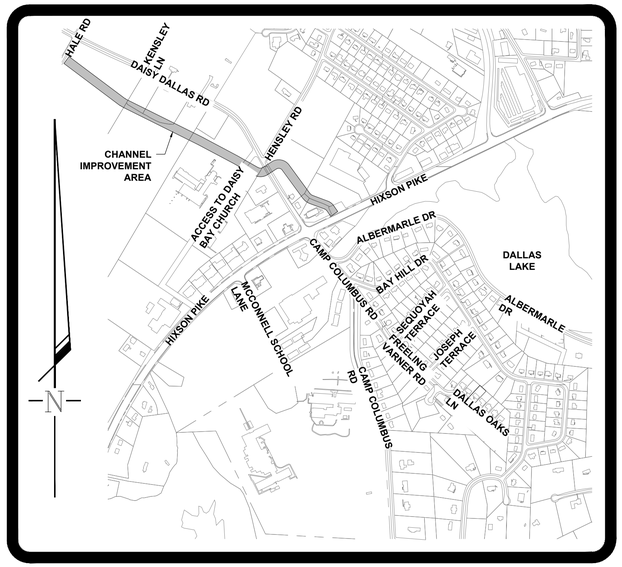
SITE CONSTRUCTION PLANS

LAKESITE STORMWATER IMPROVEMENTS

LAKESITE, TN 37379

INDEX OF SHEETS



LOCATION MAP
N.T.S.

CHANNEL IMPROVEMENT AREA: HIXSON PIKE TO HALE ROAD

CULVERT REPAIR AREAS: 2228 DRIFTWOOD ROAD, 9291 BANNER ELK ROAD, 2373 GLENGERRIE DRIVE, DOCKSIDE DRIVE AT GENEVA TRAIL, DOCKSIDE DRIVE AT HIXSON PIKE, OLD HIXSON PIKE, 2304 PINEWAY TRAIL, 2123 COLLINS LANE

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3-7-2025

ISSUED FOR BID

LAKESITE STORMWATER IMPROVEMENTS
LAKESITE, TN 37379
FOR
CITY OF LAKESITE

No.	Revision/Issue	Date
1		

PROJECT NO.	23-0130
DATE	03/08/2025
SCALE	AS SHOWN
DESIGNED BY	ASA
DRAWN BY	ASA
CHECKED BY	ASA
TITLE	
SHEET NO.	

GENERAL NOTES

1. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES ON THE DRAWING OR IN THE FIELD BEFORE BEGINNING WORK OR DURING CONSTRUCTION.
2. DEVIATION FROM THESE PLANS & NOTES WITHOUT THE PRIOR CONSENT OF THE OWNER'S REPRESENTATIVE MAY BE CAUSE FOR THE WORK TO BE UNACCEPTABLE.
3. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES IN THE PROXIMITY OF THE CONSTRUCTION AREA AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE PRIOR TO BEGINNING WORK.
4. THE CONTRACTOR SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL CODES AND OBTAIN ALL PERMITS PRIOR TO BEGINNING WORK.
5. THE CONTRACTOR SHALL CHECK ALL FINISHED GRADES AND DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE PRIOR TO BEGINNING WORK.
6. DIMENSIONS ARE TO THE FACE OF CURB, EDGE OF CONCRETE AND FACE OF BUILDING UNLESS NOTED OTHERWISE. CONTRACTOR TO VERIFY ALL DIMENSIONS PRIOR TO COMMENCING CONSTRUCTION.
7. ALL HANDICAP RAMPS, PARKING SPACES AND ACCESSIBLE ROUTES SHALL COMPLY WITH THE CURRENT ADA REQUIREMENTS.
8. EXTERIOR DOOR LANDINGS SHALL BE PROVIDED PER THE LOCAL BUILDING CODE. CONTRACTOR SHALL COORDINATE DOOR LOCATIONS AND ADJACENT SIDEWALK/LANDING GRADES WITH THESE PLANS AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE.
9. THE NECESSARY PERMITS FOR THE WORK SHOWN ON THESE SITE DEVELOPMENT PLANS WILL BE OBTAINED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF ANY WORK ON THIS PROJECT. THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES AND OBTAIN ALL PERMITS, PAY ALL FEES INVOLVED IN SECURING SAID PERMITS, AND POST NECESSARY BONDS AS REQUIRED BY THE CITY AND/OR STATE. HE SHALL ALSO COMPLY WITH ALL CITY, COUNTY AND STATE BUILDING LAWS, ORDINANCES OR REGULATIONS RELATING TO THE CONSTRUCTION OF THE PROJECT.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND SHALL BEAR ALL EXPENSES OF FIELD STAKING NECESSARY FOR SITE LAYOUT. ALL LAYOUT SHALL BE PERFORMED IN ACCORDANCE WITH THE SITE LAYOUT PLAN.
11. THE LOCATION OF EXISTING PIPING AND UNDERGROUND UTILITIES, SUCH AS WATER AND GAS LINES, ELECTRICAL AND TELEPHONE CONDUITS, ETC., AS SHOWN ON THIS PORTION OF THE PLANS HAVE BEEN DETERMINED FROM THE BEST AVAILABLE INFORMATION BY ACTUAL SURVEYS, OR TAKEN FROM THE RECORDS AND DRAWINGS OF THE EXISTING UTILITIES. HOWEVER, THE CIVIL ENGINEER DOES NOT ASSUME RESPONSIBILITY THAT, DURING CONSTRUCTION, THE POSSIBILITY OF UTILITIES OTHER THAN THOSE SHOWN MAY BE ENCOUNTERED OR THAT ACTUAL LOCATION OF THOSE SHOWN MAY VARY SOMEWHAT FROM THE LOCATION DESIGNATED ON THIS PORTION OF THE PLANS. IN AREAS WHERE IT IS NECESSARY THAT THE EXACT LOCATIONS OF UNDERGROUND LINES BE KNOWN, THE CONTRACTOR SHALL, AT THIS OWN EXPENSE, FURNISH ALL LABOR AND TOOLS TO EITHER VERIFY AND SUBSTANTIATE OR DEFINITIVELY ESTABLISH THE LOCATION OF THE LINES.
12. THE CONTRACTOR MUST UNDERSTAND THAT THE WORK IS ENTIRELY AT HIS RISK UNTIL THE SAME IS ACCEPTED AND HE WILL BE HELD RESPONSIBLE FOR ITS SAFETY BY THE OWNER. THEREFORE, THE CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY TEMPORARY WORKS FOR THE PROTECTION OF THE WORK.
13. THE SITE DEVELOPMENT PORTION OF THIS PROJECT WILL BE SUBJECT TO THE INSPECTION AND FINAL APPROVAL OF THE LOCAL PLANNING, CODES, WATER AND SEWER DEPARTMENTS (AND/OR UTILITY DISTRICTS), ENGINEERING/PUBLIC WORKS DEPARTMENTS AND FIRE MARSHAL'S OFFICE.
14. IF, DURING THE CONSTRUCTION OF THE SITE DEVELOPMENT PORTION OF THIS PROJECT, A QUESTION OF INTENT OR CLARITY ARISES FROM EITHER THE PLANS OR SPECIFICATIONS, THE CONTRACTOR WILL IMMEDIATELY BRING THE MATTER TO THE ATTENTION OF THE CIVIL ENGINEER OR OWNER'S REPRESENTATIVE FOR RESOLUTION BEFORE THE AFFECTED WORK ITEMS ARE INITIATED OR PURSUED FURTHER.
15. THE CONTRACTOR WILL EXERCISE EXTREME CAUTION IN THE USE OF EQUIPMENT IN AND AROUND OVERHEAD AND/OR UNDERGROUND POWER LINES. IF AT ANY TIME IN THE PURSUIT OF THIS WORK THE CONTRACTOR MUST WORK IN CLOSE PROXIMITY OF THE ABOVE-NOTED LINES, THE ELECTRIC AND/OR TELEPHONE COMPANIES SHALL BE CONTACTED PRIOR TO SUCH WORK AND THE PROPER SAFETY MEASURES TAKEN. THE CONTRACTOR SHOULD MAKE A THOROUGH EXAMINATION OF THE OVERHEAD LINES IN THE PROJECT AREA PRIOR TO THE INITIATION OF CONSTRUCTION.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE DONE TO THE PREMISES OR ADJACENT PREMISES, OR INJURIES TO THE PUBLIC DURING THE CONSTRUCTION OF THE WORK, CAUSED BY HIMSELF, HIS SUBCONTRACTORS, OR THE CARELESSNESS OF ANY OF HIS EMPLOYEES.
17. ALL PRODUCT MATERIALS SPECIFIED IN THESE PLANS TO BE INSTALLED PER NOTES AND DETAILS OR MANUFACTURE'S RECOMMENDATION. IF CONFLICT ARISES BETWEEN PLANS AND MANUFACTURE'S RECOMMENDATION, CONTACT ENGINEER PRIOR TO PURCHASE AND/OR INSTALLATION.
18. PROVIDE ADDITIONAL EROSION CONTROL PER TDEC AND LOCAL REGULATIONS AS NECESSAY

SITE DEMOLITION

1. THE CONTRACTOR WILL BE REQUIRED TO REMOVE ALL EXCAVATED MATERIALS AND SUCH ITEMS SHALL BECOME THE PROPERTY OF THE CONTRACTOR. ALL ITEMS SHALL BE PROPERLY DISPOSED OF AT AN OFF-SITE LOCATION. THE CONTRACTOR SHALL OUTLINE ANY AND ALL POSSIBLE HAUL ROUTES AND SHALL BE PREPARED TO SUBMIT SUCH TO THE LOCAL JURISDICTION PUBLIC WORKS DEPARTMENT, THE CIVIL ENGINEER AND OTHER AUTHORITIES FOR APPROVAL.
2. FOR ANY SOIL THAT CANNOT BE USED ONSITE, THE CONTRACTOR WILL TAKE EXCESS SOIL TO EITHER THE BIRCHWOOD C&D LANDFILL AT 9327 BIRCHWOOD PIKE, HARRISON, TN OR THE RHEA COUNTY CLASS I LANDFILL AT 207 SANITARY DRIVE, DAYTON, TN.
3. IF, AT ANY TIME PRIOR TO OR DURING THE DEMOLITION WORK, HAZARDOUS MATERIAL IS ENCOUNTERED, THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE AND APPROPRIATE GOVERNMENTAL AGENCY.
4. THE CONTRACTOR SHALL NOTIFY ADJACENT OWNERS OF WORK THAT MAY AFFECT THEIR PROPERTY, POTENTIAL NOISE, UTILITY OUTAGE OR DISRUPTION. SUCH OPERATIONS SHALL BE CONDUCTED BY THE CONTRACTOR WITH MINIMUM INTERFERENCE TO ADJACENT OWNERS. ADJACENT EGRESS AND ACCESS SHALL BE PROPERLY MAINTAINED AT ALL TIMES. DO NOT CLOSE OR OBSTRUCT ANY ROADWAYS, PARKING OR SIDEWALKS WITHOUT PERMISSION FROM THE ADJACENT OWNERS OR THE LOCAL JURISDICTION PUBLIC WORKS DEPARTMENT.
5. PRIOR TO THE COMMENCEMENT OF DEMOLITION/GRADING OPERATIONS, ALL OVERHEAD AND UNDERGROUND UTILITIES SHALL BE LOCATED. ALL REMOVAL AND/OR RELOCATION OF UTILITIES SHALL BE COORDINATED WITH THE RESPECTIVE UTILITY COMPANIES.
6. THE CONTRACTOR WILL PROVIDE ALL NECESSARY PROTECTIVE MEASURES TO SAFEGUARD EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION OF THIS PROJECT. IN THE EVENT THAT SPECIAL EQUIPMENT IS REQUIRED TO WORK OVER OR AROUND THE UTILITIES, THE CONTRACTOR WILL BE REQUIRED TO FURNISH SUCH EQUIPMENT AT NO ADDITIONAL COST TO OWNER.
7. THE CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR CONTACTING ALL AFFECTED UTILITIES PRIOR TO SUBMITTING HIS BID TO DETERMINE THE EXTENT TO WHICH UTILITY DISCONNECTIONS AND/OR ADJUSTMENTS WILL HAVE UPON THE SCHEDULE OF THE WORK FOR THE PROJECT. SOME UTILITY FACILITIES MAY NEED TO BE ADJUSTED CONCURRENTLY WITH THE CONTRACTOR'S OPERATIONS, WHILE SOME WORK MAY BE REQUIRED 'AROUND' UTILITY FACILITIES THAT WILL REMAIN IN PLACE. IT IS UNDERSTOOD AND AGREED THAT THE CONTRACTOR WILL RECEIVE NO ADDITIONAL COMPENSATION FOR DELAYS OR INCONVENIENCE CAUSED BY THE UTILITY ADJUSTMENT.
8. MINIMIZE PRODUCTION OF DUST DUE TO DEMOLITION OPERATIONS; DO NOT USE WATER IF THAT WILL RESULT IN ICE, FLOODING, SEDIMENTATION OF PUBLIC WATERWAYS OR STORM SEWERS, OR OTHER POLLUTION.
9. REMOVE ALL EXISTING ABOVE-GRADE IMPROVEMENTS. REMOVE ANY EXISTING SLABS, PAVING, CURBS, FOUNDATIONS, WALLS, FLOOR SLABS, CONCRETE SLAB-ON-GRADES, PAVEMENTS, ETC.
10. REMOVE DEMOLITION MATERIALS, OBSTRUCTIONS, AND WASTE MATERIAL, INCLUDING TRASH AND DEBRIS, AND LEGALLY DISPOSE OF THEM OFF THE SITE.
11. SMOOTH DISTURBED AREAS TO ACCOMMODATE MOWERS, AND COVER WITH MINIMUM ONE INCH OF SHREDDED WOOD MULCH FOR TEMPORARY EROSION CONTROL.
12. COMPLY WITH APPLICABLE CODES AND REGULATIONS FOR SITE DEMOLITION OPERATIONS AND SAFETY OF ADJACENT STRUCTURES AND THE PUBLIC.
13. PROVIDE, ERECT, AND MAINTAIN TEMPORARY BARRIERS AND SECURITY DEVICES AS NECESSARY.
14. USE PHYSICAL BARRIERS TO PREVENT ACCESS TO AREAS THAT COULD BE HAZARDOUS TO WORKERS OR THE PUBLIC.
15. CONDUCT OPERATIONS TO MINIMIZE EFFECTS ON AND INTERFERENCE WITH ADJACENT STRUCTURES AND OCCUPANTS.
16. DO NOT CLOSE OR OBSTRUCT ROADWAYS OR SIDEWALKS WITHOUT PERMIT.
17. CONDUCT OPERATIONS TO MINIMIZE OBSTRUCTION OF PUBLIC AND PRIVATE ENTRANCES AND EXITS; DO NOT OBSTRUCT REQUIRED EXITS AT ANY TIME; PROTECT PERSONS USING ENTRANCES AND EXITS FROM REMOVAL OPERATIONS.
18. OBTAIN WRITTEN PERMISSION FROM OWNERS OF ADJACENT PROPERTIES WHEN DEMOLITION EQUIPMENT WILL TRAVERSE, INFRINGE UPON OR LIMIT ACCESS TO THEIR PROPERTY.
19. DO NOT BEGIN REMOVAL UNTIL RECEIPT OF NOTIFICATION TO PROCEED FROM OWNER.
20. PARTIAL REMOVAL OF PAVING AND CURBS: NEATLY SAW CUT AT RIGHT ANGLE TO SURFACE.
21. COORDINATE WORK WITH UTILITY COMPANIES; NOTIFY BEFORE STARTING WORK AND COMPLY WITH THEIR REQUIREMENTS; OBTAIN REQUIRED PERMITS.
22. PROTECT EXISTING UTILITIES TO REMAIN FROM DAMAGE.
23. DO NOT DISRUPT PUBLIC UTILITIES WITHOUT PERMIT FROM AUTHORITY HAVING JURISDICTION.
24. DO NOT CLOSE, SHUT OFF, OR DISRUPT EXISTING LIFE SAFETY SYSTEMS THAT ARE IN USE WITHOUT AT LEAST 7 DAYS PRIOR WRITTEN NOTIFICATION TO OWNER.
25. DO NOT CLOSE, SHUT OFF, OR DISRUPT EXISTING UTILITY BRANCHES OR TAKE-OFFS THAT ARE IN USE WITHOUT AT LEAST 3 DAYS PRIOR WRITTEN NOTIFICATION TO OWNER.
26. LOCATE AND MARK UTILITIES TO REMAIN; MARK USING HIGHLY VISIBLE TAGS OR FLAGS, WITH IDENTIFICATION OF UTILITY TYPE; PROTECT FROM DAMAGE DUE TO SUBSEQUENT CONSTRUCTION, USING SUBSTANTIAL BARRICADES IF NECESSARY.
27. REMOVE EXPOSED PIPING, VALVES, METERS, EQUIPMENT, SUPPORTS, AND FOUNDATIONS OF DISCONNECTED AND ABANDONED UTILITIES. DISPOSE OF OFF THE SITE.
28. PREPARE BUILDING DEMOLITION AREAS BY DISCONNECTING AND CAPPING UTILITIES OUTSIDE THE DEMOLITION ZONE; IDENTIFY AND MARK UTILITIES TO BE SUBSEQUENTLY RECONNECTED, IN SAME MANNER AS OTHER UTILITIES TO REMAIN.
29. REMOVE DEMOLITION MATERIALS, DEBRIS, JUNK, AND TRASH FROM SITE.
30. LEAVE SITE IN RELATIVELY SMOOTH AND CLEAN CONDITION, READY FOR SUBSEQUENT WORK.
31. COVER DISTURBED AREAS WITH MINIMUM ONE INCH OF SHREDDED WOOD MULCH.
32. CLEAN UP SPILLAGE AND WIND-BLOWN DEBRIS FROM PUBLIC AND PRIVATE ADJACENT LANDS.
33. ANY REQUIRED EXCAVATION IN OR AROUND THE PROTECTION ZONE TO ACCOMMODATE UNDERGROUND SERVICES, FOOTINGS, ETC., SHALL BE INDICATED ON THE PLAN, AND SHALL BE EXCAVATED BY HAND. IN ADDITION, RELATED ROOT PRUNING SHALL BE ACCOMPLISHED BY A CERTIFIED ARBORIST VIA ANSI A-300-95 STANDARD SO AS TO MINIMIZE IMPACT OF THE GENERAL ROOT SYSTEM.
34. THE STORAGE OF BUILDING MATERIALS OR STOCKPILING SHALL NOT BE PERMITTED WITHIN THE LIMITS OF OR AGAINST THE PROTECTION BARRIERS.
35. TREES WITHIN THE PROTECTION BARRIERS MUST BE ADEQUATELY CARED FOR THROUGHOUT THE CONSTRUCTION PROCESS (I.E., THEY MUST BE WATERED SUFFICIENTLY, PARTICULARLY IF THE TREE'S ROOT SYSTEM HAS BEEN DISTURBED BY EXCAVATION). FILL SHALL NOT BE PLACED UPON THE ROOT SYSTEM IN SUCH A MANNER AS TO ENDANGER THE HEALTH OR LIFE OF THE AFFECTED TREE.
36. TREE PROTECTION BARRIER SHALL REMAIN INTACT THROUGHOUT THE ENTIRE PERIOD OF CONSTRUCTION.

SITE PREPARATION AND GRADING

1. EROSION CONTROL SEDIMENT BARRIERS AND TREE PROTECTION BARRIER SHALL BE INSTALLED PRIOR BEGINNING SITE WORK.
2. NO HEAVY EQUIPMENT SHALL CROSS OR BE STORED OUTSIDE THE LIMITS OF CONSTRUCTION, WITHIN TREE PROTECTIONS ZONES, OR UNDER THE DRIP LINE OF EXISTING TREES TO REMAIN.
3. TOPSOIL STRIPPED FROM AREAS TO BE GRADED SHALL BE STOCKPILED ON SITE IN A LOCATION APPROVED BY THE OWNER'S REPRESENTATIVE. DRAINAGE SHALL BE ROUTED AROUND STOCKPILE LOCATIONS FOR THE DURATION OF GRADING OPERATIONS. EROSION CONTROL MEASURES SHALL BE INSTALLED TO PREVENT LOSS OF TOPSOIL MATERIAL.
4. ALL CUT AND FILL SHALL BE PERFORMED UNDER THE DIRECTION/OBSERVATION OF THE GEOTECHNICAL ENGINEER.
5. THE SUITABILITY OF SOILS FOR FILL MATERIAL SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER.
6. UNLESS DIRECTED OTHERWISE BY GEOTECHNICAL ENGINEER, ALL FILL AREAS SHALL BE RAISED IN LIFTS NOT EXCEEDING 8" IN THICKNESS. THE RELATIVE COMPACTION OF EACH LAYER SHALL NOT BE LESS THAN 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698) IN ALL AREAS OF FILL WITHIN OPEN AREAS AND 98% OF SAME SPECIFICATION FOR AREAS UNDER ROADS, PARKING, SIDEWALKS, BUILDING SLABS, AND FOUNDATIONS.
7. THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT ENGINEER FOR ANY FIELD GRADE ADJUSTMENTS NEEDED DUE TO ACTUAL TOPOGRAPHY VARYING FROM THE TOPOGRAPHIC SURVEY, OR OTHER CIRCUMSTANCES.
8. NEW FINISHED CONTOURS SHOWN ARE TO TOP OF NEW PAVING IN AREAS TO RECEIVE PAVEMENT, AND TO TOP OF TOPSOIL IN AREAS TO BE SEEDED OR LANDSCAPED. PROPOSED CONTOUR INTERVALS ARE AS LABELED. ALL PROPOSED CONTOURS ARE FINISHED GRADE.
9. UNLESS OTHERWISE SPECIFIED, ALL NON-PAVED OR SURFACED SLOPES SHALL BE COVERED WITH MINIMUM OF 6" TOPSOIL. SEE EPSC PLAN FOR TOPSOIL AND PERMANENT SEEDING AREAS. ALL AREAS TO BE STABILIZED PER THE EPSC PLAN AND LANDSCAPE PLAN.
10. UNUSABLE EXCAVATED MATERIALS AND ALL WASTE RESULTING FROM CLEARING AND GRUBBING SHALL BE DISPOSED OF OFF-SITE BY CONTRACTOR.
11. BEFORE ANY MACHINE WORK IS DONE, CONTRACTOR SHALL STAKE OUT AND MARK THE ITEMS ESTABLISHED BY THE SITE PLAN. CONTROL POINTS SHALL BE PRESERVED AT ALL TIMES DURING THE COURSE OF THE PROJECT. LACK OF PROPER WORKING POINTS AND GRADE STAKES MAY REQUIRE CESSATION OF OPERATIONS UNTIL SUCH POINTS AND GRADES HAVE BEEN PLACED TO THE OWNER'S SATISFACTION.
12. THE CONTRACTOR SHALL INSURE THAT POSITIVE AND ADEQUATE DRAINAGE IS MAINTAINED AT ALL TIMES WITHIN THE PROJECT LIMITS. THIS MAY INCLUDE, BUT NOT BE LIMITED TO, REPLACEMENT OR RECONSTRUCTION OF EXISTING DRAINAGE STRUCTURES THAT HAVE BEEN DAMAGED OR REMOVED OR RECONSTRUCTED AS REQUIRED BY THE ENGINEER, EXCEPT FOR THOSE DRAINAGE ITEMS SHOWN AT SPECIFIC LOCATIONS IN AND HAVING SPECIFIC PAY ITEMS IN THE DETAILED ESTIMATE. NO SEPARATE PAYMENT WILL BE MADE FOR ANY COSTS INCURRED TO COMPLY WITH THIS REQUIREMENT.
13. CONTRACTOR SHALL SMOOTH/BLEND ALL SLOPES WITH THE SURROUNDING ENVIRONMENT.
14. MAXIMUM EMBANKMENT SLOPES TO BE AS FOLLOWS, UNLESS NOTED OTHERWISE: CUT AREAS - 3:1; FILL AREAS - 3:1. ANY SLOPES STEEPER THAN 3:1 (18.4 DEGREES) SHALL BE ANALYZED BY A GEOTECHNICAL ENGINEER FOR STABILITY PRIOR TO FINISHING STABILIZATION.
15. ALL EXCAVATING IS UNCLASSIFIED AND SHALL INCLUDE ALL MATERIALS ENCOUNTERED.
16. CONTRACTOR SHALL REPAIR OR REPLACE IN KIND ANY DAMAGE THAT OCCURS AS A RESULT OF THEIR WORK OR THE WORK OF THEIR SUBS.
17. CONTRACTOR TO COORDINATE ALL WORK WITH OTHER UTILITY INSTALLATIONS NOT COVERED IN THESE PLANS (ELECTRIC, TELEPHONE, GAS, CABLE, ETC.) AND ALLOW FOR THEIR OPERATIONS AND CONSTRUCTION TO BE PERFORMED.
18. ALL VEGETATION, TOPSOIL, ROOTS, STOCKPILED SOIL, AND ANY DEBRIS SHALL BE STRIPPED AND REMOVED FROM AREAS TO RECEIVE FILL AND FINISHED GRADE WORK.
19. THE SUBGRADE OF DRIVEWAYS, PARKING, AND BUILDINGS SHALL BE PROOF-ROLLED WITH A LOADED RUBBER-TIRED VEHICLE OR EQUIPMENT. THE EQUIPMENT SHOULD MAKE AT LEAST TWO PASSES OVER EACH SECTION, WITH THE SECOND PASS PERPENDICULAR TO THE FIRST.
20. DURING PROOF-ROLLING OF THE SUBGRADES, PRIOR TO RECEIVING FILL, THE GEOTECHNICAL ENGINEER, OR THEIR REPRESENTATIVE, SHALL IDENTIFY ANY AREAS OF INSTABILITY. PROOF-ROLLING SHOULD NOT BE DONE AFTER A PERIOD OF WET WEATHER TO AVOID DEGRADING AN OTHERWISE ACCEPTABLE SUB-GRADE.
21. SUBGRADE STABILIZATION REQUIREMENTS MAY BE REFINED BY THE GEOTECHNICAL ENGINEER, SUBJECT TO APPROVAL OF THE PROJECT ENGINEER, DURING THE GRADING PROCESS BASED ON THE PERFORMANCE OF THE SUBGRADES DURING PROOF-ROLLING.
22. A GEOTECHINICAL EXPLORATION AND REPORT WAS NOT PROVIDED FOR THIS PROJECT.

TESTING

- 1.1.1. A QUALIFIED SOILS TESTING LABORATORY SHALL DETERMINE THE SUITABILITY OF THE EXISTING SUB-GRADE AND EXISTING ON SITE MATERIAL PRIOR TO BEGINNING ANY FILLING OPERATION.
- 1.1.2. THE CONTRACTOR SHALL PROVIDE ANY EXCAVATION AND MATERIAL SAMPLES NECESSARY TO CONDUCT REQUIRED SOIL AND CONCRETE TESTS. ALL ARRANGEMENTS AND SCHEDULING FOR THE TESTING SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

EROSION PREVENTION AND SEDIMENT CONTROLS

DESIGN, INSPECTION, AND MAINTENANCE OF BMPS DESCRIBED AND SHOWN ON THESE PLANS SHALL BE CONSISTENT WITH OR EXCEED RECOMMENDATIONS CONTAINED IN THE CURRENT EDITION OF TDEC'S TENNESSEE EROSION CONTROL HANDBOOK.

1. ALL CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS, TDEC, AND LOCAL STANDARDS.
2. BMP CAPACITY [SEDIMENT TRAPS, SILT FENCES, SEDIMENTATION PONDS, AND OTHER SEDIMENT CONTROL] SHALL NOT BE REDUCED BY MORE THAN 50% AT ANY GIVEN TIME. IF PERIODIC INSPECTIONS OR OTHER INFORMATION INDICATES A CONTROL HAS BEEN USED INAPPROPRIATELY OR INCORRECTLY, THE CONTRACTOR MUST REPLACE OR MODIFY THE CONTROL FOR RELEVANT SITE SITUATIONS.
3. WHERE PERMANENT OR TEMPORARY VEGETATION COVER IS USED AS A CONTROL MEASURE, THE TIMING OF THE PLANTING IS CRITICAL. PLANNING FOR PLANTING OF VEGETATION COVER DURING WINTER OR DRY MONTHS SHOULD BE AVOIDED.
4. IF SEDIMENT ESCAPES THE PERMITTED AREA, OFF-SITE ACCUMULATIONS OF SEDIMENT THAT HAVE NOT REACHED A STREAM MUST BE REMOVED AT A FREQUENCY SUFFICIENT TO MINIMIZE OFFSITE IMPACTS. THE CONTRACTOR SHALL NOT INITIATE REMEDIATION/RESTORATION OF A STREAM WITHOUT CONSULTING THE DIVISION FIRST. THE NOI GENERAL PERMIT DOES NOT AUTHORIZE ACCESS TO PRIVATE PROPERTY. ARRANGEMENTS CONCERNING REMOVAL OF SEDIMENT ON ADJOINING PROPERTY MUST BE SETTLED BY THE CONTRACTOR AND ADJOINING LANDOWNER.
5. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORM WATER SHALL BE PICKED UP PRIOR TO ANTICIPATED STORM EVENTS OR BEFORE BEING CARRIED OFF OF THE SITE BY WIND OR OTHERWISE PREVENTED FROM BECOMING A POLLUTANT SOURCE FOR STORM WATER DISCHARGES. AFTER USE, MATERIALS USED FOR EPSC SHOULD BE REMOVED OR OTHERWISE PREVENTED FROM BECOMING A POLLUTANT SOURCE FOR STORM WATER DISCHARGE.
6. ERODIBLE MATERIAL STORAGE AREAS (INCLUDING OVERBURDEN AND STOCKPILES OF SOIL) AND BORROW PITS ARE CONSIDERED PART OF THE SITE AND SHOULD BE ADDRESSED WITH APPROPRIATE BMP'S ACCORDINGLY.
7. PRE-CONSTRUCTION VEGETATIVE GROUND COVER SHALL NOT BE DESTROYED, REMOVED, OR DISTURBED MORE THAN 15 DAYS PRIOR TO GRADING OR EARTH MOVING UNLESS THE AREA IS STABILIZED. CONTRACTOR SHALL SEQUENCE EVENTS TO MINIMIZE THE EXPOSURE TIME OF GRADED OR DENUDED AREAS. CLEARING AND GRUBBING SHALL BE HELD TO THE MINIMUM NECESSARY FOR GRADING AND EQUIPMENT OPERATION. EXISTING VEGETATION AT THE SITE SHOULD BE PRESERVED TO THE MAXIMUM EXTENT PRACTICABLE.
8. EPSC MEASURES MUST BE IN PLACE AND FUNCTIONAL BEFORE MOVING OPERATIONS BEGIN AND MUST BE CONSTRUCTED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. TEMPORARY MEASURES MAY BE REMOVED AT THE BEGINNING OF THE WORKADAY, BUT MUST BE REPLACED AT THE END OF THE WORKDAY.
9. IF APPLICABLE, THE FOLLOWING RECORDS SHALL BE MAINTAINED ON OR NEAR SITE: THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR; THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE OR A PORTION OF THE SITE; THE DATES WHEN STABILIZATION MEASURES ARE INITIATED; INSPECTION RECORDS AND RAINFALL RECORDS. CONTRACTOR SHALL MAINTAIN A RAIN GAUGE AND DAILY RAINFALL RECORDS AT THE SITE, OR USE A REFERENCE SITE FOR A RECORD OF DAILY AMOUNT OF PRECIPITATION.
10. IF APPLICABLE, A COPY OF THE SWPPP SHALL BE RETAINED ON-SITE AND SHOULD BE ACCESSIBLE TO THE DIRECTOR AND THE PUBLIC. ONCE SITE IS INACTIVE OR DOES NOT HAVE AN ONSITE LOCATION ADEQUATE TO STORE THE SWPPP, THE LOCATION OF THE SWPPP, ALONG WITH A CONTACT PHONE NUMBER, SHALL BE POSTED ON-SITE. IF THE SWPPP IS LOCATED OFF-SITE, REASONABLE LOCAL ACCESS TO THE PLAN, DURING NORMAL WORKING HOURS, MUST BE PROVIDED.
11. OFF-SITE VEHICLE TRACKING OF SEDIMENTS AND THE GENERATION OF DUST SHALL BE MINIMIZED. A STABILIZED CONSTRUCTION ACCESS (A POINT OF ENTRANCE/EXIT TO A CONSTRUCTION SITE) SHALL BE CONSTRUCTED AS NEEDED TO REDUCE THE TRACKING OF MUD AND DIRT ONTO PUBLIC ROADS BY CONSTRUCTION VEHICLES.
12. IF APPLICABLE, INSPECTIONS MUST BE PERFORMED AT LEAST TWICE EVERY CALENDAR WEEK. INSPECTIONS SHALL BE PERFORMED AT LEAST 72 HOURS APART. WHERE SITES OR PORTIONS OF CONSTRUCTION SITES HAVE BEEN TEMPORARILY STABILIZED, OR RUNOFF IS UNLIKELY DUE TO WINTER CONDITIONS OR DUE TO EXTREME DROUGHT, SUCH INSPECTION HAS TO BE CONDUCTED ONCE PER MONTH UNTIL THAWING OR PRECIPITATION RESULTS IN RUNOFF OR CONSTRUCTION ACTIVITIES RESUMES. INSPECTION REQUIREMENT DO NOT APPLY TO DEFINABLE AREAS THAT HAVE BEEN FINALLY STABILIZED, AS DESIGNED BY THE ENGINEER. WRITTEN NOTIFICATION OF THE INTENT TO CHANGE THE INSPECTION FREQUENCY AND THE JUSTIFICATION FOR SUCH REQUEST MUST BE SUBMITTED TO THE LOCAL ENVIRONMENTAL FIELD OFFICE, OR THE DIVISION'S NASHVILLE CENTRAL OFFICE FOR PROJECTS OF TDOT OR TVA. SHOULD THE DIVISION DISCOVER THAT MONTHLY INSPECTION OF THE DIVISION DISCOVER THAT MONTHLY INSPECTIONS OF THE SITE ARE NOT APPROPRIATE DUE TO INSUFFICIENT STABILIZATION MEASURES OR OTHERWISE, TWICE WEEKLY INSPECTIONS SHALL RESUME. THE DIVISION MAY INSPECT THE SITE TO CONFIRM OR DENY THE NOTIFICATION TO CONDUCT MONTHLY INSPECTIONS.
13. IF APPLICABLE, INSPECTORS PERFORMING THE REQUIRED TWICE WEEKLY INSPECTIONS MUST HAVE AN ACTIVE CERTIFICATION AND A RECORD OF CERTIFICATION MUST BE KEPT ON SITE. BASED ON THE RESULTS OF THE INSPECTION, ANY INADEQUATE CONTROL MEASURES OR CONTROL MEASURES IN DESPAIR SHALL BE REPLACED OR MODIFIED, OR REPAIRED AS NECESSARY, BEFORE THE NEXT RAIN EVENT, BUT IN NO CASE MORE THAN 7 DAYS AFTER THE NEED IDENTIFIED.
14. OUTFALL POINTS SHALL BE INSPECTED TO DETERMINE WHETHER EPSC MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATERS.

SITE UTILITY

1. ALL MATERIALS AND WORKMANSHIP FOR UTILITY LINES AND APPURTENANCES SHALL BE IN STRICT COMPLIANCE WITH THE GOVERNING UTILITY COMPANY AND LOCAL CODES. PRIOR TO CONSTRUCTION CONTRACTOR SHALL NOTIFY UTILITY COMPANY. (SEE UTILITY CONTACT INFORMATION)
2. CONTRACTOR SHALL COORDINATE SITE ELECTRICAL, GAS, TELEPHONE, AND CABLE WITH THE RESPECTIVE UTILITY COMPANY FOR SERVICE LAYOUT AND DESIGN INFORMATION. ANY PROPOSED LAYOUT OF THESE UTILITIES DEPICTED ON THESE DRAWINGS IS GRAPHICAL ONLY AND NOT INTENDED TO REPRESENT DESIGN OF THESE UTILITIES.
3. PRIOR TO COMMENCEMENT OF CONSTRUCTION, CONTRACTOR SHALL OBTAIN ALL PERMITS AND PAY ANY REQUIRED TAP AND CONNECTION FEES.
4. ALL TRENCHING, PIPE LAYING AND BACKFILLING SHALL BE IN ACCORDANCE WITH CITY STANDARD DETAILS.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE SEQUENCING OF CONSTRUCTION FOR ALL UTILITY LINES TO AVOID CONFLICTS.

PAVING

1. THE WORK UNDER THIS SECTION SHALL COMPLY WITH THE CITY OF LAKESITE STANDARD SPECIFICATIONS.
2. CONCRETE JOINTS OR SCORE MARKS ARE TO BE SHARP AND CLEAN WITHOUT SHOWING EDGES OF JOINT TOOL.
3. MAXIMUM JOINT SPACING SHALL BE APPROXIMATELY 30 TIMES SLAB THICKNESS. MAXIMUM EXPANSION JOINT SPACING SHALL BE APPROXIMATELY 50 FEET.
4. THE CONTRACTOR SHALL ADJUST CHAMFERS AND STRUCTURE RIMS TO FINISH GRADE.

PAVEMENT MARKINGS & SIGNAGE

1. ALL TRAFFIC MARKINGS SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL PAVEMENT MARKING SHALL BE THERMOPLASTIC UNLESS DIRECTED OTHERWISE BY THE OWNER'S REPRESENTATIVE.
2. ALL PAVEMENT MARKINGS SHALL COMPLY WITH THE CITY OF LAKESITE OR AS SHOWN ON THESE PLANS AND SPECIFICATIONS.

STORM SEWER

1. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO TDOT STANDARD SPECFICIATIONS AND DETAILS.
2. THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE MUNICIPALITY FORTY-EIGHT (48) HOURS PRIOR TO THE START OF CONSTRUCTION. THE MUNICIPALITY SHALL HAVE THE AUTHORITY TO INSPECT, APPROVE, OR REJECT THE CONSTRUCTION OF IMPROVEMENTS.
3. PIPE SEWERS SHALL BE CONSTRUCTED OF THE SIZES, CLASSES, AND MATERIALS AND TO THE ALIGNMENTS AND GRADES GIVEN BY THE PROJECT PLANS. ALL PIPE SHALL BE INSPECTED BY THE CONTRACTOR UPON DELIVERY AND SUCH PIPE AS DOES NOT CONFORM TO THE REQUIREMENTS OF THESE SPECIFICATIONS AND WHICH ARE NOT SUITABLE FOR USE SHALL BE REJECTED AND IMMEDIATELY REMOVED FROM THE SITE OF THE WORK OR DESTROYED.
4. HIGH DENSITY POLYETHYLENE PIPE (HDPE) SHALL CONFORM TO TDOT STANDARD SPECIFICATIONS AND DETAILS.
5. REINFORCED CONCRETE PIPE (RCP) SHALL CONFORM TO TDOT STANDARD SPECIFICATIONS AND DETAILS.
6. PIPE BEDDING AND TRENCH BACKFILL SHALL BE CONSTRUCTED IN ACCORDANCE WITH TDOT SPECIFICATIONS AND DETAILS.
7. MANHOLES, ENDWALLS, AND CATCH BASINS SHALL BE IN ACCORDANCE WITH THE PLAN DETAILS.
8. MINIMUM PIPE COVER SHALL BE TWO FEET.

LEGEND AND ABBREVIATIONS

- GAS METER
- GAS VALVE
- GAS PIPELINE MARKER
- TP TELEPHONE PEDESTAL
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- IRRIGATION CONTROL VALVE
- ELECTRICAL BOX
- LIGHT POLE
- POWER POLE
- GUY WIRE
- ELECTRICAL/TRANSFORMER
- CATCH BASIN
- SIGN

	SEWER MANHOLE
	CLEANOUT
	CENTERLINE
E/P	EDGE OF PAVEMENT
Mag(N)	MAG NAIL (NEW)
R/C(N)	ROD/CAP (NEW)
R/C(O)	ROD/CAP (OLD)
PK(O)	PK NAIL (OLD)
RR(O)	RAILROAD SPIKE (OLD)
RCP	REINFORCED CONCRETE PIPE
CMP	CORRUGATED METAL PIPE
P.O.B.	POINT OF BEGINNING
FFE	FINISH FLOOR ELEVATION
Bk./Pg.	BOOK/PAGE
	TREE

NOTE: UTILITY SERVICE LINES SHOWN AT APPROXIMATE LOCATIONS ONLY.

SOME OF THE SYMBOLS SHOWN IN THIS LEGEND MAY NOT HAVE BEEN USED.

	PROPERTY LINE
	BUILDING LINE
	SEWER LINE (STORM, EXIST.)
D	SEWER LINE (STORM, PRO.)
S	SEWER LINE (SANITARY)
	OVERHEAD POWER/TELEPHONE LINE
UGT	UNDERGROUND TELEPHONE POLE
UGE	UNDERGROUND ELECTRIC LINE
W	WATER LINE
G	GAS LINE
	FENCE LINE
	GUARDRAIL
	DITCH LINE
COMM	COMMUNICATIONS LINE
DIP	DUCTILE IRON PIPE
TAWC	TENNESSEE AMERICAN WATER COMPANY
(TYP.)	TYPICAL
EX.	EXISTING
LF	LINEAR FEET
INV.	INVERT ELEVATION
MEP	MECHANICAL, ELECTRICAL, PLUMBING

ASA
ENGINEERING & CONSULTING, INC.
201 CHEROKEE BLVD., SUITE 101
CHATTANOOGA, TN 37405
WWW.ASAENGINEERINGINC.COM
423.805.3700

SEAL

3-7-2025

ISSUED FOR BID

LAKESITE STORMWATER IMPROVEMENTS

LAKESITE, TN 37379
FOR
CITY OF LAKESITE

No.	Revision/Issue	Date
-	-	-

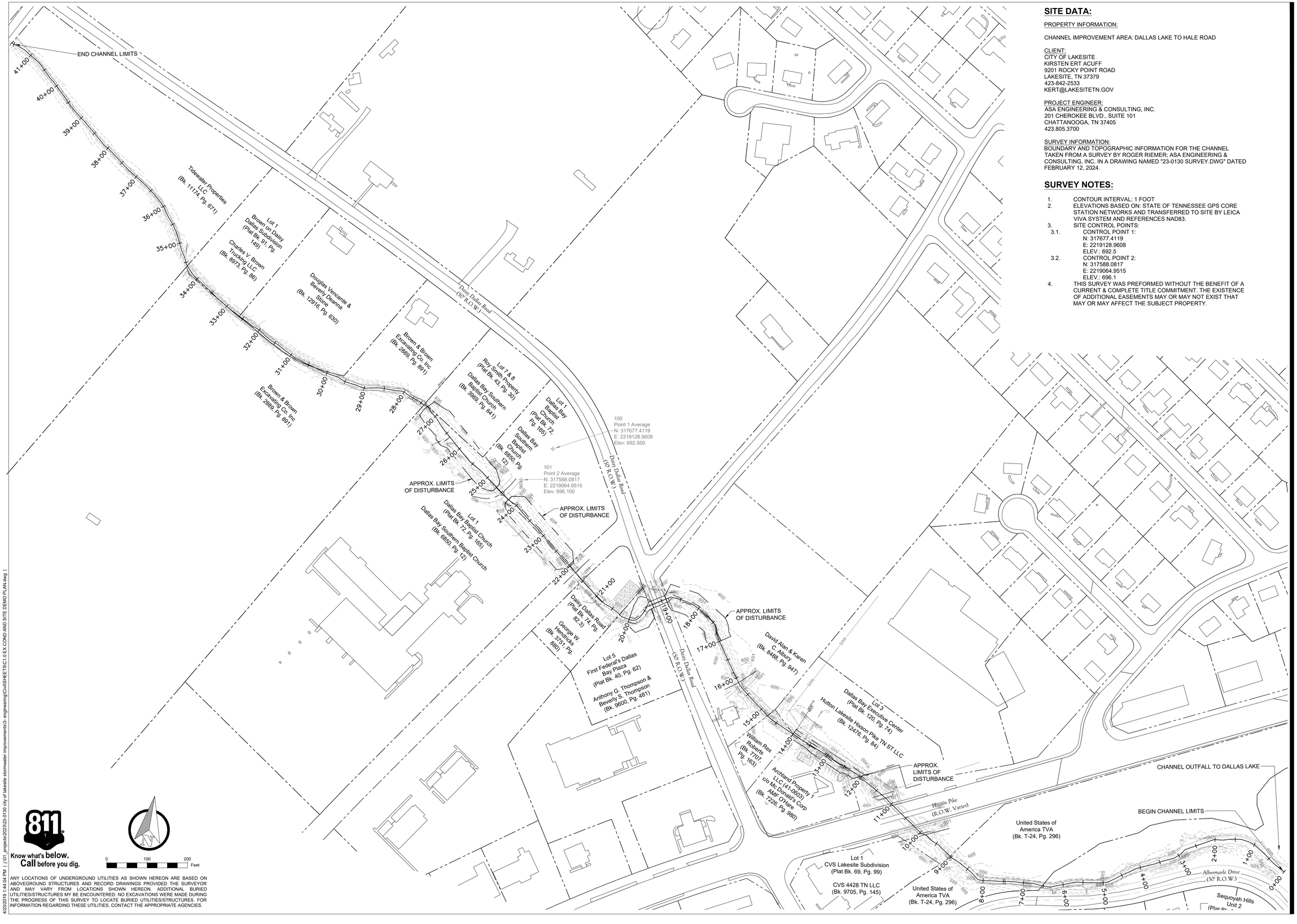
PROJECT NO.	23-0130
DATE	03/08/2025
SCALE	AS SHOWN
DESIGNED BY	ASA
DRAWN BY	ASA
CHECKED BY	ASA

TITLE

GENERAL NOTES, LEGEND, AMD ABBERIVATIONS

SHEET NO.

C0.1



Know what's **below.** **Call** before you dig.

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SITE DATA:

PROPERTY INFORMATION:

CHANNEL IMPROVEMENT AREA: DALLAS LAKE TO HALE ROAD

CLIENT:
CITY OF LAKESITE
KIRSTEN ERT ACUFF
9201 ROCKY POINT ROAD
LAKESITE, TN 37379
423-842-2533
KERT@LAKESITETN.GOV

PROJECT ENGINEER:
ASA ENGINEERING & CONSULTING, INC.
201 CHEROKEE BLVD., SUITE 101
CHATTANOOGA, TN 37405
423.805.3700

SURVEY INFORMATION:
BOUNDARY AND TOPOGRAPHIC INFORMATION FOR THE CHANNEL TAKEN FROM A SURVEY BY ROGER RIEMER; ASA ENGINEERING & CONSULTING, INC. IN A DRAWING NAMED "23-0130 SURVEY.DWG" DATED FEBRUARY 12, 2024.

SURVEY NOTES:

1. CONTOUR INTERVAL: 1 FOOT
2. ELEVATIONS BASED ON: STATE OF TENNESSEE GPS CORE STATION NETWORKS AND TRANSFERRED TO SITE BY LEICA VIVA SYSTEM AND REFERENCES NAD83.
3. SITE CONTROL POINTS:
   - 3.1. CONTROL POINT 1:
     N: 317677.4119
     E: 2219128.9608
     ELEV.: 692.5
   - 3.2. CONTROL POINT 2:
     N: 317588.0817
     E: 2219064.9515
     ELEV.: 696.1
4. THIS SURVEY WAS PREFORMED WITHOUT THE BENEFIT OF A CURRENT & COMPLETE TITLE COMMITMENT. THE EXISTENCE OF ADDITIONAL EASEMENTS MAY OR MAY NOT EXIST THAT MAY OR MAY AFFECT THE SUBJECT PROPERTY.

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423.805.3700

SEAL

RACHEL A. TRAMEL — REGISTERED ENGINEER — AGRICULTURE — COMMERCE — No. 120578 — STATE OF TENNESSEE
3-7-2025

ISSUED FOR BID

LAKESITE STORMWATER IMPROVEMENTS

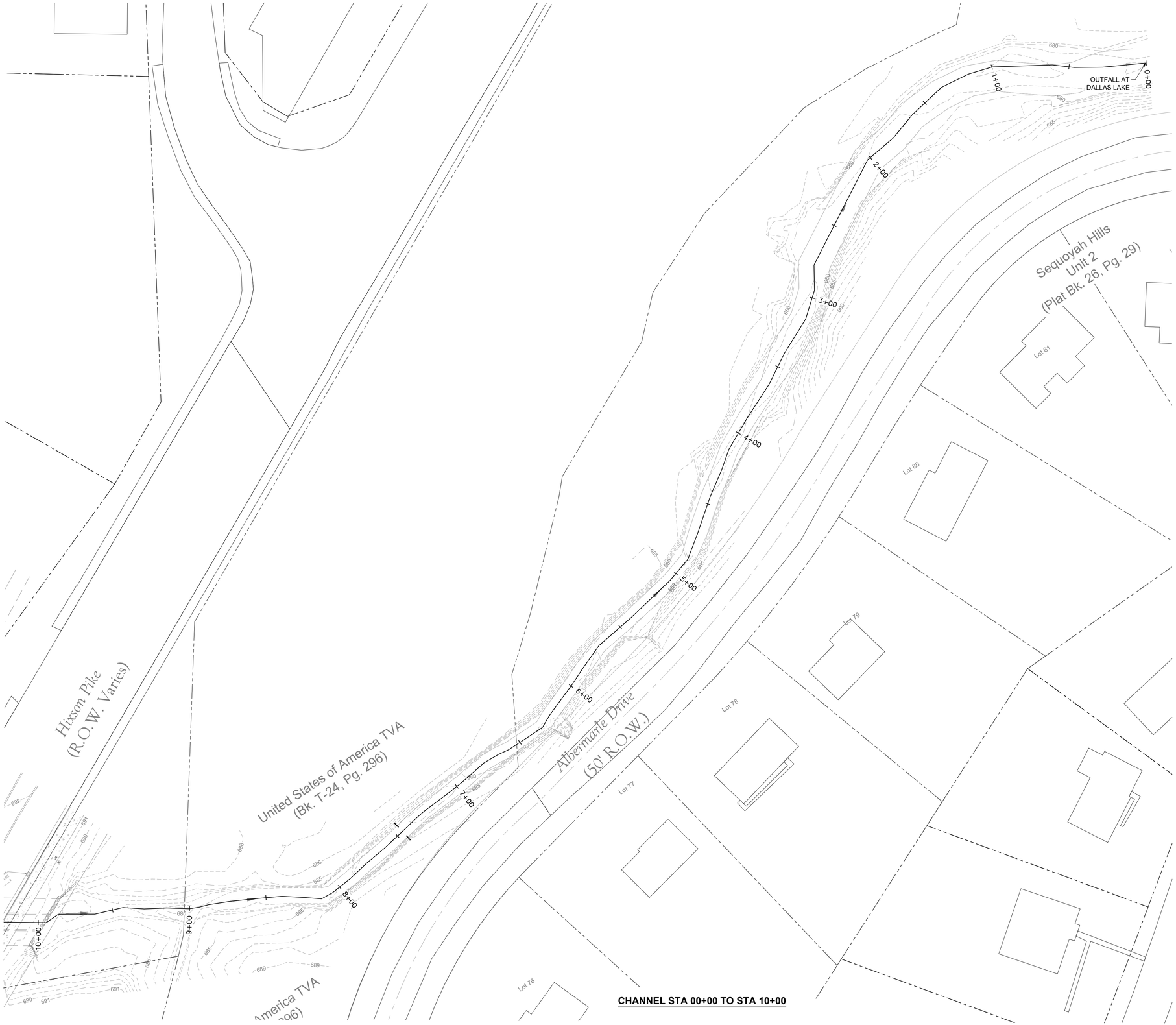
LAKESITE, TN 37379
FOR
CITY OF LAKESITE

No.	Revision/Issue	Date

PROJECT NO.	23-0130
DATE	03/08/2025
SCALE	AS SHOWN
DESIGNED BY	ASA
DRAWN BY	ASA
CHECKED BY	ASA

TITLE
CHANNEL OVERALL EXISTING CONDITIONS & SITE DEMOLITION PLAN

SHEET NO.
C1.0



CHANNEL STA 00+00 TO STA 10+00

SITE DATA:

PROPERTY INFORMATION:

CHANNEL IMPROVEMENT AREA: DALLAS LAKE TO HALE ROAD

CLIENT:
CITY OF LAKESITE
KIRSTEN ERT ACUFF
9201 ROCKY POINT ROAD
LAKESITE, TN 37379
423-842-2533
KERT@LAKESITETN.GOV

PROJECT ENGINEER:
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SITE DEMOLITION NOTES:

1. CONTRACTOR SHALL COORDINATE WITH RESPECTIVE PROPERTY OWNER PRIOR TO ACCESSING AND DISTURBING THE SITE.
2. UNLESS NOTED OTHERWISE, ALL TREES AND VEGETATION SHALL BE CLEARED WITHIN THE PROJECT LIMITS OF DISTURBANCE.
3. INSTALL EPSC MEASURES AND EXCAVATE LIMITS OF CHANNEL WIDENING.
4. ASA ENGINEERING & CONSULTING, INC. IS NOT RESPONSIBLE FOR THE MEANS AND METHODS EMPLOYED BY THE CONTRACTOR TO IMPLEMENT THIS SITE DEMOLITION PLAN. THIS PLAN ONLY INDICATES THE KNOWN OBJECTS ON THE SUBJECT PROPERTY THAT ARE TO BE DEMOLISHED AND REMOVED FROM THE SITE.

PHASE I - EROSION AND SEDIMENT CONTROL SCHEDULE:

1. CONDUCT PRE CONSTRUCTION MEETING WITH EROSION CONTROL INSPECTOR.
2. STAKE OUT CLEARING LIMITS, BUFFERS, ETC.
3. INSTALL CONSTRUCTION EXITS, CULVERT PROTECTION, AND PERIMETER SILT FENCE.
4. DEMO EXISTING PAVEMENTS, TREES, DRIVES, STRIP TOP SOIL, ETC. WITHIN DISTURBANCE LIMITS.
5. STOCKPILE EXISTING TOPSOIL ONSITE FOR REUSE. COVER OR SURROUND WITH SILT FENCE FOR PROTECTION.
6. PROVIDE TEMPORARY GRASSING / MULCHING @ 14 DAY INTERVALS.

PHASE II/III - EROSION AND SEDIMENT CONTROL SCHEDULE:

1. BEGIN SITE GRADING WHERE APPLICABLE.
2. MAINTAIN PHASE I EPSC MEASURES IN PHASE II AS THE PROJECT PROGRESSES.
3. TEMPORARY SEED @ 14 DAY INTERVALS AND/OR AS DIRECTED BY THE CITY INSPECTOR.
4. INSTALL STABILIZATION MATTING, LANDSCAPING, MULCH, AND PERMANENT SEEDING PER LANDSCAPE PLAN.
5. CLEAN STORM STRUCTURES.
6. DEMUCK ALL STRUCTURAL BMP'S AND SAFELY DISPOSE OF MATERIAL. REMOVE ALL TEMPORARY BMP'S AS SHOWN ON PLANS.

EROSION CONTROL LEGEND

	LIMITS OF DISTURBANCE
CE	CONSTRUCTION ENTRANCE
IP-SS	INLET PROTECTION - SILT SOXX
IP-C	INLET PROTECTION - CULVERT
PS	PERMANENT SEEDING
TS	TEMPORARY SEEDING
SF	SILT FENCE

SEE SHEET C1.6 FOR DETAILS

811 Know what's **below.** **Call** before you dig.

0 30 60 Feet

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SEAL

RACHEL A. TRANCHINA — REGISTERED — AGRICULTURE — COMMERCE — No. 120578 — STATE OF TENNESSEE
3-7-2025

ISSUED FOR BID

LAKESITE STORMWATER IMPROVEMENTS

LAKESITE, TN 37379
FOR
CITY OF LAKESITE

No.	Revision/Issue	Date

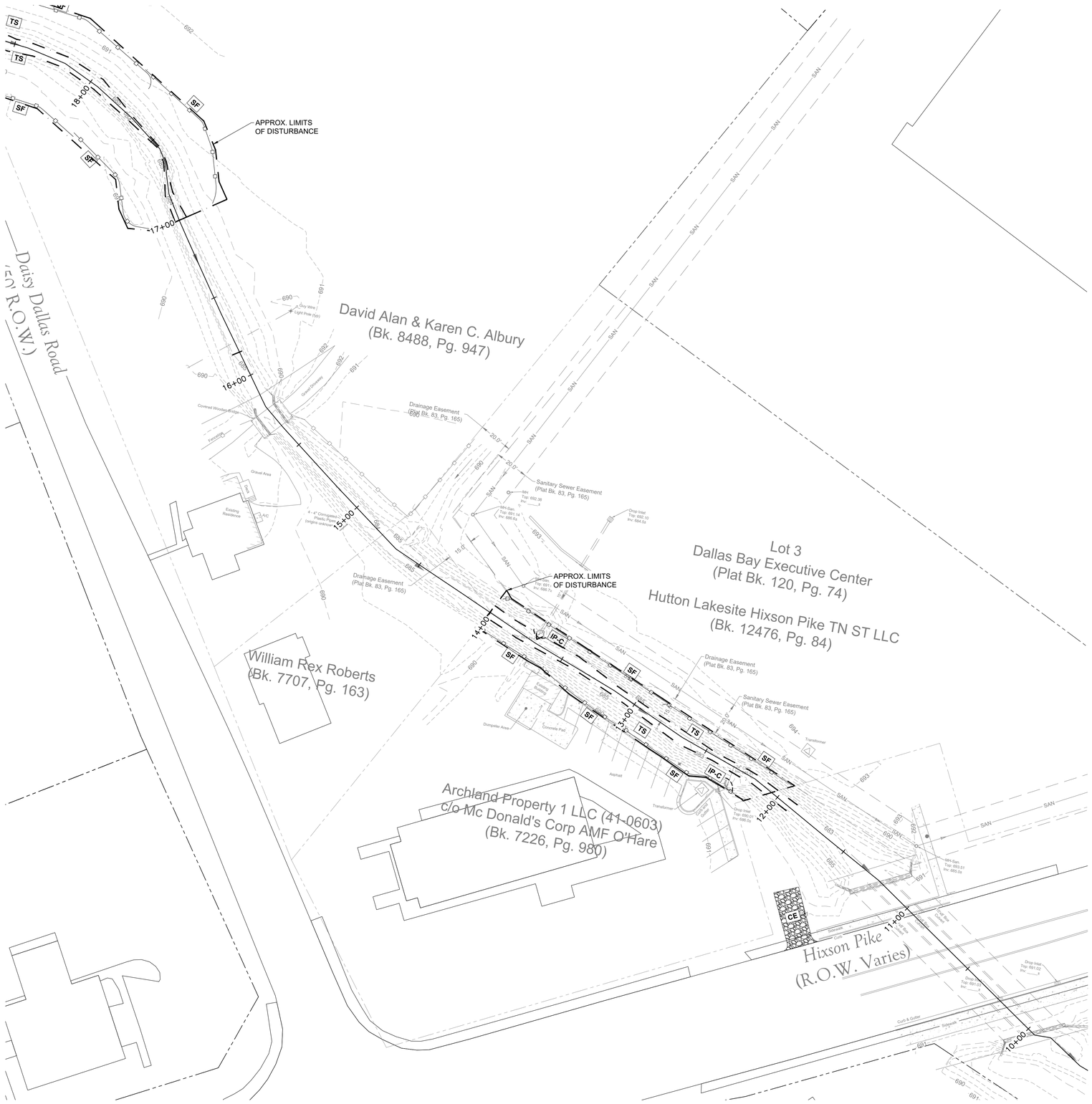
PROJECT NO.	23-0130
DATE	03/08/2025
SCALE	AS SHOWN
DESIGNED BY	ASA
DRAWN BY	ASA
CHECKED BY	ASA

TITLE

SITE DEMOLITION PLAN AND EPSC PLAN ENLARGEMENT 1

SHEET NO.

C1.1



CHANNEL STA 10+00 TO STA 18+00

SITE DATA:

PROPERTY INFORMATION:

CHANNEL IMPROVEMENT AREA: DALLAS LAKE TO HALE ROAD

CLIENT:
CITY OF LAKESITE
KIRSTEN ERT ACUFF
9201 ROCKY POINT ROAD
LAKESITE, TN 37379
423-842-2533
KERT@LAKESITETN.GOV

PROJECT ENGINEER:
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SURVEY NOTES:

1. CONTOUR INTERVAL: 1 FOOT
2. ELEVATIONS BASED ON: STATE OF TENNESSEE GPS CORE STATION NETWORKS AND TRANSFERRED TO SITE BY LEICA VIVA SYSTEM AND REFERENCES NAD83.
3. SITE CONTROL POINTS:
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     ELEV.: 692.5
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PHASE II/III - EROSION AND SEDIMENT CONTROL SCHEDULE:

1. BEGIN SITE GRADING WHERE APPLICABLE.
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EROSION CONTROL LEGEND

- - - - -	LIMITS OF DISTURBANCE
CE	CONSTRUCTION ENTRANCE
IP-SS	INLET PROTECTION - SILT SOXX
IP-C	INLET PROTECTION - CULVERT
PS	PERMANENT SEEDING
TS	TEMPORARY SEEDING
SF	SILT FENCE

SEE SHEET C1.6 FOR DETAILS

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SEAL

RACHEL A. TRAMMELL
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
No. 120578
STATE OF TENNESSEE
3-7-2025

ISSUED FOR BID

LAKESITE STORMWATER IMPROVEMENTS

LAKESITE, TN 37379
FOR
CITY OF LAKESITE

No.	Revision/Issue	Date

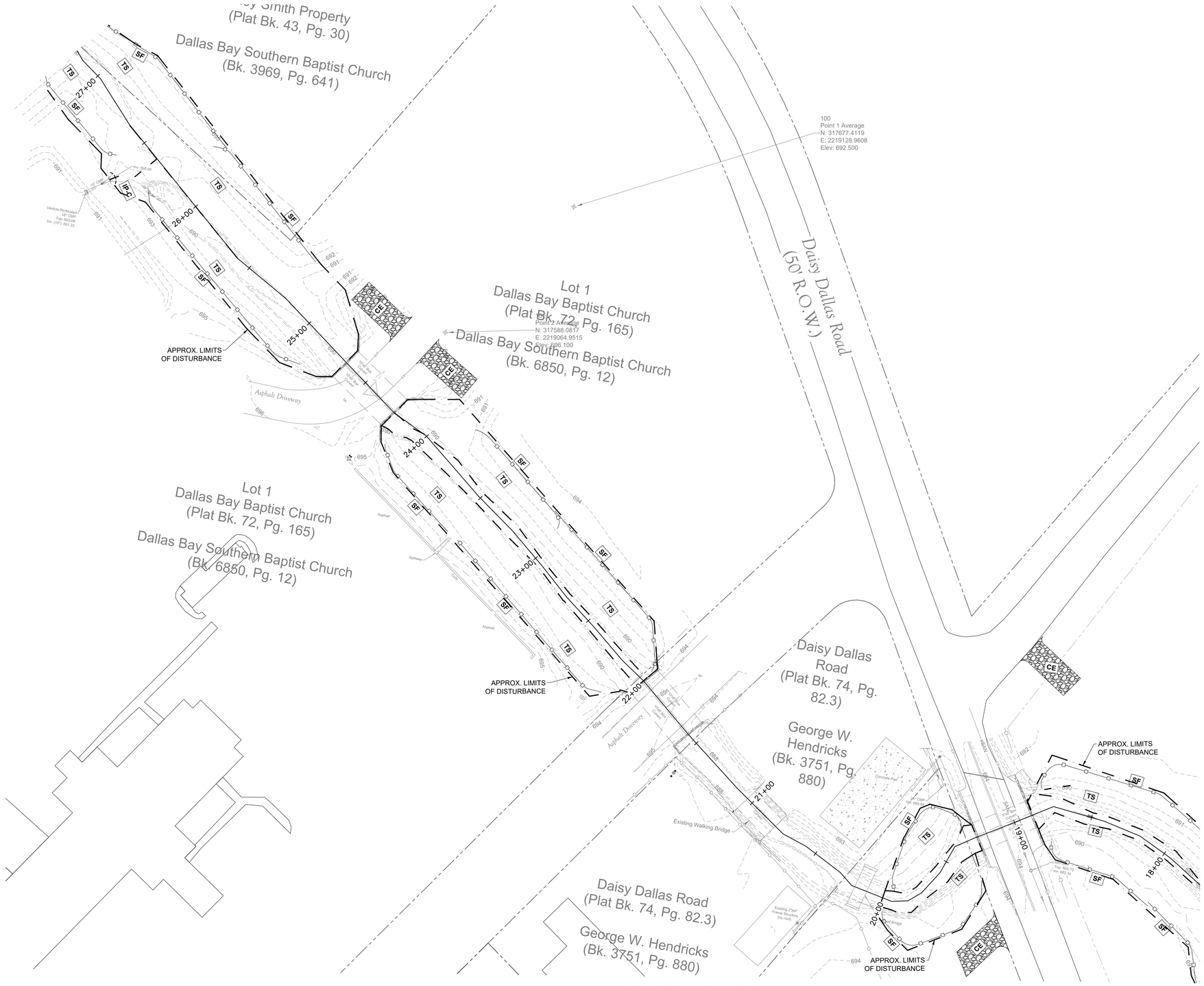
PROJECT NO.	23-0130
DATE	03/08/2025
SCALE	AS SHOWN
DESIGNED BY	ASA
DRAWN BY	ASA
CHECKED BY	ASA

TITLE

SITE DEMOLITION PLAN AND EPSC PLAN ENLARGEMENT 2

SHEET NO.

C1.2



CHANNEL STA 18+00 TO STA 27+00

SITE DATA:

PROPERTY INFORMATION:

CHANNEL IMPROVEMENT AREA: DALLAS LAKE TO HALE ROAD

CLIENT:
CITY OF LAKESITE
KIRSTEN ERT ACUFF
9201 ROCKY POINT ROAD
LAKESITE, TN 37379
423-842-2533
KERT@LAKESITETN.GOV

PROJECT ENGINEER:
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SURVEY INFORMATION:
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SURVEY NOTES:

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3. SITE CONTROL POINTS:
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   - 3.2. CONTROL POINT 2: N:317588.0817 E: 2219064.9515 ELEV.: 696.1
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EROSION CONTROL LEGEND

- - - -	LIMITS OF DISTURBANCE
CE	CONSTRUCTION ENTRANCE
IP-SS	INLET PROTECTION - SILT SOXX
IP-C	INLET PROTECTION - CULVERT
PS	PERMANENT SEEDING
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SEE SHEET C1.6 FOR DETAILS

Know what's below. Call before you dig.

0 30 60 Feet

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ASA
ENGINEERING & CONSULTING, INC.
201 CHEROKEE BLVD., SUITE 101
CHATTANOOGA, TN 37405
WWW.ASAENGINEERINGINC.COM
423.805.3700

SEAL

RACHEL A. TRAMEL
REGISTERED
LANDSCAPE
ARCHITECT
No. 120578
STATE OF TENNESSEE
3-7-2025

ISSUED FOR BID

LAKESITE STORMWATER IMPROVEMENTS

LAKESITE, TN 37379
FOR
CITY OF LAKESITE

No.	Revision/Issue	Date

PROJECT NO.	23-0130
DATE	03/08/2025
SCALE	AS SHOWN
DESIGNED BY	ASA
DRAWN BY	ASA
CHECKED BY	ASA

TITLE

SITE DEMOLITION PLAN AND EPSC PLAN ENLARGEMENT 3

SHEET NO.

C1.3

CHANNEL STA 27+00 TO STA 36+00

SITE DATA:

PROPERTY INFORMATION:

CHANNEL IMPROVEMENT AREA: DALLAS LAKE TO HALE ROAD

CLIENT:
CITY OF LAKESITE
KIRSTEN ERT ACUFF
9201 ROCKY POINT ROAD
LAKESITE, TN 37379
423-842-2533
KERT@LAKESITETN.GOV

PROJECT ENGINEER:
ASA ENGINEERING & CONSULTING, INC.
201 CHEROKEE BLVD., SUITE 101
CHATTANOOGA, TN 37405
423.805.3700

SURVEY INFORMATION:
BOUNDARY AND TOPOGRAPHIC INFORMATION FOR THE CHANNEL TAKEN FROM A SURVEY BY ROGER RIEMER; ASA ENGINEERING & CONSULTING, INC. IN A DRAWING NAMED "23-0130 SURVEY.DWG" DATED FEBRUARY 12, 2024.

SURVEY NOTES:

1. CONTOUR INTERVAL: 1 FOOT
2. ELEVATIONS BASED ON: STATE OF TENNESSEE GPS CORE STATION NETWORKS AND TRANSFERRED TO SITE BY LEICA VIVA SYSTEM AND REFERENCES NAD83.
3. SITE CONTROL POINTS:
   - 3.1. CONTROL POINT 1:
     N: 317677.4119
     E: 2219128.9608
     ELEV.: 692.5
   - 3.2. CONTROL POINT 2:
     N:317588.0817
     E: 2219064.9515
     ELEV.: 696.1
4. THIS SURVEY WAS PREFORMED WITHOUT THE BENEFIT OF A CURRENT & COMPLETE TITLE COMMITMENT, THE EXISTENCE OF ADDITIONAL EASEMENTS MAY OR MAY NOT EXIST THAT MAY OR MAY AFFECT THE SUBJECT PROPERTY.

SITE DEMOLITION NOTES:

1. CONTRACTOR SHALL COORDINATE WITH RESPECTIVE PROPERTY OWNER PRIOR TO ACCESSING AND DISTURBING THE SITE.
2. UNLESS NOTED OTHERWISE, ALL TREES AND VEGETATION SHALL BE CLEARED WITHIN THE PROJECT LIMITS OF DISTURBANCE.
3. INSTALL EPSC MEASURES AND EXCAVATE LIMITS OF CHANNEL WIDENING.
4. ASA ENGINEERING & CONSULTING, INC. IS NOT RESPONSIBLE FOR THE MEANS AND METHODS EMPLOYED BY THE CONTRACTOR TO IMPLEMENT THIS SITE DEMOLITION PLAN. THIS PLAN ONLY INDICATES THE KNOWN OBJECTS ON THE SUBJECT PROPERTY THAT ARE TO BE DEMOLISHED AND REMOVED FROM THE SITE.

PHASE I - EROSION AND SEDIMENT CONTROL SCHEDULE:

1. CONDUCT PRE CONSTRUCTION MEETING WITH EROSION CONTROL INSPECTOR.
2. STAKE OUT CLEARING LIMITS, BUFFERS, ETC.
3. INSTALL CONSTRUCTION EXITS, CULVERT PROTECTION, AND PERIMETER SILT FENCE.
4. DEMO EXISTING PAVEMENTS, TREES, DRIVES, STRIP TOP SOIL, ETC. WITHIN DISTURBANCE LIMITS.
5. STOCKPILE EXISTING TOPSOIL ONSITE FOR REUSE. COVER OR SURROUND WITH SILT FENCE FOR PROTECTION.
6. PROVIDE TEMPORARY GRASSING / MULCHING @ 14 DAY INTERVALS.

PHASE II/III - EROSION AND SEDIMENT CONTROL SCHEDULE:

1. BEGIN SITE GRADING WHERE APPLICABLE.
2. MAINTAIN PHASE I EPSC MEASURES IN PHASE II AS THE PROJECT PROGRESSES.
3. TEMPORARY SEED @ 14 DAY INTERVALS AND/OR AS DIRECTED BY THE CITY INSPECTOR.
4. INSTALL STABILIZATION MATTING, LANDSCAPING, MULCH, AND PERMANENT SEEDING PER LANDSCAPE PLAN.
5. CLEAN STORM STRUCTURES.
6. DEMUCK ALL STRUCTURAL BMP'S AND SAFELY DISPOSE OF MATERIAL. REMOVE ALL TEMPORARY BMP'S AS SHOWN ON PLANS.

EROSION CONTROL LEGEND

	LIMITS OF DISTURBANCE
CE	CONSTRUCTION ENTRANCE
IP-SS	INLET PROTECTION - SILT SOXX
IP-C	INLET PROTECTION - CULVERT
PS	PERMANENT SEEDING
TS	TEMPORARY SEEDING
SF	SILT FENCE

SEE SHEET C1.6 FOR DETAILS

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0 30 60 Feet

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423.805.3700

SEAL

CHEL A. TRAINUM
AGRICULTURE
ARCHITECTURE
CIVIL
COMMERCE
No. 120578
STATE OF TENNESSEE
3-7-2025

ISSUED FOR BID

LAKESITE STORMWATER IMPROVEMENTS

LAKESITE, TN 37379
FOR
CITY OF LAKESITE

No.	Revision/Issue	Date

PROJECT NO.	23-0130
DATE	03/08/2025
SCALE	AS SHOWN
DESIGNED BY	ASA
DRAWN BY	ASA
CHECKED BY	ASA

TITLE

SITE DEMOLITION PLAN AND EPSC PLAN ENLARGEMENT 4

SHEET NO.

C1.4

CHANNEL STA 36+00 TO STA 41+57

SITE DATA:

PROPERTY INFORMATION:

CHANNEL IMPROVEMENT AREA: DALLAS LAKE TO HALE ROAD

OWNER:
CITY OF LAKESITE
KIRSTEN ERT ACUFF
9201 ROCKY POINT ROAD
LAKESITE, TN 37379
423-842-2533
KERT@LAKESITETN.GOV

PROJECT ENGINEER:
ASA ENGINEERING & CONSULTING, INC.
201 CHEROKEE BLVD., SUITE 101
CHATTANOOGA, TN 37405
423.805.3700

SURVEY INFORMATION:
BOUNDARY AND TOPOGRAPHIC INFORMATION FOR THE CHANNEL TAKEN FROM A SURVEY BY ROGER RIEMER; ASA ENGINEERING & CONSULTING, INC. IN A DRAWING NAMED "23-0130 SURVEY.DWG" DATED FEBRUARY 12, 2024.

SURVEY NOTES:

1. CONTOUR INTERVAL: 1 FOOT
2. ELEVATIONS BASED ON: STATE OF TENNESSEE GPS CORE STATION NETWORKS AND TRANSFERRED TO SITE BY LEICA VIVA SYSTEM AND REFERENCES NAD83.
3. SITE CONTROL POINTS:
   - 3.1. CONTROL POINT 1: N: 317677.4119 E: 2219128.9608 ELEV.: 692.5
   - 3.2. CONTROL POINT 2: N:317588.0817 E: 2219064.9515 ELEV.: 696.1
4. THIS SURVEY WAS PREFORMED WITHOUT THE BENEFIT OF A CURRENT & COMPLETE TITLE COMMITMENT, THE EXISTENCE OF ADDITIONAL EASEMENTS MAY OR MAY NOT EXIST THAT MAY OR MAY AFFECT THE SUBJECT PROPERTY.

SITE DEMOLITION NOTES:

1. CONTRACTOR SHALL COORDINATE WITH RESPECTIVE PROPERTY OWNER PRIOR TO ACCESSING AND DISTURBING THE SITE.
2. UNLESS NOTED OTHERWISE, ALL TREES AND VEGETATION SHALL BE CLEARED WITHIN THE PROJECT LIMITS OF DISTURBANCE.
3. INSTALL EPSC MEASURES AND EXCAVATE LIMITS OF CHANNEL WIDENING.
4. ASA ENGINEERING & CONSULTING, INC. IS NOT RESPONSIBLE FOR THE MEANS AND METHODS EMPLOYED BY THE CONTRACTOR TO IMPLEMENT THIS SITE DEMOLITION PLAN. THIS PLAN ONLY INDICATES THE KNOWN OBJECTS ON THE SUBJECT PROPERTY THAT ARE TO BE DEMOLISHED AND REMOVED FROM THE SITE.

PHASE I - EROSION AND SEDIMENT CONTROL SCHEDULE:

1. CONDUCT PRE CONSTRUCTION MEETING WITH EROSION CONTROL INSPECTOR.
2. STAKE OUT CLEARING LIMITS, BUFFERS, ETC.
3. INSTALL CONSTRUCTION EXITS, CULVERT PROTECTION, AND PERIMETER SILT FENCE.
4. DEMO EXISTING PAVEMENTS, TREES, DRIVES, STRIP TOP SOIL, ETC. WITHIN DISTURBANCE LIMITS.
5. STOCKPILE EXISTING TOPSOIL ONSITE FOR REUSE. COVER OR SURROUND WITH SILT FENCE FOR PROTECTION.
6. PROVIDE TEMPORARY GRASSING / MULCHING @ 14 DAY INTERVALS.

PHASE II/III - EROSION AND SEDIMENT CONTROL SCHEDULE:

1. BEGIN SITE GRADING WHERE APPLICABLE.
2. MAINTAIN PHASE I EPSC MEASURES IN PHASE II AS THE PROJECT PROGRESSES.
3. TEMPORARY SEED @ 14 DAY INTERVALS AND/OR AS DIRECTED BY THE CITY INSPECTOR.
4. INSTALL STABILIZATION MATTING, LANDSCAPING, MULCH, AND PERMANENT SEEDING PER LANDSCAPE PLAN.
5. CLEAN STORM STRUCTURES.
6. DEMUCK ALL STRUCTURAL BMP'S AND SAFELY DISPOSE OF MATERIAL. REMOVE ALL TEMPORARY BMP'S AS SHOWN ON PLANS.

EROSION CONTROL LEGEND

— — —	LIMITS OF DISTURBANCE
CE	CONSTRUCTION ENTRANCE
IP-SS	INLET PROTECTION - SILT SOXX
IP-C	INLET PROTECTION - CULVERT
PS	PERMANENT SEEDING
TS	TEMPORARY SEEDING
SF	SILT FENCE

SEE SHEET C1.6 FOR DETAILS

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SEAL

RACHEL A. TRAMEL
DEPARTMENT OF AGRICULTURE
DEPARTMENT OF COMMERCE
No. 120578
STATE OF TENNESSEE
3-7-2025

ISSUED FOR BID

LAKESITE STORMWATER IMPROVEMENTS

LAKESITE, TN 37379
FOR
CITY OF LAKESITE

No.	Revision/Issue	Date

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CHECKED BY	ASA

TITLE

SITE DEMOLITION PLAN AND EPSC PLAN ENLARGEMENT 5

SHEET NO.

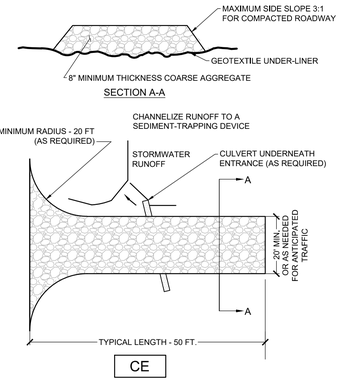
C1.5

TEMPORARY SEEDING

TEMPORARY SEEDING FOR LATE WINTER & EARLY SPRING	TEMPORARY SEEDING FOR SUMMER	TEMPORARY SEEDING FOR FALL
SPECIES RATE (lb/acre) RYE 120 SEEDING DATES FEB. 1-MAY 1 SOIL AMENDMENTS FOLLOW RECOMMENDATIONS OF SOIL TEST OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 750 lb/acre 10-10-10 FERTILIZER. MULCH APPLY 4,000 lb/acre STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NEETING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL. MAINTENANCE REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.	SPECIES RATE (lb/acre) RYE 60 BROWN TOP MILLET 30 SEEDING DATES MAY 15-AUG. 15 SOIL AMENDMENTS FOLLOW RECOMMENDATIONS OF SOIL TEST OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 750 lb/acre 10-10-10 FERTILIZER. MULCH APPLY 4,000 lb/acre STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NEETING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL. MAINTENANCE REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.	SPECIES RATE (lb/acre) RYE 30 WINTER WHEAT 30 SEEDING DATES AUG. 15-DEC. 15 SOIL AMENDMENTS FOLLOW RECOMMENDATIONS OF SOIL TEST OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 750 lb/acre 10-10-10 FERTILIZER. MULCH APPLY 4,000 lb/acre STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NEETING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL. MAINTENANCE REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE. IF NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 lb/ac CRIMSON CLOVER IN LATE FEBRUARY OR EARLY MARCH.

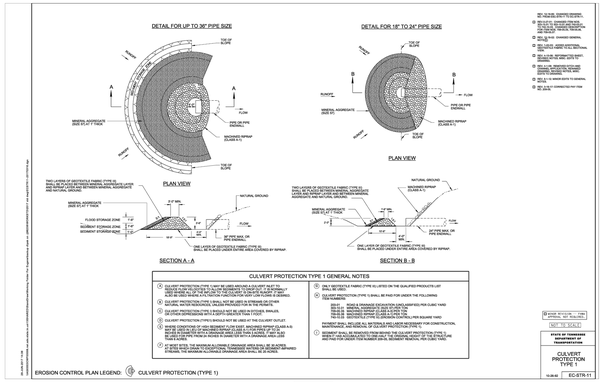
TS

1 TEMPORARY SEEDING
NOT TO SCALE



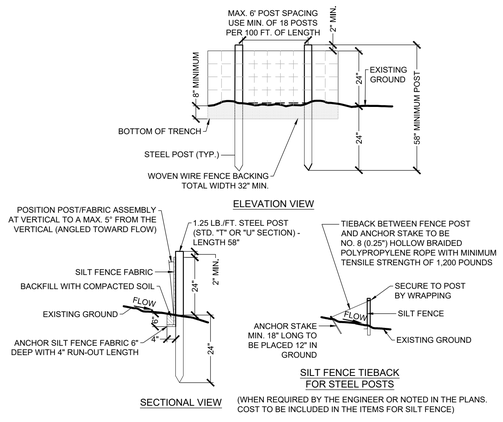
CE

2 CONSTRUCTION EXIT
NOT TO SCALE



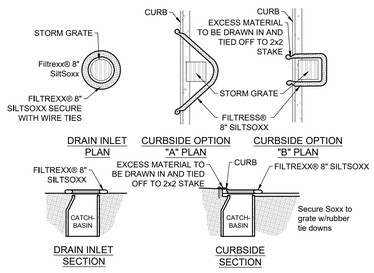
IP-C

3 CULVERT PROTECTION
NOT TO SCALE



SF

4 SILT FENCE WITH WIRE BACKING AND STEEL POST
NOT TO SCALE



Notes:
1. All material to meet Filtrexx® specifications.
2. SiltSoxx™ compost/soil/rock/seed fill to meet application requirements.
3. Compost material to be dispersed on site after final stabilization of the site.

IP-SS

5 INLET PROTECTION - SILT SOXX
NOT TO SCALE

PERMANENT SEEDING - *PREFERRED SEED MIXES*

GENERAL SEEDING AREAS	PLANTING DATES BEST	PLANTING DATES MARGINAL	PREGERRED RATE / MIX (lb/ac PLS)
Steep Slopes	Aug 15 - Sept 1 **Mar 1 - Apr 1**	Sept 1 - Sept 15 Apr 1 - June 10	15 browntop millet* (nurse crop) 5 purpletop 10 little bluestem 10 indian grass 2 black-eyed susan 0.5 manard (bergamot) 4 Maryland senna
Shallow Soils	Aug 15 - Sept 1 **Mar 1 - Apr 1**	Sept 1 - Sept 15 Apr 1 - June 10	15 browntop millet* (nurse crop) 5 purpletop 10 little bluestem 10 broomsedge 2 partridge pea 2 black-eyed susan 0.5 manard (bergamot)
Moderate Slopes	Aug 15 - Sept 1 **Mar 1 - Apr 1**	Sept 1 - Sept 15 Apr 1 - June 10	15 browntop millet* (nurse crop) 5 purpletop 10 little bluestem 10 indian grass 2 black-eyed susan 0.5 manard (bergamot) 4 Maryland senna
Lawn Areas	Sept 15 - Oct 31 **Feb 15 - Apr 15**	Oct 31 - Nov 30 Apr 15 - May 15	Annual Ryegrass (nurse crop) 5 Star Fescue Grass Seed Blend Falcon IV Tall Fescue Crossfire III Tall Fescue Rebel Tall Fescue Mix

**non-native but do not spread*
Note:
The bold dates are the preferred dates for seeding.
Temporary Seeding may be required when seeding outside of the preferred seeding dates
High maintenance areas include lawns & other grassed areas that will be maintained for aesthetics.

PS

6 PERMANENT SEEDING
NOT TO SCALE

ENGINEERING & CONSULTING, INC.
201 CHEROKEE BLVD., SUITE 101
CHATTANOOGA, TN 37405
WWW.ASAENGINEERINGINC.COM
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SEAL

ISSUED FOR BID

LAKESITE STORMWATER IMPROVEMENTS

LAKESITE, TN 37379
FOR
CITY OF LAKESITE

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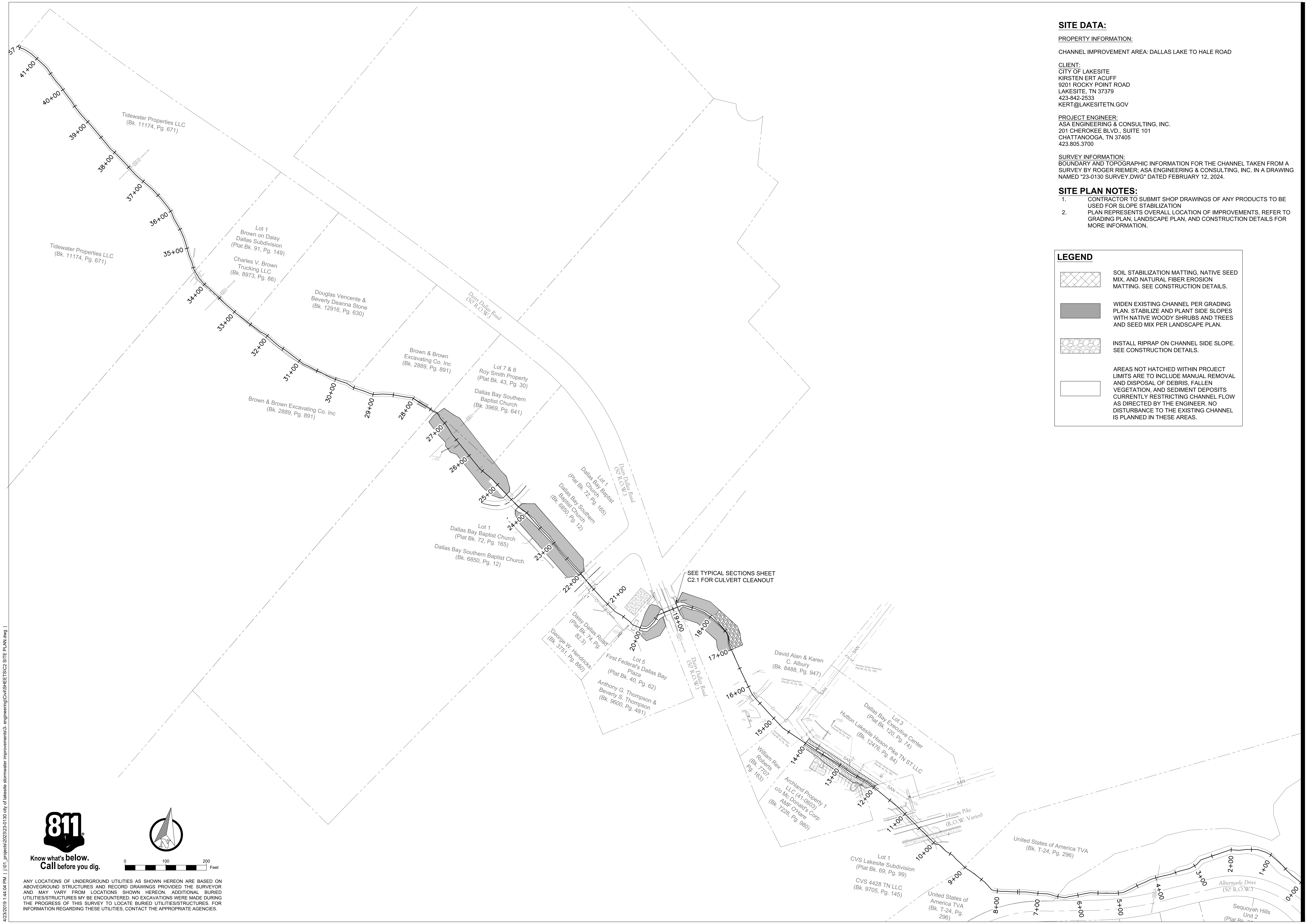
TITLE

EPSC DETAILS

SHEET NO.

C1.6



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SITE DATA:

PROPERTY INFORMATION:

CHANNEL IMPROVEMENT AREA: DALLAS LAKE TO HALE ROAD

CLIENT:
CITY OF LAKESITE
KIRSTEN ERT ACUFF
9201 ROCKY POINT ROAD
LAKESITE, TN 37379
423-842-2533
KERT@LAKESITETN.GOV

PROJECT ENGINEER:
ASA ENGINEERING & CONSULTING, INC.
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CHATTANOOGA, TN 37405
423.805.3700

SURVEY INFORMATION:
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SITE PLAN NOTES:

1. CONTRACTOR TO SUBMIT SHOP DRAWINGS OF ANY PRODUCTS TO BE USED FOR SLOPE STABILIZATION
2. PLAN REPRESENTS OVERALL LOCATION OF IMPROVEMENTS. REFER TO GRADING PLAN, LANDSCAPE PLAN, AND CONSTRUCTION DETAILS FOR MORE INFORMATION.

LEGEND

(crosshatch)	SOIL STABILIZATION MATTING, NATIVE SEED MIX, AND NATURAL FIBER EROSION MATTING. SEE CONSTRUCTION DETAILS.
(gray fill)	WIDEN EXISTING CHANNEL PER GRADING PLAN. STABILIZE AND PLANT SIDE SLOPES WITH NATIVE WOODY SHRUBS AND TREES AND SEED MIX PER LANDSCAPE PLAN.
(riprap)	INSTALL RIPRAP ON CHANNEL SIDE SLOPE. SEE CONSTRUCTION DETAILS.
(blank)	AREAS NOT HATCHED WITHIN PROJECT LIMITS ARE TO INCLUDE MANUAL REMOVAL AND DISPOSAL OF DEBRIS, FALLEN VEGETATION, AND SEDIMENT DEPOSITS CURRENTLY RESTRICTING CHANNEL FLOW AS DIRECTED BY THE ENGINEER. NO DISTURBANCE TO THE EXISTING CHANNEL IS PLANNED IN THESE AREAS.

ASA
ENGINEERING & CONSULTING, INC.
201 CHEROKEE BLVD., SUITE 101
CHATTANOOGA, TN 37405
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423.805.3700

SEAL

RACHEL A. TRANEL — REGISTERED ENGINEER — AGRICULTURE — COMMERCE — No. 120578 — STATE OF TENNESSEE — 3-7-2025

ISSUED FOR BID

LAKESITE STORMWATER IMPROVEMENTS

LAKESITE, TN 37379
FOR
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DRAWN BY	ASA
CHECKED BY	ASA

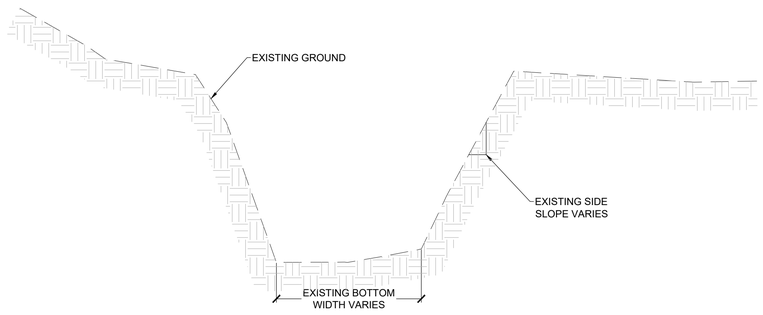
TITLE

OVERALL CHANNEL SITE PLAN

SHEET NO.

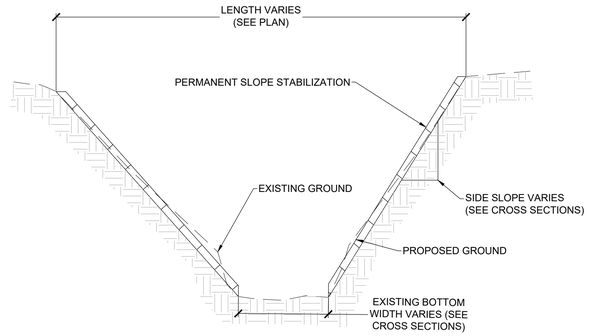
C2.0

4/23/2019 1:44:04 PM | j:\01_projects\2023\23-0130 city of lakesite stormwater improvements\3- engineering\Civil\SHEETS\C2 SITE PLAN.dwg |



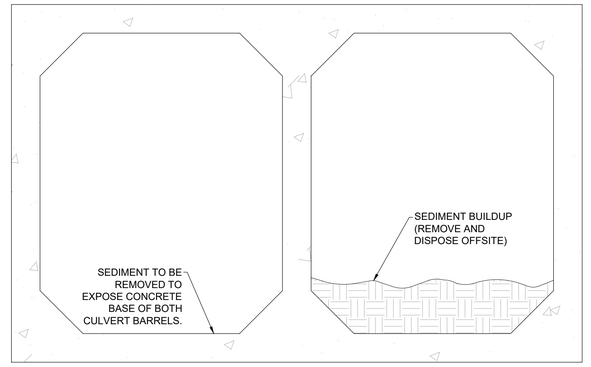
1 HAND CLEARING ONLY - TYPICAL SECTION*
NOT TO SCALE

*BEGIN PROJECT TO STA. 8+93
AND
STA. 14+32 TO STA. 17+00
AND
STA. 27+50 TO END PROJECT



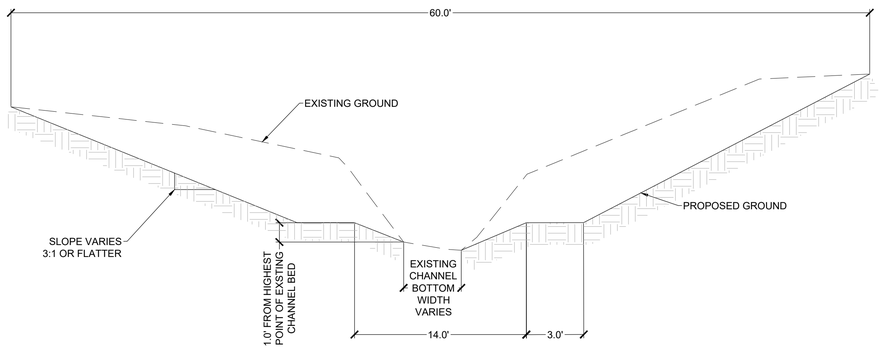
2 PERMANENT SLOPE STABILIZATION - TYPICAL SECTION*
NOT TO SCALE

* STA. 12+04 TO STA. 14+32



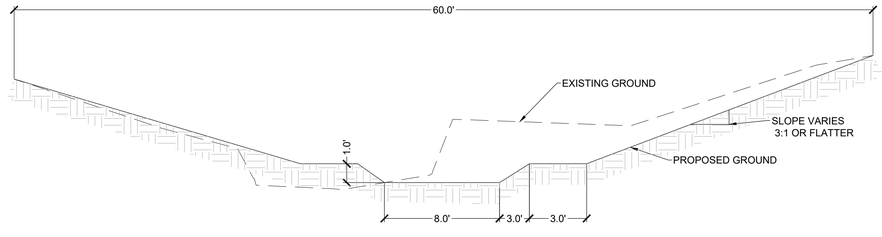
3 CULVERT CLEANOUT- TYPICAL SECTION*
NOT TO SCALE

* STA. 18+88 TO STA. 19+26



4 CHANNEL WIDENING - TYPICAL SECTION*
NOT TO SCALE

* STA. 17+00 TO STA. 18+88
AND
STA. 19+26 TO STA. 20+00
AND
STA. 22+00 TO STA. 24+25
AND
STA. 24+67 TO STA. 25+60
AND
STA. 26+65 TO STA. 27+50



5 CHANNEL RE-ESTABLISHMENT - TYPICAL SECTION*
NOT TO SCALE

* STA. 25+60 TO STA. 26+65

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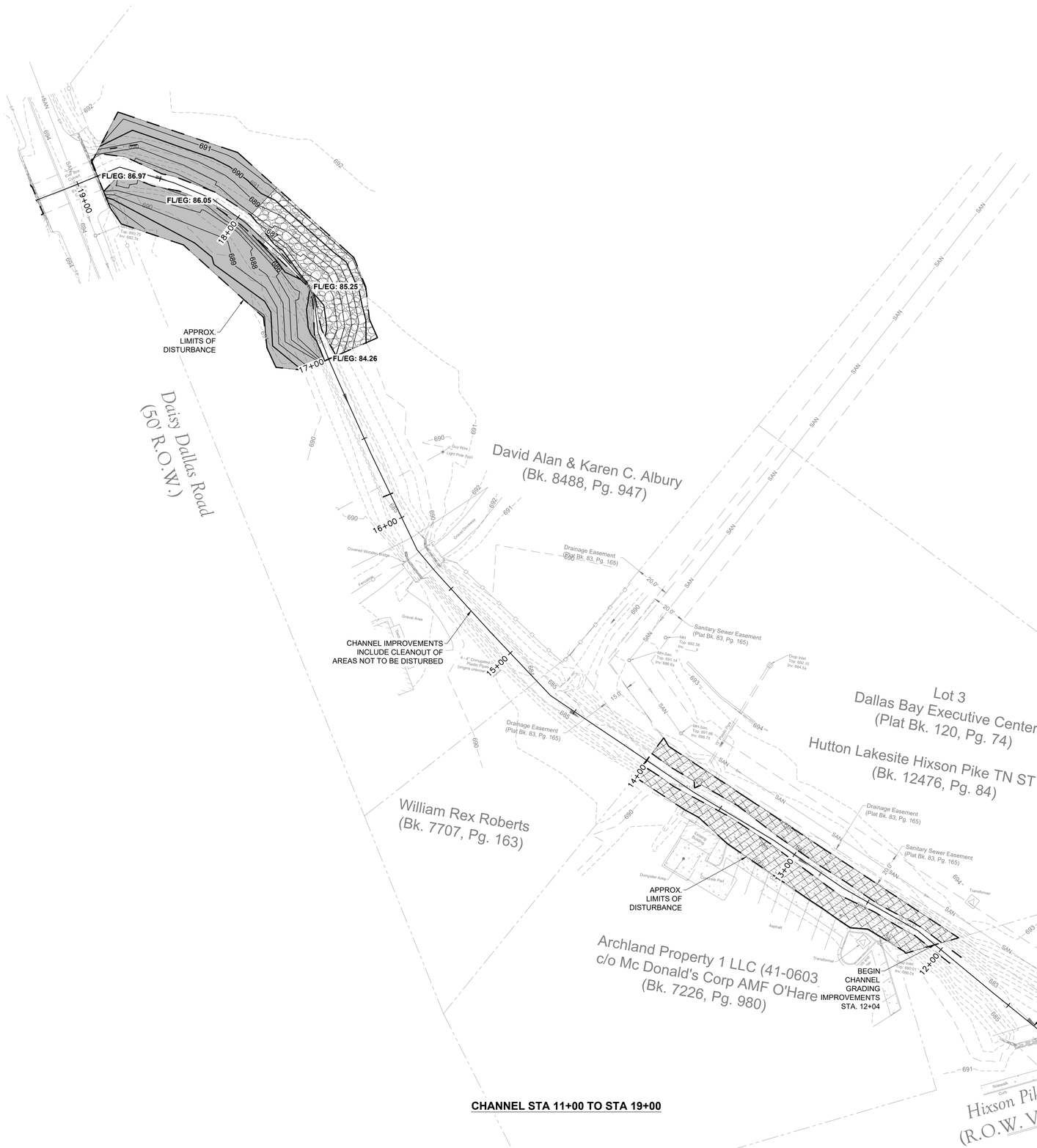
CHANNEL TYPICAL SECTIONS

SHEET NO.

C2.1



CHANNEL STA 11+00 TO STA 19+00

SITE DATA:

PROPERTY INFORMATION:

CHANNEL IMPROVEMENT AREA: DALLAS LAKE TO HALE ROAD

CLIENT:
CITY OF LAKESITE
KIRSTEN ERT ACUFF
9201 ROCKY POINT ROAD
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423-842-2533
KERT@LAKESITETN.GOV

PROJECT ENGINEER:
ASA ENGINEERING & CONSULTING, INC.
201 CHEROKEE BLVD., SUITE 101
CHATTANOOGA, TN 37405
423.805.3700

SURVEY INFORMATION:
BOUNDARY AND TOPOGRAPHIC INFORMATION FOR THE CHANNEL TAKEN FROM A SURVEY BY ROGER RIEMER; ASA ENGINEERING & CONSULTING, INC. IN A DRAWING NAMED "23-0130 SURVEY.DWG" DATED FEBRUARY 12, 2024.

GRADING NOTES:

1. CONTRACTOR TO MATCH EXISTING GRADES AT LIMITS OF DISTURBANCE.
2. SPOT ELEVATIONS REFER TO ELEVATIONS @ 6XX.XX.
3. FOR ANY SOIL THAT CANNOT BE USED ONSITE, THE CONTRACTOR WILL TAKE EXCESS SOIL TO EITHER THE BIRCHWOOD C&D LANDFILL AT 9327 BIRCHWOOD PIKE, HARRISON, TN OR THE RHEA COUNTY CLASS I LANDFILL AT 207 SANITARY DRIVE, DAYTON, TN.

GRADING LEGEND

EG	EXISTING GRADE
FG	FINISHED GRADE OF CHANNEL SIDE SLOPE
FL	FINISHED GRADE AT CHANNEL FLOWLINE

LEGEND

- SOIL STABILIZATION MATTING, NATIVE SEED MIX, AND NATURAL FIBER EROSION MATTING. SEE CONSTRUCTION DETAILS.
- WIDEN EXISTING CHANNEL PER GRADING PLAN. STABILIZE AND PLANT SIDE SLOPES WITH NATIVE WOODY SHRUBS AND TREES AND SEED MIX PER LANDSCAPE PLAN.
- INSTALL RIPRAP ON CHANNEL SIDE SLOPE. SEE CONSTRUCTION DETAILS.
- AREAS NOT HATCHED WITHIN PROJECT LIMITS ARE TO INCLUDE MANUAL REMOVAL AND DISPOSAL OF DEBRIS, FALLEN VEGETATION, AND SEDIMENT DEPOSITS CURRENTLY RESTRICTING CHANNEL FLOW AS DIRECTED BY THE ENGINEER. NO DISTURBANCE TO THE EXISTING CHANNEL IS PLANNED IN THESE AREAS.

Know what's below. Call before you dig.

0 30 60 Feet

ANY LOCATIONS OF UNDERGROUND UTILITIES AS SHOWN HEREON ARE BASED ON ABOVEGROUND STRUCTURES AND RECORD DRAWINGS PROVIDED THE SURVEYOR AND MAY VARY FROM LOCATIONS SHOWN HEREON. ADDITIONAL BURIED UTILITIES/STRUCTURES MY BE ENCOUNTERED. NO EXCAVATIONS WERE MADE DURING THE PROGRESS OF THIS SURVEY TO LOCATE BURIED UTILITIES/STRUCTURES. FOR INFORMATION REGARDING THESE UTILITIES, CONTACT THE APPROPRIATE AGENCIES.

ASA
ENGINEERING & CONSULTING, INC.
201 CHEROKEE BLVD., SUITE 101
CHATTANOOGA, TN 37405
WWW.ASAENGINEERINGINC.COM
423.805.3700

SEAL

RACHEL A. TRAMMELL
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
No. 120578
STATE OF TENNESSEE
3-7-2025

ISSUED FOR BID

LAKESITE STORMWATER IMPROVEMENTS
LAKESITE, TN 37379
FOR
CITY OF LAKESITE

No.	Revision/Issue	Date

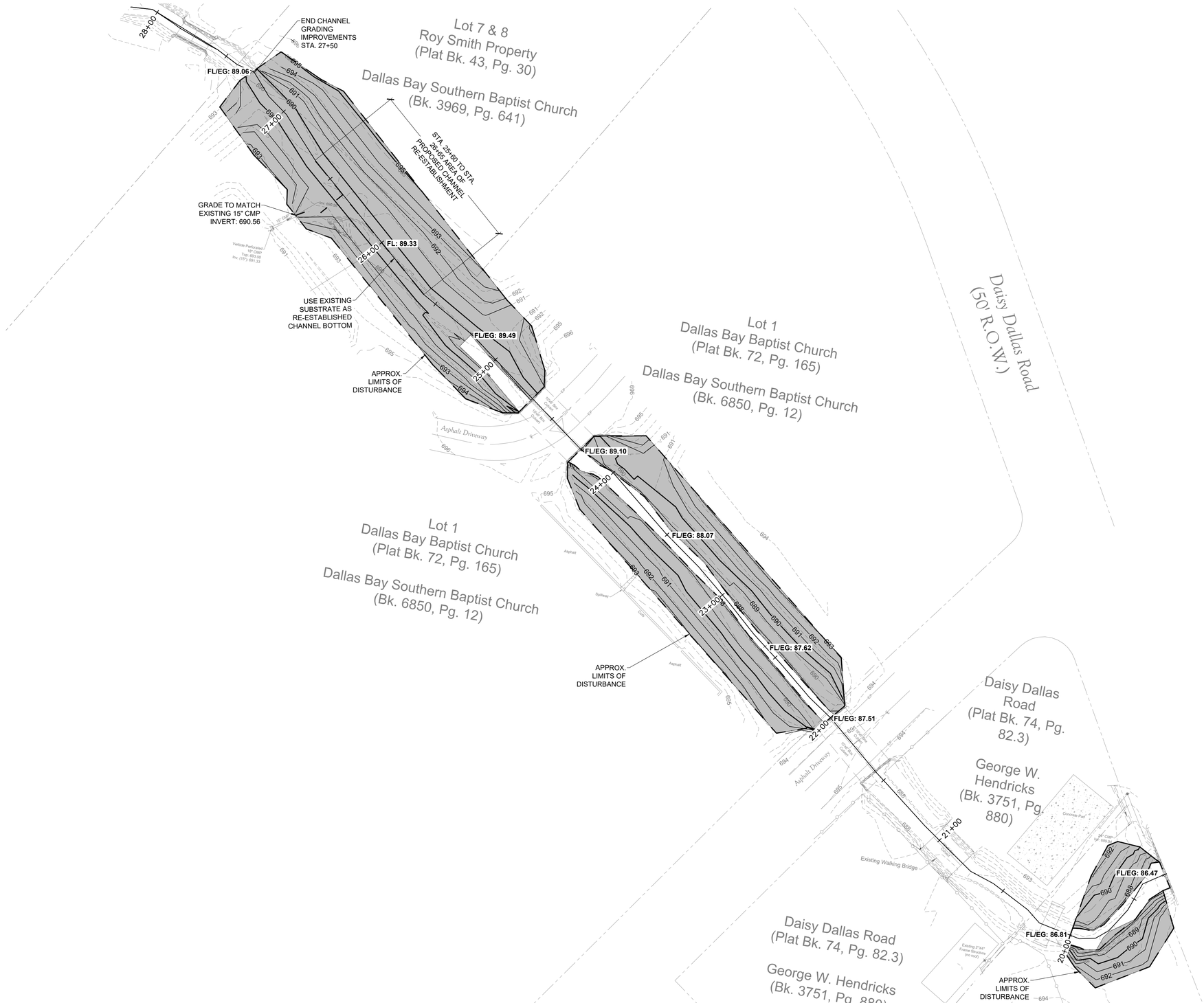
PROJECT NO.	23-0130
DATE	03/08/2025
SCALE	AS SHOWN
DESIGNED BY	ASA
DRAWN BY	ASA
CHECKED BY	ASA

TITLE

CHANNEL GRADING PLAN ENLARGEMENT 1

SHEET NO.

C3.0



STA 19+00 TO STA 27+50

SITE DATA:

PROPERTY INFORMATION

CHANNEL IMPROVEMENT AREA: DALLAS LAKE TO HALE ROAD

CLIENT:
CITY OF LAKESITE
KIRSTEN ERT ACUFF
9201 ROCKY POINT ROAD
LAKESITE, TN 37379
423-842-2533
KERT@LAKESITETN.GOV

PROJECT ENGINEER:
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201 CHEROKEE BLVD., SUITE 101
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GRADING LEGEND

EG	EXISTING GRADE
FG	FINISHED GRADE OF CHANNEL SIDE SLOPE
FL	FINISHED GRADE AT CHANNEL FLOWLINE

LEGEND

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CHEL A. TRANMER
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AGRICULTURE
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No. 120578
STATE OF TENNESSEE
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LAKESITE, TN 37379
FOR
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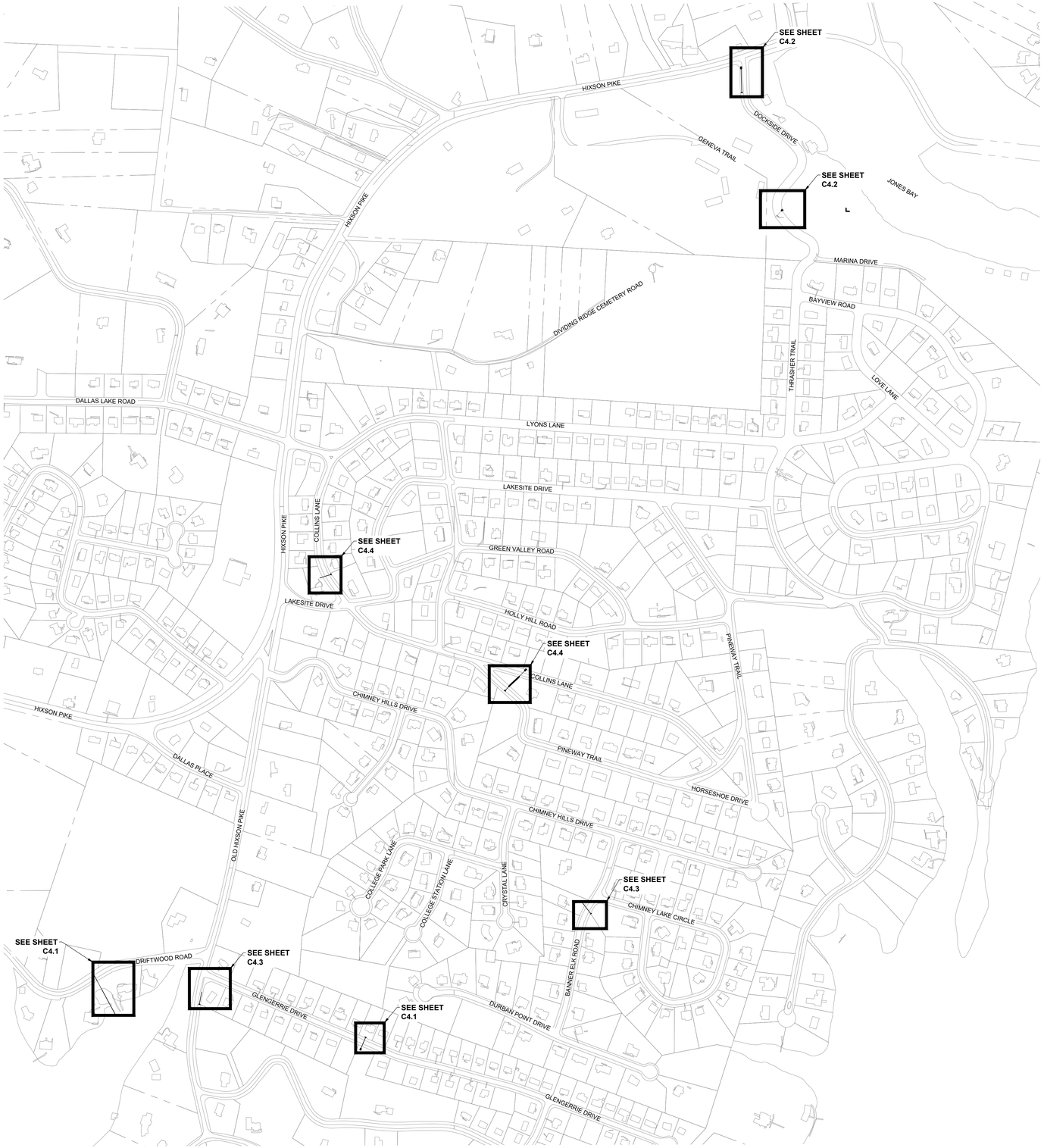
CHECKED BY	ASA

TITLE

CHANNEL GRADING PLAN ENLARGEMENT 2

SHEET NO.

C3.1



SITE DATA:

PROPERTY INFORMATION:

CULVERT IMPROVEMENT AREAS: 2228 DRIFTWOOD ROAD, 9291 BANNER ELK ROAD, 2373 GLENGERRIE DRIVE, DOCKSIDE AT GENEVA TRAIL, DOCKSIDE DRIVE AT HIXSON PIKE, 918 OLD HIXSON PIKE, 2304 PINEWAY TRAIL, 2123 COLLINS LANE

CLIENT:
CITY OF LAKESITE
KIRSTEN ERT ACUFF
9201 ROCKY POINT ROAD
LAKESITE, TN 37379
423-842-2533
KERT@LAKESITETN.GOV

PROJECT ENGINEER:
ASA ENGINEERING & CONSULTING, INC.
201 CHEROKEE BLVD., SUITE 101
CHATTANOOGA, TN 37405
423.805.3700

SURVEY INFORMATION:
FIELD SURVEY WAS NOT CONDUCTED FOR THE CULVERT REPAIRS/REPLACEMENTS. TOPOGRAPHIC INFORMATION SHOWN IS REPRESENTATIVE OF HAMILTON COUNTY GIS CONTOURS.

Know what's **below.**
Call before you dig.

0 300 600 Feet

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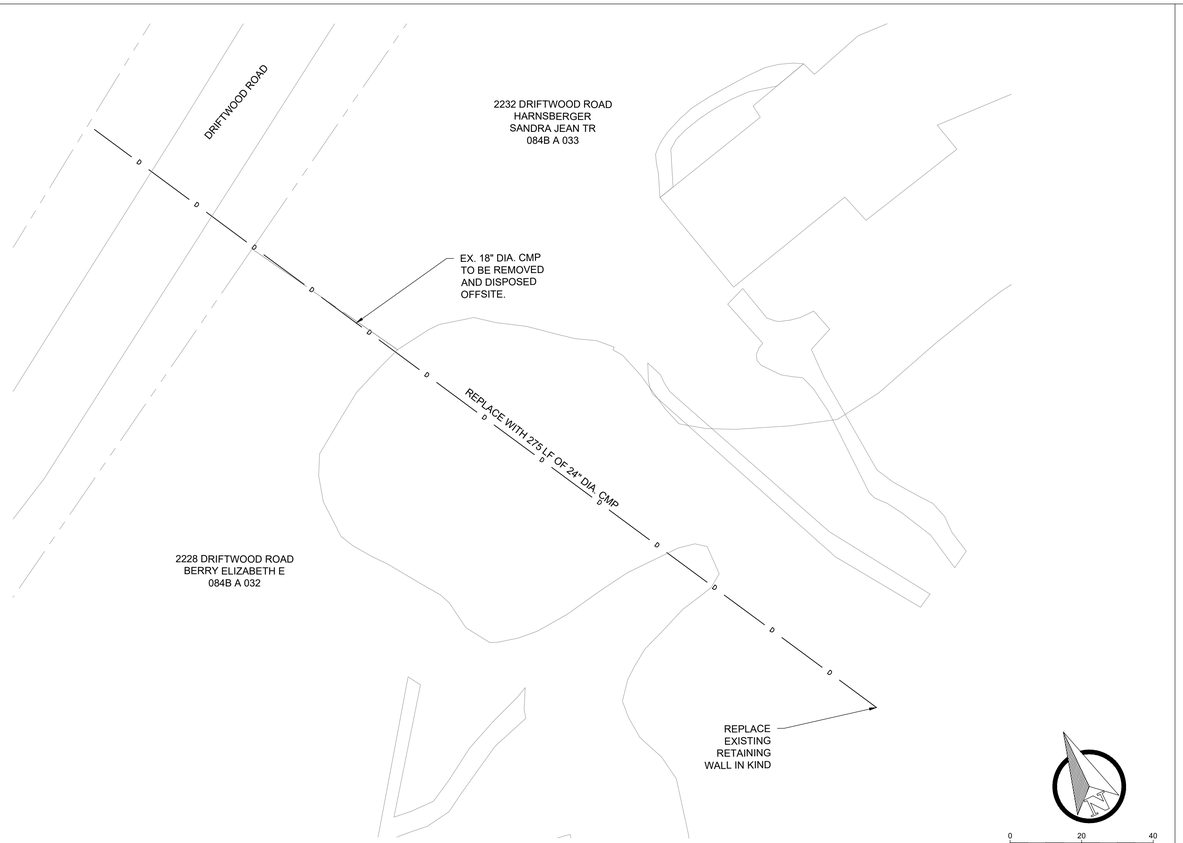
CHECKED BY	ASA

TITLE

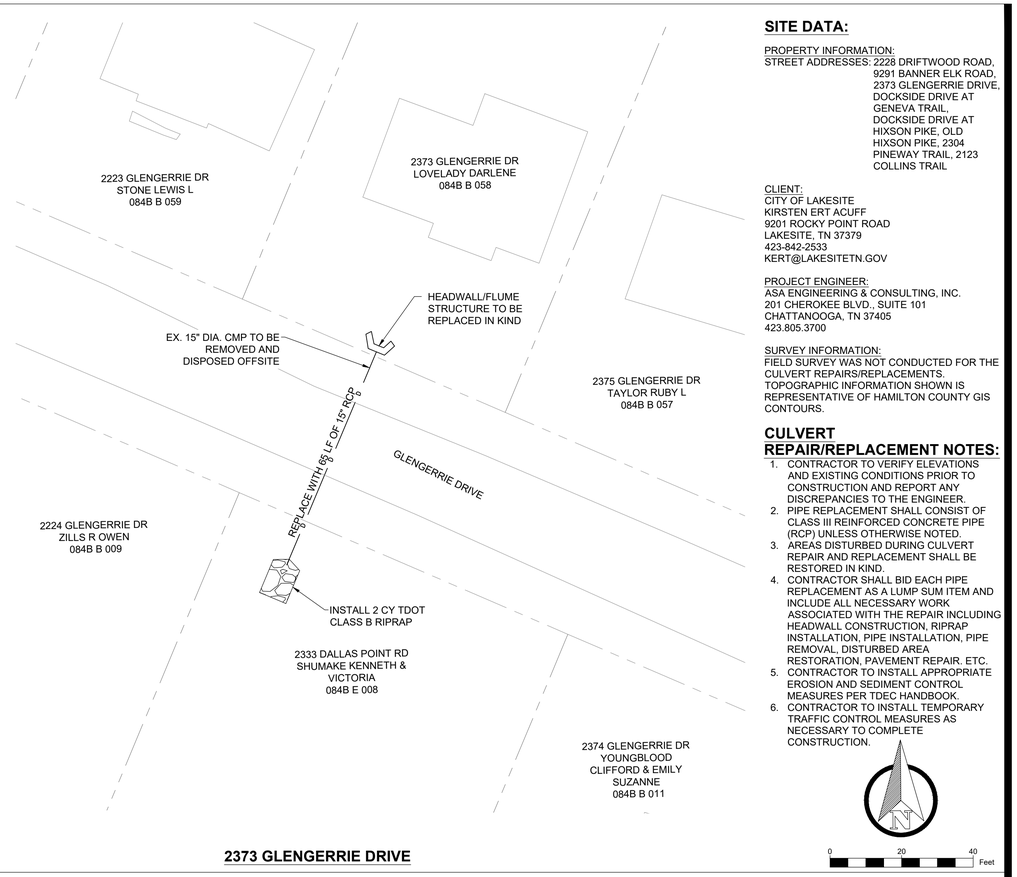
OVERALL CULVERT REPAIR PLAN

SHEET NO.

C4.0



2228 DRIFTWOOD ROAD



2373 GLENGERRIE DRIVE

SITE DATA:

PROPERTY INFORMATION:
STREET ADDRESSES: 2228 DRIFTWOOD ROAD, 9291 BANNER ELK ROAD, 2373 GLENGERRIE DRIVE, DOCKSIDE DRIVE AT GENEVA TRAIL, DOCKSIDE DRIVE AT HIXSON PIKE, OLD HIXSON PIKE, 2304 PINEWAY TRAIL, 2123 COLLINS TRAIL

CLIENT:
CITY OF LAKESITE
KIRSTEN ERT ACUFF
9201 ROCKY POINT ROAD
LAKESITE, TN 37379
423-842-2533
KERT@LAKESITETN.GOV

PROJECT ENGINEER:
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SURVEY INFORMATION:
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2. PIPE REPLACEMENT SHALL CONSIST OF CLASS III REINFORCED CONCRETE PIPE (RCP) UNLESS OTHERWISE NOTED.
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4. CONTRACTOR SHALL BID EACH PIPE REPLACEMENT AS A LUMP SUM ITEM AND INCLUDE ALL NECESSARY WORK ASSOCIATED WITH THE REPAIR INCLUDING HEADWALL CONSTRUCTION, RIPRAP INSTALLATION, PIPE INSTALLATION, PIPE REMOVAL, DISTURBED AREA RESTORATION, PAVEMENT REPAIR. ETC.
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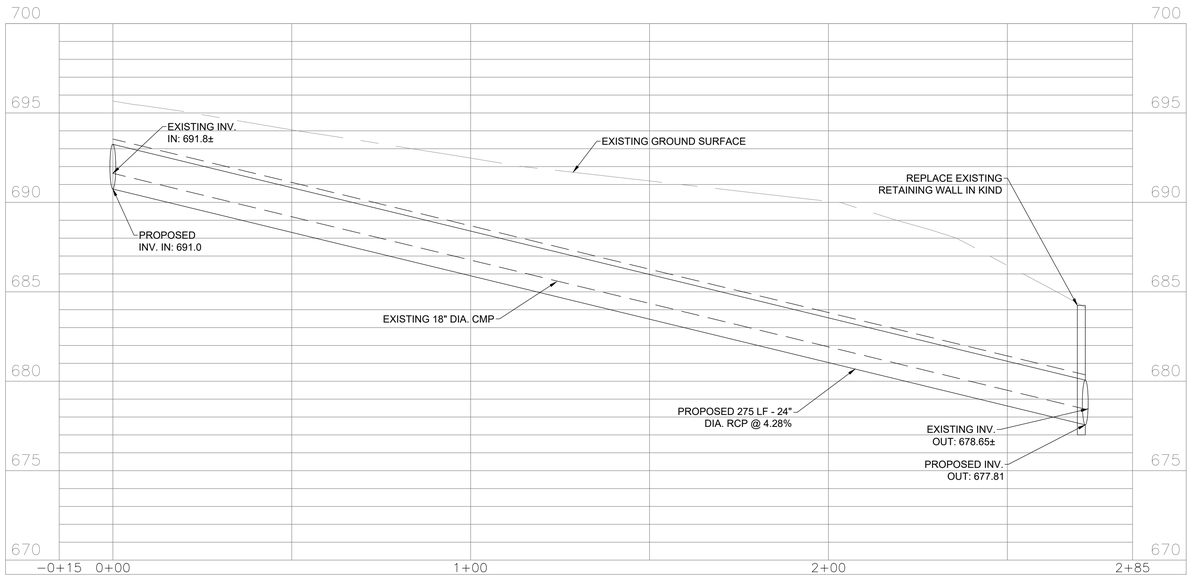
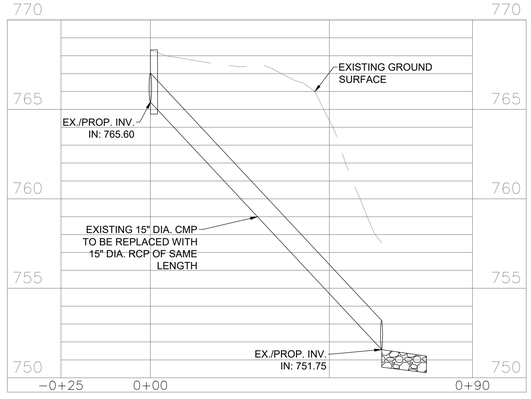
PROFILE SCALE:
HORIZONTAL: 1"=20'
VERTICAL: 1"=4'



PROFILE SCALE:
HORIZONTAL: 1"=20'
VERTICAL: 1"=4'



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SEAL

ISSUED FOR BID

LAKESITE STORMWATER IMPROVEMENTS

LAKESITE, TN 37379
FOR
CITY OF LAKESITE

No.	Revision/Issue	Date

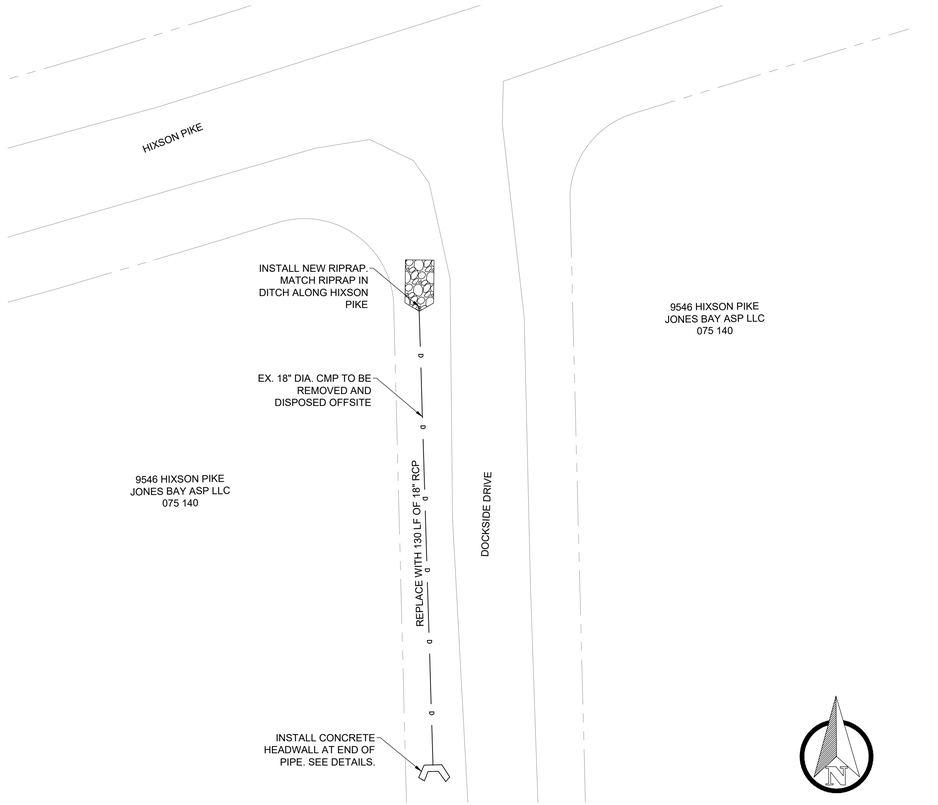
PROJECT NO.	23-0130
DATE	03/08/2025
SCALE	AS SHOWN
DESIGNED BY	ASA
DRAWN BY	ASA
CHECKED BY	ASA

TITLE

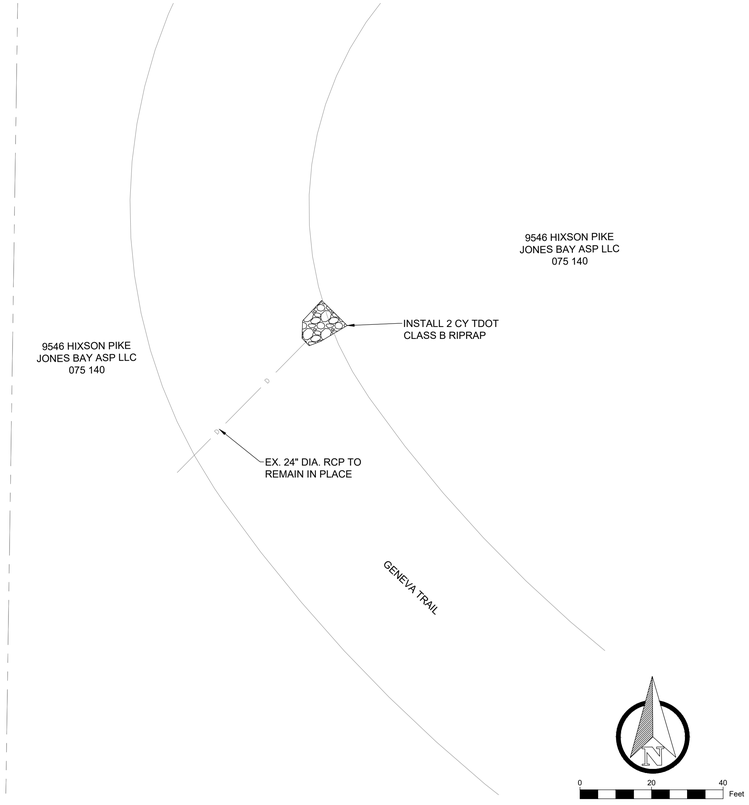
CULVERT REPAIR PLAN 1

SHEET NO.

C4.1



DOCKSIDE DRIVE AT HIXSON PIKE



DOCKSIDE DRIVE AT GENEVA TRAIL

SITE DATA:

PROPERTY INFORMATION:
STREET ADDRESSES: 2228 DRIFTWOOD ROAD, 9291 BANNER ELK ROAD, 2373 GLENGERRIE DRIVE, DOCKSIDE DRIVE AT GENEVA TRAIL, DOCKSIDE DRIVE AT HIXSON PIKE, OLD HIXSON PIKE, 2304 PINEWAY TRAIL, 2123 COLLINS TRAIL

CLIENT:
CITY OF LAKESITE
KIRSTEN ERT ACUFF
9201 ROCKY POINT ROAD
LAKESITE, TN 37379
423-842-2533
KERT@LAKESITETN.GOV

PROJECT ENGINEER:
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423.805.3700

SURVEY INFORMATION:
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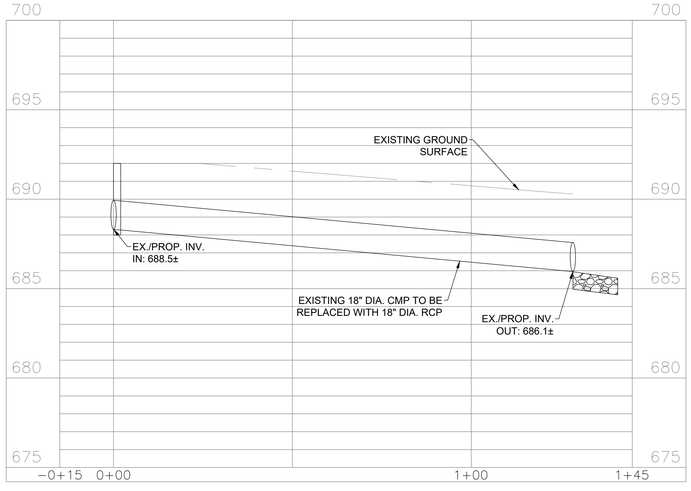
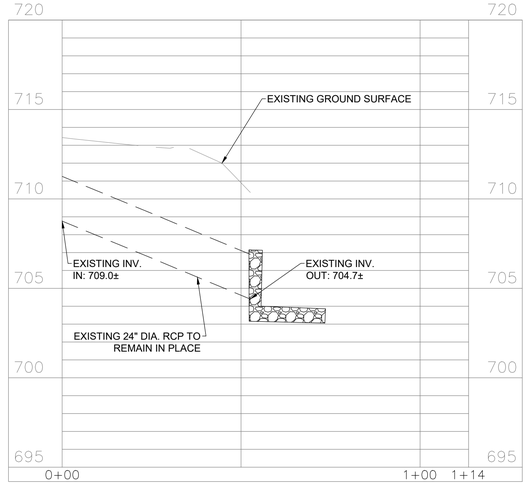
PROFILE SCALE:

HORIZONTAL: 1"=20'
VERTICAL: 1"=4'



PROFILE SCALE:

HORIZONTAL: 1"=20'
VERTICAL: 1"=4'



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SEAL

RACHEL A. TRAMEL
TENNESSEE
AGRICULTURE
COMMERCE
No. 120578
STATE OF TENNESSEE
3-7-2025

ISSUED FOR BID

LAKESITE STORMWATER IMPROVEMENTS

LAKESITE, TN 37379
FOR
CITY OF LAKESITE

No.	Revision/Issue	Date

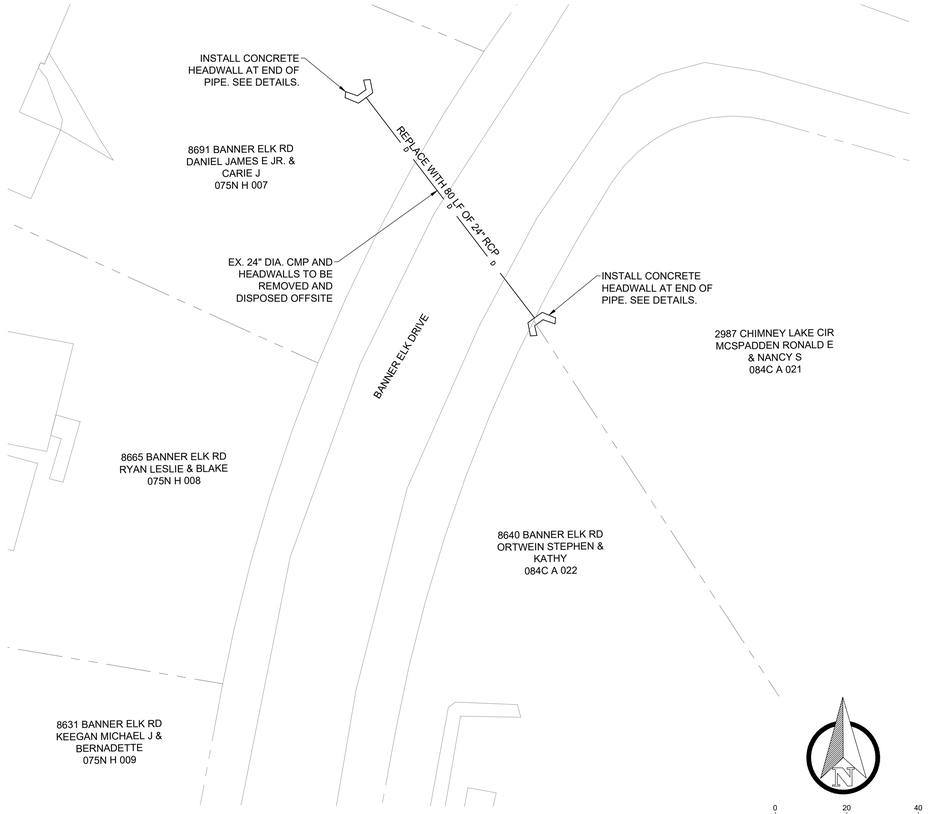
PROJECT NO.	23-0130
DATE	03/08/2025
SCALE	AS SHOWN
DESIGNED BY	ASA
DRAWN BY	ASA
CHECKED BY	ASA

TITLE

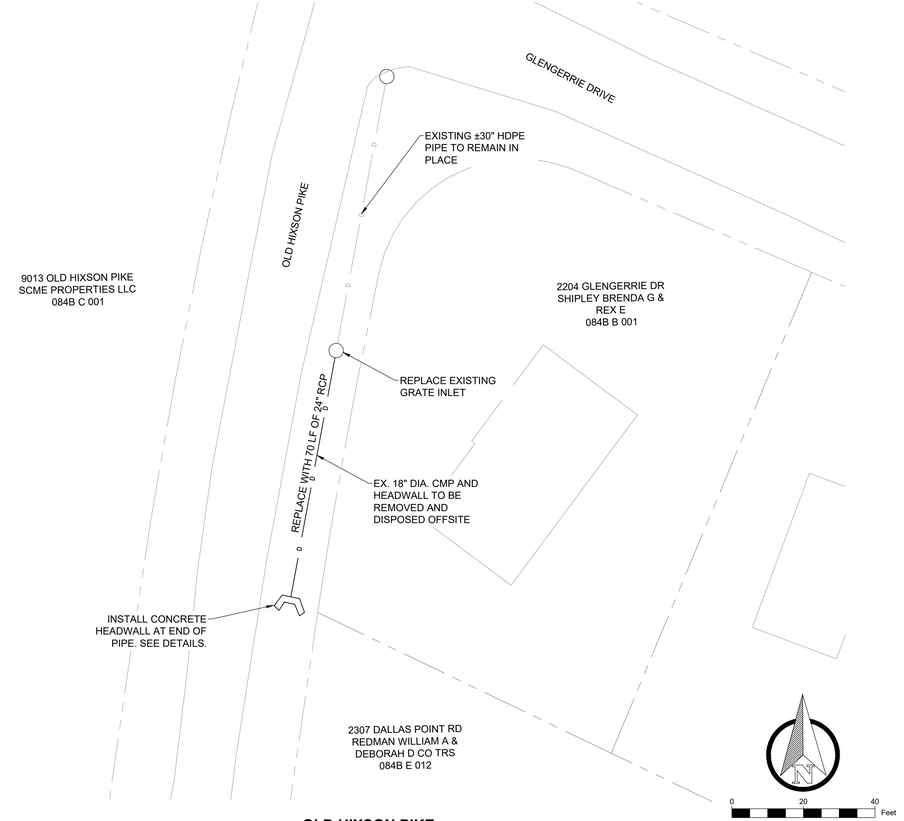
CULVERT REPAIR PLAN 2

SHEET NO.

C4.2



8691 BANNER ELK DRIVE



OLD HIXSON PIKE

SITE DATA:

PROPERTY INFORMATION:
STREET ADDRESSES: 2228 DRIFTWOOD ROAD, 9291 BANNER ELK ROAD, 2373 GLENGERRIE DRIVE, DOCKSIDE DRIVE AT GENEVA TRAIL, DOCKSIDE DRIVE AT HIXSON PIKE, OLD HIXSON PIKE, 2304 PINEWAY TRAIL, 2123 COLLINS TRAIL

CLIENT:
CITY OF LAKESITE
KIRSTEN ERT ACUFF
9201 ROCKY POINT ROAD
LAKESITE, TN 37379
423-842-2533
KERT@LAKESITETN.GOV

PROJECT ENGINEER:
ASA ENGINEERING & CONSULTING, INC.
201 CHEROKEE BLVD., SUITE 101
CHATTANOOGA, TN 37405
423.805.3700

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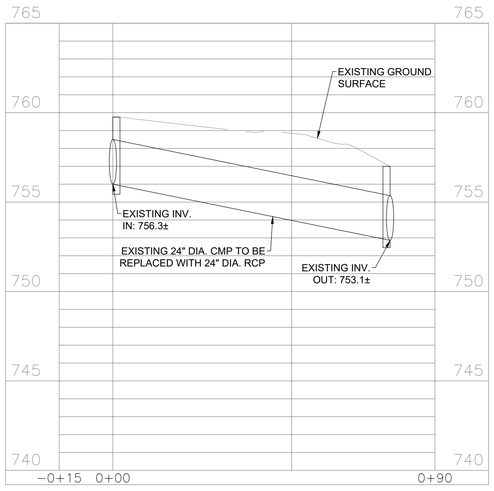
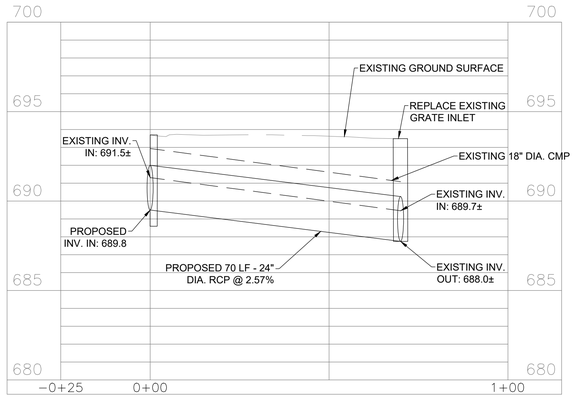
PROFILE SCALE:
HORIZONTAL: 1"=20'
VERTICAL: 1"=4'



PROFILE SCALE:
HORIZONTAL: 1"=20'
VERTICAL: 1"=4'



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SEAL

RACHEL A. TRANEL — TENNESSEE — AGRICULTURE — COMMERCE — No. 120578 — STATE OF TENNESSEE
3-7-2025

ISSUED FOR BID

LAKESITE STORMWATER IMPROVEMENTS

LAKESITE, TN 37379
FOR
CITY OF LAKESITE

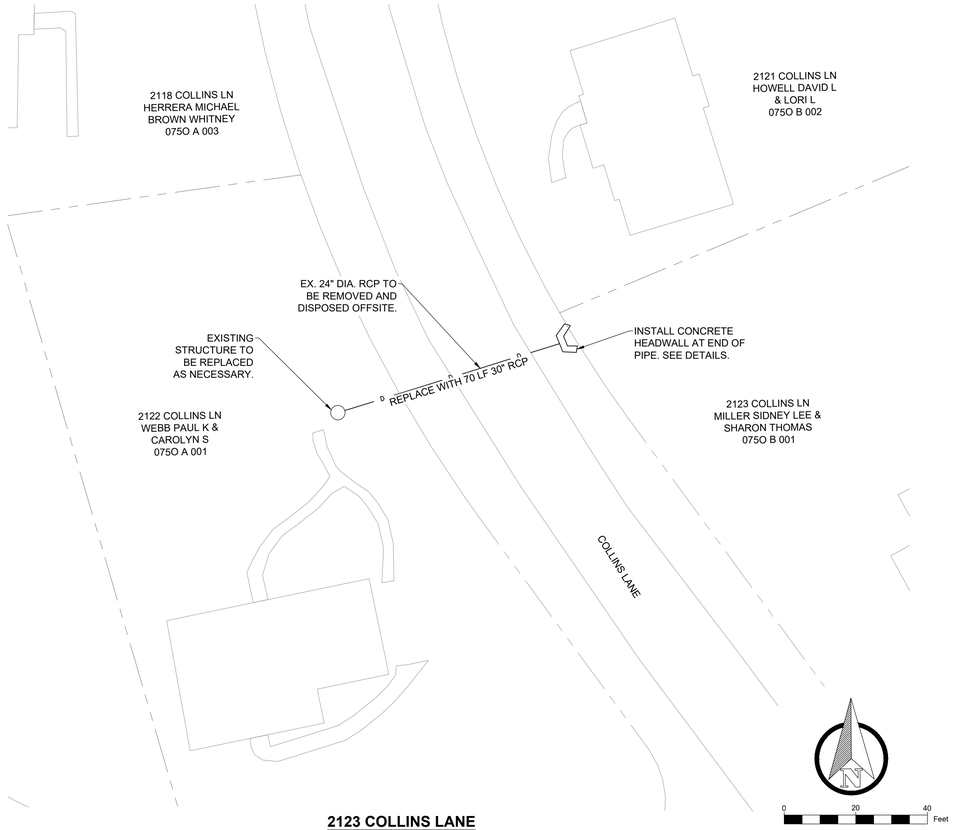
No.	Revision/Issue	Date

PROJECT NO.	23-0130
DATE	03/08/2025
SCALE	AS SHOWN
DESIGNED BY	ASA
DRAWN BY	ASA
CHECKED BY	ASA
TITLE	

CULVERT REPAIR PLAN 3

SHEET NO.

C4.3

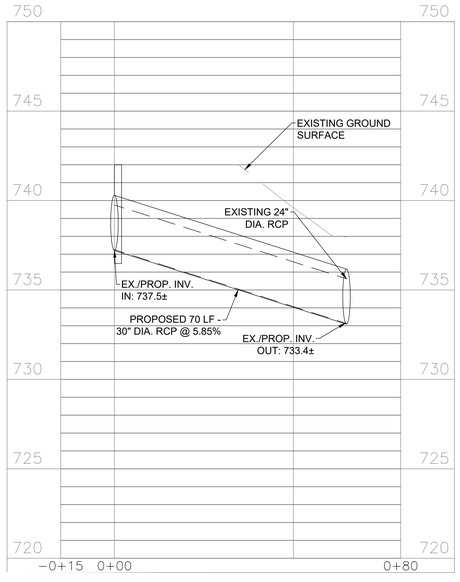


2123 COLLINS LANE

2304 PINEWAY TRAIL

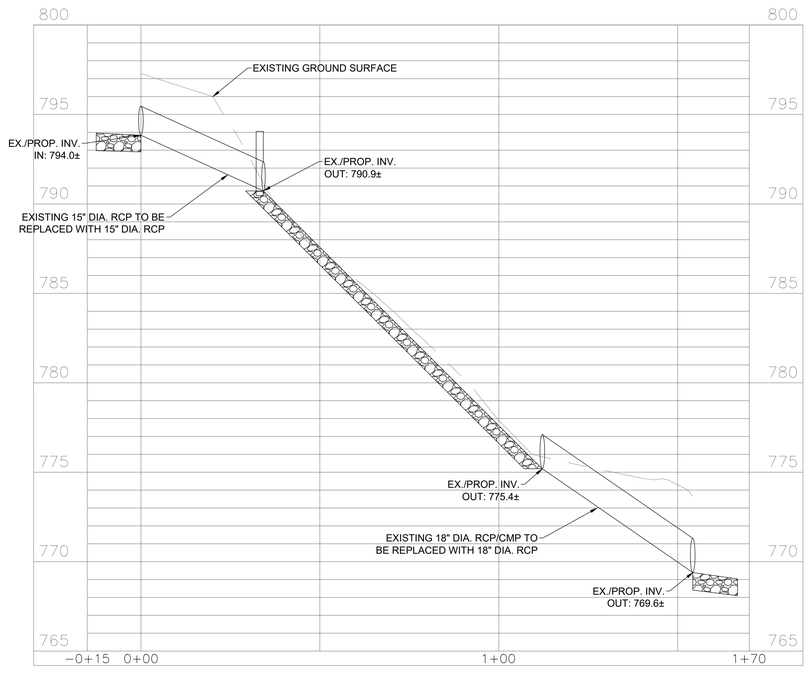
PROFILE SCALE:

HORIZONTAL: 1"=20'
VERTICAL: 1"=4'



PROFILE SCALE:

HORIZONTAL: 1"=20'
VERTICAL: 1"=4'



SITE DATA:

PROPERTY INFORMATION:
STREET ADDRESSES: 2228 DRIFTWOOD ROAD, 9291 BANNER ELK ROAD, 2373 GLENGERRIE DRIVE, DOCKSIDE DRIVE AT GENEVA TRAIL, DOCKSIDE DRIVE AT HIXSON PIKE, OLD HIXSON PIKE, 2304 PINEWAY TRAIL, 2123 COLLINS TRAIL

CLIENT:
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KIRSTEN ERT ACUFF
9201 ROCKY POINT ROAD
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PROJECT ENGINEER:
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423.805.3700

SURVEY INFORMATION:
FIELD SURVEY WAS NOT CONDUCTED FOR THE CULVERT REPAIRS/REPLACEMENTS. TOPOGRAPHIC INFORMATION SHOWN IS REPRESENTATIVE OF HAMILTON COUNTY GIS CONTOURS.

CULVERT REPAIR/REPLACEMENT NOTES:

1. CONTRACTOR TO VERIFY ELEVATIONS AND EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO THE ENGINEER.
2. PIPE REPLACEMENT SHALL CONSIST OF CLASS III REINFORCED CONCRETE PIPE (RCP) UNLESS OTHERWISE NOTED.
3. AREAS DISTURBED DURING CULVERT REPAIR AND REPLACEMENT SHALL BE RESTORED IN KIND.
4. CONTRACTOR SHALL BID EACH PIPE REPLACEMENT AS A LUMP SUM ITEM AND INCLUDE ALL NECESSARY WORK ASSOCIATED WITH THE REPAIR INCLUDING HEADWALL CONSTRUCTION, RIPRAP INSTALLATION, PIPE INSTALLATION, PIPE REMOVAL, DISTURBED AREA RESTORATION, PAVEMENT REPAIR. ETC.
5. CONTRACTOR TO INSTALL APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES PER TDEC HANDBOOK.
6. CONTRACTOR TO INSTALL TEMPORARY TRAFFIC CONTROL MEASURES AS NECESSARY TO COMPLETE CONSTRUCTION.

Know what's **below.**
Call before you dig.

ANY LOCATIONS OF UNDERGROUND UTILITIES AS SHOWN HEREON ARE BASED ON ABOVEGROUND STRUCTURES AND RECORD DRAWINGS PROVIDED THE SURVEYOR AND MAY VARY FROM LOCATIONS SHOWN HEREON. ADDITIONAL BURIED UTILITIES/STRUCTURES MY BE ENCOUNTERED. NO EXCAVATIONS WERE MADE DURING THE PROGRESS OF THIS SURVEY TO LOCATE BURIED UTILITIES/STRUCTURES. FOR INFORMATION REGARDING THESE UTILITIES, CONTACT THE APPROPRIATE AGENCIES.

ASA
ENGINEERING & CONSULTING, INC.
201 CHEROKEE BLVD., SUITE 101
CHATTANOOGA, TN 37405
WWW.ASAENGINEERINGINC.COM
423.805.3700

SEAL

ISSUED FOR BID

LAKESITE STORMWATER IMPROVEMENTS

LAKESITE, TN 37379
FOR
CITY OF LAKESITE

No.	Revision/Issue	Date

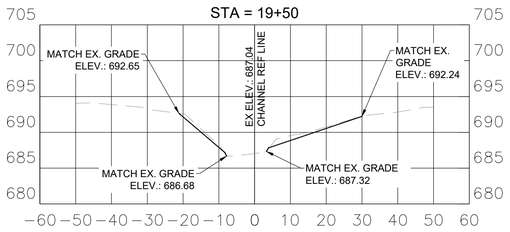
PROJECT NO.	23-0130
DATE	03/08/2025
SCALE	AS SHOWN
DESIGNED BY	ASA
DRAWN BY	ASA
CHECKED BY	ASA

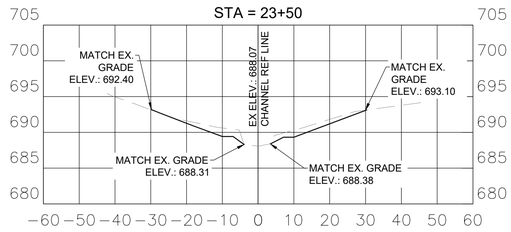
TITLE

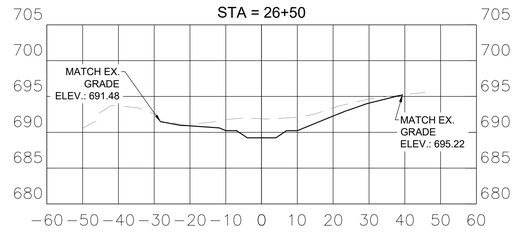
CULVERT REPAIR PLAN 4

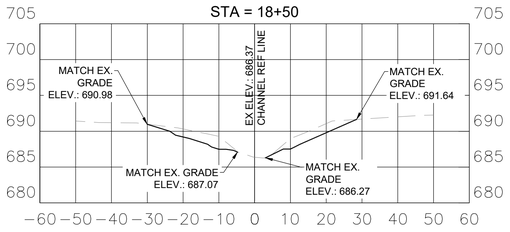
SHEET NO.

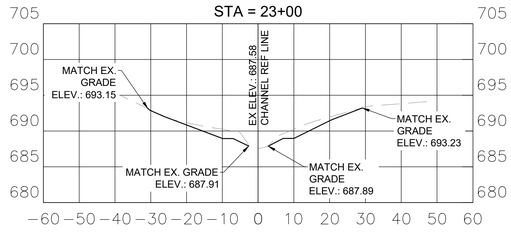
C4.4

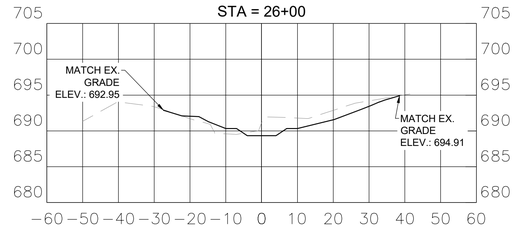


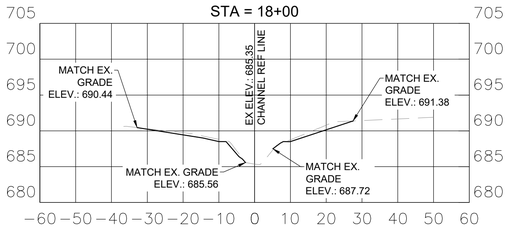


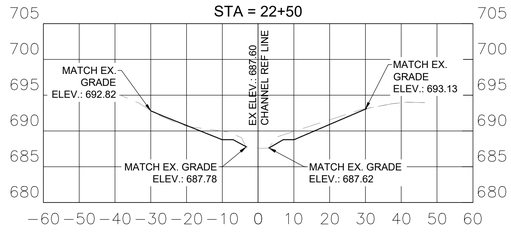


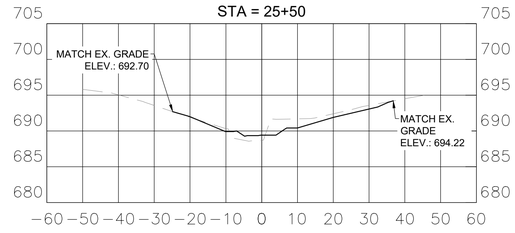


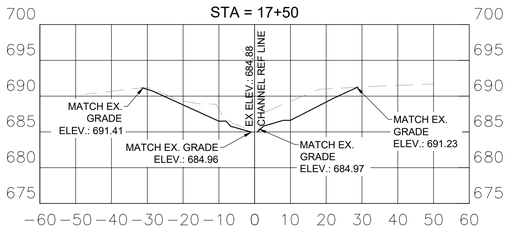


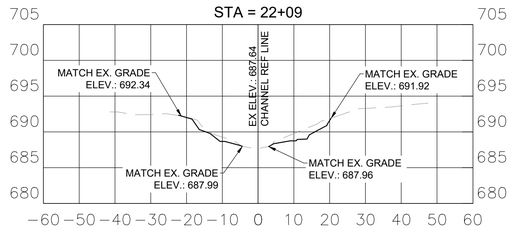


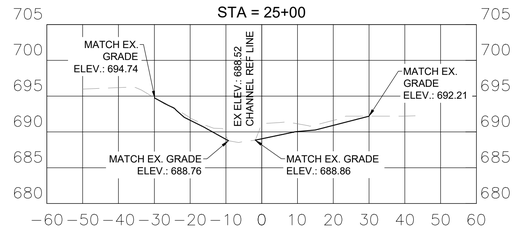


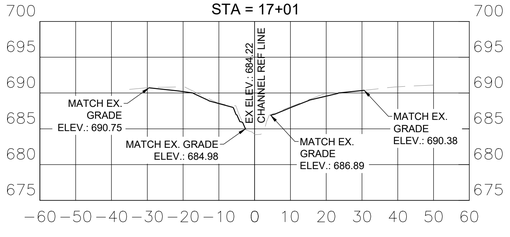


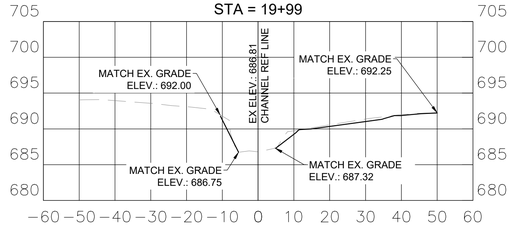


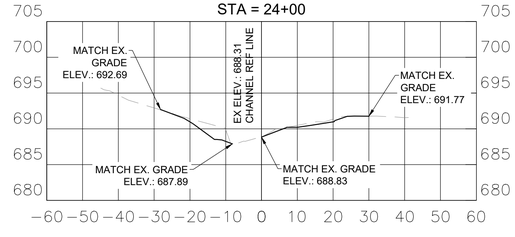


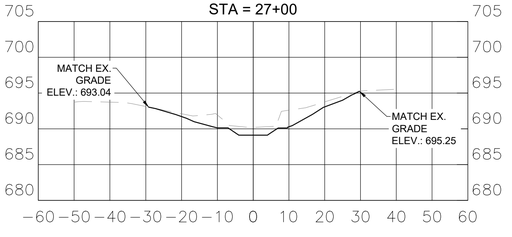












SITE DATA:

PROPERTY INFORMATION:

CHANNEL IMPROVEMENT AREA: DALLAS LAKE TO HALE ROAD

CLIENT:
CITY OF LAKESITE
KIRSTEN ERT ACUFF
9201 ROCKY POINT ROAD
LAKESITE, TN 37379
423-842-2533
KERT@LAKESITETN.GOV

PROJECT ENGINEER:
ASA ENGINEERING & CONSULTING, INC.
201 CHEROKEE BLVD., SUITE 101
CHATTANOOGA, TN 37405
423.805.3700

SURVEY INFORMATION:
BOUNDARY AND TOPOGRAPHIC INFORMATION FOR THE CHANNEL TAKEN FROM A SURVEY BY ROGER RIEMER; ASA ENGINEERING & CONSULTING, INC. IN A DRAWING NAMED "23-0130 SURVEY.DWG" DATED FEBRUARY 12, 2024.

PROFILE SCALE:	
HORIZONTAL:	1"=20'
VERTICAL:	1"=10'

GENERAL NOTES:

1. CHANNEL SIDE SLOPES NOT TO EXCEED 3:1 MAXIMUM SLOPE.

ASA
ENGINEERING & CONSULTING, INC.
201 CHEROKEE BLVD., SUITE 101
CHATTANOOGA, TN 37405
WWW.ASAENGINEERINGINC.COM
423.805.3700

SEAL

RACHEL A. TRAMEL
REGISTERED
AGRICULTURE
ENGINEER
CONSERVICE
No. 120578
STATE OF TENNESSEE
3-7-2025

ISSUED FOR BID

LAKESITE STORMWATER IMPROVEMENTS

LAKESITE, TN 37379
FOR
CITY OF LAKESITE

No.	Revision/Issue	Date

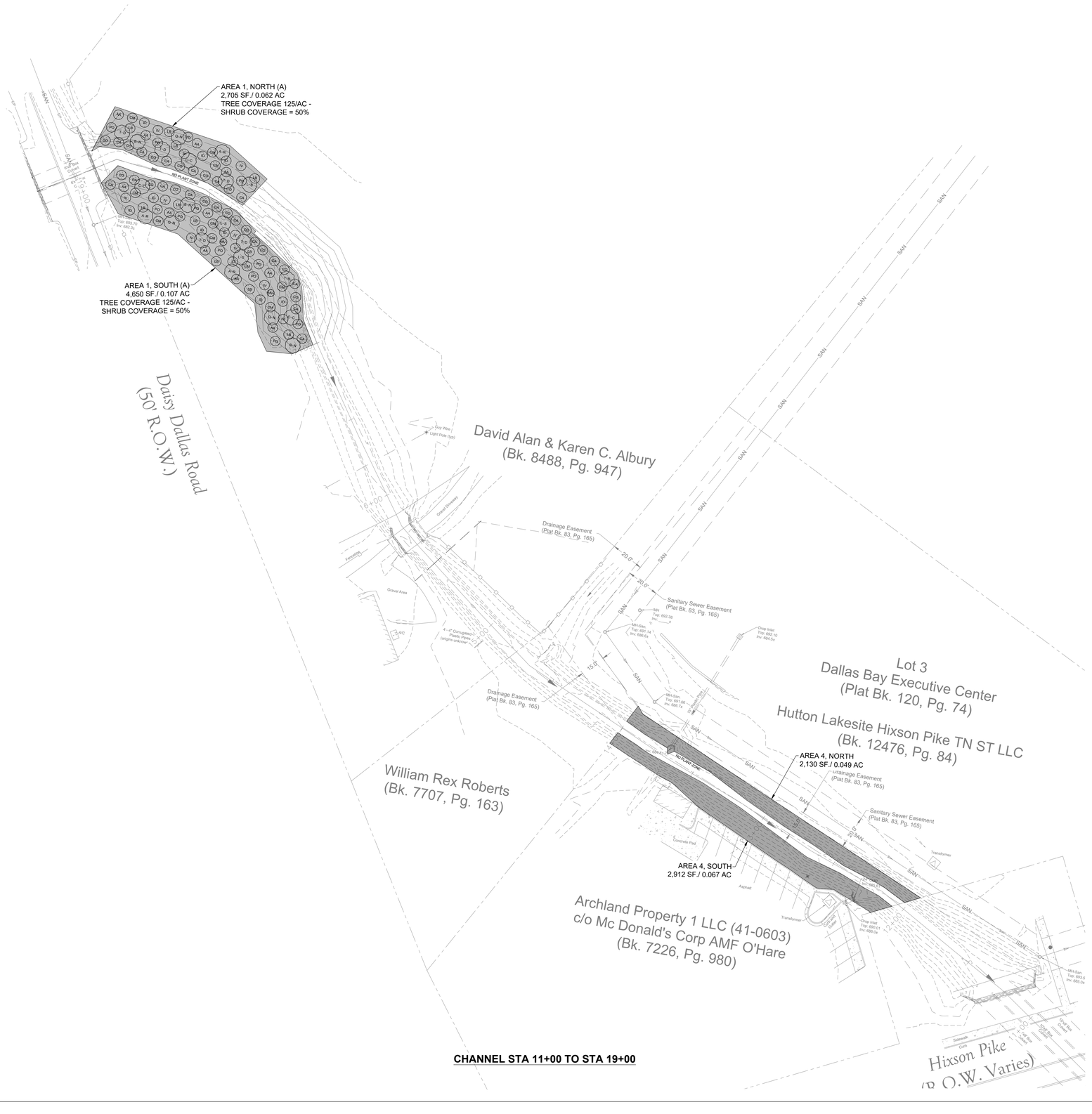
PROJECT NO.	23-0130
DATE	03/08/2025
SCALE	AS SHOWN
DESIGNED BY	ASA
DRAWN BY	ASA
CHECKED BY	ASA

TITLE

CHANNEL CROSS-SECTIONS

SHEET NO.

C5.0



CHANNEL STA 11+00 TO STA 19+00

SITE DATA:

PROPERTY INFORMATION:

CHANNEL IMPROVEMENT AREA: DALLAS LAKE TO HALE ROAD

CLIENT:
CITY OF LAKESITE
KIRSTEN ERT ACUFF
9201 ROCKY POINT ROAD
LAKESITE, TN 37379
423-842-2533
KERT@LAKESITETN.GOV

PROJECT ENGINEER:
ASA ENGINEERING & CONSULTING, INC.
201 CHEROKEE BLVD., SUITE 101
CHATTANOOGA, TN 37405
423.805.3700

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LANDSCAPE LEGEND

C-C	LARGE TREE CC=ID (IDENTIFIER)
M-V	SMALL TREE MV = ID (IDENTIFIER)
CC	SHRUB MASS (40 SF, 10 PLANTS EACH) CC= ID (IDENTIFIER)
	MIX 168 - SOUTHERN RIARIAN BUFFER MIX BY : ROUNDSTONE NATIVE SEED COMPANY INSTALL EROSION CONTROL MATERIAL, COIR MAT40 HYDROSEED MIX168 COMBINED WITH TEMPORARY SEED MIX

ASA
ENGINEERING & CONSULTING, INC.
201 CHEROKEE BLVD., SUITE 101
CHATTANOOGA, TN 37405
WWW.ASAENGINEERINGINC.COM
423.805.3700

SEAL

KEVIN TUCKER REGISTERED LANDSCAPE ARCHITECT TENNESSEE NO. 2517 COMMERCE AGRICULTURE 5/31/25

ISSUED FOR BID

LAKESITE STORMWATER IMPROVEMENTS

LAKESITE, TN 37379
FOR
CITY OF LAKESITE

No.	Revision/Issue	Date

PROJECT NO.	23-0130
DATE	03/08/2025
SCALE	AS SHOWN
DESIGNED BY	ASA
DRAWN BY	ASA
CHECKED BY	ASA

TITLE

LANDSCAPE PLAN ENLARGEMENT 1

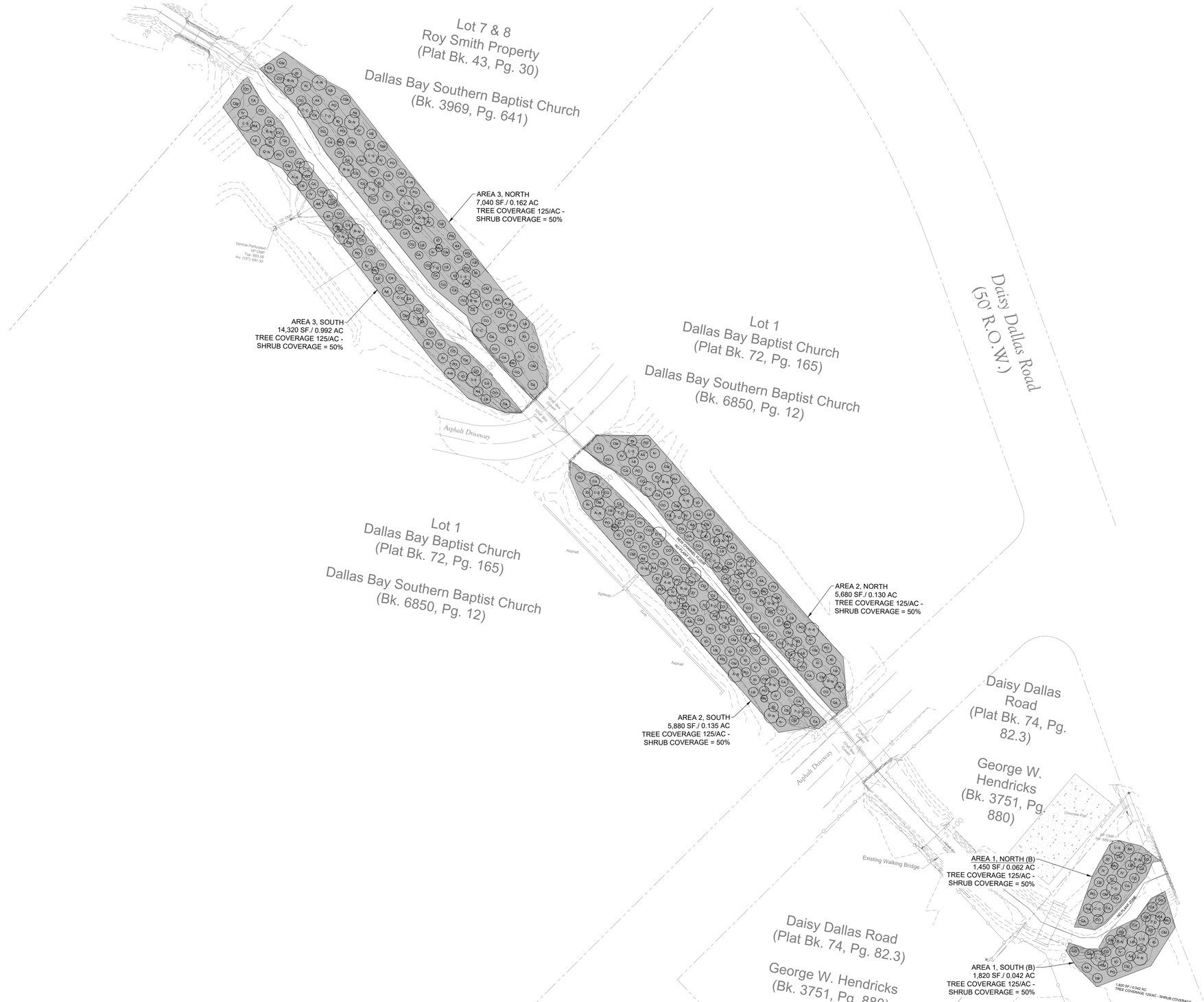
SHEET NO.

C6.0

811 Know what's below. Call before you dig.

0 30 60 Feet

ANY LOCATIONS OF UNDERGROUND UTILITIES AS SHOWN HEREON ARE BASED ON ABOVEGROUND STRUCTURES AND RECORD DRAWINGS PROVIDED THE SURVEYOR AND MAY VARY FROM LOCATIONS SHOWN HEREON. ADDITIONAL BURIED UTILITIES/STRUCTURES MY BE ENCOUNTERED. NO EXCAVATIONS WERE MADE DURING THE PROGRESS OF THIS SURVEY TO LOCATE BURIED UTILITIES/STRUCTURES. FOR INFORMATION REGARDING THESE UTILITIES, CONTACT THE APPROPRIATE AGENCIES.



STA 19+00 TO STA 27+50

SITE DATA:

PROPERTY INFORMATION

CHANNEL IMPROVEMENT AREA: DALLAS LAKE TO HALE ROAD

CLIENT:
CITY OF LAKESITE
KIRSTEN ERT ACUFF
9201 ROCKY POINT ROAD
LAKESITE, TN 37379
423-842-2533
KERT@LAKESITETN.GOV

PROJECT ENGINEER:
ASA ENGINEERING & CONSULTING, INC.
201 CHEROKEE BLVD., SUITE 101
CHATTANOOGA, TN 37405
423.805.3700

SURVEY INFORMATION:
BOUNDARY AND TOPOGRAPHIC INFORMATION FOR THE CHANNEL TAKEN FROM A SURVEY BY ROGER RIEMER; ASA ENGINEERING & CONSULTING, INC. IN A DRAWING NAMED "23-0130 SURVEY.DWG" DATED FEBRUARY 12, 2024.

LANDSCAPE LEGEND

C-C	LARGE TREE CC=ID (IDENTIFIER)
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CC	SHRUB MASS (40 SF, 10 PLANTS EACH) CC= ID (IDENTIFIER)
	MIX 168 - SOUTHERN RIARIAN BUFFER MIX BY : ROUNDSTONE NATIVE SEED COMPANY INSTALL EROSION CONTROL MATERIAL, COIR MAT40 HYDROSEED MIX168 COMBINED WITH TEMPORARY SEED MIX

Know what's **below.**
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0 30 60 Feet

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CHATTANOOGA, TN 37405
WWW.ASAENGINEERINGINC.COM
423.805.3700

SEAL

KEVIN TUCKER
REGISTERED
AGRICULTURE
COMMERCE
TENNESSEE NO. 257
LANDSCAPE ARCHITECT
3/28/25

ISSUED FOR BID

LAKESITE STORMWATER IMPROVEMENTS

LAKESITE, TN 37379
FOR
CITY OF LAKESITE

No.	Revision/Issue	Date
1		

PROJECT NO.	23-0130
DATE	03/08/2025
SCALE	AS SHOWN
DESIGNED BY	ASA
DRAWN BY	ASA
CHECKED BY	ASA

TITLE

LANDSCAPE PLAN ENLARGEMENT 2

SHEET NO.

C6.1

AREA 1, NORTH, A&B

ID	Qty	Botanical Name	Common Name	Type	Height	Spread	Medium	Specification/Comments
		TREES						
CC	2	Carpinus Caroliniana	Ironwood	D	10 FT	5 FT	B&B	Minimum 3" Caliper DBH
MV	1	Magnolia Virginiana	Sweetbay Magnolia	SE	8 FT	4 FT	B&B	Five Canes, Each 1" Caliper DBH
AR	1	Acer Rubrum	Red Maple	D	12 FT	6 FT	B&B	Minimum 3" Caliper DBH / Single Leader
BN	2	Betula Nigra	River Birch	D	10 FT	5 FT	B&B	Three canes each, 1" Caliper DBH
LS	2	Liquidambar Styracillua	Sweetgum	D	12 FT	6 FT	B&B	Minimum 3" Caliper DBH / Single Leader
QN	1	Quercus Nigra	Water Oak	D	12 FT	6 FT	B&B	Minimum 3" Caliper DBH / Single Leader
TD	4	Taxodium Distichum	Bald Cypress	E	12 FT	6 FT	B&B	Minimum 3" Caliper DBH / Single Leader
	13							
		SHRUBS						
AA	60	Aronia Arbutitolia	Red Chokeberry	D	14 IN	12 IN	C	Dense root mass
CM	50	Callicarpa Americana	American Beautyberry	D	14 IN	12 IN	C	Dense root mass
CO	100	Cephalanthus Occidentalis	Buttonbush	D	14 IN	12 IN	C	Dense root mass
CA	100	Cornus Amomum	Silky Dogwood	D	18 IN	12 IN	C	Dense root mass
ID	50	Ilex Decidua	Possumhaw Holly	D	14 IN	12 IN	C	Dense root mass
IV	50	Ilex Verticillata	Common Winterberry	E	14 IN	12 IN	C	Dense root mass
LB	60	Lindera Benzoin	Spicebush	D	14 IN	12 IN	C	Dense root mass
PO	50	Physocarpus Opulifolius	Ninebark	D	18 IN	12 IN	C	Dense root mass
	520							
		GRASSES						
EV		Elymus Virginicus	Virginia Wild Rye	G	Riparian Seed Mix			2.4% x 13.5 POUNDS/ACRE
EM		Echinochloa Muricata	Barnyard Grass	G	Riparian Seed Mix			0.5% x 13.5 POUNDS/ACRE
AP		Agrostis Perennans	Upland Bentgrass	G	Riparian Seed Mix			0.2% x 13.5 POUNDS/ACRE
AG		Andropogon Gerardii	Big Bluestem	G	Riparian Seed Mix			1.4% x 13.5 POUNDS/ACRE
PC		Panicum Clandestinum	Deer Tongue Grass	G	Riparian Seed Mix			1.4% x 13.5 POUNDS/ACRE
PA		Panicum Anceps	Fall Panicum	G	Riparian Seed Mix			1.4% x 13.5 POUNDS/ACRE
PV		Panicum Virgatum	Switchgrass	G	Riparian Seed Mix			2.4% x 13.5 POUNDS/ACRE
CV		Carex Vulpinoidea	Fox sedge	G	Riparian Seed Mix			0.48% x 13.5 POUNDS/ACRE
		WILDFLOWERS						
CM		Cassia Marilandica	Wild Senna	H-P	Riparian Seed Mix			1% x 13.5 POUNDS/ACRE
DI		Desmanthus Illinoensis	Illinois Bundleflower	H-P	Riparian Seed Mix			0.5% x 13.5 POUNDS/ACRE
HH		Heliopsis Helianthoides	False Sunflower	H-P	Riparian Seed Mix			0.6% x 13.5 POUNDS/ACRE
LSP		Liatris Spicate	Spiked Blazing Star	H-P	Riparian Seed Mix			0.5% x 13.5 POUNDS/ACRE
MF		Monarda Fistulosa	Bergamot	H-P	Riparian Seed Mix			0.1% x 13.5 POUNDS/ACRE
SP		Silphium Perfoliatum	Cup Plant	H-P	Riparian Seed Mix			1% x 13.5 POUNDS/ACRE
BA		Bidens Aristosa	Showy Thickseed	H-P	Riparian Seed Mix			0.6% x 13.5 POUNDS/ACRE
EF		Eupatorium Fistulosum	Joe-Pye Weed	H-P	Riparian Seed Mix			0.2% x 13.5 POUNDS/ACRE
HA		Helenium Autumnale	Sneezeweed	H-P	Riparian Seed Mix			0.2% x 13.5 POUNDS/ACRE
VA		Verbesina Alternifolia	Yellow Wingstem	H-P	Riparian Seed Mix			0.5% x 13.5 POUNDS/ACRE
VAI		Veronia Altissima	Iron Weed	H-P	Riparian Seed Mix			0.4% x 13.5 POUNDS/ACRE
HAN		Helianthus Angustifolius	Narrow-leaved Sunflower	H-P	Riparian Seed Mix			0.4% x 13.5 POUNDS/ACRE

LEGEND: ID = IDENTIFIER / QTY = QUANTITY / D = DECIDUOUS / E = EVERGREEN / H = HERBACEOUS / P = PERENNIAL / G = GRASS / C = CONTAINER / B&B = BALLED & BURLAPPED / BR = BARE ROOT / PG = PLUG/ DBH = DIAMETER AT BREAST HEIGHT

AREA 1, SOUTH, A&B

ID	Qty	Botanical Name	Common Name	Type	Height	Spread	Medium	Specification/Comments
		TREES						
CC	3	Carpinus Caroliniana	Ironwood	D	10 FT	5 FT	B&B	Minimum 3"Caliper DBH
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IV	90	Ilex Verticillata	Common Winterberry	E	14 IN	12 IN	C	Dense root mass
LB	90	Lindera Benzoin	Spicebush	D	14 IN	12 IN	C	Dense root mass
PO	90	Physocarpus Opulifolius	Ninebark	D	18 IN	12 IN	C	Dense root mass
	870							
		GRASSES						
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MF		Monarda Fistulosa	Bergamot	H-P	Riparian Seed Mix			0.1% x 13.5 POUNDS/ACRE
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VAI		Veronia Altissima	Iron Weed	H-P	Riparian Seed Mix			0.4% x 13.5 POUNDS/ACRE
HAN		Helianthus Angustifolius	Narrow-leaved Sunflower	H-P	Riparian Seed Mix			0.4% x 13.5 POUNDS/ACRE

LEGEND: ID = IDENTIFIER / QTY = QUANTITY / D = DECIDUOUS / E = EVERGREEN / H = HERBACEOUS / P = PERENNIAL / G = GRASS / C = CONTAINER / B&B = BALLED & BURLAPPED / BR = BARE ROOT / PG = PLUG/ DBH = DIAMETER AT BREAST HEIGHT

AREA 2, NORTH

ID	Qty	Botanical Name	Common Name	Type	Height	Spread	Medium	Specification/Comments
		TREES						
CC	3	Carpinus Caroliniana	Ironwood	D	10 FT	5 FT	B&B	Minimum 3" Caliper DBH
MV	3	Magnolia Virginiana	Sweetbay Magnolia	SE	8 FT	4 FT	B&B	Five Canes, Each 1" Caliper DBH
AR	3	Acer Rubrum	Red Maple	D	12 FT	6 FT	B&B	Minimum 3" Caliper DBH / Singe Leader
BN	2	Betula Nigra	River Birch	D	10 FT	5 FT	B&B	Three canes each, 1" caliper DBH
LS	2	Liquidambar Styracillua	Sweetgum	D	12 FT	6 FT	B&B	Minimum 3" Caliper DBH / Single Leader
QN	2	Quercus Nigra	Water Oak	D	12 FT	6 FT	B&B	Minimum 3" Caliper DBH / Single Leader
TD	3	Taxodium Distichum	Bald Cypress	E	12 FT	6 FT	B&B	Minimum 3" Caliper DBH / Single Leader
	18							
		SHRUBS						
AA	100	Aronia Arbutitolia	Red Chokeberry	D	14 IN	12 IN	C	Dense root mass
CM	90	Callicarpa Americana	American Beautyberry	D	14 IN	12 IN	C	Dense root mass
CO	120	Cephalanthus Occidentalis	Buttonbush	D	14 IN	12 IN	C	Dense root mass
CA	130	Cornus Amomum	Silky Dogwood	D	18 IN	12 IN	C	Dense root mass
ID	90	Ilex Decidua	Possumhaw Holly	D	14 IN	12 IN	C	Dense root mass
IV	90	Ilex Verticillata	Common Winterberry	E	14 IN	12 IN	C	Dense root mass
LB	80	Lindera Benzoin	Spicebush	D	14 IN	12 IN	C	Dense root mass
PO	90	Physocarpus Opulifolius	Ninebark	D	18 IN	12 IN	C	Dense root mass
	790							
		GRASSES						
EV		Elymus Virginicus	Virginia Wild Rye	G	Riparian Seed Mix			2.4% x 13.5 POUNDS/ACRE
EM		Echinochloa Muricata	Barnyard Grass	G	Riparian Seed Mix			0.5% x 13.5 POUNDS/ACRE
AP		Agrostis Perennans	Upland Bentgrass	G	Riparian Seed Mix			0.2% x 13.5 POUNDS/ACRE
AG		Andropogon Gerardii	Big Bluestem	G	Riparian Seed Mix			1.4% x 13.5 POUNDS/ACRE
PC		Panicum Clandestinum	Deer Tongue Grass	G	Riparian Seed Mix			1.4% x 13.5 POUNDS/ACRE
PA		Panicum Anceps	Fall Panicum	G	Riparian Seed Mix			1.4% x 13.5 POUNDS/ACRE
PV		Panicum Virgatum	Switchgrass	G	Riparian Seed Mix			2.4% x 13.5 POUNDS/ACRE
CV		Carex Vulpinoidea	Fox sedge	G	Riparian Seed Mix			0.48% x 13.5 POUNDS/ACRE
		WILDFLOWERS						
CM		Cassia Marilandica	Wild Senna	H-P	Riparian Seed Mix			1% x 13.5 POUNDS/ACRE
DI		Desmanthus Illinoensis	Illinois Bundleflower	H-P	Riparian Seed Mix			0.5% x 13.5 POUNDS/ACRE
HH		Heliopsis Helianthoides	False Sunflower	H-P	Riparian Seed Mix			0.6% x 13.5 POUNDS/ACRE
LSP		Liatris Spicate	Spiked Blazing Star	H-P	Riparian Seed Mix			0.5% x 13.5 POUNDS/ACRE
MF		Monarda Fistulosa	Bergamot	H-P	Riparian Seed Mix			0.1% x 13.5 POUNDS/ACRE
SP		Silphium Perfoliatum	Cup Plant	H-P	Riparian Seed Mix			1% x 13.5 POUNDS/ACRE
BA		Bidens Aristosa	Showy Thickseed	H-P	Riparian Seed Mix			0.6% x 13.5 POUNDS/ACRE
EF		Eupatorium Fistulosum	Joe-Pye Weed	H-P	Riparian Seed Mix			0.2% x 13.5 POUNDS/ACRE
HA		Helenium Autumnale	Sneezeweed	H-P	Riparian Seed Mix			0.2% x 13.5 POUNDS/ACRE
VA		Verbesina Alternifolia	Yellow Wingstem	H-P	Riparian Seed Mix			0.5% x 13.5 POUNDS/ACRE
VAI		Veronia Altissima	Iron Weed	H-P	Riparian Seed Mix			0.4% x 13.5 POUNDS/ACRE
HAN		Helianthus Angustifolius	Narrow-leaved Sunflower	H-P	Riparian Seed Mix			0.4% x 13.5 POUNDS/ACRE

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AREA 2, SOUTH

ID	Qty	Botanical Name	Common Name	Type	Height	Spread	Medium	Specification/Comments
		TREES						
CC	3	Carpinus Caroliniana	Ironwood	D	10 FT	5 FT	B&B	Minimum 3" Caliper DBH
MV	3	Magnolia Virginiana	Sweetbay Magnolia	SE	8 FT	4 FT	B&B	Five Canes, Each 1" Caliper DBH
AR	3	Acer Rubrum	Red Maple	D	12 FT	6 FT	B&B	Minimum 3" Caliper DBH / Singe Leader
BN	2	Betula Nigra	River Birch	D	10 FT	5 FT	B&B	Three canes each, 1" caliper DBH
LS	2	Liquidambar Styracillua	Sweetgum	D	12 FT	6 FT	B&B	Minimum 3" Caliper DBH / Single Leader
QN	3	Quercus Nigra	Water Oak	D	12 FT	6 FT	B&B	Minimum 3" Caliper DBH / Single Leader
TD	3	Taxodium Distichum	Bald Cypress	E	12 FT	6 FT	B&B	Minimum 3" Caliper DBH / Single Leader
	19							
		SHRUBS						
AA	70	Aronia Arbutitolia	Red Chokeberry	D	14 IN	12 IN	C	Dense root mass
CM	90	Callicarpa Americana	American Beautyberry	D	14 IN	12 IN	C	Dense root mass
CO	130	Cephalanthus Occidentalis	Buttonbush	D	14 IN	12 IN	C	Dense root mass
CA	130	Cornus Amomum	Silky Dogwood	D	18 IN	12 IN	C	Dense root mass
ID	90	Ilex Decidua	Possumhaw Holly	D	14 IN	12 IN	C	Dense root mass
IV	90	Ilex Verticillata	Common Winterberry	E	14 IN	12 IN	C	Dense root mass
LB	90	Lindera Benzoin	Spicebush	D	14 IN	12 IN	C	Dense root mass
PO	90	Physocarpus Opulifolius	Ninebark	D	18 IN	12 IN	C	Dense root mass
	780							
		GRASSES						
EV		Elymus Virginicus	Virginia Wild Rye	G	Riparian Seed Mix			2.4% x 13.5 POUNDS/ACRE
EM		Echinochloa Muricata	Barnyard Grass	G	Riparian Seed Mix			0.5% x 13.5 POUNDS/ACRE
AP		Agrostis Perennans	Upland Bentgrass	G	Riparian Seed Mix			0.2% x 13.5 POUNDS/ACRE
AG		Andropogon Gerardii	Big Bluestem	G	Riparian Seed Mix			1.4% x 13.5 POUNDS/ACRE
PC		Panicum Clandestinum	Deer Tongue Grass	G	Riparian Seed Mix			1.4% x 13.5 POUNDS/ACRE
PA		Panicum Anceps	Fall Panicum	G	Riparian Seed Mix			1.4% x 13.5 POUNDS/ACRE
PV		Panicum Virgatum	Switchgrass	G	Riparian Seed Mix			2.4% x 13.5 POUNDS/ACRE
CV		Carex Vulpinoidea	Fox sedge	G	Riparian Seed Mix			0.48% x 13.5 POUNDS/ACRE
		WILDFLOWERS						
CM		Cassia Marilandica	Wild Senna	H-P	Riparian Seed Mix			1% x 13.5 POUNDS/ACRE
DI		Desmanthus Illinoensis	Illinois Bundleflower	H-P	Riparian Seed Mix			0.5% x 13.5 POUNDS/ACRE
HH		Heliopsis Helianthoides	False Sunflower	H-P	Riparian Seed Mix			0.6% x 13.5 POUNDS/ACRE
LSP		Liatris Spicate	Spiked Blazing Star	H-P	Riparian Seed Mix			0.5% x 13.5 POUNDS/ACRE
MF		Monarda Fistulosa	Bergamot	H-P	Riparian Seed Mix			0.1% x 13.5 POUNDS/ACRE
SP		Silphium Perfoliatum	Cup Plant	H-P	Riparian Seed Mix			1% x 13.5 POUNDS/ACRE
BA		Bidens Aristosa	Showy Thickseed	H-P	Riparian Seed Mix			0.6% x 13.5 POUNDS/ACRE
EF		Eupatorium Fistulosum	Joe-Pye Weed	H-P	Riparian Seed Mix			0.2% x 13.5 POUNDS/ACRE
HA		Helenium Autumnale	Sneezeweed	H-P	Riparian Seed Mix			0.2% x 13.5 POUNDS/ACRE
VA		Verbesina Alternifolia	Yellow Wingstem	H-P	Riparian Seed Mix			0.5% x 13.5 POUNDS/ACRE
VAI		Veronia Altissima	Iron Weed	H-P	Riparian Seed Mix			0.4% x 13.5 POUNDS/ACRE
HAN		Helianthus Angustifolius	Narrow-leaved Sunflower	H-P	Riparian Seed Mix			0.4% x 13.5 POUNDS/ACRE

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AREA 3, NORTH

ID	Qty	Botanical Name	Common Name	Type	Height	Spread	Medium	Specification/Comments
		TREES						
CC	3	Carpinus Caroliniana	Ironwood	D	10 FT	5 FT	B&B	Minimum 3" Caliper DBH
MV	3	Magnolia Virginiana	Sweetbay Magnolia	SE	8 FT	4 FT	B&B	Five Canes, Each 1" Caliper DBH
AR	3	Acer Rubrum	Red Maple	D	12 FT	6 FT	B&B	Minimum 3" Caliper DBH / Singe Leader
BN	3	Betula Nigra	River Birch	D	10 FT	5 FT	B&B	Three canes each, 1" caliper DBH
LS	3	Liquidambar Styracillua	Sweetgum	D	12 FT	6 FT	B&B	Minimum 3" Caliper DBH / Single Leader
QN	3	Quercus Nigra	Water Oak	D	12 FT	6 FT	B&B	Minimum 3" Caliper DBH / Single Leader
TD	3	Taxodium Distichum	Bald Cypress	E	12 FT	6 FT	B&B	Minimum 3" Caliper DBH / Single Leader
	21							
		SHRUBS						
AA	100	Aronia Arbutitolia	Red Chokeberry	D	14 IN	12 IN	C	Dense root mass
CM	100	Callicarpa Americana	American Beautyberry	D	14 IN	12 IN	C	Dense root mass
CO	140	Cephalanthus Occidentalis	Buttonbush	D	14 IN	12 IN	C	Dense root mass
CA	150	Cornus Amomum	Silky Dogwood	D	18 IN	12 IN	C	Dense root mass
ID	100	Ilex Decidua	Possumhaw Holly	D	14 IN	12 IN	C	Dense root mass
IV	100	Ilex Verticillata	Common Winterberry	E	14 IN	12 IN	C	Dense root mass
LB	90	Lindera Benzoin	Spicebush	D	14 IN	12 IN	C	Dense root mass
PO	100	Physocarpus Opulifolius	Ninebark	D	18 IN	12 IN	C	Dense root mass
	880							
		GRASSES						
EV		Elymus Virginicus	Virginia Wild Rye	G	Riparian Seed Mix			2.4% x 13.5 POUNDS/ACRE
EM		Echinochloa Muricata	Barnyard Grass	G	Riparian Seed Mix			0.5% x 13.5 POUNDS/ACRE
AP		Agrostis Perennans	Upland Bentgrass	G	Riparian Seed Mix			0.2% x 13.5 POUNDS/ACRE
AG		Andropogon Gerardii	Big Bluestem	G	Riparian Seed Mix			1.4% x 13.5 POUNDS/ACRE
PC		Panicum Clandestinum	Deer Tongue Grass	G	Riparian Seed Mix			1.4% x 13.5 POUNDS/ACRE
PA		Panicum Anceps	Fall Panicum	G	Riparian Seed Mix			1.4% x 13.5 POUNDS/ACRE
PV		Panicum Virgatum	Switchgrass	G	Riparian Seed Mix			2.4% x 13.5 POUNDS/ACRE
CV		Carex Vulpinoidea	Fox sedge	G	Riparian Seed Mix			0.48% x 13.5 POUNDS/ACRE
		WILDFLOWERS						
CM		Cassia Marilandica	Wild Senna	H-P	Riparian Seed Mix			1% x 13.5 POUNDS/ACRE
DI		Desmanthus Illinoensis	Illinois Bundleflower	H-P	Riparian Seed Mix			0.5% x 13.5 POUNDS/ACRE
HH		Heliopsis Helianthoides	False Sunflower	H-P	Riparian Seed Mix			0.6% x 13.5 POUNDS/ACRE
LSP		Liatris Spicate	Spiked Blazing Star	H-P	Riparian Seed Mix			0.5% x 13.5 POUNDS/ACRE
MF		Monarda Fistulosa	Bergamot	H-P	Riparian Seed Mix			0.1% x 13.5 POUNDS/ACRE
SP		Silphium Perfoliatum	Cup Plant	H-P	Riparian Seed Mix			1% x 13.5 POUNDS/ACRE
BA		Bidens Aristosa	Showy Thickseed	H-P	Riparian Seed Mix			0.6% x 13.5 POUNDS/ACRE
EF		Eupatorium Fistulosum	Joe-Pye Weed	H-P	Riparian Seed Mix			0.2% x 13.5 POUNDS/ACRE
HA		Helenium Autumnale	Sneezeweed	H-P	Riparian Seed Mix			0.2% x 13.5 POUNDS/ACRE
VA		Verbesina Alternifolia	Yellow Wingstem	H-P	Riparian Seed Mix			0.5% x 13.5 POUNDS/ACRE
VAI		Veronia Altissima	Iron Weed	H-P	Riparian Seed Mix			0.4% x 13.5 POUNDS/ACRE
HAN		Helianthus Angustifolius	Narrow-leaved Sunflower	H-P	Riparian Seed Mix			0.4% x 13.5 POUNDS/ACRE

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AREA 3, SOUTH

ID	Qty	Botanical Name	Common Name	Type	Height	Spread	Medium	Specification/Comments
		TREES						
CC	2	Carpinus Caroliniana	Ironwood	D	10 FT	5 FT	B&B	Minimum 3" Caliper DBH
MV	1	Magnolia Virginiana	Sweetbay Magnolia	SE	8 FT	4 FT	B&B	Five Canes, Each 1" Caliper DBH
AR	2	Acer Rubrum	Red Maple	D	12 FT	6 FT	B&B	Minimum 3" Caliper DBH / Singe Leader
BN	2	Betula Nigra	River Birch	D	10 FT	5 FT	B&B	Three canes each, 1" caliper DBH
LS	2	Liquidambar Styracillua	Sweetgum	D	12 FT	6 FT	B&B	Minimum 3" Caliper DBH / Single Leader
QN	2	Quercus Nigra	Water Oak	D	12 FT	6 FT	B&B	Minimum 3" Caliper DBH / Single Leader
TD	2	Taxodium Distichum	Bald Cypress	E	12 FT	6 FT	B&B	Minimum 3" Caliper DBH / Single Leader
	13							
		SHRUBS						
AA	40	Aronia Arbutitolia	Red Chokeberry	D	14 IN	12 IN	C	Dense root mass
CM	40	Callicarpa Americana	American Beautyberry	D	14 IN	12 IN	C	Dense root mass
CO	150	Cephalanthus Occidentalis	Buttonbush	D	14 IN	12 IN	C	Dense root mass
CA	150	Cornus Amomum	Silky Dogwood	D	18 IN	12 IN	C	Dense root mass
ID	40	Ilex Decidua	Possumhaw Holly	D	14 IN	12 IN	C	Dense root mass
IV	40	Ilex Verticillata	Common Winterberry	E	14 IN	12 IN	C	Dense root mass
LB	40	Lindera Benzoin	Spicebush	D	14 IN	12 IN	C	Dense root mass
PO	40	Physocarpus Opulifolius	Ninebark	D	18 IN	12 IN	C	Dense root mass
	540							
		GRASSES						
EV		Elymus Virginicus	Virginia Wild Rye	G	Riparian Seed Mix			2.4% x 13.5 POUNDS/ACRE
EM		Echinochloa Muricata	Barnyard Grass	G	Riparian Seed Mix			0.5% x 13.5 POUNDS/ACRE
AP		Agrostis Perennans	Upland Bentgrass	G	Riparian Seed Mix			0.2% x 13.5 POUNDS/ACRE
AG		Andropogon Gerardii	Big Bluestem	G	Riparian Seed Mix			1.4% x 13.5 POUNDS/ACRE
PC		Panicum Clandestinum	Deer Tongue Grass	G	Riparian Seed Mix			1.4% x 13.5 POUNDS/ACRE
PA		Panicum Anceps	Fall Panicum	G	Riparian Seed Mix			1.4% x 13.5 POUNDS/ACRE
PV		Panicum Virgatum	Switchgrass	G	Riparian Seed Mix			2.4% x 13.5 POUNDS/ACRE
CV		Carex Vulpinoidea	Fox sedge	G	Riparian Seed Mix			0.48% x 13.5 POUNDS/ACRE
		WILDFLOWERS						
CM		Cassia Marilandica	Wild Senna	H-P	Riparian Seed Mix			1% x 13.5 POUNDS/ACRE
DI		Desmanthus Illinoensis	Illinois Bundleflower	H-P	Riparian Seed Mix			0.5% x 13.5 POUNDS/ACRE
HH		Heliopsis Helianthoides	False Sunflower	H-P	Riparian Seed Mix			0.6% x 13.5 POUNDS/ACRE
LSP		Liatris Spicate	Spiked Blazing Star	H-P	Riparian Seed Mix			0.5% x 13.5 POUNDS/ACRE
MF		Monarda Fistulosa	Bergamot	H-P	Riparian Seed Mix			0.1% x 13.5 POUNDS/ACRE
SP		Silphium Perfoliatum	Cup Plant	H-P	Riparian Seed Mix			1% x 13.5 POUNDS/ACRE
BA		Bidens Aristosa	Showy Thickseed	H-P	Riparian Seed Mix			0.6% x 13.5 POUNDS/ACRE
EF		Eupatorium Fistulosum	Joe-Pye Weed	H-P	Riparian Seed Mix			0.2% x 13.5 POUNDS/ACRE
HA		Helenium Autumnale	Sneezeweed	H-P	Riparian Seed Mix			0.2% x 13.5 POUNDS/ACRE
VA		Verbesina Alternifolia	Yellow Wingstem	H-P	Riparian Seed Mix			0.5% x 13.5 POUNDS/ACRE
VAI		Veronia Altissima	Iron Weed	H-P	Riparian Seed Mix			0.4% x 13.5 POUNDS/ACRE
HAN		Helianthus Angustifolius	Narrow-leaved Sunflower	H-P	Riparian Seed Mix			0.4% x 13.5 POUNDS/ACRE

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AREA 4

ID	Qty	Botanical Name	Common Name	Type	Height	Spread	Medium	Specification/Comments
EV		**GRASSES**						
EM		Elymus Virginicus	Virginia Wild Rye	G	Riparian Seed Mix			2.4% x 13.5 POUNDS/ACRE
AP		Echinochloa Muricata	Barnyard Grass	G	Riparian Seed Mix			0.5% x 13.5 POUNDS/ACRE
AG		Agrostis Perennans	Upland Bentgrass	G	Riparian Seed Mix			0.2% x 13.5 POUNDS/ACRE
PC		Andropogon Gerardii	Big Bluestem	G	Riparian Seed Mix			1.4% x 13.5 POUNDS/ACRE
PA		Panicum Clandestinum	Deer Tongue Grass	G	Riparian Seed Mix			1.4% x 13.5 POUNDS/ACRE
PV		Panicum Anceps	Fall Panicum	G	Riparian Seed Mix			1.4% x 13.5 POUNDS/ACRE
CV		Panicum Virgatum	Switchgrass	G	Riparian Seed Mix			2.4% x 13.5 POUNDS/ACRE
		Carex Vulpinoidea	Fox sedge	G	Riparian Seed Mix			0.48% x 13.5 POUNDS/ACRE
		WILDFLOWERS						
CM		Cassia Marilandica	Wild Senna	H-P	Riparian Seed Mix			1% x 13.5 POUNDS/ACRE
DI		Desmanthus Illinoensis	Illinois Bundleflower	H-P	Riparian Seed Mix			0.5% x 13.5 POUNDS/ACRE
HH		Heliopsis Helianthoides	False Sunflower	H-P	Riparian Seed Mix			0.6% x 13.5 POUNDS/ACRE
LSP		Liatris Spicate	Spiked Blazing Star	H-P	Riparian Seed Mix			0.5% x 13.5 POUNDS/ACRE
MF		Monarda Fistulosa	Bergamot	H-P	Riparian Seed Mix			0.1% x 13.5 POUNDS/ACRE
SP		Silphium Perfoliatum	Cup Plant	H-P	Riparian Seed Mix			1% x 13.5 POUNDS/ACRE
BA		Bidens Aristosa	Showy Thickseed	H-P	Riparian Seed Mix			0.6% x 13.5 POUNDS/ACRE
EF		Eupatorium Fistulosum	Joe-Pye Weed	H-P	Riparian Seed Mix			0.2% x 13.5 POUNDS/ACRE
HA		Helenium Autumnale	Sneezeweed	H-P	Riparian Seed Mix			0.2% x 13.5 POUNDS/ACRE
VA		Verbesina Alternifolia	Yellow Wingstem	H-P	Riparian Seed Mix			0.5% x 13.5 POUNDS/ACRE
VAI		Veronia Altissima	Iron Weed	H-P	Riparian Seed Mix			0.4% x 13.5 POUNDS/ACRE
HAN		Helianthus Angustifolius	Narrow-leaved Sunflower	H-P	Riparian Seed Mix			0.4% x 13.5 POUNDS/ACRE

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4/23/2019 1:44:04 PM | j:\01_projects\2023\23-0130 city of lakesite stormwater improvements\3- engineering\Civil\SHEETS\L1 LANDSCAPE PLAN.dwg |

ASA
ENGINEERING & CONSULTING, INC.
201 CHEROKEE BLVD., SUITE 101
CHATTANOOGA, TN 37405
WWW.ASAENGINEERINGINC.COM
423.805.3700

SEAL

ISSUED FOR BID

LAKESITE STORMWATER IMPROVEMENTS

LAKESITE, TN 37379
FOR
CITY OF LAKESITE

No.	Revision/Issue	Date
-	-	-

PROJECT NO.	23-0130
DATE	03/08/2025
SCALE	AS SHOWN
DESIGNED BY	ASA
DRAWN BY	ASA
CHECKED BY	ASA

TITLE

LANDSCAPE SCHEDULES

SHEET NO.

C6.2

LANDSCAPE SPECIFICATIONS:

PLANTING FOR SLOPED CHANNEL BANKS
(INCLUDES TOPSOIL PLACEMENT, TREES & SHRUBS)

1. CONTRACTOR SHALL SECURE ENGINEER'S APPROVAL THAT SUBGRADE OF SLOPED CHANNEL BANKS IS TRUE TO GRADING DESIGN, FREE OF ANY DEBRIS, RUBBLE, STUMPS, AND ROOTS AND HAS BEEN COMPACTED PER SPECIFICATIONS PRIOR TO ANY PLACEMENT OF TOPSOIL.
2. JUST PRIOR TO PLACEMENT OF TOPSOIL, CONTRACTOR SHALL RUN DOZER TRACKS PERPENDICULAR TO CONTOURS OF SUB-GRADE BANKS TO CREATE A FINISHED SURFACE COMPLETELY AND CONSISTENTLY COVERED WITH DOZER TRACKS.
3. ALL SLOPED BANKS TO BE PLANTED SHALL RECEIVE SIX INCHES OF COMPACTED TOPSOIL, ALL OF WHICH SHALL COME FROM A SINGLE SOURCE AND BE OF A CONSISTENT COMPOSITION. CONTRACTOR SHALL HAVE SOIL TESTED BY AN APPROVED LABORATORY AND SUBMIT RESULTS TO LANDSCAPE ARCHITECT FOR APPROVAL. FERTILIZER SHALL NOT BE APPLIED. HOWEVER, PH SHALL BE AMENDED IF APPLICABLE, AS INSTRUCTED BY LANDSCAPE ARCHITECT.
4. PRIOR TO RAIN, PLACE SIX-INCH COMPACTED LAYER OF TOPSOIL. TO ACHIEVE COMPACTION, RUN DOZER TRACKS PERPENDICULAR TO CONTOURS TO CREATE A FINISHED SURFACE COMPLETELY AND CONSISTENTLY COVERED WITH DOZER TRACKS. SHOULD IT RAIN PRIOR TO PLACEMENT OF TOPSOIL AND CAUSE THE DIVOTS OF THE TRACKING DESCRIBED IN ITEM #3 ABOVE, IT COULD BE NECESSARY TO REPEAT THE TRACKING IF INSTRUCTED BY THE LANDSCAPE ARCHITECT.
5. FOR SOIL PREPARATION PRIOR TO SEEDING GRASSES AND WILDFLOWERS REFER TO PLANTING FOR SLOPED CHANNEL BANKS - GRASSES & WILDFLOWERS, ON THIS SHEET.
6. PLANTING OF TREES AND SHRUBS SHALL OCCUR BEFORE THE PLANTING OF GRASSES AND WILDFLOWERS BETWEEN FEBRUARY 15 THROUGH MAY 15 AND SEPTEMBER 1 THROUGH DECEMBER 15.
7. NOTIFY THE LANDSCAPE ARCHITECT IN WRITING OF NECESSARY TREE OR PLAN SUBSTITUTIONS FOR APPROVAL PRIOR TO PURCHASE AND DELIVERY OF PLANT MATERIAL. ALL PLANTS FOR THIS PROJECT SHALL BE NATIVE SPECIES. CULTIVARS SHALL NOT BE ACCEPTED.
8. ALL PLANT MATERIAL SHALL BE NURSERY-GROWN, WELL-ROOTED, AND WELL-BRANCHED; ALL TREES MUST BE FREE OF INSECTS, DISEASES, MECHANICAL INJURY, AND OTHER OBJECTIONABLE FEATURES WHEN PLANTED; ALL MATERIALS MUST CONFORM TO THE "AMERICAN NURSEY STOCK STANDARDS" LATEST EDITION.
9. THE LANDSCAPE ARCHITECT SHALL INSPECT/APPROVE ALL PLANT MATERIAL DELIVERED TO THE SITE BEFORE INSTALLATION. IF REQUESTED BY THE LANDSCAPE ARCHITECT, THE CONTRACTOR SHALL PROVIDE INVOICES AND/OR NURSERY TAGS (ORIGINAL OR COPIES) TO THE LANDSCAPE ARCHITECT FOR CONFIRMATION OF QUANTITIES, SPECIES, AND CONDITION.
10. ALL TREES SHALL BE BALLED AND BIODEGRADABLE BURLAPPED. WIRE CAGES SHALL BE REMOVED. BIODEGRADABLE CONTAINERS WILL BE ACCEPTED.
11. TREES SHALL HAVE NORMAL, WELL-DEVELOPED BRANCHES AND A SINGLE-DOMINANT CENTRAL LEADER; TREES WITH TOPPED CENTRAL LEADERS AND INDISCRIMINATELY PRUNED LATERAL BRANCHES WILL NOT BE ACCEPTED. STRUCTURAL PRUNING SHALL FOLLOW ANSI A300 TREE CARE STANDARDS
12. TREE ROOT FLARES SHOULD BE VISIBLE AND PLANTED 1-2" ABOVE SURROUNDING GRADE.
13. TREES SHALL BE SECURED BY USING 6 FOOT LONG METAL "T" POSTS, SPACED 120 DEGREES APART, THREE FEET FROM TRUNK, USING 13-GUAGE, GALVANIZED WIRE, DOUBLED AROUND TREE WITH RUBBERED HOSE PROTECTION AND WRAPPED AROUND POST WITH A 1X2X5" TWISTER FOR EACH POST TO FIRMLY AFFIX EACH WIRE SYSTEM TO STABILIZE TREE TRUNK.
14. ALL SHRUBS SHALL BE BALLED AND IN BIODEGRADABLE CONTAINERS OR REMOVABLE PLASTIC CONTAINERS.
15. SOIL USED IN BACKFILLING PLANTING PITS SHALL BE TOPSOIL AND MIXES WITH 25% PEAT BY VOLUME, EXCEPT FOR ERICACEOUS PLANTS, VERY ACIDIC OR SOUR SOIL (SOIL HAVING A PH LESS THAN 6) SHALL BE MIXED WITH SUFFICIENT LIME TO PRODUCE A SLIGHTLY ACID REACTION (A PH OF 6.0 TO 6.5). 10-10-10 COMMERCIAL FERTILIZER AT THE RATE OF 2 POUNDER PER CUBIC YARD SHALL BE ADDED. BOTH FERTILIZER AND PEAT SHALL BE THOROUGHLY MIXED.
16. TREES AND SHRUBS FOR THIS PROJECT SHALL BE PLANTED ON SLOPES AND SHALL REQUIRE SOIL STABILIZATION ON THE UP-SLOPE SIDE, AS SHOWN ON APPLICABLE DETAILS. THIS WILL INCLUDE A BIODEGRADABLE SOCK AND SPIKES MANUFACTURED BY ONE CLARION (PH: 863.261.8388).

SOIL PREPARATION AND HYDROSEEDING:

(NATIVE GRASSES AND WILDFLOWERS)

1. NATIVE GRASSES AND WILDFLOWERS SHALL BE PLANTED FOLLOWING THE COMPLETION OF INSTALLATION OF ALL TREES AND SHRUBS.
2. THE TOP TWO INCHES OF THE TOPSOIL LAYER SHALL BE ROTO-TILLED TO CREATE CONSISTENT PARTICLE SIZE IN A FRIABLE CONDITION. ALL DEBRIS AND CLODS SHALL BE REMOVED. THE SOIL SHALL THEN BE RANKED INTO ITS ORIGINAL POSITION AND ROLLED FOR CONFORMITY.
3. FOLLOWING THE COMPLETION OF THE SOIL PREPARATION, AN EROSION CONTROL MATERIAL, "COIR MAT 40," TWO-INCH GRID MANUFACTURED BY ONE CLARION (PH: 863.261.8388).
4. THIS MATTING SHALL BE CAREFULLY PLACED AROUND TREES AND SHRUBS. PERPENDICULAR 90-DEGREE CUTS SHALL BE MADE TO THE MATTING AND THEN SPLICED BACK TOGETHER AROUND TREE TRUNKS AND THE BASE OF SHRUB LIMBS. MATTING SHALL BE SECURED AND STABILIZED UTILIZING COIR BIODEGRADABLE SPIKES. OVERLAP THE NETTING MINIMUM OF 6-INCH WITH PREVIOUS ROW. APPLY STAPLES AT 4 FEET MAXIMUM SPACING ON ALL EDGES AND LAPS, WITH INTERIOR ROWS OF STAPLES AT A 4-FEET MAXIMUM SPACING AND SPACED IN THE ROW AT 8-FEET MAXIMUM SPACING. STAPLES IN AN INTERIOR ROW SHALL ALTERNATE IN SPACING WITH STAPLES ON AN ADJACENT INTERIOR ROW. ALL STAPLES SHALL BE DRIVEN FLUSH WITH THE SOIL SURFACE.
5. UPON COMPLETION OF THE INSTALLATION OF THE COIR MAT, THE SEEDING WILL BE PERFORMED BY HYDROSEEDING OVER THE COIR MAT 40.
6. GRASSES AND WILDFLOWERS FOR THIS PROJECT WILL BE PLANTED FROM SEED. THE SEED IS REFERRED TO AS "MIX-168-SOUTHERN RIPARIAN BUFFER MIX" AND IS AVAILABLE FROM ROUNDSTONE NATIVE SEED COMPANY - (PH: 888.531.2353). SEED SHALL BE PURE, LIVE SEED AND SHALL NOT CONTAIN PROHIBITED, NOXIOUS WEEDS ACCORDING TO STATE LAW. APPLICATION RATE SHALL BE 13.5 POUNDS PER ACRE.
7. TEMPORARY SEED MIX TO BE UTILIZED FOR EROSION PROTECTION AND MIXED WITH MIX 168:
   - AFTER AUGUST 1, USE OATS @ 40 POUNDS PER ACRE AS TEMPORARY SEED
   - BEFORE AUGUST 1, USE BROWN TOP MILLET @ 8 POUNDS PER ACRE AS TEMPORARY SEED
7. GROWTH MEDIA SHALL BE FLEXIBLE GROWTH MEDIUM FIBER MULCH: APPLY ACCORDING TO MANUFACTURER RECOMMENDATIONS. THIS PRODUCT SHALL BE APPLIED AT A MINIMUM RATE OF 3500 LBS/ACRE ON SLOPES. REFER TO MANUFACTURERS SPECIFICATION.
8. EQUIPMENT SHALL HAVE A BUILT-IN MECHANICAL AGITATION SYSTEM AND OPERATING CAPACITY SUFFICIENT TO AGITATE, SUSPEND, OR HOMOGENEOUSLY MIX A SLURRY CONTAINING NOT LESS THAN 44 LBS OR ORGANIC MULCHING AMENDMENT PLUS FERTILIZER, CHEMICAL ADDITIVES, AND SOLIDS FOR EACH 150 GALLONS OF WATER. EQUIPMENT SHOULD ALSO INCLUDE A FAN-TYPE NOZZLE WITH 50-DEGREE TIPS TO PROVIDE BETTER COVERAGE.
9. INSTALLATION SHALL STRICTLY COMPLY WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS. SPRAY-APPLY SLURRY UNIFORMLY TO ALL AREAS TO BE SEEDED WITH TWO-STEP PROCESS. MIX 50% OF THE SEED MIXTURE, SOIL AMENDMENTS, TACKIFIER, AND COMMERCIAL FERTILIZER WITH A SMALL AMOUNT OF FLEXIBLE GROWTH MEDIUM FOR VISUAL METERING AND APPLY ALONG THE AREAS TO BE VEGETATED BEING SURE TO APPLY SEED AND AMENDMENTS AT THE SPECIFIED RATES. SECOND COAT SHALL BE APPLIED PERPENDICULAR TO THE FIRST COAT. APPLY THE BALANCE OF THE SEED MIX AND FLEXIBLE GROWTH MEDIUM AT A RATE SO THAT TOTAL MULCH COMPONENT AND SEED COMPONENT IS DEPOSITED AT NOT LESS THAN THE SPECIFIED SEED SOWING RATE
10. MIX AND APPLY THE FLEXIBLE GROWTH MEDIUM AT A RATE OF 50 LBS PER 125 GALLONS OF WATER OVER FRESHLY SEEDED AREAS. HYDROMULCH SHOULD BE APPLIED IN MULTIPLE DIRECTIONS SO THAT SHADOWING DOES NOT OCCUR AND TO ENSURE UNIFORMITY OF THE APPLICATION.
11. CONFORM THE LOADING RATES WITH EQUIPMENT MANUFACTURERS. DO NOT LEAVE SEEDED SURFACES UNPROTECTED, ESPECIALLY IF PRECIPITATION IS IMMINENT.
12. EXERCISE SPECIAL CARE TO PREVENT ANY OF THE SLURRY FROM BEING SPRAYED ONTO ANY HARDSCAPE AREAS INCLUDING CONCRETE WALKS, FENCES, WALLS, BUILDINGS, ETC. REMOVE ALL SLURRY SPRAYED ONTO THESE SURFACES IMMEDIATELY.
13. IN THE CASE OF DROUGHT: FREQUENT LIGHT IRRIGATION WILL NEED TO BE APPLIED TO SEEDED AREAS IF NO NATURAL RAIN EVENTS HAVE OCCURRED WITHIN ONE WEEK OF HYDROSEEDING. WATER SHOULD BE APPLIED LONG ENOUGH TO MOISTEN THE SOIL THOROUGHLY TO THE DEPTH OF THE SLURRY MULCH TAKING CARE NOT TO SUPER SATURATE OR WASH AWAY THE SLURRY AND SEED.
14. AFTER SEED GERMINATION HAS OCCURRED AND PLANTS ARE VISIBLE THE FREQUENCY OF IRRIGATION SHOULD BE CUT BACK WITH HEAVIER APPLICATION RATES STILL MAKING SURE NOT TO SUPER SATURATE OR WASH AWAY THE SLURRY AND SEED. NO NEED TO WATER IF NATURAL RAIN FALL IS OCCURRING. REPAIR ALL SEED WASHINGS AND EROSION.

TURF SEEDING ABOVE SLOPED BANK

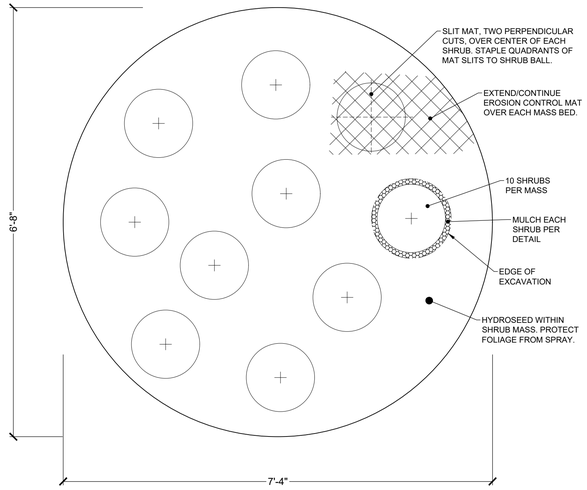
(INCLUDES ANY DISTURBED AREA ABOVE THE TOP OF BANK)

1. ALL DISTURBED AREAS TO BE SEEDED WITH KENTUCKY 31 FESCUE AT THE RATE OF FIVE POUNDS PER 1,000 S.F. ALL SEED TO BE 98% PURE WITH 85% GERMINATION AND CONFORM TO ALL STATE REQUIREMENTS FOR GRASS SEED. THE FERTILIZER SHALL BE 6-12-12 COMMERCIAL TYPE WITH 50% OF ITS ELEMENTS DERIVED FROM ORGANIC SOURCES.
2. STRAW MULCH SHALL BE PLACED UPON SEEDED AREAS. STRAW SHALL BE OATS OR WHEAT STRAW, FREE FROM WEEDS, FOREIGN MATTER DETRIMENTAL TO PLANT LIFE, AND DRY. HAY OR CHOPPED CORNSTALKS ARE NOT ACCEPTABLE.
3. THE CONTRACTOR SHALL VERIFY TO THE LANDSCAPE ARCHITECT THAT THE PREPARED SOIL BASE IS READY TO RECEIVE WORK. THE TOPSOIL SHALL BE CULTIVATED TO A DEPTH OF 4 INCHES WITH A MECHANICAL TILLER AND SUBSEQUENTLY RAKED UNTIL SMOOTH. FOREIGN MATERIALS COLLECTED DURING CULTIVATION AND RAKING OPERATIONS SHALL BE REMOVED FROM PROJECT SITE.
4. FERTILIZER SHALL BE APPLIED PER THE MANUFACTURER'S RECOMMENDATIONS. LIMESTONE MAY BE APPLIED WITH THE FERTILIZER. FERTILIZER SHALL BE APPLIED AFTER SMOOTH RAKING AND PRIOR TO ROLLER COMPACTION AND IT SHALL BE MIXED THOROUGHLY IN THE UPPER 2 INCHES OF TOPSOIL.
5. SEED SHALL BE APPLIED EVENLY IN THE TWO INTERSECTING DIRECTIONS AND RAKED IN LIGHTLY. THE TOPSOIL SHALL BE LIGHTLY WATERED PRIOR TO APPLYING SEED. DO NOT SEED AREA IN EXCESS OF THAT WHICH CAN BE MULCHED ON THE SAME DAY.
6. ROLL SEEDED AREA WITH ROLLER NOT EXCEEDING 150 POUNDS.
7. IMMEDIATELY FOLLOWING SEEDING AND COMPACTING, APPLY STRAW MULCH AT THE RATE OF ONE AND ONE HALF BALE PER 1,000 SQUARE FEET. IMMEDIATELY AFTER MULCHING, APPLY WATER WITH A FINE SPRAY AND SATURATE THE GROUND TO A DEPTH OF 4 INCHES.
8. CONTRACTORS SHALL BE RESPONSIBLE FOR WATERING SEEDED AREAS TO PREVENT GRASS AND SOIL FROM DRYING OUT UNTIL THE INSTALLATION IS INSPECTED AND ACCEPTED BY THE LANDSCAPE ARCHITECT. MINIMUM ACCEPTABLE COVERAGE SHALL BE 95 PERCENT.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR RESEEDING BARE SPOTS FOR A PERIOD OF ONE YEAR AFTER THE ACCEPTANCE OF INSTALLATION.

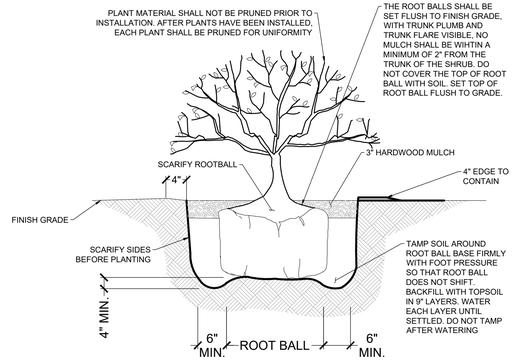
OBSERVATION OF CONSTRUCTION, PROJECT COMPLETION, & WARRANTY

(TREES, SHRUBS, NATIVE GRASSES, WILDFLOWERS, & TURF GRASSES)

1. A ONE-YEAR WARRANTY SHALL APPLY TO THE PLANTING OF TREES, SHRUBS, NATIVE GRASSES, WILDFLOWERS, AND TURF GRASSES. THIS WARRANTY SHALL BEGIN ON THE DATE THAT ALL PLANTINGS WERE DETERMINED COMPLETE AND A "FINAL COMPLETION LETTER" IS ISSUED, THEN THE WARRANTY SHALL EXTEND FOR 365 CALENDAR DAYS.
2. THE LANDSCAPE ARCHITECT WILL PERIODICALLY OBSERVE PLANTING ACTIVITY AND SHALL PERFORM A FINAL INSPECTION UPON COMPLETION OF ALL PLANTING OPERATIONS.
3. UPON INITIAL COMPLETION, SHOULD DEFICIENCIES BE DETERMINED, THE CONTRACTORS SHALL BE PRESENTED WITH A "REMEDIAL PLAN OF ACTION" TO EXECUTE BEFORE FINAL COMPLETION IS RECOGNIZED. THE TIMELINE FOR THIS REMEDIAL ACTION COULD BE DEPENDENT ON PLANTING SEASON AND WEATHER. WHEN SATISFACTORY COMPLETION IS DETERMINED, A DATE WILL BE DETERMINED AND THE FINAL COMPLETION LETTER ISSUED.
4. A ONE-YEAR INSPECTION SHALL BE CONDUCTED FOLLOWING THE DATE OF WHICH COMPLETION WAS DETERMINED. AT SUCH TIME, THE CONTRACTOR SHALL REPLACE AT THEIR COST ALL DEAD, DAMAGED, OR DEFICIENT PLANT MATERIALS AS DETERMINED BY THE LANDSCAPE ARCHITECT. THIS INSPECTION SHALL PRODUCE A PUNCH LIST AND A SPECIFIC DATE FOR WHICH ALL REMEDIES SHALL BE COMPLETED. UPON SUCCESSFUL REMEDY TO THIS PUNCH LIST OF DEFICIENCIES APPLICABLE TO THIS ONE-YEAR WARRANTY INSPECTION, ANY REMAINING CONTINGENCY FEES SHALL BE RELEASED AND THE CONTRACTOR SHALL BE RELIEVED OF ANY FURTHER OBLIGATIONS CONCERNING THE PLANTING AND ESTABLISHMENT OF TREES, SHRUBS, NATIVE GRASSES, WILDFLOWERS, AND TURF GRASSES.

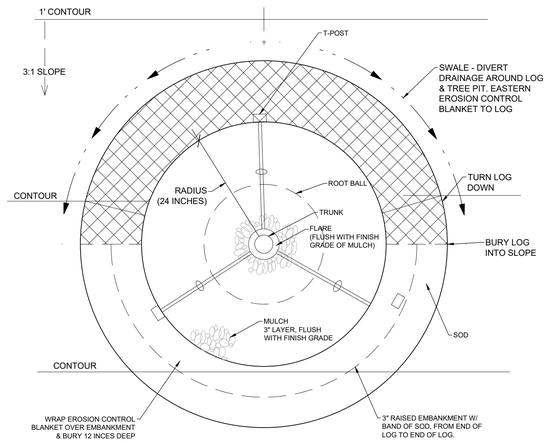


1 | SHRUB MASS DETAIL
NOT TO SCALE

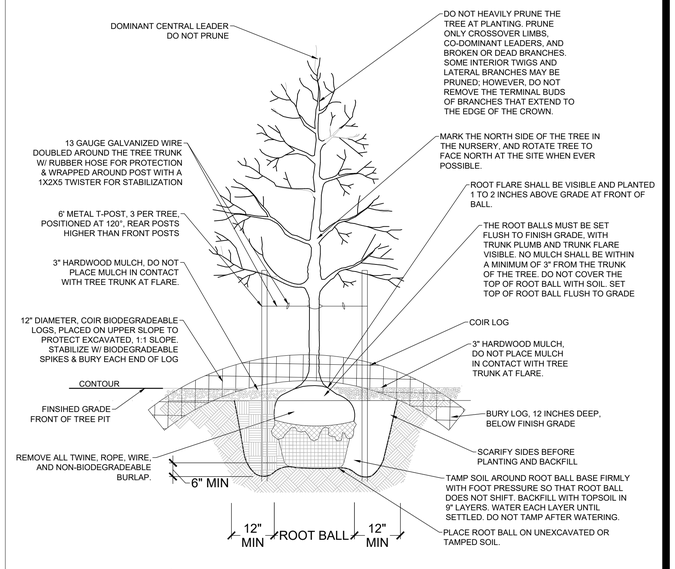


NOTES:
1. WHERE PLANTS ARE SHOWN IN BEDS, MULCH SHALL COVER ENTIRE BED AS DENOTED ON THE PLANS.
2. BURLAP GROWN PLANT MATERIAL MAY BE SUBSTITUTED FOR CONTAINER MATERIAL.

2 | SHRUB PLANTING
NOT TO SCALE



3 | TREE DETAIL - ON SLOPE
NOT TO SCALE



4 | TREE PLANTING DETAIL
NOT TO SCALE

ASA
ENGINEERING & CONSULTING, INC.
201 CHEROKEE BLVD., SUITE 101
CHATTANOOGA, TN 37405
WWW.ASAENGINEERINGINC.COM
423.805.3700

SEAL

ISSUED FOR BID

LAKESITE STORMWATER IMPROVEMENTS

LAKESITE, TN 37379
FOR
CITY OF LAKESITE

No.	Revision/Issue	Date

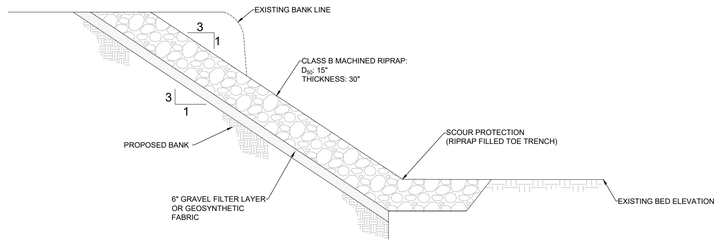
PROJECT NO.	23-0130
DATE	03/08/2025
SCALE	AS SHOWN
DESIGNED BY	ASA
DRAWN BY	ASA
CHECKED BY	ASA

TITLE

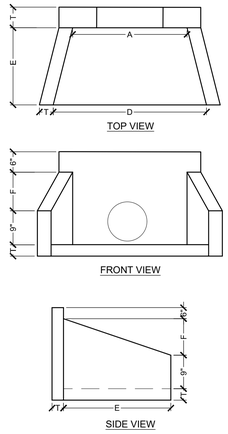
LANDSCAPE DETAILS

SHEET NO.

C6.3



1 RIPRAP STABILIZATION SECTION
NOT TO SCALE



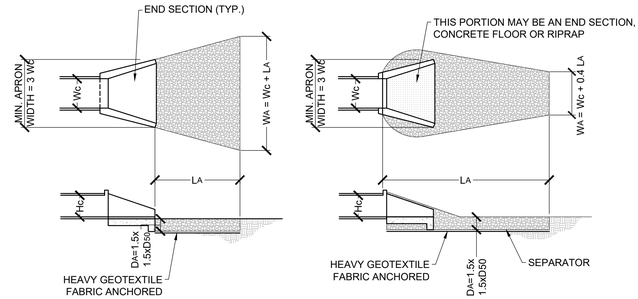
2 CONCRETE HEADWALL
NOT TO SCALE

TABLE OF DIMENSIONS					
PIPE SIZE	A	D	E	F	T min
15	2'-6"	5'-0"	2'-6"	1'-9"	0'-6"
18	2'-6"	5'-0"	2'-6"	1'-9"	0'-6"
21	2'-6"	5'-0"	2'-6"	1'-9"	0'-6"
24	4'-0"	6'-6"	3'-0"	3'-3"	0'-6"
30	4'-0"	6'-6"	3'-0"	3'-3"	0'-6"
36	5'-6"	8'-0"	3'-6"	4'-5"	0'-6"
42	5'-6"	8'-0"	3'-6"	4'-5"	0'-6"
48	5'-6"	8'-0"	3'-6"	4'-5"	0'-6"
54	7'-0"	9'-5"	4'-6"	5'-9"	0'-6"
60	7'-0"	9'-5"	4'-6"	5'-9"	0'-6"
66	8'-6"	11'-0"	5'-6"	6'-11"	0'-6"
72	8'-6"	11'-0"	5'-6"	6'-11"	0'-6"

CONCRETE: 4000 PSI AT 28 DAYS REINFORCED WITH NO. 4 BARS 10" C/CEACH WAY WITH WINGS AND TOE SLAB DOWELLED TO HEADWALL WITH NO. 5 BARS.

3/4" CHAMFER ON ALL EXPOSED EDGES.

NOTE:
1. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW PRIOR TO CONSTRUCTION.

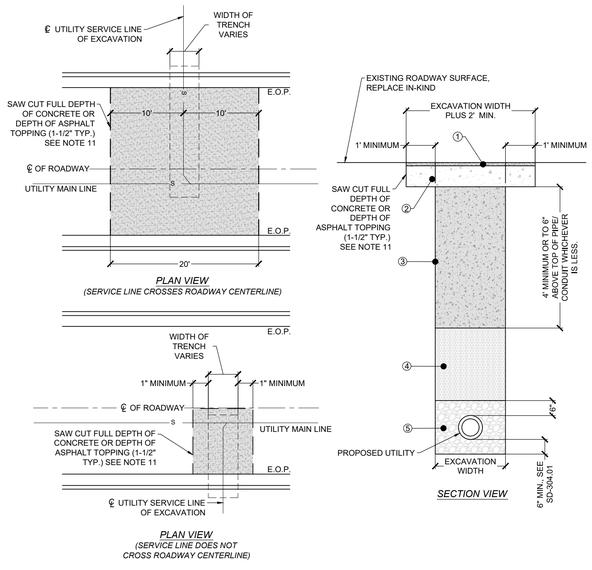


TAILWATER < 0.5 Hc AND ASSUMING FULL CULVERT FLOW (LOW TAILWATER CONDITIONS)

TAILWATER > 0.5 Hc AND ASSUMING FULL CULVERT FLOW (HIGH TAILWATER CONDITIONS)

Hc	= HEIGHT OF CULVERT
Wc	= WIDTH OF CULVERT
LA	= LENGTH OF RIP-RAP APRON
WA	= WIDTH OF RIP-RAP APRON AT END
D50	= MEDIAN RIP-RAP SIZE
DMAX	= MAXIMUM SIZE OF RIP-RAP = 1.5 D50
DA	= DEPTH OF RIP-RAP APRON = 1.5 DMAX

3 RIPRAP APRON
NOT TO SCALE



DRAWING NOTES

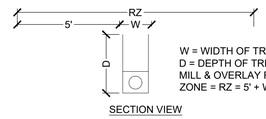
1. 1-1/2" GRADE 'E' ASPHALT CONCRETE TOPPING, APPLY COAT PRIOR TO PLACEMENT.
2. FOR CONCRETE ROADWAY: 8" MIN. (MATCH EXISTING) CLASS 'A' CONCRETE (4,000 P.S.I. MIN.) COURSE BROOM FINISH. CONCRETE SHALL BE COLORED, STAMPED AND TEXTURED TO MATCH ADJACENT SURFACE.
3. FLOWABLE FILL (COMPRESSIVE STRENGTH 200-250 P.S.I. IN 48 HOURS), 4 FOOT MINIMUM OR TO WITHIN 6 INCHES ABOVE TOP OR PIPE CONCRETE ALWAYS: FILL TO THE BOTTOM OF THE EXISTING CONCRETE ROADBED.
   ASPHALT ROADWAYS: FILL TO WITHIN - 1/2" OF FINISHED GRADE.
4. 1/4" LIME DUST 1/8" MINUS MANUFACTURED SAND OR 1/2" WASHED STONE.
5. BEDDING MATERIAL - SEE SD-307.01.

GENERAL REQUIREMENTS

1. ALL STREET CUTS MUST BE BACKFILLED WITH FLOWABLE FILL WITH A COMPRESSIVE STRENGTH OF 200-250 PSI IN 48 HOURS.
2. FLOWABLE FILL SHALL BE IN PLACE FOR A MINIMUM OF 48 HOURS PRIOR TO PLACING ASPHALT OR CONCRETE TOPPING.
3. WHERE IT IS IMPRACTICAL TO USE FLOWABLE FILL DUE TO TERRAIN, SLOPE, WIDTH OF TRENCH, OR OTHER SITUATIONS, THE MATERIAL FOR THE BACKFILL IN THE ROADWAY AREAS MAY BE CEMENT TREATED (5% BY UNIT WEIGHT) AGGREGATE BASE AT THE SOLE DISCRETION OF THE CITY TRANSPORTATION ENGINEER/STREETCUT INSPECTOR. BACKFILL SHALL BE PLACED IN 8" LIFTS AND SHALL BE THOROUGHLY COMPACTED BY MEANS OF A MECHANICAL TAMP.
4. WHERE LONGITUDINAL CUTS ARE MADE, THE OWNER RESERVES THE RIGHT TO REQUIRE ADDITIONAL RESURFACING BEYOND THE LIMITS OF THE REPAIR TO ENSURE THE PROPER RIDING CHARACTERISTICS AND THE STABILITY OF THE PAVEMENT.
5. BACKFILL OF TRENCHES WITHIN THE SIDEWALK AREAS SHALL BE COMPACTED GRADED AGGREGATE BASE (NOT LOOSE WASHED STONE). BACKFILL SHALL BE PLACED IN 8" LIFTS AND SHALL BE THOROUGHLY COMPACTED BY MEANS OF A MECHANICAL TAMP.
6. IF A PERPENDICULAR CUT TRENCH REACHES THE CENTERLINE OF THE ROADWAY, THE ASPHALT MUST BE REPLACED FROM CURB TO CURB AND BE A MINIMUM OF TEN (10) FEET ON EACH SIDE OF THE CENTERLINE OF EXCAVATION. (SEE PLAN VIEW DETAIL, THIS SHEET)
7. ALL REFERENCES TO MATERIALS ARE DESCRIBED IN DETAIL IN THE CITY OF CHATTANOOGA'S STANDARD SPECIFICATIONS. THESE SPECIFICATIONS MUST BE USED AS A REFERENCE WHEN ORDERING MATERIALS.
8. ANY SUBSTITUTIONS TO THE MATERIALS REFERENCED HEREON MUST BE APPROVED BY THE CITY TRANSPORTATION ENGINEER OR STREETCUT INSPECTOR PRIOR TO INSTALLATION.
9. EXISTING CONCRETE STREETS THAT HAVE BEEN OVERLAID WITH ASPHALT SHALL BE REPAIRED WITH CONCRETE HAVING A DEPTH EQUAL TO THE EXISTING CONCRETE PLUS THE ADJACENT EXISTING ASPHALT OVERLAY.
10. WHERE EXISTING CONSTRUCTION AND EXPANSION JOINTS ARE ENCOUNTERED IN CONCRETE PAVEMENT CUTS, THE ENGINEER/INSPECTOR SHALL DESIGNATE LOCATION, SIZE AND MATERIALS TO CONSTRUCT JOINTS IN THE NEW CONCRETE SURFACE.
11. ALL STREETCUTS SHALL BE SAWCUT THE FULL DEPTH OF CONCRETE OR DEPTH OF ASPHALT TOPPING (1-1/2" TYP.) PRIOR TO ANY OTHER DEMOLITION METHODS BEING USED.

4 REPAIR DETAILS (ROADWAYS)
NOT TO SCALE

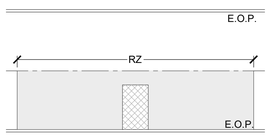
PERPENDICULAR CUTS IN ASPAHLT



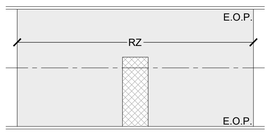
SECTION VIEW

W = WIDTH OF TRENCH
D = DEPTH OF TRENCH
MILL & OVERLAY RESURFACING
ZONE = RZ = 5' + W + 5'

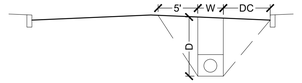
WHEN CUT IS WITHIN ONE LANE
PLAN VIEW



WHEN CUT CROSSES CENTERLINE
PLAN VIEW



LINEAR CUTS IN ASPAHLT



SECTION VIEW

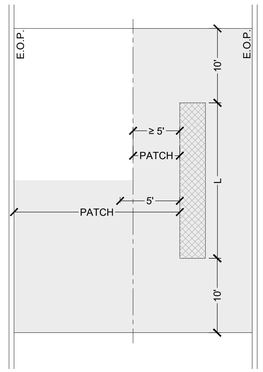
DC = DISTANCE TO CURB

MILL & OVERLAY ZONE:
LINEAR LIMITS = LL = L + 20'
WIDTH LIMITS = RZ = DC +W + 5'
(OR WIDTH OF ADJACENT LANE IF CUT IS WITHIN 5' OF THE CENTER LINE)

IF MULTILANE ROAD, THEN MILL & OVERLAY WILL STOP AT NEXT LANE LINE BEYIND RZ.

IF TWO LANEROAD AND RZ DISTANCE CROSSES THE CENTERLINE THEN ENTIRE WIDTH SHALL BE MILLED AND OVERLAYED

SETTLEMENT CRITERIA
- SEAM GAP $\frac{1}{4}$ INCH OR GREATER
- SETTLEMENT
  - -ANY BIRD BATH
  - $\frac{1}{2}$ INCH VERTICAL DISPLACEMENT



5 REPAIR DETAILS (ROADWAYS)
NOT TO SCALE

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SEAL

ISSUED FOR BID

LAKESITE STORMWATER IMPROVEMENTS

LAKESITE, TN 37379
FOR
CITY OF LAKESITE

No.	Revision/Issue	Date

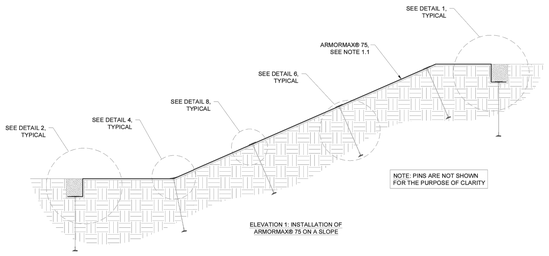
PROJECT NO.	23-0130
DATE	03/08/2025
SCALE	AS SHOWN
DESIGNED BY	ASA
DRAWN BY	ASA
CHECKED BY	ASA

TITLE

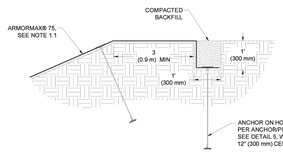
CONSTRUCTION DETAILS

SHEET NO.

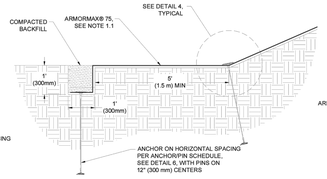
C7.0



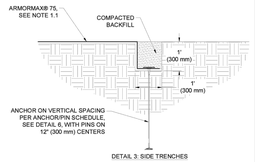
ELEVATION 1: INSTALLATION OF ARMORMAX® 75 ON A SLOPE



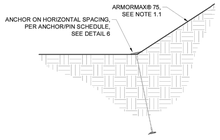
DETAIL 1: CREST OF SLOPE (COS) TRENCH



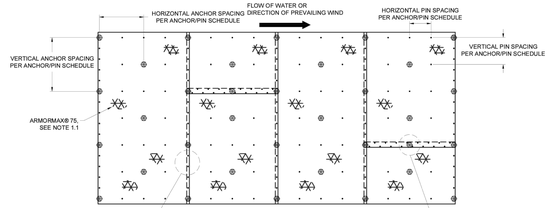
DETAIL 2: TOE OF SLOPE (TOS) TRENCH



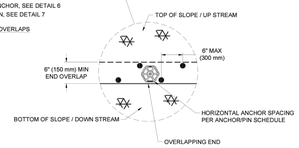
DETAIL 3: SIDE TRENCHES



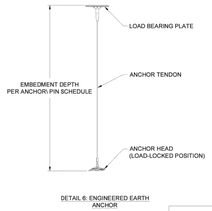
DETAIL 4: BREAK IN SLOPE INTERFACE



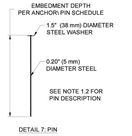
DETAIL 5: PIN PATTERN AND OVERLAPS



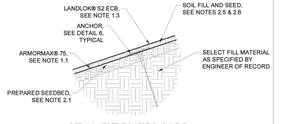
ANCHOR/PIN SCHEDULE		
SECURING DEVICE	ANCHOR	PIN
HORIZONTAL ANCHOR SPACING	PER MANUFACTURERS RECOMMENDATIONS	PER MANUFACTURERS RECOMMENDATIONS
VERTICAL ANCHOR SPACING	PER MANUFACTURERS RECOMMENDATIONS	PER MANUFACTURERS RECOMMENDATIONS
EMBEDMENT DEPTH	PER MANUFACTURERS RECOMMENDATIONS	PER MANUFACTURERS RECOMMENDATIONS



DETAIL 6: ENGINEERED EARTH ANCHOR



DETAIL 7: PIN



DETAIL 8: VEGETATION ESTABLISHMENT

ARMORMAX® 75 FOR EROSION CONTROL GENERAL INSTALLATION GUIDELINES

1. GENERAL NOTES

1.1. ARMORMAX® 75 is an engineered solution used for permanent erosion protection or surficial slope stability in vegetated and unvegetated applications. It is composed of two components: PYRAMAT® 75 High Performance Turf Reinforcement Mat (HPTRM) and Engineered Earth Anchors. ARMORMAX® 75 is available in green or tan to provide for an aesthetically pleasing solution with proven performance.

1.1.1. PYRAMAT® 75 HPTRM is a three-dimensional, lofty, woven polypropylene geotextile that is available in green or tan which is specially designed for erosion control applications on steep slopes and vegetated waterways. The matrix is composed of polypropylene monofilament yarns featuring X3® technology woven into a uniform configuration of resilient pyramid-like projections. The material exhibits very high interlock and reinforcement capacity with both soil and root systems, demonstrates superior UV resistance, and enhances seedling emergence.

1.1.2. The B1 Anchor model is used for permanent erosion protection applications and has a working load of up to 500 lbs. The B1 Anchor consists of an aluminum anchor head, galvanized steel cable, aluminum ferrules, aluminum load-locking mechanism, and an aluminum top plate. The bullet nose design of the anchor head allows the anchor to penetrate HPTRM resulting in minimal installation damage. The B1 Anchor is also designed with a recessed cavity so the top of the cable can be cut below the surface being protected.

1.2. The 12", 18", and 24" Securing Pins are composed of a wire, mushroomed at the top. A washer is then placed on the wire and the wire is crimped or swedged about 3-1/2" below the top so the washer will not slide off. The end of the wire is cut at a 45 degree angle for easy penetration of the soil. These Pins with washers conform to industry standards for erosion control pins with washers.

1.3. LANDLOK® S2 Erosion Control Blankets consist of 100% wheat straw mechanically bound and covered on both sides by netting. The straw is homogeneously blended and evenly distributed throughout the blanket. The netting is photodegradable polypropylene with mesh openings of approximately 3/8 in. by 3/8 in. (11 mm by 11 mm). The blanket is sewn on approximately 2 in. (51 mm) centers with photodegradable polypropylene thread. This product is NTPEP approved for AASHTO standards.

2. VEGETATION ESTABLISHMENT

2.1. Prepare seedbed by loosening/scarifying top 2 to 3 in. (50 to 75 mm) of the soil surface.

2.2. Apply any necessary soil amendments needed to promote healthy vegetation.

2.3. Sow 25-35% of the total permanent seed mixture to the prepared seedbed. Note this seed mixture amount is in addition to the 100% total seed mixture being applied in further steps.

2.4. Install ARMORMAX® 75 per guidelines and specifications.

2.5. Soil-fill the ARMORMAX® 75 with 1 to 2 in. (25 to 50 mm) of amended topsoil or fill with a biotic soil media. Do not place excessive soil above the ARMORMAX® 75 material.

2.6. Apply 100% of the total permanent seed mixture onto the topsoil/biotic soil media by broadcasting. Sown seed may need to be raked into place to ensure good contact between seed and soil.

2.7. Install surficial protection with LANDLOK® S2 Erosion Control Blanket (ECB). LANDLOK® S2 ECB is to be secured using 6" U-shaped staples with a frequency of 1.7 staples per square yard (2.0 staples per square meter).

2.8. Water and/or irrigate seeded areas as needed to establish and maintain vegetation until the desired vegetative density has been achieved. Frequent, light irrigation will need to be applied to seeded areas if natural rain events have not occurred within two weeks of seeding.

2.9. Rubber-tired or rubber-tracked vehicles shall be used, and sharp turns avoided. No heavy and/or metal tracked equipment or sharp turns shall be permitted on the installed ARMORMAX® 75. Foot traffic and construction equipment shall be avoided over the ARMORMAX® 75 if loose or wet soil conditions exist.

BEFORE INSTALLATION BEGINS

- Coordinate with a Solmax Representative: A pre-construction meeting is suggested with the construction team and a representative from Solmax. This meeting should be scheduled by the contractor with at least a two week notice.
- Gather the Tools Needed: Tools that you will need to install ARMORMAX® 75 include a pair of industrial shears to cut PYRAMAT® 75, tape measure, percussion hammer (sized appropriately for the anchors), ground rod driver compatible with the percussion hammer, drive steel compatible with the anchor, setting tool to set and load-lock the anchor, and wire cutters to cut the cable tendon of the anchor. Available for purchase from Solmax are drive steel, setting tools, and wire cutters.
- Determine how to Establish Vegetation: The method of vegetation establishment should be determined prior to the start of installation. Different vegetation establishment methods require different orders of installation. Refer to Establish Vegetation for further guidance.
- A site specific soil test should be conducted to determine the recommended soil amendments required to establish permanent vegetation.
- Please consult the Solmax Website for the most up to date installation guidelines.

SOLMAX

NOTE: THE STANDARD DETAILS ILLUSTRATED IN THESE DRAWINGS ARE FOR INFORMATION AND EVALUATION PURPOSES ONLY AND ARE NOT FOR CONSTRUCTION. PROJECT SPECIFIC CALCULATIONS, SHOP DRAWINGS AND SPECIFICATIONS, SIGNED AND SEALED BY A REGISTERED LICENSED ENGINEER, ARE REQUIRED FOR CONSTRUCTION.

CONCEPTUAL INSTALLATION DETAILS
ARMORMAX® 75 FOR SLOPES

DATE:	SCALE:	SHEET	OF
06/03/2024	NTS	1	1

1 SLOPE STABILIZATION DETAIL
NOT TO SCALE

GENERAL NOTES:
1. CONTRACTOR TO PROVIDE SIGNED AND SEALED SHOP DRAWINGS FROM THE MANUFACTURER OF THIS PRODUCT, OR APPROVED EQUAL FOR ENGINEER REVIEW PRIOR TO INSTALLATION.

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SEAL

RACHEL A. TRAMM
REGISTERED
AGRICULTURE
COMMERCE
No. 120578
STATE OF TENNESSEE
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