Campground Loop 4 Upgrades
Montauk State Park
Salem, Missouri

olsson

Olsson, Inc. Engineering MO State Cert. of Authority #001592
Olsson, Inc. Landscape Architecture MO State Cert. of Authority #2005000285
1301 Burlington St.
North Kansas City, MO 64116 TEL 816.361.1177 www.olsson.com

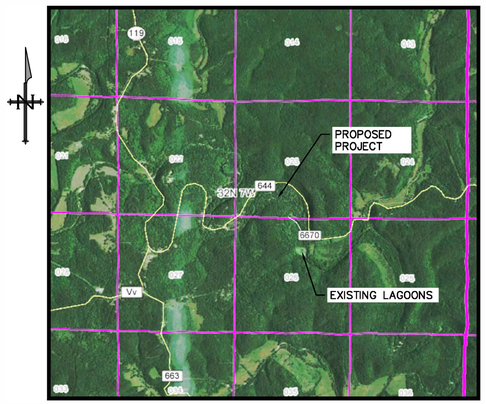
Olsson # 022-00567

INDEX OF DRAWINGS

OWNER: STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR

DEPARTMENT OF
NATURAL RESOURCES
DIVISION OF STATE PARKS

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



VICINITY MAP

DESIGNER: OLSSON, INC.
1301 BURLINGTON STREET
NORTH KANSAS CITY, MO. 64116

PROJECT NUMBER: X2203-01

SITE NUMBER: 5307
FACILITY NUMBER: 7815307049

UNDERGROUND UTILITY NOTE

ANY UNDERGROUND FACILITIES, STRUCTURES, OR UTILITIES THAT HAVE BEEN SHOWN ARE FROM AVAILABLE RECORDS. THEREFORE, THE RELATIONSHIP BETWEEN THE NEW WORK AND THE EXISTING FACILITIES, STRUCTURES, OR UTILITIES MUST BE CONSIDERED APPROXIMATE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY ALL THE LOCAL, AND/OR GOVERNING UTILITY COMPANIES PRIOR TO CONSTRUCTION TO DETERMINE THEIR EXACT LOCATIONS AND THE EXISTENCE OF ANY NOT SHOWN. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES AND THE OWNER AS TO THE RELOCATION OR REMOVAL OF ANY UTILITIES SHOWN OR NOT SHOWN

SHEET NUMBER:
G-100
1 OF 17 SHEETS
01/13/2023

DWG: \\oa.ad.oconsulting.com\fnts-ne1\projects\2022\00501-01000\022-00567\40-Design\AutoCAD\Final Plans\Sheets\MECH\X2203-01-5307-7815307049-G-1.00.dwg USER: tdanner
DATE: Jun 13, 2023 9:17am XREFS: legend

LEGEND

	Benchmark		Deciduous Tree (Size as Noted)
	Informational Sign		Coniferous Tree (Size as Noted)
	Sign		Tree Stump
	Wood Post W/Light	P–OH	Ex. Overhead Powerline
LTP	Light Pole	E	Ex. Underground Powerline
ER	Electric Riser	SD	Ex. Storm Pipe
E	Electric Box	W	Ex. Water Line
	Power Pole	SS	Ex. Sanitary Sewer Line
	Electric Cabinet		Ex. Fence Split Rail
EM	Electric Meter		Ex. Fence Chain Link
ELO	Electric Outlet		Ex. Fence Wood
	Buried Fiber Marker	1280	Ex. Contour
GRILL	Grill	1280	Prop. Contour
	Picnic Table	TP=900.00	Top of Pavement
	Steel Post	FG=900.00	Finished Ground
	Wood Post	FL=900.00	Flow Line
	Parking Block		
	Catch Basin		
	Flared End Section		
WV	Water Valve		
YHT	Yard Hydrant		
WM	Water Meter		
S	Sanitary Sewer Manhole		
	Sanitary Sewer Clean–out		
T	Telephone Pedestal		

GENERAL NOTES:

1. ALL TRAFFIC CONTROL SHALL BE IN CONFORMANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)

2. THE EXISTING UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MAY NOT INCLUDE ALL LINES PRESENT. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALL "1–800–DIG–RITE", AND COORDINATE FIELD LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO BEGINNING GRADING ACTIVITIES. !!STOP!! CALL BEFORE YOU DIG!!

3. THE CONTRACTOR SHALL NOT CHANGE OR DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE OWNER AND ENGINEER.

4. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ALL PERMITS AND PAY ALL FEES AS REQUIRED BY THE CONSTRUCTION COVERED IN THESE PLANS.

5. ALL WORK AND MATERIALS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE OWNER OR THE OWNER'S REPRESENTATIVE.

6. ANY ESTIMATES OF QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR AND SUBCONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING ALL QUANTITIES. CONTRACTOR SHALL PROVIDE ALL WORK AND MATERIALS AS SHOWN ON PLANS.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING THE PUBLIC AND CAMPGROUND ROADS IN THE VICINITY OF THE JOB SITE CLEAN AND FREE OF ROCKS, SOIL AND DEBRIS.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RESTORATION OF THE TURF AREAS AND FOR DAMAGED IMPROVEMENTS SUCH AS PAVEMENT AND UTILITIES. DAMAGED IMPROVEMENTS SHALL BE REPAIRED IN CONFORMANCE WITH THE LATEST STATE STANDARDS AND THE STATES SATISFACTION.

9. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING BERMS, SILT FENCES, OR OTHER MEANS TO PREVENT ERODED MATERIALS FROM REACHING THE PUBLIC RIGHT–OF–WAY AND ADJACENT PROPERTIES. IN THE EVENT THE PREVENTION MEASURES ARE NOT EFFECTIVE, THE CONTRACTOR SHALL REMOVE ANY DEBRIS, SILT, OR MUD AND RESTORE THE RIGHT–OF–WAY TO ORIGINAL OR BETTER CONDITION.

10. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DOWNSTREAM EROSION AND SILTATION DURING ALL PHASES OF CONSTRUCTION. EROSION CONTROL PROCEDURES SHALL BE IN PLACE PRIOR TO BEGINNING GRADING ACTIVITIES.

11. CONTRACTOR AND SUBCONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING ALL EARTHWORK QUANTITIES. CONTRACTOR SHALL PROVIDE ALL WORK AND MATERIALS AS SHOWN ON PLANS.

12. THE CONTRACTOR SHALL CLEAN OUT ALL EXISTING AND PROPOSED INLETS, PIPES AND MANHOLES OF DEBRIS AND SEDIMENTATION AT COMPLETION OF SITEWORK. THIS WORK SHALL BE DONE TO THE SATISFACTION OF THE OWNER & STATE OF MISSOURI.

13. THE CONTOUR LINES, SPOT ELEVATIONS AND BUILDING FLOOR ELEVATIONS SHOWN ARE TO FINISH GRADE FOR SURFACE OF PAVEMENT, TOP OF SIDEWALKS AND CURBS, TOP OF FLOOR SLABS, ETC. REFER TO TYPICAL SECTIONS FOR PAVING, SLAB AND AGGREGATE BASE THICKNESS TO DEDUCT FOR GRADING LINE ELEVATIONS.

14. THE CONTRACTOR SHALL FINISH GRADE SLOPES AS SHOWN NO STEEPER THAN 1 FOOT VERTICAL IN 3 FEET HORIZONTAL.

15. THE CONTRACTOR SHALL GRADE LANDSCAPED AREAS AT A MIN. OF 1% TO PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDINGS AND SIDEWALKS WHEN FINISH LANDSCAPE MATERIALS ARE IN PLACE, UNLESS SPECIFIED OTHERWISE.

16. ALL EXTERIOR CONCRETE SHALL HAVE A MINIMUM 28–DAY COMPRESSIVE STRENGTH OF 4000 PSI AND BE AIR ENTRAINED. FLY ASH IS NOT A SUITABLE REPLACEMENT FOR PORTLAND CEMENT.

17. ALL BACK FILL SHALL BE TAMPED. BACK FILL WITHIN THE RIGHT–OF–WAY SHALL BE COMPACTED TO 95% MAX. DENSITY AS PER ASTM–D698 (STANDARD PROCTOR COMPACTION)

18. THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE PLANS (APPROVED BY THE STATE OF MISSOURI) AND ONE (1) COPY OF THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE SITE AT ALL TIMES.

19. ALL REFERENCES CONTAINED WITHIN THESE PLANS ARE HEREBY REFERENCED TO THE OWNER'S ENGINEER, OLSSON, INC.

20. THE CONTRACTOR IS RESPONSIBLE FOR ATTENDING TO AND CORRECTING UNSUITABLE SOIL CONDITIONS RELATED TO PLOW ZONES, WET SOILS, AND OTHER CONDITIONS. THE UNSUITABLE CONDITIONS MUST BE CORRECTED PER THE GEOTECHNICAL ENGINEER'S REPORT, WHERE REQUIRED, TO MEET PROJECT NEEDS.

21. THE CONTRACTOR IS TO RETAIN FLOATABLE WIND BLOWN MATERIALS ON SITE BY STORING ALL TRASH AND BUILDING MATERIAL WASTE IN ENCLOSURES UNTIL PROPER DISPOSAL AT AN OFF–SITE FACILITY. CONTRACTOR TO CHECK ADJACENT AREAS DAILY AND PICK UP CONSTRUCTION WASTE MATERIALS AND DEBRIS THAT HAVE BLOWN OR WASHED OFF–SITE.

22. EROSION CONTROL DEVICES SHALL BE MAINTAINED DURING THE WHOLE CONSTRUCTION PERIOD BY THE CONTRACTOR.

23. THE CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE ANY EXISTING STREET, CURB AND GUTTER, SIDEWALK AND DRIVEWAYS UNLESS SHOWN TO BE REMOVED.

24. CONTRACTOR TO PROTECT ANY STORM INLETS FROM SEDIMENT THAT TAKE STORM WATER FROM THE AREA OF CONSTRUCTION.

25. ALL DISTURBED AREAS SHALL BE STABILIZED IN ACCORDANCE WITH THE APPROVED SEDIMENT AND EROSION CONTROL PLAN (SECP).

26. THE CONTRACTOR SHALL FIELD VERIFY ALL HORIZONTAL AND VERTICAL LINES AND GRADES OF EXISTING UTILITIES PRIOR TO THE CONSTRUCTION OF IMPROVEMENTS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERY OF A DISCREPANCY BETWEEN THE CONTRACT DRAWINGS AND ACTUAL FIELD CONDITIONS.

27. CONTRACTOR SHALL UTILIZE PRIVATE UTILITY LOCATOR TO LOCATE AND MARK EXISTING UTILITIES WITHIN THE PROJECT AREA. CONTRACTOR IS RESPONSIBLE FOR ALL COSTS AND COORDINATION ASSOCIATED WITH THIS.

UTILITY COMPANIES:

ELECTRIC:
INTERCOUNTY ELECTRIC CO–OP:
TELEPHONE: (866) 621–3679

SANITARY SEWER, WATER, AND COMMUNICATIONS:
DOUGLAS RUSK
NATURAL RESOURCE MANAGER
MISSOURI STATE PARKS
MONTAUK STATE PARK
OFFICE: (573)–548–2201
FAX: (573)548–2206

BENCHMARKS:

#1. EXISTING SANITARY SEWER MANHOLE
RIM ELEV. = 909.44

#2. EXISTING SANITARY SEWER MANHOLE
RIM ELEV. = 907.40

ABBREVIATION:

100 YEAR WSE =
100 YEAR WATER SURFACE ELEVATION

OWNER/DEVELOPER:

MISSOURI DEPARTMENT OF
NATURAL RESOURCES
P.O. BOX 176
1101 RIVER SIDE DRIVE
JEFFERSON CITY, MISSOURI 65102–0176
TELEPHONE: (573) 5751–3443

PREPARED BY:

OLSSON, INC.
CONTACT: RICKY HAASE
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
TELEPHONE: (417) 890–8802
FAX: (417) 890–8805

FLOOD MAP

COUNTY OF DENT, MISSOURI
COMMUNITY PANEL NUMBER
290118 0175 A
EFFECTIVE DATE:
JANUARY 5,1984

MISSOURI ONE CALL SYSTEM
1-800-DIG-RITE or 811
www.mo1call.com

STATE OF MISSOURI
MICHAEL L. PARSON, GOVERNOR

STATE OF MISSOURI
RICKY HAASE
ENGINEER
PE-2010017828
01/13/2023
PROFESSIONAL ENGINEER

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OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT,
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DEPARTMENT OF
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Campground Loop 4 Upgrades

Montauk State Park

345 County Road 6670
Salem, Missouri

PROJECT # X2203-01
SITE # 5307
FACILITY # 7815307049

REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
ISSUE DATE: 01/13/2023

CAD FILE: X2203-01-5307-7815307049
DRAWN BY: RPJ
CHECKED BY: JKE
DESIGNED BY: RPJ

SHEET TITLE:

Site Layout

SHEET NUMBER:

C-100

2 OF 17 SHEETS
01/13/2023

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V_XTOPO_DEMO_02200567 Legend X2203-01-5307-7815307049-E-1.00 X-2204-01-4306-53282-C-SP-1.01

N

1" = 30'

0' 15' 30' 60'

SCALE IN FEET

PAVING LEGEND

CONCRETE CAMPSITES (REFER TO DETAIL SHEET C-400)

UTILITY PADS (MATCH SECTION OF CONCRETE CAMPSITE) (REFER TO DETAIL SHEET C-400)

CAMPSITE COORDINATE TABLE

CAMPSITE	NORTHING	EASTING
401	591340.98	479701.77
401	591355.98	479801.31
406 / 407	591445.82	479868.12
406 / 407	591498.97	479921.24
408	591479.93	479982.77
408	591523.51	479921.00
425	591644.15	479632.55
425	591593.86	479718.34
427	591555.28	479678.76
427	591513.02	479739.40
430	591496.09	479696.28
430	591426.83	479734.02

STATE OF MISSOURI
MICHAEL L. PARSON, GOVERNOR

STATE OF MISSOURI
RICKY HAASE
NUMBER PE-2019017828
01/13/2023
PROFESSIONAL ENGINEER

olsson
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Campground Loop 4 Upgrades

Montauk State Park
345 County Road 6670

Salem, Missouri

PROJECT # X2203-01
SITE # 5307
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REVISION:
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DATE:
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ISSUE DATE: 01/13/2023

CAD FILE: X2203-01-5307-7815307049
DRAWN BY: RPJ
CHECKED BY: JKE
DESIGNED BY: RPJ

SHEET TITLE:

Campground Layout

SHEET NUMBER:

C-101

MISSOURI ONE CALL SYSTEM
1-800-DIG-RITE or 811
www.mo1call.com

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USER: rjungbauer

TEMPORARY VEGETATION REQUIREMENTS

TOPSOIL REQUIREMENTS:

TEMPORARY SEEDING –
LOOSEN COMPACTED SOILS TO A DEPTH OF 4 INCHES. IF RAINFALL CAUSES THE SURFACE TO BECOME SEALED OR CRUSTED, LOOSEN IT JUST PRIOR TO SEEDING. SLOPES STEEPER THAN 33 PERCENT (3:1) GRADE SHOULD BE GROOVED OR FURROWED ON THE CONTOUR BEFORE SEEDING. A GOOD SEEDBED IS WELL PULVERIZED, LOOSE, AND UNIFORM.

LIME REQUIREMENTS:

TEMPORARY SEEDING –
LIME SHOULD BE APPLIED ACCORDING TO SOIL TEST RECOMMENDATIONS. IF THE PH OF THE SOIL IS UNKNOWN, LIME SHALL BE INCORPORATED INTO THE TOP 4 INCHES OF SOIL AT THE RATE OF 1500 POUNDS EFFECTIVE NEUTRALIZING MATERIAL (ENM) PER ACRE. SOILS WITH A PH OF SIX OR HIGHER NEED NOT BE LIMED.

FERTILIZER REQUIREMENTS:

TEMPORARY SEEDING –
FERTILIZER SHOULD BE APPLIED BASED ON SOIL TESTS. WHEN THESE ARE NOT POSSIBLE, A 10–10–10 GRADE FERTILIZER SHALL BE INCORPORATED INTO THE TOP 4 INCHES OF SOIL AT THE RATE OF 200 POUNDS PER ACRE.

SEED REQUIREMENTS:

TEMPORARY SEEDING –
SEED MIX SHALL CONSIST OF ANY COMBINATION OF TALL FESCUE, ANNUAL RYEGRASS, SUDAN, MILLET, WHEAT, OR OATS. SEED MIXTURE SHALL BE APPLIED AT A RATE OF 200 POUNDS PER ACRE.

DORMANT SEASON SEEDING –
SEED MIX SHALL CONSIST OF 80 PERCENT (80%) TALL FESCUE, TEN PERCENT (10%) ANNUAL RYEGRASS, AND TEN PERCENT (10%) SPRING OATS. SEED MIXTURE SHALL BE APPLIED AT A RATE OF 600 POUNDS PER ACRE.

MULCH REQUIREMENTS:

TEMPORARY SEEDING –
WHERE SLOPES ARE LESS THAN 25 PERCENT (4:1) GRADE, CEREAL GRAIN MULCH IS REQUIRED AT THE RATE OF 100 POUNDS PER 1,000 SQUARE FEET (4,500 LBS/ACRE). CEREAL GRAIN MULCH SHALL MEET THE REQUIREMENTS OF SECTION 802 OF THE MISSOURI STATE SPECIFICATIONS FOR HIGHWAY CONSTRUCTION FOR TYPE 1 MULCH. WHERE SLOPES ARE 25 PERCENT (4:1) OR GREATER GRADE, TYPE 3 MULCH ("HYDROMULCH") MEETING THE REQUIREMENTS OF SECTION 802 OF THE STATE SPECIFICATIONS SHALL BE USED. TYPE 3 MULCH SHALL BE APPLIED AT A MINIMUM RATE OF 2,000 LBS/ACRE.

DATES FOR SEEDING:

TEMPORARY SEEDING – CAN OCCUR DURING ANY SEASON, HOWEVER WINTER IS THE LEAST TOLERANT.
DORMANT SEASON SEEDING – DECEMBER 15 TO FEBRUARY 29

DEMOLITION NOTES:

1. ALL DEMOLITION IS TO BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE STATE GOVERNING BODY'S STANDARDS.

2. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS ASSOCIATED WITH THE DEMOLITION WORK AS DESCRIBED & SHOWN ON THESE PLANS.

3. ALL WORK WITHIN STATE RIGHT–OF–WAY WILL REQUIRE AN EXCAVATION PERMIT. IT IS THE CONTRACTORS RESPONSIBILITY TO OBTAIN THIS PERMIT.

4. THE EXISTING UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MAY NOT INCLUDE ALL LINES PRESENT. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALL "811", AND COORDINATE FIELD LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO BEGINNING DEMOLITION ACTIVITIES. !!KNOW WHAT'S BELOW. CALL BEFORE YOU DIG!!

5. CONTRACTOR SHALL COORDINATE WITH WATER, GAS, ELECTRIC, TELEPHONE/FIBER, CABLE AND SANITARY SEWER PROVIDERS TO TERMINATE ALL EXISTING SERVICES TO BUILDINGS MARKED FOR DEMOLITION ON THESE PLANS. CONTRACTOR SHALL VERIFY WITH UTILITY PROVIDERS THAT SERVICES HAVE BEEN DISCONNECTED PRIOR TO ANY REMOVAL OF INTERNAL SERVICE LINES.

6. THE DEMOLITION PLAN AND EXISTING CONDITIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL INSPECT AND FIELD VERIFY THE EXISTING SITE CONDITIONS TO BECOME ACQUAINTED WITH ALL EXISTING CONDITIONS WHICH EFFECT ANY AND ALL WORK ASSOCIATED WITH THE DEMOLITION PLANS.

7. ALL EXISTING SANITARY SEWER, STORM SEWERS, WATER SERVICE, GAS SERVICE, TELEPHONE SERVICE, ETC. WITHIN THE AREA OF THE BUILDINGS AND OUTSIDE THE BUILDINGS TO BE DEMOLISHED SHALL BE REMOVED FROM THE SITE AND DISPOSED BY THE CONTRACTOR.

8. ALL EXISTING BUILDING FOUNDATIONS, CONCRETE, ASPHALT PAVEMENT, CURB & GUTTER, RETAINING WALLS AND MISCELLANEOUS STRUCTURES INCLUDING BUT NOT LIMITED TO LIGHT POLES AND BASES, AND MISCELLANEOUS DEBRIS SHALL BE DEMOLISHED AND REMOVED FROM THE SITE AND SHALL BE DISPOSED OFF–SITE AT CONTRACTORS EXPENSE TO AN APPROVED DUMP SITE, UNLESS OTHERWISE NOTED.

9. IN THE EVENT THE CONTRACTOR ENCOUNTERS MATERIAL ON–SITE REASONABLY BELIEVED TO BE ASBESTOS, LEAD–BASED PAINT OR ANY OTHER HAZARDOUS MATERIAL, SAID MATERIAL SHALL BE REMOVED AND DISPOSED BY THE CONTRACTOR IN ACCORDANCE WITH CITY, COUNTY, STATE & FEDERAL REGULATIONS.

10. DEBRIS SHALL NOT BE BURIED ONSITE. ALL UNSUITABLE MATERIAL AND DEBRIS SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OFF–SITE IN ACCORDANCE WITH ALL CITY, STATE, COUNTY & FEDERAL LAWS AND ORDINANCES.

11. IF EXISTING UN–CAPPED WATER WELLS ARE DISCOVERED ON–SITE, CONTRACTOR SHALL COORDINATE WITH AN AUTHORIZED COMPANY TO HAVE WELLS PLUGGED AND CAPPED IN ACCORDANCE WITH ALL CITY, COUNTY, STATE & FEDERAL LAWS AND ORDINANCES.

12. IF EXISTING SEPTIC SYSTEMS ARE DISCOVERED ON–SITE, CONTRACTOR SHALL COORDINATE WITH A SEPTIC HAULER TO PUMP ANY REMAINING WASTEWATER AND SLUDGE FROM ALL THE TANKS IN THE SYSTEM. CONTRACTOR SHALL REMOVE EXISTING SEPTIC TANKS, LATERAL FIELDS AND ALL OTHER PARTS OF THE SYSTEM IN ACCORDANCE WITH CITY, COUNTY, STATE & FEDERAL LAWS AND ORDINANCES.

13. ANY AREA DISTURBED BY DEMOLITION THAT WILL NOT BE DISTURBED IN PROPOSED GRADING ACTIVITIES SHOWN ON THESE PLANS SHALL HAVE TOPSOIL PLACED, SEEDED AND MULCHED ACCORDING TO THE CONTRACT SPECIFICATIONS.

14. ALL GAS MAINS & STRUCTURES SHALL BE PROTECTED IN PLACE.

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LEGEND

- PROPERTY LINE
- RIGHT–OF–WAY LINE
- UTILITY EASEMENT
- 1200 EXIST. CONTOUR
- 1200 FINISH GRADE CONTOUR
- LOC LIMITS OF CONSTRUCTION/DISTURBANCE
- TREES TO BE PRESERVED. (REFER TO DETAIL ON SHEET C–402 FOR ACTUAL LIMITS OF TREE PROTECTION BASED ON THE TREE CANOPY)
- TREES TO BE REMOVED
- EXISTING ASPHALT PAVEMENT TO BE REMOVED
- EXISTING CONCRETE PAVEMENT TO BE REMOVED

LAND DISTURBANCE:

TOTAL AREA DISTURBED: 0.91± AC

DEMOLITION KEYNOTES:

- 1.0 SAW CUT AND REMOVE EXISTING ASPHALT PAVEMENT. REFER TO DEMOLITION NOTES.
- 1.1 SAW CUT AND REMOVE EXISTING CONCRETE PAVEMENT. REFER TO DEMOLITION NOTES.
- 2.0 REMOVE EXISTING FIRE PIT, PICNIC TABLE, VEGETATIVE STUMP AND TRASH BAG POLE. REFER TO DEMOLITION NOTES.
- 2.1 REMOVE ELECTRICAL PEDESTAL IN ITS ENTIRETY. REFER TO ELECTRICAL PLAN FOR ADDITIONAL INFORMATION.
- 2.2 REMOVE EXISTING SIGN. REFER TO DEMOLITION NOTES.
- 3.0 PROTECT IN PLACE EXISTING FIRE PIT, PICNIC TABLE, AND TRASH BAG POLE.
- 3.1 PROTECT IN PLACE EXISTING ELECTRICAL PEDESTAL.
- 3.2 PROTECT IN PLACE EXISTING YARD HYDRANT.

EROSION CONTROL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF ALL EROSION & SEDIMENT CONTROL MEASURES AND PRACTICES THROUGHOUT THE PROJECT. ANY AND ALL FINES ASSOCIATED WITH EROSION CONTROL VIOLATIONS WILL BE THE CONTRACTOR'S RESPONSIBILITY.
2. EROSION CONTROL IS THE CONTRACTOR'S RESPONSIBILITY. THIS PLAN SHOULD BE USED AS A GUIDE AND REPRESENTS THE MINIMUM EROSION CONTROL DEVICES REQUIRED.
3. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. ADDITIONAL EROSION & SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON–SITE INSPECTION BY CONTRACTOR.
4. CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL EROSION & SEDIMENT CONTROL DEVICES AFTER EACH RAINFALL EVENT.
5. THE CONTRACTOR SHALL PROVIDE ANY FURTHER EROSION CONTROL MEASURES IN ADDITION TO THOSE LISTED TO ENSURE THAT SILT WILL NOT LEAVE THE PROJECT CONFINES.
6. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING THE TEMPORARY EROSION & SEDIMENT CONTROL DEVICES AFTER COMPLETION OF CONSTRUCTION AND ONLY WHEN AREAS HAVE BEEN STABILIZED WITH A HEALTHY STAND OF PERMANENT VEGETATION.
7. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING SILT FROM SITE IF NOT REUSABLE ON–SITE AND ASSURING PLAN ALIGNMENT AND GRADE IN ALL DITCHES AT COMPLETION OF CONSTRUCTION.
8. THE CONTRACTOR SHALL ENSURE THAT ALL DRAINAGE STRUCTURES, FLUMES, PIPES, ETC. ARE CLEANED OUT AND WORKING PROPERLY AT TIME OF ACCEPTANCE.
9. THE CONTRACTOR SHALL PROVIDE ANY TEMPORARY STABILIZATION AS REQUIRED.
10. THE CONTRACTOR SHALL PROVIDE A TEMPORARY CONSTRUCTION ENTRANCE FOR VEHICULAR TRAFFIC AT LOCATION SHOWN.
11. ALL EROSION CONTROL DEVICES SHALL CONFORM TO THE REQUIREMENTS OF THE STATE OF MISSOURI.
12. REFERENCE DETAILS ON SHEET C–402 FOR TYPICAL EROSION CONTROL DEVICE INSTALLATION.
13. THE CONTRACTOR WILL BE REQUIRED TO CLEAN THE STREETS OF DEPOSITED MUD AS FREQUENTLY AS NEEDED AS DETERMINED BY THE ENGINEER IN ORDER TO KEEP THEM USABLE AND TO CONTROL DUST.
14. SEE TEMPORARY VEGETATION REQUIREMENT NOTES ON THIS SHEET FOR EXPOSED SOIL WHERE NO ACTIVITY WILL OCCUR FOR MORE THAN 14 DAYS.
15. CONTRACTOR IS RESPONSIBLE FOR PHASED INSTALLATION OF EROSION CONTROL BMP'S IN ORDER TO PREVENT SEDIMENT FROM BREACHING THE LIMITS OF DISTURBANCE.

POLLUTION PREVENTION PROCEDURE NOTES:

1. HANDLING AND DISPOSAL OF HAZARDOUS MATERIALS:

DO:
PREVENT SPILLS
USE PRODUCTS UP
FOLLOW LABEL DIRECTIONS FOR DISPOSAL
REMOVE LIDS FROM EMPTY BOTTLES AND CANS WHEN DISPOSING TRASH
RECYCLE WASTES WHENEVER POSSIBLE

DON'T:
DON'T POUR WASTE INTO SEWERS OR WATERWAYS ON THE GROUND
DON'T POUR WASTE DOWN THE SINK, FLOOR DRAIN OR SEPTIC TANKS
DON'T BURY CHEMICALS OR CONTAINERS, OR DISPOSE OF THEM WITH OTHER WASTE
DON'T BURN OR MIX CHEMICALS OR CONTAINERS
DON'T WASH SEDIMENT DOWN STORM SEWER INLETS

2. CONTAINERS SHALL BE PROVIDED FOR COLLECTION OF ALL WASTE MATERIAL INCLUDING CONSTRUCTION DEBRIS, TRASH, PETROLEUM PRODUCTS AND ANY HAZARDOUS MATERIALS TO BE USED ONSITE. ALL WASTE MATERIAL SHALL BE DISPOSED OF AT FACILITIES APPROVED FOR THAT MATERIAL.
3. NO WASTE MATERIALS SHALL BE BURIED ON–SITE.
4. MIXING, PUMPING, TRANSFERRING OR OTHERWISE HANDLING CONSTRUCTION CHEMICALS SUCH AS FERTILIZER, LIME, ASPHALT, CONCRETE DRYING COMPOUNDS, AND ALL OTHER POTENTIALLY HAZARDOUS MATERIALS SHALL BE PERFORMED IN AN AREA AWAY FROM ANY WATERCOURSE, DITCH OR STORM DRAIN.
5. EQUIPMENT FUELING AND MAINTENANCE, OIL CHANGING, ETC., SHALL BE PERFORMED ONLY IN AN AREA DESIGNATED FOR THAT PURPOSE. THE DESIGNATED AREA SHALL BE EQUIPPED FOR RECYCLING OIL AND CATCHING SPILLS.
6. CONCRETE WASH WATER SHALL NOT BE ALLOWED TO FLOW DIRECTLY TO STORM SEWERS, STREAMS, DITCHES, LAKES, ETC WITHOUT BEING TREATED. A CONCRETE WASHOUT AREA SHALL BE PROVIDED. SEE DETAIL ON SHEET C–402.
7. ALL PAINT, SOLVENTS, PETROLEUM PRODUCTS AND PETROLEUM WASTE PRODUCTS, AND STORAGE CONTAINERS (SUCH AS DRUMS, CANS, OR CARTONS) SHALL BE STORED ACCORDING TO BMPS. THE MATERIALS EXPOSED TO PRECIPITATION SHALL BE STORED IN WATERTIGHT, STRUCTURALLY SOUND, CLOSED CONTAINERS. ALL CONTAINERS SHALL BE INSPECTED FOR LEAKS OR SPILLAGE DURING THE ONCE PER WEEK INSPECTION OF BMPS. IF SUBSTANCES SUCH AS OIL, DIESEL FUEL, HYDRAULIC FLUID, ANTIFREEZE, ETC. ARE SPILLED, LEAKED, OR RELEASED ONTO SOIL, THE SOIL SHALL BE DUG UP AND PROPERLY DISPOSED OF. SPILLS ON PAVEMENT SHALL BE ABSORBED WITH SAWDUST, KITTY LITTER OR PRODUCT DESIGNED FOR THAT PURPOSED AND DISPOSED OF AT A LICENSED SANITARY LANDFILL. HAZARDOUS OR INDUSTRIAL WASTES SUCH AS MOST SOLVENTS, GASOLINE, OIL–BASED PAINTS, AND CEMENT CURING COMPOUNDS REQUIRE SPECIAL HANDLING. THESE MATERIALS WILL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH MoDNR REQUIREMENTS.
8. STATE LAW REQUIRES THE PARTY RESPONSIBLE FOR A PETROLEUM PRODUCT SPILL IN EXCESS OF 50 GALLONS TO REPORT THE SPILL TO MoDNR (573–634–2436) AS SOON AS PRACTICAL AFTER DISCOVERY. FEDERAL LAW REQUIRES THE RESPONSIBLE PARTY TO REPORT ANY RELEASE OF OIL IF IT REACHES OR THREATENS A SEWER, LAKE, CREEK, STREAM, RIVER, GROUNDWATER, WETLAND, OR AREA, LIKE A ROAD DITCH, THAT DRAINS INTO ONE OF THE ABOVE.
9. SUFFICIENT TEMPORARY TOILET FACILITIES TO SERVE THE NUMBER OF WORKERS ON THE SITE SHALL BE PROVIDED. THE FACILITIES SHALL BE SERVICED FREQUENTLY TO MAINTAIN A SANITARY CONDITIONS.

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Campground Loop 4 Upgrades

Montauk State Park
345 County Road 6670

Salem, Missouri

PROJECT # X2203-01
SITE # 5307
FACILITY # 7815307049

REVISION:
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REVISION:
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REVISION:
DATE:
ISSUE DATE: 01/13/2023

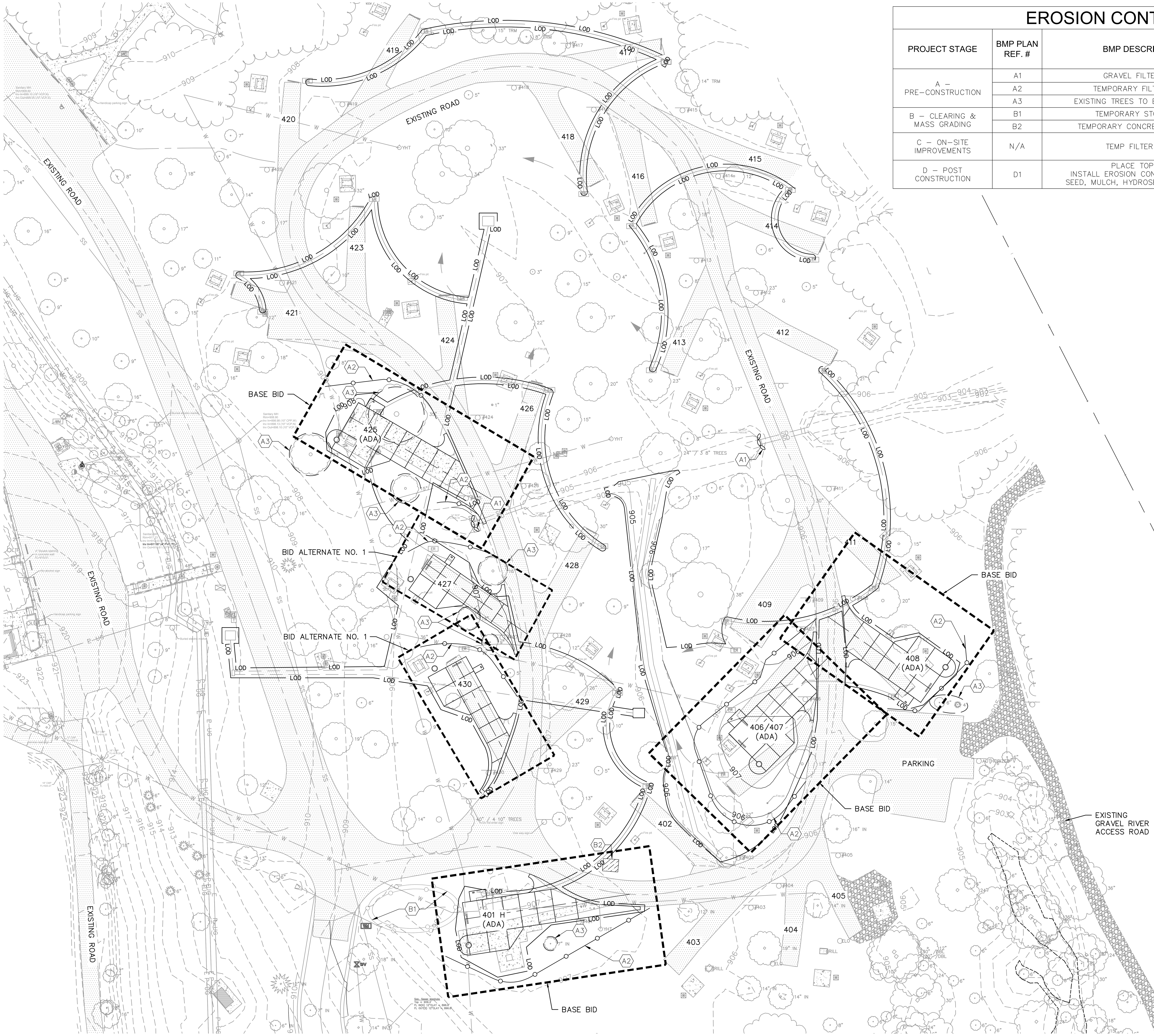
CAD FILE: X2203-01-5307-7815307049
DRAWN BY: RPJ
CHECKED BY: JKE
DESIGNED BY: RPJ

SHEET TITLE:

Sediment, Erosion Control and Demolition Plan

SHEET NUMBER:

C-200



EROSION CONTROL PHASING CHART

PROJECT STAGE	BMP PLAN REF. #	BMP DESCRIPTION	REMOVE AFTER STAGE	NOTES:
A – PRE-CONSTRUCTION	A1	GRAVEL FILTER BAG	D	SEE DETAIL SHEET C-402
	A2	TEMPORARY FILTER SOCK	D	SEE DETAIL SHEET C-402
	A3	EXISTING TREES TO BE PRESERVED	D	SEE DETAIL SHEET C-402
B – CLEARING & MASS GRADING	B1	TEMPORARY STOCK PILE	C	SEE APPROX. LOCATION ON THIS SHEET
	B2	TEMPORARY CONCRETE WASHOUT	C	SEE DETAIL SHEET C-402
C – ON-SITE IMPROVEMENTS	N/A	TEMP FILTER SOCK	D	ADD FILTER SOCK AS NEEDED TO AVOID SEDIMENT LEAVING THE SITE.
D – POST CONSTRUCTION	D1	PLACE TOPSOIL, INSTALL EROSION CONTROL MATTING, SEED, MULCH, HYDROSEED, LANDSCAPE	N/A	ESTABLISH PERENNIAL VEGETATION WITH A 70% DENSITY OVER 100% OF DISTURBED AREA. REFERENCE LANDSCAPE PLANS.

EROSION CONTROL LEGEND

- LOD — LIMITS OF CONSTRUCTION/DISTURBANCE
- COMPOST FILTER SOCK
- GRAVEL FILTER BAGS
- INSTALL CONCRETE WASHOUT
- DESIGNATED WETLANDS

NOTES:
CONTRACTOR SHALL COORDINATE WITH ENGINEER/OWNER PRIOR TO TREE REMOVAL BEYOND WHAT IS SHOWN ON THESE PLANS.

ANY TREES WITHIN, OR IMMEDIATELY ADJACENT TO, THE LIMITS OF DISTURBANCE THAT ARE NOT INDICATED TO BE SAVED SHALL BE REMOVED.

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PROJECT # X2203-01
SITE # 5307
FACILITY # 7815307049

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REVISION: ______ DATE: ______
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ISSUE DATE: 01/13/2023

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DRAWN BY: RPJ
CHECKED BY: JKE
DESIGNED BY: RPJ

SHEET TITLE:
Sediment and Erosion Control Plan

SHEET NUMBER:
C-201

5 OF 17 SHEETS
01/13/2023

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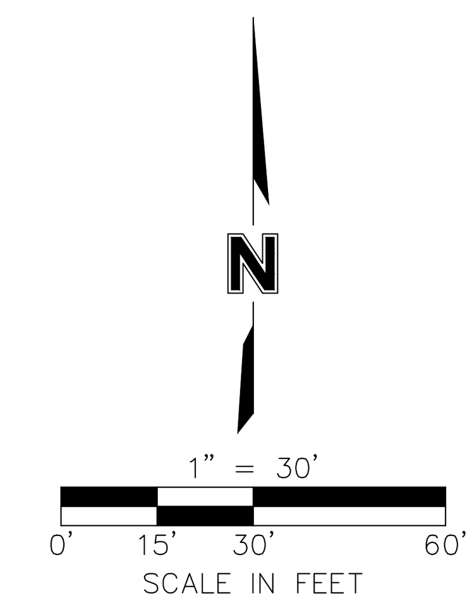

GRADING LEGEND

— — 900 — —	Ex. Contour
—— 900 ——	Prop. Contour
TP=900.00	Top of Pavement
GR=900.00	Finished Grade
- - - - - - - -	Wetlands
ME	Match Existing

GRADING NOTES:

1. BASIS OF BEARINGS: GRID NORTH BASED ON MISSOURI STATE PLANE COORDINATE SYSTEM 1983 (2401 MO EAST) BY USE OF GPS OBSERVATION USING OPUS SOLUTION. DATUM: ELEVATIONS BASED ON NAVD 88 BY USE OF GPS OBSERVATION USING OPUS SOLUTION (GEOID 12A).

2. STRIPPINGS ARE TO BE STOCKPILED ON-SITE AS DIRECTED BY THE ENGINEER. FOLLOWING THE COMPLETION OF THE GRADING, THIS TOPSOIL SHALL BE USED AS FILL MATERIAL ON ALL LANDSCAPED AREAS. IF STOCKPILE IS INACTIVE FOR MORE THAN 14 DAYS, STABILIZE OR PROTECT THE PERIMETER AS PER STATE OF MISSOURI REQUIREMENTS OR AS REQUIRED BY THE SWPPP.

3. ALL HERBACEOUS VEGETATION SHALL BE REMOVED FROM WITHIN THE LIMITS OF THE GRADING AND REDISTRIBUTED WITH THE TOPSOIL AS OUTLINED IN NOTE #2.

4. CONTRACTOR SHALL USE CAUTION AROUND ANY EXISTING UTILITIES LOCATED ON SITE. THEY SHALL BE RESPONSIBLE FOR THE REPAIRS OF SUCH STRUCTURES WHEN BROKEN OR OTHERWISE DAMAGED BY THE NEW CONSTRUCTION.

5. THE PROPOSED CONTOURS REPRESENT TOP OF SLAB IN PAVEMENT AREAS AND FINISHED GRADE IN ALL OTHER AREAS. QUANTITIES DO NOT TAKE INTO ACCOUNT CORE-OUT OR ANY OVER-EXCAVATION.

6. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITY PIPES AND STRUCTURES SHOWN ON THESE PLANS WERE OBTAINED BY A SEARCH OF AVAILABLE RECORDS AND TO THE BEST OF OUR KNOWLEDGE CONSTITUTES ALL KNOWN FACILITIES. HOWEVER, THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT ANY EXISTING UTILITIES OR STRUCTURES LOCATED AT THE WORK SITE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT UNDERGROUND LOCATE SERVICE IN ADVANCE OF ANY EXCAVATION FOR THE MARK-OUT OF THE LOCATION OF UTILITIES AND NOTIFICATION OF COMMENCEMENT OF WORK.

7. CONTRACTOR SHALL UTILIZE PRIVATE UTILITY LOCATOR TO LOCATE AND MARK EXISTING UTILITIES WITHIN THE PROJECT AREA. CONTRACTOR IS RESPONSIBLE FOR ALL COSTS AND COORDINATION ASSOCIATED WITH THIS.

8. BEFORE EXCAVATING FOR THIS CONTRACT, THE CONTRACTOR SHALL FIELD VERIFY LOCATION OF UNDERGROUND UTILITIES. CONTRACTOR SHALL MAKE EXPLORATION EXCAVATIONS AND LOCATE EXISTING UNDERGROUND UTILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS IF REVISIONS ARE NECESSARY BECAUSE OF ACTUAL LOCATION OF EXISTING FACILITIES.

9. CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN AND ANY OTHER EXISTING LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS.

10. CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE SEDIMENT CONTROL BARRIERS FOR A PERIOD OF 1 YEAR OR UNTIL THEY ARE RELEASED FROM THIS RESPONSIBILITY BY THE ENGINEER, WHICH EVER PERIOD IS SHORTER.

11. ALL ITEMS REMOVED SHALL BE DISPOSED OFF SITE BY THE CONTRACTOR AS PER STATE OF MISSOURI REQUIREMENTS.

12. IN ALL LOCATIONS WHERE NEW PAVEMENT ABUTS EXISTING, SAW CUT EXISTING PAVEMENT AS NECESSARY TO PROVIDE A SMOOTH TRANSITION AT THE JOINT. MATCH EXISTING GRADES AT THE JOINT IN ALL LOCATIONS.

13. CONTRACTOR SHALL FINISH GRADE SLOPES AS SHOWN NO STEEPER THAN 1 FOOT VERTICAL IN 3 FEET HORIZONTAL.

BENCHMARKS:

#1. EXISTING SANITARY SEWER MANHOLE RIM ELEV. = 909.44

#2. EXISTING SANITARY SEWER MANHOLE RIM ELEV. = 907.40

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CAD FILE: X2203-01-5307-7815307049
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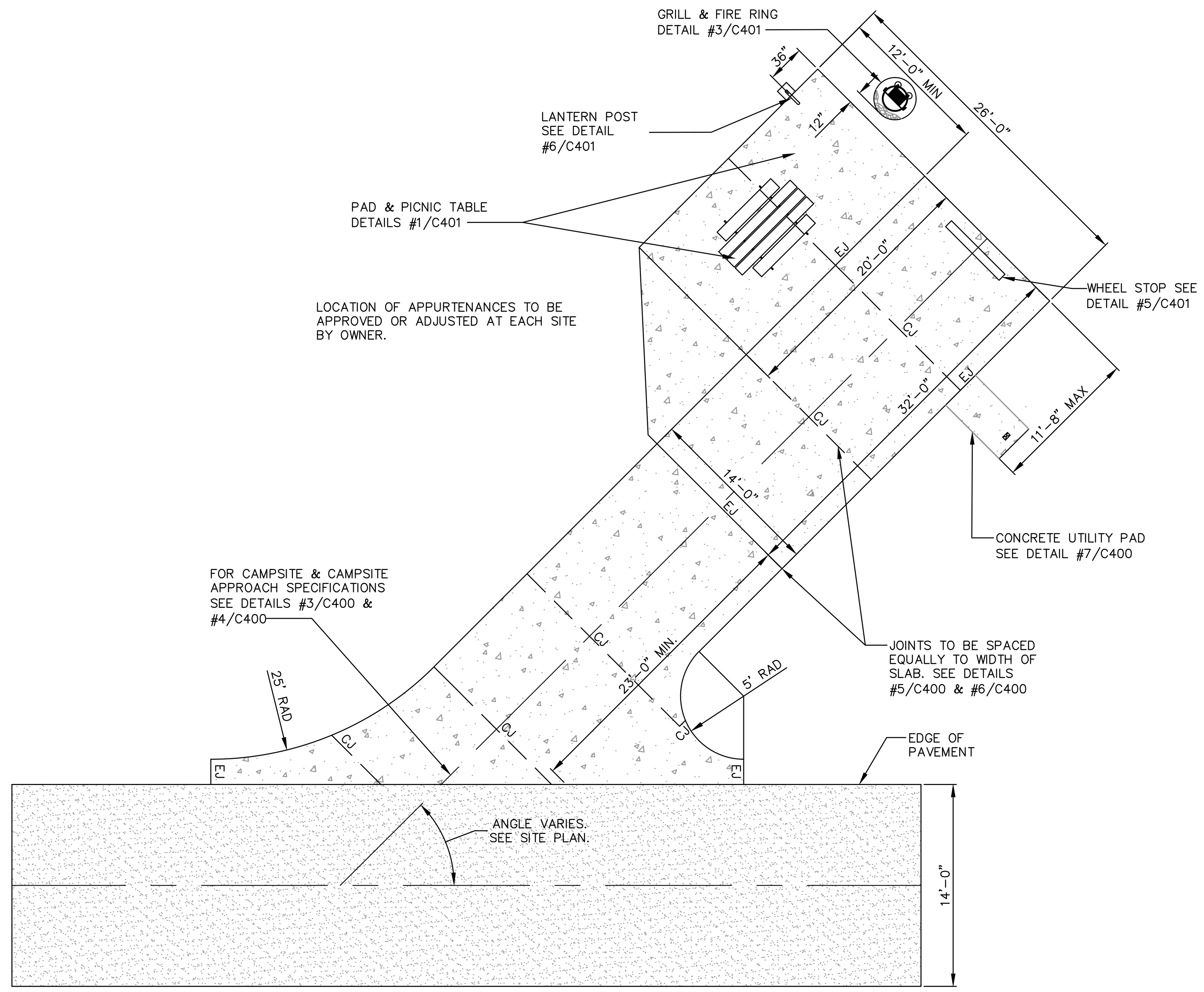
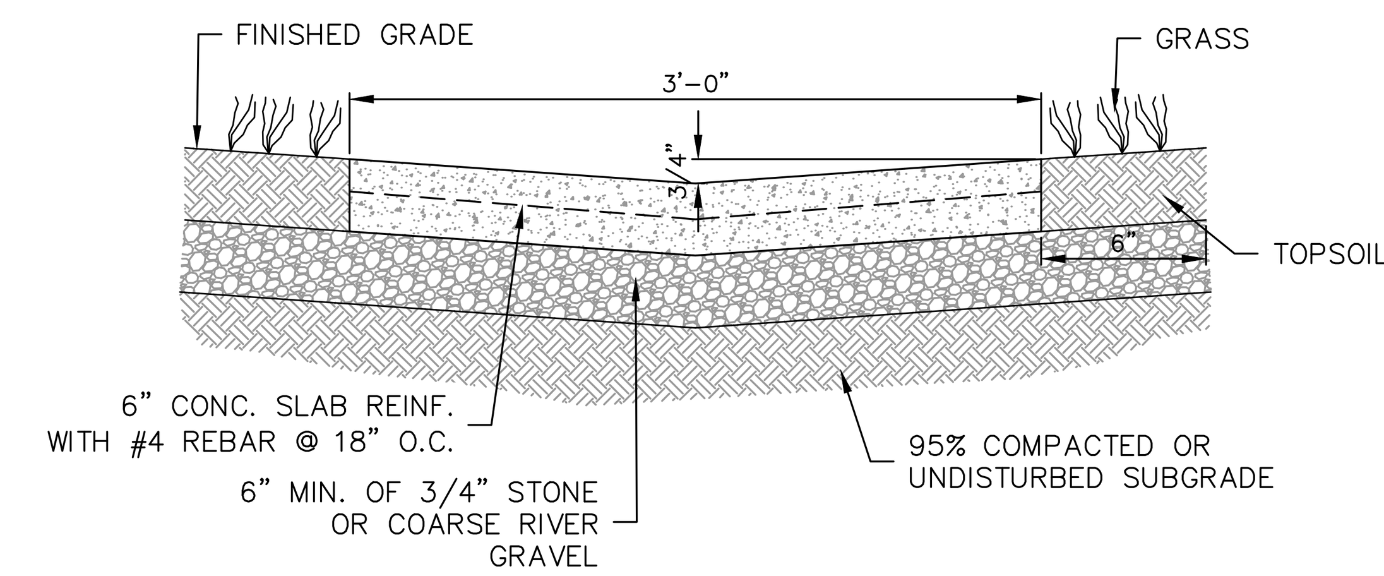
SHEET TITLE:
Site Grading

SHEET NUMBER:
C-300



2 C400 TYPICAL STANDARD CAMPSITE LAYOUT
NTS



8 C400 LOW FLOW CHANNEL
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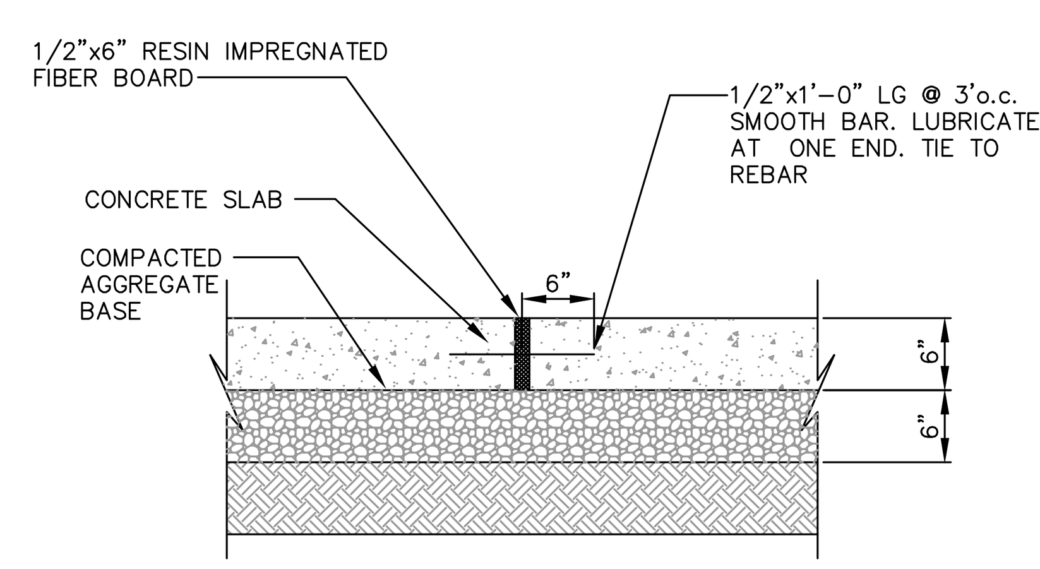
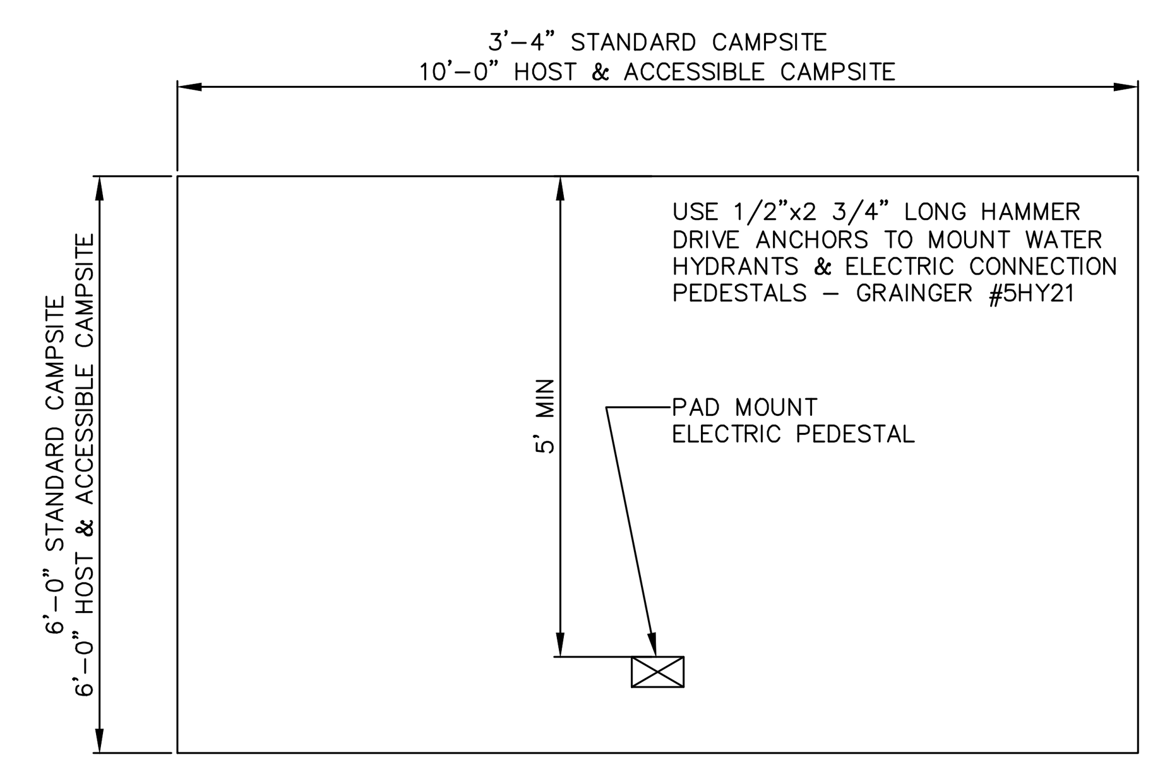


6 C400 EXPANSION JOINT (EJ)
NTS



7 C400 UTILITY PAD
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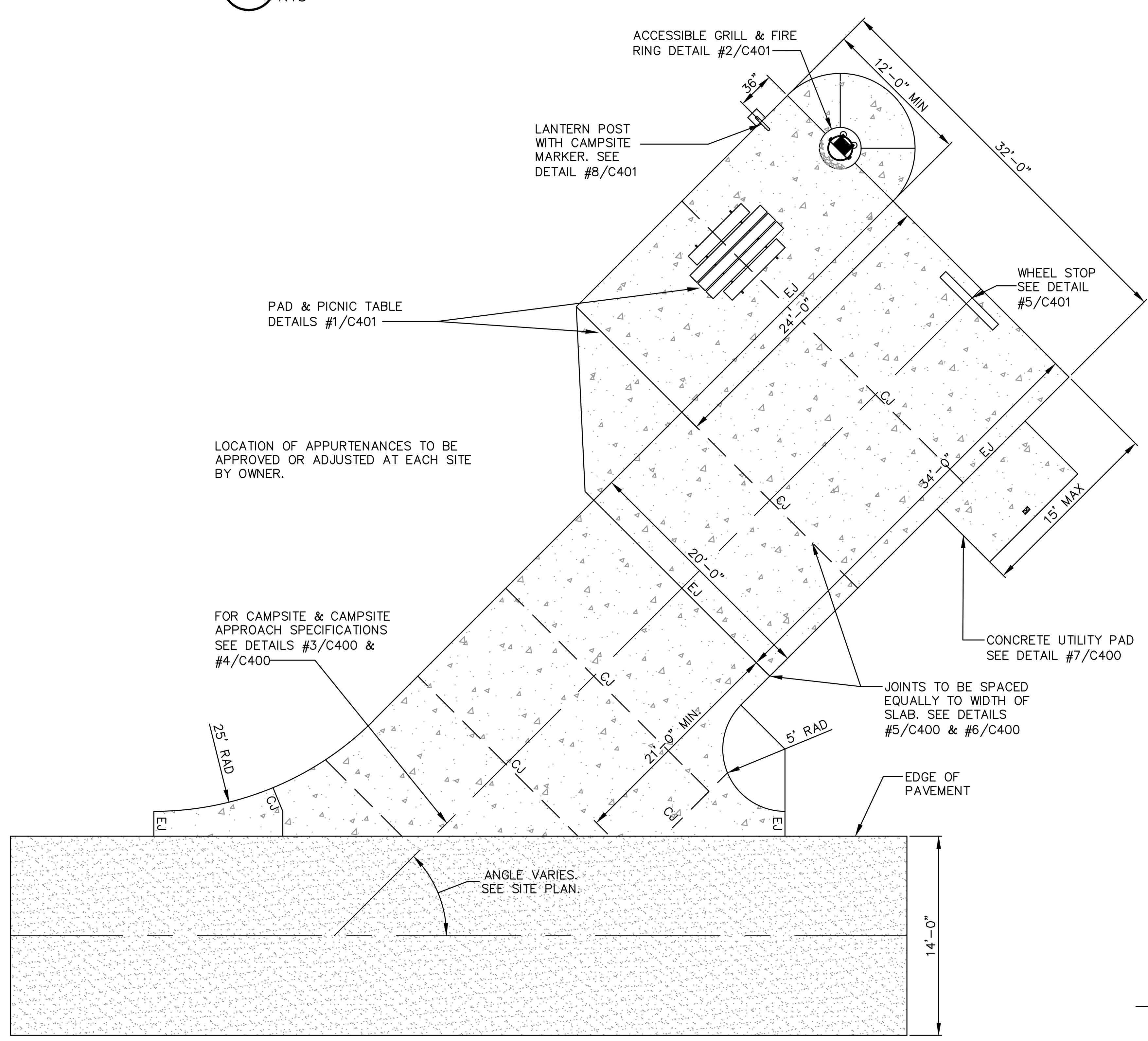

1 C400 HOST & ACCESSIBLE CAMPSITE LAYOUT
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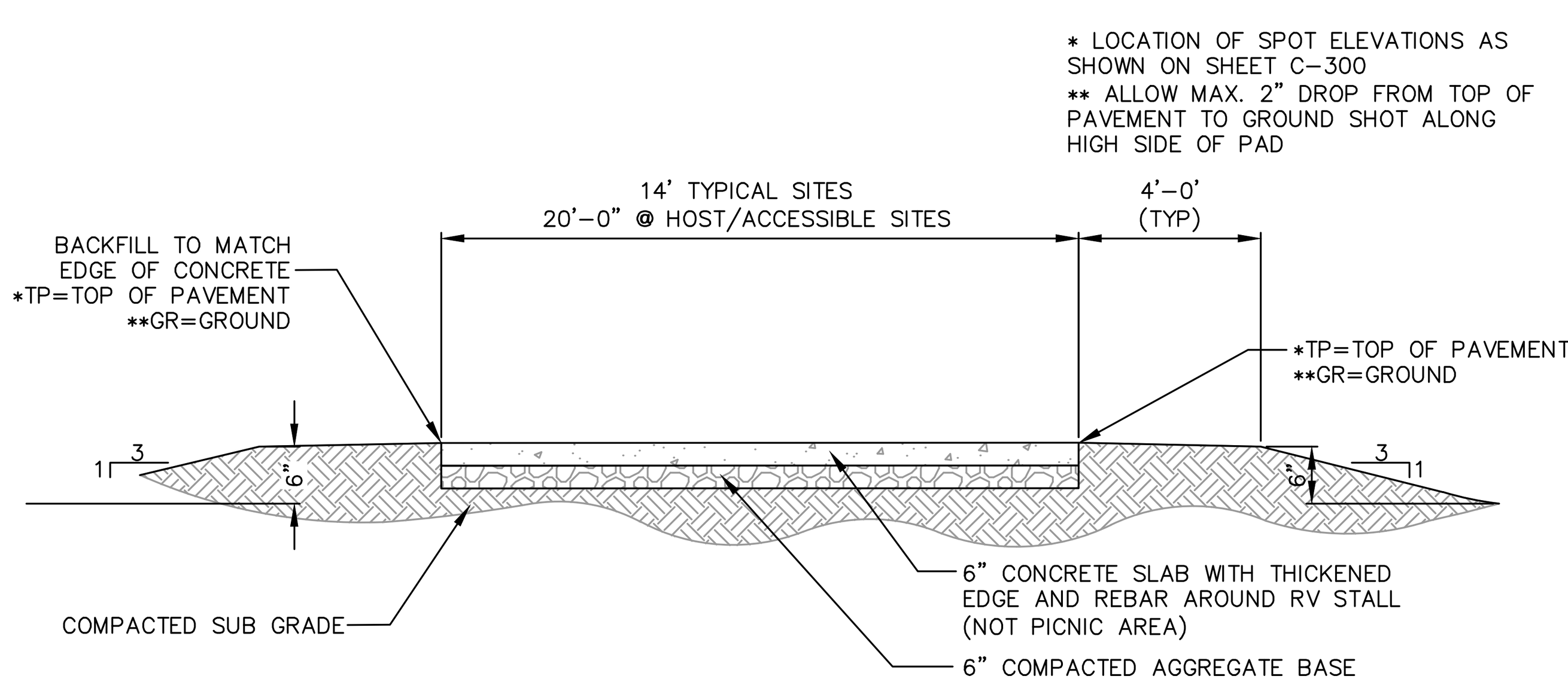
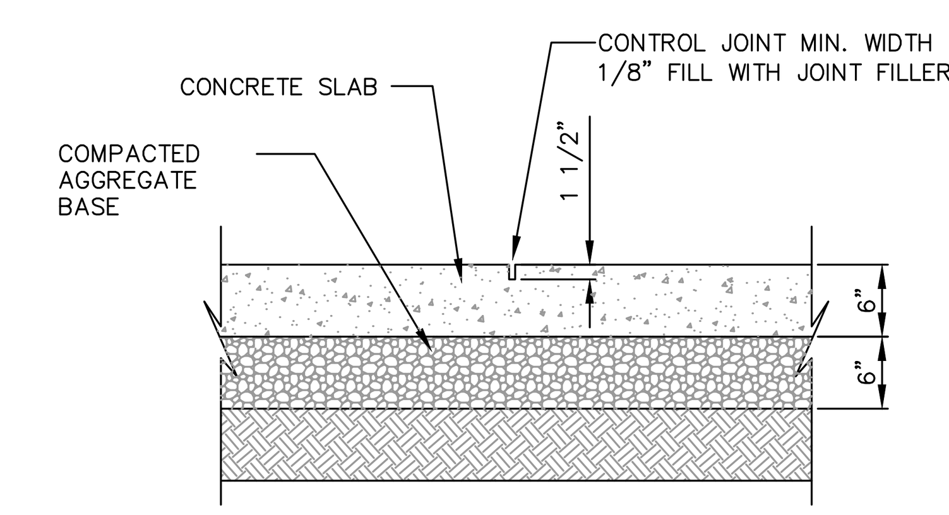
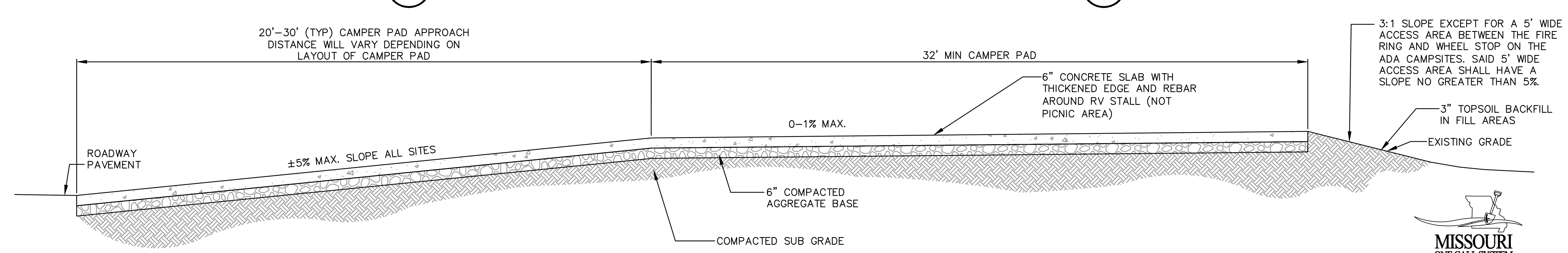


4 C400 CAMPSITE CROSS SECTION
NTS



5 C400 CONTROL JOINT (CJ)
NTS



3 C400 CAMPSITE LONGITUDINAL ELEVATION
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DRAWN BY: RPJ
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DESIGNED BY: RPJ

SHEET TITLE:
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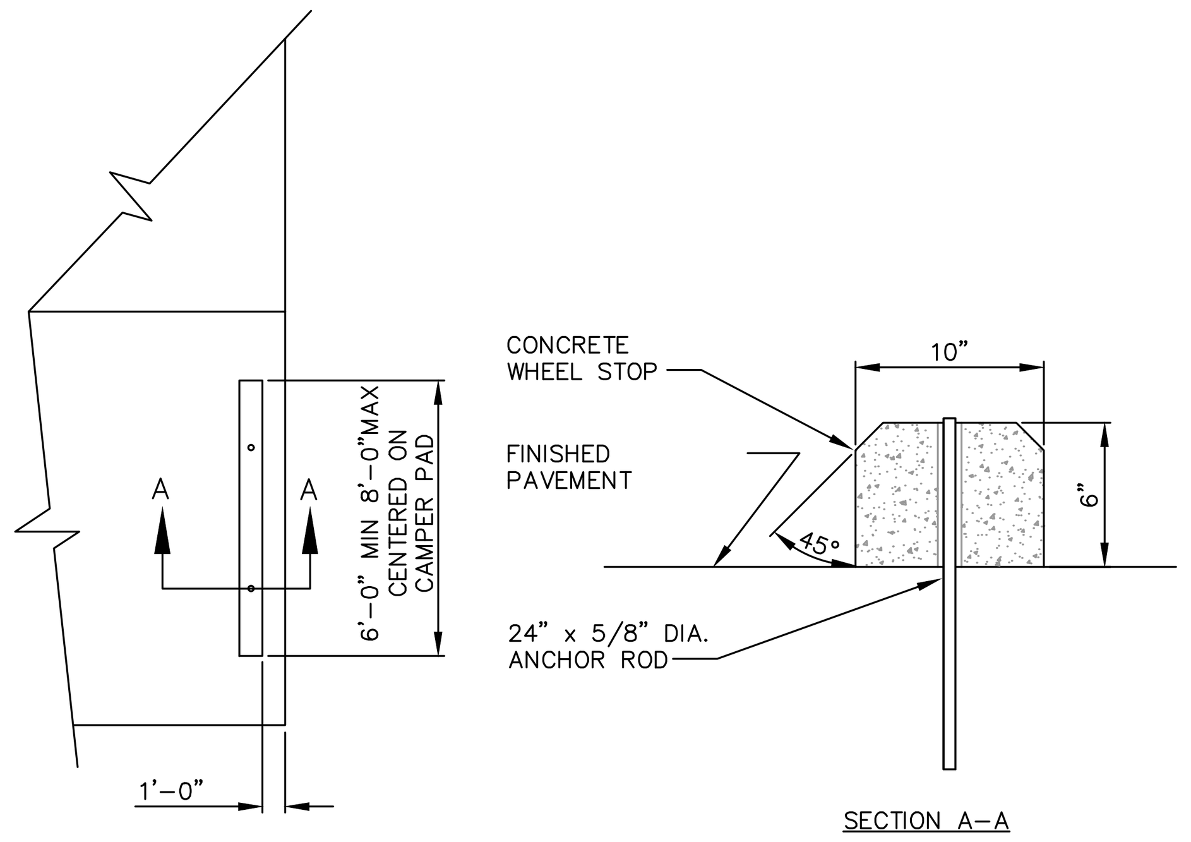

5 C401 WHEEL STOP DETAIL
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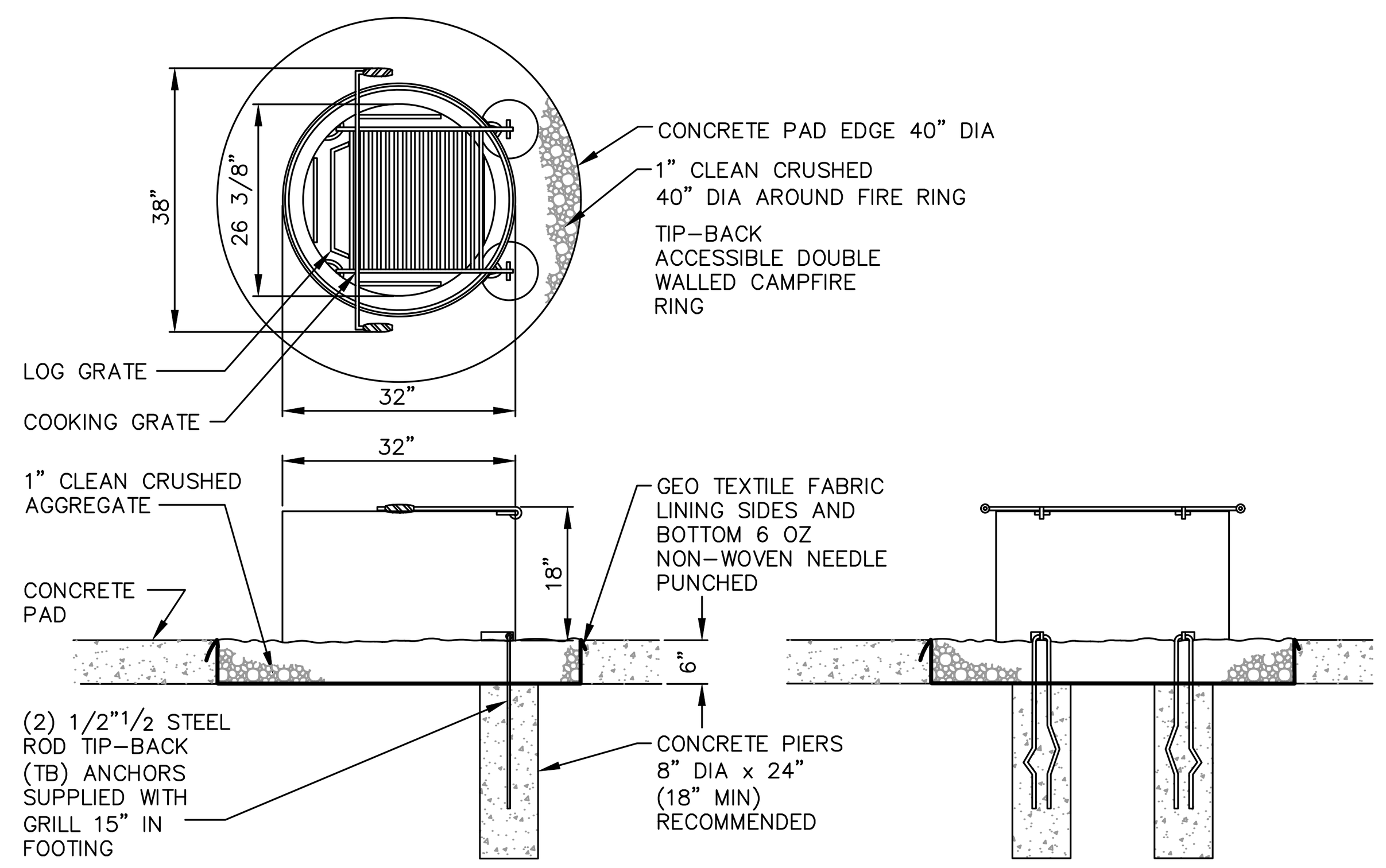

2 C401 ACCESSIBLE GRILL & FIRE RING
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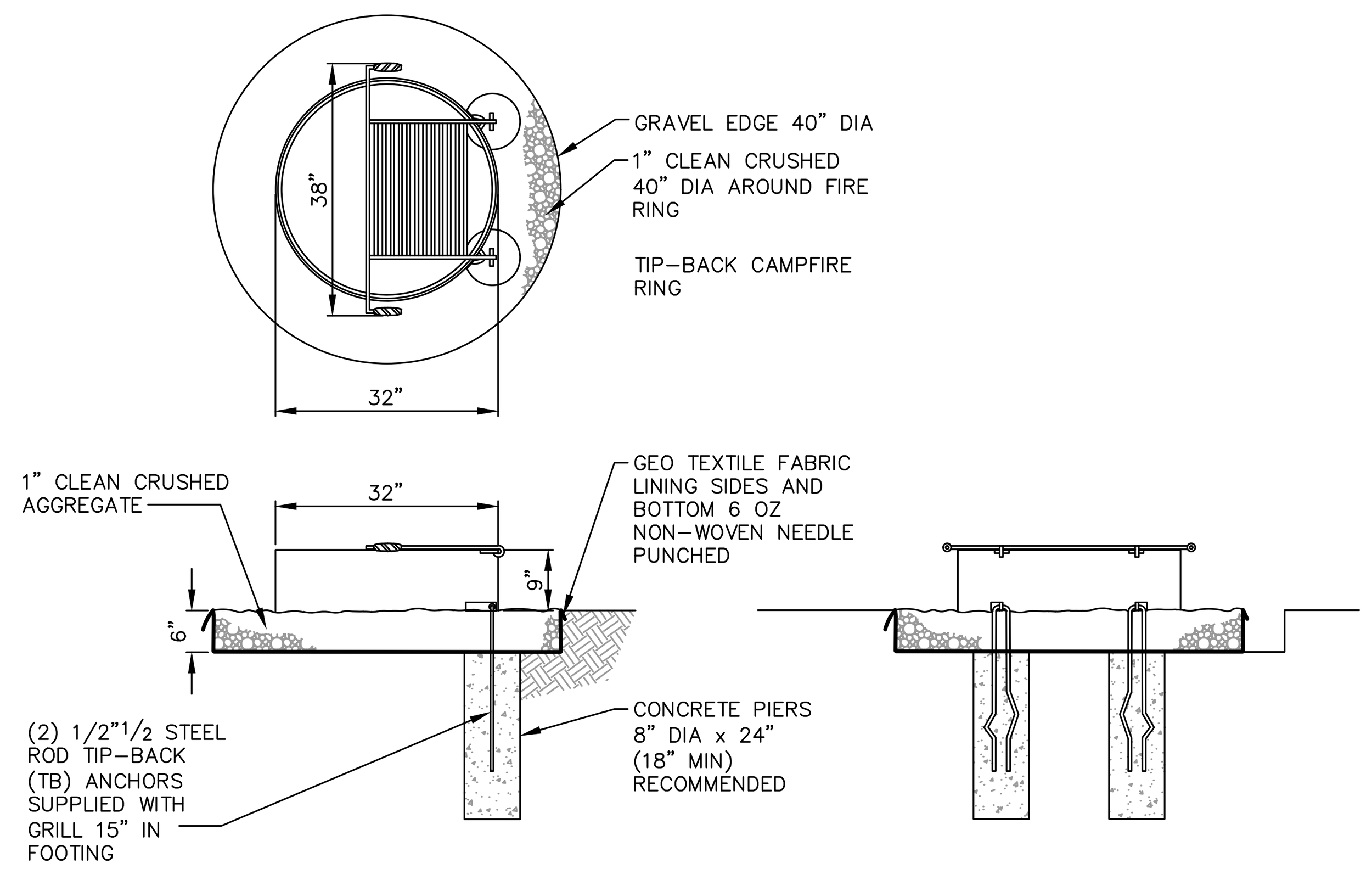

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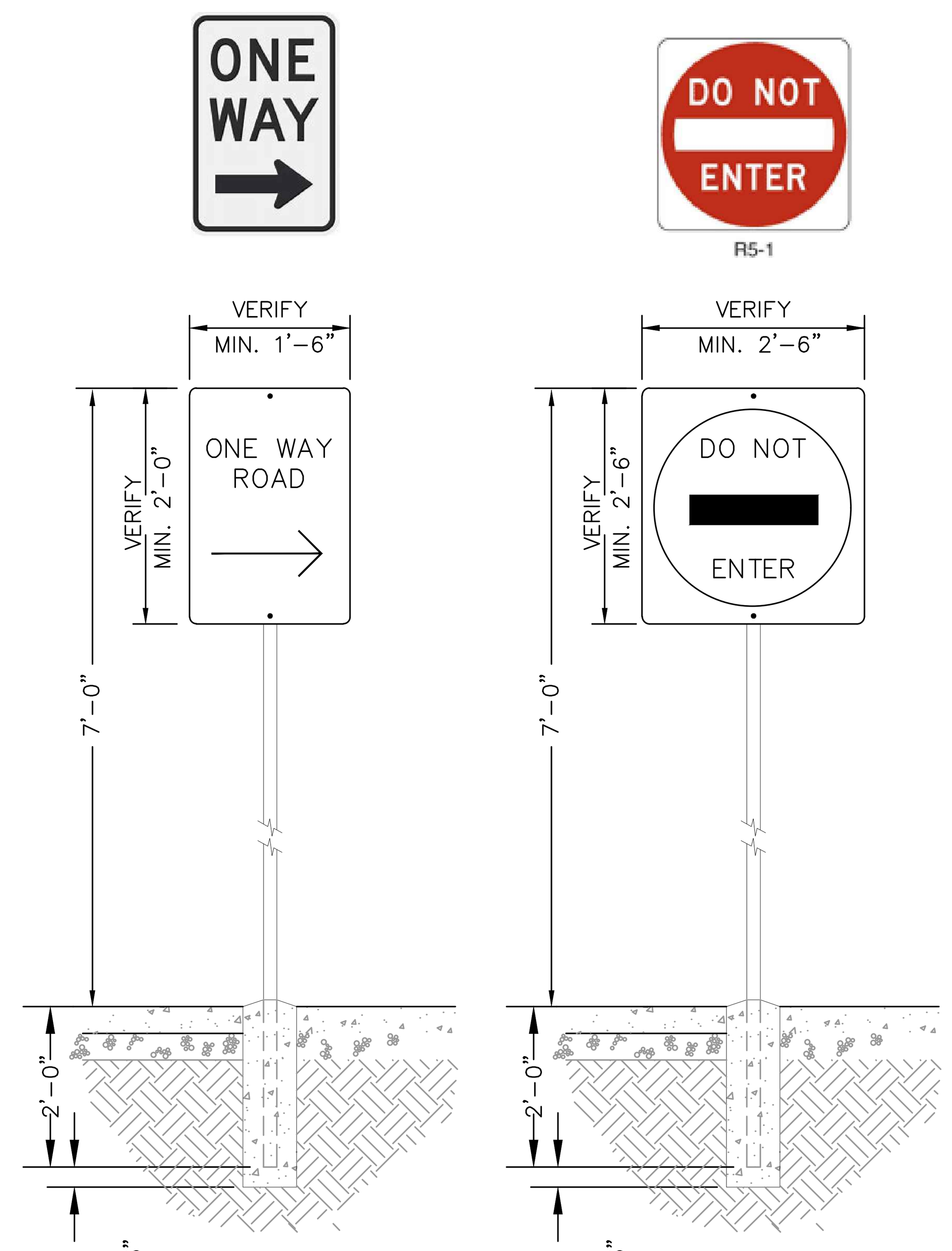

4 C401 ONE WAY SIGN DETAILS
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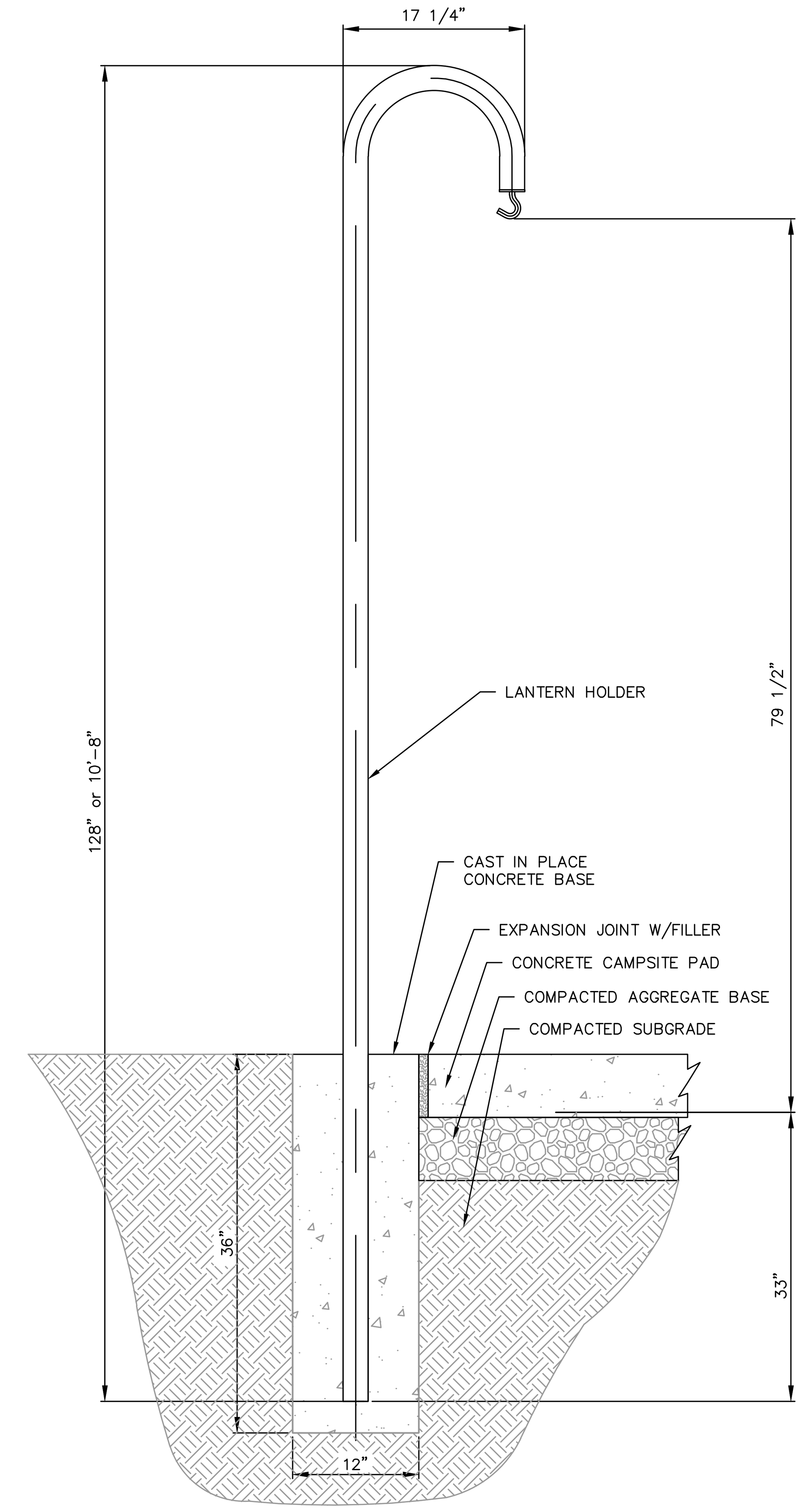

6 C401 LANTERN POST
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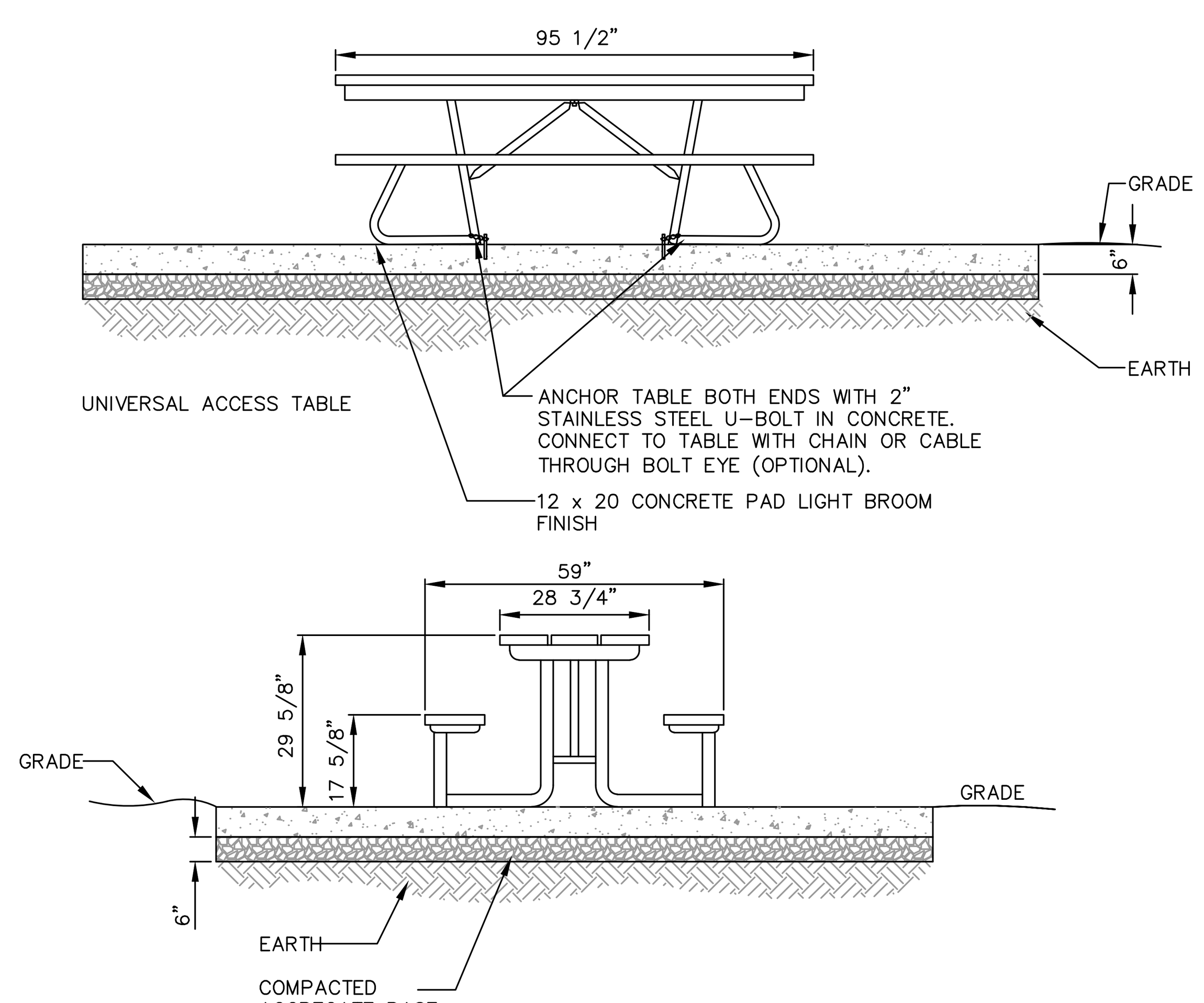

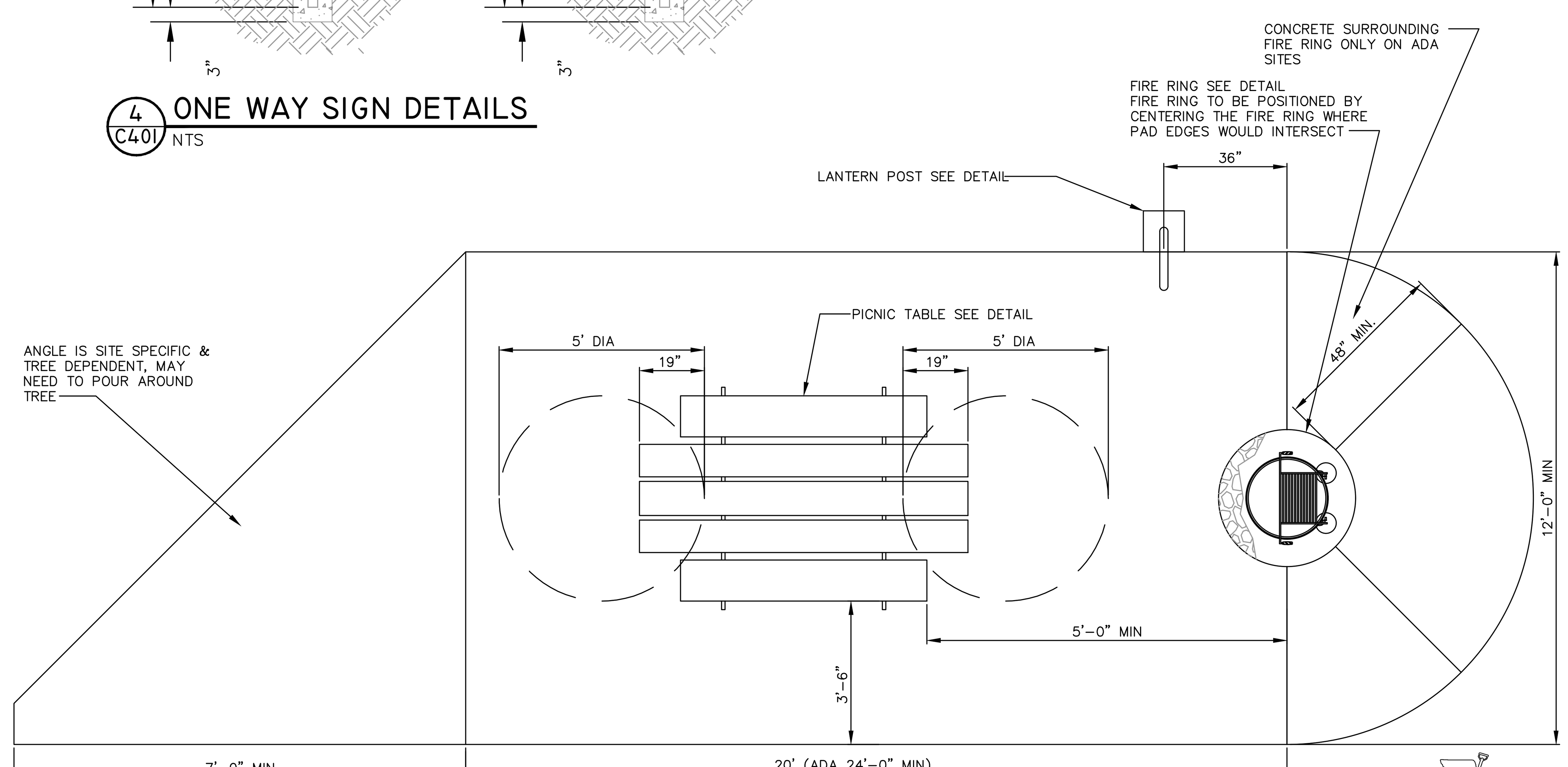

1 C401 PAD & PICNIC TABLE DETAILS
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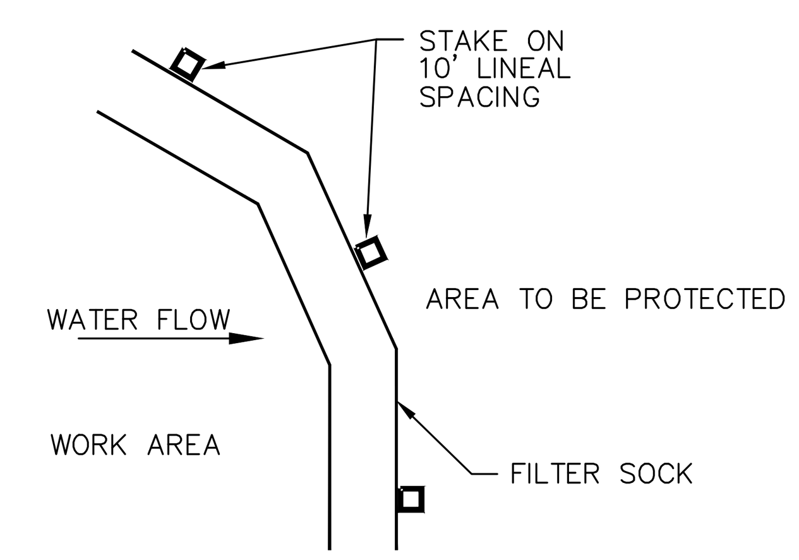
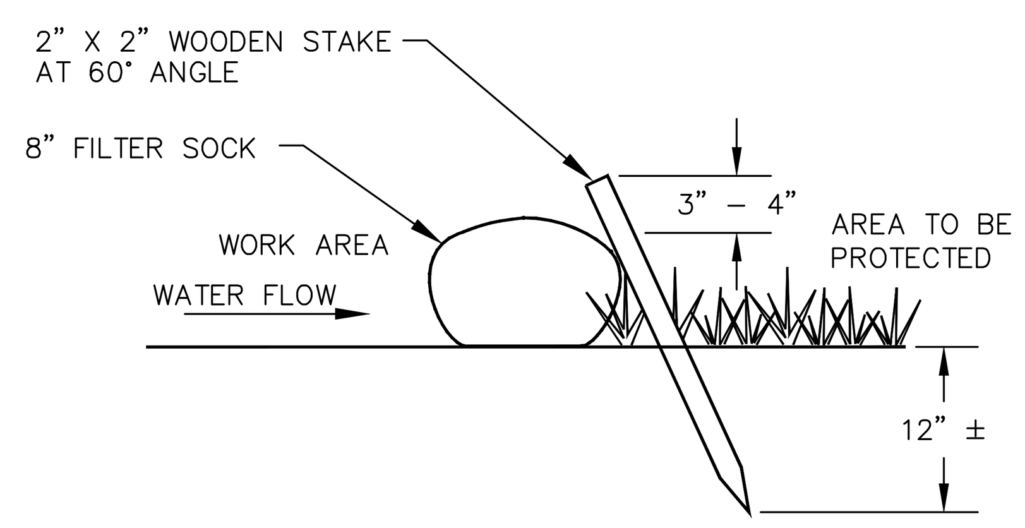


PLAN VIEW

NOTES:

1. COMPOST FILTER SOCK SHALL MEET THE REQUIREMENTS OF MODOT SECTION 806.8.6.4.8. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL BEFORE INSTALLING SOCK.
2. FILTER SOCK DEPICTED IS FOR MINIMUM SLOPES. GREATER SLOPES MAY REQUIRE LARGER SOCKS PER ENGINEER.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

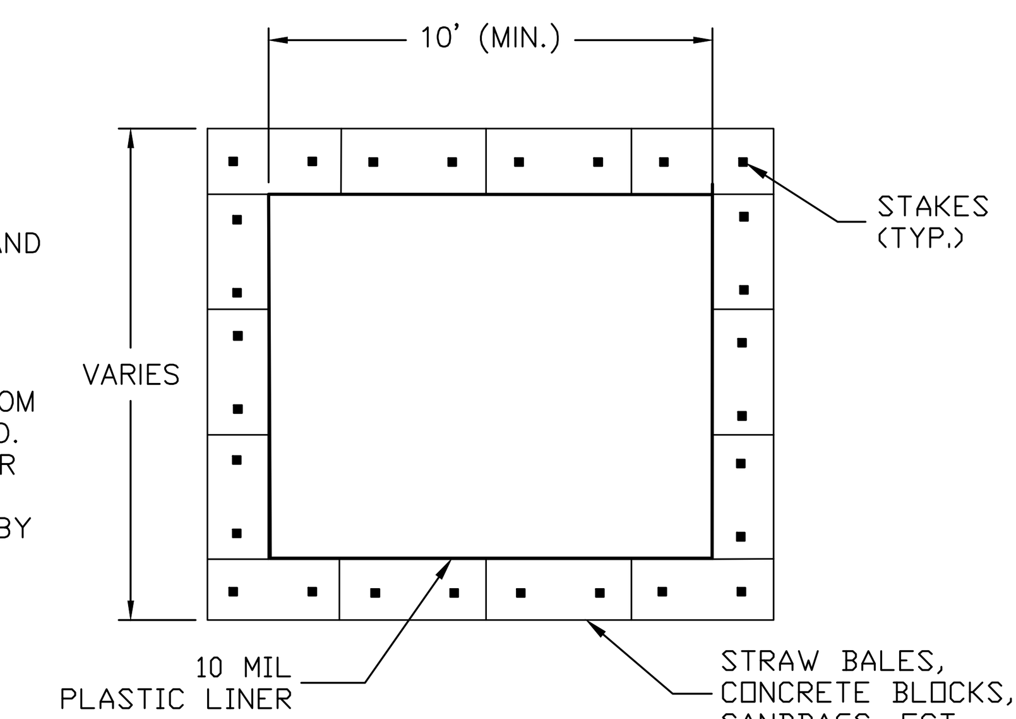


SECTION VIEW

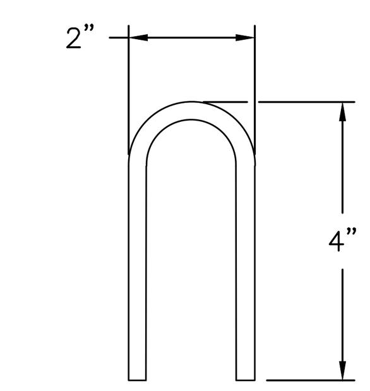
3
C402 COMPOST FILTER SOCK DETAILS
NTS

NOTES:

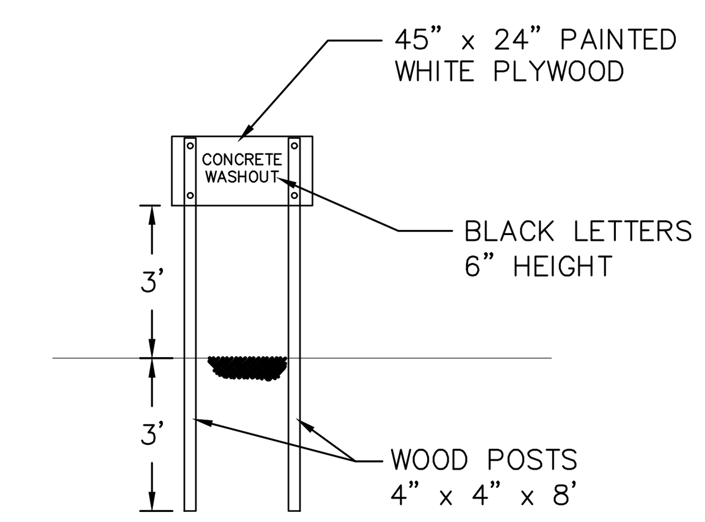
1. ACTUAL LAYOUT LOCATIONS & NUMBER OF WASH-OUTS TO BE DETERMINED BY CONTRACTOR IN FIELD.
2. THE CONCRETE WASH-OUT SIGN SHALL BE INSTALLED WITHIN 30 FT. OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. WASH-OUTS SHALL BE LOCATED A MINIMUM OF 50 FT. FROM STORM DRAINS, OPEN DRAINAGE FACILITIES AND WATER COURSES. AVOID MIXING EXCESS AMOUNTS OF FRESH CONCRETE.
4. INSTALL BEFORE THE START OF ANY CONCRETE ACTIVITIES OR DELIVERIES.
5. INSPECT EVERY WEEK AND AFTER ½" STORM EVENT. REMOVE AND DISPOSE OF HARDENED CONCRETE AND RETURN THE FACILITY TO A FUNCTIONAL CONDITION. WASH-OUT FACILITIES MUST BE CLEANED, OR NEW FACILITIES MUST BE CONSTRUCTED AND READY FOR USE ONCE THE WASH-OUT IS 75% FULL.
6. WHEN TEMPORARY CONCRETE WASH-OUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE SHOULD BE REMOVED AND DISPOSED. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASH-OUT FACILITIES SHALL BE REMOVED FROM THE SITE AND DISPOSED. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE WASH-OUT SHALL BE BACKFILLED AND REPAIRED.



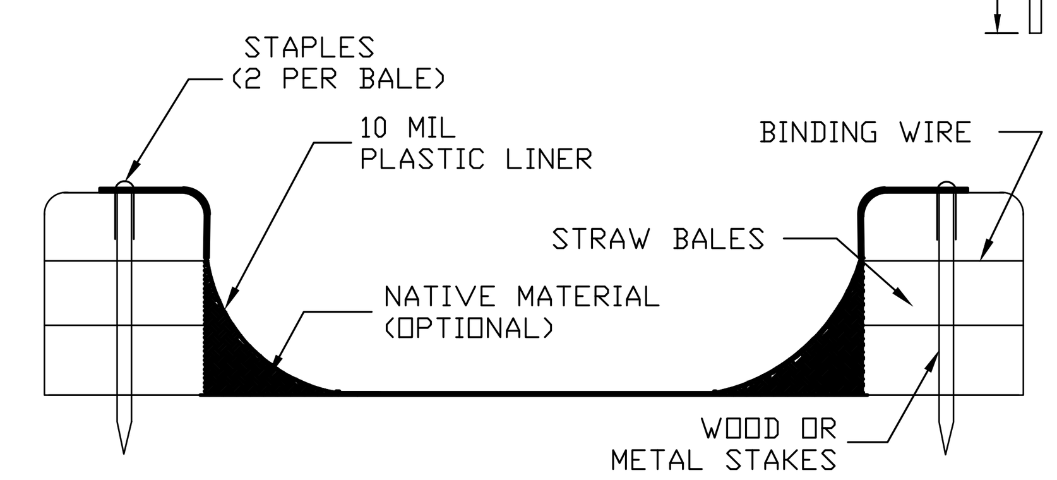
PLAN



STAPLE

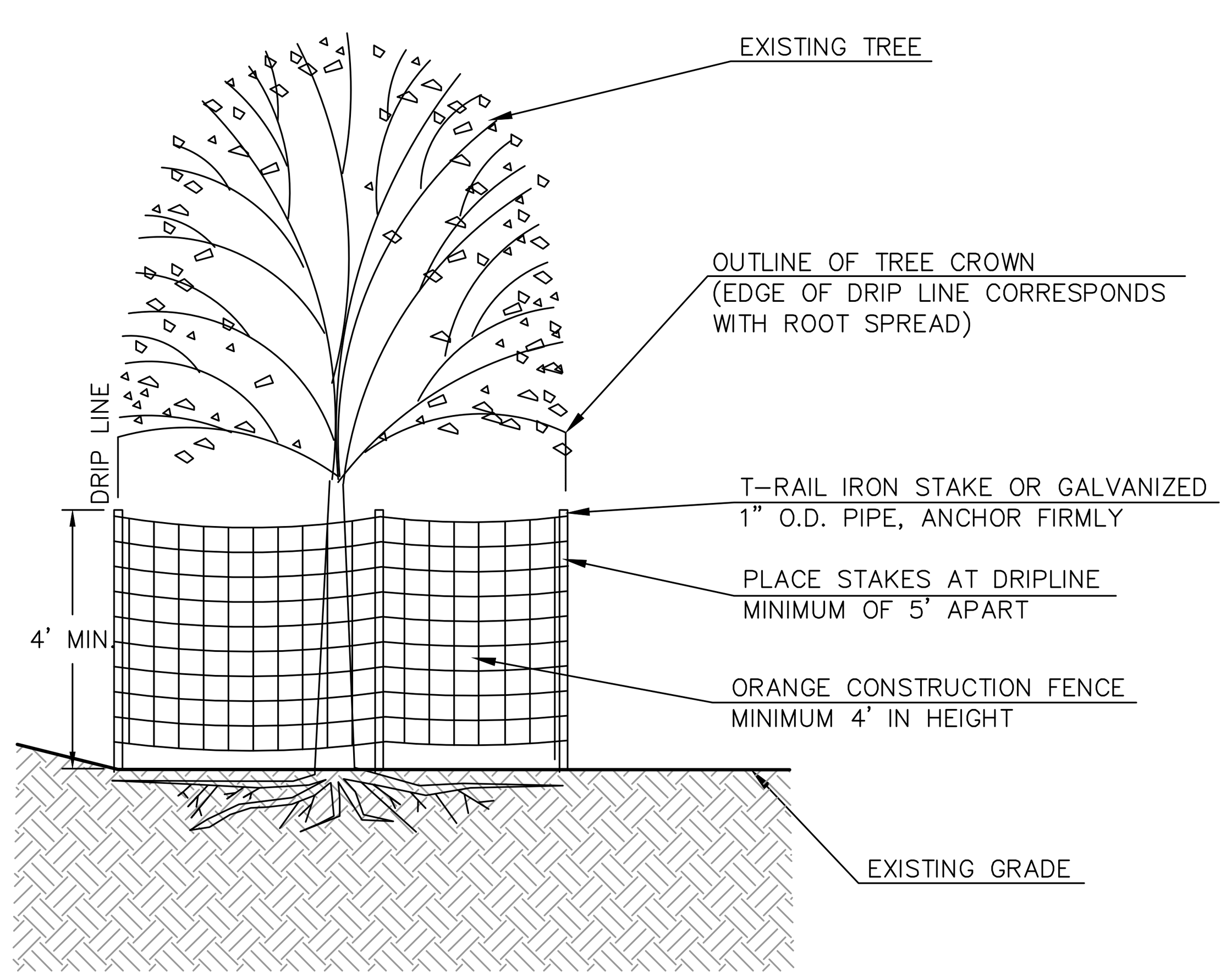


WASHOUT SIGN



SECTION

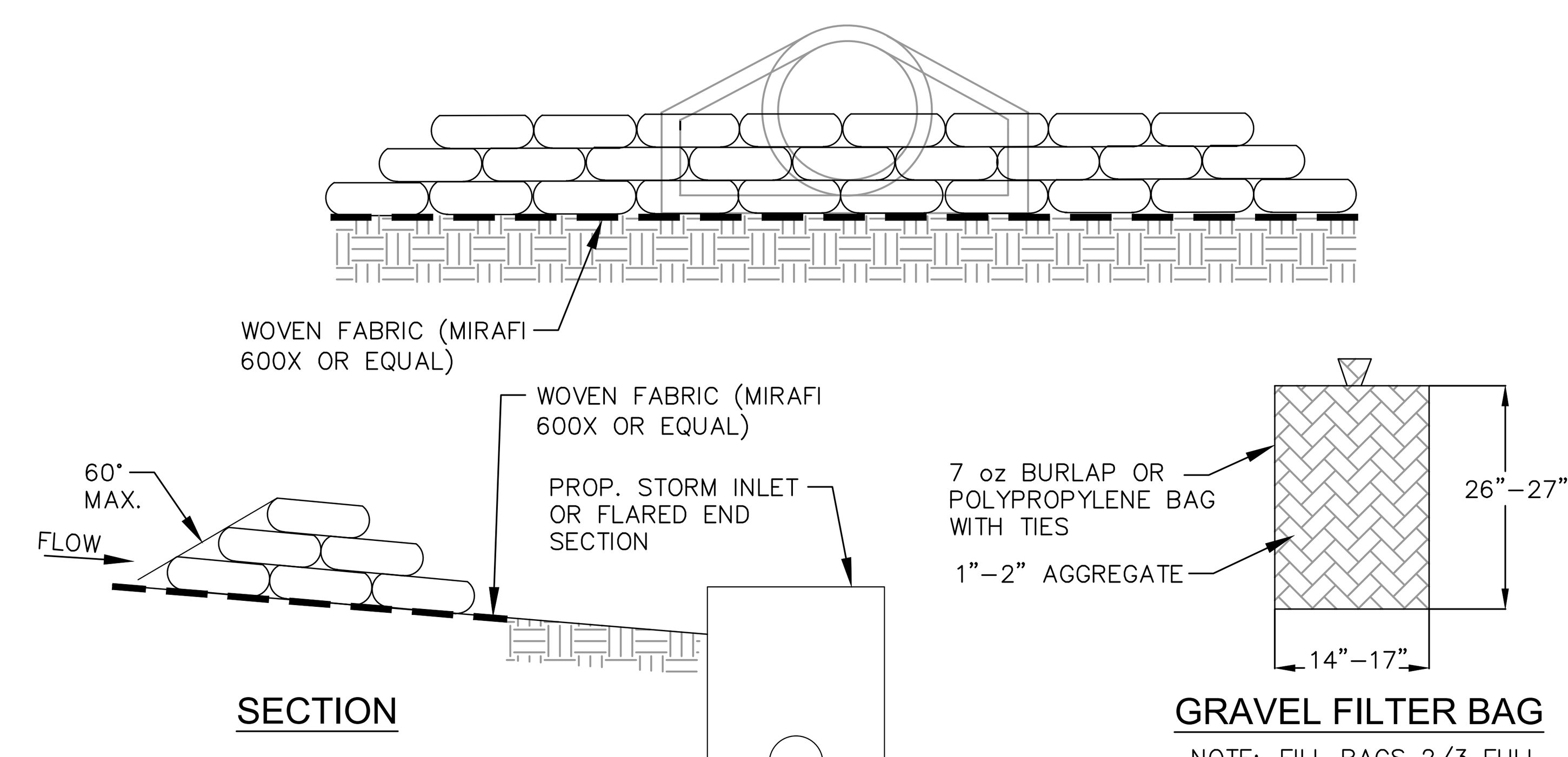
4
C402 CONCRETE WASHOUT DETAIL
NTS



TREE PROTECTION NOTES:

1. PROTECTION OF TREES MUST REMAIN IN PLACE THROUGH THE ENTIRE DEMOLITION, CLEARING, GRADING AND CONSTRUCTION PROCESS. WHERE THE PLACEMENT OF FENCE IS INTERRUPTED BY EXISTING STRUCTURES, ADDITIONAL FENCING SHALL BE SET BETWEEN THE STRUCTURES AND THE TREES AS CLOSE TO THE STRUCTURES AS POSSIBLE. AFTER THE STRUCTURE IS DEMOLISHED THE FENCE SHALL BE RESET AT THE DRIPLINE.
2. WHERE EXCAVATION OR CONSTRUCTION WITHIN THE CRITICAL ROOT ZONE OF A TREE IS NECESSARY AND LESS THAN 50% OF THE ROOT SYSTEM WILL BE AFFECTED, ROOT PRUNING/CUTTING CAN OCCUR.
3. CUT ROOTS CLEANLY PRIOR TO MECHANICAL EXCAVATION NEAR TREE TO MINIMIZE DAMAGE TO REMAINING ROOTS AND REDUCE THE RISK OF CAUSING DISEASE, DECAY AND INSTABILITY.
4. AS A TEMPORARY MEASURE, PLACE BURLAP MATERIAL AND/OR SPREAD MULCH OVER EXPOSED ROOTS AFTER CUTS ARE MADE AND BEFORE SOIL IS REPLACED. KEEP THIS MATERIAL DAMP UNTIL BACKFILLED TO PREVENT THE FINE ROOTS FROM DRYING AND DYING.
5. PROPOSED ROOT CUTS SHOULD BE MARKED IN THE FIELD AND REVIEWED BY THE CITY'S URBAN FORESTER OR AUTHORIZED REPRESENTATIVE AND/OR APPROPRIATE CONSULTANT PRIOR TO TRENCHING, EXCAVATING OR CUTTING TO DETERMINE THE IMPACT ON ANY STRUCTURAL CRITICAL ROOTS AND THE CLOSEST POINT TO TREE THAT SOIL MAY BE DISTURBED.
6. THE CONTRACTOR SHALL ARRANGE FOR THE CITY'S URBAN FORESTER OR AUTHORIZED REPRESENTATIVE AND/OR APPROPRIATE CONSULTANT TO BE ON-SITE DURING THE PROCESS TO MONITOR, PHOTOGRAPH AND DOCUMENT ALL ROOT CUTS.
7. ROOT PRUNING SHALL OCCUR ALONG OR BEHIND THE LINE OF A PLANNED EXCAVATION AND THEREFORE SHOULD COORDINATE WITH THE TREE PROTECTION FENCING.
8. ROOT PRUNING CAN BE ACCOMPLISHED WITH CIRCULAR SAWS OR VARYING TYPES AND/OR A ROTARY-TYPE STUMP GRINDER TO A DEPTH OF 18" OR TO THE MAXIMUM DEPTH OF THE REQUIRED GRADING CUT, WHICHEVER IS LESS. SAW BLADES AND GRINDER TEETH SHOULD BE SHARPENED PRIOR TO USE.
9. ROOT PRUNING CAN ALSO BE ACCOMPLISHED WITH THE AID OF A SUPERSONIC AIR TOOL AND A TRAINED OPERATOR.
10. THE EXACT LOCATION AND DEPTH OF ROOT PRUNING WILL BE DETERMINED DURING THE PRE-CONSTRUCTION MEETING. SPECIFIC EQUIPMENT AND METHODS WILL BE DETERMINED BY THE CITY'S URBAN FORESTER OR AUTHORIZED REPRESENTATIVE AND/OR APPROPRIATE CONSULTANT BASED UPON DEPTH AND TREE IMPACT.

1
C402 TREE PROTECTION DETAIL
NTS



SECTION

GRAVEL FILTER BAG

NOTE: FILL BAGS 2/3 FULL.
60 LBS MAX WEIGHT

2
C402 GRAVEL FILTER BAG DETAIL
NTS

MISSOURI ONE CALL SYSTEM
1-800-DIG-RITE or 811
www.mo1call.com

DWG: F:\2022\00501-01000\022-00567\40-Design\AutoCAD\Final Plans\Sheets\GNCV\X2203-01-5307-7815307049-C-402.dwg USER: rjungbauer
DATE: Jan 10, 2023 9:34am XREFS:

STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR

STATE OF MISSOURI
RICKY
HAASE
NUMBER
PE-2019017828
01/13/2023
PROFESSIONAL ENGINEER

olsson

Olsson, Inc. Engineering MO State Cert. of Authority #001592
Olsson, Inc. Landscape Architecture MO State Cert. of Authority #2005000285
550 St. Louis St.
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OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF
Natural Resources
Division of State Parks

Campground Loop 4 Upgrades

Montauk State Park
345 County Road 6670

Salem, Missouri

PROJECT # X2203-01
SITE # 5307
FACILITY #
7815307049

REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
ISSUE DATE: 01/13/2023

CAD FILE: X2203-01-5307-7815307049
DRAWN BY: RPJ
CHECKED BY: JKE
DESIGNED BY: RPJ

SHEET TITLE:
Details

SHEET NUMBER:
C-402

BUILDING CODE AND STANDARDS

2018 INTERNATIONAL BUILDING CODE (IBC 2018)
ASCE 7-16 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES

STRUCTURAL DESIGN LOADS:

DEAD LOAD	
PER EQUIPMENT MANUFACTURER	
LIVE LOADS	300 LBS. CONCENTRATED FORCE
SNOW DESIGN DATA	
GROUND SNOW LOAD, P_G	20 PSF
SNOW EXPOSURE FACOR, C_E	0.9
SNOW LOAD IMPORTANCE FACTOR, I_S	1.0
THERMAL FACTOR, C_T	1.2
WIND DESIGN DATA	
BASIC WIND SPEED, V_{ULT}/V_{ASD}	105 MPH / 81 MPH
RISK CATEGORY	I
WIND EXPOSURE	C
EARTHQUAKE DESIGN DATA	
SEISMIC DOES NOT GOVERN	
GEOTECHNICAL DESIGN DATA	
ALLOWABLE SOIL BEARING PRESSURE	2,500 PSF

MATERIAL DATA:

CONCRETE & REINFORCING	
CONCRETE WEIGHT	ALL CONCRETE SHALL BE NORMAL-WEIGHT UNLESS OTHERWISE NOTED.
C.I.P. CONCRETE STRENGTH (MIN f'c at 28 days)	4,000 PSI (AE)
MAX WATER/CEMENT RATIO	0.45 UNLESS OTHERWISE NOTED
CEMENT TYPE	PORTLAND TYPE I/II - ASTM C150
AGGREGATES	REGULAR WEIGHT HARDROCK TYPE - ASTM C33
ADMIXTURES	ASTM C494 AIR-ENTRAINMENT ASTM C260
REINFORCING STEEL	ASTM A615, GRADE 60, DEFORMED
WELDABLE REINFORCING STEEL	ASTM A706, GRADE 60, DEFORMED
WELDED WIRE REINFORCEMENT	ASTM A1064, PROVIDE SHEET-TYPE; ROLL-TYPE IS NOT ACCEPTABLE
STEEL	
ANGLES	ASTM A36
W SHAPES, WT SHAPES	ASTM A992
PLATES	ASTM A572, GRADE 50
HSS SQUARE TUBES	ASTM A500 GRADE C, F_y = 50 ksi
ANCHOR RODS	ASTM F1554, GRADE 55 WELDABLE
WASHERS FOR ANCHOR RODS	ASTM F844
HIGH STRENGTH BOLTS	ASTM F3125, GRADE 325 TYPE 1
WASHERS FOR HIGH STRENGTH BOLTS	ASTM F436
HEAVY HEX NUTS	ASTM A563
STICK ELECTRODES	AWS CLASS E70XX AWS E6010 OR E6011 (GALVANIZED SURFACES)

GENERAL NOTES

1. THE STRUCTURAL DRAWINGS ARE TO BE COORDINATED AND USED IN CONJUNCTION WITH THE CIVIL AND ELECTRICAL DRAWINGS. VERIFY ALL DIMENSIONS AND ELEVATIONS WITH GENERAL ARRANGEMENT DRAWINGS AND IMMEDIATELY NOTIFY THE STRUCTURAL ENGINEER OF ANY DISCREPANCIES.

2. OLSSON SHALL NOT BE RESPONSIBLE FOR, NOR HAVE CHARGE OF, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES FOR THE SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THIS PROJECT AND SHALL NOT BE RESPONSIBLE FOR CONTRACTOR'S FAILURE TO CARRY OUT HIS WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

3. OLSSON SHALL NOT BE RESPONSIBLE FOR, NOR HAVE CONTROL OVER, THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS, ANY OF THEIR AGENTS OR EMPLOYEES, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

4. THE CONTRACTOR SHALL PROVIDE AND BE RESPONSIBLE FOR ALL TEMPORARY SHORING AND BRACING REQUIRED FOR THE CONSTRUCTION OF THIS PROJECT. ALL SHORING AND BRACING MEMBERS AND CONNECTIONS SHALL BE OF SUFFICIENT STRENGTH TO SUPPORT THE IMPOSED LOADS. TEMPORARY MEMBERS AND CONNECTIONS SHALL NOT BE REMOVED UNTIL PERMANENT MEMBERS ARE IN PLACE AND FINAL CONNECTIONS ARE MADE.

5. THE CONTRACTOR SHALL VERIFY IN FIELD ALL DIMENSIONS, ELEVATIONS, AND MEMBER SIZES AS SHOWN ON THE CONTRACT DRAWINGS FOR THE EXISTING CONSTRUCTION PRIOR TO THE DETAILING OR FABRICATION OF ANY NEW STRUCTURAL ELEMENT. THE CONTRACTOR SHALL DOCUMENT ANY CONSTRUCTION-RELATED DISCREPANCIES. PRIOR TO THE SCHEDULED START OF ANY DETAILING OR FABRICATION, THE CONTRACTOR SHALL FURNISH THE ABOVE INFORMATION IN THE FORM OF DETAILED SKETCHES TO THE STRUCTURAL ENGINEER FOR REVIEW.

6. CONTRACTOR TO VERIFY LOCATIONS OF EXISTING UNDERGROUND STRUCTURES AND UTILITIES BEFORE CONSTRUCTING NEW FOUNDATIONS.

7. THE CONTRACTOR SHALL PROVIDE ALL MEASURES AND PRECAUTIONS NECESSARY TO PREVENT DAMAGE AND/OR SETTLEMENT OF EXISTING OR NEW CONSTRUCTION INSIDE OR OUTSIDE THE PROJECT LIMITS DURING EXCAVATION AND FOUNDATION CONSTRUCTION. ANY DAMAGE TO NEW OR EXISTING CONSTRUCTION INSIDE OR OUTSIDE OF THE PROJECT LIMITS CAUSED BY CONSTRUCTION TECHNIQUES IS THE RESPONSIBILITY OF THE CONTRACTOR.

8. NO FIELD MODIFICATIONS TO ANY STRUCTURAL COMPONENTS SHALL BE MADE WITHOUT PRIOR APPROVAL BY THE STRUCTURAL ENGINEER. THIS INCLUDES, BUT IS NOT LIMITED TO, REVISIONS DUE TO MIS-LOCATION, MISFIT, OR ANY OTHER CONSTRUCTION ERRORS.

9. NO OPENING SHALL BE PLACED IN ANY STRUCTURAL MEMBER (OTHER THAN AS INDICATED ON APPROVED SHOP DRAWINGS) UNTIL THE LOCATION HAS BEEN APPROVED BY THE STRUCTURAL ENGINEER.

10. ALL DETAILS, SECTIONS, AND NOTES ON THE DRAWINGS ARE INTENDED TO BE TYPICAL FOR SIMILAR SITUATIONS ELSEWHERE UNLESS OTHERWISE NOTED.

11. MATERIALS AND EQUIPMENT SHALL BE STORED AND TRANSPORTED IN A MANNER SO AS NOT TO EXCEED THE ALLOWABLE CAPACITY OF THE CONSTRUCTION.

12. THE CONTRACTOR SHALL FOLLOW WRITTEN DIMENSIONS ONLY. DO NOT SCALE DRAWINGS.

13. THE STEEL FRAMING COMPONENTS SHOWN RELY ON BUILDING COMPONENTS OTHER THAN STRUCTURAL STEEL FOR FINAL STRUCTURAL STABILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN AND PROVISION OF ANY AND ALL TEMPORARY BRACING AND SHORING AGAINST WIND, ERECTION AND ALL CONSTRUCTION LOADS UNTIL ALL ELEMENTS, MEMBERS, AND CONNECTIONS (FLOORS, ROOF, SHEAR WALLS, ETC), AS SHOWN ON THE CONTRACT DOCUMENTS ARE COMPLETELY INSTALLED. THE STRUCTURAL MEMBERS SHOWN ON THE CONTRACT DOCUMENTS ARE DESIGNED FOR THE ANTICIPATED LOADS THAT THE STRUCTURE WILL BE SUBJECTED TO ONLY AFTER ALL STRUCTURAL ELEMENTS ARE IN PLACE AND FINAL CONNECTIONS ARE COMPLETE

SHOP DRAWINGS

1. ALL SHOP DRAWING SUBMITTALS SHALL BE AS DESCRIBED IN THE PROJECT SPECIFICATIONS OR IN THESE NOTES.

2. SHOP DRAWINGS AND RELATED MATERIALS PREPARED BY SUPPLIERS AND SUBCONTRACTORS SHALL BE REVIEWED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTING TO THE STRUCTURAL ENGINEER.

3. THE GENERAL CONTRACTOR SHALL REVIEW ALL SUBMISSIONS FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS, MEANS, METHODS, TECHNIQUES, SEQUENCES, AND OPERATION OF CONSTRUCTION, TECHNICAL CONTENT, COORDINATION OF TRADES, DIMENSIONAL ACCURACY, SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL THERETO, ALL OF WHICH ARE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

4. THE GENERAL CONTRACTOR SHALL APPROVE AND SO STAMP EACH SUBMISSION.

5. SHOP SUBMITTALS SHALL BE SUBMITTED IN A DIGITAL FORMAT. MULTIPLE COPIES OF DRAWINGS WILL NOT BE MARKED-UP WITH REVIEW COMMENTS.

6. THE STRUCTURAL DRAWINGS SHALL NOT BE USED AS BACKGROUNDS FOR THE PRODUCTION OF ANY SHOP DRAWINGS THAT ARE SUBMITTED FOR REVIEW.

7. ANY DEVIATIONS FROM THE ORIGINAL DESIGN OR DESIGN CRITERIA AS SPECIFIED ON THE "FOR CONSTRUCTION" DESIGN DOCUMENTS OF THE PROJECT SHALL BE BOLDLY NOTED ON THE SHOP DRAWINGS THAT ARE SUBMITTED FOR APPROVAL.

8. ALL CHANGES TO RESUBMITTED SHOP DRAWINGS SHALL BE BUBBLED

EARTHWORK

1. REFERENCE THE GEOTECHNICAL INVESTIGATION REPORT PREPARED BY OLSSON, DATED 12-11-2014 FOR SUBSURFACE CONDITIONS AND CONSTRUCTION CONSIDERATIONS. CONTRACTOR SHALL OBTAIN A COPY OF SAID REPORT AND ANY AVAILABLE ADDENDA OR SUPPLEMENTS AND FOLLOW ALL REQUIREMENTS SPECIFIED THEREIN.

2. SHALLOW FOUNDATIONS: CONTINUOUS WALL FOOTINGS, ISOLATED SPREAD FOOTINGS, AND GROUND SUPPORTED MAT FOUNDATIONS HAVE BEEN DESIGNED TO BEAR ON FIRM NATIVE SOILS OR COMPACTED ENGINEERED FILL CAPABLE. REFER TO THE SOILS REPORT FOR SPECIFIC SOIL PREPARATION REQUIREMENTS.

3. GENERAL CONTRACTOR SHALL COMPACT EXPOSED FOOTING BOTTOMS AND EXPOSED AGGREGATE PIER SURFACES WITH HAND-OPERATED, MECHANICAL COMPACTION EQUIPMENT AFTER EACH FOOTING EXCAVATIONS IS COMPLETED AND PRIOR TO PLACING STEEL OR CONCRETE.

4. ALL UNSUITABLE SOILS SHALL BE REMOVED WITHIN THE EXCAVATION AREA OF THE FOUNDATIONS. ALL FOOTINGS SHALL BEAR ON VIRGIN SOIL OR PROPERLY PLACED AND COMPACTED ENGINEERED FILL.

5. SHOULD UNSUITABLE BEARING CONDITIONS BE ENCOUNTERED DURING EXCAVATION, NOTIFY THE OWNER, ARCHITECT, AND STRUCTURAL ENGINEER BEFORE CONTINUING WITH CONSTRUCTION.

6. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MEASURES TO PREVENT ANY WATER, FROST, OR ICE FROM PENETRATING ANY FOOTING OR SLAB SUBGRADE BEFORE AND AFTER PLACING OF CONCRETE AND UNTIL SUCH SUBGRADES ARE FULLY PROTECTED BY THE PERMANENT STRUCTURE.

7. RECORDS OF ANY EXISTING SUBGRADE INTERFERENCES, OTHER THAN THOSE INTERFERENCES SHOWN OR INDICATED ON THE CIVIL CONSTRUCTION DOCUMENTS, ARE NOT CURRENTLY AVAILABLE. DURING EXCAVATION WORK, INTERFERENCES MAY BE DISCOVERED. CONTRACTOR SHALL DOCUMENT CONSTRUCTION-RELATED DIMENSIONS OF ALL INTERFERENCES. CONTRACTOR SHALL FURNISH THE ABOVE INFORMATION IN THE FORM OF DETAILED SKETCHES TO THE STRUCTURAL ENGINEER FOR REVIEW.

8. REFER TO THE TESTING AND INSPECTION SECTION OF THESE NOTES FOR THE FOUNDATION TESTING AND INSPECTION REQUIREMENTS

9. THE CONTRACTOR MUST PROVIDE SURFACE DRAINAGE AND PUMPS TO PROTECT ALL EXCAVATION FROM FLOODING. FLOODING OF ANY EXCAVATION AFTER APPROVAL OF THE SUBGRADE WILL BE CAUSE FOR RE-PREPARATION OF THE SUBGRADE.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF AISC 303 "CODE OF STANDARD PRACTICE FOR STEEL BUILDING AND BRIDGES".

2. THE STEEL FABRICATOR/ERECTOR SHALL DOCUMENT ANY CONSTRUCTION RELATED DISCREPANCIES AND SHALL FURNISH SAID INFORMATION IN THE FORM OF DETAILED SKETCHES TO THE STRUCTURAL ENGINEER FOR REVIEW. THERE SHALL BE RESOLUTION TO THE NOTED DISCREPANCIES PRIOR TO FABRICATION OF ANY NEW STRUCTURAL ELEMENTS.

3. THE FABRICATOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW, ENGINEERED AND CHECKED DRAWINGS SHOWING FABRICATION DETAILS, FIELD ASSEMBLY DETAILS, AND ERECTION DIAGRAMS FOR ALL STRUCTURAL STEEL ELEMENTS.

4. ALL WELDING SHALL BE PERFORMED BY CERTIFIED/QUALIFIED WELDERS AND SHALL CONFORM TO THE LATEST EDITION OF AWS D1.1 "STRUCTURAL WELDING CODE - STEEL".

5. ALL BOLTED STEEL CONNECTIONS SHALL UTILIZE HIGH STRENGTH BOLTS IN BEARING-TYPE CONNECTIONS, UNLESS OTHERWISE NOTED. TENSION-CONTROLLED BOLTS (T/C BOLTS) MAY BE USED AT THE ERECTOR'S DISCRETION.

6. BOLTS ARE TO BE TIGHTENED, AT A MINIMUM, TO THE "SNUG TIGHT" CONDITION, UNLESS NOTED AS "PRETENSIONED" OR "SLIP CRITICAL".

7. BOLTS DESIGNATED AS "PRETENSIONED" OR "SLIP CRITICAL" ARE TO BE TIGHTENED IN ACCORDANCE WITH AN APPROVED METHOD OUTLINED IN THE AISC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS.

8. THERE SHALL BE NO FIELD CUTTING OF STRUCTURAL STEEL MEMBERS WITHOUT THE PRIOR APPROVAL OF THE STRUCTURAL ENGINEER.

9. ALL STEEL SHALL BE HOT-DIP GALVANIZED UNLESS OTHERWISE NOTED

STRUCTURAL CONCRETE

1. CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF:
   - A. ACI 301 - "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS"
   - B. ACI 302 - "RECOMMENDED PRACTICE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION"
   - C. ACI 304 - "ACI MANUAL OF CONCRETE INSPECTION"
   - D. ACI 311 - "RECOMMENDED PRACTICE FOR MEASURING, MIXING, TRANSPORTING, AND PLACING CONCRETE"
   - E. ACI 315 - "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT"
   - F. ACI 318 - "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"
   - G. ACI 347 - "RECOMMENDED PRACTICE FOR CONCRETE FORMWORK"
   - H. ACI 117 - "SPECIFICATION FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS"
   - I. ACI 304R - "GUIDE FOR MEASURING MIXING, TRANSPORTING, AND PLACING CONCRETE"

2. CONCRETE MIX FOR INTERIOR CONCRETE SLABS-ON-GRADE SHALL ADHERE TO THE FOLLOWING CRITERIA:
   - A. FLY ASH MAY REPLACE 15% OF PORTLAND CEMENT MAXIMUM.
     - a. DO NOT USE POZZOLANS IN MIXES FOR FINISHED FLOOR SLABS.
   - B. AGGREGATE SHALL BE WELL GRADED WITH 3/4" MAXIMUM DIAMETER.
   - C. THE MIX SHALL CONTAIN NO ADMIXTURES THAT EXACERBATE SHRINKAGE.

3. LABORATORY TEST REPORTS OR MATERIAL CERTIFICATES FOR CONCRETE MATERIALS AND MIX DESIGN TEST DATA, IN CONFORMANCE WITH ACI STANDARDS, SHALL BE SUBMITTED FOR REVIEW FOR EACH TYPE OF CONCRETE TO BE USED. EACH SUBMITTED MIX DESIGN SHALL IDENTIFY THE APPLICATION FOR WHICH THE MIX WILL BE USED.

4. THE MINIMUM CONCRETE COVER FOR CAST-IN-PLACE (NON-PRESTRESSED) CONCRETE SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

A. CONCRETE CAST AGAINST/PERMANENTLY EXPOSED TO EARTH:	3"
B. CONCRETE EXPOSED TO EARTH OR WEATHER:	
a. NO 6 THROUGH NO 18 BARS	2"
b. NO 5 BAR, W31 OR D31 WIRE, AND SMALLER	1 1/2"
C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:	
a. SLABS, WALLS, JOISTS:	
• NO 14 AND NO 18 BARS	1 1/2”
• NO. 11 BAR AND SMALLER	3/4"
b. BEAMS, COLUMNS:	
• PRIMARY REINFORCEMENT	1 1/2”
c. TIES, STIRRUPS, SPIRALS	1 1/2"

5. PROVIDE LAP SPLICES AS INDICATED BELOW UNLESS OTHERWISE NOTED IN THE DRAWINGS.

BAR SIZE	SPLICE LENGTH TOP BARS*	SPLICE LENGTH OTHER BARS
#3	24"	19"
#4	32"	25"
#5	40"	31"
#6	48"	37"
#7	70"	54"
#8	80"	62"
#9	90"	69"
#10	76"	77"

*TOP BAR CONDITION OCCURS WHERE HORIZONTAL REINFORCEMENT IS PLACED SUCH THAT MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST BELOW THE SPLICE.

6. ALL HOOKS SHALL BE "STANDARD" PER ACI SPECIFICATIONS.

7. CONTINUOUS TOP AND BOTTOM BARS SHALL BE SPLICED AS FOLLOWS:

A. TOP BARS:	AT MID SPAN
B. BOTTOM BARS:	CENTERED OVER SUPPORT

8. MECHANICAL COUPLERS CAPABLE OF SUSTAINING 125% OF THE BAR ULTIMATE TENSILE CAPACITY MAY BE USED IN LIEU OF LAP SPLICES.

9. ANCHOR BOLTS ARE TO BE FURNISHED BY THE FOUNDATION CONTRACTOR UNLESS OTHERWISE NOTED. CONTRACTOR SHALL PLACE ALL REBAR SO AS TO NOT INTERFERE WITH ANCHOR BOLTS.

10. ANCHOR BOLTS SHALL CONFORM TO THE ASTM STANDARD SPECIFIED AND BE FURNISHED WITH HEAVY HEX NUTS AND WASHERS; AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.

11. ALL ABOVE GRADE FOUNDATION SURFACES SHALL BE STEEL TROWEL FINISHED UNLESS OTHERWISE NOTED.ALL ABOVE GRADE FOUNDATION EDGES SHALL HAVE A 3/4" CHAMFER UNLESS OTHERWISE NOTED.

12. ALL EXPOSED EXTERIOR CONCRETE SHALL BE AIR ENTRAINED (6%). THE FOLLOWING SLUMP SHALL BE USED ACCORDING TO ASTM C 143:

FOOTINGS, FOUNDATIONS, AND WALLS	3"
SLABS	4"
DRILLED PIERS	5"

ALLOWABLE TOLERANCE = ±1"

TESTING AND INSPECTIONS

1. THE TESTING AGENCY SHALL BE RETAINED BY THE CONTRACTOR.

2. THE TESTING AGENCY SHALL SUBMIT TO THE OWNER THREE COPIES OF WEEKLY REPORTS OF THE TESTS AND INSPECTIONS CONDUCTED DURING THE WEEK. THE REPORTS SHALL STATE IF THE TESTS AND INSPECTIONS MET THE PROJECT REQUIREMENTS AND, IF NOT, WHAT FOLLOW-UP TESTS OR INSPECTIONS WILL BE MADE.

3. AT THE END OF THE PROJECT, THE TESTING AGENCY SHALL SUBMIT THREE COPIES OF A SUMMARY REPORT OF ALL TESTS AND INSPECTIONS MADE TO THE OWNER AND ONE COPY OF ALL TESTS AND INSPECTIONS MADE TO THE LOCAL BUILDING OFFICIAL. THE SUMMARY REPORT SHALL STATE THAT THE TESTS AND INSPECTIONS MET THE PROJECT REQUIREMENTS. ANY TEST OR INSPECTION THAT FAILED TO MEET PROJECT REQUIREMENTS SHALL BE NOTED. SUBMIT COPIES OF CORRESPONDENCE SHOWING ACCEPTANCE OR REJECTION OF THE MATERIAL OR WORKMANSHIP THAT FAILED TESTS OR INSPECTIONS.

FOUNDATION INSPECTION

1. ALL FOUNDATION EXCAVATIONS SHALL BE OBSERVED AND TESTED BY A REPRESENTATIVE OF A QUALIFIED GEOTECHNICAL ENGINEERING DAILY REPORTS OF OBSERVATIONS SHALL BE PREPARED. ALL REPORTS ARE TO BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR THE REQUIRED TEST TYPE AND FREQUENCY SHALL BE AS SPECIFIED IN THE PROJECT SPECIFICATIONS.

2. SEE PROJECT SPECIFICATIONS FOR ADDITIONAL TESTING AND INSPECTION REQUIREMENTS.

REINFORCED CONCRETE INSPECTION

1. PROVIDE CONTINUOUS INSPECTION OF THE FOLLOWING:
   - A. ANCHOR RODS OR OTHER BOLTS INSTALLED IN CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE.
   - B. SAMPLING OF FRESH CONCRETE FOR SLUMP, AIR CONTENT AND TEMPERATURE AT THE TIME OF MAKING SPECIMENS FOR STRENGTH TESTS.
   - C. CONCRETE PLACEMENT.

2. PROVIDE PERIODIC INSPECTION AND VERIFICATION OF THE FOLLOWING:
   - A. REINFORCING STEEL PLACEMENT INCLUDING REINFORCING SIZE, LENGTHS, POSITION, SHAPES, SPACING, NUMBER OF BARS, REINFORCING TYPE, GRADE, FINISH, CLEANNESS, AND CONCRETE COVER TO FORMWORK AND TO TOP OF SLABS.
   - B. BAR SUPPORT TYPE, FINISH, AND LOCATION AND HEIGHT OF BAR SUPPORT.
   - C. CONDITION OF REINFORCING AND SUPPORTS, CHECKING FOR DAMAGE INCLUDING BENDS NOT DETAILED, EXCESSIVE RUST, AND REPAIR OF COATINGS.
   - D. PLACEMENT OF ADDITIONAL STEEL AS REQUIRED BY DETAILS AT OPENINGS, SLEEVES, EDGE OF SLABS, AND OTHER TYPICAL DETAILS.
   - E. USE OF REQUIRED CONCRETE MIX.
   - F. MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.

3. TESTING FREQUENCY: OBTAIN ONE COMPOSITE SAMPLE FOR EACH 100 CUBIC YARDS OR FRACTION THEREOF OF EACH CONCRETE MIX PLACED EACH DAY. WHEN FREQUENCY OF TESTING WILL PROVIDE FEWER THAN FIVE COMPRESSIVE STRENGTH TESTS FOR EACH CONCRETE MIX, TESTING SHALL BE CONDUCTED FROM AT LEAST FIVE RANDOMLY SELECTED BATCHES OR FROM EACH BATCH IF FEWER THAN FIVE ARE USED.

4. PERFORM THE FOLLOWING TESTS:
   - A. SLUMP: ASTM C 143; ONE TEST AT POINT OF PLACEMENT FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIX. PERFORM ADDITIONAL TESTS WHEN CONCRETE CONSISTENCY APPEARS TO CHANGE.
   - B. AIR CONTENT: ASTM C 231, PRESSURE METHOD, FOR NORMAL WEIGHT CONCRETE; ASTM C 173, VOLUMETRIC METHOD, FOR LIGHTWEIGHT CONCRETE; ONE TEST FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIX.
   - C. CONCRETE TEMPERATURE: ASTM C 1064; ONE TEST HOURLY WHEN AIR TEMPERATURE IS 40 DEG F AND BELOW AND WHEN 80 DEG F AND ABOVE, AND ONE TEST FOR EACH COMPOSITE SAMPLE.
   - D. UNIT WEIGHT: ASTM C 567; FRESH UNIT WEIGHT OF LIGHTWEIGHT CONCRETE; ONE TEST FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIX.
   - E. COMPRESSIVE TEST SPECIMENS: ASTM C 31; CAST AND LABORATORY CURE ONE SET OF FIVE STANDARD CYLINDER SPECIMENS FOR EACH COMPOSITE SAMPLE. CAST AND FIELD CURE ONE SET OF THREE STANDARD CYLINDER SPECIMENS FOR EACH COMPOSITE SAMPLE.
   - F. COMPRESSIVE-STRENGTH TESTS: ASTM C39; TEST TWO LABORATORY CURED SPECIMENS AT 7 DAYS AND TWO AT 28 DAYS. RESERVE ONE CYLINDER FOR FURTHER TESTING IF NECESSARY. TEST ONE FIELD CURED SPECIMEN AT 7 DAYS AND TWO AT 28 DAYS. WHEN STRENGTH OF FIELD CURED CYLINDERS IS LESS THAN 85% OF COMPANION LABORATORY CURED CYLINDERS, CONTRACTOR SHALL EVALUATE OPERATIONS AND METHODS.

5. SEE PROJECT SPECIFICATIONS FOR ADDITIONAL TESTING AND INSPECTION REQUIREMENTS

STRUCTURAL STEEL INSPECTION

1. SHOP INSPECTIONS
   - A. MATERIAL VERIFICATION OF STRUCTURAL STEEL:
     - a. IDENTIFICATION OF MARKINGS TO CONFORM TO STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.
     - b. SUBMIT COPIES OF MANUFACTURER'S CERTIFIED MILL TEST REPORTS.

2. WELDING:
   - A. REVIEW WELDING PROCEDURES.
   - B. VERIFY WELD FILLER MATERIALS.
   - C. PROVIDE CONTINUOUS INSPECTIONS AND TESTS OF THE FOLLOWING:
     - a. COMPLETE AND PARTIAL PENETRATION GROOVE WELDS.
     - b. MULTI-PASS FILLET WELDS.
     - c. SINGLE-PASS FILLET WELDS GREATER THAN 5/16".
   - D. PROVIDE PERIODIC INSPECTIONS FOR SINGLE-PASS FILLET WELDS LESS THAN 5/16".
   - E. TESTS:
     - a. PROVIDE VISUAL INSPECTION OF ALL WELDS.
     - b. CHECK 15% OF ALL FILLET WELDS AND PARTIAL PENETRATION WELDS WITH MAGNETIC PARTICLE OR DYE PENETRATION TESTS.
     - c. PROVIDE ULTRASONIC TESTING ON 100% OF ALL FULL PENETRATION WELDS.

3. BOLTING:
   - A. VERIFY HIGH-STRENGTH BOLT, NUT AND WASHER MATERIALS.
     - a. IDENTIFY MARKINGS TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.
     - b. SUBMIT COPIES OF MANUFACTURER'S CERTIFICATES OF COMPLIANCE.
   - B. PROVIDE CONTINUOUS INSPECTION OF SLIP-CRITICAL CONNECTIONS. SLIP-CRITICAL BOLTS SHALL BE TIGHTENED BY THE "TURN OF THE NUT" METHOD.
   - C. PROVIDE PERIODIC INSPECTION OF BEARING TYPE CONNECTIONS.
   - D. SEE PROJECT SPECIFICATIONS FOR ADDITIONAL TESTING AND INSPECTION REQUIREMENTS.

TESTING AND INSPECTIONS, cont'd.

4. FIELD INSPECTION
   - A. INSPECTION OF STEEL FRAME FOR COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS.
     - a. MEMBER LOCATIONS.
     - b. DETAILS, INCLUDING BRACING AND STIFFENING ELEMENTS.
     - c. APPLICATION OF JOINT DETAILS AT EACH CONNECTION.
   - B. WELDING:
     - a. REVIEW WELDING PROCEDURES.
     - b. VERIFY WELD FILLER MATERIALS.
     - c. PROVIDE CONTINUOUS INSPECTIONS AND TESTS OF THE FOLLOWING:
       - COMPLETE AND PARTIAL PENETRATION GROOVE WELDS.
       - MULTI-PASS FILLET WELDS.
       - SINGLE-PASS FILLET WELDS GREATER THAN 5/16".
     - d. PROVIDE PERIODIC INSPECTIONS FOR SINGLE-PASS FILLET WELDS LESS THAN 5/16".
     - e. TESTS:
       - PROVIDE VISUAL INSPECTION OF ALL WELDS.
       - CHECK 15% OF ALL FILLET WELDS AND PARTIAL PENETRATION WELDS WITH MAGNETIC PARTICLE OR DYE PENETRATION TESTS.
       - PROVIDE ULTRASONIC TESTING ON 100% OF ALL FULL PENETRATION WELDS.
   - C. BOLTING:
     - a. VERIFY HIGH-STRENGTH BOLT, NUT, AND WASHER MATERIALS.
       - IDENTIFY MARKINGS TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.
       - SUBMIT COPIES OF MANUFACTURER'S CERTIFICATES OF COMPLIANCE.
     - b. PROVIDE CONTINUOUS INSPECTION OF SLIP-CRITICAL CONNECTIONS. SLIP-CRITICAL BOLTS SHALL BE TIGHTENED BY THE "TURN OF THE NUT" METHOD.
     - c. PROVIDE PERIODIC INSPECTION OF BEARING TYPE CONNECTIONS.
   - D. SEE PROJECT SPECIFICATIONS FOR ADDITIONAL TESTING AND INSPECTION REQUIREMENTS.

STRUCTURAL ABBREVIATIONS

ACI	AMERICAN CONCRETE INSTITUTE
AE	AIR ENTRAINED
ALT	ALTERNATE
B/	BOTTOM OF
BLDG	BUILDING
BOT	BOTTOM
BRG	BEARING
CG	CENTER OF GRAVITY
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
CL,	CENTERLINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUED, CONTINUOUS
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DET	DETAIL
DIA	DIAMETER
DIM	DIMENSION(S)
DWG	DRAWING
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT
ELEV	ELEVATION
EOR	ENGINEER OF RECORD
EQ	EQUAL
EQUIP	EQUIPMENT
ES	EACH SIDE
EW	EACH WAY
EWEF	EACH WAY EACH FACE
FND	FOUNDATION
FT	FEET (FOOT)
FTG	FOOTING
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GR	GRADE
HORIZ	HORIZONTAL
HS	HEADED STUD
ID	INSIDE DIAMETER
K	KIP (1000 POUNDS)
KLF	KIPS PER LINEAR FOOT
LB, #	POUND(S)
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
MAX	MAXIMUM
MECH	MECHANICAL
MEP	MECHANICAL, ELECTRICAL, PLUMBING
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
NA	NOT APPLICABLE
NO, #	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OCEW	ON CENTER EACH WAY
OD	OUTSIDE DIAMETER
PJF	PRE-MOLDED JOINT FILLER
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PSF	POUND PER SQUARE FOOT
PSI	POUND PER SQUARE INCH
QTY	QUANTITY
R	RADIUS
REC	RECLOSER
REINF	REINFORCE(D)
REV	REVISED/REVISION
SEC	SECTION
SF	SQUARE FOOT
SIM	SIMILAR
SPEC	SPECIFICATION
SS	STAINLESS STEEL
STD	STANDARD
T&B	TOP AND BOTTOM
T/	TOP OF
TBD	TO BE DETERMINED
TOC	TOP OF CONCRETE
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
W/O	WITHOUT
WP	WORKING POINT
WWR	WELDED WIRE REINFORCEMENT
XFMR	TRANSFORMER

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Campground Loop 4 Upgrades

Montauk State Park
345 County Road 6670

Salem, Missouri

PROJECT # X-2203-01
SITE # 5307
ASSET #
7815307049

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GENERAL NOTES

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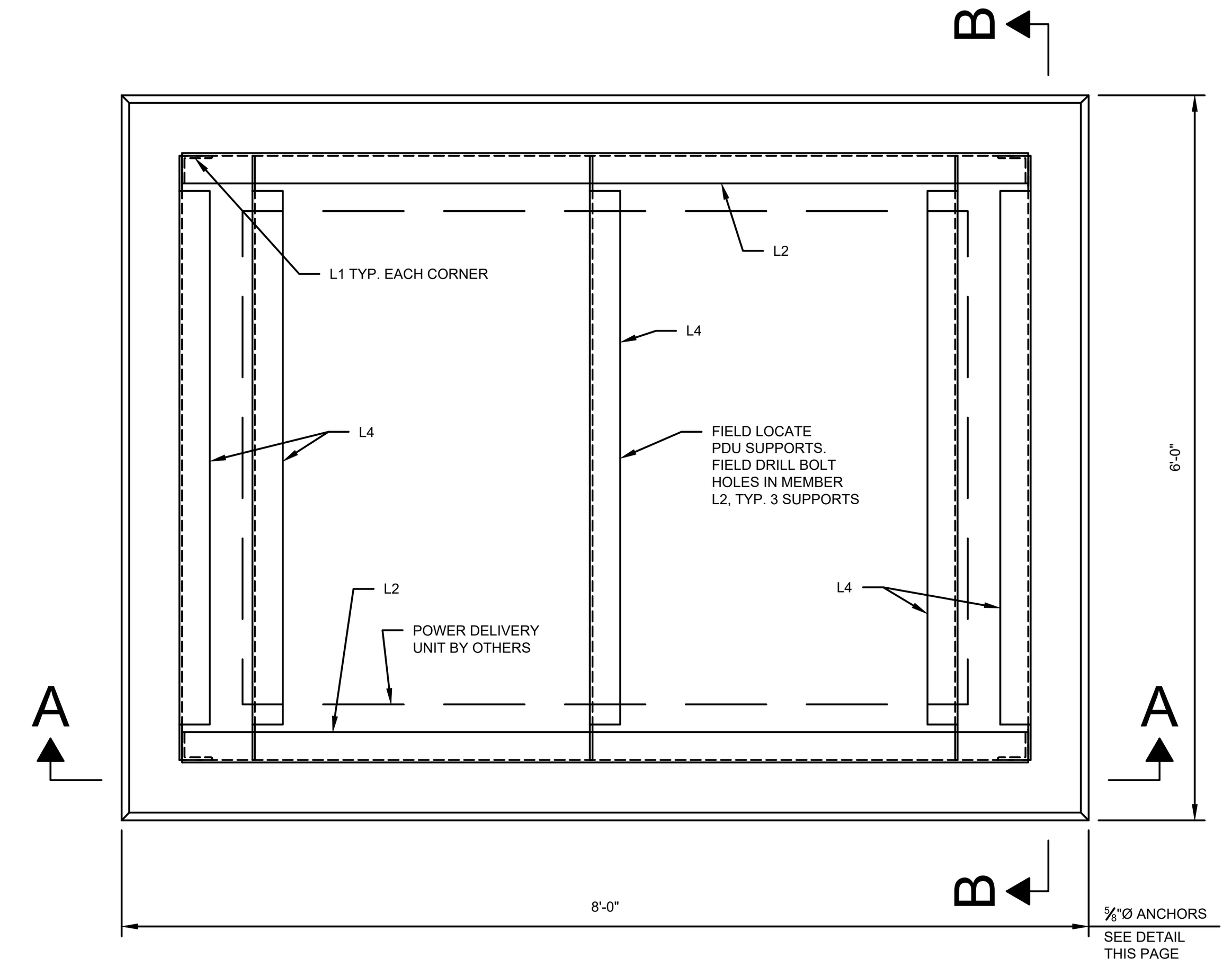
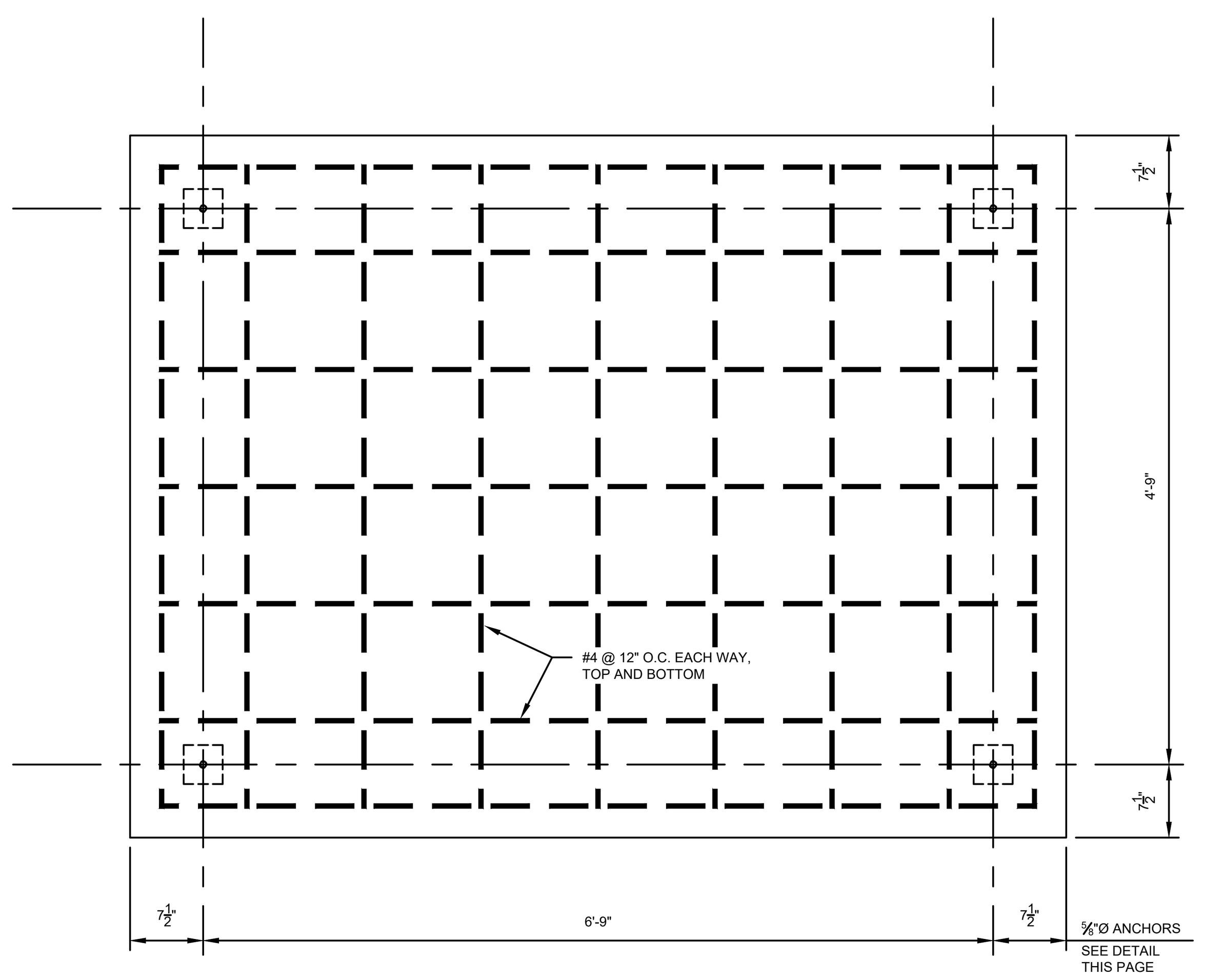
S-100

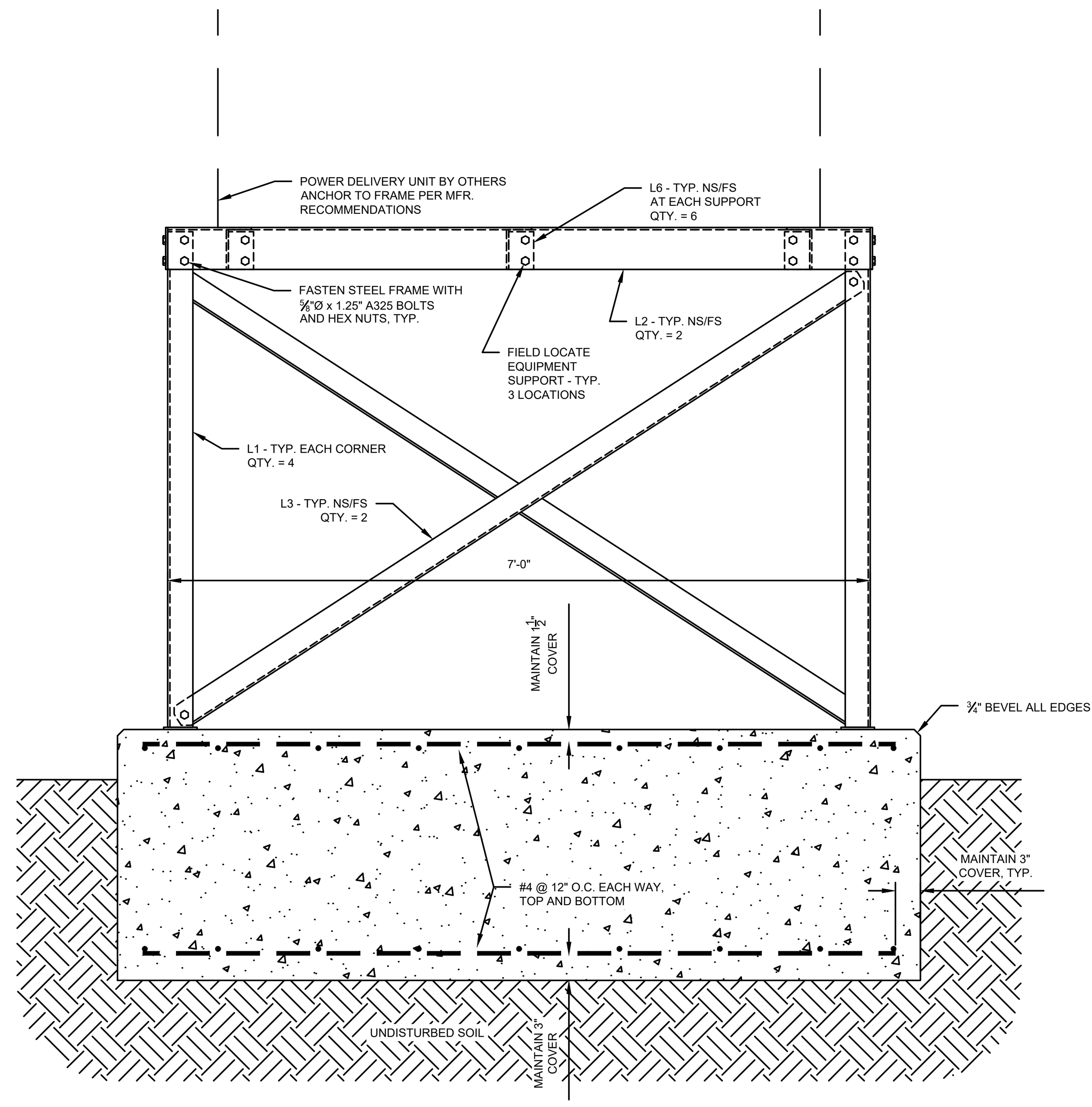
10 OF 17 SHEETS
01/13/2023



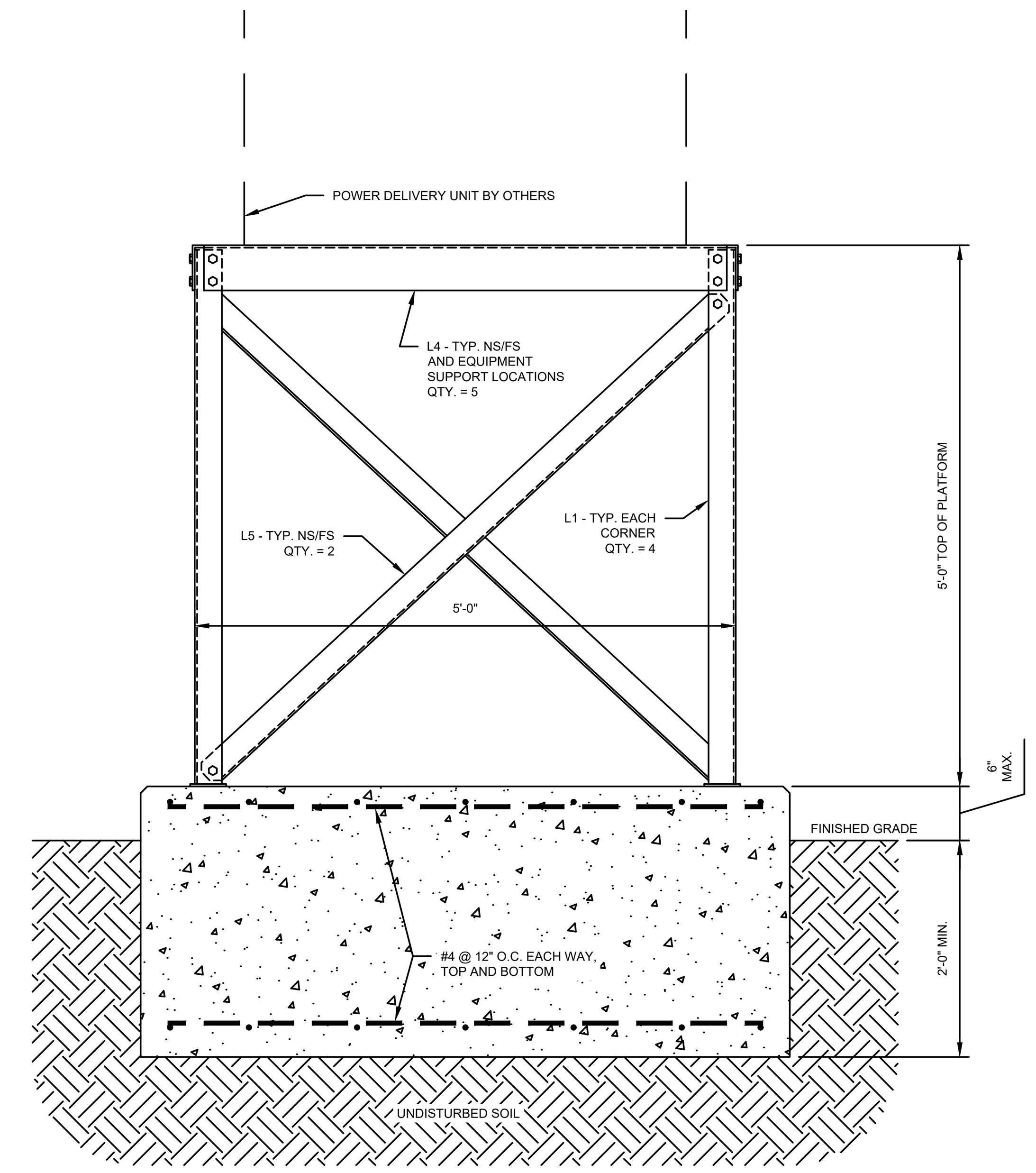
1 FOUNDATION AND PLATFORM PLAN
SCALE: ¾" = 1'-0"



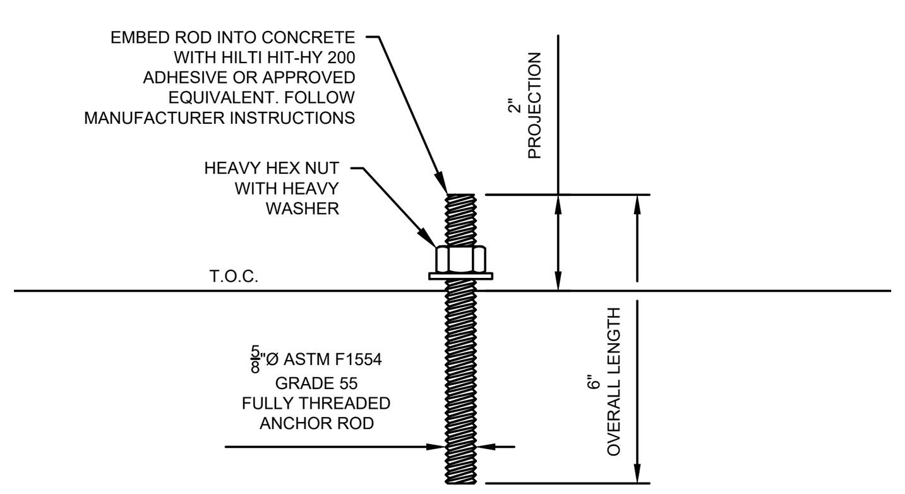
2 FOUNDATION REINFORCING AND ANCHOR PLAN
SCALE: ¾" = 1'-0"



3 FOUNDATION SECTION A
SCALE: ¾" = 1'-0"



4 FOUNDATION SECTION B
SCALE: ¾" = 1'-0"



5 ANCHOR ROD DETAIL
SCALE: 3" = 1'-0"

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11 OF 17 SHEETS
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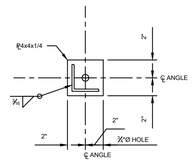

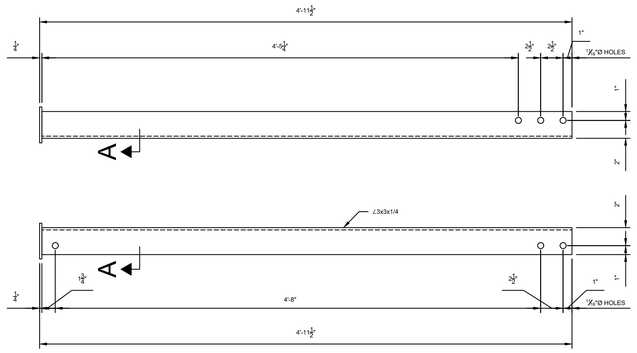

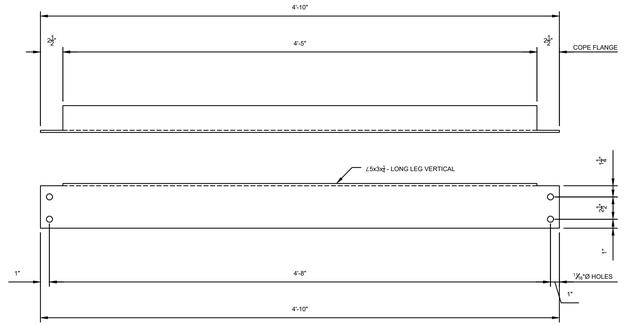

L1 SECTION A
SCALE: 1½" = 1'–0"

L2 PLATFORM LEG - ∠3x3x1/4
SCALE: 1½" = 1'–0"

L5 PLATFORM BEAM - ∠5x3x1/4
SCALE: 1½" = 1'–0"

L3 PLATFORM BEAM - ∠5x3x1/4
SCALE: 1½" = 1'–0"

DETAIL A
SCALE: 3" = 1'–0"

L6 PLATFORM BRACE - ∠3x3x1/4
SCALE: 1½" = 1'–0"

DETAIL B
SCALE: 3" = 1'–0"

DETAIL C
SCALE: 3" = 1'–0"

L4 PLATFORM BRACE - ∠3x3x1/4
SCALE: 1½" = 1'–0"

DETAIL D
SCALE: 3" = 1'–0"

L6 CONNECTION ANGLE - ∠3x3x1/4
SCALE: 3" = 1'–0"

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12 OF 17 SHEETS
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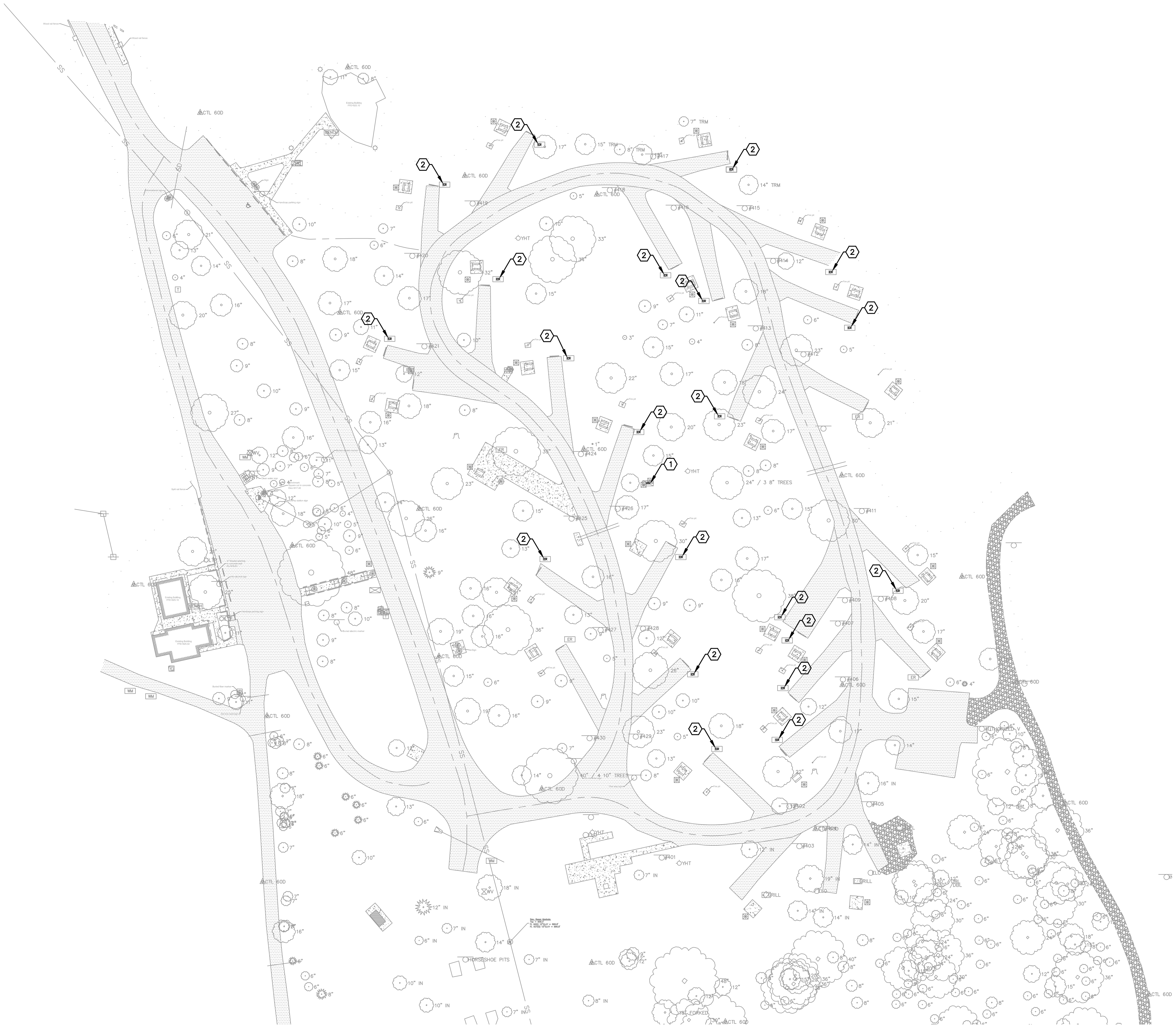

1 SITE POWER DEMOLITION PLAN
SCALE: 1" = 40'-0"

PLAN NOTES:

1. DISCONNECT AND REMOVE EXISTING PANELBOARD. DISCONNECT AND REMOVE WIRING BACK TO SOURCE. EXISTING CONDUIT SHALL BE ABANDONED.
2. EXISTING RV POWER PEDESTAL SHALL BE DISCONNECTED AND REMOVED. DISCONNECT AND REMOVE WIRING BACK TO SOURCE. EXISTING CONDUIT SHALL BE ABANDONED.

DEMOLITION NOTES:

1. EACH VEHICLE PEDESTAL IS FED WITH ELECTRICAL POWER VIA 600V CABLING IN CONDUIT BELOW GRADE. REMOVE ALL CABLING IN CONDUIT BELOW GRADE FROM THE SOURCE TO THE LOAD. DEMOLITION OF CABLING SHALL BE TO THE BEST EXTENT POSSIBLE. BELOW GROUND RACEWAY SHALL REMAIN IN PLACE. REMOVE ALL CABLING AND ASSOCIATED ABOVE GROUND MATERIAL FROM THE SITE.

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SITE POWER DEMOLITION PLAN

SHEET NUMBER:

DE-100

PLAN NOTES:

1. UTILITY PAD MOUNTED TRANSFORMER. PROVIDE TRENCHING, BACK FILL, COMPACTION AND CONDUIT FOR SECONDARY CONDUCTORS.
2. PROVIDE AND MOUNT A 800A, 277/480V, 3φ, 4W, SERVICE RATED DISTRIBUTION PANELBOARD ON UNISTRUT. RE: ONE-LINE DIAGRAM AND PANELBOARD SCHEDULE FOR INSTALLATION DETAILS AND TYPE.
3. PROVIDE PAD MOUNTED SUBSTATION WITH INTEGRAL TRANSFORMER PER SCHEDULES.
4. PROVIDE PAD MOUNTED ELECTRICAL POWER PEDESTAL. RE: DETAIL 1/E-400 FOR INSTALLATION DETAILS. ALL RV PEDESTAL LOOP CIRCUITS SHALL BE CONNECTED TO FEED THRU LUGS WITH MATCHING BUS RATINGS (200A) (TYP. ALL CAMP SITES).
5. ROUTE FEEDER AND CONDUIT BELOW GRADE TO PAD MOUNTED SUBSTATION POWER DISTRIBUTION UNIT. RE: ONE-LINE DIAGRAM FOR CONDUIT AND CONDUCTOR SIZES.

BRANCH CIRCUIT FEEDER SCHEDULE

(1) (3)-#3/0 CU AND (1)-#6 CU GROUND IN 2" CONDUIT.

SITE POWER PLAN

SCALE: 1" = 40'-0"

GENERAL NOTES:

1. TO FEDERAL, STATE, AND LOCAL STATUTES, NOTIFY MISSOURI ONE-CALL SYSTEM, INC. AT LEAST 48 HOURS PRIOR TO ANY DIGGING, TRENCHING, EXCAVATION, ETC.
2. INFORMATION SHOWN ON THIS DRAWING CONCERNING TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO TYPE AND LOCATION OF SAME AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.
3. FIELD VERIFY LOCATION OF ALL UTILITIES PRIOR TO BEGINNING WORK. ANY INTERFERENCE SHALL BE BROUGHT TO ATTENTION OF THE ARCHITECT AND ENGINEER FOR DIRECTION.
4. PROVIDE EQUIPMENT GROUNDING CONDUCTOR THROUGHOUT EACH BRANCH CIRCUIT. CONDUCTOR MAY NOT BE INDICATED GRAPHICALLY.
5. IF WIRING DEVIATES SIGNIFICANTLY FROM THE LAYOUT ON THE PLANS, ACCOUNT FOR MORE VOLTAGE DROP BY INCREASING ALL THE CONDUCTOR SIZES BY A FACTOR OF ONE SIZE.
6. REFER TO CONDUIT APPLICATION AND SPECIFICATIONS FOR ALL CONDUIT REQUIREMENTS.
7. COORDINATE ALL NEW PRIMARY SERVICE WORK, OUTAGES, PAD REQUIREMENTS, ETC. WITH UTILITY COMPANY FOR EXACT INSTALLATION REQUIREMENTS.
8. UNDERGROUND CONDUITS SHALL BE INSTALLED TO AVOID CROSSING PAVED AREAS AND BENEATH TREE CANOPIES. SAW CUT OR BORE UNDER ROADS FOR UNDERGROUND CONDUIT ROUTING. DETERMINE EXACT ROUTING OF BELOW GRADE CONDUITS TO MINIMIZE ROUTING UNDER PAVED SURFACES AND REMOVING TREES.

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ELECTRICAL SITE PLAN

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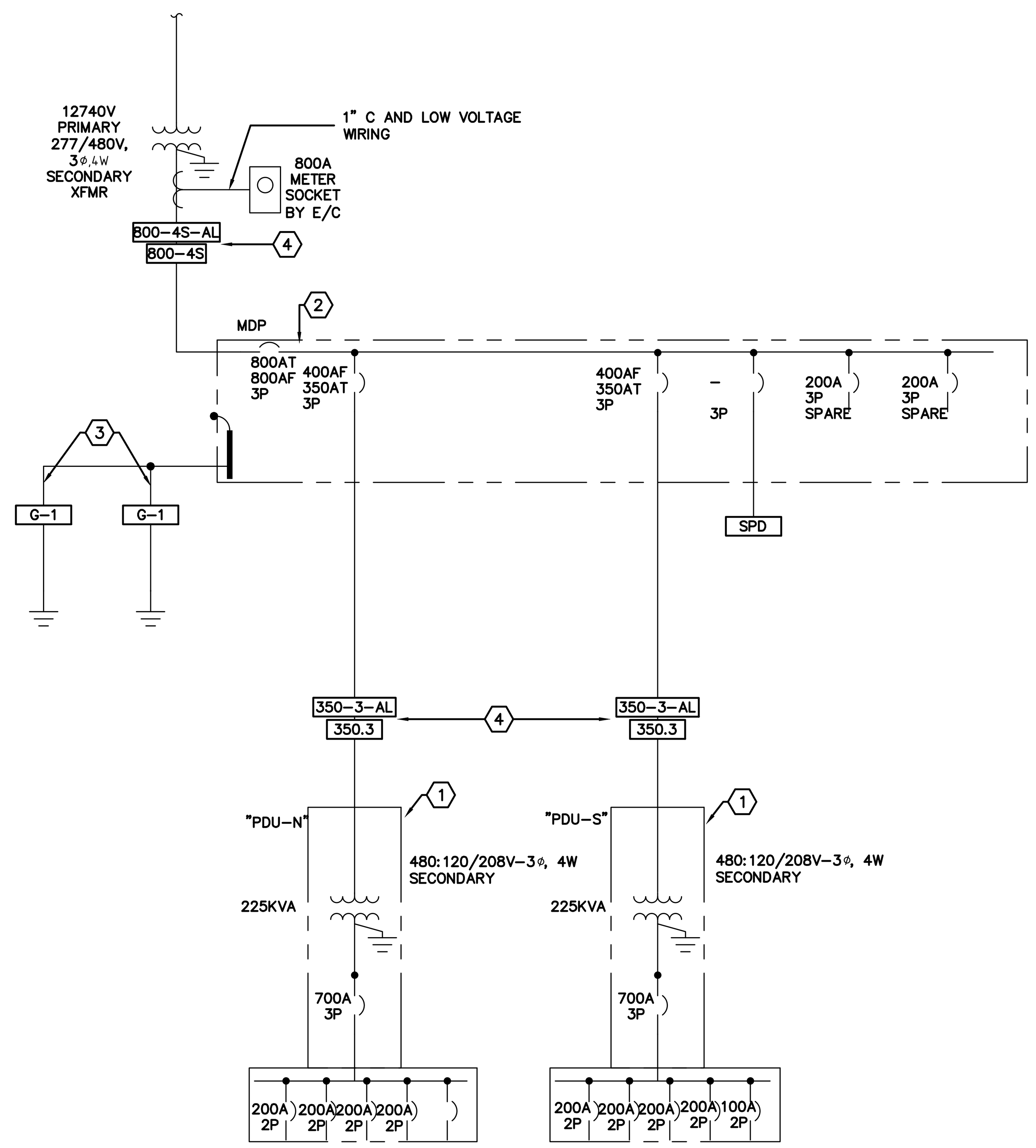

1 ELECTRICAL ONE-LINE DIAGRAM

SCALE: NTS

ONE-LINE DIAGRAM NOTES:

1. PROVIDE A PAD MOUNTED POWER DISTRIBUTION UNIT WITH INTEGRAL TRANSFORMER ON CONCRETE PAD.
2. MOUNT SERVICE ENTRANCE RATED DISTRIBUTION PANELBOARD TO UNISTRUT. DISTRIBUTION PANELBOARD SHALL BE IN A NEMA 3R ENCLOSURE WITH SUN/RAIN SHIELD AND HINGED WEATHER PROOF DOOR.
3. PROVIDE (2) 5/8" x 10'-0" DRIVEN GROUND RODS. RE: GROUNDING DETAIL 4/E-400 FOR ADDITIONAL INFORMATION.
4. CONDUCTOR MATERIAL SHALL BE ALUMINUM OR COPPER AS INDICATED

ONE-LINE DIAGRAM FEEDER SCHEDULE:

TAG ID	OCPD	FEEDER						
		SETS	PHASE	NEUTRAL	GROUND	CONDUIT	MATERIAL	REMARKS
800-4S	800A	3	3 - 300MCM	1 - 300MCM	-	3"	COPPER	-
350-3	350A	1	3 - 500MCM	-	1 - #3	3"	COPPER	-
800-4S-AL	800A	3	3 - 500MCM	1 - 500MCM	-	2.5"	ALUMINUM	-
350-3-AL	350A	1	3 - 750MCM	-	1 - #1	3"	ALUMINUM	-
G-1	N/A	-	-	-	1 - #3/0	1"	COPPER	-

ONE-LINE DIAGRAM FEEDER GENERAL NOTES

1. CONDUCTOR SIZING BELOW 100A IS SIZED PER 60°C TEMPERATURE RATING. ALL CONDUCTORS 100A AND HIGHER ARE SIZED PER 75°C TEMPERATURE RATING.
2. CONDUIT INSTALLED BELOW SLAB SHALL BE RIGID STEEL, IMC, PVC OR HDPE, MINIMUM 3/4". IF PVC OR HDPE IS USED, TRANSITION TO RIGID STEEL BEFORE TURNING UP AND PENETRATING FLOOR SLAB.
3. ALL CONDUCTORS SHALL HAVE AN INSULATION RATING OF 90°C.
4. REFERENCE CONDUIT APPLICATION SCHEDULE FOR CONDUIT MATERIALS AT DIFFERENT LOCATIONS.
5. ALL WIRING SHALL BE XHHW, UNLESS OTHERWISE NOTED.

STATE OF MISSOURI
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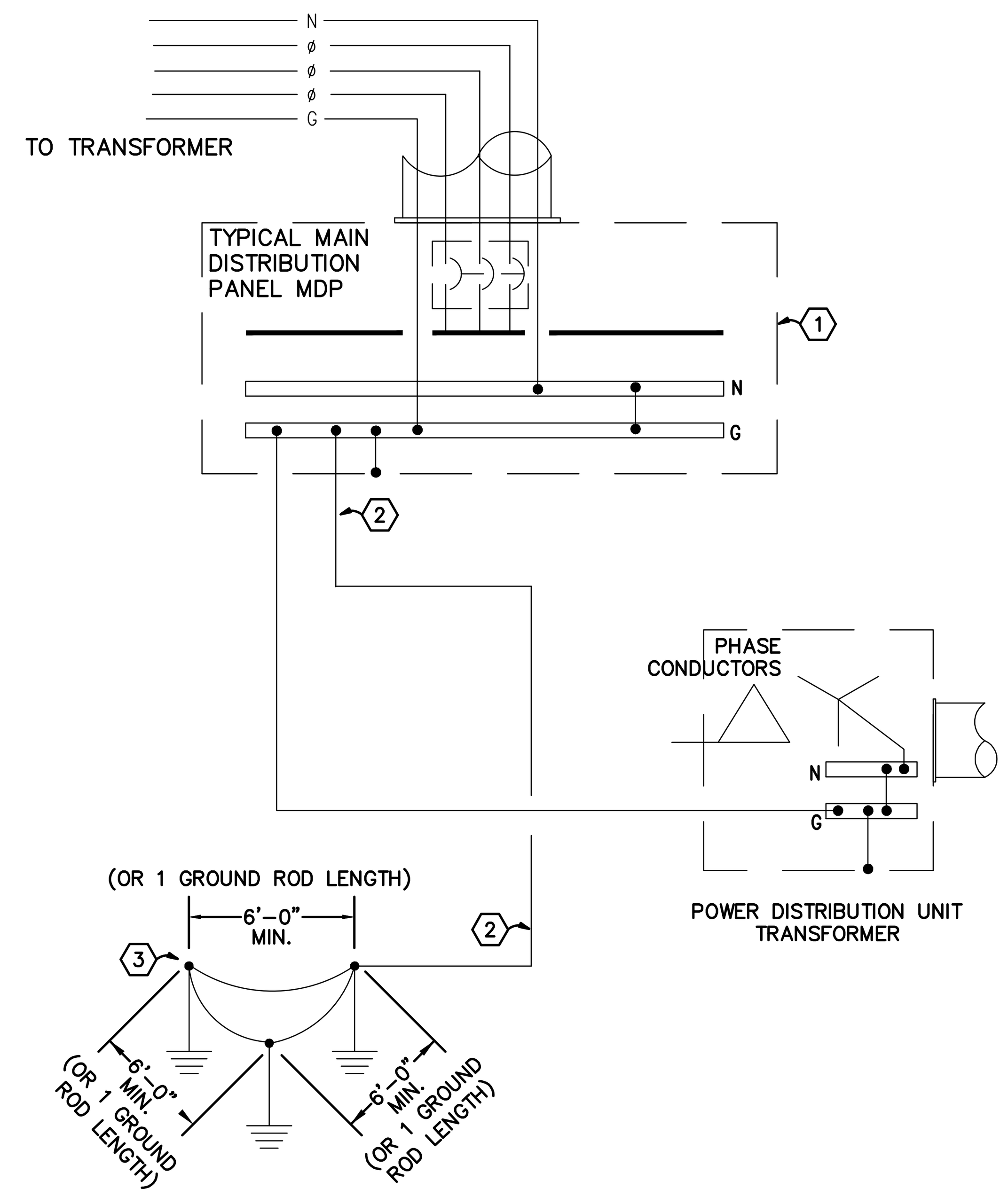
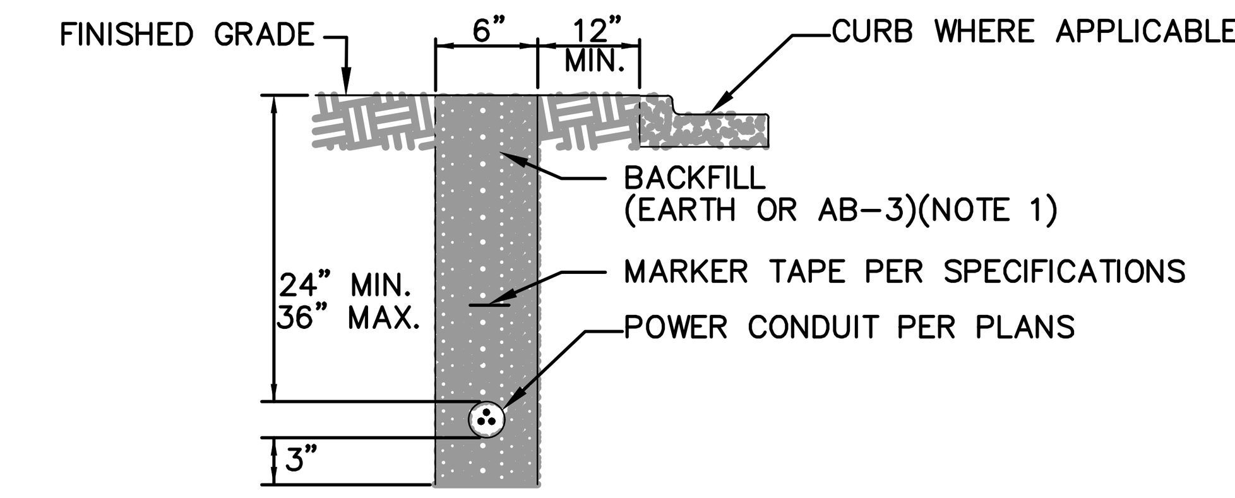


GROUNDING NOTES

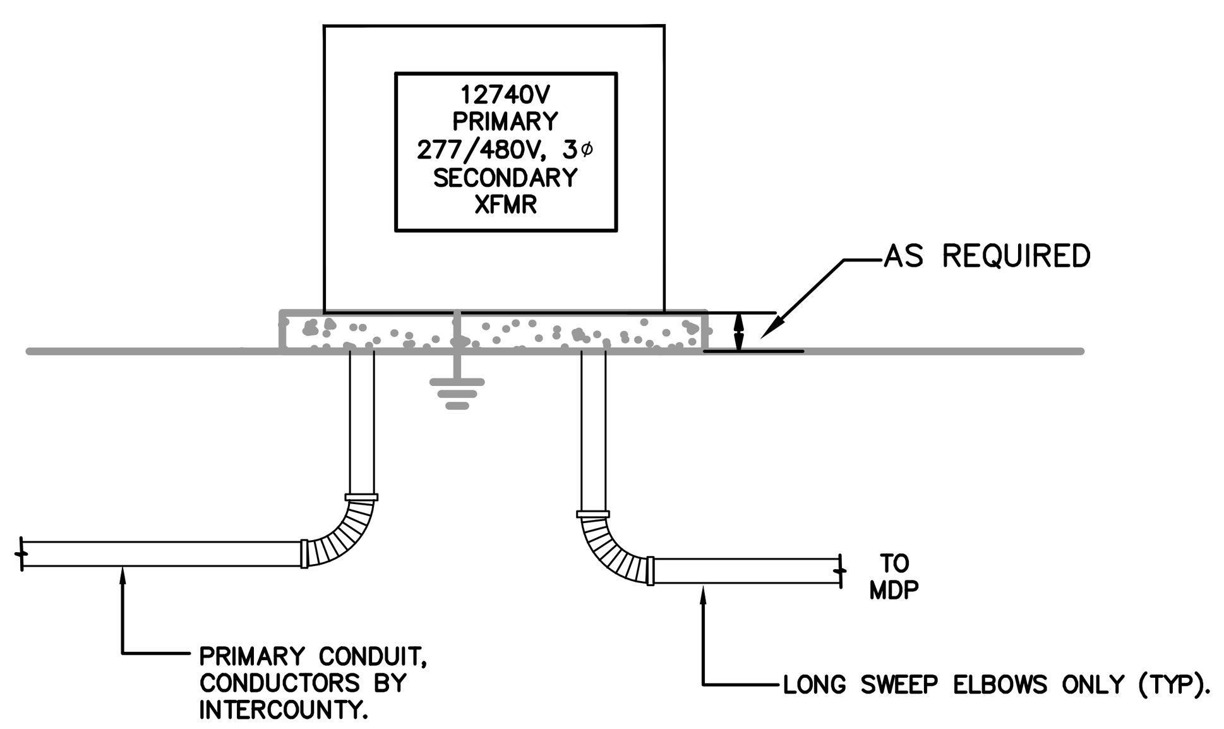
1. TYPICAL OF ONE DISTRIBUTION PANELBOARD MOUNTED ON UNISTRUT. PROVIDE GROUNDING AT ENTRANCE PER DETAIL
2. INSTALL GROUNDING ELECTRODE CONDUCTOR SIZED PER NEC 250.66. GROUNDING ELECTRODE CONDUCTOR SIZE FOR UTILITY SERVICE IS 3/0.
3. INSTALL 10' 5/8" COPPER CLAD GROUNDING RODS SPACED A MINIMUM OF 6'-0" APART. CONNECT GROUNDING RODS WITH A EQUIPMENT BONDING JUMPER SIZED THE SAME AS THE GROUNDING ELECTRODE CONDUCTOR. REFERENCE NEC FOR GROUND ROD AND BONDING JUMPER INSTALLATION REQUIREMENTS.

4 TYPICAL ELECTRICAL SYSTEM GROUNDING & BONDING DETAIL
SCALE: NTS



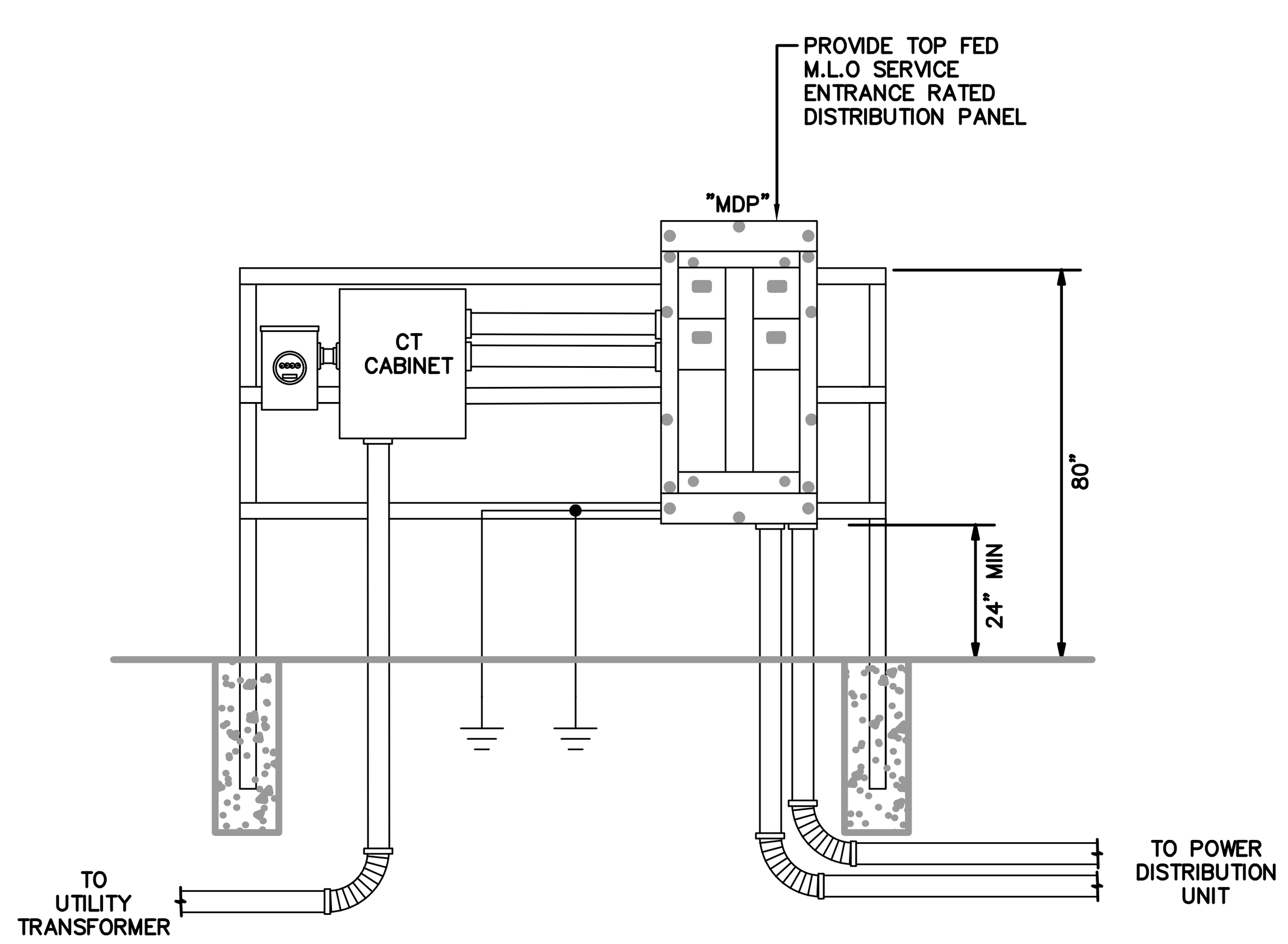
NOTE:
1. BACKFILL IN UNPAVED AREAS SHALL BE FREE OF RUBBLE AND ROCK.
2. ALL TRENCHES FOR CONDUIT UNDER PAVED SURFACES SHALL BE BACKFILLED WITH GRAVEL.

2 TRENCHING DETAIL
SCALE: NTS



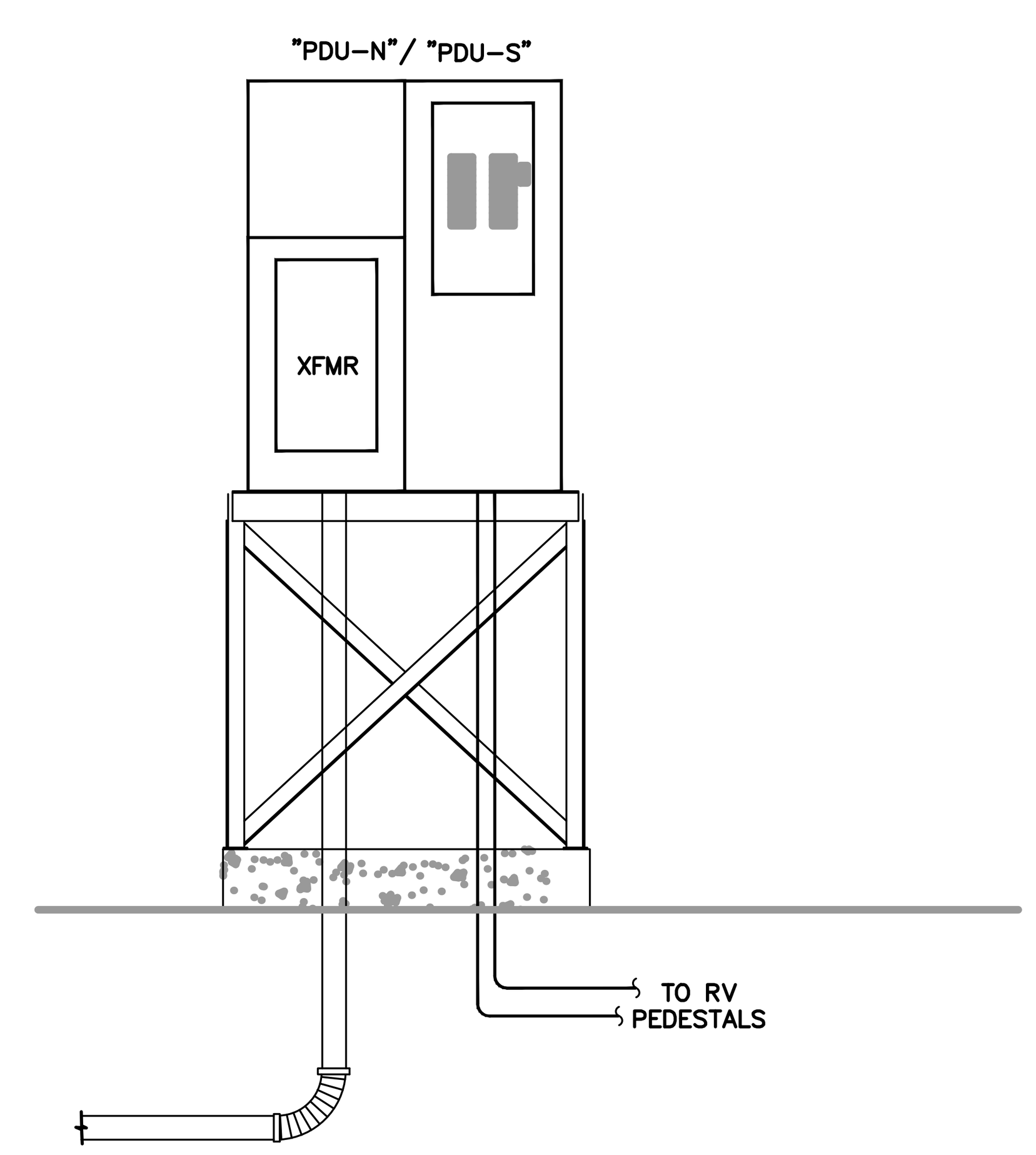
NOTES:
1. COORDINATE REQUIREMENTS WITH UTILITY FOR MAINTAINING TRANSFORMER IN A FLOOD PLAIN.

6 UTILITY TRANSFORMER DETAIL
SCALE: NTS



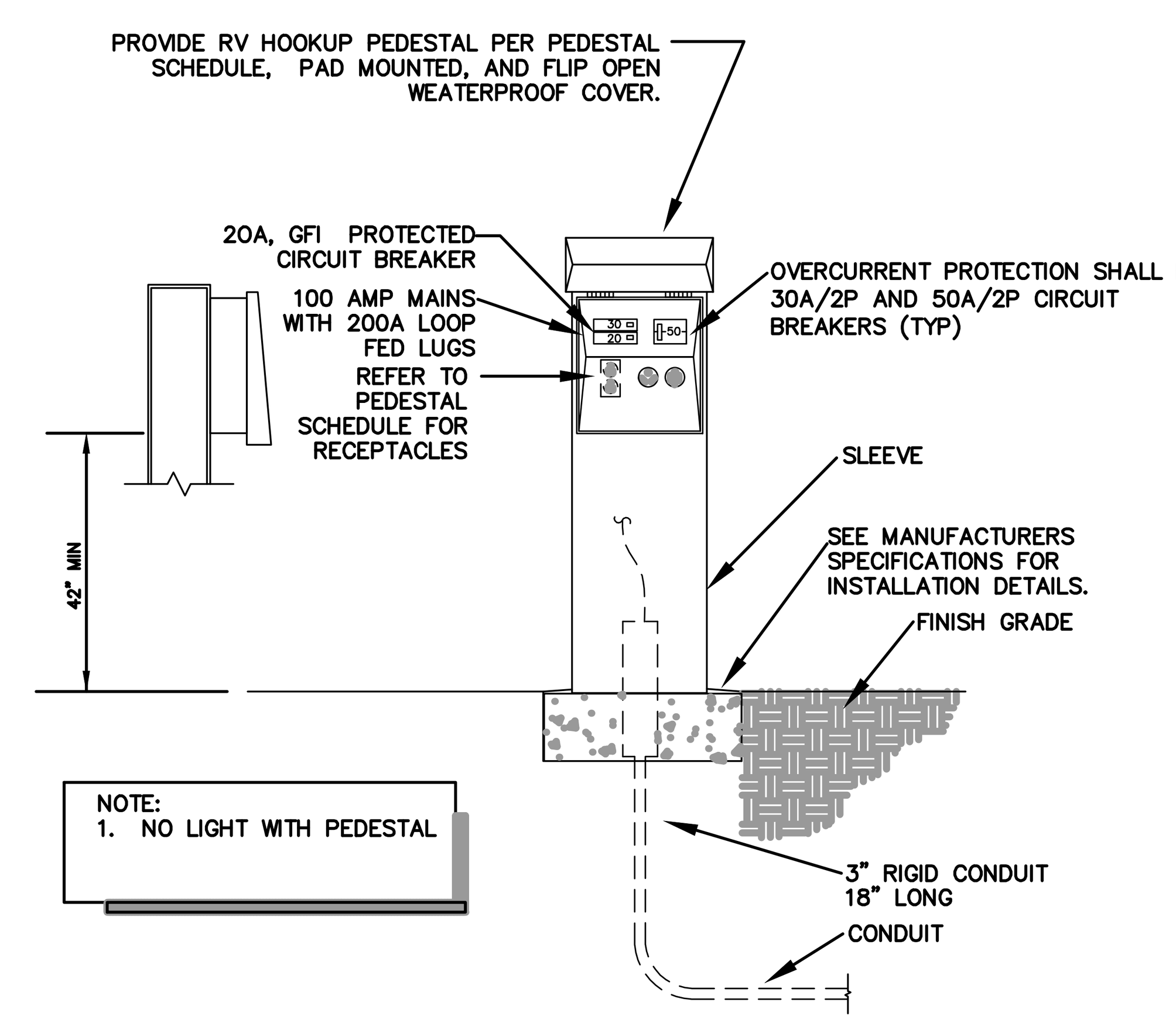
NOTES:
1. DETAIL IS SCHEMATIC ONLY.

5 SERVICE ENTRANCE/MDP DETAIL
SCALE: NTS



NOTES:
1. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.

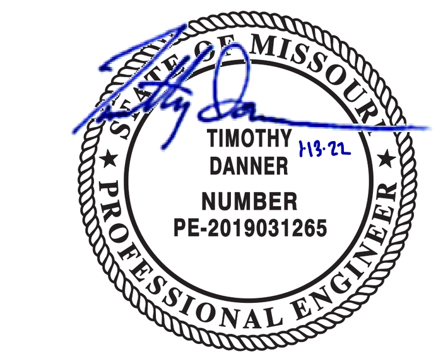
3 PDU INSTALLATION DETAIL
SCALE: NTS



NOTE:
1. NO LIGHT WITH PEDESTAL

1 RV HOOK UP ELECTRICAL PEDESTAL DETAIL
SCALE: NTS

STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR



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DEPARTMENT OF Natural Resources

DIVISION OF STATE PARKS

Campground Loop 4 Upgrades

Montauk State Park
345 County Road 6670

Salem, Missouri

PROJECT # X-2203-01
SITE # 5307
ASSET # 7815307049

REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
ISSUE DATE: 01/13/2023

CAD DWG FILE: X2203-01-5307-7815307049-E-DT-
DRAWN BY: SH
CHECKED BY: TD
DESIGNED BY: SH

SHEET TITLE:
ELECTRICAL DETAILS

SHEET NUMBER:
E-400

PANEL SCHEDULE

PANEL DESIGNATION:	SERVICE:	PANEL SIZE:
MDP	277/480V-3PH-4W FED FROM UTILITY:	MAIN BUS: 800 AMPS
MIN AIC: 65K	MOUNTING: Surface	PANEL OPTIONS: GND BUS, NEUTRAL BUS
NEMA TYPE: 3R	LOCATION: CAMPGROUND SITE	

REV NO.	NOTE NO.	CIRC NO.	LOAD DESCRIPTION	CIRC BRKR	POLES	LOAD (VA)	PHASE LOADS (VA) A	B	C
		1	DPU-N	SEE ONE-LINE		153600	76800	38400	38400
		2	DPU-S	SEE ONE-LINE		105600	52800	38400	14400
		3	SPD	SEE ONE-LINE					
		4	SPARE	SEE ONE-LINE					
		5	SPARE	SEE ONE-LINE					
						TOTAL CONNECTED PER PHASE (VA):	129600	76800	52800
						PHASE AMPERAGE (A):	468	277	191
						PANEL CONNECTED LOAD (VA):	259200		
						DIVERSIFIED CONNECTED LOAD:	153800		
						SPARE CAPACITY:	25%		
						MINIMUM PANEL/FEEDER SIZE(AMPS):	231		

Diversity Factor calculated based on NEC, section 220.

NOTES:
ALL SECTIONS TO BE FULLY BUSSED.

PANEL SCHEDULE

PANEL DESIGNATION:	SERVICE:	PANEL SIZE:		MOUNTING: Surface	
DPU-N	120/208V-3PH-4W FED FROM: MDP	MAIN BUS: 800 AMPS W / 700 AMP MAIN CKT BREAKER	PANEL OPTIONS: GND BUS	LOCATION: CAMPGROUND SITE	NEMA TYPE: 3R

REV NO.	NOTE NO.	CIRC NO.	LOAD DESCRIPTION	CIRC BRKR	POLES	LOAD (VA)	PHASE LOADS (VA) A	B	C	LOAD (VA)	POLES	CIRC BRKR	LOAD DESCRIPTION	CIRC NO.	NOTE NO.	REV NO.
		1	RV17,18,19,20	200	2	19200	38400			19200	2	200	RV21, 21B, 23, 24,	2		
		3	"	-		19200		38400		19200		-	"	4		
		5	RV13,14,15,16	200	2	19200			38400	19200	2	200	RV 25,26,27,28	6		
		7	"	-		19200	38400			19200		-	"	8		
		9	SPD	30	3			0			2	100	SPARE	10		
		11	"	-					0			-	"	12		
		13	"				0							14		
		15						0						16		
		17							0					18		
		19					0							20		
		21						0						22		
		23							0					24		
		25					0							26		
		27						0						28		
		29							0					30		
		31					0							32		
		33						0						34		
		35							0					36		
		37					0							38		
		39						0						40		
		41							0					42		
						TOTAL CONNECTED PER PHASE (VA):	76800	38400	38400	Diversity Factor calculated based on NEC, section 220.						
						PHASE AMPERAGE (A):	640	320	320	NOTES:						
						PANEL CONNECTED LOAD (VA):	153600.00									
						DIVERSIFIED CONNECTED LOAD:	81800.00									
						SPARE CAPACITY:	25%									
						MINIMUM PANEL/FEEDER SIZE(AMPS):	284									

PANEL SCHEDULE

PANEL DESIGNATION:	SERVICE:	PANEL SIZE:		MOUNTING: Surface	
DPU-S	120/208V-3PH-4W FED FROM: MDP	MAIN BUS: 800 AMPS W / 700 AMP MAIN CKT BREAKER	PANEL OPTIONS: GND BUS	LOCATION: CAMPGROUND SITE	NEMA TYPE: 3R

REV NO.	NOTE NO.	CIRC NO.	LOAD DESCRIPTION	CIRC BRKR	POLES	LOAD (VA)	PHASE LOADS (VA) A	B	C	LOAD (VA)	POLES	CIRC BRKR	LOAD DESCRIPTION	CIRC NO.	NOTE NO.	REV NO.
		1	RV9,9B,11, 12	200	2	19200	38400			19200	2	250	RV1,2,29,30	2		
		3	"	-		19200		38400		19200		-	"	4		
		5	RV 6,7,8	200	2	14400			14400		2	100	SPARE	6		
		7	"	-		14400	14400					-	"	8		
		9	SPD	30	3			0						10		
		11	"	-					0					12		
		13	"				0							14		
		15						0						16		
		17							0					18		
		19					0							20		
		21						0						22		
		23							0					24		
		25					0							26		
		27						0						28		
		29							0					30		
		31					0							32		
		33						0						34		
		35							0					36		
		37					0							38		
		39						0						40		
		41							0					42		
						TOTAL CONNECTED PER PHASE (VA):	52800	38400	14400	Diversity Factor calculated based on NEC, section 220.						
						PHASE AMPERAGE (A):	440	320	120	NOTES:						
						PANEL CONNECTED LOAD (VA):	105600.00									
						DIVERSIFIED CONNECTED LOAD:	77000.00									
						SPARE CAPACITY:	25%									
						MINIMUM PANEL/FEEDER SIZE(AMPS):	268									

CONDUIT APPLICATION SCHEDULE

APPLICATION	MATERIAL	FITTING TYPE (IF APPLICABLE)	NOTES
SERVICE ENTRANCE CONDUIT ABOVE GRADE ONLY	RIGID STEEL	–	–
FEEDERS ABOVE GRADE	RIGID STEEL	–	–
SERVICE ENTRANCE CONDUIT BELOW GRADE	PVC	–	2
FEEDERS AND BRANCH CIRCUITS BELOW GRADE	PVC	–	1

1. TRANSITION TO RIGID STEEL SHALL BE MADE PRIOR TO COMING UP FROM BELOW GRADE
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN UTILITY COMPANY REQUIREMENTS FOR PRIMARY SERVICE AND ENCASING IN CONCRETE IF REQUIRED.
3. WHERE CEILINGS EXIST, WIRING CAN BE OPEN, PLENUM–RATED WIRING. IN AREAS WITHOUT A CEILING, EMT CONDUIT IS REQUIRED.

RV POWER PEDESTAL SCHEDULE (RV1–31)

MARK	MANUFACTURER	MOUNTING	RECEPTACLES	ELECTRICAL REQUIREMENTS: CIRCUIT BREAKERS	VOLTAGE	AMPS BUS	AMPS FEED THRU LOOP	NOTES:	ACCESSORIES
"RV–"	MIDWEST ELECTRIC PRODUCTS	PAD MOUNTED	BR32U, BR54U, 5–20R2	CB250, CB130, GFI120	120/208V 1–PHASE	100	200	1., 2., 3.	WS

*EQUAL BY APPROVAL ONLY, OR ALTERNATE DESIGN METHOD.

ABBREVIATIONS

WS – WATER SHWROUD
GFI – GROUND FAULT INTERRUPTER
PC – PHOTOCELL
LT – 7 WATT LIGHT

*NOTES:

1. EQUAL TO EATON NEW PORT CAMP MATE #CRNBU421120M
2. FEED THRU 200A LUGS
3. PROVIDE GFI BREAKER AND NOT A GFI 20A DUPLEX RECEPTACLE

SUBSTATION POWER DISTRIBUTION UNIT

MARK	MANUFACTURER	LOCATION	TRANSFORMER KVA	VOLT/PH INPUT	VOLT/PH OUT	°C RISE	DISTRIBUTION UNIT VOLTAGE	AMPS BUS	BREAKERS # POLES	AIC	MATERIAL	MCB AMPS	ENCLOSURE	ACCESSORIES
"PDU–N"	EATON	PEDESTAL MOUNT	225	480/3ϕ	208/120 3ϕ	150 UL INSUL	120/208V 3–PHASE	800	SEE DIST. PANEL	–	CU	800	NEMA 3R	PW,CB,SM,VE,HD,G
"PDU–S"	EATON	PEDESTAL MOUNT	225	480/3ϕ	208/120 3ϕ	150 UL INSUL	120/208V 3–PHASE	800	SEE DIST. PANEL	–	CU	800	NEMA 3R	PW,CB,SM,VE,HD,G

*EQUAL BY APPROVAL ONLY, OR ALTERNATE DESIGN METHOD.

ACCESSORIES:
CB – BOLT ON BREAKERS
SM – SURFACE MOUNT TO CONCRETE EMBEDDED STEEL TUBES AND UNISTRUT
VE – VENTED ENCLOSURE
HD – HINGED ACCESS DOORS
G – FULL SIZED GROUND AND NEUTRAL BUS
PW – FACTORY WIRED SECONDARY TO PANEL

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