

LAGOON IMPROVEMENTS FESTUS READINESS CENTER FESTUS, MISSOURI

OWNER: STATE OF MISSOURI
MIKE KEHOE
GOVERNOR

DEPARTMENT OF THE MISSOURI NATIONAL GUARD
OFFICE OF THE ADJUTANT GENERAL
FACILITIES MANAGEMENT OFFICE

PROJECT
MANAGEMENT: DEPARTMENT OF THE MISSOURI NATIONAL GUARD
OFFICE OF THE ADJUTANT GENERAL
FACILITIES MANAGEMENT OFFICE

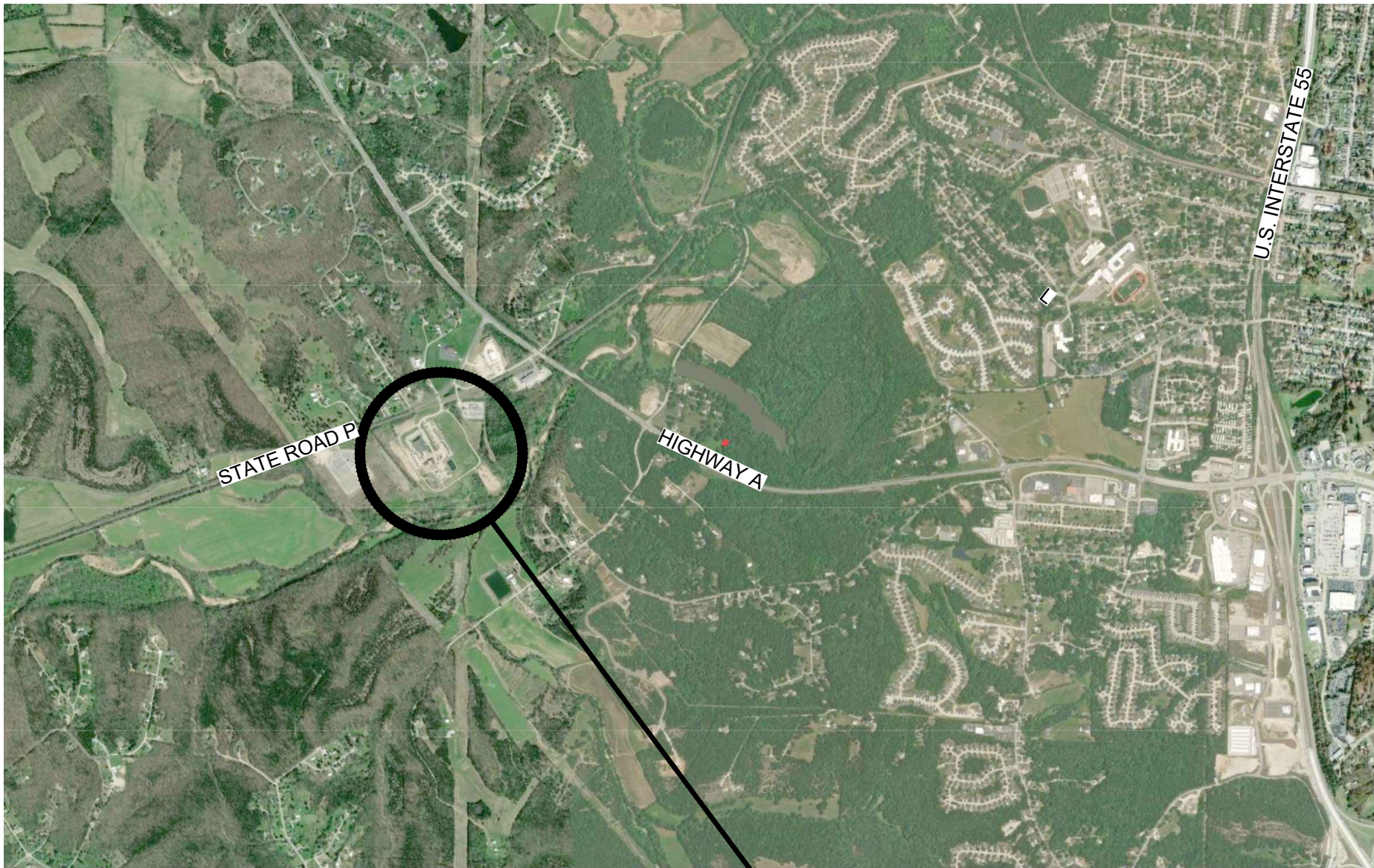


SHEET INDEX:	
G-001	COVER SHEET
C-101	EXISTING SITE PLAN
C-102	LAGOON SITE PLAN
C-103	LAND APPLICATION SITE PLAN
C-501	MISCELLANEOUS DETAILS

DESIGNER: MITCH STROTHER PE
MISSOURI ARMY NATIONAL GUARD

PROJECT NUMBER: T251801

SITE NUMBER: 6302
ASSET NUMBER: 8136302001



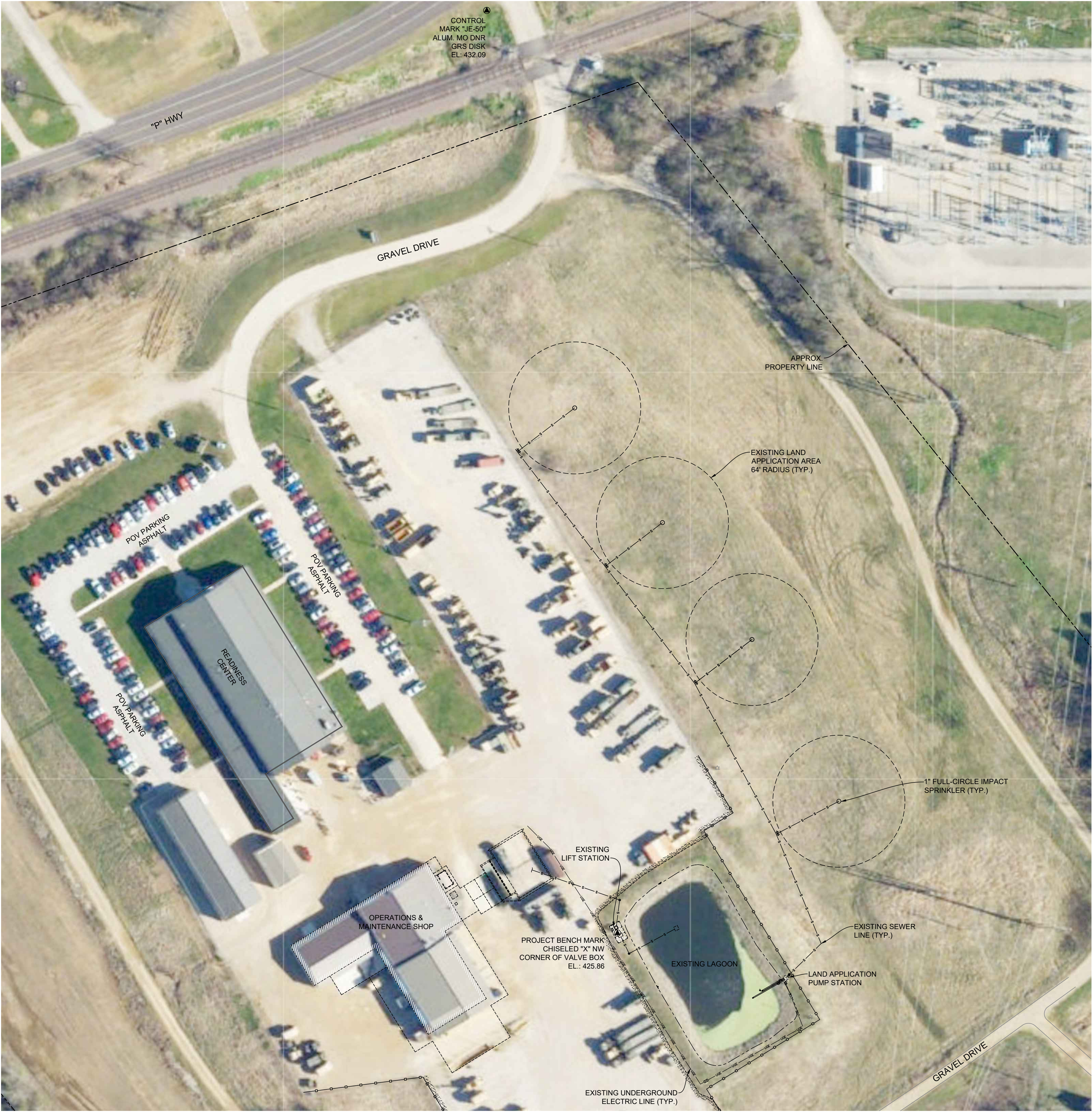
PROJECT LOCATION
ADDRESS:
2740 HIGHWAY P
FESTUS, MO 63028

COORDINATES:
38.218, -90.446

SHEET NUMBER:

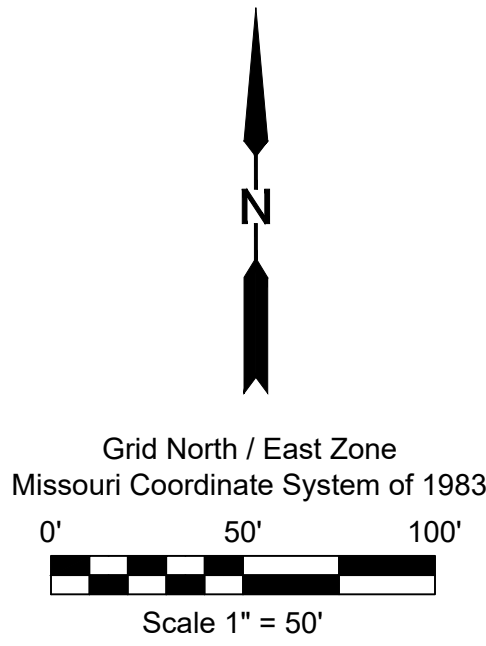
G-001

1 OF 5 SHEETS
November 24, 2025



1
C-101

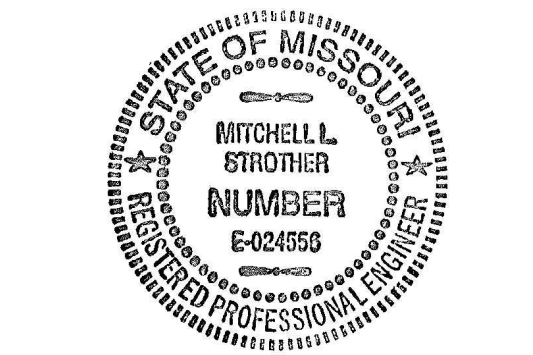
EXISTING SITE PLAN



GENERAL NOTES:

1. EXISTING UTILITIES ARE TO REMAIN IN PLACE AND IN OPERATION, UNLESS SPECIFIED OTHERWISE WITHIN THE PLANS. EXISTING UTILITIES DEPICTED ON THESE PLANS REPRESENT THE BEST INFORMATION AVAILABLE FOR DESIGN. LOCATIONS ARE BASED ON AVAILABLE SURVEYS AND RECORDS; THEREFORE, LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. VERIFICATION OF THE LOCATIONS OF UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, UTILITY LOCATES WILL BE REQUIRED PRIOR TO CONSTRUCTION. CONTACT THE MISSOURI ONE CALL SYSTEM AT 1-800-DIG-RITE (1-800-344-7483) PRIOR TO EXCAVATION OR DEMOLITION.
2. HORIZONTAL & VERTICAL CONTROL WERE DERIVED FROM THE MISSOURI DEPARTMENT OF TRANSPORTATION'S REAL-TIME NETWORK, THE HORIZONTAL CONTROL IS UTILIZING THE MISSOURI STATE PLANE COORDINATE SYSTEM, EAST ZONE, AND THE VERTICAL CONTROL IS BASED FROM NAVD88 DATUM.
3. THE LAND APPLICATION FORCE MAIN AND SPRINKLER SYSTEM ARE SHOWN PER PROJECT NO. T-0245-01 ASBUILT DRAWINGS.

STATE OF MISSOURI
MIKE KEHOE,
GOVERNOR



MITCHELL L. STROTHER
PROFESSIONAL ENGINEER - E-024556



OFFICE OF THE
ADJUTANT GENERAL

MISSOURI NATIONAL GUARD
FACILITIES DIVISION

LAGOON
IMPROVEMENTS

FESTUS
READINESS CENTER
2740 HIGHWAY P
FESTUS, MO 63028

PROJECT # T251801
SITE # 6302
ASSET # 8136302001

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 11/24/2025

CAD DWG FILE: LAGOONIMP
DRAWN BY: RLH
CHECKED BY: MLS
DESIGNED BY: RLH/MLS

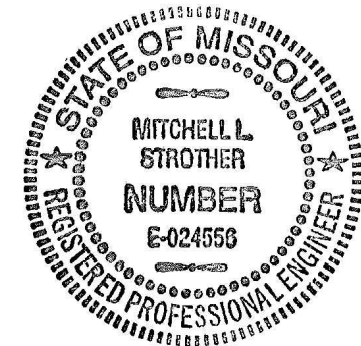
SHEET TITLE:

**EXISTING
SITE PLAN**

SHEET NUMBER:

C-101

SHEET: 2 OF 5
DATE: 11/24/2025



MITCHELL L. STROTHER
PROFESSIONAL ENGINEER - E-024556



OFFICE OF THE
ADJUTANT GENERAL

MISSOURI NATIONAL GUARD
FACILITIES DIVISION

LAGOON
IMPROVEMENTS

FESTUS
READINESS CENTER
2740 HIGHWAY P
FESTUS, MO 63028

PROJECT # T251801
SITE # 6302
ASSET # 8136302001

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 11/24/2025

CAD DWG FILE: LAGOONIMP
DRAWN BY: RLH
CHECKED BY: MLS
DESIGNED BY: RLH/MLS

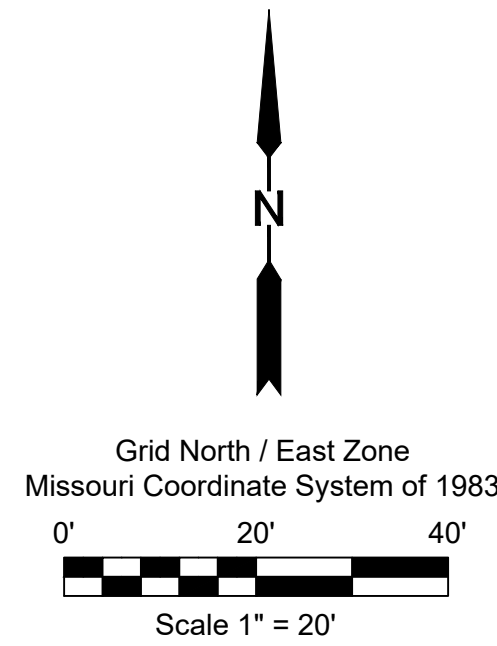
SHEET TITLE:

LAGOON
SITE PLAN

SHEET NUMBER:

C-102

SHEET: 3 OF 5
DATE: 11/24/2025



GENERAL NOTES:

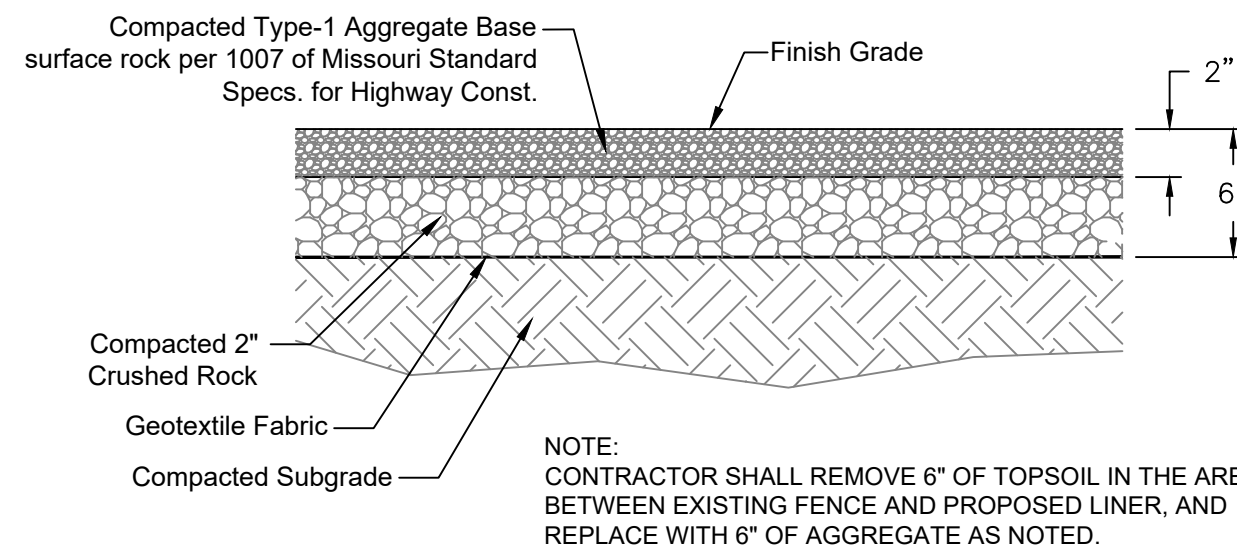
- CONTRACTOR SHALL VERIFY LAND APPLICATION PUMP STATION AND SYSTEM IS FUNCTIONING PROPERLY (SEE DETAIL 5 ON SHEET C-501 FOR KNOWN ITEMS NEEDING REPLACED). A PORTION OF THE EXISTING WASTEWATER TO BE PUMPED FROM EXISTING LAGOON UTILIZING THE LAND APPLICATION SYSTEM. THE REMAINING WASTEWATER AND SLUDGE TO BE DISPOSED OFF-SITE BY A METHOD APPROVED BY MODNR.
- CONTRACTOR SHALL FURNISH PORTABLE RESTROOMS TO ACCOMMODATE UP TO 223 SOLDIERS (DRILL WEEKEND) AND 19 FULL TIME EMPLOYEES, COMPLYING WITH OSHA'S REQUIREMENTS.
- BOTTOM OF THE LAGOON ELEVATIONS AND DIMENSIONS SHALL BE VERIFIED BY CONTRACTOR AFTER SLUDGE REMOVAL. ELEVATION OF BOTTOM OF LAGOON TO BE AT OR BELOW 415.6 FOR ALL VOLUME CALCULATIONS.
- PRIOR TO PLACING THE LINER, ALL RIP-RAP, LANDSCAPING FABRIC, TOP SOIL, AND VEGETATION SHALL BE REMOVED (LEGALLY DISPOSE OF OFFSITE) AND SUB-GRADE SHALL BE PROOF ROLLED UNTIL FIRM AND UNYIELDING. ALL FILL MATERIAL PLACED IN LAGOON AREA SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.
- ALL DISTURBED AREAS OUTSIDE OF THE FENCED AREA SHALL BE SEEDED AND MULCHED.
- EXISTING STAFF GAUGE TO BE REMOVED AND NEW GAUGE TO BE INSTALLED IN THE SAME LOCATION. SEE SHEET C-501 FOR INSTALLATION DETAILS.
- LINER SHALL BE A LINEAR LOW DENSITY POLYETHYLENE GEOMEMBRANE LINER WITH A MINIMUM ROLL AVERAGE OF 40 MILS. (SEE SPECIFICATIONS SECTION 444999 FOR MORE DETAILS). INSTALLATION SHALL BE IN ACCORDANCE WITH THE APPROVED MANUFACTURE'S GEOMEMBRANE INSTALLATION GUIDELINES.
- CONTRACTOR SHALL FOLLOW APPROVED MANUFACTURE'S PIPE PENETRATION DETAILS FOR ALL EXISTING INFLUENT AND EFFLUENT PIPING.
- EXISTING CONCRETE SPLASH PAD SHALL BE REMOVED. NEW 4'x4'x12" CONCRETE SPLASH PAD SHALL CONSTRUCTED ONCE LINER HAS BEEN INSTALLED.
- GRADES HAVE BEEN REVISED USING CURRENT FIELD DATA. ALL GRADES WITH AN "" ARE ADJUSTED ASBUILT GRADES AND HAVE NOT BEEN FIELD VERIFIED. THE CURRENT GRADES ARE ON NAVD 88 DATUM AND MATCH MOST OF THE PREVIOUS SITE PROJECTS. HOWEVER, THE 2002/2003 LAGOON IMPROVEMENT PROJECT (T-0245-01) USED ANOTHER SITE BENCH MARK, THEIR BENCH MARK IS 0.40' HIGHER. THEREFORE, CURRENT ELEVATION + 0.40' = PROJECT NO. T-0245-01 ELEVATIONS. ALL DIMENSIONS AND ELEVATIONS SHALL BE FIELD VERIFIED BY CONTRACTOR, NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

ESTIMATED QUANTITIES:

- EXISTING WATER/SLUDGE TO BE REMOVED = 41,625 CF (BASED ON WATER LEVEL EL. = 419.60)
- GEOMEMBRANE SURFACE AREA = 22,200 SF (INCLUDES 5LF BEYOND TOP OF LAGOON BANK)
- PROPOSED AGGREGATE SURFACE = 1065 SY

LEGEND

EXISTING MAJOR CONTOUR	--- XXX ---
EXISTING MINOR CONTOUR	--- ---
EXISTING CHAIN LINK FENCE	--- □ ---
EXISTING UNDERGROUND ELECTRIC	--- UGE --- UGE ---
EXISTING SANITARY SEWER	--- S --- S ---
EXISTING BURIED ELECTRIC VAULT	--- [Symbol] ---
EXISTING LIGHT POLE	--- [Symbol] ---
EXISTING VALVE PIT	--- [Symbol] ---
EXISTING 10" GATE VALVE	--- [Symbol] ---
CONTROL MARK	--- [Symbol] ---
RECORD DRAWING INFORMATION (NOT FIELD VERIFIED)	--- XXXXX ---

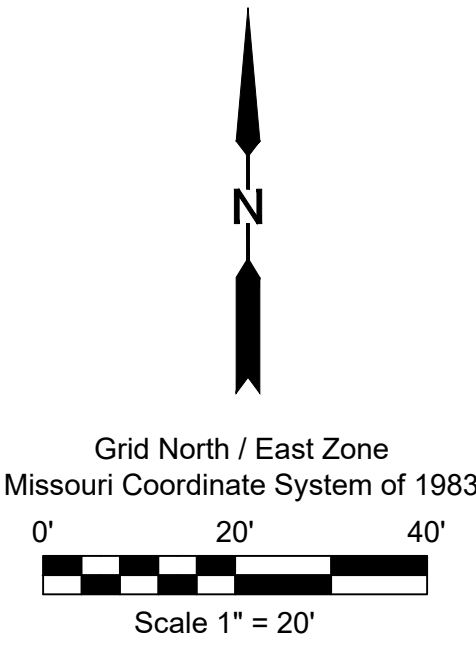


2
C-102
AGGREGATE SURFACE DETAIL
SCALE: 1" = 1'

1
C-102
MVC SITE PLAN

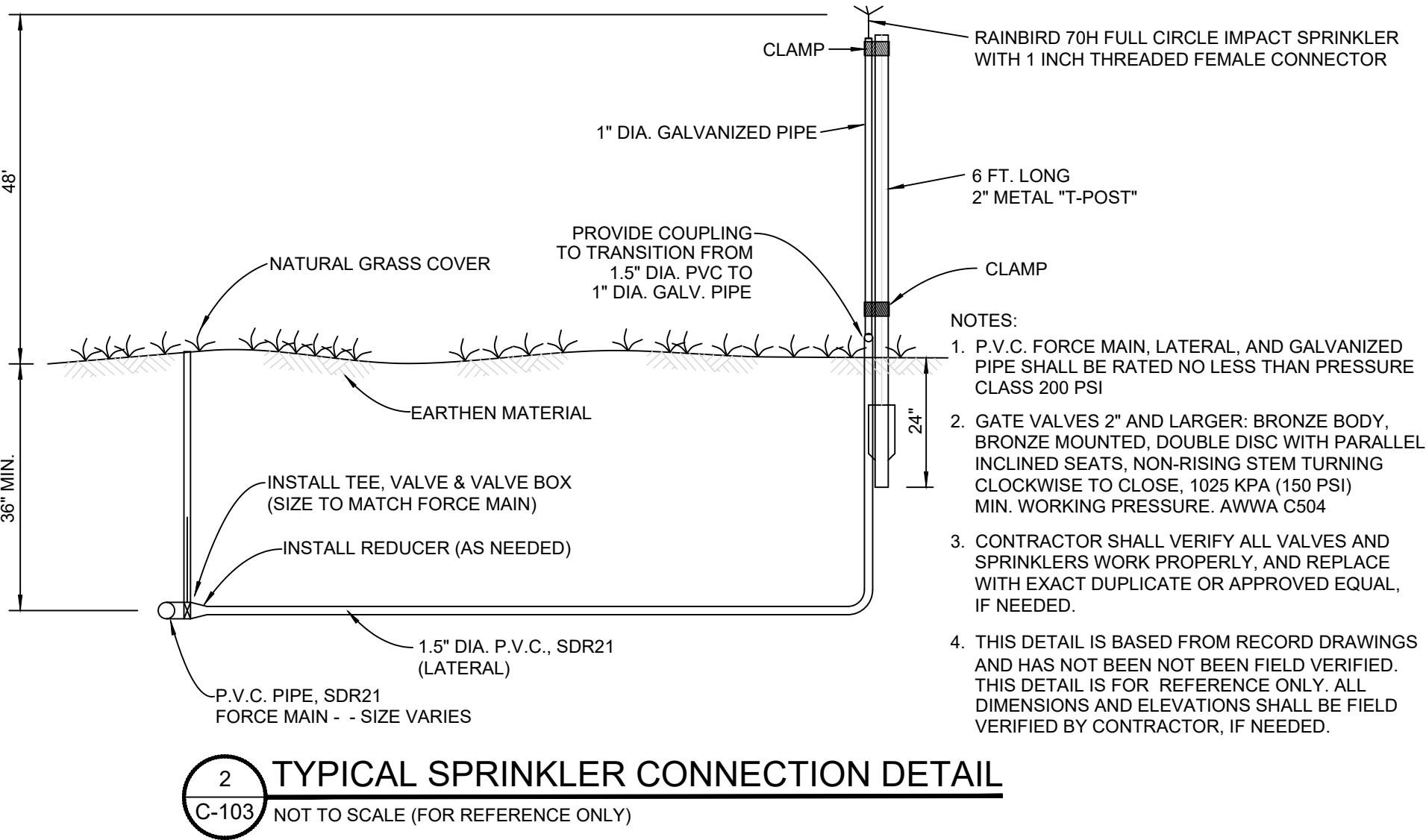


1 LAND APPLICATION SITE PLAN
C-103



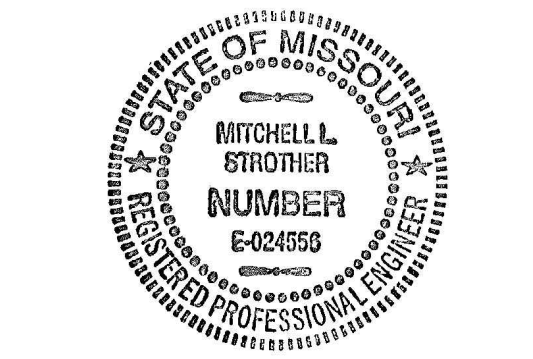
GENERAL NOTES:

1. CONTRACTOR SHALL VERIFY LAND APPLICATION PUMP STATION AND SYSTEM IS FUNCTIONING PROPERLY. ALL DAMAGED VALVES, VALVE BOXES, AND SPRINKLERS SHALL BE REPLACED.
2. ALL DISTURBED AREAS OUTSIDE OF THE FENCED AREA SHALL BE SEEDED AND MULCHED.
3. THE LAND APPLICATION SYSTEM AS SHOWN PER RECORD DRAWINGS AND HAS NOT BEEN FIELD VERIFIED. DIMENSIONS AND ELEVATIONS SHALL BE FIELD VERIFIED BY CONTRACTOR (AS NEEDED), NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.



LEGEND

EXISTING MAJOR CONTOUR	- - - - - XXX - - - - -
EXISTING MINOR CONTOUR	- - - - -
EXISTING CHAIN LINK FENCE	- □ - □ -
EXISTING UNDERGROUND ELECTRIC	- UGE - UGE -
EXISTING SANITARY SEWER	- S - S -
EXISTING BURIED ELECTRIC VAULT	⊠
EXISTING LIGHT POLE	⊙
EXISTING VALVE PIT	⊙
EXISTING 10" GATE VALVE	⊗
CONTROL MARK	⬤
RECORD DRAWING INFORMATION (NOT FIELD VERIFIED)	XXXXX



MITCHELL L. STROTHER
PROFESSIONAL ENGINEER - E-024556



OFFICE OF THE
ADJUTANT GENERAL

MISSOURI NATIONAL GUARD
FACILITIES DIVISION

LAGOON
IMPROVEMENTS

FESTUS
READINESS CENTER
2740 HIGHWAY P
FESTUS, MO 63028

PROJECT # T251801
SITE # 6302
ASSET # 8136302001

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 11/24/2025

CAD DWG FILE: LAGOONIMP
DRAWN BY: RLH
CHECKED BY: MLS
DESIGNED BY: RLH/MLS

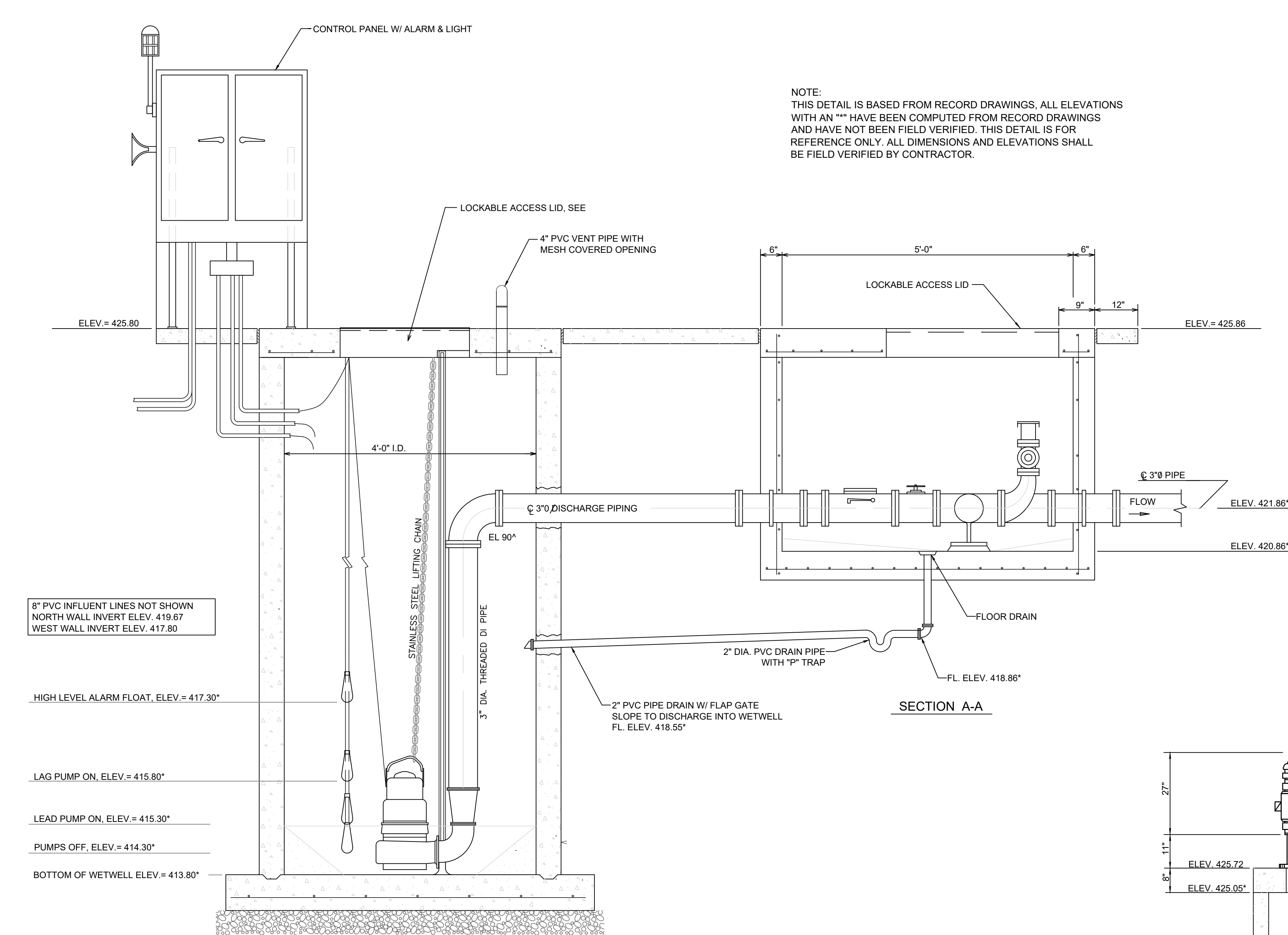
SHEET TITLE:

LAND APPLICATION
SITE PLAN

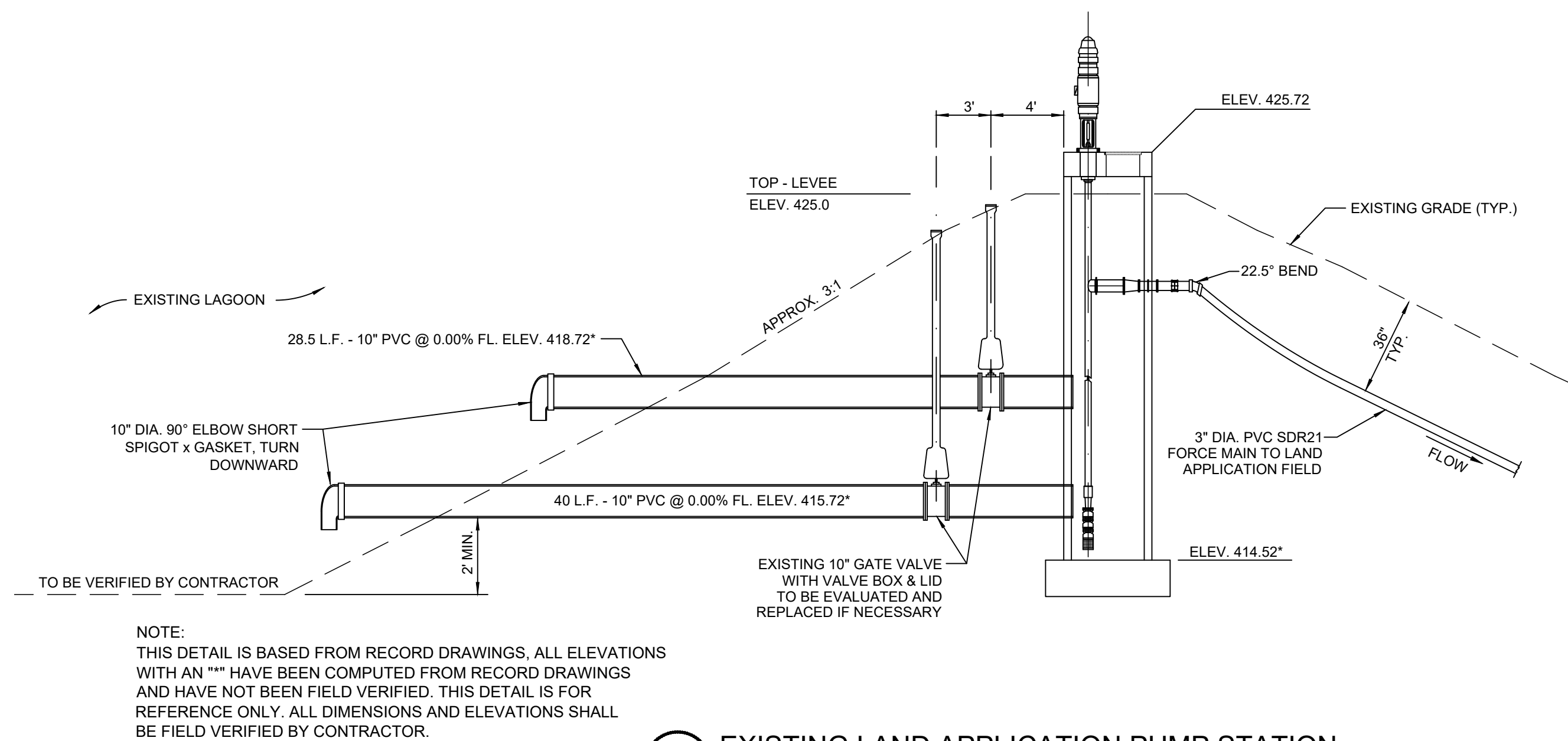
SHEET NUMBER:

C-103

SHEET: 4 OF 5
DATE: 11/24/2025

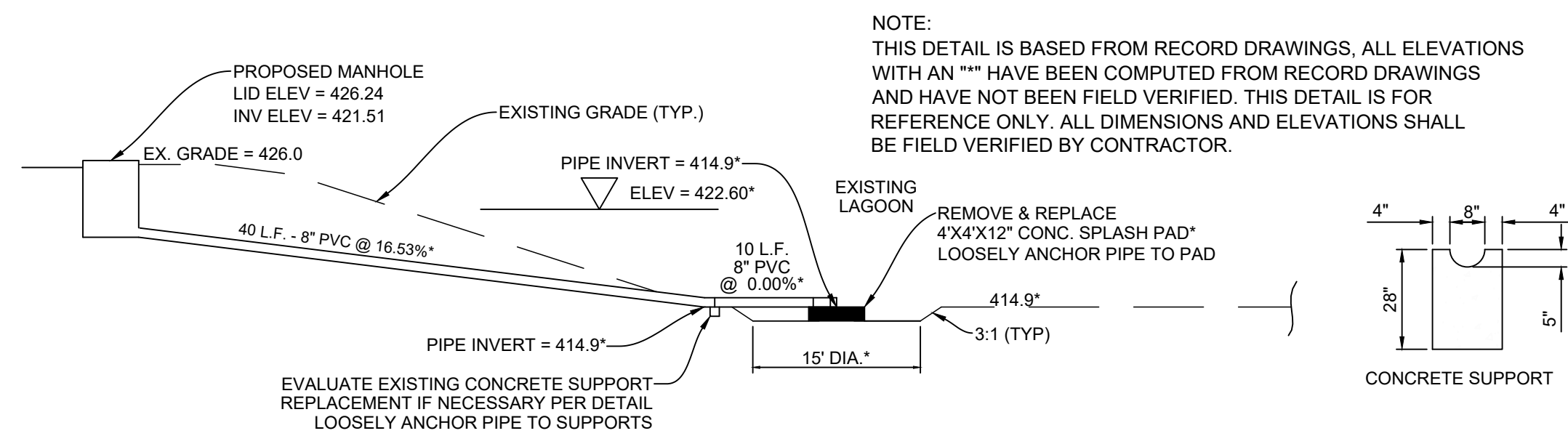


1 EXISTING LIFT STATION
C-501 NOT TO SCALE (FOR REFERENCE ONLY)

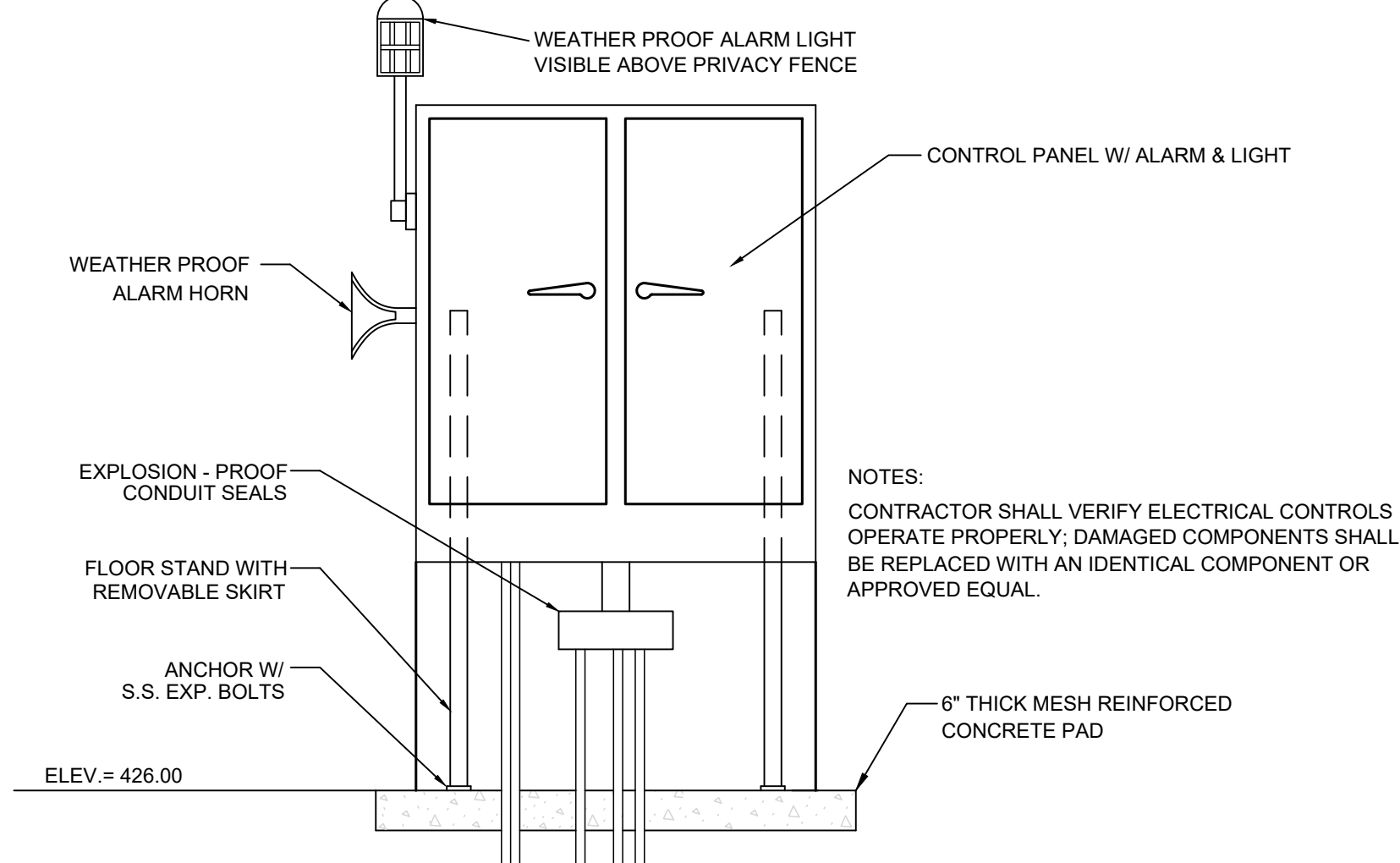


4 EXISTING LAND APPLICATION PUMP STATION
C-501 NOT TO SCALE (FOR REFERENCE ONLY)

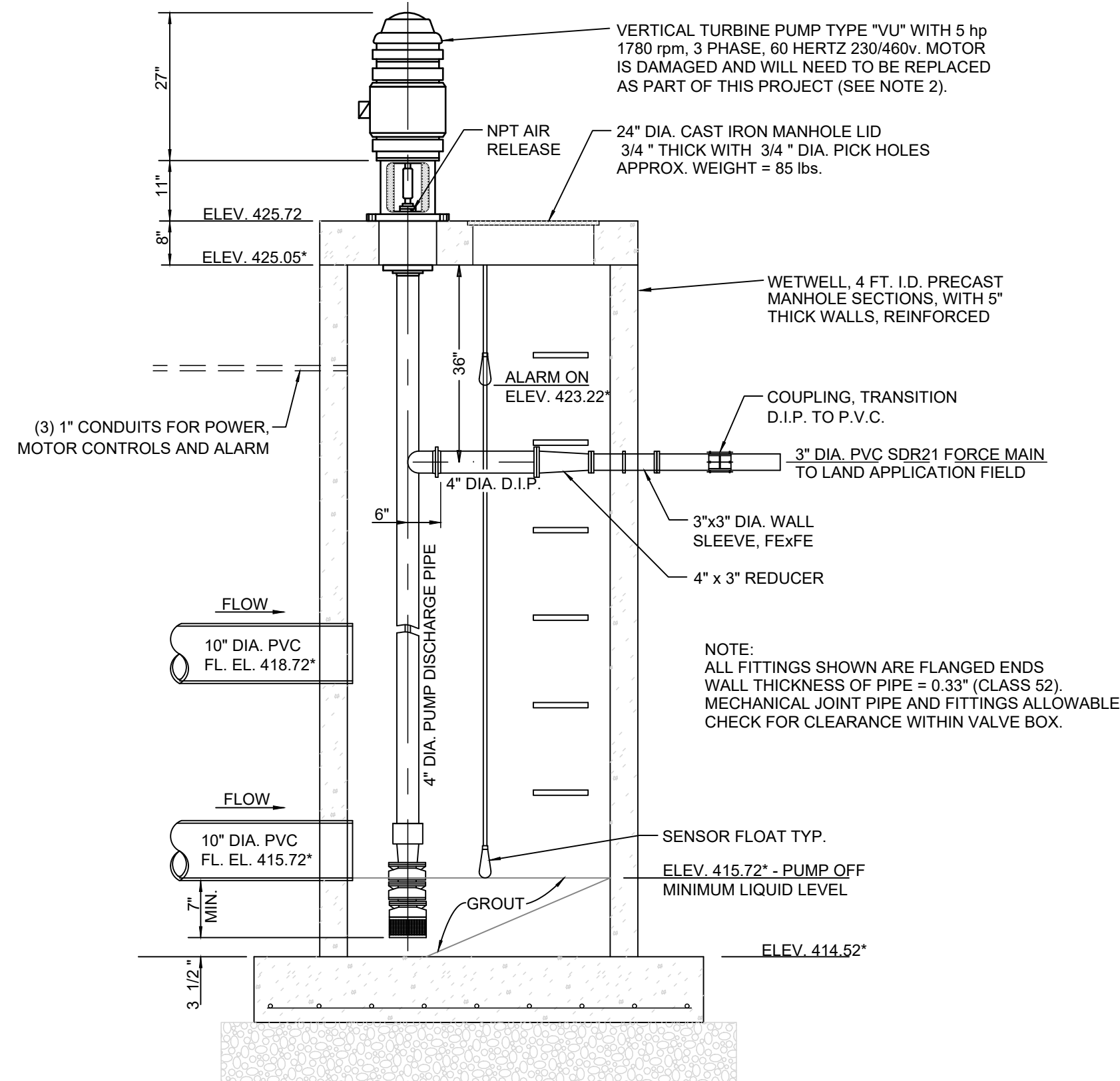
5 EXISTING LAND APPLICATION PUMP STATION - SECTION
C-501 NOT TO SCALE



2 EXISTING INFLUENT PIPE & SPLASH PAD
C-501 NOT TO SCALE (FOR REFERENCE ONLY)

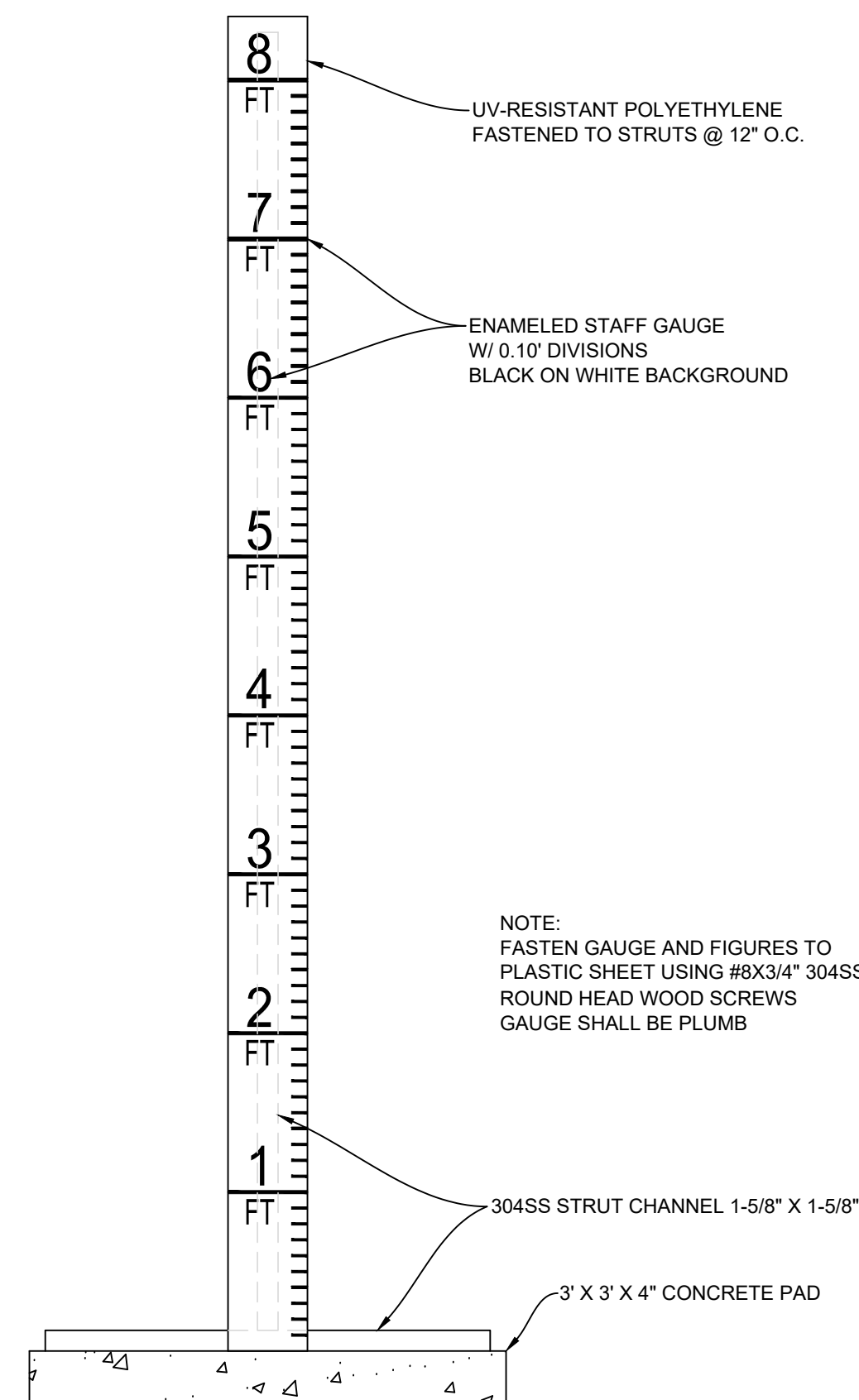


3 LAND APPLICATION PUMP CONTROL PANEL
C-103 NOT TO SCALE (FOR REFERENCE ONLY)



- NOTES:
- THIS DETAIL IS BASED FROM RECORD DRAWINGS, ALL ELEVATIONS WITH AN "" HAVE BEEN COMPUTED FROM RECORD DRAWINGS AND HAVE NOT BEEN FIELD VERIFIED. THIS DETAIL IS FOR REFERENCE ONLY. ALL DIMENSIONS AND ELEVATIONS SHALL BE FIELD VERIFIED BY CONTRACTOR.
 - EXISTING 5 HP MOTOR SHALL BE REPLACED WITH A VERTICAL HOLLOW SHAFT 5 HP, 1780 RPM, 3 PHASE, 60 HZ, 230/460 VOLTS WITH NON-REVERSE RATCHET, P BASE, SQUIRREL CAGE INDUCTION DESIGN. ENCLOSURE SHALL MEET NEMA WEATHER PROTECTED TYPE 1 DESIGN WITH STAINLESS STEEL SCREENS TO PREVENT ENTRANCE OF RODENTS. MOTOR SHALL HAVE CLASS B OR F INSULATION WITH TEMPERATURE WITH TEMPERATURE RISE PER NEMA STANDARDS AND HAVE A 1.15 SERVICE FACTOR. THRUST BEARING SHALL HANDLE THE CONTINUOUS DOWN THRUST AS SPECIFIED BY PUMP MANUFACTURER WITH AN AFBMA B-10 ONE YEAR MIN. OR 5 YEAR AVERAGE LIFE UNDER DESIGN CONDITIONS. PROVISIONS SHALL BE MADE FOR MOMENTARY UP THRUST EQUAL TO 30% OF RATED DOWN THRUST. MOTOR RATING SHALL BE AT DESIGN IT WILL NOT BE LOADED BEYOND NAMEPLATE RATING AND AT NO PLACE ON PUMP CURVE SHALL THE LOADING EXCEED THE SERVICE FACTOR. THE MOTOR HOUSING SHALL BE ALL-WEATHER CONSTRUCTION.

6 STAFF GAUGE
C-501 NO SCALE



STATE OF MISSOURI
MIKE KEHOE,
GOVERNOR



MITCHELL L. STROTHER
PROFESSIONAL ENGINEER - E-024556



OFFICE OF THE
ADJUTANT GENERAL

MISSOURI NATIONAL GUARD
FACILITIES DIVISION

LAGOON
IMPROVEMENTS

FESTUS
READINESS CENTER
2740 HIGHWAY P
FESTUS, MO 63028

PROJECT # T251801
SITE # 6302
ASSET # 8136302001

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 11/24/2025

CAD DWG FILE: BASEFINAL
DRAWN BY: RLH
CHECKED BY: MLS
DESIGNED BY: RLH/MLS

SHEET TITLE:

MISCELLANEOUS
DETAILS

SHEET NUMBER:

C-501

SHEET: 5 OF 5
DATE: 11/24/2025