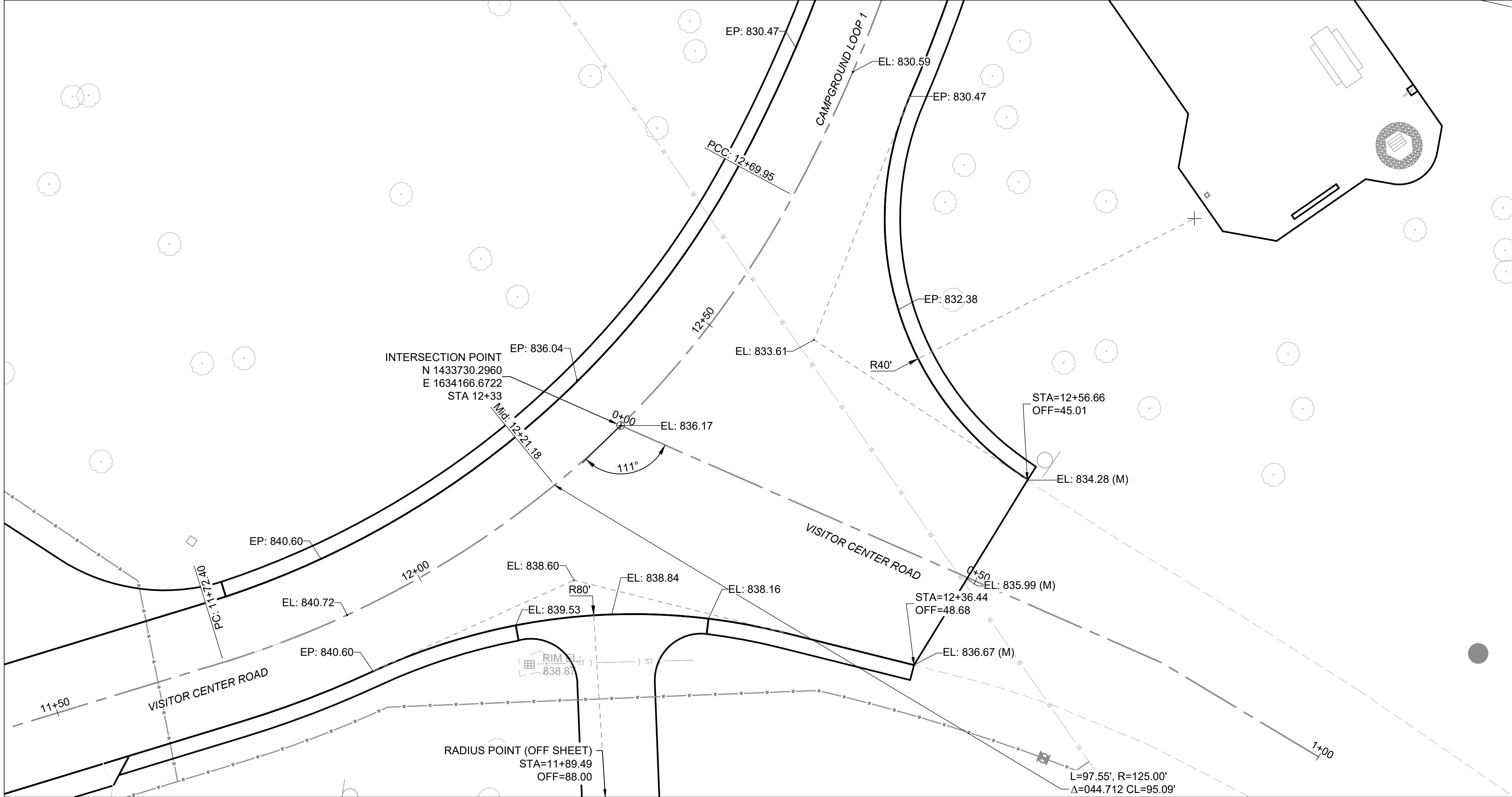
0 20' 40'  
HORIZONTAL SCALE: 1" = 20'





1 NW VISITOR CENTER RD & CAMPGROUND LOOP 1 INTERSECTION  
SCALE: 1" = 10'

- NOTES
- SEE SHEET C103 FOR TYPICAL ROAD SECTIONS.
  - SEE SHEET C102 FOR COORDINATE POINT TABLES AND HORIZONTAL ROAD GEOMETRY.



2 SE VISITOR CENTER RD & CAMPGROUND LOOP 1 INTERSECTION  
SCALE: 1" = 10'

- BENCHMARKS
- DATUM: NAD83 MISSOURI STATE PLANES, CENTRAL ZONE, US FOOT
- CHISELED "□" SOUTH EDGE OF CONCRETE MANHOLE NORTH OF LAGOON, ELEVATION: 831.02
  - CHISELED "□" SOUTHEAST CORNER CONCRETE PAD WITH LIQUID PROPANE TANK WEST OF SHOWER HOUSE, ELEVATION: 846.13
  - TOP REBAR - CONTROL POINT 3, ELEVATION: 845.67

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LOOP 1

LONG BRANCH STATE PARK  
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MACON, MO 63552

PROJECT # X2517-01  
SITE # 5601  
ASSET # 7815601031

REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
ISSUE DATE: 12-17-2025

CAD DWG FILE: C109  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

SHEET TITLE:

INTERSECTION  
DETAILS

SHEET NUMBER:

C109

SHEET 20 OF 41  
12/17/2025





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LOOP 1

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PROJECT # X2517-01  
SITE # 5601  
ASSET # 7815601031

REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
ISSUE DATE: 12-17-2025

CAD DWG FILE: C110  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

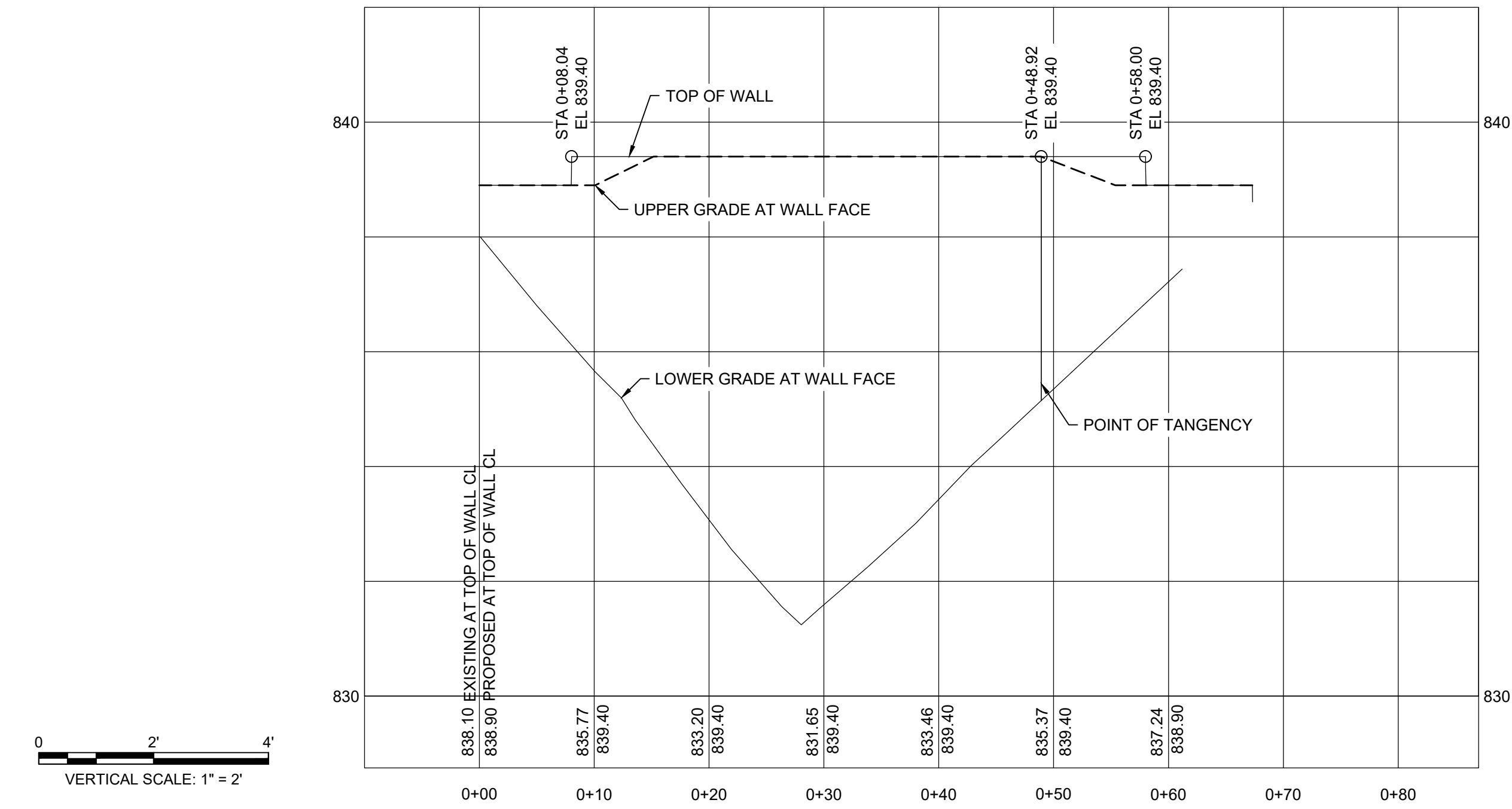
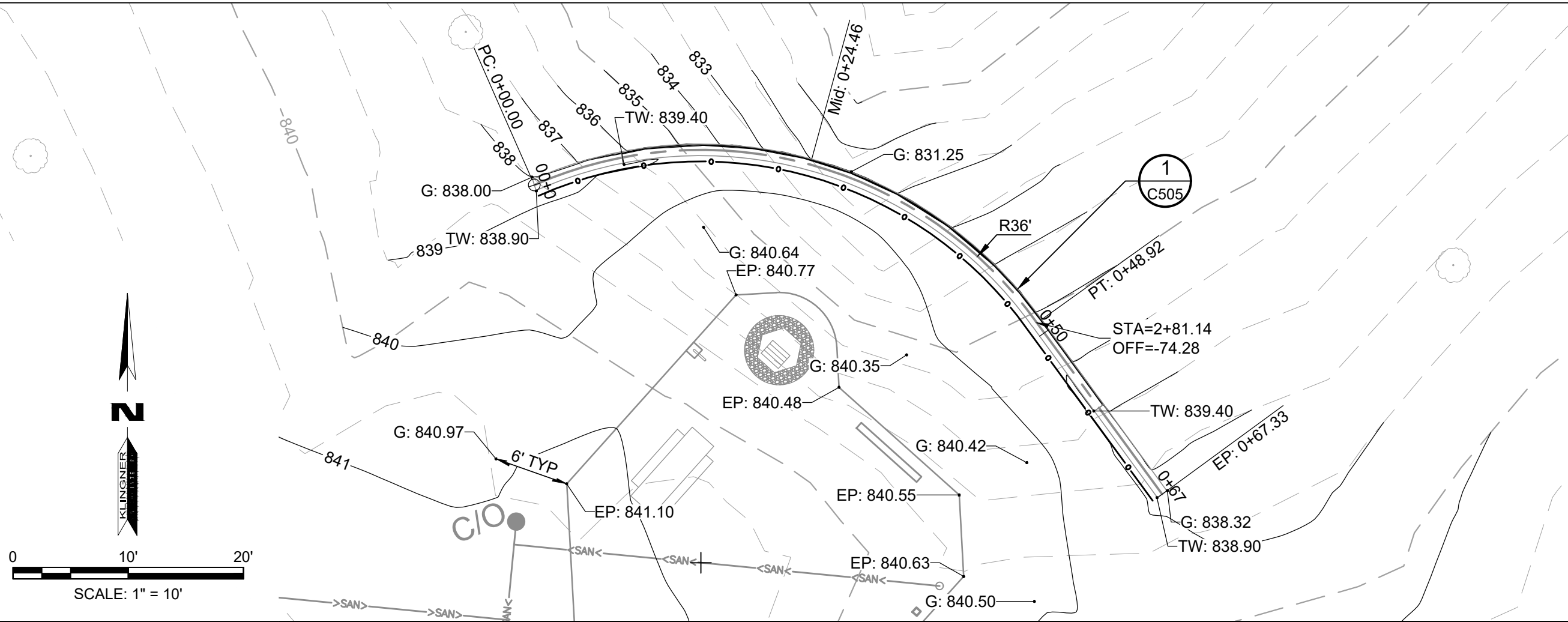
SHEET TITLE:

RETAINING WALL  
PROFILES

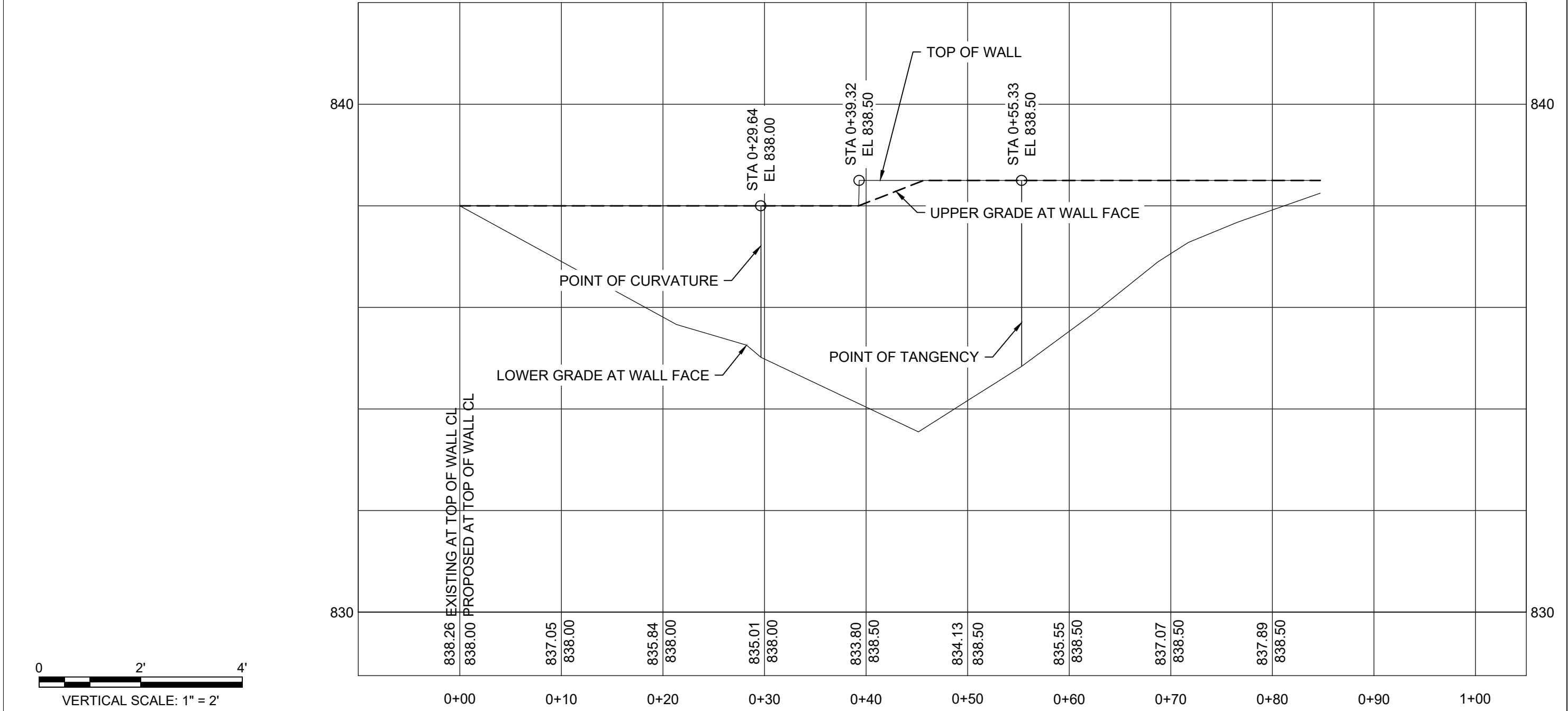
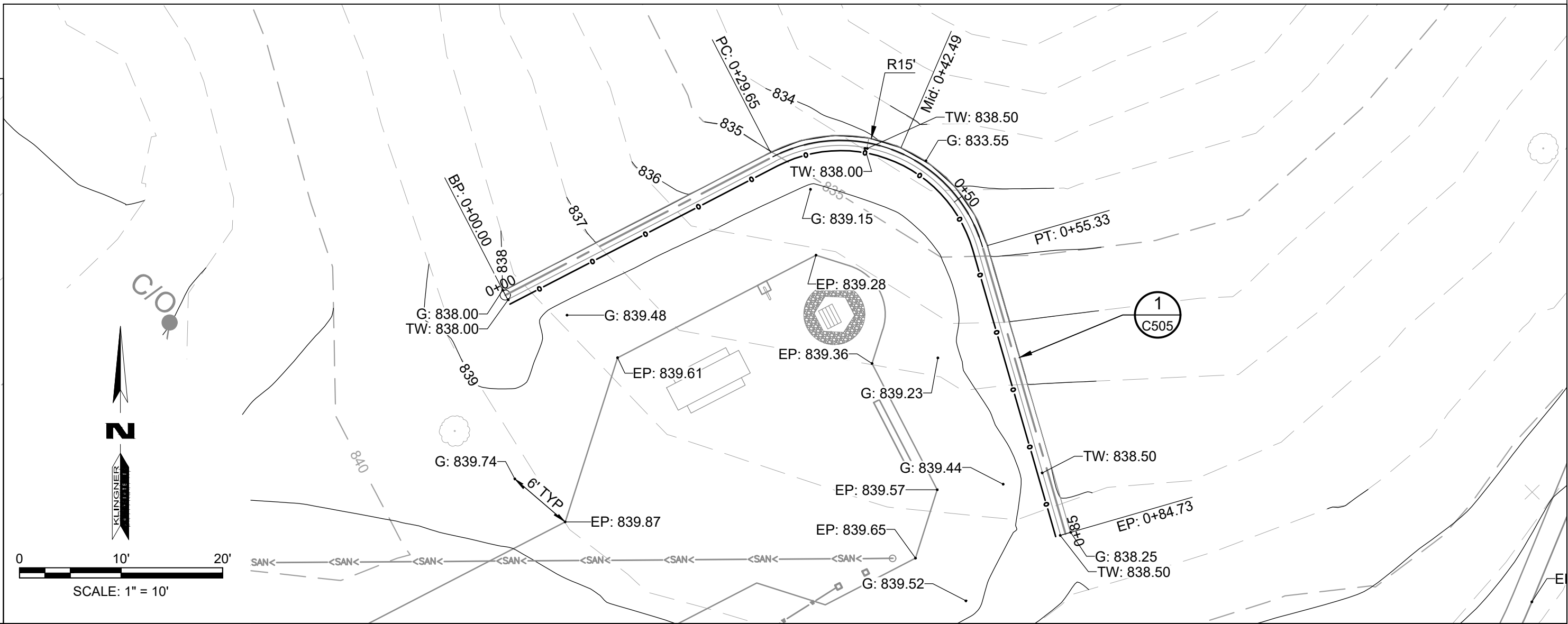
SHEET NUMBER:

C110

SHEET 21 OF 41  
12/17/2025



**1 F #1 CAMPSITE WALL PROFILE**  
SCALE: SEE BARS



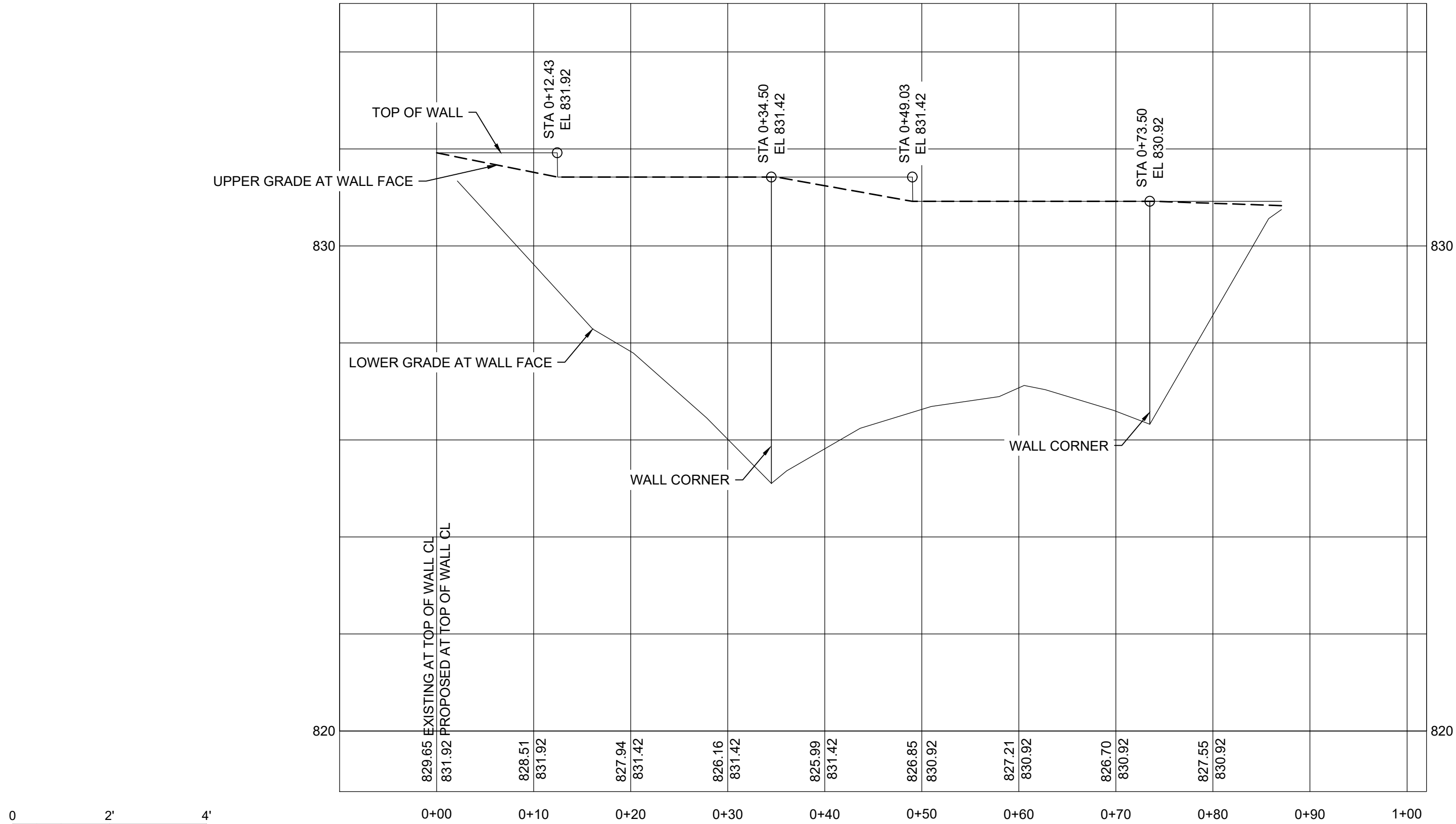
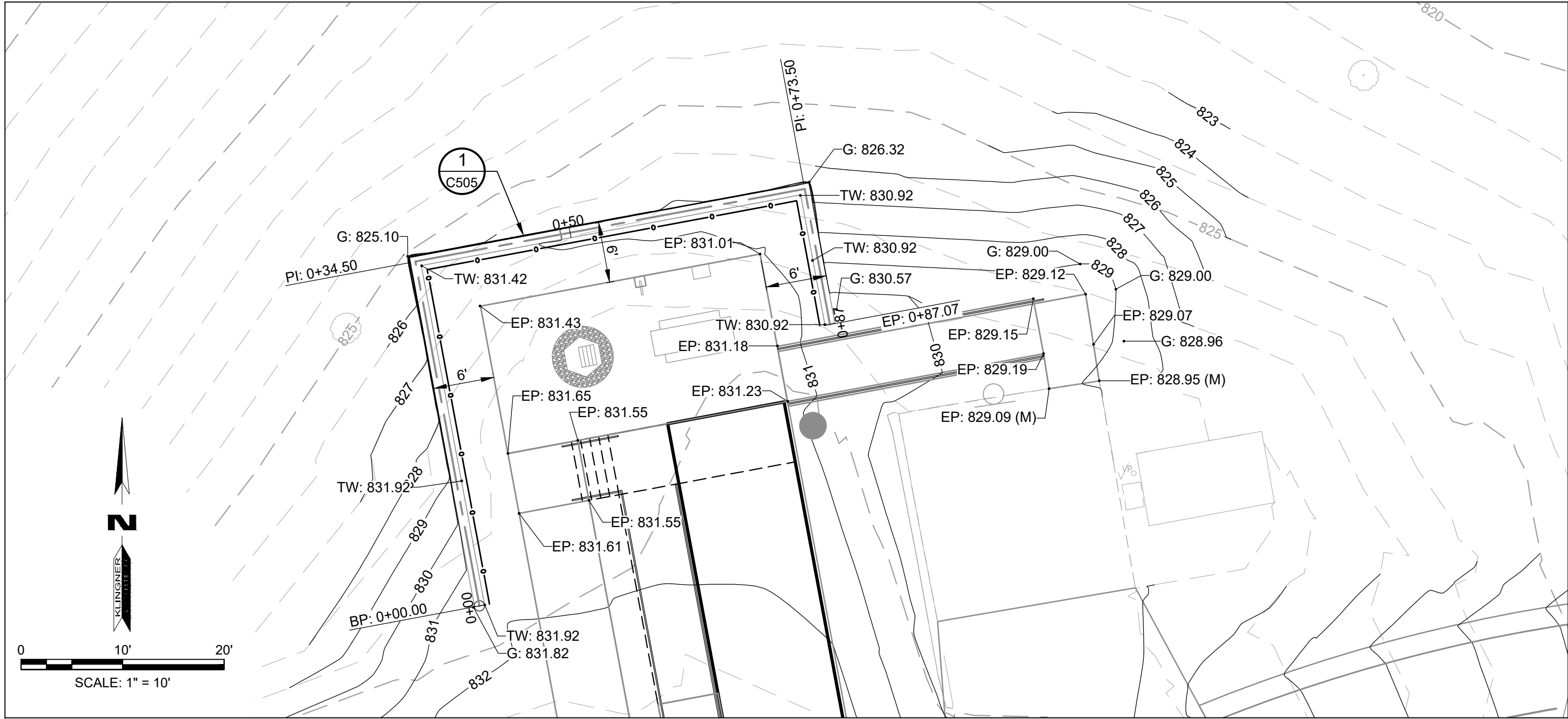
**2 F #4 CAMPSITE WALL PROFILE**  
SCALE: SEE BARS

**BENCHMARKS**

DATUM: NAD83 MISSOURI STATE PLANES, CENTRAL ZONE, US FOOT

- CHISELED "□" SOUTH EDGE OF CONCRETE MANHOLE NORTH OF LAGOON, ELEVATION: 831.02
- CHISELED "□" SOUTHEAST CORNER CONCRETE PAD WITH LIQUID PROPANE TANK WEST OF SHOWER HOUSE, ELEVATION: 846.13
- TOP REBAR - CONTROL POINT 3, ELEVATION: 845.67





1 ADA CABIN #6 WALL PROFILE  
SCALE: SEE BARS

BENCHMARKS

DATUM: NAD83 MISSOURI STATE PLANES, CENTRAL ZONE, US FOOT

- CHISELED "□" SOUTH EDGE OF CONCRETE MANHOLE NORTH OF LAGOON, ELEVATION: 831.02
- CHISELED "□" SOUTHEAST CORNER CONCRETE PAD WITH LIQUID PROPANE TANK WEST OF SHOWER HOUSE, ELEVATION: 846.13
- TOP REBAR - CONTROL POINT 3, ELEVATION: 845.67

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MISSOURI STATE PARKS

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LOOP 1

LONG BRANCH STATE PARK  
28615 VISITOR CENTER RD  
MACON, MO 63552

PROJECT # X2517-01  
SITE # 5601  
ASSET # 7815601031

REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_

ISSUE DATE: 12-17-2025

CAD DWG FILE: C111  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

SHEET TITLE:

RETAINING WALL  
PROFILE

SHEET NUMBER:

C111

SHEET 22 OF 41  
12/17/2025





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PROJECT # X2517-01  
SITE # 5601  
ASSET # 7815601031

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DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
ISSUE DATE: 12-17-2025

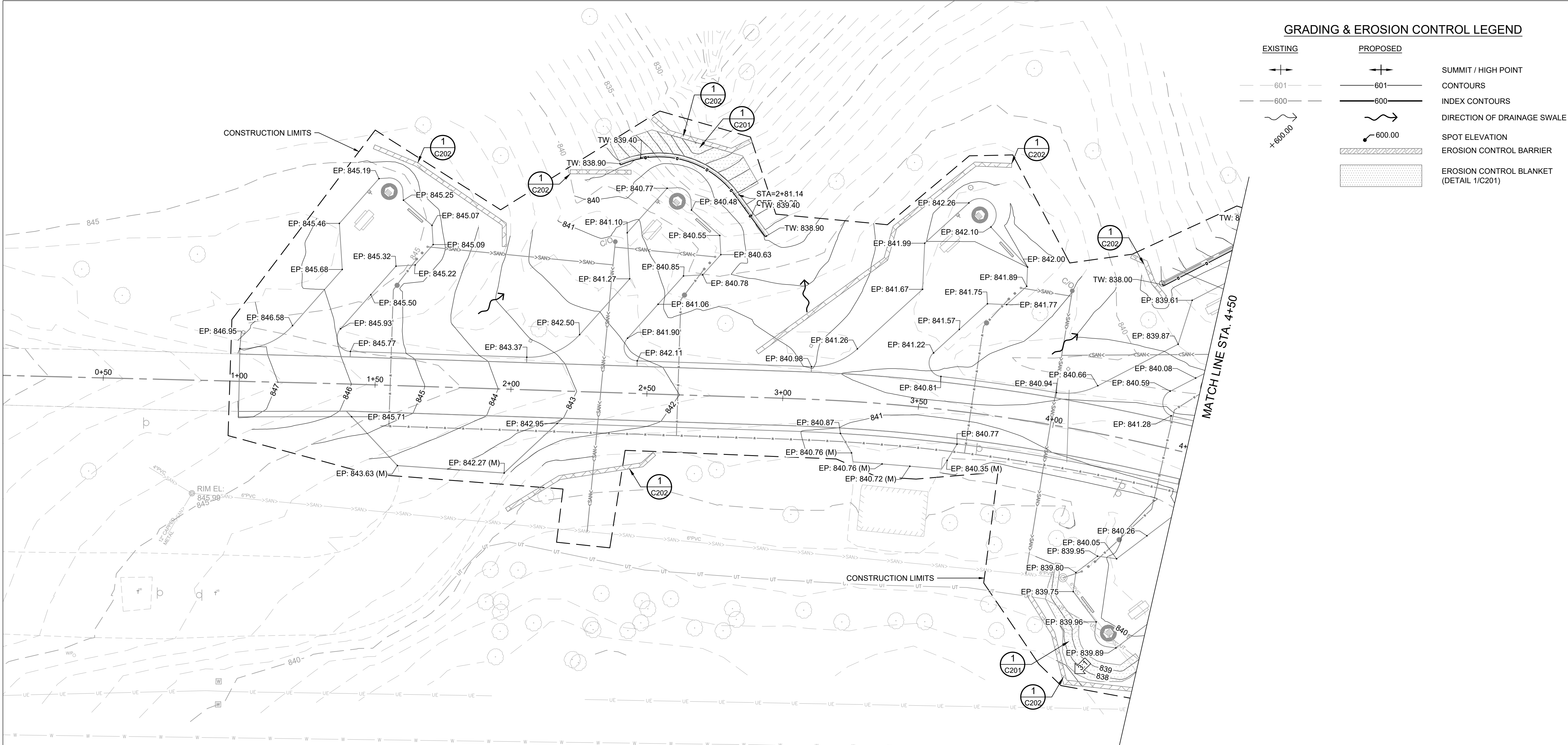
CAD DWG FILE: C201  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

SHEET TITLE:  
SITE GRADING &  
EROSION CONTROL  
PLAN STA 1+00 TO  
STA 4+50

SHEET NUMBER:

C201

SHEET 23 OF 41  
12/17/2025



GRADING & EROSION CONTROL LEGEND

EXISTING

PROPOSED

SUMMIT / HIGH POINT

CONTOURS

INDEX CONTOURS

DIRECTION OF DRAINAGE SWALE

SPOT ELEVATION

EROSION CONTROL BARRIER

EROSION CONTROL BLANKET  
(DETAIL 1/C201)

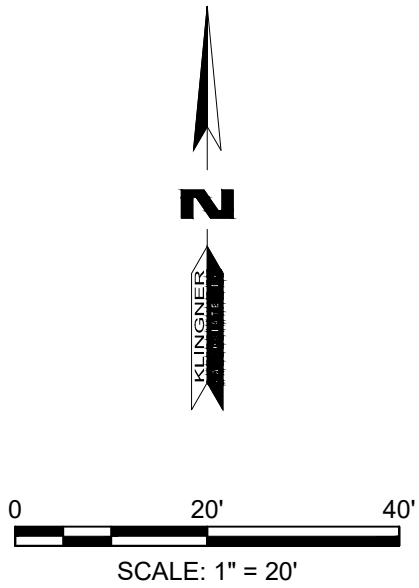
1 EROSION CONTROL BLANKET INSTALLATION DETAILS  
N.T.S.

- PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP'S), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. SEEDING WILL BE COMPLETED BY THE CONTRACTOR. COORDINATE PROPER TIMING FOR THE SEEDING AND EROSION BLANKET INSTALLATION.
- BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP'S IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECP'S EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP'S WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF RECP'S BACK OVER SEED AND COMPACTED SOIL. SECURE RECP'S OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE RECP'S.
- ROLL THE RECP'S (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. RECP'S WILL UNROLL WITH APPROXIMATE SIDE AGAINST THE SOIL SURFACE. ALL RECP'S MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROXIMATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
- THE EDGES OF PARALLEL RECP'S MUST BE STAPLED WITH APPROXIMATELY 2" - 54" OVERLAP DEPENDING ON RECP'S TYPE.
- CONSECUTIVE RECP'S SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE RECP'S WIDTH.  
NOTE:  
IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE RECP'S.
- EROSION CONTROL BLANKET SHALL BE USED ON ALL SLOPES 4:1 AND STEEPER.

BENCHMARKS

DATUM: NAD83 MISSOURI STATE PLANES, CENTRAL ZONE, US FOOT

- CHISELED "□" SOUTH EDGE OF CONCRETE MANHOLE NORTH OF LAGOON, ELEVATION: 831.02
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- TOP REBAR - CONTROL POINT 3, ELEVATION: 845.67







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NATURAL RESOURCES  
MISSOURI STATE PARKS**

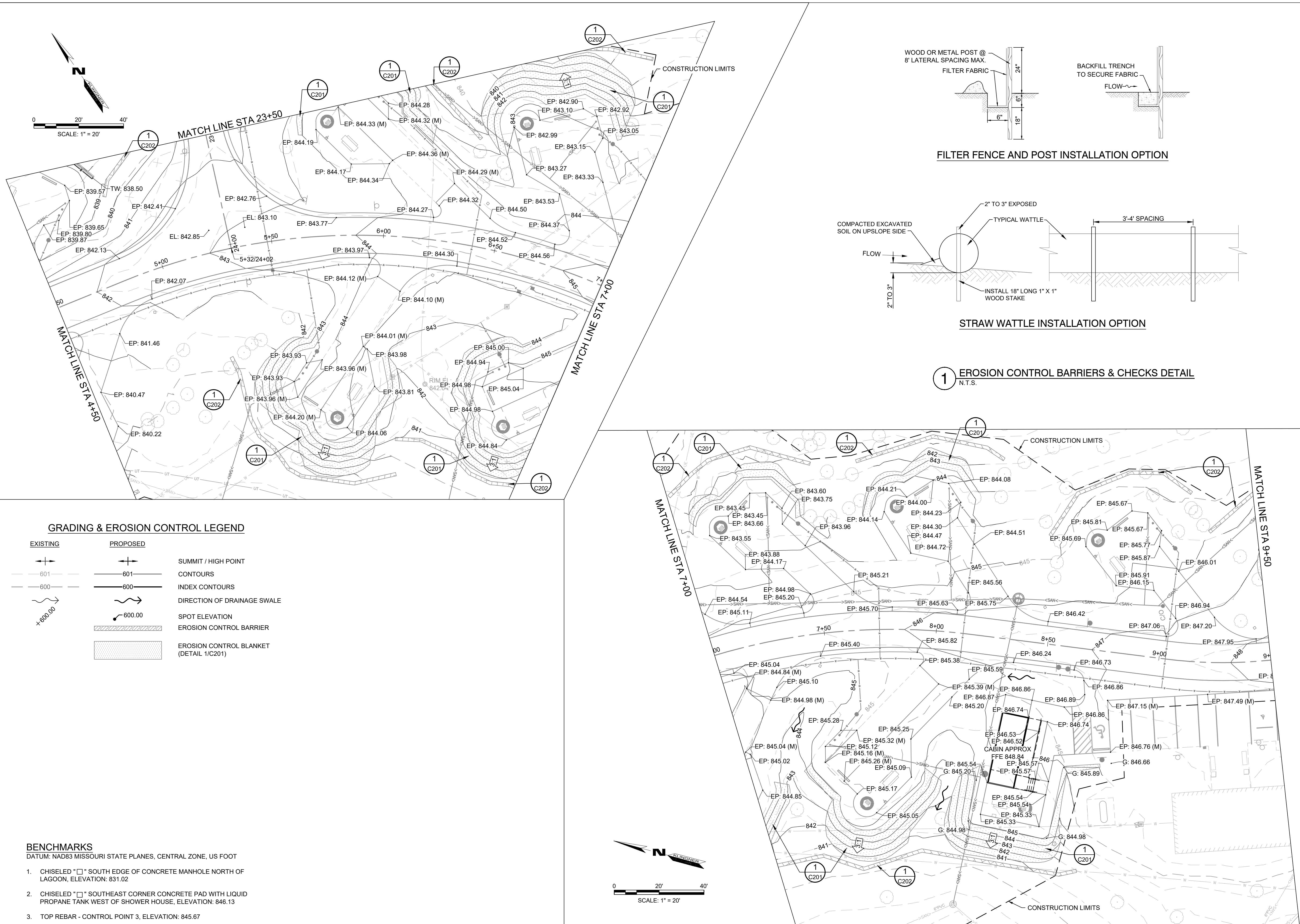
**LONG BRANCH STATE PARK**  
**28615 VISITOR CENTER RD**  
**MACON, MO 63552**

REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
ISSUE DATE: 12-17-2025

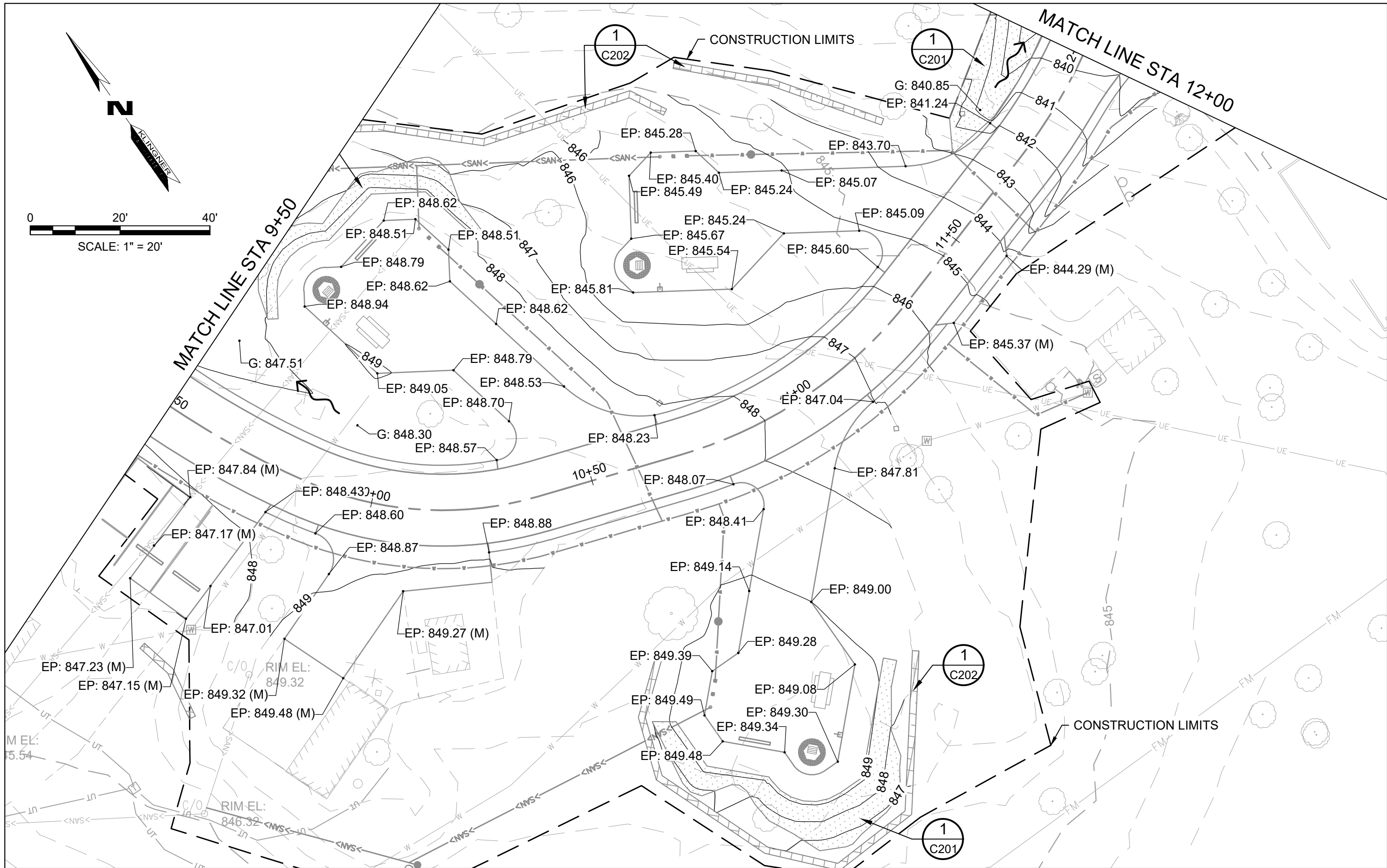
SHEET TITLE:  
SITE GRADING &  
EROSION CONTROL  
PLAN STA 4+50 TO  
STA 9+50

# C202

SHEET 24 OF 41  
12/17/2025







#### GRADING & EROSION CONTROL LEGEND

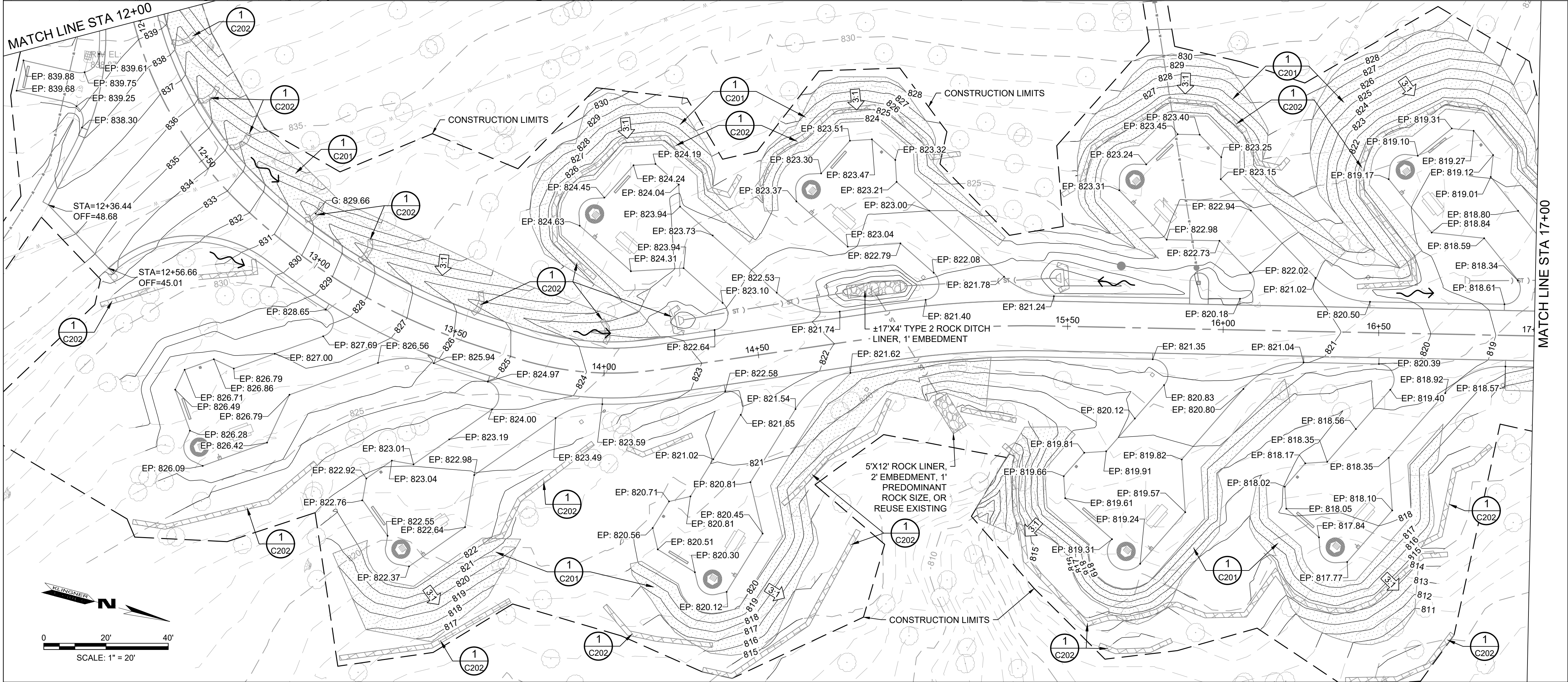
EXISTING	PROPOSED	
		SUMMIT / HIGH POINT
		CONTOURS
		INDEX CONTOURS
		DIRECTION OF DRAINAGE SWALE
		SPOT ELEVATION
		EROSION CONTROL BARRIER
		ROCK LINER
		EROSION CONTROL BLANKET (DETAIL 1/C201)

#### BENCHMARKS

- DATUM: NAD83 MISSOURI STATE PLANES, CENTRAL ZONE, US FOOT
- CHISELED "□" SOUTH EDGE OF CONCRETE MANHOLE NORTH OF LAGOON, ELEVATION: 831.02
  - CHISELED "□" SOUTHEAST CORNER CONCRETE PAD WITH LIQUID PROPANE TANK WEST OF SHOWER HOUSE, ELEVATION: 846.13
  - TOP REBAR - CONTROL POINT 3, ELEVATION: 845.67

#### NOTES

- SEE MODOT STANDARD DRAWING 609.60D FOR ROCK DITCH LINER DETAIL.
- SEE MODOT STANDARD DRAWING 609.70C FOR ROCK LINER AT CULVERT OUTLETS DETAIL.



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MODIFY CAMPGROUND  
LOOP 1

LONG BRANCH STATE PARK  
28615 VISITOR CENTER RD  
MACON, MO 63552

PROJECT # X2517-01  
SITE # 5601  
ASSET # 7815601031

REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
ISSUE DATE: 12-17-2025

CAD DWG FILE: C203  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

SHEET TITLE:  
SITE GRADING &  
EROSION CONTROL  
PLAN STA 9+50 TO  
STA 17+00

SHEET NUMBER:

C203

SHEET 25 OF 41  
12/17/2025





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REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
ISSUE DATE: 12-17-2025

CAD DWG FILE: C204  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

SHEET TITLE:  
SITE GRADING &  
EROSION CONTROL  
PLAN STA 17+00 TO  
STA 20+50

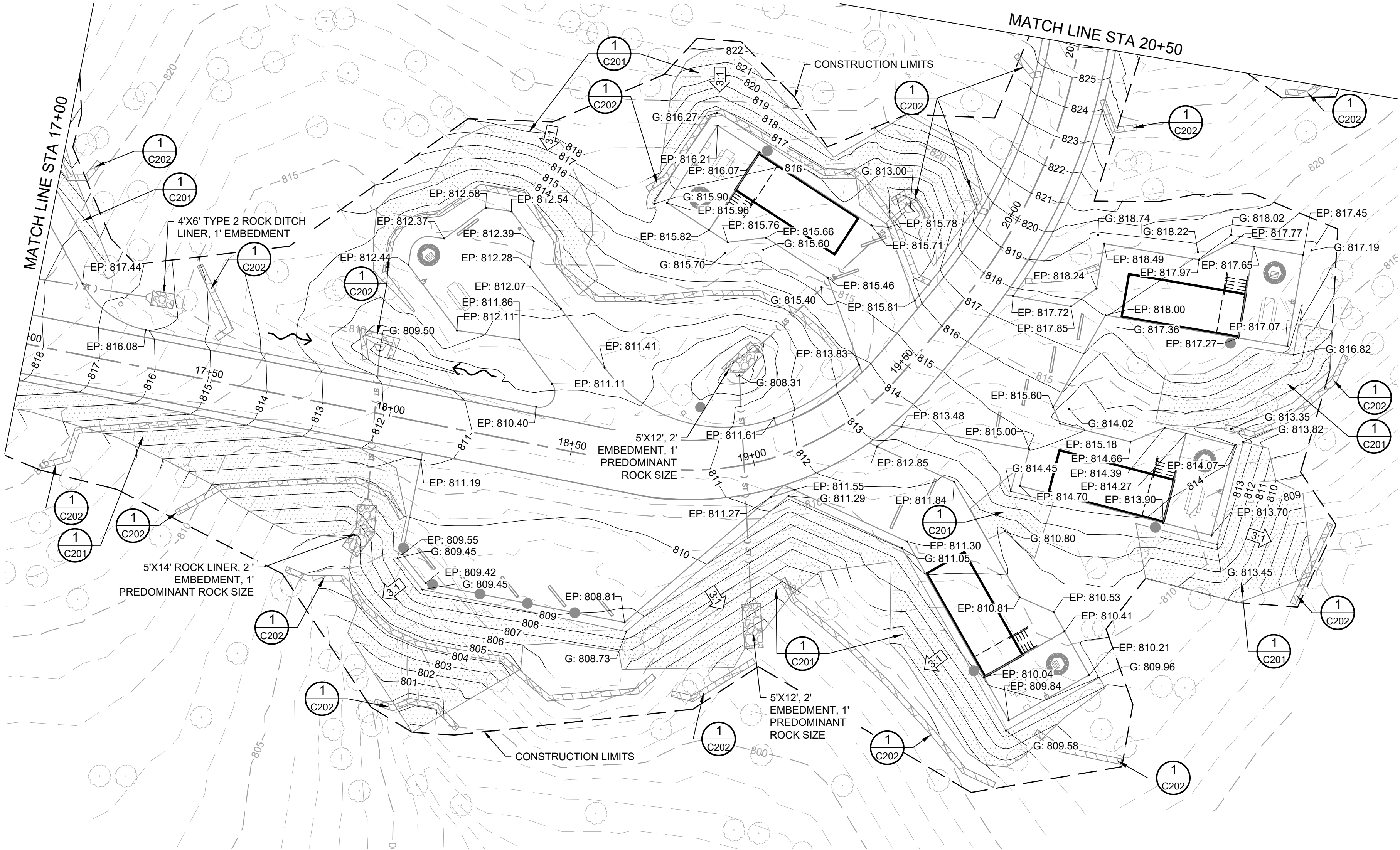
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C204

SHEET 26 OF 41  
12/17/2025

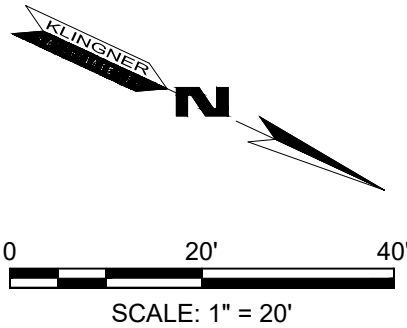
GRADING & EROSION CONTROL LEGEND

EXISTING	PROPOSED	
		SUMMIT / HIGH POINT
		CONTOURS
		INDEX CONTOURS
		DIRECTION OF DRAINAGE SWALE
		SPOT ELEVATION
		EROSION CONTROL BARRIER
		ROCK LINER
		EROSION CONTROL BLANKET (DETAIL 1/C201)



- NOTES
- SEE MODOT STANDARD DRAWING 609.60D FOR ROCK DITCH LINER DETAIL.
  - SEE MODOT STANDARD DRAWING 609.70C FOR ROCK LINER AT CULVERT OUTLETS DETAIL.

- BENCHMARKS  
DATUM: NAD83 MISSOURI STATE PLANES, CENTRAL ZONE, US FOOT
- CHISELED "□" SOUTH EDGE OF CONCRETE MANHOLE NORTH OF LAGOON, ELEVATION: 831.02
  - CHISELED "□" SOUTHEAST CORNER CONCRETE PAD WITH LIQUID PROPANE TANK WEST OF SHOWER HOUSE, ELEVATION: 846.13
  - TOP REBAR - CONTROL POINT 3, ELEVATION: 845.67







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MANAGEMENT, DESIGN  
AND CONSTRUCTION

DEPARTMENT OF  
NATURAL RESOURCES  
MISSOURI STATE PARKS

MODIFY CAMPGROUND  
LOOP 1

LONG BRANCH STATE PARK  
28615 VISITOR CENTER RD  
MACON, MO 63552

PROJECT # X2517-01  
SITE # 5601  
ASSET # 7815601031

REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
ISSUE DATE: 12-17-2025

CAD DWG FILE: C205  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

SHEET TITLE:  
SITE GRADING &  
EROSION CONTROL  
PLAN STA 20+50 TO  
STA 23+50

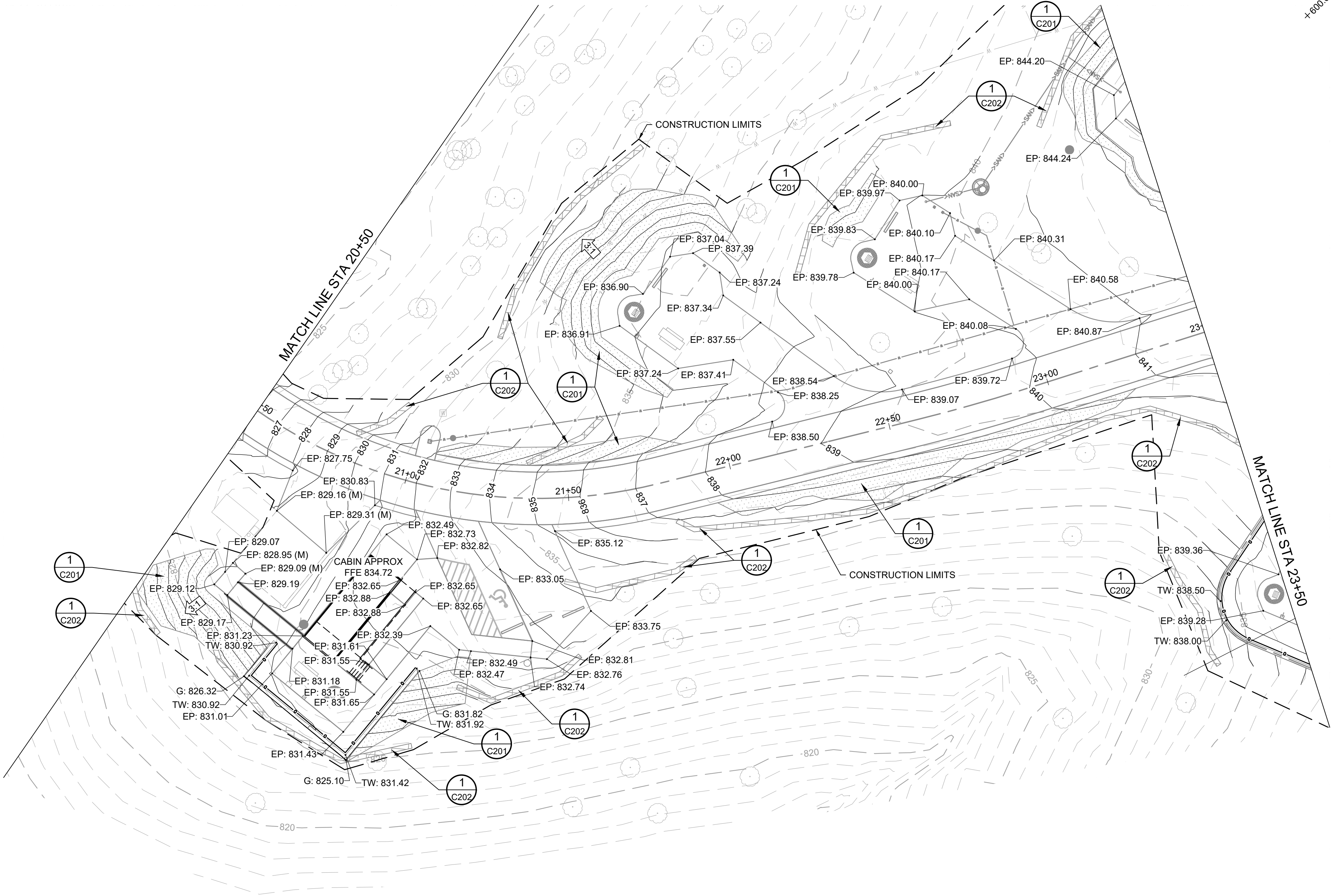
SHEET NUMBER:

C205

SHEET 27 OF 41  
12/17/2025

GRADING & EROSION CONTROL LEGEND

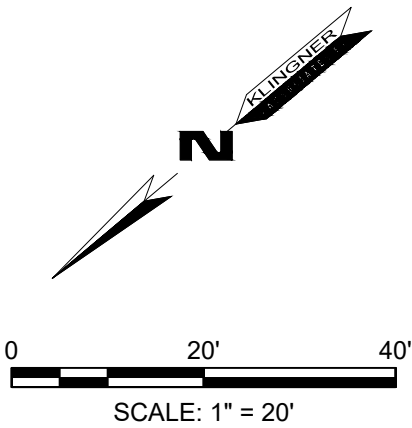
EXISTING	PROPOSED	
		SUMMIT / HIGH POINT
		CONTOURS
		INDEX CONTOURS
		DIRECTION OF DRAINAGE SWALE
		SPOT ELEVATION
		EROSION CONTROL BARRIER
		EROSION CONTROL BLANKET (DETAIL 1/C201)



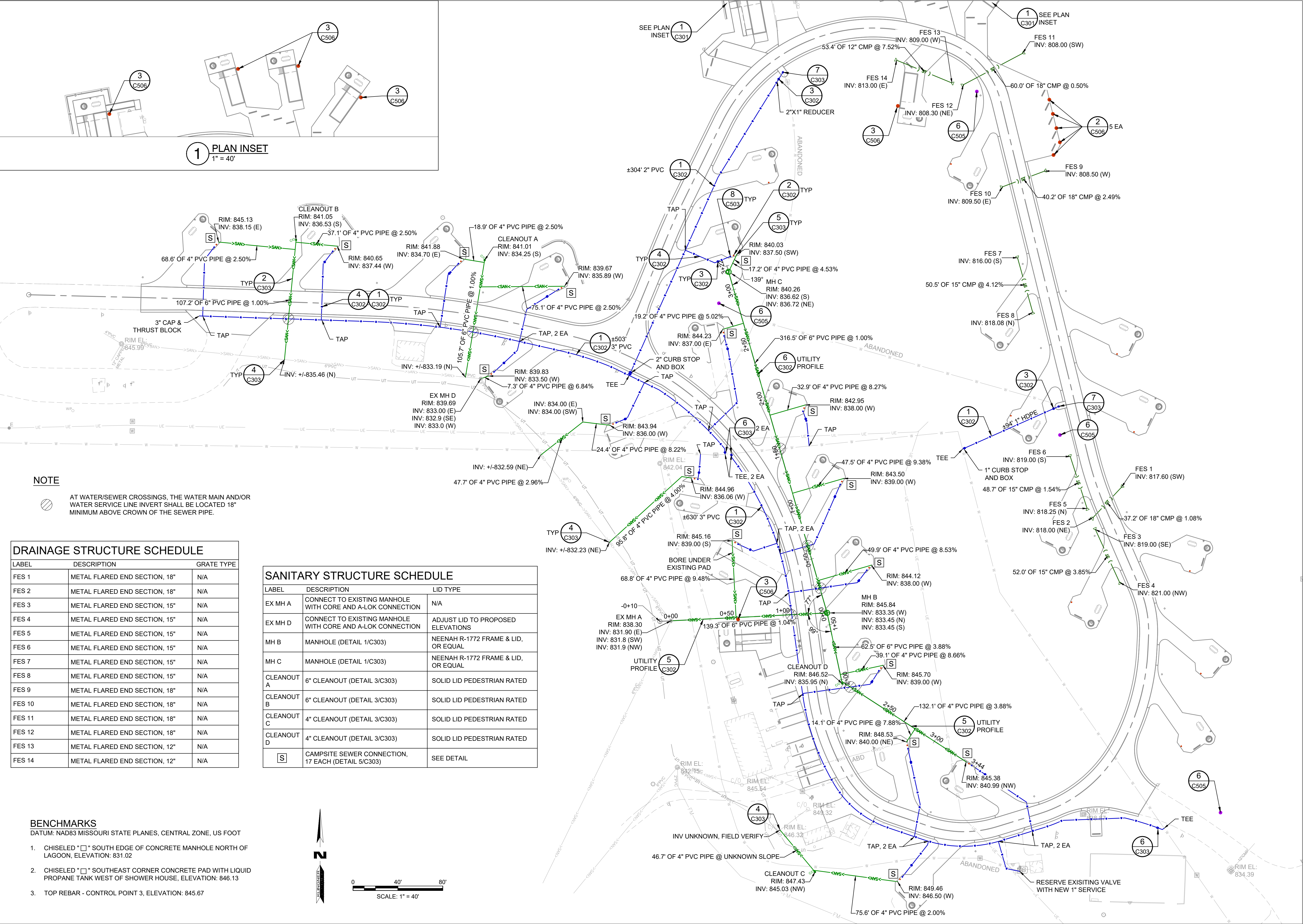
BENCHMARKS

DATUM: NAD83 MISSOURI STATE PLANES, CENTRAL ZONE, US FOOT

- CHISELED "□" SOUTH EDGE OF CONCRETE MANHOLE NORTH OF LAGOON, ELEVATION: 831.02
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DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
ISSUE DATE: 12-17-2025

CAD DWG FILE: C301  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

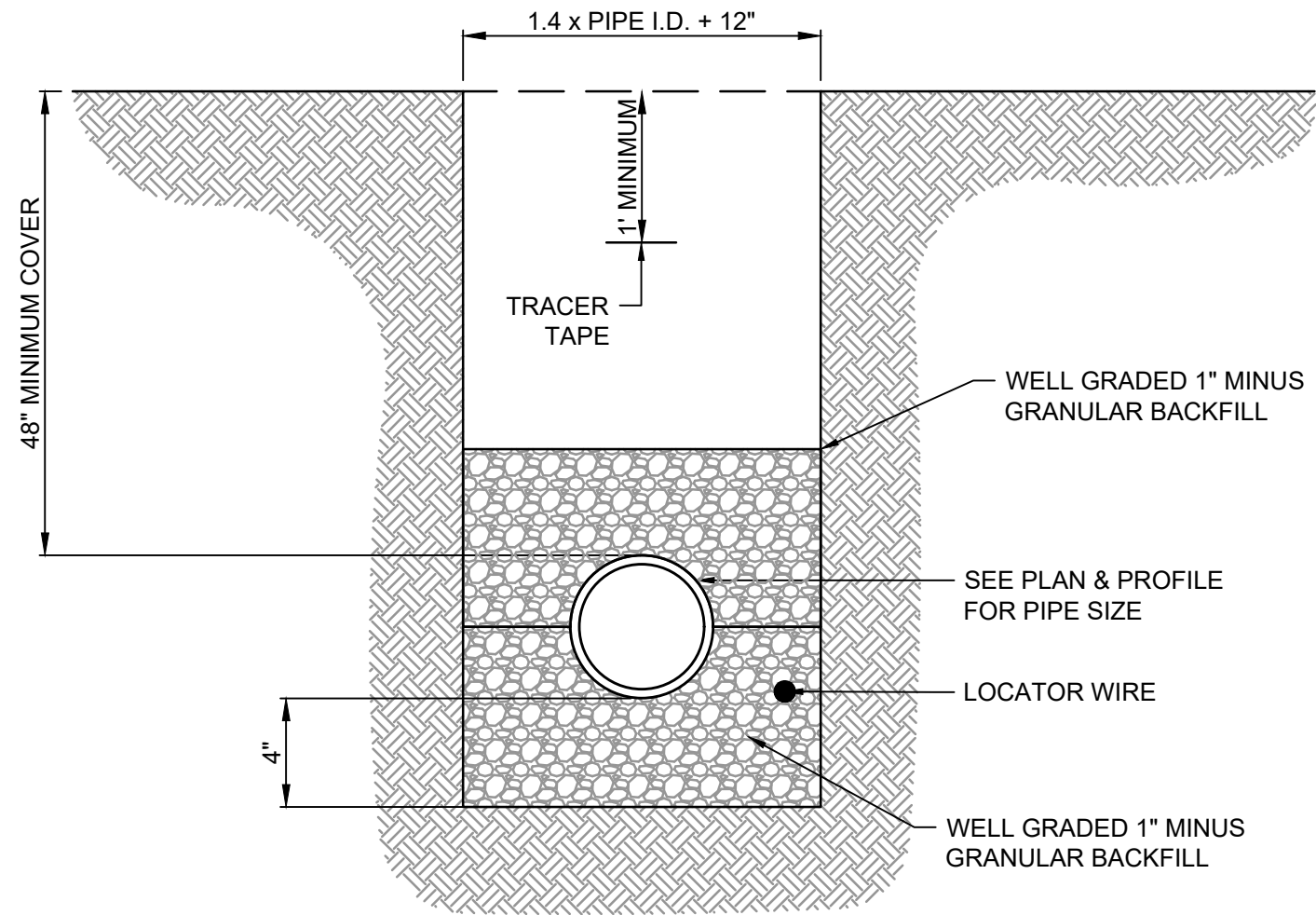
SHEET TITLE:

SITE UTILITY PLAN

SHEET NUMBER:

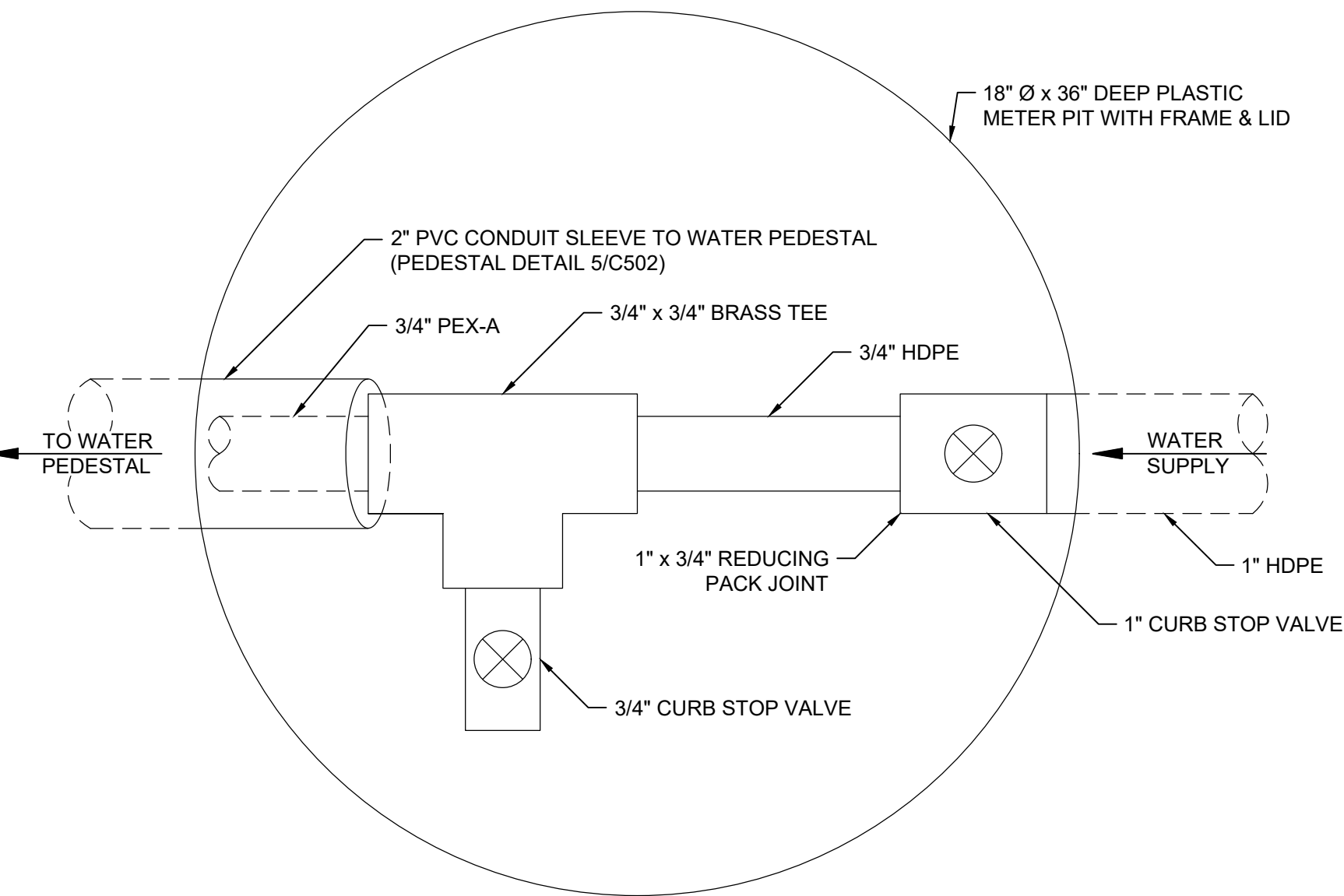
**C301**  
SHEET 28 OF 41  
12/17/2025



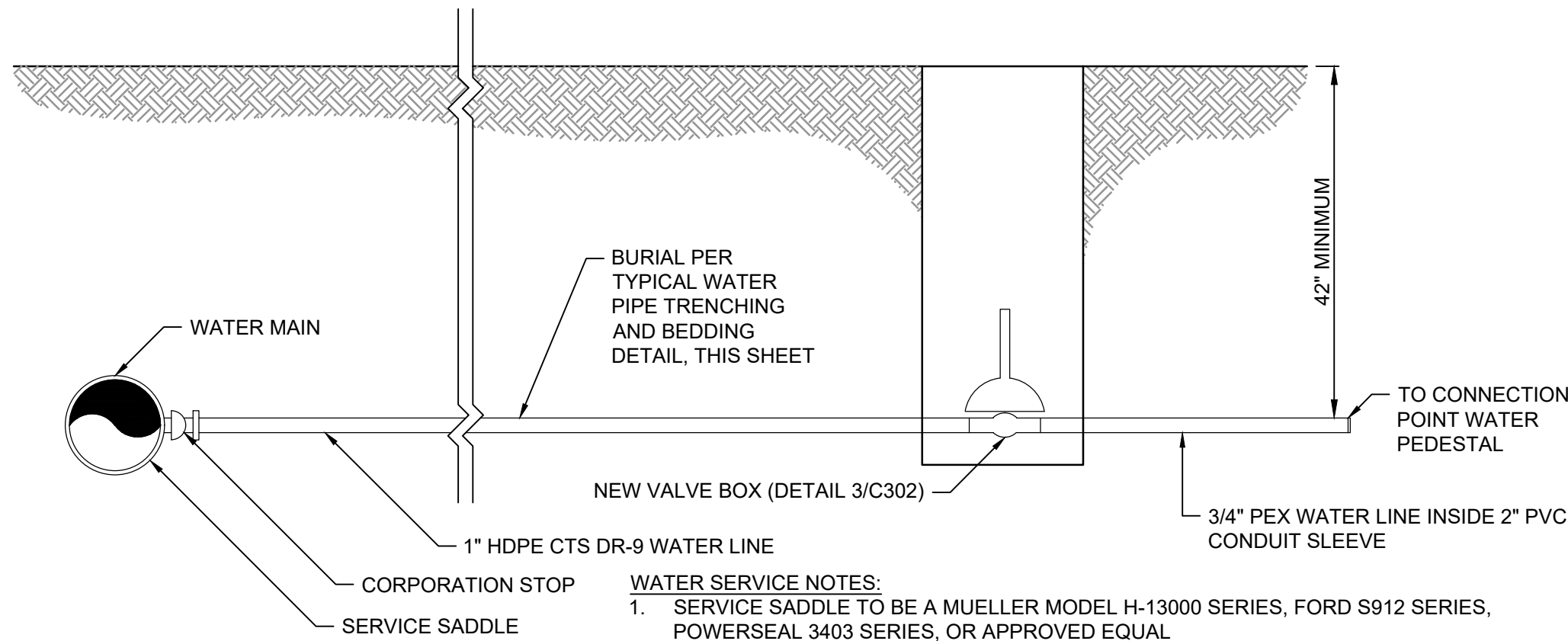


- WATER PIPE NOTES:
- BACKFILL MATERIAL FOR WATER MAIN SHALL BE SUITABLE EARTH, FREE FROM LARGE ROCKS OR STONES.
  - ALL TRENCHES IN AREAS OF UNSUITABLE EARTH USED FOR WATER MAIN SHALL HAVE A BEDDING OF WELL-GRADED, 1" MINUS, GRANULAR BACKFILL FROM 4" BELOW THE BOTTOM OF THE PIPE TO ONE-HALF THE DIAMETER OF THE PIPE COMPACTED TO 95% OF THE MODIFIED PROCTOR DENSITY (ASTM D-698).
  - IN AREAS OF CLEAN DIRT CUTS OUTSIDE OF PAVED AREAS, TRENCH MAY BE BACKFILLED WITH SAME MATERIAL AND COMPACTED TO 95% OF THE MODIFIED PROCTOR DENSITY (ASTM D-698).
  - IN AREAS OF ROCK CUT, THE TRENCH SHALL BE BACKFILLED WITH WELL-GRADED GRANULAR COMPACTED MATERIAL TO SIX INCHES ABOVE TOP OF PIPE.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR TRENCH SETTLEMENT.
  - WELL-GRADED 1" MINUS GRANULAR COMPACTED BACKFILL TO BE USED IN ALL AREAS TO BE PAVED.
  - LOCATOR WIRE SHALL BE #12 SOLID COPPER WIRE, INSULATED FOR 600V WITH SPLICE POINTS AT VALVE BOXES.
  - TRACER TAPE SHALL BE 3" WIDE, BONDED LAYER PLASTIC WITH MAGNETIC FOIL CORE, TERRA TAPE DETECTABLE, MANUFACTURED BY REEF INDUSTRIES OF HOUSTON, TEXAS OR APPROVED EQUAL, AND SHALL HAVE THE WORDS "CAUTION: WATER MAIN BURIED BELOW".

1 TYPICAL WATER PIPE TRENCHING AND BEDDING DETAIL  
N.T.S.

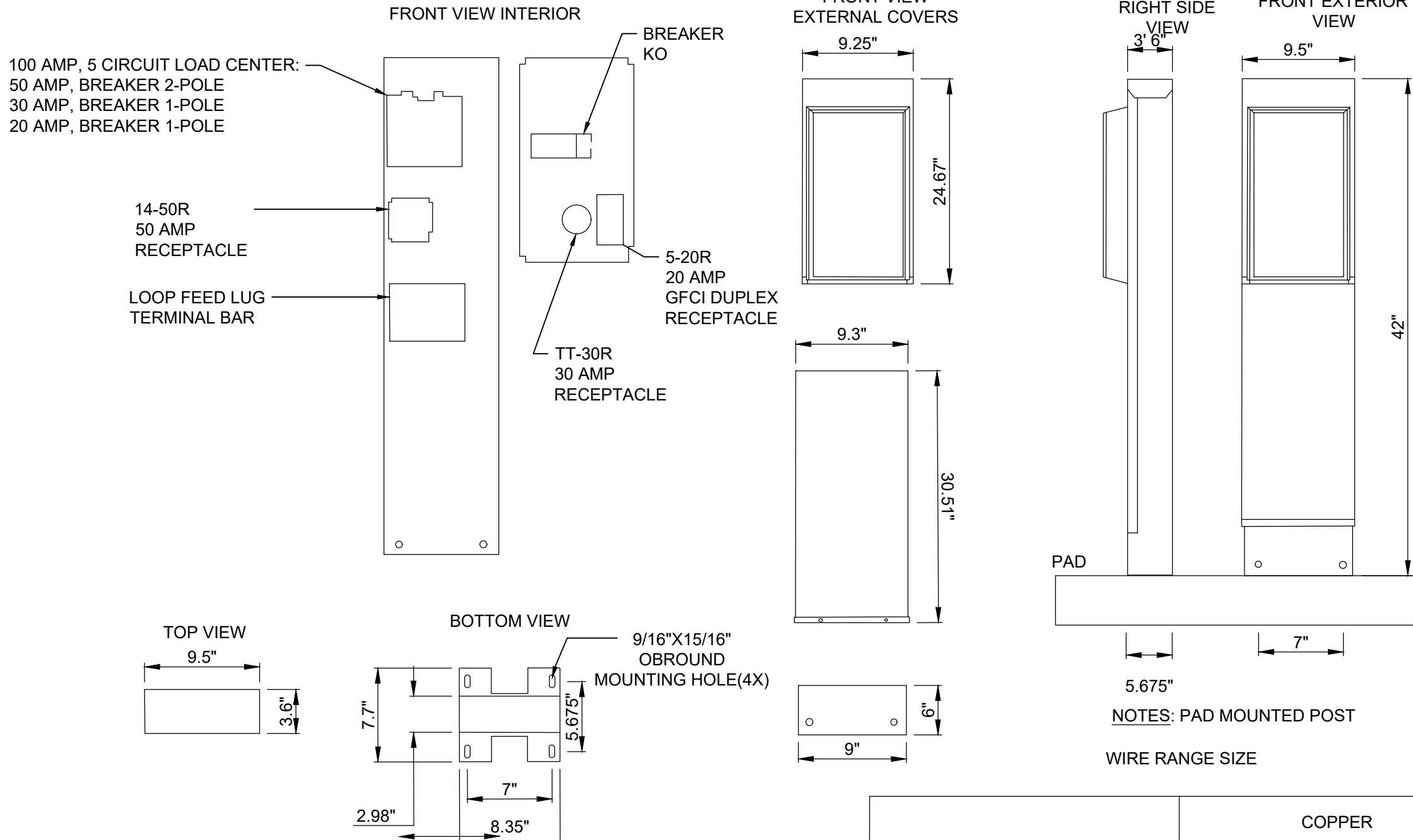


3 CAMPSITE VALVE BOX DETAIL  
N.T.S.



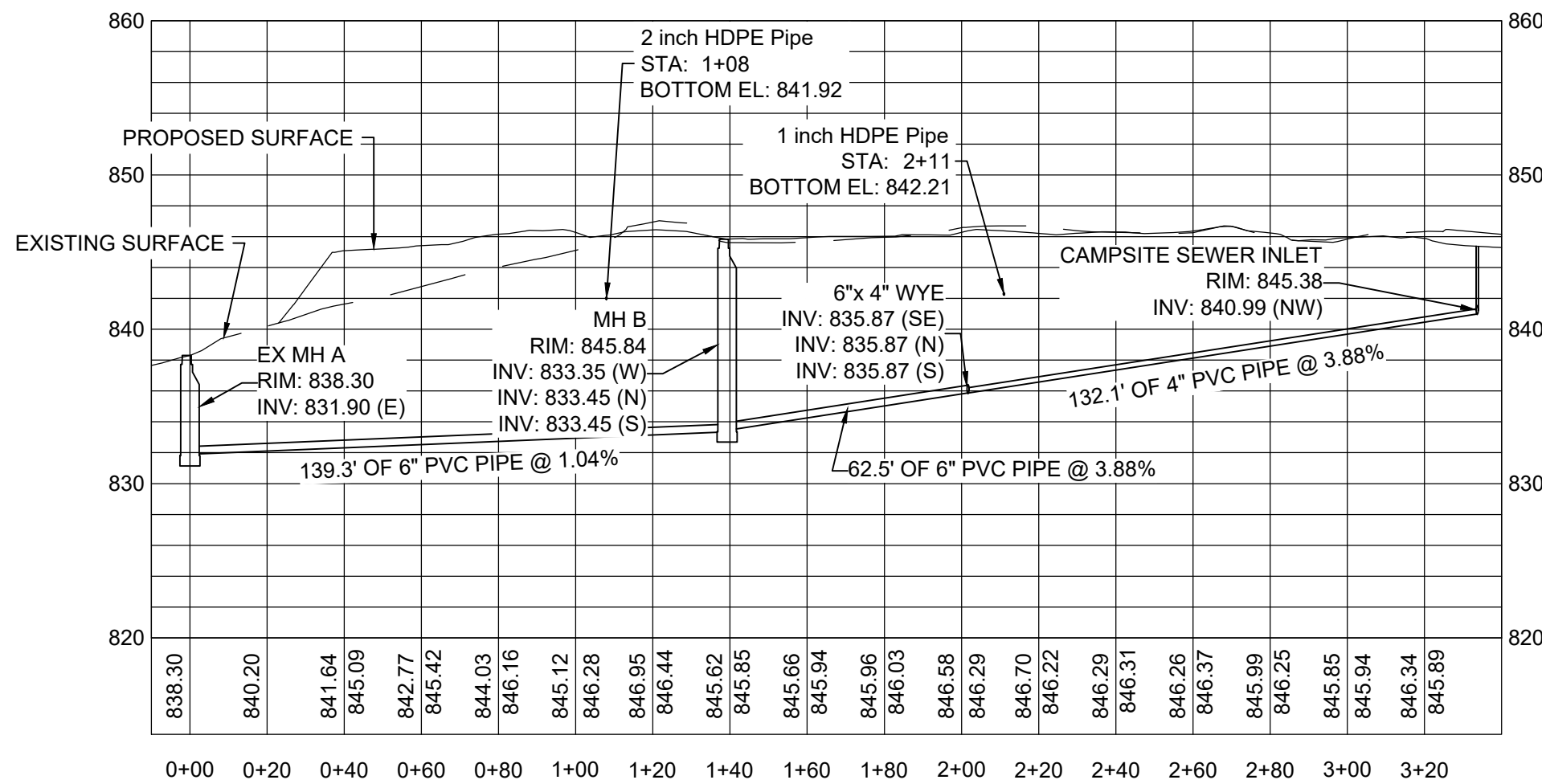
4 WATER SERVICE LINE DETAIL  
N.T.S.

- WATER SERVICE NOTES:
- SERVICE SADDLE TO BE A MUELLER MODEL H-13000 SERIES, FORD S912 SERIES, POWERSEAL 3403 SERIES, OR APPROVED EQUAL
  - CORPORATION STOP TO BE A MUELLER MODEL B-25008N, FORD FB BALLCORP TYPE, AY MCDONALD 74701BQ, OR APPROVED EQUAL
  - CURB VALVE TO BE A MUELLER MODEL H-15209N, AY MCDONALD 74713Q, FORD B44-xxxHST-Q-NL STYLE, OR APPROVED EQUAL

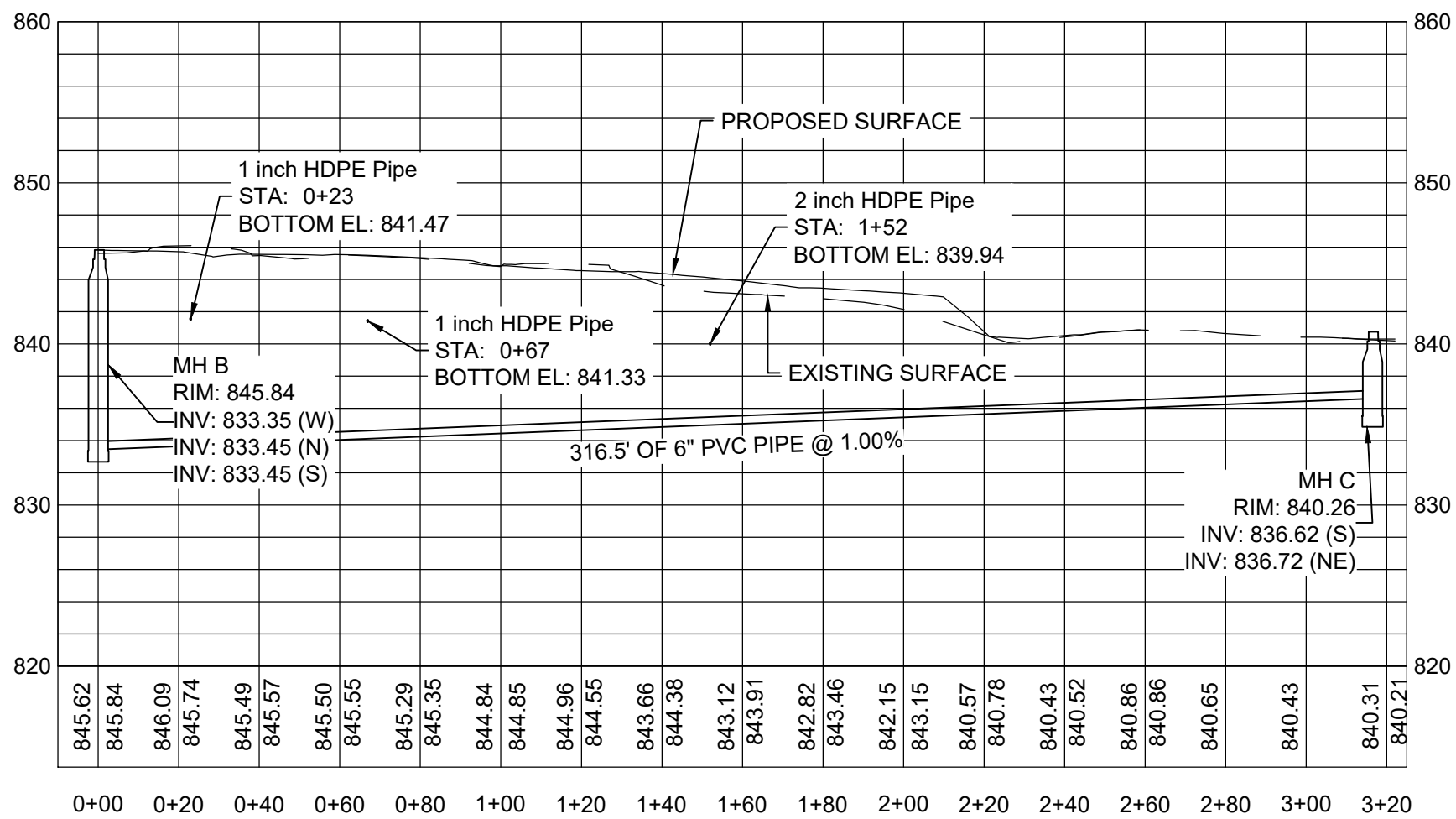


2 POWER PEDESTAL DETAIL  
N.T.S.

CONNECTOR	COPPER	
	SOLID	STRAND
LINE	14-8	14-8
LOAD	14-10	14-10
NEUTRAL	14-4	14-4
POST LINE CONNECTORS SUITABLE FOR LOOP FEED	#6-350 KCMIL	
EQUIP, GRND POST	14-2/0	14-2/0



5 SANITARY SEWER PROFILE



6 SANITARY SEWER PROFILE



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DATE: \_\_\_\_\_  
ISSUE DATE: 12-17-2025

CAD DWG FILE: C302  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

SHEET TITLE:

SANITARY SEWER  
PROFILES & UTILITY  
DETAILS

SHEET NUMBER:

C302

SHEET 29 OF 41  
12/17/2025





### 3 CLEANOUT DETAILS



1. ALL NEW SANITARY SEWER PIPE SYSTEMS SHALL BE CONSTRUCTED PER THIS DETAIL UNLESS OTHERWISE SHOWN ON PLANS OR WITH WRITTEN APPROVAL OF THE ENGINEER.
2. BREAK IN CONNECTIONS TO EXISTING MAINS SHALL UTILIZE AN ADS "INSERTA TEE" PRODUCT OR APPROVED EQUAL METHOD.

5 CAMPSITE SEWER INLET DETAIL  
N.T.S.





CERTIFICATION STATEMENTS

This plan and certifications are a part of the Storm Water Pollution Prevention Plan for the project described below, in accordance with NPDES Permit No. MO-RA00000 as issued by the Missouri Department of Natural Resources for storm water discharges from Construction Site Activities.

PROJECT INFORMATION:  
Site: Long Branch State Park  
City: Macon, MO  
Location: 28615 Visitor Center Road  
County: Macon  
Lat: 39.771858 Long: -92.523778

PERMITTEE (OWNER) CERTIFICATION:CONTRACTOR CERTIFICATION STATEMENT certify under penalty of law that this document and all attachments were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.I certify under penalty of law that I understand the terms of the general National Pollutant Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

OWNER (PERMITTEE):  
SIGNATURE:  
PRINT NAME:  
STREET ADDRESS:  
City State Zip  
TELEPHONE NUMBER:  
FAX NUMBER:  
DATE:  
CONTRACTOR:  
SIGNATURE:  
PRINT NAME:  
STREET ADDRESS:  
City State Zip  
TELEPHONE NUMBER:  
FAX NUMBER:  
DATE:

STORM WATER POLLUTION PLAN

The following plan is established and incorporated in the project to aid the contractor in the placement of temporary erosion control systems and to provide a storm sewer water pollution prevention plan for compliance under NPDES.

The purpose of this plan is to minimize erosion within the construction site and to limit sediments from leaving the construction site by utilizing proper temporary erosion control systems and providing ground cover within a reasonable amount of time.

Certain erosion control facilities shall be installed by the contractor at the beginning of construction. Other items shall be installed by the contractor as deemed necessary, on a case-by-case situation, depending on the contractor's sequence of activities, time of year and expected weather conditions.

The contractor shall install permanent erosion control systems and seeding within a time frame specified herein. Therefore minimizing the amount of area susceptible to erosion and reducing the amount of temporary seeding. Contractor shall further determine if any temporary erosion control systems shown in the plan can be deleted and if any additional temporary erosion control systems which are not included in this plan shall be added.

SITE DESCRIPTION.

1. The project consists of site work for the development of campsites, full hookup camper campsites and cabin campsites. Construction includes tree removal, earth excavation, embankment, various pavement items, underground utilities and other miscellaneous items of construction.

DESCRIPTION OF INTENDED SEQUENCE FOR MAJOR CONSTRUCTION ACTIVITIES, WHICH WILL DISTURB SOILS FOR MAJOR PORTIONS OF THE CONSTRUCTION SITE.

1. Placement, maintenance, removal and proper clean-up of temporary erosion control, such as perimeter erosion control barriers; temporary ditch checks; siltation basins, temporary seeding, etc.  
2. Tree removal as shown on the plans. Trees to remain will be protected against damage.  
3. Topsoil removal and stockpiling.  
4. Excavation and embankment at the job site to achieve the proposed site contours.  
5. Storm sewers, manholes, inlets, and other utility installations.  
6. Placement, maintenance, removal and proper clean-up of temporary erosion control, such as perimeter erosion control barrier, temporary ditch checks, inlet and pipe protection, temporary seeding, etc.  
7. Pavement, sidewalk and aggregate surface work.  
8. Final grading, landscaping and other miscellaneous items.  
9. Placement of permanent erosion control, such as riprap ditches, and erosion control blanket, seeding, etc.

AREA OF CONSTRUCTION SITE:

1. The total area of the project site is approximately 6.3 acres of which 6.2 acres will be disturbed by excavation, grading, and other activities.

OTHER REPORTS, STUDIES AND PLANS WHICH AID IN THE DEVELOPMENT OF THE STORM WATER POLLUTION PREVENTION PLAN AS REFERENCED DOCUMENTS:

1. Project plan documents, specifications, and plan drawings indicate drainage patterns and approximate slopes anticipated after grading activities were utilized for the proposed placement of the temporary erosion control systems.

DRAINAGE TRIBUTARIES AND SENSITIVE AREAS RECEIVING RUNOFF FROM THIS CONSTRUCTION SITE:

1. The names of receiving water(s) are the Long Branch State Park Lakes and East Fork Little Chariton River.  
2. Location of any sensitive areas (i.e. wetlands, habitats)

STORM WATER CONTROLS-EROSION CONTROLS AND SEDIMENT CONTROL:

1. DESCRIPTION OF STABILIZATION PRACTICES AT THE BEGINNING OF CONSTRUCTION  
The drawings and specifications should ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized. Stabilization practices include temporary seeding, permanent seeding, mulching, protection of trees, preservation of mature vegetation, and other appropriate measures. Stabilization measures shall be initiated immediately in portions of the site where construction activities have temporarily or permanently ceased, and completed in no more than 7 days after the construction activity in that portion of the site has temporarily or permanently ceased. Allowances to the seven (7) day completion period for temporary and permanent stabilization may be made due to weather and equipment malfunctions. The allowances shall be documented in the SWPPP.  
a. Areas of existing vegetation: wood and grasslands: outside the proposed construction limits shall be identified for preserving and shall be protected from construction activities.  
b. Dead, diseased, or unsuitable vegetation within the site shall be removed, along with required tree removal.  
c. As soon as reasonable access is available to all locations where water drains away from the project, temporary ditch checks, inlet and pipe protection, and perimeter erosion barrier shall be installed as called out in this plan.  
d. Bare and sparsely vegetated ground in high erodable areas shall be temporarily seeded at the beginning of construction where not construction activities are expected within seven days.  
e. Immediately after tree removal or stripping is completed, areas which are highly erodable shall be temporarily seeded when no construction activities are expected within seven days.  
f. At locations where a significant amount of water drains into the construction zone from outside areas (adjacent landowners), temporary ditch checks or silt fencing will be utilized to locally divert water, reduce flow rates, and collect outside siltation inside the site.

Establishment of these temporary erosion control measures will have additional benefits to the project. Desirable grass seed will become established in these areas and will spread seeds onto the construction site until permanent seeding/mowing and overseeding can be completed.

2. DESCRIPTION OF STABILIZATION (BEST MANAGEMENT) PRACTICES DURING CONSTRUCTION

During construction, areas outside the construction limits as outlined previously herein shall be protected. The contractor shall not use this area for staging (except as described on the plans) and parking of vehicles or construction equipment, storage of materials, or other construction related activities.

- a. Within the construction limits, areas which may be susceptible to erosion, shall remain undisturbed until full scale construction is underway to prevent unnecessary soil erosion.  
b. Earth stockpiles shall be temporarily seeded immediately if they are to remain unused for more than fourteen (14) days.  
c. As construction proceeds, the contractor shall institute the following:  
i. Place temporary erosion control facilities at locations shown on the plans.  
ii. Temporarily seed erodable bare earth on a weekly basis to minimize the amount of erodable surface area within the contract limits.  
iii. Construct ditches and provide temporary erosion control systems including ditch lining and ditch slopes.  
iv. Temporarily divert water around culvert locations.  
v. Build necessary embankments at culvert locations and then excavate and place culvert.  
vi. Continue building up the embankment to the proposed grade while at the same time,placing permanent erosion control such as riprap ditch lining and conducting final shaping to the slopes.  
d. Excavated areas and embankment shall be permanently seeded immediately after final grading. If not, they shall be temporarily seeded immediately if no construction activity in the area is planned for 7 days.  
e. Construction equipment and materials shall be stored and fueled only at designated locations. All necessary measures shall be taken to contain any fuel or other pollutant in accordance with EPA water quality regulations. Leaking equipment or supplies shall be immediately repaired or removed from the site.  
f. The contractor shall inspect the project daily during construction activities. Inspection shall also be done weekly and after heavy rains.  
g. Sediment collected during construction of the various temporary erosion control systems shall be disposed of on the site on a regular basis.  
h. The temporary erosion control systems shall be removed after use is no longer or no longer functioning.  
i. A sedimentation basin shall be included for each drainage area with ten (10) or more acres disturbed at one time. The sediment basin shall be sized to treat a local 2-year, 24-hour storm. Accumulated sediment shall be removed from the basin when basin is 50% full. Utilize outlet structures that withdraw water from the surface when discharging from basins and impoundments unless infeasible. Discharges from the basin shall not cause scouring of the banks or bottom of the receiving stream. The basin shall be maintained until final stabilization of the disturbed area served by the basin.

3. DESCRIPTION OF STRUCTURAL PRACTICES AFTER FINAL GRADING

- a. Temporary erosion control systems shall be left in place with proper maintenance until permanent erosion control is in place and working properly and all proposed turf areas seeded and established.  
b. Once permanent erosion control systems as proposed in the plans are functional and established, temporary items shall be removed, cleaned up, and disturbed turf reseeded.

MAINTENANCE AFTER CONSTRUCTION

1. Construction is complete after acceptance by the Owner. Maintenance up to this date will be by the Contractor.

MISCELLANEOUS

1. Temporary ditch checks shall be located at every 1.5 ft. fall/rise in ditch grade.  
2. Temporary erosion control seeding shall be applied at a rate of 100 lbs/acres.  
3. Straw bales, hay bales, perimeter erosion barrier and silt fences will not be permitted for permanent ditch checks. Ditch checks shall be composed of aggregate, silt panels, rolled excelsior, geotextile web grids and/or other equal materials.  
4. Sediment collected during construction by the various temporary erosion control systems shall be disposed on the site on a regular basis.

INSPECTIONS.

ON SITE INSPECTOR NAME:  
COMPANY NAME:  
STREET ADDRESS:  
City State Zip  
TELEPHONE NUMBER:  
FAX NUMBER:

The Permittee (or a representative of the permittee) shall conduct regularly scheduled inspections at least once every seven (7) calendar days. these inspections shall be conducted by a qualified personnel, one who is responsible for environmental matters at the site, or a person directly supervised by the person responsible for environmental matters. For disturbed areas that have not been finally stabilized, all installed BMP's and other polution control measures shall be inspected for proper installation, operation and maintenance. All stormwater outfalls shall be inspected 50 feet downstream of the outfall. Any structural or maintenance problems shall be noted in an inspection report and corrected within seven calendar days of the inspection. All BMP's must be inspected in accordance with one of the two schedules listed below, and any changes to the frequency of inspections, including switching between the options listed below, must be documented in the SWPPP:

- a. At least once every seven calendar days and within 24 hours after any storm event equal to or greater than the 2-year, 24-hour storm has ceased during a normal work day and within 72 hours if the rain event ceases during a non-work day such as a weekend or holiday.  
b. Once every 14 calendar days and within 48 hours of the occurrence of a storm event of 0.25 inches of precipitation or greater, or the occurrence of runoff from snow melt. To determine if a storm event of 0.25 inches or greater has occurred on your site, you must either keep a properly maintained rain gauge on site, or obtain the storm event information from a weather station for your location.  
c. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the plan shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of off site sediment tracking.  
d. Based on the results of the inspection, the description of potential pollutant sources identified herein and pollution prevention measures identified herein shall be revised as appropriate as soon as practicable after such inspection. Any changes to this plan resulting from the required inspections shall be implemented within 7 calendar days following the inspection.  
e. A report summarizing the scope of the inspection, names(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of this storm water pollution prevention plan, and actions taken shall be made and retained as part of the plan for at least three (3) years after the date of the Letter of Termination. The report shall be signed in accordance with Requirements and Guidelines of the general permit.

- f. If, for any reason, the permittee does not comply with or will be unable to comply with any daily maximum effluent limitation specified in this permit, the permittee shall provide the Department with the following information, in writing within five (5) days of becoming aware of such conditions:  
(i) a description of discharge and cause of noncompliance, and  
(ii) the period of noncompliance, including exact dates and times or, if not corrected, the anticipated the noncompliance is expected to continue m and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.  
g. Twenty-four hour reporting. The permittee shall report any noncompliance which may endanger health or environment. Any information shall be provided orally with in 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the permittee becomes aware of the circumstances. The Department may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

The report of noncompliance shall be mailed to the following address:  
Missouri Department of Natural Resources  
Northeast Regional Office  
1709 Prospect Drive  
Macon, MO 63552-2602  
Main: 660-385-8000  
Fax: 660-385-8090  
Special Provision  
For  
National Pollutant Discharge Elimination System

This project will result in a disturbance of one (1) or more acres of total land area and will require compliance with the National Pollutant Discharge Elimination System (NPDES) Storm Water Permit.

A land disturbance permit is currently in place for this site (PERMIT #MOR100038).

The Owner is the PERMITTEE and the Contractors and Subcontractors will be required to certify that they understand and will comply with all requirements of the permit.

The contractor will be required to follow the requirements of the permit and storm water pollution prevention plan in the contract documents.  
  
A storm water pollution plan shall be cooperatively developed by the PERMITTEE and contractor for this project using good engineering practices. The plan shall identify potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges. In addition, the plan shall describe and ensure the implementation of practices which will be used to reduce the pollutants in storm water discharges associated with this project and assure compliance with the terms and conditions of the Storm Water Permit.

At the completion of the project stabilization the following form shall be completed and submitted to the MoDNR:

FORM H - REQUEST FOR TERMINATION OF A GENERAL PERMIT

The Contractor shall prepare a stormwater management plan which is certified by both the Owner and Contractor. The Contractor shall be responsible for posting a copy of the public notification sign on the site and Request for Termination as well as maintaining the Stormwater Management Plan and maintenance records on-site.

STATE OF MISSOURI  
MIKE KEHOE,  
GOVERNOR

BIDDING DOCUMENTS



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ISSUE DATE: 12-17-2025

CAD DWG FILE: C401  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

SHEET TITLE:

STORM WATER  
POLLUTION  
PREVENTION PLAN

SHEET NUMBER:

C401

SHEET 31 OF 41  
12/17/2025





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CAD DWG FILE: C501  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

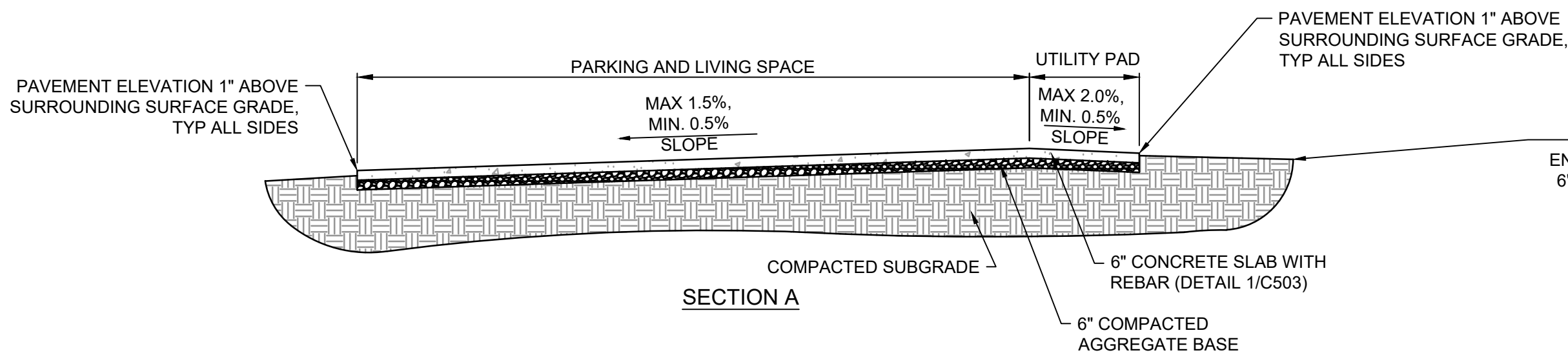
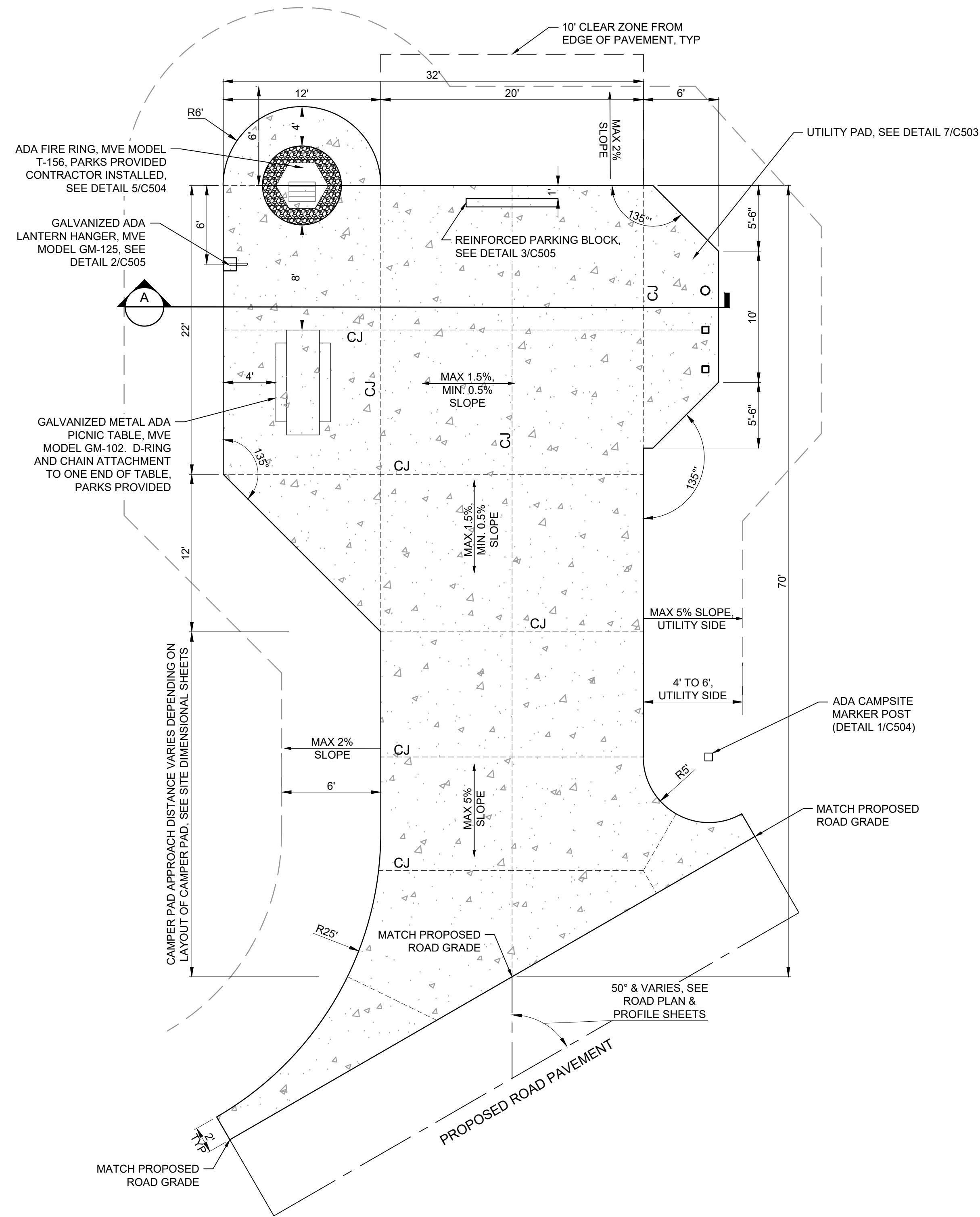
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SITE DETAILS

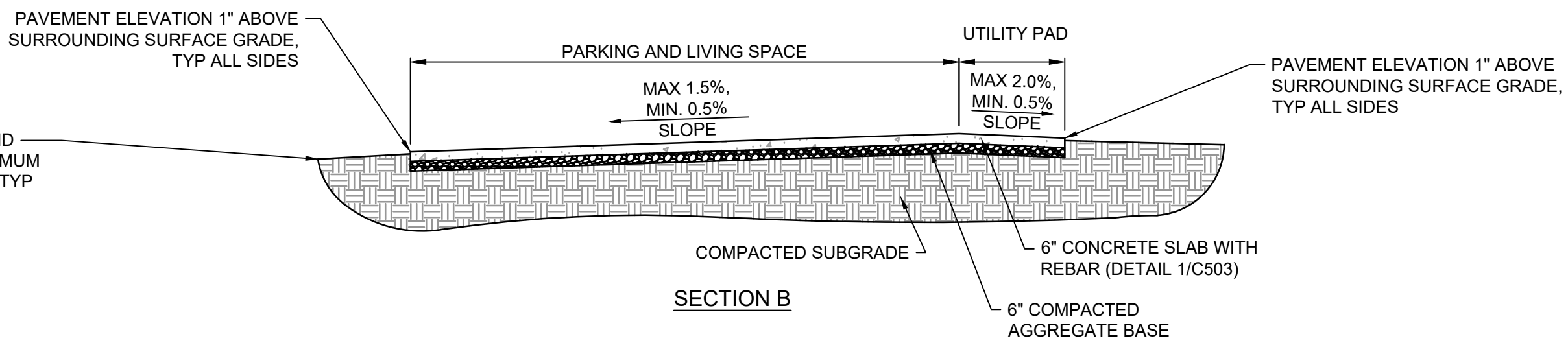
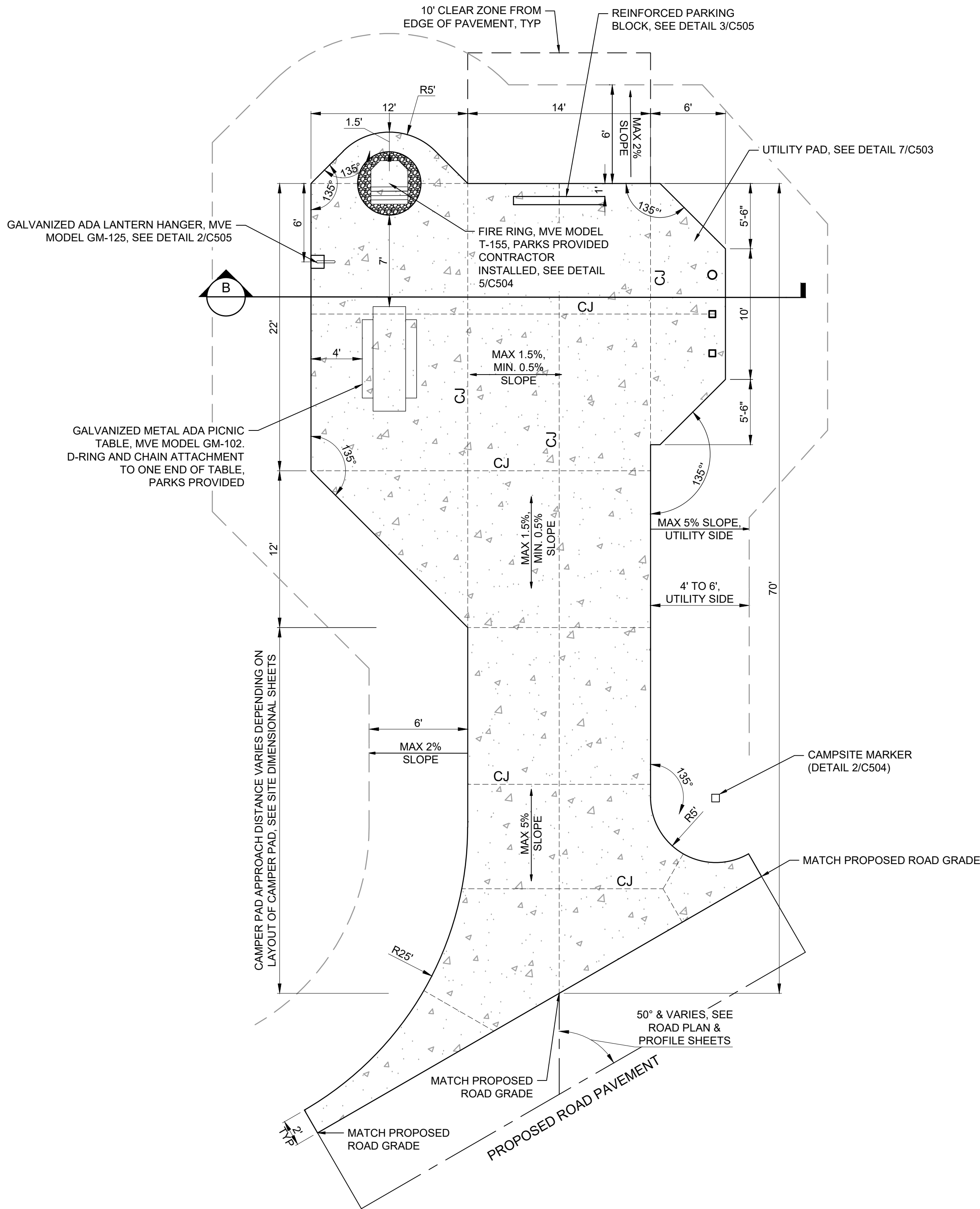
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C501

SHEET 32 OF 41  
12/17/2025



1 ADA BACK-IN CAMPSITE STANDARD - OUTSIDE OF LOOP  
N.T.S.



2 BACK-IN CAMPSITE STANDARD - OUTSIDE OF LOOP  
N.T.S.





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DEPARTMENT OF  
NATURAL RESOURCES  
MISSOURI STATE PARKS

MODIFY CAMPGROUND  
LOOP 1

LONG BRANCH STATE PARK  
28615 VISITOR CENTER RD  
MACON, MO 63552

PROJECT # X2517-01  
SITE # 5601  
ASSET # 7815601031

REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
ISSUE DATE: 12-17-2025

CAD DWG FILE: C502  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

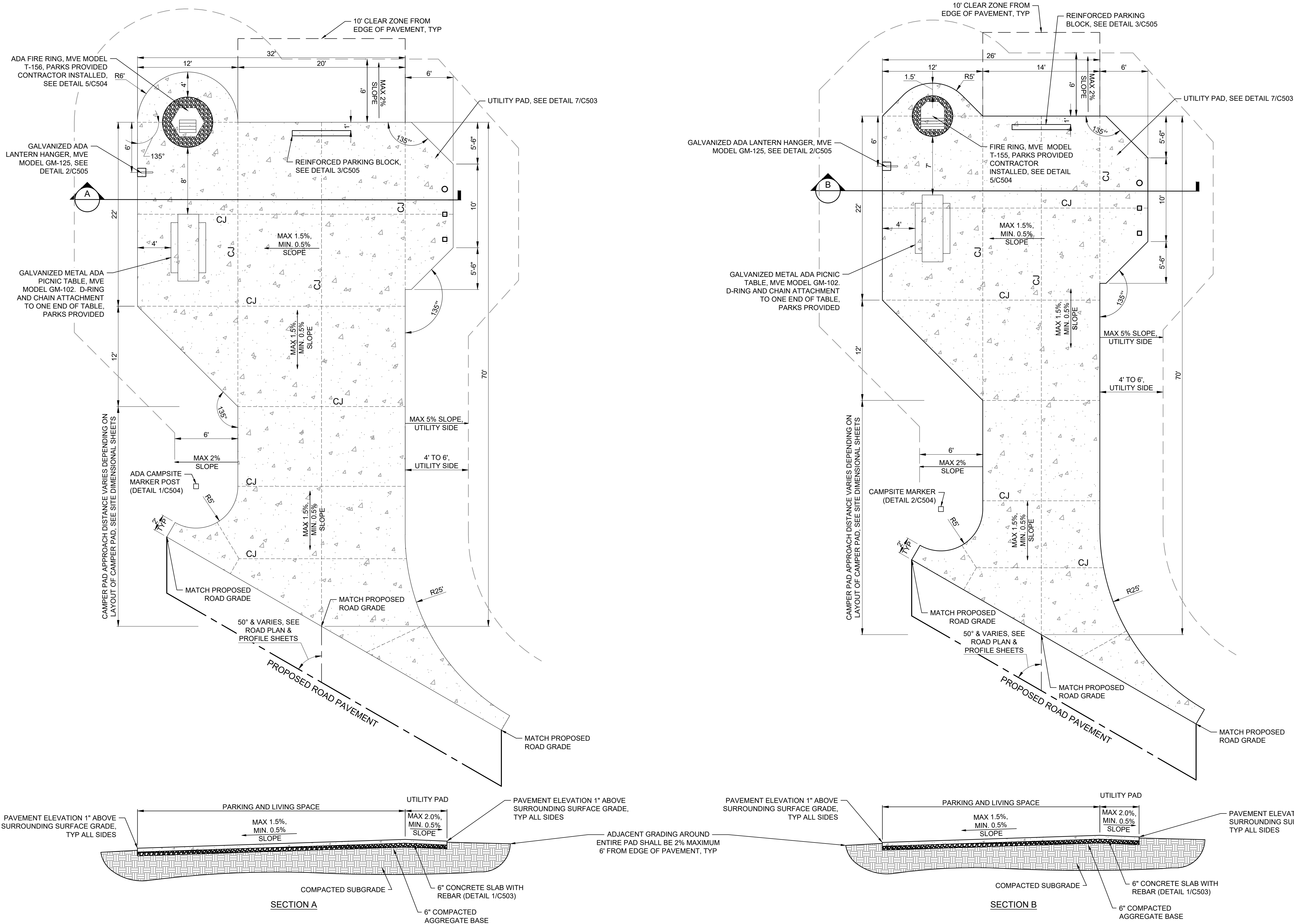
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SITE DETAILS

SHEET NUMBER:

C502

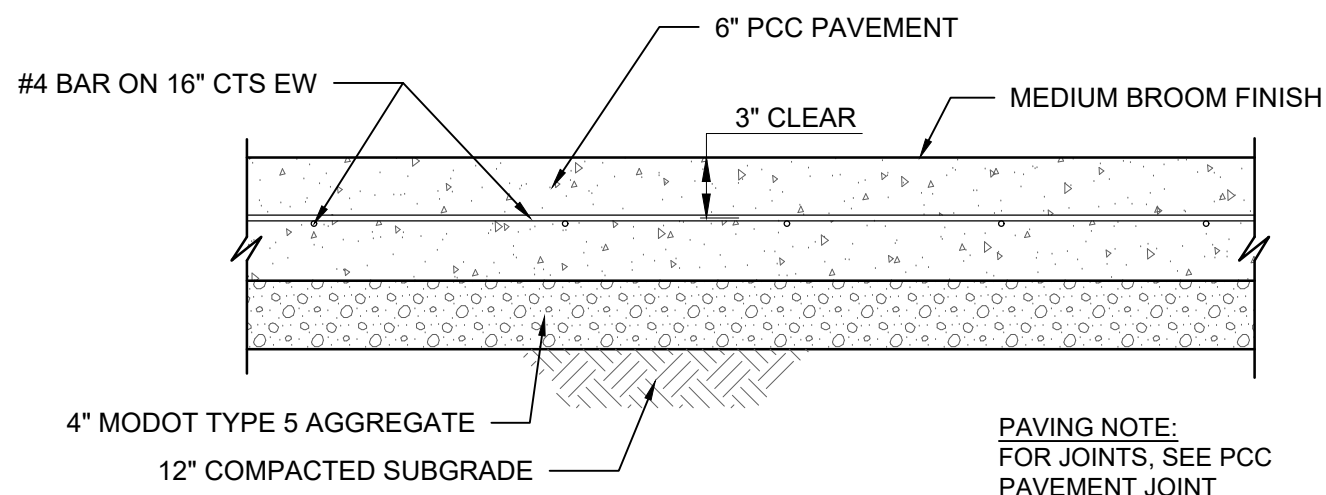
SHEET 33 OF 41  
12/17/2025



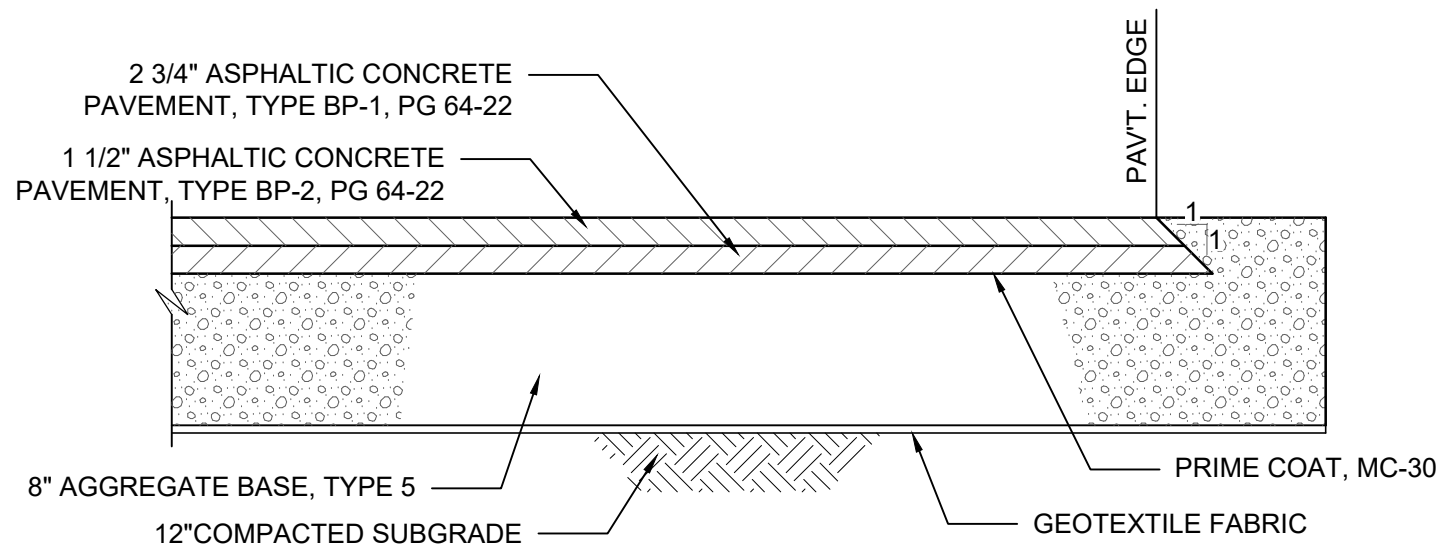
1 ADA BACK-IN CAMPSITE STANDARD - INSIDE OF LOOP  
N.T.S.

2 BACK-IN CAMPSITE STANDARD - INSIDE OF LOOP  
N.T.S.

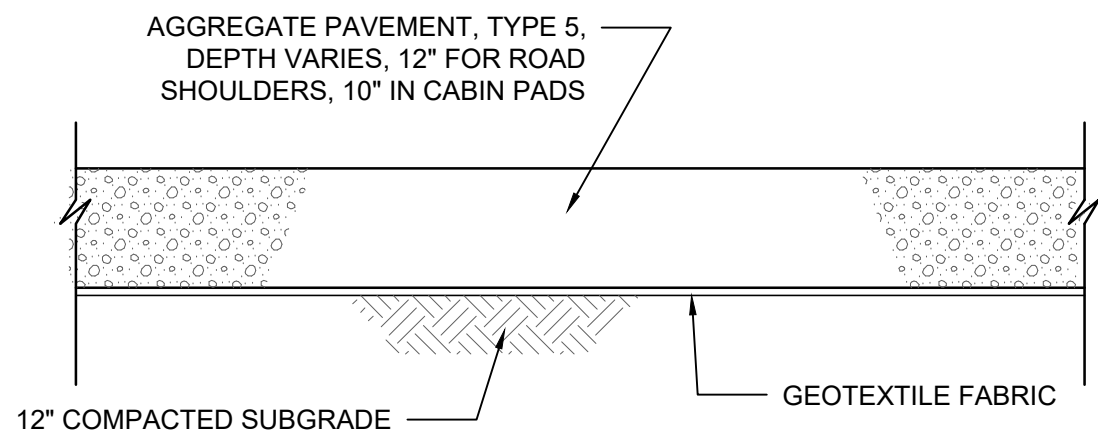




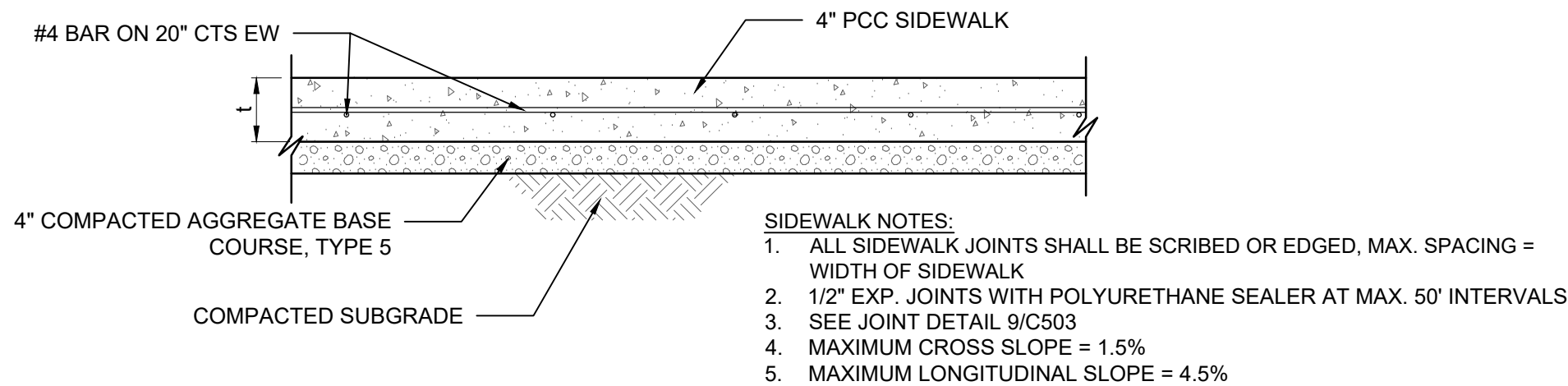
1 PCC PAVING DETAIL  
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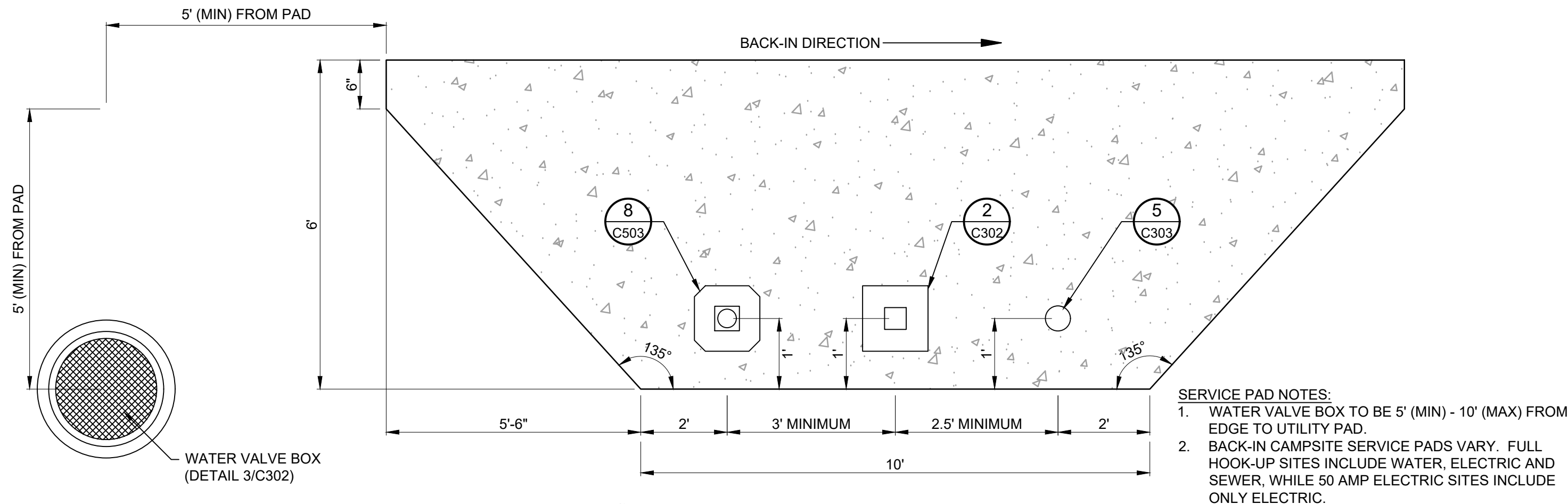
2 ASPHALT PAVING DETAIL  
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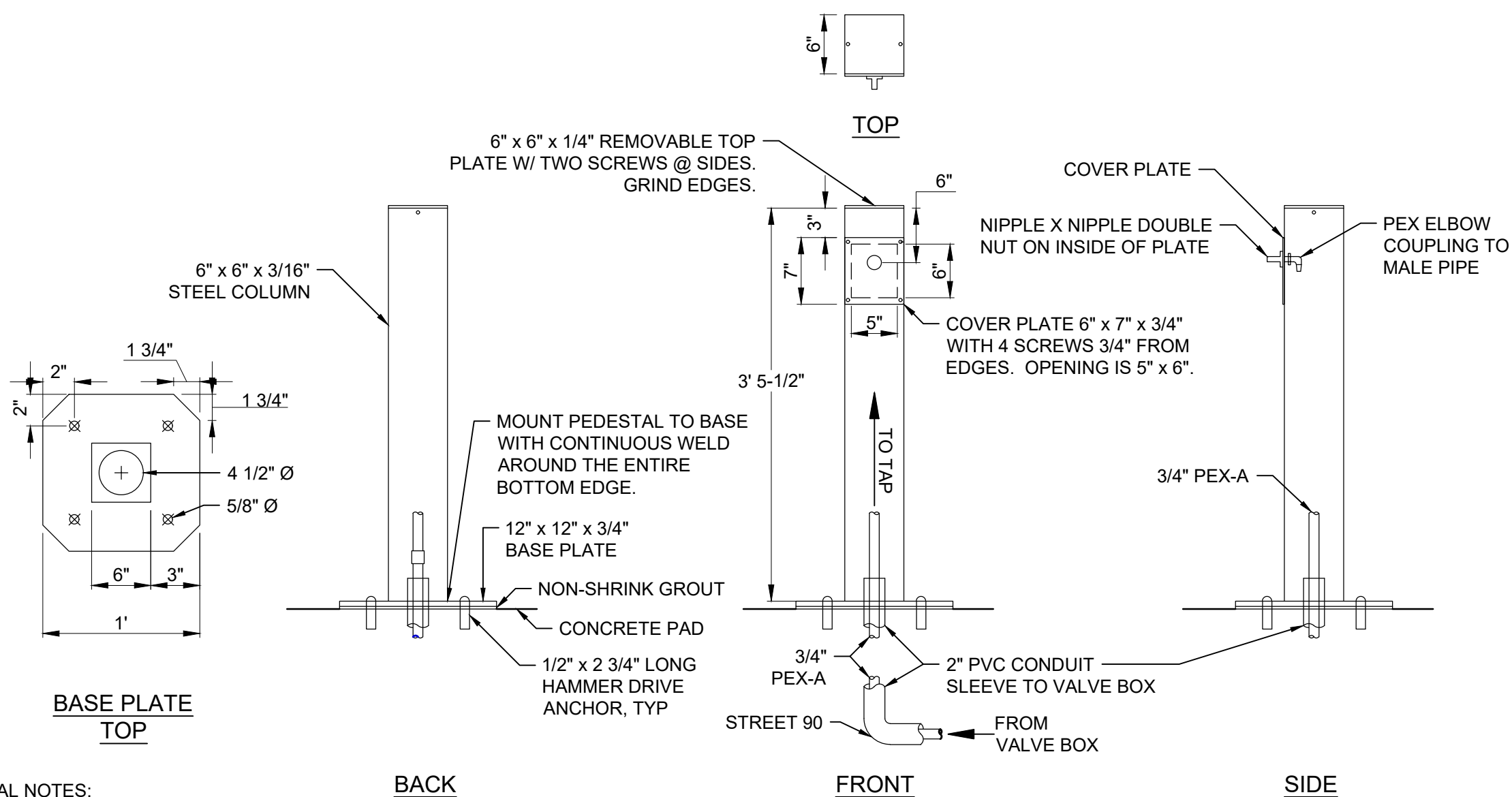
3 AGGREGATE PAVEMENT DETAIL  
N.T.S.



4 SIDEWALK DETAIL  
N.T.S.

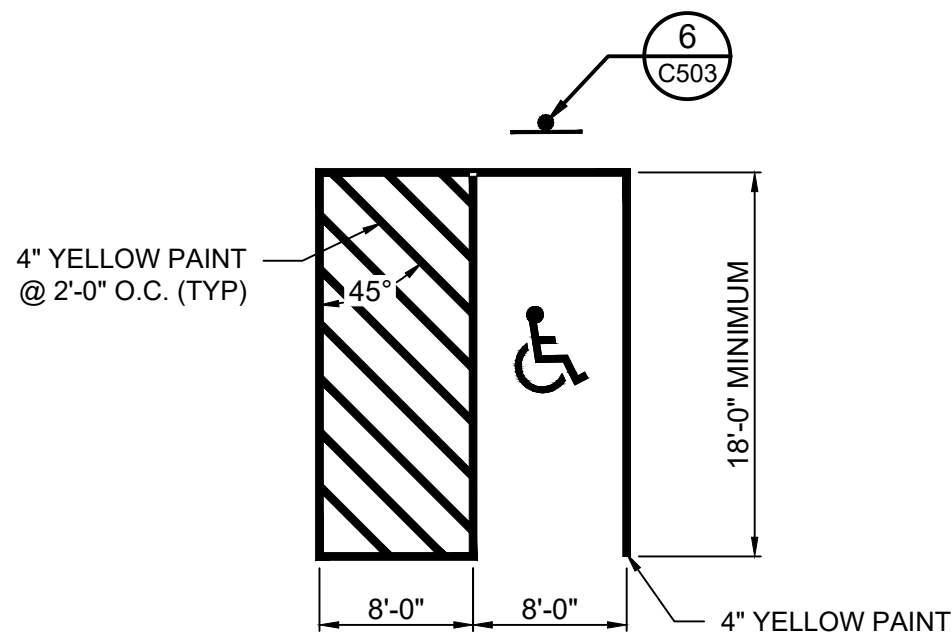


7 BACK-IN CAMPSITE SERVICE PAD DETAIL  
N.T.S.

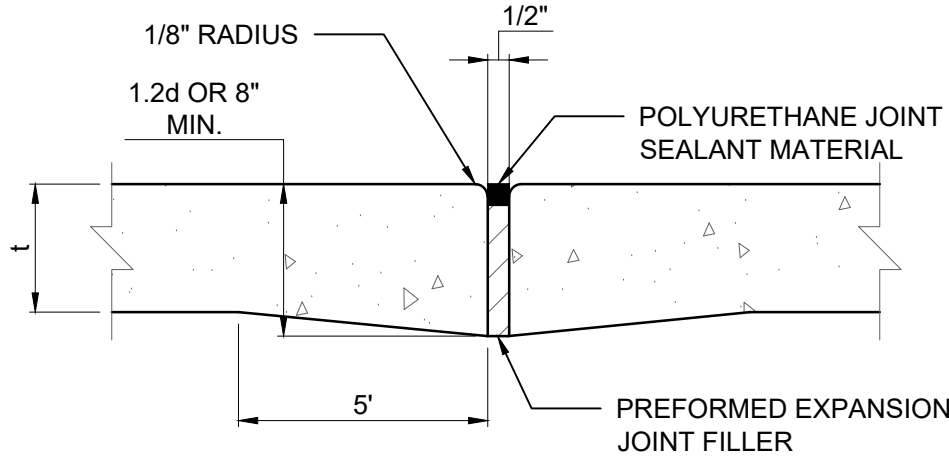


- WATER PEDESTAL NOTES:
- 3/4 inch HOSE BIB TO BE NIBCO #QT63X WITH APOLLO #38304AS (GRAINGER #6KK07) 3/4 inch VACUUM BREAKER OR APPROVED EQUAL.
  - PEDESTAL FINISH TO BE HOT DIP GALVANIZED.

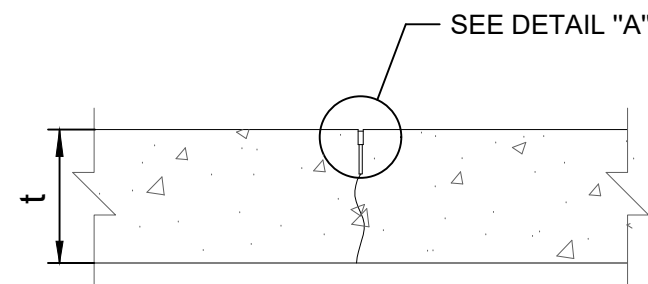
8 WATER PEDESTAL DETAIL  
N.T.S.



5 TYPICAL ACCESSIBLE STALL DETAIL  
N.T.S.



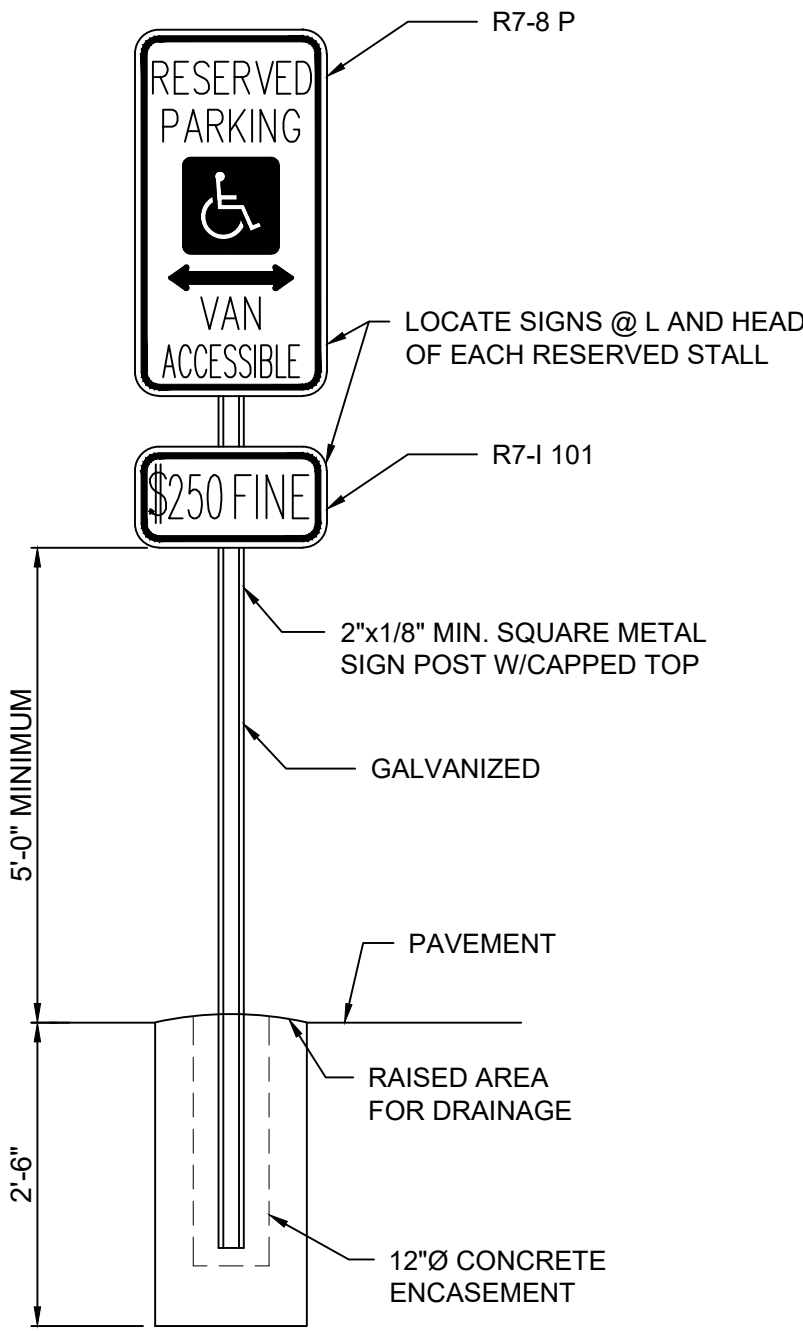
EXPANSION JOINT



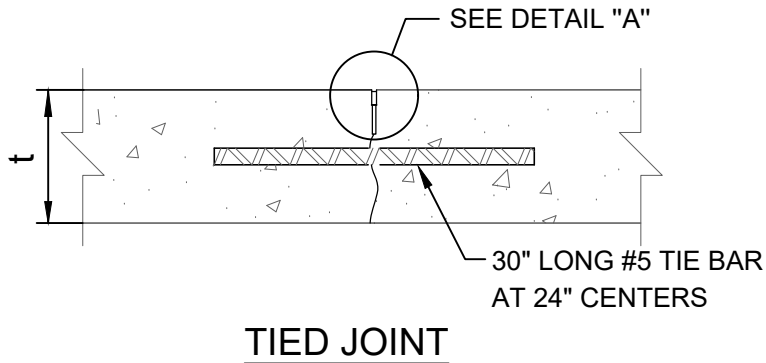
CONTRACTION JOINT

- JOINT NOTES:
- ALL TRANSVERSE JOINTS MUST EXTEND THROUGH CURBS AND MUST BE CONTINUOUS ACROSS PAVEMENT, EXCEPT TIED TRANSVERSE CONSTRUCTION JOINTS. EXPANSION JOINTS WILL BE REQUIRED AS SHOWN ON PLANS.
  - MAXIMUM JOINT SPACING IN ANY DIRECTION SHALL BE 24 TIMES THE THICKNESS OF THE SLAB, UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS.
  - PAVEMENT JOINTS SHALL BE SAWED WITHIN 24 HOURS OF CONCRETE PLACEMENT AND SEALED AS SHOWN.
  - DEFORMED BARS CONFORMING TO THE REQUIREMENTS OF A.A.S.H.T.O., M-31 OR M-53 GRADE 60 SHALL BE USED FOR THE TIE BARS.
  - SUPPORT PINS FOR THE TIE BARS, WHEN REQUIRED, SHALL BE OF A SIZE AND STRENGTH SUFFICIENT TO FIRMLY HOLD THE BAR IN PLACE.
  - WHEN ADJACENT PAVEMENTS ARE CONSTRUCTED SEPARATELY OR RIGID PAVEMENT IS CONSTRUCTED ADJACENT TO CURB AND GUTTER, EPOXY COATED DEFORMED STEEL TIE BARS OF THE SPECIFIED SIZE, LENGTH, SIZE, AND SPACING SHALL BE PLACED ACROSS LONGITUDINAL CONSTRUCTION JOINTS. THE BARS SHALL BE INSTALLED IN PREFORMED OR DRILLED HOLES ALONG THE VERTICAL EDGE OF THE ADJACENT PAVEMENT OR CURB & GUTTER AND SHALL BE INSTALLED WITH AN APPROVED NON-SHRINK GROUT OR CHEMICAL ADHESIVE (EPOXY) TO PROVIDE A MINIMUM PULL REQUIREMENTS AS ESTABLISHED IN THE STANDARD SPECIFICATIONS.

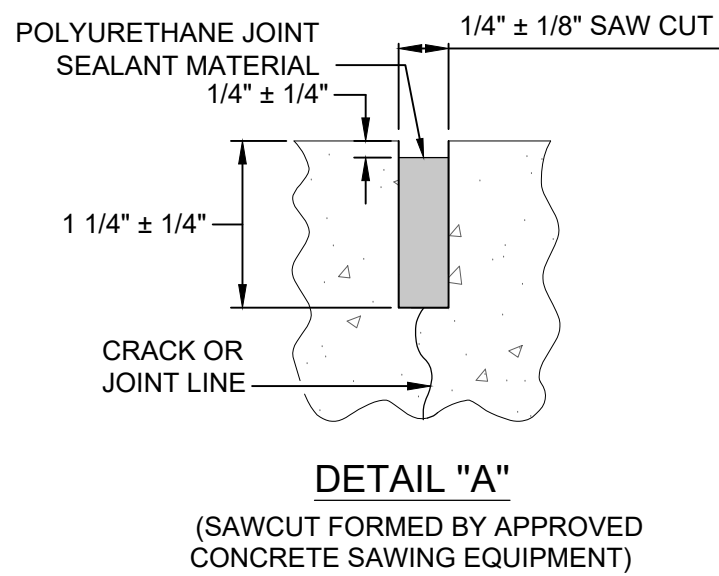
9 PC CONCRETE JOINT DETAILS  
N.T.S.



6 ACCESSIBLE PARKING SIGN DETAIL  
N.T.S.



TIED JOINT



DETAIL "A"

(SAWCUT FORMED BY APPROVED CONCRETE SAWING EQUIPMENT)

STATE OF MISSOURI  
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PROJECT # X2517-01  
SITE # 5601  
ASSET # 7815601031

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REVISION: \_\_\_\_\_  
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ISSUE DATE: 12-17-2025

CAD DWG FILE: C503  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

SHEET TITLE:

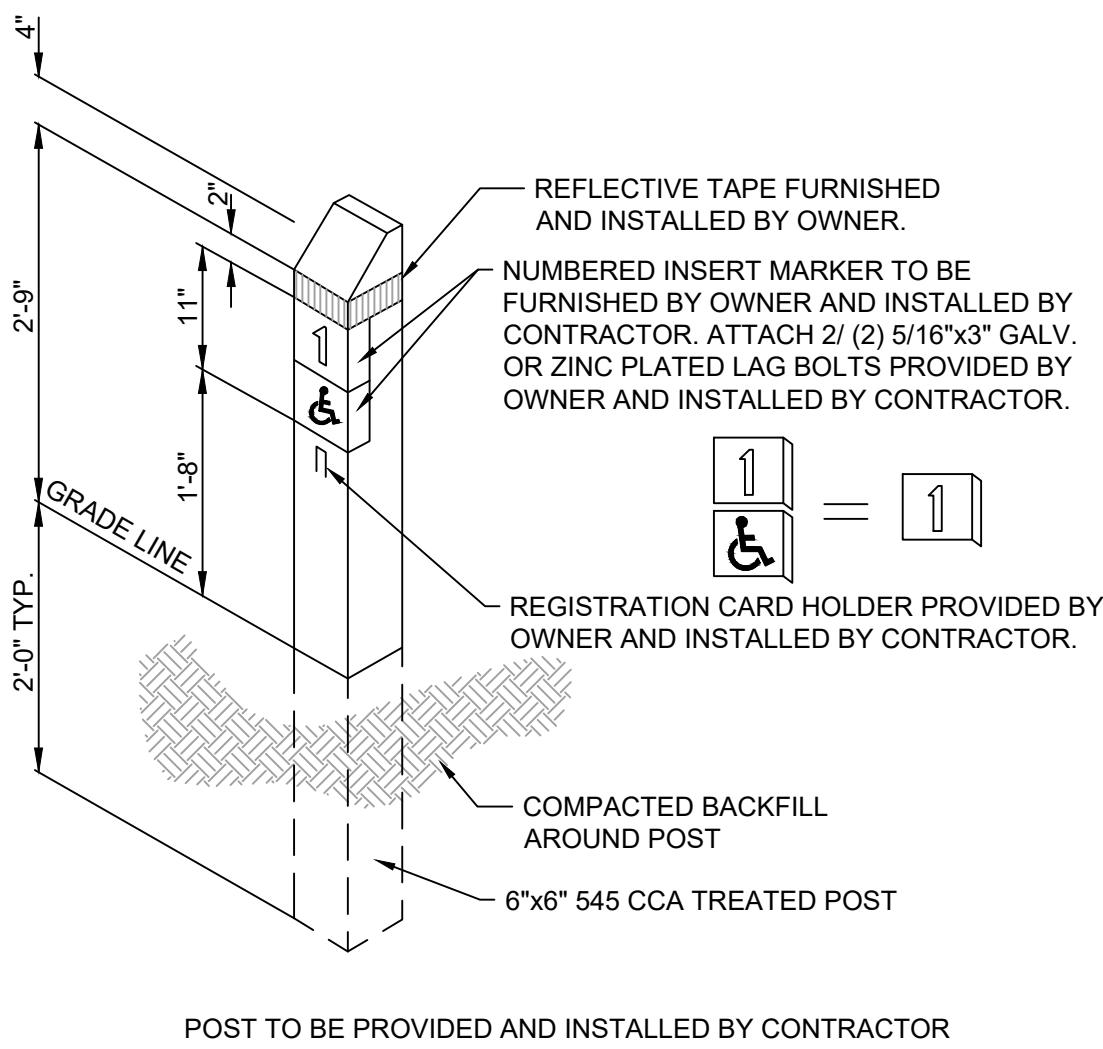
SITE DETAILS

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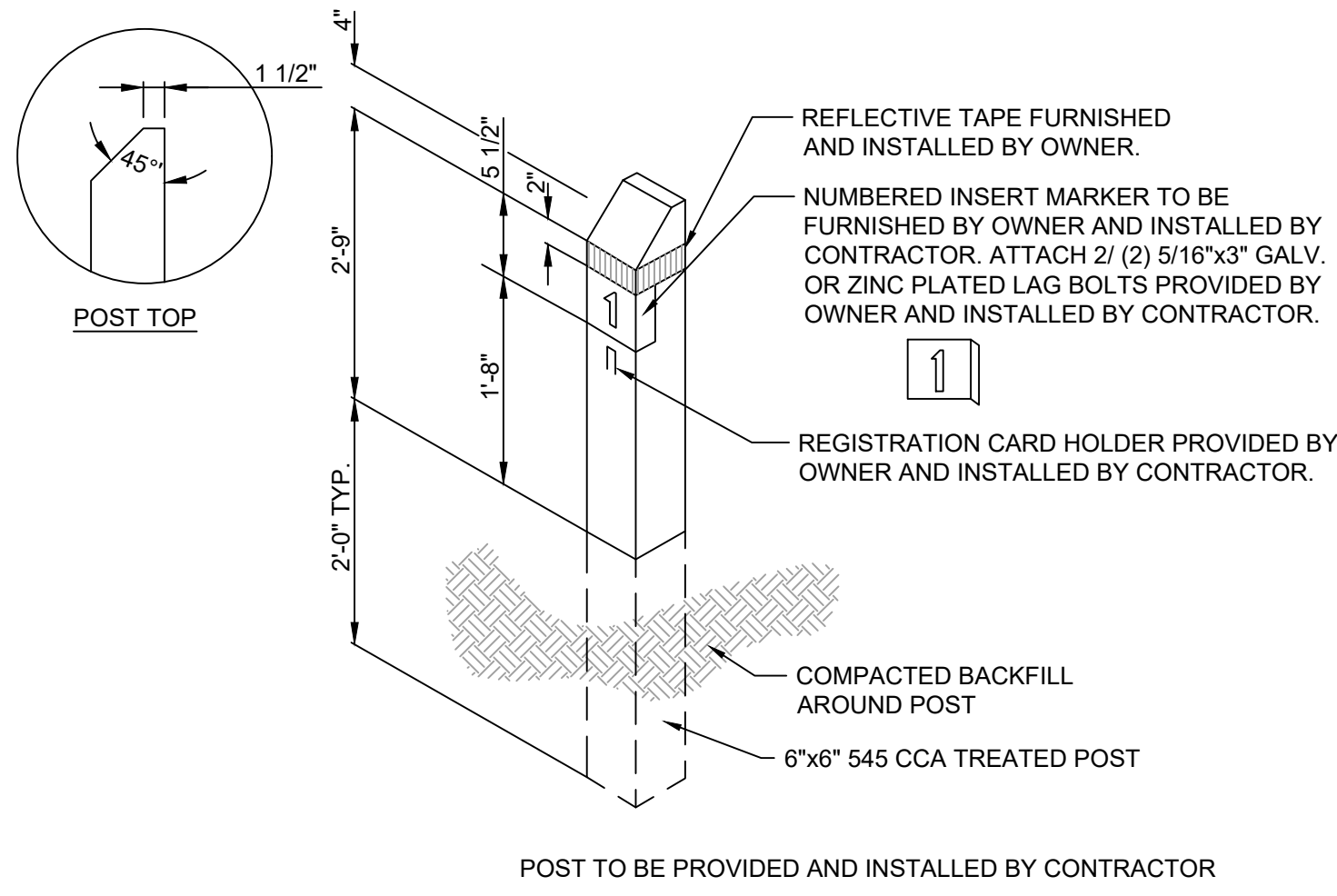
SHEET 34 OF 41  
12/17/2025





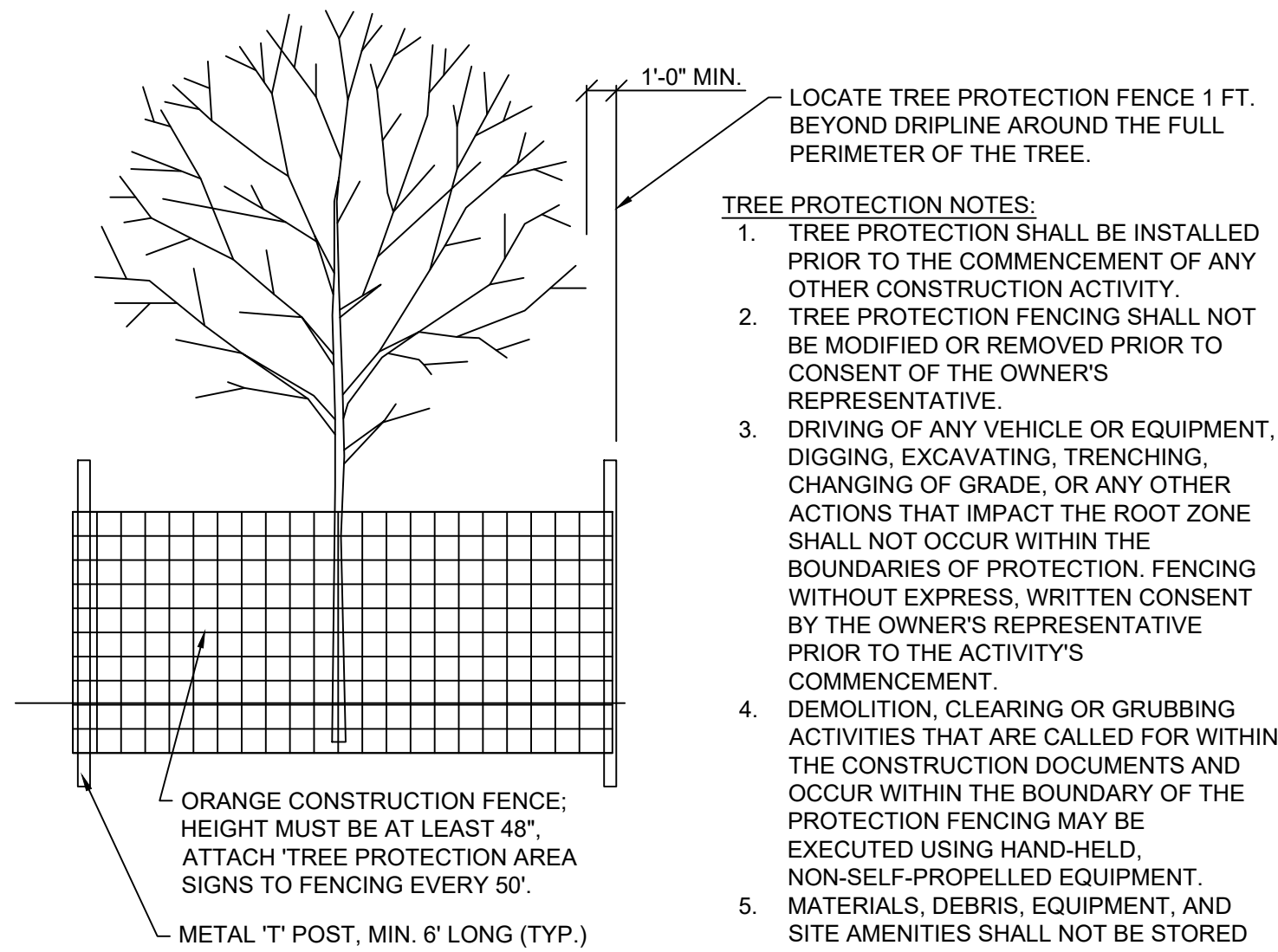
POST TO BE PROVIDED AND INSTALLED BY CONTRACTOR

1 ACCESSIBLE CAMPSITE MARKER  
N.T.S.



POST TO BE PROVIDED AND INSTALLED BY CONTRACTOR

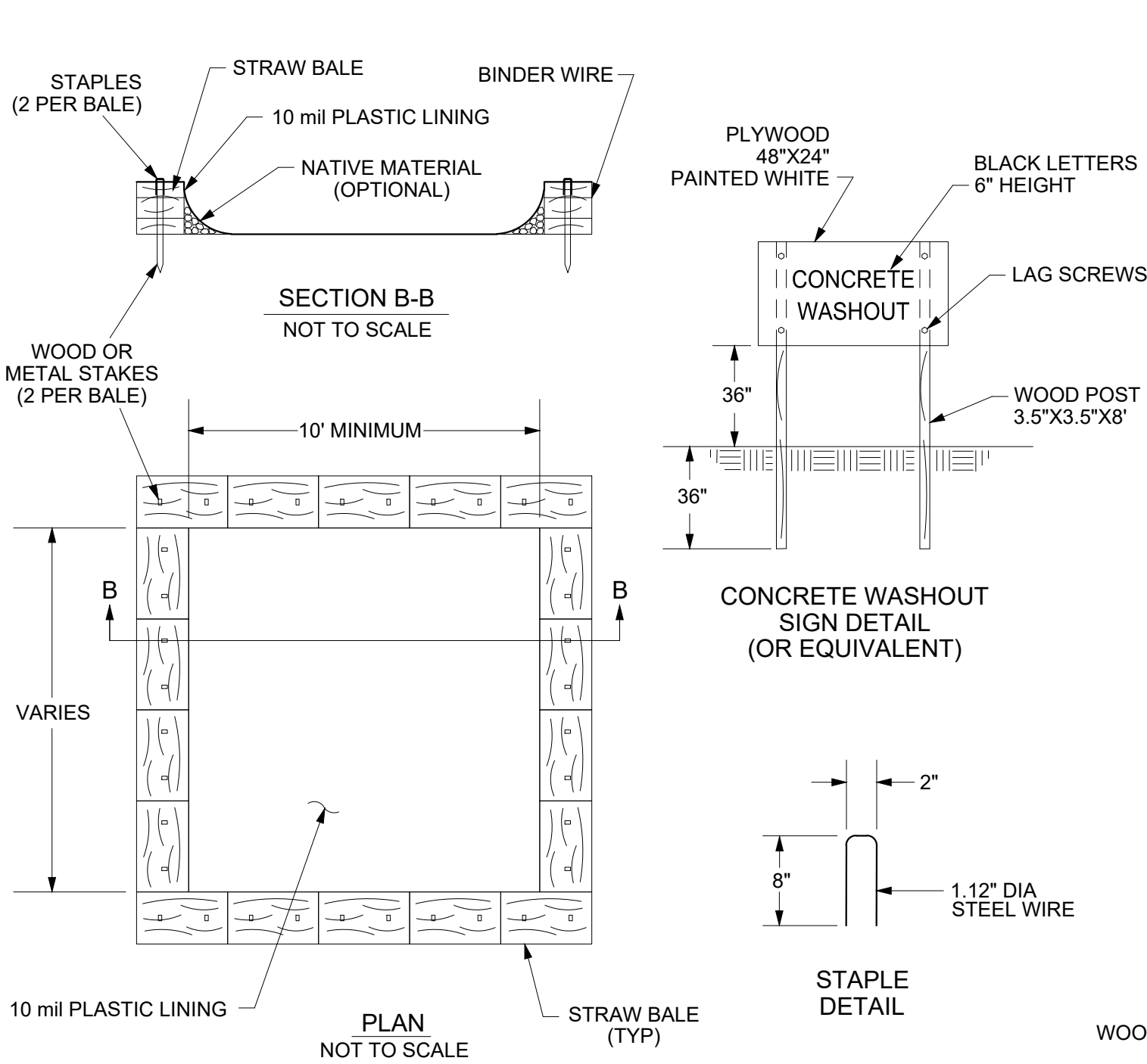
2 CAMPSITE MARKER  
N.T.S.



LOCATE TREE PROTECTION FENCE 1 FT. BEYOND DRIPLINE AROUND THE FULL PERIMETER OF THE TREE.

- TREE PROTECTION NOTES:
1. TREE PROTECTION SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY OTHER CONSTRUCTION ACTIVITY.
  2. TREE PROTECTION FENCING SHALL NOT BE MODIFIED OR REMOVED PRIOR TO CONSENT OF THE OWNER'S REPRESENTATIVE.
  3. DRIVING OF ANY VEHICLE OR EQUIPMENT, DIGGING, EXCAVATING, TRENCHING, CHANGING OF GRADE, OR ANY OTHER ACTIONS THAT IMPACT THE ROOT ZONE SHALL NOT OCCUR WITHIN THE BOUNDARIES OF PROTECTION. FENCING WITHOUT EXPRESS, WRITTEN CONSENT BY THE OWNER'S REPRESENTATIVE PRIOR TO THE ACTIVITY'S COMMENCEMENT.
  4. DEMOLITION, CLEARING OR GRUBBING ACTIVITIES THAT ARE CALLED FOR WITHIN THE CONSTRUCTION DOCUMENTS AND OCCUR WITHIN THE BOUNDARY OF THE PROTECTION FENCING MAY BE EXECUTED USING HAND-HELD, NON-SELF-PROPELLED EQUIPMENT.
  5. MATERIALS, DEBRIS, EQUIPMENT, AND SITE AMENITIES SHALL NOT BE STORED WITHIN THE TREE PROTECTION AREA.

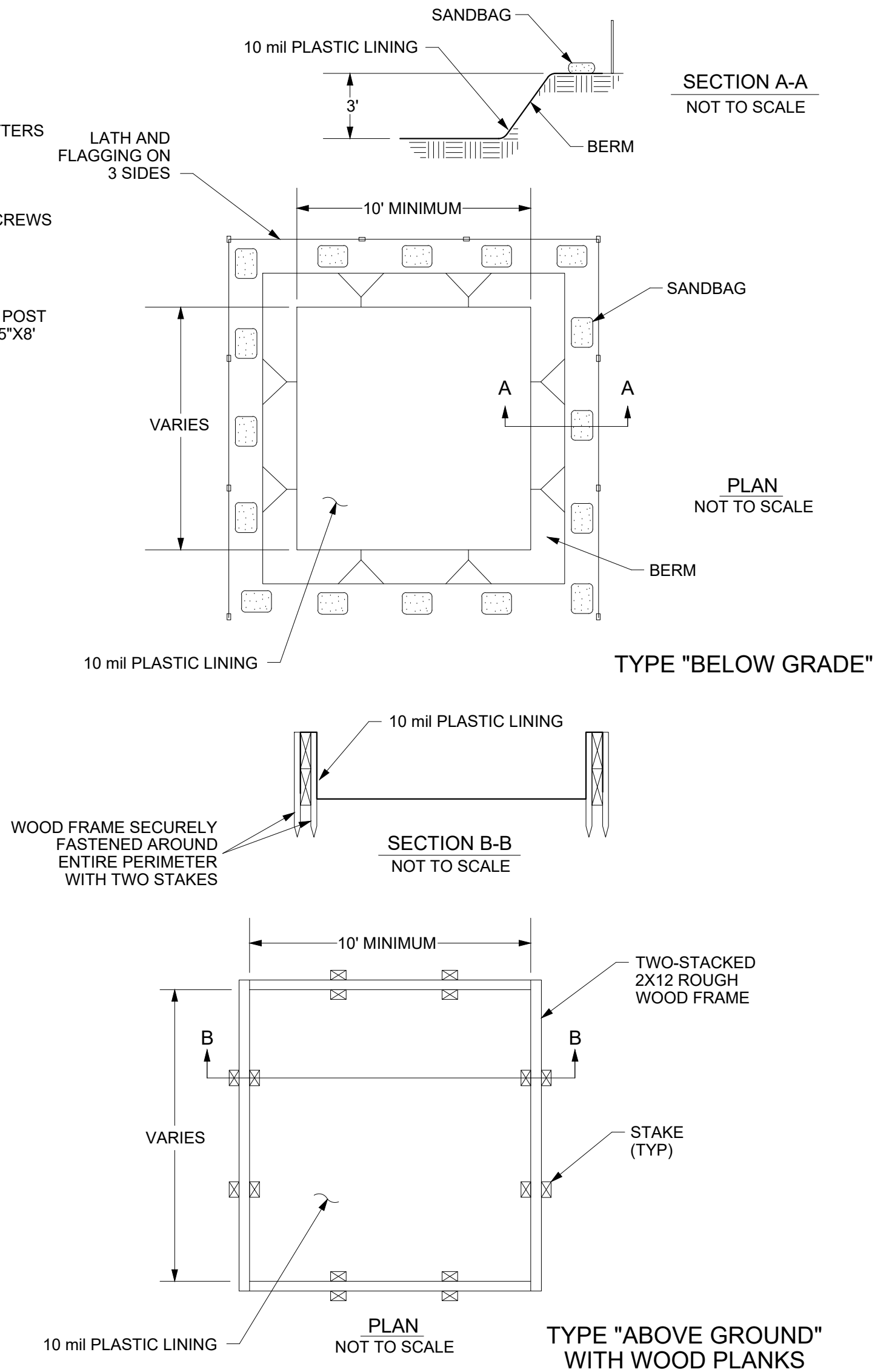
3 TREE PROTECTION FENCING DETAIL  
N.T.S.



TYPE "ABOVE GRADE" WITH STRAW BALES

- WASH OUT NOTES:
1. ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
  2. A CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
  3. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF OR RECYCLED.
  4. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE BACKFILLED, REPAIRED, AND STABILIZED TO PREVENT EROSION.

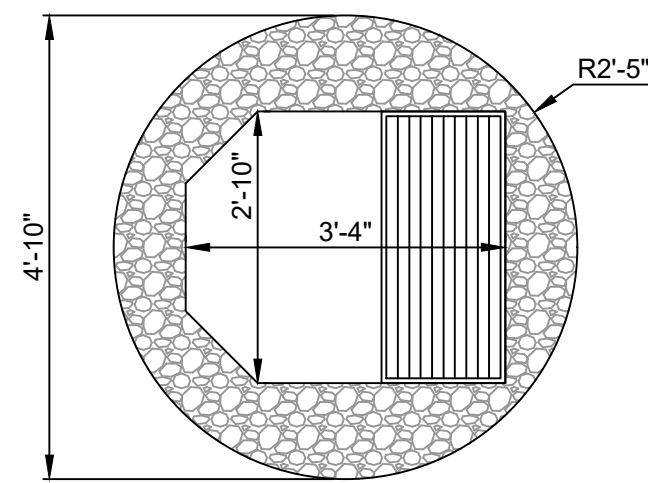
4 CONCRETE WASH OUT DETAIL  
N.T.S.



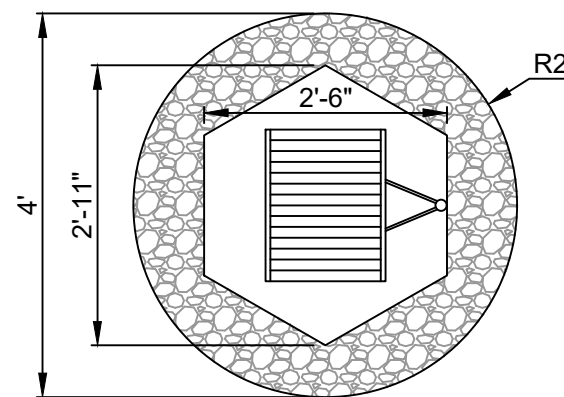
TYPE "BELOW GRADE"

TYPE "ABOVE GROUND" WITH WOOD PLANKS

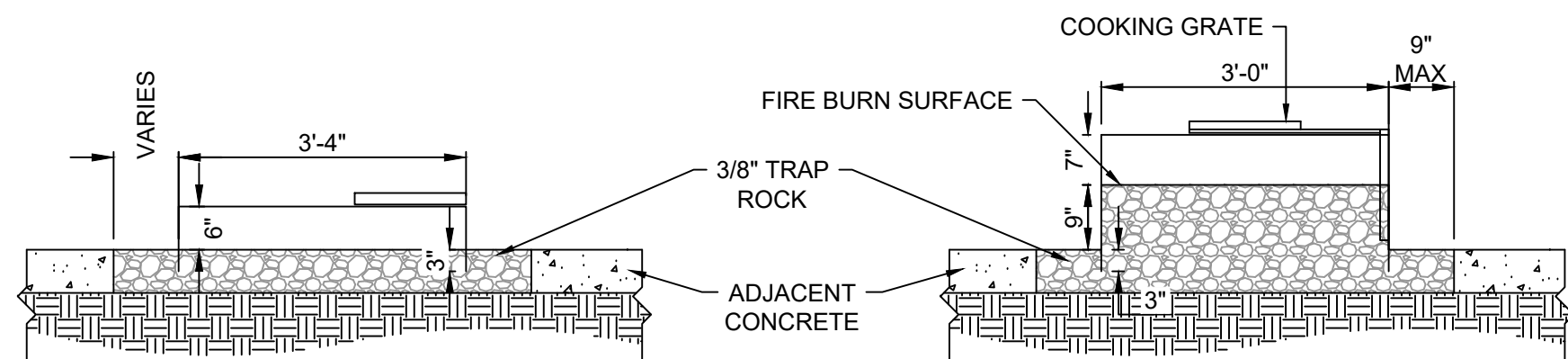
5 FIRE RING DETAIL  
N.T.S.



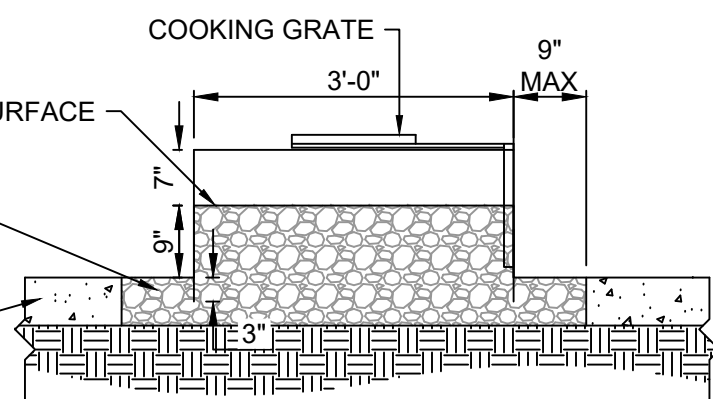
STANDARD PLAN VIEW



ADA PLAN VIEW



STANDARD SECTION VIEW



ADA SECTION VIEW

STATE OF MISSOURI  
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SITE # 5601  
ASSET # 7815601031

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ISSUE DATE: 12-17-2025

CAD DWG FILE: C504  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

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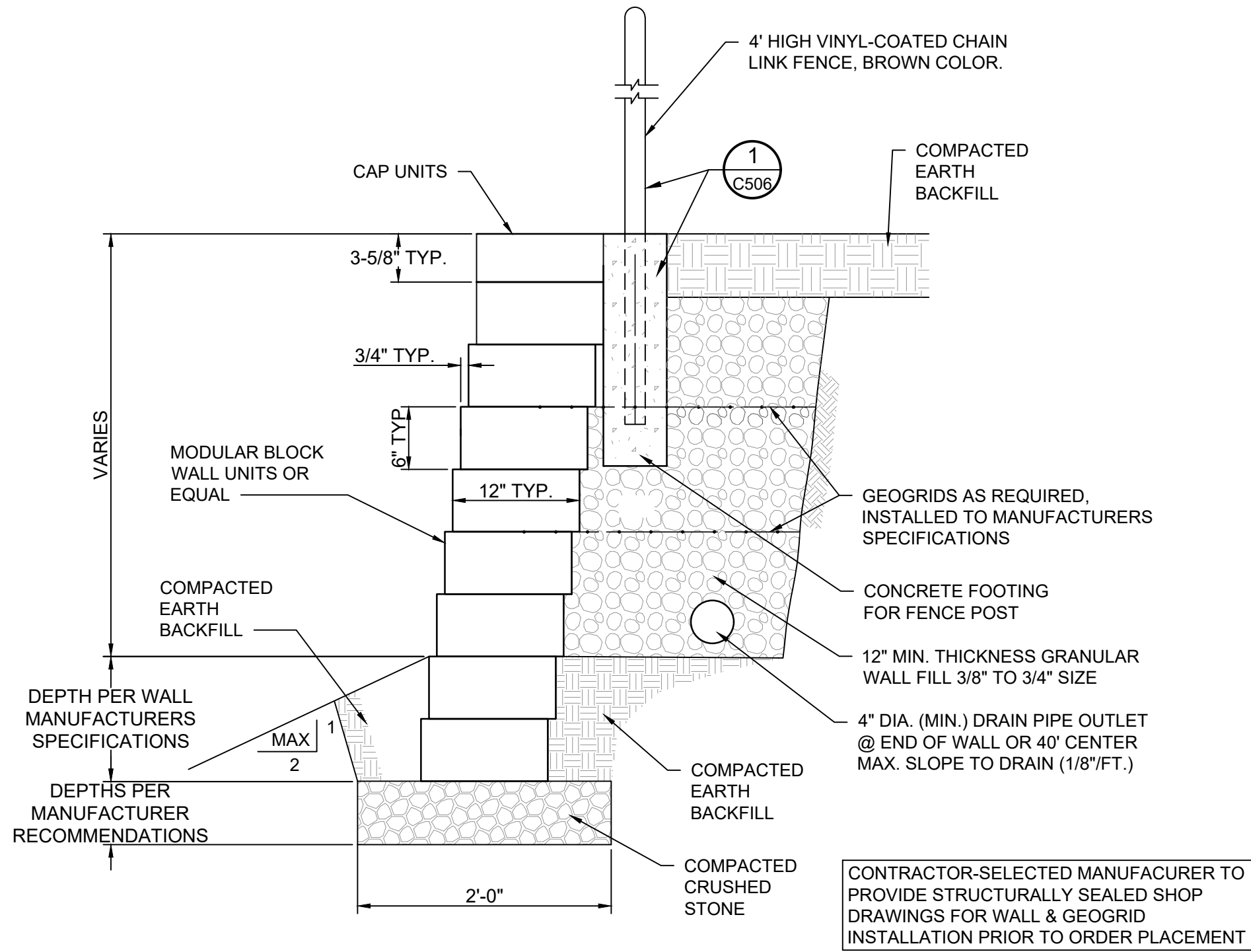
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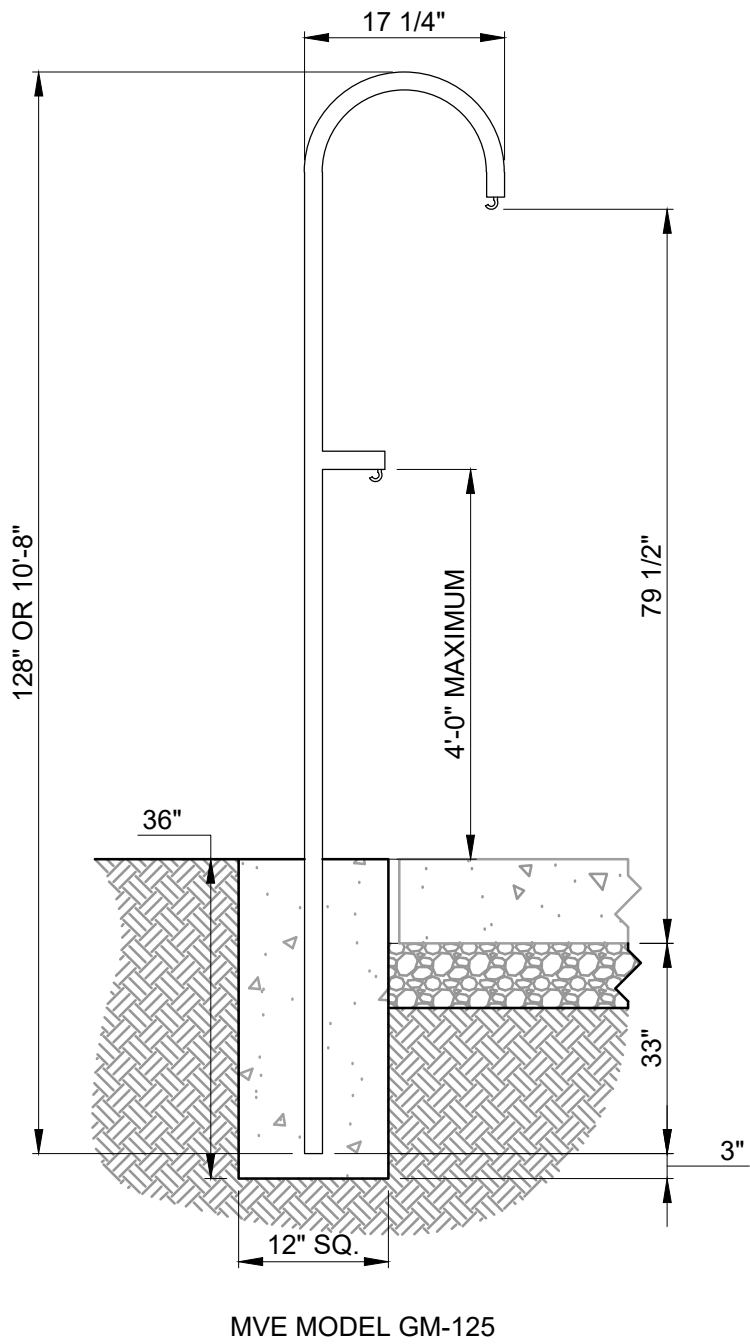
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SHEET 35 OF 41  
12/17/2025

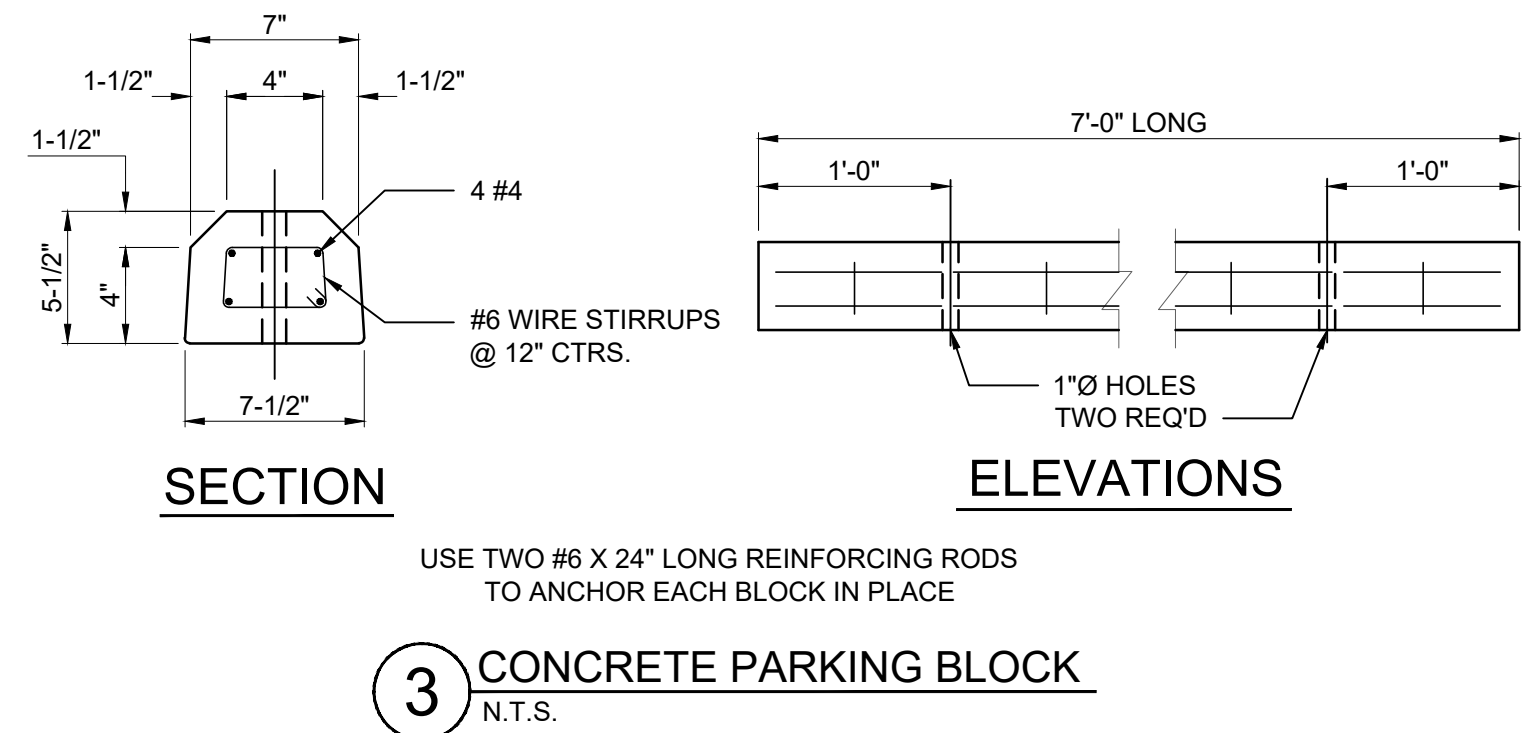




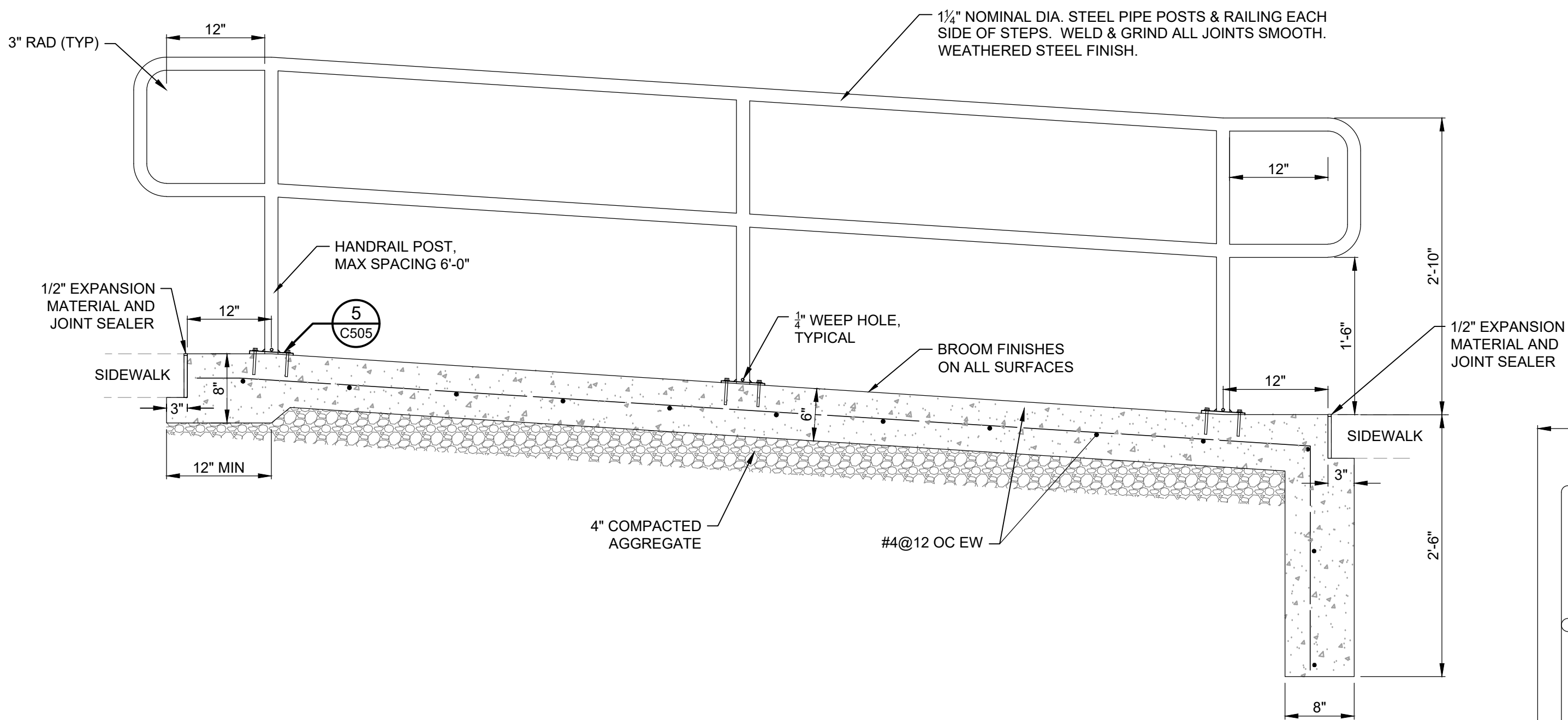
1 MODULAR BLOCK RETAINING WALL  
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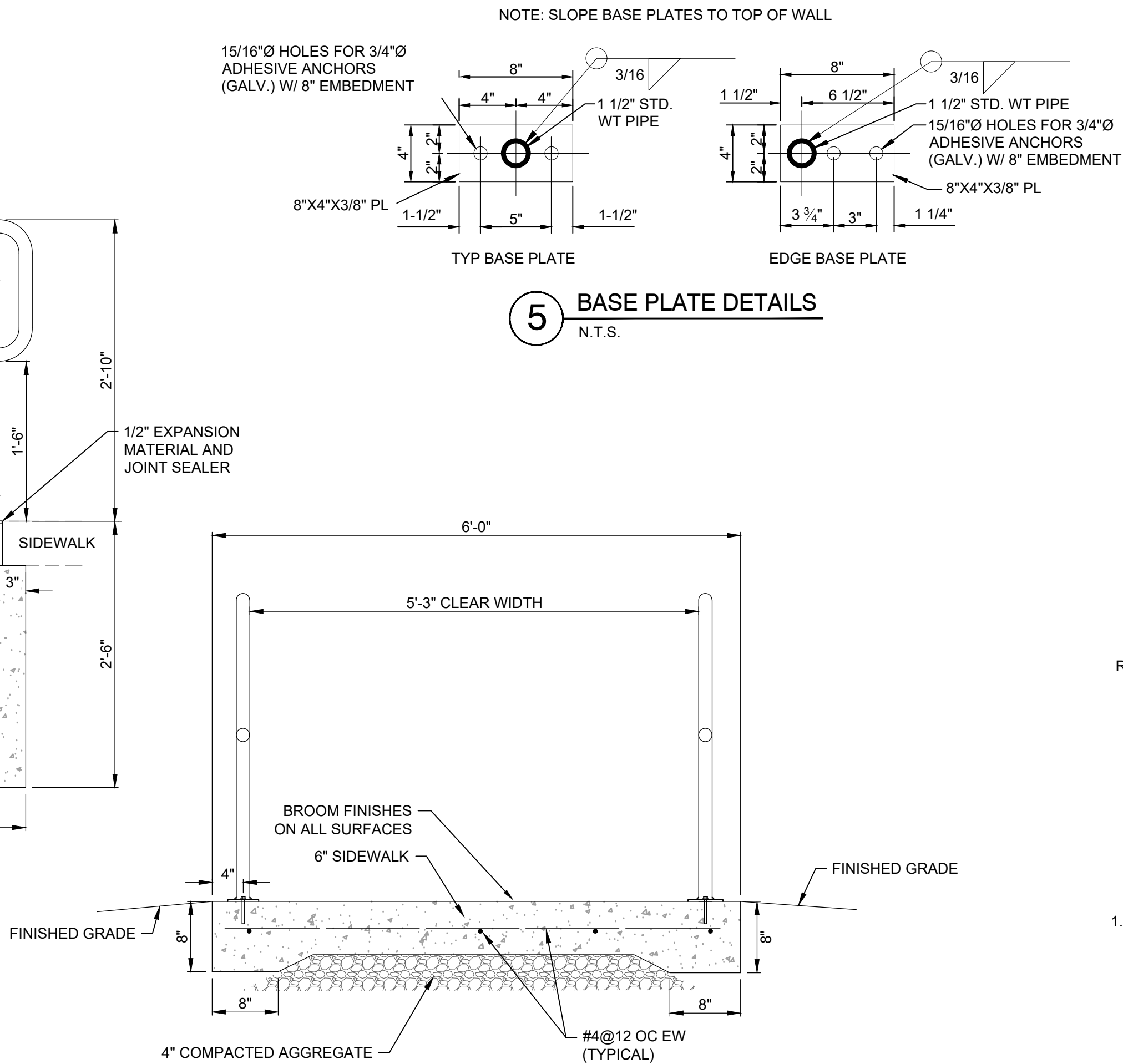
2 GALVANIZED ADA LANTERN HANGER  
N.T.S.



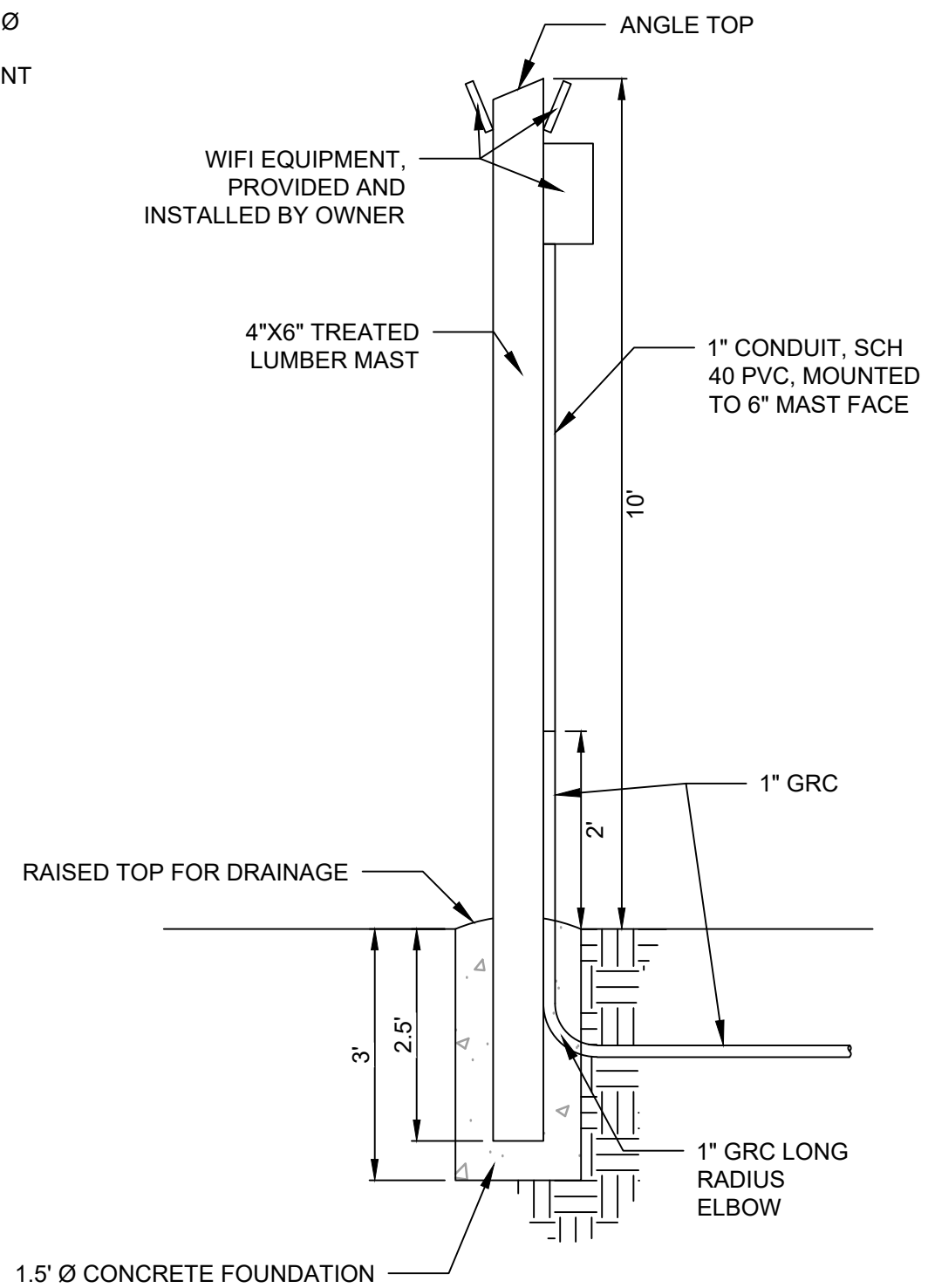
3 CONCRETE PARKING BLOCK  
N.T.S.



4 CONCRETE RAMP PROFILE & SECTION  
N.T.S.



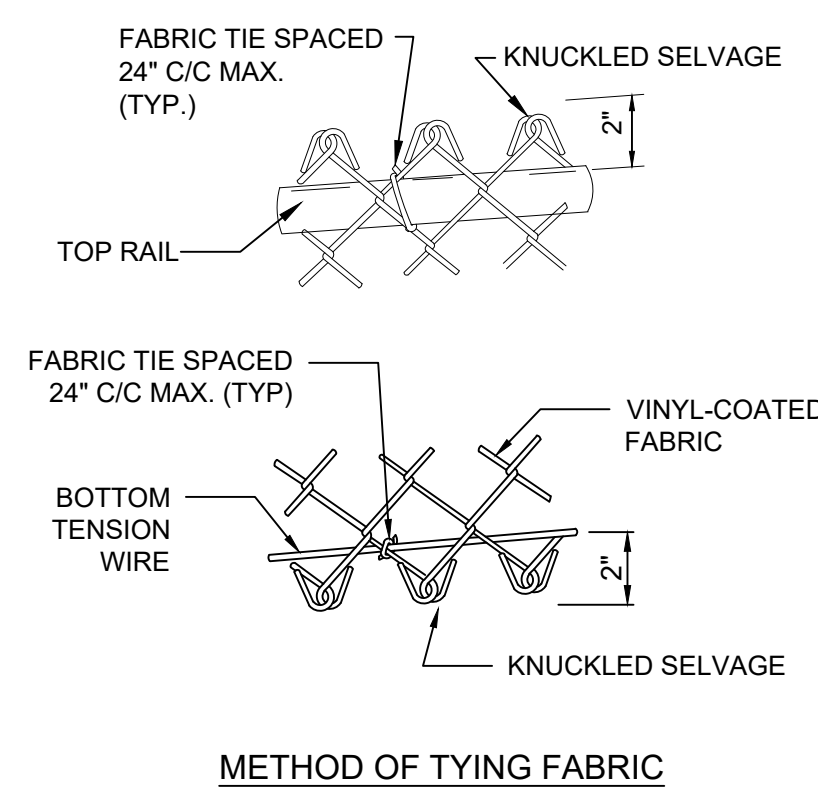
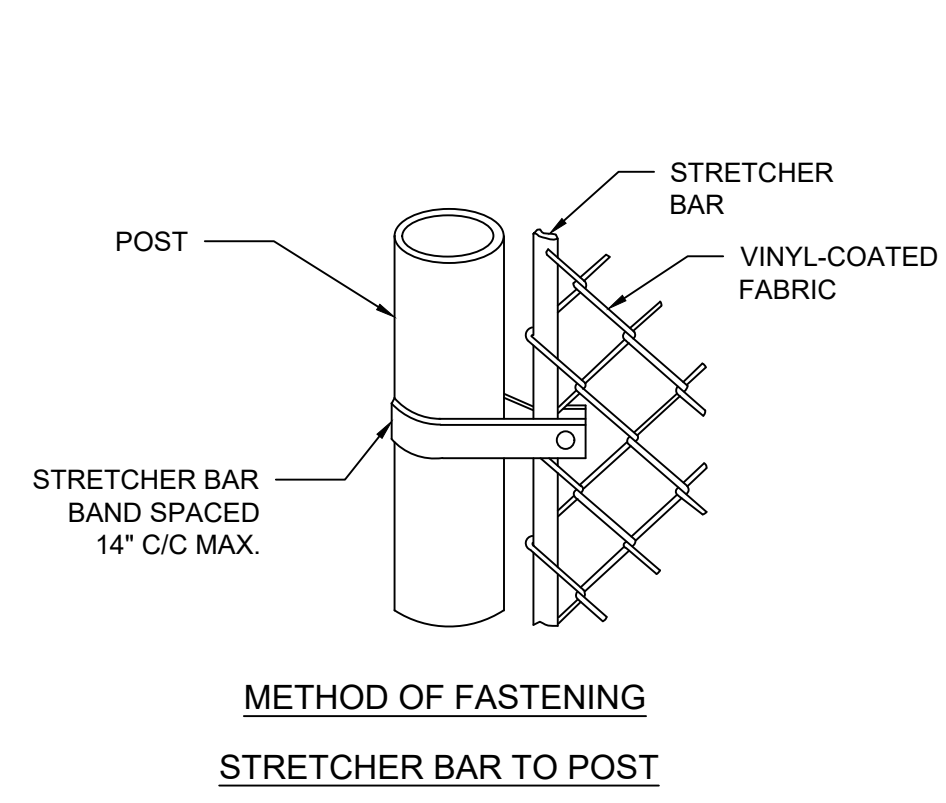
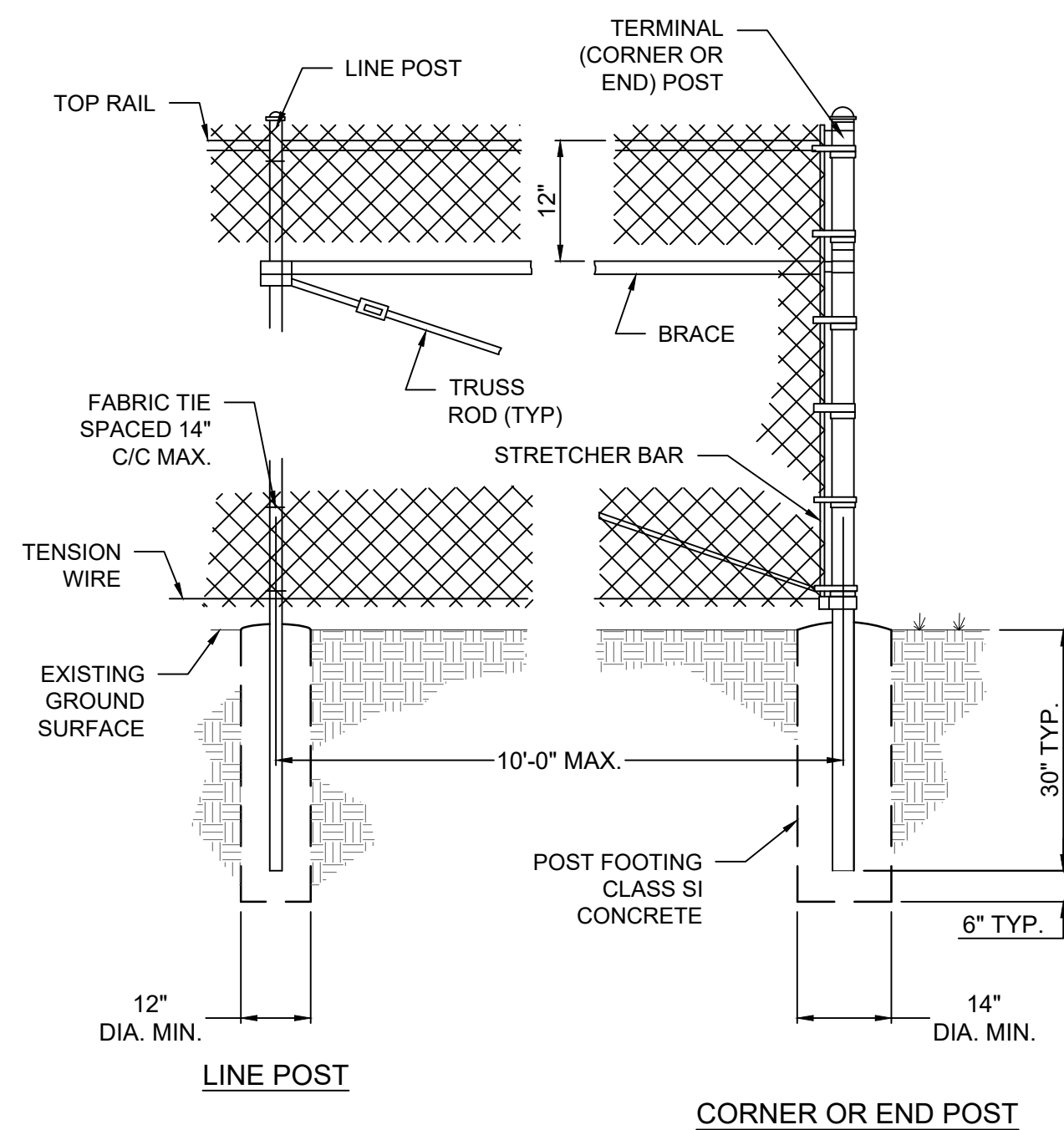
5 BASE PLATE DETAILS  
N.T.S.



6 WIFI EQUIPMENT MAST  
N.T.S.

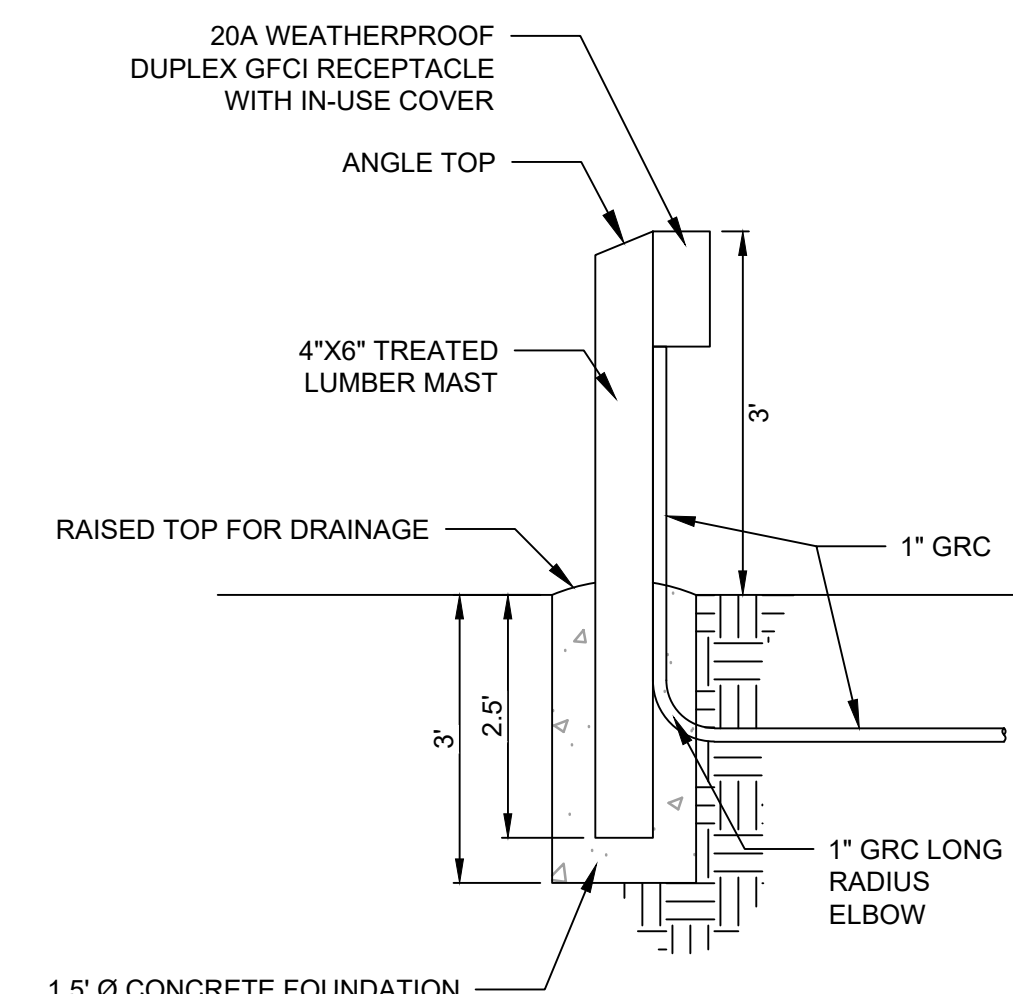






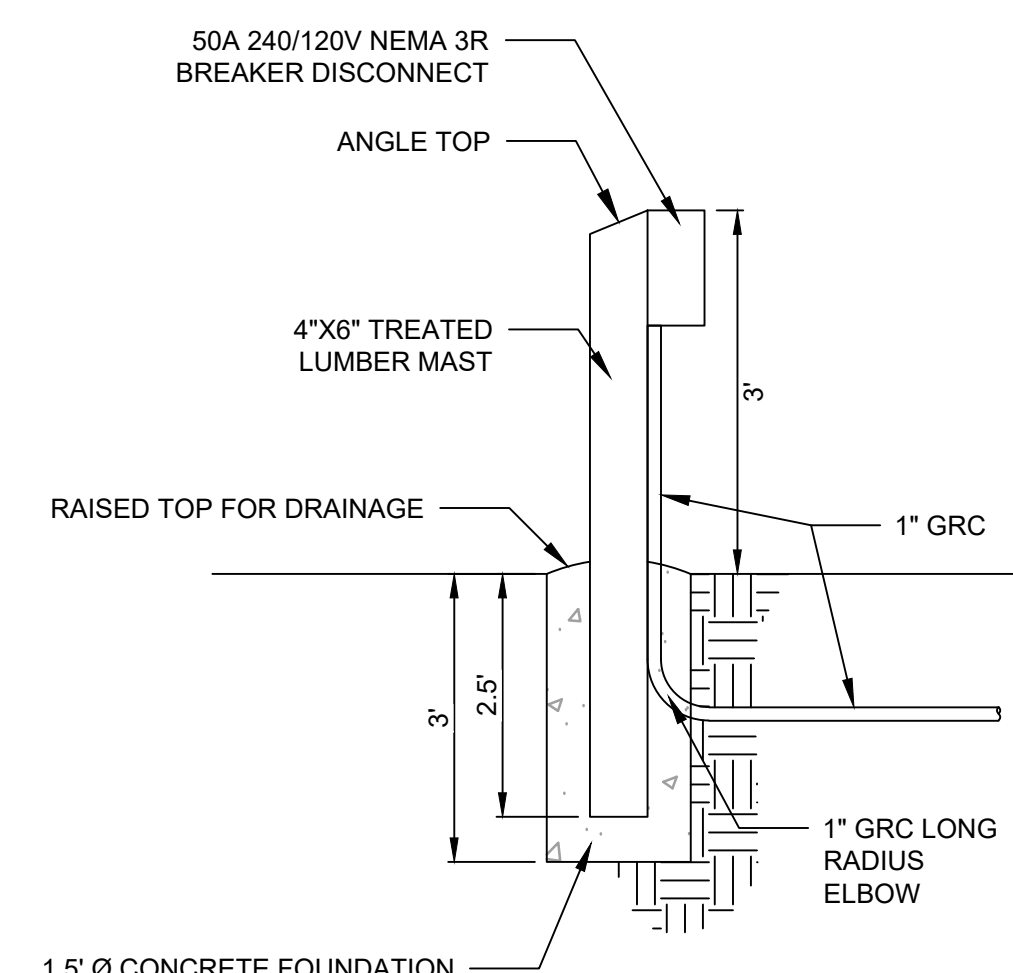
FENCE NOTE:  
1. VINYL COATINGS SHALL BE COLORED BROWN.

**1** 4' HIGH VINYL-COATED CHAIN LINK FENCE  
N.T.S.



UTILITY NOTE:  
1. SEE ELECTRICAL SHEETS FOR ADDITIONAL INFORMATION.

**2** BOAT PARKING RECEPTACLES MAST  
N.T.S.



UTILITY NOTE:  
1. SEE ELECTRICAL SHEETS FOR ADDITIONAL INFORMATION.

**3** CABIN DISCONNECT MAST  
N.T.S.



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CAD DWG FILE: C506  
DRAWING BY: BAM  
CHECKED BY: CSW  
DESIGNED BY: CSW/BAM

SHEET TITLE:

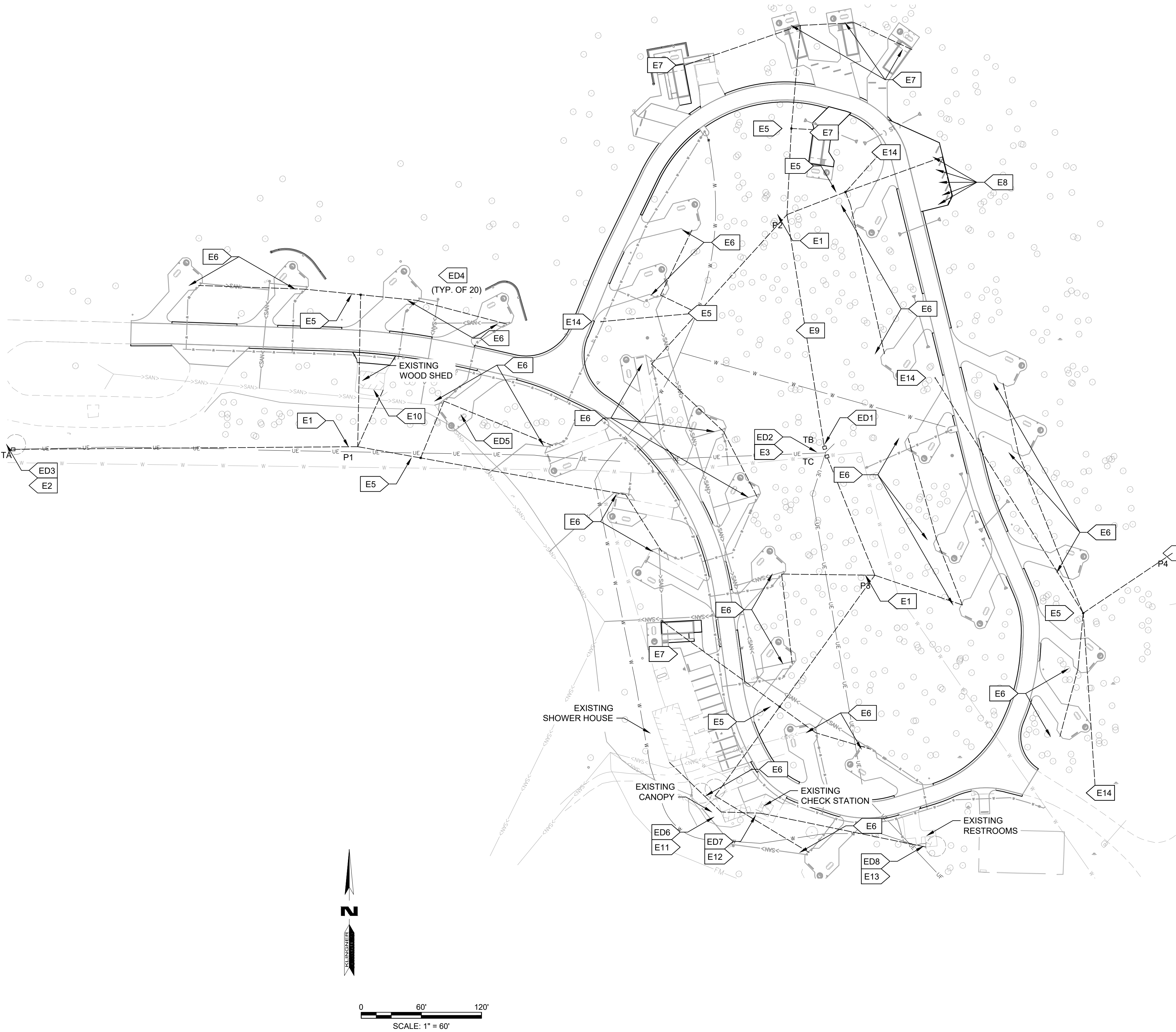
SITE DETAILS

SHEET NUMBER:

C506

SHEET 37 OF 41  
12/17/2025





GENERAL ELECTRICAL NOTES:

1. LOCATIONS OF NEW TRANSFORMERS, ELECTRICAL POWER DISTRIBUTION PANELS, IN-GROUND BOXES, DIRECT-BURIED CONDUCTORS, AND UNDERGROUND CONDUIT AND CONDUCTORS ARE GENERAL IN NATURE. CONTRACTOR MUST COORDINATE FINAL LOCATIONS OF IN-GROUND AND UNDERGROUND ELECTRICAL POWER DISTRIBUTION TO MINIMIZE CONFLICT WITH EXISTING TREES TO REMAIN.
2. CONTRACTOR SHALL PROVIDE AND INSTALL REINFORCED CONCRETE TRANSFORMER PADS OF DIMENSIONS REQUIRED BY ELECTRIC UTILITY (MACON ELECTRIC COOPERATIVE). THE PRIMARY CONTACT AT THE ELECTRIC UTILITY FOR THIS PROJECT IS MICHAEL LUCAS (660) 385-3157.
3. ALL NEW CONDUIT AND CONDUCTORS UNDERGROUND MUST HAVE DETECTABLE WARNING TAPE TO REDUCE THE RISK OF ACCIDENTAL DAMAGE DURING FUTURE EXCAVATION.

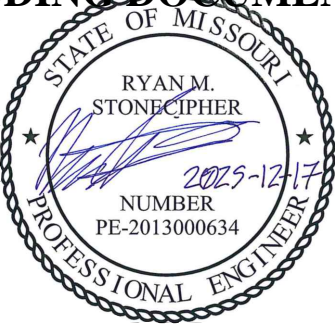
ELECTRICAL DEMOLITION KEY NOTES:

- ED1 TURN OFF MAIN BREAKERS IN (2) EXISTING 225 A MCB 240/120 VOLT PANELS. DEMOLISH BRANCH CIRCUIT CONDUCTORS FROM CONDUITS AND DEMOLISH CONDUITS TO 24" BELOW GRADE. DEMOLISH DIRECT BURIED BRANCH CIRCUIT CONDUCTORS TO 24" BELOW GRADE AND ABANDON REMAINING CONDUCTORS.
- ED2 COORDINATE WITH ELECTRIC UTILITY TO REMOVE EXISTING 100 KVA TRANSFORMER AND ASSOCIATED METERING. DEMOLISH SECONDARY CONDUIT AND CONDUCTORS FROM TRANSFORMER TO PANELS, RACEWAYS AND BOXES MOUNTED TO EXISTING WOOD SUPPORT STRUCTURE, AND WOOD SUPPORT STRUCTURE.
- ED3 COORDINATE WITH ELECTRIC UTILITY TO REMOVE EXISTING 25 KVA TRANSFORMER. DEMOLISH SECONDARY CONDUIT AND CONDUCTORS FROM TRANSFORMER TO UNUSED METER BASE MOUNTED TO WOOD POLE, METER BASE, AND POLE.
- ED4 DEMOLISH RV POWER PEDESTALS AND CONDUCTORS DOWN TO 24" BELOW GRADE AND ABANDON REMAINING UNDERGROUND CONDUCTORS (20 CAMPSITES IN TOTAL)
- ED5 DEMOLISH BRANCH CIRCUIT FORMERLY SERVING WOOD SHED FROM NEAR OLD CAMPSITE #1. BREAKERS, CONDUIT, AND DOWNSTREAM WIRING AT WOOD SHED SHALL REMAIN FOR REUSE WITH NEW CIRCUIT.
- ED6 DEMOLISH BREAKER 28/30 IN PANEL IN SHOWER HOUSE, BRANCH CIRCUIT TO PEDESTAL BEING DEMOLISHED AT HOST SITE, AND CIRCUIT FROM PEDESTAL TO JUNCTION BOX AT CANOPY. CONDUIT, WIRING, RECEPTACLES, AND LIGHTS AT CANOPY SHALL REMAIN FOR REUSE WITH NEW CIRCUIT.
- ED7 DEMOLISH BRANCH CIRCUIT FROM PANEL BEING DEMOLISHED NEAR TRANSFORMER IN MIDDLE OF LOOP TO JUNCTION BOX AT CHECK STATION. CONDUIT, WIRING, RECEPTACLES, AND LIGHTS AT CHECK STATION SHALL REMAIN FOR REUSE WITH NEW CIRCUIT.
- ED8 DEMOLISH BRANCH CIRCUIT FROM PANEL BEING DEMOLISHED NEAR TRANSFORMER IN MIDDLE OF LOOP TO JUNCTION BOX AT RESTROOM. CONDUIT, WIRING, RECEPTACLES, AND LIGHTS AT RESTROOM SHALL REMAIN FOR REUSE WITH NEW CIRCUIT.

ELECTRICAL NEW WORK KEY NOTES:

- E1 NEW CT METERED 800 AMP MCB 240/120 VOLT NEMA 3R PANEL. ERECT STEEL SUPPORT STRUCTURE ANCHORED IN CONCRETE BASE 1' WIDER THAN PANEL IN BOTH DIRECTIONS. REFER TO DIAGRAMS 2-E501 AND 3-E501 FOR CONDUIT, CONDUCTORS, GROUNDING, AND BREAKERS IN NEW PANEL.
- E2 COORDINATE WITH ELECTRIC UTILITY TO INSTALL NEW TRANSFORMER. REFER TO DIAGRAM 1-E501.
- E3 COORDINATE WITH ELECTRIC UTILITY TO INSTALL (2) NEW TRANSFORMERS. REFER TO DIAGRAMS 2-E501 AND 3-E501.
- E4 NEW BRANCH CIRCUIT BREAKERS IN EXISTING PANEL. REFER TO DIAGRAM 4-E501.
- E5 NEW PULL BOX FOR DIRECT BURIED CONDUCTORS WHERE PARALLEL CIRCUITS DIVERGE, SINGLE CIRCUITS BRANCH TO MULTIPLE PATHS, OR BOTH. REFER TO DIAGRAM ON E501. COORDINATE LOCATION OF BOX TO MAINTAIN ACCESS TO CLEANOUTS, VALVES, ETC. FOR OTHER UTILITIES IN THE SAME AREA.
- E6 NEW PAD-MOUNTED RV CAMPSITE POWER PEDESTAL WITH (1) 50-2 RECEPTACLE, (1) 30-1 RECEPTACLE, (1) 20-1 GFCI RECEPTACLE, AND LINE SIDE LUGS FOR USE WITH UP TO 350 MCM LOOP FEED. REFER TO CIVIL DETAILS FOR DIMENSIONED LOCATION ON CAMPSITE PAD.
- E7 NEW 50 AMP 240/120 VOLT NEMA 3R BREAKER DISCONNECT MOUNTED TO PEDESTAL APPROXIMATELY 3' ABOVE GRADE BY CONTRACTOR FOR FUTURE CABIN (BY OTHERS). REFER TO DIAGRAMS 2-E501 AND 3-501 FOR CONDUIT, CONDUCTORS, AND GROUNDING.
- E8 NEW 20 AMP WEATHERPROOF DUPLEX GFCI RECEPTACLE WITH IN-USE COVER MOUNTED TO PEDESTAL APPROXIMATELY 3' ABOVE GRADE AT BOAT TRAILER PARKING. REFER TO DIAGRAM ON E501 FOR CONDUIT, CONDUCTORS, AND GROUNDING.
- E9 CONDUIT AND CONDUCTORS UNDERGROUND FROM TRANSFORMER TO NEW PANEL REFER TO DIAGRAMS 1-E501, 2-E501, AND 3-E501 FOR CONDUIT AND CONDUCTORS.
- E10 EXTEND (1) 20 AMP 240V MULTI WIRE BRANCH CIRCUIT UNDERGROUND FROM NEW PANEL TO WOOD SHED TO RE-FEED WOOD SHED BREAKERS.
- E11 EXTEND (1) 20 AMP 120V BRANCH CIRCUIT FROM EXISTING BREAKER 27 IN SHOWER HOUSE TO REFEED CANOPY RECEPTACLES AND LIGHTS.
- E12 EXTEND (1) 30 AMP 240V CIRCUIT FROM NEW 30-2 BREAKER 28/30 IN SHOWER HOUSE TO REFEED CHECK STATION.
- E13 EXTEND (1) 20 AMP 120V CIRCUIT FROM EXISTING BREAKER 29 IN SHOWER HOUSE TO REFEED RESTROOM.
- E14 NEW WIRELESS ACCESS POINT WITH (1) 20 AMP 120V CIRCUIT BY CONTRACTOR. REFER TO CIVIL DETAILS.

STATE OF MISSOURI  
MIKE KEHOE,  
GOVERNOR  
BIDDING DOCUMENTS



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OFFICE OF  
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DIVISION OF FACILITIES  
MANAGEMENT, DESIGN  
AND CONSTRUCTION

DEPARTMENT OF  
NATURAL RESOURCES  
MISSOURI STATE PARKS

MODIFY CAMPGROUND  
LOOP 1

LONG BRANCH STATE PARK  
28615 VISITOR CENTER RD  
MACON, MO 63552

PROJECT # X2517-01  
SITE # 5601  
ASSET # 7815601031

REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_  
ISSUE DATE: 12-17-2025

CAD DWG FILE: \_\_\_\_\_  
DRAWING BY: RMS  
CHECKED BY: GCS  
DESIGNED BY: RMS

SHEET TITLE:

POWER  
DISTRIBUTION  
PLAN

SHEET NUMBER:

E101

SHEET 38 OF 41  
12/17/2025





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DRAWING BY: RMS  
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DESIGNED BY: RMS

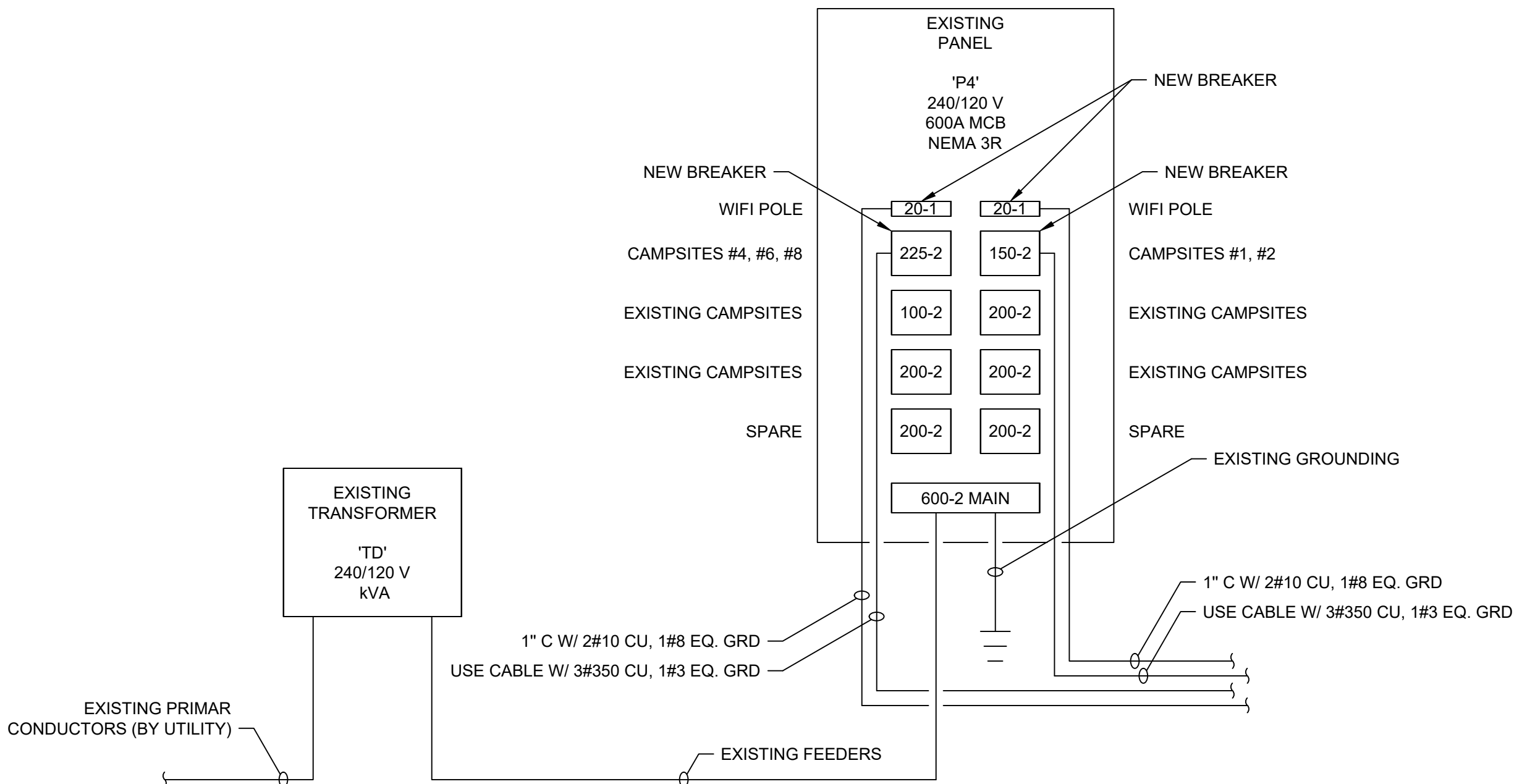
SHEET TITLE:

ELECTRICAL  
DIAGRAMS AND  
SCHEDULES

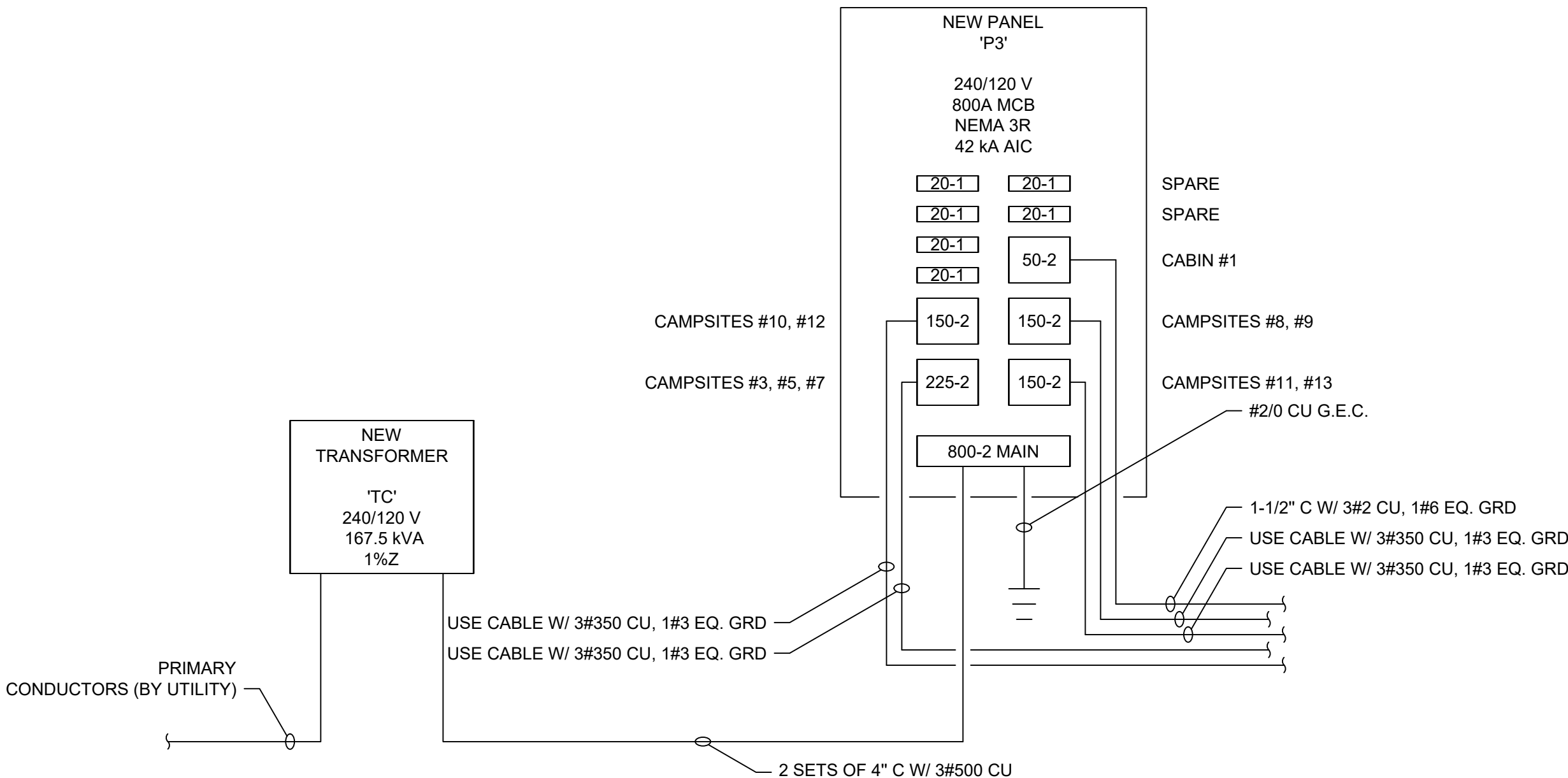
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E501

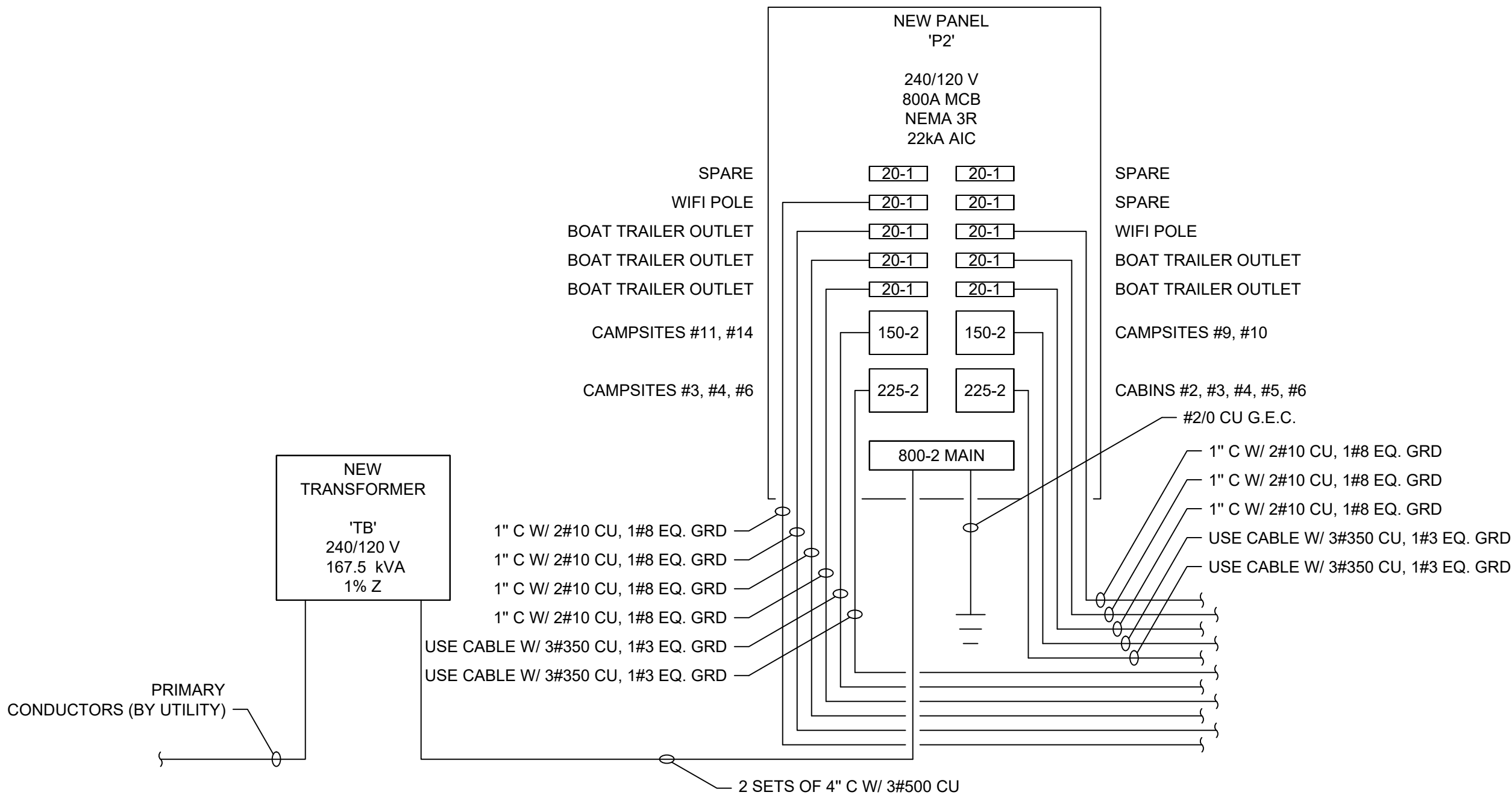
SHEET 39 OF 41  
12/17/2025



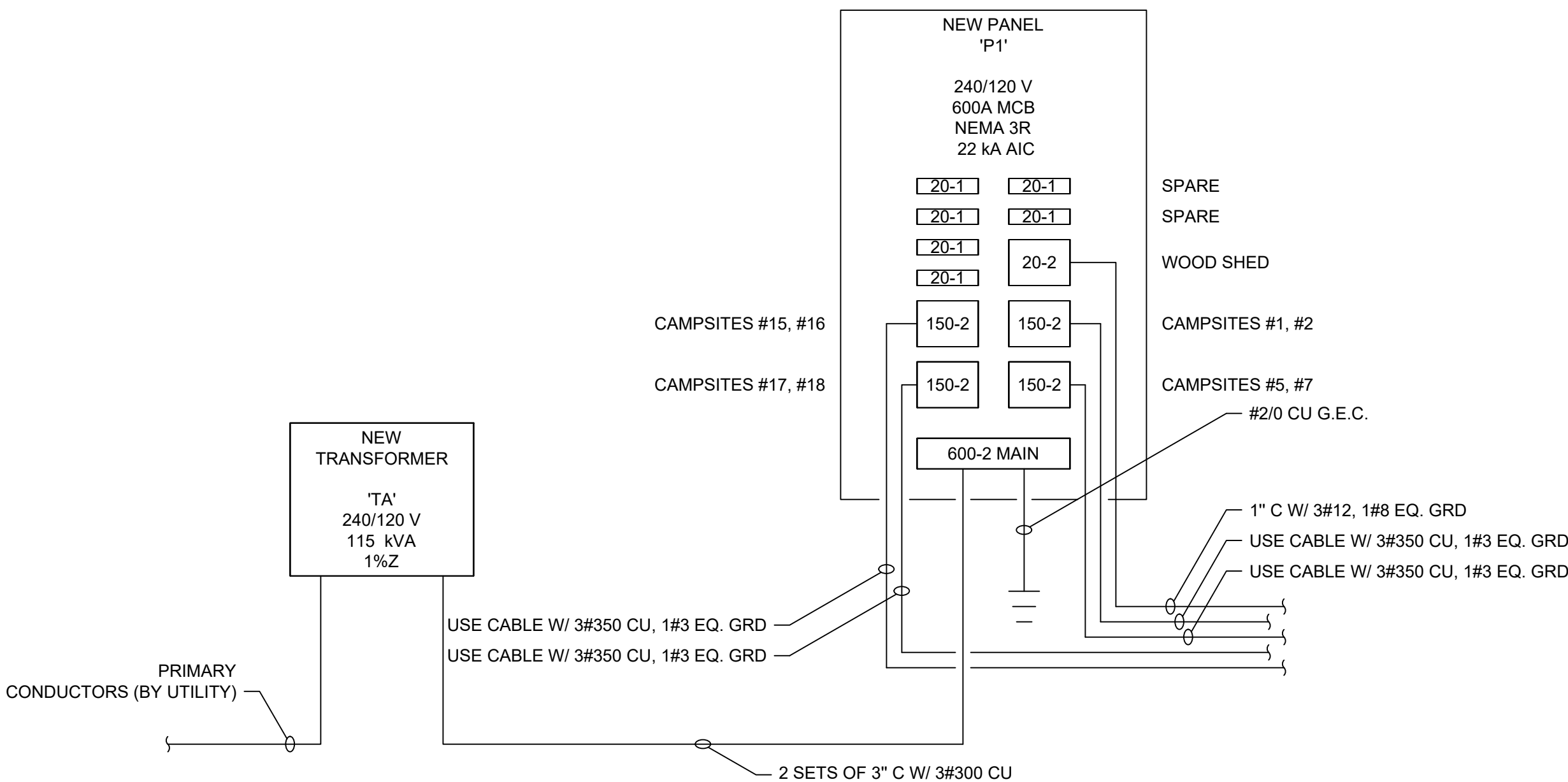
4 ONE-LINE DIAGRAM - EXISTING TRANSFORMER 'D'  
NO SCALE



3 ONE-LINE DIAGRAM - TRANSFORMER 'C'  
NO SCALE



2 ONE-LINE DIAGRAM - TRANSFORMER 'B'  
NO SCALE



1 ONE-LINE DIAGRAM - TRANSFORMER 'A'  
NO SCALE



DESIGN CRITERIA (RAMP AND STAIRS)

1. BUILDING CODES:

A. IBC 2018

B. ASCE 7-16
2. DESIGN LOADS:

A. Risk Category II

B. Dead Loads

a. Ramp and Stair DL = 15 psf

b. See roof framing plan for additional loads & locations. (RTU, Point Loads, etc.)

C. Live Loads

a. Ramp and Stair LL =100 psf

D. Roof Snow Load

a. Ground Snow Load, P<sub>g</sub> = 20 psf

b. Flat Roof Snow Load, P<sub>f</sub> = 17 psf

c. Minimum Snow Load, P<sub>m</sub> = 20 psf

d. Snow Load Importance, I<sub>s</sub> = 1.0

e. Snow Exposure Factor, C<sub>e</sub> = 1.0

f. Roof Thermal Factor, C<sub>t</sub> = 1.2

g. Drifting: (As per ASCE-7)
3. Cabin Structure Design Criteria (BY OTHERS)

ABBREVIATIONS

AB	ANCHOR BOLT	LG	LONG
A/E	ARCHITECT/ENGINEER	LL	LIVE LOAD
AF	ABOVE FINISHED FLOOR	LLH	LONG LEG HORIZONTAL
ALT	ALTERNATE	LLV	LONG LEG VERTICAL
ALUM	ALUMINUM	LONG	LONGITUDINAL
APPROX	APPROXIMATE(LY)	LSH	LONG SIDE HORIZONTAL
ARCH	ARCHITECT	LWC	LIGHT WEIGHT CONCRETE
AVG	AVERAGE		
@	AT	MAX	MAXIMUM
&	AND	MDF	MEDIUM DENSITY FIBERBOARD
		MECH	MECHANICAL
BLDG	BUILDING	MEP	MACHANICAL ELECTRICAL PLUMBING
BM	BEAM	MFR	MANUFACTURER
BO	BOTTOM OF	MIL	MILLIMETERS
BOD	BASIS OF DESIGN	MIN	MINIMUM
BOF	BOTTOM OF FOOTING		
BRG	BEARING	NIC	NOT IN CONTRACT
BRDG	BRIDGING	NO (#)	NUMBER
BTM	BOTTOM	NOM	NOMINAL
BTW	BETWEEN	NS	NEAR SIDE
BYD	BEYOND	NTS	NOT TO SCALE
		OC	ON CENTER
		OD	OUTSIDE DIAMETER
CIP	CAST IN PLACE	OH	OPPOSITE HAND
CJ	CONSTRUCTION JOINT	OPNG	OPENING
CL (☿)	CENTERLINE	OPP	OPPOSITE
CLR	CLEAR	OVHD	OVERHEAD
CMU	CONCRETE MASONRY UNIT		
COL	COLUMN	PAR	PARALLEL
CONC	CONCRETE	PEMB	PRE-ENGINEERED METAL BUILDING
CONT	CONTINUOUS	PERP	PERPENDICULAR
COORD	COORDINATE	PL (☿)	PLATE
CTR	CENTER(S)	PLY	PLYWOOD
		PNL	PANEL
DBA	DEFORMED BAR ANCHOR	PREFAB	PREFABRICATED
DBL	DOUBLE	PSF	POUNDS PER SQUARE FOOT
DIA (Ø)	DIAMETER	PT	PRESSURE TREATED
DIAPH	DIAPHRAGM		
DM	DIMENSION		
DL	DEAD LOAD	RAD	RADIUS
DTL	DETAIL	REINF	REINFORCING
DWG	DRAWING	REQ	REQUIRED
DWLS	DOWELS	REV	REVISION(S), REVISE(D)
		RO	ROUGH OPENING
EA	EACH	RTU	ROOF TOP UNIT
EF	EACH FACE		
EJ	EXPANSION JOINT	SCH	SCHEDULE
ELEV (EL)	ELEVATION	SF	SQUARE FOOT
EMBED	EMBEDMENT	SH	SHEET
EQ	EQUAL	SIM	SIMILAR
EW	EACH WAY	SL (☿)	STEEL LINE
EX	EXISTING	SOG	SLAB ON GRADE
EXT	EXTERIOR	SPEC	SPECIFICATIONS
		SSTL	STAINLESS STEEL
FB	FIELD BEND	STL	STEEL
FD	FLOOR DRAIN	STAGG	STAGGERED
FDN	FOUNDATION	STD	STANDARD
FF	FINISHED FLOOR	STIFF	STIFFENER
FLR	FLOOR	STRUCT	STRUCTURE(AL)
FS	FAR SIDE		
FTG	FOOTING	TBD	TO BE DETERMINED
FV	FIELD VERIFY	TBR	TO BE REMOVED
		TERM	TERMINATE
GA	GAUGE	THK	THICK
GALV	GALVANIZED	THRU	THROUGH
GWB	GYPSUM WALL BOARD	TO	TOP OF
		TOF	TOP OF FOOTING
HDG	HOT DIP GALVANIZED	TOS	TOP OF STEEL
HDR	HEADER	TOW	TOP OF WALL
HGR	HANGER	TRANS	TRANSVERSE
HORIZ	HORIZONTAL	TYP	TYPICAL
HS	HEADED STUD		
HSS	HOLLOW STRUCTURAL SECTION	UNO	UNLESS OTHERWISE NOTED
HT	HEIGHT		
		VERT	VERTICAL
ID	INSIDE DIAMETER	VIF	VERIFY IN FIELD
INT	INTERIOR		
		WI	WITH
JNT	JOINT	WD	WOOD
JST	JOIST	WF	WIDE FLANGE
		W/O	WITHOUT
		WP	WORKING POINT
		WWF	WELDED WIRE FABRIC
		WR	WATER REDUCER
		WRB	WEATHER RESISTIVE BARRIER

GENERAL

1. The structure is designed to be self-supporting and stable after the structure is fully completed. It is solely the contractor's responsibility to determine erection procedure and sequence and ensure the safety of the construction personnel, public, building and its components parts, and adjacent buildings and properties. This includes the addition of whatever temporary or permanent shoring, bracing, needling, underpinning, or sheet piling, etc. that may be necessary to brace new construction, adjacent buildings, so that the structure is braced for wind, seismic, gravity, construction loads, etc. and that no horizontal or vertical settlement or any damage occurs to the adjacent existing structure. Temporary supports shall be maintained in place until permanents support and/or shoring and bracing are installed.
2. It is the contractor's responsibility to enforce all applicable safety codes and regulations during all phases of construction.
3. The contractor shall form all construction for the project in a manner and sequence that are based on accepted industry standards that recognize the interaction of the components that comprise the structure, without causing distress, unanticipated movements or irregular load paths as a result of the construction means and methods employed.
4. Construction loads shall not exceed design live loads. The contractor shall be responsible for all design required to support construction equipment used in constructing this project. Shoring and reshoring are the responsibility of the contractor.
5. All contractors are required to examine the drawings and specifications carefully, visit the site and fully inform themselves as to all existing conditions and limitations, prior to agreeing to perform the work. Failure to visit the site and familiarize themselves with the existing conditions and limitations will in no way relieve the contractor from furnishing any materials or performing any work in accordance with drawings and specifications without additional cost to the owner.
6. Contractor shall verify all dimensions and conditions at the job site before commencing work and shall report any discrepancies to the engineer.
7. Omissions or conflicts between various elements of the drawings, notes, details and specifications shall be brought to the attention of the engineer and resolved before proceeding with the work.
8. Details labeled "Typical Details" on drawings apply to situations occurring on the project that are the same or similar to those specifically details. Such details apply whether or not details are referenced at each location. Notify engineer of clarification regarding applicability of "Typical Details" .
9. Work these drawings with civil drawings.
10. Do not scale drawings.
11. Should any of the general notes conflict with any details or instructions on plans, the strictest provision shall govern.
12. Shop drawings and submittals:

A. These drawings shall be checked and coordinated with other materials and contracts by the general contractor and shop drawings and submittals shall bear the contractor's review stamp with the checker's initials before being submitted to the architect for approval.

B. When the fabricator has been authorized to use the architect and engineer's drawings as erection drawings, the fabricator must remove all title blocks, professional seals and any other reference to the architect and engineer from that erection drawing. The fabricator's name and title shall be placed on the erection drawing.

CAST-IN-PLACE CONCRETE

1. All concrete construction shall conform to ACI 301, "Specification for Structural Concrete" and ACI 302, "Guide for Concrete Floor and Slab Construction", ACI 305 "Specification for Hot Weather Concreting" and ACI 306, "Standard Specification for Cold Weather Concreting", unless noted otherwise for the year referenced in the building code noted.
2. All detailing, fabrication and placing of reinforcing bars, unless otherwise noted, shall conform to ACI-318, "Building Code Requirements for Structural Concrete", ACI SPEC-117, "Specification for Tolerances for Concrete Construction and Materials", and the latest ACI detailing manual.
3. Concrete Types:

A. Concrete Permanently Exposed to Weather; Exterior Walls, Exterior Foundations and Stoops:

a. Min. Cementitious Content = 693 lb/cu yd

b. Max Water-Cement Ratio = 0.42

c. Specified 28-day Compressive Strength, f<sub>c</sub> = 4500 psi

d. Specified Slump Range for Placement 4" max. w/o W.R. (8" max with W.R.)

e. Specified Air Content % by Volume = 5.0 to 8.0

f. Max Size Aggregate = 1"

B. All cement shall be Type I or Type II Portland Cement per ASTM C150 or ASTM C595 Type IP or IL. Types IA is not acceptable type. IP is acceptable, if strength is met and total pozzolans do not exceed the specified limits in ACI 301. Use one brand of cement throughout the project.

C. Minimum cementitious content shall consist of 100% cement or a combination of fly ash (see note below), or a combination of cement and ground granulated blast furnace slag (GGBFS) (see note below). Fly ash shall not be used in combination with GGBFS as a substitute for cement.

D. Fly ash is permitted and shall conform to ASTM C618 Type C (for interior use w/no exposure to weather changes) or F, but shall not exceed 20% of cementitious content by weight indicated above on a substitution basis and shall be included in the water-cement ratio.

E. Ground granulated blast furnace slag (GGBFS) is permitted and shall conform to ASTM C989, but shall not exceed 15% of cementitious content by weight indicated above on a substitution basis and shall be included in the water-cement ratio.

F. Concrete used for floors shall have 1800 psi, 3-day strength. Mixes to be pumped shall be so identified on the mix design submittal. All pumped mixes shall have a mid-range or high-range water reducer.

G. All admixtures other than superplasticizers shall be added at the batch plant. Superplasticizers, designed for addition to the mix at the plant, may be added at the batch plant with verifications from the engineer and verification that the water-cement ratio has not been exceeded. Superplasticizers added at the site shall be in pre-measured containers from the batch plant.

H. All concrete used for cast-in-place concrete slabs shall contain the specified water reducing or water reducing/retarding admixture. All concrete slabs, placed at air temperature below 50°F shall contain the specified non-corrosive, non-chloride accelerator. All concrete placed at air temperature above 80°F shall contain specific water-reducing/retarder admixture. All concrete required to be air-entrained shall contain an approved air-entraining admixture. All pumped concrete shall contain the specified high-range water-reducing admixture. Concrete with a water-cement ratio between 0.4 and 0.6 shall contain the specified water-reducer.

I. Calcium chloride shall not be permitted nor shall any admixture containing calcium chloride be permitted.
4. All aluminum in contact with concrete or dissimilar metals shall be coated with two coats of coal tar epoxy, approved by the engineer, unless otherwise noted.
5. Concrete shall be discharged at the site within 1 ½ hours after water has been added to the cement and aggregates. Addition of water to the mix at the project site will not be permitted. All water must be added at the batch plant. Slump may be adjusted only through the use of additional water reducing admixtures or high range water reducing admixture.
6. All concrete shall be placed without horizontal construction joints, except where specifically noted.
7. All exposed edges of concrete members shall be chamfered ¾" unless shown otherwise.
8. Reinforcing bars shall conform to ASTM A615, Grade 60, No tack welding of reinforcing in the field will be permitted.
9. Reinforcing bars for welded applications shall conform to ASTM A706, Grade 60.
10. Welded wire fabric reinforcing shall conform to ASTM A1064/A1064M and be furnished in flat sheets and installed on chairs.
11. Wire bar supports shall be furnished for all reinforcing within slabs, inclusive of welded wire fabric. Bottom bars in slabs-on-grade may be supported by other suitable supports. Reinforcing shall be properly positioned prior to concrete placement and may not be re-positioned once concrete operations have begun. Wire bar and other types of supports shall be in accordance with the concrete reinforcing steel institute manual of standard practice.
12. Reinforcement shall be continuous through all construction joints unless otherwise noted on drawings.
13. All hooks shown on drawings shall be ACI standard hooks, unless otherwise noted.
14. Where continuous bars are called for, they shall run continuously around corners and be lapped at necessary splices. Lap lengths shall be as given in the splice and development table.
15. In reinforced concrete walls, grade beams and trench footing provide corner dowels of same size and spacing as horizontal reinforcing. Dowels shall lap with horizontal reinforcing in each direction.
16. The following minimum concrete cover shall be provided for reinforcement, unless otherwise noted:

A. Earth formed and cast directly against soil - 3"

B. Cast against forms but exposed to earth and weather

a. #6 and Larger - 2"

b. #5 and Smaller - 1 ½"

C. Slabs and walls not exposed to earth or weather - ¾"

D. Others - 2"
17. Reinforcing bars shall have a minimum clear spacing of 4"
18. SPLICE LENGTHS:

Bar Size	Min. Lap
#3	1'-4"
#4	1'-8"
#5	2'-0"
#6	2'-6"
#7	3'-6"
#8	4'-0"
#9	5'-0"
#10	6'-2"

- A. When lapping two different size bars, use the lap dimension of the smaller bar or the anchorage dimension of the larger bar, use whichever dimension is larger.

WOOD FRAMING:

1. All timber shall conform to "National Design Specification for Wood Construction" (ANSI/AWC NDS) for the year referenced in the building code noted.
2. Connect all members per IBC 2015 "Fastening Schedule" Table 2304.10.1, unless noted otherwise. All members shall be framed, anchored, tied, and braced so as to develop the strength and rigidity for the purpose which they are used. All nails shall be "common wire nails" of the following length and diameter:

A. 6d: 2" x 0.113"Ø

B. 8d: 2 1/2" x 0.131"Ø

C. 10d: 3" x 0.148"Ø

D. 12d: 3 1/4" x 0.148"Ø

E. 16d: 3 1/2" x 0.162"Ø
3. Collated gun-driven nails shall meet the requirements of ASTM F1667. Nail gun pressures shall be adjusted to install the nail into the substrate without being over-driven. Nails shall not be over-driven.
4. All sawn lumber shall be Spruce Pine Fir (SPF) No. 2, or better, with the following NDS minimum reference design values, unless noted otherwise.

A. Fb=875psi

B. Fv=135psi

C. F<sub>t</sub>=1150psi

D. F<sub>c</sub>L =425psi

E. E=1,400,000psi
5. Wood Member Connections – Connect multiple individual framing member that are parallel and in contact thus:

A. 2 Members: 2 rows of 10d nails at 12" OC

B. 3 Members: 2 rows of 16d nails at 12" OC

C. 4 or 5 Members: 2 rows of ¼" Ø Simpson SDS Wood Screws or Equal spaced at 12" OC

D. a. Screw length shall match the total thickness of the built-up members.

E. > 5 Members: ¾" Ø A307 through bolts at mid-depth and spaced at 12" OC
6. Joist hangers, beam hangers, connections and fasteners shall be by one of the following manufacturers:

A. Simpson Strong-Tie

B. USP Structural Connectors

C. or approved substitution
7. Connectors depicted throughout the structural details are based on Simpson Strong-Tie model numbers. Connectors manufactured by other approved companies may be used provided their performance is equal or better. All connectors shall be selected and installed according to manufacturer's written instructions.
8. All lumber exposed to the exterior or in direct contact with masonry or concrete shall be pressure treated. Pressure treated members shall be Southern-Pine No. 2. Pressure treatments shall conform to the building code.
9. All fasteners and connector in contact with treated lumber or exposed to the exterior shall be hot dip galvanized or have a Z185 galvanized coating.

POST INSTALLED ANCHORS

1. Concrete adhesive anchors Hilti HY200 or approved equal. Concrete Mechanical Anchors Hilti Kwik Bolt TZ2 or approved equal.
2. Masonry adhesive anchors Hilti HY270 or approved equal. Masonry Mechanical Anchors Hilti Kwik Bolt III in grouted CMU or approved equal.
3. Submit ICC-ES reports for all post installed anchors.
4. Install all post installed anchors per the product's ICC-ES report and the manufacturer's written instructions.
5. Post installed anchors shall be inspected per the product's ICC-ES report.
6. Install adhesive anchors in dry hammer drilled holes.

FOUNDATION

1. A soil testing laboratory shall be retained by the owner for project construction review to ensure conformance with the construction documents during the excavation, back fill, and foundation phases of the project.
2. Foundation design is based on assumed allowable soil bearing pressure for isolated footings of 1,500 psf
3. All fill material shall be free of organic contaminations and other deleterious matter.
4. All soil surrounding and under footings shall be protected from frost action and freezing during the course of construction.
5. Notify structural engineer of any unusual soil conditions that are in variance with the geotechnical report.
6. Footing excavations should be made to the required lines and grades as rapidly as possible. Footing excavations be left open for a minimum of time to prevent disturbance to the foundation soils. Foot traffic should be prevented on the base of the footing excavations if disturbance is noted. Hand cleaning, if required and setting of reinforcing steel should then be accomplished from the sides of the excavation.

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ISSUE DATE: 12-17-2025

CAD DWG FILE: S001  
DRAWING BY: BWS  
CHECKED BY: KTH  
DESIGNED BY: KTH

SHEET TITLE:

STRUCTURAL NOTES

SHEET NUMBER:

S001



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SHEET TITLE:  
RAMP AND STAIR  
STRUCTURAL DETAILS

0101

S101

SHEET 41 OF 41  
12/17/2025

