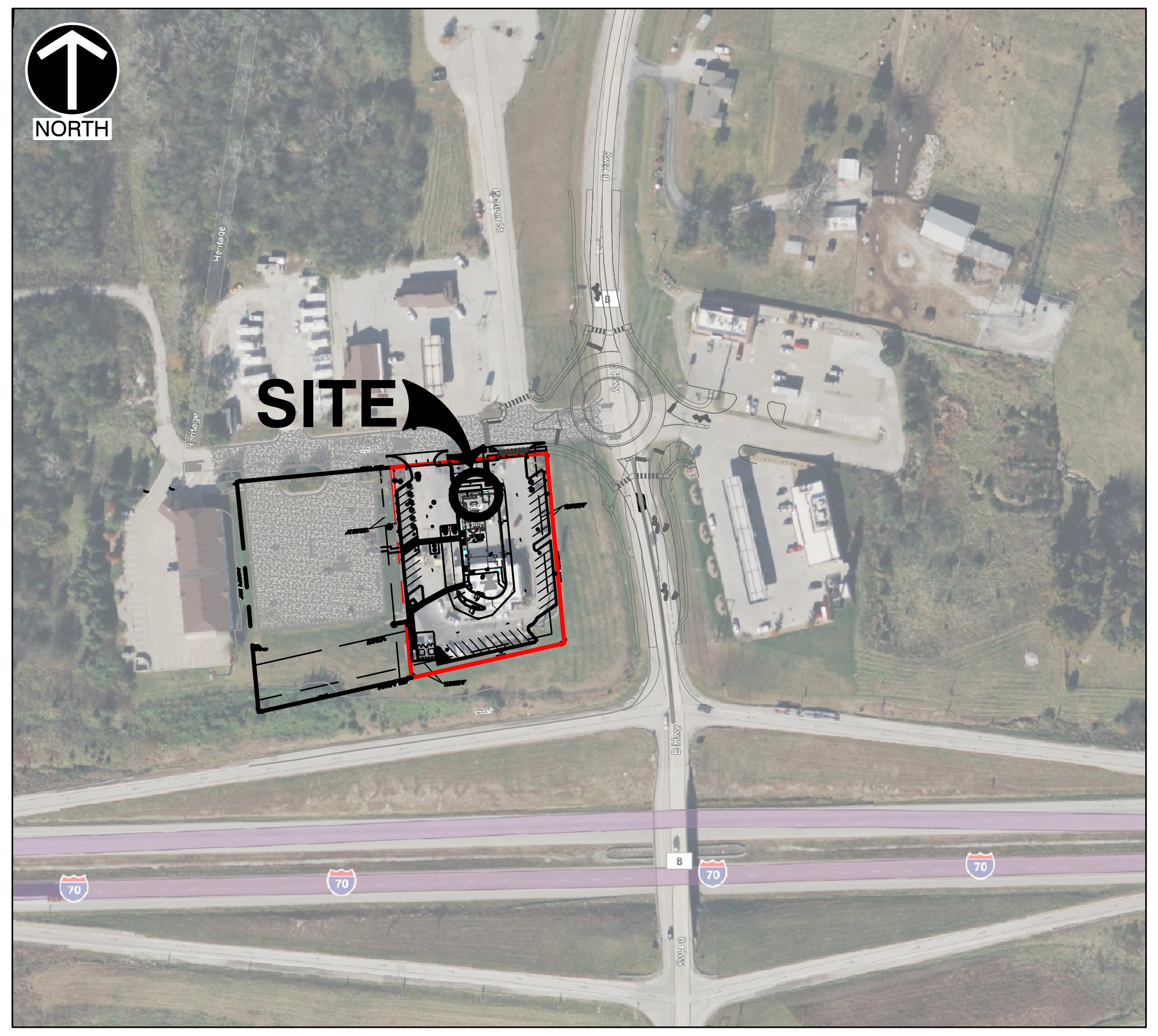
IMPROVEMENT PLANS FOR
McDONALD'S RESTAURANT #024-0281
490 AMERICANA DRIVE,
BOONVILLE, MO 65233



SCALE IN FEET
0 200 400

OWNER/TEAM INFORMATION

CIVIL ENGINEER / SURVEY

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
1450 BEALE STREET, SUITE 305
ST. CHARLES, MO 63303
PH: (314) 656-4566
FX: (314) 656-4595
CONTACTS: PATRICK T. BENNETT, PE

ARCHITECT

TAYLOR/KEMPKES ARCHITECTS P.A.
210 CENTRAL AVE, SUITE 3A
PH: (501) 624-5679
CONTACT: SLOBODAN OZIMICA
SLOBODAN@TAYLORKEMPKES.COM

OWNER

McDONALD'S CORP, D/B/A DELAWARE MCD
MARTIN RESTAURANTS
2011 CHAPEL PLAZA COURT, SUITE 101,
COLUMBIA, MO 65203
DEB LYSTER
PH: (636) 288-1460
FX: (636) 600-5081

DEVELOPER

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

UTILITY COMPANIES

SANITARY SEWER SERVICE

CITY OF BOONVILLE
1200 LOCUST STREET
BOONVILLE, MO 65233
CONTACT: JEFF DITTO
PH: 660.882.5257
EMAIL: JEFF.DITTO@BOONVILLE-MO.ORG

STORM WATER FACILITIES

CITY OF BOONVILLE
1200 LOCUST STREET
BOONVILLE, MO 65233
CONTACT: JEFF DITTO
PH: 660.882.5257
EMAIL: JEFF.DITTO@BOONVILLE-MO.ORG

ELECTRIC SERVICE

AMEREN
CONTACT: KYLE WHANGER
PH: 573.975.9962
EMAIL: KWHANGER@AMEREN.COM

WATER SERVICE

CITY OF BOONVILLE
1200 LOCUST STREET
BOONVILLE, MO 65233
CONTACT: JEFF DITTO
PH: 660.882.5257
EMAIL: JEFF.DITTO@BOONVILLE-MO.ORG

TELEPHONE SERVICE

ATT
CONTACT: JUSTIN COURTOUISE
PH: 636.448.2136
EMAIL: JC670S@ATT.COM

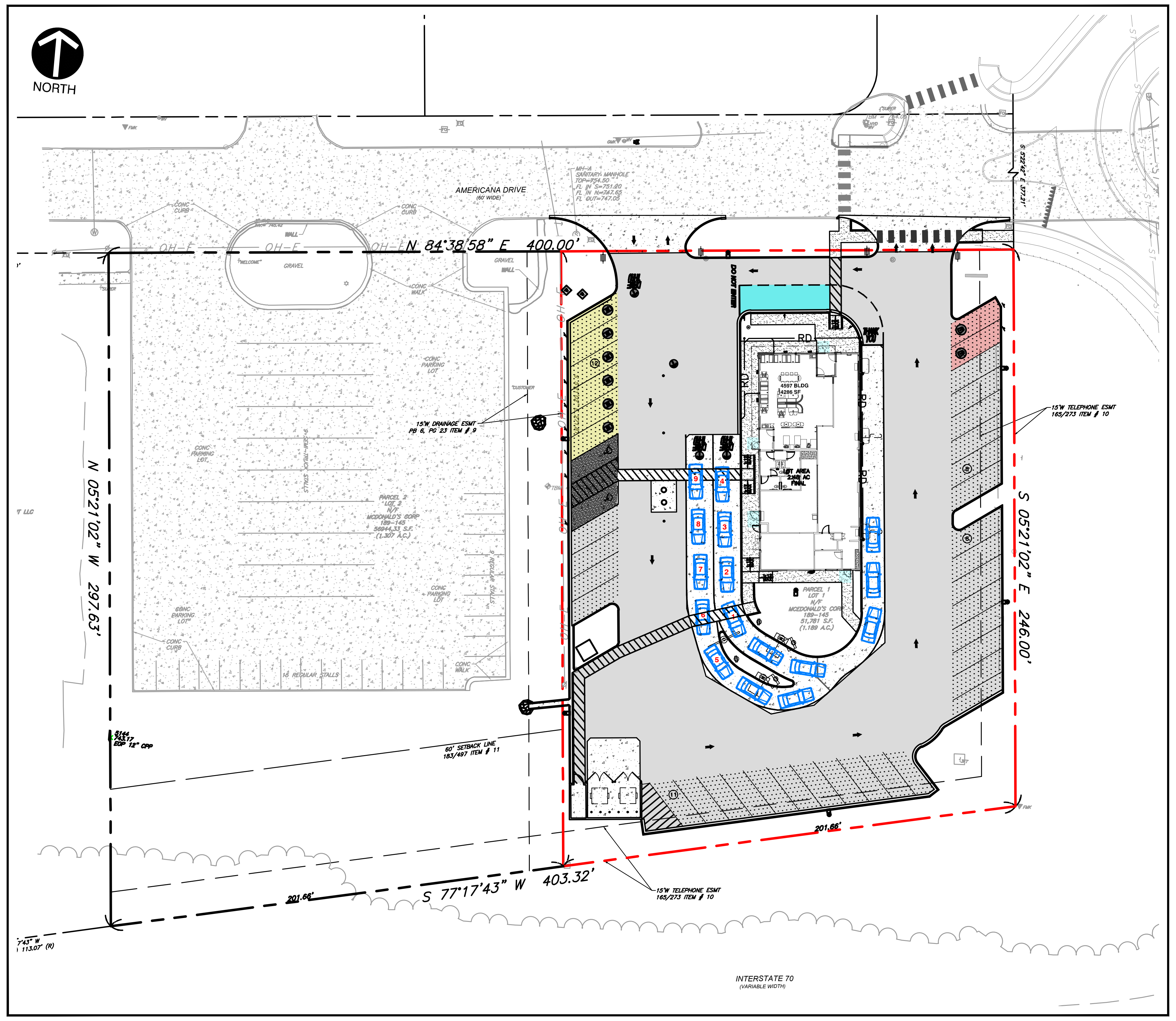
GAS SERVICE

AMEREN MISSOURI
301 2ND STREET
BOONVILLE, MO 65233
CONTACT: CHRISTOPHER MAGERS
PH: N/A
EMAIL: CMAGERS@AMEREN.COM

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

NOTES:

1. REFER TO 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 THIS PROJECT.



SITE MAP

SCALE: 1"=40'

NOTE: THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES PRIOR TO ANY EXCAVATION AND SHALL CONTACT THE MISSOURI ONE CALL SYSTEM, INC. SERVICE A MINIMUM OF TWO (2) WORKING DAYS PRIOR TO DIGGING AT TELEPHONE NO. 1-800-344-7483 NO EXCAVATION SHALL COMMENCE UNTIL ALL APPLICABLE UTILITIES HAVE BEEN CLEARED.

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 COVERAGE CALCULATION

IMPROVEMENT AREA			
	AREA (SF)	AREA (AC)	
TOTAL PARCEL AREA	51,781	1.19	
EXISTING / UNDEVELOPED SITE			
	AREA (SF)	AREA (AC)	
IMPERVIOUS	44,278	1.02	86%
PERVIOUS	7,503	0.17	14%
TOTAL	51,781	1.19	
PROPOSED SITE			
	AREA (SF)	AREA (AC)	
IMPERVIOUS	43,047	0.99	83%
PERVIOUS	8,734	0.20	17%
TOTAL	51,781	1.19	

IMPERVIOUS COVER DIFFERENTIAL

PROPOSED (SF)	EXISTING (SF)	DIFFERENTIAL (SF)
43,047	44,278	-1,231

SHEET INDEX

Sheet #	DWG #	TITLE
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05	C300	GRADING PLAN
06	C500	UTILITY PLAN
07	C700	LANDSCAPE PLAN
08	C701	PLANTING DETAILS
09	C800	CONSTRUCTION DETAILS
10	C801	CONSTRUCTION DETAILS
11	C900	EROSION AND SEDIMENT CONTROL PLAN
12	C901	EROSION AND SEDIMENT CONTROL DETAILS
13	HYD	DRAINAGE AREA MAPS
14	LIGHTING	PHOTOMETRIC PLAN
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16	S200	STRUCTURAL FOUNDATION DETAILS
17	S201	STRUCTURAL FOUNDATION DETAILS
18	LI-1	IRRIGATION PLAN
19	LI-2	IRRIGATION DETAILS
20	LI-3	IRRIGATION SPECIFICATIONS

2

PARKING INFORMATION

TOTAL SPACES REQUIRED **15**	• 1 per / 300 sf GROSS FLOOR AREA 4286 GFA/300 = 14.29
TOTAL SPACES PROVIDED **39**	37 PROPOSED SPACES: 9' X 20' STANDARD @ 60° 2 PROPOSED SPACES: 9' X 20' ACCESSIBLE @ 60°

SITE DEVELOPMENT ZONING DATA

TOTAL AREA OF SURVEYED PROPERTY:	2.496± ACRES
ZONING DISTRICT:	C-2 CENTRAL COMMERCIAL DISTRICT

	MIN
FRONT BUILDING SETBACK:	0'
LEFT SIDE BUILDING SETBACK:	0'
RIGHT SIDE BUILDING SETBACK:	0'
REAR BUILDING SETBACK:	0'

BUILDING FOOTPRINT: 4,286 SF

FLOOD PLAIN NOTE
SURVEYED PROPERTY LIES WITHIN FLOOD ZONE X (AREAS DETERMINED TO BE OUTSIDE 500-YEAR FLOODPLAIN) AS PER THE NATIONAL FLOOD HAZARD INSURANCE RATE MAP, FIRM MAP NO. 29053C0155C DATED MAY 3, 2011.

SETBACKS
C AND M DISTRICTS NO PARKING SPACE MAY BE PROVIDED IN A FRONT YARD UNLESS THE BUILDING IS SET BACK AT LEAST 30 FEET FROM THE STREET.

BENCHMARKS (NAVD88)

SITE BENCHMARKS ARE THE TOP NUT ON A FIRE HYDRANT AND AN "L" CUT IN THE BASE OF A CONCRETE PAD.

BASIS OF BEARING AND ELEVATIONS FOR THIS SURVEY IS MISSOURI CENTRAL STATE PLANE. SITE WAS SCALED TO GROUND USING A GROUND SCALE FACTOR DERIVED FROM A CENTRAL POINT ON SITE USING TRIMBLE ACCESS SOFTWARE ON A TSC7 DATA COLLECTOR. SAID POINT IS AT
LAT 38°56'14.08865"N
LONG 92°44'42.61902"W
HEIGHT 641.292'
GROUND SCALE FACTOR=1.0000917790

AS SURVEYED DESCRIPTION:

BEGINNING AT THE NORTHEAST CORNER OF LOT 1 OF MAIN STREET AMERICA SUBDIVISION; THENCE SOUTHERLY ALONG THE WESTERN RIGHT-OF-WAY LINE OF ROUTE B SOUTH 05°21'02" EAST 246.00 FEET TO A POINT; THENCE WESTERLY ALONG THE NORTHERN RIGHT-OF-WAY LINE OF INTERSTATE 70 SOUTH 77°17'43" WEST 403.32 FEET TO A POINT; THENCE NORTH 05°21'02" WEST 297.63 FEET TO A POINT; THENCE EASTERLY ALONG THE SOUTHERN RIGHT-OF-WAY LINE OF AMERICANA DRIVE NORTH 84°38'58" EAST 400.00 FEET TO THE POINT OF BEGINNING AND CONTAINING 108,726.00 SQUARE FEET OR 2.496 ACRES MORE OR LESS.

PATRICK TODD BENNETT
NUMBER PE-2002003134
04/03/2026

REVISION RECORD

NO	DATE	DESCRIPTION
2	04/03/26	PER CLIENT COMMENTS / OFF-SITE ROAD IMPROVEMENTS
1	02/03/2026	CITY AND CLIENT COMMENTS

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

McDONALD'S RESTAURANT
NSN 8043 (024-0281)
490 AMERICANA
BOONVILLE, MO 65233

COVER

DATE:	DECEMBER 19, 2025	DRAWN BY:	LFD
DWG SCALE:	AS SHOWN	CHECKED BY:	LFD
PROJECT NO:	353-116		
APPROVED BY:	PTB		

DRAWING NO.: **C000**
SHEET 01 OF 20

GENERAL 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 FROM THOSE SHOWN, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.
2. THE CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL EXISTING UTILITIES (INCLUDING THOSE LABELED PER RECORD DATA) PRIOR TO THE BEGINNING OF CONSTRUCTION OR EARTH MOVING OPERATIONS. INFORM ENGINEER OF ANY CONFLICTS DETRIMENTAL TO THE DESIGN INTENT.
3. 48 HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTOR SHALL NOTIFY THE FOLLOWING AGENCIES: THE MISSOURI UTILITY PROTECTION SERVICES, AND ALL OTHER AGENCIES THAT MAY HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NON-MEMBERS OF MISSOURI ONE CALL UNDERGROUND PROTECTION, INC.
4. 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.
5. THE CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE 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.
6. CONTRACTOR SHALL OBTAIN A PERMIT FOR ALL CONSTRUCTION ACTIVITIES IN ACCORDANCE WITH LOCAL, STATE, & FEDERAL REGULATIONS.
7. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL CODES, OBTAIN ALL APPLICABLE PERMITS, AND PAY ALL REQUIRED FEES PRIOR TO BEGINNING WORK.
8. 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.
9. THE CONTRACTOR IS TO PERFORM ALL INSPECTIONS AS REQUIRED BY THE MISSOURI DNR FOR THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT AND FURNISH OWNER'S REPRESENTATIVE WITH WRITTEN REPORTS. THE CONTRACTOR WILL OBTAIN NPDES PERMIT IF NEEDED.
10. CONTRACTOR SHALL IMPLEMENT ALL SOIL AND EROSION CONTROL PRACTICES REQUIRED BY THE CITY OF BOONVILLE AND THE MISSOURI DNR.
11. ALL GROUND SURFACE AREAS THAT HAVE BEEN EXPOSED OR LEFT BARE AS A RESULT OF CONSTRUCTION AND ARE TO FINAL GRADE AND ARE TO REMAIN SO, SHALL BE SEEDED AND MULCHED AS SOON AS PRACTICAL IN ACCORDANCE WITH SPECIFICATIONS. IF NO SPECIFICATIONS ARE SUPPLIED, USE STATE OF MISSOURI SPECIFICATIONS.
12. REFER TO THE MISSOURI DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS, ALL CONSTRUCTION WORK SHALL BE DONE ACCORDING TO SAID SPECIFICATIONS AND IN ACCORDANCE WITH APPLICABLE STANDARDS OF THE CITY OF BOONVILLE. WHEN IN CONFLICT, THE CITY REQUIREMENTS SHALL PREVAIL.
13. ALL WORK PERFORMED BY THE CONTRACTOR SHALL CONFORM TO THE LATEST REGULATIONS OF THE AMERICANS WITH DISABILITIES ACT.
14. THE 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.
15. 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.
16. ADJUST/RECONSTRUCT ALL EXISTING CASTINGS, CLEANOUTS, ETC. WITHIN PROJECT AREA TO GRADE AS REQUIRED.
17. CONTRACTOR TO REMOVE & REPLACE PAVEMENT AS SPECIFIED.
18. ALL STANDARD PARKING PLACES ARE 9' BY 20'.
19. SITE SIGNAGE AND STRIPING SHALL BE IN ACCORDANCE WITH THE MISSOURI MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
20. THE CITY OF BOONVILLE FIRE PROTECTION DISTRICT MUST HAVE ACCESS TO SITE DURING THE CONSTRUCTION PHASE. THIS INCLUDES ANY LOCKED CONSTRUCTION FENCES / GATES. IF NEEDED FOR CONSTRUCTION, A TEMPORARY KNOX BOX IS AVAILABLE. CONTACT THE BATTALION CHIEF / FIRE MARSHAL FOR DETAILS.
21. REVISED PLANS ARE REQUIRED FOR CHANGES TO PLANS AND MUST BE SUBMITTED TO THE PLANNING DIVISION FOR REVIEW AND APPROVAL.

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

NOTES:

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DEMOLITION NOTES

1. ALL EXISTING ABOVE AND BELOW GROUND STRUCTURES WITHIN THE LIMITS OF CONSTRUCTION SHALL BE REMOVED UNLESS NOTED OTHERWISE WITHIN THIS CONSTRUCTION SET AND/OR PROJECT SPECIFICATIONS. THIS INCLUDES FOUNDATION SLABS, WALLS AND FOOTINGS. CAVITIES LEFT BY STRUCTURE REMOVAL SHALL BE BACKFILLED WITH SATISFACTORY MATERIALS AND COMPACTED TO THE GEOTECHNICAL ENGINEER'S RECOMMENDATION.
2. CLEARING LIMITS SHALL BE PHYSICALLY MARKED IN THE FIELD.
3. NO TREES SHALL BE REMOVED, NOR VEGETATION DISTURBED BEYOND THE LIMITS OF CONSTRUCTION WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE OWNER'S REPRESENTATIVE.
4. TREE PROTECTION FENCING SHALL BE IN ACCORDANCE WITH THE CITY OF BOONVILLE STANDARDS – OR – IN ACCORDANCE WITH THE DETAILED DRAWINGS. DO NOT OPERATE OR STORE EQUIPMENT, NOR HANDLE OR STORE MATERIALS WITHIN THE DRIP LINES OF THE TREES SHOWN TO REMAIN.
5. PROTECTION OF EXISTING TREES AND VEGETATION: PROTECT EXISTING TREES AND OTHER VEGETATION INDICATED TO REMAIN IN PLACE AGAINST UNNECESSARY CUTTING, BREAKING OR SKINNING OF ROOTS, SKINNING OR BRUISING OF BARK, SMOTHERING OF TREES BY STOCKPILING CONSTRUCTION MATERIALS OR EXCAVATED MATERIALS WITHIN DRIP LINE, EXCESS FOOT OR VEHICULAR TRAFFIC, OR PARKING OF VEHICLES WITHIN DRIP LINE. PROVIDE TEMPORARY GUARDS TO PROTECT TREES AND VEGETATION TO BE LEFT STANDING.
6. 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 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.
7. 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 COVER SHEET.
8. THE BURNING OF CLEARED MATERIAL AND DEBRIS SHALL NOT BE ALLOWED UNLESS CONTRACTOR OBTAINS PRIOR WRITTEN AUTHORIZATION FROM THE LOCAL AUTHORITIES.
9. EROSION & SEDIMENT CONTROL MEASURES AROUND AREAS OF DEMOLITION SHALL BE PROPERLY INSTALLED AND FUNCTION PROPERLY PRIOR TO INITIALIZATION OF DEMOLITION ACTIVITIES.
10. 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.
11. CONTRACTOR SHALL ADHERE TO ALL LOCAL, STATE, FEDERAL AND OSHA REGULATIONS DURING ALL DEMOLITION ACTIVITIES.
12. 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.
13. 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.
14. 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.
15. PROVIDE NEAT, STRAIGHT, FULL DEPTH, SAW CUTS OF EXISTING PAVEMENT WHERE INDICATED ALONG LIMITS OF PAVEMENT DEMOLITION.
16. 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 OF REGULATED ITEMS MAY INCLUDE, BUT ARE NOT LIMITED TO WELLS, ASBESTOS, UNDER GROUND STORAGE TANKS, SEPTIC TANKS AND ELECTRIC TRANSFORMERS. 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.
17. 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 IF 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.
18. THE CONTRACTOR SHALL USE SUITABLE METHODS TO CONTROL DUST AND DIRT CAUSED BY THE DEMOLITION ACTIVITIES.

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
CMP	CORRUGATED METAL PIPE
CPP	CORRUGATED PLASTIC PIPE
COMM	U/G COMMUNICATION LINE
CONC	CONCRETE
CY	CUBIC YARD
DI	DUCTILE IRON
DIA	DIAMETER
DB	DRAIN BASIN
DS	DOWNSPOUT
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
HDPE	HIGH DENSITY POLYETHYLENE
HGL	HYDRAULIC GRADE LINE
HGT	HEIGHT
IMP	IMPERVIOUS
INV	INVERT
IRRIG	U/G IRRIGATION LINE
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
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
SF	SQUARE FEET
ST; STM	STORM
T/C	U/G PHONE AND/OR DATA LINE
TBR	TO BE REMOVED
TBR&R	TO BE REMOVED & REPLACED
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

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 IN ACCORDANCE WITH THE SPECIFICATIONS.
5. SITE WORK CONCRETE WALKS AND PADS SHALL HAVE A BROOM FINISH TO ALL SURFACES. SITE WORK CONCRETE SHALL BE CLASS "A" (4000 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, OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
8. CONTRACTOR SHALL MAINTAIN ONE SET OF AS-BUILT / RECORD DRAWINGS ON-SITE DURING CONSTRUCTION FOR DISTRIBUTION TO THE OWNER AND/OR OWNER'S REPRESENTATIVE UPON COMPLETION.
9. REFER TO THE ARCHITECTURAL, PLUMBING & ELECTRICAL DRAWINGS FOR EXACT DIMENSIONS AND LOCATIONS OF UTILITY SERVICE ENTRY LOCATIONS AND PRECISE BUILDING DIMENSIONS.
10. THIS SITE LAYOUT IS SPECIFIC TO THE APPROVALS NECESSARY FOR THE CONSTRUCTION IN ACCORDANCE WITH THE CITY OF BOONVILLE. 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.

GRADING NOTES

11. ALL PROPOSED GRADES SHOWN ARE FINAL GRADES, TOP OF GROUND LEVEL, OR TOP OF PAVEMENT, OR GRATE ELEVATION AT THE DRAWDOWN POINT, UNLESS INDICATED OTHERWISE.
12. REFER TO AND FOLLOW THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT PREPARED FOR THIS PROJECT.
13. SITE BUILDING PAD EXCAVATION AND CONSTRUCTION TO BE PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. BUILDING PAD PREPARATION SHALL BEGIN BY CLEARING & STRIPPING UNSUITABLE MATERIAL FROM PAD SITE, THEN PLACEMENT & COMPACTION OF BACKFILL MATERIAL PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. ALL BACKFILL MATERIAL MUST BE ACCEPTABLE TO THE GEOTECHNICAL ENGINEER.
14. ALL FILL UNDER PAVEMENT SHALL BE COMPACTED TO THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.
15. ALL ELEVATIONS SHOWN ARE FINISHED GRADE ELEVATIONS.
16. CONTRACTOR SHALL STRICTLY ADHERE TO THE EROSION & SEDIMENT CONTROL PLAN PREPARED FOR THIS PROJECT.
17. EARTHWORK SHALL INCLUDE CLEARING AND GRUBBING, STRIPPING AND STOCKPILING TOPSOIL, MASS GRADING, EXCAVATION, FILLING, UNDER CUT AND REPLACEMENT, IF REQUIRED, AND COMPACTION.
18. CONTRACTOR TO REFILL UNDERCUT AREAS WITH SUITABLE MATERIAL AND COMPACT AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.
19. PLACE TOPSOIL OVER THE SUBGRADE OF UNPAVED, DISTURBED AREAS TO A DEPTH INDICATED ON THE LANDSCAPE PLANS (6" MINIMUM).
20. PAVEMENT SLOPES ACROSS ACCESSIBLE PARKING STALLS AND ADJOINING ACCESS AISLES SHALL BE MAXIMUM 2% AND SHALL CONFORM TO THE LATEST REGULATIONS OF THE AMERICANS WITH DISABILITIES ACT.
21. ALL SLOPES IN NON-PAVED AREAS SHALL BE 3:1 (HORIZONTAL:VERTICAL) MAXIMUM UNLESS NOTED OTHERWISE.
22. ALL AREAS NOT PAVED SHALL BE STABILIZED IN ACCORDANCE WITH THE EROSION & SEDIMENT CONTROL PLAN, UNLESS NOTED OTHERWISE.
23. COMPACTED FILLS ARE TO BE MADE TO A MINIMUM OF THREE FEET ABOVE THE CROWN OF ANY PROPOSED SEWER PRIOR TO CUTTING OF TRENCHES FOR PLACEMENT OF SAID SEWERS. ALL FILLS SHALL BE CONTROLLED, COMPACTED, AND INSPECTED BY AN APPROVED TESTING LABORATORY OR AN INSPECTOR FROM THE APPROPRIATE GOVERNMENTAL AGENCY.
24. 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.
25. THE CONTRACTOR IS RESPONSIBLE FOR BALANCING THE SITE EARTHWORK BY IMPORTING OR EXPORTING AS NECESSARY TO ACHIEVE DESIGN GRADES AND SPECIFICATIONS.

STORM 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. FOR EXACT LOCATION OF DOWN SPOUTS & ROOF DRAINS, CONTRACTOR IS TO COORDINATE WITH ARCHITECTURAL AND PLUMBING DRAWINGS.
5. ALL PROPOSED STORM SEWERS, SURFACE OR OTHER DRAINAGE FACILITIES ARE TO BE PRIVATE AND MAINTAINED BY THE OWNER.
6. ALL STORM STRUCTURES ARE MODOT TYPES UNLESS OTHERWISE INDICATED.
7. ALL CATCH BASINS AND MANHOLES WITH A DEPTH GREATER THAN 4' SHALL BE PROVIDED WITH STEPS. STEPS SHALL MEET THE REQUIREMENTS OF THE CITY OF BOONVILLE OR MODOT.
8. STORM SEWER IS TO BE BEDDED WITH CLEAN GRANULAR MATERIAL-AGGREGATES, IN ACCORDANCE WITH THE CITY OF BOONVILLE OR MODOT, ABOVE THE PIPE.

UTILITY NOTES

1. ALL PROPOSED UTILITY LINES AND EXTENSIONS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE CORRESPONDING UTILITY AGENCY / DISTRICT / MUNICIPALITY / COMPANY 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. MAINTAIN MINIMUM 10-FOOT HORIZONTAL AND 18-INCH MINIMUM VERTICAL SEPARATION BETWEEN SANITARY SEWER, STORM SEWER AND WATER SUPPLY LINE, UNLESS OTHERWISE INDICATED.
5. 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.
6. ALL TRENCH SPOILS 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.
7. SANITARY SEWER SHALL BE INSTALLED AT A MINIMUM SLOPE OF TWO PERCENT (2.00%) UNLESS OTHERWISE NOTED. SANITARY SERVICE SHALL BE INSTALLED AT A MINIMUM DEPTH OF FOUR FEET (4') UNLESS OTHERWISE NOTED. A MINIMUM OF 18" CLEARANCE SHALL BE MAINTAINED AT ALL WATERLINE & STORM SEWER CROSSINGS. SANITARY SEWER LATERALS SHALL CONFORM WITH CITY OF BOONVILLE STANDARD SPECIFICATIONS & CONSTRUCTION STANDARDS.
8. SANITARY SEWER IS TO BE BEDDED WITH CLEAN GRANULAR MATERIAL-AGGREGATES ABOVE THE PIPE. CONFORM TO CITY OF BOONVILLE STANDARD SPECIFICATIONS & CONSTRUCTION STANDARDS.
9. DISTANCES SHOWN FOR BOTH SANITARY AND STORM SEWER PIPES ARE MEASURED FROM CENTER OF STRUCTURE, CONTRACTOR RESPONSIBLE FOR ACTUAL FIELD CUT LENGTH.
10. ROOF DRAINS, FOUNDATION DRAINS AND ALL OTHER CLEAR WATER CONNECTIONS TO THE SANITARY SEWER SYSTEMS ARE PROHIBITED.
11. 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.
12. 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.
13. MECHANICAL/ELECTRICAL CONTRACTORS SHALL BRING ALL UTILITIES 5' OUTSIDE BUILDING WALL. COORDINATE WITH CONSTRUCTION MANAGER.
14. ALL WATERLINE CROSSINGS SHALL MAINTAIN A VERTICAL SEPARATION OF 18" MINIMUM. SANITARY SEWER SHALL BE LOCATED 18" BELOW WATERMAIN AT ALL CROSSINGS. WATERMAIN SHALL BE LOCATED A MINIMUM OF 10' HORIZONTALLY FROM ANY SANITARY SEWER OR STORM SEWER. ALL MEASUREMENTS SHALL BE TAKEN FROM OUTSIDE OF SEWER PIPE TO THE OUTSIDE OF WATERMAIN PIPE. ONE FULL LENGTH OF WATERMAIN PIPE SHALL BE LOCATED AT ALL CROSSINGS TO ENABLE BOTH JOINTS TO BE LOCATED AS FAR FROM SEWER AS POSSIBLE.
15. WATERLINE IS TO BE BEDDED WITH CLEAN GRANULAR MATERIAL-AGGREGATES ABOVE THE PIPE. CONFORM TO CITY OF BOONVILLE STANDARD SPECIFICATIONS & CONSTRUCTION STANDARDS.
16. SANITARY SEWER LATERAL AND MANHOLE CONNECTION REQUIREMENTS ARE TO BE TO CITY OF BOONVILLE SEWER DISTRICT SPECIFICATIONS.

REVISION RECORD

NO	DATE	DESCRIPTION
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1	02/03/2026	CITY AND CLIENT COMMENTS

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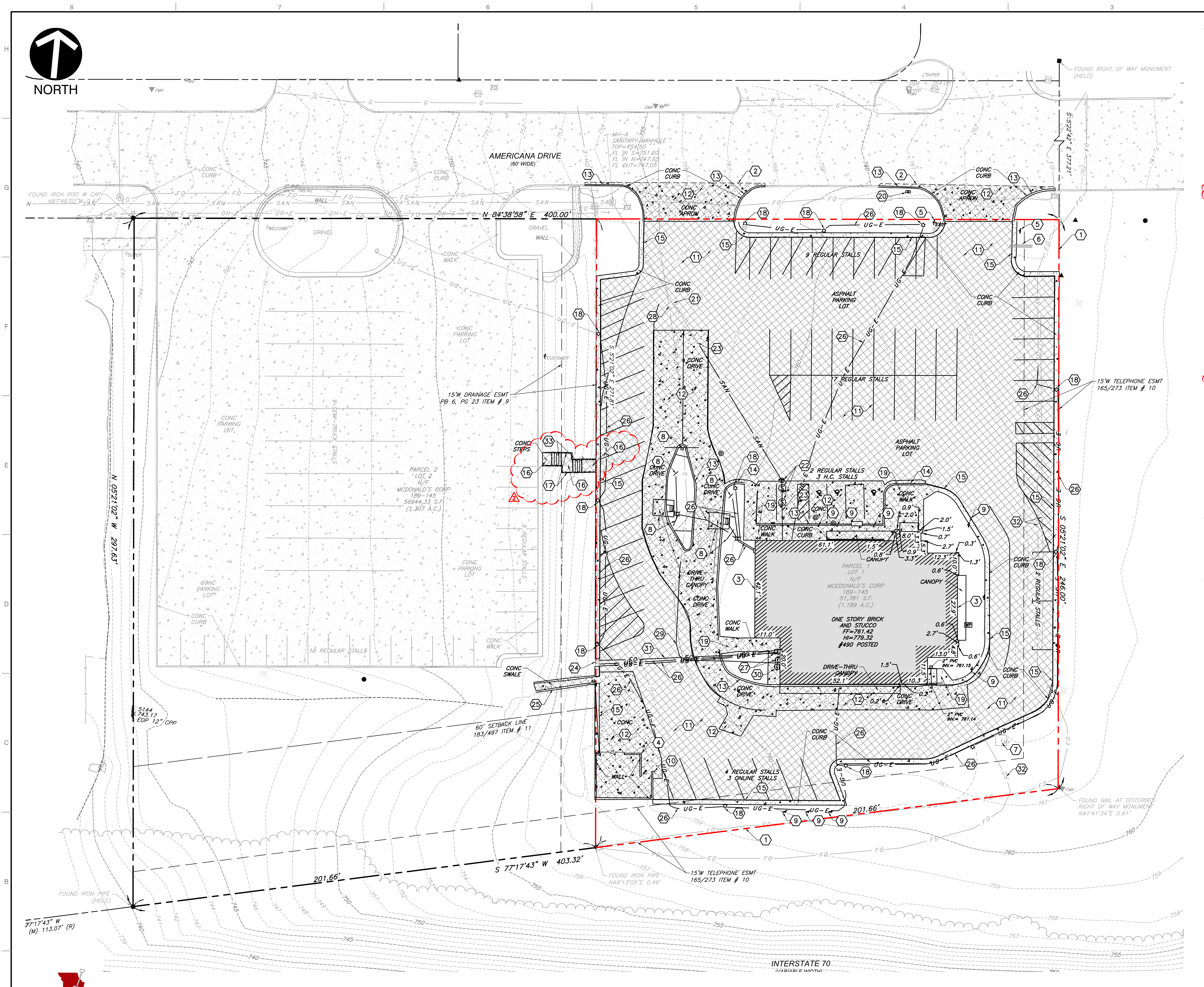
**McDONALD'S RESTAURANT
NSN 8043 (024-0281)
490 AMERICANA
BOONVILLE, MO 65233**

GENERAL NOTES

DATE:	DECEMBER 19, 2025	DRAWN BY:	LFD
DWG SCALE:	AS SHOWN	CHECKED BY:	LFD
PROJECT NO:			353-116
APPROVED BY:			PTB

PATRICK TODD BENNETT
NUMBER PE-2002003134
04/03/2026

DRAWING NO.: **C001**
SHEET 02 OF 20


NORTH
AMERICANA DRIVE
(60' WIDE)
N 84°38'58" E 400.00'
S 05°21'02" E 246.00'
S 77°17'43" W 403.32'
N 05°21'02" W 297.63'
201.66'
77°17'43" W
(M) 113.07' (R)
FOUND IRON ROD W CAP
FOUND RIGHT OF WAY MONUMENT (HELD)
FOUND NAIL AT DISTURBED RIGHT OF WAY MONUMENT
FOUND IRON PIPE (HELD)
MH-A SANITARY MANHOLE
15'W DRAINAGE ESMT PB 6, PG 23 ITEM # 9
15'W TELEPHONE ESMT 165/273 ITEM # 10
60' SETBACK LINE 183/497 ITEM # 11
PARCEL 2 LOT 2 N/F MCDONALD'S CORP 189-145 56944.33 S.F. (1.307 A.C.)
PARCEL 1 LOT 1 N/F MCDONALD'S CORP 189-145 51,781 S.F. (1.189 A.C.)
ONE STORY BRICK AND STUCCO FF=761.42 HI=779.32 #490 POSTED
ASPHALT PARKING LOT
CONC PARKING LOT
9 REGULAR STALLS
7 REGULAR STALLS
2 REGULAR STALLS 3 H.C. STALLS
4 REGULAR STALLS 3 ONLINE STALLS
15 REGULAR STALLS
DRIVE-THRU CANOPY
CANOPY
CONC DRIVE
CONC WALK
CONC CURB
CONC APRON
CONC STEPS
CONC SWALE
GRAVEL
WALL
INTERSTATE 70 (VARIABLE WIDTH)

KEY NOTES ⟨#⟩

1. EXISTING PROPERTY LINE.
2. NEW SAWCUT LINE. REFER TO DETAIL ON SHEET C800.
3. EXISTING BUILDING AND FOUNDATION TO BE COMPLETELY REMOVED.
4. EXISTING TRASH ENCLOSURE AND FOUNDATION TO BE COMPLETELY REMOVED.
5. EXISTING MCDONALD'S ENTER / EXIT SIGN(S) TO BE REMOVED.
6. EXISTING FREE STANDING SIGN TO REMAIN. PROTECT IN PLACE AS NEEDED
7. EXISTING HIGH RISE HIGHWAY SIGN TO REMAIN. PROTECT IN PLACE AS NEEDED.
8. EXISTING DRIVE THRU SIGN(S) / EQUIPMENT / FOOTINGS TO BE REMOVED.
9. EXISTING SIGNS TO BE REMOVED.
10. EXISTING PIPE BOLLARD(S) TO BE REMOVED.
11. EXISTING ASPHALT PAVEMENT TO BE REMOVED.
12. EXISTING CONCRETE PAVEMENT TO BE REMOVED.
13. EXISTING 6" WIDE CONCRETE CURB TO BE REMOVED.
14. EXISTING 6" WIDE CONCRETE CURB AND GUTTER TO BE REMOVED
15. EXISTING 2' WIDE CONCRETE CURB TO BE REMOVED.
16. EXISTING LANDING TO BE REMOVED.
17. EXISTING HANDRAILS TO BE REMOVED. 2
18. EXISTING LIGHT STANDARD(S) TO BE REMOVED
19. EXISTING SIDEWALK TO BE REMOVED.
20. EXISTING MAILBOX TO BE REMOVED AND RELOCATED.
21. EXISTING SANITARY LATERAL TO BE USED IN PLACE. CONTRACTOR TO VERIFY EXISTING LATERAL CONDITION AND REPORT BACK TO EOR IF ADDITIONAL REPLACEMENT IS NEEDED.
22. EXISTING GREASE TRAP TO BE REMOVED.
23. EXISTING SANITARY SERVICE TO BE REMOVED.
24. EXISTING ELECTRIC / UTILITY POLE TO REMAIN. PROTECT IN PLACE AS NEEDED.
25. EXISTING CONCRETE FLUME TO BE REMOVED.
26. EXISTING UNDERGROUND ELECTRIC TO BE REMOVED.
27. EXISTING ELECTRIC METERS/CABINETS TO BE REMOVED.
28. EXISTING GAS SERVICE TO BE USED IN PLACE. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY AND VERIFY EXISTING PIPE CONDITION. REPORT BACK TO EOR IF ADDITIONAL REPLACEMENT IS NEEDED.
29. EXISTING GAS SERVICE TO BE REMOVED. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY.
30. EXISTING GAS METER TO BE REMOVED PER LOCAL REQUIREMENTS.
31. EXISTING COMMUNICATIONS/FIBER OPTIC SERVICE TO BE REMAINED AS IS.
32. EXISTING COMMUNICATIONS/FIBER OPTIC SERVICE TO REMAIN. PROTECT IN PLACE AS NEEDED.
33. EXISTING CONCRETE STEPS TO BE REMOVED. 2

DEMOLITION LEGEND:

▨	PAVEMENT TO BE REMOVED FULL DEPTH
▒	STRUCTURE TO BE REMOVED

EXISTING LEGEND:

🟥	*EXISTING PROPERTY LINE*
	EXISTING ADJACENT PROPERTY LINE
	EXISTING RIGHT-OF-WAY
	EXISTING EASEMENT
870	*EXISTING INDEX CONTOUR*
	EXISTING INTERMEDIATE CONTOUR
×	*EXISTING FENCE*
	EXISTING DITCH FLOW LINE
SAN	*EXISTING SANITARY SEWER LINE*
CS	*EXISTING COMBINED SEWER LINE*
ST	*EXISTING STORM SEWER LINE*
G	*EXISTING GAS LINE*
W	*EXISTING WATER LINE*
FO	*EXISTING FIBER OPTIC LINE*
T	*EXISTING TELEPHONE LINE*
UG-E	*EXISTING UNDERGROUND ELEC. LINE*
OH-E	*EXISTING OVERHEAD ELECTRIC*
	EXISTING TREELINE
	EXISTING BUSHES
×1082.40	*EXISTING SPOT ELEVATION*
	SIGN
☼	*LIGHT STANDARD*
Ⓓ	*STORM MANHOLE*
	CATCH BASIN (TYPE)
	CURB INLET
	INLET (CIRCULAR)
	DRAIN
	BEEHIVE INLET SQUARE
	INLET SQUARE
Ⓢ	*SANITARY MANHOLE*
◎	*CLEAN OUT*
	FIRE HYDRANT
▼	*WATERLINE MARKER*
W	*WATER METER*
⊕	*BENCHMARK*

SCALE IN FEET
0 20 40

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

NOTES:

1. REFER TO 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 THIS PROJECT.

P:\350-000\353-116\-CADD\Dwg\CV01\353116-CV01-C100.dwg{C100} LS:(4/3/2026 - ldiekemper) - LP: 4/3/2026 2:35 PM

REVISION RECORD

NO	DATE	DESCRIPTION
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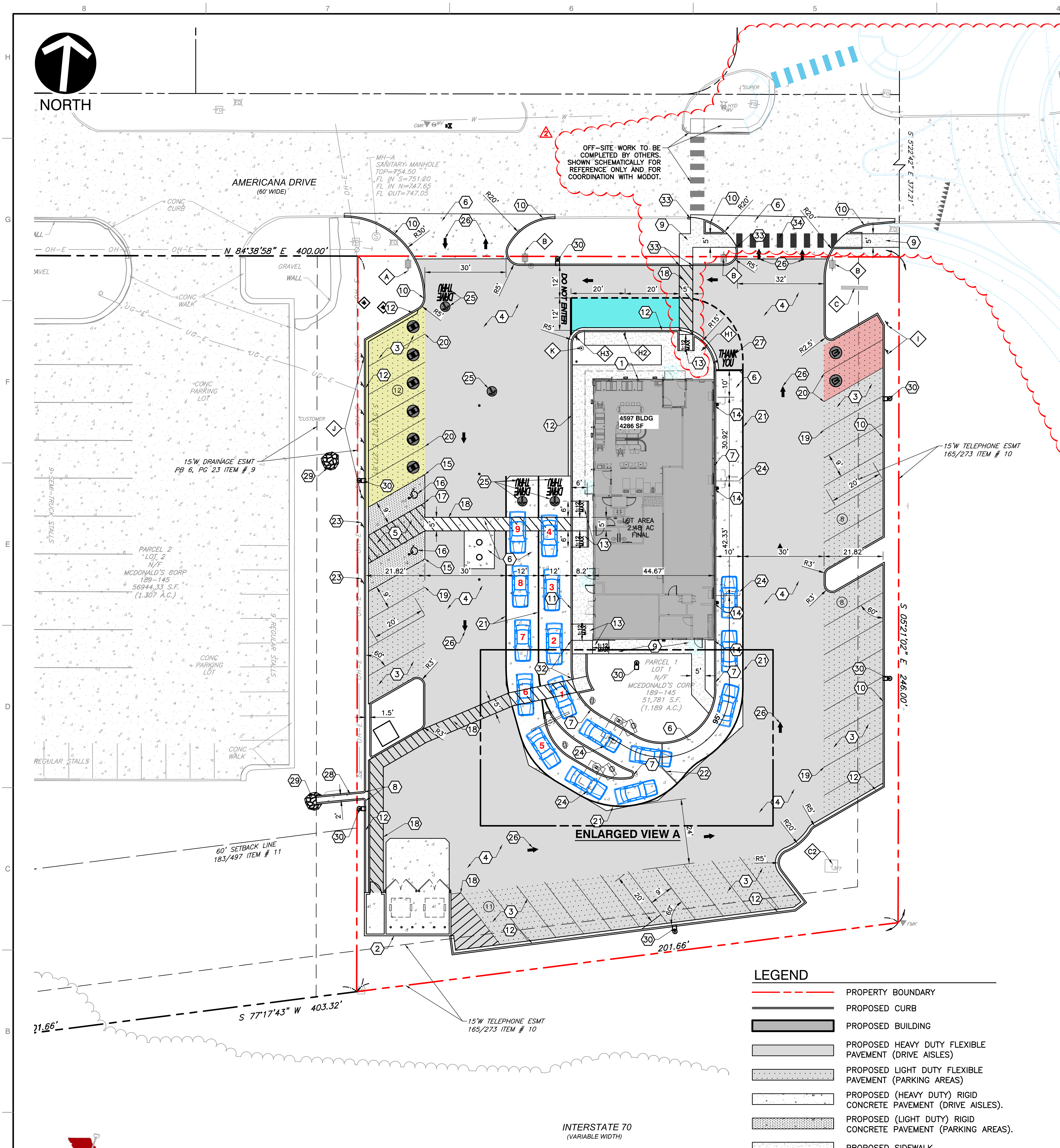
McDONALD'S RESTAURANT
NSN 8043 (024-0281)
490 AMERICANA
BOONVILLE, MO 65233

EXISTING CONDITIONS AND DEMOLITION PLAN

DATE:	DECEMBER 19, 2025	DRAWN BY:	LFD
DWG SCALE:	AS SHOWN	CHECKED BY:	LFD
PROJECT NO:	353-116		
APPROVED BY:	PTB		

PATRICK TODD BENNETT
NUMBER PE-2002003134
04/03/2026

DRAWING NO.:
C100
SHEET 03 OF 20


NORTH
AMERICANA DRIVE
(60' WIDE)
N 84°38'58" E 400.00'
S 5°22'42" E 377.21'
S 05°21'02" E 246.00'
S 77°17'43" W 403.32'
201.66'
21.66'
OFF-SITE WORK TO BE COMPLETED BY OTHERS. SHOWN SCHEMATICALLY FOR REFERENCE ONLY AND FOR COORDINATION WITH MODOT.
MODOT ROUNDABOUT PLANS, BY BURNS & MCDONNELL (DATED 10/27/2025), SHOWN SCHEMATICALLY FOR REFERENCE ONLY.
ROUTE B (VARIABLE WIDTH)
MH-A SANITARY MANHOLE TOP=754.50 FL IN S=751.20 FL IN N=747.65 FL OUT=747.05
FLARED END FL=757.90
FLARED END FL=757.40
15'W DRAINAGE ESMT PB 6, PG 23 ITEM # 9
15'W TELEPHONE ESMT 165/273 ITEM # 10
60' SETBACK LINE 183/497 ITEM # 11
PARCEL 2 LOT 2 N/F MCDONALD'S CORP 189-145 56944.33 S.F. (1.307 A.C.)
PARCEL 1 LOT 1 N/F MCDONALD'S CORP 189-145 51,781 S.F. (1.189 A.C.)
4597 BLDG 4286 SF
LOT AREA 2.48 AC FINAL
DO NOT ENTER
DRIVE THRU
THANK YOU
CONC CURB
CONC WALK
CONC PARKING LOT
REGULAR STALLS
SEMI-TRUCK STALLS
GRAVEL WALL
ENLARGED VIEW A

INTERSTATE 70
(VARIABLE WIDTH)

OVERALL VIEW

SCALE: 1" = 20'
SCALE IN FEET
0 20 40

LEGEND

▬ ▬ ▬	PROPERTY BOUNDARY
═	PROPOSED CURB
▬	PROPOSED BUILDING
▭	PROPOSED HEAVY DUTY FLEXIBLE PAVEMENT (DRIVE AISLES)
▭	PROPOSED LIGHT DUTY FLEXIBLE PAVEMENT (PARKING AREAS)
▭	PROPOSED (HEAVY DUTY) RIGID CONCRETE PAVEMENT (DRIVE AISLES).
▭	PROPOSED (LIGHT DUTY) RIGID CONCRETE PAVEMENT (PARKING AREAS).
▭	PROPOSED SIDEWALK
▨	PROPOSED STRIPING
🟦	PROPOSED DRIVE-THRU PARKING
🟥	PROPOSED MCDELIVERY PARKING
🟨	PROPOSED CURB SIDE PICK-UP PARKING

KEY NOTES ⬡#

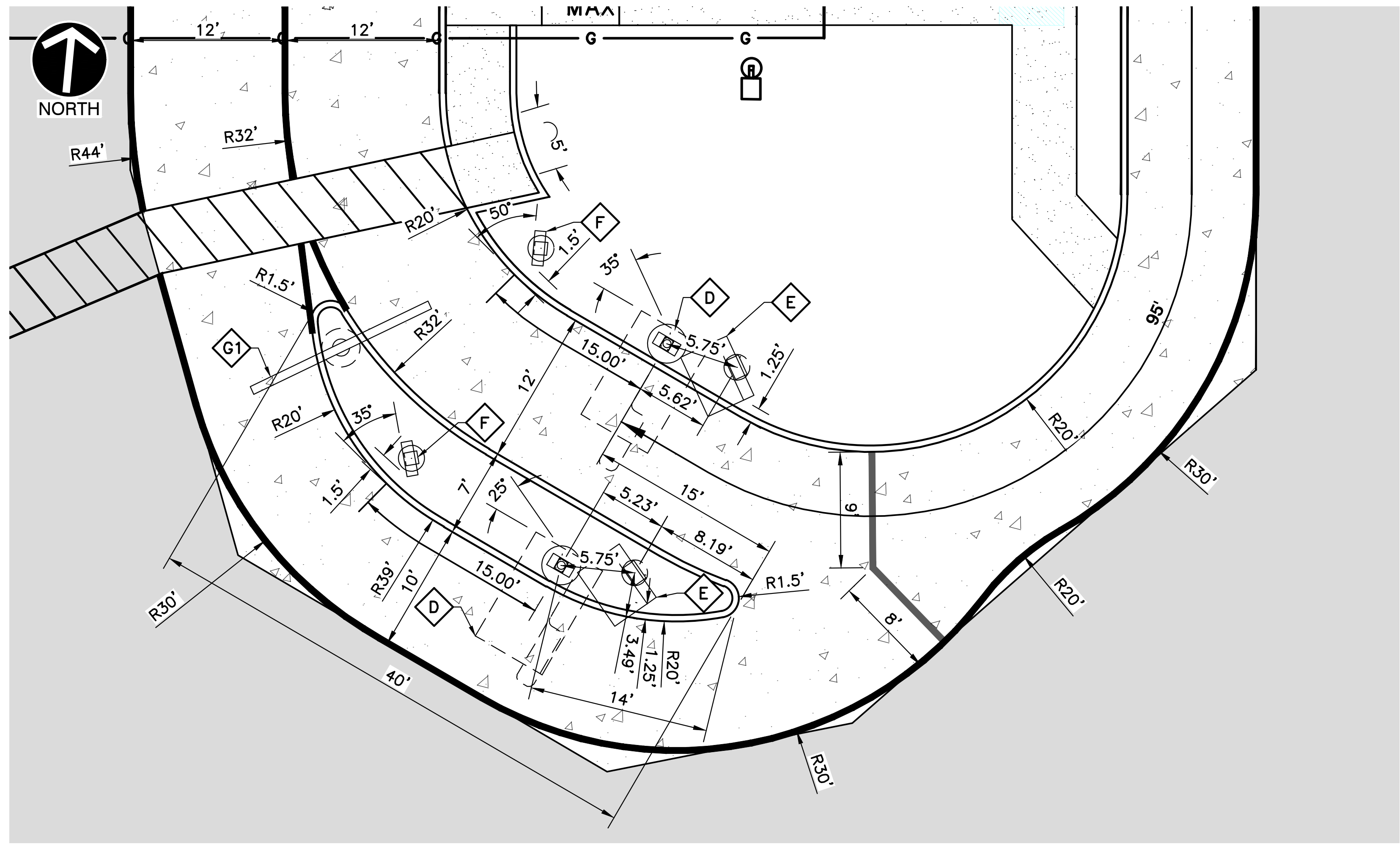
1. PROPOSED BUILDING. REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION.
2. PROPOSED TRASH ENCLOSURE WITH STORAGE. FOR ADDITIONAL INFORMATION REFER TO DETAIL ON SHEET C802 AND ARCHITECTURAL PLANS.
3. PROPOSED LIGHT DUTY FLEXIBLE PAVEMENT (PARKING AREAS). REFER TO DETAIL ON SHEET C800.
4. PROPOSED HEAVY DUTY FLEXIBLE PAVEMENT (DRIVE AISLES). REFER TO DETAIL ON SHEET C800.
5. PROPOSED LIGHT DUTY RIGID CONCRETE PAVEMENT (PARKING AREAS). REFER TO DETAIL ON SHEET C800.
6. PROPOSED HEAVY DUTY RIGID CONCRETE PAVEMENT (DRIVE AISLES). REFER TO DETAIL ON SHEET C800.
7. PROPOSED 6" INTEGRAL CONCRETE CURB. REFER TO DETAIL ON SHEET C800.
8. PROPOSED CURB CUT. REFER TO DETAIL ON SHEET C800.
9. PROPOSED ADA COMPLIANT CONCRETE WALK. REFER TO DETAIL ON SHEET C800.
10. PROPOSED 6" VERTICAL CONCRETE CURB. REFER TO DETAIL ON SHEET C800.
11. PROPOSED ADA COMPLIANT COMBINATION CURB / SIDEWALK. REFER TO DETAIL ON SHEET C800
12. PROPOSED 6" CONCRETE CURB AND GUTTER. REFER TO DETAIL ON SHEET C800.
13. PROPOSED ADA ACCESSIBLE DEPRESSED CURB RAMP. REFER TO DETAIL ON SHEET C800.
14. PROPOSED BOLLARD. REFER TO DETAIL ON SHEET C800.
15. PROPOSED ADA PARKING STRIPING. (PER LOCAL REQ). REFER TO DETAIL ON SHEET C801.
16. PROPOSED PAINTED ADA ACCESSIBLE PARKING SYMBOL. REFER TO DETAIL ON SHEET C801.
17. PROPOSED PAINTED ADA ACCESSIBLE PARKING AISLE. REFER TO DETAIL ON SHEET C801.
18. PROPOSED PAVEMENT STRIPING. REFER TO DETAIL ON SHEET C801.
19. PROPOSED PARKING STRIPING (WHITE). REFER TO DETAIL ON SHEET C801.
20. PROPOSED PARKING STRIPING (YELLOW). REFER TO DETAIL ON SHEET C801.
21. PROPOSED DRIVE THRU LANE STRIPING (6" WIDE). REFER TO MCDONALD'S STANDARDS.
22. PROPOSED MERGE STRIPING (6" WIDE). REFER TO MCDONALD'S STANDARDS
23. PROPOSED ADA ACCESIBLE PARKING SIGN(S). REFER TO DETAIL ON SHEET C801.
24. PROPOSED DETECTOR LOOP. REFER TO ELECTRICAL PLANS.
25. PROPOSED BRANDED PAVEMENT STRIPING TO MCDONALD'S STANDARDS. REFER TO DETAIL ON SHEET C801.
26. PROPOSED WHITE PAINTED DIRECTIONAL ARROWS. REFER TO DETAIL ON SHEET C801.
27. PROPOSED GUARDRAIL. REFER TO ARCHITECTURAL PLANS FOR DETAILS.
28. PROPOSED CONCRETE FLUME. REFER TO DETAIL ON SHEET C801.
29. PROPOSED RIP RAP.
30. PROPOSED LOT LIGHT. REFER TO PHOTOMETRIC PLAN (BY OTHERS).
31. ~~PROPOSED CONCRETE LANDING~~. (REMOVED) △2
32. PROPOSED 6" EXPOSED CONCRETE CURB. REFER TO DETAIL ON SHEET C800.
33. PROPOSED 6" CONCRETE CURB TO TRANSITION TO FLUSH AT SIDEWALK OVER 1 FOOT.
34. PROPOSED CROSSWALK PER CITY/DOT STANDARDS.

△2

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.
C	EXISTING McDONALD'S ROAD SIGN TO REMAIN.
C2	EXISTING McDONALD'S HIGHWAY SIGN TO REMAIN.
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 ROLL FORWARD – ("TURN LEFT") DRIVE-THRU SIGN. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR DETAILS.
H2	McDONALD'S ROLL FORWARD – ("PULL AHEAD") DRIVE-THRU SIGN. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR DETAILS.
H3	McDONALD'S ROLL FORWARD – ("PICK UP HERE") 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).



ENLARGED VIEW

SCALE: 1" = 10'
SCALE IN FEET
0 10 20

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

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2	04/03/26	PER CLIENT COMMENTS / OFF-SITE ROAD IMPROVEMENTS
1	02/03/2026	CITY AND CLIENT COMMENTS

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Civil & Environmental
Consultants, Inc.

1450 Beale Street
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Ph: 314.656.4566
www.cecinc.com

McDONALD'S RESTAURANT
NSN 8043 (024-0281)
490 AMERICANA
BOONVILLE, MO 65233

PATRICK TODD BENNETT
NUMBER PE-2002003134
04/03/2026

SITE PLAN

DATE:	DECEMBER 19, 2025	DRAWN BY:	LFD
DWG SCALE:	AS SHOWN	CHECKED BY:	LFD
PROJECT NO:			353-116
APPROVED BY:			PTB

DRAWING NO.:
C200

SHEET 04 OF 20

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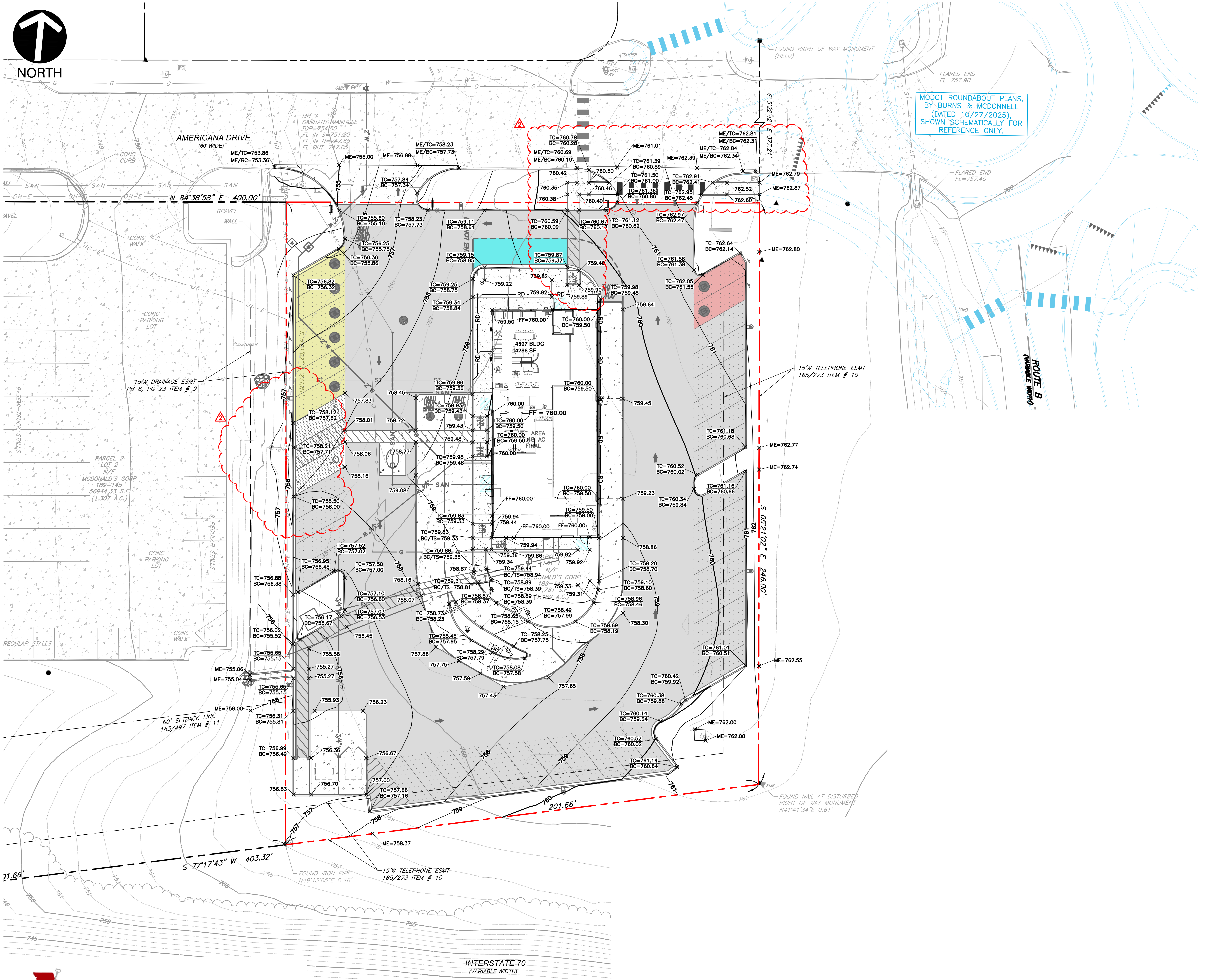

SCALE IN FEET
0 20 40

GRADING QUANTITIES:

TO FINISHED GRADE:

2,337	C.Y. CUT
11	C.Y. FILL
2,326	C.Y. NET CUT

THE ABOVE GRADING QUANTITY IS APPROXIMATE ONLY, FROM COMPARING THE FINISHED SURFACE ELEVATIONS TO THE EXISTING SURFACE ELEVATIONS. ADDITIONAL FACTORS SUCH AS SHRINK/SWELL, TOPSOIL, PAVEMENT/BUILDING SUBGRADE EXCAVATION, UNDERCUTTING FOR SOIL REMEDIATION, OR UTILITY TRENCH SPOILS, ETC. ARE NOT INCLUDED. THIS IS NOT FOR BIDDING PURPOSES. CONTRACTOR SHALL VERIFY QUANTITIES PRIOR TO CONSTRUCTION.

GRADING LEGEND:

BC	BOTTOM OF CURB
FF	FINISHED FLOOR
ME	MATCH EXISTING
TC	TOP OF CURB
TS	TOP OF SIDEWALK

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

NOTES:

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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 THIS PROJECT.

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REVISION RECORD

NO	DATE	DESCRIPTION
2	04/03/26	PER CLIENT COMMENTS / OFF-SITE ROAD IMPROVEMENTS
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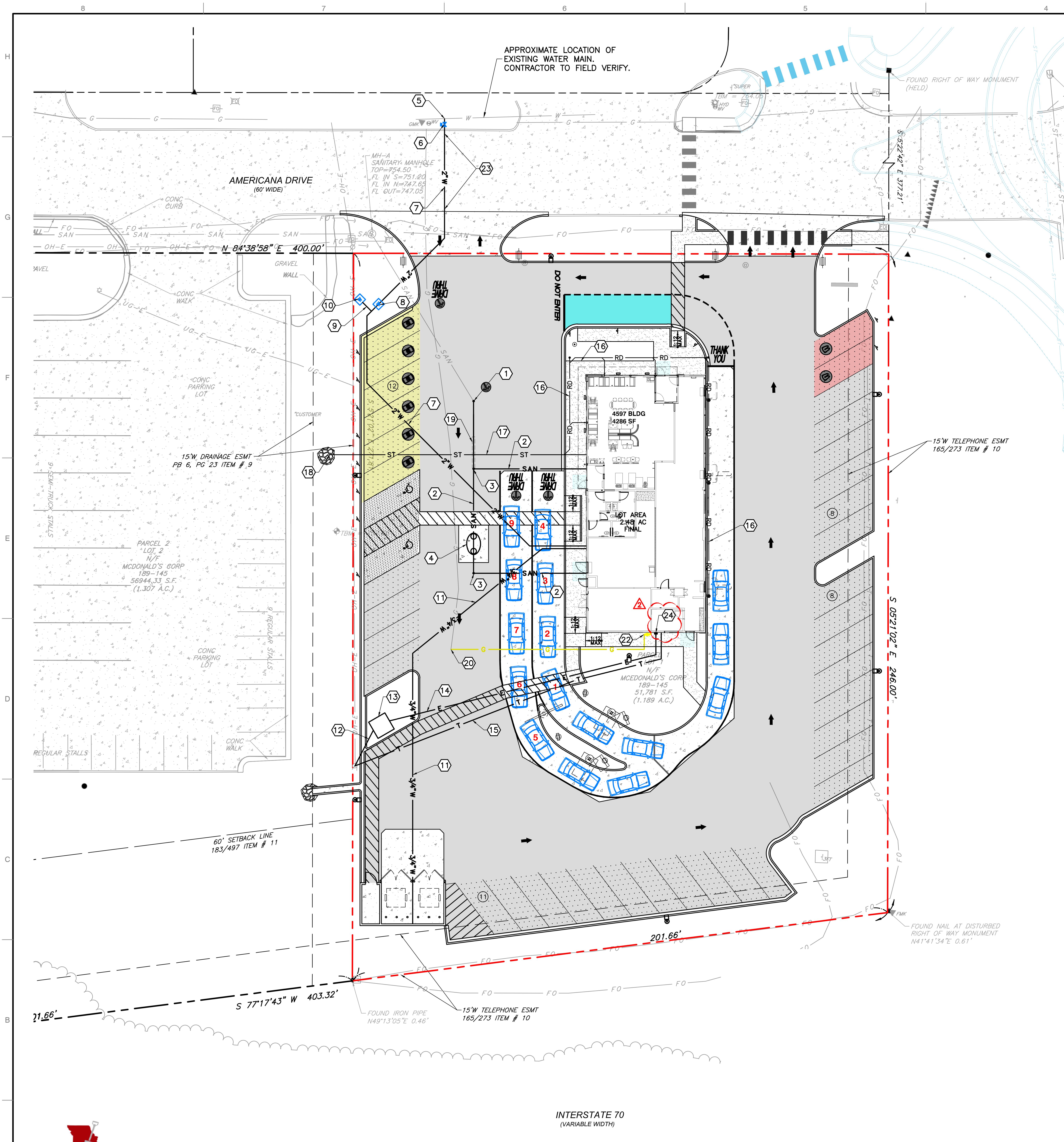
BOONVILLE, MO 65233

GRADING PLAN

DATE:	DECEMBER 19, 2025	DRAWN BY:	LFD
DWG SCALE:	AS SHOWN	CHECKED BY:	LFD
PROJECT NO:			353-116
APPROVED BY:			PTB

PATRICK TODD BENNETT
04/03/2026

DRAWING NO.:
C300
SHEET 05 OF 20


APPROXIMATE LOCATION OF EXISTING WATER MAIN. CONTRACTOR TO FIELD VERIFY.
AMERICANA DRIVE
(60' WIDE)
MH-A SANITARY MANHOLE TOP=754.50 FL IN S=751.20 FL IN N=747.65 FL OUT=747.05
CONC CURB
CONC WALK
GRAVEL
WALL
N 84°38'58" E 400.00'
S 5°22'42" E 377.21'
S 05°21'02" E 246.00'
S 77°17'43" W 403.32'
201.66'
21.66'
DO NOT ENTER
THANK YOU
DRIVE THRU
4597 BLDG
4286 SF
LOT AREA 2.48 AC FINAL
CONC PARKING LOT
"CUSTOMER
15'W DRAINAGE ESMT PB 6, PG 23 ITEM # 9
9 SEMI-TRUCK STALLS
9 REGULAR STALLS
REGULAR STALLS
PARCEL 2 LOT 2 N/F MCDONALD'S CORP 189-145 56944.33 S.F. (1.307 A.C.)
PARCEL 1 LOT 1 N/F MCDONALD'S CORP 189-145 51,781 S.F. (1.189 A.C.)
60' SETBACK LINE 183/497 ITEM # 11
15'W TELEPHONE ESMT 165/273 ITEM # 10
FOUND IRON PIPE N49°13'05"E 0.46'
FOUND NAIL AT DISTURBED RIGHT OF WAY MONUMENT N41°41'34"E 0.61'
FOUND RIGHT OF WAY MONUMENT (HELD)
TBM = 764.05
FLARED END FL=757.90
FLARED END FL=757.40
MODOT ROUNDABOUT PLANS, BY BURNS & MCDONNELL (DATED 10/27/2025), SHOWN SCHEMATICALLY FOR REFERENCE ONLY.
ROUTE B (VARIABLE WIDTH)
INTERSTATE 70
(VARIABLE WIDTH)
2"W
3/4"W
SAN
ST
RD
G
E
T
FO
OH-E
UG-E
1:12 MAX
1
2
3
4
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6
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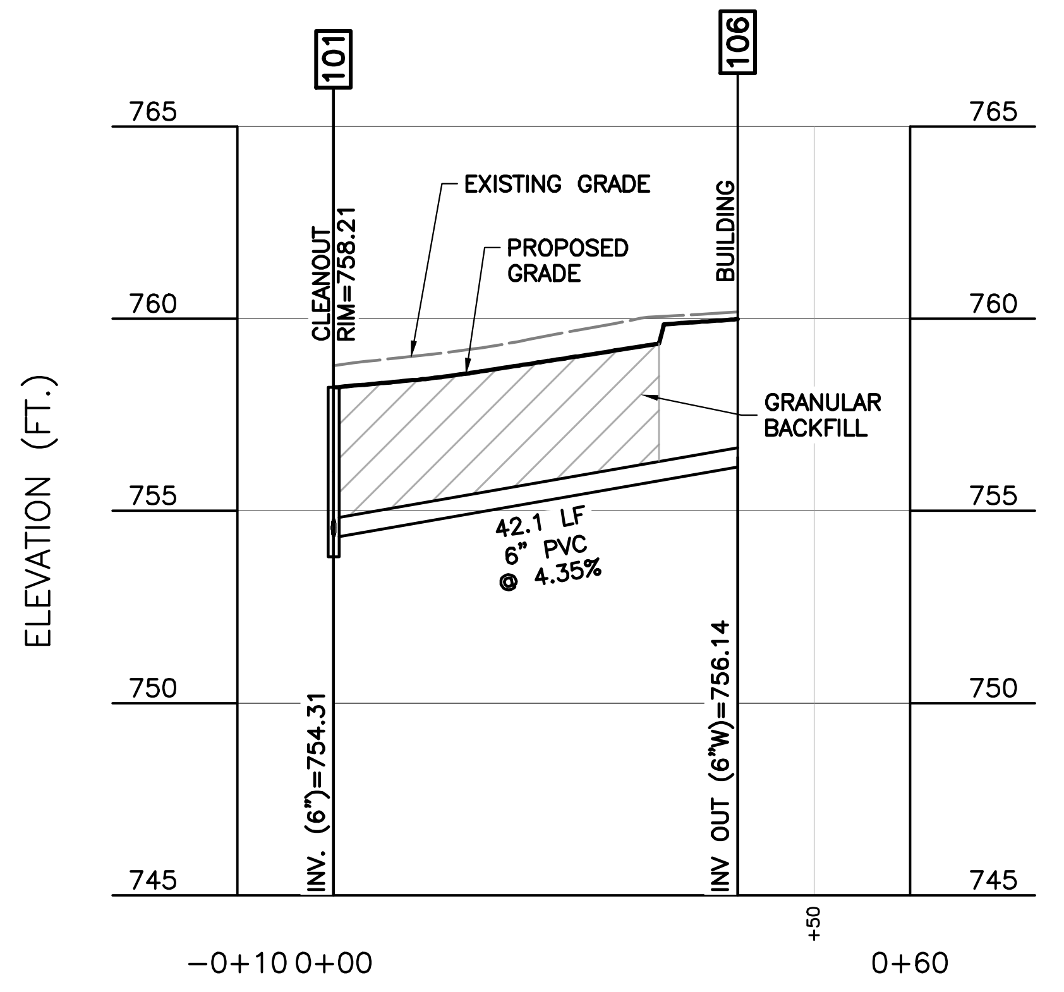
24

KEY NOTES ⟨#⟩

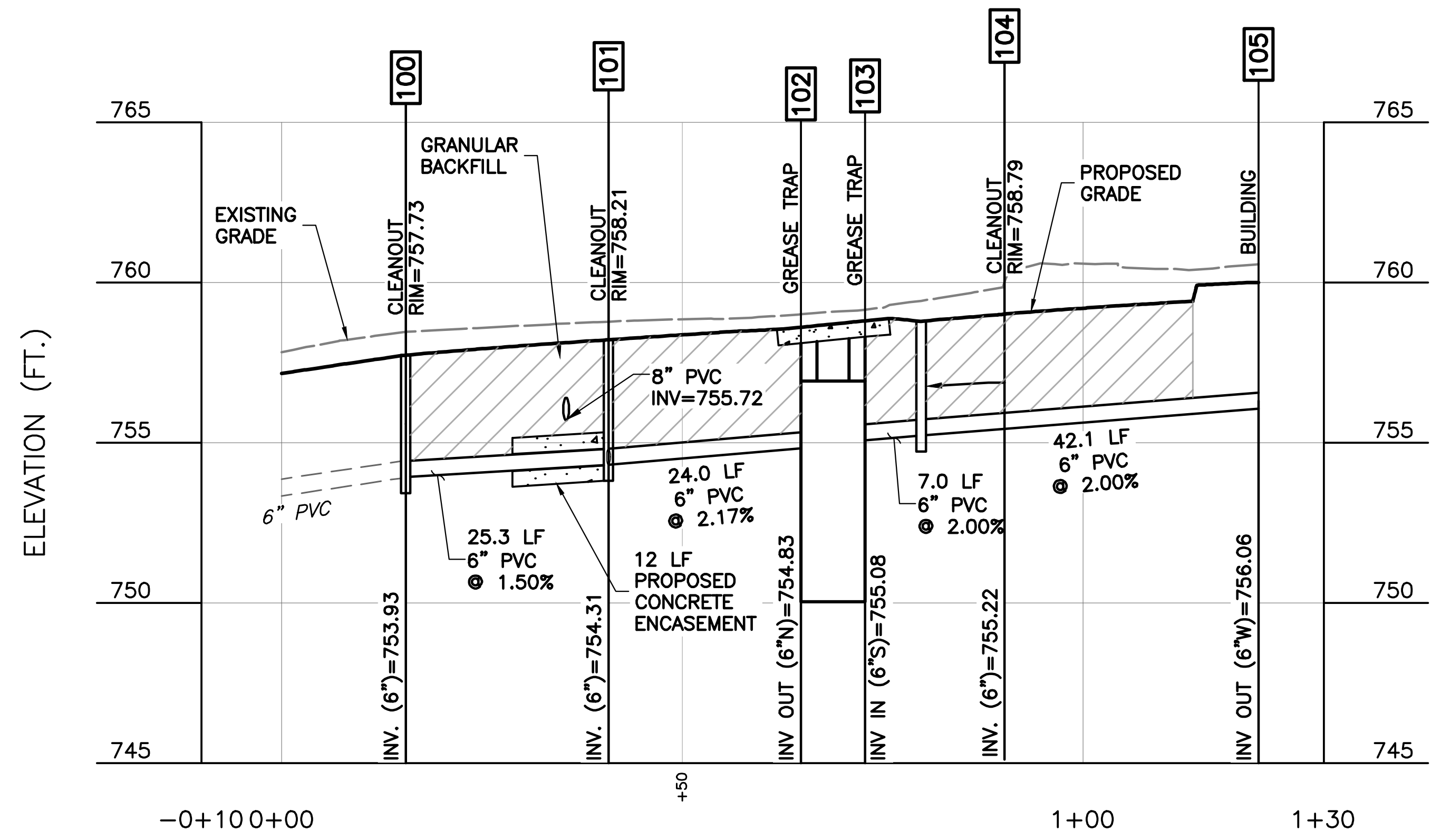
1. PROPOSED SANITARY CLEANOUT / POINT OF CONNECTION TO EXISTING 6" PVC SANITARY SEWER LATERAL. REFER TO DETAIL ON SHEET C801 AND COORDINATE WITH CITY OF BOONVILLE DEPARTMENT OF PUBLIC WORKS. CONTRACTOR TO CAMERA EXISTING LATERAL TO VERIFY ITS CONDITION. CAMERA REPORT TO BE SHARED WITH CITY PUBLIC WORKS AND BUILDING INSPECTOR.
2. PROPOSED 6" PVC SANITARY SEWER LATERAL AT 1.5% MINIMUM SLOPE.
3. PROPOSED SANITARY SEWER CLEANOUT. REFER TO DETAIL ON C801.
4. PROPOSED GREASE INTERCEPTOR. COORDINATE WITH PLUMBING PLAN.
5. PROPOSED WATER (DOMESTIC) SERVICE POINT OF CONNECTION. COORDINATE WITH CITY OF BOONVILLE DEPARTMENT OF PUBLIC WORKS.
6. PROPOSED 2" WATER VALVE. COORDINATE WITH CITY OF BOONVILLE DEPARTMENT OF PUBLIC WORKS.
7. PROPOSED 2" TYPE K COPPER WATER (DOMESTIC) SERVICE LINE TO 4' PAST METER. PRIVATE 2" PE CTS TUBING TO BUILDING. PROVIDE TRACER/LOCATOR WIRE FOR WATER LINES WITHIN THE RIGHT OF WAY.
8. PROPOSED 2" WATER METER. COORDINATE WITH CITY OF BOONVILLE DEPARTMENT OF PUBLIC WORKS.
9. PROPOSED 1-1/2" IRRIGATION LINE (PRIVATE).
10. PROPOSED 1-1/2" IRRIGATION METER (PRIVATE) – SEE IRRIGATION PLAN FOR CONTINUATION..
11. PROPOSED 3/4" PRIVATE PE CTS TUBING (DOMESTIC) SERVICE LINE TO DUMPSTER HOSE BIB
12. PROPOSED UNDERGROUND PRIMARY ELECTRIC SERVICE LINE.
13. PROPOSED PAD MOUNTED TRANSFORMER. COORDINATE WITH UTILITY COMPANY.
14. PROPOSED UNDERGROUND SECONDARY ELECTRIC SERVICE LINE.
15. PROPOSED UNDERGROUND CONDUIT FOR TELEPHONE/COMMUNICATIONS LINE. COORDINATE WITH UTILITY COMPANY.
16. PROPOSED 6" PVC CANOPY DRAIN (2% MINIMUM SLOPE) TO CONNECT TO ROOF DRAIN. REFER TO DETAIL ON SHEET C801.
17. PROPOSED 8" PVC ROOF DRAIN (1% MINIMUM SLOPE)
18. PROPOSED 8" PVC TO DAYLIGHT IN LANDSCAPE AREA AT INV≈755.00
19. PROPOSED 12 LF OF CONCRETE ENCASEMENT ON SANITARY LATERAL WHERE UTILITY CROSSING IS LESS THAN 18" MINIMUM CLEARANCE. REFER TO DETAIL ON SHEET C801.
20. PROPOSED GAS SERVICE POINT OF CONNECTION TO EXISTING GAS LINE. COORDINATE WITH UTILITY COMPANY
21. PROPOSED GAS LINE.
22. PROPOSED GAS METER.
23. PROPOSED BORE AND CASING FOR NEW 2" WATER SERVICE. COORDINATE WITH CITY OF BOONVILLE DEPARTMENT OF PUBLIC WORKS.
24. PROPOSED ELECTRIC METER. COORDINATE WITH UTILITY COMPANY. 2

NOTE: CONTRACTOR TO PROVIDE 18" MINIMUM CLEARANCE AT ALL UTILITY CROSSINGS UNLESS OTHERWISE NOTED.



SANITARY PROFILE 1 PROFILE

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



SANITARY PROFILE 2 PROFILE

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

SCALE IN FEET
0 20 40

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

NOTES:

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490 AMERICANA
BOONVILLE, MO 65233

UTILITY PLAN

DATE: DECEMBER 19, 2025	DRAWN BY: LFD
DWG SCALE: AS SHOWN	CHECKED BY: LFD
PROJECT NO:	353-116
APPROVED BY:	PTB

PATRICK TODD BENNETT
NUMBER PE-2002003134
04/03/2026

DRAWING NO.: C500

SHEET 06 OF 20

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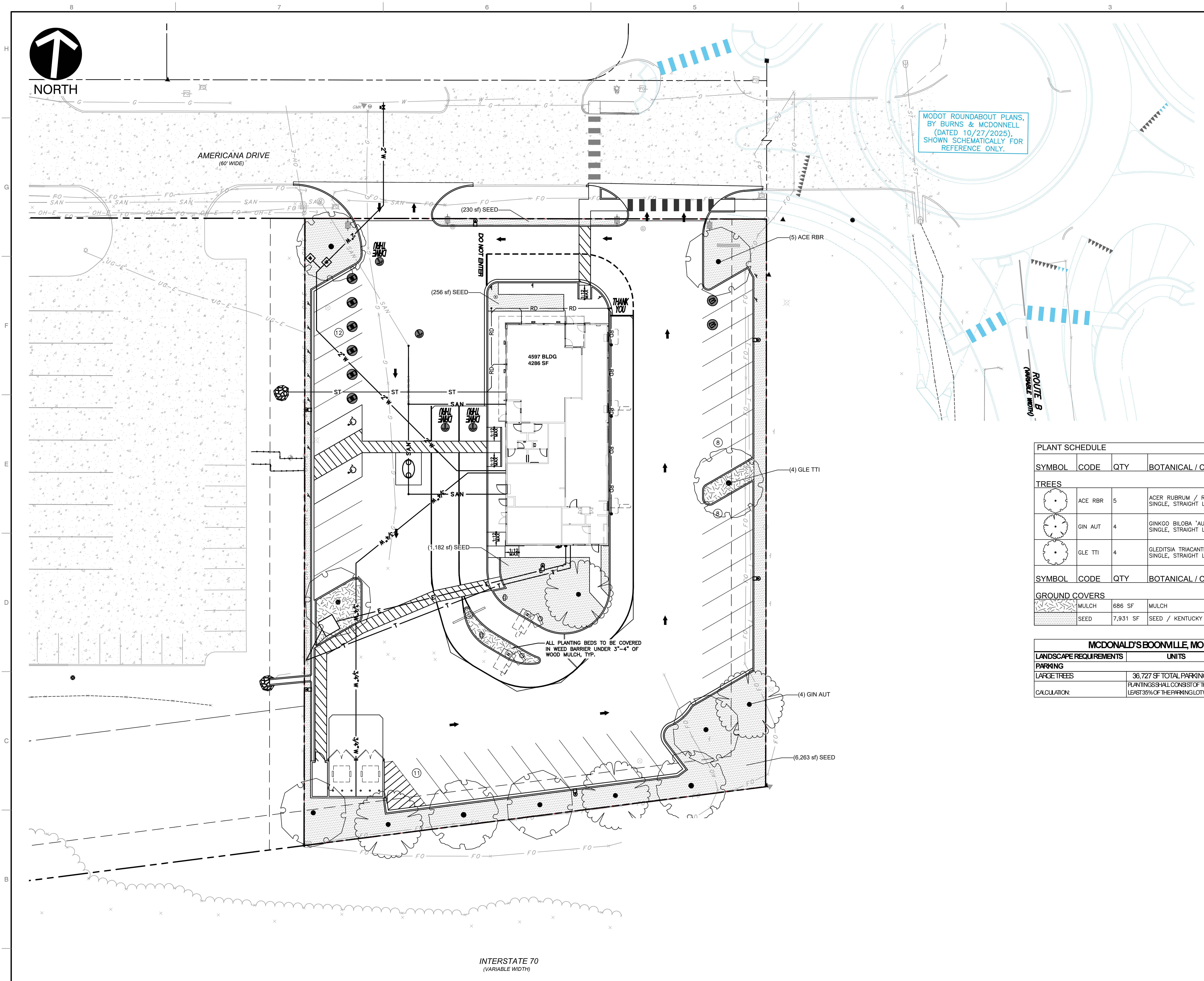

PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	CONTAINER	CALIPER	SIZE
TREES						
	ACE RBR	5	ACER RUBRUM / RED MAPLE SINGLE, STRAIGHT LEADER; MATCH SPECIMEN	B&B	2" CAL.	12'-14' HT.
	GIN AUT	4	GINKGO BILOBA 'AUTUMN GOLD' / AUTUMN GOLD MAIDENHAIR TREE SINGLE, STRAIGHT LEADER; MATCH SPECIMEN	B&B	2" CAL.	12'-14' HT.
	GLE TTI	4	GLEDITSIA TRIACANTHOS F. INERMIS / THORNLESS HONEY LOCUST SINGLE, STRAIGHT LEADER; MATCH SPECIMEN	B&B	2" CAL.	12'-14' HT.
SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME			
GROUND COVERS						
▨	MULCH	686 SF	MULCH			
▒	SEED	7,931 SF	SEED / KENTUCKY BLUEGRASS/FESCUE BLEND			

MCDONALD'S BOONVILLE, MO PLANTING REQUIREMENTS

LANDSCAPE REQUIREMENTS	UNITS	REQUIRED PLANTS	PROVIDED PLANTS
PARKING			
LARGE TREES	36,727 SF TOTAL PARKING AREA	9,182 SF TO BE SHADED	13
CALCULATION:	PLANTINGS SHALL CONSIST OF THE NUMBER OF STANDARD CANOPY TREES NEEDED TO SHADE AT LEAST 35% OF THE PARKING LOT WHEN THE TREES ARE MATURE.		

PARKING LOT LANDSCAPING REQUIREMENTS:
PLANTINGS SHALL CONSIST OF THE NUMBER OF STANDARD CANOPY TREES NEEDED TO SHADE AT LEAST 35% OF THE PARKING LOT WHEN THE TREES ARE MATURE.

TOTAL PARKING LOT AREA: 36,727 SF

REQUIRED PARKING LOT AREA TO BE SHADED: 36,727 SF X 35% = 9,182 SF

REQUIRED LARGE CANOPY TREES: 9,182 SF / 706.5 SF (SHADE RADIUS OF LARGE CANOPY TREE) = 13

NOTE TO CONTRACTOR
THE CONTRACTOR SHALL REFER TO ALL PLANS WITHIN THIS PLAN SET. IT IS NOT THE ENGINEER'S INTENT THAT ANY SINGLE PLAN SHEET IN THIS SET OF DOCUMENTS FULLY DEPICT ALL WORK ASSOCIATED WITH THIS PRODUCT.

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.

PATRICK TODD BENNETT
NUMBER PE-2002003134
04/03/2026

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NSN 8043 (024-0281)
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BOONVILLE, MO 65233

LANDSCAPE PLAN

DATE:	DECEMBER 19, 2025	DRAWN BY:	LFD
DWG SCALE:	AS SHOWN	CHECKED BY:	LFD
PROJECT NO:	353-116		
APPROVED BY:	PTB		

DRAWING NO.:
C700
SHEET 07 OF 20

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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:

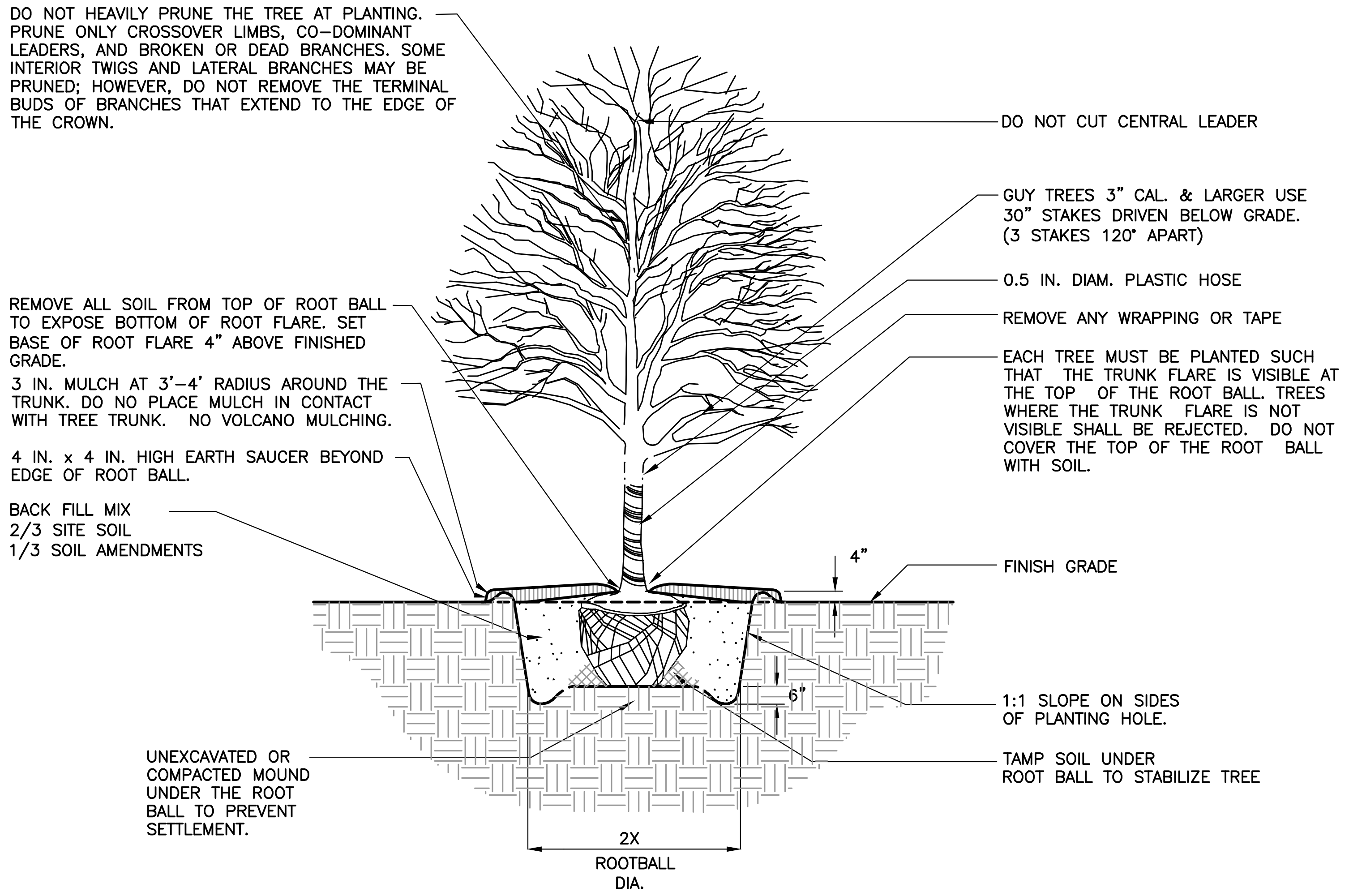
A. 1/2 TO 1 POUND: 38 PERCENT UREA FORMALDEHYDE PER 1,000 SQUARE FEET

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.

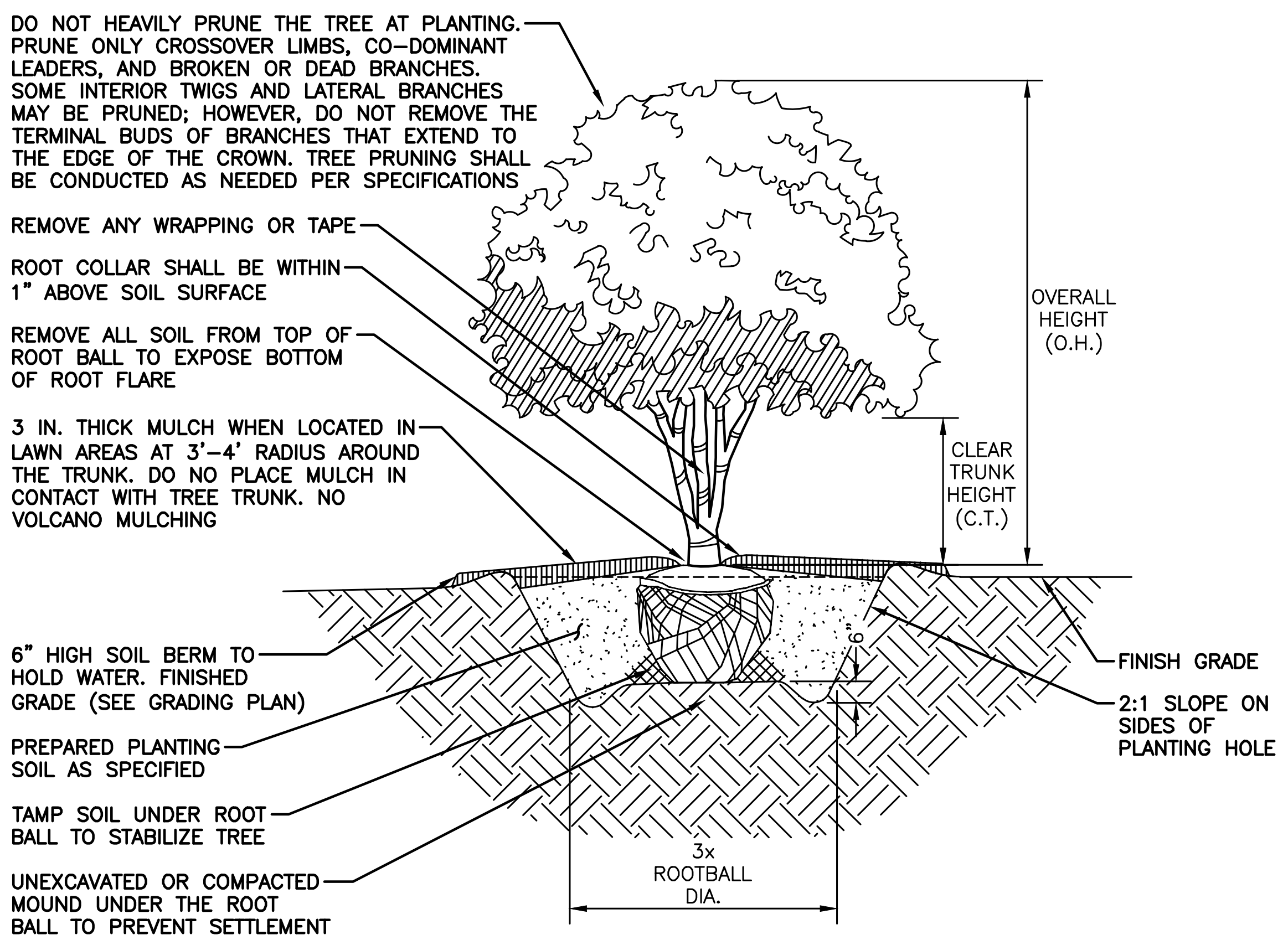
INSPECTIONS
A. THE LANDSCAPE ARCHITECT SHALL INSPECT THE SOD WITHIN 30 DAYS AFTER INSTALLATION AND DETERMINE IF IT IS ACCEPTABLE.

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.


DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY CROSSOVER LIMBS, CO–DOMINANT LEADERS, AND BROKEN OR DEAD BRANCHES. SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED; HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.
DO NOT CUT CENTRAL LEADER
GUY TREES 3" CAL. & LARGER USE 30" STAKES DRIVEN BELOW GRADE. (3 STAKES 120° APART)
0.5 IN. DIAM. PLASTIC HOSE
REMOVE ANY WRAPPING OR TAPE
EACH TREE MUST BE PLANTED SUCH THAT THE TRUNK FLARE IS VISIBLE AT THE TOP OF THE ROOT BALL. TREES WHERE THE TRUNK FLARE IS NOT VISIBLE SHALL BE REJECTED. DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL.
REMOVE ALL SOIL FROM TOP OF ROOT BALL TO EXPOSE BOTTOM OF ROOT FLARE. SET BASE OF ROOT FLARE 4" ABOVE FINISHED GRADE.
3 IN. MULCH AT 3'–4' RADIUS AROUND THE TRUNK. DO NO PLACE MULCH IN CONTACT WITH TREE TRUNK. NO VOLCANO MULCHING.
4 IN. x 4 IN. HIGH EARTH SAUCER BEYOND EDGE OF ROOT BALL.
BACK FILL MIX 2/3 SITE SOIL 1/3 SOIL AMENDMENTS
4"
FINISH GRADE
6"
1:1 SLOPE ON SIDES OF PLANTING HOLE.
TAMP SOIL UNDER ROOT BALL TO STABILIZE TREE
UNEXCAVATED OR COMPACTED MOUND UNDER THE ROOT BALL TO PREVENT SETTLEMENT.
2X ROOTBALL DIA.

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

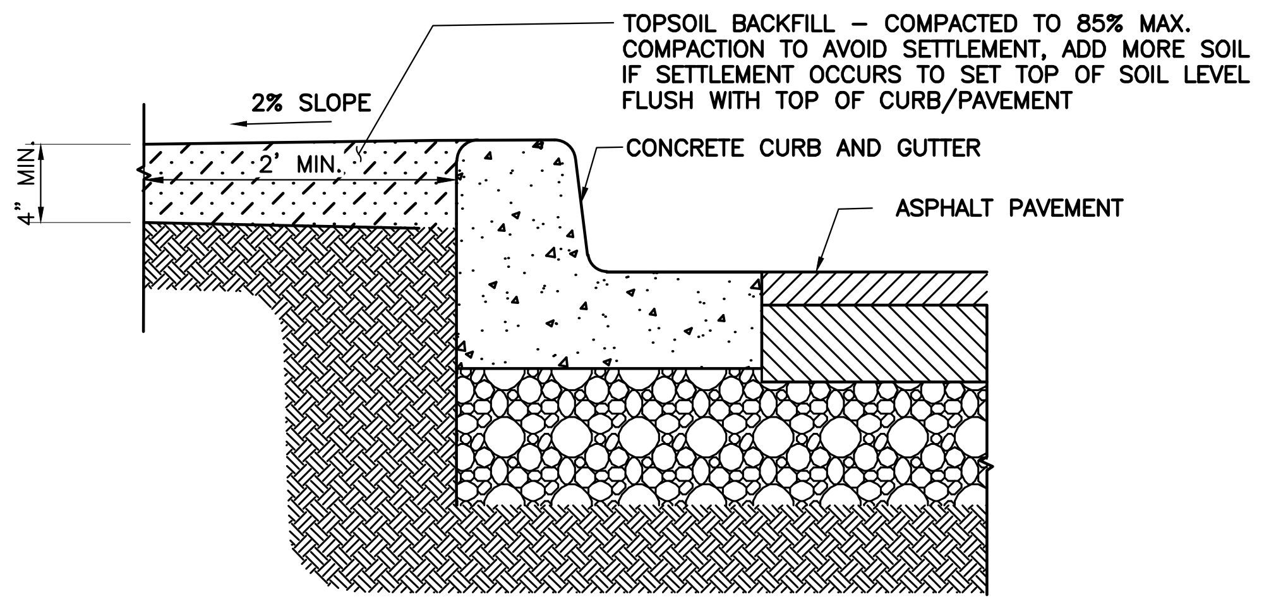

DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY CROSSOVER LIMBS, CO–DOMINANT LEADERS, AND BROKEN OR DEAD BRANCHES. SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED; HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN. TREE PRUNING SHALL BE CONDUCTED AS NEEDED PER SPECIFICATIONS
REMOVE ANY WRAPPING OR TAPE
ROOT COLLAR SHALL BE WITHIN 1" ABOVE SOIL SURFACE
REMOVE ALL SOIL FROM TOP OF ROOT BALL TO EXPOSE BOTTOM OF ROOT FLARE
3 IN. THICK MULCH WHEN LOCATED IN LAWN AREAS AT 3'–4' RADIUS AROUND THE TRUNK. DO NO PLACE MULCH IN CONTACT WITH TREE TRUNK. NO VOLCANO MULCHING
OVERALL HEIGHT (O.H.)
CLEAR TRUNK HEIGHT (C.T.)
6" HIGH SOIL BERM TO HOLD WATER. FINISHED GRADE (SEE GRADING PLAN)
PREPARED PLANTING SOIL AS SPECIFIED
TAMP SOIL UNDER ROOT BALL TO STABILIZE TREE
UNEXCAVATED OR COMPACTED MOUND UNDER THE ROOT BALL TO PREVENT SETTLEMENT
6"
FINISH GRADE
2:1 SLOPE ON SIDES OF PLANTING HOLE
3x ROOTBALL DIA.

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.

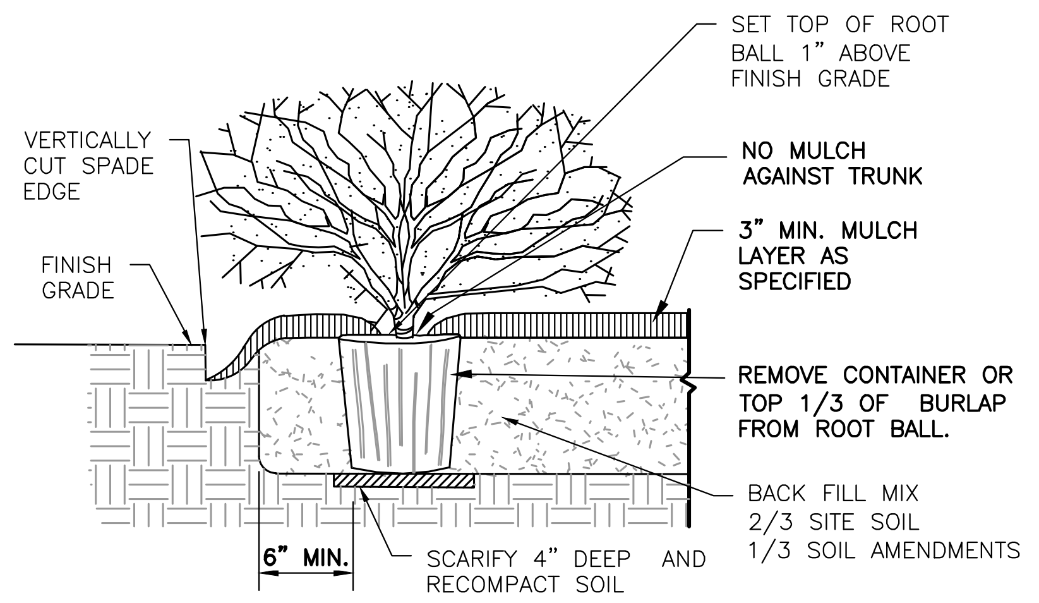
2 MULTI–TRUNK TREE PLANTING DETAIL
NOT TO SCALE

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

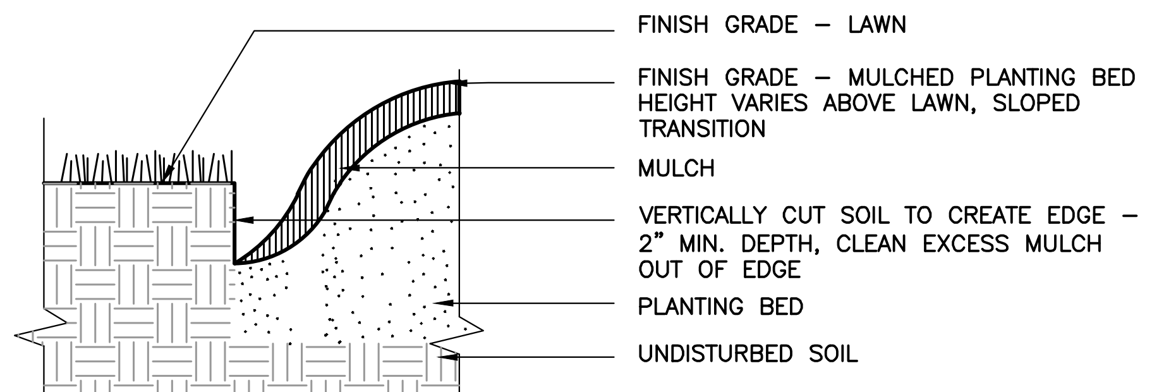

TOPSOIL BACKFILL – COMPACTED TO 85% MAX. COMPACTION TO AVOID SETTLEMENT, ADD MORE SOIL IF SETTLEMENT OCCURS TO SET TOP OF SOIL LEVEL FLUSH WITH TOP OF CURB/PAVEMENT
2% SLOPE
2' MIN.
4" MIN.
CONCRETE CURB AND GUTTER
ASPHALT PAVEMENT

3 TOPSOIL BACKFILL DETAIL
NOT TO SCALE


SET TOP OF ROOT BALL 1" ABOVE FINISH GRADE
VERTICALLY CUT SPADE EDGE
FINISH GRADE
NO MULCH AGAINST TRUNK
3" MIN. MULCH LAYER AS SPECIFIED
REMOVE CONTAINER OR TOP 1/3 OF BURLAP FROM ROOT BALL.
BACK FILL MIX 2/3 SITE SOIL 1/3 SOIL AMENDMENTS
6" MIN.
SCARIFY 4" DEEP AND RECOMPACT SOIL

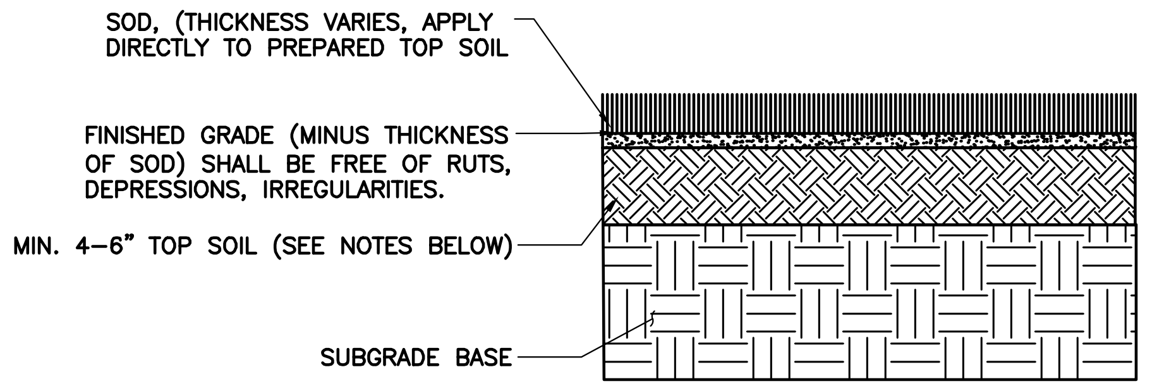
NOTES
1. SEE PLANTING SCHEDULE AND PLANTING NOTES FOR ADDITIONAL INFORMATION/REQUIREMENTS.
2. LIMIT AMOUNT OF PRUNING TO ONLY DEAD OR DAMAGED LIMBS. RETAIN THE NATURAL SHAPE OF SHRUB. IF MORE THAN 1/5 OF TOTAL SHRUB FOLIAGE IS PRUNED, PLANT MAYBE REJECTED.

4 SHRUB PLANTING DETAIL
NOT TO SCALE


FINISH GRADE – LAWN
FINISH GRADE – MULCHED PLANTING BED HEIGHT VARIES ABOVE LAWN, SLOPED TRANSITION
MULCH
VERTICALLY CUT SOIL TO CREATE EDGE – 2" MIN. DEPTH, CLEAN EXCESS MULCH OUT OF EDGE
PLANTING BED
UNDISTURBED SOIL

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


SOD, (THICKNESS VARIES, APPLY DIRECTLY TO PREPARED TOP SOIL
FINISHED GRADE (MINUS THICKNESS OF SOD) SHALL BE FREE OF RUTS, DEPRESSIONS, IRREGULARITIES.
MIN. 4–6" TOP SOIL (SEE NOTES BELOW)
SUBGRADE BASE

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
2	04/03/26	PER CLIENT COMMENTS / OFF-SITE ROAD IMPROVEMENTS
1	02/03/2026	CITY AND CLIENT COMMENTS

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

McDONALD'S RESTAURANT
NSN 8043 (024-0281)
490 AMERICANA
BOONVILLE, MO 65233

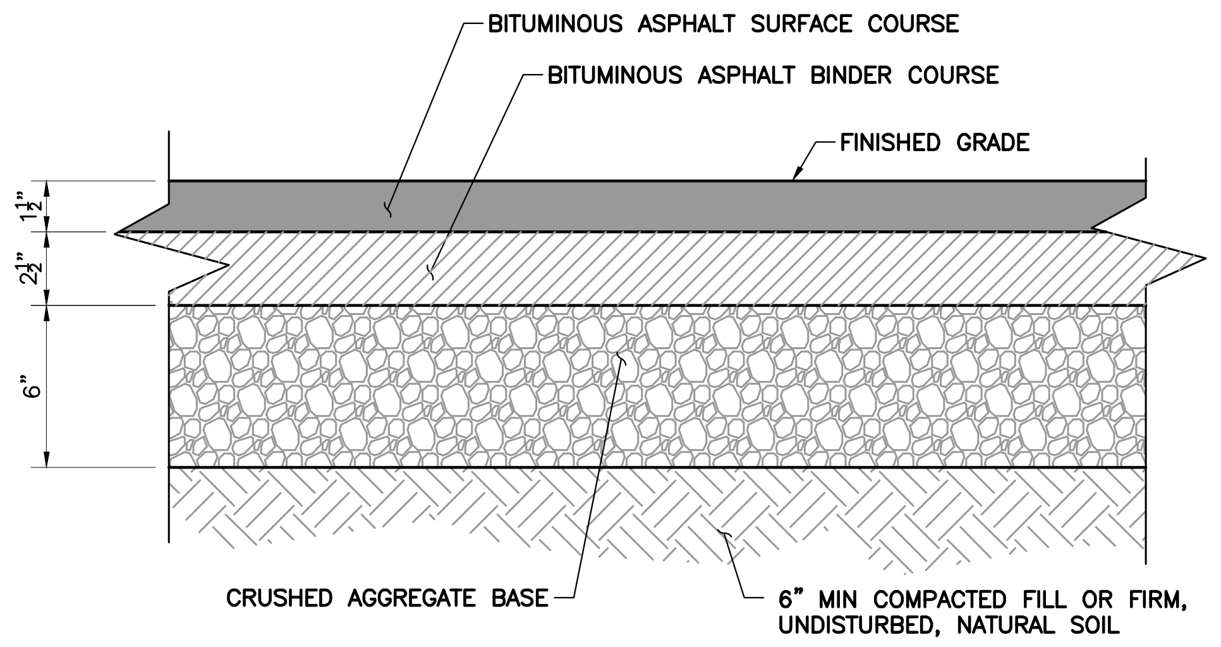
PLANTING DETAILS

DATE:	DECEMBER 19, 2025	DRAWN BY:	LFD
DWG SCALE:	AS SHOWN	CHECKED BY:	LFD
PROJECT NO:			353-116
APPROVED BY:			PTB

STATE OF MISSOURI
PATRICK TODD BENNETT
PROFESSIONAL ENGINEER
04/03/2026

DRAWING NO.:
C701
SHEET 08 OF 20

P:\350-000\353-116\-CADD\Dwg\CV01\353116-CV01-C700.dwg[C701] LS:(4/3/2026 - ldiekemper) - LP: 4/3/2026 2:36 PM

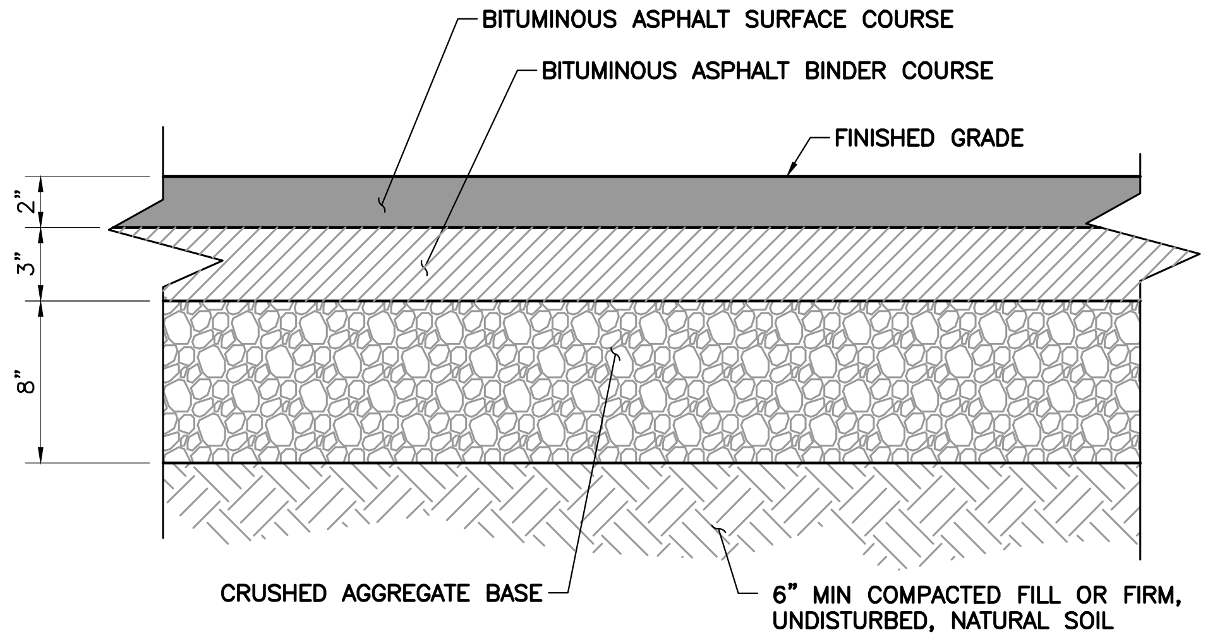

BITUMINOUS ASPHALT SURFACE COURSE
BITUMINOUS ASPHALT BINDER COURSE
FINISHED GRADE
1½"
2½"
6"
CRUSHED AGGREGATE BASE
6" MIN COMPACTED FILL OR FIRM, UNDISTURBED, NATURAL SOIL

NOTES:

1. PAVEMENT THICKNESS SHOWN PER GEOTECHNICAL REPORT, REFER TO THIS DOCUMENT FOR FURTHER SPECIFICATIONS AND/OR RECOMMENDATIONS. (SEE GRADING NOTES ON C001).

LIGHT DUTY ASPHALT PAVEMENT (PARKING)

NOT TO SCALE

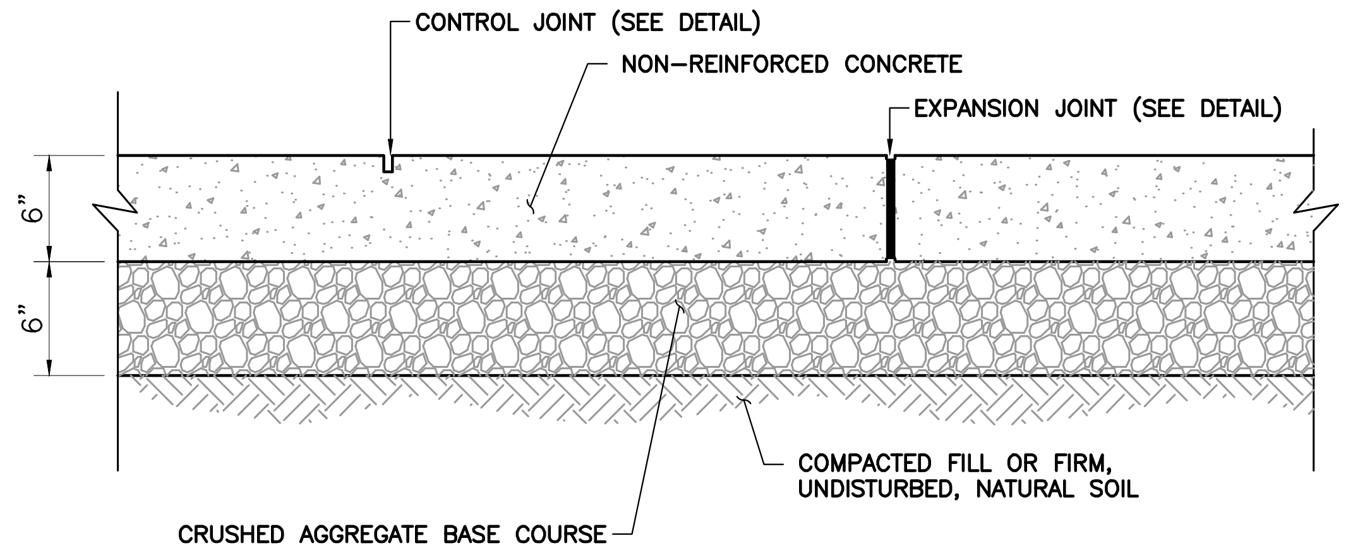

BITUMINOUS ASPHALT SURFACE COURSE
BITUMINOUS ASPHALT BINDER COURSE
FINISHED GRADE
2"
3"
8"
CRUSHED AGGREGATE BASE
6" MIN COMPACTED FILL OR FIRM, UNDISTURBED, NATURAL SOIL

NOTES:

1. PAVEMENT THICKNESS SHOWN PER GEOTECHNICAL REPORT, REFER TO THIS DOCUMENT FOR FURTHER SPECIFICATIONS AND/OR RECOMMENDATIONS. (SEE GRADING NOTES ON C001)

HEAVY DUTY ASPHALT PAVEMENT (DRIVE AISLE)

NOT TO SCALE

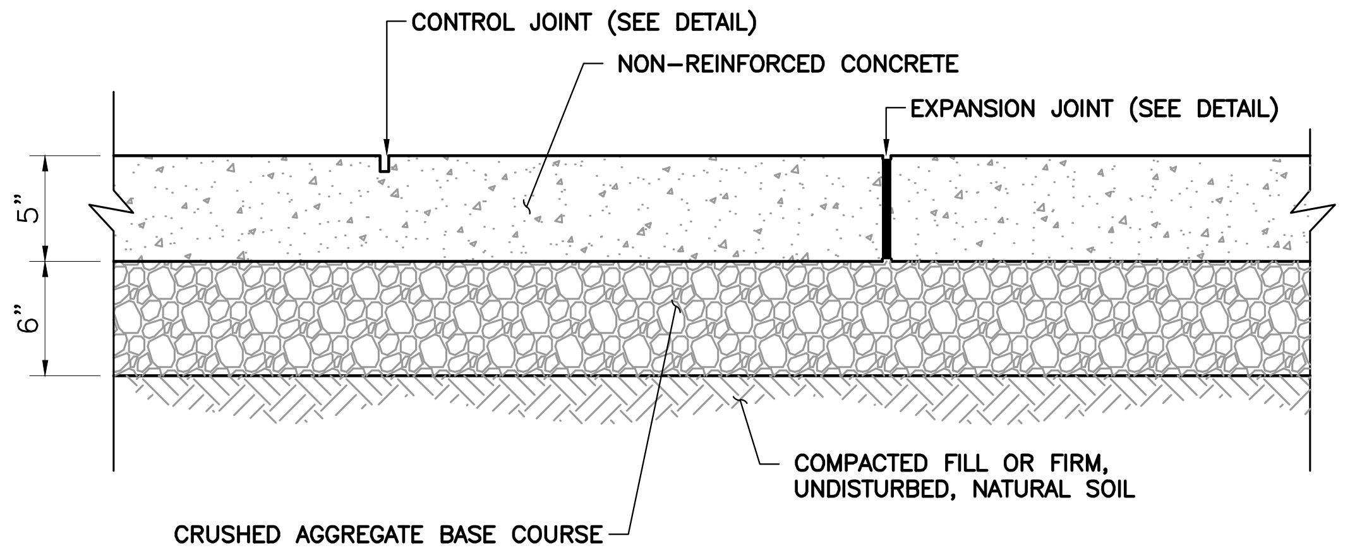

CONTROL JOINT (SEE DETAIL)
NON–REINFORCED CONCRETE
EXPANSION JOINT (SEE DETAIL)
6"
6"
COMPACTED FILL OR FIRM, UNDISTURBED, NATURAL SOIL
CRUSHED AGGREGATE BASE COURSE

NOTES:

1. PAVEMENT THICKNESS SHOWN PER GEOTECHNICAL REPORT, REFER TO THIS DOCUMENT FOR FURTHER SPECIFICATIONS AND/OR RECOMMENDATIONS. (SEE GRADING NOTES ON C001)

HEAVY DUTY CONCRETE PAVEMENT DRIVE-THRU LANES, ENTRANCES, TRASH ENCLOSURE PAD)

N.T.S.

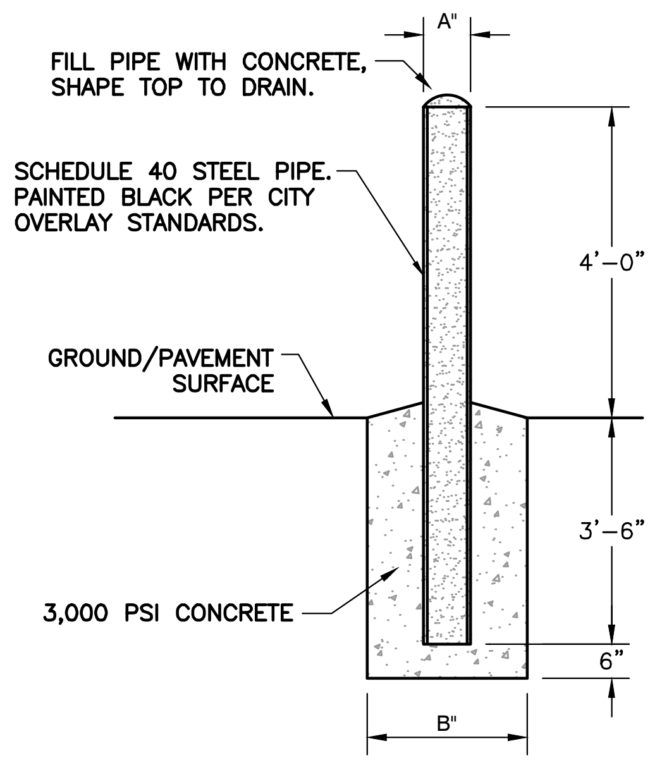

CONTROL JOINT (SEE DETAIL)
NON–REINFORCED CONCRETE
EXPANSION JOINT (SEE DETAIL)
5"
6"
COMPACTED FILL OR FIRM, UNDISTURBED, NATURAL SOIL
CRUSHED AGGREGATE BASE COURSE

NOTES:

1. PAVEMENT THICKNESS SHOWN PER GEOTECHNICAL REPORT, REFER TO THIS DOCUMENT FOR FURTHER SPECIFICATIONS AND/OR RECOMMENDATIONS. (SEE GRADING NOTES ON C001)

LIGHT DUTY CONCRETE PAVEMENT (ADA PARKING)

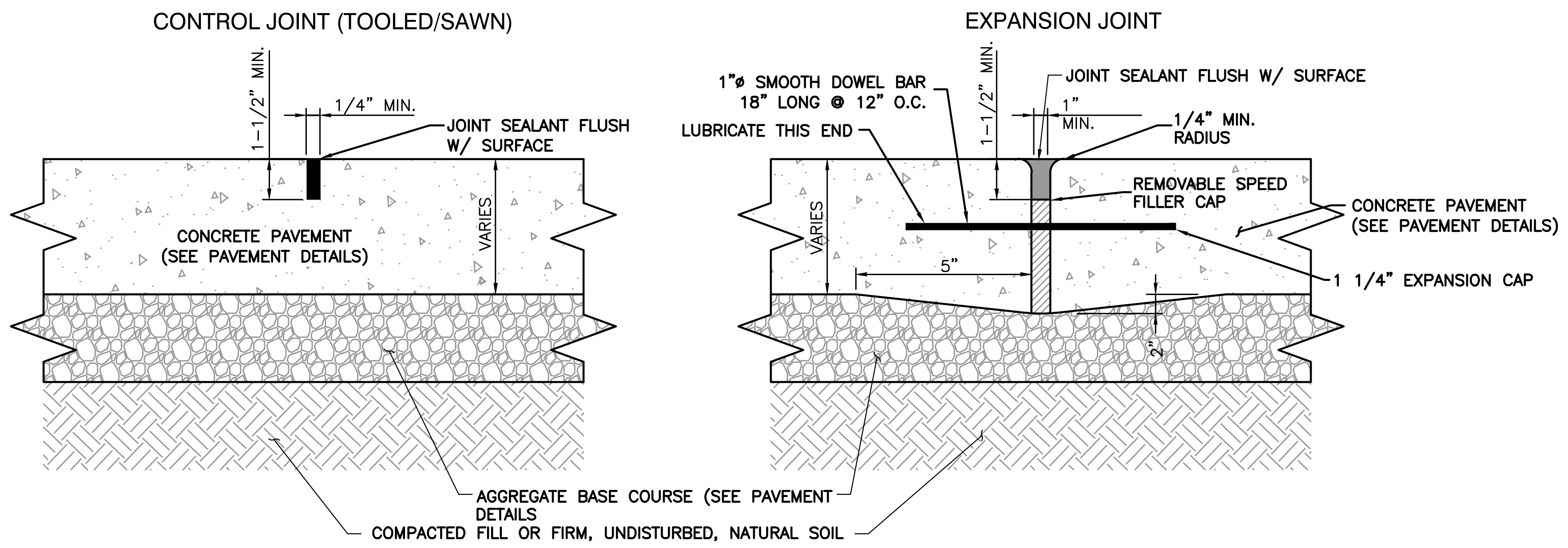
N.T.S.


"A"
FILL PIPE WITH CONCRETE, SHAPE TOP TO DRAIN.
SCHEDULE 40 STEEL PIPE. PAINTED BLACK PER CITY OVERLAY STANDARDS.
4'–0"
GROUND/PAVEMENT SURFACE
3'–6"
3,000 PSI CONCRETE
6"
B"

"A" DIA	"B" DIA
4"	16"
6"	18"
8"	20"

PIPE BOLLARD

N.T.S

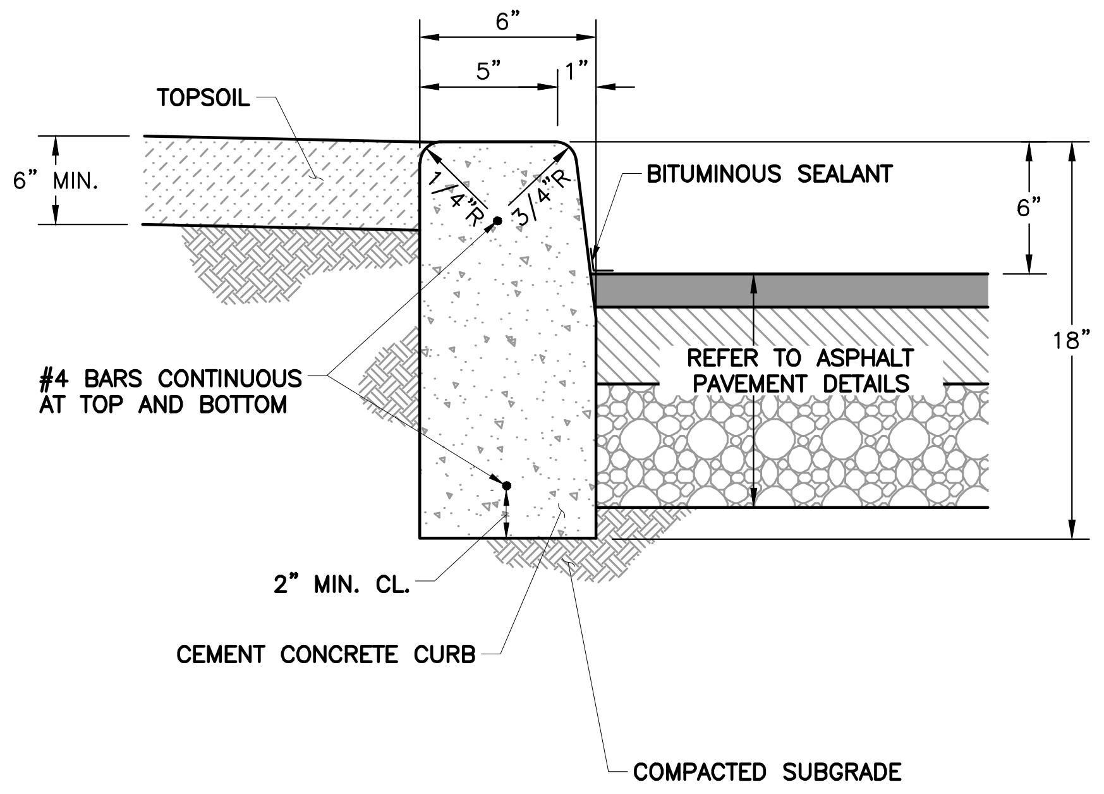

CONTROL JOINT (TOOLED/SAWN)
1–1/2" MIN.
1/4" MIN.
JOINT SEALANT FLUSH W/ SURFACE
CONCRETE PAVEMENT (SEE PAVEMENT DETAILS)
VARIES
EXPANSION JOINT
1"ø SMOOTH DOWEL BAR 18" LONG @ 12" O.C.
LUBRICATE THIS END
1–1/2" MIN.
JOINT SEALANT FLUSH W/ SURFACE
1" MIN.
1/4" MIN. RADIUS
REMOVABLE SPEED FILLER CAP
CONCRETE PAVEMENT (SEE PAVEMENT DETAILS)
1 1/4" EXPANSION CAP
VARIES
5"
2"
AGGREGATE BASE COURSE (SEE PAVEMENT DETAILS
COMPACTED FILL OR FIRM, UNDISTURBED, NATURAL SOIL

NOTES:

1. MAXIMUM JOINT SPACING SHALL BE 15' CENTER TO CENTER.
1. EXPANSION JOINTS ARE REQUIRED AT ALL LOCATIONS WHERE CHANGE OF MATERIAL OR THICKNESSES OCCUR OR ABUTTING STRUCTURES.

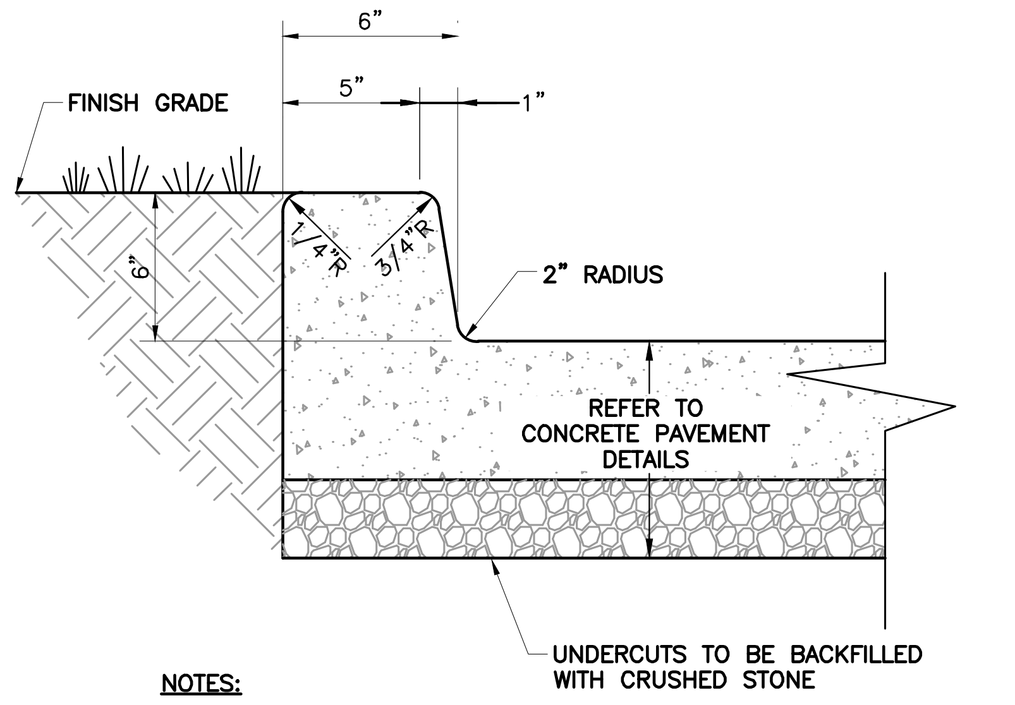
CONCRETE PAVEMENT JOINT DETAILS

NOT TO SCALE



VERTICAL CONCRETE CURB

N.T.S.

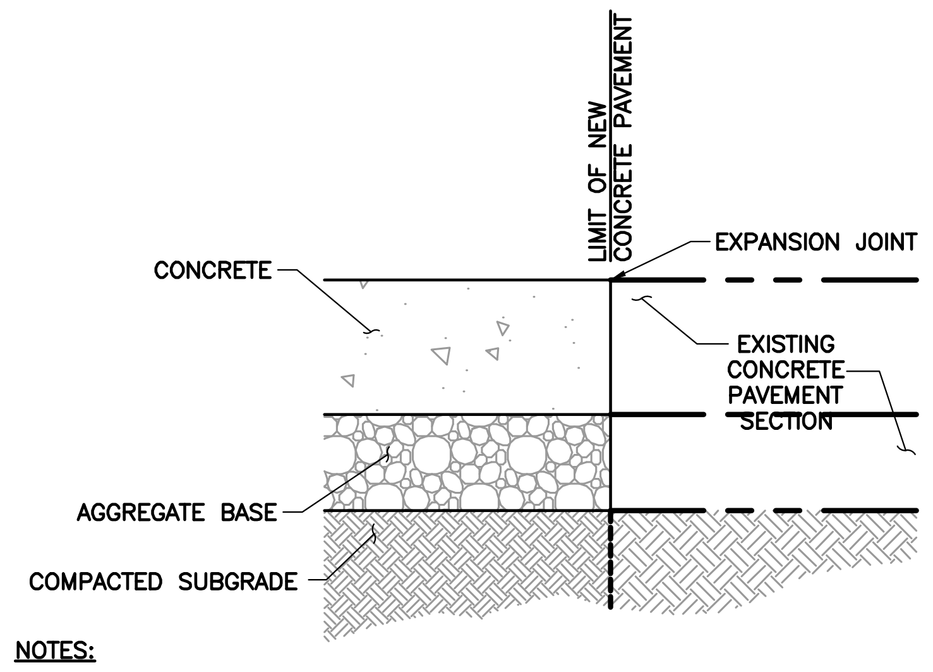

6"
5"
1"
FINISH GRADE
1/4"R
3/4"R
6"
2" RADIUS
REFER TO CONCRETE PAVEMENT DETAILS
UNDERCUTS TO BE BACKFILLED WITH CRUSHED STONE

NOTES:

1. REFER TO CONCRETE PAVEMENT SECTION FOR FURTHER DETAIL.

INTEGRAL CONCRETE CURB

N.T.S.

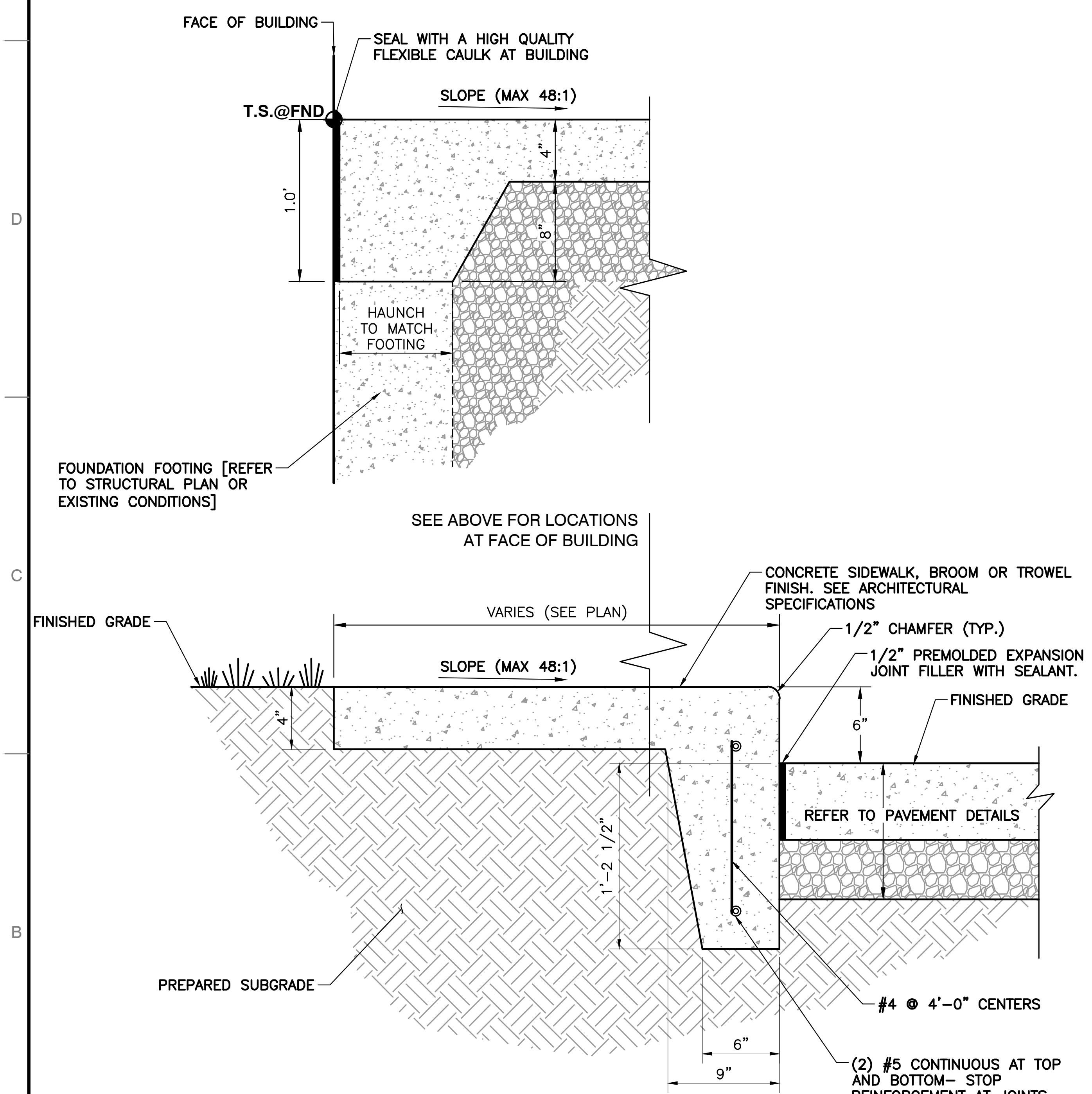

LIMIT OF NEW CONCRETE PAVEMENT
CONCRETE
EXPANSION JOINT
EXISTING CONCRETE PAVEMENT SECTION
AGGREGATE BASE
COMPACTED SUBGRADE

NOTES:

1. REFER TO GEOTECHNICAL REPORT BY SCI ENGINEERING DATED JANUARY 2023 FOR FURTHER SPECIFICATIONS AND/OR RECOMMENDATIONS.
2. WHERE APPLICABLE, REPAINT ALL LANE MARKINGS, PARKING STALLS, ETC. WITH PAVEMENT GRADE SOLID WHITE PAINT 4" WIDE.

PAVEMENT SAWCUT

N.T.S.

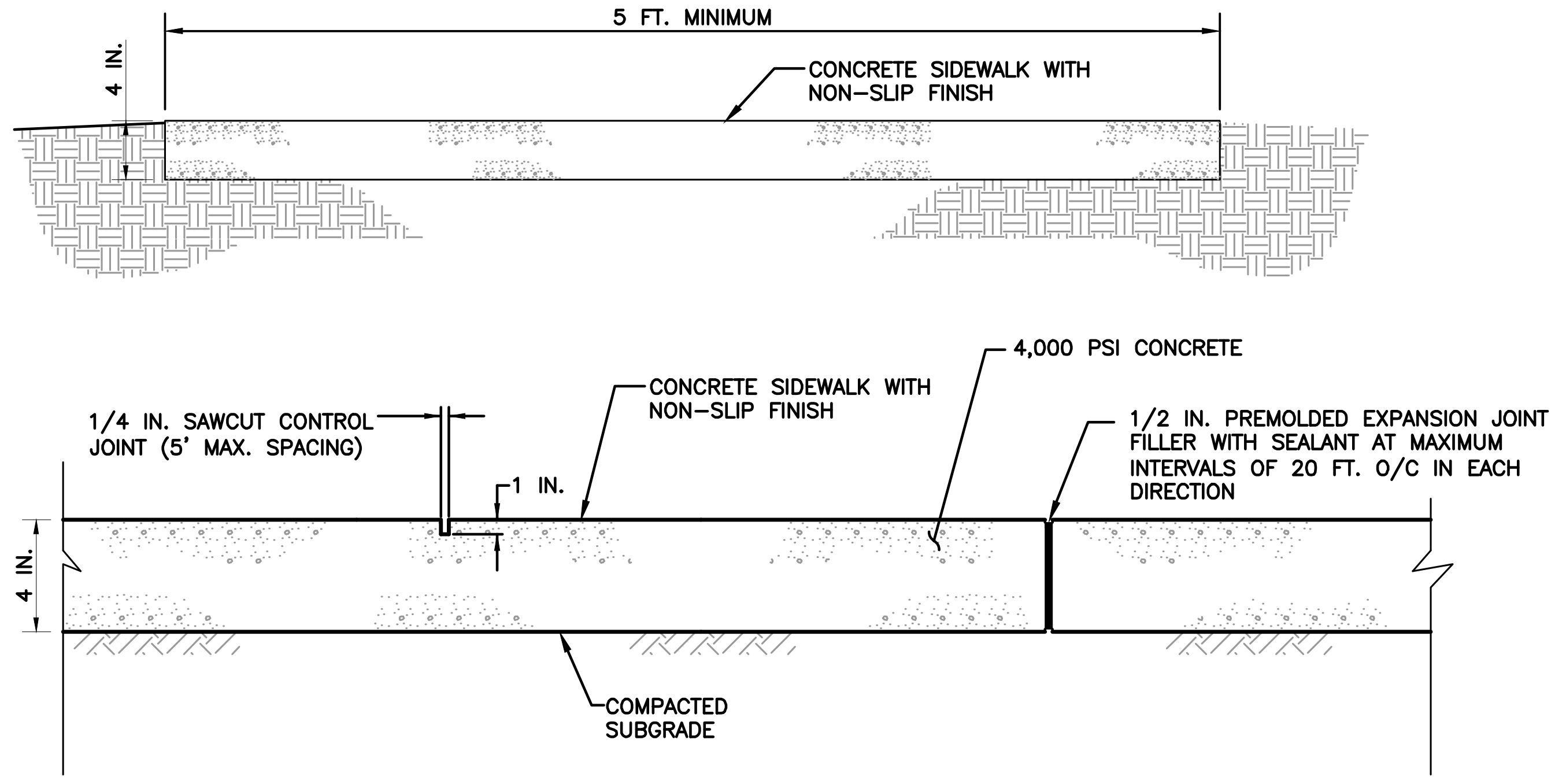

FACE OF BUILDING
SEAL WITH A HIGH QUALITY FLEXIBLE CAULK AT BUILDING
T.S.@FND.
SLOPE (MAX 48:1)
4"
1.0'
8"
HAUNCH TO MATCH FOOTING
FOUNDATION FOOTING [REFER TO STRUCTURAL PLAN OR EXISTING CONDITIONS]
SEE ABOVE FOR LOCATIONS AT FACE OF BUILDING
CONCRETE SIDEWALK, BROOM OR TROWEL FINISH. SEE ARCHITECTURAL SPECIFICATIONS
FINISHED GRADE
VARIES (SEE PLAN)
1/2" CHAMFER (TYP.)
1/2" PREMOLDED EXPANSION JOINT FILLER WITH SEALANT.
SLOPE (MAX 48:1)
FINISHED GRADE
4"
6"
REFER TO PAVEMENT DETAILS
1'–2 1/2"
PREPARED SUBGRADE
#4 @ 4'–0" CENTERS
6"
9"
(2) #5 CONTINUOUS AT TOP AND BOTTOM– STOP REINFORCEMENT AT JOINTS

NOTES:

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

COMBINATION CURB / SIDEWALK

N.T.S.

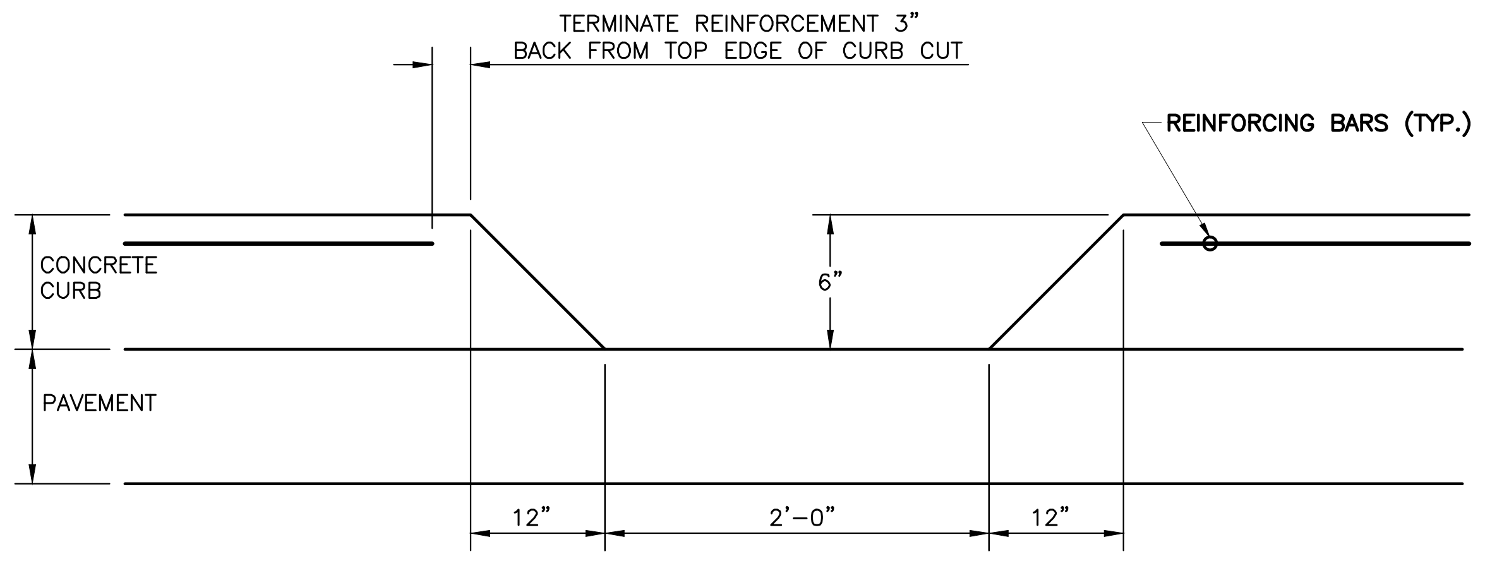

5 FT. MINIMUM
4 IN.
CONCRETE SIDEWALK WITH NON–SLIP FINISH
4,000 PSI CONCRETE
1/4 IN. SAWCUT CONTROL JOINT (5' MAX. SPACING)
CONCRETE SIDEWALK WITH NON–SLIP FINISH
1 IN.
1/2 IN. PREMOLDED EXPANSION JOINT FILLER WITH SEALANT AT MAXIMUM INTERVALS OF 20 FT. O/C IN EACH DIRECTION
4 IN.
COMPACTED SUBGRADE

NOTES:

1. PROVIDE AN 8 IN. HAUNCH AND 1/2 IN. EXPANSION JOINT FILLER WITH SEALANT WHERE THE CONCRETE SIDEWALK ABUTS THE BUILDING.

CONCRETE SIDEWALK

NOT TO SCALE

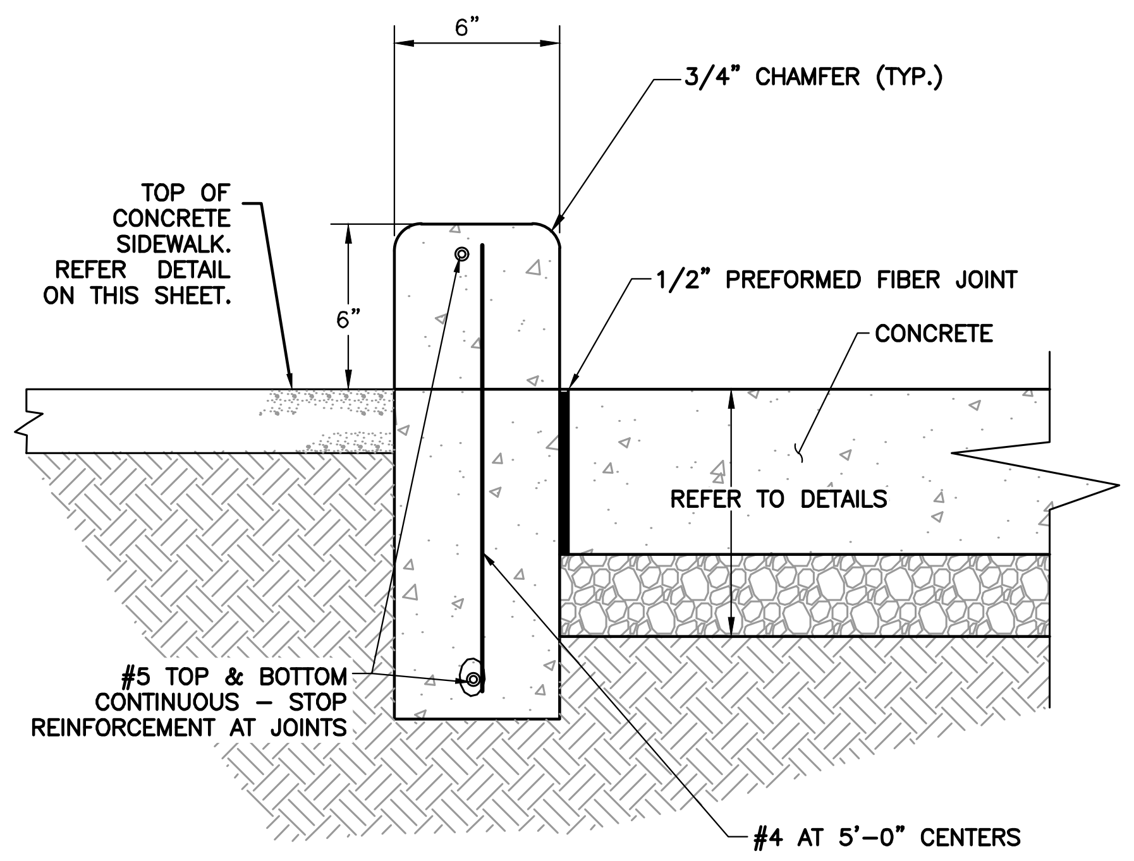


NOTES:

1. PROVIDE REQUIRED LIP WHERE CURB MEETS ROADWAY.

CURB CUT

NOT TO SCALE


6"
3/4" CHAMFER (TYP.)
TOP OF CONCRETE SIDEWALK. REFER DETAIL ON THIS SHEET.
1/2" PREFORMED FIBER JOINT
CONCRETE
6"
REFER TO DETAILS
#5 TOP & BOTTOM CONTINUOUS – STOP REINFORCEMENT AT JOINTS
#4 AT 5'–0" CENTERS

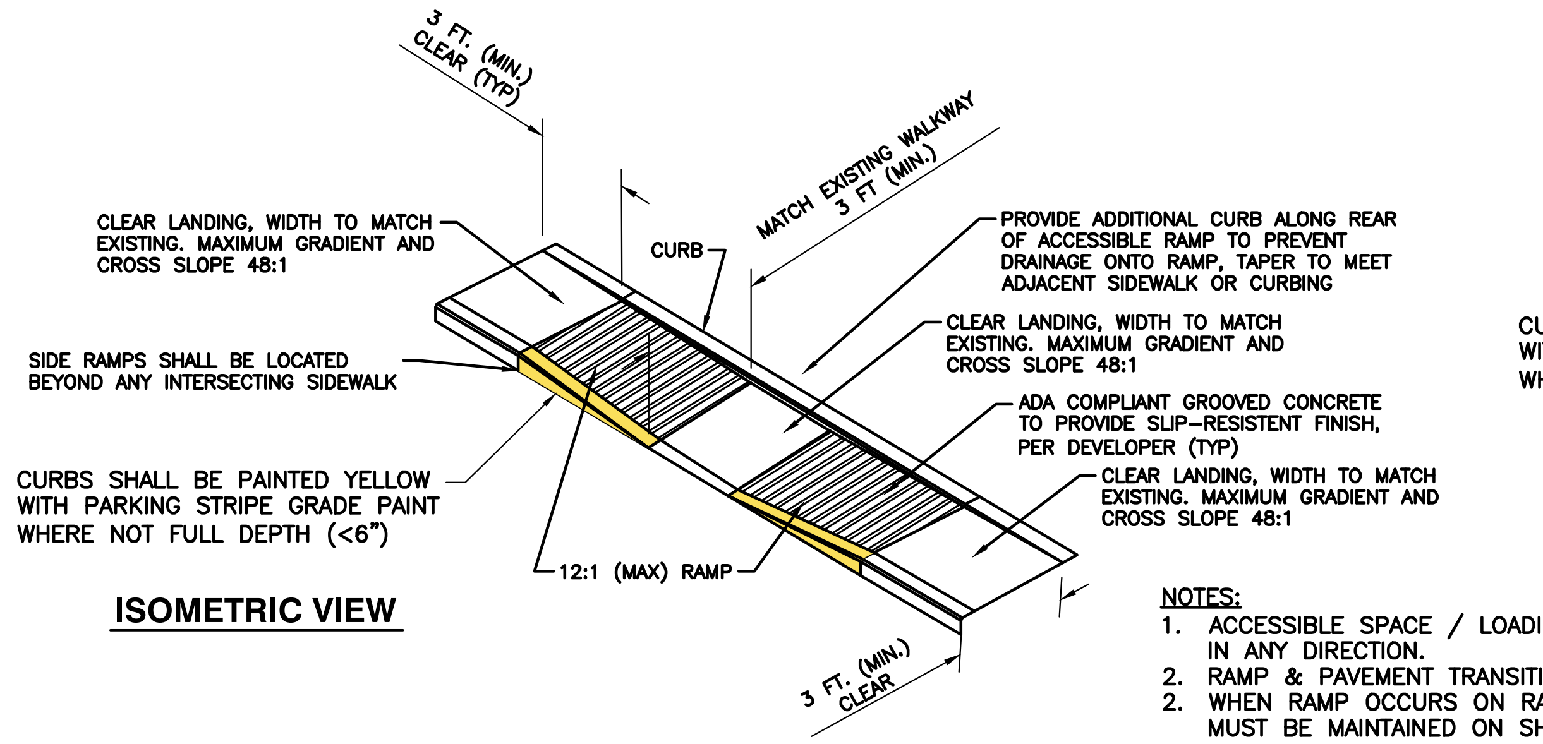
NOTES:

1. SEE CONCRETE SECTION DETAILS FOR PAVEMENT TYPICALS.

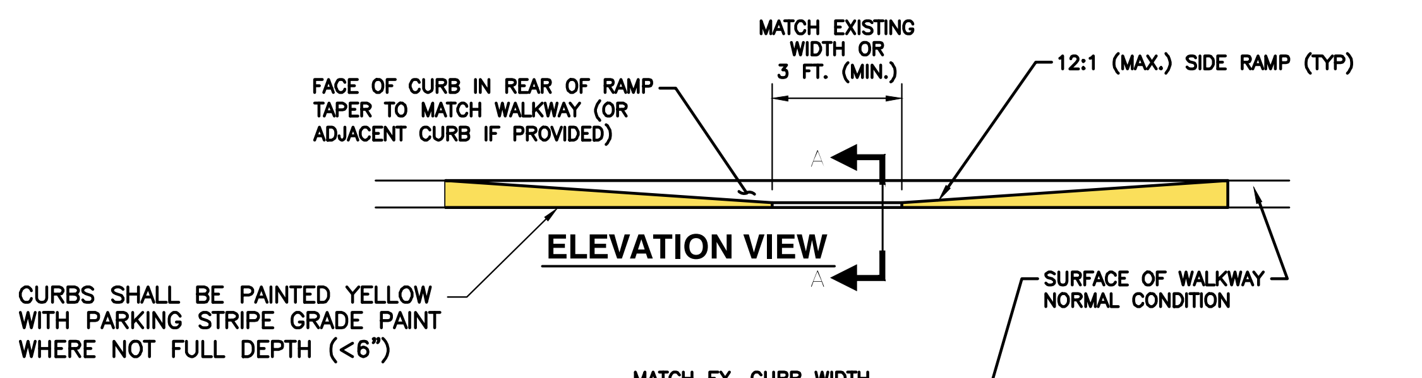
EXPOSED CONCRETE CURB DETAIL

[W/ CONCRETE PVMT]

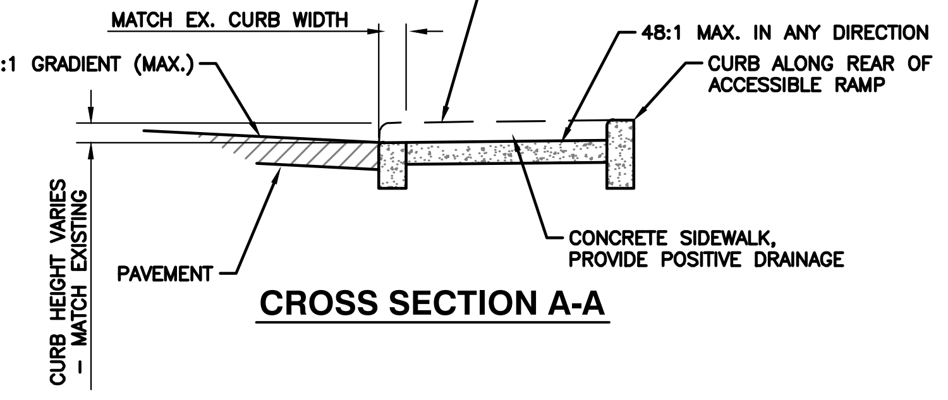
N.T.S.


3 FT. (MIN.) CLEAR (TYP)
MATCH EXISTING WALKWAY 3 FT (MIN.)
CLEAR LANDING, WIDTH TO MATCH EXISTING. MAXIMUM GRADIENT AND CROSS SLOPE 48:1
CURB
PROVIDE ADDITIONAL CURB ALONG REAR OF ACCESSIBLE RAMP TO PREVENT DRAINAGE ONTO RAMP, TAPER TO MEET ADJACENT SIDEWALK OR CURBING
CLEAR LANDING, WIDTH TO MATCH EXISTING. MAXIMUM GRADIENT AND CROSS SLOPE 48:1
SIDE RAMPS SHALL BE LOCATED BEYOND ANY INTERSECTING SIDEWALK
ADA COMPLIANT GROOVED CONCRETE TO PROVIDE SLIP–RESISTENT FINISH, PER DEVELOPER (TYP)
CLEAR LANDING, WIDTH TO MATCH EXISTING. MAXIMUM GRADIENT AND CROSS SLOPE 48:1
CURBS SHALL BE PAINTED YELLOW WITH PARKING STRIPE GRADE PAINT WHERE NOT FULL DEPTH (<6")
12:1 (MAX) RAMP
3 FT. (MIN.) CLEAR

ISOMETRIC VIEW


MATCH EXISTING WIDTH OR 3 FT. (MIN.)
FACE OF CURB IN REAR OF RAMP TAPER TO MATCH WALKWAY (OR ADJACENT CURB IF PROVIDED)
12:1 (MAX.) SIDE RAMP (TYP)
A
A
CURBS SHALL BE PAINTED YELLOW WITH PARKING STRIPE GRADE PAINT WHERE NOT FULL DEPTH (<6")
SURFACE OF WALKWAY NORMAL CONDITION

ELEVATION VIEW


MATCH EX. CURB WIDTH
20:1 GRADIENT (MAX.)
48:1 MAX. IN ANY DIRECTION
CURB ALONG REAR OF ACCESSIBLE RAMP
CURB HEIGHT VARIES – MATCH EXISTING
PAVEMENT
CONCRETE SIDEWALK, PROVIDE POSITIVE DRAINAGE

CROSS SECTION A-A

NOTES:

1. ACCESSIBLE SPACE / LOADING AREA: MAXIMUM 48:1 (1:50) SLOPE IN ANY DIRECTION.
2. RAMP & PAVEMENT TRANSITION TO BE COMPLETELY FLUSH, NO LIP.
2. WHEN RAMP OCCURS ON RADII, MINIMUM CLEAR LANDING WIDTH MUST BE MAINTAINED ON SHORTEST SIDE ALONG CURVE.
3. CONSTRUCT PER A.D.A. & LOCAL STANDARDS.

ADA DEPRESSED CURB ACCESSIBLE RAMP

N.T.S

P:\350-000\353-116\-CADD\Dwg\CV01\353116-CV01-C800.dwg{C800} LS:(4/3/2026 - mburnett) - LP: 4/3/2026 2:37 PM

REVISION RECORD

NO	DATE	DESCRIPTION
2	04/03/26	PER CLIENT COMMENTS / OFF-SITE ROAD IMPROVEMENTS
1	02/03/2026	CITY AND CLIENT COMMENTS

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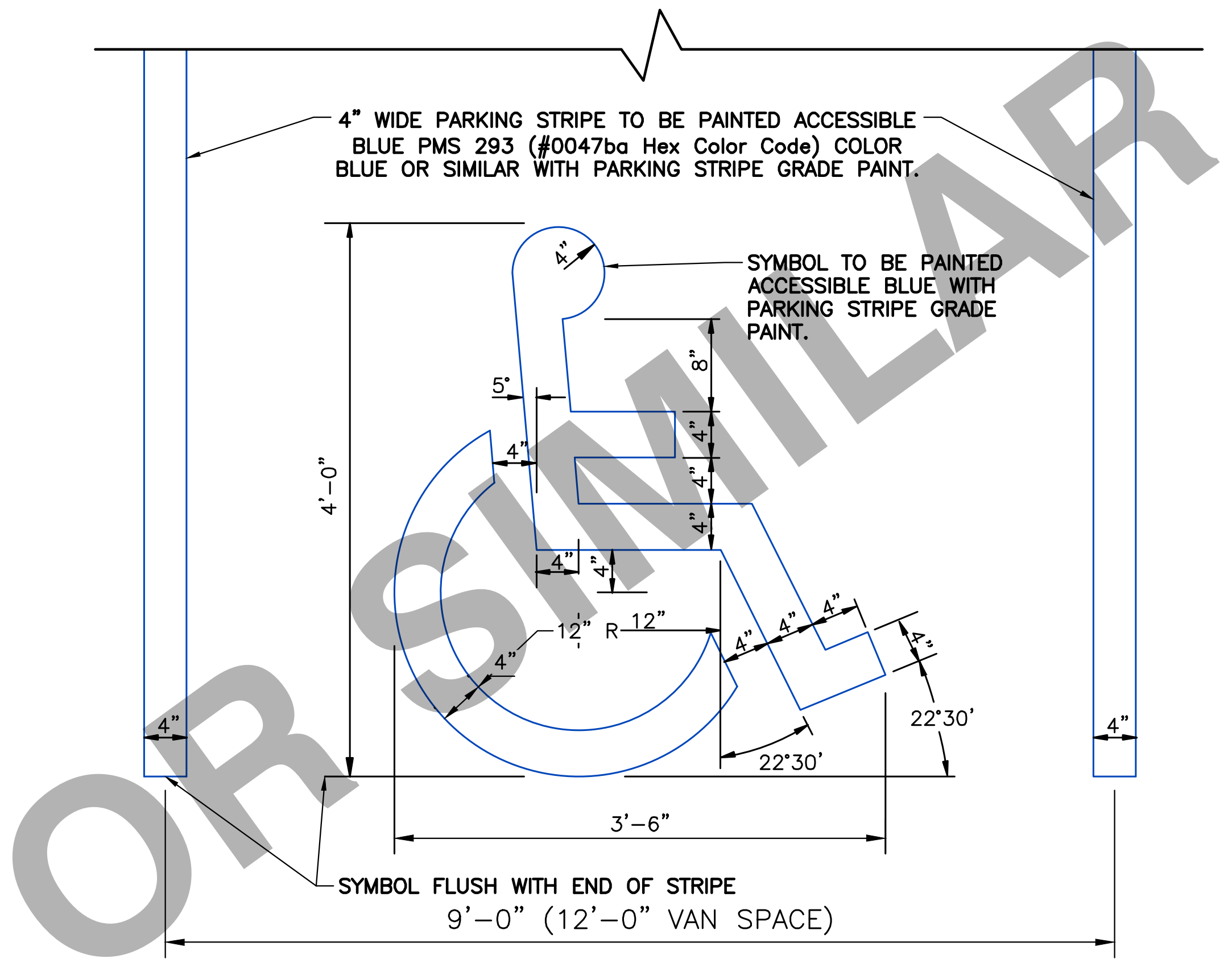
McDONALD'S RESTAURANT
NSN 8043 (024-0281)
490 AMERICANA
BOONVILLE, MO 65233

CONSTRUCTION DETAILS

DATE:	DECEMBER 19, 2025	DRAWN BY:	LFD
DWG SCALE:	AS SHOWN	CHECKED BY:	LFD
PROJECT NO:			353-116
APPROVED BY:			PTB

PATRICK TODD BENNETT
NUMBER PE-2002003134
04/03/2026

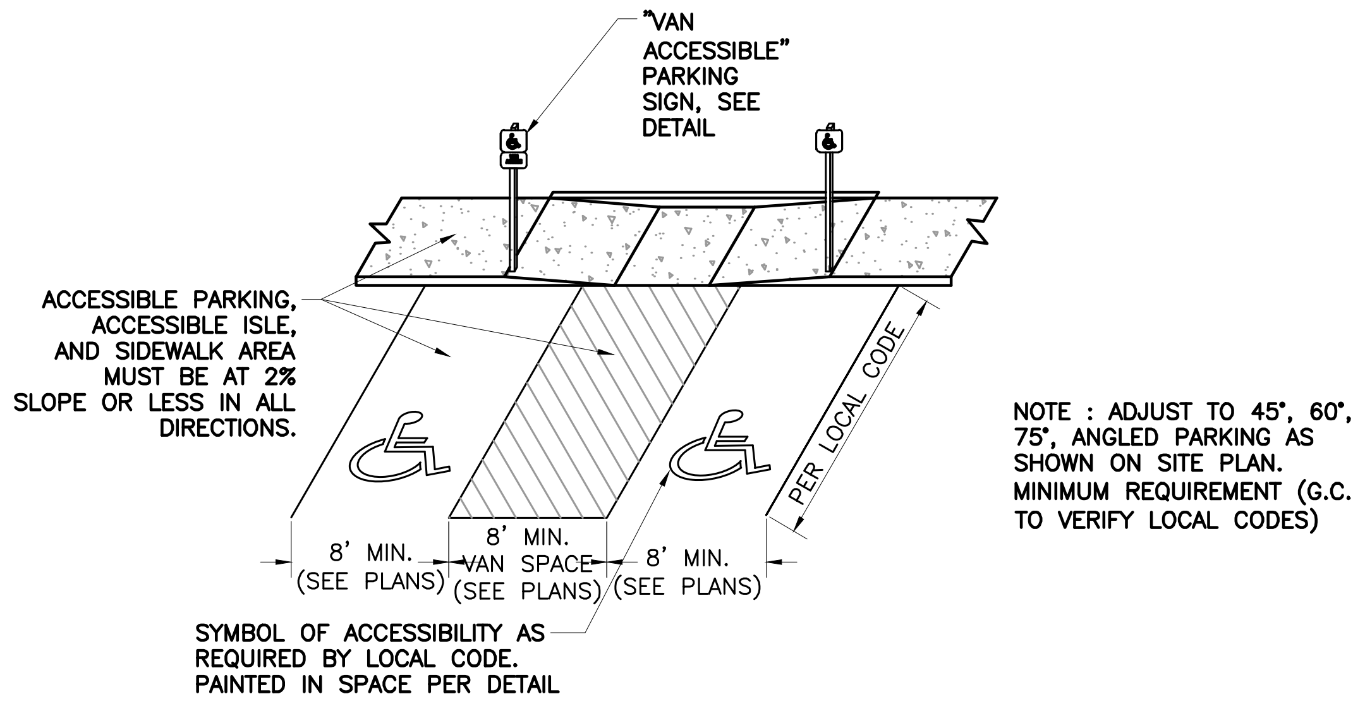
DRAWING NO.:
C800
SHEET 09 OF 20


4" WIDE PARKING STRIPE TO BE PAINTED ACCESSIBLE BLUE PMS 293 (#0047ba Hex Color Code) COLOR BLUE OR SIMILAR WITH PARKING STRIPE GRADE PAINT.
SYMBOL TO BE PAINTED ACCESSIBLE BLUE WITH PARKING STRIPE GRADE PAINT.
4"
5°
8"
4'–0"
12"
R
22°30'
3'–6"
SYMBOL FLUSH WITH END OF STRIPE
9'–0" (12'–0" VAN SPACE)

OR SIMILAR

ADA ACCESSIBLE PARKING SYMBOL

N.T.S


"VAN ACCESSIBLE" PARKING SIGN, SEE DETAIL
ACCESSIBLE PARKING, ACCESSIBLE ISLE, AND SIDEWALK AREA MUST BE AT 2% SLOPE OR LESS IN ALL DIRECTIONS.
PER LOCAL CODE
8' MIN. (SEE PLANS)
8' MIN. VAN SPACE (SEE PLANS)
8' MIN. (SEE PLANS)
SYMBOL OF ACCESSIBILITY AS REQUIRED BY LOCAL CODE. PAINTED IN SPACE PER DETAIL

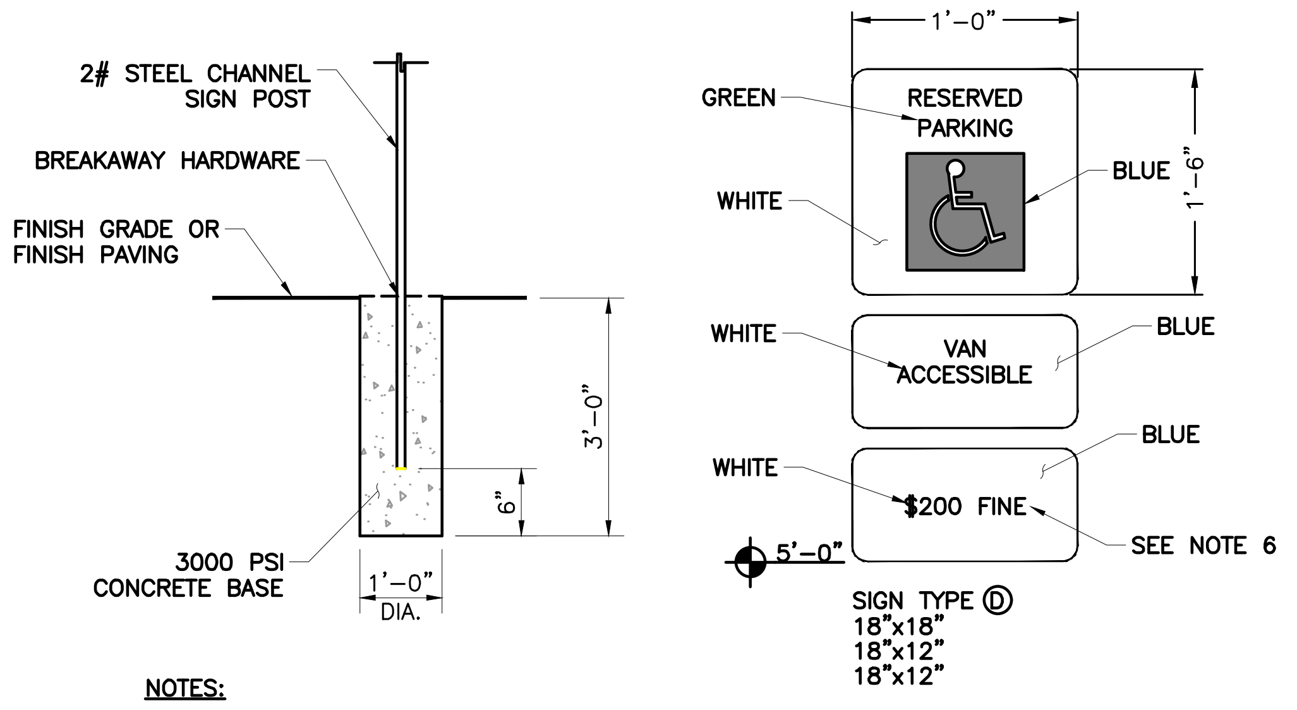
NOTE : ADJUST TO 45°, 60°, 75°, ANGLED PARKING AS SHOWN ON SITE PLAN. MINIMUM REQUIREMENT (G.C. TO VERIFY LOCAL CODES)

NOTES:

1. ALL STRIPING FOR ADA ACCESSIBLE PARKING STALLS AND ACCESS AISLES SHALL MEET THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT.
2. ALL ADA PARKING STALL STRIPING, CROSSHATCH, AND SYMBOLS SHALL BE PMS 293 (#0047ba Hex Color Code) COLOR BLUE OR SIMILAR WITH PARKING STRIPE GRADE PAINT.
3. ACCESSIBLE PARKING SPACE AND ACCESSIBLE ISLE: MAXIMUM 2.0% SLOPE IN ANY DIRECTION.
4. ASPHALT TO CONCRETE BLENDED TRANSITION TO BE COMPLETELY FLUSH, NO LIP.
5. PLACEMENT AND STRIPING SHOWN IN DETAIL IS SCHEMATIC, SEE SITE PLAN FOR CONFIGURATION.
6. ACCESSIBLE ISLE SHALL BE PAINT STRIPED AT 45° ANGLE, EACH 6" WIDE STRIPE AT 24" ON CENTER.

ADA ACCESSIBLE PARKING SPACE MARKING

N.T.S.

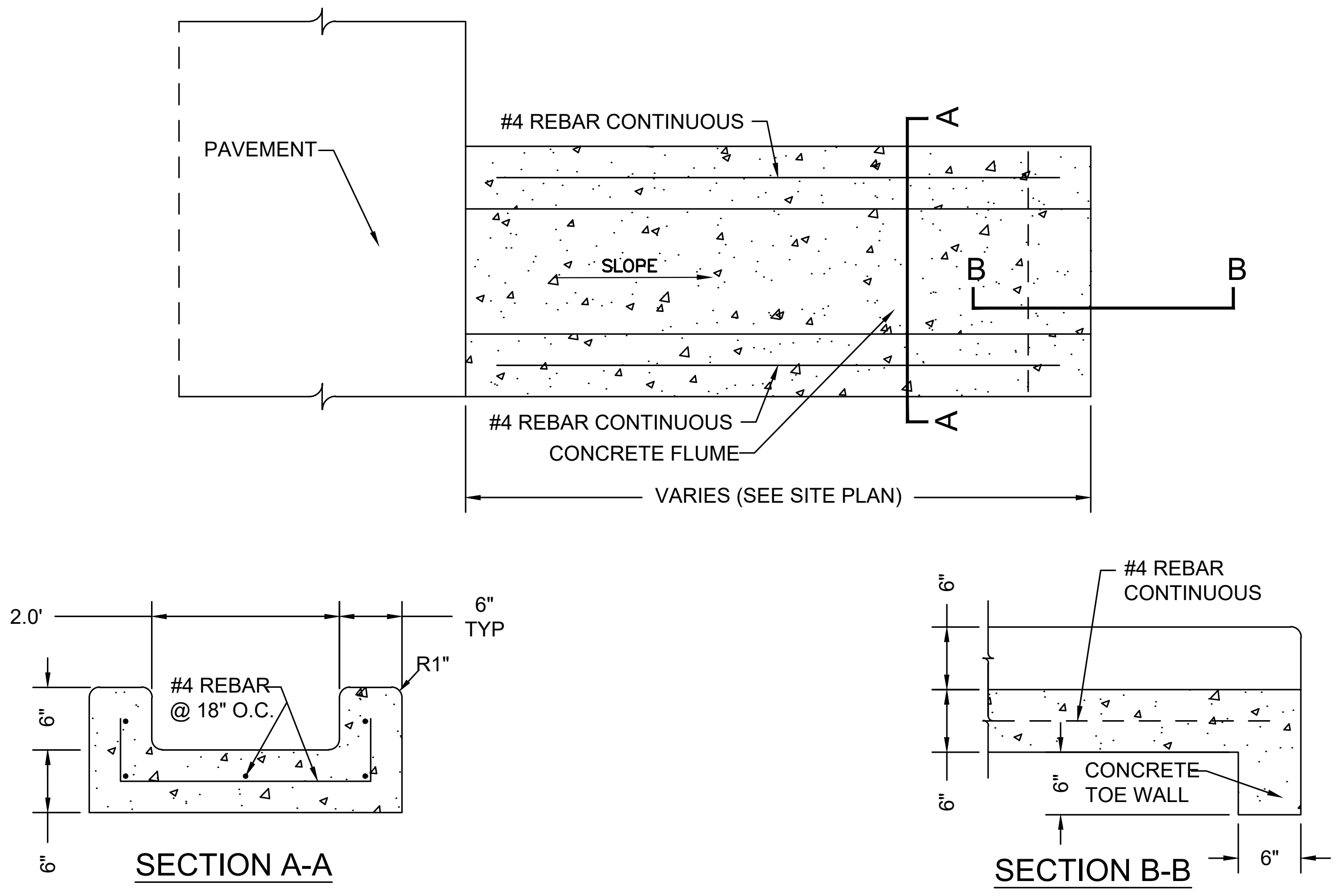


NOTES:

1. SET POSTS IN CONCRETE TO A MINIMUM DEPTH OF 36". SIGN PANELS SHALL BE 0.100 ALUMINUM WITH RAISED OR SILKSCREEN COPY.
2. FOR POST MOUNTING, USE NON–CORROSIVE 3/8" 2. MACHINE BOLTS W/ WASHERS, 2 PER SIGN; OR IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
3. FOR WALL MOUNTING, USE NON–CORROSIVE 3/8" LAG BOLTS W/ LEAD EXPANSION SHIELD, 4 PER SIGN.
4. ALL ACCESSIBLE PARKING SIGNAGE IS TO BE INSTALLED WITH THE BOTTOM EDGE OF THE LOWEST SIGN AT LEAST 60" ABOVE FINISHED GRADE.
5. FINE AMOUNT SHALL BE DISPLAYED IN ACCORDANCE WITH LOCAL LAW. THE AMOUNT SHOWN HEREON IS REPRESENTATIVE ONLY. COORDINATE POSTING OF FINE AMOUNT WITH LOCAL LAW ENFORCEMENT AGENCY.

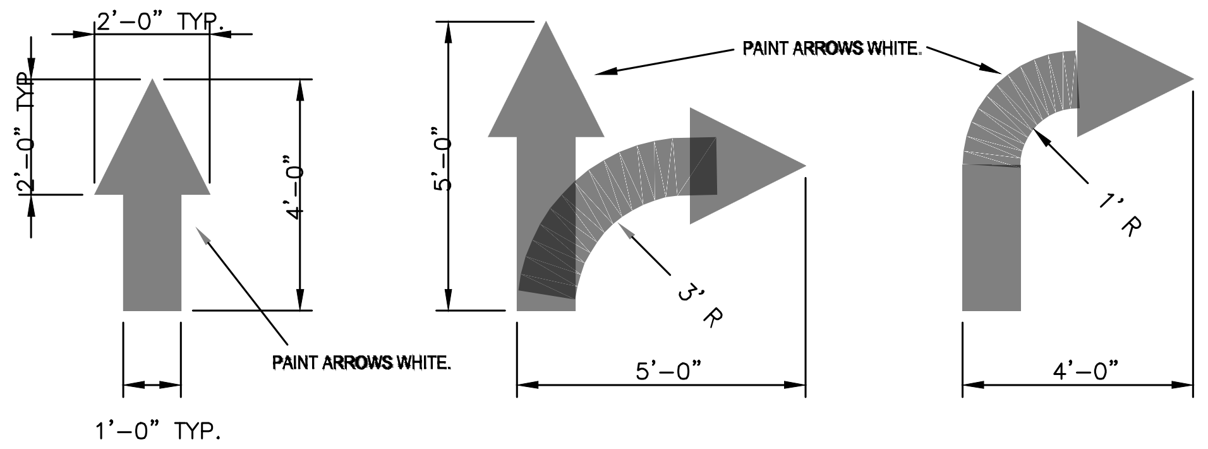
ADA ACCESSIBLE PARKING SIGN

N.T.S



CONCRETE FLUME DETAIL

N.T.S.



WHITE PAINTED DIRECTIONAL ARROWS

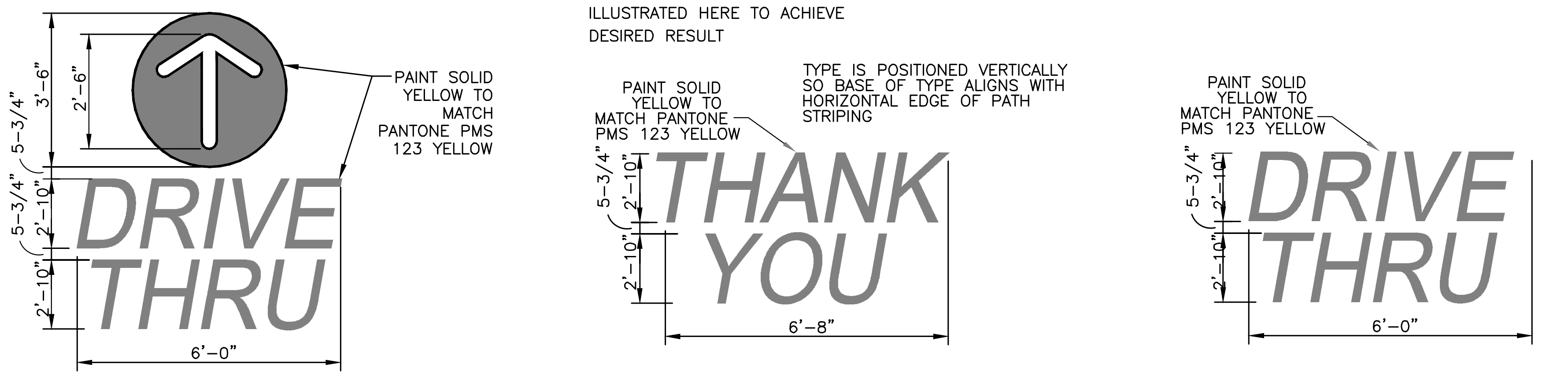
N.T.S

CIRCLE IS POSITIONED HORIZONTALLY CENTERED ABOVE TYPE

ARROW IS POSITIONED VERTICALLY AND HORIZONTALLY INSIDE OF CIRCLE

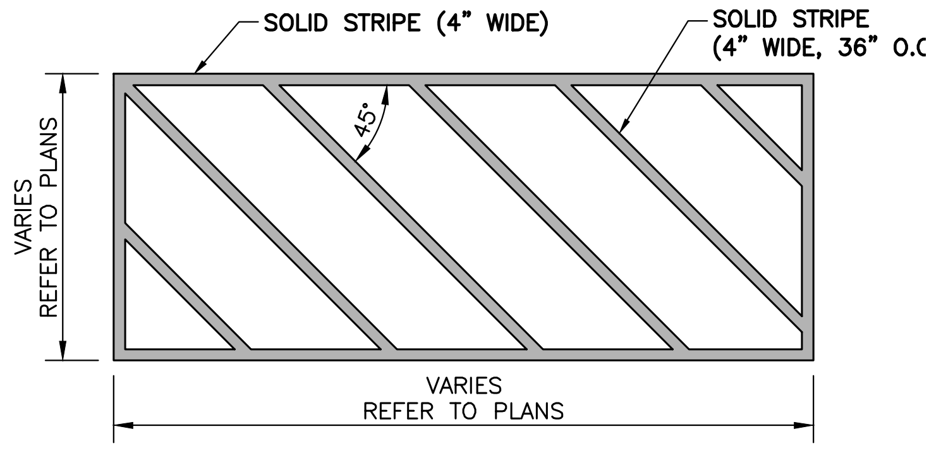
ARROW ART KNOCKS OUT SO THAT THE ARROW IS THE COLOR OF THE PAVEMENT

NOTE : ARROWS AND WORDS CAN BE ARRANGED IN OTHER COMBINATIONS THAN THOSE ILLUSTRATED HERE TO ACHIEVE DESIRED RESULT

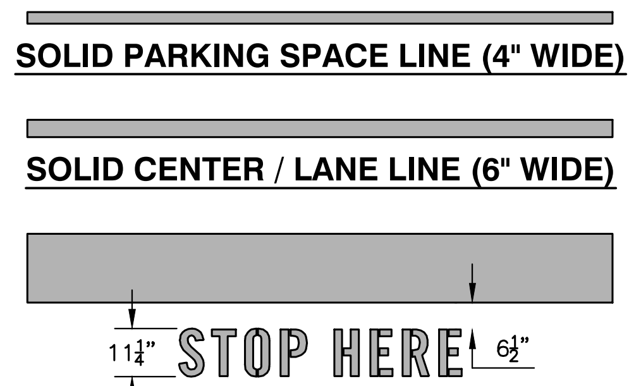

PAINT SOLID YELLOW TO MATCH PANTONE PMS 123 YELLOW
3'–6"
2'–6"
5–3/4"
5–3/4"
2'–10"
2'–10"
DRIVE
THRU
6'–0"
PAINT SOLID YELLOW TO MATCH PANTONE PMS 123 YELLOW
TYPE IS POSITIONED VERTICALLY SO BASE OF TYPE ALIGNS WITH HORIZONTAL EDGE OF PATH STRIPING
5–3/4"
2'–10"
2'–10"
THANK
YOU
6'–8"
PAINT SOLID YELLOW TO MATCH PANTONE PMS 123 YELLOW
5–3/4"
2'–10"
2'–10"
DRIVE
THRU
6'–0"

BRANDED PAVEMENT STRIPING

N.T.S



CROSS WALK STRIPING



SOLID PARKING SPACE LINE (4" WIDE)

SOLID CENTER / LANE LINE (6" WIDE)

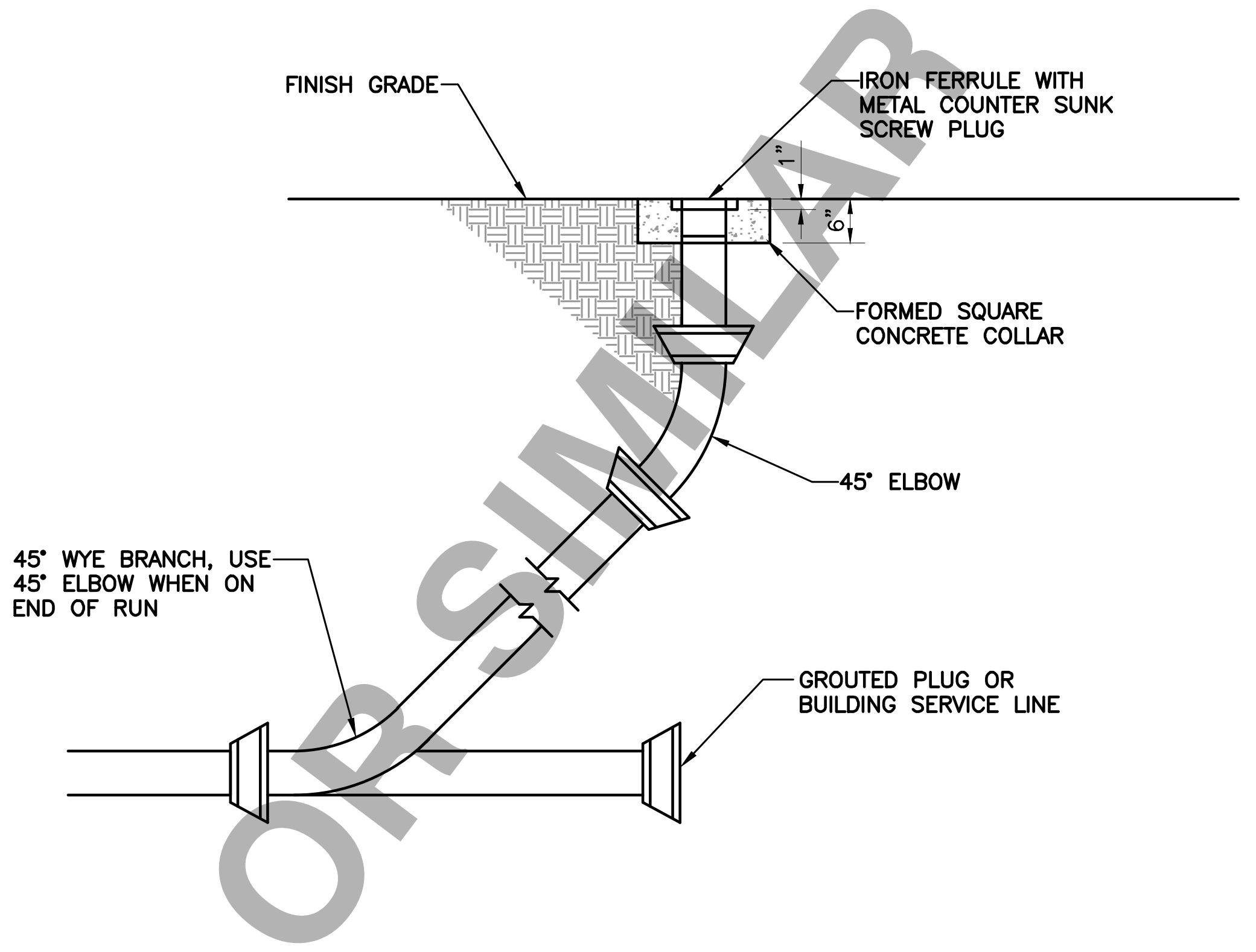
SOLID STOP BAR LINE (24" WIDE)

NOTE:

1. ALL MARKINGS TO BE WHITE UNLESS OTHER WISE NOTED. OR AS DIRECTED BY OWNER.
2. MARKING PAINT TO BE SPECIFIED BY OWNER.

PAVEMENT STRIPING

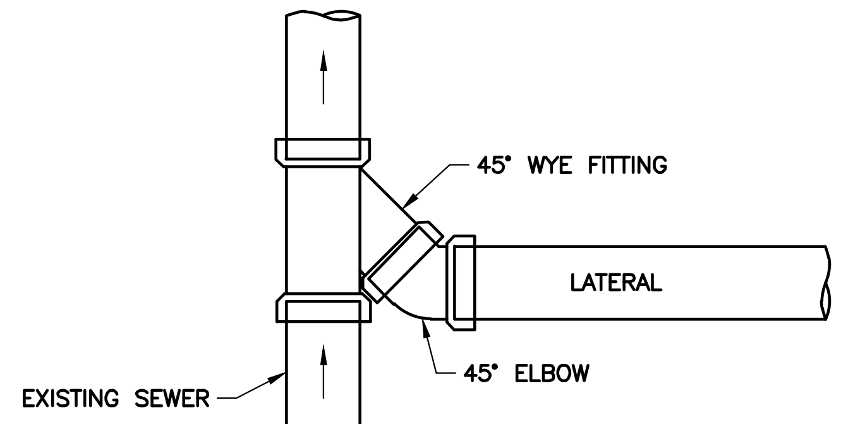
N.T.S


FINISH GRADE
IRON FERRULE WITH METAL COUNTER SUNK SCREW PLUG
1"
6"
FORMED SQUARE CONCRETE COLLAR
45° ELBOW
45° WYE BRANCH, USE 45° ELBOW WHEN ON END OF RUN
GROUTED PLUG OR BUILDING SERVICE LINE

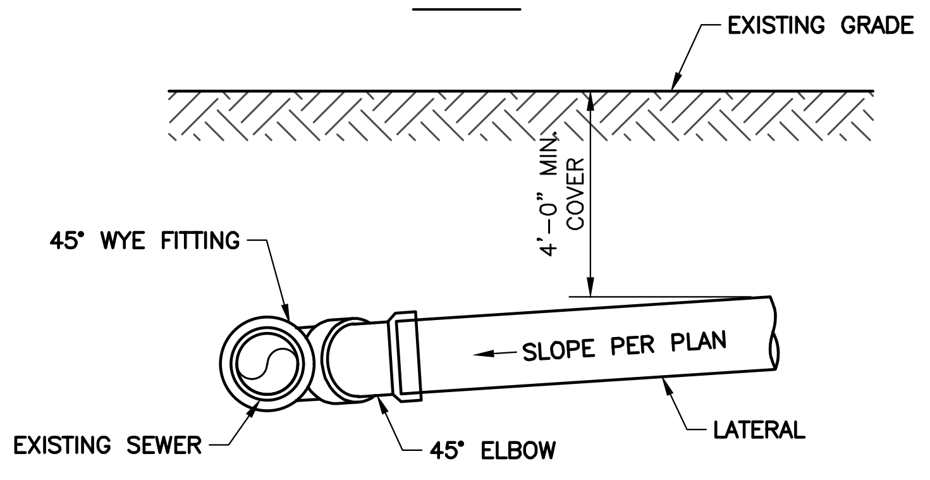
OR SIMILAR

SEWER CLEANOUT

N.T.S.



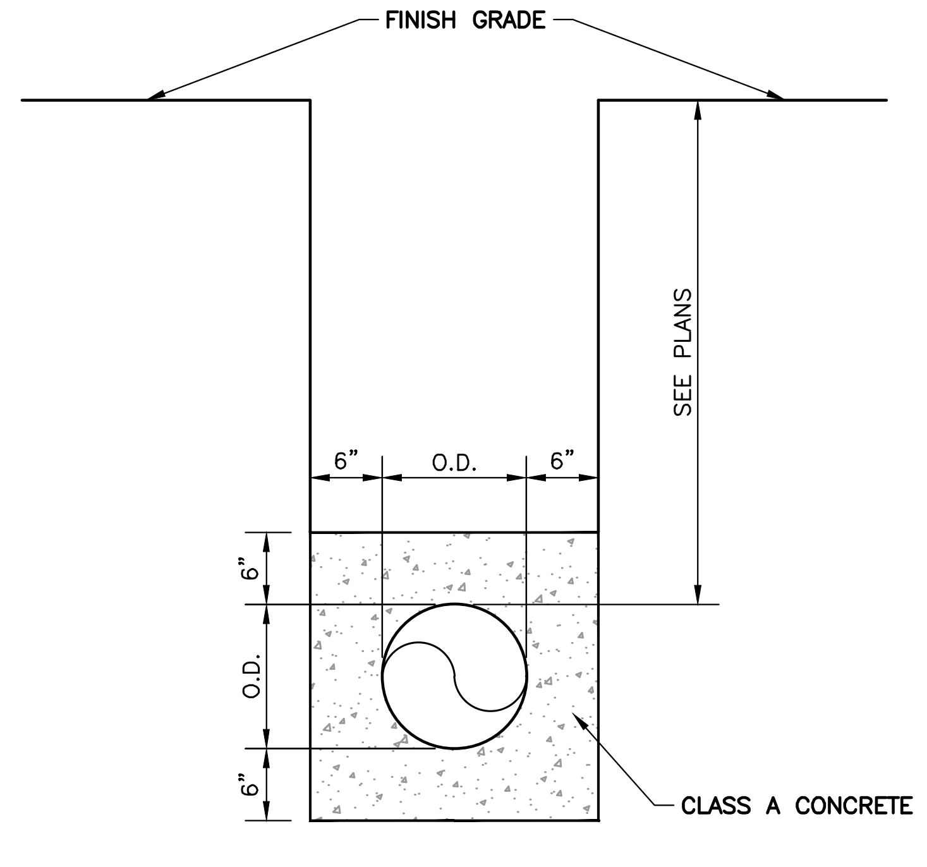
PLAN



ELEVATION

SANITARY LATERAL CONNECTION DETAIL

N.T.S



STANDARD

CONCRETE ENCASEMENT

N.T.S

PATRICK TODD BENNETT
NUMBER PE-2002003134
04/03/2026

REVISION RECORD

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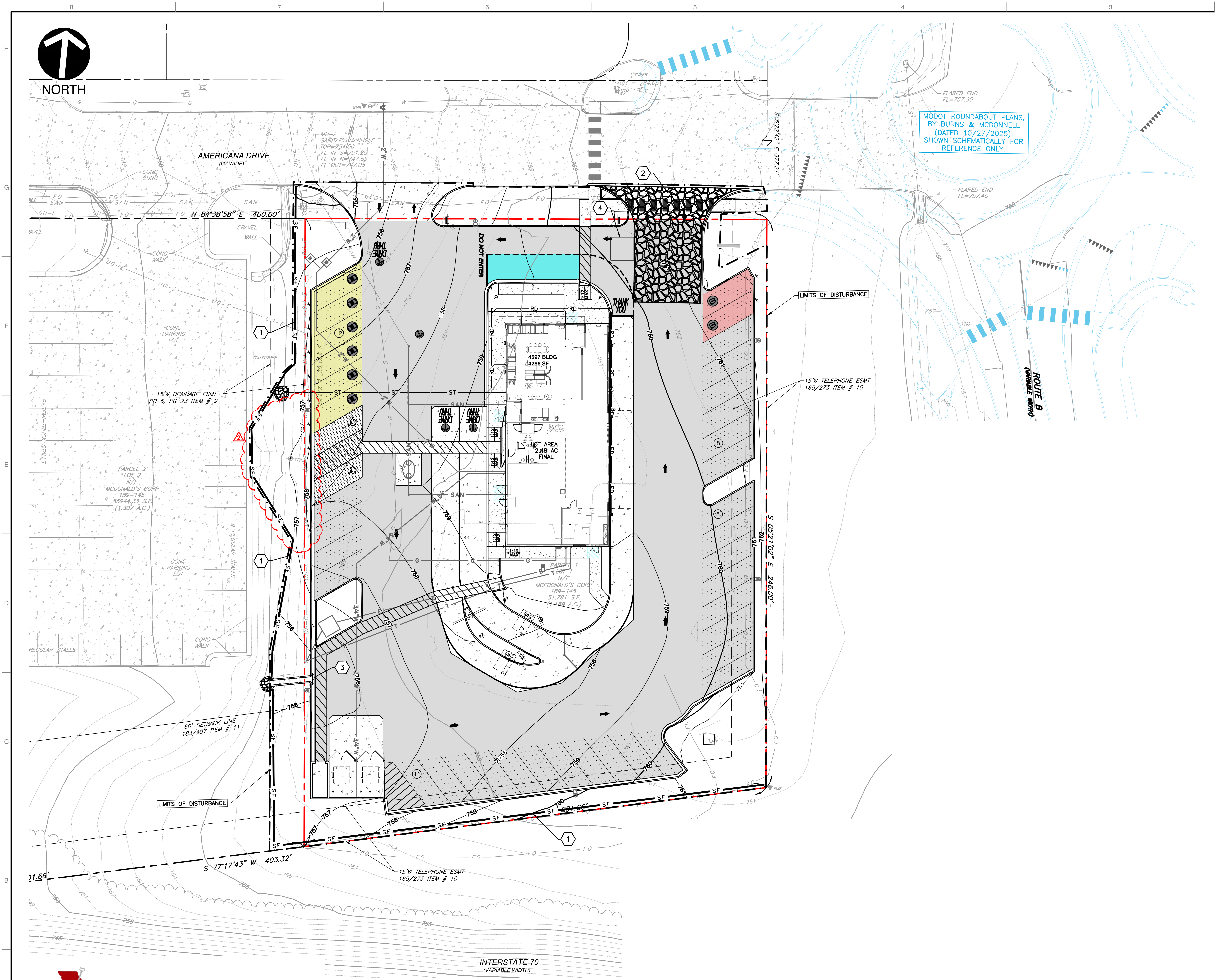
490 AMERICANA
BOONVILLE, MO 65233

CONSTRUCTION DETAILS

DATE:	DECEMBER 19, 2025	DRAWN BY:	LFD
DWG SCALE:	AS SHOWN	CHECKED BY:	LFD
PROJECT NO:			353-116
APPROVED BY:			PTB

DRAWING NO.:
C801
SHEET 10 OF 20



LEGEND

	PROPERTY BOUNDARY
	PROPOSED LIMITS OF DISTURBANCE (57,839± SQFT, 1.33± ACRES) ⚠2
SF	PROPOSED SILT FENCE
	PROPOSED STABILIZED CONSTRUCTION ENTRANCE
	PROPOSED CURB CUT PROTECTION

KEY NOTES ⬡#

1. PROPOSED SILT FENCE. REFER TO DETAIL ON SHEET C901.
2. PROPOSED CONSTRUCTION ENTRANCE. REFER TO DETAIL ON SHEET C901.
3. PROPOSED CURB CUT PROTECTION. REFER TO DETAIL ON SHEET C901.
4. PROPOSED CONCRETE WASHOUT. REFER TO DETAIL ON SHEET C901.

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

NOTES:

1. REFER TO 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 THIS PROJECT.

THIS PLAN SHALL BE UPDATED AS CONSTRUCTION OCCURS TO INCLUDE ONSITE STORAGE OF POTENTIAL SOURCES OF POLLUTION AND ANY CHANGES OR ADDITIONS TO THE BMPS UTILIZED TO PREVENT POTENTIAL POLLUTANTS FROM DISCHARGE DURING LAND DISTURBANCE ACTIVITIES.

THE EROSION & SEDIMENT CONTROL PLAN, AS AMENDED THROUGHOUT CONSTRUCTION, AND LAND DISTURBANCE PERMITS SHALL BE RETAINED ONSITE BY THE SUPERINTENDENT AT ALL TIMES AND BE AVAILABLE UPON REQUEST. THE SUPERINTENDENT IS RESPONSIBLE FOR THE LOCATION, PROTECTION, AND ACCESSIBILITY OF THESE DOCUMENTS AT ALL TIMES.

SCALE IN FEET
0 20 40

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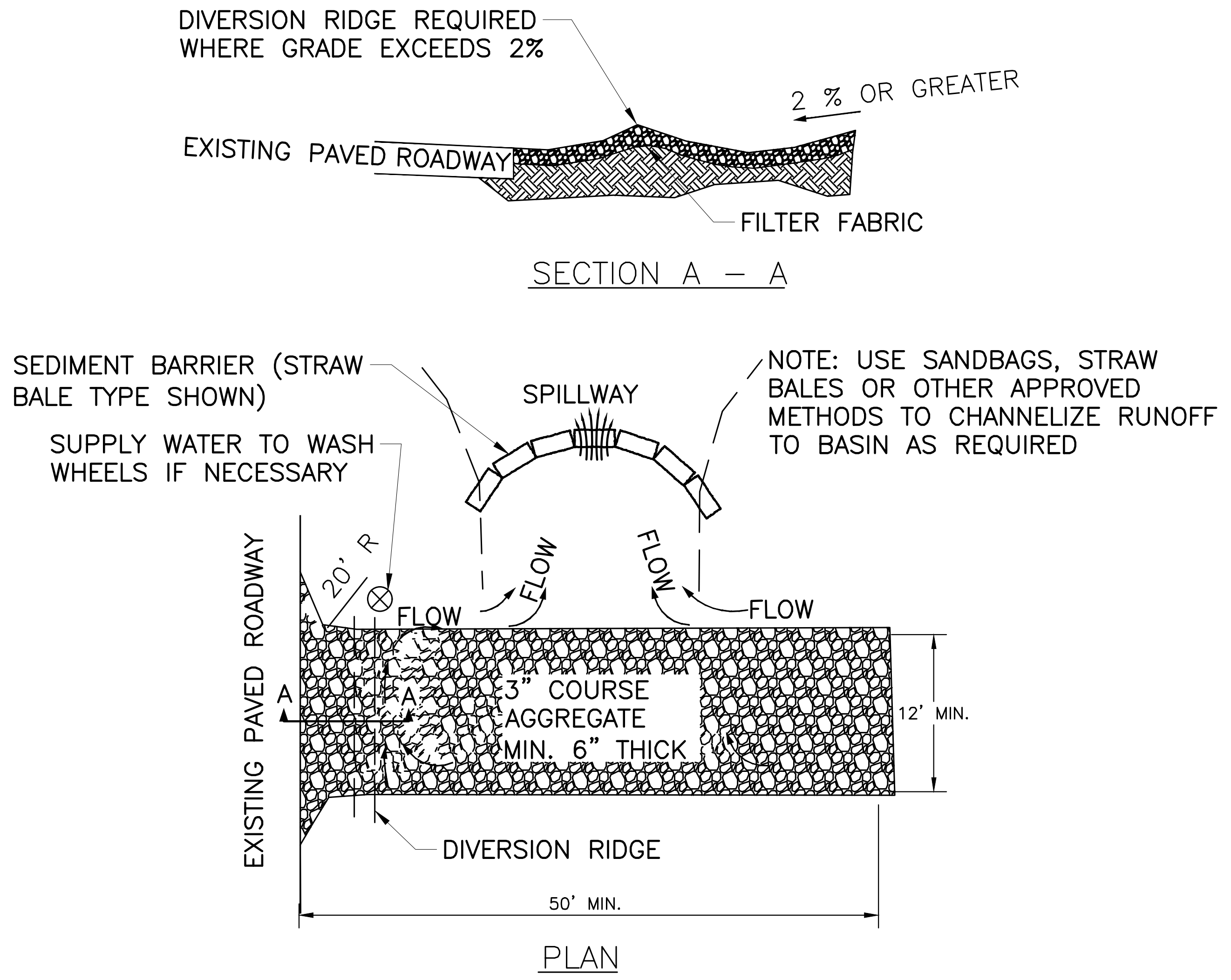
BOONVILLE, MO 65233

EROSION AND SEDIMENT CONTROL PLAN

DATE:	DECEMBER 19, 2025	DRAWN BY:	LFD
DWG SCALE:	AS SHOWN	CHECKED BY:	LFD
PROJECT NO:			353-116
APPROVED BY:			PTB

PATRICK TODD BENNETT
NUMBER PE-2002003134
04/03/2026

DRAWING NO.:
C900
SHEET 11 OF 20

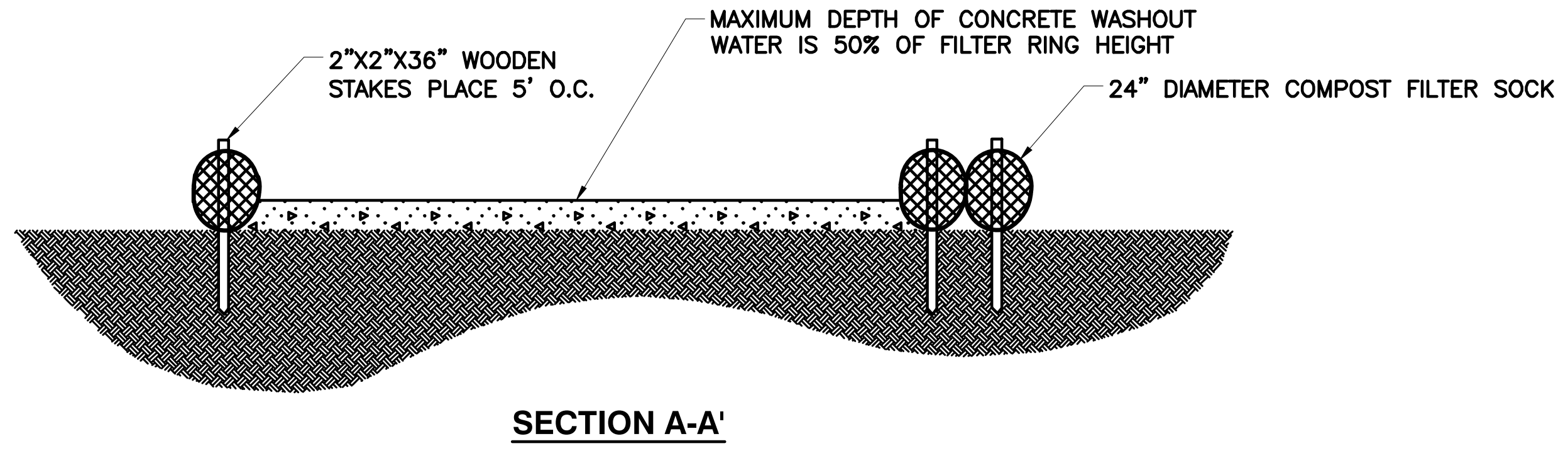

DIVERSION RIDGE REQUIRED WHERE GRADE EXCEEDS 2%
2 % OR GREATER
EXISTING PAVED ROADWAY
FILTER FABRIC
SECTION A – A
SEDIMENT BARRIER (STRAW BALE TYPE SHOWN)
SUPPLY WATER TO WASH WHEELS IF NECESSARY
SPILLWAY
NOTE: USE SANDBAGS, STRAW BALES OR OTHER APPROVED METHODS TO CHANNELIZE RUNOFF TO BASIN AS REQUIRED
20' R
FLOW
FLOW
FLOW
FLOW
EXISTING PAVED ROADWAY
A
A
3" COURSE AGGREGATE MIN. 6" THICK
12' MIN.
DIVERSION RIDGE
50' MIN.
PLAN

NOTES:

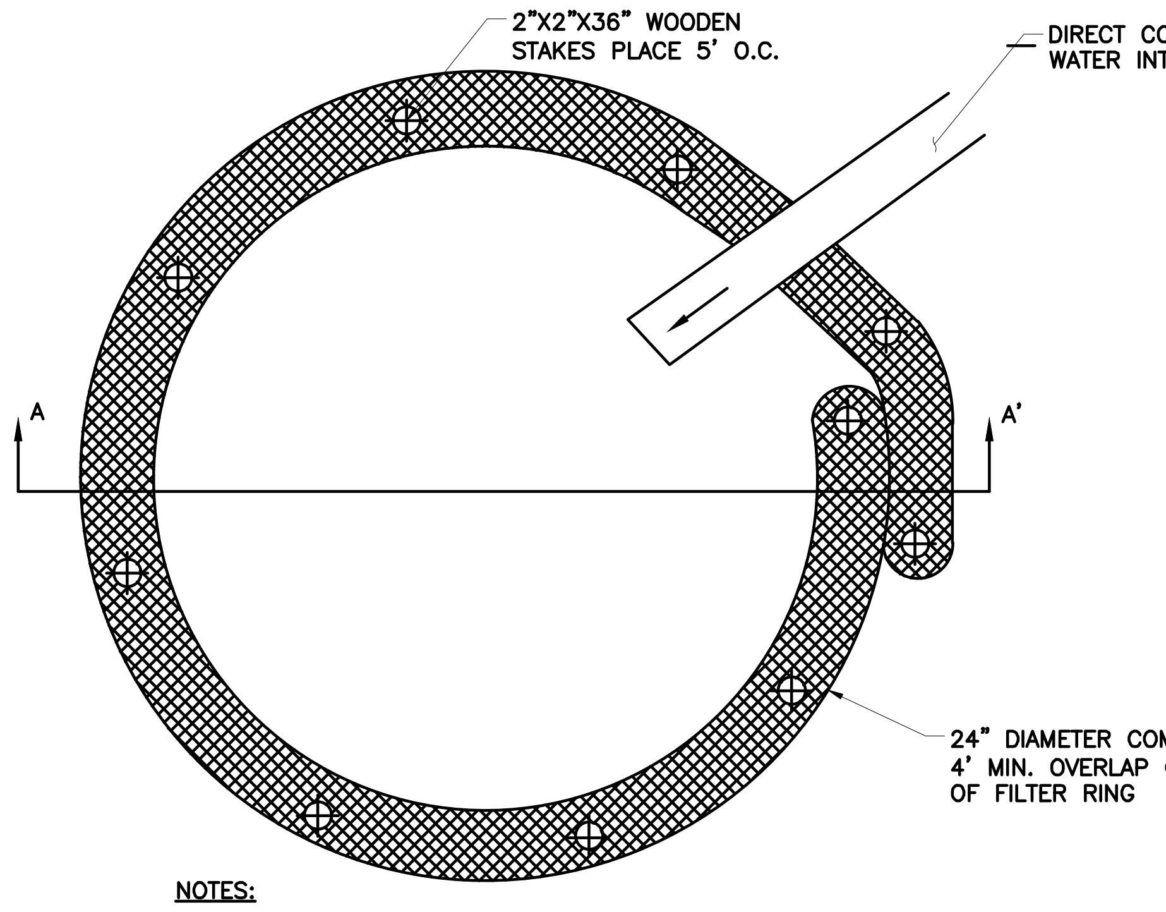
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT–OF–WAY.
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.

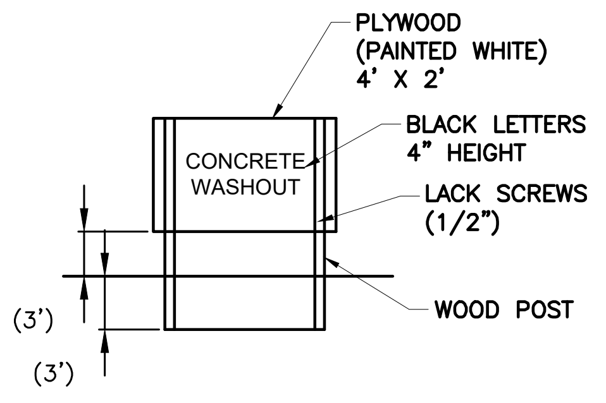
TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT

N.T.S.


2"X2"X36" WOODEN STAKES PLACE 5' O.C.
MAXIMUM DEPTH OF CONCRETE WASHOUT WATER IS 50% OF FILTER RING HEIGHT
24" DIAMETER COMPOST FILTER SOCK

SECTION A-A'


2"X2"X36" WOODEN STAKES PLACE 5' O.C.
DIRECT CONCRETE WASHOUT WATER INTO FILTER RING
A
A'
24" DIAMETER COMPOST FILTER SOCK. 4' MIN. OVERLAP ON UPSLOPE SIDE OF FILTER RING



CONCRETE WASHOUT SIGN DETAIL (OR EQUIVALENT)

NOTES:

1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE
4. 18" DIAMETER FILTER SOCK MAY BE STACKED ONTO DOUBLE 24" DIAMETER SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.

TEMPORARY FILTER SOCK CONCRETE WASHOUT FACILITY

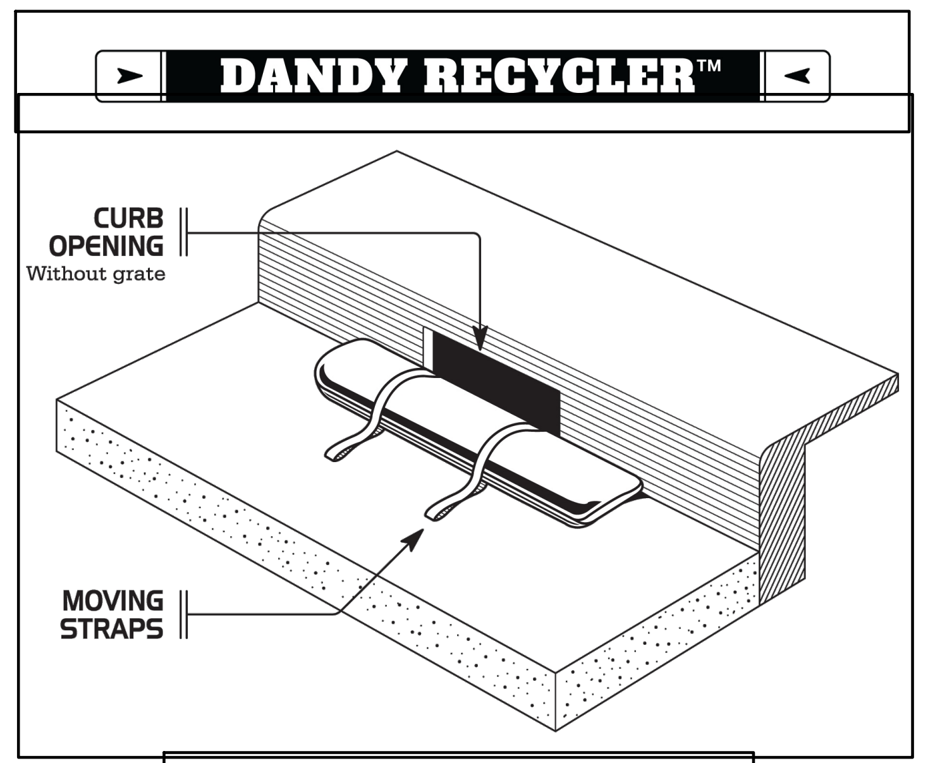
N.T.S.

MISSOURI
ONE CALL SYSTEM

GRADING/SEDIMENT & EROSION CONTROL NOTES

1. SEDIMENT AND EROSION CONTROL SHALL NOT BE LIMITED TO THE MEASURES SHOWN ON THE PLANS. THE CONTRACTOR, WITH THE APPROVAL OF THE CITY OF BOONVILLE INSPECTOR, SHALL UTILIZE BEST MANAGEMENT PRACTICES TO PREVENT SEDIMENT FROM ENTERING ADJACENT PROPERTIES, ROADWAYS, STORM SEWERS, AND DRAINAGEWAYS.
2. ALL FILLED PLACES UNDER PROPOSED STORM AND SANITARY SEWER LINES AND/OR PAVED AREAS INCLUDING TRENCH BACKFILLS WITHIN AND OFF THE ROAD RIGHT–OF–WAY SHALL BE COMPACTED TO 90 PERCENT OF MAXIMUM DENSITY AS DETERMINED BY THE "MODIFIED AASHTO T–180 COMPACTION TEST" (ASTM D–1557). ALL TESTS SHALL BE VERIFIED BY A SOILS ENGINEER CONCURRENT WITH GRADING AND BACKFILLING OPERATIONS.
3. ALL FILLED PLACES IN PROPOSED AND EXISTING ROADS (HIGHWAYS) SHALL BE COMPACTED FROM THE BOTTOM OF THE FILL UP TO 90 PERCENT MAXIMUM DENSITY AS DETERMINED BY THE "MODIFIED AASHTO T–180 COMPACTION TEST" (ASTM D–1557). PAVED AREAS IN CUTS SHALL MEET THE SAME COMPACTION REQUIREMENTS. ALL TESTS SHALL BE VERIFIED BY A SOILS ENGINEER CONCURRENT WITH GRADING OPERATIONS.
4. ALL TRUCKING OPERATIONS SHALL FOLLOW THE APPROVED TRUCKING HAUL ROUTE. CONCRETE TRUCKS SHALL HAVE PROPER WASHOUTS, AS APPROVED BY THE CITY OF BOONVILLE INSPECTOR. CITY AND STATE ROADS SHALL BE CLEANED AND KEPT CLEAR OF MUD, SEDIMENT, AND ANY OTHER DEBRIS AT ALL TIMES THROUGHOUT CONSTRUCTION.
5. ALL ON–SITE TRASH, LITTER, DISCARDED BUILDING MATERIALS, OTHER CONSTRUCTION SITE WASTES, AND DEBRIS, EITHER EXISTING OR FROM CONSTRUCTION, MUST BE REMOVED AND PROPERLY DISPOSED OF OFF–SITE.
6. DEBRIS AND FOUNDATION MATERIAL FROM ANY EXISTING ON–SITE BUILDING OR STRUCTURE WHICH IS SCHEDULED TO BE RAZED FOR THIS DEVELOPMENT MUST BE PROPERLY DISPOSED OF OFF–SITE.
7. CONTRACTOR SHALL PROVIDE SUFFICIENT TEMPORARY TOILET FACILITIES TO SERVE THE NUMBER OF WORKERS ON THE SITE.
8. CONTRACTOR SHALL PROVIDE THE CITY OF BOONVILLE INSPECTOR INFORMATION CONCERNING STORAGE AND HANDLING OF ALL HAZARDOUS AND TOXIC SUBSTANCES BROUGHT ONTO THE SITE. THE CONTRACTOR WILL ADHERE TO APPLICABLE FEDERAL AND STATE REGULATIONS CONCERNING STORAGE AND DISPENSERS, SPILL PREVENTION CONTROL, AND COUNTERMEASURE PLANS FOR CLEAN–UP.
9. ANY WELLS AND/OR SPRINGS WHICH MAY EXIST ON THIS PROPERTY SHOULD BE LOCATED AND SEALED IN A MANNER ACCEPTABLE TO THE CITY OF BOONVILLE.
10. SOFT SOILS IN THE BOTTOM AND BANKS OF ANY EXISTING OR FORMER POND SITES OR TRIBUTARIES OR ANY SEDIMENT BASINS, TRAPS, OR OTHER ESC MEASURES SHOULD BE REMOVED, SPREAD OUT AND PERMITTED TO DRY SUFFICIENTLY TO BE USED AS FILL. NONE OF THIS MATERIAL SHOULD BE PLACED IN PROPOSED PUBLIC RIGHT–OF–WAY LOCATIONS OR ON ANY STORM SEWER LOCATION. ANY OTHER WET SOILS THAT ARE OUTSIDE THE OPTIMUM MOISTURE RANGE TO OBTAIN THE PROPER COMPACTION SHALL BE AIR DRIED SUFFICIENTLY BEFORE USE AS FILL.
11. A PRE–CONSTRUCTION CONFERENCE MUST BE SCHEDULED WITH THE DIRECTOR OF DEVELOPMENT REVIEW PRIOR TO THE START OF EACH CONSTRUCTION PHASE OF LAND DISTURBANCE ACTIVITY. THE PERMITEE WILL BE RESPONSIBLE FOR NOTIFYING ALL CONTRACTORS, UTILITY CREWS, AND OTHER ENTITIES THAT WILL PERFORM WORK AT THE SITE TO BE IN ATTENDANCE.
12. THE EROSION CONTROL INSPECTOR FOR THE CITY OF BOONVILLE SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO THE COMMENCEMENT OF CLEARING, GRADING, AND/OR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION TO ARRANGE FOR AN INSPECTION OF THE SITE.
13. ALL EXCAVATIONS, GRADING, OR FILLING SHALL HAVE A FINISHED GRADE NOT TO EXCEED A 3:1 SLOPE (33%).
14. TEMPORARY SILTATION CONTROL MEASURES (STRUCTURAL) SHALL BE MAINTAINED UNTIL VEGETATIVE COVER IS ESTABLISHED AT A DENSITY SUFFICIENT TO PROVIDE EROSION CONTROL ON THE SITE.
15. CONTRACTOR SHALL PROVIDE DUST CONTROL, AS DETERMINED BY THE CITY OF BOONVILLE INSPECTOR.
16. UPON COMPLETION OF STORM SEWERS, SILTATION CONTROL SHALL BE PROVIDED AROUND ALL OPEN SEWER INLETS AND SHALL REMAIN UNTIL THE DISTURBED DRAINAGE AREAS HAVE BEEN PROPERLY STABILIZED.
17. WHERE NATURAL VEGETATION IS REMOVED DURING GRADING, VEGETATION SHALL BE RE–ESTABLISHED IN SUCH A DENSITY AS TO PREVENT EROSION.
18. TEMPORARY VEGETATION OR OTHER APPROVED SURFACE STABILIZATION METHODS SHALL BE ESTABLISHED WITHIN 14 DAYS WHEN THE SOIL DISTURBANCE HAS CEASED ON AREAS GREATER THAN 2,000 SQ. FT.
19. PERMANENT GRASS MUST BE ESTABLISHED AT A DENSITY SUFFICIENT TO PROVIDE EROSION CONTROL ON THE SITE WITHIN 30 DAYS OF THE COMPLETION OR SUSPENSION OF GRADING OPERATIONS. BETWEEN PERMANENT GRASS SEEDING PERIODS, TEMPORARY COVER SHALL BE PROVIDED ACCORDING TO THE RECOMMENDATION BY THE CITY OF BOONVILLE.
20. ALL SILTATION CONTROL DEVICES SHALL BE INSPECTED BY THE CONTRACTOR BI–WEEKLY, AT A MINIMUM, AND WITHIN 24 HOURS AFTER EACH RAINFALL EVENT. FOR DISTURBED AREAS THAT HAVE NOT BEEN FINALLY STABILIZED, ALL INSTALLED BMP'S AND OTHER POLLUTION CONTROL MEASURES SHALL BE INSPECTED FOR PROPER INSTALLATION, OPERATION, AND MAINTENANCE. LOCATIONS WHERE STORMWATER LEAVES THE SITE SHALL BE INSPECTED FOR EVIDENCE OF EROSION OR SEDIMENT DEPOSITION. ANY DEFICIENCIES SHALL BE NOTED IN A REPORT OF THE INSPECTION AND CORRECTED WITHIN FOUR CALENDAR DAYS OF THE INSPECTION.
21. SEDIMENT SHALL BE WASHED FROM ALL VEHICLES AT WASH DOWN STATION PRIOR TO LEAVING THE SITE. NO TRACKING OF MUD ONTO PUBLIC ROADS SHALL BE ALLOWED.
22. ALL TRASH AND DEBRIS ON–SITE, EITHER EXISTING OR FROM CONSTRUCTION, MUST BE REMOVED AND PROPERLY DISPOSED OF OFF–SITE.
23. THIS SITE DOES NOT REQUIRE 404/401 PERMITTING.
24. NO DEWATERING METHODS ARE ANTICIPATED OR PROPOSED FOR THIS PROJECT.
25. NO CONSTRUCTION WASTE OR POTENTIAL POLLUTION SOURCES ARE PROPOSED TO BE STORED ON SITE DURING CONSTRUCTION OR LAND DISTURBANCES.
26. PRIOR TO ANY MAJOR LAND DISTURBANCE ACTIVITY, A LAND DISTURBANCE PERMIT FROM THE MISSOURI DEPARTMENT OF NATURAL RESOURCES (MODNR) WILL BE REQUIRED. CONTRACTOR SHALL ADHERE TO THE REQUIREMENTS OF SAID PERMIT.
27. THE LOSS OF ANY CONTAINED SEDIMENT OR OTHER POLLUTANT REQUIRES IMMEDIATE ACTION WHICH MUST BE DOCUMENTED AND REPORTED TO THE CITY OF BOONVILLE.
28. PROPOSED POST CONSTRUCTION SURFACE BMPS SHALL BE CONSTRUCTED AFTER SUBSTANTIAL COMPLETION OF LAND DISTURBANCE ACTIVITIES. ALL POST CONSTRUCTION BMPS ARE TO BE PROTECTED FROM RUNOFF, SEDIMENT, AND DAMAGE DURING CONSTRUCTION ACTIVITIES.
29. THE FOLLOWING SUBMITTALS ARE REQUIRED PRIOR TO TEMPORARY AND PERMANENT SEEDING: 1. SEEDING DATE 2. SEED MIXTURE(S) AND RATE(S), SUPPLIER, PURITY PERCENTAGE 3. MULCHING MATERIAL(S) AND APPLICATION RATE(S) 4. MOWING HEIGHT AND SCHEDULE SEEDED AREAS SHALL BE RE–FERTILIZED 4 WEEKS AFTER INITIAL SEEDING. ALL AREAS IDENTIFIED AS BARE AND SPARSE (LESS THAN 30% GROUND COVER) DURING THE INSPECTION SHALL BE RE–SEEDED AND MULCHED. GRASS SHALL NOT BE CUT UNTIL 4 INCHES OF GROWTH OCCURS.
30. EPA ALLOWABLE NON–STORM WATER DISCHARGES:

WATERLINE FLUSHING
LANDSCAPE IRRIGATION
DIVERTED STREAM FLOWS
RISING GROUND WATERS
UNCONTAMINATED GROUND WATER INFILTRATION
UNCONTAMINATED PUMPED GROUND WATER
FOUNDATION DRAINS
DISCHARGE FROM POTABLE WATER SOURCES
AIR CONDITIONING CONDENSATION
IRRIGATION WATER, SPRINGS
WATER FROM CRAWL SPACE PUMPS
FOOTING DRAINS
LAWN WATERING
INDIVIDUAL RESIDENT CAR WASHING
FLOWS FROM RIPARIAN HABITATS AND WETLANDS
DE–CHLORINATED SWIMMING POOL DISCHARGES
STREET WASH WATER
RESIDENTIAL BUILDING WASH WATERS, WITHOUT DETERGENT
DISCHARGES FROM EMERGENCY FIRE FIGHTING ACTIVITIES



DANDY RECYCLER™
CURB INLET AND GUTTER PROTECTION SYSTEM GUIDE SPECIFICATION

1.0 **Description:**

1.1 Work covered under this item consists of installing a Dandy Recycler™ inlet and gutter protection system for inlets, median barrier inlets without grates, and gutters. The purpose is to keep silt, sediment, and construction debris out of the storm system.

2.0 **Material:**

2.1 The Dandy Recycler™ inlet protection system shall be a **sewn in the U.S.A**. fabric unit in the form of a cylindrical tube. Diameter of the tube is nominal 9". Lengths available are 3', 4', 5', 6', and 8'.

2.2 The Dandy Recycler™ is filled with a recycled crumble rubber material or aggregate on the Velcro end of the unit. This work it typically performed by others.

2.3 The Dandy Recycler™ unit shall utilize an orange monofilament fabric that is manufactured in the U.S.A. with the following characteristics:

PROPERTY	TEST METHOD	UNITS	TEST RESULTS
Tensile Strength	ASTM D4632	lbs	450 x 300
Elongation	ASTM D4632	%	38% x 21%
Trapezoidal Tear	ASTM D4533	lbs	165 x 150
CBR Puncture	ASTM D6241	lbs	1000
HYDRAULIC PROPERTIES:			
Apparent Opening Size (AOS)	ASTM D 4751	US Std Sieve	30
Permittivity	ASTM D 4491	sec^1	4.9
Water Flow Rate	ASTM 4491	$gal/min/ft^2$	365
% Open Area (POA)	COE - 22125-86	%	29
UV Resistance (% Retained @ 2500 hrs)	ASTM D 4355	%	70
~~Color~~			~~Orange~~[1]

[1]The color orange is a trademark of Dandy Products, Inc.
The property values listed above are effective April 2022 and are subject to change without notice.

3.0 **Installation:**

3.1 Place Dandy Recycler™ inlet protection unit on ground near the inlet, or in the gutter, where it is to be installed.

3.2 For oil and sediment model, to install or replace absorbent, open the Velcro end, and place absorbent inside the unit.

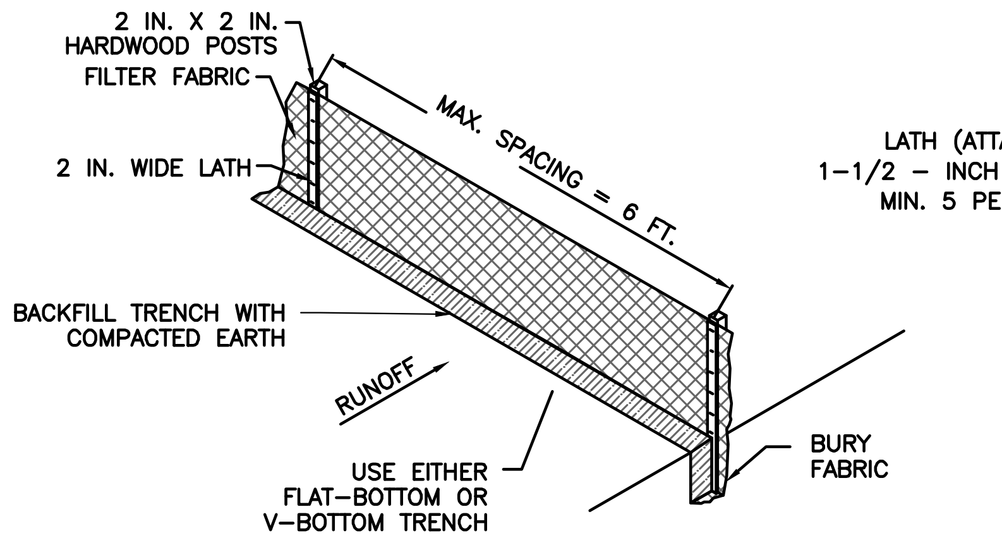
3.3 Using the lifting straps, maneuver the Dandy Recycler™ to the location where it will be used for best protection against silt, sediment, and construction debris out of the storm system.

3.4 Place the unit with no gaps between the adjoining curb or another unit.

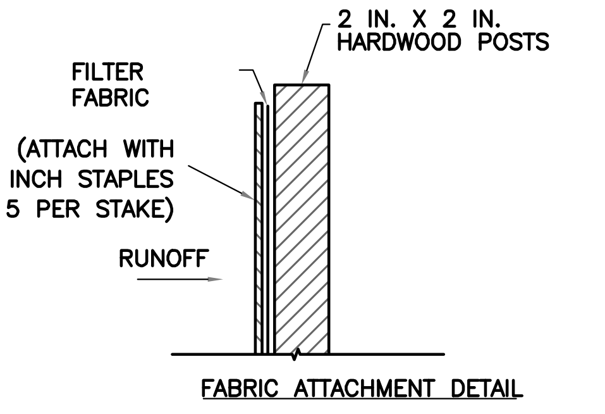
4.0 **Maintenance:**

4.1 The contractor shall remove all accumulated sediment and debris from around and within the vicinity of unit after each rain event or as directed by engineer/inspector. Dispose of unit no longer in use at an appropriate recycling or solid waste facility.

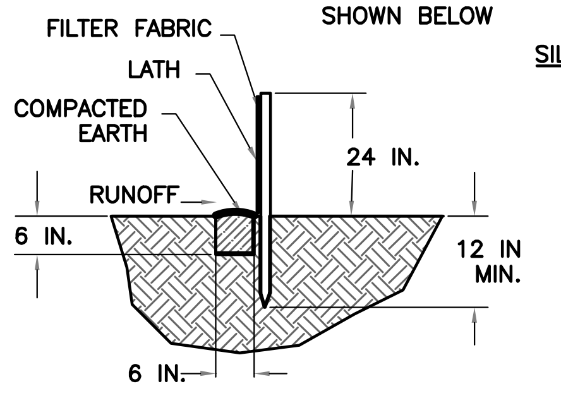
4.2 *For oil and sediment model; remove and replace absorbent when near saturation.*


2 IN. X 2 IN. HARDWOOD POSTS
FILTER FABRIC
2 IN. WIDE LATH
MAX. SPACING = 6 FT.
BACKFILL TRENCH WITH COMPACTED EARTH
RUNOFF
USE EITHER FLAT–BOTTOM OR V–BOTTOM TRENCH SHOWN BELOW
BURY FABRIC

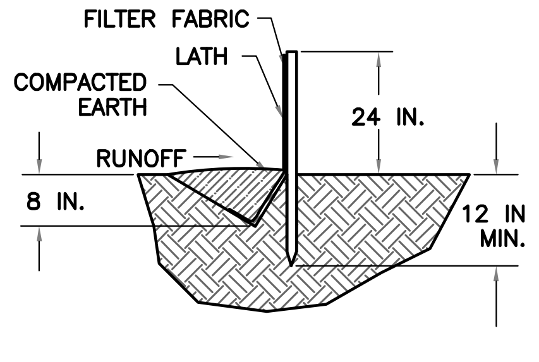
SILT FENCE INSTALLATION


FILTER FABRIC
2 IN. X 2 IN. HARDWOOD POSTS
LATH (ATTACH WITH 1–1/2 – INCH STAPLES MIN. 5 PER STAKE)
RUNOFF

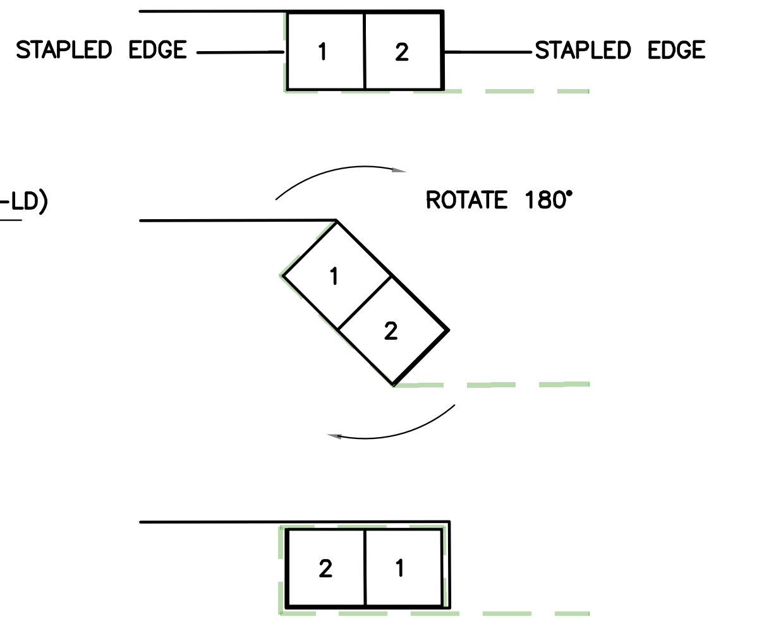
FABRIC ATTACHMENT DETAIL



FLAT BOTTOM TRENCH SECTION



V-SHAPED TRENCH SECTION



MATERIAL SPECIFICATION

SPECIFICATION	LIGHT DUTY SILT FENCE (SF–LD)
MIN. TENSEL STRENGTH (LBS) ASTM D–4632	WARP – 120 FILL – 100
MAX. ELONGATION (%) ASTM D–4632	40
APPARENT OPENING SIZE MAX. SIEVE SIZE (ASTM D–4751)	#30
MAX. FLOW RATE (GAL/MIN/SF) GDT – 87	25
ULTRAVIOLET STABILITY ASTM D–4632 AFTER 300 HOURS PER ASTM D–4355	80
MIN. BURSTING STRESS (PSI) ASTM D–3786	WARP – 120 FILL – 100
MIN. FABRIC WIDTH (IN)	36 IN.

SILT FENCE

N.T.S.

REVISION RECORD

NO	DATE	DESCRIPTION
2	04/03/26	PER CLIENT COMMENTS / OFF-SITE ROAD IMPROVEMENTS
1	02/03/2026	CITY AND CLIENT COMMENTS

Civil & Environmental Consultants, Inc.

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

McDONALD'S RESTAURANT
NSN 8043 (024-0281)
490 AMERICANA
BOONVILLE, MO 65233

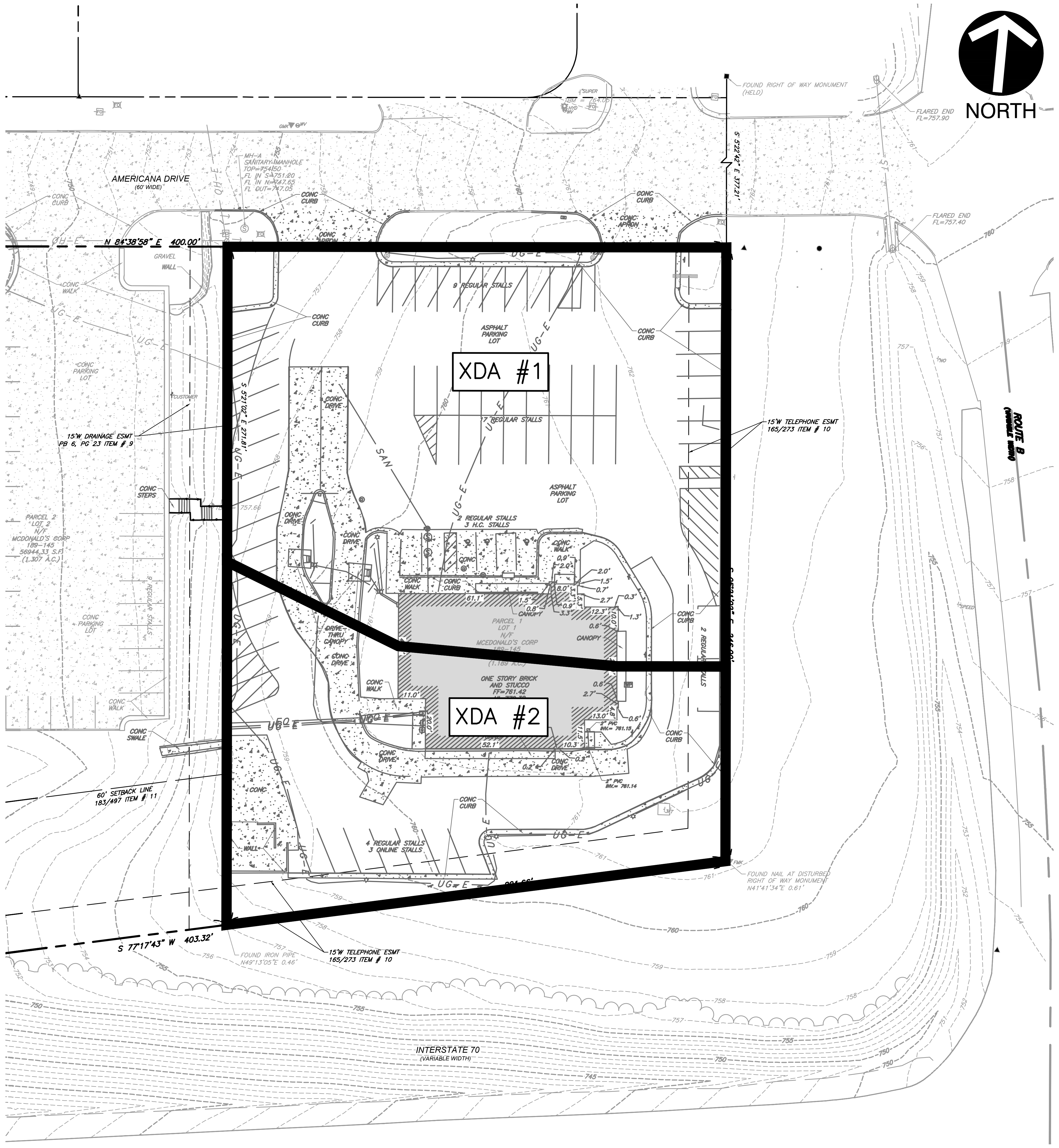
PATRICK TODD BENNETT
NUMBER PE-2002003134
04/03/2026

EROSION AND SEDIMENT CONTROL DETAILS

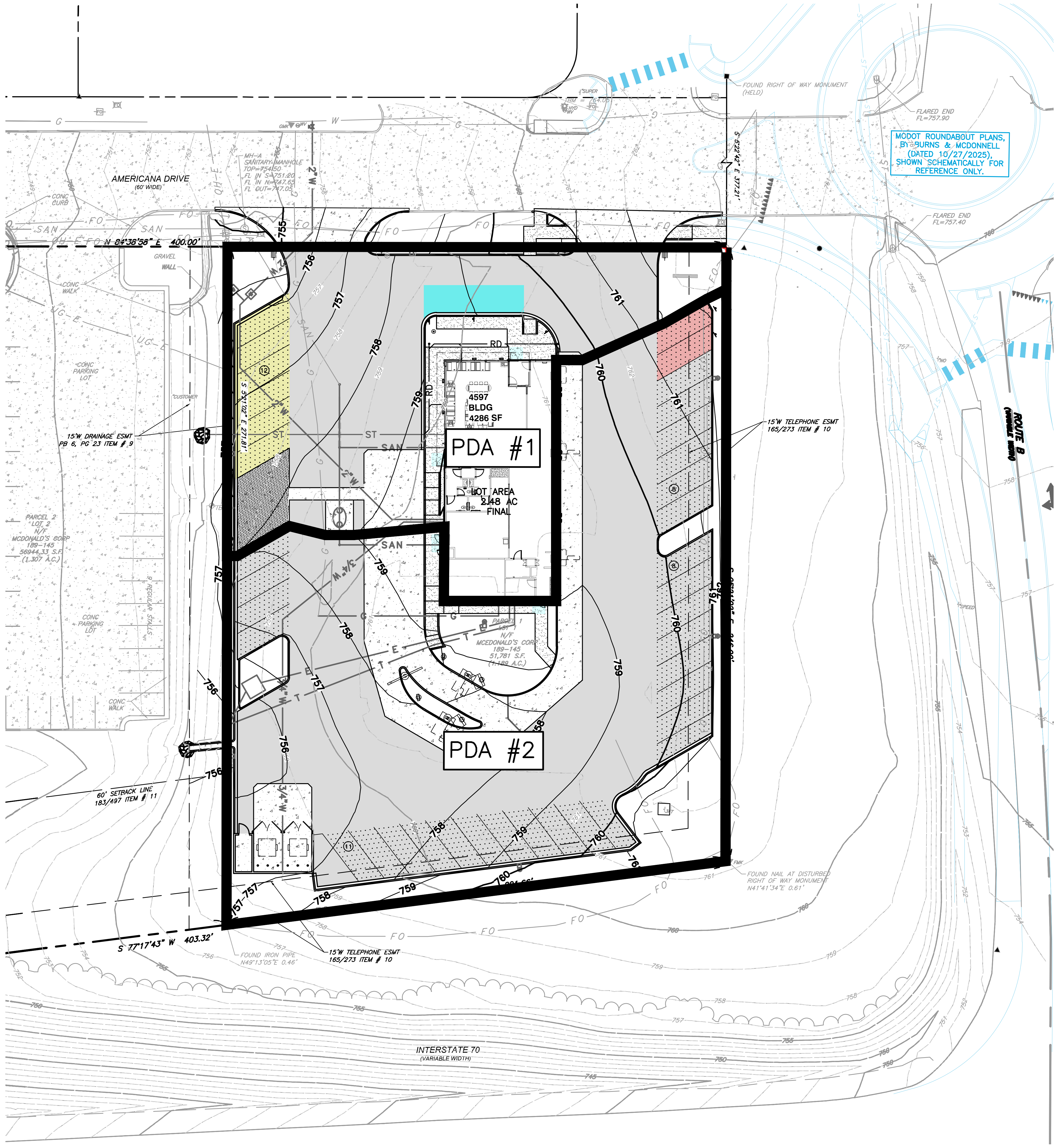
DATE:	DECEMBER 19, 2025	DRAWN BY:	LFD
DWG SCALE:	AS SHOWN	CHECKED BY:	LFD
PROJECT NO:			353-116
APPROVED BY:			PTB

DRAWING NO.:
C901
SHEET 12 OF 20

P:\350-000\353-116\-CADD\Dwg\CV01\353116-CV01-C900.dwg{C901} LS:(4/3/2026 – ldiekemper) – LP: 4/3/2026 2:53 PM



EXISTING DRAINAGE AREA MAP
SCALE: 1"=30'


AMERICANA DRIVE
PDA #1
PDA #2
4597 BLDG 4286 SF
LOT AREA 2.48 AC FINAL
MODOT ROUNDABOUT PLANS, BY BURNS & MCDONNELL (DATED 10/27/2025). SHOWN SCHEMATICALLY FOR REFERENCE ONLY.
ROUTE B
INTERSTATE 70

PROPOSED DRAINAGE AREA MAP
SCALE: 1"=30'

EXISTING DRAINAGE AREAS (25-YR STORM)

Drainage Area	Ultimate Runoff Direction	Subareas	Area (SF)	Area (AC)	% IMP	C	I (in/hr)	Q_{25}(cfs)
XDA #1	Northwest/West	IMPERVIOUS	28,597	0.66		0.90		
		PERVIOUS	2,934	0.07		0.20		
		TOTAL	**31,531**	**0.72**	**91%**	**0.83**	**8.30**	**5.02**
XDA #2	Southwest/West	IMPERVIOUS	15,681	0.36		0.90		
		PERVIOUS	4,569	0.10		0.20		
		TOTAL	**20,250**	**0.46**	**77%**	**0.74**	**8.30**	**2.86**
		ON-SITE TOTALS	**51,781**	**1.19**	**86%**	**0.80**	**8.30**	**7.88**

PROPOSED DRAINAGE AREAS (25-YR STORM)

Drainage Area	Ultimate Runoff Direction	Subareas	Area (SF)	Area (AC)	% IMP	C	I (in/hr)	Q_{25}(cfs)
PDA #1	Northwest/West	IMPERVIOUS	16,744	0.38		0.90		
		PERVIOUS	1,960	0.04		0.20		
		TOTAL	**18,704**	**0.43**	**90%**	**0.83**	**8.30**	**2.95**
PDA #2	Southwest/West	IMPERVIOUS	26,302	0.60		0.90		
		PERVIOUS	6,775	0.16		0.20		
		TOTAL	**33,077**	**0.76**	**80%**	**0.76**	**8.30**	**4.77**
		ON-SITE TOTALS	**51,781**	**1.19**	**83%**	**0.78**	**8.30**	**7.71**

NOTE:

THE RUNOFF CALCULATIONS WERE COMPLETED PER APPENDIX E SECTION II OF THE CITY OF BOONVILLE CODE OF ORDINANCES WHICH STATES THE RATIONAL METHOD SHOULD BE USED FOR DRAINAGE AREAS LESS THAN 200 ACRES. THE RUNOFF COEFFICIENTS USED ARE PER APPENDIX E TABLE 1. THE 25 YEAR INTENSITY USED IS PER APPENDIX E TABLE 4 WHERE THE DURATION IS EQUAL TO TIME OF CONCENTRATION (5 MINUTES). PER THE ABOVE CALCULATIONS, THE OVERALL RUNOFF FROM THE SITE IS BEING REDUCED FROM EXISTING TO PROPOSED CONDITIONS.

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

NOTES:

1. REFER TO 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 THIS PROJECT.

REVISION RECORD

NO	DATE	DESCRIPTION
2	04/03/26	PER CLIENT COMMENTS / OFF-SITE ROAD IMPROVEMENTS
1	02/03/2026	CITY AND CLIENT COMMENTS

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 PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PROVIDED BY CEC LANDSCAPE ARCHITECTS, LLC.

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Ph: 314.656.4566
www.cecinc.com

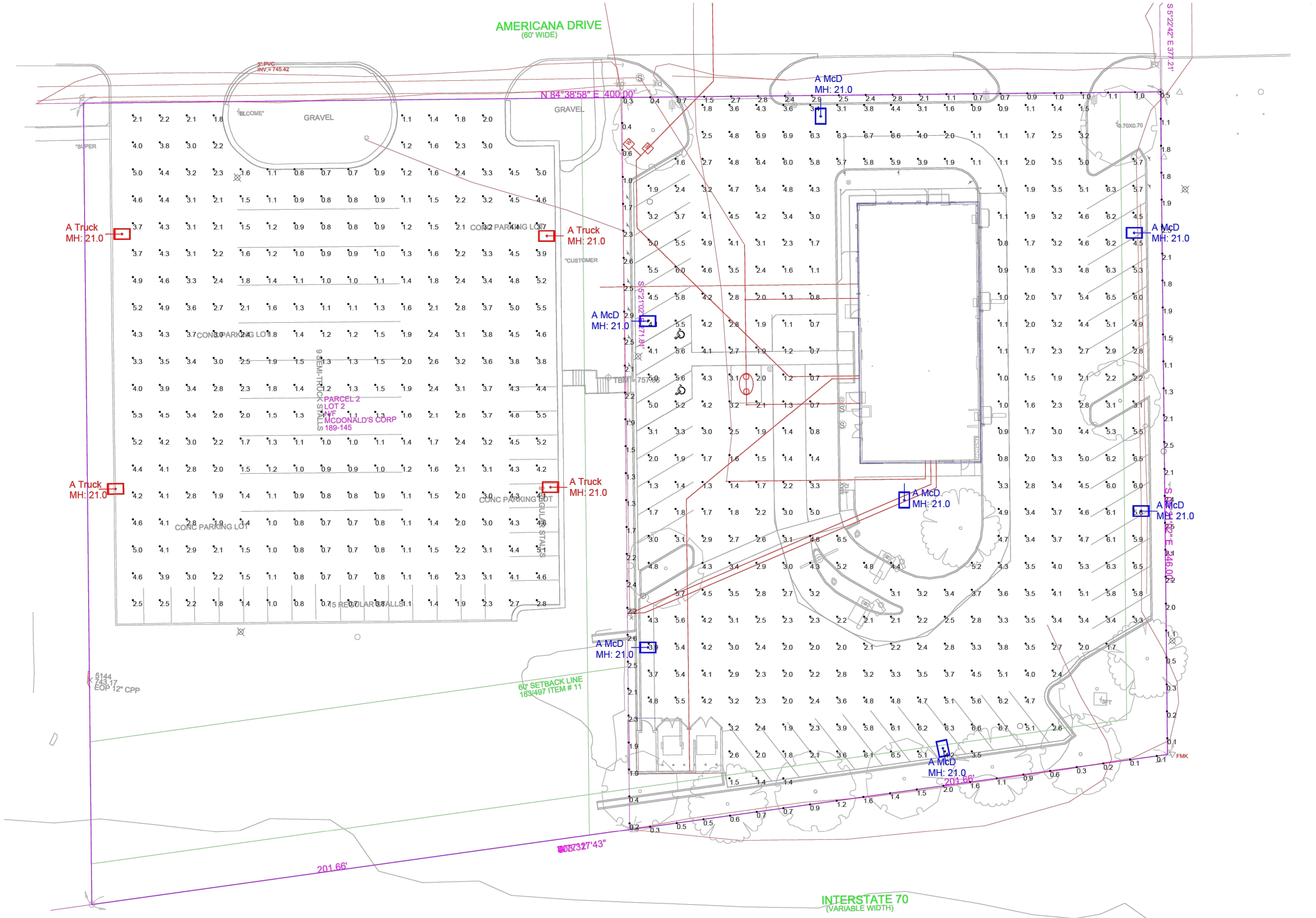
McDONALD'S RESTAURANT
NSN 8043 (024-0281)
490 AMERICANA
BOONVILLE, MO 65233

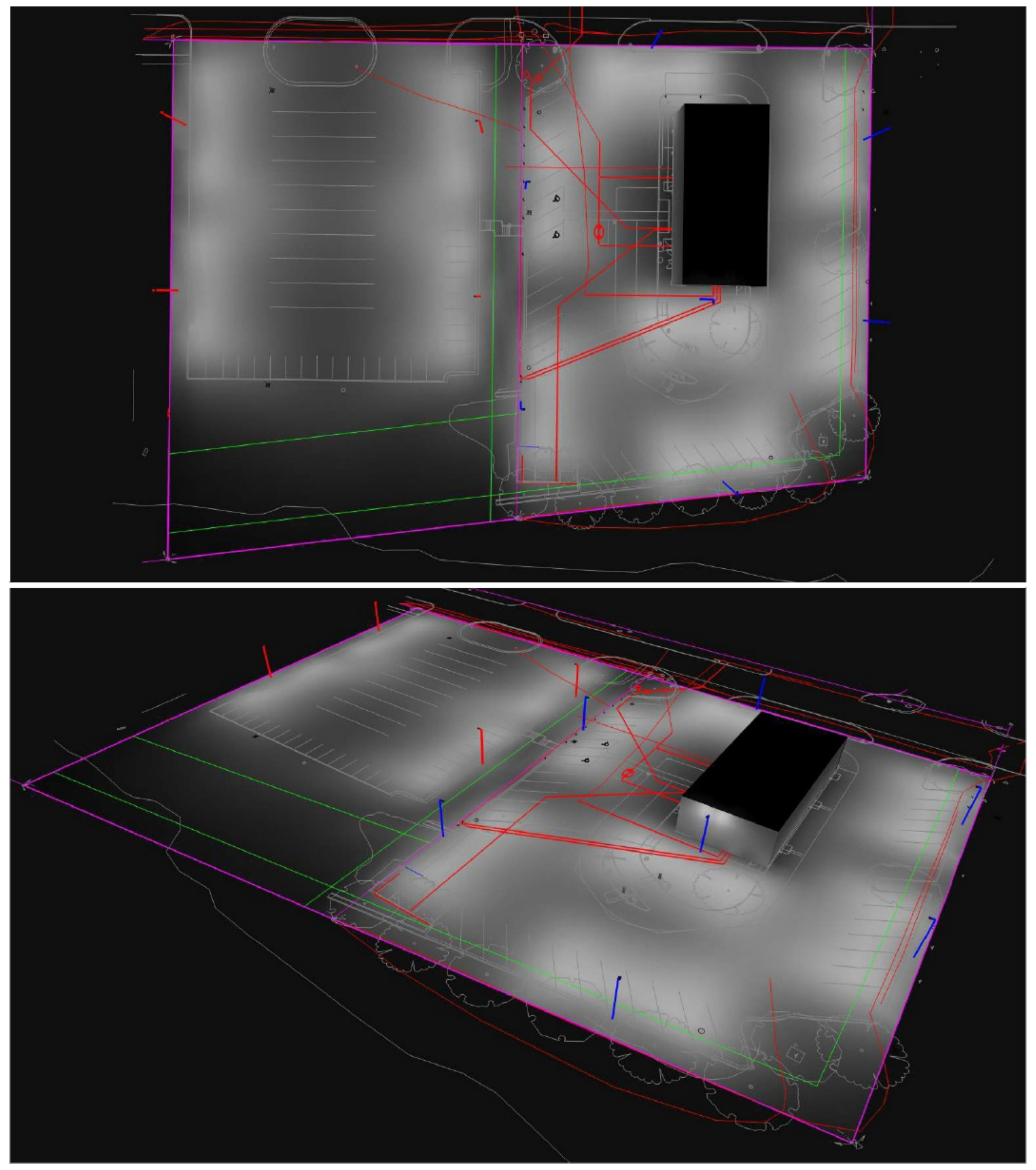
DRAINAGE AREA MAPS

DATE:	DECEMBER 19, 2025	DRAWN BY:	LFD
DWG SCALE:	AS SHOWN	CHECKED BY:	LFD
PROJECT NO:	353-116		
APPROVED BY:	PTB		

PATRICK TODD BENNETT
NUMBER PE-2002003134
04/03/2026

DRAWING NO.: **HYD**
SHEET 13 OF 20





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 READINGS	Illuminance	Fc	3.46	6.9	0.7	4.94	9.86
Propertyline	Illuminance	Fc	1.47	2.9	0.1	14.70	29.00
Truck Parking	Illuminance	Fc	2.40	5.5	0.7	3.43	7.86

Luminaire Schedule

Symbol	Qty	Label	Arrangement	LLF	Description	Lum. Watts	EPA	Mtg Height	Pole Type
🟥	4	A Truck	Single	0.850	VP-2-320L-210-5K7-4W-UNV-A-PSS	213.9	0.607	21	SES-18-40-1-TA-GL-xx (4")
🟦	7	A McD	Single	0.850	VP-2-320L-210-5K7-4W-UNV-A-PSS	213.9	0.607	21	SES-18-40-1-TA-GL-xx (4")

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

Regional Drawing
024-0281

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.

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
490 AMERICANA BOONVILLE, MO 65233-975

NATIONAL STORE NUMBER
8043

DATE
12/19/2025

DRAWING NUMBER
A252321A.AGI

GENERAL

1. THESE GENERAL NOTES REPRESENT AND/OR SUMMARIZE KEY PROJECT INFORMATION FOR THE DRAWING USER'S CONVENIENCE. HOWEVER, ALL CONSTRUCTION DOCUMENTS SHOULD BE REVIEWED FOR FURTHER DETAILS AND REQUIREMENTS.
2. WHERE REFERENCE IS MADE TO VARIOUS CODES, STANDARDS, AND TEST STANDARDS FOR MATERIALS, SUCH STANDARDS SHALL BE AS SPECIFIED IN SECTION CODES AND STANDARDS.
3. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS. WHERE NO SPECIFIC DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT.
4. TYPICAL DETAILS ARE NOT CUT ON DRAWINGS, BUT APPLY UNLESS NOTED OTHERWISE.
5. WHERE ANY DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL STRUCTURAL NOTES AND SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL GOVERN.
6. FOR PROJECT DIMENSIONAL CONTROL, SEE CIVIL DRAWINGS.
7. ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR ELECTRICAL PRIOR TO CONSTRUCTION. DO NOT PENETRATE ANY STRUCTURAL ELEMENTS (CAISSONS) WITHOUT PRIOR WRITTEN APPROVAL OF STRUCTURAL ENGINEER UNLESS SPECIFIC PENETRATION DETAILS ARE SHOWN ON DRAWINGS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL BUILDING PERMITS AND SCHEDULING/ACCOMMODATING ALL REQUIRED INSPECTIONS PERTAINING TO THE BUILDING PERMITS.
9. SUBMIT SHOP DRAWINGS, PROJECT DATA AND SAMPLES AS SPECIFIED ON CONSTRUCTION DOCUMENTS.
10. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE, WHICH IS DESIGNED TO BE SELF–SUPPORTING AND STABLE AFTER THE CONSTRUCTION IS FULLY COMPLETED. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND ENSURE THE STABILITY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, TEMPORARY BRACING, ETC. THAT MAY BE NECESSARY. SUCH MATERIAL SHALL REMAIN THE CONTRACTOR'S PROPERTY AFTER COMPLETION OF THE PROJECT.
11. THIS ENGINEER DOES NOT HAVE CONTROL OR CHARGE OF, AND SHALL NOT BE RESPONSIBLE FOR, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ACTS OR OMISSIONS OF THE CONTRACTOR, THEIR SUBCONTRACTORS, AND ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF THESE PERSONS TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
12. THE CONTRACTOR IS RESPONSIBLE FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK THAT CONFORMS WITH THE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) SAFETY AND HEALTH STANDARDS FOR THE CONSTRUCTION INDUSTRY.
13. CONSTRUCTION MATERIAL SHALL BE SPREAD OUT IN SUCH A MANNER TO NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT OF THE AREA.
14. OPTIONS AND ALTERNATES ARE FOR THE CONTRACTOR'S CONVENIENCE. IF AN OPTION OR ALTERNATE IS CHOSEN, CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CHANGES NECESSARY AND SHALL COORDINATE ALL DETAILS WITH EOR PRIOR TO CONSTRUCTION.
15. THE FOLLOWING ABBREVIATIONS MAY BE USED ON THE DRAWINGS:

ABBREVIATIONS

A ROD	ANCHOR ROD
A/E	ARCHITECT & ENGINEER
AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ALUM	ALUMINUM
APPROX	APPROXIMATE
APVD	APPROVED
ARCH	ARCHITECTURAL/ARCHITECT
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS
AWS	AMERICAN WELDING SOCIETY
B/	BOTTOM OF
BLDG	BUILDING
BM	BEAM
BOT	BOTTOM
BRG	BEARING
BTWN	BETWEEN
C/C	CENTER TO CENTER
CALC	CALCULATION(S)
CHKD	CHECKED
CIP	CAST–IN–PLACE CONCRETE
CL	CENTERLINE
CLR	CLEAR/CLEARANCE
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTINUOUS
COORD	COORDINATE
CP	CONCRETE PIER
CRSI	CONCRETE REINFORCING STEEL INSTITUTE
CTR	CENTER
CTRD	CENTERED
CU	CUBIC
DEG	DEGREES
DET	DETAIL
DIA	DIAMETER
DL	DEAD LOAD
(E)	EXISTING
EA	EACH
EF	EACH FACE
EL	ELEVATION
ELEC	ELECTRICAL
ENGR	ENGINEER
EOR	ENGINEER OF RECORD
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
FDN	FOUNDATION
FF	FINISHED FLOOR
FFE	FINISHED FLOOR ELEVATION
FG	FINISHED GRADE
FIN	FINISH
FND	FOUNDATION
FRMG	FRAMING
FRP	FIBER REINFORCED PLASTIC
FS	FAR SIDE
FT	FOOT
FTG	FOOTING
GA	GAGE, GAUGE
GALV	GALVANIZED (HOT DIP)
(H)	HORIZONTAL BEAM ORIENTATION
HORIZ	HORIZONTAL
HP	HIGH POINT
HR	HANDRAIL
HSB	HIGH STRENGTH BOLT
IF	INSIDE FACE
IBC	INTERNATIONAL BUILDING CODE
ICC	INTERNATIONAL CODE COUNCIL
ICF	INSULATED CONCRETE FORM
ID	INSIDE DIAMETER
IN	INCH
INT	INTERIOR
K	KIP(S)
KB	KNEE BRACE
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH

LB	POUND
LF	LINEAR FEET
LL	LIVE LOAD
LONG	LONGITUDINAL
M	MOMENT
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MFD	MANUFACTURED
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MTL	METAL
N&F	NEAR AND FAR
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NS	NEAR SIDE
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OPNG	OPENING
OPP	OPPOSITE
PCF	POUNDS PER CUBIC FOOT
PE	PROFESSIONAL ENGINEER
PENE	PENETRATION
PERIM	PERIMETER
PL	PLATE
PLCS	PLACES
PLF	POUNDS PER LINEAR FOOT
PREFAB	PREFABRICATED
PROJ	PROJECTION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
R	RADIUS
REF	REFERENCE
REINF	REINFORCING
REQD	REQUIRED
RET	RETURN
REV	REVISION
SCHED	SCHEDULE
SECT	SECTION
SHT	SHEET
SIM	SIMILAR
SL	SLOPE
SPCS	SPACES
SPEC(S)	SPECIFICATION(S)
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STRUCT	STRUCTURAL
SYM	SYMMETRICAL
T/	TOP OF
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
THK	THICK
THRU	THROUGH
TP	TOE PLATE
TRANS	TRANSVERSE
TYP	TYPICAL
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
W/O	WITHOUT
WCJ	WALL CONTROL JOINT
WP	WORKING POINT
WS	WATERSTOP
WWR	WELDED WIRE REINFORCEMENT
YD	YARD

CODES & STANDARDS

1. IBC 2006: INTERNATIONAL BUILDING CODE [CITE STATE SPECIFIC BUILDING CODE AS APP.]
2. ASCE 7–05: MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
3. MNL–66–20: ACI DETAILING MANUAL
4. ACI 117–10: SPECIFICATION FOR TOLERANCES FOR CONCRETE
5. ACI 301–20: STANDARD SPECIFICATION FOR STRUCTURAL CONCRETE
6. ACI 318–05: BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE
7. ACI 347–25: STANDARD SPECIFICATION FOR FORMWORK FOR CONCRETE
8. CRSI–24: MANUAL OF STANDARD PRACTICE
9. ASTM A615–24: STANDARD SPECIFICATION FOR DEFORMED AND PLAIN CARBON STEEL BARS FOR CONCRETE REINFORCEMENT
10. ASTM C150–24: STANDARD SPECIFICATION FOR PORTLAND CEMENT

DESIGN CRITERIA

RISK CATEGORY	I (II FOR LIGHT POLE)
1. DEAD LOADS (ASSUMED)	
A. CANOPY	750 LBS
B. DRIVE–THRU GATEWAY	576 LBS
C. DIRECTIONAL SIGN	500 LBS
D. PRE–BROWSE MENU	500 LBS
E. DIGITAL MENU BOARD	500 LBS
F. FLAGPOLE	830 LBS
G. LIGHT POLE	200 LBS
2. SNOW LOADS	
A. GROUND SNOW LOAD	20 PSF
B. EXPOSURE FACTOR	0.9
C. THERMAL FACTOR	1.2
D. ROOF SNOW LOAD	18.4 PSF
3. WIND LOADS	
A. ULTIMATE WIND SPEED (3–SECOND GUST)	90 MILES PER HOUR
B. EXPOSURE	C
C. BUILDING CLASSIFICATION	SOLID FREESTANDING WALLS & SOLID SIGNS

NOTES:
1. VEHICULAR IMPACT AND SEISMIC LOAD WERE EXCLUDED FROM DESIGN CRITERIA.
2. SIGN AND POLE DEAD LOADS WERE CONSERVATIVELY ASSUMED TO CHECK BEARING PRESSURE.

FOUNDATION NOTES

1. FOUNDATIONS ARE DESIGNED IN ACCORDANCE WITH THE FOLLOWING GEOTECHNICAL REPORT (SUPPLIED BY OWNER)
   A. PREPARER: ECS MIDWEST, LLC
   B. REPORT/PROJECT NUMBER: 16:15801
   C. REPORT DATE: 8–8–2025
2. THE DESIGN PARAMETERS WERE PROVIDED FOR SOIL PROPERTIES AS NOTED BELOW:
   A. BEARING CAPACITY: 5000 PSF (ALLOWABLE)
   B. DENSITY OF SOIL & BACKFILL: 120 PCF
   C. FROST DEPTH: 3 FT
   D. PASSIVE LATERAL SOIL PRESSURE: 300 PSF/FT
3. GEOTECHNICAL ENGINEER TO BE RETAINED BY OWNER TO PROVIDE OBSERVATION AND TESTING SERVICES DURING THE GRADING AND FOUNDATION PHASE OF CONSTRUCTION. INSPECTION AND TESTING REPORT SHALL BE SUBMITTED TO THE ENGINEER OF RECORD.
4. PREPARE FOUNDATION SUBGRADE IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED IN THE PROJECT GEOTECHNICAL REPORT.
5. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE WHETHER OR NOT ADDITIONAL GEOTECHNICAL INFORMATION IS REQUIRED AND TO PROVIDE SUCH INFORMATION AS HE/SHE DEEMS NECESSARY.
6. PRIOR TO PLACEMENT OF CONCRETE, CONTRACTOR SHALL CONFIRM ALL FOUNDATION EMBED ITEMS – PIPES SLEEVES, STEEL PLATES, INSERTS, ETC., ARE IN PLACE.
7. ENSURE EXCAVATION IS FREE OF STANDING WATER, ICE, DEBRIS, ETC. PRIOR TO PLACING CONCRETE.

EXCAVATIONS

1. EXCAVATIONS SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL REPORT.
2. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE SHORING OR SLOPING OF EXCAVATIONS TO MEET OSHA REQUIREMENTS. DESIGN OF SHORING IS THE CONTRACTORS RESPONSIBILITY. EXCAVATIONS SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.
3. BLASTING IS NOT PERMITTED.
4. ANY SURFACES DISTURBED DURING CONSTRUCTION SHALL BE GRADED TO MATCH SITE GRADING DRAWINGS.
5. POSITIVE SITE DRAINAGE SHALL BE PROVIDED AT ALL TIMES SO THAT WATER IS NOT ALLOWED TO POND IN EXCAVATIONS OR NEAR FOUNDATIONS.

STRUCTURAL CONCRETE

1. CONCRETE WORK SHALL FOLLOW THE PRACTICES AND STANDARDS SPECIFIED IN SECTION CODES AND STANDARDS.
2. CONCRETE PROPERTIES:
   A. ALL CONCRETE SHALL CONFORM TO ASTM C94
   B. ALL AGGREGATES SHALL CONFORM TO ASTM C33 (NORMAL–WEIGHT) & ACI 302.1
   C. ALL CONCRETE SHALL BE CURED IN CONFORMANCE WITH ACI 301
   D. ALL CONCRETE FORMWORK SHALL CONFORM WITH ACI 347
3. ADDITION OF WATER TO THE BATCH FOR MATERIAL WITH INSUFFICIENT SLUMP WILL NOT BE PERMITTED, UNLESS THE SUPPLIER HAS SPECIFICALLY WITHHELD WATER FROM THE BATCH AT THE PLANT. IN SUCH CASE, THE MIX DESIGN AND TRUCK TICKET MUST CLEARLY STATE THE MAXIMUM AMOUNT OF WATER THAT CAN BE ADDED TO THE BATCH ON SITE. IN NO CASE SHALL THE DESIGN WATER TO CEMENTITIOUS MATERIAL RATIO BE EXCEEDED.
4. AGGREGATES DETERMINED TO BE ALKALI–CARBONATE REACTIVE (ACR), IN ACCORDANCE WITH ASTM C1778, ARE NOT PERMITTED.
5. CONTRACTOR TO SUBMIT ALL PROPOSED CONCRETE ADMIXTURES TO EOR FOR APPROVAL.
6. CONTRACTOR AND REDI–MIX SUPPLIER SHALL SELECT A TARGET SLUMP FOR THE POINT OF DELIVERY FOR CONCRETE MIXTURES USED FOR THIS PROJECT. SELECTED TARGET SLUMP SHALL NOT EXCEED 9 INCHES. CONCRETE SHALL NOT SHOW VISIBLE SIGNS OF SEGREGATION. THE TARGET SLUMP INDICATED ON THE SUBMITTAL SHALL BE USED AS THE BASIS FOR ACCEPTANCE DURING THE PROJECT. DETERMINE THE SLUMP BY ASTM C143/C143M. SLUMP TOLERANCES SHALL BE IN ACCORDANCE WITH ACI 117.
7. MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED, EXCEPT THAT SLABS ON GRADE NEED TO BE VIBRATED ONLY AROUND UNDER–FLOOR DUCTS, SLAB EDGES, REINFORCING, KEYS, ETC. MECHANICALLY VIBRATE ONLY THE TOP 5 FEET OF DRILLED PIER CONCRETE. REVIBRATE TOP OF DRILLED PIER 15 MINUTES AFTER PLACING CONCRETE.
8. WHERE SPECIFIED, VERTICAL CONCRETE SURFACES ARE TO BE FORMED.
9. ALL EXPOSED HORIZONTAL CONCRETE CORNERS SHALL HAVE A 3/4" CHAMFER OR ROUNDED TOOLED EDGE. TOPS OF PIERS SHALL BE SLOPED TOWARD OUTWARD EDGE TO PREVENT POOLING OF WATER.
10. THE REQUIREMENTS OF MECHANICAL, ELECTRICAL AND PLUMBING FOR EMBEDDED ITEMS INCLUDING PIPE, CONDUIT, EMBEDDED STEEL, AND BOLTS ARE TO BE CHECKED PRIOR TO EACH CONCRETE POUR. VERIFY ALL ANCHOR BOLT LOCATIONS AND EQUIPMENT OPENINGS AGAINST CERTIFIED VENDOR DRAWINGS.
11. ALL CONCRETE SHALL CURE A MINIMUM OF 7 DAYS AFTER POURING, AND SHALL REMAIN UNLOADED UNTIL CONCRETE HAS REACHED 80% OF THE 28 DAY DESIGN STRENGTH, UNLESS APPROVED BY THE ENGINEER OF RECORD.
12. UNLESS OTHERWISE SPECIFIED, CONCRETE TEMPERATURE AS DELIVERED SHALL NOT EXCEED 95 DEGREES FAHRENHEIT NOR BE LESS THAN 55 DEGREES FAHRENHEIT FOR SECTION SIZE <12", 50 DEGREES FAHRENHEIT FOR 12" – 36". TEMPERATURE OF CONCRETE AS PLACED SHALL NOT EXCEED THESE VALUES BY MORE THAN 20 DEGREES FAHRENHEIT.
13. CONTRACTOR TO SELECT A TARGET SLUMP BASED ON ASTM C143 AS PERMITTED UNDER ACI 301.
14. ALKALI–SILICA REACTION – COMPLY WITH ONE OF THE FOLLOWING:
   A. EXPANSION RESULT OF AGGREGATE: NOT MORE THAN 0.04 PERCENT AT ONE–YEAR WHEN TESTED IN ACCORDANCE WITH ASTM 1293.
   B. EXPANSION RESULTS OF AGGREGATE AND CEMENTITIOUS MATERIALS IN COMBINATION: NOT MORE THAN 0.10 PERCENT AT AN AGE OF 16 DAYS WHEN TESTED IN ACCORDANCE WITH ASTM C1567.
   C. ALKALI CONTENT IN CONCRETE: NOT MORE THAN 4 LB/YD^3 FOR MODERATELY REACTIVE AGGREGATE OR 3 LB/YD^3 FOR HIGHLY REACTIVE AGGREGATE, WHEN TESTED IN ACCORDANCE WITH ASTM C1293 AND CATEGORIZED IN ACCORDANCE WITH ASTM C1778, BASED ON ALKALI CONTENT BEING CALCULATED IN ACCORDANCE WITH ACI 301 (ACI 301M).

CONCRETE MIX REQUIREMENTS

CONCRETE TYPE	28 DAY COMPRESSIVE STRENGTH (f'c, PSI)	AIR CONTENT (+/– 1.5%) (AE=AIR ENTRAINED)	MAX W/C RATIO	MAX NOM AGG SIZE (IN)	CEMENT TYPE	FLYASH % (OF TOTAL CEMENT)	EXPOSURE CLASSES
ALL CONCRETE (UNO)	4,500	6.0%	0.45	3/4	I/II	10–20	F2, S0, W1, C1

ANCHOR RODS & EMBEDDED STEEL

1. ALL STEEL ITEMS EMBEDDED IN CONCRETE INCLUDING ANCHOR RODS SHALL BE PLAIN UNLESS NOTED OTHERWISE ON DESIGN DRAWINGS.
2. ANCHOR BOLTS SHALL BE PRE–TENSIONED TO THE VALUES GIVEN ON THE DESIGN DRAWINGS WHERE SHOWN. OTHERWISE TIGHTEN TO SNUG–TIGHT CONDITION AS DEFINED BY AISC.

REINFORCING STEEL

1. REINFORCING STEEL SHALL FOLLOW THE PRACTICES AND STANDARDS SPECIFIED IN SECTION CODES AND STANDARDS.
2. TYPICAL REINFORCING BAR STRENGTHS
   A. REINFORCING (NON–WELDABLE) ASTM A615, DEFORMED
   Fy= 60 KSI (420 MPa)
3. CONCRETE COVER FOR REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF ACI 318 OR ACI 350, UNLESS OTHERWISE NOTED.
4. DETAILING, FABRICATION, SUPPORT, AND PLACING OF ALL BARS SHALL BE PER CRSI SPECIFICATIONS/HANDBOOKS AND THE LATEST ACI CODES AND DETAILING MANUALS.
5. ALL REINFORCING SHALL BE HELD SECURELY IN POSITION WITH STANDARD ACCESSORIES IN CONCRETE. SECURELY TIE ALL BARS IN LOCATION BEFORE PLACING CONCRETE.
6. REINFORCING BAR SPACINGS GIVEN ARE MAXIMUM ON CENTERS.
7. REINFORCING BAR HOOKS AND BENDS SHALL BE ACI STANDARD DIMENSIONS, UNLESS NOTED OTHERWISE.
8. REINFORCING BARS SHALL NOT BE BENT OR STRAIGHTENED IN A MANNER THAT WILL DAMAGE THE MATERIAL. BARS WITH KINKS OR IMPROPER BENDS SHALL NOT BE USED. NO BARS PARTIALLY EMBEDDED IN CONCRETE SHALL BE FIELD BENT, EXCEPT AS SHOWN ON THE DRAWINGS OR AS PERMITTED BY THE ENGINEER.
9. NO REINFORCING STEEL SHALL BE FIELD BENT WITHOUT THE APPROVAL OF THE ENGINEER OF RECORD. FIELD BENDING OF PLAIN REINFORCEMENT, IF PERMITTED, SHALL BE PERFORMED USING AN APPROVED AND APPROPRIATE SIZED PORTABLE HYDRAULIC DEVICE THAT MAKES ACI STANDARD RADIUS BENDS. NO OTHER FIELD BENDING METHOD SHALL BE PERMITTED.
10. REINFORCING LAP SPLICES IN CONCRETE SHALL BE PER TYPICAL DETAILS UNLESS NOTED OTHERWISE. ALL SPLICE LOCATIONS ARE SUBJECT TO APPROVAL. PROVIDE BENT CORNER BARS TO MATCH AND LAP WITH HORIZONTAL BARS AT CORNERS AND INTERSECTIONS OF FOOTINGS AND WALLS.
11. ALL SPLICING OF REINFORCING BARS SHALL BE DONE BY LAPPING UNLESS OTHERWISE APPROVED. BARS SPLICED BY NON CONTACT LAP SPLICES IN FLEXURAL MEMBERS SHALL NOT BE SPACED TRANSVERSELY FARTHER APART THAN ONE–FIFTH THE REQUIRED SPLICE LENGTH NOR 6 INCHES.
12. LAP SPLICE LENGTHS FOR DEFORMED BARS SHALL BE ACI 318 CLASS B TENSION LAP SPLICES UNLESS OTHERWISE NOTED ON DESIGN DRAWINGS.
13. LAP SPLICES FOR ADJACENT BARS SHALL BE STAGGERED. STAGGERED SPLICE REQUIREMENTS DO NOT APPLY TO BEAMS AND COLUMNS.
14. ALL SPLICES NOT DETAILED ON DESIGN DRAWINGS SHALL BE TAKEN AS TENSION LAP SPLICES.
15. ALL REINFORCING BARS AT REENTRANT CORNERS SHALL EXTEND FOR THE FULL BAR DEVELOPMENT LENGTH PAST THE CORNERS UNLESS NOTED.

CONCRETE DEVELOPMENT/LAP SPLICE SCHEDULE (f'c = 4.5 KSI)

BAR SIZE	DEVELOPMENT LENGTH (IN)	LAP SPLICE LENGTH, CLASS B (IN)
4	18	24
5	23	30
6	27	35
7	40	51

*BAR TYPE 1 – CLEAR SPACING OF BARS BEING DEVELOPED OR LAP SPLICED NOT LESS THAN Db, CONCRETE COVER NOT LESS THAN Db, AND STIRRUPS OR TIES THROUGHOUT Ld NOT LESS THAN THE CODE MINIMUM.

SHOP DRAWINGS & SUBMITTALS

1. THE GENERAL CONTRACTOR WILL REVIEW AND STAMP ALL SHOP DRAWINGS AND PRODUCT DATA SUBMITTALS FOR CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS PRIOR TO SUBMISSION. ANY SHOP DRAWINGS OF PRODUCT DATA NOT REVIEWED AND STAMPED BY THE GENERAL CONTRACTOR WILL BE RETURNED WITHOUT REVIEW.
2. ANY SHOP DRAWINGS NOT CHECKED AND INITIALED BY THE SUPPLIER/DETAILER PRIOR TO SUBMITTING FOR ARCHITECTURAL AND ENGINEERING REVIEW, WILL BE RETURNED WITHOUT REVIEW.
3. THE CEC CONSTRUCTION DOCUMENTS MAY NOT BE REPRODUCED FOR USE AS SHOP DRAWINGS, UNLESS APPROVED BY THE ENGINEER OF RECORD.
4. ELECTRONIC FILES OF CONSTRUCTION DOCUMENTS WILL NOT BE MADE AVAILABLE FOR USE AS SHOP DRAWINGS.
5. REFER TO INDIVIDUAL NOTES SECTIONS FOR ADDITIONAL SUBMITTAL REQUIREMENTS.

REVISION RECORD

NO	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.
3000 Little Hills Expressway
Suite 102
St. Charles, MO 63301
Ph: 314.656.4566
www.cecinc.com

McDONALD'S RESTAURANT
NSN 00000 (024-0281)
400 AMERICANA
BOONVILLE, MO 65233

PATRICK TODD BENNETT
NUMBER PE-2002003134
04/03/2026

STRUCTURAL GENERAL NOTES

DATE:	NOVEMBER 2025	DRAWN BY:	RL
DWG SCALE:	NTS	CHECKED BY:	DRAFT
PROJECT NO:	353-116		
APPROVED BY:	DRAFT		

DRAWING NO.: S100
SHEET 15 OF 20

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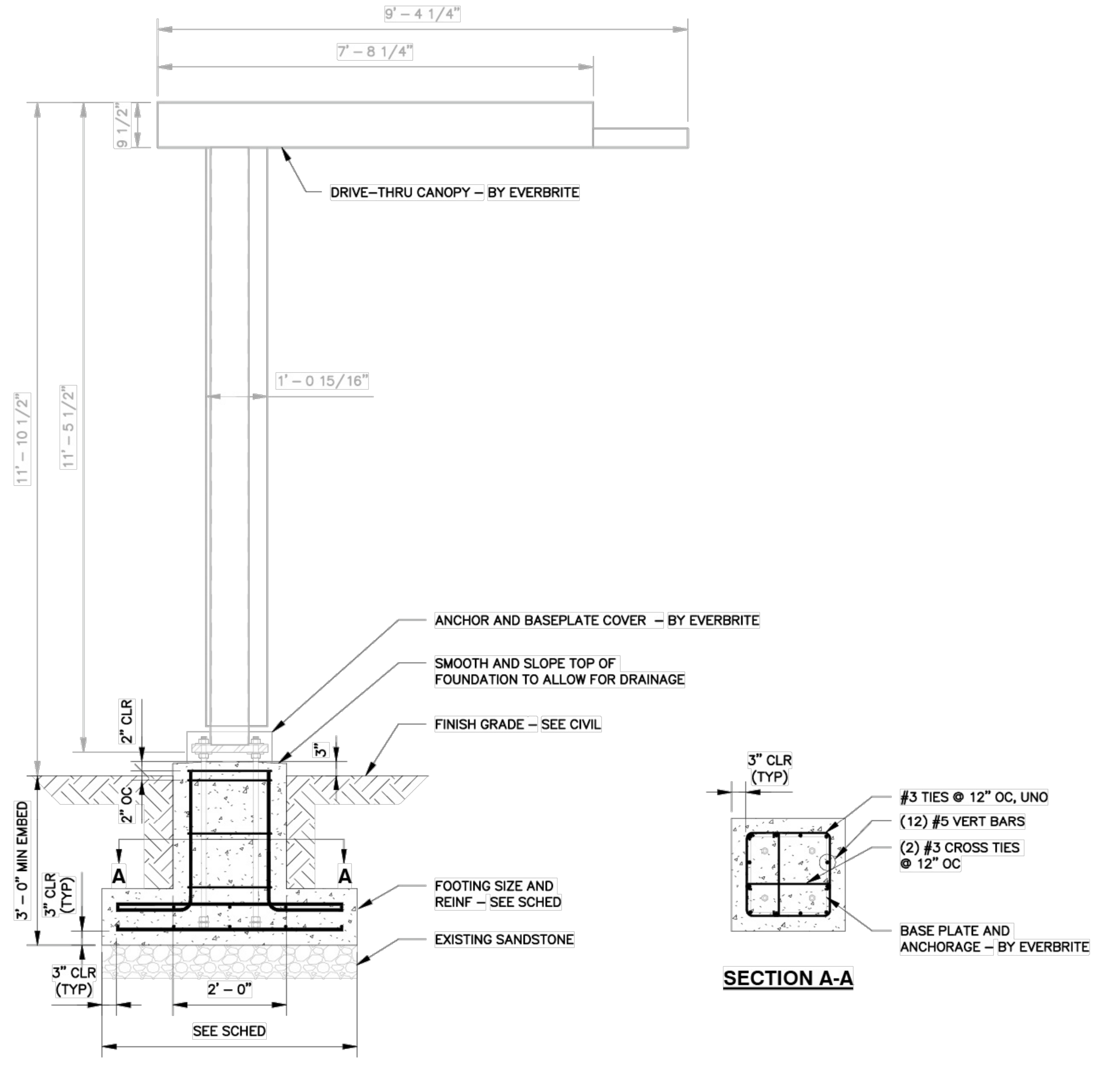
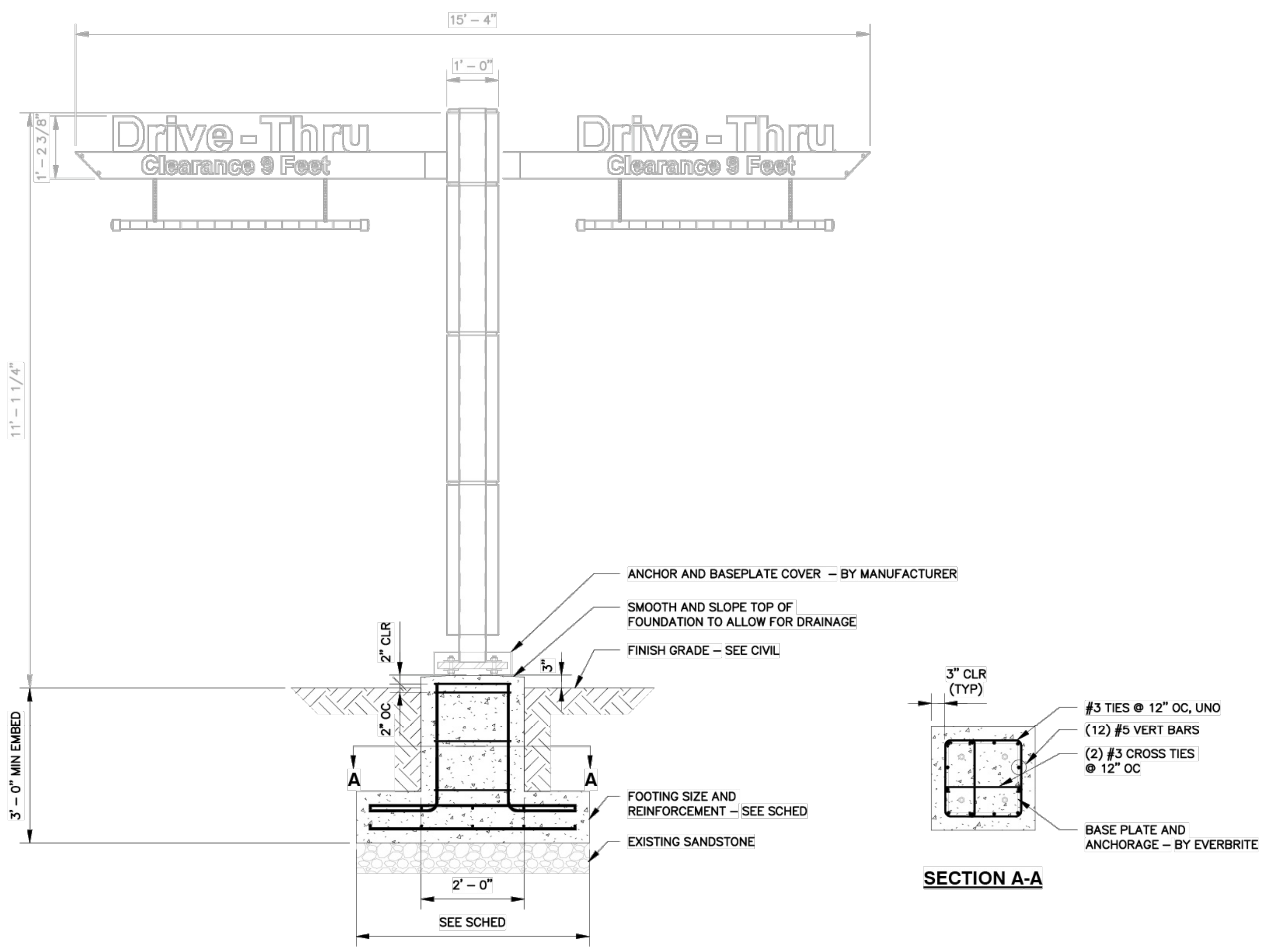


SECTION A-A

1 S200 **DRIVE-THRU CANOPY CAISSON DETAIL**
1/2" = 1'–0"



SECTION A-A

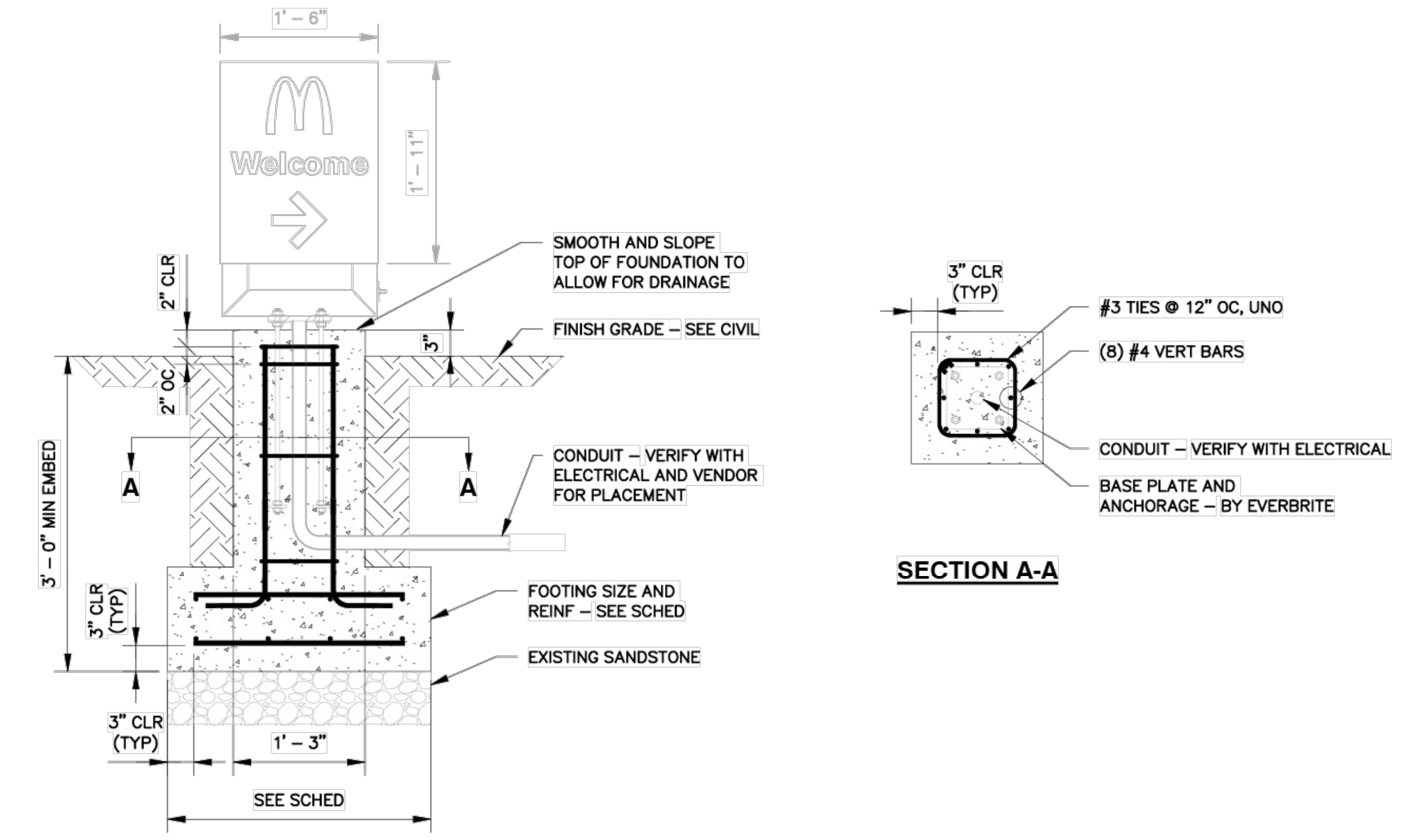
2 S200 **DOUBLE ARM GATEWAY CAISSON DETAIL**
1/2" = 1'–0"

FOOTING SCHEDULE

SIGN / STRUCTURE	DIMENSIONS (L x W x D)	REINFORCEMENT
CANOPY	4'-6" x 4'-6" x 1'-0"	#5 @ 12" OC EW T&B
GATEWAY	4'-6" x 4'-6" x 1'-0"	#5 @ 12" OC EW T&B
DIRECTIONAL	2'-6" x 2'-6" x 1'-0"	#4 @ 8" OC EW T&B

FOUNDATION NOTES

1. SEE CIVIL FOR FOUNDATION LOCATIONS.
2. CONTRACTOR SHALL COORDINATE ALL ELEVATIONS AND GRADING WITH CIVIL DRAWINGS AND NOTIFY THE EOR OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
3. CONTRACTOR SHALL COORDINATE ALL ANCHORAGE WITH EVERBRITE AND NOTIFY THE EOR OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
4. CONTRACTOR TO ENSURE THAT FOUNDATIONS MEET MINIMUM DEPTH REQUIREMENTS AND ARE BEARING ON COMPETENT ROCK.


1' – 6"
Welcome
1' – 11"
SMOOTH AND SLOPE TOP OF FOUNDATION TO ALLOW FOR DRAINAGE
FINISH GRADE – SEE CIVIL
2" CLR
3"
2" OC
3' – 0" MIN EMBED
A
A
CONDUIT – VERIFY WITH ELECTRICAL AND VENDOR FOR PLACEMENT
3" CLR (TYP)
FOOTING SIZE AND REINF – SEE SCHED
EXISTING SANDSTONE
3" CLR (TYP)
1' – 3"
SEE SCHED
3" CLR (TYP)
#3 TIES @ 12" OC, UNO
(8) #4 VERT BARS
CONDUIT – VERIFY WITH ELECTRICAL
BASE PLATE AND ANCHORAGE – BY EVERBRITE

SECTION A-A

3 S200 **DIRECTIONAL SIGN CAISSON DETAIL**
3/4" = 1'–0"

REVISION RECORD

NO	DATE	DESCRIPTION

3000 Little Hills Expressway
Suite 102
St. Charles, MO 63301
Ph. 314.656.4566
www.cecinc.com

Civil & Environmental
Consultants, Inc.

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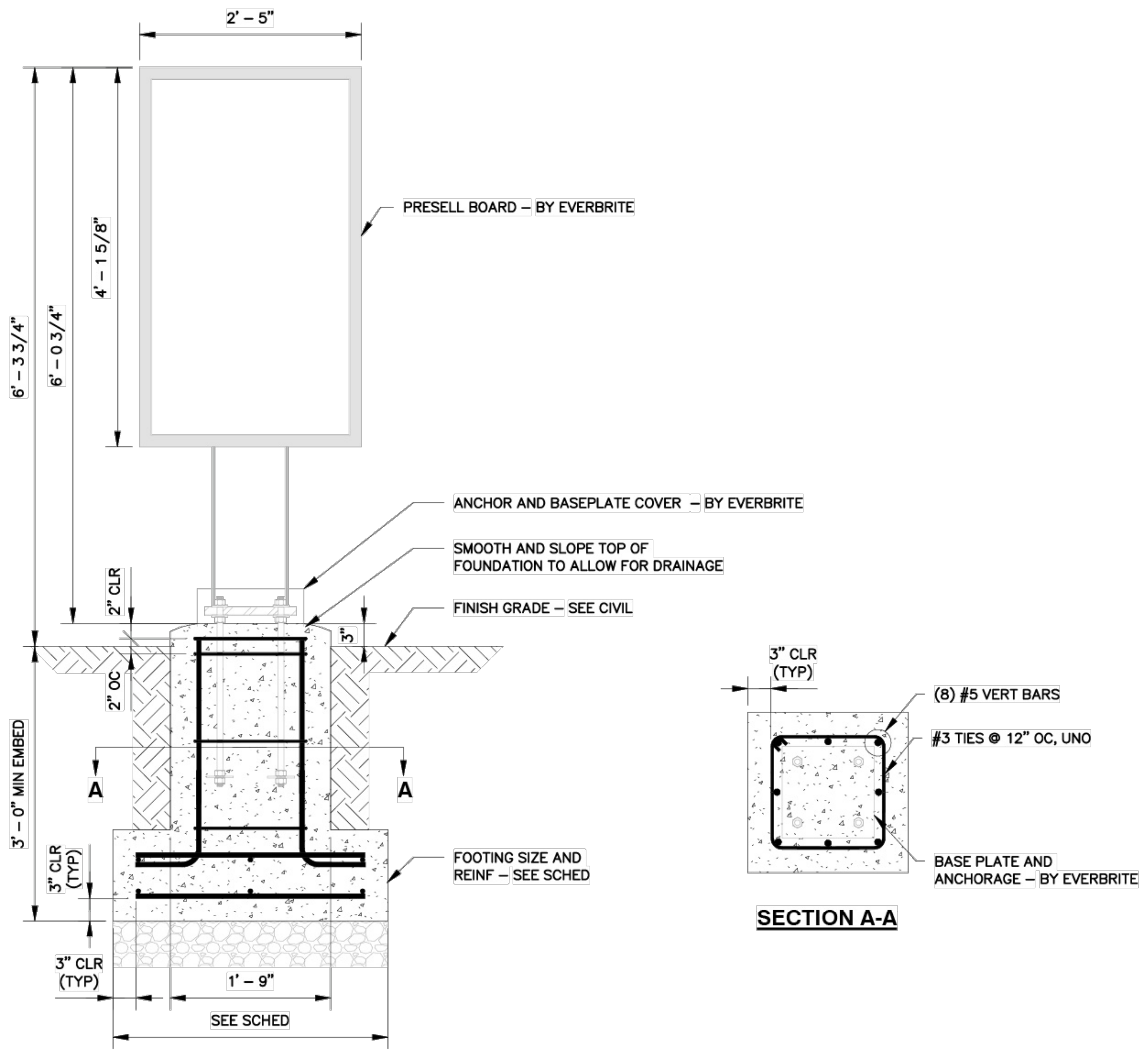
BOONVILLE, MO 65233

PATRICK TODD BENNETT
NUMBER PE-2002003134
04/03/2026

STRUCTURAL FOUNDATION DETAILS

DATE:	NOVEMBER 2025	DRAWN BY:	RL
DWG SCALE:	As indicated	CHECKED BY:	DRAFT
PROJECT NO:	353-116		
APPROVED BY:	DRAFT		

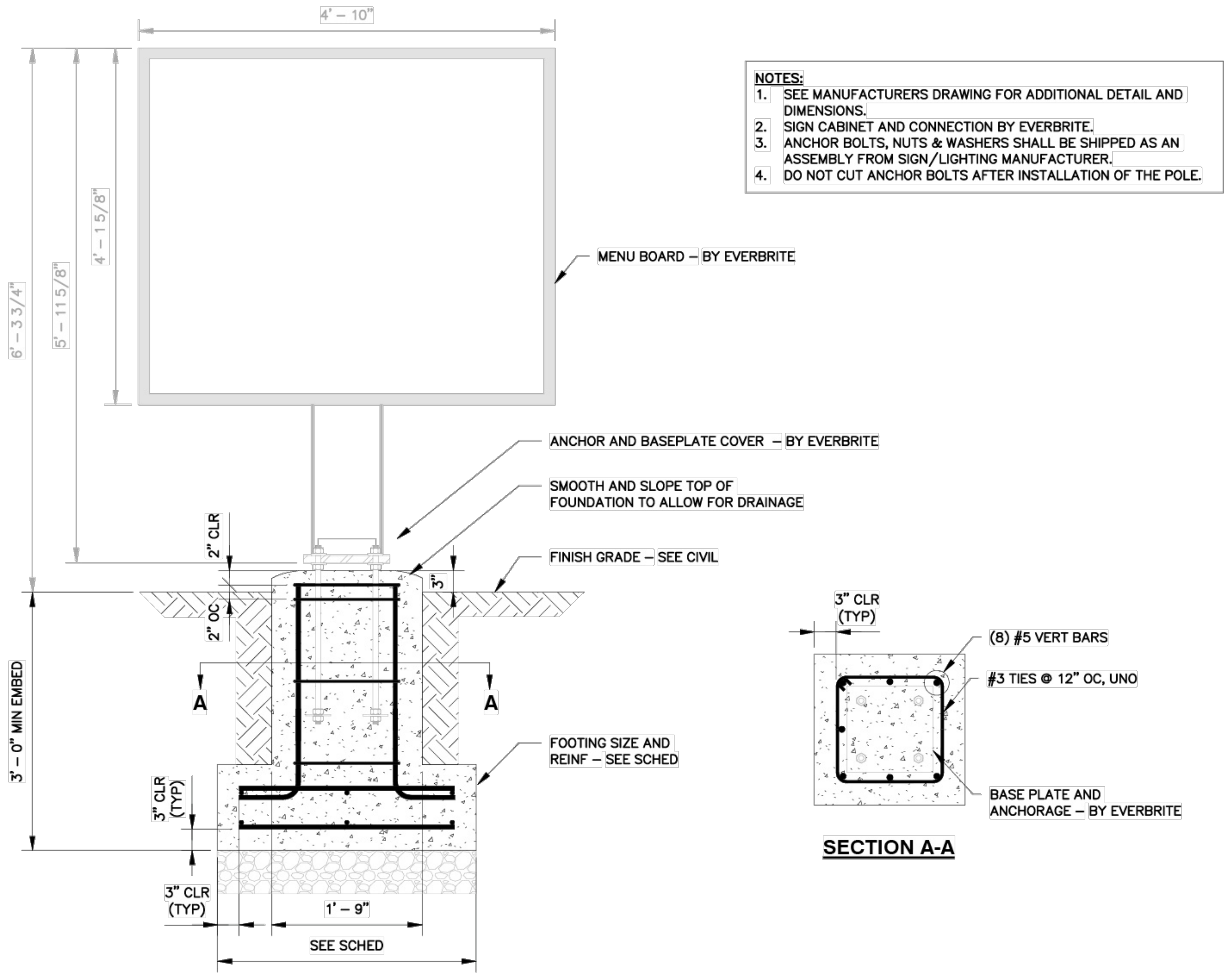
DRAWING NO.:
S200
SHEET 16 OF 20


2' – 5"
6' – 3 3/4"
6' – 0 3/4"
4' – 1 5/8"
PRESELL BOARD – BY EVERBRITE
ANCHOR AND BASEPLATE COVER – BY EVERBRITE
SMOOTH AND SLOPE TOP OF FOUNDATION TO ALLOW FOR DRAINAGE
FINISH GRADE – SEE CIVIL
2" CLR
3"
2" OC
A
A
3' – 0" MIN EMBED
3" CLR (TYP)
FOOTING SIZE AND REINF – SEE SCHED
3" CLR (TYP)
1' – 9"
SEE SCHED
3" CLR (TYP)
(8) #5 VERT BARS
#3 TIES @ 12" OC, UNO
BASE PLATE AND ANCHORAGE – BY EVERBRITE
SECTION A-A

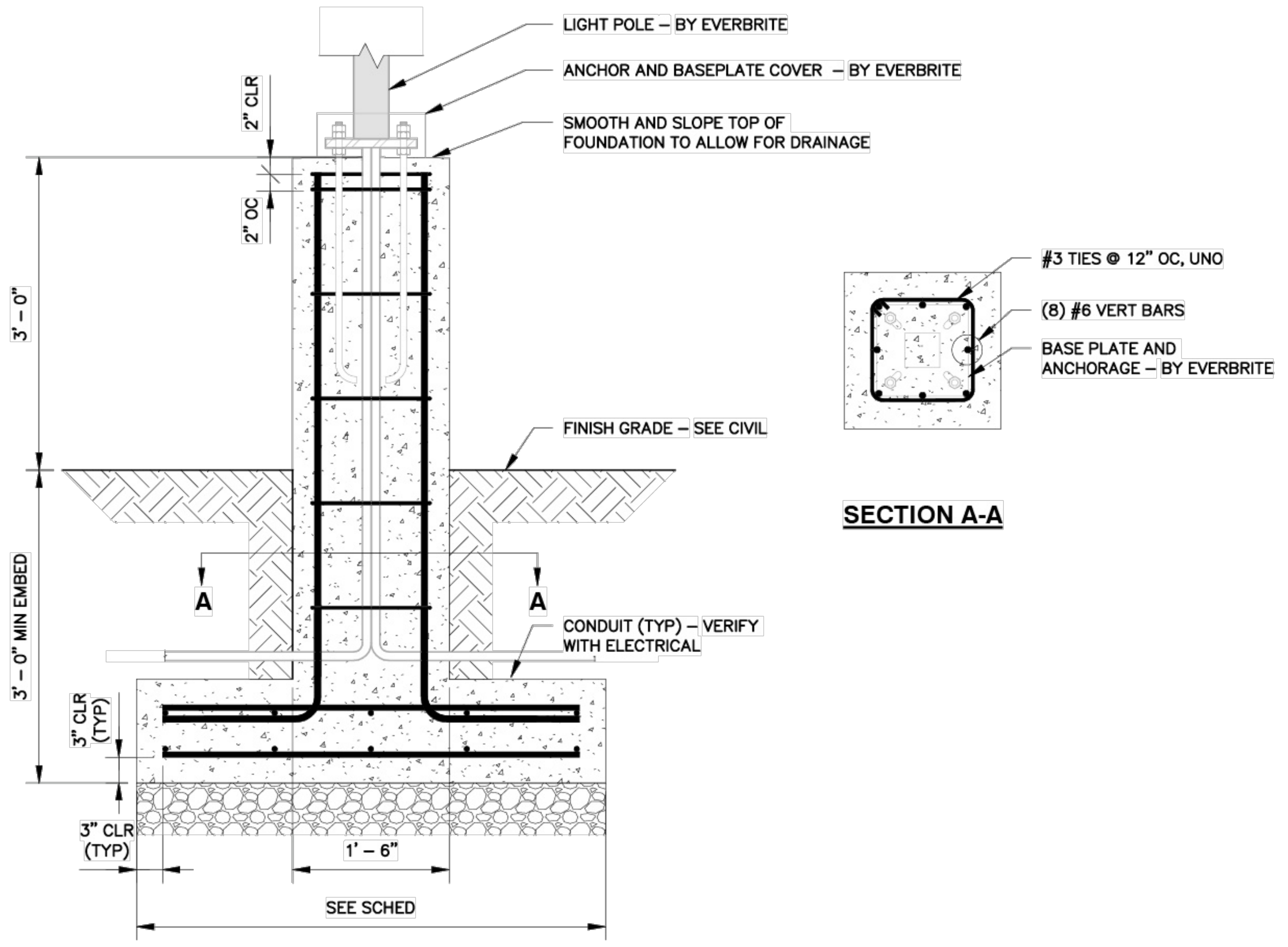
1 DIGITAL PRE-BROWSE BOARD CAISSON DETAIL
S201 3/4" = 1'–0"

NOTES:

1. SEE MANUFACTURERS DRAWING FOR ADDITIONAL DETAIL AND DIMENSIONS.
2. SIGN CABINET AND CONNECTION BY EVERBRITE.
3. ANCHOR BOLTS, NUTS & WASHERS SHALL BE SHIPPED AS AN ASSEMBLY FROM SIGN/LIGHTING MANUFACTURER.
4. DO NOT CUT ANCHOR BOLTS AFTER INSTALLATION OF THE POLE.



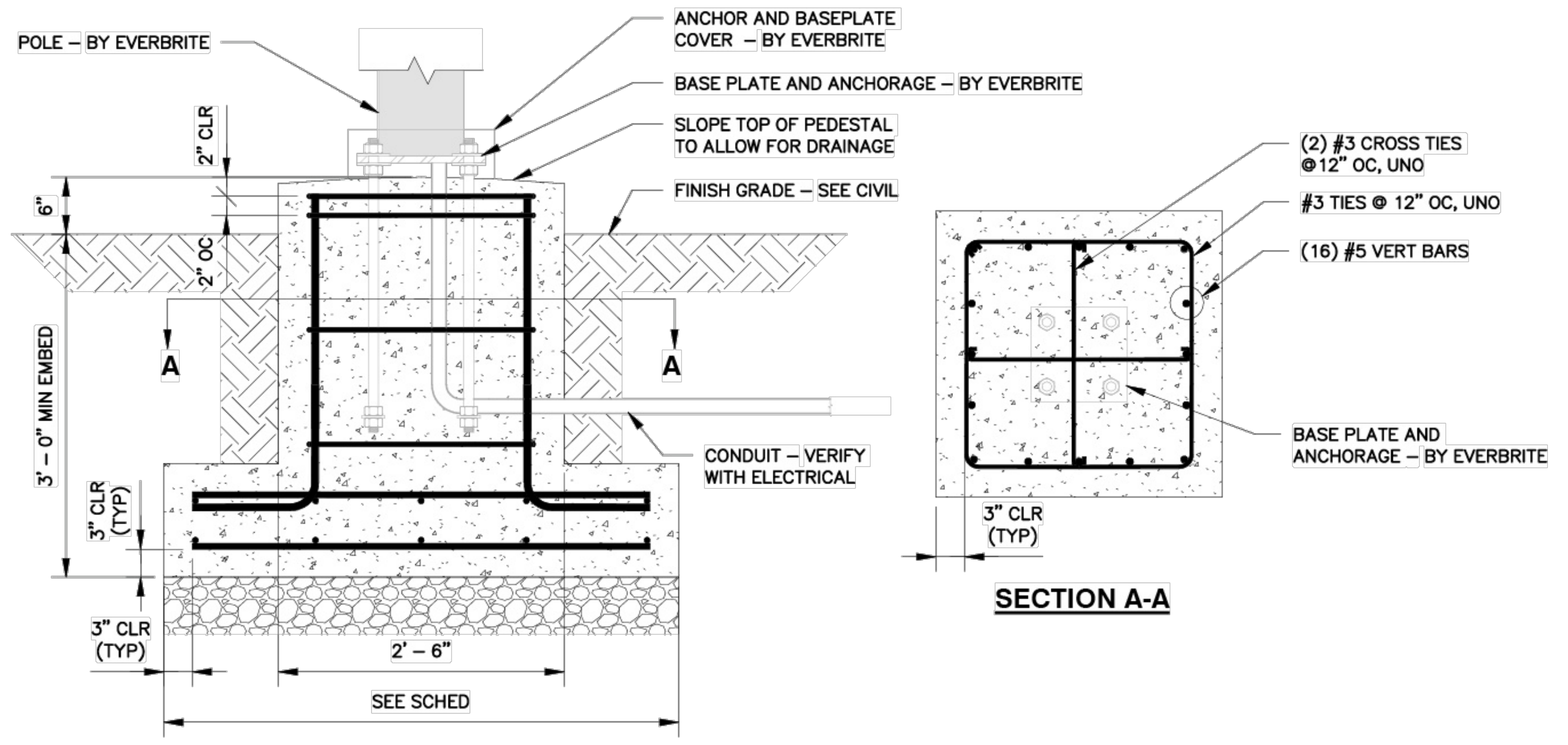
2 DIGITAL MENU BOARD CAISSON DETAIL
S201 3/4" = 1'–0"


LIGHT POLE – BY EVERBRITE
ANCHOR AND BASEPLATE COVER – BY EVERBRITE
SMOOTH AND SLOPE TOP OF FOUNDATION TO ALLOW FOR DRAINAGE
2" CLR
2" OC
3' – 0"
FINISH GRADE – SEE CIVIL
A
A
3' – 0" MIN EMBED
CONDUIT (TYP) – VERIFY WITH ELECTRICAL
3" CLR (TYP)
3" CLR (TYP)
1' – 6"
SEE SCHED
#3 TIES @ 12" OC, UNO
(8) #6 VERT BARS
BASE PLATE AND ANCHORAGE – BY EVERBRITE
SECTION A-A

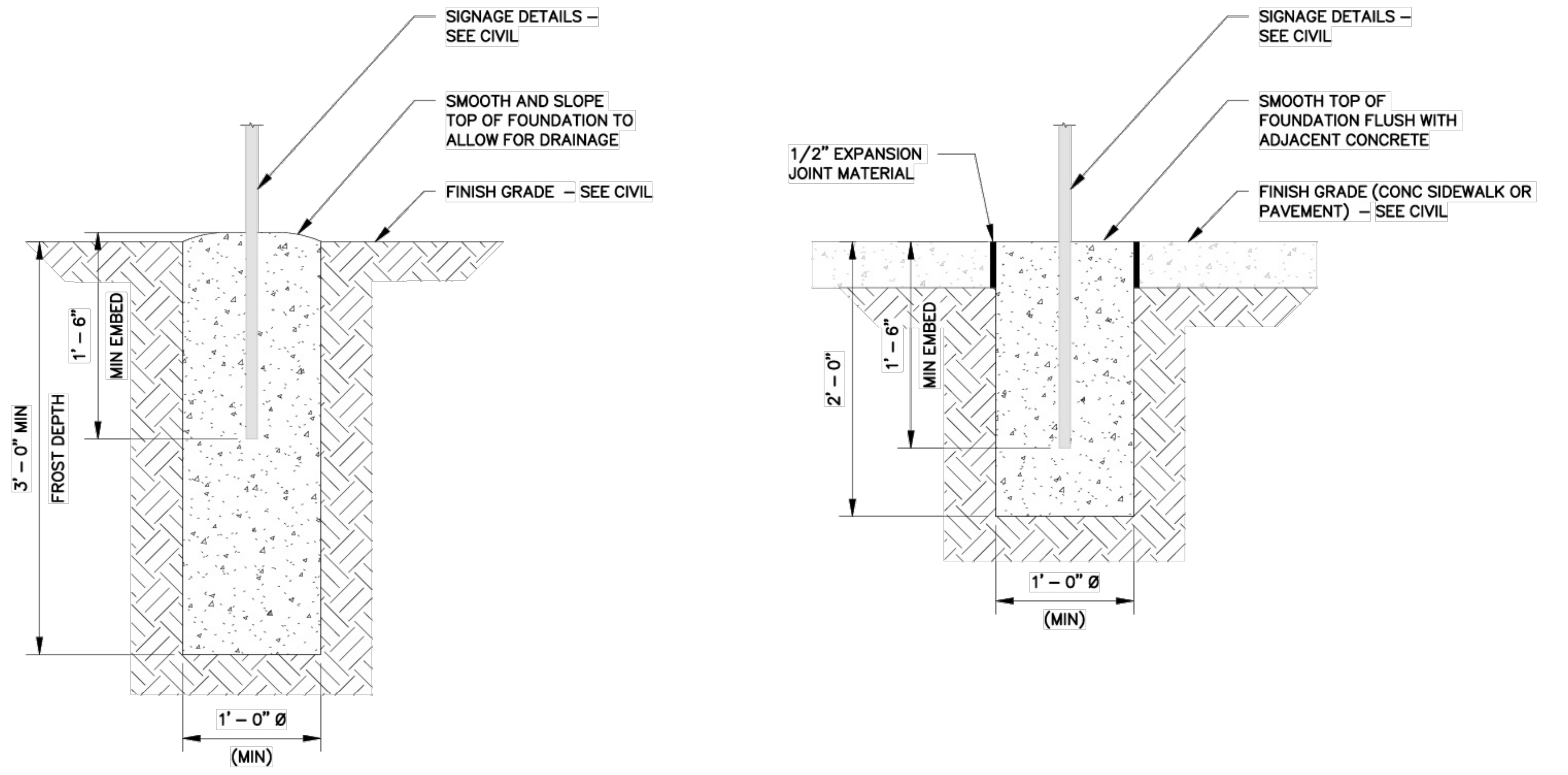
3 LIGHT POLE CAISSON DETAIL
S201 3/4" = 1'–0"

NOTES:

1. MAXIMUM FLAG SIZE OF 6'–0"X10'–0".
2. MAXIMUM POLE HEIGHT OF 30'–0".
3. LIGHTNING GROUND SPIKE – BY EVERBRITE.


POLE – BY EVERBRITE
ANCHOR AND BASEPLATE COVER – BY EVERBRITE
BASE PLATE AND ANCHORAGE – BY EVERBRITE
SLOPE TOP OF PEDESTAL TO ALLOW FOR DRAINAGE
FINISH GRADE – SEE CIVIL
2" CLR
6"
2" OC
A
A
3' – 0" MIN EMBED
CONDUIT – VERIFY WITH ELECTRICAL
3" CLR (TYP)
3" CLR (TYP)
2' – 6"
SEE SCHED
(2) #3 CROSS TIES @12" OC, UNO
#3 TIES @ 12" OC, UNO
(16) #5 VERT BARS
BASE PLATE AND ANCHORAGE – BY EVERBRITE
3" CLR (TYP)
SECTION A-A

4 BOLTED FLAG POLE CAISSON
S201 3/4" = 1'–0"


SIGNAGE DETAILS – SEE CIVIL
SMOOTH AND SLOPE TOP OF FOUNDATION TO ALLOW FOR DRAINAGE
FINISH GRADE – SEE CIVIL
1' – 6"
MIN EMBED
3' – 0" MIN
FROST DEPTH
1' – 0" Ø
(MIN)
SIGNAGE DETAILS – SEE CIVIL
1/2" EXPANSION JOINT MATERIAL
SMOOTH TOP OF FOUNDATION FLUSH WITH ADJACENT CONCRETE
FINISH GRADE (CONC SIDEWALK OR PAVEMENT) – SEE CIVIL
2' – 0"
1' – 6"
MIN EMBED
1' – 0" Ø
(MIN)

FINISH GRADE - SOIL/GRASS/ASPHALT

FINISH GRADE - CONCRETE

5 TYPICAL SIGNPOST FOUNDATION
S201 1" = 1'–0"

FOOTING SCHEDULE

SIGN / STRUCTURE	DIMENSIONS (L x W)	REINFORCEMENT
MENU BOARD	3'-0" x 3'-0"	#5 @ 15" OC EW T&B
BROWSE BOARD	3'-0" x 3'-0"	#5 @ 15" OC EW T&B
LIGHT POLE	4'-6" x 4'-6"	#5 @ 12" OC EW T&B
FLAG POLE	4'-6" x 4'-6"	#5 @ 12" OC EW T&B

FOUNDATION NOTES

1. SEE CIVIL FOR FOUNDATION LOCATIONS.
2. CONTRACTOR SHALL COORDINATE ALL ELEVATIONS AND GRADING WITH CIVIL DRAWINGS AND NOTIFY THE EOR OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
3. CONTRACTOR SHALL COORDINATE ALL ANCHORAGE WITH EVERBRITE AND NOTIFY THE EOR OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
4. CONTRACTOR TO ENSURE THAT FOUNDATIONS MEET MINIMUM DEPTH REQUIREMENTS AND ARE BEARING ON COMPETENT ROCK.

REVISION RECORD

NO	DATE	DESCRIPTION

3000 Little Hills Expressway
Suite 102
St. Charles, MO 63301
Ph: 314.656.4566
www.cecinc.com

Civil & Environmental
Consultants, Inc.

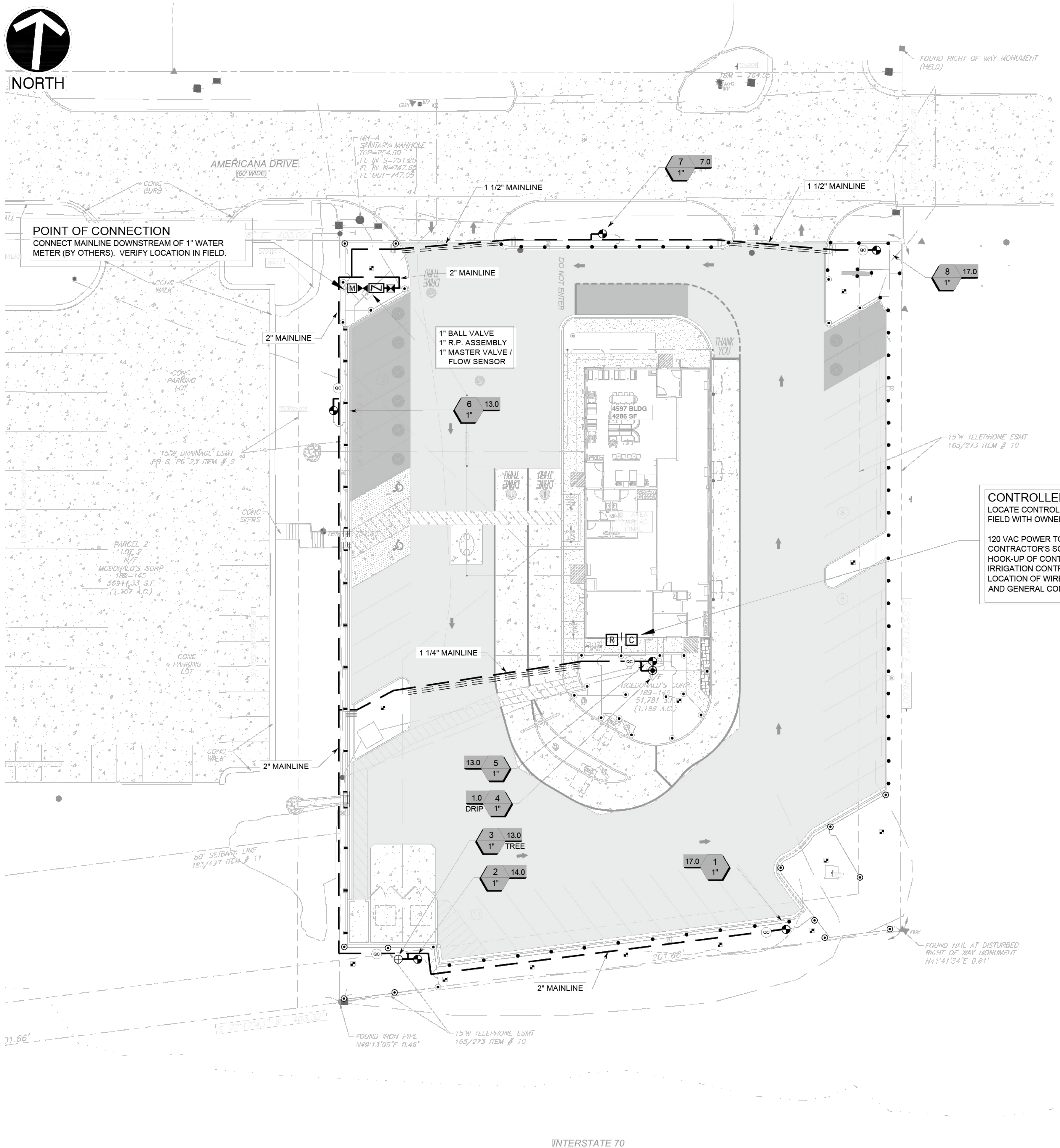
McDONALD'S RESTAURANT
NSN 00000 (024-0281)
400 AMERICANA
BOONVILLE, MO 65233

STRUCTURAL FOUNDATION DETAILS

DATE: NOVEMBER 2025	DRAWN BY: RL
DWG SCALE: As indicated	CHECKED BY: DRAFT
PROJECT NO:	353-116
APPROVED BY:	DRAFT

PATRICK TODD BENNETT
NUMBER PE-2002003134
04/03/2026

DRAWING NO.: **S201**
SHEET 17 OF 20


NORTH
AMERICANA DRIVE
(60' WIDE)
POINT OF CONNECTION
CONNECT MAINLINE DOWNSTREAM OF 1" WATER METER (BY OTHERS). VERIFY LOCATION IN FIELD.
1 1/2" MAINLINE
1 1/2" MAINLINE
2" MAINLINE
2" MAINLINE
2" MAINLINE
2" MAINLINE
1 1/4" MAINLINE
1" BALL VALVE
1" R.P. ASSEMBLY
1" MASTER VALVE / FLOW SENSOR
7 7.0 1"
8 17.0 1"
6 13.0 1"
13.0 5 1"
1.0 4 DRIP 1"
3 13.0 1" TREE
2 14.0 1"
17.0 1 1"
M
R
C
4597 BLDG
4286 SF
DO NOT ENTER
THANK YOU
FOUND RIGHT OF WAY MONUMENT (HELD)
TBM = 754.05
MH-A SANITARY MANHOLE TOP=754.50 FL IN S=751.60 FL IN N=747.65 FL OUT=747.05
CONC CURB
CONC WALK
CONC PARKING LOT
15'W DRAINAGE ESMT PB 6, PG 23 ITEM # 9
CONC SIGNS
PARCEL 2 "LOT 2" N/F MCDONALD'S CORP 189-145 56944.13 S.F. (1.307 A.C.)
MCDONALD'S CORP 189-145 51,781 (1.189 A.C.)
15'W TELEPHONE ESMT 165/273 ITEM # 10
60' SETBACK LINE 183/497 ITEM # 11
FOUND NAIL AT DISTURBED RIGHT OF WAY MONUMENT N41°41'34"E 0.61'
FOUND IRON PIPE N49°13'05"E 0.46'
15'W TELEPHONE ESMT 165/273 ITEM # 10
201.66'
INTERSTATE 70
(VARIABLE WIDTH)

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.**

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.

VALVE KEY

Valve Callout
Valve Number
Valve Flow
Valve Size

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 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.
⊕	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 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.
N	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 COVER AND 3/4" PVC BALL VALVE
C	RAINBIRD ESP12LXMEF2P SERIES AUTOMATIC WALL MOUNT CONTROLLER
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

SCALE IN FEET
0 20 40

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

NOTES:

1. REFER TO 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 THIS PROJECT.

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EVERGREEN DESIGN GROUP
800.680.6630
www.evergreendesigngroup.com
LANDSCAPE ARCHITECTURE
LAND PLANNING · IRRIGATION DESIGN

STEPHEN W. SALES
NUMBER PLA-2022044706
DATE: 03/03/2026

REVISION RECORD

NO	DATE	DESCRIPTION
2	03/17/26	PER CLIENT COMMENTS
1	02/03/2026	CITY AND CLIENT COMMENTS

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.
1450 Beale Street
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St. Charles, MO 63303
Ph: 314.656.4566
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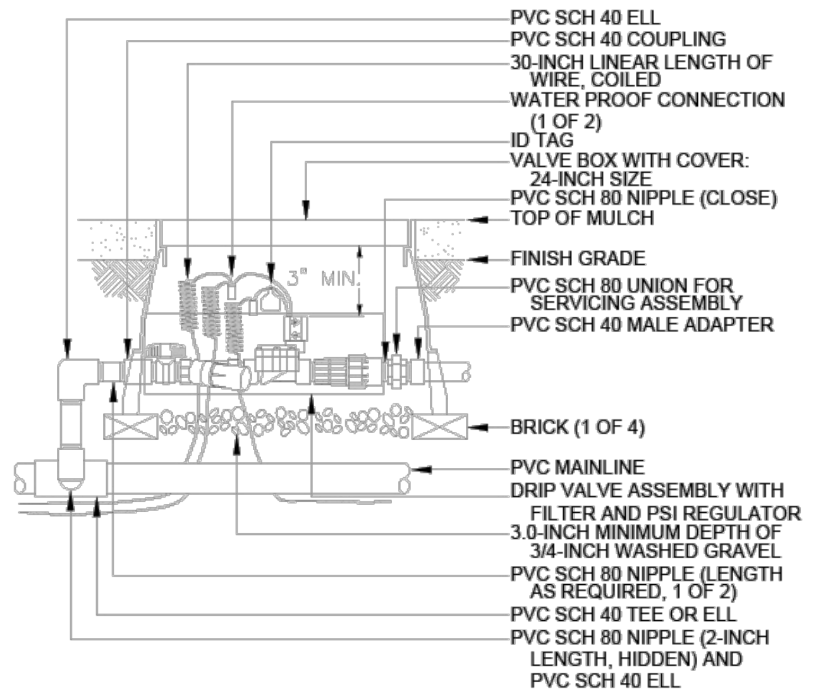
McDONALD'S RESTAURANT
NSN 8043 (024-0281)
490 AMERICANA
BOONVILLE, MO 65233

IRRIGATION PLAN

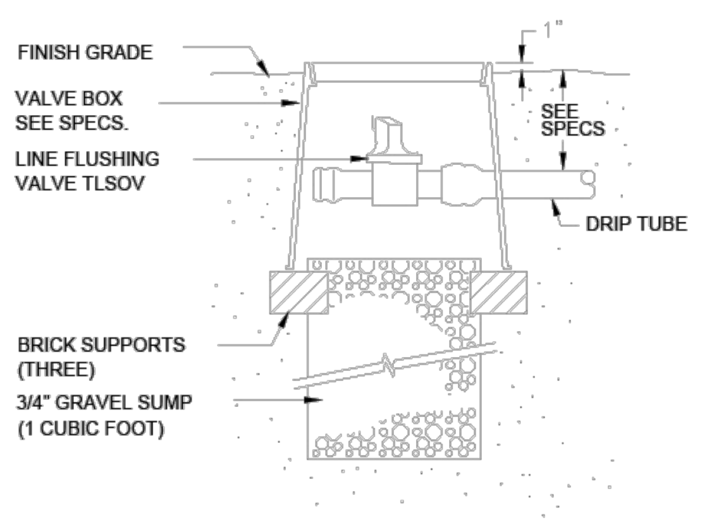
DATE:	DECEMBER 19, 2025	DRAWN BY:	GA
DWG SCALE:	AS SHOWN	CHECKED BY:	AM
PROJECT NO:	353-116		
APPROVED BY:	SS		

DRAWING NO.:
LI-1
SHEET 18 OF 20


PVC SCH 40 ELL
PVC SCH 40 COUPLING
30-INCH LINEAR LENGTH OF WIRE, COILED
WATER PROOF CONNECTION (1 OF 2)
ID TAG
VALVE BOX WITH COVER: 24-INCH SIZE
PVC SCH 80 NIPPLE (CLOSE)
TOP OF MULCH
3" MIN.
FINISH GRADE
PVC SCH 80 UNION FOR SERVICING ASSEMBLY
PVC SCH 40 MALE ADAPTER
BRICK (1 OF 4)
PVC MAINLINE
DRIP VALVE ASSEMBLY WITH FILTER AND PSI REGULATOR
3.0-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
PVC SCH 80 NIPPLE (LENGTH AS REQUIRED, 1 OF 2)
PVC SCH 40 TEE OR ELL
PVC SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND PVC SCH 40 ELL

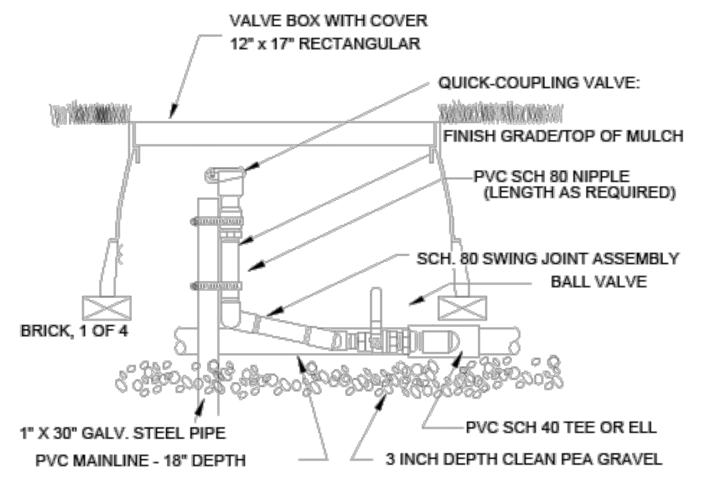
CONTROL ZONE KIT

N.T.S.



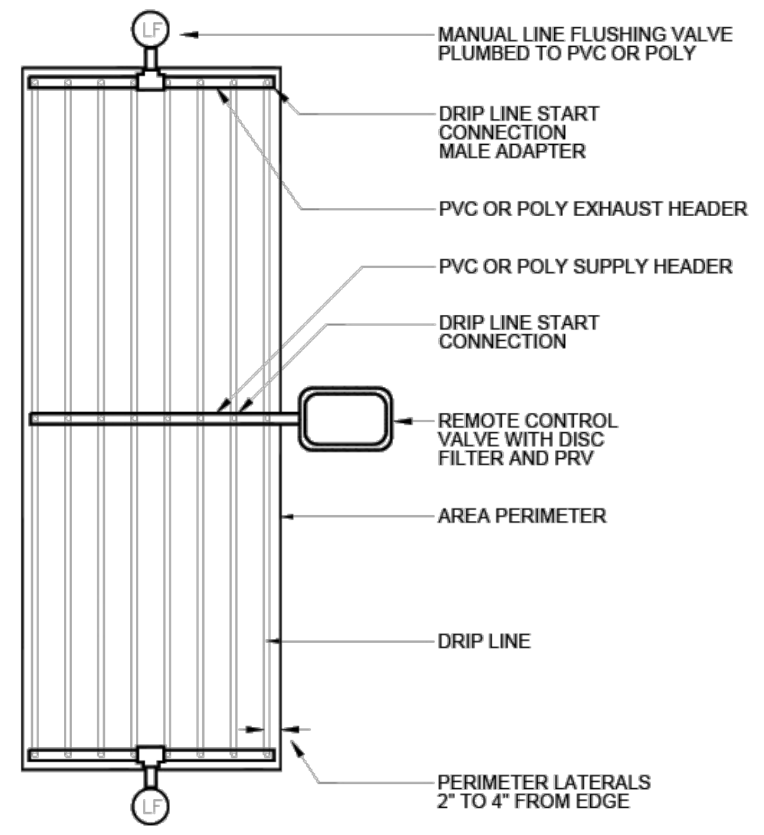
MANUAL LINE FLUSH VALVE

N.T.S.


VALVE BOX WITH COVER 12" x 17" RECTANGULAR
QUICK-COUPLING VALVE:
FINISH GRADE/TOP OF MULCH
PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
SCH. 80 SWING JOINT ASSEMBLY
BALL VALVE
BRICK, 1 OF 4
1" X 30" GALV. STEEL PIPE
PVC MAINLINE - 18" DEPTH
PVC SCH 40 TEE OR ELL
3 INCH DEPTH CLEAN PEA GRAVEL

N.T.S.

QUICK COUPLER VALVE WITH PVC BALL VALVE

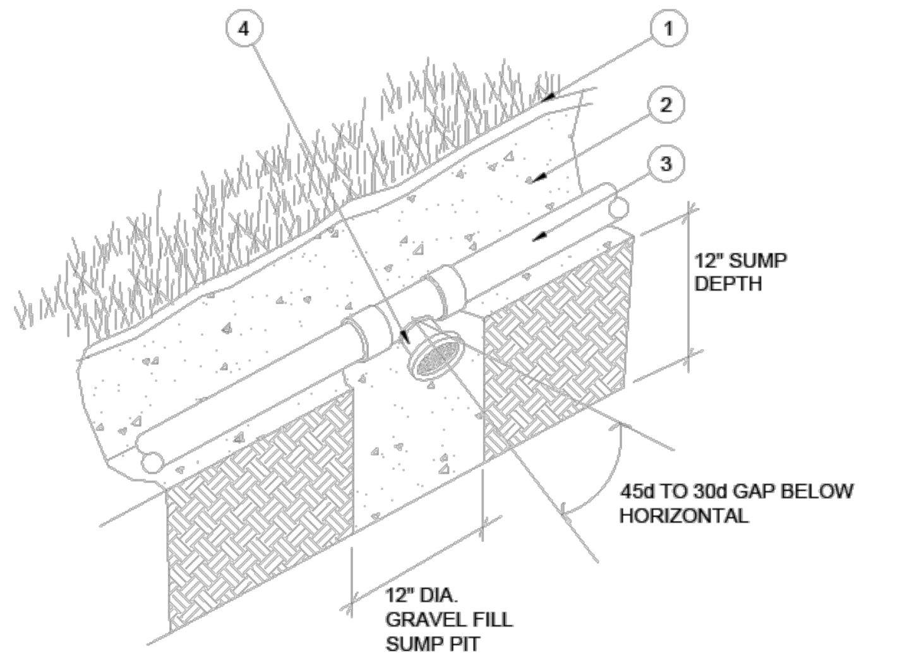

LF
MANUAL LINE FLUSHING VALVE PLUMBED TO PVC OR POLY
DRIP LINE START CONNECTION MALE ADAPTER
PVC OR POLY EXHAUST HEADER
PVC OR POLY SUPPLY HEADER
DRIP LINE START CONNECTION
REMOTE CONTROL VALVE WITH DISC FILTER AND PRV
AREA PERIMETER
DRIP LINE
PERIMETER LATERALS 2" TO 4" FROM EDGE
LF

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.

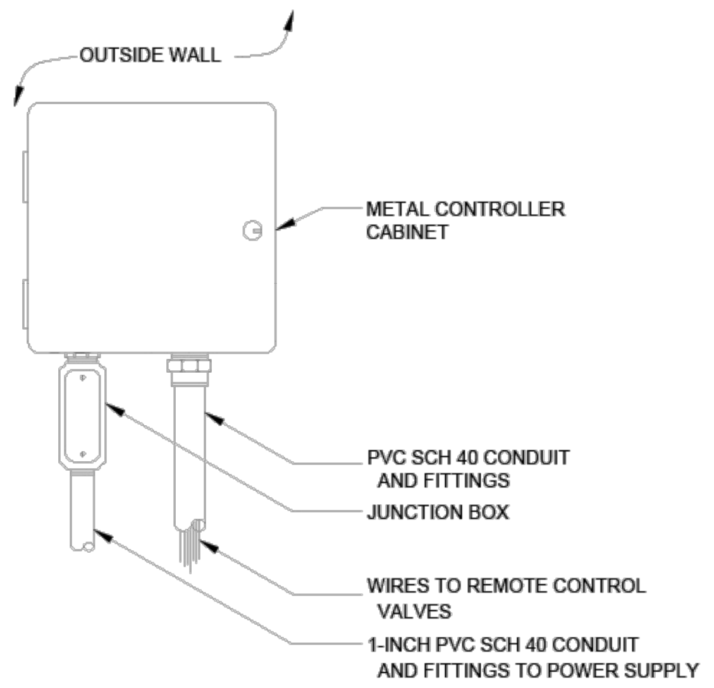

4
1
2
3
12" SUMP DEPTH
45d TO 30d GAP BELOW HORIZONTAL
12" DIA. GRAVEL FILL SUMP PIT

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

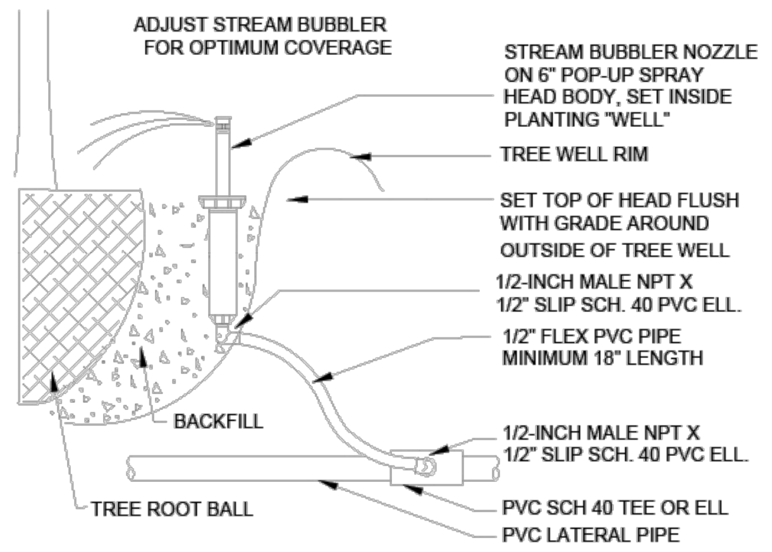
AUTOMATIC DRAIN VALVE

N.T.S.


OUTSIDE WALL
METAL CONTROLLER CABINET
PVC SCH 40 CONDUIT AND FITTINGS
JUNCTION BOX
WIRES TO REMOTE CONTROL VALVES
1-INCH PVC SCH 40 CONDUIT AND FITTINGS TO POWER SUPPLY

WALL MOUNT CONTROLLER

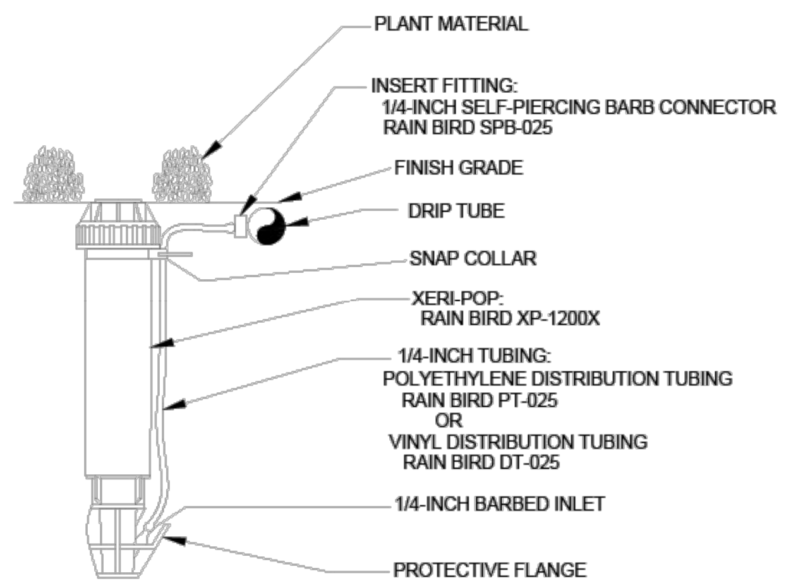
N.T.S.


ADJUST STREAM BUBBLER FOR OPTIMUM COVERAGE
STREAM BUBBLER NOZZLE ON 6" POP-UP SPRAY HEAD BODY, SET INSIDE PLANTING "WELL"
TREE WELL RIM
SET TOP OF HEAD FLUSH WITH GRADE AROUND OUTSIDE OF TREE WELL
1/2-INCH MALE NPT X 1/2" SLIP SCH. 40 PVC ELL.
1/2" FLEX PVC PIPE MINIMUM 18" LENGTH
BACKFILL
1/2-INCH MALE NPT X 1/2" SLIP SCH. 40 PVC ELL.
TREE ROOT BALL
PVC SCH 40 TEE OR ELL
PVC LATERAL PIPE

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

TREE BUBBLER

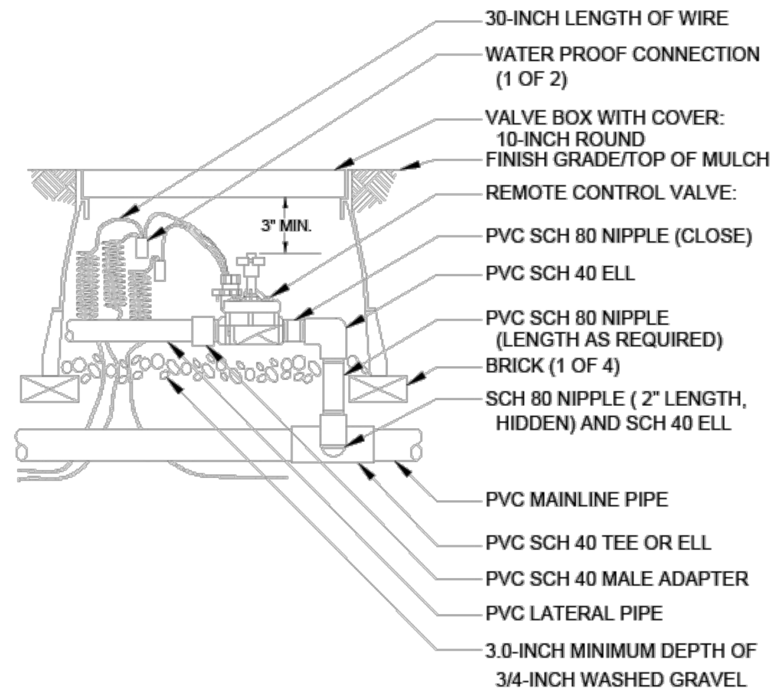
N.T.S.


PLANT MATERIAL
INSERT FITTING: 1/4-INCH SELF-PIERCING BARB CONNECTOR RAIN BIRD SPB-025
FINISH GRADE
DRIP TUBE
SNAP COLLAR
XERI-POP: RAIN BIRD XP-1200X
1/4-INCH TUBING: POLYETHYLENE DISTRIBUTION TUBING RAIN BIRD PT-025 OR VINYL DISTRIBUTION TUBING RAIN BIRD DT-025
1/4-INCH BARBED INLET
PROTECTIVE FLANGE

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.

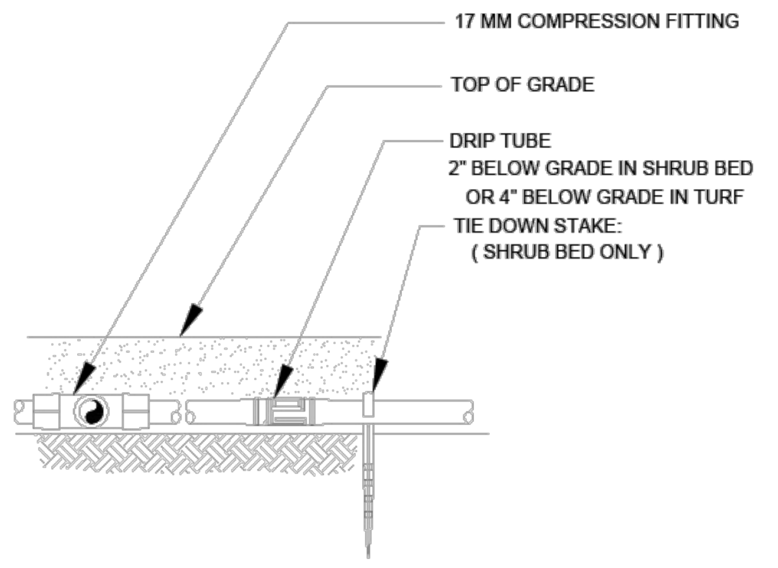
DRIP ZONE INDICATOR

N.T.S.


30-INCH LENGTH OF WIRE
WATER PROOF CONNECTION (1 OF 2)
VALVE BOX WITH COVER: 10-INCH ROUND
FINISH GRADE/TOP OF MULCH
REMOTE CONTROL VALVE:
3" MIN.
PVC SCH 80 NIPPLE (CLOSE)
PVC SCH 40 ELL
PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
BRICK (1 OF 4)
SCH 80 NIPPLE (2" LENGTH, HIDDEN) AND SCH 40 ELL
PVC MAINLINE PIPE
PVC SCH 40 TEE OR ELL
PVC SCH 40 MALE ADAPTER
PVC LATERAL PIPE
3.0-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL

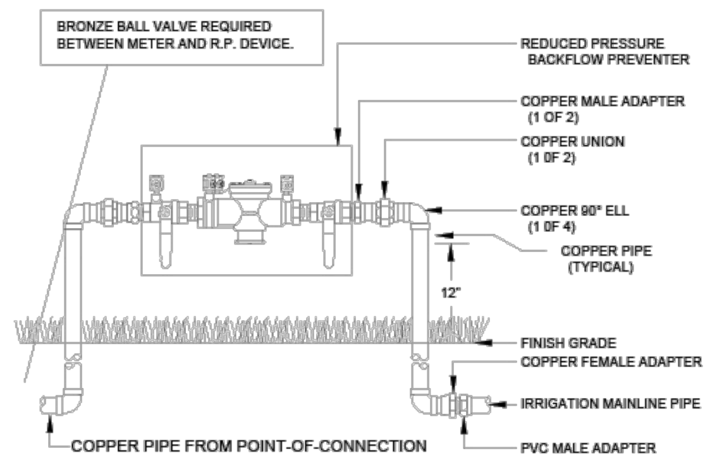
REMOTE CONTROL VALVE

N.T.S.


17 MM COMPRESSION FITTING
TOP OF GRADE
DRIP TUBE 2" BELOW GRADE IN SHRUB BED OR 4" BELOW GRADE IN TURF
TIE DOWN STAKE: (SHRUB BED ONLY)

DRIP TUBE

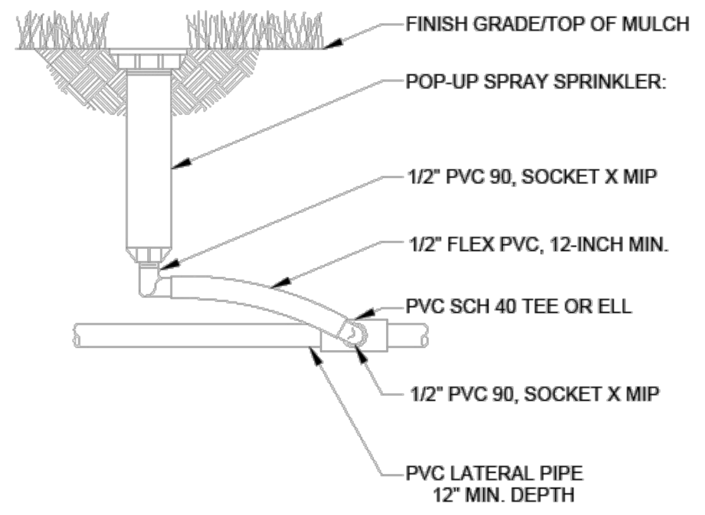
N.T.S.


BRONZE BALL VALVE REQUIRED BETWEEN METER AND R.P. DEVICE.
REDUCED PRESSURE BACKFLOW PREVENTER
COPPER MALE ADAPTER (1 OF 2)
COPPER UNION (1 0F 2)
COPPER 90° ELL (1 0F 4)
COPPER PIPE (TYPICAL)
12"
FINISH GRADE
COPPER FEMALE ADAPTER
IRRIGATION MAINLINE PIPE
COPPER PIPE FROM POINT-OF-CONNECTION
PVC MALE ADAPTER

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

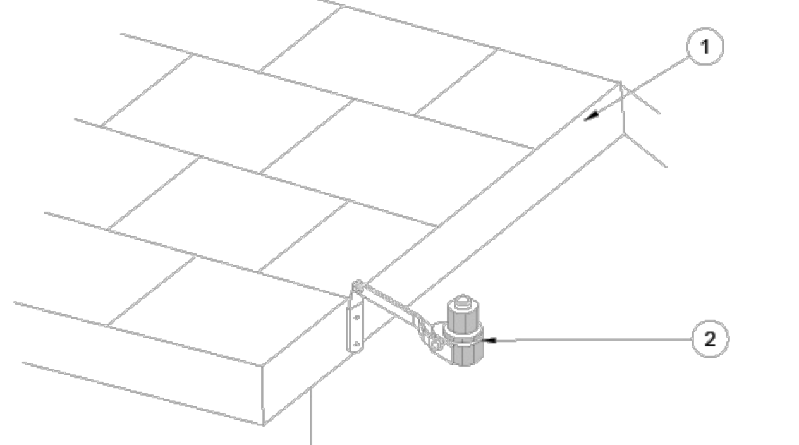
RP DEVICE

N.T.S.


FINISH GRADE/TOP OF MULCH
POP-UP SPRAY SPRINKLER:
1/2" PVC 90, SOCKET X MIP
1/2" FLEX PVC, 12-INCH MIN.
PVC SCH 40 TEE OR ELL
1/2" PVC 90, SOCKET X MIP
PVC LATERAL PIPE 12" MIN. DEPTH

POP-UP SPRAY HEAD

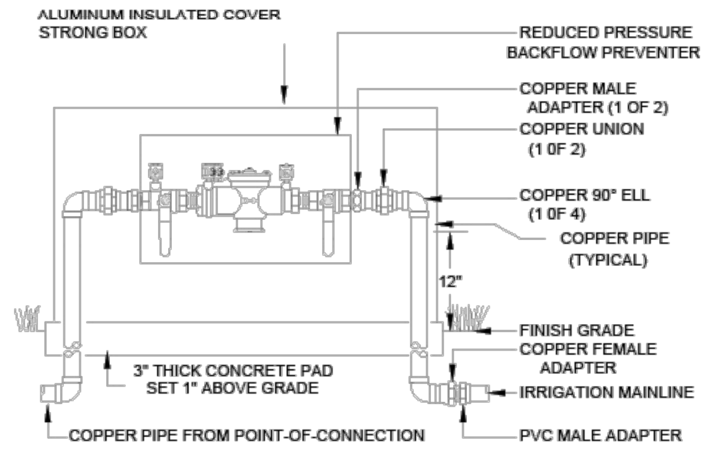
N.T.S.



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

RAIN SENSOR, ROOF MOUNT

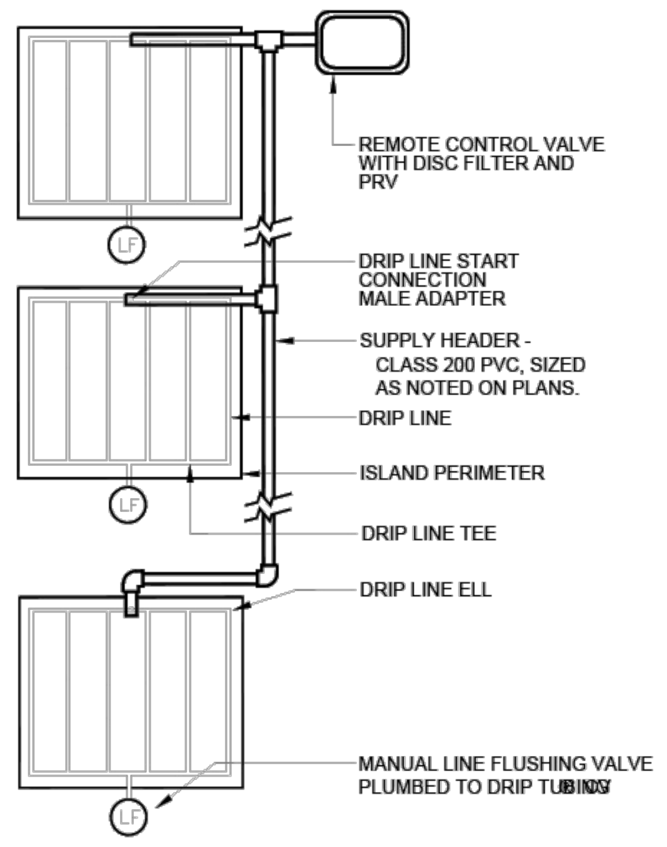
N.T.S.


ALUMINUM INSULATED COVER STRONG BOX
REDUCED PRESSURE BACKFLOW PREVENTER
COPPER MALE ADAPTER (1 OF 2)
COPPER UNION (1 0F 2)
COPPER 90° ELL (1 0F 4)
COPPER PIPE (TYPICAL)
12"
FINISH GRADE
COPPER FEMALE ADAPTER
IRRIGATION MAINLINE
3" THICK CONCRETE PAD SET 1" ABOVE GRADE
COPPER PIPE FROM POINT-OF-CONNECTION
PVC MALE ADAPTER

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

RP DEVICE WITH INSULATED COVER

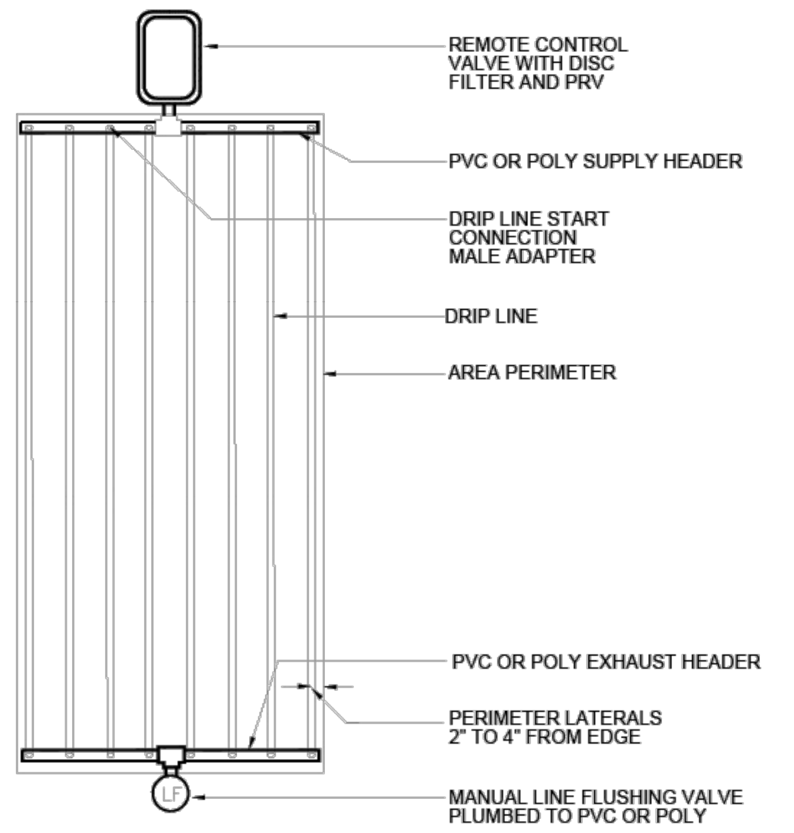
N.T.S.


REMOTE CONTROL VALVE WITH DISC FILTER AND PRV
LF
DRIP LINE START CONNECTION MALE ADAPTER
SUPPLY HEADER - CLASS 200 PVC, SIZED AS NOTED ON PLANS.
DRIP LINE
ISLAND PERIMETER
DRIP LINE TEE
DRIP LINE ELL
MANUAL LINE FLUSHING VALVE PLUMBED TO DRIP TUBING

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

DRIP ISLAND LAYOUT

N.T.S.

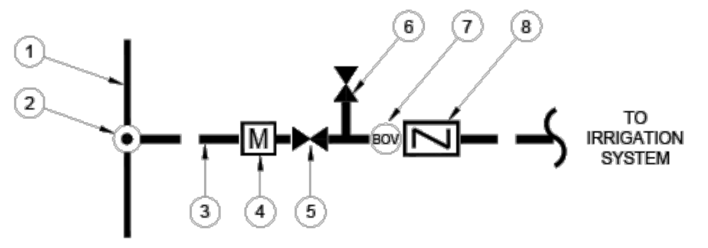

REMOTE CONTROL VALVE WITH DISC FILTER AND PRV
PVC OR POLY SUPPLY HEADER
DRIP LINE START CONNECTION MALE ADAPTER
DRIP LINE
AREA PERIMETER
PVC OR POLY EXHAUST HEADER
PERIMETER LATERALS 2" TO 4" FROM EDGE
LF
MANUAL LINE FLUSHING VALVE PLUMBED TO PVC OR POLY

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.



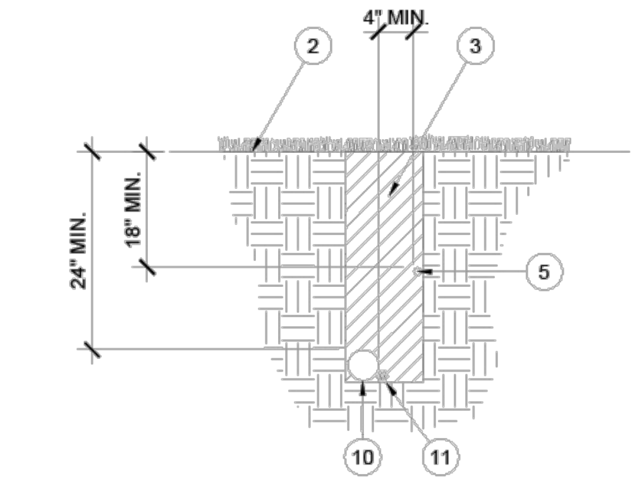
DEDICATED IRRIGATION TAP

① CITY MAINLINE
② TAP
③ SERVICE LINE
④ WATER METER
⑤ ISOLATION VALVE (PER PLAN)
⑥ MANUAL DRAIN VALVE (BALL VALVE)
⑦ BLOW OFF VALVE (BOV)
⑧ BACKFLOW DEVICE (WHERE SHOWN)

WINTERIZATION PROCEDURE:
1. TURN OFF EITHER THE METER AND ISOLATION VALVE (DEDICATED IRRIGATION METER) OR ISOLATION VALVE (DOMESTIC TAP).
2. OPEN ONE CONTROL VALVE TO RELIEVE PRESSURE
3. SLOWLY OPEN MANUAL DRAIN VALVE.
4. REPEAT PROCEDURE FOR ALL MANUAL DRAIN VALVES ALONG IRRIGATION MAINLINE.
5. CLOSE MANUAL DRAIN VALVES AND BLOW OUT REMAINING WATER FROM THE BLOWOUT VALVE. SLOWLY INCREASE AIR PRESSURE, NOT TO EXCEED 80 PSI. DO NOT BLOWOUT SYSTEM FROM BACKFLOW. BLOWOUT SYSTEM TWICE BUT NOT TO EXCEED AT MORE THAN 2 MIN. INTERVALS.

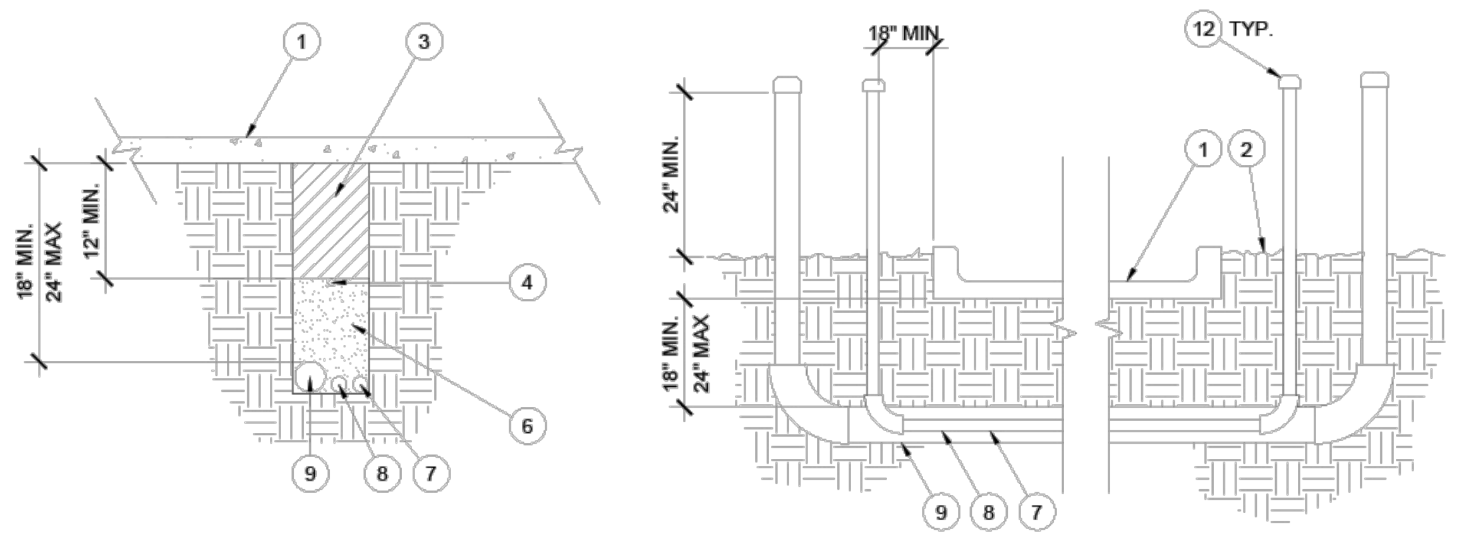
WATER TAP DIAGRAM

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.

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https://www.mo1call.com

NOTES:
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LAND PLANNING - IRRIGATION DESIGN

STEPHEN W. SALES
NUMBER PLA-2022044706
DATE: 03/03/2026

REVISION RECORD

NO	DATE	DESCRIPTION
2	03/17/26	PER CLIENT COMMENTS
1	02/03/2026	CITY AND CLIENT COMMENTS

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.

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490 AMERICANA
BOONVILLE, MO 65233

IRRIGATION DETAILS

DATE:	DECEMBER 19, 2025	DRAWN BY:	GA
DWG SCALE:	AS SHOWN	CHECKED BY:	AM
PROJECT NO:	353-116		
APPROVED BY:	SS		

DRAWING NO.:
LI-2
SHEET 19 OF 20

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

R. 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.

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

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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 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.
⊕	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 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 COVER AND 3/4" PVC BALL VALVE
C	RAINBIRD ESP12LXMEF2P SERIES AUTOMATIC WALL MOUNT CONTROLLER
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:

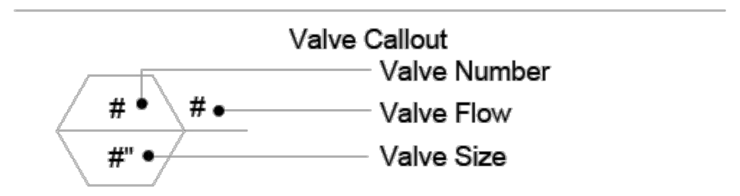
1. SEPARATE TURF / SHRUB ZONES FOR SCHEDULING ADJUSTMENT
2. NO OVERSPRAY ONTO PAVEMENT PERMITTED
3. USE OF RAIN SENSOR SHUT OFF OVER-RIDE DEVICE

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



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:	17.0 gpm
Flow Available at POC:	30.0 gpm
Residual Flow Available:	13.0 gpm
Critical Station: 1	
Head Pressure Required:	35.0 psi
Lateral Loss:	3.3 psi
Loss through Valve:	2.5 psi
Pressure Req. at Critical Station:	40.80 psi
Loss for Main Line:	1.21 psi
Loss for Fittings 20%(Main Line):	0.24 psi
Loss for Master Valve:	1.90 psi
Loss for Backflow:	11.00 psi
Loss for Water Meter:	1.60 psi
Critical Station Pressure at POC:	56.75 psi
Pressure Available:	65.00 psi
Residual Pressure Available:	8.25 psi

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LANDSCAPE ARCHITECTURE
LAND PLANNING · IRRIGATION DESIGN

STEPHEN W. SALES
NUMBER PLA-2022044706

DATE: 03/03/2026

REVISION RECORD

NO	DATE	DESCRIPTION
2	03/17/26	PER CLIENT COMMENTS
1	02/03/2026	CITY AND CLIENT COMMENTS

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.

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McDONALD'S RESTAURANT
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BOONVILLE, MO 65233

IRRIGATION SPECIFICATIONS

DATE:	DECEMBER 19, 2025	DRAWN BY:	GA
DWG SCALE:	AS SHOWN	CHECKED BY:	AM
PROJECT NO:	353-116		
APPROVED BY:	SS		

DRAWING NO.:
LI-3
SHEET 20 OF 20