SITE PLAN FOR A PROPOSED

McDONALD'S RESTAURANT

NSN45021 (024-1329)

653 S HUNT ROAD
WILLARD, MISSOURI 65781

DEVELOPMENT NOTES:

1. SITE AREA: 1.526 ACRES
2. SITE ADDRESS: 653 S HUNT ROAD WILLARD, MO 65781
3. PROPERTY ID 0725302073
4. EXISTING ZONING: C-2 GENERAL BUSINESS DISTRICT
5. USE:
   EXISTING USE: VACANT
   PROPOSED USE: RESTAURANT, McDONALD'S
6. BUILDING: 4590 BUILDING
   GROSS BUILDING AREA: 4,388 SQ.FT.
   NET FLOOR AREA: 4,076 SQ.FT.

PROPERTY OWNER: CRIGHTON, NANCY J TRUSTEE
516 E NEW MELVILLE RD
WILLARD, MO 65781

7. SETBACKS (PER ORDINANCE): FRONT BUILDING SETBACK: 25'
   SIDE BUILDING SETBACK: NONE
   REAR BUILDING SETBACK: NONE
8. MAXIMUM BUILDING HEIGHT: 45'
9. ALL NEW UTILITIES SHALL BE LOCATED UNDERGROUND.
10. ALL NECESSARY UTILITIES (PUBLIC AND PRIVATE) WILL BE AVAILABLE, FUNCTIONING, AND USABLE AT THE TIME ANY STAGE OF THE PROJECT OR THE TOTAL PROJECT IS READY FOR OCCUPANCY.
11. FLOOD ZONE INFORMATION: ACCORDING TO THE FLOOD INSURANCE RATE MAP OF WILLARD, MO, MAP NUMBER 29077C0191E, WITH AN EFFECTIVE DATE OF DECEMBER 17, 2010, THIS PROPERTY IS LOCATED IN AN AREA OF MINIMAL FLOOD HAZARD – ZONE X.
12. ANY SIGNAGE SHALL BE BY SEPARATE PERMIT.

SITE DATA TABLE

SITE AREA	66,479 SQ.FT. (1.526 ACRES)
EXISTING IMPERVIOUS AREA	0 SQ. FT. (0 ACRES, 0%)
EXISTING PERVIOUS AREA	66,479 SQ. FT. (1.526 ACRES, 100.00%)
PROPOSED IMPERVIOUS AREA	41,341 SQ. FT. (0.949 ACRES, 62.19%)
PROPOSED PERVIOUS AREA	25,138 SQ. FT. (0.577 ACRES, 37.81%)
TOTAL DISTURBED AREA	1.95 ACRES

PARKING INFORMATION

TOTAL SPACES REQUIRED **25**	• 1 SPACE FOR EVERY 3 FIXED SEATS PLUS 1 SPACE FOR EVERY 2 EMPLOYEES ON THE LARGEST SHIFT. (48 SEATS)/3 = 16 (18 EMPLOYEES)/2 = 9
TOTAL SPACES PROVIDED **36**	• 21 PROPOSED SPACES: 9'X19' STANDARD @ 60' • 13 PROPOSED SPACES: 9'X18.5' STANDARD @90' • 2 PROPOSED 9'X18.5" ADA @ 60'

OWNER/TEAM INFORMATION

CIVIL ENGINEER & LAND SURVEYOR

CIVIL & ENVIRONMENTAL
CONSULTANTS, INC.
10300 ALLIANCE ROAD, SUITE 300
CINCINNATI, OH 45242
PH: (513) 985-0226
CONTACTS: TYLER AMICON

ARCHITECT

JAW ARCHITECTS, INC.
6115 CAMP BOWIE BLVD., SUITE 200
FORT WORTH, TX 76116
PH: (817) 705-3387
CONTACT: JERAMY WILLIAMS

DEVELOPER

McDONALD'S USA, LLC
110 N. CARPENTER ST.
CHICAGO, IL 60607
CONTACT: AMY SWITZER
PH: (913) 660-2205
EMAIL: AMY.SWITZER@US.MCD.COM

UTILITY COMPANIES

SANITARY SEWER SERVICE

CITY OF WILLARD PUBLIC WORKS
108 W JACKSON
WILLARD, MO 65781
CONTACT: TREVOR HOFFMAN
PH: 717-742-5320
EMAIL: PWD@CITYOFWILLARD.ORG

STORM WATER FACILITIES

CITY OF WILLARD PUBLIC WORKS
224 W JACKSON
WILLARD, MO 65781
CONTACT: MIKE RUESCH
PH: 417-742-5310
EMAIL: PLANNING@CITYOFWILLARD.ORG

WATER SERVICE

CITY OF WILLARD PUBLIC WORKS
108 W JACKSON
WILLARD, MO 65781
CONTACT: TREVOR HOFFMAN
PH: 417-742-5320
EMAIL: PWD@CITYOFWILLARD.ORG

ELECTRIC SERVICE

EMPIRE DISTRICT ELECTRIC
2690 W BROADWAY ST
BOLIVAR, MO 65613
CONTACT: JOHN PENNER
PH: 417-560-5582
EMAIL: JOHN.PENNER@LIBERTYUTILITIES.COM

GAS SERVICE

SPIRE ENERGY
520 E 5TH STREET
JOPLIN, MO 64801
CONTACT: DUSTIN BORLAND
PH: 513-287-5632
EMAIL: DUSTIN.BORLAND@SPIREENERGY.COM

CABLE TV SERVICE

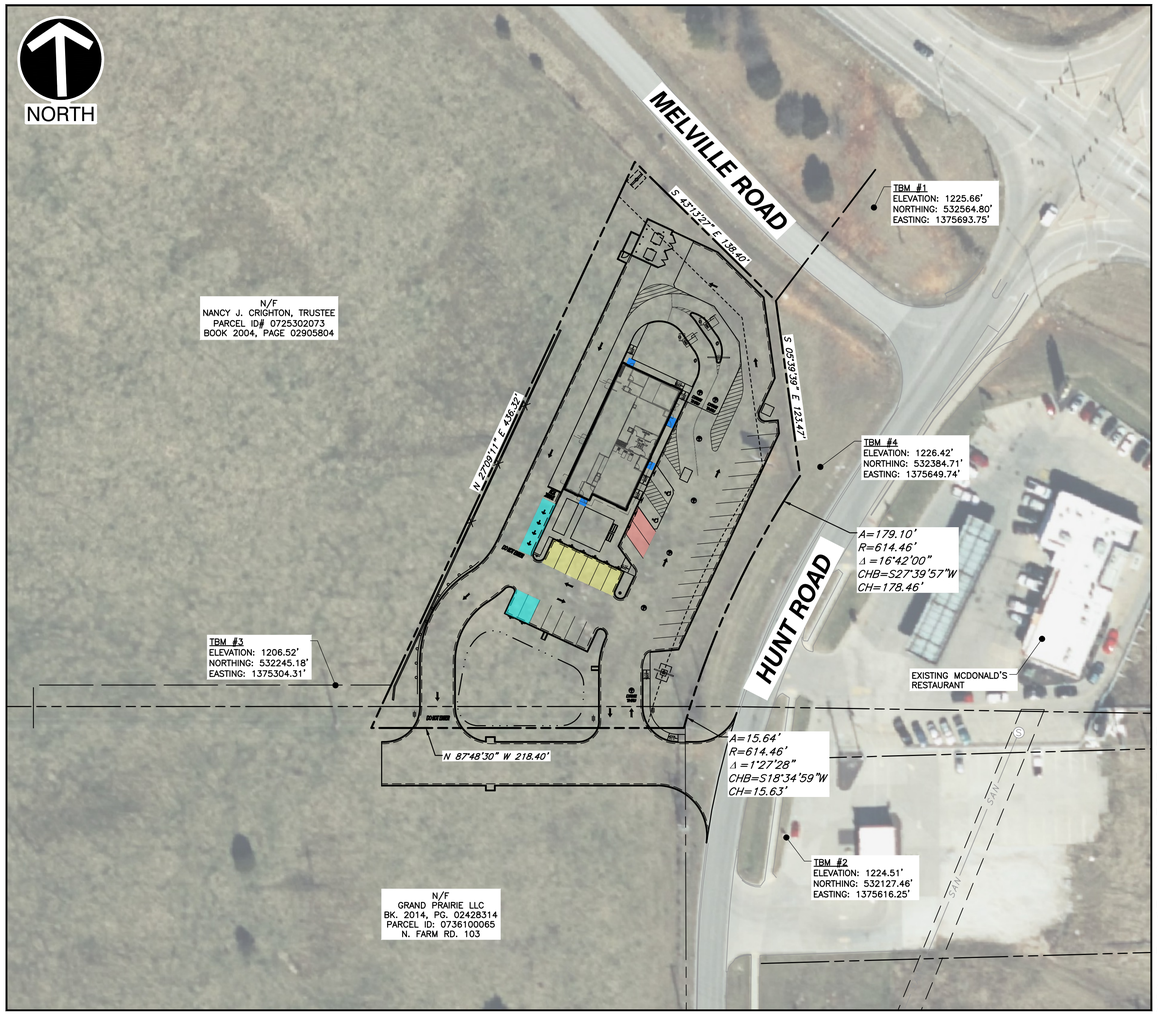
AT&T
CONTACT: JOHN PENNER
PH: 417-353-8877
EMAIL: JP1392@ATT.COM

TELEPHONE SERVICE

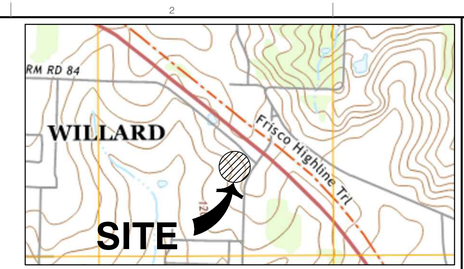
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811 or 1-800-344-7483
https://www.mo1call.com

NOTE: PRIOR TO ANY EXCAVATION FOR UNDERGROUND UTILITIES, CONTRACTOR SHALL EXPOSE AND VERIFY LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO GAS, WATER, AND SANITARY SEWER. ANY CONFLICTS SHALL BE REPORTED, IMMEDIATELY, TO THE ENGINEER AND THE APPROPRIATE AUTHORITIES.



SITE MAP
SCALE: 1"=50'



NORTH

SITE USGS AND LOCATION MAP
U.S.G.S. 7.5 TOPOGRAPHIC MAP OF WILLARD QUADRANGLE, MISSOURI – GREEN CO. DATED 2021.
SCALE: 1" = 1000'

SHEET INDEX

SHEET NUMBER	DRAWING NUMBER	SHEET TITLE
1	C000	COVER SHEET
2	C001	GENERAL NOTES
3	C100	EXISTING CONDITIONS & DEMOLITION PLAN
4	C200	LAYOUT PLAN
5	C300	GRADING PLAN
6	C301	ACCESS ROAD PLAN
7	C400	DRAINAGE PLAN
8	C401	DRAINAGE PROFILES
9	C500	UTILITY PLAN
10	C501	SANITARY MAIN EXTENSION PLAN
11	C502	SANITARY MAIN EXTENSION PROFILES
12	C700	LANDSCAPE PLAN
13	C701	LANDSCAPE DETAILS
14	C800	SITE DETAILS
15	C801	SITE DETAILS
16	C802	SITE DETAILS
17	C803	SITE DETAILS
18	C900	EROSION & SEDIMENT CONTROL PLAN
19	C901	EROSION & SEDIMENT CONTROL NOTES DETAILS
20	C902	EROSION & SEDIMENT CONTROL NOTES DETAILS
21	LI-1	IRRIGATION PLAN
22	LI-2	IRRIGATION DETAILS
23	LI-3	IRRIGATION SPECIFICATIONS
24	LIGHTING	PHOTOMETRIC PLAN
25	SV01	ALTA/NSPS LAND TITLE SURVEY COVER SHEET AND NOTES
26	SV01	ALTA/NSPS LAND TITLE SURVEY OVERALL SITE
27	SV01	ALTA/NSPS LAND TITLE SURVEY PROJECT SITE DETAIL
28	SV01	ALTA/NSPS LAND TITLE SURVEY AERIAL OVERLAY SHEET
29	COVER	RETAINING WALL COVER SHEET
30	P1	RETAINING WALL ELEVATION & PLAN
31	D1	RETAINING WALL NOTES & DETAILS
32	D2	RETAINING WALL DETAILS

LEGAL DESCRIPTION

PART OF THE SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 30 NORTH, RANGE 23 WEST, CITY OF WILLARD, GREENE COUNTY, MISSOURI DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 25;

THENCE ALONG THE LINE COMMON TO SECTIONS 25 AND 36, NORTH 87 DEGREES 48 MINUTES 30 SECONDS WEST A DISTANCE OF 21.35 FEET TO THE POINT OF INTERSECTION OF SAID COMMON SECTION LINE AND WEST RIGHT-OF-WAY LINE OF HUNT ROAD (VARIABLE WIDTH), SAID POINT BEING THE POINT OF BEGINNING;

THENCE DEPARTING SAID LINE COMMON TO SECTIONS 25 AND 36, AND ALONG THE WEST RIGHT OF WAY LINE OF HUNT ROAD (VARIABLE WIDTH), ALONG A CURVE TO THE LEFT, HAVING A RADIUS OF 614.46 FEET, AN ARC LENGTH OF 15.64 FEET, AND A CHORD WHICH BEARS SOUTH 89 DEGREES 34 MINUTES 59 SECONDS WEST, 15.63 FEET TO A POINT ON THE SOUTH LINE OF A TRACT OF LAND CONVEYED TO THE NANCY J. CRIGHTON REVOCABLE TRUST, PER INSTRUMENT RECORDED IN BOOK 2004, PAGE 02905804 OF THE GREENE COUNTY RECORDS;

THENCE, ALONG LAST SAID SOUTH LINE, NORTH 87 DEGREES 48 MINUTES 30 SECONDS WEST, 218.40 FEET;

THENCE, DEPARTING LAST SAID SOUTH LINE, NORTH 27 DEGREES 09 MINUTES 11 SECONDS EAST, 436.32 FEET THE SOUTH RIGHT-OF-WAY LINE OF NEW MELVILLE ROAD, (VARIABLE WIDTH);

THENCE, ALONG LAST SAID SOUTH RIGHT-OF-WAY LINE OF SAID NEW MELVILLE ROAD, VARIABLE WIDTH, SOUTH 43 DEGREES 13 MINUTES 27 SECONDS EAST, 138.40 FEET TO THE NORTHWEST LINE OF SAID HUNT ROAD (VARIABLE WIDTH);

THENCE, ALONG LAST SAID NORTHWEST LINE OF HUNT ROAD (VARIABLE WIDTH) THE FOLLOWING COURSES AND DISTANCES: SOUTH 05 DEGREES 39 MINUTES 39 SECONDS EAST, 123.47 FEET TO A POINT OF CURVATURE;

THENCE, CONTINUING, SOUTHWESTERLY ALONG A CURVE TO THE LEFT, HAVING AN ARC, A RADIUS OF 614.46 FEET, AN ARC LENGTH OF 179.10 FEET, AND A CHORD WHICH BEARS SOUTH 27 DEGREES 39 MINUTES 57 SECONDS WEST, A CHORD DISTANCE OF 178.46 FEET TO THE POINT OF BEGINNING AND CONTAINING 66,479 SQUARE FEET OR 1.526 ACRES, MORE OR LESS.

TOGETHER WITH
EASEMENTS SET FORTH IN EASEMENT AGREEMENT BY AND BETWEEN GRAND PRAIRIE, LIMITED LIABILITY COMPANY, A MISSOURI LIMITED LIABILITY COMPANY AND MCDONALD'S REAL ESTATE COMPANY, A DELAWARE CORPORATION, DATED _____, 2026, RECORDED _____, 2026, IN BOOK _____PAGE ____, IN THE OFFICE OF THE RECORDER OF GREENE COUNTY, MISSOURI.

STATE OF MISSOURI
PATRICK TODD BENNETT
NUMBER 2014039733
11/02/2026
PROFESSIONAL ENGINEER

REVISION RECORD

NO	DATE	DESCRIPTION
1	07/30/2026	REVISION 1
2	09/15/2026	REVISION 2 - ISSUED FOR CONSTRUCTION
3	10/16/2026	REVISION 3 - WATERMAIN AND QUADRANGLE ADJUSTMENTS
4	11/03/2026	REVISION 4 - WATER MAIN AND SANITARY MISDIRECTIONS

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF NORTH CAROLINA WILL BE PROVIDED BY CEC, ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE IN THE STATE OF OHIO WILL BE PROVIDED BY CEC, ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PROVIDED BY CEC, CORRIDOR ARCHITECTS, LLC.

10300 Alliance Road
Suite 300
Cincinnati, OH 45242
Ph: 513.985.0226
www.cecinc.com
Civil & Environmental Consultants, Inc.

McDONALD'S RESTAURANT
NSN 45021 (024-1329)
653 S HUNT RD
WILLARD, MO 65781

COVER SHEET

DRAWN BY:	CJW
CHECKED BY:	THA
DATE:	AUGUST 2026
DWG SCALE:	AS SHOWN
PROJECT NO.	353-866
APPROVED BY:	DRAFT

DRAWING NO.: **C000**
SHEET 1 OF 32

P:\350-000\353-866\-CADD\Dwg\C001\353866-CV01-C000.dwg[C000] 11/12/2026 - jwilmoth - 11/12/2026 4:55 PM

SURVEY NOTES

1. EXISTING CONDITIONS AS DEPICTED ON THESE PLANS ARE GENERAL AND ILLUSTRATIVE IN NATURE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO EXAMINE THE SITE AND BE FAMILIAR WITH EXISTING CONDITIONS PRIOR TO BIDDING ON THIS PROJECT. IF CONDITIONS ENCOUNTERED DURING EXAMINATION ARE SIGNIFICANTLY DIFFERENT THAN THOSE SHOWN, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.
2. THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR COMPLYING WITH APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS, TOGETHER WITH EXERCISING PRECAUTIONS AT ALL TIMES FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SUBCONTRACTORS TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.
3. THE CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE ENGINEER, OWNER, AND OWNER'S REPRESENTATIVE FOR ANY AND ALL INJURIES AND/OR DAMAGES TO PERSONNEL, EQUIPMENT AND/OR EXISTING FACILITIES OCCURRING IN THE COURSE OF THE DEMOLITION AND CONSTRUCTION DESCRIBED IN THE PLANS AND SPECIFICATIONS.
4. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL CODES, OBTAIN ALL APPLICABLE PERMITS, AND PAY ALL REQUIRED FEES PRIOR TO BEGINNING WORK.
5. ALL WORK PERFORMED BY THE CONTRACTOR SHALL CONFORM TO THE LATEST REGULATIONS OF THE AMERICANS WITH DISABILITIES ACT. IF DEVIATION FROM THE REQUIREMENTS ARE PROPOSED THE ENGINEER SHALL BE CONTACTED IMMEDIATELY.
6. CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION. IT IS NOT THE ENGINEER'S INTENT THAT ANY SINGLE PLAN SHEET IN THIS SET OF DOCUMENTS FULLY DEPICTS ALL WORK ASSOCIATED WITH THE PROJECT.
8. BEFORE INSTALLATION OF STORM OR SANITARY SEWER, OR OTHER UTILITY, THE CONTRACTOR SHALL VERIFY ALL CROSSINGS, BY EXCAVATION WHERE NECESSARY, AND INFORM THE OWNER AND THE ENGINEER OF ANY CONFLICTS. THE ENGINEER WILL BE HELD HARMLESS IN THE EVENT HE IS NOT NOTIFIED OF DESIGN CONFLICTS PRIOR TO CONSTRUCTION.
9. UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE THEIR LOCATIONS SHALL BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF THE LOCATION OF ALL UNDERGROUND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL BE LOCATED PRIOR TO ANY GRADING OR CONSTRUCTION OF THE IMPROVEMENTS.

DEMOLITION NOTES

1. CLEARING LIMITS SHALL BE PHYSICALLY MARKED IN THE FIELD.
2. ALL DEMOLITION WASTE AND CONSTRUCTION DEBRIS SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE DESIGNATED AND SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF OFFSITE IN A STATE APPROVED WASTE SITE AND IN ACCORDANCE WITH ALL LOCAL AND STATE CODES AND PERMIT REQUIREMENTS. TAKE CARE TO PROTECT UTILITIES THAT ARE TO REMAIN. REPAIR DAMAGE ACCORDING TO THE APPROPRIATE UTILITY COMPANY STANDARDS AND AT THE CONTRACTOR'S EXPENSE.
3. ALL UTILITY DISCONNECTION, REMOVAL, RELOCATION, CUTTING, CAPPING AND/OR ABANDONMENT SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANY / AGENCY. UTILITY CONTACTS ARE LISTED ON THE COVERSHEET.
4. THE BURNING OF CLEARED MATERIAL AND DEBRIS SHALL NOT BE ALLOWED UNLESS CONTRACTOR OBTAINS PRIOR WRITTEN AUTHORIZATION FROM THE LOCAL AUTHORITIES.
5. EROSION AND SEDIMENTATION CONTROL MEASURES AROUND AREAS OF DEMOLITION SHALL BE PROPERLY INSTALLED AND SHALL FUNCTION PROPERLY PRIOR TO INITIALIZATION OF DEMOLITION ACTIVITIES.
6. ASBESTOS OR HAZARDOUS MATERIALS ARE NOT EXPECTED, IF FOUND ON SITE, SUCH MATERIALS SHALL BE REMOVED BY A LICENSED HAZARDOUS MATERIALS CONTRACTOR. CONTRACTOR SHALL NOTIFY OWNER IMMEDIATELY IF HAZARDOUS MATERIALS ARE ENCOUNTERED.
7. CONTRACTOR SHALL ADHERE TO ALL LOCAL, STATE, FEDERAL AND OSHA REGULATIONS DURING ALL DEMOLITION ACTIVITIES.
8. CONTRACTOR SHALL PROTECT ALL CORNER PINS, MONUMENTS, PROPERTY CORNERS AND BENCHMARKS DURING DEMOLITION ACTIVITIES. IF DISTURBED, CONTRACTOR SHALL HAVE DISTURBED ITEMS RESET BY A LICENSED SURVEYOR AT NO ADDITIONAL COST TO THE OWNER.
9. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES, STRUCTURES, AND FEATURES TO REMAIN. ANY ITEMS TO REMAIN THAT HAVE BEEN DISTURBED OR DAMAGED AS A RESULT OF CONSTRUCTION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT CONTRACTOR'S EXPENSE.
10. CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC CONTROL MEASURES IN ACCORDANCE WITH STATE DEPARTMENT OF TRANSPORTATION REGULATIONS AND AS REQUIRED BY LOCAL AGENCIES WHEN WORKING IN AND/OR ALONG STREETS, ROADS, HIGHWAYS, ETC. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN APPROVAL AND COORDINATE WITH LOCAL AND/OR STATE AGENCIES REGARDING THE NEED, EXTENT AND LIMITATIONS ASSOCIATED WITH INSTALLING AND MAINTAINING TRAFFIC CONTROL MEASURES.
11. PROVIDE NEAT, STRAIGHT, FULL DEPTH, SAW CUTS OF EXISTING PAVEMENT WHERE INDICATED ALONG LIMITS OF PAVEMENT DEMOLITION.
12. ALL UTILITY AND STRUCTURE REMOVAL, RELOCATION, CUTTING, CAPPING AND/OR ABANDONMENT SHALL BE COORDINATED AND PROPERLY DOCUMENTED BY A CERTIFIED PROFESSIONAL, WHEN APPLICABLE, WITH THE APPROPRIATE UTILITY COMPANY, MUNICIPALITY AND/OR AGENCY. DEMOLITION CONTRACTOR SHALL REFER TO ANY ENVIRONMENTAL STUDIES FOR DEMOLITION RECOMMENDATIONS AND GUIDANCE. AVAILABLE ENVIRONMENTAL STUDIES MAY INCLUDE, BUT ARE NOT LIMITED TO: PHASE I ESA, PHASE II, WETLAND AND STREAM DELINEATION AND ASBESTOS SURVEY. ALL APPLICABLE ENVIRONMENTAL STUDIES SHALL BE MADE AVAILABLE UPON REQUEST.
14. NO TREES SHALL BE REMOVED, NOR VEGETATION DISTURBED BEYOND THE LIMITS OF CONSTRUCTION WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE OWNER'S REPRESENTATIVE.
16. ALL PAVEMENT, BASE COURSES, SIDEWALKS, CURBS, BUILDINGS, FOUNDATIONS, ETC., WITHIN THE AREA TO BE DEMOLISHED SHALL BE REMOVED TO FULL DEPTH. EXISTING BASE COURSE MATERIALS MAY BE WORKED INTO THE NEW PAVEMENT OR BUILDING SUBGRADE PROVIDED THAT THE GRADATION, CONSISTENCY, COMPACTION, SUBGRADE CONDITION, ETC., ARE IN ACCORDANCE WITH THE SPECIFICATIONS AND RECOMMENDATIONS OF THE REPORT OF GEOTECHNICAL INVESTIGATION. BASE COURSE MATERIALS SHALL NOT BE WORKED INTO THE SUBGRADE AREAS TO RECEIVE LANDSCAPING.
17. THE CONTRACTOR SHALL USE SUITABLE METHODS TO CONTROL DUST AND DIRT CAUSED BY THE DEMOLITION ACTIVITIES.

MISSOURI ONE CALL SYSTEM
811 or 1-800-344-7483
https://www.mo1call.com

NOTE: PRIOR TO ANY EXCAVATION FOR UNDERGROUND UTILITIES, CONTRACTOR SHALL EXPOSE AND VERIFY LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO GAS, WATER, AND SANITARY SEWER. ANY CONFLICTS SHALL BE REPORTED, IMMEDIATELY, TO THE ENGINEER AND THE APPROPRIATE AUTHORITIES.

LAYOUT NOTES

1. THE CONTRACTOR SHALL CHECK EXISTING GRADES, DIMENSIONS, AND INVERTS IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE PRIOR TO BEGINNING WORK.
2. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES, INCLUDING IRRIGATION LINES. TAKE CARE TO PROTECT UTILITIES THAT ARE TO REMAIN. RELOCATE EXISTING UTILITIES AS INDICATED, OR AS NECESSARY FOR CONSTRUCTION.
3. PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING PAVEMENT AND NEW PAVEMENT. FIELD ADJUSTMENT OF FINAL GRADES MAY BE NECESSARY. INSTALL ALL UTILITIES, INCLUDING IRRIGATION SLEEVING, PRIOR TO INSTALLATION OF PAVED SURFACES.
4. THE CONTRACTOR SHALL PROTECT ALL TREES TO REMAIN.
5. SITE WORK CONCRETE WALKS AND PADS SHALL HAVE A BROOM FINISH TO ALL SURFACES. SITE WORK CONCRETE SHALL BE CLASS "A" (4,000 PSI @ 28 DAYS) UNLESS OTHERWISE NOTED.
6. ALL DAMAGE TO EXISTING PAVEMENT TO REMAIN WHICH RESULTS FROM THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED WITH LIKE MATERIALS AT THE CONTRACTOR'S EXPENSE.
7. SITE DIMENSIONS SHOWN ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
8. CONTRACTOR SHALL MAINTAIN ONE SET OF AS-BUILT / RECORD DRAWINGS ON THE JOB SITE DURING CONSTRUCTION FOR DISTRIBUTION TO THE OWNER AND/OR OWNER'S REPRESENTATIVE UPON COMPLETION.
9. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT DIMENSIONS AND LOCATIONS OF UTILITY SERVICE ENTRY LOCATIONS AND PRECISE BUILDING DIMENSIONS. SHOULD SIGNIFICANT DEVIATION EXIST BETWEEN WHAT IS SHOWN HEREIN THE CONTRACTOR SHALL CONTACT THE ENGINEER.
10. THIS SITE LAYOUT IS SPECIFIC TO THE APPROVALS NECESSARY FOR THE CONSTRUCTION IN ACCORDANCE WITH TOWN OF BROWNSBURG STANDARDS. NO CHANGES TO THE SITE LAYOUT ARE ALLOWED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER. CHANGES MADE TO THE SITE LAYOUT WITHOUT APPROVAL IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR. CHANGES INCLUDE BUT ARE NOT LIMITED TO, INCREASED IMPERVIOUS PAVEMENT, ADDITION / DELETION OF PARKING SPACES, MOVEMENT OF CURB LINES, CHANGES TO DRAINAGE STRUCTURES AND PATTERNS, LANDSCAPING, ETC.

DRAINAGE NOTES

1. DISTANCES SHOWN ON PIPING ARE HORIZONTAL DISTANCES FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE, UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE INSTALLATION, INSPECTION, TESTING AND FINAL ACCEPTANCE OF ALL NEW STORMWATER MANAGEMENT FACILITIES CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH ALL APPLICABLE REGULATING AGENCIES CONCERNING INSTALLATION, INSPECTION AND APPROVAL OF THE STORM DRAINAGE SYSTEM CONSTRUCTION.
3. ALL STORMWATER MANAGEMENT FACILITIES, INCLUDING COLLECTION AND CONVEYANCE STRUCTURES SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE LOCAL AND STATE CODES AND REGULATIONS.
4. ANY WORK PERFORMED IN THE LOCAL OR STATE RIGHT OF WAYS SHALL BE IN ACCORDANCE WITH THE APPLICABLE LOCAL OR STATE REQUIREMENTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THE NECESSARY PERMITS FOR THE WORK, SCHEDULE NECESSARY INSPECTIONS, AND PROVIDE THE NECESSARY TRAFFIC CONTROL MEASURES AND DEVICES, ETC., FOR WORK PERFORMED IN THE RIGHT OF WAYS.

GRADING NOTES

1. CONTRACTOR SHALL ADHERE TO THE EROSION CONTROL PLAN PREPARED FOR THIS PROJECT.
2. REFER TO AND FOLLOW THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEERING REPORT PREPARED BY OTHERS.
3. EARTHWORK SHALL INCLUDE CLEARING AND GRUBBING, STRIPPING AND STOCKPILING TOPSOIL, MASS GRADING, EXCAVATION, FILLING, UNDER CUT AND REPLACEMENT, IF REQUIRED, AND COMPACTION.
4. CONTRACTOR TO REFILL UNDERCUT AREAS WITH SUITABLE MATERIAL AND COMPACT AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.
5. PLACE TOPSOIL OVER THE SUBGRADE OF UNPAVED, DISTURBED AREAS TO A DEPTH INDICATED ON THE LANDSCAPE PLANS.
6. PAVEMENT SLOPES ACROSS ACCESSIBLE PARKING STALLS AND ADJOINING ACCESS AISLES SHALL BE MAXIMUM 2%.
7. NO SLOPE SHALL EXCEED 3:1 (HORIZONTAL:VERTICAL) UNLESS NOTED OTHERWISE.
8. ALL AREAS NOT PAVED SHALL BE STABILIZED IN ACCORDANCE WITH THE EROSION CONTROL PLAN, UNLESS NOTED OTHERWISE.
9. ALL EXCESS SOIL MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE DESIGNATED SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF OFFSITE AT NO ADDITIONAL COST TO THE OWNER IN ACCORDANCE WITH ALL LOCAL AND STATE CODES AND PERMIT REQUIREMENTS.
10. ALL EVACUATED AREAS BENEATH AND WITHIN TWO FEET OF THE PAVEMENT SHALL BE BACKFILLED WITH GRANULAR MATERIAL AND COMPACTED TO 90% MAXIMUM DENSITY AS DETERMINED BY THE "STANDARD AASHO T-180 COMPACTION TEST" (ASTM D-1557-70). ALL OTHER AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL PLACED IN THE 8" MAXIMUM THICKNESS LIFTS, FREE OF FROZEN PARTICLES, AND COMPACTED TO 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D-1557-70 OR AS OTHERWISE DETERMINED BY THE GEOTECHNICAL ENGINEER.
11. ALL SOILS TEST SHALL BE VERIFIED BY A GEOTECHNICAL ENGINEER CONCURRENT WITH THE GRADING AND BACKFILLING OPERATIONS.
12. A GEOTECHNICAL ENGINEER SHALL BE EMPLOYED BY THE OWNER AND BE ON SITE DURING GRADING OPERATIONS. ALL SOILS TESTS SHALL BE VERIFIED BY THE GEOTECHNICAL ENGINEER CONCURRENT WITH THE GRADING AND BACK FILLING OPERATIONS.
13. THE GRADING CONTRACTOR SHALL PERFORM A COMPLETE GRADING AND COMPACTION OPERATION AS SHOWN ON THE PLANS, STATED IN THESE NOTES, OR REASONABLY IMPLIED THERE FROM, ALL IN ACCORDANCE WITH THE PLANS AND NOTES AS INTERPRETED BY THE GEOTECHNICAL ENGINEER.
14. ALL AREAS SHALL BE ALLOWED TO DRAIN. ALL LOW POINTS SHALL BE PROVIDED WITH TEMPORARY DITCHES.
15. ANY EXISTING TRASH AND DEBRIS CURRENTLY ON THIS PROPERTY MUST BE REMOVED AND DISPOSED OF OFF-SITE IN AN APPROVED MANNER.
16. SITE PREPARATION INCLUDES THE CLEARANCE OF ALL STUMPS, TREES, BUSHES, SHRUBS, AND WEEDS; THE GRUBBING AND REMOVAL OF ROOTS AND OTHER SURFACE OBSTRUCTIONS FROM THE SITE; AND THE DEMOLITION AND REMOVAL OF ANY MAN-MADE STRUCTURES. THE UNSUITABLE MATERIAL SHALL BE PROPERLY DISPOSED OF OFF-SITE. TOPSOIL AND GRASS IN THE FILL AREAS SHALL BE THOROUGHLY DISCED PRIOR TO THE PLACEMENT OF ANY FILL. THE GEOTECHNICAL ENGINEER SHALL APPROVE THE DISCING OPERATION.
17. TREE CLEARING WILL BE PERFORMED BY THE OWNER IN ADVANCE OF FULL SITE WORK (NOT INCLUDING STUMP GRINDING).
18. COMPACTION EQUIPMENT SHALL CONSIST OF TAMPING ROLLERS, PNEUMATIC-TIRED ROLLERS, VIBRATORY ROLLER, OR HIGH SPEED IMPACT TYPE DRUM ROLLERS ACCEPTABLE TO THE GEOTECHNICAL ENGINEER. THE ROLLER SHALL BE DESIGNED SO AS TO AVOID THE CREATION OF A LAYERED FILL WITHOUT PROPER BLENDING OF SUCCESSIVE FILL LAYERS.
19. THE GEOTECHNICAL ENGINEER SHALL OBSERVE AND TEST THE PLACEMENT OF THE FILL TO VERIFY THAT SPECIFICATIONS ARE MET. A SERIES OF FILL DENSITY TESTS WILL BE DETERMINED ON EACH LIFT OF FILL. INTERIM REPORTS SHOWING FILL QUALITY WILL BE MADE TO THE OWNER AT REGULAR INTERVALS.
20. THE GEOTECHNICAL ENGINEER SHALL NOTIFY THE CONTRACTOR OF REJECTION OF A LIFT OF FILL OR PORTION THEREOF. THE CONTRACTOR SHALL REWORK THE REJECTED PORTION OF FILL AND OBTAIN NOTIFICATION FROM THE GEOTECHNICAL ENGINEER OF ITS ACCEPTANCE PRIOR TO THE PLACEMENT OF ADDITIONAL FILL.
21. ALL AREAS TO RECEIVE FILL SHALL BE SCARIFIED TO A DEPTH OF NOT LESS THAN 6 INCHES AND THEN COMPACTED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT. THE GEOTECHNICAL ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING THE ACCEPTABILITY OF SOILS PLACED. ANY UNACCEPTABLE SOILS PLACED SHALL BE REMOVED AT THE CONTRACTOR'S EXPENSE.
22. THE SEQUENCE OF OPERATION IN THE FILL AREAS WILL BE FILL, COMPACT, VERIFY ACCEPTABLE SOIL DENSITY, AND REPETITION OF THE SEQUENCE. THE ACCEPTABLE MOISTURE CONTENTS DURING THE FILLING OPERATION ARE THOSE AT WHICH SATISFACTORY DRY DENSITIES CAN BE OBTAINED. THE ACCEPTABLE MOISTURE CONTENTS DURING THE FILLING OPERATION IN THE REMAINING AREAS ARE FROM -2 TO +2 PERCENT ABOVE THE OPTIMUM MOISTURE VALUE.
23. THE SURFACE OF THE FILL SHALL BE FINISHED SO THAT IT WILL NOT IMPOUND WATER. IF AT THE END OF A DAYS WORK IT WOULD APPEAR THAT THERE MAY BE RAIN PRIOR TO THE NEXT WORKING DAY, THE SURFACE SHALL BE FINISHED SMOOTH. IF THE SURFACE HAS BEEN FINISHED SMOOTH FOR ANY REASON, IT SHALL BE SCARIFIED BEFORE PROCEEDING WITH THE PLACEMENT OF SUCCEEDING LIFTS. FILL SHALL NOT BE PLACED ON FROZEN GROUND, NOR SHALL FILLING OPERATIONS CONTINUE WHEN THE TEMPERATURE IS SUCH AS TO PERMIT THE LAYER UNDER PLACEMENT TO FREEZE.
24. ALL FILLED PLACES, INCLUDING TRENCH BACKFILLS, UNDER BUILDINGS, PROPOSED STORM & SANITARY SEWER LINES, ETC. SHALL BE COMPACTED TO THE CRITERIA AS SPECIFIED BY THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT OR BE EQUAL TO THE REQUIREMENTS OF THE CITY OF HUXLEY IF SO ESTABLISHED.
25. ANY CONTAMINATED SOIL ENCOUNTERED DURING EXCAVATION SHALL BE HAULED AND PLACED AS DIRECTED BY THE OWNERS ENVIRONMENTAL ENGINEERING REPRESENTATIVE.

UTILITY NOTES

1. ALL PROPOSED UTILITY LINES AND EXTENSIONS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE CORRESPONDING UTILITY'S SPECIFICATIONS. CONTRACTOR SHALL COORDINATE UTILITY DISCONNECTIONS WITH THE APPROPRIATE AGENCY.
2. THE CONTRACTOR IS PARTICULARLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF THE EXISTING UTILITIES SHOWN HEREON IS BASED ON TOPOGRAPHIC SURVEYS AND RECORD DRAWINGS. THE CONTRACTOR SHALL NOT RELY UPON THIS INFORMATION AS BEING EXACT OR COMPLETE. SHOULD UNCHARTED UTILITIES BE ENCOUNTERED DURING EXCAVATION OPERATIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AS SOON AS POSSIBLE FOR INSTRUCTIONS. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION AND REQUEST FIELD VERIFICATION OF UTILITY LOCATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO RELOCATE EXISTING UTILITIES CONFLICTING WITH IMPROVEMENTS SHOWN HEREON IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.
3. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE SEQUENCING OF CONSTRUCTION FOR ALL UTILITY LINES SO THAT WATER LINES, GAS LINES, AND UNDERGROUND ELECTRIC DO NOT CONFLICT WITH SANITARY SEWERS OR STORM SEWERS. INSTALL UTILITIES PRIOR TO PAVEMENT CONSTRUCTION.
5. ALL TRENCH SPOILS SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE DESIGNATED. SPOILS SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF OFF SITE AT NO ADDITIONAL COST TO THE OWNER IN ACCORDANCE WITH ALL LOCAL AND STATE CODES AND PERMIT REQUIREMENTS.
6. ADJUST ALL EXISTING UTILITY SURFACE FEATURES INCLUDING BUT NOT LIMITED TO CASTINGS, VALVE BOXES, PEDESTALS, CLEANOUTS, ETC. TO MATCH PROPOSED FINISHED GRADES, UNLESS OTHERWISE INDICATED.
7. THE CONTRACTOR SHALL PROVIDE RECORD DRAWINGS OF ALL IMPROVEMENTS. INCLUDE AT LEAST TWO DIMENSIONS TO EACH VALVE AND MANHOLE FROM KNOWN SITE FEATURES. DRAWINGS SHALL INCLUDE HORIZONTAL AND VERTICAL INFORMATION ON ALL NEW UTILITIES AS WELL AS EXISTING UTILITIES ENCOUNTERED.
8. CONTRACTOR SHALL COORDINATE WITH EACH UTILITY PROVIDER THE INSTALLATION OF UTILITY CONDUITS FOR TELEPHONE, ELECTRIC, GAS, IRRIGATION, AND ETC.. CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR FOR THE TRENCHING AND CONDUIT INSTALLATION. COST FOR INSTALLATION AND MATERIALS SHALL BE INCLUDED IN VARIOUS BID ITEMS.
9. ALL DOWNSPOUT COLLECTORS TO BE CONSTRUCTED OF PVC SDR-35 OR SIMILAR, OR AS REQUIRED BY CODE.
10. THE SITE LIGHTING LAYOUT SHOWN HEREON IS BY OTHERS AND IS FOR COORDINATION PURPOSES ONLY. CIVIL & ENVIRONMENTAL CONSULTANTS, INC. HAS NOT PERFORMED A SITE LIGHTING DESIGN FOR THIS PROJECT AND SUCH SHALL NOT BE INFERRED DUE THE ILLUSTRATION OF FIXTURE DESIGNATIONS AND LOCATIONS SHOWN HEREON. PLEASE REFER TO SEPARATE PLANS BY OTHERS FOR DETAILED FIXTURE AND POLE SPECIFICATIONS, ELECTRICAL LAYOUT AND CONTROL SYSTEM DESIGNS AND ANY OTHER SITE LIGHTING ELEMENTS.
11. ALL TRENCH BACKFILLS UNDER PAVED AREAS SHALL BE GRANULAR BACKFILL AND SHALL BE COMPACTED TO 90% OF THE MAXIMUM DENSITY AS DETERMINED BY THE "STANDARD AASHTO T-180 COMPACTION TEST," (A.S.T.M.-D-1557) OR PER GEOTECHNICAL REPORT. ALL OTHER TRENCH BACKFILLS MAY BE EARTH MATERIAL (FREE OF LARGE CLODS OR STONES). ALL TRENCHES ARE TO BE BACK-FILLED ACCORDING TO THE CITY OF WILLARD STANDARD CONSTRUCTION SPECIFICATIONS.
12. ALL P.V.C. SANITARY SEWER IS TO BE SCHEDULE 40 WITH CLEAN 1/2" TO 1" GRANULAR STONE BEDDING UNIFORMLY GRADED. THIS BEDDING SHALL EXTEND FROM 4" BELOW THE PIPE TO THE SPRINGLINE OF THE PIPE. IMMEDIATE BACKFILL OVER PIPE SHALL CONSIST OF SAME SIZE "CLEAN" OR MINUS STONE FROM SPRINGLINE OF PIPE TO 12" ABOVE THE TOP OF PIPE. A NO. 12 TRACER WIRE OR OTHER UTILITY LOCATION TECHNOLOGY SHALL BE PLACED ON ALL LATERAL SERVICE LINES WITHIN THE RIGHT OF WAY, AND AN ACCESS POINT WITHIN A PROTECTIVE ENCLOSURE OVER THE CLEANOUT FOR GRAVITY SEWER LATERALS SHALL BE PROVIDED.
13. ALL WATER LINES SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY, FROM ANY SANITARY SEWER, STORM SEWER, OR MANHOLE. 18" VERTICAL CLEARANCE FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE SHALL BE MAINTAINED WHEREVER WATER LINES MUST CROSS SANITARY SEWERS, LATERALS, OR STORM DRAINS. THE WATER LINE SHALL BE LAID AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER LINE IS ABOVE THE TOP OF THE DRAIN OR SEWER. A FULL LENGTH OF WATER PIPE SHALL BE CENTERED OVER THE SEWER LINE TO BE CROSSED SO THAT THE JOINTS WILL BE EQUALLY DISTANT FROM THE SEWER AND AS REMOTE THEREFROM AS POSSIBLE. THIS VERTICAL SEPARATION SHALL BE MAINTAINED FOR THAT PORTION OF THE WATER LINE LOCATED WITHIN 10 FEET HORIZONTALLY, OF ANY SEWER OR DRAIN IT CROSSES.
14. ALL WATER PIPE SHALL CONFORM TO CITY OF WILLARD SPECIFICATIONS AND C-900 STANDARD SPECIFICATION FOR SEAMLESS COPPER WATER TUBE.
15. WATER LINES, VALVES, SLEEVES, METERS, AND FITTINGS SHALL MEET ALL SPECIFICATIONS AND INSTALLATION REQUIREMENTS OF CITY OF SOUTHAVEN WATER DEPARTMENT. CONTRACTOR TO NOTIFY ALL AFFECTED PROPERTY OWNERS. ANY SHUTTING DOWN OF THE PUBLIC WATER SUPPLY SHALL BE COORDINATED WITH THE WATER COMPANY.
16. BRICK WILL NOT BE USED IN THE CONSTRUCTION OF SANITARY SEWER MANHOLES.
17. GAS, WATER AND OTHER UNDERGROUND UTILITIES SHALL NOT CONFLICT WITH THE DEPTH OR HORIZONTAL LOCATION OF EXISTING OR PROPOSED SANITARY OR STORM SEWERS, INCLUDING HOUSE LATERALS.
18. ALL EXISTING SITE IMPROVEMENTS DISTURBED, DAMAGED OR DESTROYED SHALL BE REPAIRED OR REPLACED TO MATCH PRE-CONSTRUCTION CONDITIONS.
19. HIGH DENSITY POLYETHYLENE PIPE (HDPE) FOR STORM SEWERS SHALL MEET ASHTO M294 OR ASTM F2306.
20. TRACER WIRE IS REQUIRED ON ALL WATER LINES.
21. WATER LINES, VALVES, FITTINGS, AND HYDRANTS SHALL BE INSTALLED, DISINFECTED, PRESSURE TESTED, AND LEAKAGE TESTED IN ACCORDANCE WITH ALL STATE AND LOCAL REQUIREMENTS.
22. CONSTRUCTION AND MATERIALS FOR THE SANITARY SYSTEM SHALL CONFORM TO THE SPECIFICATIONS OF THE MISSOURI DEPARTMENT OF NATURAL RESOURCES AND THE WEST CENTRAL CONSERVANCY.

WATER NOTES

1. WATER LINES SHALL HAVE A MIN. OF 10 FEET HORIZONTAL OR 18 INCHES OF VERTICAL CLEARANCE (MEASURED FROM EDGE OF PIPE TO EDGE OF PIPE) WITH ALL SANITARY SEWER AND STORM SEWER LINES.
2. WATER LINES SHALL HAVE A MINIMUM OF 42 INCHES OF COVER, UNLESS OTHERWISE NOTED, MEASURED FROM THE TOP OF FINISHED GRADE TO THE TOP OF PIPE.
3. WATER MAINS CROSSING SEWERS, OR ANY OTHER LINES CARRYING NON-POTABLE FLUIDS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL CLEAR DISTANCE OF 18 INCHES BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF THE NON-POTABLE PIPELINE.
4. AT WATER AND SANITARY SEWER CROSSINGS, THE FULL LENGTH OF THE WATER PIPE SHALL BE LOCATED SO BOTH JOINTS WILL BE AS FAR FROM SEWER AS POSSIBLE. SPECIAL STRUCTURAL SUPPORT FOR THE WATER AND SEWER PIPES MAY BE REQUIRED.
5. THE GENERAL CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGES TO ADJACENT PROPERTY DURING THE CONSTRUCTION PHASES OF THIS PROJECT.
6. CONTRACTOR IS TO REMOVE AND DISPOSE OF ALL DEBRIS, RUBBISH AND OTHER MATERIAL RESULTING FROM DEMOLITION OPERATIONS. DISPOSAL WILL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND/OR FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.
7. ALL FIRE SERVICE AND DOMESTIC WATER SUPPLY 2"ø AND GREATER SHALL THRUST BLOCKS AT ALL TEES, CROSSES, CAPS, 90°, 45°, 22.5°, AND 11.25° BENDS.
8. ALL TRENCHES CROSSING STREETS SHALL BE BACKFILLED FULL DEPTH WITH COMPACTED GRANULAR BACKFILL.
9. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITIES AT CONTRACTOR'S EXPENSE.
10. ALL POTABLE WATER SERVICE LATERALS SHALL BE 1" SDR-9 (ASTM-D2737 CTS-OD-PIPE) HDPE.
11. TRACER WIRE MUST BE ATTACHED TO THE WATER MAIN AND ALL SERVICE LINES. IT CANNOT JUST BE PLACED IN THE TRENCH.
12. ALL WATER MAINS MUST HAVE GASKET MECHANICAL CONNECTION AT JOINTS, VALVES, TEES, ELBOWS, FIRE HYDRANTS, AND CROSSINGS. MECHANICAL FITTINGS SHALL BE "MEGA-LUGGED" MECHANICAL FITTINGS OR MJ FOSTER ADAPTERS. GLAND PACKS ARE NOT PERMITTED.
13. MAXIMUM JOINT DEFLECTION FOR A MECHANICAL JOINT SHALL BE 2.5°. MAXIMUM PVC PUSH-ON JOINT DEFLECTION SHALL BE 1.0°.
14. ALL MAINS, SERVICE LINES, VALVES, OR OTHER STRUCTURES AND APPURTENANCES SHALL NOT BE COVERED OR BACKFILLED UNTIL INSPECTED BY THE CITY OF WILLARD. THE FAILURE TO DO SO WILL REQUIRE THE CONTRACTOR TO UNCOVER THE IMPROVEMENTS FOR INSPECTION.
15. COPIES OF ANY FIRE FLOW TESTS MUCH BE SENT TO THE CITY. ALL FIRE HYDRANTS INTALLED BY THE CONTRACTOR SHALL BE FLOW TESTED FOLLOWING PRESSURE TESTING AND DISINFECTION OF THE MAINS. THIS TESTING SHALL BE DONE IN THE PRESENCE OF THE WILLARD FIRE DISTRICT AND THE RESULTS SHOULD BE PROVIDED TO THE CITY FOR RECORD.
16. WATER MAIN AND WATER SERVICE CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION O THE "WILLARD LAND DEVELOPMENT REGULATIONS" AND "DESIGN STANDARDS FOR PUBLIC IMPROVEMENTS" AND WITH THE WATER LINE CONSTRUCTION SPECIFICATIONS.
17. NEXT TWO JOINTS PAST EVERY MECHANICAL JOINT SHALL HAVE BELL RESTRAINTS PROVIDED.

4

ABBREVIATIONS

AC	ACRES
ADA	AMERICANS WITH DISABILITIES ACT
ADAAG	AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES
AI; A.I.	AREA INLET
ATG	ADJUST TO GRADE
BC	BASE OF CURB AT FLOWLINE
BFP	BACK FLOW PREVENTION
BLDG	BUILDING
C.O.	CLEANOUT
CI; C.I.	CURB INLET
COMM	U/G COMMUNICATION LINE
CONC	CONCRETE
CU.YD.	CUBIC YARD
DI	DUCTILE IRON
DIA	DIAMETER
DB	DRAIN BASIN
DS	DOWNSPOUT
DNR	DEPARTMENT OF NATURAL RESOURCES
ELEV	ELEVATION
EX	EXISTING
E.O.P.	END OF PIPE
FEMA	FEDERAL EMERGENCY MANAGEMENT ADMINISTRATION
FF	FINISHED FLOOR ELEVATION
FL	FLOW LINE
FND	FOUNDATION
G	U/G GAS LINE
GI; G.I.	GRATED INLET
G.I. W/S.I.	GRATE INLET WITH SIDE INTAKE
HDPE	HIGH DENSITY POLYETHYLENE
HGT	HEIGHT
IMP	IMPERVIOUS
INV	INVERT
IRRIG	U/G IRRIGATION LINE
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
DOT	DEPARTMENT OF TRANSPORTATION
N.T.S; NTS	NOT TO SCALE
OAH	OVERALL HEIGHT
PP	POLY PROPYLENE
PVC	POLY VINYL CHLORIDE
PVMT	PAVEMENT
R	RADIUS
RD	ROOF DRAIN
SAN; SS	SANITARY SEWER
SQ.FT.	SQUARE FEET
ST; STM	STORM
T/C	U/G PHONE AND/OR DATA LINE
TBR	TO BE REMOVED
TBR&R	TO BE REMOVED & RELOCATED
TC	TOP OF CURB
TD	TRENCH DRAIN
TS	TOP OF SURFACE
TW	TOP OF WALL ELEVATION
TYP	TYPICAL
UG; U/G	UNDERGROUND
UG-E	U/G ELECTRIC LINE
USGS	UNITED STATES GEOLOGICAL SURVEY
UST	U/G PETROLEUM STORAGE TANK
W	WATER
XFRMR	TRANSFORMER

REVISION RECORD

NO	DATE	DESCRIPTION
1	07/29/2026	REVISION 1
2	09/10/2026	REVISION 2 - ISSUE FOR CONSTRUCTION
3	10/19/2026	REVISION 3 - WATER MAIN AND GAURDRAIL ADJUSTMENTS
4	11/02/2026	REVISION 4 - WATER MAIN AND SANITARY MODIFICATIONS

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NSN 45021 (024-1329)
653 S HUNT RD
WILLARD, MO 65781

STATE OF MISSOURI
PATRICK TODD BENNETT
NUMBER PE-2002003134
11/02/2026
PROFESSIONAL ENGINEER

GENERAL NOTES

DATE:	AUGUST 2026	DRAWN BY:	CJW
DWG SCALE:	AS SHOWN	CHECKED BY:	THA
PROJECT NO:			353-866
APPROVED BY:			DRAFT

DRAWING NO.:
C001
SHEET 2 OF 32

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NORTH

PROPOSED 30' DRAINAGE EASEMENT

SECTION 25 / SECTION 36

N/F
NANCY J. CRIGHTON, TRUSTEE
PARCEL ID# 0725302073
BOOK 2004, PAGE 02905804

TOTAL TRACT AREA
2,955,707 SQ. FT.
OR
67.854 ACRES +/-

PROPOSED LOT B
2,889,228 SF
66.328 AC

TOTAL LIMITS OF DISTURBANCE
(AREA=1.95 AC.)

N 27°09'11" E 436.32'

PROPOSED LOT A
66,479 SF
1.526 AC

25' FRONT BUILDING SETBACK

S 43°13'27" E 138.40'

MELVILLE ROAD
VARIABLE WITDH
PUBLIC

N/F
NANCY J. CRIGHTON TRUSTEE
PARCEL ID# 0725302073
BOOK 2004 PAGE 02905804

N 87°48'30" W 218.40'

A=15.64'
R=614.46'
Δ=1°27'28"
CHB=S18°34'59"W
CH=15.63'

A=179.10'
R=614.46'
Δ=16°42'00"
CHB=S27°39'57"W
CH=178.46'

BILLBOARD

S 05°39'39" E
123.47'

25' FRONT BUILDING SETBACK

HUNT ROAD
PUBLIC
VARIABLE WITDH
AKA. FARM ROAD 103

N/F
GRAND PRAIRIE LLC
BK. 2014, PG. 02428314
PARCEL ID: 0736100065
N. FARM RD. 103

N/F
BATTLEFIELD EAGLE STOP LLC
2025/3884325
PARCEL ID: 0723402008
652 S. HUNT RD.

N/F
BATTLEFIELD EAGLE STOP LLC
2025/3884325
PARCEL ID: 0736100153
654 S. HUNT RD.

N/F
T345 DEVELOPMENT LLC
BK 2019, PG. 03655919
PARCEL ID: 0736100157
N. FARM RD. 103

MISSOURI ONE CALL SYSTEM
811 or 1-800-344-7483
https://www.mo1call.com

NOTE: PRIOR TO ANY EXCAVATION FOR UNDERGROUND UTILITIES, CONTRACTOR SHALL EXPOSE AND VERIFY LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO GAS, WATER, AND SANITARY SEWER. ANY CONFLICTS SHALL BE REPORTED, IMMEDIATELY, TO THE ENGINEER AND THE APPROPRIATE AUTHORITIES.

SCALE IN FEET
0 20 40

NOTES

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LEGEND

- EXISTING SUBJECT PROPERTY LINE
- EXISTING ADJOINING PROPERTY LINE
- EXISTING RIGHT OF WAY LINE
- EXISTING EASEMENT
- EXISTING INDEX (MAJOR) CONTOUR
- EXISTING INTERMEDIATE (MINOR) CONTOUR
- EXISTING CONCRETE
- EXISTING SIGN
- EXISTING TREE
- EXISTING FENCE
- EXISTING DITCH
- EXISTING GAS LINE
- EXISTING OVERHEAD WIRE
- EXISTING COMMUNICATIONS LINE
- EXISTING WATER LINE
- EXISTING GAS LIINE MARKER
- EXISTING GUY WIRE/UTILITY POLE
- EXISTING FIBER OPTIC BOX/MARKER
- EXISTING TELEPHONE PEDESTAL/BOX
- EXISTING WATER VALVE/WATER/HYDRANT
- EXISTING WATER MANHOLE
- REMOVE EXISTING FENCE
- REMOVE EXISTING OVERHEAD WIRE
- SAWCUT EXISTING PAVEMENT/CONCRETE
- PROPOSED LIMITS OF DISTURBANCE
- REMOVE EXISTING PAVEMENT

KEY NOTES

1. EXISTING ASPHALT PAVEMENT TO BE REMOVED.
2. SAWCUT EXISTING PAVEMENT/CURB & GUTTERS TO CREATE CLEAN BUTT JOINT.
3. CONTRACTOR TO REMOVE EXISTING BILLBOARD.
4. CONTRACTOR TO REMOVE EXISTING FENCE.
5. CONTRACTOR TO PROTECT EXISTING UTILITY POLE AND OVERHEAD LINES. IF RELOCATING, CONTRACTOR TO TAKE SPECIAL CARE TO AVOID DAMAGE.
6. CONTRACTOR TO REMOVE EXISTING GUY WIRE AND RELOCATE. SEE SHEET C500 FOR PROPOSED LOCATION OF GUY WIRE. COORDINATE WITH UTILITY COMPANY.
7. CONTRACTOR TO PROTECT EXISTING WATER VALVES AND WATER MAIN.
8. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY TO ADJUST ELEVATION OF LOW HANGING WIRES TO PROVIDE ADEQUATE VERTICAL CLEARANCE FOR PROPOSED ACCESS DRIVE.
9. CONTRACTOR TO PROTECT EXISTING GAS LINE.
10. UTILITY PROVIDER TO REMOVE EXISTING OVERHEAD LINES AND POLES. CONTRACTOR TO COORDINATE AS NEEDED.
11. POTENTIAL LOCATION FOR TEMPORARY ELECTRICAL SERVICE. CONTRACTOR TO COORDINATE WITH UTILITY PROVIDER AS NEEDED.
12. RELOCATE EXISTING UTILITY POLE. RECONNECT EXISTING OVERHEAD LINES ACCORDINGLY UNLESS OTHERWISE NOTED. SEE SHEET C500 FOR PROPOSED LOCATION OF UTILITY POLE. COORDINATE WITH UTILITY COMPANY.
13. RECONNECT EXISTING UTILITY LINES TO PROPOSED POLE LOCATION. COORDINATE WITH UTILITY COMPANY.
14. CONTRACTOR TO REMOVE 12" EXISTING WATER MAIN. COORDINATE WITH WATER PROVIDER AS NEEDED.

PATRICK TODD BENNETT NUMBER 2011019972 STATE OF MISSOURI PROFESSIONAL ENGINEER
11/02/2026

REVISION RECORD

NO	DATE	DESCRIPTION
1	07/30/2026	REVISION 1
2	09/15/2026	REVISION 2 - ISSUED FOR CONSTRUCTION
3	10/15/2026	REVISION 3 - WATERMAIN AND GRADING ADJUSTMENTS
4	11/02/2026	REVISION 4 - WATER MAIN AND SANITARY MODIFICATIONS

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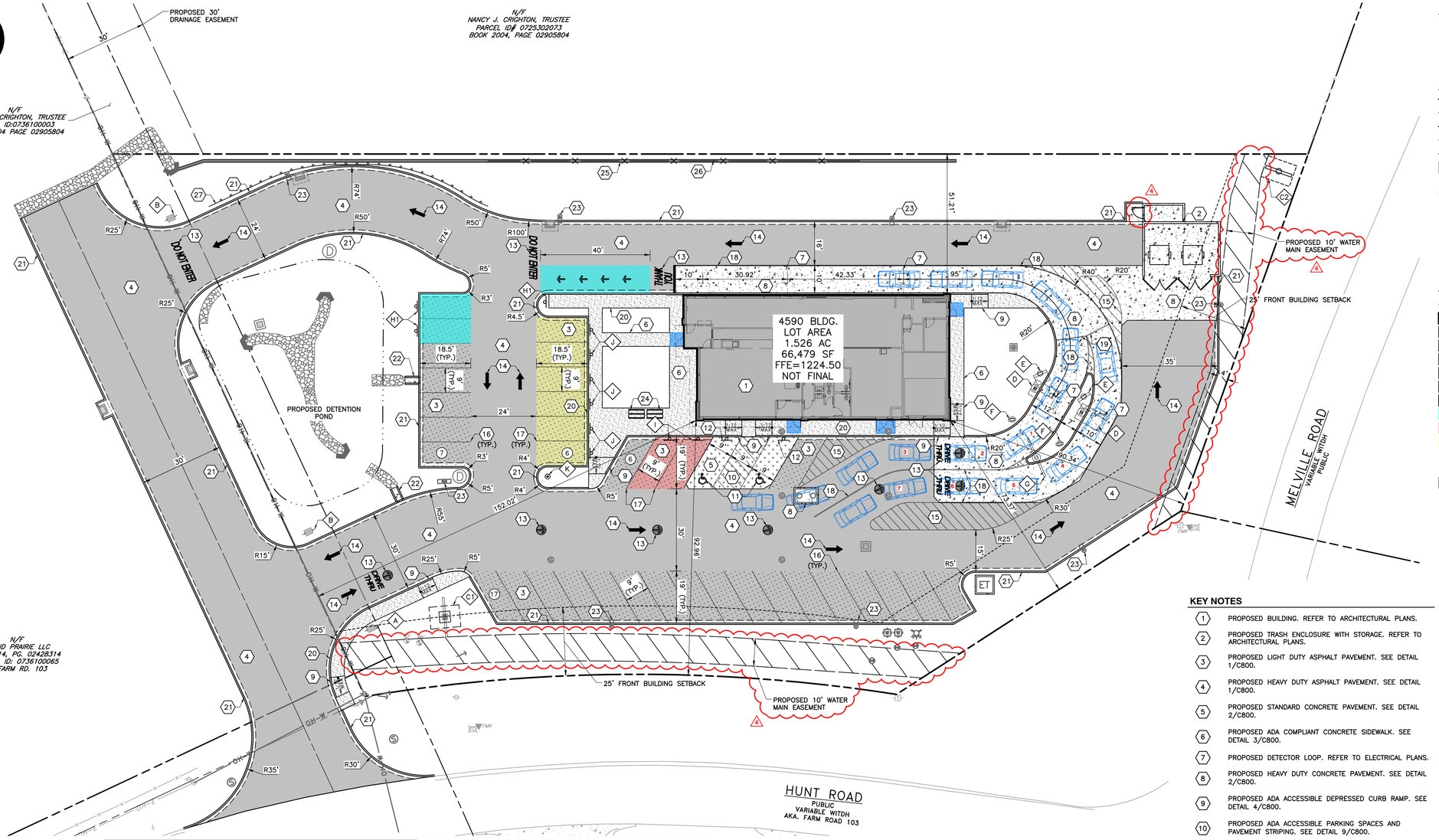
EXISTING CONDITIONS & DEMOLITION PLAN

DATE:	AUGUST 2026
DRAWN BY:	CJW
CHECKED BY:	THA
DWG SCALE:	1"=20'
PROJECT NO:	353-866
APPROVED BY:	DRAFT

DRAWING NO.: **C100**

SHEET 3 OF 32

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NOTES

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LEGEND

- EXISTING SUBJECT PROPERTY LINE
- EXISTING ADJOINING PROPERTY LINE
- EXISTING RIGHT OF WAY LINE
- EXISTING EASEMENT
- EXISTING SETBACK
- EXISTING CONCRETE
- EXISTING SIGN
- EXISTING FENCE
- EXISTING GAS LIINE MARKER
- EXISTING GUY WIRE/UTILITY POLE
- EXISTING FIBER OPTIC BOX/MARKER
- EXISTING TELEPHONE PEDESTAL/BOX
- EXISTING WATER VALVE/WATER/HYDRANT
- EXISTING WATER MANHOLE
- PROPOSED DETENTION POND
- PROPOSED FENCE
- PROPOSED BUILDING
- PROPOSED LIGHT DUTY ASPHALT PAVEMENT
- PROPOSED HEAVY DUTY ASPHALT PAVEMENT
- PROPOSED STANDARD DUTY CONCRETE PAVEMENT
- PROPOSED HEAVY DUTY CONCRETE PAVEMENT
- PROPOSED CONCRETE SIDEWALK
- PROPOSED PAVEMENT STRIPING
- PROPOSED DRIVE–THRU PARKING
- PROPOSED MCDELIVERY PARKING
- PROPOSED CURB SIDE PICK–UP PARKING
- PROPOSED 5x5 LANDING
- PROPOSED STORM STRUCTURES
- PROPOSED RIPRAP
- PROPOSED WATER VALVE/METER/HYDRANT
- PROPOSED SANITARY CLEANOUT
- PROPOSED GREASE TRAP
- PROPOSED LIGHT POLE
- PROPOSED TRANSFORMER

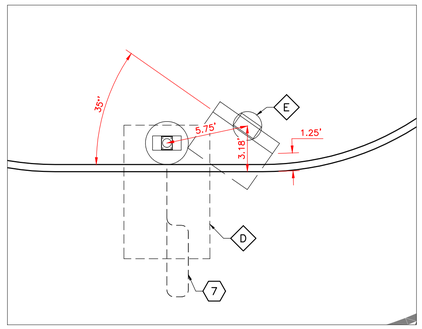
KEY NOTES

1. PROPOSED BUILDING. REFER TO ARCHITECTURAL PLANS.
2. PROPOSED TRASH ENCLOSURE WITH STORAGE. REFER TO ARCHITECTURAL PLANS.
3. PROPOSED LIGHT DUTY ASPHALT PAVEMENT. SEE DETAIL 1/C800.
4. PROPOSED HEAVY DUTY ASPHALT PAVEMENT. SEE DETAIL 1/C800.
5. PROPOSED STANDARD CONCRETE PAVEMENT. SEE DETAIL 2/C800.
6. PROPOSED ADA COMPLIANT CONCRETE SIDEWALK. SEE DETAIL 3/C800.
7. PROPOSED DETECTOR LOOP. REFER TO ELECTRICAL PLANS.
8. PROPOSED HEAVY DUTY CONCRETE PAVEMENT. SEE DETAIL 2/C800.
9. PROPOSED ADA ACCESSIBLE DEPRESSED CURB RAMP. SEE DETAIL 4/C800.
10. PROPOSED ADA ACCESSIBLE PARKING SPACES AND PAVEMENT STRIPING. SEE DETAIL 9/C800.
11. PROPOSED PAINTED ADA ACCESSIBLE PARKING SYMBOL. SEE DETAIL 10/C800.
12. PROPOSED ADA ACCESSIBLE PARKING SIGN(S). SEE DETAIL 8/C800.
13. PROPOSED BRANDED PAVEMENT STRIPING TO MCDONALD'S STANDARDS SEE DETAIL 11/C800.
14. PROPOSED PAINTED DIRECTIONAL ARROWS. SEE DETAIL 12/C800.
15. PROPOSED PAVEMENT STRIPING. SEE DETAIL 7/C800.
16. PROPOSED PARKING STRIPING (WHITE).
17. PROPOSED PARKING STRIPING (YELLOW).
18. PROPOSED DRIVE THRU LANE STRIPING (6" WIDE). REFER TO MCDONALD'S STANDARDS.
19. PROPOSED MERGE STRIPING (6" WIDE). REFER TO MCDONALD'S STANDARDS.
20. PROPOSED ADA COMPLIANT COMBINATION CONCRETE CURB/SIDEWALK. SEE DETAIL 6/C800.
21. PROPOSED CURB. SEE DETAIL 5/C800.
22. PROPOSED 2FT CONCRETE FLUME.
23. PROPOSED LIGHT POLE. SEE PHOTOMETRIC PLANS.
24. PROPOSED BIKE RACK. SIZE AND CAPACITY TO BE SELECTED BY OPERATOR.
25. PROPOSED RETAINING WALL. (DESIGN BY OTHERS)
26. PROPOSED SAFETY FENCE (MINIMUM 42" TALL W/ 4" MAXIMUM OPENINGS). CONTRACTOR TO COORDINATE W/ OPERATOR ON FENCE TYPE.
27. PROPOSED GUARD RAIL. CONTRACTOR TO COORDINATE W/ OPERATOR FOR SPECIFICATIONS.

McDONALD'S SIGN LEGEND

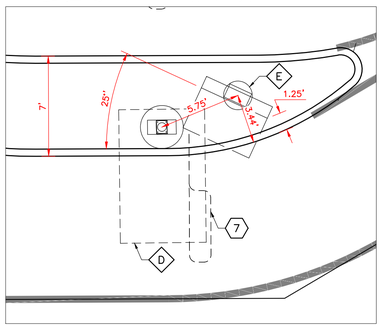
- A — McDONALD'S DIRECTIONAL ENTER SIGN. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR SIGN AND STRUCTURAL DETAILS.
- B — McDONALD'S DIRECTIONAL EXIT SIGN. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR SIGN AND STRUCTURAL DETAILS.
- C1 — McDONALD'S ROAD SIGN. REFER TO ARCHITECTURAL AND/OR VENDOR PLANS FOR DETAILS.
- C2 — McDONALD'S HIGHWAY SIGN. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR DETAILS.
- D — McDONALD'S DRIVE–THRU CANOPY. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR SIGN AND STRUCTURAL DETAILS.
- E — McDONALD'S DIGITAL MENU BOARD. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR SIGN AND STRUCTURAL DETAILS.
- F — McDONALD'S DIGITAL PRE–BROWSE MENU BOARD. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR SIGN AND STRUCTURAL DETAILS.
- G1 — McDONALD'S GATEWAY SIGN (DOUBLE ARM). REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR SIGN AND STRUCTURAL DETAILS.
- H1 — McDONALD'S PULL FORWARD – ("RESERVED") DRIVE–THRU SIGN. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR DETAILS
- I — McDONALD'S McDELIVERY – ("COURIER PARKING") SIGN. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR DETAILS.
- J — McDONALD'S ("CURBSIDE PICK UP") SIGN. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR DETAILS.
- K — FLAGPOLE AND BASE. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR SIGN AND STRUCTURAL DETAILS. GENERAL CONTRACTOR TO COORDINATE WITH CONSTRUCTION MANAGER REGARDING ILLUMINATION OF FLAG.

NOTE:
ALL SIGNS/LOCATIONS/ORIENTATION SHALL BE CONFIRMED BY McDONALD'S/OPERATOR AND COORDINATED WITH SIGNAGE BRAND BOOK (BY OTHERS).



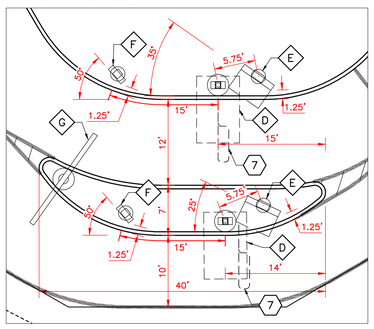
PRIMARY LANE MENU BOARD DETAILED VIEW

SCALE IN FEET
0 5 10



SECONDARY LANE MENU BOARD DETAILED VIEW

SCALE IN FEET
0 5 10



DETAILED VIEW

SCALE IN FEET
0 10 20

SCALE IN FEET
0 20 40

MISSOURI ONE CALL SYSTEM
811 or 1-800-344-7483
https://www.mo1call.com

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STATE OF MISSOURI
PATRICK TODD BENNETT
2019030825
ENGINEER
11/02/2026

REVISION RECORD

NO	DATE	DESCRIPTION
1	07/30/2026	REVISION 1
2	09/15/2026	REVISION 2 - ISSUED FOR CONSTRUCTION
3	10/15/2026	REVISION 3 - WATERMAIN AND GRADING ADJUSTMENTS
4	10/16/2026	REVISION 4 - WATERMAIN AND SANITARY MODIFICATIONS
5	11/03/2026	REVISION 5

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF MISSOURI CURRENTLY PROVIDED BY CEC, INC. ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES PROVIDED BY FCC ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PROVIDED BY CEC, INC. ENGINEERS & CONSULTANTS, LLC.

Civil & Environmental Consultants, Inc.
10300 Alliance Road
Suite 300
Cincinnati, OH 45242
Ph: 513.985.0226
www.cecinc.com

McDONALD'S RESTAURANT
NSN 45021 (024-1329)
653 S HUNT RD
WILLARD, MO 65781

LAYOUT PLAN

DATE:	AUGUST 2026
DRAWN BY:	CJW
CHECKED BY:	THA
DWG SCALE:	1"=20'
PROJECT NO:	353-866
APPROVED BY:	DRAFT

DRAWING NO.: **C200**

SHEET 4 OF 32

A:\353-0001\353-866_cad\Dwg\0001\353866-0101-C200.dwg(C200) LS(11/2/2026 - jwilmot) - LP: 11/2/2026 4:55 PM

NORTH

TOTAL LIMITS OF DISTURBANCE (AREA=1.95 AC.)

4590 BLDG.
LOT AREA
1.526 AC
66,479 SF
FFE=1224.50
NOT FINAL

MELVILLE ROAD
VARIABLE WITDH
PUBLIC

HUNT ROAD
PUBLIC
VARIABLE WITDH
AKA. FARM ROAD 103

SEE SHEET C301 FOR ACCESS ROAD PLAN

NOTES

1. SEE SHEET C001 FOR GENERAL NOTES AND ABBREVIATIONS.
2. CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION. IT IS NOT THE ENGINEER'S INTENT THAT ANY SINGLE PLAN SHEET IN THIS SET OF DOCUMENTS FULLY DEPICT ALL WORK ASSOCIATED WITH THE PROJECT.

LEGEND

- EXISTING SUBJECT PROPERTY LINE
- EXISTING ADJOINING PROPERTY LINE
- EXISTING RIGHT OF WAY LINE
- EXISTING EASEMENT
- EXISTING SETBACK
- EXISTING INDEX (MAJOR) CONTOUR
- EXISTING INTERMEDIATE (MINOR) CONTOUR
- EXISTING CONCRETE
- EXISTING SIGN
- EXISTING TREE
- EXISTING FENCE
- EXISTING DITCH
- EXISTING GAS LINE
- EXISTING OVERHEAD WIRE
- EXISTING COMMUNICATIONS LINE
- EXISTING WATER LINE
- EXISTING GAS LIINE MARKER
- EXISTING GUY WIRE/UTILITY POLE
- EXISTING FIBER OPTIC BOX/MARKER
- EXISTING TELEPHONE PEDESTAL/BOX
- EXISTING WATER VALVE/WATER/HYDRANT
- EXISTING WATER MANHOLE
- PROPOSED DETENTION POND
- PROPOSED FENCE
- PROPOSED 5x5 LANDING
- PROPOSED STORM PIPE
- PROPOSED ROOF DRAIN
- PROPOSED ¾" WATER LINE
- PROPOSED 2" WATER LINE
- PROPOSED 6" WATER LINE
- PROPOSED SANITARY SEWER LINE
- PROPOSED SANITARY FORCE MAIN
- PROPOSED UNDERGROUND ELECTRIC LINE
- PROPOSED FIBER OPTIC LINE
- PROPOSED STORM STRUCTURES
- PROPOSED RIPRAP
- PROPOSED DRAINAGE ARROW
- PROPOSED WATER VALVE/METER/HYDRANT
- PROPOSED SANITARY CLEANOUT
- PROPOSED GREASE TRAP
- PROPOSED LIGHT POLE
- PROPOSED TRANSFORMER
- 505 PROPOSED INDEX (MAJOR) CONTOUR
- 504 PROPOSED INTERMEDIATE (MINOR) CONTOUR
- PROPOSED LIMITS OF DISTURBANCE
- TC=1222.62 / BC=1222.12 PROPOSED TOP/BOTTOM OF CURB ELEVATION
- TW=1218.83 / BW=1210.24 PROPOSED TOP/BOTTOM OF WALL ELEVATION
- 1222.25 PROPOSED SPOT ELEVATION
- 504.43 EXISTING SPOT ELEVATION

SCALE IN FEET
0 20 40

MISSOURI ONE CALL SYSTEM
811 or 1-800-344-7483
https://www.mo1call.com

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STATE OF MISSOURI
PATRICK TODD BENNETT
NUMBER A-2010037
PROFESSIONAL ENGINEER
11/02/2026

REVISION RECORD

NO	DATE	DESCRIPTION
1	07/30/2026	REVISION 1
2	09/15/2026	REVISION 2 - ISSUE FOR CONSTRUCTION
3	10/15/2026	REVISION 3 - WATERMAIN AND GRADING ADJUSTMENTS
4	11/03/2026	REVISION 4 - WATER MAIN AND SANITARY MODIFICATIONS

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF NORTH CAROLINA WILL BE PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PROVIDED BY CONSOLIDATED ARCHITECTS, LLC.

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10300 Alliance Road
Suite 300
Cincinnati, OH 45242
Ph: 513.985.0226
www.cecinc.com

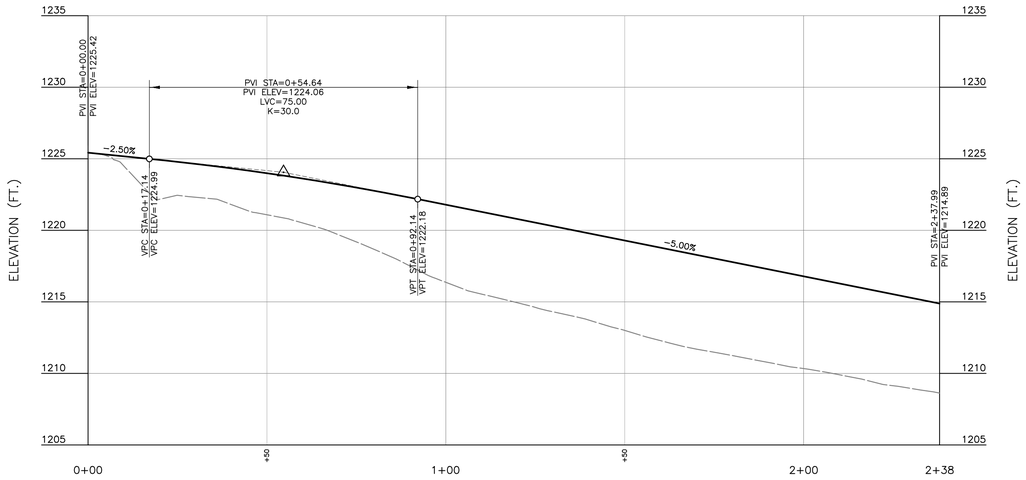
McDONALD'S RESTAURANT
NSN 45021 (024-1329)
653 S HUNT RD
WILLARD, MO 65781

GRADING PLAN

DATE:	AUGUST 2026
DRAWN BY:	CJW
DWG SCALE:	1" = 20'
CHECKED BY:	THA
PROJECT NO:	353-866
APPROVED BY:	DRAFT

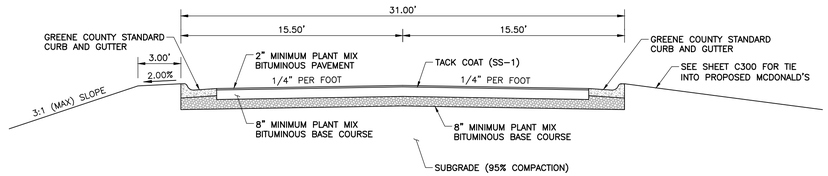
DRAWING NO.:
C300
SHEET 5 OF 32

P:\353-866\353-866 - CAD\Dwg\CV01\353866-CV01-C300.dwg[C300] | CS(10/29/2026 - jwillman) - LP: 11/2/2026 4:56 PM



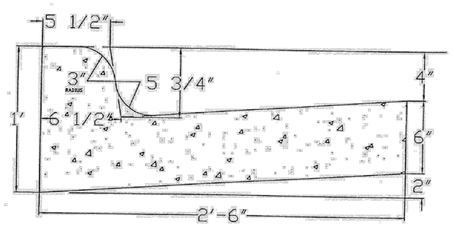
ACCESS DRIVE PROFILE

SCALE H:1"=20'; V:1"=5'



ACCESS DRIVE SECTION

1"=5'



GREENE COUNTY STANDARD CURB AND GUTTER

NOT TO SCALE

MISSOURI ONE CALL SYSTEM
811 or 1-800-344-7483
https://www.mo1call.com

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SCALE IN FEET (HORIZONTAL)
0 20 40

SCALE IN FEET (VERTICAL)
0 5 10

STATE OF MISSOURI
PATRICK TODD BENNETT
NUMBER A-2010039019
11/02/2026
PROFESSIONAL ENGINEER

REVISION RECORD

NO	DATE	DESCRIPTION
1	07/30/2026	REVISION 1
2	09/15/2026	REVISION 2 - ISSUED FOR CONSTRUCTION
3	10/16/2026	REVISION 3 - WATERMAIN AND GRADING ADJUSTMENTS
4	10/30/2026	REVISION 4 - WATER MAIN AND SANITARY MODIFICATIONS
5	11/02/2026	

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Civil & Environmental Consultants, Inc.
10300 Alliance Road
Suite 300
Cincinnati, OH 45242
Ph: 513.985.0226
www.cecinc.com

McDONALD'S RESTAURANT
NSN 45021 (024-1329)
653 S HUNT RD
WILLARD, MO 65781

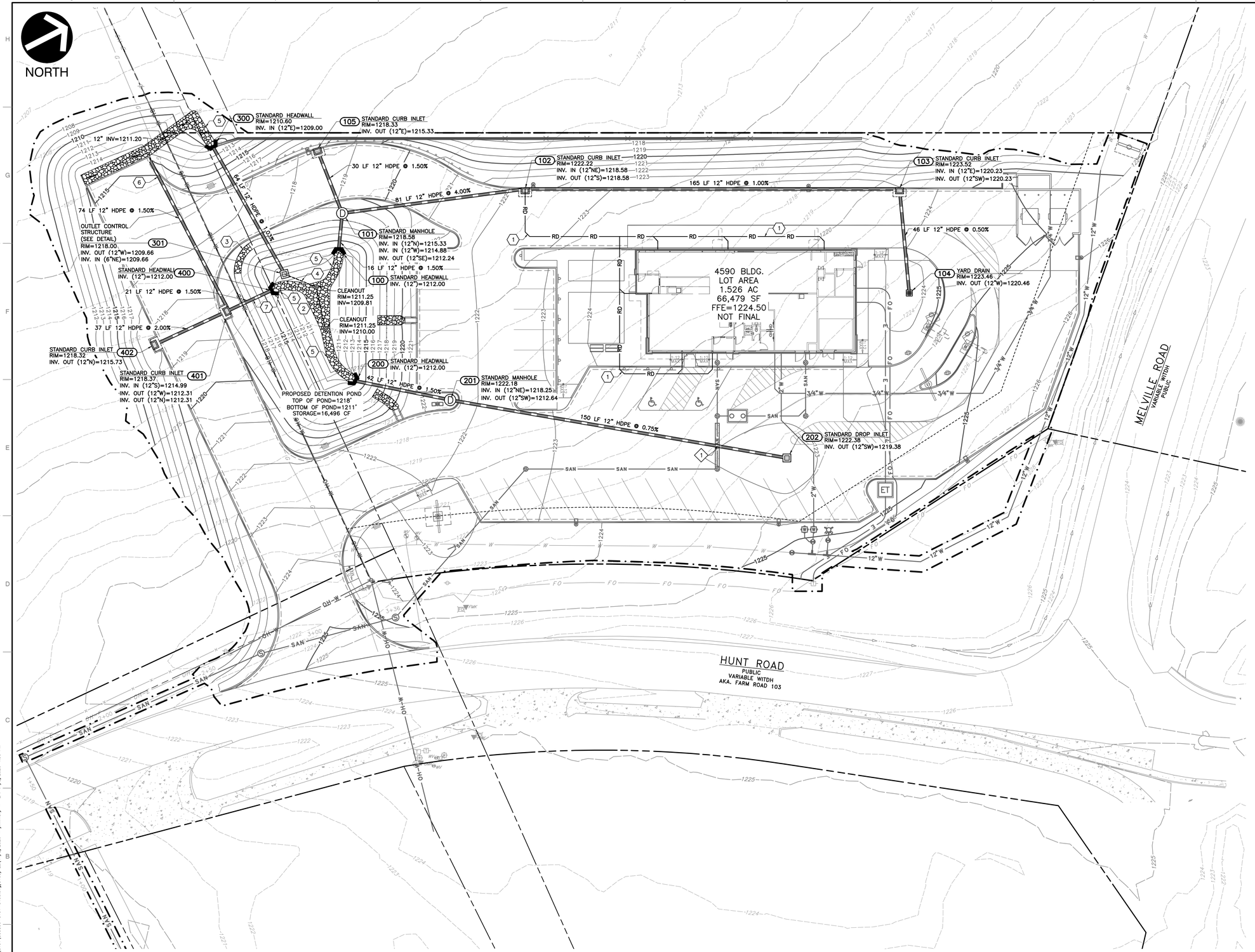
ACCESS ROAD PLAN

DATE:	AUGUST 2026
DRAWN BY:	CJW
CHECKED BY:	THA
DWG SCALE:	AS SHOWN
PROJECT NO:	353-866
APPROVED BY:	DRAFT

DRAWING NO.:
C301
SHEET 6 OF 32

P:\350-001\353-866\--Civil\Dwg\Civil\353866-Civil--C300.dwg[C301] LS (10/29/2026 - jwilmoth) - LP: 11/2/2026 4:56 PM

NORTH



NOTES

1. SEE SHEET C001 FOR GENERAL NOTES AND ABBREVIATIONS.
2. CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION. IT IS NOT THE ENGINEER'S INTENT THAT ANY SINGLE PLAN SHEET IN THIS SET OF DOCUMENTS FULLY DEPICT ALL WORK ASSOCIATED WITH THE PROJECT.

LEGEND

- EXISTING SUBJECT PROPERTY LINE
- EXISTING ADJOINING PROPERTY LINE
- EXISTING RIGHT OF WAY LINE
- EXISTING EASEMENT
- EXISTING SETBACK
- EXISTING INDEX (MAJOR) CONTOUR
- EXISTING INTERMEDIATE (MINOR) CONTOUR
- EXISTING CONCRETE
- EXISTING SIGN
- EXISTING TREE
- EXISTING FENCE
- EXISTING DITCH
- EXISTING GAS LINE
- EXISTING OVERHEAD WIRE
- EXISTING COMMUNICATIONS LINE
- EXISTING WATER LINE
- EXISTING GAS LIINE MARKER
- EXISTING GUY WIRE/UTILITY POLE
- EXISTING FIBER OPTIC BOX/MARKER
- EXISTING TELEPHONE PEDESTAL/BOX
- EXISTING WATER VALVE/WATER/HYDRANT
- EXISTING WATER MANHOLE
- PROPOSED DETENTION POND
- PROPOSED FENCE
- PROPOSED STORM PIPE
- PROPOSED ROOF DRAIN
- PROPOSED ¾" WATER LINE
- PROPOSED 2" WATER LINE
- PROPOSED 6" WATER LINE
- PROPOSED SANITARY SEWER LINE
- PROPOSED SANITARY FORCE MAIN
- PROPOSED UNDERGROUND ELECTRIC LINE
- PROPOSED FIBER OPTIC LINE
- PROPOSED STORM STRUCTURES
- PROPOSED RIPRAP
- PROPOSED DRAINAGE ARROW
- PROPOSED WATER VALVE/METER/HYDRANT
- PROPOSED SANITARY CLEANOUT
- PROPOSED GREASE TRAP
- PROPOSED LIGHT POLE
- ET PROPOSED TRANSFORMER
- 505 PROPOSED INDEX (MAJOR) CONTOUR
- 504 PROPOSED INTERMEDIATE (MINOR) CONTOUR
- PROPOSED LIMITS OF DISTURBANCE

KEY NOTES

1. PROPOSED 6" PVC SDR-35 ROOF DRAIN @ MIN. 1% SLOPE. CONTRACTOR TO COORDINATE ROOF DRAIN CONNECTION TYPE WITH OWNER/OPERATOR.
2. PROPOSED 6" PERFORATED PVC SDR-35 @ 1% SLOPE.
3. PROPOSED 10 LF 0.5' HEIGHT EMERGENCY SPILLWAY.
4. PROPOSED 6" SOLID WALL PVC SDR-35 @ 1% SLOPE.
5. PROPOSED ROCK LINING FOR CULVERT OUTLET. SEE DETAIL 2/C801.
6. PROPOSED 12" PIPE TO BE CAPPED AT END OF PROPOSED ACCESS DRIVE. PIPE TO BE EXTENDED IN THE FUTURE WITH ACCESS DRIVE EXTENSION AND TIED INTO PROPOSED STORM SYSTEM IN EXTENDED ACCESS DRIVE. SEE NOTE 7.
7. PIPE AND HEADWALL TO BE REMOVED OR ABANDONED IN PLACE WHEN ACCESS DRIVE IS EXTENDED. CONNECTION TO HEADWALL 400 TO BE PLUGGED OR GROUTED IN STRUCTURE 401 TO DIVERT DRAINAGE TOWARD 12" W INVERT.

STORM CROSSINGS

4 1 GRADE=1222.97
12" STORM INV.=1219.06
6" SAN INV.=1218.06

SCALE IN FEET
0 20 40

MISSOURI ONE CALL SYSTEM
811 or 1-800-344-7483
https://www.mo1call.com

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STATE OF MISSOURI
PATRICK TODD BENNETT
NUMBER
PROFESSIONAL ENGINEER
11/02/2026

REVISION RECORD

NO	DATE	DESCRIPTION
1	07/30/2026	REVISION 1
2	09/15/2026	REVISION 2 - ISSUE FOR CONSTRUCTION
3	10/15/2026	REVISION 3 - WATERMAIN AND GRADING ADJUSTMENTS
4	10/30/2026	REVISION 4 - WATERMAIN AND SANITARY MODIFICATIONS
5	11/02/2026	REVISION 5

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CEC
Civil & Environmental Consultants, Inc.
10300 Alliance Road
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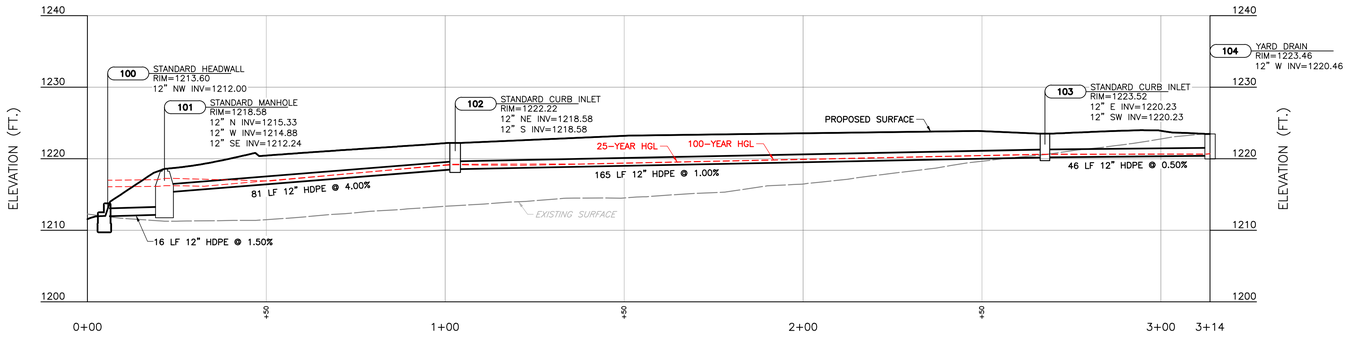
McDONALD'S RESTAURANT
NSN 45021 (024-1329)
653 S HUNT RD
WILLARD, MO 65781

DRAINAGE PLAN

DATE:	AUGUST 2026
DWG SCALE:	1"=20'
PROJECT NO.	353-866
APPROVED BY:	DRAFT
DRAWN BY:	CJW
CHECKED BY:	THA

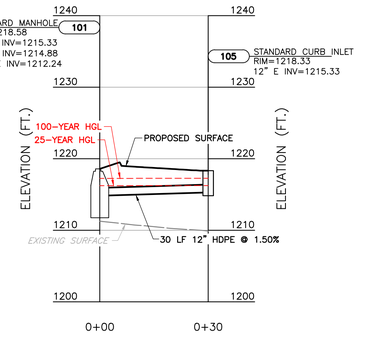
DRAWING NO.: C400
SHEET 7 OF 32

P:\353-0001\353-866\-2400\Dwg\C401\353866-C401-C400.dwg[C400] LS(11/2/2026 - jwilmoth) - LP: 11/2/2026 4:56 PM



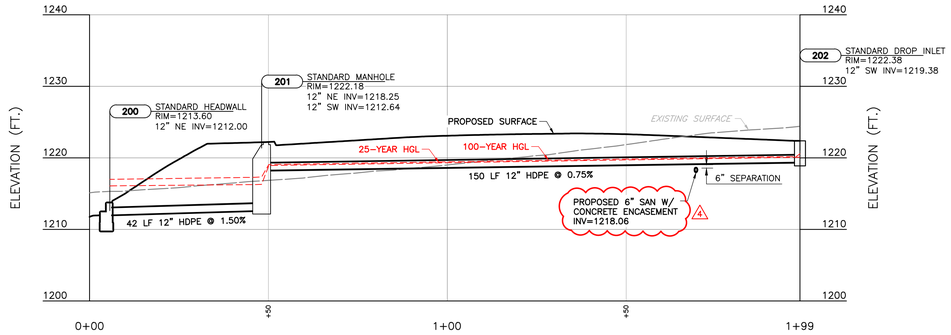
100 TO 104 PROFILE

SCALE H:1"=20'; V:1"=10'



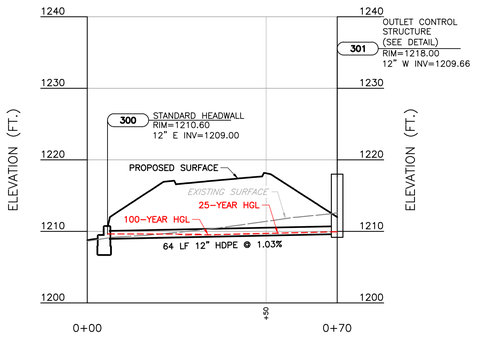
101 TO 105 PROFILE

SCALE H:1"=20'; V:1"=10'



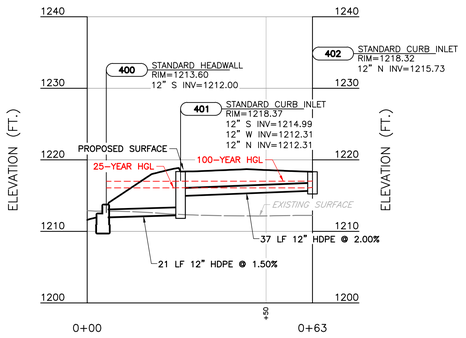
200 TO 202 PROFILE

SCALE H:1"=20'; V:1"=10'



300 TO 301 PROFILE

SCALE H:1"=20'; V:1"=10'



400 TO 402 PROFILE

SCALE H:1"=20'; V:1"=10'

MISSOURI ONE CALL SYSTEM
811 or 1-800-344-7483
https://www.mo1call.com

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SCALE IN FEET (HORIZONTAL)
0 20 40

SCALE IN FEET (VERTICAL)
0 10 20

STATE OF MISSOURI
PATRICK TODD BENNETT
NUMBER
2014039933
11/02/2026
PROFESSIONAL ENGINEER

REVISION RECORD

NO	DATE	DESCRIPTION
1	07/30/2026	REVISION 1
2	09/10/2026	REVISION 2 - ISSUED FOR CONSTRUCTION
3	10/16/2026	REVISION 3 - WATERMAIN AND GRADING ADJUSTMENTS
4	11/02/2026	REVISION 4 - WATER MAIN AND SANITARY MODIFICATIONS

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF NORTH CAROLINA WILL BE PROVIDED BY CEC, ENGINEERS & CONSULTANTS, LLC, LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PROVIDED BY CEC, ENGINEERS & CONSULTANTS, LLC, LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF PA WILL BE PROVIDED BY CEC, CORRIDOR ARCHITECTS, LLC

10300 Alliance Road
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Cincinnati, OH 45242
Ph: 513.985.0226
www.cecinc.com

Civil & Environmental Consultants, Inc.

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653 S HUNT RD
WILLARD, MO 65781

DRAINAGE PROFILES

DATE:	AUGUST 2026
DWG SCALE:	AS SHOWN
PROJECT NO.	
APPROVED BY:	
DRAWN BY:	CJW
CHECKED BY:	THA
	353-866
	DRAFT

DRAWING NO.:
C401
SHEET 8 OF 32

A:\350-0001\353-866\-DATA\Dwg\Civil\353866-Civil-2400.dwg[2401] LS(11/2/2026 - jwilmoth) - LD: 11/2/2026 4:56 PM

NORTH

4590 BLDG.
LOT AREA
1.526 AC
66,479 SF
FFE=1224.50
NOT FINAL

MELVILLE ROAD
VARIABLE WITDH
PUBLIC

HUNT ROAD
PUBLIC
VARIABLE WITDH
AKA. FARM ROAD 103

PROPOSED 10' WATER MAIN EASEMENT

CLEANOUT
RIM=1224.30
INV=1220.59

CLEANOUT
RIM=1224.44
INV=1220.90

CLEANOUT
RIM=1223.34
INV=1218.33

CLEANOUT
RIM=1223.15
INV=1219.93

CLEANOUT
RIM=1222.80
INV=1216.09

CLEANOUT
RIM=1222.97
INV=1217.85

GREASE TRAP
RIM=1223.41
INV IN=1218.86
INV OUT=1218.53

61 LF 8" SDR-35 @ 0.98%

S4 STANDARD MANHOLE
RIM=1224.70
INV. OUT (8"S)=1214.28

S3 STANDARD MANHOLE
RIM=1224.68
INV. IN (8"N)=1213.68
INV. OUT (8"S)=1213.58

114 LF 8" SDR-35 @ 0.98%

SEE SHEET C501 - SANITARY EXTENSION PLAN

MISSOURI ONE CALL SYSTEM
811 or 1-800-344-7483
https://www.mo1call.com

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NOTES

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LEGEND

- EXISTING SUBJECT PROPERTY LINE
- EXISTING ADJOINING PROPERTY LINE
- EXISTING RIGHT OF WAY LINE
- EXISTING EASEMENT
- EXISTING SETBACK
- EXISTING INDEX (MAJOR) CONTOUR
- EXISTING INTERMEDIATE (MINOR) CONTOUR
- EXISTING CONCRETE
- EXISTING SIGN
- EXISTING TREE
- EXISTING FENCE
- EXISTING DITCH
- EXISTING GAS LINE
- EXISTING OVERHEAD WIRE
- EXISTING COMMUNICATIONS LINE
- EXISTING WATER LINE
- EXISTING GAS LIINE MARKER
- EXISTING GUY WIRE/UTILITY POLE
- EXISTING FIBER OPTIC BOX/MARKER
- EXISTING TELEPHONE PEDESTAL/BOX
- EXISTING WATER VALVE/WATER/HYDRANT
- EXISTING WATER MANHOLE
- PROPOSED DETENTION POND
- PROPOSED FENCE
- PROPOSED STORM PIPE
- PROPOSED ROOF DRAIN
- PROPOSED ¾" WATER LINE
- PROPOSED 2" WATER LINE
- PROPOSED 6" WATER LINE
- PROPOSED SANITARY SEWER LINE
- PROPOSED SANITARY FORCE MAIN
- PROPOSED UNDERGROUND ELECTRIC LINE
- PROPOSED FIBER OPTIC LINE
- PROPOSED STORM STRUCTURES
- PROPOSED RIPRAP
- PROPOSED WATER VALVE/METER/HYDRANT
- PROPOSED SANITARY CLEANOUT
- PROPOSED GREASE TRAP
- PROPOSED LIGHT POLE
- PROPOSED TRANSFORMER
- PROPOSED INDEX (MAJOR) CONTOUR
- PROPOSED INTERMEDIATE (MINOR) CONTOUR
- PROPOSED LIMITS OF DISTURBANCE

KEY NOTES

1. PROPOSED UNDERGROUND ELECTRIC SERVICE. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY.
2. PROPOSED UNDERGROUND FIBER OPTIC SERVICE. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY.
3. PROPOSED TRANSFORMER AND CONCRETE PAD PER UTILITY COMPANY SPECIFICATIONS.
4. PROPOSED 6" PVC SCHEDULE 40 SANITARY SEWER LATERAL AT MINIMUM 2.08% SLOPE PER CITY OF WILLARD STANDARDS.
5. PROPOSED SANITARY SEWER CLEANOUT. SEE DETAIL 3/C802.
6. PROPOSED GREASE TRAP. CONTRACTOR TO COORDINATE WITH PLUMBING PLAN.
7. PROPOSED 2" DOMESTIC WATER SERVICE.
8. PROPOSED UTILITY BUILDING CONNECTION. REFER TO MEP PLANS FOR EXACT SIZE AND LOCATION.
9. PROPOSED ¾" DOMESTIC WATER SERVICE TO HOSE BIB.
10. PROPOSED WATER METER FOR 2" DOMESTIC WATER SERVICE PER CITY OF WILLARD STANDARDS.
11. CONTRACTOR TO CONNECT TO SANITARY MANHOLE. SEE SANITARY MAIN EXTENSION PLANS FOR MORE INFORMATION.
12. 6" ANCHORING TEE AND VALVE WITH FIRE HYDRANT ASSEMBLY PER LOCAL FIRE DEPARTMENT REQUIREMENTS.
13. PROPOSED FIRE HYDRANT AND VALVE ASSEMBLY.
14. PROPOSED WATER METER FOR IRRIGATION SERVICE.
15. POTENTIAL LOCATION FOR TEMPORARY ELECTRICAL SERVICE. CONTRACTOR TO COORDINATE WITH UTILITY PROVIDER AS NEEDED.
16. PROPOSED RELOCATION OF EXISTING GUY WIRE. COORDINATE WITH UTILITY COMPANY.
17. PROPOSED RELOCATION OF EXISTING UTILITY POLE. COORDINATE WITH UTILITY COMPANY.
18. RECONNECT EXISTING OVERHEAD LINE TO RELOCATED UTILITY POLE. COORDINATE WITH UTILITY COMPANY.
19. PROPOSED 12" WATER MAIN. CONTRACTOR TO COORDINATE MATERIAL AND SPECIFICATIONS WITH UTILITY COMPANY.
20. CONNECT PROPOSED 12" WATER MAIN TO EXISTING 12" WATER MAIN. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY FOR JOINT SPECIFICATIONS.
21. PROPOSED BEND AND BLOCK.
22. PROPOSED SHUT-OFF VALVE
23. PROPOSED CONCRETE ENCASEMENT.

UTILITY CROSSINGS

1	GRADE=1222.97 12" STORM INV.=1219.06 6" SAN INV.=1218.06	4 GRADE=1223.47 6" SAN INV.=1220.34 ¾" WATER INV.=1217.22
2	GRADE=1223.46 2" WATER INV.=1221.57 ¾" WATER INV.=1219.57	5 GRADE=1224.08 ¾" WATER INV.=1221.88 ELECTRIC INV.=1219.88
3	GRADE=1223.07 6" SAN INV.=1219.49 2" WATER INV.=1217.49	6 GRADE=1224.12 ¾" WATER INV.=1221.97 FIOPTIC INV.=1219.97

SCALE IN FEET
0 20 40

PATRICK TODD BENNETT NUMBER 2014040922 PROFESSIONAL ENGINEER
STATE OF MISSOURI
11/02/2026

REVISION RECORD

NO	DATE	DESCRIPTION
1	07/30/2026	REVISION 1
2	09/15/2026	REVISION 2 - ISSUED FOR CONSTRUCTION
3	10/15/2026	REVISION 3 - WATERMAIN AND GRADING ADJUSTMENTS
4	10/16/2026	REVISION 4 - WATERMAIN AND SANITARY MODIFICATIONS
5	11/02/2026	REVISION 5 - WATER MAIN AND SANITARY MODIFICATIONS

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF NORTH CAROLINA WILL BE PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC.

Civil & Environmental Consultants, Inc.
10300 Alliance Road
Suite 300
Cincinnati, OH 45242
Ph: 513.985.0226
www.cecinc.com

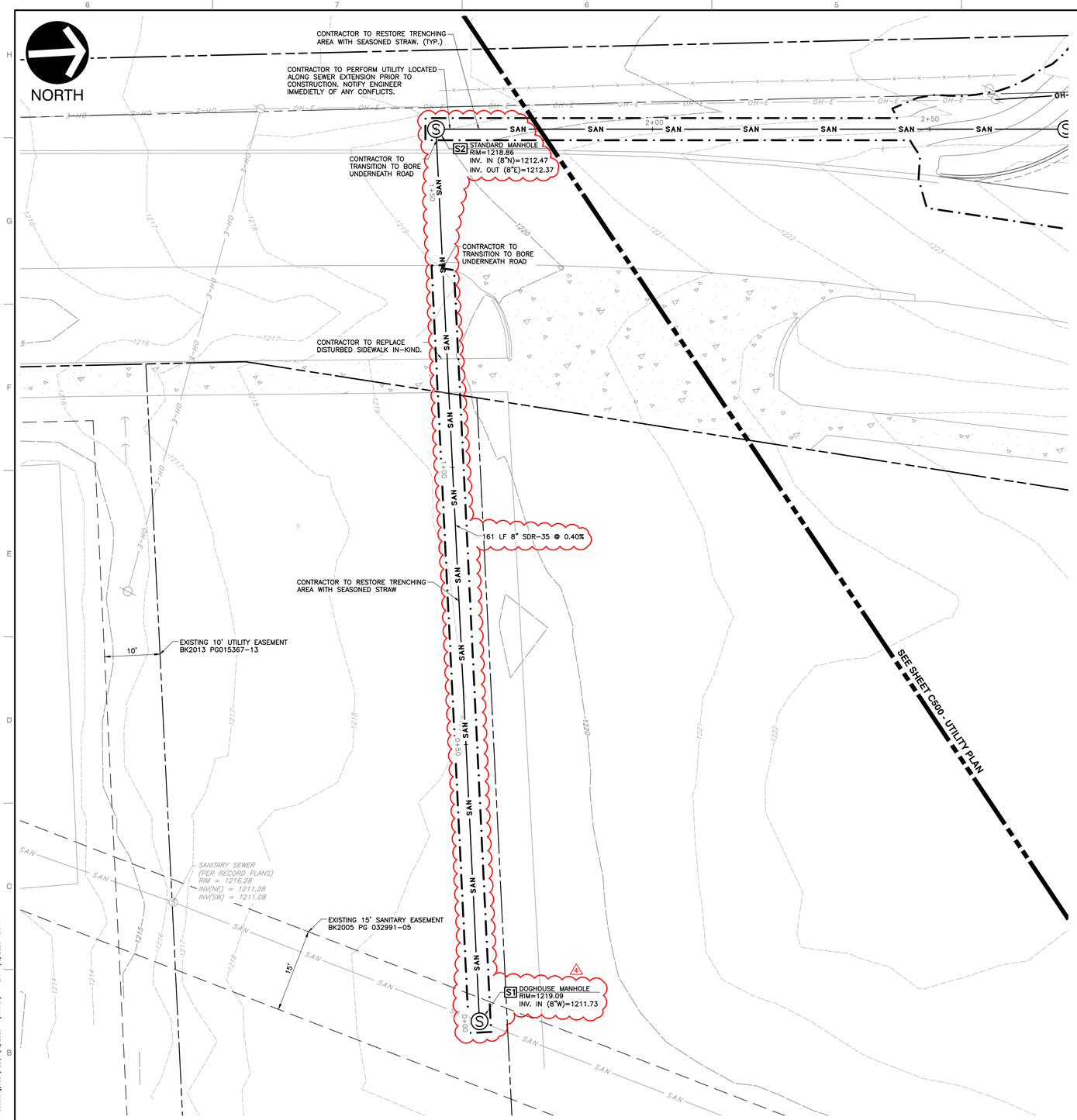
McDONALD'S RESTAURANT
NSN 45021 (024-1329)
653 S HUNT RD
WILLARD, MO 65781

UTILITY PLAN

DATE:	AUGUST 2026
DWG SCALE:	1"=20'
PROJECT NO.	353-866
DRAWN BY:	CJW
CHECKED BY:	THA
APPROVED BY:	DRAFT

DRAWING NO.: C500
SHEET 9 OF 32

P:\350-099\353-866\~2400\Dwg\C501\353866-C501-C500.dwg[C500] LS(1) 11/2/2026 4:56 PM - LP, 11/2/2026 4:56 PM - jwilmoth



NOTES

1. SEE SHEET C001 FOR GENERAL NOTES AND ABBREVIATIONS.
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MISSOURI ONE CALL SYSTEM
811 or 1-800-344-7483
https://www.mo1call.com

SCALE IN FEET
0 10 20

STATE OF MISSOURI
PATRICK TODD BENNETT
NUMBER A-2010039123
11/02/2026
PROFESSIONAL ENGINEER

REVISION RECORD

NO	DATE	DESCRIPTION
1	07/30/2026	REVISION 1
2	09/15/2026	REVISION 2 - RESUBMITTAL FOR CONSTRUCTION
3	10/16/2026	REVISION 3 - WATERMAIN AND GRADING ADJUSTMENTS
4	11/02/2026	REVISION 4 - WATER MAIN AND SANITARY MODIFICATIONS

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Civil & Environmental Consultants, Inc.
10300 Alliance Road
Suite 300
Cincinnati, OH 45242
Ph: 513.985.0226
www.cecinc.com

McDONALD'S RESTAURANT
NSN 45021 (024-1329)
653 S HUNT RD
WILLARD, MO 65781

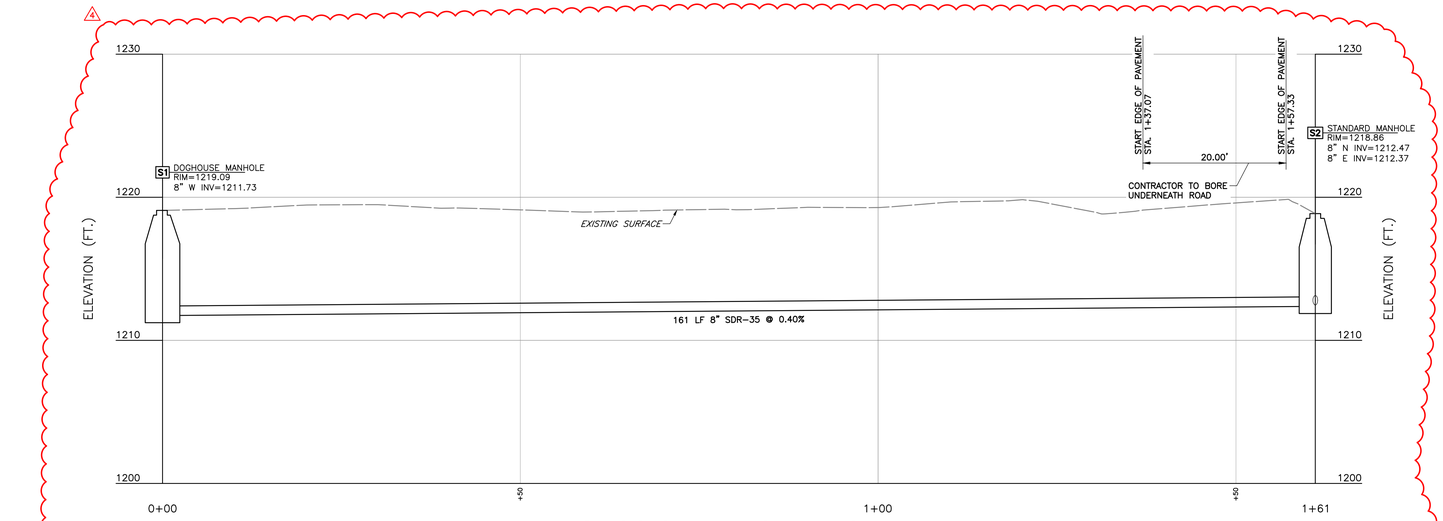
SANITARY EXTENSION PLAN

DATE:	AUGUST 2026	DRAWN BY:	CJW
DWG SCALE:	1"=10'	CHECKED BY:	THA
PROJECT NO.			353-866
APPROVED BY:			DRAFT

DRAWING NO.: C501

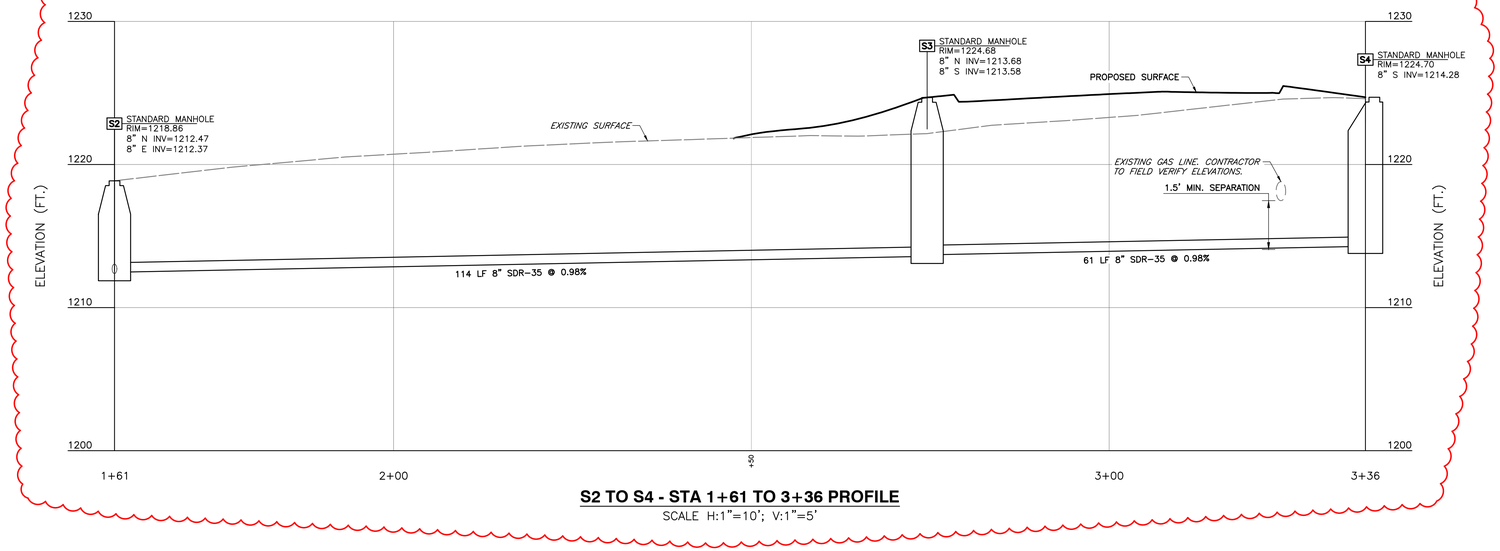
SHEET 10 OF 32

P:\350-0001\353-866\-CADD\Dwg\Civil\353866-Civil-C2000.dwg[C501] LS(11/2/2026 - jwilmot) - LP: 11/2/2026 4:56 PM



S1 TO S2 STA. 0+00 TO 1+61 PROFILE

SCALE H:1"=10'; V:1"=5'



S2 TO S4 - STA 1+61 TO 3+36 PROFILE

SCALE H:1"=10'; V:1"=5'

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https://www.mo1call.com

SCALE IN FEET (HORIZONTAL)
0 10 20

SCALE IN FEET (VERTICAL)
0 5 10

STATE OF MISSOURI
PATRICK TODD BENNETT
NUMBER A2004000423
PROFESSIONAL ENGINEER
11/02/2026

REVISION RECORD

NO	DATE	DESCRIPTION
1	07/30/2026	REVISION 1
2	09/15/2026	REVISION 2 - ISSUED FOR CONSTRUCTION
3	10/15/2026	REVISION 3 - WATER MAIN AND GRADING ADJUSTMENTS
4	11/03/2026	REVISION 4 - WATER MAIN AND SANITARY MODIFICATIONS

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Ph: 513.985.0226
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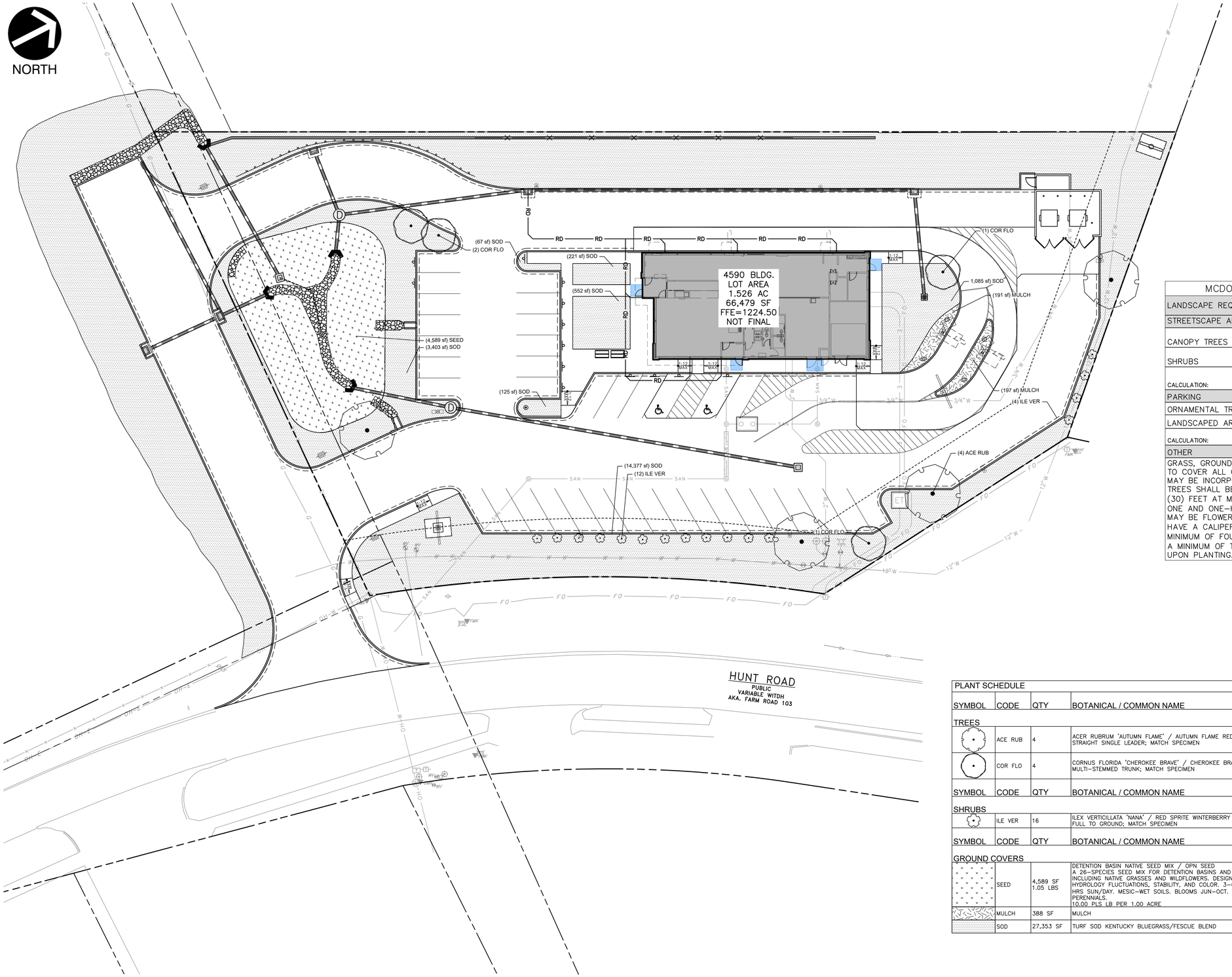
SANITARY EXTENSION PROFILES

DATE:	AUGUST 2026	DRAWN BY:	CJW
DWG SCALE:	1"=20'	CHECKED BY:	THA
PROJECT NO:			353-866
APPROVED BY:			DRAFT

DRAWING NO.: **C502**

SHEET 11 OF 32

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NOTE TO CONTRACTOR
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GENERAL NOTES:
1. SEE SHEET C200 FOR FULL LEGEND.
2. SEE SHEET C701 FOR PLANTING NOTES AND DETAILS.

GENERAL LANDSCAPE NOTES:

2. ALL LANDSCAPE BEDS AND TREE RINGS TO BE 3"–4" DEPTH AGED HARDWOOD MULCH.
3. DISTURBED AREAS NOT RECEIVING MULCH OR OTHER GROUNDCOVER TO BE KENTUCKY BLUEGRASS/FESCUE BLEND SEED, UNLESS NOTED FOR SOD.
4. CONTRACTOR TO PROVIDE MULCH.
5. CONTRACTOR TO HAND WATER ALL PROPOSED PLANT MATERIAL AT A RATE OF 1" PER WEEK UNTIL THE JOB IS ACCEPTED BY THE OWNER'S REPRESENTATIVE.

MCDONALD'S WILLARD, MO PLANTING REQUIREMENTS			
LANDSCAPE REQUIREMENTS	UNIT	REQUIRED PLANTS	PROVIDED PLANTS
STREETSCAPE AND FRONTAGE			
CANOPY TREES	440 LF OF FRONTAGE	4	4
SHRUBS	440 LF OF FRONTAGE	16	16
CALCULATION:	1 CANOPY OR ORNAMENTAL TREE AND 4 SHRUBS PER 100 LINEAR FEET OF LOT FRONTAGE; IF PERIMETER AREA IS LESS THAN 50 LF, 4 SHRUBS AND 1 CANOPY OR ORNAMENTAL TREE ARE REQUIRED.		
PARKING			
ORNAMENTAL TREES	39 SPACES	4	4
LANDSCAPED AREA	32330 SF	3,178 SF (5%)	12,132 SF (19%)
CALCULATION:	1 CANOPY OR UNDERSTORY TREE OR 2 ORNAMENTAL TREES PER 20 PARKING SPACES; 5% OF PARKING AREA TO BE LANDSCAPED.		
OTHER			
GRASS, GROUND COVER OR OTHER LIVING LANDSCAPE MATERIAL SHALL BE USED TO COVER ALL OPEN GROUND. MULCH, BARK OR OTHER LANDSCAPING MATERIALS MAY BE INCORPORATED IN THE LANDSCAPE PLAN WHERE APPROPRIATE. CANOPY TREES SHALL BE DECIDUOUS TREES THAT HAVE A MINIMUM HEIGHT OF THIRTY (30) FEET AT MATURITY. ALL CANOPY TREES SHALL HAVE A CALIPER WIDTH OF ONE AND ONE–HALF (1½) INCHES AT TIME OF PLANTING. ORNAMENTAL TREES MAY BE FLOWERING OR NON–FLOWERING TREES. ALL ORNAMENTAL TREES SHALL HAVE A CALIPER WIDTH OF ONE (1) INCH AT TIME OF PLANTING OR SHALL BE A MINIMUM OF FOUR (4) FEET IN HEIGHT ABOVE THE ROOT BALL. SHRUBS SHALL BE A MINIMUM OF TWELVE (12) INCHES IN HEIGHT WHEN MEASURED IMMEDIATELY UPON PLANTING.			

PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	CONTAINER	CALIPER	SIZE
TREES						
	ACE RUB	4	ACER RUBRUM 'AUTUMN FLAME' / AUTUMN FLAME RED MAPLE STRAIGHT SINGLE LEADER; MATCH SPECIMEN	B&B	1.5" CAL.	7' – 8' HT.
	COR FLO	4	CORNUS FLORIDA 'CHEROKEE BRAVE' / CHEROKEE BRAVE DOGWOOD MULTI–STEMMED TRUNK; MATCH SPECIMEN	B&B	1" CAL.	4'–5' HT.
SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	CONTAINER	HEIGHT	SPACING
SHRUBS						
	ILE VER	16	ILEX VERTICILLATA 'NANA' / RED SPRITE WINTERBERRY FULL TO GROUND; MATCH SPECIMEN	NO. 3 CONT.	12"–18" HT.	AS SHOWN
SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME			
GROUND COVERS						
	SEED	4,589 SF 1.05 LBS	DETENTION BASIN NATIVE SEED MIX / OPN SEED A 26–SPECIES SEED MIX FOR DETENTION BASINS AND BIOSWALES, INCLUDING NATIVE GRASSES AND WILDFLOWERS. DESIGNED FOR HYDROLOGY FLUCTUATIONS, STABILITY, AND COLOR. 3–6 FT. HT. 4–6 HRS SUN/DAY. MESIC–WET SOILS. BLOOMS JUN–OCT. ANNUALS AND PERENNIALS. 10.00 PLS LB PER 1.00 ACRE			
	MULCH	388 SF	MULCH			
	SOD	27,353 SF	TURF SOD KENTUCKY BLUEGRASS/FESCUE BLEND			

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SCALE IN FEET
0 20 40

PATRICK TODD BENNETT NUMBER 2010030123 STATE OF MISSOURI PROFESSIONAL ENGINEER 11/02/2026

REVISION RECORD

NO	DATE	DESCRIPTION
1	07/30/2026	REVISION 1
2	09/15/2026	REVISION 2 - ISSUED FOR CONSTRUCTION
3	10/15/2026	REVISION 3 - WATERMAIN AND GRADING ADJUSTMENTS
4	11/03/2026	REVISION 4 - WATER MAIN AND SANITARY MODIFICATIONS

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McDONALD'S RESTAURANT
NSN 45021 (024-1329)
653 S HUNT RD
WILLARD, MO 65781

LANDSCAPE PLAN

DATE: AUGUST 2026 | DRAWN BY: CJW
DWG SCALE: 1"=20' | CHECKED BY: THA
PROJECT NO: 353-866
APPROVED BY: DRAFT

DRAWING NO.: C700
SHEET 12 OF 32

P:\353-866\353-866-01\Dwg\CIVIL\353866-CIV01-C700.dwg(C700) LS(10/29/2026 - jwilmon) - LP: 11/2/2026 4:56 PM

PLANTING NOTES

1. THE QUANTITIES INDICATED ON THE PLANT MATERIALS SCHEDULE ARE PROVIDED FOR THE BENEFIT OF THE LANDSCAPE CONTRACTOR BUT SHOULD NOT BE ASSUMED TO BE CORRECT. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE QUANTITIES INDICATED. ANY DISCREPANCIES NOTED SHALL BE BROUGHT TO THE ATTENTION OF THE OWNERS REPRESENTATIVE PRIOR TO INSTALLATION. IN THE EVENT OF A DISCREPANCY, THE DRAWINGS SHALL GOVERN.
2. NO SUBSTITUTIONS AS TO SIZE, TYPE, SPACING, QUANTITY OR QUALITY OF PLANT MATERIAL SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT. CHANGES IN PLANT MATERIAL MAY REQUIRE RE-APPROVAL BY LOCAL AUTHORITIES. CONTRACTOR IS NOT TO SEEK RE-APPROVAL WITHOUT EXPRESS WRITTEN CONSENT OF THE LANDSCAPE ARCHITECT.
3. ALL PLANTS MUST BE NURSERY GROWN, HEALTHY, VIGOROUS, AND FREE FROM ALL PESTS AND DISEASE, BALL AND BURLAP (B&B) OR CONTAINER GROWN AS SPECIFIED IN THE MATERIALS SCHEDULE. ALL PLANTS SHALL CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK ANSI Z-60, LATEST EDITION FOR SIZE AND QUALITY.
4. ALL TREES MUST BE STRAIGHT TRUNKED, FULL HEADED, WITH A SINGLE DOMINANT LEADER, AND MEET THE MINIMUM REQUIREMENTS. TREES WITH A 'Y' SHAPE ARE NOT ACCEPTABLE.
5. ALL PLANTS ARE SUBJECT TO REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT AND OR OWNERS REPRESENTATIVE AT ANY TIME PRIOR TO FINAL ACCEPTANCE.
6. THE DIMENSIONS FOR HEIGHT, SPREAD, AND CALIPER AS SPECIFIED IN THE PLANT MATERIALS SCHEDULE ARE THE MINIMUM DESIRED FOR EACH PLANT. EACH PLANT SHALL BE UNIFORM AND CONSISTENT AS IT PERTAINS TO THE SPECIFICATIONS AND THE INDIVIDUAL SPECIES. ANY PLANT MATERIAL WHICH FAILS THESES SPECIFICATIONS WILL BE REJECTED. THE CONTRACTOR SHALL PROVIDE ACCEPTABLE MATERIAL AT NO ADDITIONAL COST TO THE OWNER. CALIPER SIZE IS NOT TO BE REDUCED. TREES THAT FAIL MINIMUM CALIPER SIZE AS MEASURED IN THE FIELD WILL BE REJECTED AND REPLACEMENTS SHALL BE MADE BY THE CONTRACTOR AT NO ADDITIONAL COST. CALIPER MEASUREMENTS SHALL BE MADE IN ACCORDANCE WITH ANSI STANDARDS.
7. PRIOR TO COMMENCEMENT OF INSTALLATION, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES AND SHALL AVOID DAMAGING UTILITIES DURING INSTALLATION. ANY UTILITIES DAMAGED DURING INSTALLATION SHALL BE REPAIRED BY THE LANDSCAPE CONTRACTOR TO THE SATISFACTION OF THE APPROPRIATE UTILITY COMPANY. ALL REPAIRS SHALL BE AT NO COST TO THE OWNER. NO TREES SHALL BE PLANTED WITHIN 10' OF SITE UTILITY LINES. FIELD ADJUST AS NECESSARY AFTER LANDSCAPE ARCHITECT'S APPROVAL.
8. THE LANDSCAPE CONTRACTOR SHALL FIELD STAKE ALL PLANT LOCATIONS PRIOR TO INSTALLATION. THE LANDSCAPE ARCHITECT SHALL APPROVE ALL STAKED LOCATIONS PRIOR TO INSTALLATION. PLANTS INSTALLED PRIOR TO APPROVAL BY THE LANDSCAPE ARCHITECT ARE SUBJECT TO REJECTION AND/ OR REPLACEMENT AT NO ADDITIONAL COST TO THE OWNER.
9. PRE-EMERGENT HERBICIDES, TREFLAN OR EPTAM, SHALL BE APPLIED TO ALL PLANTING BEDS. APPLY AT MANUFACTURERS RECOMMENDATIONS. HERBICIDES SHALL BE INCORPORATED INTO THE SOIL MIXES.
10. APPLY ROOT STIMULATOR, CONTAINING MICRORHIZZA, TO ALL PLANTS PRIOR TO BACK FILLING. APPLY AT MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUBMIT SAMPLES OF ROOT STIMULATOR TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO USE.
11. ALL DISTURBED AREAS NOT RECEIVING MULCH OR OTHER SPECIFIED IMPROVEMENTS ARE TO BE FINE GRADED TO TRANSITION SMOOTHLY INTO ADJACENT GRADES AND RECEIVE BERMUDA SOD. SEE SOD NOTES BELOW.
12. THE LANDSCAPE CONTRACTOR SHALL COMPLETELY GUARANTEE ALL PLANTINGS FOR A PERIOD OF ONE YEAR BEGINNING UPON THE WRITTEN DATE OF SUBSTANTIAL COMPLETION OF THE PROJECT. ANY PLANTS SUBJECT TO REPLACEMENT SHALL BE MADE AT THE END OF THE WARRANTY PERIOD OR AT TIME AS DETERMINED BY THE OWNERS REPRESENTATIVE. ALL PLANTS MUST BE ALIVE AND HEALTHY FOR REVIEW AND APPROVAL BY LOCAL AUTHORITIES AS APPROPRIATE FOR OCCUPANCY PERMIT.
13. THE LANDSCAPE CONTRACTOR SHALL UTILIZE ON-SITE TOPSOIL AS AVAILABLE FROM THE CONTRACTOR. ALL IMPORTED TOPSOIL SHALL BE APPROVED BY THE OWNERS REPRESENTATIVE PRIOR TO PLACEMENT.
14. EXISTING GRASS TO BE REMOVED, IF PRESENT, AND TOPSOIL TO BE SPREAD SMOOTH AND HAND-RAKED TO REMOVE ALL ROCKS AND DEBRIS LARGER THAT 1 INCH IN DIAMETER PRIOR TO LAYING SOD OR TO BE MULCHED WITH A MINIMUM OF 3 INCHES OF AGED, BROWN HARDWOOD BARK, SUBMIT SAMPLE TO LANDSCAPE ARCHITECT FOR APPROVAL. ALL PLANTING AREAS MUST BE COMPLETELY MULCHED.
15. THE TYPICAL PLANTING SOIL BACKFILL MIX FOR BEDS AND PLANT BACKFILL SHALL CONSIST OF THE FOLLOWING:
    - 2/3 SITE SOIL
    - 1/3 SOIL AMENDMENTS (BY VOLUME AS FOLLOWS)
    - 2 PARTS HUMUS AND OR PEAT
    - 1 PART COARSE RIVER SAND
    - 1 PART STERILIZED COMPOSTED COW MANURE
    - COMMERCIAL FERTILIZER AND LIME AS RECOMMENDED BY THE SOILS TEST REPORT.
    - COMPLETELY BLEND BACKFILL SOIL MIX PRIOR TO PLACEMENT.
18. MULCH SHALL BE BROWN HARDWOOD MULCH WITH NO WEED OR OTHER UNPROCESSED ORGANICS.

LANDSCAPE MAINTENANCE

THE DEVELOPER, ITS SUCCESSOR AND/OR SUBSEQUENT OWNERS AND THEIR AGENTS, SHALL MAINTAIN LANDSCAPING ON THE PROPERTY ON A CONTINUING BASIS FOR THE LIFE OF THE DEVELOPMENT.

1. ALL LANDSCAPING IS SUBJECT TO PERIODIC INSPECTION BY THE PLANNING DIRECTOR OR DESIGNEE. THE CITY MAY CAUSE REMOVAL OF ANY DEAD OR DISEASED TREES, PLANTS AND SHRUBS ON PRIVATE PROPERTY WITHIN THE CITY, WHEN THOSE TREES, PLANTS AND SHRUBS CONSTITUTE A HAZARD TO LIFE AND/OR PROPERTY OR HARBOR INSECTS OR DISEASE WHICH CONSTITUTES A POTENTIAL THREAT TO OTHER TREES, PLANTS OR SHRUBS WITHIN THE CITY. IF THE PLANNING DIRECTOR DETERMINES THAT REMOVAL OF ANY DISEASED TREE, PLANTS OR SHRUBS ARE NECESSARY; THE PLANNING OFFICIAL SHALL PROVIDE THE PROPERTY OWNER WRITTEN NOTICE OF THE REQUIRED MAINTENANCE OR REMOVAL.
2. ALL REQUIRED LANDSCAPING SHALL BE PROVIDED WITH A READILY AVAILABLE AND ACCEPTABLE WATER SUPPLY. UNDERGROUND SPRINKLER SYSTEMS ARE ENCOURAGED FOR ALL REQUIRED STREET YARD LANDSCAPING, PARKING LOT LANDSCAPING, LANDSCAPE BUFFER YARDS, AND LANDSCAPE SCREENING.
3. WARRANTY PERIOD – COMPLETED LANDSCAPING SHALL COMPLY WITH THE APPROVED LANDSCAPE PLAN, INCLUDING THE QUANTITIES, LOCATION, SPECIES, AND SIZE OF PLANTS AND OTHER LANDSCAPE MATERIALS, AND THAT SUCH LANDSCAPING WILL REMAIN IN GOOD CONDITION FREE FROM DEFECTS IN MATERIAL AND/OR WORKMANSHIP DURING THE WARRANTY PERIOD.
   3.1. FOR THE PURPOSE OF THIS SUBSECTION, "WARRANTY PERIOD," MEANS A PERIOD OF ONE YEAR BEGINNING WHEN THE CITY ACCEPTS THE LANDSCAPING AS COMPLETE.
   3.2. DURING THE WARRANTY PERIOD, DEFECTIVE MATERIALS, EQUIPMENT, AND WORKMANSHIP SHALL BE REPAIRED, CORRECTED, OR REPLACED WITHOUT CHARGE OR COST TO THE OWNER. THE CITY MAY AT ANY TIME DURING THE WARRANTY PERIOD INSPECT, PHOTOGRAPH, OR TELEVISE SUCH LANDSCAPING AND SHALL NOTIFY THE DEVELOPER OF ANY NECESSARY REPAIR, CORRECTION, OR REPLACEMENT.

KENTUCKY BLUEGRASS SODDING NOTES

PART 1. GENERAL
THIS WORK SHALL INCLUDE ALL SOIL PREPARATION AND THE STORAGE, TRANSPORTATION, PLACING, AND MAINTENANCE OF SOD AT ALL LOCATIONS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE LANDSCAPE ARCHITECT. TEMPORARY STORAGE OF SOD IS PERMITTED; HOWEVER, TAKE CARE TO MAINTAIN THE SOD IN A LIVE, GROWING CONDITION. SOD SHALL BE REJECTED IF IT IS PERMITTED TO DECAY OR DRY OUT TO THE EXTENT THAT, IN THE JUDGMENT OF THE LANDSCAPE ARCHITECT, ITS SURVIVAL IS DOUBTFUL. DISPOSE OF REJECTED SOD AS DIRECTED BY THE LANDSCAPE ARCHITECT AT NO EXPENSE TO THE OWNER. SET SOD BETWEEN MARCH 1 AND OCTOBER 15 AND WHEN THE SOIL IS IN A WORKABLE CONDITION. CONTRACTOR SHALL COORDINATE INSTALLATION OF SOD WITH COMPLETION OF IRRIGATION SYSTEM. THIS WILL INSURE WATERING OF NEW MATERIAL. DO NOT SET SOD OUT OF SEASON UNLESS SOIL CONDITIONS ARE FAVORABLE AND WRITTEN PERMISSION IS OBTAINED FROM THE LANDSCAPE ARCHITECT. THE CONTRACTOR SHALL BE WHOLLY RESPONSIBLE FOR THE SCHEDULING, ORDERING, RECEIVING, STORING, AND INSTALLING OF ALL SODDING MATERIALS.

PART 2. PRODUCTS
SOD: KENTUCKY BLUEGRASS; NEW SOD CONSISTING OF LIVE, DENSE, WELL ROOTED GROWTH; WELL SUITED FOR THE INTENDED PURPOSE AND SOIL CONDITIONS; COMPLETELY FREE OF NOXIOUS WEEDS AND GRASSES (QUACK GRASS, JOHNSON GRASS, CANADA THISTLE); AND CONTAINING LESS THAN 5 PLANTS OF OBJECTIONABLE WEEDS PER 100 SQUARE FEET IF NURSERY GROWN OR 10 SUCH PLANTS IF FIELD GROWN

FERTILIZER: COMMERCIALLY MANUFACTURED, GRADE 10-10-10; FURNISHED IN STANDARD CONTAINERS THAT ARE CLEARLY MARKED WITH THE NAME, WEIGHT, AND GUARANTEED ANALYSIS OF THE CONTENTS AND THAT ENSURE PROPER PROTECTION IN TRANSPORTATION AND HANDLING; AND IN COMPLIANCE WITH ALL LOCAL, STATE, AND FEDERAL FERTILIZER LAWS AGRICULTURAL LIMESTONE: CONTAINING A MINIMUM OF 85 PERCENT CALCIUM CARBONATE AND MAGNESIUM CARBONATE COMBINED, 85 PERCENT OF WHICH PASSES A NO. 10 MESH SIEVE.

PART 3. EXECUTION
BEFORE BEGINNING SODDING OPERATIONS IN ANY AREA, COMPLETE THE PLACING OF TOPSOIL, FINAL GRADING, AND REMOVAL OF ANY DEBRIS. HAVE THE WORK APPROVED BY THE LANDSCAPE ARCHITECT. A MINIMUM OF 4 INCHES OF GOOD, CLEAN TOPSOIL SHALL BE SPREAD OVER THE CONSTRUCTION AREA. SCARIFY EACH AREA TO BE SODDED A MINIMUM OF 2 INCHES.

APPLY FERTILIZER AND AGRICULTURAL LIMESTONE UNIFORMLY OVER THE SOD BED AT THE RATES SHOWN BELOW. IMMEDIATELY PRIOR TO PLACING SOD, WATER THE SOD BED UNTIL IT IS SATURATED TO A DEPTH OF 1 INCH, AND KEEP IT MOIST UNTIL THE SOD IS PLACED.

A. FERTILIZER: 15 POUNDS PER 1,000 SQUARE FEET OF 10-10-10

B. AGRICULTURAL LIMESTONE: 40 POUNDS PER 1,000 SQUARE FEET

PLACE SOD AS SOON AS PRACTICAL AFTER ITS REMOVAL FROM POINT OF ORIGIN. KEEP IT MOIST WHILE DISPLACED. PLACE SOD BY HAND SO THAT THE EDGES ARE IN CLOSE CONTACT AND IN A POSITION TO BREAK JOINTS WITH THE LONG DIMENSION PERPENDICULAR TO THE SLOPE. FIT AND POUND THE SOD INTO PLACE WITH A 10 INCHES X 10 INCHES WOOD TAMP OR OTHER SIMILAR IMPLEMENTS. IMMEDIATELY AFTER PLACING THE SOD, THOROUGHLY WET AND ROLL IT. TWO WEEKS AFTER THE SOD IS INSTALLED, TOP DRESS AND THOROUGHLY WATER IT. TOP DRESSING SHALL CONSIST OF THE FOLLOWING:

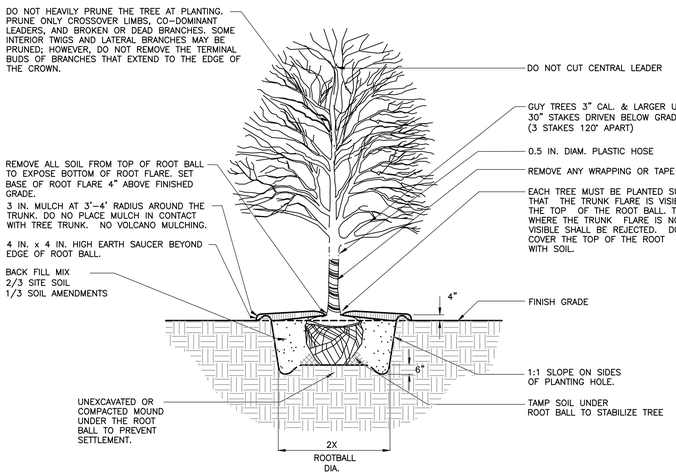
A. 1/2 TO 1 POUND: 38 PERCENT UREA FORMALDEHYDE PER 1,000 SQUARE FEET

B. 20 POUNDS: 6-12-12 PER 1,000 SQUARE FEET

NO EQUIPMENT, MATERIAL STORAGE, CONSTRUCTION TRAFFIC, ETC., WILL BE PERMITTED ON NEWLY SODDED AREAS. DISPOSE OF ALL SURPLUS MATERIAL AS DIRECTED BY THE OWNER THE OWNER WILL REVIEW THE SOD FOR ACCEPTANCE 30 DAYS AFTER INSTALLATION, AT WHICH TIME THE MAINTENANCE PERIOD WILL BEGIN AS STATED IN THESE SPECIFICATIONS. THIS ACCEPTANCE BY THE OWNER IS FOR THE PURPOSES OF PAYMENT ONLY.

INSPECTIONS
A. THE LANDSCAPE ARCHITECT SHALL INSPECT THE SOD WITHIN 30 DAYS AFTER INSTALLATION AND DETERMINE IF IT IS ACCEPTABLE.

GUARANTEES
A. ESTABLISH AN ACCEPTABLE GROWTH OF THE SPECIFIED SOD ON ALL AREAS INDICATED ON THE DRAWINGS OR AS DIRECTED BY THE LANDSCAPE ARCHITECT. AN AREA IS CONSIDERED ACCEPTABLE IF THE MAJORITY OF EACH PIECE OF SOD IS ALIVE AND HEALTHY AND GENERALLY FREE FROM WEEDS, INSECT, AND DISEASE.



NOTES:
1. TREES ARE NOT TO BE STAKED.
2. PROVIDE POSITIVE DRAINAGE UNDER ALL CIRCUMSTANCES. DRAINAGE SHOULD BE FROM CENTER OF ROOT BALL TO PERIMETER OF ROOT BALL. DO NOT ALLOW PONDING OF WATER UNDER ROOTBALL.
3. REMOVE TOP HALF OF WIRE BASKET AFTER PLACING ROOTBALL IN PLANT PIT.
4. REMOVE ROPE TIES & TOP 1/3 OF BURLAP FROM ROOT BALL AFTER PLANTING.
5. POLYPROPYLENE STRAPS MAY BE SUBSTITUTED IN LIEU OF WIRES, ARBORTIE OR EQUIVALENT.
6. SEE PLANTING SCHEDULE AND PLANTING NOTES FOR ADDITIONAL INFORMATION/REQUIREMENTS.

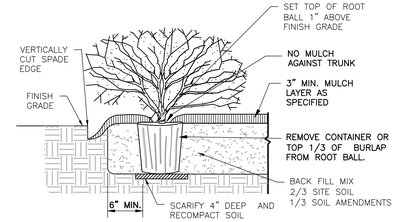
1 DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE

NOTES:
1. TREES SHALL BE STAKED AND GUYED AS DETAILED AND SPECIFIED ONLY IF THE TREE CANNOT STAND ON ITS OWN.
2. PROVIDE POSITIVE DRAINAGE UNDER ALL CIRCUMSTANCES. DRAINAGE SHOULD BE FROM CENTER OF ROOT BALL TO PERIMETER OF ROOT BALL. DO NOT ALLOW PONDING OF WATER UNDER ROOTBALL.
3. SET TREE AT ORIGINAL DEPTH. REMOVE BURLAP, WIRE AND STRAPS (ANYTHING THAT COULD GIRDLE TREE OR RESTRICT ROOT GROWTH) ON UPPER 1/3 OF ROOTBALL. NO SYNTHETIC BURLAP WILL BE ACCEPTED.
4. SEE LANDSCAPE PLANTING NOTES FOR THE TYPE OF MULCH MATERIAL TO USE.
5. BRANCHING HEIGHT PER PLANTING NOTES AND SPECIFICATIONS.
6. SEE PLANTING SCHEDULE AND PLANTING NOTES FOR ADDITIONAL INFORMATION/REQUIREMENTS.

2 MULTI-TRUNK TREE PLANTING DETAIL
NOT TO SCALE

NOTES:
1. SUBGRADE SURFACE TO FREE OF ALL DEBRIS AND CLEAN SOIL FILL. LANDSCAPE ARCHITECT TO APPROVE SUBSOIL CONDITIONS PRIOR TO TOPSOIL PLACEMENT.
2. COMPACT PLANTING SOIL AND SUBSOIL AREAS TO 85% MAX. COMPACTION TO AVOID SETTLEMENT ADJACENT TO PAVEMENTS

3 TOPSOIL BACKFILL DETAIL
NOT TO SCALE



NOTES
1. SEE PLANTING SCHEDULE AND PLANTING NOTES FOR ADDITIONAL INFORMATION/REQUIREMENTS.
2. LIMIT AMOUNT OF PRUNING TO ONLY DEAD OR DAMAGED LIMBS. RETAIN THE NATURAL SHAPE OF SHRUB. IF MORE THAN 1/5 OF TOTAL SHRUB FOLIAGE IS PRUNED, PLANT MAYBE REJECTED.

4 SHRUB PLANTING DETAIL
NOT TO SCALE

NOTES
1. INSTALL BED EDGE WHEN MULCHED AREAS ABUT LAWN AREAS UNLESS SPECIFIED FOR STEEL EDGING. DO NOT INSTALL UNTIL LAWN IS ESTABLISHED AND SOIL IS FIRM. RE-MULCH EDGE IF SOIL GETS ON PREVIOUSLY INSTALLED MULCH DURING EDGE INSTALLATION.

5 PLANTING BED EDGE DETAIL
NOT TO SCALE

NOTES:

1. MINIMUM TOPSOIL DEPTH IS 4 INCHES.
2. TOPSOIL SHOULD HAVE A GOOD HUMUS CONTENT. THIS CAN BE 20 TONS OF COMPOSTED MANURE PER ACRE OR 170 BALES OF PEAT PER ACRE.
3. TOPSOIL WITH A PH OF 6 OR LESS WILL NEED A LIME AMENDMENT. EVENLY APPLY HYDRATED LIME OR GROUND LIMESTONE TO TOP SOIL UNTIL PH IS ADJUSTED TO BETWEEN 6-7. PH BELOW 5.5 OR ABOVE 7.5 IS UNACCEPTABLE FOR LAWNS.
4. 650 LBS OF SLOW RELEASE WELL BALANCED FERTILIZER 10-10-10 PER ACRE SHOULD BE HARROWED INTO THE TOPSOIL PRIOR TO SEEDING.
5. SODDING IS BEST IN THE LATE SUMMER-EARLY AUTUMN. A HARROW MAY BE USED TO OBTAIN AN EVEN SURFACE THAT IS FIRM. THE SEED MAY BE MECHANICALLY SPREAD INTO THE SURFACE.
6. CONTRACTOR IS RESPONSIBLE FOR ENSURING SOD IS WATERED DURING ESTABLISHMENT.

6 SOD PLANTING
NOT TO SCALE

REVISION RECORD

NO	DATE	DESCRIPTION
1	07/30/2026	REVISION 1
2	09/10/2026	REVISION 2 - ISSUE FOR CONSTRUCTION
3	10/16/2026	REVISION 3 - WATERMAIN AND GAS PANEL ADJUSTMENTS
4	11/03/2026	REVISION 4 - WATER MAIN AND SANITARY MODIFICATIONS

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF NORTH CAROLINA WILL BE PROVIDED BY CEC, ENGINEER'S & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PROVIDED BY CEC, ENGINEER'S & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF KENTUCKY WILL BE PROVIDED BY CEC, ENGINEER'S & CONSULTANTS, LLC.

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653 S HUNT RD
WILLARD, MO 65781

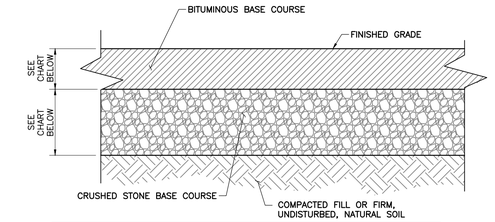
LANDSCAPE DETAILS

DATE:	AUGUST 2026
DWG SCALE:	AS SHOWN
PROJECT NO:	353-866
APPROVED BY:	DRAFT
DRAWN BY:	CJW
CHECKED BY:	THA

STATE OF MISSOURI
PATRICK TODD BENNETT
NUMBER A2000039423
11/02/2026
PROFESSIONAL ENGINEER

DRAWING NO.: C701
SHEET 13 OF 32

P:\353-0001\353-866\-CAD\Dwg\C101\353866-C101-C703.dwg(C703) LS(10/29/2026 - jwilmoth) - LP: 11/2/2026 4:58 PM

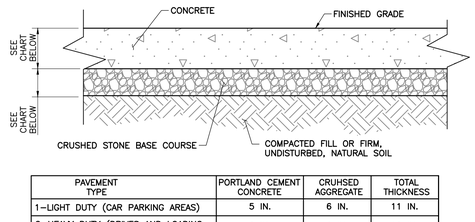


PAVEMENT TYPE	SUFACE COURSE	CRUSHED AGGREGATE	TOTAL THICKNESS
1–LIGHT DUTY (CAR PARKING AREAS)	4 IN.	8 IN.	12 IN.
2–HEAVY DUTY (DRIVES AND LOADING AREAS)	5 IN.	10 IN.	15 IN.

NOTES:

1. PAVEMENT THICKNESS SHALL BE PER GEOTECHNICAL REPORT. REFER TO THIS DOCUMENT FOR FURTHER SPECIFICATIONS AND/OR RECOMMENDATIONS.

1 C800 ASPHALT PAVEMENT
NOT TO SCALE

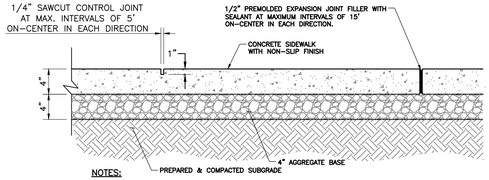


PAVEMENT TYPE	PORTLAND CEMENT CONCRETE	CRUHSED AGGREGATE	TOTAL THICKNESS
1–LIGHT DUTY (CAR PARKING AREAS)	5 IN.	6 IN.	11 IN.
2–HEAVY DUTY (DRIVES AND LOADING AREAS)	6 IN.	6 IN.	12 IN.

NOTES:

1. PAVEMENT THICKNESS SHALL BE PER GEOTECHNICAL REPORT. REFER TO THIS DOCUMENT FOR FURTHER SPECIFICATIONS AND/OR RECOMMENDATIONS.
2. CONCRETE TO HAVE A MINIMUM 28–DAY COMPRESSIVE STRENGTH OF 4,000 POUNDS PER SQUARE INCH (PSI) AND AIR ENTRAINMENT OF 4 TO 6 PERCENT BY VOLUME.

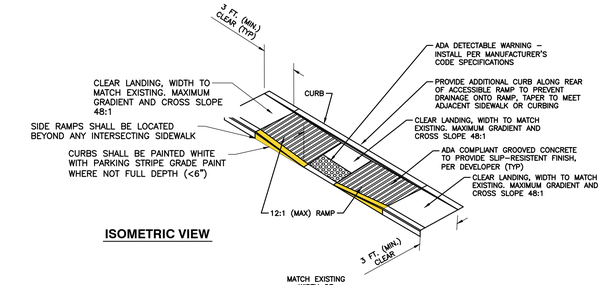
2 C800 CONCRETE PAVEMENT
NOT TO SCALE



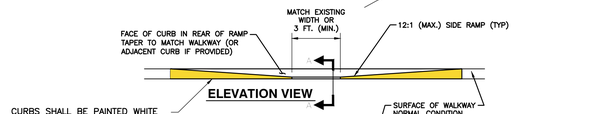
NOTES:

1. PROVIDE MEDIUM BROOM FINISH.
2. SEE PLAN FOR SIDEWALK WIDTHS
3. WHEN CONNECTING TO EXISTING SIDEWALK, SAWCUT AT NEAREST JOINT.
4. CROSS–SLOPE SHALL BE MAXIMUM 48:1.
5. REFER TO GEOTECHNICAL REPORT FOR FURTHER SPECIFICATIONS AND/OR RECOMMENDATIONS (SEE GRADING NOTES ON C001).

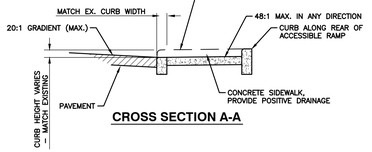
3 C800 CONCRETE SIDEWALK
NOT TO SCALE



ISOMETRIC VIEW



ELEVATION VIEW

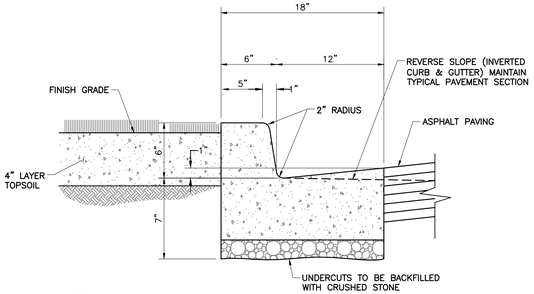


CROSS SECTION A-A

NOTES:

1. ACCESSIBLE SPACE / LOADING AREA: MAXIMUM 48:1 SLOPE IN ANY DIRECTION.
2. RAMP & PAVEMENT TRANSITION TO BE COMPLETELY FLUSH, NO LIP.
3. WHEN RAMP OCCURS ON RADII, MINIMUM CLEAR LANDING WIDTH MUST BE MAINTAINED ON SHORTEST SIDE ALONG CURVE.
4. CONSTRUCT PER A.D.A. & LOCAL STANDARDS.

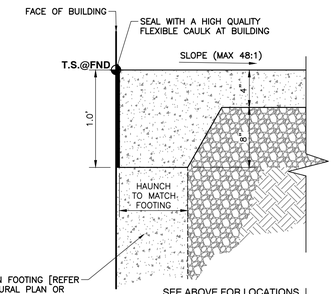
4 C800 ADA DEPRESSED CURB ACCESSIBLE RAMP
NOT TO SCALE

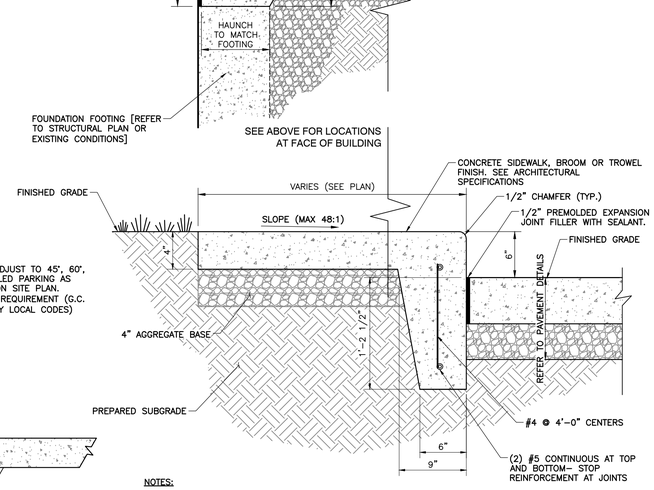


NOTES:

1. SEE PAVEMENT SECTION DETAILS FOR PAVEMENT SPECIFICATIONS
2. REFER TO GEOTECHNICAL REPORT FOR FURTHER SPECIFICATIONS AND/OR RECOMMONDATIONS.

5 C800 CONCRETE CURB
NOT TO SCALE



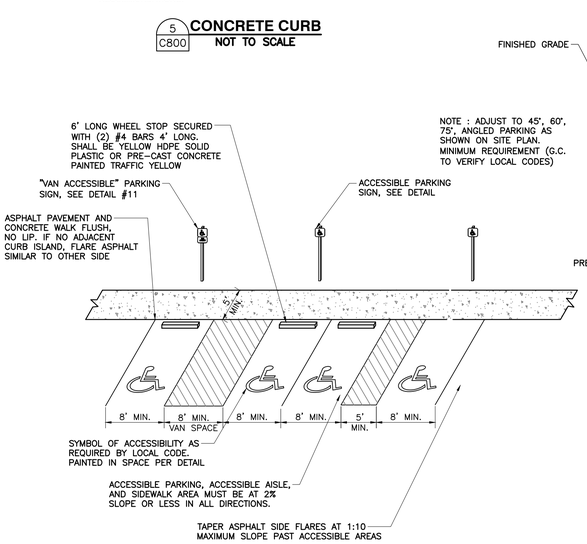


NOTES:

1. PROVIDE 1/2" PREMOLDED EXPANSION JOINT @ 25' ON CENTER.
2. PROVIDE TOOLED CONTRACTION JOINTS AT 5' ON CENTER.

6 C800 COMBINATION CONCRETE CURB/SIDEWALK
NOT TO SCALE

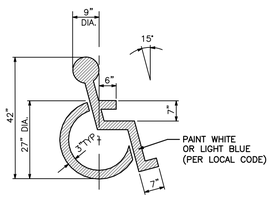
7 C800 PAVEMENT STRIPING
NOT TO SCALE



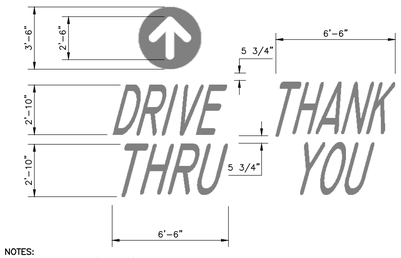
NOTES:

1. ACCESSIBLE PARKING SPACE AND ACCESSIBLE ISLE: MAXIMUM 2.0% SLOPE IN ANY DIRECTION.
2. ASPHALT TO CONCRETE BLENDED TRANSITION TO BE COMPLETELY FLUSH, NO LIP.
3. PLACEMENT AND STRIPING SHOWN IN DETAIL IS SCHEMATIC, SEE SITE PLAN FOR CONFIGURATION.
4. ACCESSIBLE AISLE SHALL BE PAINT STRIPED AT 45° ANGLE, EACH 6" WIDE STRIPE AT 24" ON CENTER.

9 C800 ADA ACCESSIBLE PARKING SPACES
NOT TO SCALE



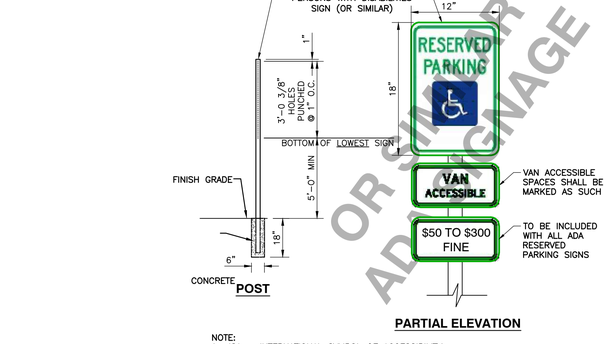
10 C800 ADA ACCESSIBLE PARKING SYMBOL
NOT TO SCALE



NOTES:

1. YELLOW PAINT (PMS123) IS USED FOR ALL DRIVE–THRU MARKINGS.
2. THE WORDS 'DRIVE–THRU' AND THE CIRCLE ARROW ARE PLACED AT ALL ENTRANCES TO THE LOT APPROX. 25' TO 30' FROM THE CURB OR SIDEWALK.
3. THE WORDS 'DRIVE–THRU' SHOULD BE CENTERED IN THE DRIVEWAY FOR ONE WAY TRAFFIC (ON THE INGRESS SIDE OF THE DRIVE AISLE IF THERE IS TWO WAY TRAFFIC).
4. THE CIRCLE DIRECTIONAL ARROW SHOULD BE CENTERED ABOVE THE WORD 'DRIVE' APPROX. 5' IN TO THE PARKING LOT.
5. IF FIVE OR MORE ARROWS ARE NEEDED TO DIRECT CARS TO THE DRIVE–THRU, PLAN THE CORRECT PLACEMENT OF THE ARROWS TO INCLUDE THE APPLICATION OF THE WORDS 'DRIVE–THRU' WITH AN ARROW CENTERED ABOVE THE WORD 'DRIVE,' ORIENTED TO THE DECISION POINT.
6. THE ARROW ART KNOCKS OUT SO THAT THE ARROW IS THE COLOR OF THE UNDERLYING PAVEMENT.

11 C800 PAVEMENT BRANDING DETAIL
NOT TO SCALE

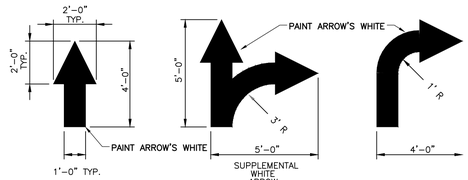


PARTIAL ELEVATION

NOTE:

1. ISA – INTERNATIONAL SYMBOL OF ACCESSIBILITY
2. SIGN MAY BE AFFIXED TO WALL SURFACE
3. SIGN MUST NOT PROTRUDE MORE THAN 4" (IF WALL MOUNTED) OR 12" IF POST MOUNTED HORIZONTALLY INTO PEDESTRIAN PATH.
4. SIGN POST MAY ALTERNATELY BE INSERTED INTO STEEL BOLLARD, ALL REQUIRED DIMENSIONS SHALL BE MAINTAINED

8 C800 ADA ACCESSIBLE PARKING SIGN
NOT TO SCALE



12 C800 DIRECTIONAL ARROWS
NOT TO SCALE

OR SIMILAR ADA SIGNAGE

MISSOURI ONE CALL SYSTEM
811 or 1-800-344-7483
https://www.mo1call.com

NOTE: PRIOR TO ANY EXCAVATION FOR UNDERGROUND UTILITIES, CONTRACTOR SHALL EXPOSE AND VERIFY LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO GAS, WATER, AND SANITARY SEWER. ANY CONFLICTS SHALL BE REPORTED, IMMEDIATELY, TO THE ENGINEER AND THE APPROPRIATE AUTHORITIES.

STATE OF MISSOURI PATRICK TODD BENNETT NUMBER A-2012038812 11/02/2026 PROFESSIONAL ENGINEER

REVISION RECORD

NO	DATE	DESCRIPTION
1	07/30/2026	REVISION 1
2	09/10/2026	REVISION 2 - ISSUED FOR CONSTRUCTION
3	10/16/2026	REVISION 3 - WATER MAIN AND GAS/ORIGINAL ADJUSTMENTS
4	11/03/2026	REVISION 4 - WATER MAIN AND SANITARY MODIFICATIONS

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Civil & Environmental Consultants, Inc.
10300 Aliance Road
Suite 300
Cincinnati, OH 45242
Ph: 513.985.0226
www.cecinc.com

McDONALD'S RESTAURANT
NSN 45021 (024-1329)
653 S HUNT RD
WILLARD, MO 65781

SITE DETAILS

DATE:	AUGUST 2026
DRAWN BY:	CJW
CHECKED BY:	THA
DWG SCALE:	AS SHOWN
PROJECT NO:	353-866
APPROVED BY:	DRAFT

DRAWING NO.: C800
SHEET 14 OF 32

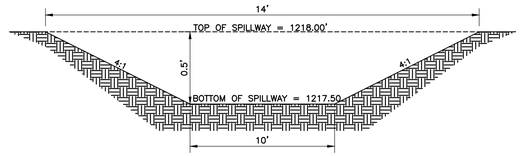
P:\350-0001\353-866\-CADD\Dwg\C801\353866-CV01-C800.dwg[C800] 10/10/2026 - jwilmes) - LP: 11/2/2026 4:56 PM



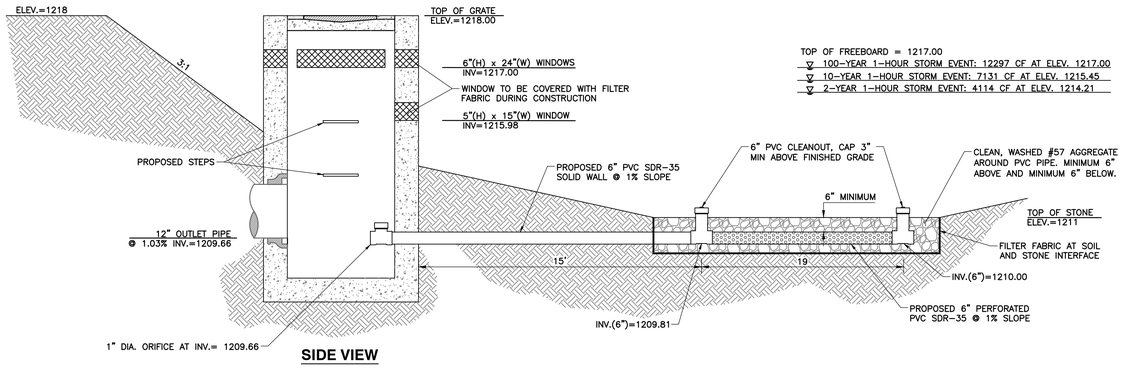
TOP VIEW

NOTES:

1. WINDOWS TO BE COVERED WITH FILTER FABRIC DURING CONSTRUCTION.
2. CONTRACTOR TO PERFORM DE-SILTING OF BASIN AFTER CONSTRUCTION OF BASIN AND ONCE THE SITE HAS BEEN PERMANENTLY OR TEMPORARILY STABILIZED. INCLUDES REMOVAL AND REPLACEMENT OF #57 AGGREGATE AND PVC PIPES/COMPONENTS.
3. ALL JOINTS ON CATCH BASIN ARE TO BE WATERTIGHT.

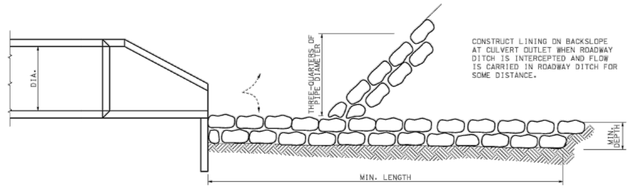


EMERGENCY SPILL WAY

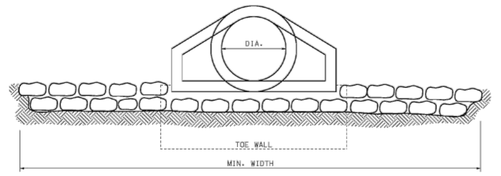


SIDE VIEW

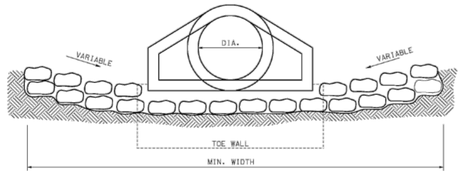
1 C801 **OUTLET CONTROL STRUCTURE DETAIL**
NOT TO SCALE



SIDE VIEW



END VIEW



END VIEW
(ALTERNATE METHOD)

ROCK LINING FOR CULVERT OUTLETS

CULVERT SIZE, DIA (IN.)	MINIMUN DEPTH AND WIDTH (FT.)	MINIMUM LENGHT (FT.)	ROCK LINING (CU.YD.)	EQUIVALENT PIPE ARCH CULVERT (APPROX.)	EQUIVALENT CONCRETE BOX CULVERT (APPROX.)
18	1 X 4	12	2		
24	1 X 6	14	3		2' X 1½'
30	1 X 7	16	4	B-5	2' X 2'
36	1.5 X 9	18	9	B-6	3' X 2'
42	2 X 10	20	15	B-7	3' X 3'
48	2 X 12	20	18	B-8	4' X 3'
54	2 X 13.5	22	22	B-9	4' X 4'
60	2 X 15	25	28	B-10	5' X 4'
66	2 X 18	25	33	B-11	5' X 5'
72	2 X 20	30	44	B-12	5' X 6'
84	2.5 X 25	35	81		6' X 6'
96	2.5 X 30	40	111		7' X 7'
108	3 X 32	40	142		8' X 8'

GENERAL NOTES:

THE DIMENSIONS SHOWN IN THE TABLE CAN BE APPLIED TO BOX OR ARCH CULVERTS OF EQUIVALENT WATERWAY AREA.

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105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

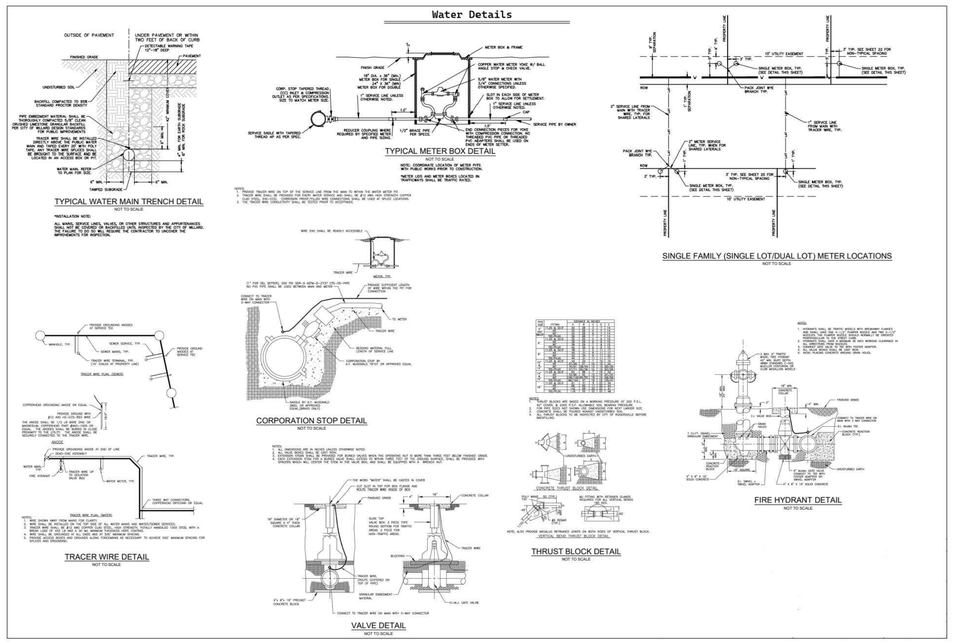
ROCK LINING FOR CULVERT OUTLET

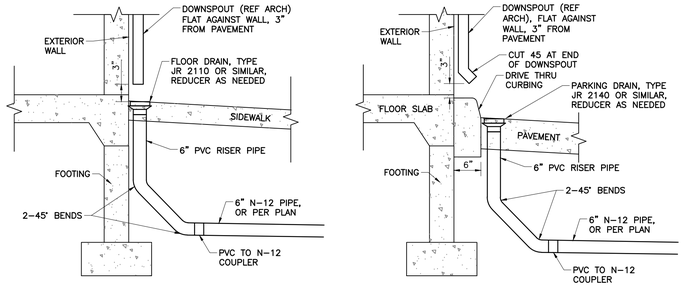
DATE EFFECTIVE: 10/01/1981
DATE PREPARED: 8/21/2009

609.70C

SHEET NO.: 1 OF 1

2 C801 **MODOT RIP RAP DETAIL**
NOT TO SCALE





3 C801 **DOWNSPOUT CONNECTION DETAIL**
NOT TO SCALE

NOTE: PRIOR TO ANY EXCAVATION FOR UNDERGROUND UTILITIES, CONTRACTOR SHALL EXPOSE AND VERIFY LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO GAS, WATER, AND SANITARY SEWER. ANY CONFLICTS SHALL BE REPORTED, IMMEDIATELY, TO THE ENGINEER AND THE APPROPRIATE AUTHORITIES.

MISSOURI ONE CALL SYSTEM
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https://www.mo1call.com

STATE OF MISSOURI
PATRICK TODD BENNETT
NUMBER A-2010039123
11/02/2026
PROFESSIONAL ENGINEER

REVISION RECORD

NO	DATE	DESCRIPTION
1	07/30/2026	REVISION 1
2	09/10/2026	REVISION 2 - ISSUED FOR CONSTRUCTION
3	10/10/2026	REVISION 3 - WATERMAIN AND LANDSCAPE ADJUSTMENTS
4	11/02/2026	REVISION 4 - WATERMAIN AND SANITARY MODIFICATIONS

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IF A SEAL IS PRESENT ON THIS SHEET IT WAS APPLIED ELECTRONICALLY BACKUP AND ARCHIVED

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10300 Alliance Road
Suite 300
Cincinnati, OH 45242
Ph: 513.985.0226
www.cecinc.com

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NSN 45021 (024-1329)
653 S HUNT RD
WILLARD, MO 65781

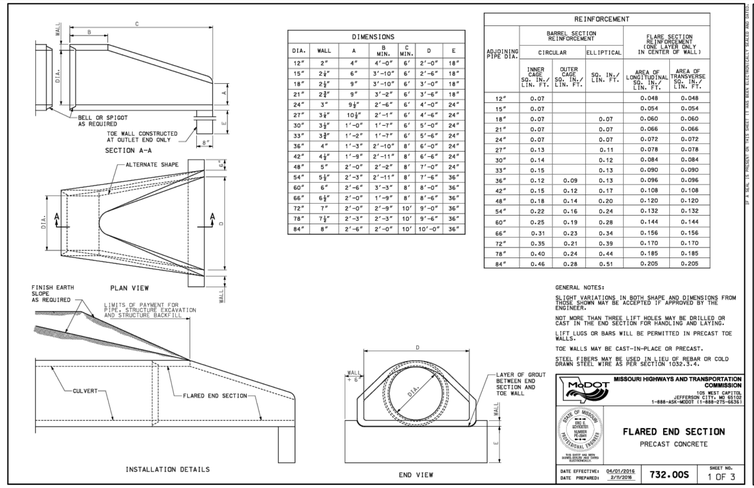
SITE DETAILS

DATE:	AUGUST 2026
DWG SCALE:	AS SHOWN
PROJECT NO:	353-866
APPROVED BY:	DRAFT
DRAWN BY:	CJW
CHECKED BY:	THA

DRAWING NO.: C801

SHEET 15 OF 32

P:\350-000\353-866\-CADD\Dwg\C801\353866-CV01-C800.dwg[C801] LS(10/30/2026 - Jwillmes) - LP: 11/02/2026 4:57 PM



DIMENSIONS						
DIA.	WALL	A	B MIN.	C MIN.	D	E
12"	2"	4"	4'-0"	6'	2'-0"	18"
15"	2½"	6"	3'-10"	6'	2'-6"	18"
18"	2½"	9"	3'-10"	6'	3'-0"	18"
21"	2½"	9"	3'-2"	6'	3'-6"	18"
24"	3"	9½"	2'-6"	6'	4'-0"	24"
27"	3½"	10½"	2'-6"	6'	4'-6"	24"
30"	3½"	11½"	1'-7"	6'	5'-0"	24"
33"	3½"	1'-0"	1'-7"	6'	5'-6"	24"
36"	4"	1'-3"	3'-10"	8'	6'-0"	24"
42"	4½"	1'-6"	3'-11"	8'	6'-6"	24"
48"	5"	2'-0"	2'-8"	8'	7'-0"	24"
54"	5½"	2'-3"	2'-11"	8'	7'-6"	36"
60"	6"	2'-6"	3'-3"	8'	8'-0"	36"
66"	6½"	2'-0"	1'-9"	8'	8'-6"	36"
72"	7"	2'-0"	2'-9"	10'	9'-0"	36"
78"	7½"	2'-3"	2'-3"	10'	9'-6"	36"
84"	8"	2'-6"	2'-0"	10'	10'-0"	36"

REINFORCEMENT					
ADJUSTING RING DIA.	BARREL SECTION REINFORCEMENT			FLARE SECTION REINFORCEMENT (ONE LAYER ONLY IN CENTER OF WALL)	
	CIRCULAR		ELLIPTICAL		
	INNER CAGE SQ. IN./ LIN. FT.	OUTER CAGE SQ. IN./ LIN. FT.	SQ. IN./ LIN. FT.	AREA OF LONGITUDINAL STEEL SQ. IN./ LIN. FT.	AREA OF TRANSVERSE STEEL SQ. IN./ LIN. FT.
12"				0.048	0.048
15"	0.07			0.054	0.054
18"	0.07		0.07	0.060	0.060
21"	0.07		0.07	0.066	0.066
24"	0.07		0.07	0.072	0.072
27"	0.13		0.11	0.078	0.078
30"	0.14		0.12	0.084	0.084
33"	0.15		0.13	0.090	0.090
36"	0.12	0.09	0.13	0.096	0.096
42"	0.15	0.12	0.17	0.108	0.108
48"	0.18	0.14	0.20	0.120	0.120
54"	0.22	0.16	0.24	0.132	0.132
60"	0.25	0.19	0.28	0.144	0.144
66"	0.31	0.23	0.34	0.156	0.156
72"	0.35	0.21	0.39	0.170	0.170
78"	0.40	0.24	0.44	0.185	0.185
84"	0.46	0.28	0.51	0.205	0.205

GENERAL NOTES:

SLIGHT VARIATIONS IN BOTH SHAPE AND DIMENSIONS FROM THOSE SHOWN MAY BE ACCEPTED IF APPROVED BY THE ENGINEER.

NOT MORE THAN THREE LIFT HOLES MAY BE DRILLED OR CAST IN THE END SECTION FOR HANDLING AND LAYING.

LIFT LUGS OR BARS WILL BE PERMITTED IN PRECAST TOE WALLS.

TOE WALLS MAY BE CAST-IN-PLACE OR PRECAST.

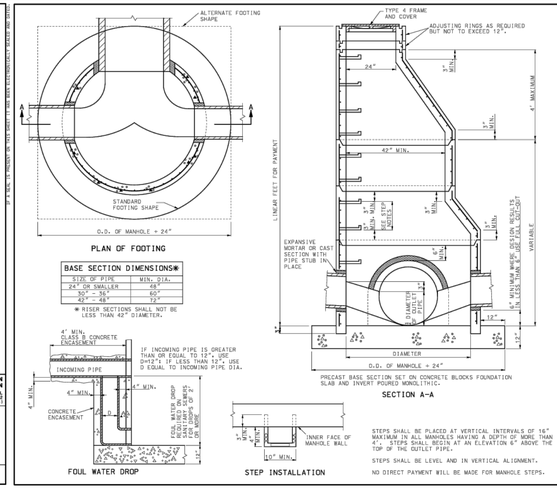
STEEL FIBERS MAY BE USED IN LIEU OF REBAR OR COLD DRAWN STEEL WIRE IN SECTION 726.3.1.

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105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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FLARED END SECTION
PRECAST CONCRETE

DATE EFFECTIVE:	04/01/2016
DATE PREPARED:	2/17/2016

732.00S | SHEET NO. 1 OF 3



BASE SECTION DIMENSIONS*	
SIZE OF PIPE	MIN. DIA.
24" OR SMALLER	48"
30" – 36"	60"
42" – 48"	72"

* RISER SECTIONS SHALL NOT BE LESS THAN 42" DIAMETER.

GENERAL NOTES:

THE CONTRACTOR WILL BE PERMITTED TO CAST IN PLACE THE MANHOLES, IN ACCORDANCE WITH THE CONCRETE MANHOLE STANDARD.

IF THE CONTRACTOR ELECTS TO CAST IN PLACE THE MANHOLES, PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE FOR PRECAST MANHOLES.

THE CONFIGURATION DETAILS SHOWN ARE DESCRIPTIVE ONLY AND MAY BE VARIED TO CONFORM WITH AN ESTABLISHED MANUFACTURING PROCEDURE.

FORMED OR CUT OUT OPENINGS SHALL BE PROVIDED WHERE PIPE INLETS AND OUTLETS ARE SHOWN ON THE PLANS.

THE TOP OF THE INLET SHALL NOT BE SET BELOW THE TOP OF THE OUTLET PIPE.

REINFORCEMENT SHALL BE CUT AT PIPE OPENINGS.

NO DIRECT PAYMENT WILL BE MADE FOR CUTTING PIPE, NOR FOR CUTTING AND BENDING REINFORCING STEEL.

WHERE THE WIDTH OF THE BASE SECTION IS GREATER THAN 42" AN ECCENTRIC TAPER SECTION MAY BE USED TO ALLOW THE USE OF 42" RISER SECTIONS.

THE LOWER TRANSITION SECTION AS SHOWN ON SECTION A-A IS OPTIONAL.

FOUL WATER DROPS ARE REQUIRED WHEN SPECIFIED IN THE PLANS. NO DIRECT PAYMENT WILL BE MADE FOR THE FOUL WATER DROP OR ITS ENCASEMENT.

SEE STANDARD PLAN 614.30 FOR MANHOLE FRAMES AND COVERS.

WHERE PIPES DO NOT ENTER OR EXIT RADIALLY, USE NEXT LARGER SIZE MANHOLE. CLASS 3 EXCAVATION WILL BE PAID WITHIN VERTICAL LIMITS 18" OUTSIDE OF THE OUTER WALLS OF THE BASE SECTION ON THE MANHOLE. CLASS 3 EXCAVATION WILL NOT BE PAID FOR OUTSIDE THE FOOTING LIMITS.

ALL PIPE CONNECTED WITH A MANHOLE WILL BE MEASURED AND PAID FOR TO THE INSIDE WALL OF THE MANHOLE.

CIRCUMFERENTIAL REINFORCEMENT SIZE AND PLACEMENT SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS TO A MAXIMUM DEPTH OF 20 FEET. OVER 20 FOOT DEPTH CIRCUMFERENTIAL REINFORCEMENT IS INCREASED TO 0.24 SQUARE INCHES STEEL REQUIRED PER LINEAR FOOT. TO A MAXIMUM DEPTH OF 30 FEET.

FOR PIPE CONNECTIONS, A RUBBER GASKET IN ACCORDANCE WITH ASTM RUBBER GASKET SPECIFICATIONS C-443 OR C-923 AND CLASS I CONCRETE IN MANHOLE MAY BE USED AS AN ALTERNATE TO EXPANSIVE MORTAR.

STEPS SHALL BE PLACED AT VERTICAL INTERVALS OF 16" MAXIMUM IN ALL MANHOLES HAVING A DEPTH OF MORE THAN 4'. STEPS SHALL BEGIN AT AN ELEVATION 6" ABOVE THE TOP OF THE OUTLET PIPE.

STEPS SHALL BE SET IN LEVEL AND IN VERTICAL ALIGNMENT.

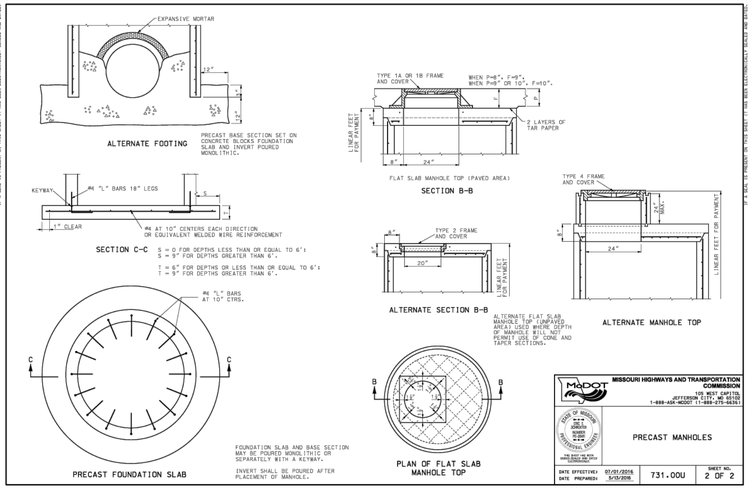
NO DIRECT PAYMENT WILL BE MADE FOR MANHOLE STEPS.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

PRECAST MANHOLES

DATE EFFECTIVE:	07/01/2016
DATE PREPARED:	5/13/2016

731.00U | SHEET NO. 1 OF 2



FOUNDATION SLAB AND BASE SECTION MAY BE POURED MONOLITHIC OR SEPARATELY WITH A KEYWAY.

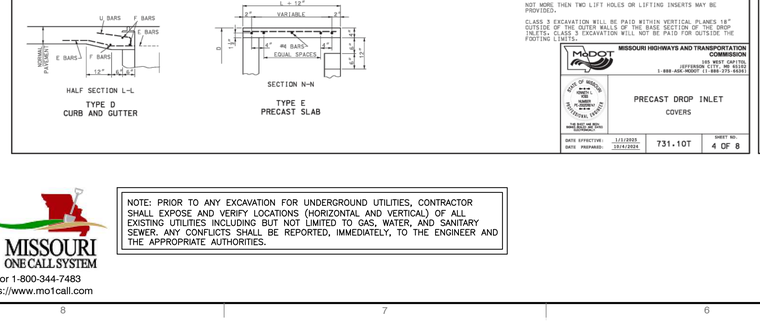
INVERT SHALL BE POURED AFTER PLACEMENT OF MANHOLE.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

PRECAST MANHOLES

DATE EFFECTIVE:	07/01/2016
DATE PREPARED:	5/13/2016

731.00U | SHEET NO. 2 OF 2



GENERAL NOTES:

STEPS SHALL BE PLACED AT VERTICAL INTERVALS OF 16" MAXIMUM IN ALL INLETS HAVING A DEPTH OF MORE THAN 4 FEET. STEPS SHALL BEGIN AT AN ELEVATION 6" ABOVE THE TOP OF THE OUTLET PIPE.

STEPS SHALL BE SET LEVEL AND IN VERTICAL ALIGNMENT AND NOT NEARER THAN 3" TO A JOINT.

NO DIRECT PAYMENT WILL BE MADE FOR INLET STEPS.

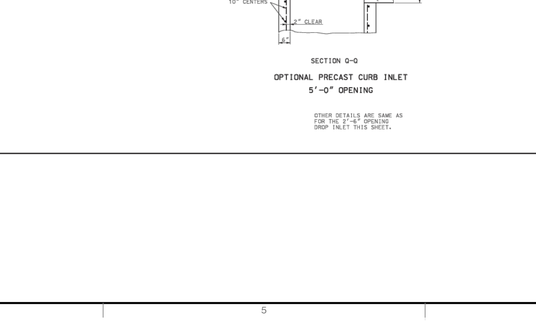
STEPS ARE NOT REQUIRED FOR TYPE D INLETS.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

PRECAST DROP INLET

DATE EFFECTIVE:	1/1/2025
DATE PREPARED:	10/4/2024

731.10T | SHEET NO. 1 OF 8



DROP INLET		
WIDTH FT.	LENGTH FT.	TYPE
2	2	A-B-C
4	2	
2	2	D
3	2	
4	3	E-S-I
5	2	S-2-S-3
5	3	

GENERAL NOTES:

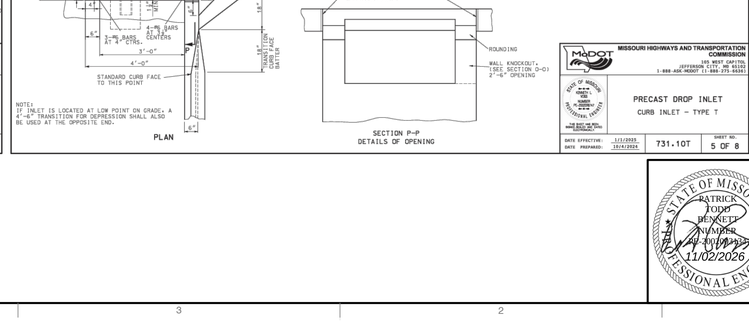
THE CONCRETE FOR INVERTS SHALL BE PLACED AFTER CONCRETE IN THE DROP INLET BOX. NO DIRECT PAYMENT WILL BE MADE FOR FURNISHING OR PLACING INVERT CONCRETE.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

PRECAST DROP INLET

DATE EFFECTIVE:	1/1/2025
DATE PREPARED:	10/4/2024

731.10T | SHEET NO. 2 OF 8



PAVEMENT BAR BILL				
TYPE	WIDTH	LENGTH	MARK NO.	LENGTH
A	2'	2'	E	6'-0"
			F	6'-6"
			U	14"
	3'	2'	E	6'-0"
			F	6'-6"
			U	14"
B	4'	2'	E	7'-0"
			F	7'-0"
			U	14"
	2'	2'	E	5'-0"
			F	5'-3"
			U	14"
C	3'	2'	E	6'-0"
			F	6'-3"
			U	14"
D	2'	2'	E	7'-0"
			F	7'-3"
			U	14"
	3'	2'	E	8'-0"
			F	8'-3"
			U	14"

BARS E, F, & U..... #6

GENERAL NOTE:

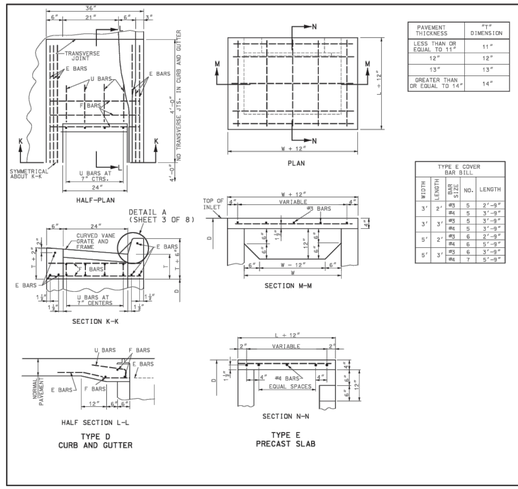
SEE STANDARD PLAN 614.11 FOR CURVED VANE GRATE.

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JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

PRECAST DROP INLET
COVERS

DATE EFFECTIVE:	1/1/2025
DATE PREPARED:	10/4/2024

731.10T | SHEET NO. 3 OF 8



PAVEMENT THICKNESS	"Y" DIMENSION
LESS THAN OR EQUAL TO 11"	11"
12"	12"
13"	13"
GREATER THAN OR EQUAL TO 14"	14"

TYPE E COVER BAR BILL				
WIDTH	LENGTH	BAR NO.	NO.	LENGTH
3'	2'	#5	5	2'-9"
		#4	5	3'-9"
3'	3'	#5	5	3'-9"
		#4	5	3'-9"
5'	2'	#5	6	2'-9"
		#4	6	5'-9"
5'	3'	#5	6	3'-9"
		#4	7	5'-9"

GENERAL NOTES:

THE SIZE OF THE DROP INLET AND TYPE OF COVER WILL BE SHOWN ON THE PLANS.

THE CONFIGURATION DETAILS SHOWN ARE DESCRIPTIVE ONLY AND MAY BE VARIED TO CONFORM WITH ESTABLISHED MANUFACTURING PROCEDURES.

TOP OF DROP INLET WALL SHALL BE CONSTRUCTED TO THE ELEVATION OF BOTTOM OF SLAB AT THE EDGE OF PAVEMENT OR BOTTOM OF CURB AND GUTTER AT DROP INLET.

WHERE THE DROP INLET IS LOCATED IN AN UNPAVED AREA, THE TOP OF THE DROP INLET WALLS SHALL BE SET TO THE ELEVATION SHOWN ON THE PLANS.

ALL CONCRETE ABOVE THE TAR PAPER SEPARATION JOINT IS TO BE CONSIDERED AS PAVEMENT FOR OPEN GRADED AND CURB CONSTRUCTION, AND SHALL BE PAID FOR AS SQUARE YARDS OF CONCRETE PAVEMENT OR LINEAR FEET OF CURB AND GUTTER.

FORMED OR CUT-OUT OPENINGS SHALL BE PROVIDED WHERE PIPE INLETS AND OUTLETS ARE SHOWN ON THE PLANS.

REINFORCING BARS IN PAVEMENT SHALL BE EPOXY COATED AND SECURELY TIED TOGETHER AND FASTENED TO AVOID ANY POSSIBLE DISPLACEMENT DURING THE PLACING OF CONCRETE. REINFORCEMENT SHOWN IS IN ADDITION TO ANY REINFORCEMENT SHOWN FOR CONCRETE PAVEMENT OR CURB AND GUTTER.

JOINTS SHALL BE SEALED IN ACCORDANCE WITH SECTION 726.3.1 OF THE STANDARD SPECIFICATIONS.

THE CONTRACTOR WILL BE PERMITTED TO CAST IN PLACE THE DROP INLETS CALLED FOR IN THE PLANS. TO THE DIMENSIONS REQUIRED FOR PRECAST DROP INLETS.

WELDED WIRE REINFORCEMENT MAY BE IN LIEU OF REINFORCING BARS. THE REINFORCEMENT SHALL NOT BE LESS THAN .23 SQUARE INCHES PER LINEAR FOOT BOTH HORIZONTALLY AND VERTICALLY.

NO DIRECT PAYMENT WILL BE MADE FOR REINFORCING STEEL.

NO DIRECT PAYMENT WILL BE MADE FOR CUTTING PIPE NOR FOR CUTTING OR BENDING REINFORCING STEEL.

THE TOP OF INLET PIPES SHALL NOT BE SET BELOW THE TOP OF THE OUTLET PIPE.

NO DIRECT PAYMENT WILL BE MADE FOR FORMING FOR CURVED VANE GRATES AND FRAMES.

THE REINFORCEMENT SHOWN IS THE MINIMUM REQUIRED. AT THE CONTRACTOR'S OPTION, ADDITIONAL REINFORCEMENT MAY BE USED.

REINFORCING STEEL EDGE DISTANCE WILL BE 1½" UNLESS OTHERWISE SPECIFIED.

NOT MORE THEN TWO LIFT HOLES OR LIFTING INSERTS MAY BE PROVIDED.

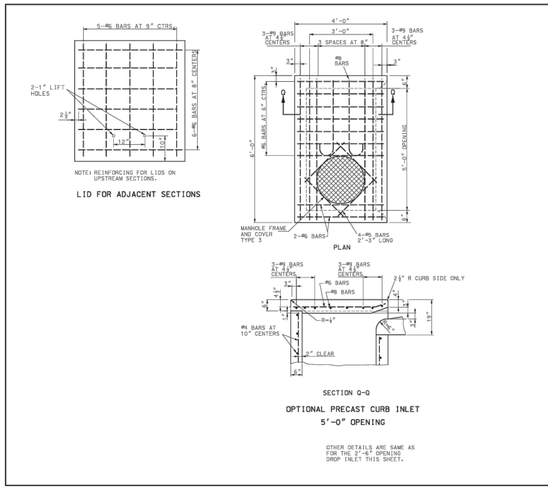
CLASS 3 EXCAVATION WILL BE PAID WITHIN VERTICAL PLANES 18" OUTSIDE OF THE OUTER WALLS OF THE BASE SECTION OF THE DROP INLETS. CLASS 3 EXCAVATION WILL NOT BE PAID FOR OUTSIDE THE FOOTING LIMITS.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

PRECAST DROP INLET
COVERS

DATE EFFECTIVE:	1/1/2025
DATE PREPARED:	10/4/2024

731.10T | SHEET NO. 4 OF 8



GENERAL NOTES:

NOTES PERTAINING TO TYPE T:

THE LENGTH AND DEPTH OF THE INLET SHALL BE AS SHOWN ON THE PLANS.

WALLS BETWEEN THE ADJACENT SECTIONS SHALL BE SEALED IN ACCORDANCE WITH SECTION 726.3.1 OF THE STANDARD SPECIFICATIONS.

IF DEPTH OF INLET EXCEEDS 6 FEET THE PRECAST UNITS MAY BE FURNISHED IN TWO OR MORE SECTIONS.

IF TWO OR MORE SECTIONS ARE USED, THE TYPE 3 MANHOLE FRAME AND COVER SHALL BE IN THE DOWNSTREAM SECTION ONLY.

IF A 5 FOOT OPENING IS REQUIRED, TWO 2'-6" OPENING SECTIONS OR ONE 5 FOOT OPENING SECTION MAY BE PROVIDED AT THE CONTRACTOR'S OPTION.

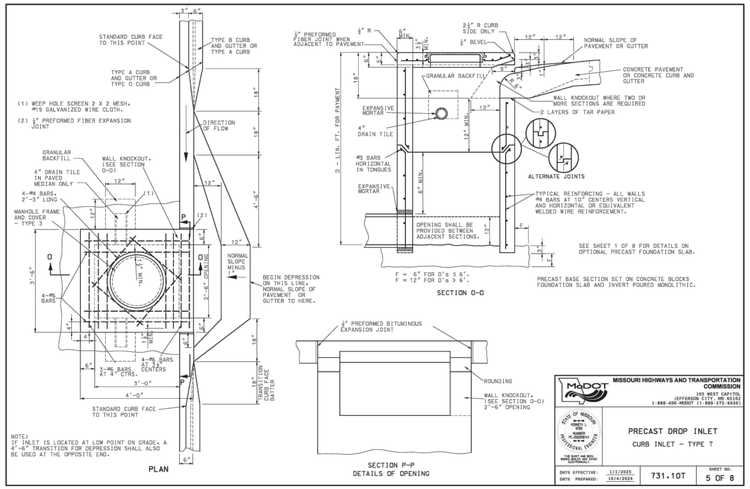
SHEET 1 FOR STEP DETAILS AND SHEET 4 FOR GENERAL NOTES.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

PRECAST DROP INLET
CURB INLET - TYPE T

DATE EFFECTIVE:	1/1/2025
DATE PREPARED:	10/4/2024

731.10T | SHEET NO. 6 OF 8



MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

PRECAST DROP INLET
CURB INLET - TYPE T

DATE EFFECTIVE:	1/1/2025
DATE PREPARED:	10/4/2024

731.10T | SHEET NO. 5 OF 8

MISSOURI ONE CALL SYSTEM
811 or 1-800-344-7483
https://www.mo1call.com

NOTE: PRIOR TO ANY EXCAVATION FOR UNDERGROUND UTILITIES, CONTRACTOR SHALL EXPOSE AND VERIFY LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO GAS, WATER, AND SANITARY SEWER. ANY CONFLICTS SHALL BE REPORTED, IMMEDIATELY, TO THE ENGINEER AND THE APPROPRIATE AUTHORITIES.

REVISION RECORD		
NO	DATE	DESCRIPTION
1	07/30/2026	REVISION 1
2	08/10/2026	REVISION 2 - ISSUED FOR CONSTRUCTION
3	09/10/2026	REVISION 3 - WATERMAIN AND GEOMETRIC ADJUSTMENTS
4	10/30/2026	REVISION 4 - WATERMAIN AND SANITARY MODIFICATIONS
5	11/20/2026	REVISION 5

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www.cecinc.com

McDONALD'S RESTAURANT
NSN 45021 (024-1329)
653 S HUNT RD
WILLARD, MO 65781

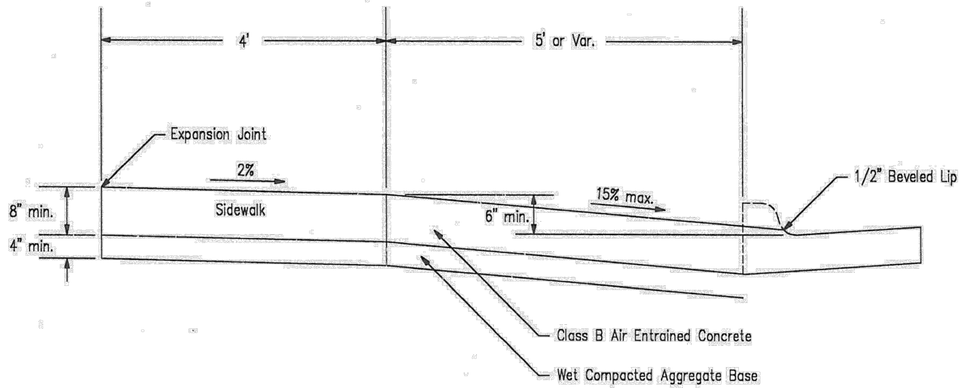
SITE DETAILS

DATE:	AUGUST 2026
DWG SCALE:	AS SHOWN
PROJECT NO:	353-866
APPROVED BY:	DRAFT
DRAWN BY:	CJW
CHECKED BY:	THA

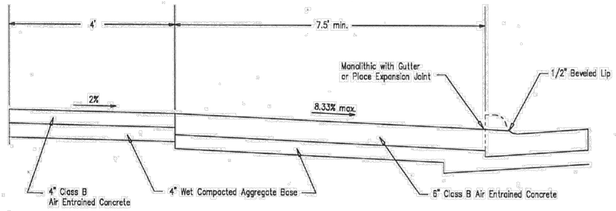
PATRICK TODD BENNETT NUMBER A-2010037822 PROFESSIONAL ENGINEER 11/02/2026

DRAWING NO.: C802
SHEET 16 OF 32

P:\350-001\353-866\-CADD\Dwg\CIVIL\353866-CIVIL-C802.dwg[2820] | CS(10.50)2026 - | xwilmot | - LP: 11/12/2026 4:57 PM

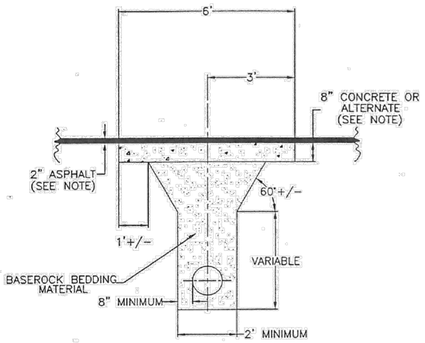


1 C803 **GREENE COUNTY COMMERCIAL DRIVEWAY SECTION**
NOT TO SCALE



CURB RAMP (Typical) CROSS SECTION

2 C803 **GREENE COUNTY CURB RAMP CROSS SECTION**
NOT TO SCALE



NOTE: ALL MATERIAL AND PLACEMENT OF MATERIAL MUST MEET THE SPECIFICATIONS SET FORTH IN THE LATEST EDITION OF THE MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

ASPHALT: 2" MINIMUM HOT MIX ASPHALT LAYED LEVEL WITH EXISTING ROAD SURFACE.

CONCRETE: HIGH EARLY PAVING (CONCRETE BASE) ALTERNATE IS 10" BLACK BASE.

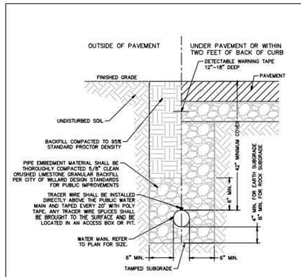
BEDDING MATERIAL SHALL BE PLACED IN LIFTS AND COMPACTED PER COUNTY SPECIFICATIONS.

CONTRACTOR IS TO SAW CUT AND REPLACE WITH 8" OF CONCRETE (OR ALTERNATE) AND 2" OF NEW ASPHALT AS SPECIFIED.

IT IS MANDATORY THAT A GREENE COUNTY INSPECTOR BE NOTIFIED BEFORE CONCRETE IS PLACED AND AFTER COMPLETION OF JOB.

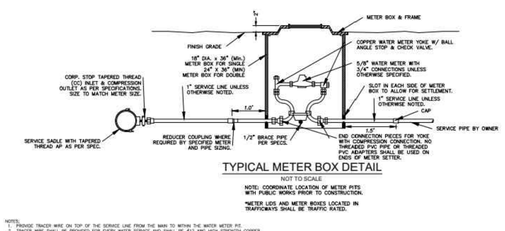
3 C803 **GREENE COUNTY HIGHWAY DEPARTMENT STREET CUT SPECIFICATIONS**
NOT TO SCALE

Water Details



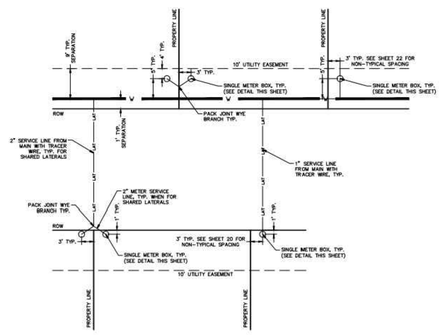
TYPICAL WATER MAIN TRENCH DETAIL
NOT TO SCALE

*INSTALLATION NOTE:
ALL MAINS, SERVICE LINES, VALVES, OR OTHER STRUCTURES AND APPURTENANCES SHALL NOT BE COVERED OR BACKFILLED UNTIL INSPECTED BY THE CITY OF WILLARD. THE FAILURE TO DO SO WILL REQUIRE THE CONTRACTOR TO UNCOVER THE IMPROVEMENTS FOR INSPECTION.

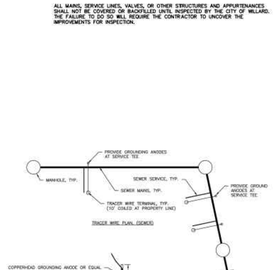


TYPICAL METER BOX DETAIL
NOT TO SCALE
NOTE: COORDINATE LOCATION OF METER PITS WITH PUBLIC WORKS PRIOR TO CONSTRUCTION.
*METER LIDS AND METER BOXES LOCATED IN TRAFFICWAYS SHALL BE TRAFFIC RATED.

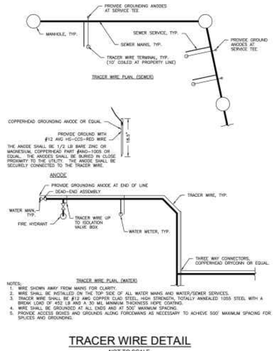
NOTES:
1. PROVIDE TRACER WIRE ON TOP OF THE SERVICE LINE FROM THE MAIN TO WITHIN THE METER PIT.
2. TRACER WIRE SHALL BE PROVIDED FOR EVERY WATER SERVICE AND SHALL BE #12 AWG HIGH STRENGTH COPPER CLAD STEEL (HS-CCS). CORROSION PROOF/YELLOW WIRE CONNECTIONS SHALL BE USED AT SPLICE LOCATIONS.
3. THE TRACER WIRE CONDUCTIVITY SHALL BE TESTED PRIOR TO ACCEPTANCE.



SINGLE FAMILY (SINGLE LOT/DUAL LOT) METER LOCATIONS
NOT TO SCALE

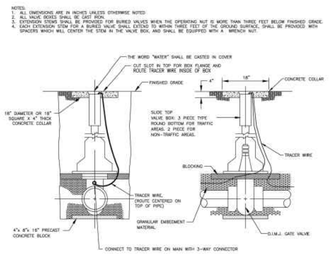


CORPORATION STOP DETAIL
NOT TO SCALE

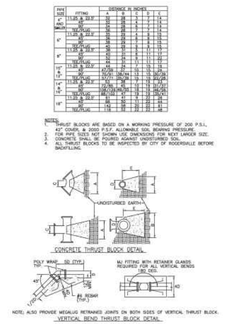


NOTES:
1. WIRE SHOWN AWAY FROM MAINS FOR CLARITY.
2. WIRE SHALL BE INSTALLED ON THE TOP SIDE OF ALL WATER MAINS AND WATER/SEWER SERVICES.
3. TRACER WIRE SHALL BE #12 AWG COPPER CLAD STEEL, HIGH STRENGTH, TOTALLY ANNEALED 1050 STEEL WITH A BREAK LOAD OF 692 LB MAY & 30 MIL MINIMUM THICKNESS HDPE COATING.
4. TRACER WIRE SHALL BE TAPED TO THE TOP OF THE PIPE EVERY 20 FEET.
5. PROVIDE ACCESS BOXES AND GROUNDS ALONG FORCEMAINS AS NECESSARY TO ACHIEVE 500' MAXIMUM SPACING FOR SPLICES AND GROUNDING.

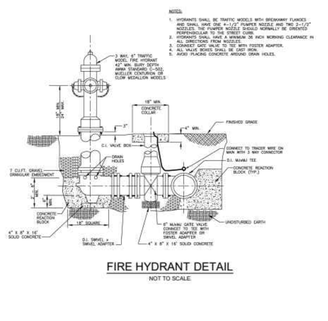
TRACER WIRE DETAIL
NOT TO SCALE



VALVE DETAIL
NOTE TO SCALE



THRUST BLOCK DETAIL
NOTE TO SCALE



FIRE HYDRANT DETAIL
NOT TO SCALE

1 C804 **CITY OF WILLARD WATER MAIN DETAILS**
NOT TO SCALE

MISSOURI ONE CALL SYSTEM
811 or 1-800-344-7483
https://www.mo1call.com

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STATE OF MISSOURI PATRICK TODD BENNETT NUMBER 2011035772 11/02/2026 PROFESSIONAL ENGINEER

REVISION RECORD

NO	DATE	DESCRIPTION
1	07/30/2026	REVISION 1
2	09/10/2026	REVISION 2 - ISSUED FOR CONSTRUCTION
3	10/16/2026	REVISION 3 - WATER MAIN AND GRADING ADJUSTMENTS
4	11/03/2026	REVISION 4 - WATER MAIN AND SANITARY MODIFICATIONS

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF NORTH CAROLINA WILL BE PROVIDED BY CEC, ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE IN THE STATE OF MISSOURI WILL BE PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PROVIDED BY CONSCAPE ARCHITECTS, LLC.

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Cincinnati, OH 45242
Ph: 513.985.0226
www.cecinc.com

McDONALD'S RESTAURANT
NSN 45021 (024-1329)
653 S HUNT RD
WILLARD, MO 65781

SITE DETAILS

DATE:	AUGUST 2026
DWG SCALE:	AS SHOWN
PROJECT NO:	
APPROVED BY:	
DRAWN BY:	CJW
CHECKED BY:	THA
	353-866
	DRAFT

DRAWING NO.: **C803**

SHEET 17 OF 32

P:\350-0001\353-866\~CAD\Dwg\C801\353866-CVD1-C800.dwg[C803] 10/30/2026 - jwilmes - LP: 11/2/2026 4:57 PM

NORTH

TOTAL LIMITS OF DISTURBANCE (AREA=1.95 AC.)

4590 BLDG.
LOT AREA
1.526 AC
66,479 SF
FFE=1224.50
NOT FINAL

MELVILLE ROAD
VARIABLE WITDH
PUBLIC

HUNT ROAD
PUBLIC
VARIABLE WITDH
AKA. FARM ROAD 103

NOTES

1. SEE SHEET C001 FOR GENERAL NOTES AND ABBREVIATIONS.
2. CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION. IT IS NOT THE ENGINEER'S INTENT THAT ANY SINGLE PLAN SHEET IN THIS SET OF DOCUMENTS FULLY DEPICT ALL WORK ASSOCIATED WITH THE PROJECT.

LEGEND

- EXISTING SUBJECT PROPERTY LINE
- EXISTING ADJOINING PROPERTY LINE
- EXISTING RIGHT OF WAY LINE
- EXISTING EASEMENT
- EXISTING SETBACK
- EXISTING INDEX (MAJOR) CONTOUR
- EXISTING INTERMEDIATE (MINOR) CONTOUR
- EXISTING CONCRETE
- EXISTING SIGN
- EXISTING TREE
- EXISTING FENCE
- EXISTING DITCH
- EXISTING GAS LINE
- EXISTING OVERHEAD WIRE
- EXISTING COMMUNICATIONS LINE
- EXISTING WATER LINE
- EXISTING GAS LIINE MARKER
- EXISTING GUY WIRE/UTILITY POLE
- EXISTING FIBER OPTIC BOX/MARKER
- EXISTING TELEPHONE PEDESTAL/BOX
- EXISTING WATER VALVE/WATER/HYDRANT
- EXISTING WATER MANHOLE
- PROPOSED DETENTION POND
- PROPOSED FENCE
- PROPOSED STORM PIPE
- PROPOSED ROOF DRAIN
- PROPOSED ¾" WATER LINE
- PROPOSED 2" WATER LINE
- PROPOSED 6" WATER LINE
- PROPOSED SANITARY SEWER LINE
- PROPOSED SANITARY FORCE MAIN
- PROPOSED UNDERGROUND ELECTRIC LINE
- PROPOSED FIBER OPTIC LINE
- PROPOSED STORM STRUCTURES
- PROPOSED RIPRAP
- PROPOSED WATER VALVE/METER/HYDRANT
- PROPOSED SANITARY CLEANOUT
- PROPOSED GREASE TRAP
- PROPOSED LIGHT POLE
- PROPOSED TRANSFORMER
- PROPOSED INDEX (MAJOR) CONTOUR
- PROPOSED INTERMEDIATE (MINOR) CONTOUR
- PROPOSED LIMITS OF DISTURBANCE
- PROPOSED CONSTRUCTION EXIT
- PROPOSED COMPOST FILTER SOCK
- PROPOSED SILT FENCE
- PROPOSED STANDARD INLET PROTECTION
- PROPOSED CURB INLET PROTECTION

KEY NOTES

1. PROPOSED SILT FENCE. SEE DETAIL 1/C901.
2. PROPOSED CONSTRUCTION EXIT. SEE DETAIL 3/C901.
3. PROPOSED STANDARD INLET PROTECTION. SEE DETAIL 4/C901.
4. PROPOSED CURB INLET PROTECTION. SEE DETAIL 2/C901.
5. PROPOSED COMPOST FILTER SOCK. SEE DETAIL 5/C901.
6. PROPOSED CONCRETE WASHOUT FACILITY. SEE DETAIL 2/C902.
7. PROPOSED ROCK CHECK DAM. SEE DETAIL 1/C902

SCALE IN FEET
0 20 40

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https://www.mo1call.com

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STATE OF MISSOURI
PATRICK TODD BENNETT
NUMBER 2019038972
ENGINEER
11/02/2026

REVISION RECORD

NO	DATE	DESCRIPTION
1	07/30/2026	REVISION 1
2	09/15/2026	REVISION 2 - ISSUED FOR CONSTRUCTION
3	10/15/2026	REVISION 3 - WATERMAIN AND GRADING ADJUSTMENTS
4	10/30/2026	REVISION 4 - WATER MAIN AND SANITARY MODIFICATIONS
5	11/02/2026	REVISION 5 - WATER MAIN AND SANITARY MODIFICATIONS

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF MISSOURI IS REGULATED BY THE MISSOURI BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, PROFESSIONAL LAND SURVEYORS AND LANDSCAPE ARCHITECTS. PURSUANT TO SECTION 327.411 RSMO, THE SERVICES PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC, LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PERFORMED BY CONSOLE ARCHITECTS, LLC.

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Ph: 513.985.0226
www.cecinc.com

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NSN 45021 (024-1329)
653 S HUNT RD
WILLARD, MO 65781

EROSION & SEDIMENT CONTROL PLAN

DATE:	AUGUST 2026
DRAWN BY:	CJW
CHECKED BY:	THA
DWG SCALE:	1"=20'
PROJECT NO.	353-866
APPROVED BY:	DRAFT

DRAWING NO.: C900

SHEET 18 OF 32

A:\353-0001\353-866\--2400\Dwg\C901\353866-C901-C900.dwg[C900] LS:(10/29/2026 - jwilmes) - LP: 11/2/2026 4:57 PM

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) GENERAL NOTES

1. WORK ON THIS SITE IS TO COMPLETE CONSTRUCTION OF A PROPOSED MCDONALD'S RESTAURANT BUILDING, A TRASH ENCLOSURE, LANDSCAPE ISLANDS, ASSOCIATED PAVING FOR PARKING AND SIDEWALKS, AND AN ABOVE GROUND DETENTION POND.
2. PROPOSED SITE IMPROVEMENTS INCLUDE PAVING, A BUILDING, AND UTILITIES FOR A MCDONALD'S RESTAURANT. THE PROPOSED EARTH DISTURBED AREA IS 1.95 ACRES. THE PRE–DEVELOPMENT CONDITIONS OF THE SITE IS AN UNDEVELOPED LOT. THE POST–DEVELOPMENT CONDITIONS OF THE SITE WILL BE A PROPOSED BUILDING, ASSOCIATED PARKING LOT, AND PROPOSED TRASH ENCLOSURE.
3. THE SITE IS LOCATED ALONG HUNT ROAD, AND MELVILLE ROAD. ACCORDING TO USDA NATURAL RESOURCE CONSERVATION, ON SITE SOILS CONSIST OF BONA GRAVELLY SILT LOAM 8 TO 15 PERCENT SLOPES WITH HYDROLOGIC SOIL GROUP C, WANDA SILT LOAM 2 TO 5 PERCENT SLOPES WITH HYDROLOGIC SOIL GROUP B, KEEN–BONA COMPLEX 2 TO 5 PERCENT SLOPES WITH HYDROLOGIC SOIL GROUP C, AND GASCONADE–GATEWOOD ROCK OUTCROP COMPLEX 3 TO 15 PERCENT SLOPES WITH HYDROLOGIC SOIL GROUP D.
4. ACCORDING TO FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP NO. 29077C191E (DATED 12/17/2010). THE SITE IS LOCATED IN FLOOD ZONE X (UNSHADED), AREAS DETERMINED TO BE OF MINIMAL FLOOD HAZARD.
5. THE SITE IS BOUNDED BY MELVILLE RD THE NORTH, HUNT RD TO THE EAST, UNDEVELOPED PROPERTY TO THE SOUTH, AND UNDEVELOPED PROPERTY TO THE WEST.
6. ON BEHALF OF THE OWNER/PERMITTEE, THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP).
7. SOIL RELEASED OR LOST DUE TO CONTAINMENT FAILURE SHALL BE IMMEDIATELY CLEANED UP AND DISPOSED OF IN AN APPROVED MANNER. DAMAGED BMP'S WILL BE REPLACED AND BMP DEFICIENCIES WILL BE REPAIRED UPON INSPECTION.
8. THE CONTRACTOR SHALL MODIFY THE SWPPP AS REQUIRED TO INCLUDE PERMIT COVERAGE DOCUMENTATION FOR OFF–SITE BORROW, FILL, MATERIAL STORAGE SITES, OR INFORMATION RELATIVE TO HAUL ROUTES, TRUCKS AND EQUIPMENT OR DEWATERING METHODS WHICH ARE USED FOR THIS PROJECT IN ACCORDANCE WITH STATE AND/OR LOCAL JURISDICTIONAL ENTITY REGULATIONS.
9. SOIL SEDIMENT AND EROSION BEST MANAGEMENT PRACTICE (BMP) MEASURES WILL BE INSTALLED PRIOR TO START OF ANY CONSTRUCTION AND WILL BE MAINTAINED AT ALL TIMES UNTIL CONSTRUCTION HAS BEEN COMPLETED, INCLUDING ALL GRASS BEING WELL ESTABLISHED AND/OR PERMANENT EROSION AND SEDIMENTATION BMP MEASURES ARE IN PLACE. ALL BMP MEASURES WILL BE INSTALLED TO THE SATISFACTION OF AUTHORITIES HAVING JURISDICTION.
10. THE CONTRACTOR IS TO DESIGNATE A SITE DUMP/WASH AREA PRIOR TO STARTING CONSTRUCTION FOR SUCH PURPOSES AS WASHING OUT CONCRETE TRUCKS AND DUMPING NON–HAZARDOUS WASTE MATERIALS. DUMPING OR DISCHARGE OF ANY WASTE MATERIALS TO ANY SEWERS IS PROHIBITED. HAZARDOUS WASTES ARE TO BE REMOVED OFF SITE AND PROPERLY DISPOSED OF CONSISTENT WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS.
11. UNITS OF EARTH DISTURBING ACTIVITY ARE INDICATED IN THE SITE PLAN AND ARE CONTAINED ON THE SITE. IF REQUIRED, CONTRACTOR SHALL LOCATE VEHICLE FUELING AREAS AWAY FROM STORM WATER DRAINAGE FEATURES AND MARK THOSE AREAS ON THE SITE MAP. LEGALLY DISPOSE OF ALL CONSTRUCTION DEBRIS OFF SITE. MINIMIZE DUST ON SITE BY SPRAYING WATER ON DRY AREAS OF THE SITE. THE USE OF PETROLEUM–BASED OR OTHER TOXIC LIQUIDS FOR DUST SUPPRESSION IS PROHIBITED.
12. THE CONTRACTOR SHALL POST AND MAINTAIN SIGN(S) AT A MINIMUM OF ONE (1) CONSTRUCTION ENTRANCE/EXIT LOCATION DESIGNATED BY THE CONTRACTOR, WHERE PROJECT MEETS PAVED COUNTY, STATE, OR FEDERAL HIGHWAYS/ROADS, AND/OR AT OTHER EASILY ACCESSIBLE LOCATION(S) TO ADEQUATELY IDENTIFY THE SITE PRIOR TO COMMENCEMENT OF AND DURING CONSTRUCTION UNTIL REGISTRATION IS PROPERLY TERMINATED. SUCH SIGN SHALL DISPLAY A COPY(IES) OF A COMPLETED APPLICATION(S) FOR PERMIT COVERAGE, NOTICE(S) OF COVERAGE NOTIFYING THE APPLICANT THAT COVERAGE UNDER THE APPLICABLE PERMIT(S) HAS BEEN OBTAINED, THE LOCATION OF THE SWPPP, THE NAME AND PHONE NUMBER OF A CONTACT PERSON RESPONSIBLE FOR SCHEDULING SWPPP VIEWING TIMES AND ANY OTHER STATE OR LOCAL REQUIREMENTS.
13. THE CONTRACTOR SHALL PROVIDE TEMPORARY SANITATION FACILITIES FOR WORKERS AND MAINTAIN FACILITIES DAILY. TRASH CONTAINERS SHALL BE EMPTIED DAILY, OR WHEN FULL. STORE CHEMICALS, PAINTS, SOLVENTS, LUBRICANTS, FERTILIZERS AND OTHER TOXIC MATERIALS IN WEATHERPROOF CONTAINERS. DUMPING OR DISCHARGE OF ANY WASTE MATERIALS TO ANY SEWERS IS PROHIBITED. HAZARDOUS WASTES ARE TO BE REMOVED OFF SITE AND PROPERLY DISPOSED OF CONSISTENT WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS.
14. THE CONTRACTOR SHALL PREPARE, IMPLEMENT, AND MAINTAIN A SPILL PREVENTION, CONTROL AND COUNTERMEASURES (SPCC) PLAN, AS A SEPARATE DOCUMENT OR AS A COMPONENT OF THE SWPPP, FOR ALL TANKS/CONTAINERS STORING ONSITE FUEL, CHEMICALS, OR OTHER POLLUTANTS CONSISTENT WITH THE REQUIREMENTS OF STATE ENVIRONMENTAL PROTECTION AGENCY NPDES RULES. EFFECTIVE MEASURES NECESSARY TO PREVENT SPILLS AND TO CLEAN UP SPILLS OF ANY TOXIC POLLUTANT, AS DOCUMENTED IN THE FACILITY'S SPCC PLAN, SHALL BE FULLY IMPLEMENTED. SOIL CONTAMINATED BY HAZARDOUS SUBSTANCES, PAINTS, FUEL, OR CHEMICAL SPILLS, SHALL BE IMMEDIATELY CLEANED–UP, MANAGED, AND DISPOSED OF IN AN APPROVED MANNER. WHERE POTENTIAL SPILLS CAN OCCUR, MATERIALS HANDLING PROCEDURES SHALL BE SPECIFIED AND PROCEDURES FOR IMMEDIATE CLEANUP/REMEDIATION OF SPILLS SHALL BE DESCRIBED IN THE SPCC PLAN OR EMPLOYEE TRAINING PLANS. THE EQUIPMENT NECESSARY FOR IMPLEMENT A CLEANUP SHALL BE MADE AVAILABLE TO FACILITY PERSONNEL. THE PERMITTEE SHALL IMMEDIATELY NOTIFY THE DESIGNATED STATE AND LOCAL GOVERNMENT AGENCIES AFTER BECOMING AWARE OF A VISIBLE OIL SHEEN IN STORM WATER RUNOFF FROM ITS FACILITY OR IN A WATER OF THE STATE IN THE PROJECT VICINITY AS A RESULT OF ACTIVITIES AT THE SITE. THE CALLER SHOULD BE PREPARED TO REPORT THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE PERSON REPORTING SPILL, THE EXACT LOCATION OF THE SPILL, COMPANY NAME AND LOCATION, THE MATERIAL SPILLED, THE ESTIMATED QUANTITY, THE SOURCE OF SPILL, THE CAUSE OF THE SPILL, THE NEAREST DOWNSTREAM WATER WITH THE POTENTIAL TO RECEIVE THE SPILL, AND THE ACTIONS BEING TAKEN FOR CONTAINMENT AND CLEANUP. PETROLEUM PRODUCT SPILLS OF 25 GALLONS OR MORE SHALL BE IMMEDIATELY REPORTED TO THE MISSOURI DEPARTMENT OF NATURAL RESOURCES (800–361–4827) AND THE LOCAL FIRE DEPARTMENT (636–528–8567). ALL RELEASES OF HAZARDOUS SUBSTANCES TO THE ENVIRONMENT MUST BE HANDLED PURSUANT TO APPLICABLE LAWS. ALL SPILLS THAT RESULT IN CONTACT WITH WATER OF THE STATE MUST BE REPORTED TO THE FLORIDA EPA. ENVIRONMENTAL REGULATIONS REQUIRE THAT ALL RELEASES OF HAZARDOUS SUBSTANCES EXCEEDING REPORTABLE QUANTITIES BE REPORTED TO THE NATIONAL RESPONSE CENTER (800–424–8802). MAKE SURE TO REPORT THESE ITEMS WITHIN 15 MINUTES OF IDENTIFICATION.
15. PRIOR TO ANY EXCAVATION FOR UNDERGROUND UTILITIES. CONTRACTOR SHALL EXPOSE AND VERIFY LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO GAS, WATER, AND SANITARY SEWER. ANY CONFLICTS SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER AND THE APPROPRIATE AUTHORITIES.
16. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED IN THE FIELD BY THE INSPECTOR.
17. ALL EXPOSED AREAS SHALL BE SEEDED AND MULCHED OR OTHERWISE STABILIZED WITHIN 14 CALENDAR DAYS OF FINAL GRADING. SHOULD SOIL DISTURBING ACTIVITIES CEASE IN AN AREA FOR 14 CALENDAR DAYS OR MORE, CONTRACTOR SHALL TEMPORARILY SEED THE AREA OR IMPLEMENT OTHER BEST MANAGEMENT PRACTICES TO ESTABLISH INTERIM STABILIZATION. FOR AREAS EXPECTED TO REMAIN DORMANT FOR 14 DAYS OR MORE, INCLUDING OVER WINTER, APPLY TEMPORARY SEEDING AND MULCHING TO EXPOSED SOIL WITHIN 7 DAYS AFTER END OF WORK IN THE AREA.
18. STORM WATER FROM THIS SITE DISCHARGES TO A PROPOSED STORM SEWER THAT THEN DRAINS TO A PROPOSED UNDERGROUND DETENTION SYSTEM ON THE NORTHEAST SIDE OF THE SITE. ONCE THE SYSTEM FILLS, THE STORM SYSTEM OUTLETS VIA A LEVEL SPREADER TO SYCAMORE BLVD.
19. ALL DEMOLITION WASTE AND CONSTRUCTION DEBRIS HALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE DESIGNATED AND SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF OFFSITE IN A STATE APPROVED WASTE SITE AND IN ACCORDANCE WITH ALL LOCAL AND STATE CODES AND PERMIT REQUIREMENTS,
20. ALL CONTAMINATED SOIL MUST BE TREATED AND/OR DISPOSED IN MISSOURI DEPARTMENT OF NATURAL RESOURCES APPROVED SOLID WASTE MANAGEMENT FACILITY.

CONSTRUCTION SITE INSPECTION AND MAINTENANCE NOTES

1. ALL SEDIMENT CONTROLS MUST BE INSTALLED PRIOR TO GRADING. SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS (WEEKLY) AND WITHIN 24 HOURS OF A RAINFALL EXCEEDING 0.5 INCHES DURING A 24–HOUR PERIOD. ALL MAINTENANCE REQUIRED BY INSPECTION SHALL COMMENCE WITHIN 24 HOURS AND BE COMPLETED WITHIN 48 HOURS OF REPORT.
2. CONSTRUCTION ENTRANCE(S): REMOVE LARGE CHUNKS OF MUD OR CAKED SOIL FROM CONSTRUCTION ENTRANCE DAILY TO MINIMIZE SEDIMENT BUILDUP. INSPECT STONE PAD AND SEDIMENT DISPOSAL AREA WEEKLY AND AFTER STORM EVENTS OR HEAVY USE. RESHAPE PAD AS NEEDED FOR DRAINAGE AND RUNOFF CONTROL. TOP–DRESS WITH CLEAN SPECIFIED STONE AS NEEDED TO MAINTAIN EFFECTIVENESS. IMMEDIATELY REMOVE MUD OR SEDIMENT TRACKED OR WASHED ONTO ADJACENT PUBLIC OR PRIVATE ROADS OR DRIVES. REPAIR ANY BROKEN ROAD PAVEMENT IMMEDIATELY. REMOVE UNNEEDED CONSTRUCTION ENTRANCE MATERIALS FROM AREAS WHERE PERMANENT VEGETATION WILL BE ESTABLISHED. CLEAN ROADS AND DRIVES AT LEAST ONCE WEEKLY.
3. TEMPORARY SEEDING: RESEEDING – INSPECT SEEDINGS WEEKLY UNTIL A STAND IS ESTABLISHED AND THEREAFTER AT LEAST MONTHLY FOR STAND SURVIVAL AND VIGOR. ERODED AREAS SHOULD BE ADDRESSED APPROPRIATELY BY FILLING AND/OR SMOOTHING, AND REAPPLICATION OF LIME, FERTILIZER, SEED AND MULCH. FERTILIZING – SATISFACTORY ESTABLISHMENT MAY REQUIRE SOIL TESTING AND REFERTILIZING THE STAND, ESPECIALLY IF THE PLANTING IS MADE EARLY IN THE PLANTING SEASON. FOLLOW SOIL TEST RECOMMENDATIONS OR THE SPECIFICATIONS PROVIDED TO ESTABLISH THE PLANTING. MOWING – TEMPORARY PLANTINGS MAY BE MOWED AND BALED OR SIMPLY MOWED TO COMPLEMENT THE USE OF THE SITE.
4. FABRIC DROP INLET PROTECTION: INSPECT FABRIC BARRIER AFTER EACH STORM EVENT AND MAKE NEEDED REPAIRS IMMEDIATELY. REMOVE SEDIMENT FROM THE POOL AREA WHEN THE CAPACITY IS REDUCED 50% BY THE DEPOSITS. TAKE CARE NOT TO DAMAGE OR UNDERCUT THE FABRIC DURING THE SEDIMENT REMOVAL.
5. SILT FENCES: INSPECT SILT FENCES AT LEAST ONCE A WEEK AND AFTER EACH STORM EVENT. MAKE REQUIRED REPAIRS IMMEDIATELY. SHOULD THE FABRIC OF SILT FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY. REMOVE SEDIMENT DEPOSITS WHEN THEY REACH A DEPTH OF ½ THE HEIGHT OF THE FENCE.
6. STORM SEWER SYSTEM: INSPECT THE STORM SEWER SYSTEM AFTER EACH STORM EVENT AND AT LEAST ONCE WEEKLY. REMOVE AND PROPERLY DISPOSE OF SEDIMENT TO MAINTAIN FULL FLOW IN STORM SEWER PIPING.
7. ALL SITE INSPECTIONS SHALL BE PERFORMED BY QUALIFIED INSPECTOR, THE INSPECTOR SHALL PROVIDE DOCUMENTATION AFTER EACH INSPECTION TO INCLUDE, AT A MINIMUM, THE FOLLOWING: INSPECTION DATE AND TIME; NAMES, TITLES AND QUALIFICATIONS OF THE INSPECTOR; WEATHER FOR THE PERIOD SINCE THE LAST INSPECTION; WEATHER AND DISCHARGES AT THE TIME OF THE INSPECTION; LOCATIONS OF DISCHARGES AND SEDIMENT OR OTHER POLLUTANTS FROM THE SITE; LOCATIONS OF BMPS THAT NEED TO BE MAINTAINED, THAT FAILED TO OPERATE AS DESIGNED OR FAILED TO PROVIDE ADEQUATE PROTECTION, ADDITIONAL WHERE BMPS AREA NEEDED, AND THE CORRECTIVE ACTIONS TO BE IMPLEMENTED INCLUDING ANY NECESSARY PLAN CHANGES AND IMPLEMENTATION DATES. INSPECTION REPORTS SHALL BE SIGNED AND DATED BY THE INSPECTOR AND KEPT ON FILE AT THE SITE. INSPECTION RECORDS SHALL BE KEPT ON FILE FOR A MINIMUM OF THREE (3) YEARS AFTER NOTICE OF TERMINATION.
8. BMPS THAT REQUIRE REPAIR OR MAINTENANCE SHALL BE REPAIRED WITHIN THREE (3) DAYS OF INSPECTION. SEDIMENT PONDS REQUIRING REPAIR OR MAINTENANCE SHALL BE REPAIRED OR CLEANED OUT WITHIN TEN (10) DAYS OF THE INSPECTION.
9. BMPS NOT MEETING THE INTENDED FUNCTION SHALL BE REPLACED WITH A SUITABLE BMP WITHIN TEN (10) DAYS OF THE INSPECTION.
10. MISSING BMPS SHALL BE INSTALLED WITHIN TEN (10) DAYS OF INSPECTION.

SEQUENCE OF CONSTRUCTION

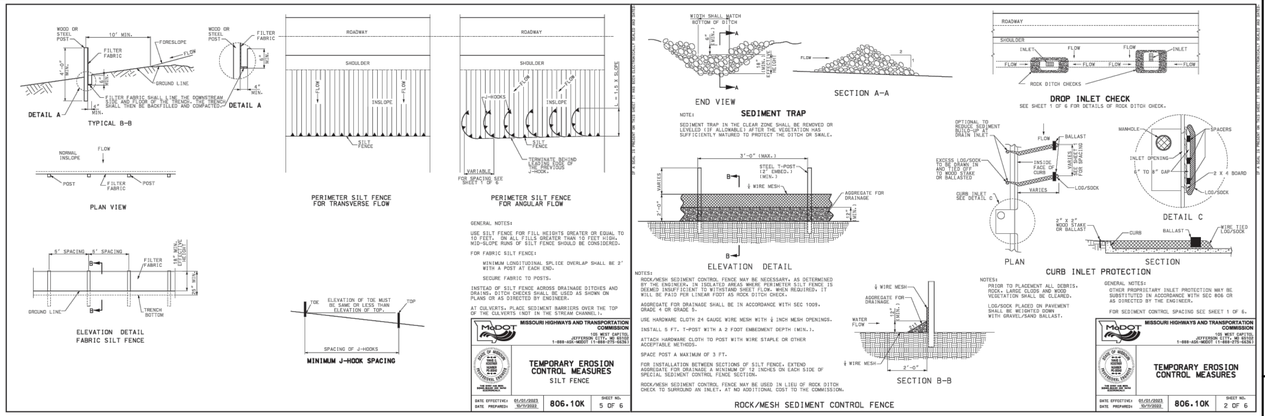
UPON IMPLEMENTATION AND INSTALLATION OF THE FOLLOWING AREAS: TRAILER, PARKING, LAY DOWN, PORTA–POTTY, WHEEL WASH, CONCRETE WASHOUT, MASON'S AREA, FUEL AND MATERIAL STORAGE CONTAINERS, SOLID WASTE CONTAINERS, ETC., IMMEDIATELY DEMOTE THEM ON THE SITE MAP AND NOTE ANY CHANGES IN LOCATION AS THEY OCCUR THROUGHOUT THE CONSTRUCTION PROCESS.

1. *ESTABLISH CONSTRUCTION ENTRANCE/EXIT AND SWPPP ENTRANCE SIGN.*
2. *CONSTRUCT THE PERIMETER AND STORM SEWER EROSION CONTROL MEASURES ON THE SITE.*
3. *PREPARE TEMPORARY PARKING AND STORAGE AREA INCLUDING DESIGNATED LOCATIONS FOR DUMPSTERS, SANITARY WASTE UNITS, AND CONCRETE WASHOUT AREA AND MARK ON SITE MAP.*
4. *FINAL GRADE BUILDING PAD AND PARKING/LANDSCAPE AREAS. PERMANENTLY STABILIZE AREAS TO BE VEGETATED AS THEY ARE BROUGHT TO FINAL GRADE.*
5. *INSTALL UTILITIES, STORM SEWERS, AND CURBS.*
6. *INSTALL INLET PROTECTION AROUND ALL STORM SEWER STRUCTURES AS THEY ARE INSTALLED.*
7. *PREPARE SITE FOR PAVING. REMOVE INLET PROTECTION NO MORE THAN 48 HOURS PRIOR TO PLACING STABILIZED BASE COURSE.*
8. *PAVE SITE.*
9. *REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES (ONLY IF SITE IS STABILIZED).*
10. *CONTINUE DAILY INSPECTION REPORTS UNTIL THE FINAL DAILY INSPECTION IS SIGNED OFF BY THE CONSTRUCTION MANAGER THAT THE SITE IS FULLY STABILIZED AND THE PERMIT MAY BE TERMINATED.*
11. *FILE NOTICE OF TERMINATION AS REQUIRED BY AUTHORITY HAVING JURISDICTION.*

NOTE: THE GENERAL CONTRACTOR MAY COMPLETE CONSTRUCTION–RELATED ACTIVITIES CONCURRENTLY ONLY IF ALL PRECEDING BMPS HAVE BEEN COMPLETELY INSTALLED. BMP–RELATED STEPS IN THE ABOVE SEQUENCE ARE *ITALICIZED* FOR CLARITY.

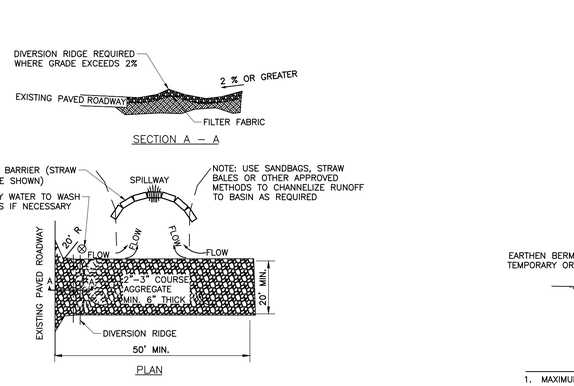
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https://www.mo1call.com

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1 C901 **MODOT SILT FENCE DETAIL**
NOT TO SCALE

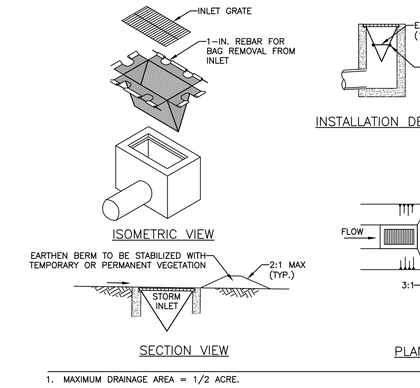
2 C901 **MODOT CURB INLET PROTECTION**
NOT TO SCALE



NOTES:

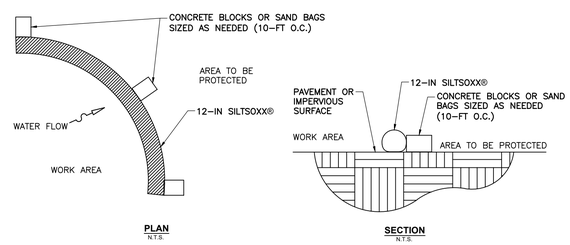
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT–OF–WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

3 C901 **STABILIZED CONSTRUCTION EXIT DETAIL**
NOT TO SCALE



1. MAXIMUM DRAINAGE AREA = 1/2 ACRE.
2. INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.
3. ROLLED EARTHEN BERM IN ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR REMAIN PERMANENTLY.
4. AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 POUNDS, A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 POUNDS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.
5. INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.
6. DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

4 C901 **STANDARD INLET PROTECTION**
NOT TO SCALE



NOTES

1. DETAIL PREPARED BY FILTREXX FOR SILTSOXX® PLACEMENT ON PAVEMENT.
2. TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.
3. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER.
4. COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
5. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, THE SOCKS SHALL BE REMOVED. THE SOCK MESH CAN BE CUT OPEN AND MULCH SPREAD AS A SOIL SUPPLEMENT. STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED.

5 C901 **COMPOST FILTER SOCK**
NOT TO SCALE

REVISION RECORD

NO	DATE	DESCRIPTION
1	07/30/2026	REVISION 1
2	09/10/2026	REVISION 2 - RESUBMITTAL FOR CONSTRUCTION
3	10/10/2026	REVISION 3 - WATERMAIN AND GEOMETRIC ADJUSTMENTS
4	11/02/2026	REVISION 4 - WATER MAIN AND SANITARY MODIFICATIONS

CEC
Civil & Environmental Consultants, Inc.
10300 Alliance Road
Suite 300
Cincinnati, OH 45242
Ph: 513.985.0226
www.cecinc.com

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF NORTH CAROLINA WILL BE PROVIDED BY CEC ENGINEERS, LLC. ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF SOUTH CAROLINA WILL BE PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PROVIDED BY CEC LANDSCAPE ARCHITECTS, LLC.

McDONALD'S RESTAURANT
NSN 45021 (024-1329)
653 S HUNT RD
WILLARD, MO 65781

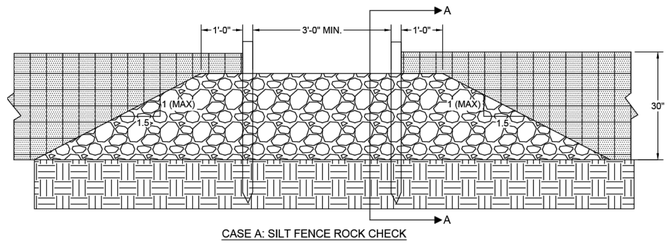
EROSION & SEDIMENT CONTROL NOTES & DETAILS

DATE:	AUGUST 2026
DRAWN BY:	CJW
CHECKED BY:	THA
DWG SCALE:	AS SHOWN
PROJECT NO:	353-866
APPROVED BY:	DRAFT

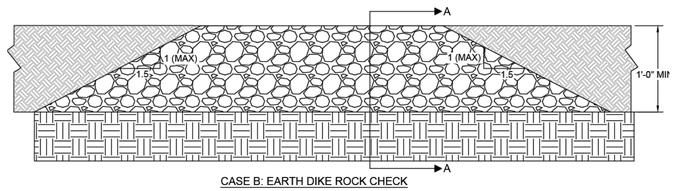
STATE OF MISSOURI
PATRICIA TODD BENNETT
NUMBER 2010019419
PROFESSIONAL ENGINEER
11/02/2026

DRAWING NO.: **C901**
SHEET **19** OF **32**

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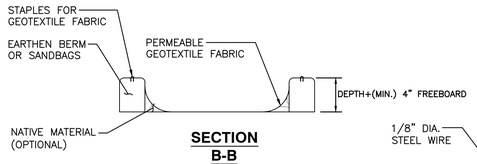


CASE A: SILT FENCE ROCK CHECK

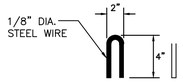


CASE B: EARTH DIKE ROCK CHECK

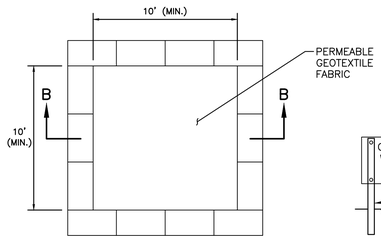
1 C902 **DITCH CHECK DETAIL**
NOT TO SCALE



SECTION B-B

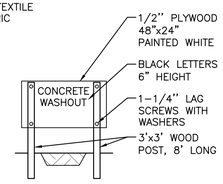


STAPLE DETAIL



* TYPE "ABOVE GRADE"

PLAN



CONCRETE WASHOUT SIGN DETAIL (OR EQUIVALENT)

NOTES:
1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 5 FT. OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

2 C902 **CONCRETE WASHOUT FACILITY DETAIL**
NOT TO SCALE

MISSOURI ONE CALL SYSTEM
811 or 1-800-344-7483
https://www.mo1call.com

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STATE OF MISSOURI
PATRICK TODD BENNETT
NUMBER
2014039939
11/02/2026
PROFESSIONAL ENGINEER

REVISION RECORD

NO	DATE	DESCRIPTION
1	07/30/2026	REVISION 1
2	09/15/2026	REVISION 2 - ISSUED FOR CONSTRUCTION
3	10/15/2026	REVISION 3 - WATERMAIN AND GRADING ADJUSTMENTS
4	11/02/2026	REVISION 4 - WATER MAIN AND SANITARY MODIFICATIONS

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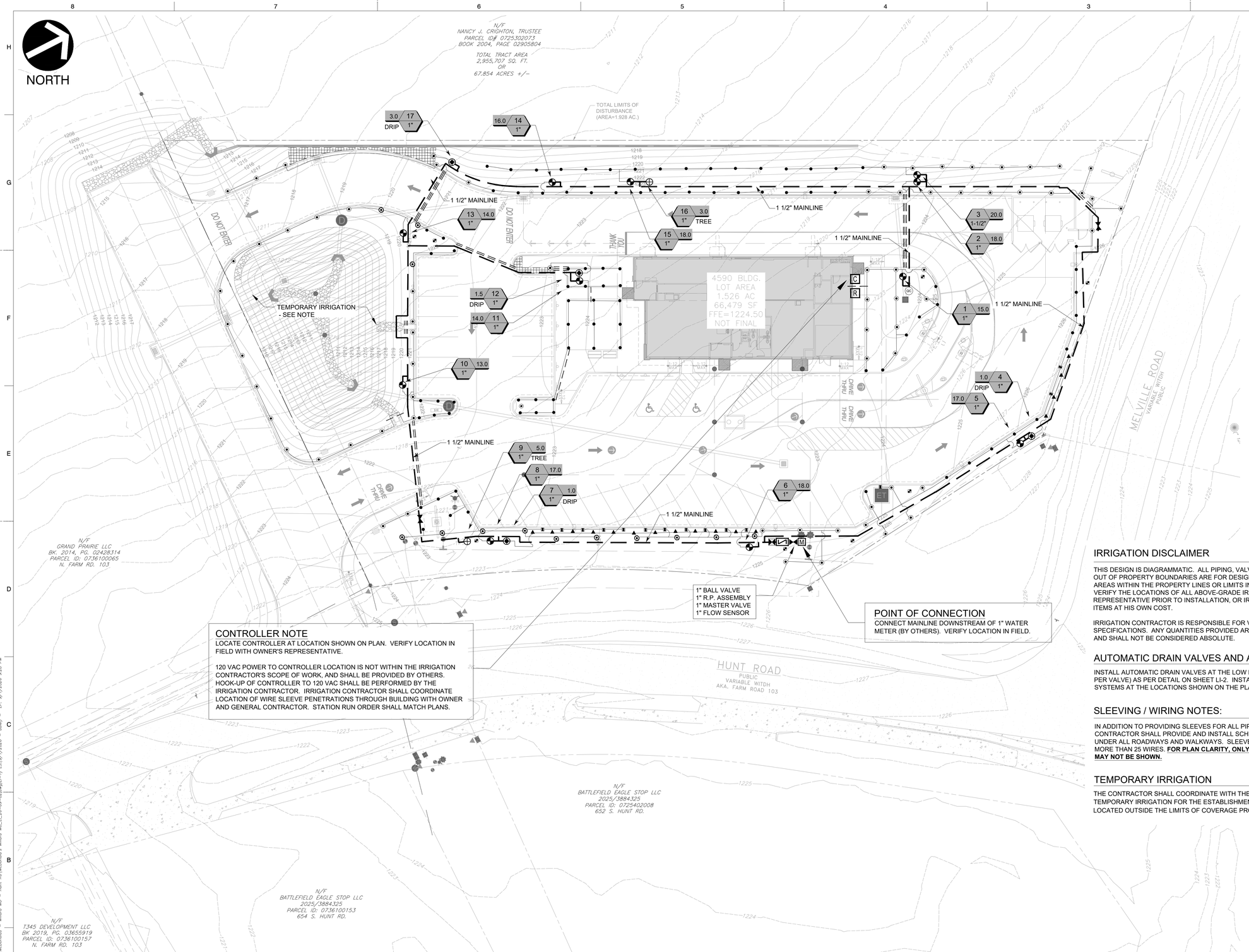
EROSION & SEDIMENT CONTROL NOTES & DETAILS

DATE:	AUGUST 2026
DWG SCALE:	AS SHOWN
PROJECT NO.	353-866
APPROVED BY:	DRAFT
DRAWN BY:	CJW
CHECKED BY:	THA

DRAWING NO.: **C902**

SHEET **20** OF **32**

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CONTROLLER NOTE

LOCATE CONTROLLER AT LOCATION SHOWN ON PLAN. VERIFY LOCATION IN FIELD WITH OWNER'S REPRESENTATIVE.

120 VAC POWER TO CONTROLLER LOCATION IS NOT WITHIN THE IRRIGATION CONTRACTOR'S SCOPE OF WORK, AND SHALL BE PROVIDED BY OTHERS. HOOK-UP OF CONTROLLER TO 120 VAC SHALL BE PERFORMED BY THE IRRIGATION CONTRACTOR. IRRIGATION CONTRACTOR SHALL COORDINATE LOCATION OF WIRE SLEEVE PENETRATIONS THROUGH BUILDING WITH OWNER AND GENERAL CONTRACTOR. STATION RUN ORDER SHALL MATCH PLANS.

1" BALL VALVE
1" R.P. ASSEMBLY
1" MASTER VALVE
1" FLOW SENSOR

POINT OF CONNECTION

CONNECT MAINLINE DOWNSTREAM OF 1" WATER METER (BY OTHERS). VERIFY LOCATION IN FIELD.

IRRIGATION DISCLAIMER

THIS DESIGN IS DIAGRAMMATIC. ALL PIPING, VALVES, AND OTHER EQUIPMENT SHOWN WITHIN PAVED AREAS OR OUT OF PROPERTY BOUNDARIES ARE FOR DESIGN CLARIFICATION ONLY, AND SHALL BE INSTALLED IN PLANTING AREAS WITHIN THE PROPERTY LINES OR LIMITS INDICATED ON PLAN. THE IRRIGATION CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL ABOVE-GRADE IRRIGATION EQUIPMENT WITH THE OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO INSTALLATION, OR IRRIGATION CONTRACTOR MAY BE REQURED TO MOVE SUCH ITEMS AT HIS OWN COST.

IRRIGATION CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL FINAL QUANTITIES PER DRAWINGS AND SPECIFICATIONS. ANY QUANTITIES PROVIDED ARE PROVIDED AS A CONVENIENCE TO THE CONTRACTOR ONLY AND SHALL NOT BE CONSIDERED ABSOLUTE.

AUTOMATIC DRAIN VALVES AND AIR RELIEF VALVES

INSTALL AUTOMATIC DRAIN VALVES AT THE LOW POINTS OF EACH LATERAL LINE (MIN. 2 PER VALVE) AS PER DETAIL ON SHEET LI-2. INSTALL AIR RELIEF VALVES ON DRIP SYSTEMS AT THE LOCATIONS SHOWN ON THE PLANS, AS PER DETAILS.

SLEEVING / WIRING NOTES:

IN ADDITION TO PROVIDING SLEEVES FOR ALL PIPING UNDER ROADWAYS AND WALKWAYS, THE IRRIGATION CONTRACTOR SHALL PROVIDE AND INSTALL SCH. 40 PVC SLEEVES FOR ALL CONTROLLER WIRES OCCURRING UNDER ALL ROADWAYS AND WALKWAYS. SLEEVES FOR CONTROLLER WIRES SHALL BE 2" DIA. AND CONTAIN NO MORE THAN 25 WIRES. **FOR PLAN CLARITY, ONLY SOME REPRESENTATIVE SLEEVES ARE SHOWN; SOME SLEEVES MAY NOT BE SHOWN.**

TEMPORARY IRRIGATION

THE CONTRACTOR SHALL COORDINATE WITH THE PLANTING PLAN AND PROVIDE TEMPORARY IRRIGATION FOR THE ESTABLISHMENT OF ALL PROPOSED PLANT MATERIALS LOCATED OUTSIDE THE LIMITS OF COVERAGE PROVIDED BY THE PERMANENT SYSTEM.

SCALE IN FEET
0 20 40

MISSOURI ONE CALL SYSTEM
811 or 1-800-344-7483
https://www.mo1call.com

NOTE: PRIOR TO ANY EXCAVATION FOR UNDERGROUND UTILITIES, CONTRACTOR SHALL EXPOSE AND VERIFY LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO GAS, WATER, AND SANITARY SEWER. ANY CONFLICTS SHALL BE REPORTED, IMMEDIATELY, TO THE ENGINEER AND THE APPROPRIATE AUTHORITIES.

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LANDSCAPE ARCHITECTURE
LAND PLANNING · IRRIGATION DESIGN

STATE OF MISSOURI
STEPHEN W. SALES
NUMBER PLA-2022044700
PROFESSIONAL LANDSCAPE ARCHITECT

DATE: 09/02/2026

REVISION RECORD

NO	DATE	DESCRIPTION
1	09/01/2026	REVISION 1

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF NORTH CAROLINA WILL BE PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC. ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF MISSOURI WILL BE PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PROVIDED BY CEC LANDSCAPE ARCHITECTS, LLC.

Civil & Environmental Consultants, Inc.
10300 Alliance Road
Suite 300
Cincinnati, OH 45242
Ph: 513.985.0226
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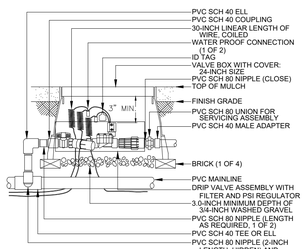
McDONALD'S RESTAURANT
NSN 45021 (024-1329)
TBD S HUNT RD
WILLARD, MO 65781

IRRIGATION PLAN

DATE:	JULY 2026
DWG SCALE:	SCALE 1" = 20'
PROJECT NO:	353-866
APPROVED BY:	SS
DRAWN BY:	AM
CHECKED BY:	SS

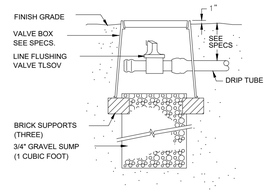
DRAWING NO.:
LI-1

Z:\Shared Projects\2026\McDonalds\Willard MO - Hunt Rd\McDonald's Willard MO_LI_26-09-02.dwg(LI-1 LS(9/1/2026 - date) - LP, 9/1/2026 2:28 PM



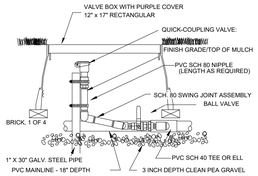
CONTROL ZONE KIT

N.T.S.



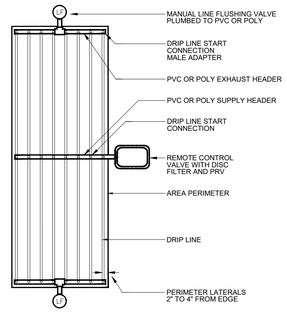
MANUAL LINE FLUSH VALVE

N.T.S.



N.T.S.

QUICK COUPLER VALVE WITH PVC BALL VALVE

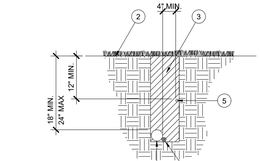


SUPPLY AND EXHAUST HEADERS SHALL BE CLASS 200 PVC PIPE, OF THE SAME DIAMETER AS THE ZONE VALVE SIZE.

USE DRIP TUBE FOR SUPPLY AND EXHAUST HEADERS ON GRIDS WITH FLOW SMALLER THAN 5 GPM ONLY.

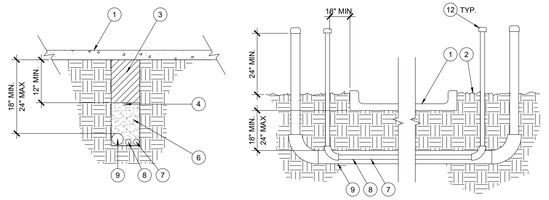
DRIP CENTER FEED LAYOUT

N.T.S.



TRENCHING

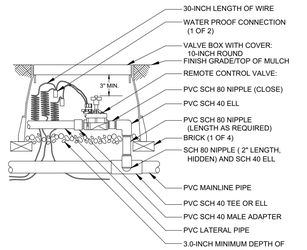
1. PAVEMENT SURFACE
2. FINISH GRADE
3. TRENCH BACKFILL
4. LOCATOR WIRE W/BURIED CAUTION TAPE
5. PVC IRRIGATION LATERAL
6. SAND BACKFILL
7. SCH. 40 PVC LATERAL SLEEVE - SEE PLANS FOR SIZE
8. SCH. 40 PVC WIRE SLEEVE FOR CONTROL WIRES, MIN. 2" DIA.
9. SCH. 40 PVC MAINLINE SLEEVE - SEE PLANS FOR SIZE
10. PVC IRRIGATION MAINLINE
11. CONTROL WIRES - TAPE TO MAINLINE AT 10' INTERVALS
12. PVC CAP, SOLVENT WELDED



SLEEVING

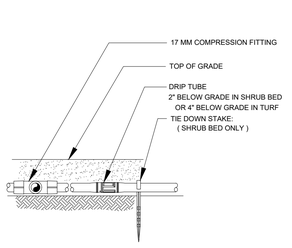
PIPE AND SLEEVE INSTALLATION

N.T.S.



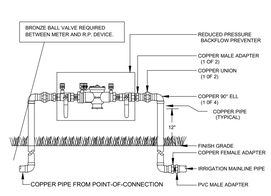
REMOTE CONTROL VALVE

N.T.S.



DRIP TUBE

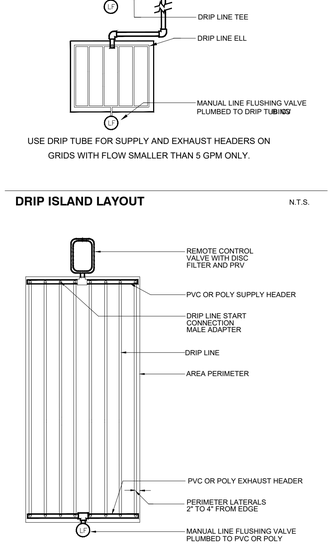
N.T.S.



NOTE:
1. INSTALL BACKFLOW PREVENTER AS REQUIRED BY LOCAL CODES AND HEALTH DEPARTMENT. VERIFY LOCAL REQUIREMENTS PRIOR TO INSTALLATION.

RP DEVICE

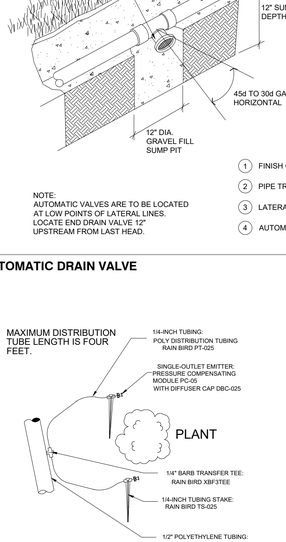
N.T.S.



USE DRIP TUBE FOR SUPPLY AND EXHAUST HEADERS ON GRIDS WITH FLOW SMALLER THAN 5 GPM ONLY.

DRIP ISLAND LAYOUT

N.T.S.



SUPPLY AND EXHAUST HEADERS SHALL BE CLASS 200 PVC PIPE, OF THE SAME DIAMETER AS THE ZONE VALVE SIZE.

USE DRIP TUBE FOR SUPPLY AND EXHAUST HEADERS ON GRIDS WITH FLOW SMALLER THAN 5 GPM ONLY.

DRIP END FEED LAYOUT

N.T.S.

NOTE:
AUTOMATIC VALVES ARE TO BE LOCATED AT LOW POINTS OF LATERAL LINES. LOCATE END DRAIN VALVE 12" UPSTREAM FROM LAST HEAD.

1. FINISH GRADE
2. PIPE TRENCH
3. LATERAL LINE PIPE
4. AUTOMATIC DRAIN VALVE

AUTOMATIC DRAIN VALVE

N.T.S.

WALL MOUNT CONTROLLER

N.T.S.

INCLUDE TWO BUBBLER HEADS, SET ON OPPOSITE SIDES OF ROOT BALL

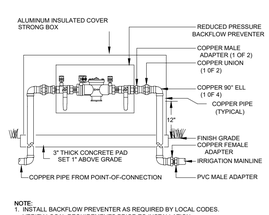
TREE BUBBLER

N.T.S.

NOTE:
USE XERIMAN TOOL XM-TOOL TO INSERT BARB CONNECTOR DIRECTLY INTO 1/2-INCH POLYETHYLENE TUBING.
LOCATE AT FURTHEST DISTANCE FROM DRIP VALVE ASSEMPLY, ADJACENT TO EDGING OR WITHIN LOW PLANTINGS FOR OPTIMUM VIEWING. WITH CLOSED SPRAY NOZZLE.

DRIP ZONE INDICATOR

N.T.S.



NOTE:
1. INSTALL BACKFLOW PREVENTER AS REQUIRED BY LOCAL CODES. VERIFY LOCAL REQUIREMENTS PRIOR TO INSTALLATION.

RP DEVICE WITH INSULATED COVER

N.T.S.

XERI-BUG EMITTER

N.T.S.

POP-UP SPRAY HEAD

N.T.S.

1. PARAPET OR EAVE
2. AUTOMATIC RAIN SENSOR - INSTALL PER MANUFACTURER'S INSTRUCTIONS

RAIN SENSOR, ROOF MOUNT

N.T.S.

NOTE:
1. INSTALL BACKFLOW PREVENTER AS REQUIRED BY LOCAL CODES. VERIFY LOCAL REQUIREMENTS PRIOR TO INSTALLATION.

RP DEVICE WITH INSULATED COVER

N.T.S.

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https://www.mo1call.com

NOTE: PRIOR TO ANY EXCAVATION FOR UNDERGROUND UTILITIES, CONTRACTOR SHALL EXPOSE AND VERIFY LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO GAS, WATER, AND SANITARY SEWER. ANY CONFLICTS SHALL BE REPORTED, IMMEDIATELY, TO THE ENGINEER AND THE APPROPRIATE AUTHORITIES.

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STATE OF MISSOURI
STEPHEN W. SALES
NUMBER PLA-2022044700
PROFESSIONAL LANDSCAPE ARCHITECT

DATE: 09/02/2026

REVISION RECORD

NO	DATE	DESCRIPTION
1	09/01/2026	REVISION 1

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF NORTH CAROLINA WILL BE PROVIDED BY EVERGREEN DESIGN GROUP, LANDSCAPE ARCHITECTURE IN THE STATE OF MISSOURI WILL BE PROVIDED BY FCC ENGINEERS & CONSULTANTS, LLC, LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PROVIDED BY CONSOLIDATED ARCHITECTS, LLC.

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Civil & Environmental Consultants, Inc.
10300 Alliance Road
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Cincinnati, OH 45242
Ph: 513.985.0226
www.cecinc.com

McDONALD'S RESTAURANT
NSN 45021 (024-1329)
TBD S HUNT RD
WILLARD, MO 65781

IRRIGATION DETAILS

DATE:	JULY 2026	DRAWN BY:	AM
DWG SCALE:	N.T.S.	CHECKED BY:	SS
PROJECT NO:		353-866	
APPROVED BY:			SS

DRAWING NO.:
LI-2

Z:\Shared Projects\2026\McDonalds\McDonalds - Willard MO - Hunt Rd\McDonald's Willard MO_LI_26-09-02.dwg[LI-2] LI-2(9/1/2026 - plot) - LP, 9/1/2026 9:28 PM

IRRIGATION SPECIFICATIONS

GENERAL

A. QUALIFICATIONS OF IRRIGATION CONTRACTOR
  1. ALL WORK SHOWN ON THESE PLANS SHALL BE PERFORMED BY A SINGLE IRRIGATION CONTRACTING FIRM SPECIALIZING IN IRRIGATION SYSTEMS. SEE THE IRRIGATION PLAN FOR SPECIFIC EQUIPMENT AND SYSTEM LAYOUT.
  2. THE IRRIGATION CONTRACTOR MUST HAVE ON ITS STAFF A LICENSED IRRIGATION INSTALLER, AS REGULATED BY THE APPROPRIATE LOCAL JURISDICTION. A LICENSED IRRIGATION INSTALLER SHALL BE PRESENT AT THE PROJECT SITE AT ALL TIMES AS WORK IS IN PROGRESS. THE OWNER MAY DEMAND THAT WORK STOP UNTIL THE CONTRACTOR PROVIDES FOR A LICENSED IRRIGATION INSTALLER TO BE PRESENT AT THE PROJECT SITE AND SUPERVISING ALL IRRIGATION WORK.
  3. A LIST OF SUCCESSFULLY COMPLETED PROJECTS OF THIS TYPE, SIZE AND NATURE MAY BE REQUESTED BY THE OWNER FOR FURTHER QUALIFICATION MEASURES.

B. SCOPE OF WORK
  1. WORK COVERED BY THESE SECTIONS INCLUDES THE FURNISHING AND PAYMENT OF ALL MATERIALS, LABOR, SERVICES, EQUIPMENT, LICENSES, TAXES, FEES, AND ANY OTHER ITEMS THAT ARE NECESSARY FOR THE EXECUTION, INSTALLATION AND COMPLETION OF ALL WORK, SPECIFIED HEREIN AND/OR SHOWN ON THE IRRIGATION PLANS, NOTES, AND DETAILS.
  2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS REQUIRED BY AUTHORITIES HAVING JURISDICTION OVER SUCH WORK, INCLUDING ALL INSPECTIONS AND PERMITS REQUIRED BY FEDERAL, STATE AND LOCAL AUTHORITIES IN SUPPLY, TRANSPORTATION AND INSTALLATION OF MATERIALS. IN CASE OF CONFLICT BETWEEN THESE PLANS AND LOCAL AND/OR STATE CODES, CODES SHALL PREVAIL.
  3. THE INTENT OF THE IRRIGATION SYSTEM IS TO PROVIDE 100% COVERAGE OF ALL LANDSCAPE AREAS. THE IRRIGATION PLAN IS GENERALLY DIAGRAMMATIC; COORDINATE IRRIGATION INSTALLATION WITH UTILITY INSTALLATIONS. ACTUAL LOCATION OF CONTROLLER, BACKFLOW DEVICE, PIPING, VALVES, SPRAY HEADS, DRIP IRRIGATION, AND RELATED EQUIPMENT MAY NEED TO BE ADJUSTED BASED ON ACTUAL SITE CONDITIONS.
  4. FOR CLARITY PURPOSES, SOME IRRIGATION LINES AND EQUIPMENT ARE SHOWN IN HARDSCAPE AREAS WITHOUT ACCESS SLEEVES; THESE LINES SHALL BE INSTALLED IN A COMMON TRENCH OR AT THE BACK OF CURB IN LANDSCAPE AREAS. MINOR FIELD ADJUSTMENTS SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.

PRODUCTS

A. ALL MATERIALS SHALL BE NEW AND WITHOUT FLAWS OR DEFECTS OF ANY TYPE AND SHALL BE THE BEST OF THEIR CLASS AND KIND. ALL MATERIALS SHALL HAVE A MINIMUM GUARANTEE OF ONE YEAR AGAINST MATERIAL DEFECTS OR DEFECTIVE WORKMANSHIP. ALL MATERIALS SHALL BE OF THE BRANDS AND TYPES NOTED ON THE DRAWINGS OR AS SPECIFIED HEREIN, OR APPROVED EQUAL. THE CONTRACTOR MUST FIRST OBTAIN APPROVAL FROM THE IRRIGATION DESIGNER FOR AN 'APPROVED EQUAL' BEFORE INSTALLING SUCH MATERIALS IN THE FIELD, OR THE CONTRACTOR MAY BE REQUIRED TO REPLACE SUCH MATERIALS AT HIS OWN COST.

B. BACKFLOW PREVENTION DEVICES SHALL BE OF THE SIZE AND TYPE INDICATED ON THE DRAWINGS. INSTALL BACKFLOW PREVENTION UNITS IN ACCORDANCE WITH IRRIGATION CONSTRUCTION DETAILS AND ALL APPLICABLE STATE AND LOCAL CODES AND ORDINANCES.

C. PIPING
  1. PRESSURE SUPPLY LINES, DOWNSTREAM OF THE POINT-OF-CONNECTION:
    a. SCHEDULE 40 PVC FOR ALL PIPE 1-1/2" OR LESS
    b. CLASS 315 PVC FOR ALL PIPE 2" TO 2-1/2"
    c. CLASS 200 PVC, GASKETED, FOR ALL PIPE 3" AND LARGER
  2. SLEEVING AND NON-PRESSURE LATERAL LINES (DOWNSTREAM FROM VALVES): CLASS 200 PVC
  3. FITTINGS: SCH. 40 PVC, EXCEPT AS NOTED OTHERWISE.

D. VALVES AND DRIP VALVE ASSEMBLIES: TYPE AND SIZE AS NOTED ON PLANS. EACH VALVE SHALL BEAR A PRE-MANUFACTURED, NUMBERED WATERPROOF TAG BEARING A NUMBER CORRESPONDING TO ITS VALVE SEQUENCE OF OPERATION ON THE CONTROLLER. THE OPERATION SEQUENCE SHALL MATCH THAT AS SHOWN ON THE PLANS.

E. QUICK COUPLERS, BALL VALVES, AND GATE VALVES: TYPE AND SIZE PER PLANS.

F. VALVE BOXES: TYPE AND SIZE AS NOTED ON DETAILS. ALL VALVES BOXES SHALL BE LOCKING BOLT-DOWN TYPE, FURNISHED WITH LIDS AND BOLTS. BOXES SHALL BE OF A SIZE TO CONTAIN THE ENTIRE VALVE AND/OR VALVE ASSEMBLY. THE VALVE BOX LID SHALL HAVE THE VALVE STATION NUMBER HEAT-BRANDED INTO THE LID WITH 2" HIGH LETTERS.

G. FIXED SPRAY HEADS AND ROTORS: PLASTIC BODY POP-UP, WITH A REMOVABLE PLASTIC SPRAY NOZZLE. EXACT TYPE, MODEL, AND NOZZLE SHALL BE AS INDICATED ON PLANS.

H. INTEGRAL EMITTER DRIP TUBING: TUBING MODEL AND FLOW RATE AS NOTED ON PLANS, WITH INTEGRAL EMITTERS WELDED TO THE INSIDE WALL OF THE TUBING AS AN INTEGRAL PART OF THE TUBING ASSEMBLY.

I. AUTOMATIC CONTROLLER: TYPE AND MODEL PER PLANS. PROVIDE VANDAL-PROOF ENCLOSURE FOR ALL EXTERIOR INSTALLATIONS. PROVIDE LINE-VOLTAGE DISCONNECT SWITCH WITH GROUND FAULT PROTECTION.

J. 24 VOLT VALVE WIRE SHALL BE A MINIMUM OF #14 GAUGE, U.F. APPROVED FOR DIRECT BURIAL, SINGLE CONDUCTOR IRRIGATION WIRE. EACH CONTROLLER SHALL HAVE A DIFFERENT COLOR STATION AND COMMON WIRE.
  1. STATION WIRE - ANY COLOR EXCEPT WHITE OR BLUE
  2. COMMON WIRE - WHITE
  3. EXTRA COMMON WIRES - BLUE

K. WIRE SPLICES SHALL BE ENCASED IN A WATERPROOF COMPOUND OR GEL. ALL FIELD SPLICES SHALL BE LOCATED IN A 6 INCH ROUND VALVE BOX.

L. RAIN SENSOR: TYPE AND MODEL PER PLANS.

METHODS

A. THIS DESIGN IS DIAGRAMMATIC. ALL PIPING, VALVES, AND OTHER EQUIPMENT SHOWN WITHIN PAVED AREAS OR OUT OF PROPERTY BOUNDARIES ARE FOR DESIGN CLARIFICATION ONLY, AND SHALL BE INSTALLED IN PLANTING AREAS WITHIN THE PROPERTY LINES OR LIMITS INDICATED ON PLAN. THE IRRIGATION CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL ABOVE-GRADE IRRIGATION EQUIPMENT WITH THE OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO INSTALLATION, OR IRRIGATION CONTRACTOR MAY BE REQURED TO MOVE SUCH ITEMS AT HIS OWN COST. ENSURE FIELD COORDINATION IS MADE EARLY ON IN THE CONSTRUCTION PHASE SO PLACEMENT LOCATION IS CORRECT.

B. THE IRRIGATION CONTRACTOR SHALL MEET WITH THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF WORK, AND SHALL OBTAIN ALL ENGINEERING, LANDSCAPE, AND OTHER APPLICABLE PLANS & DOCUMENTS. THE CONTRACTOR SHALL THOROUGHLY REVIEW THE PLANS AND REPORT ANY CONFLICTS OR DISCREPANCIES TO THE LANDSCAPE ARCHITECT AND OWNER'S REPRESENTATIVE IMMEDIATELY.

C. THE IRRIGATION CONTRACTOR SHALL NOT WILFULLY INSTALL THE IRRIGATION SYSTEM AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT UNKNOWN OBSTRUCTIONS, GRADES OR DIMENSIONS EXIST THAT MIGHT NOT HAVE BEEN CONSIDERED IN THE ENGINEEERING. SUCH OBSTRUCTIONS OR DIFFERENCES SHALL BE BROUGHT TO THE ATTENTION OF THE IRRIGATION DESIGNER. IN THE EVENT THAT THIS NOTIFICATION IS NOT PERFORMED, THE IRRIGATION CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS AND NECESSARY COSTS.

D. THE IRRIGATION CONTRACTOR SHALL PAY ANY AND ALL FEES AND PERMITS ASSOCIATED WITH THE INSTALLATION OF THE IRRIGATION SYSTEM.

E. AT LEAST SEVEN DAYS BEFORE BEGINNING WORK, CONFIRM THE STATIC WATER PRESSURE IS AT LEAST 65 PSI. IF STATIC WATER PRESSURE IS OUTSIDE OF THE STATED RANGE, DO NOT PROCEED WITHOUT FIRST NOTIFYING THE IRRIGATION DESIGNER AND OWNER IN WRITING, AND OBTAINING SUBSEQUENT DIRECTION FOR CORRECTIONAL MEASURES. SHOULD THE IRRIGATION CONTRACTOR CHOOSE TO BEGIN THE INSTALLATION WITHOUT SUCH NOTIFICATION, THE IRRIGATION CONTRACTOR WILL ASSUME THE RESPONSIBILITY FOR ALL COSTS INCURRED TO ENSURE THE SYSTEM IS WORKING PROPERLY. NO CHANGE ORDERS WILL BE AUTHORIZED IN SUCH CIRCUMSTANCES.

F. THE IRRIGATION CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITY LINES (WATER, SEWER, ELECTRICAL, TELEPHONE, GAS, CABLE, TELEVISION, ETC.) PRIOR TO THE START OF ANY WORK. THE CONTRACTOR SHALL BE FAMILIAR WITH ALL GRADE DIFFERENCES, LOCATIONS OF WALLS, STRUCTURES AND UTILITIES.

G. COORDINATE WITH THE OWNER THE PROPOSED LOCATIONS OF THE AUTOMATIC CONTROLLER AND ANY REQUIRED SLEEVES THROUGH THE BUILDING FOR CONTROL WIRES.

H. TRENCHING NEAR EXISTING TREES:
  1. CONTRACTOR SHALL NOT DISTURB ROOTS 1-1/2" AND LARGER IN DIAMETER WITHIN THE CRITICAL ROOT ZONE (CRZ) OF EXISTING TREES, AND SHALL EXERCISE ALL POSSIBLE CARE AND PRECAUTIONS TO AVOID INJURY TO TREE ROOTS, TRUNKS, AND BRANCHES. THE CRZ IS DEFINED AS A CIRCULAR AREA EXTENDING OUTWARD FROM THE TREE TRUNK, WITH A RADIUS EQUAL TO 1' FOR EVERY 1" OF TRUNK DIAMETER-AT-BREAST-HEIGHT (4.5' ABOVE THE AVERAGE GRADE AT THE TRUNK).
  2. ALL EXCAVATION WITHIN THE CRZ SHALL BE PERFORMED USING HAND TOOLS. NO MACHINE EXCAVATION OR TRENCHING OF ANY KIND SHALL BE ALLOWED WITHIN THE CRZ.
  3. ALTER ALIGNMENT OF PIPE TO AVOID TREE ROOTS 1-1/2" AND LARGER IN DIAMETER. WHERE TREE ROOTS 1-1/2" AND LARGER IN DIAMETER ARE ENCOUNTERED IN THE FIELD, TUNNEL UNDER SUCH ROOTS. WRAP EXPOSED ROOTS WITH SEVERAL LAYERS OF BURLAP AND KEEP MOIST. CLOSE ALL TRENCHES WITHIN THE CANOPY DRIP LINES WITHIN 24 HOURS.
  4. ALL SEVERED ROOTS SHALL BE HAND PRUNED WITH SHARP TOOLS AND ALLOWED TO AIR-DRY. DO NOT USE ANY SORT OF SEALERS OR WOUND PAINTS.

I. BACKFILL
  1. ALL BACKFILL MATERIAL SHALL BE SUBJECT TO APPROVAL BY THE OWNER. BACKFILL MATERIAL SHALL BE FREE FROM RUBBISH, ROCK LARGER THAN 1", LARGE STONES, BRUSH, SOD, FROZEN MATERIAL OR OTHER UNSUITABLE SUBSTANCES THAT MAY DAMAGE PIPE DURING THE BACKFILLING OPERATIONS. SEPARATE OUT ROCKS LARGER THAN 1 INCH IN ANY DIRECTION FROM EXCAVATED MATERIAL, AND REMOVE FROM AREAS TO RECEIVE LANDSCAPING. COVER FOR BOTH TOP AND SIDES OF PIPE SHALL BE A MINIMUM OF 2 INCHES OF ROCK-FREE SOIL, SAND, OR OTHER APPROVED MATERIAL.
  2. IN THE EVENT THAT THE MATERIAL FROM THE EXCAVATION OR TRENCHING IS FOUND TO BE UNSUITABLE FOR USE IN BACKFILL, IT SHALL BE REMOVED FROM THE SITE AND PROPERLY AND LEGALLY DISPOSED OF BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL THEN PURCHASE AND AND FURNISH SUITABLE BACKFILL MATERIAL CONSISTING OF EARTH, LOAM, SANDY CLAY, SAND OR OTHER APPROVED MATERIALS FREE OF DEBRIS.

J. BACKFLOW PREVENTER INSTALLATION: CONTRACTOR SHALL MAKE CONNECTIONS TO EXISTING WATER SOURCES AT LOCATION SHOWN ON PLANS AND AS APPROVED BY THE OWNER, AND SHALL MAKE ANY MINOR CHANGES IN LOCATION AS MAY BE NECESSARY DUE TO ACTUAL SITE CONDITIONS. BACKFLOW PREVENTER HEIGHT SHALL BE AS PER LOCAL CODES AND IRRIGATION DETAILS. INSTALL A BRASS BALL VALVE IMMEDIATELY UPSTREAM OF THE BACKFLOW DEVICE TO SERVE AS AN ISOLATION VALVE. TO EVERY EXTENT POSSIBLE, INSTALL BACKFLOW PREVENTER ION A LOCATION SCREENED FROM PUBLIC VIEW (SUCH AS BEHIND A SHRUB ROW).

K. PIPING:
  1. PIPE SIZE SHALL CONFORM TO THOSE SHOWN ON THE DRAWINGS. NO SUBSTITUTIONS OF SMALLER PIPE SIZES SHALL BE PERMITTED, BUT SUBSTITUTIONS FOR LARGER SIZES MAY BE APPROVED.
  2. MAINLINE PIPE AND WIRES SHALL BE INSTALLED WITH A MINIMUM COVER OF 18 INCHES (24" FOR MAINLINE 3"-5", AND 30" FOR MAINLINE 6" AND GREATER). LATERAL PIPE SHALL BE INSTALLED WITH A MINIMUM COVER OF 12 INCHES.
  3. ASSEMBLE ALL THREADED FITTINGS WITH TEFLON TAPE, WHICH SHALL BE APPLIED TO MALE THREADS ONLY.
  4. ALL SOLVENT-WELD CONNECTIONS SHALL BE MADE WITH APPROVED SOLVENT-WELD PRIMER AND GLUE.
  5. PIPE SHALL BE INSTALLED WITH A MINIMUM OF 4" HORIZONTAL CLEARANCE FROM ANY OTHER PIPE AND 2" VERTICAL CLEARANCE FROM ANY PIPES THAT CROSS OVER OR UNDER.

L. VALVES
  1. VALVES SHALL BE INSTALLED PER MANUFACTURER'S DIRECTIONS AND THE IRRIGATION DETAILS.
  2. VALVE BOXES SHALL BE INSTALLED FLUSH WITH THE GRADE, WITH CLEAN PEA GRAVEL LOCATED BELOW THE VALVE AS NOTED ON THE DETAILS. LOCATE BOXES WITHIN 12 TO 24" OF SIDEWALKS OR LANDSCAPE EDGES, WITH TOPS OF BOXES 1" ABOVE FINISH GRADE IN TURF, AND 3" ABOVE FINISH GRADE IN SHRUB AREAS (TO AVOID BEING COVERED BY MULCH).
  3. EACH VALVE BOX COVER SHALL BE HEAT-BRANDED WITH THE CONTROLLER STATION NUMBER.
  4. DO NOT INSTALL MORE THAN TWO VALVES IN A JUMBO BOX.

M. DRIP IRRIGATION EQUIPMENT SHALL BE INSTALLED PER MANUFACTURER'S DIRECTIONS AND THE IRRIGATION DETAILS.
  1. SUBSURFACE DRIP LINES SHALL BE BURIED NO MORE THAN 2" BELOW FINISH GRADE.
  2. DRIP LINES MOUNTED ON GRADE SHALL BE LOCATED BENEATH LANDSCAPE FABRIC, AND SECURED IN PLACE WITH WIRE STAPLES AT A MAXIMUM OF 24"-36" ON CENTER.

N. SPRAY, ROTOR, AND BUBBLER HEADS:
  1. ALL SPRAY AND ROTOR HEAD LOCATIONS SHALL BE STAKED, FLAGGED AND/OR OTHERWISE CLEARLY MARKED ON THE GROUND PRIOR TO INSTALLATION. SPRINKLER HEAD STAKING SHALL BE INSPECTED AND APPROVED BY THE OWNER'S REPRESENTATIVE BEFORE INSTALLATION.
  2. ALL SPRAY HEADS SHALL BE CONNECTED WITH A 12 INCH MINIMUM LENGTH OF $\frac{1}{2}$ INCH FLEX PVC. THE FLEX PVC SHALL BE SOLVENT WELDED TO SCHEDULE 40 PVC FITTINGS WITH WELD-ON #795 SOLVENT AND #P-70 PRIMER. ALL ROTORS SHALL BE CONNECTED TO LATERAL LINES WITH PRE-MANUFACTURED SWING JOINTS.
  3. ALL ROTOR, SPRAY AND BUBBLER HEADS SHALL BE SET PERPENDICULAR AND FLUSH TO FINISH GRADE AND WITH A CLEARANCE OF FOUR INCHES (MINIMUM) FROM THE EDGE OF ANY BUILDINGS, WALLS, BOULDERS, AND HARDSCAPE, WITH A CLEARANCE OF TWELVE INCHES (MINIMUM) FROM BUILDINGS, UNLESS OTHERWISE SPECIFIED.
  4. ALL ROTOR, SPRAY AND BUBBLER HEADS AND VALVES SHALL BE FLUSHED AND ADJUSTED FOR OPTIMUM COVERAGE WITH MINIMUM OVERSPRAY ON WALKS, STREETS, WALLS, ETC.
  5. LATERAL PIPE TO TREE STREAM BUBBLER HEADS IS OMITTED FOR GRAPHIC CLARITY. CONNECT TREE BUBBLER HEADS TO VALVES AS SHOWN WITH CLASS 200 PVC PIPE SIZED TO ALLOW A MAXIMUM FLOW VELOCITY OF 5 FEET PER SECOND

O. AUTOMATIC CONTROLLER:
  1. INSTALL THE CONTROLLER AT THE LOCATION INDICATED BY THE OWNER. INSTALL CONTROLLER WITH A BACKUP BATTERY AS RECOMMENDED BY THE MANUFACTURER.
  2. THE IRRIGATION CONTRACTOR SHALL COORDINATE 120 V.A.C. ELECTRICAL POWER TO CONTROLLER AND DEDICATE ONE (1) 20-AMP BREAKER FOR EACH CONTROLLER. IT SHALL BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO MAKE THE FINAL HOOK-UP FROM THE ELECTRICAL SOURCE TO THE CONTROLLER UNIT ONLY.
  3. ALL VALVE CONTROL WIRE SHALL BE AWG 14 TYPE UF, 600 VOLT TEST, DIRECT BURIAL. NO SPLICES SHALL BE ALLOWED EXCEPT AT VALVES AND CONTROLLER. WHERE SPLICES MAY BE NECESSARY DUE TO EXCESSIVELY LONG WIRE RUNS, THE CONTRACTOR SHALL MAKE ALL SPLICES IN 6" ROUND VALVE BOXES WITH 3M'S "DBY-DIRECT BURIAL SPLICE KIT". THE CONTRACTOR SHALL LABEL ALL WIRES WITH WATERPROOF TAGS AND MARKERS AT ALL SPLICES AND VALVE MANIFOLDS, AND SHALL LEAVE A 24" COIL OF EXCESS WIRE AT EACH CONNECTION.
  4. PROVIDE #10 COMMON WIRE, DIRECT BURIAL, TO ALL REMOTE CONTROL VALVES.
  5. CONNECT ALL DIRECT BURIAL WIRES TO VALVES USING 3M'S "DBY-DIRECT BURIAL SPLICE KIT" (UNLESS OTHERWISE SPECIFIED).
  6. PROVIDE THREE ADDITIONAL IRRIGATION CONTROL WIRES ALONG EACH BRANCH OF MAINLINE FOR FUTURE EXPANSION. STUB ADDITIONAL CONTROL WIRES INTO BACK OF IRRIGATION CONTROLLERS.
  7. THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ALL CONTROL WIRE SLEEVES AND PIPE SLEEVES UNDER PAVED AREAS PRIOR TO PAVING - SEE SLEEVING NOTES.

P. INSTALL THE RAIN SENSOR IN THE VICINITY OF THE CONTROLLER, AND COORDINATE LOCATION WITH THE OWNER. PROVIDE MINIMUM 5' CLEARANCE FROM OTHER OUTDOOR EQUIPMENT, FREE AND CLEAR OF ANY TREE CANOPY OR OTHER OVERHEAD OBSTRUCTIONS, AND ABOVE THE HEIGHT OF THE SPRINKLER COVERAGE. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO ENSURE THE RAIN SENSOR IS PLACED IN A LOCATION WHERE IT CAN RECEIVE ADEQUATE RAINFALL WITHOUT OBSTRUCTIONS. IF IT IS PLACED IN AN INADEQUATE LOCATION, THE IRRIGATION CONTRACTOR MAY BE REQUIRED TO RELOCATE IT AT NO ADDITIONAL COST TO THE OWNER.

Q. NO PUMP ON SITE.

R. ALL IRRIGATION EQUIPMENT NOT OTHERWISE DETAILED OR SPECIFIED SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS.

S. QUALITY CONTROL
  1. PERFORM COVERAGE TESTS AFTER IRRIGATION SYSTEM IS COMPLETED, BUT PRIOR TO ANY PLANTING AND PERFORM TESTING IN THE PRESENCE OF THE IRRIGATION DESIGNER AND THE CONSTRUCTION MANAGER.
  2. TEST SYSTEM TO ASSURE THAT ALL LAWN AND PLANTING AREAS ARE WATERED COMPLETELY AND UNIFORMLY.
  3. MAKE ALL NECESSARY ADJUSTMENTS TO PROVIDE COMPLETE COVERAGE, INCLUDING REALIGNMENT OF HEADS AND REPLACEMENT OF NOZZLES.

T. CLEAN UP
  1. DURING IRRIGATION EXCAVATION AND INSTALLATION, KEEP ALL PAVEMENT CLEAN AND ALL WORK AREAS IN A NEAT, ORDERLY CONDITION.
  2. DISPOSED LEGALLY OF ALL EXCAVATED MATERIALS OFF THE PROJECT SITE.

U. INSPECTION AND ACCEPTANCE
  1. UPON COMPLETION OF THE WORK, THE IRRIGATION CONTRACTOR SHALL PROVIDE THE SITE CLEAN, FREE OF DEBRIS AND TRASH, AND SUITABLE FOR USE AS INTENDED. THE IRRIGATION CONTRACTOR SHALL THEN REQUEST AN INSPECTION BY THE OWNER TO DETERMINE FINAL ACCEPTABILITY.
  2. WHEN THE INSPECTED WORK DOES NOT COMPLY WITH THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL REPLACE AND/OR REPAIR THE REJECTED WORK TO THE OWNER'S SATISFACTION WITHIN 24 HOURS.
  3. THE MAINTENANCE PERIOD WILL NOT COMMENCE UNTIL THE WORK HAS BEEN RE-INSPECTED BY THE OWNER AND FOUND TO BE ACCEPTABLE. AT THAT TIME, A WRITTEN NOTICE OF FINAL ACCEPTANCE WILL BE ISSUED BY THE OWNER, AND THE MAINTENANCE AND GUARANTEE PERIODS WILL COMMENCE.
  4. CONTROLLER CHART: THE IRRIGATION CONTRACTOR SHALL PROVIDE A 11" X 17" COLOR-CODED, LAMINATED COPY OF THE IRRIGATION LAYOUT AND PLACE IT IN THE CONTROLLER'S COVER. THE CONTROLLER CHART SHALL CLEARLY DELINEATE THE AREAS COVERED BY EACH VALVE, USING A SEPARATE COLOR FOR EACH ZONE.
  5. TURN THE FOLLOWING ITEMS IN TO THE OWNER UPON COMPLETION OF THE INSTALLATION:
    a. QUICK COUPLER KEYS (2)
    b. CONTROLLER MANUAL (1)
    c. CONTROLLER KEYS (2)
    d. A MINIMUM OF (2) COPIES OF RECORD DRAWINGS. A RECORD DRAWING IS A RECORD OF ALL CHANGES THAT OCCURRED IN THE FIELD AND THAT ARE DOCUMENTED THROUGH CHANGE ORDERS, ADDENDA, OR CONTRACTOR/CONSULTANT DRAWING MARKUPS.

V. REFER TO THE PLANTING SPECIFICATIONS FOR ADDITIONAL CONDITIONS OF FINAL ACCEPTANCE AND START OF THE MAINTENANCE PERIOD.

W. WARRANTY
  1. THE IRRIGATION SYSTEM SUPPLIED AND INSTALLED SHALL BE WARRANTED (LABOR AND MATERIALS) TO REMAIN OPERATIONAL FOR A PERIOD OF 12 MONTHS AFTER THE DATE OF FINAL ACCEPTANCE. DURING THIS PERIOD, THE CONTRACTOR SHALL ALSO REPAIR ANY SETTLEMENT OF THE IRRIGATION TRENCHES.
  2. BY THE END OF THE WARRANTY PERIOD, ANY IRRIGATION PART THAT IS EITHER NON-OPERATIONAL OR THAT IS OPERATING BELOW STANDARDS AS DETERMINED BY THE OWNER, SHALL BE REMOVED FROM THE SITE AND SHALL BE REPLACED. REPLACEMENTS SHALL BE OF THE SAME KIND AS SPECIFIED IN THE IRRIGATION LEGEND, AND SHALL BE INSTALLED AS ORIGINALLY SPECIFIED.
  3. IRRIGATION PARTS DAMAGED OR IMPAIRED DUE TO ACTS OF GOD, VANDALISM, AND/OR THE OWNER'S IMPROPER MAINTENANCE SHALL NOT BE COVERED BY THIS WARRANTY.

X. SHOULD THE PERMITTING JURISDICTION REQUIRE AN IRRIGATION AUDIT, THE IRRIGATION CONTRACTOR SHALL RETAIN THE SERVICES OF A THIRD-PARTY CERTIFIED LANDSCAPE IRRIGATION AUDITOR, AT NO ADDITIONAL COST TO THE OWNER.

NOTE: PRIOR TO ANY EXCAVATION FOR UNDERGROUND UTILITIES, CONTRACTOR SHALL EXPOSE AND VERIFY LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO GAS, WATER, AND SANITARY SEWER. ANY CONFLICTS SHALL BE REPORTED, IMMEDIATELY, TO THE ENGINEER AND THE APPROPRIATE AUTHORITIES.

MISSOURI ONE CALL SYSTEM
811 or 1-800-344-7483
https://www.mo1call.com

IRRIGATION LEGEND

SYMBOL — MANUFACTURER/MODEL

RAIN BIRD R-VAN-STRIP 1806-SAM-P45 ,TURF ROTARY, 5`X15` (LCS AND RCS), 5`X30` (SST) HAND ADJUSTABLE MULTI-STREAM ROTARY W/ 1800 TURF SPRAY BODY ON 6.0" POP-UP, WITH CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. 1/2" NPT FEMALE THREADED INLET.

RAIN BIRD R-VAN14 1806-SAM-P45, TURF ROTARY, 8`-14` 45°-270° AND 360° HAND ADJUSTABLE MULTI-STREAM ROTARY W/1800 TURF SPRAY BODY ON 6.0" POP-UP, WITH CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. 1/2" NPT FEMALE THREADED INLET.

RAIN BIRD R-VAN18 1806-SAM-P45, TURF ROTARY, 13`-18` 45°-270° AND 360° HAND ADJUSTABLE MULTI-STREAM ROTARY W/1800 TURF SPRAY BODY ON 6.0" POP-UP, WITH CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. 1/2" NPT FEMALE THREADED INLET.

RAIN BIRD R-VAN24 1806-SAM-P45, TURF ROTARY, 17`-24` 45°-270° AND 360° HAND ADJUSTABLE MULTI-STREAM ROTARY W/1800 TURF SPRAY BODY ON 6.0" POP-UP, WITH CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. 1/2" NPT FEMALE THREADED INLET.

RAINBIRD 1806-SAM-PRS SERIES POP UP SPRAY HEADS WITH ADAPTER AND RAINBIRD #1402 SERIES BUBBLER NOZZLES. (TWO PER TREE)
SEE INSTALLATION NOTE #N-5 REGARDING TREE BUBBLER LATERAL PIPE

RAINBIRD XERI-BUG SINGLE / MULTI OUTLET (XB-T-10-PC / XBT-10-6) POINT SOURCE DRIP EMITTERS.
SEE INSTALLATION DRIP NOTE # N REGARDING EMITTER LAYOUT AND CONNECTION TO DRIP VALVE ASSEMBLY

RAINBIRD XCZ-100-PRB-COM / 150-PRB-COM SERIES AUTOMATIC DRIP VALVE ASSEMBLY WITH 40 PSI PRESSURE REGULATOR
XCZ-100-PRB-COM - 1" BALL VALVE WITH 1" PESB VALVE AND 1" PRESSURE REGULATING 40PSI QUICK-CHECK BASKET FILTER. 0.3GPM TO 20GPM.
XCZ-150-PRB-LCDR - 1-1/2" PESB-R SCRUBBER GLOBE VALVE WITH SINGLE 1-1/2" PRESSURE REGULATING (40PSI) QUICK-CHECK BASKET FILTERS. FLOW RANGE: 15-62GPM.

RAINBIRD PEB SERIES ELECTRIC REMOTE CONTROL, "TREE BUBBLER ZONE" VALVE
SEE INSTALLATION NOTE #N-5 REGARDING TREE BUBBLER LATERAL PIPE

RAINBIRD PEB SERIES
1", 1-1/2", 2" PLASTIC INDUSTRIAL VALVES. LOW FLOW OPERATING CAPABILITY, GLOBE CONFIGURATION.

AREA TO RECEIVE DRIPLINE
RAINBIRD XFS-CV-06-12 SERIES DRIP TUBE IN SHRUB BED INSTALLED AT 2" DEPTH

AREA TO RECEIVE DRIPLINE
RAINBIRD XFS-CV-06-12 SERIES DRIP TUBE IN NARROW TURF AREAS INSTALLED AT 4" DEPTH

PIPE TRANSITION POINT ABOVE GRADE PIPE TRANSITION POINT FROM PVC LATERAL TO DRIP TUBING WITH RISER TO ABOVE GRADE INSTALLATION.

ZURN / WILKINS 375XLB SERIES REDUCED PRESSURE TYPE BACKFLOW PREVENTOR INSTALLED PER CITY CODE
WITH HEATED / INSULATED ALUMINUM ENCLSOURE AND SAME SIZE BRONZE BALL VALVE INSTALLED ON THE UP-STREAM SIDE.
G.C. TO COORDINATE POWER TO BACKFLOW ENCLOSURE LOCATION PRIOR TO CONSTRUCTION
BLOW OFF VALVE TO BE INSTALLED BETWEEN THE METER AND BACKFLOW DEVICE FOR SYSTEM WINTERIZATION

LASCO "V" SERIES SCH. 80 PVC TRUE UNION BALL VALVE, MAINLINE SIZE

M — IRRIGATION WATER METER AND TAP (BY OTHERS) SIZE AS NOTED ON THE PLAN

QC — RAINBIRD 33-DNP QUICK COUPLING VALVE WITH LOCKING PURPLE COVER AND 3/4" PVC BALL VALVE

C — RAINBIRD ESP12LXMEF2P SERIES AUTOMATIC WALL MOUNT CONTROLLER WITH ONE ESPLXMSM12 STATION MODULE

R — RAINBIRD WR2-RFC RAIN / FREEZE SENSOR - CONFIRM SENSOR LOCATION WITH OWNERS REPRESENTATIVE

1" MASTER VALVE MODEL # 100-EFB-CP WITH RAINBIRD FLOW SENSOR MODEL #FS100P SERIES

IRRIGATION LATERAL LINE: CLASS 200 PVC
IRRIGATION MAINLINE: SCHEDULE 40 PVC
IRRIGATION SLEEVES, SCH. 40 PVC, MIN. TWICE SIZE OF PIPE TO BE INSERTED

IRRIGATION NOTE:

1. L.I.C. SHALL SELECT R-VAN SPRAY NOZZLES FOR "HEAD-TO-HEAD" COVERAGE, ADJUSTED FOR NO OVERSPRAY ONTO WALLS AND WALKS. NO OVERSPRAY INTO STREETS IS PERMITTED.
2. ALL PIPE TO BE SIZED SUCH THAT FLOWS WILL NOT EXCEED VELOCITY OF 5 FPS

WATER CONSERVATION

IRRIGATION WATER CONSERVATION SHALL BE ACCOMPLISHED THROUGH THE FOLLOWING EFFORTS:

1. SEPARATE TURF / SHRUB ZONES FOR SCHEDULING ADJUSTMENT
2. NO OVERSPRAY ONTO PAVEMENT PERMITTED
3. USE OF RAIN SENSOR SHUT OFF OVER-RIDE DEVICE

LATERAL PIPE SIZE CHART

LATERAL PIPE SHALL BE SIZED TO ALLOW A MAXIMUM FLOW VELOCITY OF FIVE FEET PER SECOND ACCORDING TO THE FOLLOWING CHART:

FLOW IN GPM	LATERAL PIPE SIZE
UP TO 5 GPM	3/4" CLASS 200
6 - 10 GPM	3/4" CLASS 200
11 - 15 GPM	1" CLASS 200
16 - 28 GPM	1 1/4" CLASS 200
29 - 35 GPM	1 1/2" CLASS 200
36 - 54 GPM	2" CLASS 200
55 - 81 GPM	2 1/2" CLASS 200
82 - 120 GPM	3" CLASS 200

VALVE KEY

Valve Callout
- Valve Number (#)
- Valve Flow (#)
- Valve Size (#")

CRITICAL ANALYSIS

P.O.C. NUMBER: 01	
Water Source Information:	Irrigation Meter, By Others
FLOW AVAILABLE	
Water Meter Size:	1"
Flow Available:	30 gpm
PRESSURE AVAILABLE	
Static Pressure at POC (est.):	68.00 psi
Elevation Change:	NA
Service Line Size:	NA
Length of Service Line:	NA
Pressure Available:	65.00 psi
DESIGN ANALYSIS	
Maximum Station Flow:	18.0 gpm
Flow Available at POC:	30.0 gpm
Residual Flow Available:	12.0 gpm
Critical Station: 15	
Head Pressure Required:	35.0 psi
Lateral Loss:	3.5 psi
Loss through Valve:	2.4 psi
Pressure Req. at Critical Station:	40.9 psi
Loss for Main Line:	1.3 psi
Loss for Fittings 20%(Main Line):	0.26 psi
Loss for Master Valve:	2.1 psi
Loss for Backflow:	11.0 psi
Loss for Water Meter:	1.8 psi
Critical Station Pressure at POC:	57.36 psi
Pressure Available:	65.00 psi
Residual Pressure Available:	7.64 psi

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LANDSCAPE ARCHITECTURE
LAND PLANNING · IRRIGATION DESIGN

STATE OF MISSOURI
STEPHEN W. SALES
NUMBER PLA-2022044706
PROFESSIONAL LANDSCAPE ARCHITECT
DATE: 09/02/2026

REVISION RECORD

NO	DATE	DESCRIPTION
1	08/31/2026	REVISION 1

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF NORTH CAROLINA WILL BE PROVIDED BY CEC SURVEYING AND LANDSCAPE ARCHITECTS OF NC, PLLC. SERVICES IN PUERTO RICO WILL BE PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PROVIDED BY CEC LANDSCAPE ARCHITECTS, LLC.

Civil & Environmental Consultants, Inc.
10300 Alliance Road
Suite 300
Cincinnati, OH 45242
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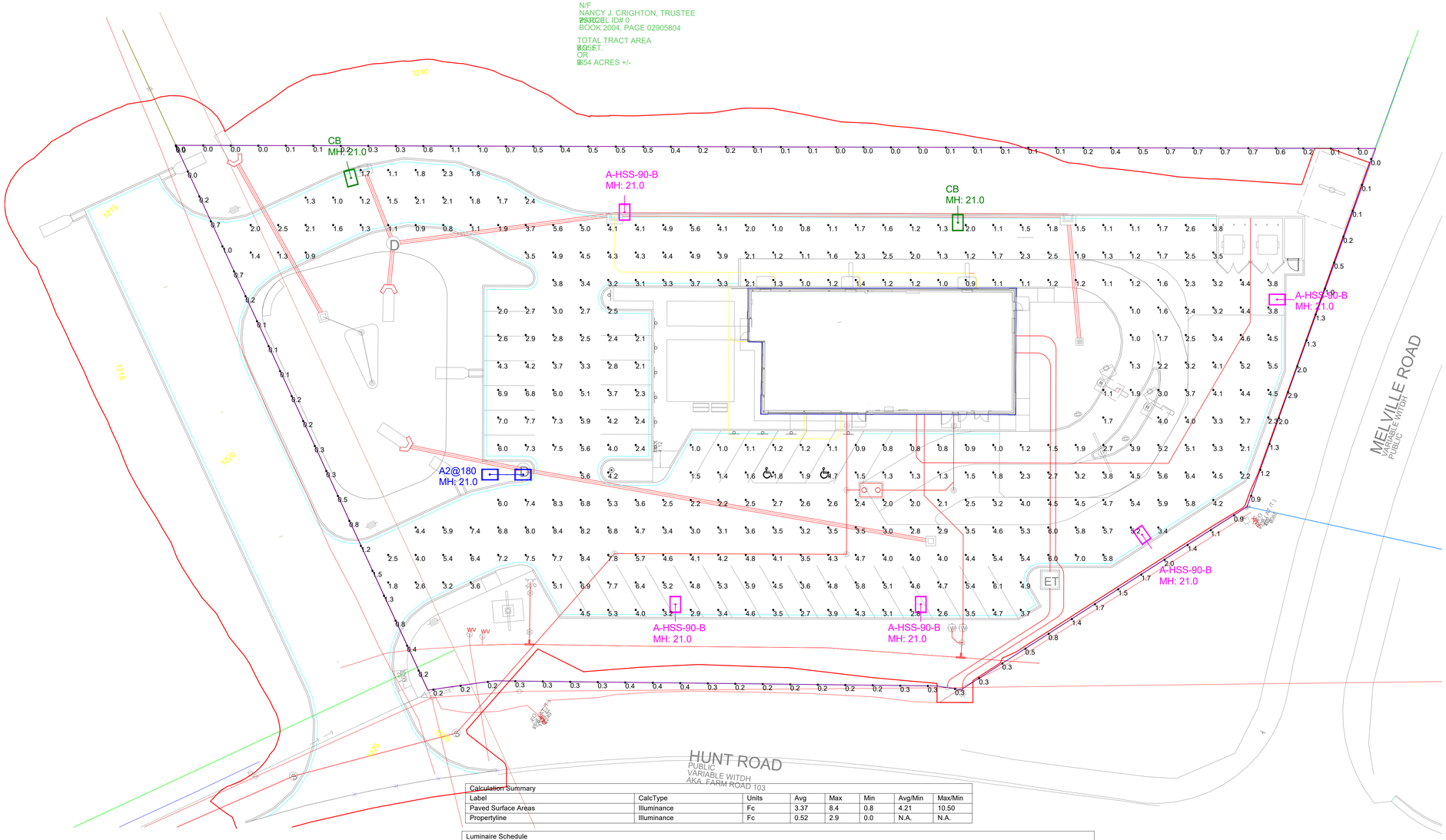
McDONALD'S RESTAURANT
NSN 45021 (024-1329)
TBD S HUNT RD
WILLARD, MO 65781

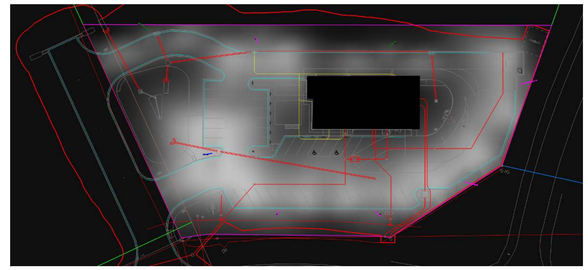
IRRIGATION SPECIFICATIONS

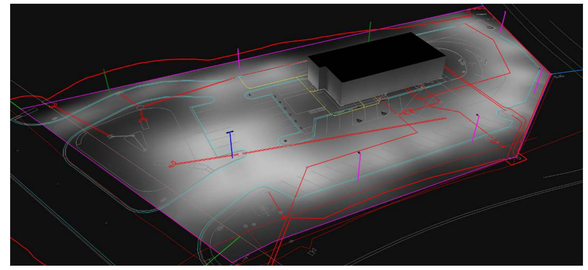
DATE:	JULY 2026	DRAWN BY:	AM
DWG SCALE:	N.T.S.	CHECKED BY:	SS
PROJECT NO:	353-866		
APPROVED BY:	SS		

DRAWING NO.: LI-3

Z:\Shared\Projects\2026\McDonalds\McDonalds – Willard MO – Hunt Rd\McDonald's Willard MO_LI_26-09-02.dwg(LI-3) LS:(9/1/2026 – adiel) – LP: 9/1/2026 9:28 PM







NOTES:

1. THE FOOTCANDLE LEVELS AS SHOWN ARE BASED ON THE FOLLOWING CRITERIA. ANY SUBSTITUTIONS IN SPECIFIED FIXTURES OR CHANGES TO LAYOUT WILL AFFECT LIGHTING LEVELS SHOWN AND WILL NOT BE THE RESPONSIBILITY OF SECURITY LIGHTING.

2. DISTANCE BETWEEN READINGS 10'

Pole Fixtures Are Full Cutoff
Tilt=0
Calculation Grids Are At Grade
Pole Light Mounting Height=21ft
(18' Pole + 3' Base)

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Paved Surface Areas	Illuminance	Fc	3.37	8.4	0.8	4.21	10.50
Propertyline	Illuminance	Fc	0.52	2.9	0.0	N.A.	N.A.

Luminaire Schedule									
Symbol	Qty	Label	Arrangement	LLF	Description	Lum. Watts	EPA	Mtg Height	Pole Type
	5	A-HSS-90-B	Single	0.850	VP-2-320L-210-5K7-4W-UNV-A-PSS-HSS-90-B	213.9	0.555	21	SES-18-40-1-TA-GL-xx (4")
	1	A2@180	Back-Back	0.850	VP-2-320L-210-5K7-4W-UNV-A-PSS	213.9	1.110	21	SES-18-40-1-TA-GL-xx (4")
	2	CB	Single	0.850	VP-1-160L-100-5K7-2-BC-UNV-A-PSS	92	0.454	21	SES-18-40-1-TA-GL-xx (4")

Regional Drawing
024-1329

1. THIS LIGHTING DESIGN IS BASED ON INFORMATION SUPPLIED BY OTHERS TO SECURITY LIGHTING SYSTEMS. SITE DETAILS PROVIDED HEREON ARE REPRODUCED ONLY AS A VISUALIZATION AID. FIELD DEVIATIONS MAY SIGNIFICANTLY AFFECT PREDICTED PERFORMANCE. PRIOR TO INSTALLATION, CRITICAL SITE INFORMATION (POLE LOCATIONS, ORIENTATION, MOUNTING HEIGHT, ETC.) SHOULD BE COORDINATED WITH THE CONTRACTOR AND/OR SPECIFIER RESPONSIBLE FOR THE PROJECT.

2. LUMINAIRE DATA IS TESTED TO INDUSTRY STANDARDS UNDER LABORATORY CONDITIONS. OPERATING VOLTAGE AND NORMAL MANUFACTURING TOLERANCES OF LAMP, BALLAST, AND LUMINAIRE MAY AFFECT FIELD RESULTS.

3. CONFORMANCE TO FACILITY CODE AND OTHER LOCAL REQUIREMENTS IS THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.

4. THIS LAYOUT MAY NOT MEET TITLE 24 OR LOCAL ENERGY REQUIREMENTS. IF THIS LAYOUT NEEDS TO E COMPLIANT WITH TITLE 24 OR OTHER ENERGY REQUIREMENTS, PLEASE CONSULT FACTORY WITH SPECIFIC DETAILS REGARDING PROJECT REQUIREMENTS SO THAT REVISIONS MAY BE MADE TO THE DRAWING.

THIS DRAWING MEETS OR EXCEEDS McDONALDS CURRENT ILLUMINATION SPECIFICATIONS OF A 3-4 FOOTCANDLE AVERAGE, UNLESS SUPERSEDED BY OTHER REQUIREMENTS.

PROJECT WIND LOAD CRITERIA BASED ON:
ASCE 7-10 WIND SPEEDS (3-SEC PEAK GUST MPH)
50 YEAR MEAN RECURRENCE INTERVAL
ALLOWED EPA 13.6 @ WIND LOAD 90 MPH

SECURITY LIGHTING™

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES

SCALE 1"=20' 0"

DRAWN BY CLB

POINT-BY-POINT FOOTCANDLE PLOT FOR
MCDONALDS
652 S HUNT RD WILLARD, MO 65781

NATIONAL STORE NUMBER
45021

DATE 7/30/2026

DRAWING NUMBER A260648C.AGI

ALTA/NSPS LAND TITLE SURVEY

PART OF SOUTHEAST QUARTER OF SECTION 25,
TOWNSHIP 30 NORTH, RANGE 23 WEST,
CITY OF WILLARD, GRENNE COUNTY, MISSOURI



VICINITY MAP - NOT TO SCALE

SITE BENCHMARK #3

ELEV. = 1206.52' (NAVD88-GEOID18)
FOUND ¾" IRON PIPE

SITE BENCHMARK #4

ELEV. = 1226.42' (NAVD88-GEOID18)
FOUND ¾" IRON PIPE

TITLE NOTES:

TITLE COMMITMENT PREPARED BY OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY FILE NUMBER NCS26014283 REVISED JULY 23, 2026. ITEMS NOT LISTED BELOW ARE STANDARD EXCEPTIONS AND/OR ARE NOT MATTERS THAT PERTAIN TO THIS SURVEY.

ITEMS 1-4 ARE GENERAL EXCEPTION ITEMS THAT ARE NOT PLOTTABLE AND ARE NOT SHOWN HEREON.

ITEM 5- SUBJECT TO AN ADVERTISING SPACE AGREEMENT TO MUSIC OUTDOOR LLC AS RECORDED IN BOOK 2023, PAGE 002473-23, GREENE COUNTY RECORDER'S OFFICE. **(AFFECTS THE SUBJECT PROPERTY- BLANKET EASEMENT)**

ITEM 6- SUBJECT TO AN ADVERTISING SPACE AGREEMENT TO MUSIC OUTDOOR LLC AS RECORDED IN BOOK 2023, PAGE 002474-23, GREENE COUNTY RECORDER'S OFFICE. **(AFFECTS THE SUBJECT PROPERTY- BLANKET EASEMENT)**

ITEM 7- SUBJECT TO AN POLE LINE PERMIT EASEMENT TO THE EMPIRE DISTRICT ELECTRIC COMPANY RECORDED IN BOOK 1120, PAGE 462, GREENE COUNTY RECORDER'S OFFICE. **(AFFECTS THE SUBJECT PROPERTY- BLANKET EASEMENT)**

ITEM 8- SUBJECT TO A RIGHT-OF-WAY EASEMENT WATER SUPPLY LINE TO THE CITY OF WILLARD RECORDED IN BOOK 2422, PAGE 1046, GREENE COUNTY RECORDER'S OFFICE. **(AFFECTS THE SUBJECT PROPERTY- BLANKET EASEMENT- THE DOCUMENT MAKES REFERENCE TO A 20-FOOT WIDE STRIP CENTERED ON THE WATER LINE AS CONSTRUCTED. THERE IS A WATER LINE ON THE PROPOSED MCDONALDS TRACT BUT NO WAY TO TELL IF IT IS THE SAME WATER LINE REFERRED TO IN THE DOCUMENT)**

ITEM 9- SUBJECT TO A REPORT OF COMMISSIONERS TO STATE OF MISSOURI AS RECORDED IN BOOK 1638, PAGE 200, GREENE COUNTY RECORDER'S OFFICE. **(HIGHWAY RIGHT-OF-WAY - DOES NOT BURDEN THE SURVEYED PROPERTY)**

ITEM 10- SUBJECT TO A CONVEYANCE FOR STATE HIGHWAY RIGHT-OF-WAY PURPOSES TO THE STATE OF MISSOURI AS RECORDED IN BOOK 2019, PAGE 011019-19, GREENE COUNTY RECORDER'S OFFICE. **(DOES NOT AFFECT THE SURVEYED PROPERTY)**

ITEMS 11-14 ARE NOT PLOTTABLE SURVEY-RELATED ITEMS AND ARE NOT SHOWN HEREON.

ITEM 15 - ANY FACTS, RIGHTS, INTERESTS OR CLAIMS THAT MAY EXIST OR ARISE BY REASON OF THE FOLLOWING MATTERS DISCLOSED BY AND REFERENCED ON THAT CERTAIN ALTA/NSPS LAND TITLE SURVEY PREPARED BY ROBERT S. BOYER, PLS NO. 2013000040 OF CIVIL & ENVIRONMENTAL ENGINEERING CONSULTANTS, INC., DATED 5-28-2026 AND LAST REVISED ON _____ AND DESIGNATED AS PROJECT NUMBER 353-866:

a. RIGHTS OF PUBLIC AND/OR QUASI-PUBLIC UTILITY COMPANIES TO UTILITY FACILITIES LOCATED ON THE LAND WITHOUT THE APPARENT BENEFIT OF AN EASEMENT, INCLUDING: OVERHEAD POWER LINES, WATER LINE AND GAS LINE. **NONE KNOWN OR FOUND BY THE SURVEYOR AT THE TIME OF THIS SURVEY.**

PROPERTY DESCRIPTION - LOT A

PART OF THE SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 30 NORTH, RANGE 23 WEST, CITY OF WILLARD, GREENE COUNTY, MISSOURI DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 25;

THENCE ALONG THE LINE COMMON TO SECTIONS 25 AND 36, NORTH 87 DEGREES 48 MINUTES 30 SECONDS WEST A DISTANCE OF 21.35 FEET TO THE POINT OF INTERSECTION OF SAID COMMON SECTION LINE AND WEST RIGHT-OF-WAY LINE OF HUNT ROAD (VARIABLE WIDTH), SAID POINT BEING THE POINT OF BEGINNING;

THENCE DEPARTING SAID LINE COMMON TO SECTIONS 25 AND 36, AND ALONG THE WEST RIGHT OF WAY LINE OF HUNT ROAD (VARIABLE WIDTH), ALONG A CURVE TO THE LEFT, HAVING A RADIUS OF 614.46 FEET, AN ARC LENGTH OF 15.64 FEET, AND A CHORD WHICH BEARS SOUTH 89 DEGREES 34 MINUTES 59 SECONDS WEST, 15.63 FEET TO A POINT ON THE SOUTH LINE OF A TRACT OF LAND CONVEYED TO THE NANCY J. CRIGHTON REVOCABLE TRUST, PER INSTRUMENT RECORDED IN BOOK 2004, PAGE 02905804 OF THE GREENE COUNTY RECORDS;

THENCE, ALONG LAST SAID SOUTH LINE, NORTH 87 DEGREES 48 MINUTES 30 SECONDS WEST, 218.40 FEET;

THENCE, DEPARTING LAST SAID SOUTH LINE, NORTH 27 DEGREES 09 MINUTES 11 SECONDS EAST, 436.32 FEET THE SOUTH RIGHT-OF-WAY LINE OF NEW MELVILLE ROAD, (VARIABLE WIDTH);

THENCE, ALONG LAST SAID SOUTH RIGHT-OF-WAY LINE OF SAID NEW MELVILLE ROAD, VARIABLE WIDTH, SOUTH 43 DEGREES 13 MINUTES 27 SECONDS EAST, 138.40 FEET TO THE NORTHWEST LINE OF SAID HUNT ROAD (VARIABLE WIDTH);

THENCE, ALONG LAST SAID NORTHWEST LINE OF HUNT ROAD (VARIABLE WIDTH) THE FOLLOWING COURSES AND DISTANCES: SOUTH 05 DEGREES 39 MINUTES 39 SECONDS EAST, 123.47 FEET TO A POINT OF CURVATURE;

THENCE, CONTINUING, SOUTHWESTERLY ALONG A CURVE TO THE LEFT, HAVING AN ARC, A RADIUS OF 614.46 FEET, AN ARC LENGTH OF 179.10 FEET, AND A CHORD WHICH BEARS SOUTH 27 DEGREES 39 MINUTES 57 SECONDS WEST, A CHORD DISTANCE OF 178.46 FEET TO THE POINT OF BEGINNING AND CONTAINING 66,479 SQUARE FEET OR 1.526 ACRES, MORE OR LESS.

TOGETHER WITH
EASEMENTS SET FORTH IN EASEMENT AGREEMENT BY AND BETWEEN GRAND PRAIRIE, LIMITED LIABILITY COMPANY, A MISSOURI LIMITED LIABILITY COMPANY AND MCDONALD'S REAL ESTATE COMPANY, A DELAWARE CORPORATION, DATED _____, 2026, RECORDED _____, 2026, IN BOOK _____PAGE ____, IN THE OFFICE OF THE RECORDER OF GREENE COUNTY, MISSOURI.

SURVEYOR'S NOTES:

BASIS OF BEARING: GRID BEARINGS, MISSOURI COORDINATE SYSTEM OF 1983, CENTRAL ZONE (2402)

SCALE POINT:

CEC#1

LAT 37°17'33.83149" N

LONG 93°24'36.12706" W

ORTHO HEIGHT 1128.761'

GRID TO GROUND FACTOR = 1.00004048628896

BASIS OF BEARING: GRID BEARINGS, MISSOURI COORDINATE SYSTEM OF 1983, CENTRAL ZONE (2402)

PRIVATE UTILITIES WERE LOCATED BY BLVD AND MO 811 TICKET NUMBER 252102308. THE SYMBOLS AND LINE WORK OF WHICH REPRESENT WHAT WAS PRESENT AT TIME OF SURVEY.

WE HAVE EXAMINED FLOOD INSURANCE RATE MAP NUMBER 29077C0191F, HAVING AN EFFECTIVE DATE OF SEPTEMBER 19, 2025 OF THE NATIONAL FLOOD INSURANCE PROGRAM PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY FOR THE AREA CONTAINING THE SUBJECT PROPERTY. BY GRAPHIC PLOTTING THE SUBJECT PROPERTY IS LOCATED WITHIN; "ZONE X" AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN AND AN AREA OF MINIMUM FLOOD HAZARD.

AS PER THE CITY OF WILLARD ZONING MAP THE SUBJECT TRACT IS ZONED "C-2" GENERAL BUSINESS DISTRICT.

TOTAL LAND AREA OF SURVEYED PROPERTY IS 68,473 SQUARE FEET OR 1.572 ACRES, MORE OR LESS.

THERE ARE NO PARKING SPACES.

SUBJECT PROPERTY WAS NOT UNDER CONSTRUCTION AT TIME OF SURVEY.

THERE IS NO EVIDENCE OF THE SITE BEING USED AS A SOLID WASTE DUMP, SUMP, SANITARY LANDFILL, CEMETERY, GRAVESITE OR BURIAL GROUNDS.

THERE ARE NO KNOWN PROPOSED RIGHT OF WAY CHANGES.

A CURRENT ZONING LETTER HAS NOT BEEN PROVIDED TO THE SURVEYOR. AS PER THE CITY OF WILLARD ZONING MAP THE SUBJECT TRACT IS ZONED "C-2" GENERAL BUSINESS DISTRICT.

SURVEYED PARCELS AND ADJOINING PARCEL ARE CONTIGUOUS AND NO GAPS OR GORES EXIST BETWEEN SAID PARCELS.

SURVEY COMPLIES WITH REQUIREMENTS SET FORTH IN THE MCDONALD'S SURVEY ORDER FORM AND MINIMUM REQUIREMENTS.

THE PROPERTY ADDRESS FOR LOT A IS: 653 S. HUNT ROAD, WILLARD, MO 65781

SUBJECT PROPERTY LIES AT INTERSECTION OF MEHLVILLE AND HUNT ROADS.

EXISTING LEGEND:

- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING RIGHT-OF-WAY
- OH–E — EXISTING OVERHEAD ELECTRIC
- EXISTING FENCE
- G — EXISTING GAS LINE
- W — EXISTING WATER LINE
- FO — EXISTING FIBER OPTIC LINE
- UG–E — EXISTING UNDERGROUND ELEC. LINE
- GUY WIRE
- UTILITY POLE
- BENCHMARK
- CHISELED MARK FOUND
- IRON PIPE FD. (SIZE)
- FIBER OPTIC MARKER
- CUT "X" SET
- WATER BOX (WATER VALVE)
- WATER METER
- TREE, CONIFER (800 SIZE TYPE)
- TELEPHONE PEDESTAL
- SIGN
- FIBER OPTIC PULL BOX (FLUSH WITH GRADE)
- GAS METER
- TELEPHONE BOX/CABINET (ABOVE GRADE)

811 or 1-800-344-7483
https://missouri-811.org

THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND FACILITIES, STRUCTURES, & UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS. THE UNDERGROUND FACILITIES, STRUCTURES, & UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT.

SURVEYOR'S CERTIFICATION:

TO MCDONALD'S CORPORATION, A DELAWARE CORPORATION
MCDONALD'S USA, LLC, A DELAWARE LIMITED LIABILITY COMPANY
MCDONALDS REAL ESTATE COMPANY, A DELAWARE CORPORATION
OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 5, 6a, 6b, 7a, 7b, 7c, 8, 9, 11, 13, 14, 16, 17, 18, AND 20 OF TABLE A THEREOF.
WE FURTHER CERTIFY THAT THIS PLAT MEETS OR EXCEEDS THE CURRENT "MISSOURI STANDARDS FOR PROPERTY BOUNDARY SURVEYS" AS ADOPTED BY THE MISSOURI BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, PROFESSIONAL LAND SURVEYORS AND PROFESSIONAL LANDSCAPE ARCHITECTS (20 CSR 2030-16), AND MEETS THE ACCURACY REQUIREMENTS OF A RURAL CLASS SURVEY AND THE RESULTS ARE SHOWN HEREON.

THE FIELD WORK WAS COMPLETED ON MARCH 13, 2026.

DATE OF PLAT OR MAP: AUGUST 6, 2026

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
MISSOURI L.S. No. 2007031293

BY: ROBERT S. BOYER, PLS
MISSOURI LICENSE No. 2013000040

STATE OF MISSOURI
ROBERT S. BOYER
NUMBER PLS 2013000040
PROFESSIONAL LAND SURVEYOR
09/03/2026

REVISION RECORD

NO	DATE	DESCRIPTION
1	09/08/2026	Revised Per Updated Title Commitment

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF NORTH CAROLINA WILL BE PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PROVIDED BY CEC LANDSCAPE ARCHITECTURE, LLC.

1450 Beale Street
Suite 305
St. Charles, MO 63303
Ph: 314.656.4566
www.cecinc.com

Civil & Environmental Consultants, Inc.

McDONALD'S RESTAURANT
NSN 00000 (024-1329)
E NEW MELVILLE RD
& S HUNT RD
WILLARD, MO 65781

ALTA/NSPS LAND TITLE SURVEY
COVER SHEET & NOTES

DATE:	JULY, 2026
DRAWN BY:	MRS/MSB
CHECKED BY:	RSB
DWG SCALE:	N/A
PROJECT NO:	353-866
APPROVED BY:	DRAFT

DRAWING NO.: **SV01**

SHEET 1 OF 4

P:\350-699\353-866\~Survey\Dwg\353-866SR-SV01-ALTA.dwg[SHEET 1] LS(8/6/2026 - bboyer) - LP: 9/3/2026 2:30 PM - Boyer, Bob

ALTA/NSPS LAND TITLE SURVEY

PART OF SOUTHEAST QUARTER OF SECTION 25,
TOWNSHIP 30 NORTH, RANGE 23 WEST,
CITY OF WILLARD, GRENNE COUNTY, MISSOURI

NORTH

SCALE IN FEET
0 100 200

FND. REBAR W/ CAP (BLEW)

N 02°14'09" E 54.63'

SET ½" REBAR W/CAP (TYPICAL)

NEW MELVILLE ROAD (VARIABLE WIDTH) PUBLIC

S 88°28'58" E 1308.21'

FND. NAIL

FND. NAIL

S 67°18'49" E 90.02'

FND. 80D NAIL

A=192.32'
R=418.37'
Δ=26°20'19"
CHB=S63°46'29"E
CH=190.63'

MISSOURI STATE ROUTE 160 (VARIABLE WIDTH) PUBLIC

NEW MELVILLE ROAD (VARIABLE WIDTH) PUBLIC

S 50°36'03" E 1122.00'

N/F
DENNIS THORTON
PARCEL ID# 0725302003
BOOK 2545, PAGE 1565
420 E. NEW MELVILLE RD.

30'w ROADWAY EASEMENT

N 02°14'09" E 1316.61'

EAST LINE OF SW ¼ SEC. 25
WEST LINE OF SE ¼ SEC. 25

LOT 7

LOT 8

LOT 9

LOT 10

LOT 11

LOT 12

BERRY (50'w) LANE

730.64'

STRAWBERRY HILL FIRST ADD. PB. LL PG. 4722

N/F
NANCY J. CRIGHTON, TRUSTEE
PARCEL ID# 0725302073
BOOK 2004, PAGE 02905804

TOTAL TRACT AREA
2,955,707 SQ. FT.
OR
67.854 ACRES +/-

SEE DETAIL ON SHEET 3 OF 4

FND. 80D NAIL

S 43°13'27" E 350.38'

FND. ½" IRON PIPE

FOUND R.O.W. POST W/NAIL

FOUND NAIL

LOT A
66,479 SQ. FT.
OR
1.526 ACRES+/-

S 05°39'39" E 123.47'

A=179.10'
R=614.46'
Δ=16°42'00"
CHB=S27°39'57"W
CH=178.46'

A=15.64'
R=614.46'
Δ=1°27'28"
CHB=S18°34'59"W
CH=15.63'

P.O.B.

HUNT ROAD (VARIABLE WIDTH) (A.K.A. FARM ROAD 103) PUBLIC

N/F
BATTLEFIELD EAGLE STOP LLC
2025/3894325
PARCEL ID: 0725402008
652 S. HUNT RD.

FND. REBAR

15.12'

1336.14'

SECTION 25
SECTION 36

N 87°48'30" W 2646.43'

1025.09'

SECTION 25
SECTION 36

66.64'

FOUND STONE MARKED 15' OFFSET

P.O.C.
SOUTHWEST CORNER OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER SECTION 25, TOWNSHIP 30 NORTH RANGE 23 WEST

SECTION 25
SECTION 36

FND. STONE MONUMENT MARKED "15/S"

FND. 4"X10" STONE MONUMENT MARKED "15/S"

N/F
HOFFMAN HILLS DEVELOPMENT, LLC
BOOK 2021, PAGE 01610621
PARCEL ID: 0736200363
500 E. NEW MELVILLE RD.

N/F
NANCY J. CRIGHTON, TRUSTEE
PARCEL ID:0736100003
BOOK 2004 PAGE 02905804

N/F
GRAND PRAIRIE LLC
BK. 2014, PG. 02428314
PARCEL ID: 0736100065
N. FARM RD. 103

N/F
BATTLEFIELD EAGLE STOP LLC
2025/3884325
PARCEL ID: 0736100153
654 S. HUNT RD.

N/F
T345 DEVELOPMENT LLC
BK 2019, PG. 03655919
PARCEL ID: 0736100157
N. FARM RD. 103

MISSOURI 811
811 or 1-800-344-7483
https://missouri-811.org

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STATE OF MISSOURI
ROBERT S. BOYER
NUMBER
PLS-2013000618
PROFESSIONAL LAND SURVEYOR

09/03/2026

REVISION RECORD

NO	DATE	DESCRIPTION
1	08/06/2026	Revised Per Updated Title Commitment

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF MISSOURI ARE PERFORMED BY CEC ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO ARE PROVIDED BY CEC LANDSCAPE ARCHITECTURE, LLC.

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McDONALD'S RESTAURANT
NSN 00000 (024-1329)
E NEW MELVILLE RD
& S HUNT RD
WILLARD, MO 65781

ALTA/NSPS LAND TITLE SURVEY
OVERALL SITE

DATE:	JULY, 2026
DRAWN BY:	MRS/MSB
DWG SCALE:	1" = 100'
CHECKED BY:	RSB
PROJECT NO:	353-866
APPROVED BY:	DRAFT

DRAWING NO.:
SV01

SHEET 2 OF 4

P:\353-000\353-866 - Survey\Dwg\353-866R-SV01-ALTA.dwg[SHEET 2] 15:08:6/2026 - bboyer - LP: 9/3/2026 3:33 PM - Boyer, Bob

ALTA/NSPS LAND TITLE SURVEY

PART OF SOUTHEAST QUARTER OF SECTION 25,
TOWNSHIP 30 NORTH, RANGE 23 WEST,
CITY OF WILLARD, GRENNE COUNTY, MISSOURI

NORTH

SCALE IN FEET
0 20 40

S 43°13'27" E 350.38'
SET ½" X 18" IRON PIPE W/ CAP
S 43°13'27" E 136.40'
NEW MELVILLE ROAD (VARIABLE WIDTH) PUBLIC
ASPHALT
FND. ¾" IRON PIPE
TBM = 1225.66
FOUND R.O.W. POST W/NAIL
CONC CURB
OH-E
FO
CONC
FOUND NAIL
N 27°09'11" E 436.32'
EL= 1209.99
EL= 1210.94
EL= 1214.13
EL= 1217.38
EL= 1221.04
EL= 1246.24
TBM = 1226.42
BILLBOARD
FND. ½" REBAR
FOUND R.O.W. POST
N76°12'55"E 0.26'
EL= 1225.31
CONC WALK
EL= 1208.98
EL= 1213.98
EL= 1220.41
EL= 1209.23
EL= 1214.70
EL= 1223.69
EL= 1213.61
TBM = 1206.52
EAST LINE OF SW ¼ SEC. 25
WEST LINE OF SE ¼ SEC. 25
A=179.10'
R=614.46'
Δ=16°42'00"
CHB=S27°39'57"W
CH=178.46'
A=15.64'
R=614.46'
Δ=1°27'28"
CHB=S18°34'59"W
CH=15.63'
LOT A
66,479 SQ. FT.
OR
1.526 ACRES+/-
N/F
NANCY J. CRIGHTON, TRUSTEE
PARCEL ID# 0725302073
BOOK 2004, PAGE 02905804
TOTAL TRACT AREA
2,955,707 SQ. FT.
OR
67.854 ACRES +/-
"NO BUILDINGS OBSERVED"
HUNT ROAD (VARIABLE WIDTH) (A.K.A. FARM ROAD 103) PUBLIC
N/F
BATTLEFIELD EAGLE STOP LLC
2025/3884325
PARCEL ID: 0725402008
652 S. HUNT RD.
P.O.B.
P.O.C.
SOUTHWEST CORNER OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER SECTION 25, TOWNSHIP 30 NORTH RANGE 23 WEST
S 05°39'39" E 123.47'
N 87°48'30" W 21.35'
FOUND ½" IRON PIPE
SECTION 25
SECTION 36
SET ½" X 18" IRON PIPE W/ CAP
N/F
NANCY J. CRIGHTON, TRUSTEE
PARCEL ID:0736100003
BOOK 2004 PAGE 02905804
N 87°48'30" W 218.40'
20.46'
66.64'
N/F
GRAND PRAIRIE LLC
BK. 2014, PG. 02428314
PARCEL ID: 0736100065
N. FARM RD. 103

MISSOURI811
811 or 1-800-344-7483
https://missouri-811.org

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STATE OF MISSOURI
ROBERT S. BOYER
NUMBER LS-2003012
08/03/2026
PROFESSIONAL LAND SURVEYOR

REVISION RECORD

NO	DATE	DESCRIPTION
1	08/06/2026	Revised Per Updated Title Commitment

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF NORTH CAROLINA WILL BE PROVIDED BY CEC, ENGINEERS & CONSULTANTS, LLC, LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF MISSOURI WILL BE PROVIDED BY CEC, ENGINEERS & CONSULTANTS, LLC, LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PROVIDED BY CONSOLE ARCHITECTS, LLC.

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Ph: 314.656.4566
www.cecinc.com

McDONALD'S RESTAURANT
NSN 00000 (024-1329)
E NEW MELVILLE RD
& S HUNT RD
WILLARD, MO 65781

ALTA NSPS LAND TITLE SURVEY
PROJECT SITE DETAIL

DATE:	JULY, 2026
DRAWN BY:	MRS/MSB
DWG SCALE:	1"=20'
CHECKED BY:	RSB
PROJECT NO:	353-866.001
APPROVED BY:	DRAFT

DRAWING NO.: SV01
SHEET 3 OF 4

P:\353-001\353-866\1-Survey\Dwg\353-866sh-SV01-ALTA.dwg[SHEET 3] 8/13/2026 2:34 PM - Boyer, Bob

ALTA/NSPS LAND TITLE SURVEY

PART OF SOUTHEAST QUARTER OF SECTION 25,
TOWNSHIP 30 NORTH, RANGE 23 WEST,
CITY OF WILLARD, GRENNE COUNTY, MISSOURI

NORTH

SCALE IN FEET
0 20 40

NEW MELVILLE ROAD
(VARIABLE WIDTH)
PUBLIC
ASPHALT

S 43°13'27" E 136.40'

FND. ¾" IRON PIPE

TBM = 1225.66

FOUND R.O.W. POST W/NAIL

S 05°39'39" E
123.47'

EAST LINE OF SW ¼ SEC. 25
WEST LINE OF SE ¼ SEC. 25

A=179.10'
R=614.46'
Δ=16°42'00"
CHB=S27°39'57"W
CH=178.46'

FOUND NAIL

BILLBOARD

FND. ½" REBAR
FOUND R.O.W. POST
N76°12'55"E 0.26'

TBM = 1228.42

CONC WALK

LOT A
66,479 SQ. FT.
OR
1.526 ACRES+/-

N/F
NANCY J. CRIGHTON, TRUSTEE
PARCEL ID# 0725302073
BOOK 2004, PAGE 02905804

TOTAL TRACT AREA
2,955,707 SQ. FT.
OR
67.854 ACRES +/-

"NO BUILDINGS OBSERVED"

A=15.64'
R=614.46'
Δ=1°27'28"
CHB=S18°34'59"W
CH=15.63'

HUNT ROAD
(VARIABLE WIDTH)
(A.K.A. FINE ROAD 159)
PUBLIC

N/F
BATTLEFIELD EAGLE STOP LLC
2025/3884325
PARCEL ID: 0725402008
652 S. HUNT RD.

P.O.B.

P.O.C.
SOUTHWEST CORNER OF THE
SOUTHEAST QUARTER OF THE
SOUTHEAST QUARTER
SECTION 25, TOWNSHIP 30 NORTH
RANGE 23 WEST

N 87°48'30" W
21.35'

FOUND ½" IRON PIPE

SECTION 25
SECTION 36

SET ½" X 18" IRON PIPE W/ CAP

20.46'

66.64'

N/F
NANCY J. CRIGHTON, TRUSTEE
PARCEL ID:0736100003
BOOK 2004 PAGE 02905804

N 87°48'30" W 218.40'

N/F
GRAND PRAIRIE LLC
BK. 2014, PG. 02428314
PARCEL ID: 0736100065
N. FARM RD. 103

MISSOURI 811
811 or 1-800-344-7483
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STATE OF MISSOURI
ROBERT S. BOYER
NUMBER PLS-2011000344
PROFESSIONAL LAND SURVEYOR
10/03/2026

REVISION RECORD

NO	DATE	DESCRIPTION
1.	10/06/2026	Revised Per Updated Title Commitment

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF NORTH CAROLINA WILL BE PROVIDED BY CEC, INC. ENGINEERING IN THE STATE OF MISSOURI WILL BE PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF MISSOURI WILL BE PROVIDED BY CONSOLE ARCHITECTS, LLC

CEC
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www.cecinc.com

McDONALD'S RESTAURANT
NSN 00000 (024-1329)
E NEW MELVILLE RD
& S HUNT RD
WILLARD, MO 65781

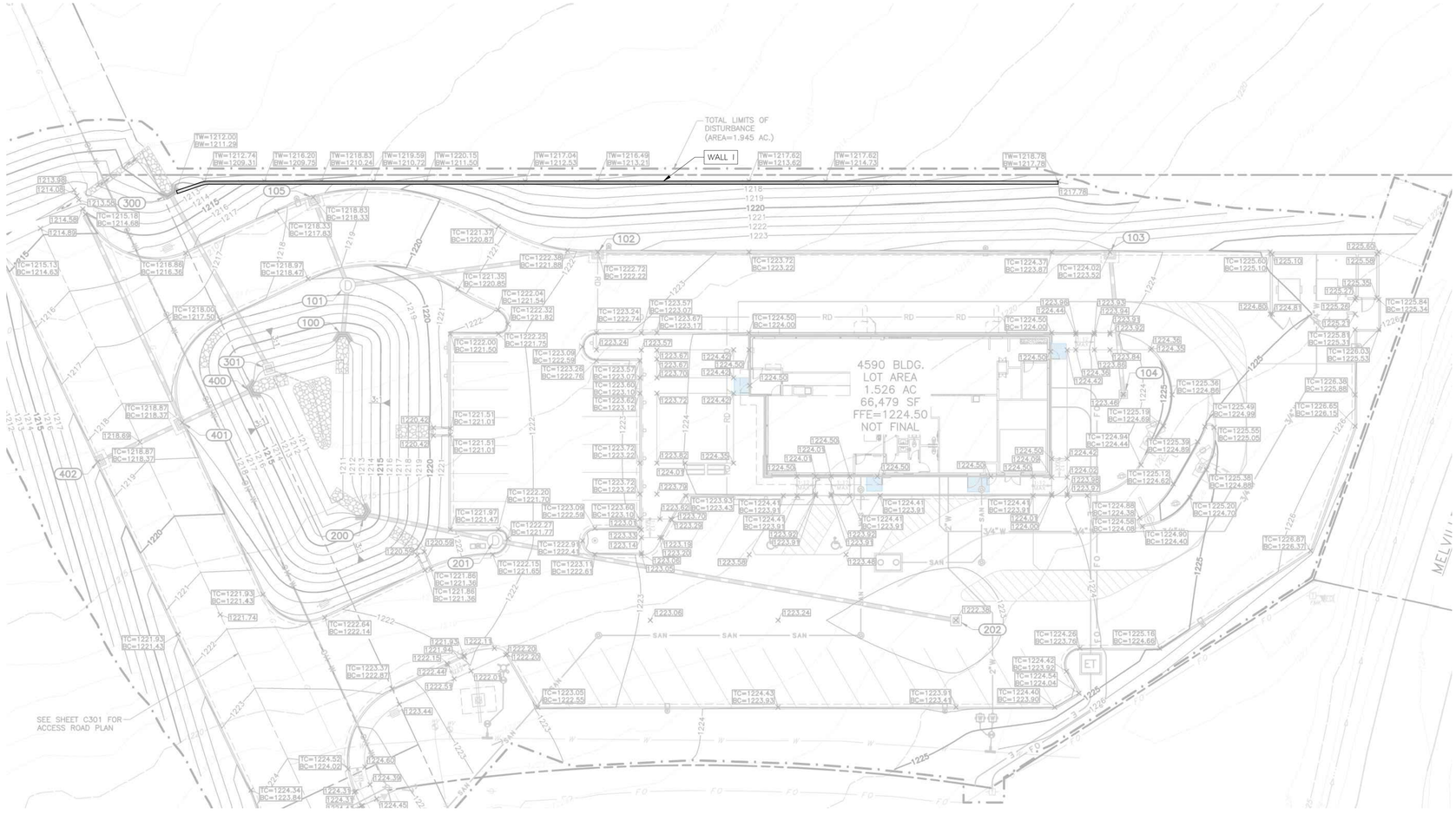
ALTA NSPS LAND TITLE SURVEY
AERIAL OVERLAY SHEET

DATE:	JULY, 2026
DRAWN BY:	MRS/MSB
DWG SCALE:	1"=20'
CHECKED BY:	RSB
PROJECT NO:	353-866.001
APPROVED BY:	DRAFT

DRAWING NO.:
SV01
SHEET 3 OF 4

P:\350-0001\353-866\ - Survey\Dwg\353-866R-SHT-ALTA.dwg[SHEET 4] LS(8/6/2026 - bboyer) - LR: 9/3/2026 2:35 PM - Boyer, Bob

McDONALD'S - WILLARD RETAINING WALL



STRUCTURAL DESIGN HEREIN REPRESENTS A FINISHED STRUCTURE. THE GENERAL CONTRACTOR/OWNER SHALL PROVIDE ALL INTERIM BRACING, SHORING, INTERIM DRAINAGE PROVISIONS, DRAINAGE DIVERSION AND EROSION PROTECTION REQUIRED UNTIL FINAL CAPPING, PAVING, CURBING AND COMPLETION OF FINAL STORM DRAIN SYSTEM IS COMPLETE.

REV	DATE	DESCRIPTION

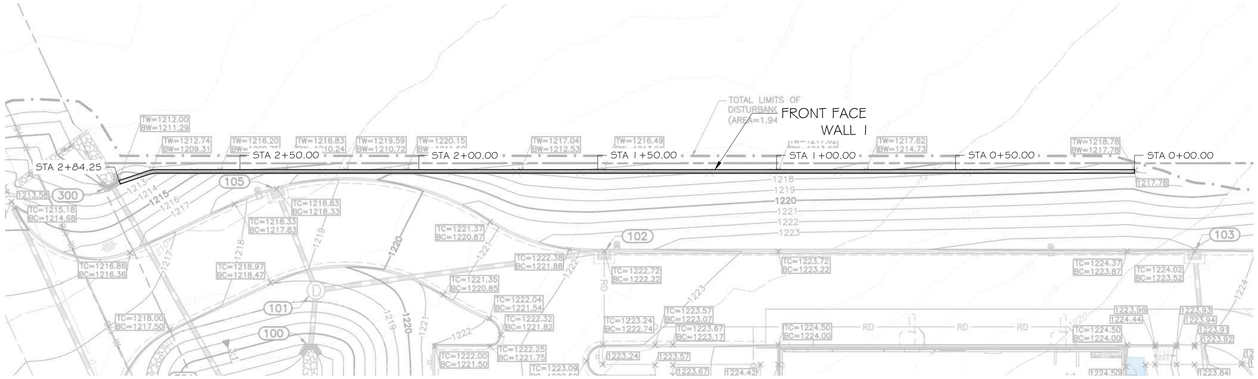
ROSCH ENGINEERING
18390 WINGS CORPORATE DRIVE
CHESTERFIELD, MO 63005
PHONE: 636-519-7770
FAX: 636-532-7773
MO CERTIFICATE OF AUTHORITY #E-2012039663

McDONALD'S - WILLARD
WILLARD, MO

RETAINING WALL
COVER SHEET

STATE OF MISSOURI
BRIAN SCHALLER
NUMBER E-28703
PROFESSIONAL ENGINEER

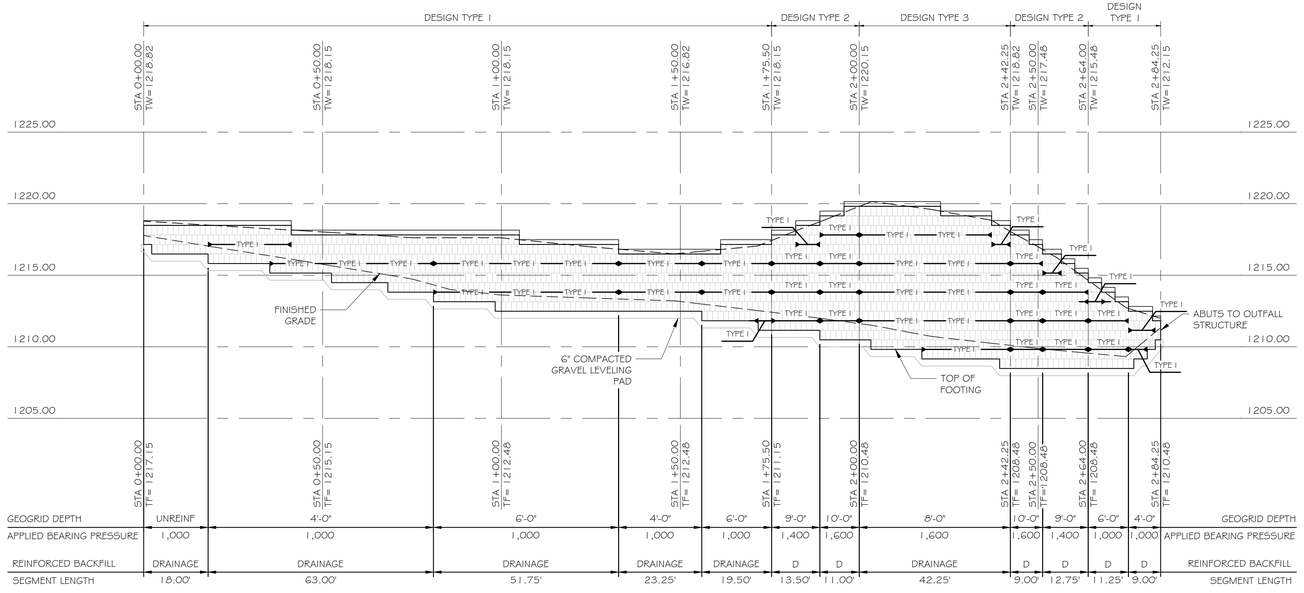
DESIGNED:	BCS
DRAWN:	AMR
DESIGN ENGINEER:	AMR
REVIEWED:	BCS
DATE:	9-8-26
JOB NO.:	26-0736
SHEET:	COVER



PLAN VIEW OF WALL 1

P1 SCALE: 1"=20'-0"

THIS WALL PLAN IS INTENDED FOR GENERAL LOCATION PURPOSES ONLY. ALL WALL LAYOUT, LOCATION AND LENGTH INFORMATION MUST COME FROM THE PROJECT CIVIL ENGINEER AND THEIR PLANS OR CAD FILES.



WALL 1 ELEVATION

P1 SCALE: 1"=20'-0" HORIZONTAL
SCALE: 1"=5'-0" VERTICAL

BLOCK PROPERTIES	
BLOCK TYPE	**ROCKWOOD
BLOCK STYLE	**CLASSIC 8

ASSUMED DESIGN SOIL PARAMETERS				
	DESCRIPTION	Φ (DEGREES)	γ (PCF)	c (PSF)
FOUNDATION SOIL	FAT CLAY	18	120	180
RETAINED SOIL	SELECT FILL	25	120	N/A
REINFORCED BACKFILL	DRAINAGE*	38	105	N/A

*SEE NOTES FOR ADDITIONAL INFORMATION
**OR APPROVED EQUIVALENT

GEOTECH REPORT SHOW ON SITE SOILS AS HIGH PLASTIC FAT CLAYS. THE RETAINED SOIL BEHIND THE WALL MUST BE A SELECT FILL WITH A MINIMUM FRICTION ANGLE OF 25° AND 50PSF COHESION.

ROSCH RECOMMENDS THAT GLOBAL STABILITY AND SLOPE STABILITY OF WALL CONFIGURATION SHOULD BE REVIEWED BY PROJECT GEOTECH.

WALL ELEVATION NOTES:

1. GEOGRID DEPTH IS MEASURED FROM THE FRONT FACE OF BLOCK
2. SEGMENT LENGTH IS THE DISTANCE BETWEEN GRID DEPTH TRANSITIONS
3. REINFORCED BACKFILL
   3.1. (D)RAINAGE ROCK, SEE DETAIL 1/D1
   3.2. (U)NREINFORCED, SEE DETAIL 2/D1
4. APPLIED BEARING PRESSURE IS IN PSF

DESIGN TYPE 1

WALL PROPERTIES			
BACKSLOPE	3:1 / 18.4	H:V / DEGREES	
TOESLOPE	*3:1 / 18.4	H:V / DEGREES	
BATTER	7.13	DEGREES	
SETBACK	1.00	INCHES	
SURCHARGE			
DEAD LOAD	0	PSF	
LIVE LOAD	25	PSF	

*TOE SLOPE MAX EXTENDING 3'.

DESIGN TYPE 2

WALL PROPERTIES			
BACKSLOPE	*3:1 / 18.4	H:V / DEGREES	
TOESLOPE	**3:1 / 18.4	H:V / DEGREES	
BATTER	7.13	DEGREES	
SETBACK	1.00	INCHES	
SURCHARGE			
DEAD LOAD	0	PSF	
LIVE LOAD	250	PSF	

250 PSF LIVE LOAD IS LOCATED 9' BEHIND WALL.
*BACK SLOPE MAX EXTENDING 9'.
**TOE SLOPE MAX EXTENDING 3'.

DESIGN TYPE 3

WALL PROPERTIES			
BACKSLOPE	- / -	H:V / DEGREES	
TOESLOPE	*3:1 / 18.4	H:V / DEGREES	
BATTER	7.13	DEGREES	
SETBACK	1.00	INCHES	
SURCHARGE			
DEAD LOAD	0	PSF	
LIVE LOAD	250	PSF	

*TOE SLOPE MAX EXTENDING 3'.

STORM PIPES, STORM STRUCTURES, LIGHT POLES BASES, ETC ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY AND ARE BASED ON THE INFORMATION SHOWN ON THE PROJECT CIVIL PLANS REFERENCED IN GENERAL NOTE 1.4. REFER TO CURRENT PROJECT CIVIL PLANS FOR ALL SPECIFIC INFORMATION INCLUDING BUT NOT LIMITED TO SIZE AND LOCATION.

STRUCTURAL DESIGN HEREIN REPRESENTS A FINISHED STRUCTURE. THE GENERAL CONTRACTOR/OWNER SHALL PROVIDE ALL INTERIM BRACING, SHORING, INTERIM DRAINAGE PROVISIONS, DRAINAGE DIVERSION AND EROSION PROTECTION REQUIRED UNTIL FINAL CAPPING, PAVING, CURBING AND COMPLETION OF FINAL STORM DRAIN SYSTEM IS COMPLETE.

REV	DATE	DESCRIPTION

ROSCH ENGINEERING
18390 WINGS CORPORATE DRIVE
CHESTERFIELD, MO 63005
PHONE: 636-519-7770
FAX: 636-532-7773
MO CERTIFICATE OF AUTHORITY #E-2012039663

McDONALD'S - WILLARD
WILLARD, MO

RETAINING WALL
ELEVATION & PLAN

STATE OF MISSOURI
BRIAN SCHALLER
NUMBER E-28703
PROFESSIONAL ENGINEER
9-8-2026

DESIGNED:	BCS
DRAWN:	AMR
DESIGN ENGINEER:	AMR
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DATE:	9-8-26
JOB NO.:	26-0736
SHEET:	P1

GENERAL NOTES:

1. RETAINING WALL DESIGN:
 1.1. STRUCTURAL DESIGN HEREIN REPRESENTS A FINISHED STRUCTURE. THE GENERAL CONTRACTOR/OWNER SHALL PROVIDE ALL INTERIM BRACING, SHORING, INTERIM DRAINAGE PROVISIONS, DRAINAGE DIVERSION AND EROSION PROTECTION REQUIRED UNTIL FINAL CAPPING, PAVING, CURBING AND COMPLETION OF FINAL STORM DRAIN SYSTEM.
  1.1.1. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR/OWNER TO ENSURE THAT THE FINISHED SITE DRAINAGE IS DIRECTED AWAY FROM THE RETAINING WALL SYSTEM.
  1.1.2. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR/OWNER TO ENSURE THAT THE SURFACE WATER RUNOFF FROM ADJACENT CONSTRUCTION AREAS IS NOT ALLOWED TO ENTER THE RETAINING WALL AREA OF THE CONSTRUCTION SITE.

 1.2. THE PROJECT GEOTECHNICAL ENGINEER SHALL REVIEW THESE DRAWINGS TO CONFIRM THE ASSUMPTIONS MEET THE INTENT OF THE GEOTECHNICAL REPORT. ADDITIONALLY, THE PROJECT GEOTECHNICAL ENGINEER SHALL REVIEW GLOBAL STABILITY OF THE RETAINING WALLS AND PROVIDE RECOMMENDATIONS AS NEEDED.

 1.3. THE DESIGN OF THE SEGMENTAL RETAINING WALLS IS IN ACCORDANCE WITH NCMA DESIGN MANUAL FOR SEGMENTAL RETAINING WALLS 3RD EDITION AND NCMA'S SEGMENTAL RETAINING WALLS BEST PRACTICES GUIDE AND INCLUDES EXTERNAL STABILITY; SLIDING AND OVERTURNING OF THE REINFORCED MASS, AND INTERNAL STABILITY; PULLOUT, CONNECTION STRENGTH AND TENSILE STRENGTH OF THE GEOGRID AS WELL AS FACIAL STABILITY OF THE FACE UNITS. THE APPLIED BEARING PRESSURES ARE LISTED ON THE INDIVIDUAL WALL PROFILES.

 1.4. SCOPE OF DESIGN SERVICES ARE LIMITED TO THOSE DEFINED FOR "SRW (RETAINING WALL) ENGINEER" IN THE NCMA BEST PRACTICES MANUAL (2017) AND NCMA TEK 15-03A. ALL OTHER ENGINEERING SERVICES ARE EXCLUDED.

 1.5. THE DESIGN OF THE SEGMENTAL RETAINING WALLS IS BASED ON THE FOLLOWING DOCUMENTS:

  DRAWING C300 DATED 7/29/2026 PREPARED BY CEC CIVIL & ENVIROMENTAL CONSULTANTS, INC.

  GEOTECHNICAL REPORT DATED 6/25/2026 PREPARED BY ECS MIDWEST, LLC.
  ECS PROJECT NO. 16:16210

 1.6. THE DESIGN OF THE SEGMENTAL RETAINING WALL IS BASED ON THE INDIVIDUAL SOIL PROPERTIES AS LISTED WITHIN THESE PLANS AS WELL AS THE FOLLOWING CRITERIA:

  SEISMIC ACCELERATION = N/A
  GROUND WATER LOCATION = 2H/3 BELOW THE TOP OF LEVEL PAD (WHERE H = HEIGHT OF WALL)
  HYDROSTATIC LOADING = NONE
  SURCHARGE LOADING = SEE WALL ELEVATION(S)
  **NOTE, IF ANY PROPOSED SURCHARGE LOADS EXCEED THOSE NOTED IN THESE DRAWINGS PLEASE NOTIFY ROSCH ENGINEERING PRIOR TO CONSTRUCTION OF ANY WALLS.

2. SETTLEMENT:
 2.1. SETTLEMENT SENSITIVE RIGID MASSES FOUNDED ON OR ABOVE ANY RETAINING WALL SHOULD BE REVIEWED AND, IF REQUIRED, A SETTLEMENT ANALYSIS SHOULD BE PERFORMED BY THE PROJECT GEOTECHNICAL ENGINEER. SETTLEMENT ANALYSIS IS OUTSIDE OF ROSCH ENGINEERING'S SCOPE OF WORK.

3. MATERIAL PROPERTIES:
 3.1. SEGMENTAL CONCRETE WALL UNITS SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM C1372 HAVING A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI AND A MAXIMUM MOISTURE ABSORPTION OF 8%. ALL UNITS SHALL BE SOUND AND FREE OF CRACKS OR OTHER DEFECTS THAT WOULD INTERFERE WITH THE PROPER PLACING OF THE UNIT OR SIGNIFICANTLY IMPAIR THE STRENGTH OR PERFORMANCE OF THE CONSTRUCTION.

 3.2. DRAINAGE ROCK SHALL BE A CLEAN CRUSHED STONE OR GRANULAR FILL SUCH AS 1" CLEAN MEETING THE FOLLOWING GRADATION AS DETERMINED IN ACCORDANCE WITH ASTM D 422:

SIEVE SIZE	PERCENT PASSING
1 INCH	100
¾ INCH	75-100
NO. 4	0-60
NO. 40	0-50
NO. 200	0-5

 3.3. COMPACTED ROCK SHALL BE FREE OF ORGANIC MATERIAL. THE ROCK SHALL BE A WELL GRADED GRAVEL OR LIMESTONE MEETING THE FOLLOWING GRADATION AS DETERMINED IN ACCORDANCE WITH ASTM D 422 AND A PI<6:

SIEVE SIZE	PERCENT PASSING
1 INCH	100
NO. 4	20-100
NO. 40	0-60
NO. 200	0-15

 3.4. LOW PERMEABLE SOIL SHALL CONSIST OF MATERIAL HAVING A MINIMUM PLASTICITY INDEX OF 10. NO MORE THAN 10% SHALL BE RETAINED ON A NO. 4 SIEVE AND NO LESS THAN 35% SHALL PASS A NO. 200 SIEVE. MATERIAL WITH A USC DESIGNATION OF ML, CL, OR OL ARE ACCEPTABLE FOR USE AS LOW PERMEABLE SOIL.

 3.5. THE GEOGRID SHALL BE A HIGH DENSITY POLYETHYLENE EXPANDED SHEET OR POLYESTER WOVEN FIBER MATERIAL, SPECIFICALLY FABRICATED FOR USE AS SOIL REINFORCEMENT. ACCEPTABLE GEOGRID TYPES AND MANUFACTURER AS FOLLOWS:
  TYPE I:
   SF35 BY SYNTEEN TECHNICAL FABRICS, INC.
   MIRAGRID 3XT AS MANUFACTURED BY TENCATE GEOSYNTHETICS.
   HP200 AS MANUFACTURED BY GEOSTAR TECHNOLOGIES, LLC.

 3.6. GEOTEXTILE FILTER FABRIC SHALL BE A NONWOVEN GEOTEXTILE COMPOSED OF POLYPROPYLENE FIBERS WITH A MINIMUM FLOW RATE OF 140 GPM/FT² WHEN TESTED ACCORDING TO ASTM D 4491.

 3.7. DRAINAGE PIPE SHALL BE A 4"Ø PERFORATED OR SLOTTED PVC OR CORRUGATED HDPE PIPE.

 3.8. DRAINAGE PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM F 405 OR ASTM F 758.

 3.9. CONSTRUCTION ADHESIVE SHALL BE EXTERIOR GRADE ADHESIVE AS RECOMMENDED BY THE SEGMENTAL CONCRETE WALL UNIT MANUFACTURER.

4. EXCAVATION:
 4.1. THE CONTRACTOR SHALL EXCAVATE TO THE LINES AND GRADES SHOWN ON THE PLANS. THE GENERAL CONTRACTOR SHALL TAKE PRECAUTIONS TO MINIMIZE OVER-EXCAVATION.

 4.2. EXCAVATION SUPPORT, INCLUDING THE STABILITY OF THE EXCAVATION AND ITS INFLUENCE ON ADJACENT PROPERTY IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

5. FOUNDATION SOIL PREPARATION:
 5.1. FOLLOWING EXCAVATION FOR THE LEVELING PAD AND THE REINFORCED SOIL ZONE, FOUNDATION SOIL SHALL BE EXAMINED BY THE OWNER'S GEOTECHNICAL ENGINEER TO ASSURE THE ACTUAL FOUNDATION SOIL STRENGTH MEETS OR EXCEEDS THE REQUIRED BEARING STRENGTH. SOIL NOT MEETING THE REQUIRED STRENGTH SHALL BE REMOVED AND REPLACED WITH SOIL MEETING THE DESIGN CRITERIA, AS DIRECTED BY THE OWNER'S GEOTECHNICAL ENGINEER.

 5.2. IF HIGH PLASTIC SOILS ARE ENCOUNTERED IN THE FOUNDATION ZONE OF ANY RETAINING WALL, IT SHALL BE REMEDIATED SIMILAR TO ANY BUILDING FOUNDATION, AS DIRECTED BY THE PROJECT GEOTECHNICAL ENGINEER.

 5.3. FOUNDATION SOIL IS DEFINED AS THE SOIL UNDER THE SEGMENTAL RETAINING WALL VOLUME, EXTENDING FROM THE TOE OF THE LEVELING PAD TO THE BACK OF THE REINFORCED MASS.

6. BASE LEVELING PAD INSTALLATION:
 6.1. LEVELING PAD SHALL BE PLACED AS SHOWN ON THE DRAWINGS AND CONSIST OF EITHER:
  LEAN CONCRETE (2,000 PSI) - 6" MINIMUM THICK
  WELL GRADED 1" GRAVEL OR DRAINAGE ROCK WITH FINES - 6" MINIMUM THICK

 6.2. SAND OR GRAVEL BASE SHALL BE COMPACTED WITH 3 PASSES OF A VIBRATORY COMPACTOR TO PROVIDE A FIRM, LEVEL BEARING PAD.

 6.3. LEAN CONCRETE SHALL CURE A MINIMUM OF 12 HOURS PRIOR TO UNIT PLACEMENT.

 6.4. LEVELING PAD SHALL BE CONSTRUCTED TO INSURE FULL BEARING OF RETAINING WALL UNITS.

7. UNIT INSTALLATION:
 7.1. THE FIRST COURSE OF SEGMENTAL CONCRETE WALL UNITS SHALL BE PLACED ON THE LEVELING PAD AND CHECKED FOR LEVEL, ALIGNMENT, AND FULL CONTACT WITH BASE.

 7.2. UNITS SHALL BE PLACED SIDE BY SIDE FOR FULL LENGTH OF WALL. ALIGNMENT SHALL BE DONE BY MEANS OF A STRING LINE OR OFFSET MEASUREMENT FROM BASE LINE.

 7.3. PLACE DRAINAGE AGGREGATE WITHIN THE BLOCK CORES DIRECTLY BEHIND AND BETWEEN THE UNITS AS SHOWN IN DETAILS. WHERE THE REINFORCED BACKFILL IS COMPACTED ROCK, PLACE REINFORCED BACKFILL DIRECTLY AGAINST DRAINAGE FILL. CONSOLIDATE DRAINAGE AGGREGATE WITH 2 PASSES OF A VIBRATORY COMPACTOR. COMPACTION TESTING OF DRAINAGE AGGREGATE IS NOT REQUIRED. EXCESS MATERIAL SHALL BE REMOVED FROM TOP OF UNITS PRIOR TO INSTALLATION OF NEXT COURSE.

 7.4. LAY UP EACH COURSE INSURING POSITIVE CONTACT BETWEEN PREVIOUS COURSE IS ACHIEVED.

8. GEOGRID INSTALLATION:
 8.1. GEOGRID SHALL BE LAID AT THE PROPER ELEVATION AND ORIENTATION AS SHOWN ON THE DRAWINGS.

 8.2. THE GEOGRID REINFORCEMENT SHALL BE LAID HORIZONTALLY ON LEVEL, COMPACTED BACKFILL, AND EMBEDDED IN THE BLOCK.

 8.3. PLACE GEOGRID ON CONCRETE WALL UNITS, PLACE THE NEXT COURSE OF UNITS, PLACE THE DRAINAGE FILL, PULL GEOGRID TIGHT PRIOR TO BACKFILLING.

 8.4. CORRECT ORIENTATION OF THE GEOGRID SHALL BE VERIFIED.

 8.5. 3" OF REINFORCED BACKFILL SHALL BE PLACED BETWEEN ALL LOCATIONS OF OVERLAPPING GEOGRID.

9. BACKFILL PLACEMENT:
 9.1. COMPACTED ROCK SHALL BE PLACED IN 8" MAXIMUM LIFTS AND COMPACTED TO A MINIMUM 95% OF STANDARD PROCTOR DENSITY PER ASTM 698 UNLESS NOTED OTHERWISE ON THE INDIVIDUAL WALL PROFILES.

 9.2. DRAINAGE ROCK SHALL BE PLACED IN 24" MAXIMUM LIFTS AND COMPACTED WITH A MINIMUM OF 2 PASSES OF A VIBRATORY COMPACTOR. FIELD DENSITY TESTING WILL NOT BE REQUIRED FOR DRAINAGE ROCK.

 9.3. ONLY LIGHTWEIGHT HAND-OPERATED COMPACTION EQUIPMENT SHALL BE USED WITHIN 3' OF THE BACK FACE OF BLOCK.

 9.4. REINFORCED BACKFILL SHALL BE PLACED, SPREAD, AND COMPACTED IN SUCH A MANNER THAT ELIMINATES THE DEVELOPMENT OF WRINKLES AND/OR MOVEMENT OF THE GEOGRID.

 9.5. REINFORCED BACKFILL SHALL BE PLACED AND COMPACTED FROM THE BACK OF THE WALL REARWARD INTO THE EMBANKMENT TO INSURE THAT THE GEOGRID REMAINS TIGHT.

 9.6. TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY ON THE GEOGRID. A MINIMUM BACKFILL THICKNESS OF 6" SHALL BE MAINTAINED TO OPERATE TRACKED VEHICLES OVER THE GEOGRID. TURNING OF TRACKED CONSTRUCTION EQUIPMENT SHALL BE KEPT TO A MINIMUM TO PREVENT TRACKS FROM DISPLACING THE FILL AND DAMAGING THE GEOGRID.

 9.7. AT THE END OF EACH DAY'S OPERATION, SLOPE THE LAST LEVEL OF COMPACTED BACKFILL AWAY FROM THE INTERIOR (CONCEALED) FACE OF THE WALL TO DIRECT SURFACE WATER RUNOFF FROM THE WALL FACE.
  9.7.1. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO ENSURE THE FINISHED SITE DRAINAGE IS DIRECTED AWAY FROM THE RETAINING WALL SYSTEM.
  9.7.2. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO ENSURE THE SURFACE WATER RUNOFF FROM ADJACENT CONSTRUCTION AREAS IS NOT ALLOWED TO ENTER THE RETAINING WALL AREA OF THE CONSTRUCTION SITE.

10. DRAIN PIPE INSTALLATION:
 10.1. DRAINAGE COLLECTION PIPES SHALL BE INSTALLED TO MAINTAIN GRAVITY FLOW OF WATER OUTSIDE OF THE REINFORCED SOIL ZONE. THE DRAINAGE COLLECTION PIPE SHOULD CONNECT INTO A STORM SEWER MANHOLE OR DAYLIGHT THROUGH THE FACE OF THE WALL.

11. CAP INSTALLATION:
 11.1. CAP UNITS SHALL BE ADHERED TO THE TOP UNITS USING MANUFACTURER SUPPLIED ADHESIVE BY PLACING TWO 1/4" BEADS OF ADHESIVE ON EACH UNIT ALONG THE ENTIRE LENGTH OF THE WALL. PRESS THE CAP UNITS FIRMLY INTO THE ADHESIVE AND ALLOW TO CURE.

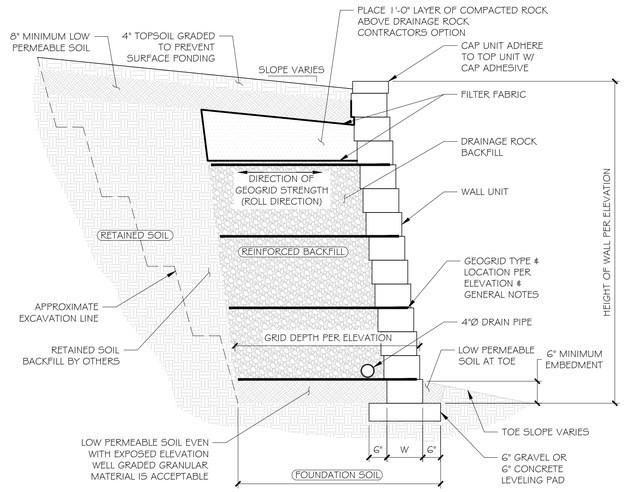
12. FIELD QUALITY CONTROL:
 12.1. THE OWNER OR OWNER'S REPRESENTATIVE IS RESPONSIBLE FOR ENGAGING THE SERVICES OF AN INDEPENDENT THIRD PARTY INSPECTOR TO OBSERVE AND VERIFY ALL SOIL PROPERTIES AS WELL AS VERIFY CORRECT INSTALLATION OF ALL SYSTEM COMPONENTS TO MEET THE REQUIREMENTS OF THESE GENERAL NOTES AND DRAWINGS.

 12.2. TESTING METHODS, FREQUENCY AND VERIFICATION OF MATERIAL SPECIFICATIONS SHALL BE THE RESPONSIBILITY OF THE INDEPENDENT THIRD PARTY INSPECTOR. AT A MINIMUM, COMPACTION TESTING SHALL INCLUDE ONE COMPACTION TEST FOR EACH LIFT BUT NOT LESS THAN ONE TEST FOR EVERY 50 CUBIC YARDS OF COMPACTED FILL AT A SPACING NOT TO EXCEED 100'.

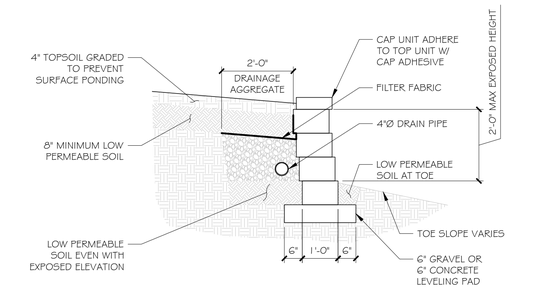
13. ABBREVIATIONS:

FGE	FINISHED GRADE EXTERIOR
FGI	FINISHED GRADE INTERIOR
FL	FLOW LINE
MAX	MAXIMUM
MIN	MINIMUM
OC	ON CENTER
PL	PROPERTY LINE
STA	STATION
TF	TOP OF FOOTING ELEVATION
TW	TOP OF WALL ELEVATION
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE

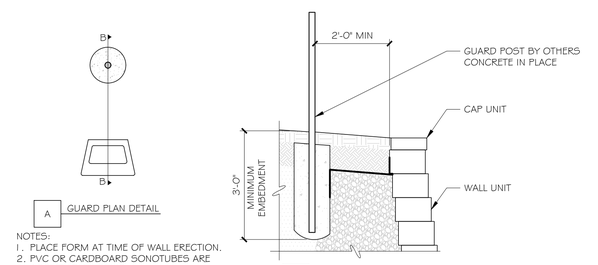
ROSCH ENGINEERING HAS PERFORMED DESIGN CALCULATIONS BASED ON THE DESIGN CRITERIA, ASSUMED SOIL PARAMETERS, AND KNOWN LOADING CONDITIONS AS LISTED IN THESE DRAWINGS. THE OWNERS REPRESENTATIVE, INDEPENDENT THIRD PARTY SPECIAL INSPECTOR AND INSTALLER SHALL NOTIFY ROSCH ENGINEERING OF ANY CHANGES OR DIFFERENCES IN ACTUAL SITE CONDITIONS WHICH VARY FROM THOSE LISTED, PRIOR TO CONSTRUCTING THE WALL.



1 | D1 TYPICAL SECTION - DRAINAGE ROCK
NTS

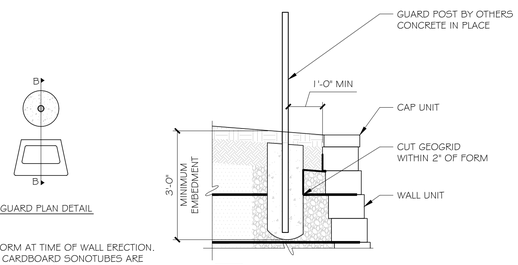


2 | D1 TYPICAL SECTION - UNREINFORCED WALL
NTS



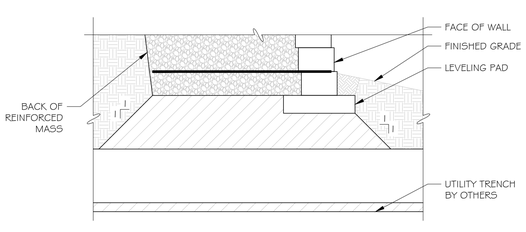
NOTES:
1. PLACE FORM AT TIME OF WALL ERECTION.
2. PVC OR CARDBOARD SONOTUBES ARE ACCEPTABLE FORMS.
3. FENCE DESIGN AND SUITABILITY IS THE RESPONSIBILITY OF OTHERS.

3 | D1 TYPICAL POST AT UNREINFORCED WALL
NTS

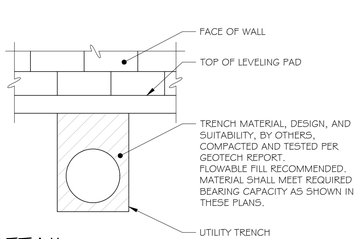


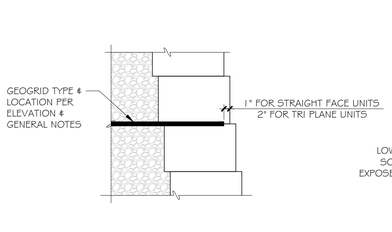
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4 | D1 TYPICAL POST AT REINFORCED WALL
NTS

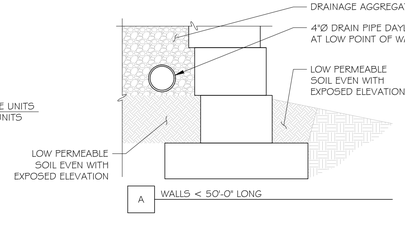


5 | D1 UTILITY TRENCH CROSSING DETAIL
NTS

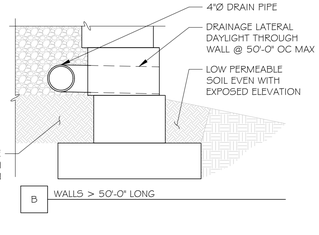




6 | D1 GEOGRID PLACEMENT
NOT TO SCALE



A WALLS < 50'-0" LONG



B WALLS > 50'-0" LONG

7 | D1 DRAIN PIPE INSTALLATION
NOT TO SCALE

STRUCTURAL DESIGN HEREIN REPRESENTS A FINISHED STRUCTURE. THE GENERAL CONTRACTOR/OWNER SHALL PROVIDE ALL INTERIM BRACING, SHORING, INTERIM DRAINAGE PROVISIONS, DRAINAGE DIVERSION AND EROSION PROTECTION REQUIRED UNTIL FINAL CAPPING, PAVING, CURBING AND COMPLETION OF FINAL STORM DRAIN SYSTEM IS COMPLETE.

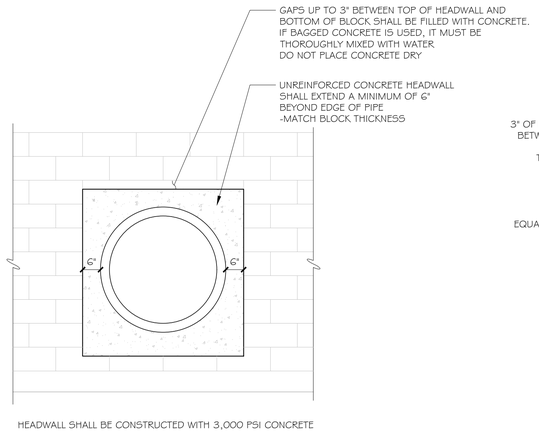
REV	DATE	DESCRIPTION

ROSCH ENGINEERING
18390 WINGS CORPORATE DRIVE
CHESTERFIELD, MO 63005
PHONE: 636-519-7770
FAX: 636-532-7773
MO CERTIFICATE OF AUTHORITY #E-2012039663

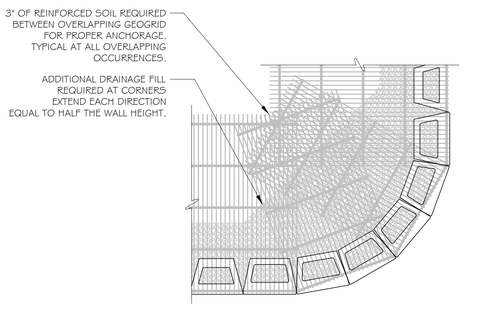
McDONALD'S - WILLARD
WILLARD, MO
RETAINING WALL
NOTES & DETAILS

BRIAN SCHALLER — STATE OF MISSOURI — NUMBER E-28703 — PROFESSIONAL ENGINEER
9-8-2026

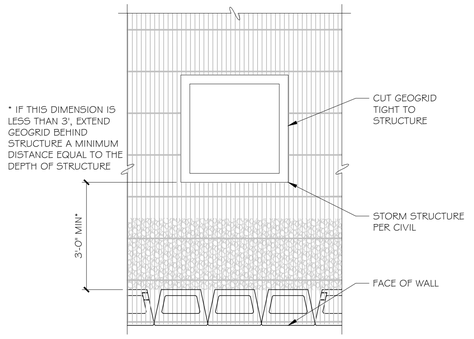
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JOB NO.:	26-0736
SHEET:	D1



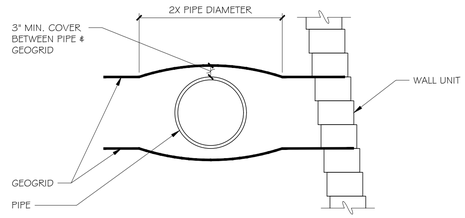
1 / D2 TYPICAL CONCRETE HEADWALL
NTS



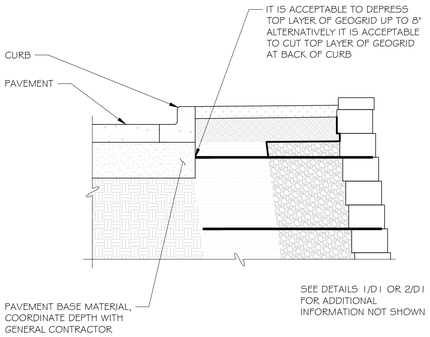
2 / D2 TYPICAL CONCAVE CORNER DETAIL
NTS



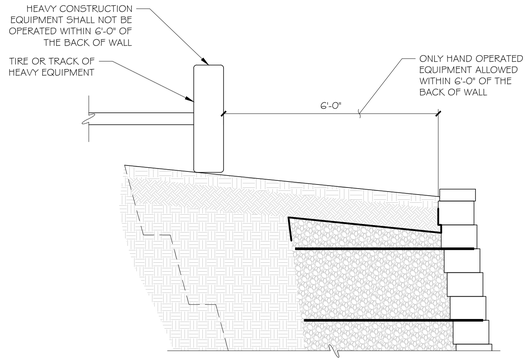
3 / D2 TYPICAL SECTION - AT STRUCTURE
NTS



4 / D2 TYPICAL SECTION - AT PIPE
NTS



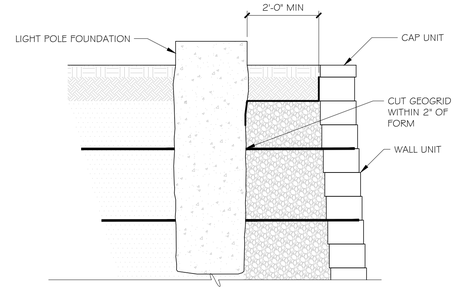
5 / D2 TYPICAL CURB AT TOP OF WALL
NTS



A ALL DRAINAGE BACKFILL

6 / D2 HEAVY EQUIPMENT AT TOP OF WALL
NTS
SEE DETAIL 1/D1 FOR ADDITIONAL INFORMATION NOT SHOWN

NOTE: LIGHT POLE FOUNDATION DESIGN AND SUITABILITY IS BY OTHERS. THIS DETAIL IS ONLY PROVIDED TO SHOW THE MINIMUM DIMENSIONAL REQUIREMENTS AS IT RELATES TO THE RETAINING WALL.

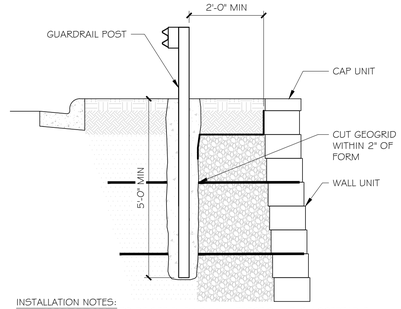


INSTALLATION NOTES:

1. LIGHT POLE BASE SHALL BE AS SHOWN AND SHALL EXTEND THROUGH A MINIMUM OF 2 LAYERS OF GEOGRID.
2. IF LIGHT POLE BASE IS CLOSER THAN 2'-0" TO BACK FACE OF WALL, IT SHALL BE DESIGNED SUCH THAT IT DOES NOT IMPOSE ANY LATERAL LOAD ON RETAINING WALL.
3. ALL ASSOCIATED CONDUIT / WIRING INSTALLATION SHALL BE CAREFULLY COORDINATED WITH WALL INSTALLATION AND SHALL NOT CUT ANY GEOGRID.

7 / D2 TYP LIGHT POLE FOUNDATION AT WALL
NTS

NOTE: GUARDRAIL DESIGN AND SUITABILITY IS BY OTHERS. THIS DETAIL IS ONLY PROVIDED TO SHOW THE MINIMUM DIMENSIONAL REQUIREMENTS AS IT RELATES TO THE RETAINING WALL.



INSTALLATION NOTES:

1. POST OR FORM TO BE SET DURING WALL ERECTION. IT IS ACCEPTABLE TO AUGER HOLES FOR POST PROVIDED THE LEADING EDGE OF THE POST IS NO CLOSER THAN 3' TO THE FACE OF WALL AS SHOWN ABOVE.
2. METAL BEAM POSTS CAN BE DRIVEN AFTER COMPLETION OF THE WALL.

8 / D2 TYP TRAFFIC BARRIER AT WALL
NTS

STRUCTURAL DESIGN HEREIN REPRESENTS A FINISHED STRUCTURE. THE GENERAL CONTRACTOR/OWNER SHALL PROVIDE ALL INTERIM BRACING, SHORING, INTERIM DRAINAGE PROVISIONS, DRAINAGE DIVERSION AND EROSION PROTECTION REQUIRED UNTIL FINAL CAPPING, PAVING, CURBING AND COMPLETION OF FINAL STORM DRAIN SYSTEM IS COMPLETE.

REV	DATE	DESCRIPTION

ROSCH ENGINEERING
18390 WINGS CORPORATE DRIVE
CHESTERFIELD, MO 63005
PHONE: 636-519-7770
FAX: 636-532-7773
MO CERTIFICATE OF AUTHORITY #E-2012039663

McDONALD'S - WILLARD
WILLARD, MO
RETAINING WALL DETAILS

STATE OF MISSOURI
BRIAN SCHALLER
NUMBER E-28703
PROFESSIONAL ENGINEER
9-8-2026

DESIGNED:	BCS
DRAWN:	AMR
DESIGN ENGINEER:	AMR
REVIEWED:	BCS
DATE:	9-8-26
JOB NO.:	26-0736
SHEET:	D2