# **CITY COUNCIL**

JIM OLK KATHLEEN PEELE TIM JOHNSON DUSTY KUYKENDALL DAVID KEER PHILLIP LAWRENCE **DEBBIE FISHER** 

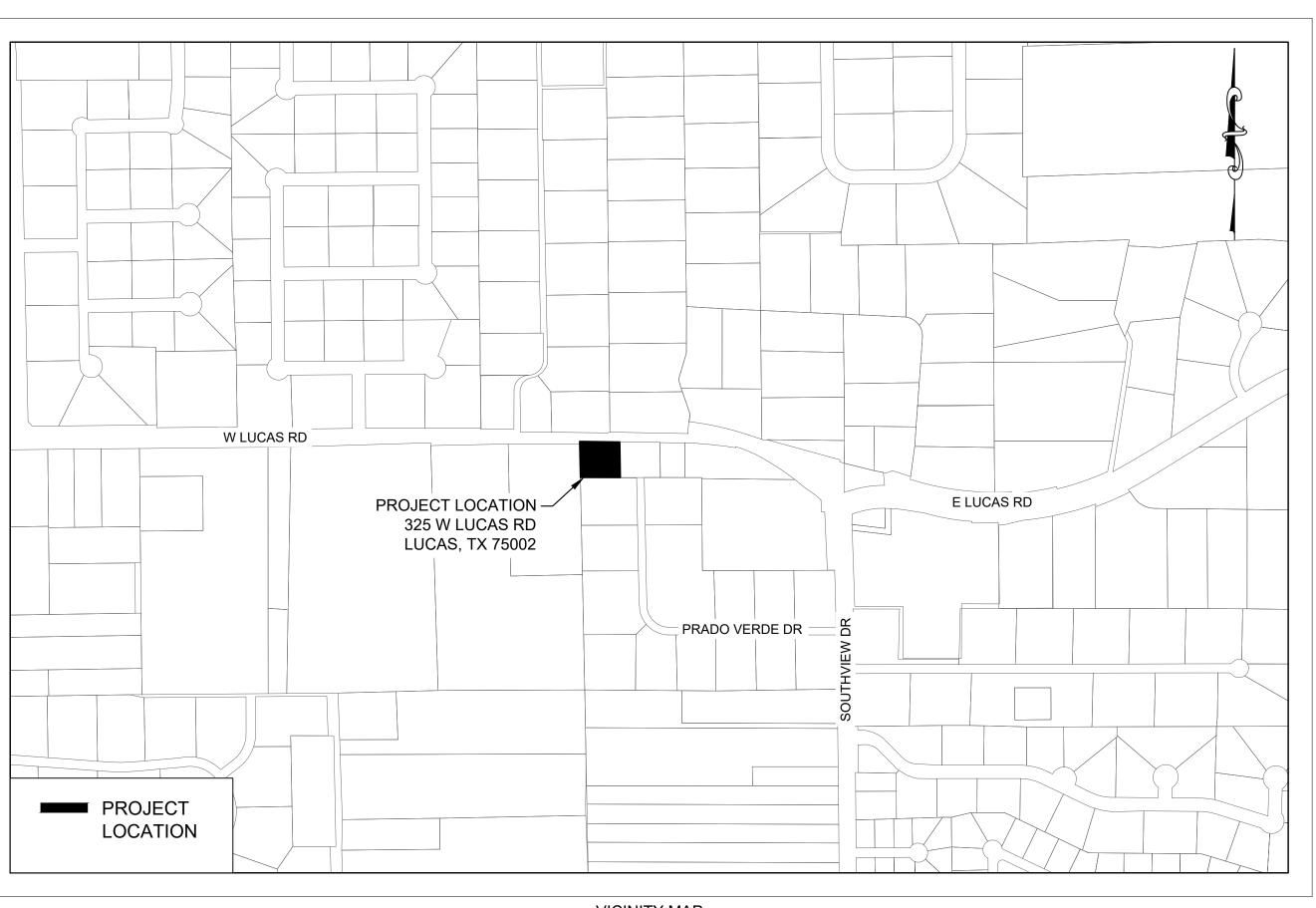
MAYOR MAYOR PRO TEM COUNCILMEMBER COUNCILMEMBER COUNCILMEMBER COUNCILMEMBER COUNCILMEMBER

# STAFF

JONI CLARKE KENT SOURIYASAK

SCOTT HOLDEN, P.E. PATRICK HUBBARD

**CITY MANAGER** ASSISTANT **CITY MANAGER** PUBLIC WORKS DIRECTOR CAPITAL IMPROVEMENT PROJECTS MANAGER



## SUBMITTAL LOG

NO.	DATE	DESCRIPTION
1.	05/26/2023	30% SUBMITTAL (FOR PRELIMINARY REVIEW ONLY)
2.	06/23/2023	60% SUBMITTAL (FOR PRELIMINARY REVIEW ONLY)
3.	07/14/2023	90% SUBMITTAL (FOR PRELIMINARY REVIEW ONLY)
4.	08/04/2023	100% SUBMITTAL (FOR PRELIMINARY REVIEW ONLY)
5.	09/01/2023	FINAL SUBMITTAL (FOR FINAL REVIEW ONLY)
6.	09/07/2023	FINAL SUBMITTAL (FOR BIDDING, CONSTRUCTION & PERMIT PUR



# WEST LUCAS ROAD 0.75 MG ELEVATED STORAGE TANK HWL = 723.0 FT

<u>VICINITY MAP</u> 1" = 500'

SEPTEMBER 7, 2023



JTG ENGINEERING, PLLC

**TBPE FIRM REGISTRATION NO. 22389** PHONE NUMBER: 214-991-6923

# SHEET INDEX

### SHEET NO.

TITLE

CIVIL GENERAL SHEETS:	
01	COVER SHEET
02	GENERAL NOTES
03	PROJECT CONTROL & LEGEND
04	EXISTING SITE PLAN
05	REMOVAL PLAN
06	PROPOSED SITE PLAN
07	FENCING PLAN
08	PROPOSED DRIVEWAY & GRADING PLAN
09	PROPOSED WATER LINE
10	TANK FLOOR PIPING PLAN
11	TANK ELEVATION VIEW
12	EROSION CONTROL PLAN
CIVIL STANDARD DETAILS:	
13	PIPE EMBEDMENT
14 TO 15	EROSION CONTROL DETAILS
16 TO 17	FENCE DETAILS
18	BOLLARD DETAILS
19	WINNINGKOFF EST CONTROL VALVE DETAIL
ELECTRICAL GENERAL SHE	ETS:
E-01 TO E-02	LEGEND & SYMBOLS
E-03	GENERAL NOTES
E-04	PROPOSED SITE PLAN
E-05	FLOOR PLAN-POWER &
	LIGHTING INSTRUMENTATION
E-06	EST ELEVATION & SECTION
E-06 E-07	
E-07 E-08	EST ELEVATION & SECTION INTERFACE DIAGRAM & SECTION SCHEMATICS
E-07	EST ELEVATION & SECTION INTERFACE DIAGRAM & SECTION
E-07 E-08 E-09 E-10	EST ELEVATION & SECTION INTERFACE DIAGRAM & SECTION SCHEMATICS GENERATOR DETAILS SCHEMATICS
E-07 E-08 E-09 E-10 E-11	EST ELEVATION & SECTION INTERFACE DIAGRAM & SECTION SCHEMATICS GENERATOR DETAILS
E-07 E-08 E-09 E-10	EST ELEVATION & SECTION INTERFACE DIAGRAM & SECTION SCHEMATICS GENERATOR DETAILS SCHEMATICS
E-07 E-08 E-09 E-10 E-11	EST ELEVATION & SECTION INTERFACE DIAGRAM & SECTION SCHEMATICS GENERATOR DETAILS SCHEMATICS WINNINGKOFF EST SITE PLAN WINNINGKOFF EST MODIFICATION DIAGRAM AND PANEL SCHEDULES
E-07 E-08 E-09 E-10 E-11 E-12 E-13	EST ELEVATION & SECTION INTERFACE DIAGRAM & SECTION SCHEMATICS GENERATOR DETAILS SCHEMATICS WINNINGKOFF EST SITE PLAN WINNINGKOFF EST MODIFICATION DIAGRAM
E-07 E-08 E-09 E-10 E-11 E-12	EST ELEVATION & SECTION INTERFACE DIAGRAM & SECTION SCHEMATICS GENERATOR DETAILS SCHEMATICS WINNINGKOFF EST SITE PLAN WINNINGKOFF EST MODIFICATION DIAGRAM AND PANEL SCHEDULES
E-07 E-08 E-09 E-10 E-11 E-12 E-13	EST ELEVATION & SECTION INTERFACE DIAGRAM & SECTION SCHEMATICS GENERATOR DETAILS SCHEMATICS WINNINGKOFF EST SITE PLAN WINNINGKOFF EST MODIFICATION DIAGRAM AND PANEL SCHEDULES VALVE VAULT GENERAL DETAILS DETAILS
E-07 E-08 E-09 E-10 E-11 E-12 E-13 E-14 TO E-15	EST ELEVATION & SECTION INTERFACE DIAGRAM & SECTION SCHEMATICS GENERATOR DETAILS SCHEMATICS WINNINGKOFF EST SITE PLAN WINNINGKOFF EST MODIFICATION DIAGRAM AND PANEL SCHEDULES VALVE VAULT GENERAL DETAILS DETAILS
E-07 E-08 E-09 E-10 E-11 E-12 E-13 E-14 TO E-15 <b>INSTRUMENTATION GENERA</b>	EST ELEVATION & SECTION INTERFACE DIAGRAM & SECTION SCHEMATICS GENERATOR DETAILS SCHEMATICS WINNINGKOFF EST SITE PLAN WINNINGKOFF EST MODIFICATION DIAGRAM AND PANEL SCHEDULES VALVE VAULT GENERAL DETAILS DETAILS
E-07 E-08 E-09 E-10 E-11 E-12 E-13 E-14 TO E-15 <b>INSTRUMENTATION GENERA</b> N-01 TO N-02	EST ELEVATION & SECTION INTERFACE DIAGRAM & SECTION SCHEMATICS GENERATOR DETAILS SCHEMATICS WINNINGKOFF EST SITE PLAN WINNINGKOFF EST MODIFICATION DIAGRAM AND PANEL SCHEDULES VALVE VAULT GENERAL DETAILS DETAILS AL SHEETS: LEGEND & SYMBOLS
E-07 E-08 E-09 E-10 E-11 E-12 E-13 E-14 TO E-15 <b>INSTRUMENTATION GENERA</b> N-01 TO N-02 N-03	EST ELEVATION & SECTION INTERFACE DIAGRAM & SECTION SCHEMATICS GENERATOR DETAILS SCHEMATICS WINNINGKOFF EST SITE PLAN WINNINGKOFF EST MODIFICATION DIAGRAM AND PANEL SCHEDULES VALVE VAULT GENERAL DETAILS DETAILS AL SHEETS: LEGEND & SYMBOLS TELEMETRY & SYSTEM ARCHITECTURE
E-07 E-08 E-09 E-10 E-11 E-12 E-13 E-14 TO E-15 <b>INSTRUMENTATION GENERA</b> N-01 TO N-02 N-03 N-04 TO N-05	EST ELEVATION & SECTION INTERFACE DIAGRAM & SECTION SCHEMATICS GENERATOR DETAILS SCHEMATICS WINNINGKOFF EST SITE PLAN WINNINGKOFF EST MODIFICATION DIAGRAM AND PANEL SCHEDULES VALVE VAULT GENERAL DETAILS DETAILS AL SHEETS: LEGEND & SYMBOLS TELEMETRY & SYSTEM ARCHITECTURE PROCESS & INSTRUMENTATION DETAILS



## CITY PROJECT NO. 029-23

- 1. PRIOR TO ANY CONSTRUCTION THE CONTRACTOR SHALL BE FAMILIAR WITH THE CONTRACT DOCUMENTS AND SPECIFICATIONS, THE PLANS (INCLUDING ALL NOTES), THE CITY OF LUCAS SPECIFICATIONS AND ANY OTHER APPLICABLE STANDARDS OR SPECIFICATIONS RELEVANT TO THE PROPER COMPLETION OF THE WORK SPECIFIED. FAILURE ON THE PART OF THE CONTRACTOR TO BE FAMILIAR WITH ALL STANDARDS AND SPECIFICATIONS PERTAINING TO THE WORK SHALL IN NO WAY RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR PERFORMING THE WORK IN ACCORDANCE WITH ALL SUCH APPLICABLE STANDARDS AND SPECIFICATIONS.
- 2. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL HAVE IN THEIR POSSESSION ALL NECESSARY PERMITS, PLANS, LICENSES, ETC. CONTRACTOR SHALL HAVE AT LEAST ONE SET OF APPROVED ENGINEERING PLANS AND SPECIFICATIONS ON-SITE AT ALL TIMES.
- 3. ALL WORK SHALL CONFORM TO THE CITY OF LUCAS DESIGN MANUALS AND STANDARDS. IN THE EVENT AN ITEM IS NOT COVERED IN THE PLANS OR THE CITY OF LUCAS DESIGN MANUALS AND STANDARDS, THE MOST CURRENT NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS (NCTCOG) STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION SHALL APPLY WITH CONCURRING NOTIFICATION TO THE CITY ENGINEER AND PROJECT ENGINEER. THE CITY ENGINEER SHALL HAVE THE FINAL DECISION ON ALL CONSTRUCTION MATERIALS, METHODS, AND PROCEDURES.
- 4. CONSTRUCTION INSPECTION WILL BE PERFORMED BY REPRESENTATIVES OF THE OWNER, ENGINEER, CITY, GEOTECHNICAL ENGINEER, AND REVIEWING AUTHORITIES AND AGENCIES. UNRESTRICTED ACCESS SHALL BE PROVIDED TO THEM AT ALL TIMES. CONTRACTOR IS RESPONSIBLE FOR UNDERSTANDING AND SCHEDULING REQUIRED INSPECTIONS. TESTING SAMPLES SHALL BE COLLECTED AND PROCESSED BY CERTIFIED TECHNICIANS.
- 5. ALL CONTRACTORS MUST CONFINE THEIR ACTIVITIES TO THE WORK AREA. NO ENCROACHMENTS ONTO DEVELOPED OR UNDEVELOPED AREAS WILL BE ALLOWED. ANY DAMAGE RESULTING THEREFROM SHALL BE CONTRACTOR'S RESPONSIBILITY TO REPAIR.
- 6. IT WILL BE THE RESPONSIBILITY OF EACH CONTRACTOR TO PROTECT ALL EXISTING PUBLIC AND PRIVATE UTILITIES THROUGHOUT THE CONSTRUCTION OF THIS PROJECT. CONTRACTOR SHALL CONTACT THE APPROPRIATE UTILITY COMPANIES FOR LINE LOCATIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION AND SHALL ASSUME FULL LIABILITY TO THOSE COMPANIES FOR ANY DAMAGES CAUSED TO THEIR FACILITIES.

TEXAS 811	800-344-8377 (OR 811)
CITY OF LUCAS	972-727-8999
COSERV	940-321-7800
COSERV GAS	800-274-4014 EXT. 7509
GRANDE/ASTOUND	214-618-6284
GCEC	903-482-7183
AT&T	972-660-0092
FRONTIER	972-318-5282
ALTICE USA/SUDDENLINK	972-336-3715

- 7. TRENCH SAFETY DESIGN WILL BE THE RESPONSIBILITY OF THE UTILITY CONTRACTOR. CONTRACTOR SHALL SUBMIT A TRENCH SAFETY DESIGN APPROVED BY A PROFESSIONAL ENGINEER TO THE CITY ENGINEERING INSPECTOR FOR REVIEW PRIOR TO THE START OF ANY UNDERGROUND UTILITY CONSTRUCTION.
- 8. IF ANY CONFLICT ARISES BETWEEN THESE GENERAL NOTES AND ANY OTHER NOTES FOUND IN THE PLANS, THE CITY GENERAL NOTES SHALL TAKE PRECEDENCE.

### PROJECT GENERAL NOTES

- 1. MAIN DOOR 3' WIDE X 7' HIGH, HOLLOW METAL DOOR WITH 16 GA. FRAME AND HEAVY DUTY CLOSER.
- 2. VEHICLE DOOR 12' WIDE X 12' HIGH ROLLING STEEL WITH 22 GA. GALVANIZED SLATES AND MANUAL CHAIR DOOR OPERATOR.
- 3. PROVIDE MONOLITHIC REINFORCED CONCRETE INTERNAL BUTTRESS SECTION ON EACH SIDE OF VEHICLE DOOR. BUTTRESS TO BE A MINIMUM OF 3'-6" WIDE AND 6" THICKER THAN NOMINAL WALL DIMENSION.
- 4. SEE CONTRACT SPECIFICATIONS FOR DESIGN CRITERIA AND DETAILS, APPLICABLE ELEVATED TANK SPECIFICATIONS FOR AWWA D100 AND ACI 318, (LATEST VERSION).
- 5. STEEL TANK FLOOR WITHIN THE PERIMETER OF THE CONCRETE SUPPORT PEDESTAL SHALL BE SUPPORTED BY A STRUCTURAL CONCRETE SLAB.
- 6. PROVIDE ADEQUATE FREEBOARD TO ENSURE ROOF PROJECTIONS AND PAINTER RAIL REMAIN ABOVE THE HIGH WATER LEVEL.
- 7. CONCRETE PEDESTAL EXTERIOR SHALL INCORPORATE HORIZONTAL AND VERTICAL RUSTICATIONS TO CREATE A SYMMETRICAL ARCHITECTURAL PATTERN.
- 8. SEE SPECIFICATIONS FOR STEEL TANK COATING REQUIREMENTS.
- 9. TANK APPURTENANCES ARE ROTATED FOR CLARITY.
- 10. ALL LADDERS AND LANDINGS SHALL BE GALVANIZED.
- 11. PROVIDE ALUMINUM SAFETY RAILS ON ALL LADDERS.
- 12. ROOF ACCESS TUBE AND TANK ACCESS HATCHES SHALL BE 30" SQUARE.

13. A REMOVABLE ALUMINUM LOUVER SHALL BE INSTALLED AT THE UPPER LANDING FOR ACCESS TO THE EXTERIOR PAINTER RAIL.

- 14. THE CONTRACTOR SHALL FIELD VERIFY THE DEPTH AND LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING CONSTRUCTION IN THE PROJECT VICINITY.
- 15. THE CONTRACTOR SHALL FURNISH IN HIS BID PRICE THE DESIGN OF THE ELEVATED WATER STORAGE TANK AND THE TANK FOUNDATION TO INCLUDE ALL STRUCTURAL DESIGN BY A REGISTERED PROFESSIONAL ENGINEER, REGISTERED IN THE STATE OF TEXAS AND EXPERIENCED IN THE DESIGN OF ELEVATED WATER STORAGE TANKS.
- 16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PAINTING, PROTECTIVE COATING, AND TANK LOGO. THE CONCRETE TANK PEDESTAL SHALL NOT BE PAINTED. THE TANK BOTTOM FLOOR SLAB SHALL BE PAINTED. ALL PIPE, VALVES, AND FITTINGS ABOVE THE BOTTOM SLAB SHALL BE PAINTED. (COLOR TO BE SELECTED BY THE CITY OF LUCAS)
- 17. THE CONTRACTOR SHALL INSTALL ALL AIRCRAFT WARNING LIGHTS, LIGHT CONTROLS, CONDUIT WIRES, AND JUNCTION BOXES. THE CONTRACTOR SHALL COORDINATE WITH THE CITY TO INSTALL ELECTRIC SERVICE AND ELECTRIC PANEL. THE CONTRACTOR SHALL INTERFACE AND PROVIDE TERMINAL CONNECTIONS FOR ALL SCADA EQUIPMENT (COORDINATE WITH THE CITY OF LUCAS).
- 18. THE CONTRACTOR SHALL OBTAIN ALL BUILDING PERMITS APPLICABLE TO THE CITY OF LUCAS.
- 19. THE CONTRACTOR SHALL FURNISH ALL CONSTRUCTION STAKING.

### FOUNDATION

MECHANICAL

- WITH SELF LEVELING SEALANT.
- 6. SLOPE SLAB MINIMUM 0.5% TO VEHICLE DOOR FOR DRAINAGE.

7. SEE THE GRADING PLAN FOR FINISHED FLOOR ELEVATIONS.

# DIFFERENTIAL MOVEMENT.

- 2. PROVIDE THRUST RESTRAINT AND SUPPORT AS REQUIRED.
- FREEZE PROTECTION.
- STEEL.
- SPECIFICATIONS.
- 7. REMOVABLE SILT SPOT SHALL BE 6 INCHES ABOVE TANK FLOOR.

### ELECTRICAL

- 1. MOUNT BASE LIGHTS 10 FEET ABOVE SLAB ON GRADE.
- 2. LADDER LIGHTS SHALL BE AT 25 FEET MAXIMUM SPACING.
- 4. MOUNT EXTERIOR DOOR LIGHTS 10' ABOVE GRADE.
- 6. ELECTRIC SERVICE PANEL SHALL BE SIZED TO ACCOMMODATE SCADA CONTROL SYSTEM
- 7. ALL ELECTRIC UTILITIES ARE TO BE UNDERGROUND.

### **EROSION CONTROL & VEGETATION**

- CONTROL OFFICER (ECO) PRIOR TO GRADING.
- OFFICIALS.
- EROSION CONTROL OFFICER (ECO).
- TXR150000 AND ANY OTHER STATE AND/OR LOCAL REGULATIONS.
- IMMEDIATELY.

- CONTRACTOR SHALL INCLUDE THIS RESTORATION IN HIS BID PRICE.
- TO THE CITY OF LUCAS PRIOR TO FINAL ACCEPTANCE.

1. REFER TO THE PRELIMINARY GEOTECHNICAL REPORT FOR GENERAL SITE INFORMATION.

2. DESIGN LOADS IN ACCORDANCE WITH AWWA D100 (LATEST VERSION)

3. DESIGN CONCRETE FOUNDATION IN ACCORDANCE WITH ACI 318 (LATEST VERSION)

4. PROVIDE A 1/2 " ISOLATION JOINT BETWEEN FLOOR AND WALL AND AT ALL FLOOR PENETRATIONS. CAP

5. SAW CUT CONTROL JOINTS 1.5-INCHES DEEP AT 20 FEET MAXIMUM CENTERS.

1. PROVIDE EXPANSION JOINT ON INLET/OUTLET RISER TO ACCOMMODATE MAXIMUM POTENTIAL

3. INLET/OUTLET PIPE TO BE INSULATED AND CLAD WITH ALUMINUM JACKET WHERE REQUIRED FOR

4. INLET/OUTLET AND OVERFLOW PIPING WITHIN THE CONCRETE PEDESTAL SHALL BE TYPE 304L STAINLESS

5. PROVIDE HANGARS, BRACKETS, AND THRUST RESTRAINT AS REQUIRED.

6. OVERFLOW SYSTEM SHALL BE DESIGNED TO ACCOMMODATE MAXIMUM FILL RATE. SEE CONTRACT

OBSTRUCTION LIGHT TO BE LOCATED 12 INCHES ABOVE HIGHEST POINT ON TANK.

5. MOUNT INTERIOR PEDESTAL BASE LIGHTS 10' ABOVE SLAB ON GRADE.

1. EVERY SOIL DISTURBING ACTIVITY SHALL HAVE AN ACCOMPANYING EROSION CONTROL PLAN (ECP), AND EITHER CONSTRUCTION SITE NOTICE (CSN) FOR THOSE ACTIVITIES DISTURBING MORE THAN 1 BUT LESS THAN 5 ACRES, OR NOTICE OF INTENT (NOI) FOR THOSE ACTIVITIES DISTURBING 5 OR MORE ACRES INCLUDING THOSE ACTIVITIES LESS THAN 5 ACRES, BUT ARE PART OF A COMMON PLAN OF DEVELOPMENT TOTALING 5 OR MORE ACRES. A COPY OF THE APPROPRIATE CSN OR NOI SHALL BE PROVIDED TO THE CITY OF LUCAS PRIOR TO ISSUANCE OF A GRADING PERMIT. THE ECP SHALL BE PROVIDED TO LUCAS' EROSION

2. THE CSN OR NOI SHALL BE POSTED IN A LOCATION VIEWABLE TO THE PUBLIC UNTIL CONSTRUCTION IS COMPLETE AND NOTICE OF TERMINATION (NOT) SUBMITTED. THE STORM WATER POLLUTION PREVENTION PLAN (SWP3) SHALL BE READILY AVAILABLE FOR REVIEW BY FEDERAL, STATE, OR LOCAL

3. NO SOIL DISTURBING ACTIVITIES WILL OCCUR PRIOR TO THE SWP3, ECP, AND ASSOCIATED BEST MANAGEMENT PRACTICES (BMP) BEING FULLY IMPLEMENTED, AND THEN INSPECTED BY CITY OF LUCAS'

4. THE CONTRACTOR SHALL COMPLY WITH THE CITY OF LUCAS' STORM WATER ORDINANCE, THE CURRENT NCTCOG ISWMM TECHNICAL MANUAL FOR CONSTRUCTION, THE TPDES GENERAL CONSTRUCTION PERMIT

5. THE CONTRACTOR SHALL EMPLOY MEASURES AS NECESSARY TO PREVENT DIRT, MUD, DEBRIS FROM BEING TRACKED OFF SITE. ANY DIRT, MUD, DEBRIS TRACKED OFFSITE SHALL BE CLEANED UP BY THE CONTRACTOR

6. THE SITE SHALL BE REVIEWED BY THE OPERATOR OR HIS REPRESENTATIVE WEEKLY. AND AFTER ANY MAJOR STORM. ADJUSTMENTS/REPAIRS TO THE EROSION CONTROL MEASURES WILL BE MADE AS NEEDED. THE CONTRACTOR SHALL NOTIFY LUCAS' ECO OF ADJUSTMENTS/REPAIRS SUCH THAT THE ADJUSTMENTS/REPAIRS MAY BE INSPECTED AND APPROVED BY THE ECO.

7. CONTRACTOR SHALL ESTABLISH PERENNIAL VEGETATION ON ALL OTHER DISTURBED AREAS IMMEDIATELY UPON COMPLETION OF GRADING ACTIVITIES. AN APPROPRIATE SEED MIX SHOULD BE CONSIDERED WITH RESPECT TO THE SEASON AND THE TIMING OF FINAL ACCEPTANCE. A COOL SEASON SEED MIX SHOULD BE USED BETWEEN SEPTEMBER 15TH AND APRIL 15TH. FINAL ACCEPTANCE OF A SITE SHALL BE CONTINGENT UPON PERENNIAL VEGETATION BEING FULLY ESTABLISHED IN ALL DISTURBED AREAS.

8. THE CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED BY CONSTRUCTION TO ITS ORIGINAL CONDITION OR BETTER. THE RESTORED AREAS INCLUDE, BUT ARE NOT LIMITED. TO TRENCH BACKFILL, SIDE SLOPES. FENCES, CULVERTS, PIPES, DRAINAGE DITCHES, DRIVEWAYS, PRIVATE YARDS, AND ROADWAYS. THE

9. A COMPLETED N.O.T. SHALL BE SUBMITTED TO THE STATE AND A COPY OF THIS N.O.T. SHALL BE PROVIDED

<ul> <li>PROTECTIVE FENCE AT THE DRIP LINE OF ALL PROTECTED EXISTING TREES, BUSHES, LANDSCAPING PLANTS, SPRINKLERS, AND LAWNS UNLESS NOTED OTHERWISE ON THE CONSTRUCTION DRAWINGS. ANY DAMAGE TO THE EXISTING TREES, BUSHES, LANDSCAPING PLANTS, SPRINKLERS, AND LAWNS CAUSED BY CONSTRUCTION SHALL BE REPLACED TO THE SATISFACTION OF THE CITY OF LUCAS AT THE CONTRACTOR'S EXPENSE.</li> <li>ALL PROTECTIVE MEASURES SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF ANY SITE OR GRADING WORK AND REMAIN IN PLACE UNTIL ALL EXTERIOR WORK HAS BEEN COMPLETED.</li> <li>THE CITY ARBORIST SHALL BE CONTACTED TO APPROVE THE PLACEMENT OF THE TREE PRESERVATION FENCING PRIOR TO BEGINNING OF SITE WORK ON PROPERTY.</li> <li>THE FOLLOWING ACTIVITIES SHALL BE PROHIBITED WITHIN THE LIMITS OF THE PRIMARY ROOT ZONE: MATERIAL STORAGE, EQUIPMENT CLEANING/LIQUID DISPOSAL, NO TREE ATTACHMENTS OF SIGNS OR WIRES, AND CONSTRUCTION EQUIPMENT/VEHICULAR TRAFFIC IS PROHIBITED.</li> <li>UNLESS SPECIFICALLY ALLOWED, NO GRADE CHANGES SHALL BE ALLOWED WITHIN THE LIMITS OF THE PRIMARY ROOT ZONE: CONSTRUCTION EQUIPMENT/VEHICULAR TRAFFIC IS PROHIBITED.</li> <li>UNLESS SPECIFICALLY ALLOWED, NO GRADE CHANGES SHALL BE ALLOWED WITHIN THE LIMITS OF THE PRIMARY ROOT ZONE OF ANY PROTECTED TREE UNLESS THE CITY ARBORIST APPROVES ADEQUATE CONSTRUCTION METHODS.</li> <li>NO TRIMMING OF TREES MAY OCCUR WITHIN THE TREE PRESERVATION FENCING LIMITS WITHOUT PRIOR CONSENT OF THE CITY ARBORIST.</li> <li>PAVING</li> <li>ALL MIX DESIGNS SHALL BE SEALED BY A PROFESSIONAL ENGINEER AND SUBMITTED TO THE CITY INSPECTOR ONE WEEK BEFORE A SCHEDULED POUR. MIX DESIGNS ARE SUBJECT TO APPROVAL BY THE CITY ENGINEER.</li> <li>ALL MIX DESIGNS SHALL BE SEALED BY A PROFESSIONAL ENGINEER AND SUBMITTED TO THE CITY INSPECTOR ONE WEEK BEFORE A SCHEDULED POUR. MIX DESIGNS ARE SUBJECT TO APPROVAL BY THE CITY ENGINEER.</li> <li>ALL CONCRETE PAVING SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI, UNLESS A HIGHER COMPRESSIVE STRENGTH OF STRENGTH IS SPECIFIED.</li></ul>	WATER
TO THE EXISTING TREES, BUSHES, LANDSCAPING PLANTS, SPRINKLERS, AND LAWNS CAUSED BY CONSTRUCTION SHALL BE REPLACED TO THE SATISFACTION OF THE CITY OF LUCAS AT THE CONTRACTOR'S EXPENSE. 2. ALL PROTECTIVE MEASURES SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF ANY SITE OR GRADING WORK AND REMAIN IN PLACE UNTIL ALL EXTERIOR WORK HAS BEEN COMPLETED. 3. THE CITY ARBORIST SHALL BE CONTACTED TO APPROVE THE PLACEMENT OF THE TREE PRESERVATION FENCING PRIOR TO BEGINNING OF SITE WORK ON PROPERTY. 4. THE FOLLOWING ACTIVITIES SHALL BE PROHIBITED WITHIN THE LIMITS OF THE PRIMARY ROOT ZONE: MATERIAL STORAGE, EQUIPMENT CLEANING/LIQUID DISPOSAL, NO TREE ATTACHMENTS OF SIGNS OR WIRES, AND CONSTRUCTION EQUIPMENT/VEHICULAR TRAFFIC IS PROHIBITED. 5. UNLESS SPECIFICALLY ALLOWED, NO GRADE CHANGES SHALL BE ALLOWED WITHIN THE LIMITS OF THE PRIMARY ROOT ZONE OF ANY PROTECTED TREE UNLESS THE CITY ARBORIST APPROVES ADEQUATE CONSTRUCTION METHODS. 6. NO TRIMMING OF TREES MAY OCCUR WITHIN THE TREE PRESERVATION FENCING LIMITS WITHOUT PRIOR CONSENT OF THE CITY ARBORIST. <b>PAVING</b> 1. ALL MIX DESIGNS SHALL BE SEALED BY A PROFESSIONAL ENGINEER AND SUBMITTED TO THE CITY INSPECTOR ONE WEEK BEFORE A SCHEDULED POUR. MIX DESIGNS ARE SUBJECT TO APPROVAL BY THE CITY ENGINEER. 2. ALL CONCRETE PAVING SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI, UNLESS A HIGHER COMPRESSIVE STRENGTH IS SPECIFIED. 3. ALL FILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY IN A MAXIMUM OF 6" (SIX) INCH LIFTS OR PER THE APPROVED GEOTECHNICAL ENGINEERS REPORT. 4. SUBGRADE SHALL EXTEND 12" MINIMUM BEHIND THE CURB, BE A MINIMUM OF 6" THICK AND SHALL BE LIME OR CEMENT STABLIZED AS RECOMMENDED IN THE GOTECHNICAL REPORT. THE AMOUNT OF LIME TO BE ADDED SHALL BE SUFFICIENT TO ACHIEVE A PLASTICITY INDEX NOT TO EXCEED 12. 5. A SUBGRADE DENSITY REPORT MUST BE PRESENTED TO THE CITY INSPECTOR PRIOR TO PAVING. DENSITIES ARE ONLY VAUID FOR 72 HOURS. DENSITIES RECEIVED TO THE CITY INSPECTOR PRIOR TO PAVING. DENSITIES ARE ONLY ALU BE SUFFICIENT TO ACHIEVE A PLASTICITY INDEX	1. AL WI
<ul> <li>EXPENSE.</li> <li>2. ALL PROTECTIVE MEASURES SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF ANY SITE OR GRADING WORK AND REMAIN IN PLACE UNTIL ALL EXTERIOR WORK HAS BEEN COMPLETED.</li> <li>3. THE CITY ABBORIST SHALL BE CONTACTED TO APPROVE THE PLACEMENT OF THE TREE PRESERVATION FENCING PRIOR TO BEGINNING OF SITE WORK ON PROPERTY.</li> <li>4. THE FOLLOWING ACTIVITIES SHALL BE PONHIBITED WITHIN THE LIMITS OF THE PRIMARY ROOT ZONE: MATERIAL STORAGE, EQUIPMENT CLEANING/LIQUID DISPOSAL, NO TREE ATTACHMENTS OF SIGNS OR WIRES, AND CONSTRUCTION EQUIPMENT/VEHICULAR TRAFFIC IS PROHIBITED.</li> <li>5. UNLESS SPECIFICALLY ALLOWED, NO GRADE CHANGES SHALL BE ALLOWED WITHIN THE LIMITS OF THE PRIMARY ROOT ZONE OF ANY PROTECTED TREE UNLESS THE CITY ARBORIST APPROVES ADEQUATE CONSTRUCTION METHODS.</li> <li>6. NO TRIMMING OF TREES MAY OCCUR WITHIN THE TREE PRESERVATION FENCING LIMITS WITHOUT PRIOR CONSENT OF THE CITY ARBORIST.</li> <li>PAVING</li> <li>1. ALL MIX DESIGNS SHALL BE SEALED BY A PROFESSIONAL ENGINEER AND SUBMITTED TO THE CITY INSPECTOR ONE WEEK BEFORE A SCHEDULED POUR. MIX DESIGNS ARE SUBJECT TO APPROVAL BY THE CITY ENGINEER.</li> <li>2. ALL CONCRETE PAVING SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI, UNLESS A HIGHER COMPRESSIVE STRENGTH IS SPECIFIED.</li> <li>3. ALL FILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY IN A MAXIMUM OF 6" (SIX) INCH LIFTS OR PER THE APPROVED GEOTECHNICAL ENGINEERS REPORT.</li> <li>4. SUBGRADE SHALL EXTEND 12" MINIMUM BEHIND THE CURP. BE A MINIMUM OF 6" THICK AND SHALL BE LIME OR CEMENT STABILIZED AS RECOMMENDED IN THE GEOTECHNICAL REPORT. THE AMOUNT OF LIME TO A PLASTICITY INDEX NOT TO EXCEED 12.</li> <li>5. A SUBGRADE DENSITY REPORT MUST BE PRESENTED TO THE CITY INSPECTOR PRIOR TO PAVING. DENSITIES A RECOMMENDED IN THE GEOTECHNICAL REPORT. THE AMOUNT OF LIME TO BE ADDED SHALL BE SUFFLICENT TO ACHIEVE A PLASTICITY INDEX NOT TO EXCEED 12.</li> <li>5. A SUBGRADE DENSITY REPORT MUST BE PRESENTED TO THE CITY INDEX NOT TO EXCEED 12.</li> <li>5. A SUBGRADE DENSITY REPORT M</li></ul>	AS TH
<ul> <li>WORK AND REMAIN IN PLACE UNTIL ALL EXTERIOR WORK HAS BEEN COMPLETED.</li> <li>THE CITY ARBORIST SHALL BE CONTACTED TO APPROVE THE PLACEMENT OF THE TREE PRESERVATION FENCING PRIOR TO BEGINNING OF SITE WORK ON PROPERTY.</li> <li>THE FOLLOWING ACTIVITIES SHALL BE PROHIBITED WITHIN THE LIMITS OF THE PRIMARY ROOT ZONE: MATERIAL STORAGE, EQUIPMENT CLEANING/LIQUID DISPOSAL, NO TREE ATTACHMENTS OF SIGNS OR WIRES, AND CONSTRUCTION EQUIPMENT/VEHICULAR TRAFFIC IS PROHIBITED.</li> <li>UNLESS SPECIFICALLY ALLOWED, NO GRADE CHANGES SHALL BE ALLOWED WITHIN THE LIMITS OF THE PRIMARY ROOT ZONE OF ANY PROTECTED TREE UNLESS THE CITY ARBORIST APPROVES ADEQUATE CONSTRUCTION METHODS.</li> <li>NO TRIMMING OF TREES MAY OCCUR WITHIN THE TREE PRESERVATION FENCING LIMITS WITHOUT PRIOR CONSENT OF THE CITY ARBORIST.</li> <li>PAVING</li> <li>ALL MIX DESIGNS SHALL BE SEALED BY A PROFESSIONAL ENGINEER AND SUBMITTED TO THE CITY INSPECTOR ONE WEEK BEFORE A SCHEDULED POUR. MIX DESIGNS ARE SUBJECT TO APPROVAL BY THE CITY ENGINEER.</li> <li>ALL CONCRETE PAVING SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI, UNLESS A HIGHER COMPRESSIVE STRENGTH IS SPECIFIED.</li> <li>ALL FILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY IN A MAXIMUM OF 6" (SIX) INCH LIFTS OR PER THE APPROVED GEOTECHNICAL ENGINEERS REPORT.</li> <li>SUBGRADE SHALL EXTEND 12" MINIMUM BEHIND THE CURB, BE A MINIMUM OF 6" THICK AND SHALL BE LIME OR SRECOMMENDED IN THE GEOTECHNICAL REPORT. THE AMOUNT OF LIME TO BE ADDED SHALL BE SUFFICIENT TO ACHIEVE A PLASTICITY INDEX NOT TO EXCEED 12.</li> <li>A SUBGRADE SHALL EXTEND 12" MINIMUM BE PRESENTED TO THE CITY INSPECTOR PRIOR TO PAVING. DENSITIES ARE ONLY VALID FOR 72 HOURS. DENSITIES RECEIVED ON A FRIDAY ARE VALUD UNTIL NOON ON THE FOLLOWING MONDAY. DENSITIES TAKEN AT THE CITY INSPECTORS DISCRETION. A MINIMUM OF 6 THE CARD BERGRE REQUIRED TO BE RETAKEN AT THE CITY INSPECTOR SAILE BERGETION. A MINIMUM OF FOR THE APPORTED A REQUIRED TO BE RETAKEN AT THE CITY INSPECTOR SAILE REQUIRED TO BE RETAKEN AT THE CITY INSPECTOR SAIL</li></ul>	2. AL UN
<ul> <li>FENCING PRIOR TO BEGINNING OF SITE WORK ON PROPERTY.</li> <li>4. THE FOLLOWING ACTIVITIES SHALL BE PROHIBITED WITHIN THE LIMITS OF THE PRIMARY ROOT ZONE: MATERIAL STORAGE, EQUIPMENT CLEANING/LIQUID DISPOSAL, NO TREE ATTACHMENTS OF SIGNS OR WIRES, AND CONSTRUCTION EQUIPMENT/VEHICULAR TRAFFIC IS PROHIBITED.</li> <li>5. UNLESS SPECIFICALLY ALLOWED, NO GRADE CHANGES SHALL BE ALLOWED WITHIN THE LIMITS OF THE PRIMARY ROOT ZONE OF ANY PROTECTED TREE UNLESS THE CITY ARBORIST APPROVES ADEQUATE CONSTRUCTION METHODS.</li> <li>6. NO TRIMMING OF TREES MAY OCCUR WITHIN THE TREE PRESERVATION FENCING LIMITS WITHOUT PRIOR CONSENT OF THE CITY ARBORIST.</li> <li>PAVING</li> <li>1. ALL MIX DESIGNS SHALL BE SEALED BY A PROFESSIONAL ENGINEER AND SUBMITTED TO THE CITY INSPECTOR ONE WEEK BEFORE A SCHEDULED POUR. MIX DESIGNS ARE SUBJECT TO APPROVAL BY THE CITY ENGINEER.</li> <li>2. ALL CONCRETE PAVING SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI, UNLESS A HIGHER COMPRESSIVE STRENGTH IS SPECIFIED.</li> <li>3. ALL FILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY IN A MAXIMUM OF 6" (SIX) INCH LIFTS OR PER THE APPROVED GEOTECHNICAL ENGINEERS REPORT.</li> <li>4. SUBGRADE SHALL EXTEND 12" MINIMUM BEHIND THE CURB, BE A MINIMUM OF 6" THICK AND SHALL BE LIME OR CEMPENT STABILIZED AS RECOMMENDED IN THE GEOTECHNICAL REPORT. THE AMOUNT OF LIME TO BE ADDED SHALL EXTERND TO ACHIEVE A PLASTICITY INDEX NOT TO EXCEED 12.</li> <li>5. A SUBGRADE DENSITY REPORT MUST BE PRESENTED TO THE CITY INSPECTOR PRIOR TO PAVING. DENSITIES ARE ONLY VALID FOR 72 HOURS. DENSITIES RECEIVED ON A FRIDAY ARE VALID UNTIL NOON ON THE FOLLOWING MONDAY. DENSITIES TAKEN BEFORE INCLEMENT WEATHER MAY BE REQUIRED TO BE RETAKEN AT THE CITY INSPECTORS DISCRETION. A MINIMUM OF FOR TO LINDERS ARE REQUIRED BE RETAKEN AT THE CITY INSPECTORS DISCRETION. A MAXIB ARE REQUIRED TO BE RETAKEN AT THE CITY INSPECTORS DISCRETION. A MAKEN WEATHER MAY BE REQUIRED TO BE RETAKEN AT THE CITY INSPECTORS DISCRETION. A MAKEN BEFORE INCLEMENT WEATHER MAY BE REQUIRED TO BE RETAKEN</li></ul>	AL PA
<ul> <li>MATERIAL STORAGE, EQUIPMENT CLEANING/LIQUID DISPOSAL, NO TREE ATTACHMENTS OF SIGNS OR WIRES, AND CONSTRUCTION EQUIPMENT/VEHICULAR TRAFFIC IS PROHIBITED.</li> <li>5. UNLESS SPECIFICALLY ALLOWED, NO GRADE CHANGES SHALL BE ALLOWED WITHIN THE LIMITS OF THE PRIMARY ROOT ZONE OF ANY PROTECTED TREE UNLESS THE CITY ARBORIST APPROVES ADEQUATE CONSTRUCTION METHODS.</li> <li>6. NO TRIMMING OF TREES MAY OCCUR WITHIN THE TREE PRESERVATION FENCING LIMITS WITHOUT PRIOR CONSENT OF THE CITY ARBORIST.</li> <li>PAVING</li> <li>1. ALL MIX DESIGNS SHALL BE SEALED BY A PROFESSIONAL ENGINEER AND SUBMITTED TO THE CITY INSPECTOR ONE WEEK BEFORE A SCHEDULED POUR. MIX DESIGNS ARE SUBJECT TO APPROVAL BY THE CITY ENGINEER.</li> <li>2. ALL CONCRETE PAVING SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI, UNLESS A HIGHER COMPRESSIVE STRENGTH IS SPECIFIED.</li> <li>3. ALL FILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY IN A MAXIMUM OF 6" (SIX) INCH LIFTS OR PER THE APPROVED GEOTECHNICAL ENGINEERS REPORT.</li> <li>4. SUBGRADE SHALL EXTEND 12" MINIMUM BEHIND THE CURB, BE A MINIMUM OF 6" THICK AND SHALL BE LIME OR CEMENT STABILIZED AS RECOMMENDED IN THE GEOTECHNICAL REPORT. THE AMOUNT OF LIME TO BE ADDED SHALL BE SUFFICIENT TO ACHIEVE A PLASTICITY INDEX NOT TO EXCEED 12.</li> <li>5. A SUBGRADE DENSITY REPORT MUST BE PRESENTED TO THE CITY INSPECTOR PRIOR TO PAVING. DENSITIES ARE ONLY VALID FOR 72 HOURS. DENSITIES RECEIVED ON A FRIDAY ARE VALID UNTIL NOON ON THE FOLLOWING MONDAY. DENSITIES TAKEN BEFORE INCLEMENT WEATHER MAY BE REQUIRED TO BE RETAKEN AT THE CITY INSPECTORS DISCRETION. A MINIMUM OF FOUR (4) TEST CYLINEDRE ARE REQUIRED</li> </ul>	3. TH TE CO
<ul> <li>PRIMARY ROOT ZONE OF ANY PROTECTED TREE UNLESS THE CITY ARBORIST APPROVES ADEQUATE CONSTRUCTION METHODS.</li> <li>6. NO TRIMMING OF TREES MAY OCCUR WITHIN THE TREE PRESERVATION FENCING LIMITS WITHOUT PRIOR CONSENT OF THE CITY ARBORIST.</li> <li>PAVING</li> <li>1. ALL MIX DESIGNS SHALL BE SEALED BY A PROFESSIONAL ENGINEER AND SUBMITTED TO THE CITY INSPECTOR ONE WEEK BEFORE A SCHEDULED POUR. MIX DESIGNS ARE SUBJECT TO APPROVAL BY THE CITY ENGINEER.</li> <li>2. ALL CONCRETE PAVING SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI, UNLESS A HIGHER COMPRESSIVE STRENGTH IS SPECIFIED.</li> <li>3. ALL FILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY IN A MAXIMUM OF 6" (SIX) INCH LIFTS OR PER THE APPROVED GEOTECHNICAL ENGINEERS REPORT.</li> <li>4. SUBGRADE SHALL EXTEND 12" MINIMUM BEHIND THE CURB, BE A MINIMUM OF 6" THICK AND SHALL BE LIME OR CEMENT STABILIZED AS RECOMMENDED IN THE GEOTECHNICAL REPORT. THE AMOUNT OF LIME TO BE ADDED SHALL BE SUFFICIENT TO ACHIEVE A PLASTICITY INDEX NOT TO EXCEED 12.</li> <li>5. A SUBGRADE DENSITY REPORT MUST BE PRESENTED TO THE CITY INSPECTOR PRIOR TO PAVING. DENSITIES ARE ONLY VALID FOR 72 HOURS. DENSITIES RECEIVED ON A FRIDAY ARE VALID UNTIL NOON ON THE FOLLOWING MONDAY. DENSITIES RECEIVED ON A FRIDAY ARE VALID UNTIL NOON ON THE FOLLOWING MONDAY. DENSITIES RECEIVED ON A FRIDAY ARE VALID UNTIL NOON ON THE FOLLOWING MONDAY. DENSITIES RECEIVED ON A FRIDAY ARE VALID UNTIL NOON ON THE FOLLOWING MONDAY. DENSITIES RECEIVED ON A FRIDAY ARE VALID UNTIL NOON ON THE FOLLOWING MONDAY. DENSITIES RECEIVED ON A FRIDAY ARE VALID UNTIL NOON ON THE FOLLOWING MONDAY. DENSITIES RECEIVED ON A FRIDAY ARE VALID UNTIL NOON ON THE FOLLOWING MONDAY. DENSITIES RAKEN BEFORE INCLEMENT WEATHER MAY BE REQUIRED TO BE RETAKEN AT THE CITY INSPECTORS DISCRETION. A MINIMUM OF FOUR (4) TEST CYLINDERS ARE REQUIRED</li> </ul>	4. TH OF
<ul> <li>CONSENT OF THE CITY ARBORIST.</li> <li>PAVING <ol> <li>ALL MIX DESIGNS SHALL BE SEALED BY A PROFESSIONAL ENGINEER AND SUBMITTED TO THE CITY INSPECTOR ONE WEEK BEFORE A SCHEDULED POUR. MIX DESIGNS ARE SUBJECT TO APPROVAL BY THE CITY ENGINEER.</li> <li>ALL CONCRETE PAVING SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI, UNLESS A HIGHER COMPRESSIVE STRENGTH IS SPECIFIED.</li> <li>ALL FILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY IN A MAXIMUM OF 6" (SIX) INCH LIFTS OR PER THE APPROVED GEOTECHNICAL ENGINEERS REPORT.</li> <li>SUBGRADE SHALL EXTEND 12" MINIMUM BEHIND THE CURB, BE A MINIMUM OF 6" THICK AND SHALL BE LIME OR CEMENT STABILIZED AS RECOMMENDED IN THE GEOTECHNICAL REPORT. THE AMOUNT OF LIME TO BE ADDED SHALL BE SUFFICIENT TO ACHIEVE A PLASTICITY INDEX NOT TO EXCEED 12.</li> <li>A SUBGRADE DENSITY REPORT MUST BE PRESENTED TO THE CITY INSPECTOR PRIOR TO PAVING. DENSITIES ARE ONLY VALID FOR 72 HOURS. DENSITIES RECEIVED ON A FRIDAY ARE VALID UNTIL NOON ON THE FOLLOWING MONDAY. DENSITIES TAKEN BEFORE INCLEMENT WEATHER MAY BE REQUIRED TO BE RETAKEN AT THE CITY INSPECTORS DISCRETION. A MINIMUM OF FOUR (4) TEST CYLINDERS ARE REQUIRED</li> </ol></li></ul>	BA 5. MI AN
<ol> <li>ALL MIX DESIGNS SHALL BE SEALED BY A PROFESSIONAL ENGINEER AND SUBMITTED TO THE CITY INSPECTOR ONE WEEK BEFORE A SCHEDULED POUR. MIX DESIGNS ARE SUBJECT TO APPROVAL BY THE CITY ENGINEER.</li> <li>ALL CONCRETE PAVING SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI, UNLESS A HIGHER COMPRESSIVE STRENGTH IS SPECIFIED.</li> <li>ALL FILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY IN A MAXIMUM OF 6" (SIX) INCH LIFTS OR PER THE APPROVED GEOTECHNICAL ENGINEERS REPORT.</li> <li>SUBGRADE SHALL EXTEND 12" MINIMUM BEHIND THE CURB, BE A MINIMUM OF 6" THICK AND SHALL BE LIME OR CEMENT STABILIZED AS RECOMMENDED IN THE GEOTECHNICAL REPORT. THE AMOUNT OF LIME TO BE ADDED SHALL BE SUFFICIENT TO ACHIEVE A PLASTICITY INDEX NOT TO EXCEED 12.</li> <li>A SUBGRADE DENSITY REPORT MUST BE PRESENTED TO THE CITY INSPECTOR PRIOR TO PAVING. DENSITIES ARE ONLY VALID FOR 72 HOURS. DENSITIES RECEIVED ON A FRIDAY ARE VALID UNTIL NOON ON THE FOLLOWING MONDAY. DENSITIES TAKEN BEFORE INCLEMENT WEATHER MAY BE REQUIRED TO BE RETAKEN AT THE CITY INSPECTORS DISCRETION. A MINIMUM OF FOUR (4) TEST CYLINDERS ARE REQUIRED</li> </ol>	UN 6. ST
<ul> <li>INSPECTOR ONE WEEK BEFORE A SCHEDULED POUR. MIX DESIGNS ARE SUBJECT TO APPROVAL BY THE CITY ENGINEER.</li> <li>2. ALL CONCRETE PAVING SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI, UNLESS A HIGHER COMPRESSIVE STRENGTH IS SPECIFIED.</li> <li>3. ALL FILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY IN A MAXIMUM OF 6" (SIX) INCH LIFTS OR PER THE APPROVED GEOTECHNICAL ENGINEERS REPORT.</li> <li>4. SUBGRADE SHALL EXTEND 12" MINIMUM BEHIND THE CURB, BE A MINIMUM OF 6" THICK AND SHALL BE LIME OR CEMENT STABILIZED AS RECOMMENDED IN THE GEOTECHNICAL REPORT. THE AMOUNT OF LIME TO BE ADDED SHALL BE SUFFICIENT TO ACHIEVE A PLASTICITY INDEX NOT TO EXCEED 12.</li> <li>5. A SUBGRADE DENSITY REPORT MUST BE PRESENTED TO THE CITY INSPECTOR PRIOR TO PAVING. DENSITIES ARE ONLY VALID FOR 72 HOURS. DENSITIES RECEIVED ON A FRIDAY ARE VALID UNTIL NOON ON THE FOLLOWING MONDAY. DENSITIES TAKEN BEFORE INCLEMENT WEATHER MAY BE REQUIRED TO BE RETAKEN AT THE CITY INSPECTORS DISCRETION. A MINIMUM OF FOUR (4) TEST CYLINDERS ARE REQUIRED</li> </ul>	7. BO RE
<ul> <li>COMPRESSIVE STRENGTH IS SPECIFIED.</li> <li>3. ALL FILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY IN A MAXIMUM OF 6" (SIX) INCH LIFTS OR PER THE APPROVED GEOTECHNICAL ENGINEERS REPORT.</li> <li>4. SUBGRADE SHALL EXTEND 12" MINIMUM BEHIND THE CURB, BE A MINIMUM OF 6" THICK AND SHALL BE LIME OR CEMENT STABILIZED AS RECOMMENDED IN THE GEOTECHNICAL REPORT. THE AMOUNT OF LIME TO BE ADDED SHALL BE SUFFICIENT TO ACHIEVE A PLASTICITY INDEX NOT TO EXCEED 12.</li> <li>5. A SUBGRADE DENSITY REPORT MUST BE PRESENTED TO THE CITY INSPECTOR PRIOR TO PAVING. DENSITIES ARE ONLY VALID FOR 72 HOURS. DENSITIES RECEIVED ON A FRIDAY ARE VALID UNTIL NOON ON THE FOLLOWING MONDAY. DENSITIES TAKEN BEFORE INCLEMENT WEATHER MAY BE REQUIRED TO BE RETAKEN AT THE CITY INSPECTORS DISCRETION. A MINIMUM OF FOUR (4) TEST CYLINDERS ARE REQUIRED</li> </ul>	8. AL RE
<ul> <li>LIFTS OR PER THE APPROVED GEOTECHNICAL ENGINEERS REPORT.</li> <li>4. SUBGRADE SHALL EXTEND 12" MINIMUM BEHIND THE CURB, BE A MINIMUM OF 6" THICK AND SHALL BE LIME OR CEMENT STABILIZED AS RECOMMENDED IN THE GEOTECHNICAL REPORT. THE AMOUNT OF LIME TO BE ADDED SHALL BE SUFFICIENT TO ACHIEVE A PLASTICITY INDEX NOT TO EXCEED 12.</li> <li>5. A SUBGRADE DENSITY REPORT MUST BE PRESENTED TO THE CITY INSPECTOR PRIOR TO PAVING. DENSITIES ARE ONLY VALID FOR 72 HOURS. DENSITIES RECEIVED ON A FRIDAY ARE VALID UNTIL NOON ON THE FOLLOWING MONDAY. DENSITIES TAKEN BEFORE INCLEMENT WEATHER MAY BE REQUIRED TO BE RETAKEN AT THE CITY INSPECTORS DISCRETION. A MINIMUM OF FOUR (4) TEST CYLINDERS ARE REQUIRED</li> </ul>	9. CO FIT
<ul> <li>LIME OR CEMENT STABILIZED AS RECOMMENDED IN THE GEOTECHNICAL REPORT. THE AMOUNT OF LIME TO BE ADDED SHALL BE SUFFICIENT TO ACHIEVE A PLASTICITY INDEX NOT TO EXCEED 12.</li> <li>5. A SUBGRADE DENSITY REPORT MUST BE PRESENTED TO THE CITY INSPECTOR PRIOR TO PAVING. DENSITIES ARE ONLY VALID FOR 72 HOURS. DENSITIES RECEIVED ON A FRIDAY ARE VALID UNTIL NOON ON THE FOLLOWING MONDAY. DENSITIES TAKEN BEFORE INCLEMENT WEATHER MAY BE REQUIRED TO BE RETAKEN AT THE CITY INSPECTORS DISCRETION. A MINIMUM OF FOUR (4) TEST CYLINDERS ARE REQUIRED</li> </ul>	FIT 10. II PA
ARE ONLY VALID FOR 72 HOURS. DENSITIES RECEIVED ON A FRIDAY ARE VALID UNTIL NOON ON THE FOLLOWING MONDAY. DENSITIES TAKEN BEFORE INCLEMENT WEATHER MAY BE REQUIRED TO BE RETAKEN AT THE CITY INSPECTORS DISCRETION. A MINIMUM OF FOUR (4) TEST CYLINDERS ARE REQUIRED	11. V BE
RETAKEN AT THE CITY INSPECTORS DISCRETION. A MINIMUM OF FOUR (4) TEST CYLINDERS ARE REQUIRED	12. A PO
TOR BREAKS AT 7 BATS, 2 AT 20 BATS, AND THE EAST CHEINDER BEING AN EATIN.	MA AF PA
6. CONSTRUCTION JOINTS, COLD JOINTS AND CURB RETURNS SHALL HAVE FABRIC INSTALLED TO ALLOW FOR EXPANSION.	13. N RU SQ
7. SAWED JOINTS SHALL BE A MAXIMUM OF 15 FEET FOR 6" THICK CONCRETE AND 20 FEET FOR 8" THICK CONCRETE, AND SHALL BE CONSTRUCTED WITHIN THE FIRST 12 HOURS OF CONCRETE PLACEMENT. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF INTENDED JOINT LAYOUT TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.	AN
TRAFFIC CONTROL	

OF THE RIGHT-OF-WAY, TEMPORARY CONSTRUCTION WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE INSTALLED TO EFFECTIVELY GUIDE THE MOTORING PUBLIC THROUGH THE AREA. CONSIDERATION FOR ROAD USER SAFETY, WORKER SAFETY, AND THE EFFICIENCY OF ROAD USER FLOW SHALL BE AN INTEGRAL ELEMENT OF EVERY TRAFFIC CONTROL ZONE. ALL TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE LATEST T.M.U.T.C.D. AND N.C.H.R.P. 350. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TRAFFIC CONTROL. DEVICES MUST CONTAIN EITHER TYPE III HI-INTENSITY SHEETING OR TYPE IV **REBOUNDABLE HI-INTENSITY SHEETING.** 

- 2. ANY TRAFFIC CONTROL PLANS NOT INCLUDED IN THE ENGINEERING PLAN SET MUST BE SUBMITTED FOR REVIEW A MINIMUM OF SEVEN (7) WORKING DAYS PRIOR TO THE ANTICIPATED LANE CLOSURE CONSTRUCTION ACTIVITY SHALL NOT BEGIN UNTIL THE TRAFFIC CONTROL PLAN IS APPROVED BY THE CITY OF LUCAS. TRAFFIC CONTROL PLANS MAY BE REQUIRED ON OTHER ROADWAYS AS DETERMINED BY THE TRAFFIC ENGINEER OR THE DESIGNEE. ALL TRAFFIC CONTROL PLANS MUST BE PREPARED BY AN INDIVIDUAL THAT IS CERTIFIED IN THEIR PREPARATION. ANY DEVIATION FROM AN APPROVED TRAFFIC CONTROL PLAN MUST BE REVIEWED BY THE TRAFFIC ENGINEER OR THEIR DESIGNATED REPRESENTATIVE.
- 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TRAFFIC CONTROL DEVICES ON AN AROUND-THE-CLOCK BASIS, WHETHER OR NOT WORK IS ACTIVE. ANY DEFICIENCIES SHALL BE CORRECTED BY THE CONTRACTOR IMMEDIATELY, REGARDLESS OF TIME OF DAY.
- 4. LANES OF TRAFFIC SHALL BE MAINTAINED AT ALL TIMES. VIOLATIONS MAY RESULT IN SUSPENSION OF ALL WORK AT THE JOB SITE FOR A MINIMUM OF 48 HOURS. THE TRAFFIC ENGINEER RESERVES THE RIGHT TO DENY A CLOSURE FOR A SPECIAL EVENT.
- 5. ALL TEMPORARY TRAFFIC CONTROL DEVICES SHALL BE REMOVED AS SOON AS PRACTICAL WHEN THEY ARE NO LONGER NEEDED. WHEN WORK IS SUSPENDED FOR SHORT PERIODS OF TIME AT THE END OF THE WORKDAY, TEMPORARY TRAFFIC CONTROL DEVICES THAT ARE NO LONGER APPROPRIATE SHALL BE REMOVED OR COVERED. THE FIRST VIOLATION OF THIS PROVISION WILL RESULT IN A VERBAL WARNING TO THE CONSTRUCTION FOREMAN. SUBSEQUENT VIOLATIONS WILL RESULT IN SUSPENSION OF ALL WORK AT THE JOB SITE FOR A MINIMUM OF 48 HOURS.
- 6. EXISTING PERMANENT SIGNS REMOVED BY THE CONTRACTOR FOR CONSTRUCTION PURPOSES OTHER THAN STOP, YIELD AND STREET NAME SIGNS SHALL BE RETURNED TO THE CITY OF LUCAS. ALL STOP, YIELD AND STREET NAME SIGNS REMOVED SHALL BE TEMPORARILY ERECTED IN THE APPROPRIATE LOCATIONS (NO LESS THAN 7 FEET VERTICAL FROM GRADE) UNTIL PERMANENT SIGNING CAN BE INSTALLED. ANY TEMPORARY STOP OR YIELD SIGN LOCATIONS TO BE LEFT IN PLACE OVERNIGHT WILL REQUIRE PRIOR APPROVAL FROM THE CITY ENGINEER.
- 7. ANY PERMANENT SIGN OR EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH THE APPROVED TRAFFIC CONTROL PLAN SHALL BE COVERED, OBLITERATED OR REMOVED AS DIRECTED BY THE CITY ENGINEER.
- 8. ACCESS MUST BE MAINTAINED TO ALL DRIVES AND SIDE STREETS OR AS INDICATED IN THE TRAFFIC CONTROL PLAN.

ALL CONSTRUCTION AND MATERIALS FOR POTABLE WATER FACILITIES SHALL BE IN STRICT ACCORDANCE WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (T.C.E.Q), THE AMERICAN WATER WORKS ASSOCIATION, THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS STANDARD SPECIFICATIONS AND THE CITY OF LUCAS SPECIFICATIONS.

ALL PIPE ABOVE GROUND SHALL BE NEW STEEL PIPE. ALL PIPE BELOW GROUND SHALL BE NEW DI PIPE, JNLESS SHOWN OTHERWISE. ALL PIPE FITTINGS SHALL BE RATED AT A MINIMUM PRESSURE OF 350 P.S.I. ALL DUCTILE IRON SHALL BE CLASS 52. ALL STEEL PIPE, VALVES, AND FITTINGS ABOVE GROUND SHALL BE PAINTED IN ACCORDANCE WITH APPLICABLE PAINTING SPECIFICATIONS.

THE CONTRACTOR SHALL FURNISH ALL TOOLS, LABOR, AND EQUIPMENT FOR CONDUCTING PRESSURE TESTING OF ALL WATER LINES AND ALL APPLICABLE TESTS FOR THE ELEVATED WATER TANK. THE CONTRACTOR SHALL INCLUDE THESE COSTS IN HIS BID PRICE FOR THE PROJECT.

THE CONTRACTOR SHALL FURNISH ALL TOOLS, LABOR, AND EQUIPMENT FOR DISINFECTING AND FLUSHING OF THE ELEVATED TANK AND WATER LINES. THE CITY OF LUCAS SHALL COLLECT SAMPLES FOR BACTERIOLOGICAL TESTS.

MINIMUM COVER SHALL BE 4 FEET FOR 6-INCH TO 8-INCH LINES, 5 FEET FOR 12-INCH TO 16-INCH LINES, AND 6 FEET FOR 20-INCH AND LARGER LINES. ADDITIONAL COVER MAY BE REQUIRED IN UN-PAVED OR JN-DEVELOPED AREAS.

STANDARD EMBEDMENT SHALL BE NCTCOG CLASS "H" FOR ALL WATER LINES.

BOLTS AND NUTS FOR MECHANICAL JOINTS WILL BE OF A HIGH-STRENGTH LOW-ALLOY CORROSION RESISTANT STEEL CONFORMING TO ASTM A325 (TYPE 3).

ALL WATER LINE FITTINGS SHALL BE DUCTILE IRON. ALL 6"-12" VALVES SHALL BE AWWA APPROVED RESILIENT WEDGE GATE VALVES.

CONCRETE AND CONCRETE THRUST BLOCKING SHALL BE INSTALLED AT ALL VALVES, BENDS, TEES, TITINGS, AND FIRE HYDRANTS UNLESS OTHERWISE SPECIFIED. IN ADDITION TO THRUST BLOCKING, ALL ITTINGS MUST BE RESTRAINED.

INSTALL 2' X 2' X 4" THICK, CONCRETE PAD AROUND ALL WATER VALVES OUTSIDE OF CONCRETE AVEMENT

VALVE EXTENSIONS SHALL BE PROVIDED ON ALL VALVES WITH OPERATING NUTS GREATER THAN 5' BELOW FINISHED GROUND OR PAVING GRADE.

ALL VALVES SHALL BE MARKED WITH A "V" BY SAWCUT ON THE CURB OR PAVEMENT. THE "V" SHALL POINT TO THE LOCATION OF THE VALVE AS FOLLOWS: IF THE VALVE IS IN THE PAVING, THE "V" SHALL BE MARKED UPRIGHT; IF THE VALVE IS OUTSIDE THE PAVING, THE "V" SHALL BE MARKED UPSIDE DOWN. AFTER CLEANING THE SAWCUT VIA COMPRESSED AIR OR BRUSH, APPLY ONE COAT OF APWA BLUE SPRAY PAINT TO MARK THE SAWCUT SYMBOL.

NRS RESILIENT-SEATED GATE VALVES SHALL CONFORM TO AWWA C509 OR AWWA C515. RUBBER-SEATED BUTTERFLY VALVES SHALL CONFORM TO AWWA C504. ALL VALVES SHALL HAVE A 2 IN. QUARE OPERATING NUT AND OPEN TO THE LEFT. ALL VALVES SHALL BE MUELLER, M&H, FLOW OR AMERICAN FLOW CONTROL.

NO. DATE COMMENT NO. DATE COM
WEST LUCAS ROAD 0.75 MG ELEVATED STORAGE TANK GENERAL NOTES
JTG ENGINEERING, PLLC TBPE FIRM REGISTRATION NO. 22389
DESIGN BY: JTG DATE: September 2023 SHEET DRAWN BY: NLS JOB NUMBER: September 2023



### ABBREVIATIONS

				ADDILLVIATIONS	
<u>B</u> B−B BLDG	BACK TO BACK BUILDING		<u>I</u> IC	IRRIGATION VALVE	
BOC BOTOC	BACK OF CURB BY OTHER THAN OPEN CUT		<u>L</u> L LF	LENGTH LINEAR FEET	
<u>C</u> CAB	CABINET		LP LT	LIGHT POLE LEFT	
CB CF	CHORD BEARING COBB, FENDLEY & ASSOCIA	TFS	<u>M</u>		
ଜ ଜୁ C.I.C.	CENTERLINE CAPPED IRON ROD	ILS .	MH	MANHOLE	
C.I.C.F. CL	CAPPED IRON ROD FOUND CHORD LENGTH		N N	NORTH	
CO CONC	CLEAN OUT CONCRETE		NEPI NW	NO EXTRA PAY ITEM NORTHWEST	
CONN. CPB CP	CONNECT COMMUNICATION PULL BOX CONTROL POINT		<u>о</u> ОН	OVERHEAD WIRE	
<u>Е</u> Е	FACT		P PC	POINT OF CURVE	
ECAB EG	EAST ELECTRIC CABINET EXISTING GRADE		PCC	POINT OF COMPOUND CURVATURE	
ELEC ELEV	ELECTRIC		PI PG	POINT OF INTERSECTION PROPOSED GRADE	
EM EMH	ELECTRIC METER ELECTRIC MANHOLE		PP PPR	POWER POLE	
EOP EP	EDGE OF PAVEMENT END POINT		PROP. PRC	PROPOSED POINT OF REVERSE CURVA	,TU
EPB ESMT	ELECTRIC PULL BOX EASEMENT		PT PVC	POINT OF TANGENCY POLYVINYL CHLORIDE	
EX. EXIST.	EXISTING EXISTING		PVI PVMT	POINT OF VERTICAL PAVEMENT	
<u>F</u> FH			R R		
F-F	FIRE HYDRANT FACE TO FACE		RCB	RADIUS REINFORCED CONCRETE BO	ЭХ
፹ FT	FLOW LINE FOOT OR FEET		R.C.P.	REINFORCED CONCRETE CYLINDER PIPE	
<u>G</u> GTL			RCP RFD R.O.W.	REINFORCED CONCRETE PII ROCK FILER DAM RIGHT OF WAY	PE
GTL GW	GAS TEST LINE GUY WIRE		R.O.W. RT	RIGHT	
				LEGEND	
AND	BUSH	X≪	WATER VALVE - EXIST.		
£	TREE	₩V T	WATER VALVE - PROP.		
SH SIGN	SPRINKLER HEAD	-0-	FIRE HYDRANT	6" W -	
	SIGN	WM	WATER METER	6 W -	
Ø	POWER POLE		IRRIGATION VALVE	w	- W
⊗ MB	MONITORING WELL			SERV SERV	V.——
	MAILBOX			6" W -	
Ц.	LIGHT POLE			SS	- 55
	FLAG POLE				
	ELECTRIC TRANSFORMER			SERV. SERV. SERV	7.—
(E)				G	- (
	ELECTRIC VAULT			OH	
GAS	GAS TEST STATION GAS LINE MARKER			———— E ————	- E
GV	GAS VALVE			xx	—x -
S	SANITARY SEWER MANHOLE- EX	IST.			0
	SANITARY SEWER MANHOLE- PR	OP.		00	- 0-
C0 <b>0</b>	SANITARY SEWER CLEANOUT- E				
	SANITARY SEWER CLEANOUT- PF	ROP.		CATV	
(D)	STORM MANHOLE				 _
$\overline{\mathbb{T}}$	TELECOM MANHOLE			——————————————————————————————————————	
$\langle \hat{\uparrow} \rangle$	TELECOM PEDESTAL				
Ţ	TELECOM VAULT				
TEL	TELECOM MARKER				
	CATV PEDESTAL				
$\checkmark$					

	SSOUTHSANSANITARYSCFSEDIMENT CONTROL FENCESHSPRINKLER HEADSSSANITARY SEWERSSMHSANITARY SEWERSSMHSANITARY SEWERMMSTORMSTMSTORMSTMSTORMSTMHSTORM MANHOLESWRSEWERITTTANGENTTCPTRAFFIC CONTROL PLANTELETELEPHONETHTEST HOLETHTEST HOLETHTTHROATT.O.P.TOP OF PIPETPEDTELEPHONE PEDESTALTYPTYPICALUUEUNDERGROUND ELECTRICVVALVE	MO. DATE COMMENT NO. DATE COMMENT NO. DATE COMMENT NO. DATE COMMENT NO. DATE COMMENT
TURE	W W WEST W/ WITH WL WATER LINE WM WATER METER WV WATER VALVE	AD RAGE TANK LEGEND
DX PE		ST LUCAS RO EVATED STOF CONTROL &
6" W 6" V	<ul> <li>R.O.W. LINE</li> <li>PROPERTY LINE</li> <li>EXIST. WATER LINE</li> </ul>	WE 0. 75 MG EL PROJECT
	<ul> <li>PROP. WATER LINE</li> <li>PROP. WATER SERVICE</li> <li>EXIST. SANITARY SEWER LINE</li> <li>PROP. SANITARY SEWER LINE</li> <li>SERV. PROP. SANITARY SEWER SERVICE LI</li> <li>GAS</li> </ul>	
- E E -xxx - o o o	— ∞ FENCE - CHAIN LINK — □ FENCE - WOOD CABLE TV - UNDERGROUND	JTG ENGINEERING, PLLC BPE FIRM REGISTRATION NO. 22389 COBB, FENDLEY, & ASSOCIATES AND SURVEY FIRM REGISTRATION NO. 10046700
- 11 11 11	FENCE - WOOD CABLE TV - UNDERGROUND STORM SEWER	G ENGINEERING, PLLC

ALL COORDINATES ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, NORTH CENTRAL ZONE 4202, NAD 83 (2011), EPOCH 2010.00 (NAVD 88 - GEOID 12B)

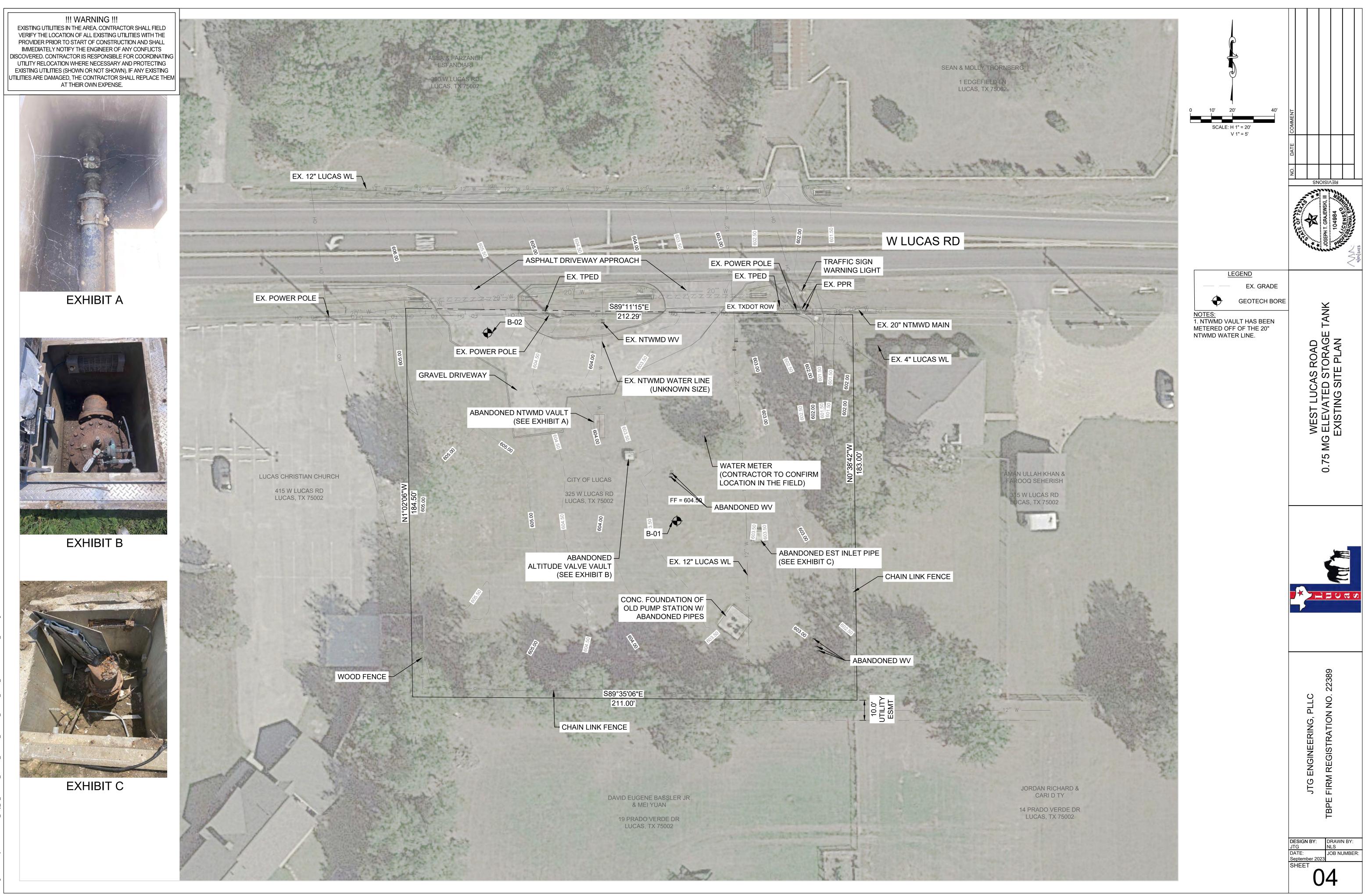
ALL DISTANCES AND COORDINATES SHOWN ARE SURFACE AND MAY BE CONVERTED TO GRID BY MULTIPLYING BY A COMBINED SCALE FACTOR OF 0.999847313.

DESIGN BY: DRAWN BY: JTG NLS DATE: JOB NUMBER

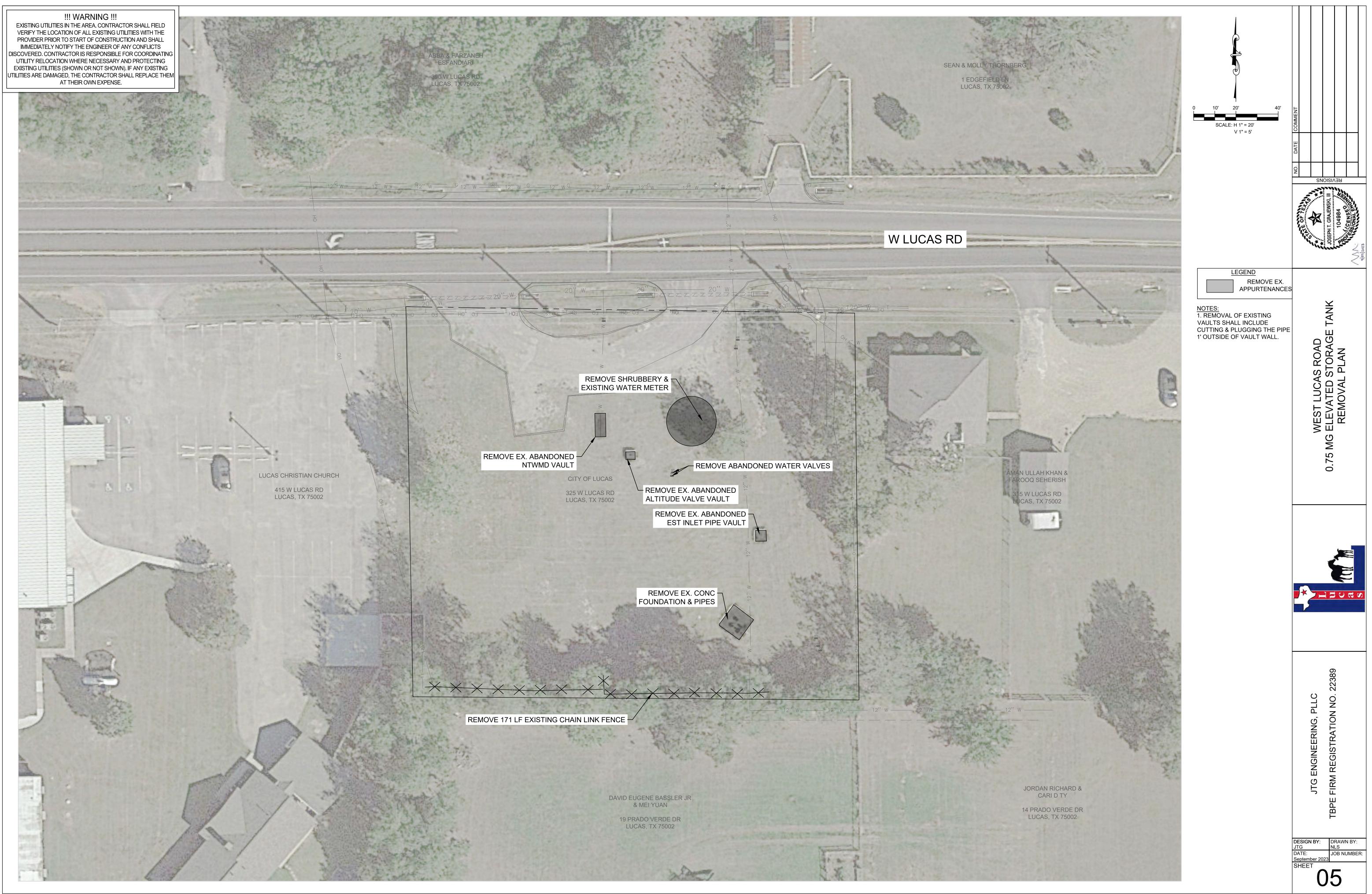
03

September 2023 SHEET

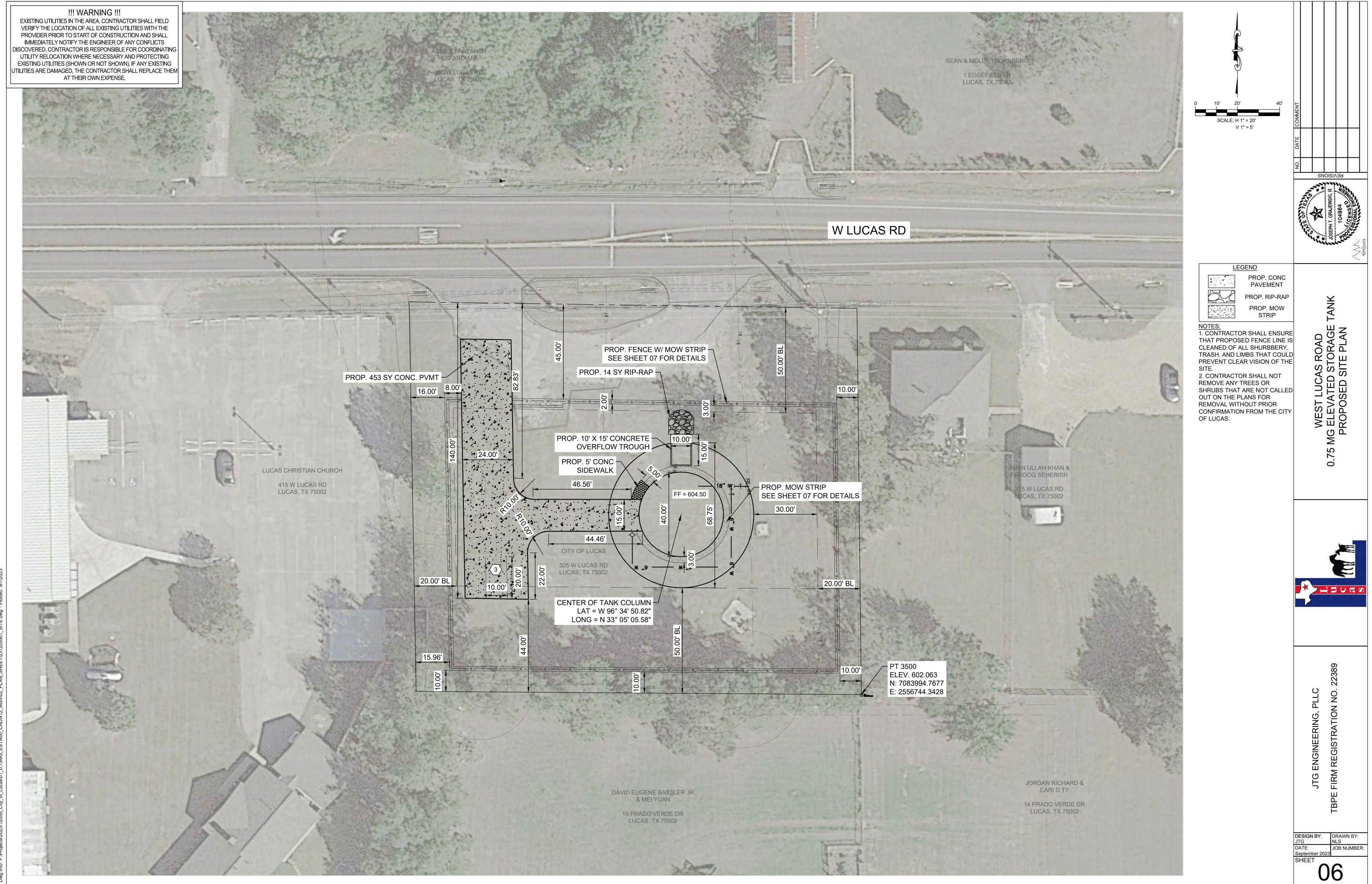
JOB NUMBER:



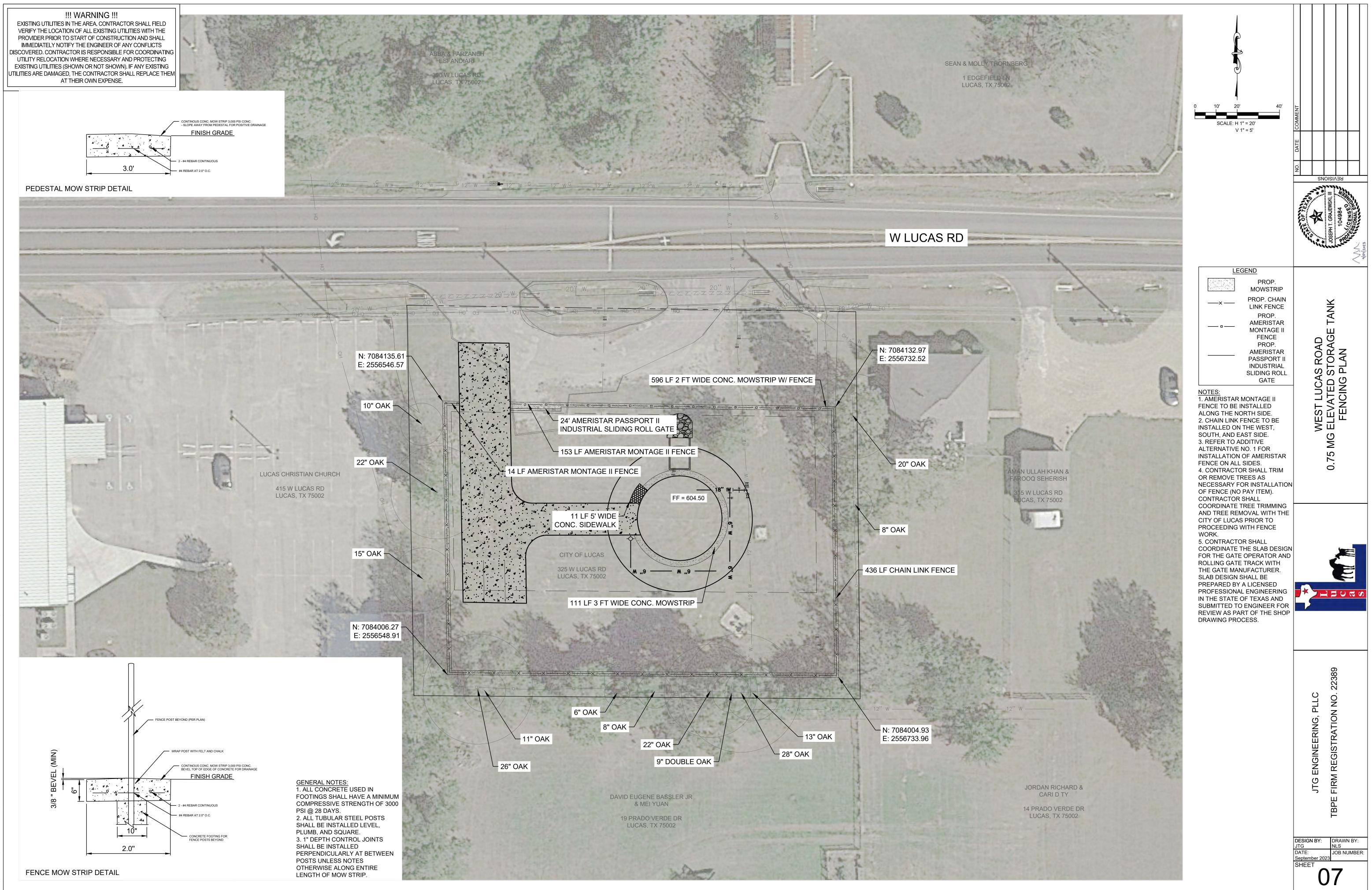
g Info: F.IProjectsI2023\12055 City of Lucas\01 0.75MG EST\400 CAD\412 Muni\02 PLAN SHEET\231205501 SITE.dwg - Plotted: 9/7/20.



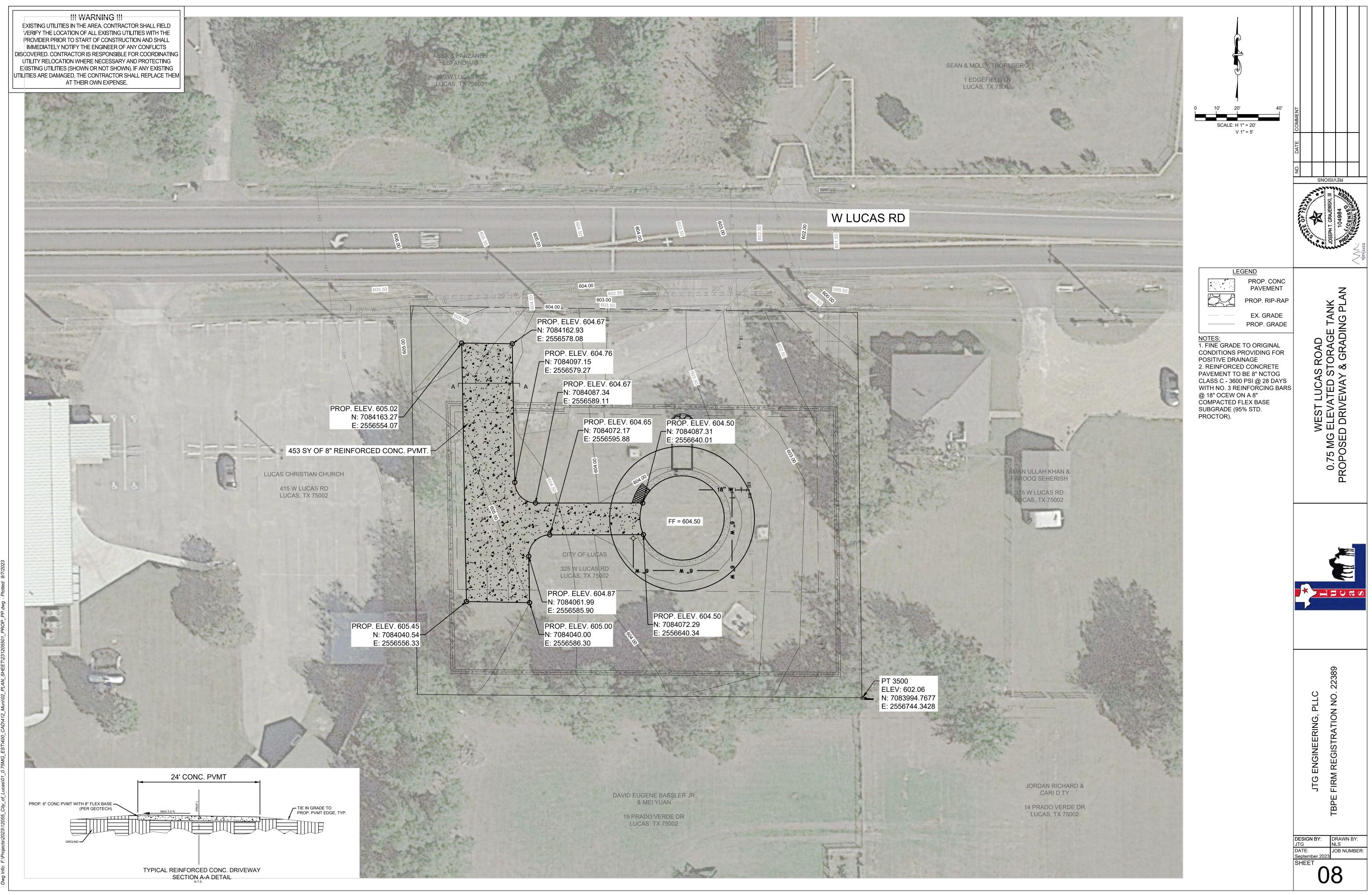
g Info: F:\Projects\2023\12055\_City\_of\_Lucas\01\_0.75MG\_EST\400\_CAD\412\_Muni\02\_PLAN\_SHEET\231205501\_SITE.dwg - Plotted: 9/7/2

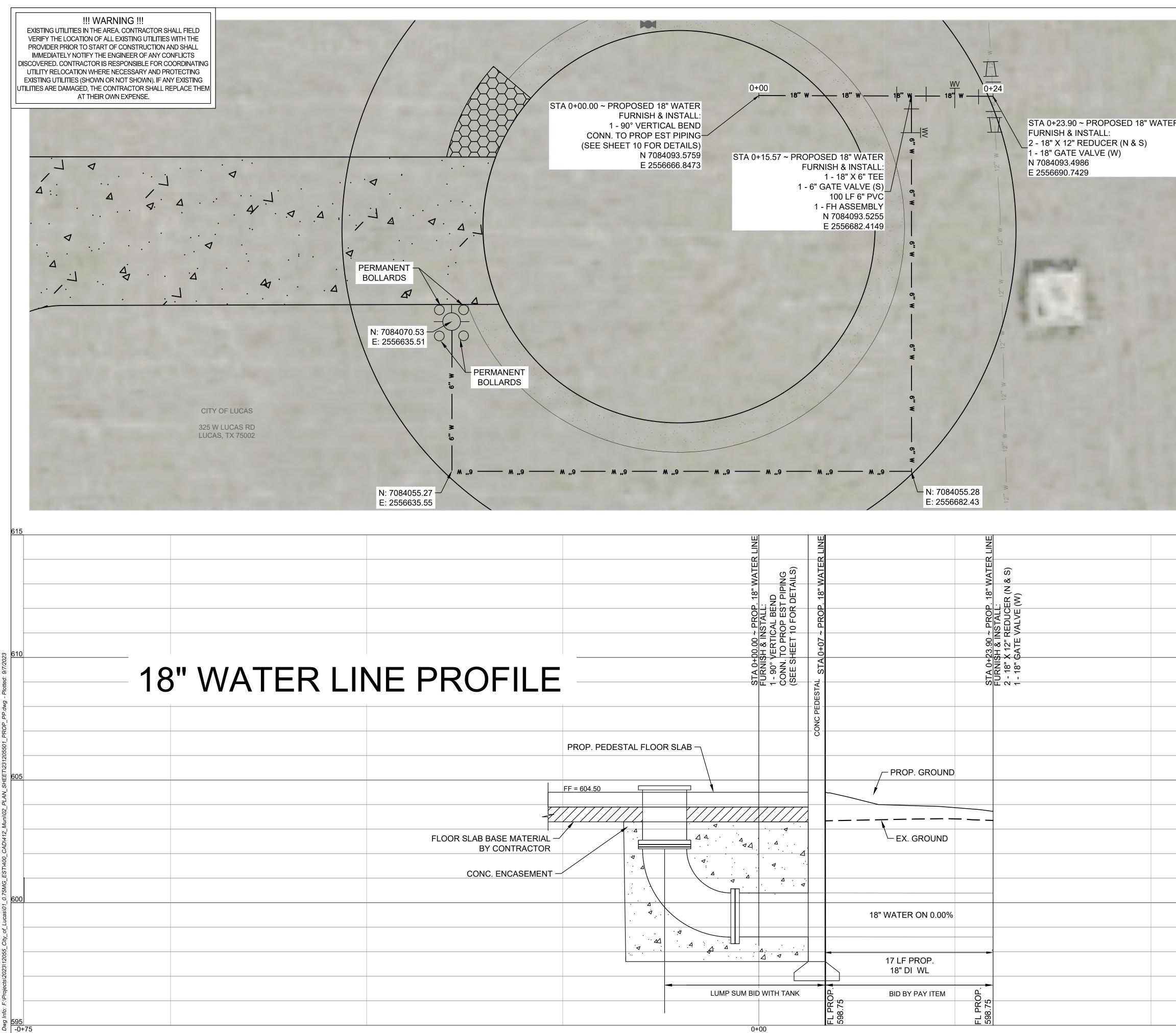


g Info: F:\Projects\2023\12055\_City\_of\_Lucas\01\_0.75MG\_EST\400\_CAD\412\_Muni\02\_PLAN\_SHEET\231205501\_SITE.dwg - Plotted: 9/7/2



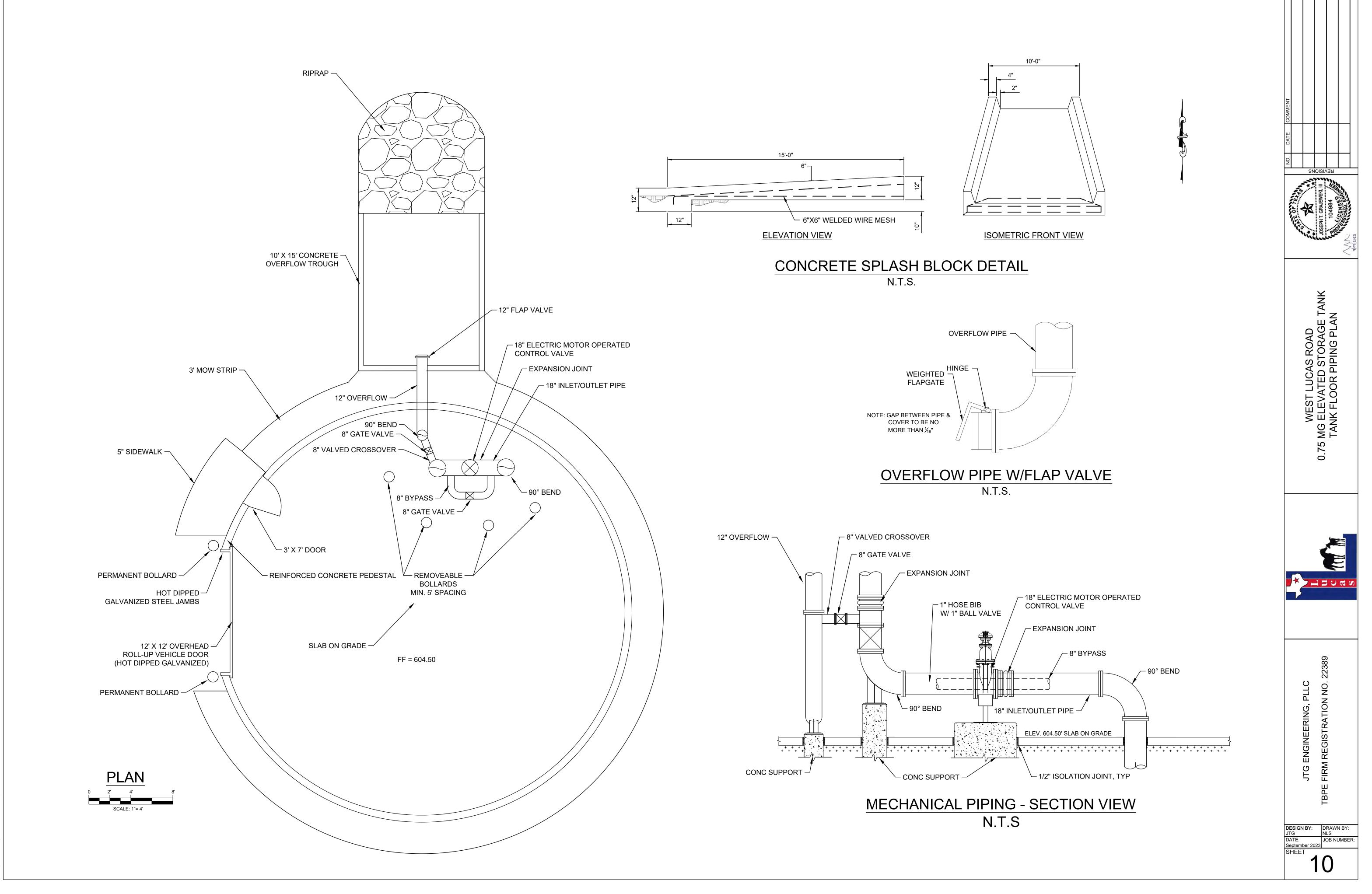
g Info: F:IProjectsi2023/12055\_City\_of\_Lucas\01\_0.75MG\_EST\400\_CAD\412\_Muni\02\_PLAN\_SHEET\231205501\_SITE.dwg - Plotted: 9

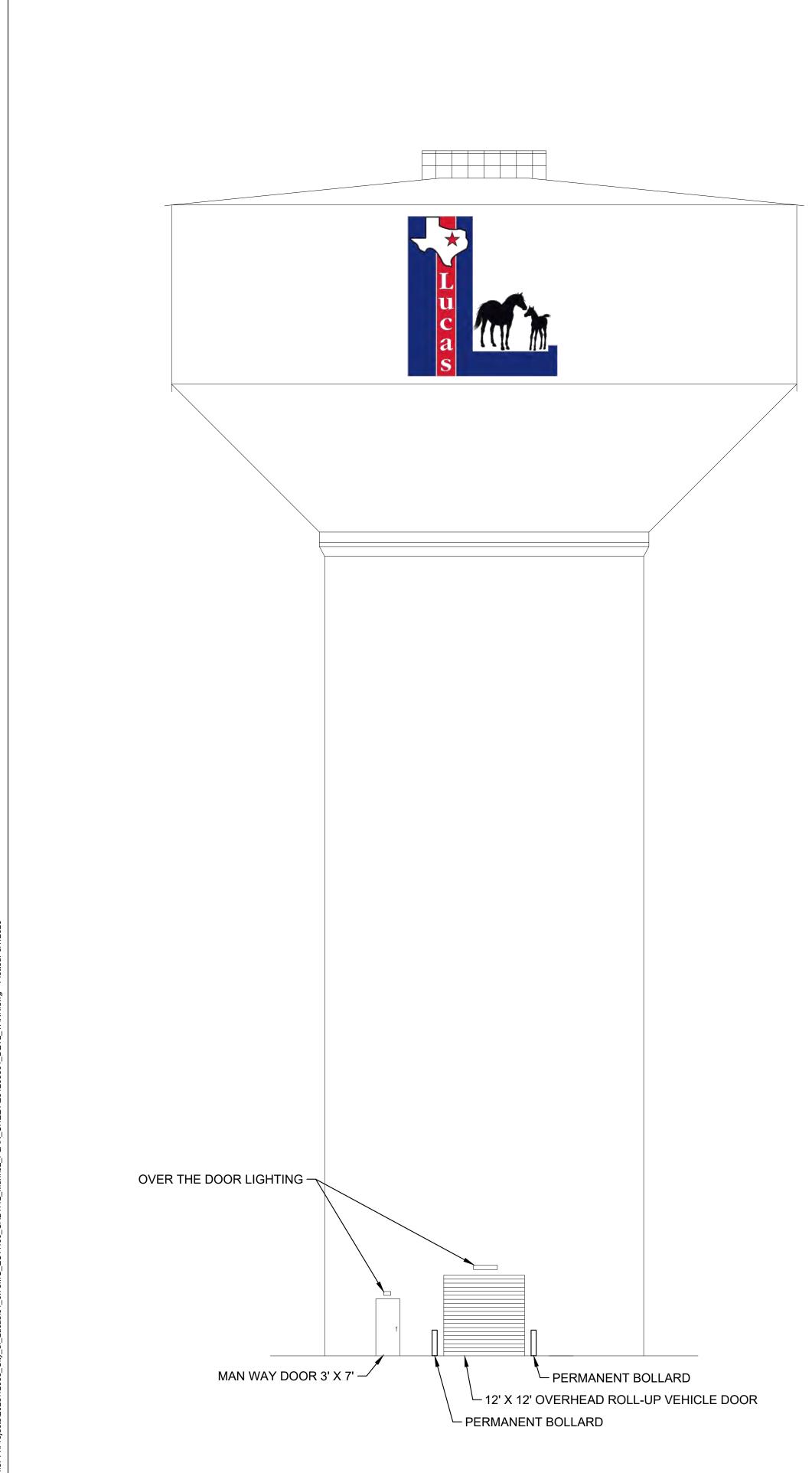


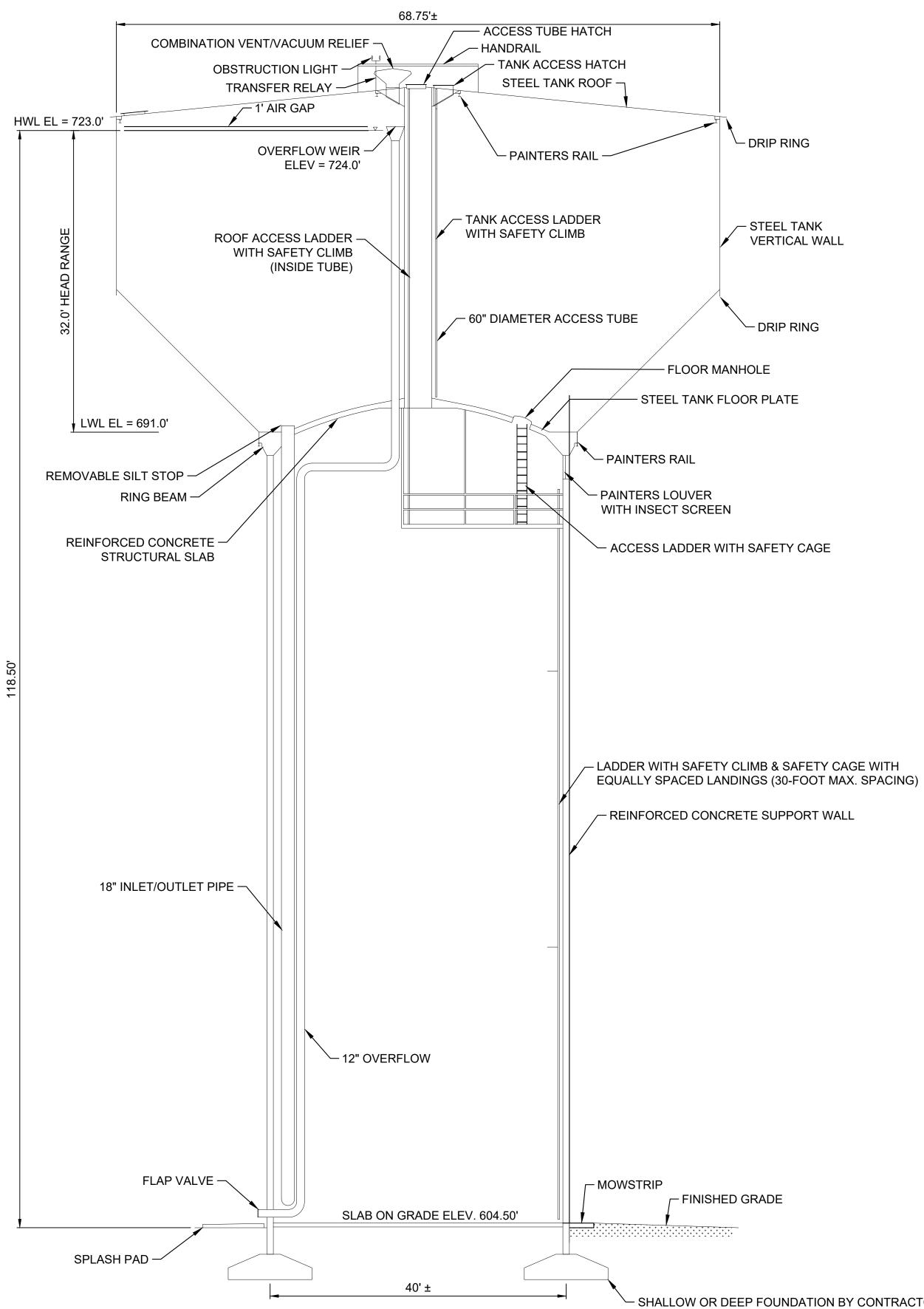


LINE	LINE		
۲ ۲	18" WATER	18" WATER 7 (N & S) V)	
	A A	× ×	
DET, 18 DET, 18			
PROP STALL: P ES1 P ES1 P ES1	PROP.		
	L L L		
STA 0+00.00 ~ PROP. 18" WATE FURNISH & INSTALL: 1 - 90° VERTICAL BEND CONN. TO PROP EST PIPING (SEE SHEET 10 FOR DETAILS)	0+07	STA 0+23.90 ~ PROP. 18" W FURNISH & INSTALL: 2 - 18" GATE VALVE (W) 1 - 18" GATE VALVE (W)	
	STA		
L C C C C C C C C C C C C C C C C C C C		の正 C <del>(</del> 一 マロ - ・	
	PEDESTAL		
	Т Ц Ц Ц Ц Ц		
	CONC		
PROP. PEDESTAL FLOOR SLAB			
	+	PROP. GROUND	
FF = 604.50	┤┡		
		EX. GROUND	
	•		
	+		
		18" WATER ON 0.00%	
	+		
	┢	17 LF PROP. 18" DI WL	
	$\rightarrow$		
LUMP SUM BID WITH TANK	(	BID BY PAY ITEM	
	ľ	BID BY PAY ITEM C208.75 BID BY	
0+00	ī		

	10' 615	WEST LUCAS ROAD 0.75 MG ELEVATED STORAGE TANK PROPOSED WATER LINE
	610	
	605	NGINEERING, PLLC REGISTRATION NO. 22389
	<u>595</u> 0+75	DATE: September 2023 SHEET







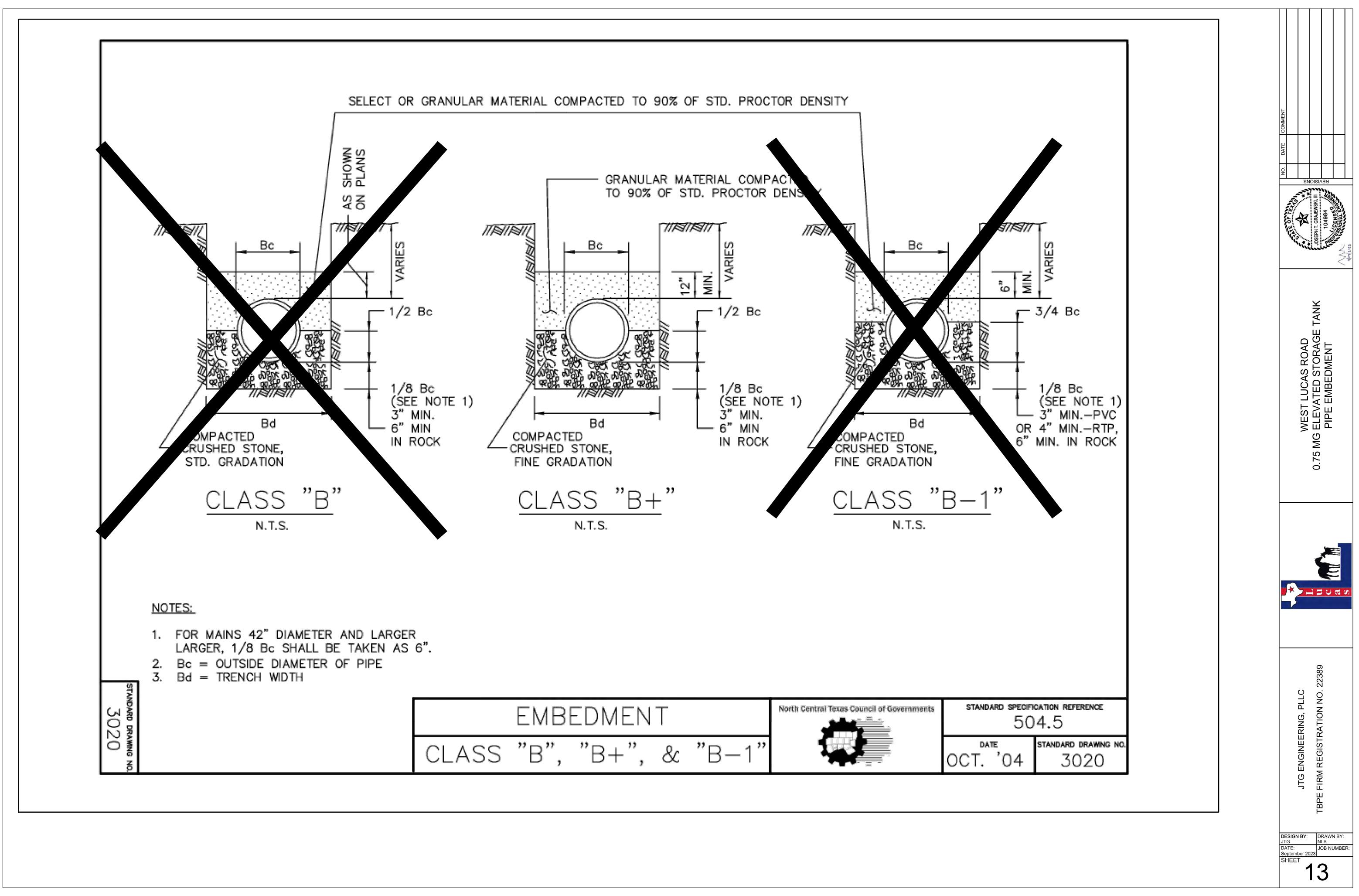
/-- STEEL TANK VERTICAL WALL

SHALLOW OR DEEP FOUNDATION BY CONTRACTOR

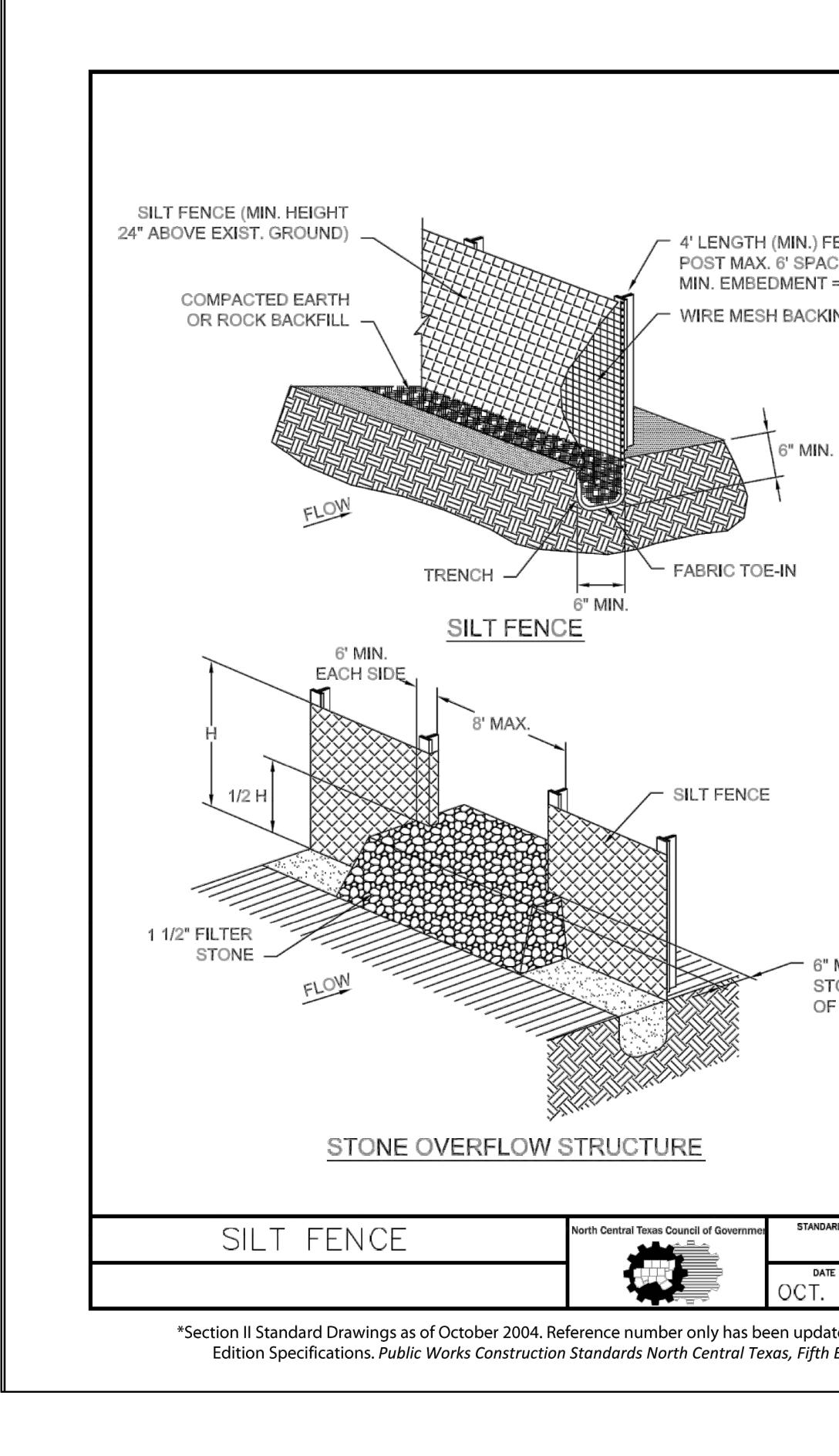
CE TANK CE TANK CE TANK Cense of the comment Cense of the comment Cense
WEST LUCAS ROAD 0.75 MG ELEVATED STORAGE TANK TANK ELEVATION VIEW
JTG ENGINEERING, PLLC TBPE FIRM REGISTRATION NO. 22389
DESIGN BY: JTG DRAWN BY: NLS DATE: September 2023 SHEET



Info: F:\Projects\2023\12055\_City\_of\_Lucas\01\_0.75MG\_EST\400\_CAD\412\_Muni\02\_PLAN\_SHEET\231205501\_EROS.dwg - Plotted: 9/7/

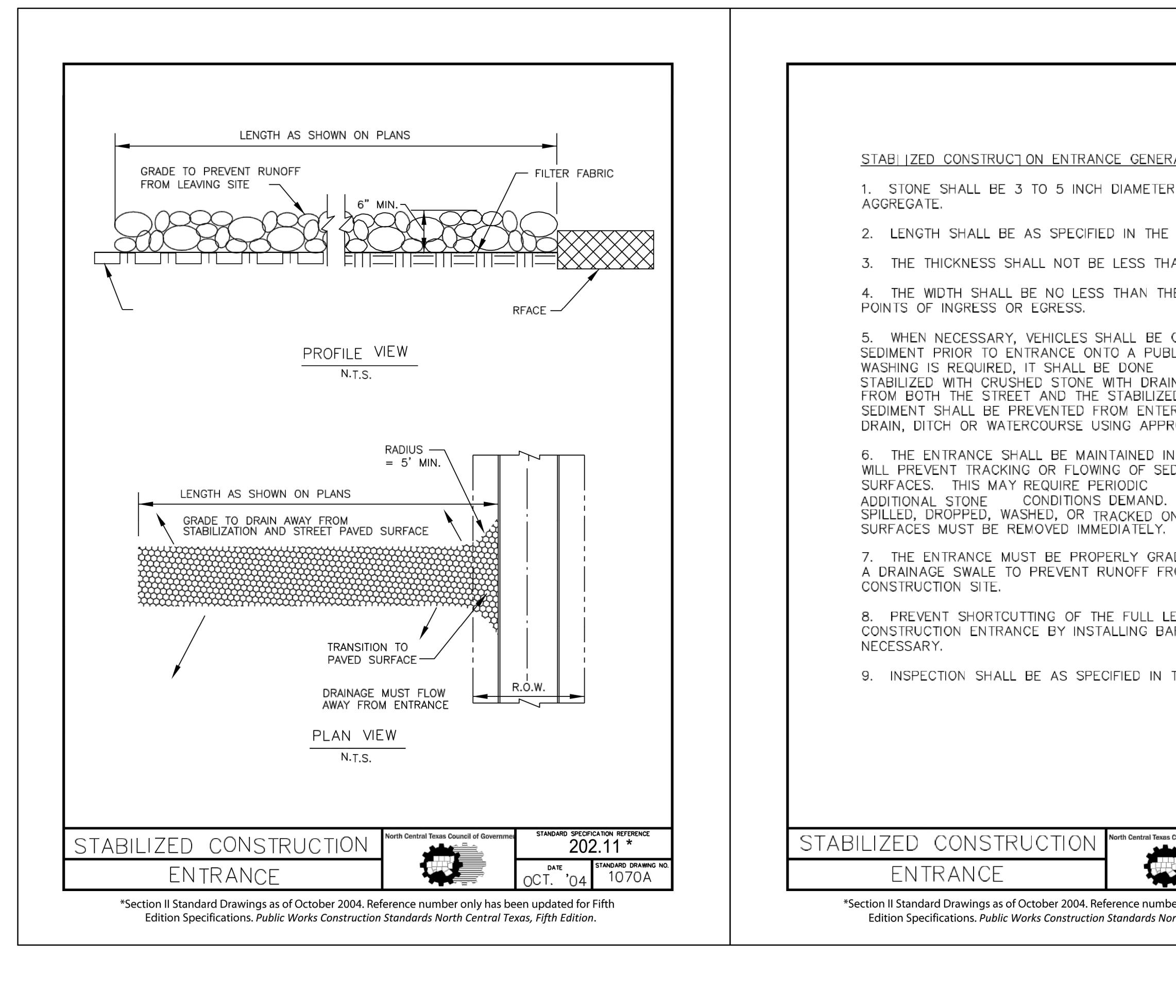


Info: F:IProjects\2023\12055\_City\_of\_Lucas\01\_0.75MG\_EST\400\_CAD\412\_Muni\02\_PLAN\_SHEET\231205501\_DETL.dwg - Plotted: 9/7/20

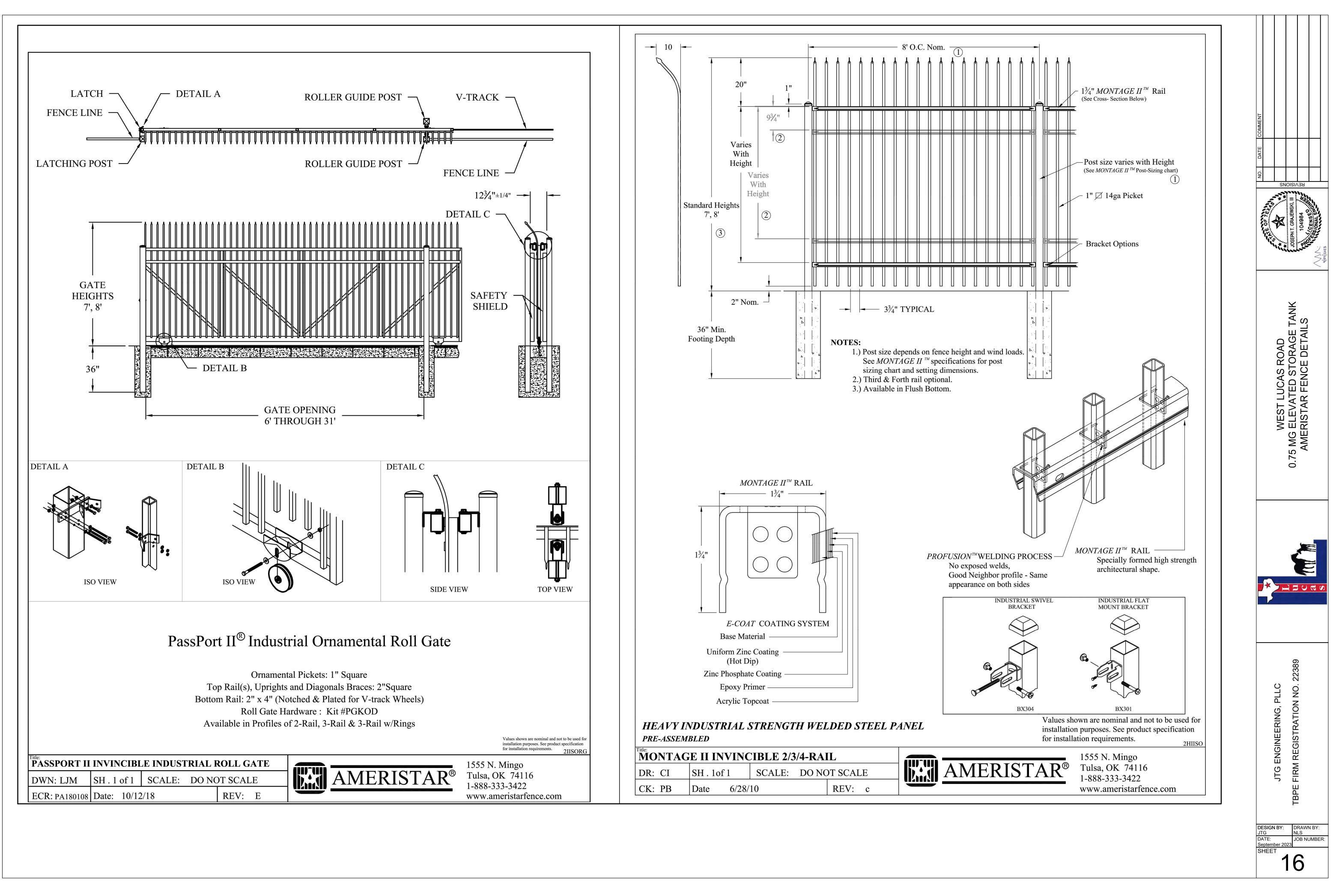


	<ol> <li>THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (e.g. PAVEMENT), WEIGHT FABRIC FLAP WITH ROCK ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.</li> <li>THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.</li> <li>SILT FENCE SHOULD BE SECURELY FASTENED TO EACH SUPPORT POST OR WIRE BACKING, WHICH IN TURN IS ATTACHED THE FENCE POST. THERE SHALL BE A FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.</li> <li>INSPECTION SHALL BE AS SPECIFIED IN THE SWPPP. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.</li> <li>SILT FENCE SHALL BE REMOVED WHEN FINAL STABILIZATION</li> </ol>	WEST LUCAS ROAD 0.75 MG ELEVATED STORAGE TANK
MIN. TOP OF ONE, EACH SIDE SILT FENCE	IS ACHIEVED OR ANOTHER EROSION OR SEDIMENT CONTROL DEVICE IS EMPLOYED. 7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF HALF THE HEIGHT OF THE FENCE. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.	
RD SPECIFICATION REFERENCE 202.5 * a standard drawing no. 1020A ted for Fifth <i>Edition.</i>	SILT FENCE       North Central Texas Council of Government       STANDARD SPECIFICATION REFERENCE 202.5 *         DATE OCT. '04       DATE 1020B         *Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth	TG ENGINEERING, PLLC IRM REGISTRATION NO. 22389

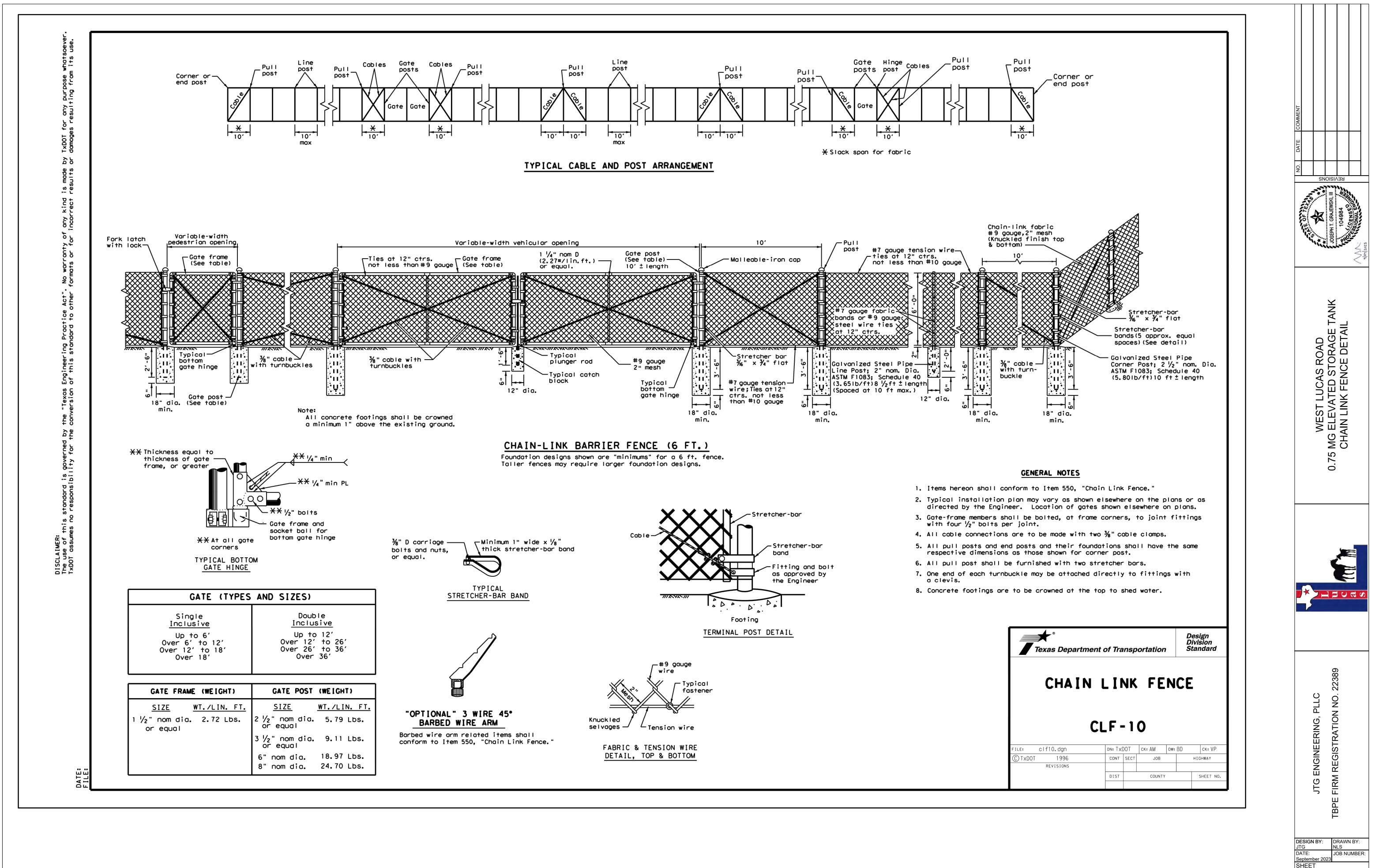
DESIGN BY:	DRAWN BY:
JTG	NLS
DATE:	JOB NUMBER:
September 2023	
SHEET	
	Λ
r i	Д



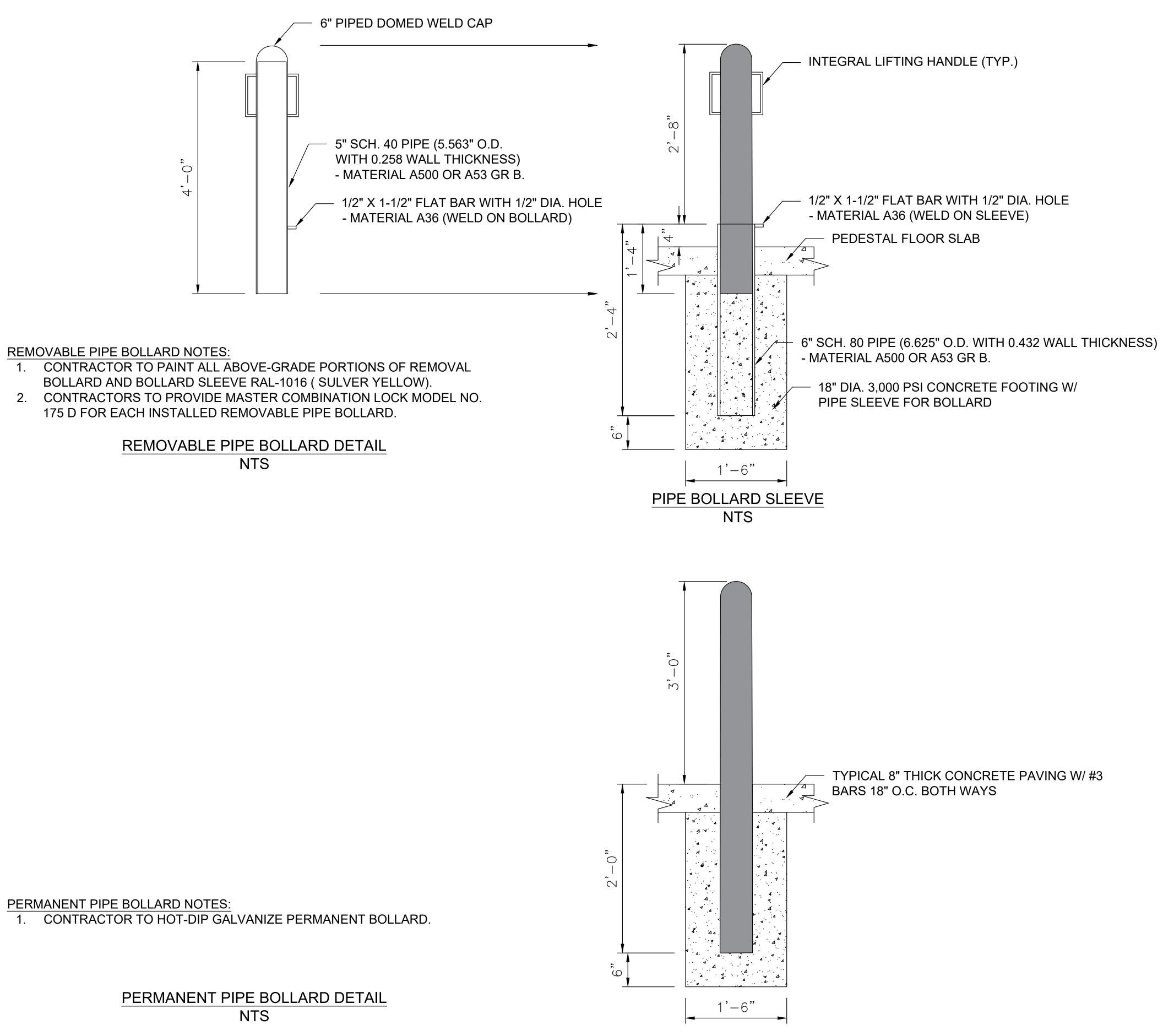
R COARSE SWPPP.	I. GRAJEWSKI, III REVISIONS PREVISIONS PREVISIONS
AN 12 INCHES. IE FULL WIDTH OF ALL	oleri zeza
CLEANED TO REMOVE LIC ROADWAY. WHEN AREA NAGE FLOWING D ENTRANCE. ALL RING ANY STORM ROVED METHODS.	WEST LUCAS ROAD G ELEVATED STORAGE TANK EROSION CONTROL - 2
A CONDITION WHICH DIMENT ONTO PAVED DRESSING WITH SEDIMENT NTO PAVED	WEST L 0.75 MG ELEVA <sup>-</sup> EROSION
ADED OR INCORPORATE ROM LEAVING THE ENGTH OF THE	
ARRIERS AS THE SWPPP.	
Council of Government       STANDARD SPECIFICATION REFERENCE         202.11 *         DATE         OCT. '04         STANDARD DRAWING NO.         1070B         Standard Drawing NO.         orth Central Texas, Fifth Edition.	JTG ENGINEERING, PLLC TBPE FIRM REGISTRATION NO. 22389
	DESIGN BY: DRAWN BY: JTG NLS DATE: JOB NUMBER:



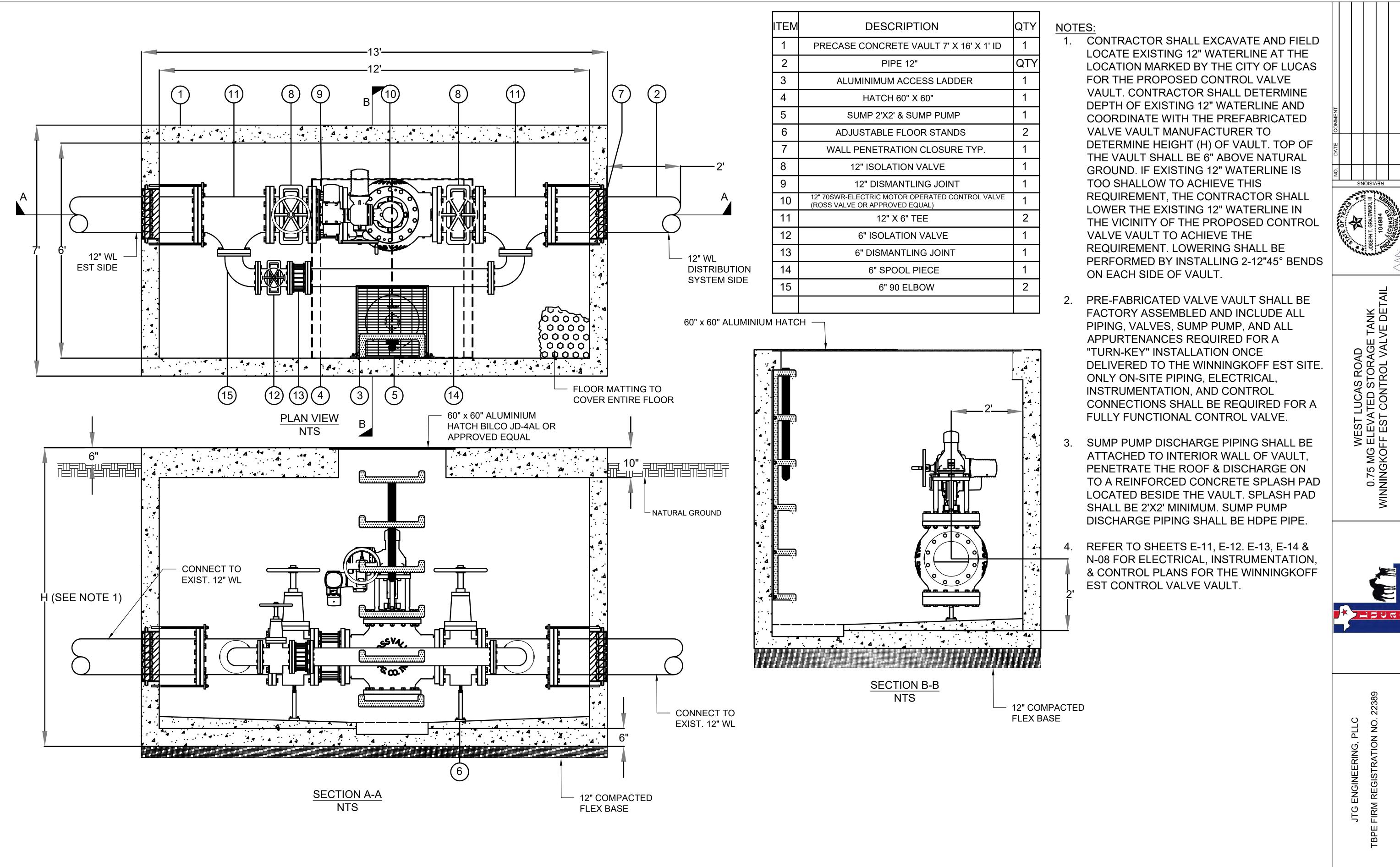
ifo: F:\Projects\2023\12055\_City\_of\_Lucas\01\_0.75MG\_EST\400\_CAD\412\_Muni\02\_PLAN\_SHEET\231205501\_DETL.dwg - Plotted: 9/7/202



nfo: F:IProjectsl2023\12055\_City\_of\_Lucas\01\_0.75MG\_EST\400\_CAD\412\_Muni\02\_PLAN\_SHEET\231205501\_DETL.dwg - Plotted: 9/







DESIGN BY: DRAWN BY: JOB NUMBER

19

SYMBOLS	DESCRIPTION	SYMBOLS	DESCRIPTION	SYMBOLS	DESCRIPTION	SYMBOLS	DESCRIPTION
_	MEDIUM VOLTAGE DRAWOUT TYPE POWER CIRCUIT	SPD	SURGE PROTECTION DEVICE		PILOT LIGHT, COLOR AS NOTED * R- RED G- GREEN		
52—CS ₩	BREAKER CS-CONTROL SWITCH	 	VOLTMETER (WITH SWITCH IF 3-PHASE)		B- BLUE W- WHITE A- AMBER	sc — (—	LIGHTNING ARRESTER/SURGE CAPACITOR
(E.O.) FRAME	LOW VOLTAGE CIRCUIT BREAKER, 3 POLE UNLESS OTHERWISE NOTED. LSIG IF NOTED	AM*	AMMETER (WITH SWITCH IF 3-PHASE)		PILOT LIGHT, PUSH-TO-TEST TYPE, COLOR AS NOTED ABOVE.		GROUND ROD
	MCP IF NOTED ERMS IF NOTED		METER * WM- WATTMETER WHM- WATTHOUR METER	TD)	TIME DELAY RELAY RANGE AS NOTED		GROUND ROD WELL
ရိ	COMBINATION MOTOR CIRCUIT PROTECTOR AND MAGNETIC MOTOR STARTER, FULL VOLTAGE NON-REVERSING UNLESS OTHERWISE NOTED:		WHDM- WATTHOUR DEMAND METER WHDR- WATTHOUR DEMAND RECORDER PF- POWER FACTOR METER RT- RUNNING TIME METER		SET POINT AS NOTED TDD-TIME DELAY AFTER DE-ENERGIZATION-OFF DELAY TDE-TIME DELAY AFTER ENERGIZATION-ON DELAY	30A	FUSE, AMPERE RATING AS NOTED
÷ * or ⊠' ∕	<ul> <li>FVR-FULL VOLTAGE REVERSING</li> <li>RVNR-REDUCED VOLTAGE NON-REVERSING</li> <li>2S1W-TWO SPEED, ONE WINDING</li> <li>2S2W-TWO SPEED, TWO WINDING</li> </ul>		TRANSDUCER AX- CURRENT TRANSDUCER WX- WATT TRANSDUCER RELAY, NO. AS INDICATED		NOTC-NORMALLY OPEN, TIMED CLOSING WHEN ENERGIZED	പ്പം OR HTR	HEATER
ک		#	25- SYNCHRONISM CHECK RELAY 27- UNDER VOLTAGE RELAY 38- BEARING PROTECTIVE DEVICE		NOTO-NORMALLY OPEN, TIMED OPENING WHEN DE-ENERGIZED		INDUCTOR
	NON-FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE	<i>π</i>	40- LOSS OF EXCITATION RELAY 42- RUNNING CONTACTOR/PILOT RELAY 46- REVERSE PHASE/PHASE BALANCE/CURRENT RELAY 47- PHASE SEQUENCE VOLTAGE RELAY		NCTC-NORMALLY CLOSED, TIMED CLOSING WHEN DE-ENERGIZED	TG	TACHOMETER GENERATOR
	FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE, AMPERE RATING AND FUSE SIZE AS NOTED:		49- MACHINE OR TRANSFORMER THERMAL RELAY 50- INSTANTANEOUS OVERCURRENT RELAY 50G- INSTANTANEOUS GROUND 51- TIME OVER CURRENT RELAY 51G- TIME OVERCURRENT RELAY,	$\otimes$	FIELD INSTRUMENT, TAG NO. OR LOOP # AS INDICATED #INDICATES INSTRUMENT TYPE DEFINED ON LOOP SHEETS ## - INDICATES LOOP NO.		CONTACT, NORMALLY OPEN (NO)
· · · · · · · · · · · · · · · · · · ·			GROUNDING RESISTOR TYPE 51N- TIME OVERCURRENT RELAY, RESIDUAL TYPE 51V- TIME OVERCURRENT RELAY WITH VOLTAGE RESTRAINT		LIQUID LEVEL (FLOAT) SWITCH		CONTACT, NORMALLY CLOSED (NC)
	MOTOR ISOLATION SWITCH, HORSEPOWER RATED		60- NEGATIVE SEQUENCE VOLTAGE RELAY 62- TIME DELAY RELAY 63- OVER PRESSURE RELAY 67- AC DIRECTIONAL OVERCURRENT RELAY 83- AUTOMATIC SELECTIVE CONTROL OR TRANSFER RELAY		NORMALLY OPEN, CLOSES ON RISING LEVEL		OVERLOAD RELAY HEATER
°) VFI ۲ XXXA			86- LOCKING-OUT RELAY 87- DIFFERENTIAL PROTECTIVE RELAY B- SUFFIX INDICATES "BUS"		NORMALLY OPEN, CLOSES ON DROPPING LEVEL	К	KEY INTERLOCK
	VACUUM FAULT INTERRUPTER AND LOAD BREAK SWITCH, AMPERE RATING AS NOTED.		G- SUFFIX INDICATES "GENERATOR" GF- GROUND FAULT ST- SHUNT TRIP T- SUFFIX INDICATES "TRANSFORMER"		NORMALLY CLOSED, OPENS ON DROPPING LEVEL	— ТВ	TERMINAL OR TEST BLOCK
~~ ~>	DRAWOUT TYPE EQUIPMENT OR DEVICE	*	X- SUFFIX INDICATES "AUXILIARY" SPECIAL CAPACITOR		NORMALLY OPEN, CLOSES ON RISING PRESSURE	RTD	RESISTANCE TEMPERATURE DETECTOR
	MEDIUM VOLTAGE CABLE TERMINATION	(	* SC- SURGE CAPACITOR PF- POWER FACTOR CORRECTION CAPACITOR INCLUDING INDUCTIVE LINK AS NEEDED		NORMALLY CLOSED, OPENS ON RISING PRESSURE	VE	VIBRATION DETECTOR
	MEDIUM VOLTAGE AIR INTERRUPTER SWITCH	<u></u>	PUSHBUTTON, MOMENTARY CONTACT, SPRING RETURN, NORMALLY CLOSED		NORMALLY OPEN, CLOSES ON DROPPING PRESSURE		
	MEDIUM VOLTAGE FUSED AIR INTERRUPTER SWITCH		PUSHBUTTON, MOMENTARY CONTACT, SPRING RETURN, NORMALLY OPEN		NORMALLY CLOSED, OPENS ON DROPPING PRESSURE	DM	DAMPER MOTOR
	MEDIUM VOLTAGE FUSED MOTOR CONTROLLER	E-STOP	EMERGENCY STOP PUSHBUTTON WITH RED MUSHROOM HEAD OPERATOR (MAINTAINED CONTACT)				ELAPSED TIME METER
△ 30KVA 480V- 120/208Y	TRANSFORMER, RATINGS AND CONNECTIONS AS NOTED. UNLESS OTHERWISE NOTED ON THE SINGLE LINE DIAGRAMS ALL DRY TYPE TRANSFORMERS SERVICING ADMINISTRATIVE AND LABORATORY SPACES SHALL HAVE A	*	STOP PUSHBUTTON WITH RED HEAD OPERATOR (MAINTAINED CONTACT) WITH LOCKABLE OPTION		NORMALLY OPEN, CLOSES ON RISING TEMPERATURE	MOV	MOTOR OPERATED VALVE
Ц К-*	K FACTOR OF 13. ALL OTHER DRY TYPE TRANSFORMERS SHALL HAVE A K-4 RATING. ISOLATION TRANSFORMERS SHALL HAVE A K-20 RATING		*: E-STOP *: STOP		NORMALLY OPEN, CLOSES ON DROPPING TEMPERATURE	●	PUSHBUTTON STATION, REFER TO ELECTRICAL SCHEMATIC FOR NUMBER OF DEVICES.
* A:5	CURRENT TRANSFORMER: * QUANTITY A= PRIMARY AMPERES		START-STOP PUSHBUTTON CONTROL STATION (MOMENTARY CONTACT) "L" DENOTES LOCKOUT TYPE		NORMALLY CLOSED, OPENS ON DROPPING TEMPERATURE	J	JUNCTION BOX
*_PV-SV	POTENTIAL TRANSFORMER: * QUANTITY	START			FLOW SWITCH (AIR, WATER, ETC.) NORMALLY OPEN, CLOSES ON INCREASED FLOW	J	POWER JUNCTION BOX
	PV= PRIMARY VOLTAGE         SV= SECONDARY VOLTAGE         GENERATOR, RATINGS AND CONNECTIONS AS		START-STOP PUSHBUTTON CONTROL STATION, MAINTAINED CONTACT WITH LOCKOUT DEVICE ON STOP		NORMALLY OPEN, CLOSES ON DROPPING FLOW	JI	4-20mA SIGNAL JUNCTION BOX
100A ATS-1	NOTED TRANSFER SWITCH	OFF ON	OFF/ON SELECTOR SWITCH		NORMALLY CLOSED, OPENS ON INCREASED FLOW	JC	CONTROL JUNCTION BOX
	AUTOMATIC TRANSFER SWITCH (EG ATS-1) MANUAL TRANSFER SWITCH (EG MTS-1) "N" INDICATES NORMAL SOURCE "S" INDICATES STANDBY SOURCE	A <sup>B</sup> C <b>*</b>	3 POSITION SELECTOR SWITCH, MAINTAINED CONTACT O-OPEN X-CLOSED		POSITION (LIMIT) SWITCH	PB	PULL BOX
	100A INDICATES CONTINUOUS CURRENT RATING         VARIABLE SPEED DRIVE CONTROLLER		POSITIONTOP CONTACTMIDDLE CONTACTBOTTOM CONTACTAXOO		NORMALLY OPEN NORMALLY OPEN - HELD CLOSED	TC	TERMINATION CABINET
*	★ D.C.= D.C. DRIVE CONTROLLER SCR= SILICON CONTROLLED RECTIFIER VFD= VARIABLE FREQUENCY DRIVE AFD= ADJUSTABLE FREQUENCY DRIVE	(XOO)	B         0         0         O           C         0         O         X           *         NAMEPLATE (A/B/C)         X		NORMALLY CLOSED NORMALLY CLOSED - HELD OPEN		REMOTE DEVICES
	VACUUM CONTACTOR	OOOX)	HOA- HAND/OFF/AUTO HOR- HAND/OFF/REMOTE LOR- LOCAL/OFF/REMOTE RSL- RAISE/STOP/LOWER		TORQUE SWITCH NORMALLY CLOSED, OPENS ON HIGH TORQUE		MOV WITHOUT INTEGRATED DISCONNECT
5KW OR E	UNIT HEATER - ELECTRIC HEATING COIL AND FAN	(OOX)	NOTE: 2 POSITION MULTI-CONTACT SWITCH FOLLOWS SAME CONVENTION		NORMALLY OPEN, CLOSES ON HIGH TORQUE	 X	MOV WITH INTEGRATED DISCONNECT
5KW OR U	UNIT HEATER - STEAM OR WATER HEATING COIL AND FAN		MOTOR STARTER COIL, NUMBER AS INDICATED		CONDUCTORS OR CONDUITS CROSSING PATHS BUT NOT CONNECTED	5	
				1	CONDUCTORS ELECTRICALLY CONNECTED		INDICATES LIMITS OF EQUIPMENT OR WIRING ENCLOSURE

Info: W:\Miscellaneous\1214\_Lucas - West Lucas Road EST\6 Drawings\Electrica\\!Working\E-01.dwg - Plotted: 9/7/20

Gupta & Associates, Inc.     13717 Neutron Road       Consulting Engineering     13717 Neutron Road       Texas Registration No. F-2593     www.gaiconsulting.com	NO. DATE COMMENT NO. DATE COMMENT GEORGE B. LUKE REVISIONS REVISIONS REVISIONS 090723
	WEST LUCAS ROAD 0.75 MG ELEVATED STORAGE TANK ELECTRICAL LEGEND & SYMBOLS - I
	JTG ENGINEERING TBPE FIRM REGISTRATION NO. 22389
ND. F S.	DESIGN BY: S.AKTER J.MEAM DATE: 09-07-2023 SHEET E-01

THIS IS A STANDARD LEGEND. SOME SYMBOLS MAY NOT APPEAR ON THE DRAWINGS.

GENERAL NOTE

					DECODIDEION	] [				
SYMBOLS	DESCRIPTION	SYMBOLS	DESCRIPTION	SYMBOLS	DESCRIPTION		ABBREVIATIONS	LSIG	CONTINUED BELOW LEFT	atron Road 243-244 490-7661 onsulting c
LA-3	REFER TO LIGHT FIXTURE SCHEDULE FOR TYPE FIXTURE:			COM	IMUNICATIONS SYSTEMS	AC AFD	ALTERNATING CURRENT ADJUSTABLE FREQUENCY DRIVE		INSTANTANEOUS/GROUND FAULT FEATURE INCLUDED	13717 Neu Dal J132. Te www.gaio
(A) b	"A"- FIXTURE TYPE "b"- CONTROLLED BY SWITCH "b" "LA-3"- CIRCUIT 3 FROM PANEL LA	OR	LIGHTING PANELBOARD (TYPICAL 120V/240V OR 120V/208V)	▼	TELEPHONE OUTLET	AFF AG	ABOVE FINISHED FLOOR ABOVE GRADE	MCC MCP	MOTOR CONTROL CENTER MOTOR CIRCUIT PROTECTOR	
b	REFER TO LIGHT FIXTURE SCHEDULE FOR TYPE	L*-##			DATA OUTLET	ALUM AMP/A		MFR MH	MANUFACTURER MANHOLE	ering of F-25
A LA-3	FIXTURE, NOTATIONS SAME AS ABOVE			P	DATA INPUT/OUTPUT CABLE OUTLET. "P" DENOTES PROCESS	ATS AUTO	AUTOMATIC TRANSFER SWITCH AUTOMATIC	MLO MTG	MAIN LUGS ONLY MOUNTING	ASSOCIE ENGINE
	INDICATES LIGHT FIXTURES WHICH ARE NONSWITCHED, NOTATIONS SAME AS ABOVE		DISTRIBUTION PANELBOARD (TYPICAL 277V/480V)		COMPUTER SYSTEM	AUX AWG	AUXILIARY	MTD MTS	MOUNTED MANUAL TRANSFER SWITCH	& As egistra
A LA-3 OR ANS	"NS" - NONSWITCHED	H*-##	DUPLEX RECEPTACLE, 20A, 120V, 2P, 3W :		VOICE/DATA OUTLET	С	CONDUIT CIRCUIT BREAKER	NC NO	NORMALLY CLOSED	
⊢A LA-3 b	WALL MOUNTED LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE	$\begin{array}{c} & & \\$	₭ GFI- GROUND FAULT INTERRUPTER TYPE WP- WEATHERPROOF	S⊲	PAGING SPEAKER HORN	СКТ	CIRCUIT	NTS	NOT TO SCALE	
LA-3		LA-3	"LA-3"- CIRCUIT 3 FROM PANEL LA		PAGING SPEAKER BI-DIRECTIONAL	CLF CP	CURRENT LIMITING FUSE CONTROL PANEL	OL OLX	OVERLOAD OVERLOAD CONTROL RELAY	
• (A) b	POLE MOUNTED LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE		RED FACE ISOLATED GROUND DUPLEX, 15A			CPT CR	CONTROL POWER TRANSFORMER CONTROL RELAY	PB PCC	PUSHBUTTON OR PULL BOX PUMP CONTROL CONSOLE	KEVISIONS
A LA-3	EMERGENCY LIGHTING BATTERY UNIT WITH TWO LAMP HEADS, NOTATIONS SAME AS ABOVE			S S	PAGING SPEAKER, CEILING MOUNTED TYPE	CS CT	CONTROL SWITCH CURRENT TRANSFORMER	PPR PFR	PHASE PROTECTIVE RELAY PHASE FAILURE RELAY	
			20A, 240V, 2P, 3W, RECEPTACLE	S	PAGING SPEAKER, WALL MOUNTED TYPE	CU DC	COPPER DIRECT CURRENT	PH PNLBD	PHASE PANELBOARD	BB. LUK
	REMOTE EMERGENCY ADJUSTABLE WALL LIGHTING FIXTURE WITH TWO LAMP HEADS, NOTATIONS SAME AS ABOVE		CLASS 1, DIVISION 1, RATED TWIST LOCK RECEPTACLE, VOLTAGE AND AMPERAGE RATING AS NOTED		SECURITY SYSTEMS		DOOR INTERLOCK DOWN	PR PT	PAIR POTENTIAL TRANSFORMER	GEORGE B. 6090
A X	CEILING MOUNTED EXIT SIGN, NOTATIONS SAME AS ABOVE		SINGLE FACE, SINGLE GANG PEDESTAL WITH 20A, 120V, 2P, 3W DUPLEX RECEPTACLE, FURNISHED AND INSTALLED UNDER		SECURITY ALARM PANEL		DRAWING ELECTRICAL HANDHOLE	PTT	PUSH TO TEST TYPE POLYVINYL CHLORIDE	The second second
LA-3			DIVISION 16 UNLESS OTHERWISE NOTED. * DENOTES FURNISHED JNDER OTHER DIVISIONS OF THE SPECIFICATIONS BUT NSTALLED UNDER DIVISION 16	SAP		EC	EMPTY CONDUIT	QTY	QUANTITY	Strager
⊢. L	WALL OUTLET EXIT SIGN. ARROW INDICATES DIRECTION OF EGRESS, NOTATIONS SAME AS ABOVE		DOUBLE FACE, SINGLE GANG PEDESTAL WITH 20A, 120V, 2P, 3W DUPLEX RECEPTACLE AND 20A, 240V, 2P, 3W SINGLE	DS	SECURITY ALARM DOOR SWITCH	ELEC ELEV	ELECTRICAL ELEVATION	RCP RECP	RECEPTACLES	
LA-3			RECEPTACLE, FURNISHED AND INSTALLED UNDER DIVISION 16 JNLESS OTHERWISE NOTED. * DENOTES FURNISHED UNDER	KP	SECURITY ALARM KEY PAD	EM EMH	EMERGENCY ELECTRICAL MANHOLE	RVSS SC	REDUCED VOLTAGE SOFT STARTER SURGE CAPACITOR	
	CONDUIT, EXPOSED/SURFACE MOUNTED		OTHER DIVISIONS OF THE SPECIFICATIONS BUT INSTALLED JNDER DIVISION 16	CR	SECURITY SYSTEM CARD ACCESS READER	EO ERMS	ELECTRICALLY OPERATED ENERGY-REDUCING	SCH SCCR	SCHEMATIC SHORT CIRCUIT CURRENT RATING	TAN T
	CONDUIT OR DUCTBANK, CONCEALED		DOUBLE RECEPTACLE, 20A, 120V, 2P, 3W MOUNTED IN BOX CURB FURNISHED UNDER OTHER DIVISIONS OF THE SPECIFICATIONS BUT INSTALLED UNDER DIVISION 16	ws	SECURITY ALARM WINDOW SWITCH	-   FBO	MAINTENANCE SWITCH FURNISHED BY OTHERS	SEC SH	SECONDS OR SECONDARY SHIELDED OR SHEET	
o	CONDUIT, EXPOSED/SURFACE MOUNTED, TURNING UP		SINGLE GANG 20A, 120V, 2P, 3W RECEPTACLE		SECURITY ALARM MOTION DETECTOR	FO	FIBER OPTIC FIBERGLASS REINFORCED	SHT	SHEET SOLID NEUTRAL	ROA FORA BOLS
•	CONDUIT, EXPOSED/SURFACE MOUNTED, TURNING DOWN	$\left  \begin{array}{c} \Theta \end{array} \right $	SINGLE GANG ZUA, 1200, 2F, 3W RECEFIACLE		SECURITY CAMERA * CCTV- CLOSED CIRCUIT TV CAMERA	1	POLYESTER	SS	STAINLESS STEEL	STC STC
			QUAD RECEPTACLE		PTZ- PAN, TILT, ZOOM CAMERA LENS CONTROLS		FUSE GENERATOR CONTROL PANEL	ST SV	STARTER SOLENOID VALVE	LED UCA
	CONDUIT STUBBED OUT AND CAPPED			GB	GLASS BREAK DETECTOR	GEN G, GRD	GENERATOR GROUND	SW SWBD		ST LU ND & ND &
	DENOTES A QUANTITY OF 2 SETS OF THREE (3) NO.3/0 AWG CONDUCTORS AND 1 NO.AWG GROUND CONDUCTOR EACH INSTALLED IN 3" CONDUIT.	OS	OCCUPANCY SENSOR CAPABLE OF VACANCY	ACP	ACCESS CONTROL PANEL	GFI GFCI	GROUND FAULT INTERRUPTER GROUND FAULT CIRCUIT	SWGR TC	SWITCHGEAR TERMINATION CABINET	
└── 2(3#3/0+1#2G, 3"C)	DENOTES A QUANTITY OF TWO INSTRUMENT CABLES. EACH	PC	PHOTOCELL			- GO	INTERRUPTER GATE OPERATOR	TEL TO	TELEPHONE TIME DELAY ON OPENING	
2(2/C#16TS)	CONSISTS OF TWO NO.16 AWG CONDUCTORS TWISTED TOGETHER AND COVERED WITH A METALLIC SHIELD AND AN OVERALL PROTECTIVE JACKET. REFER TO THE SPECIFICATIONS				FIRE ALARM SYSTEMS	GRS	GALVANIZED RIGID STEEL HANDHOLE	TS TVSS	TEMPERATURE SWITCH TRANSIENT VOLTAGE	75 1
	FOR THE EXACT CABLE TO BE PROVIDED.	-		FACP	FIRE ALARM CONTROL PANEL	НТ НТР	HEIGHT HEAT TRACE PANEL	TSW	SURGE SUPPRESSOR TWISTED SHIELDED WIRE	0
3(4"C)	DENOTES A QUANTITY OF THREE 4-INCH CONDUITS.			(SD)*	SMOKE DETECTOR ¥: D- DENOTES DUCT SMOKE DETECTOR		HERTZ	TYP	TYPICAL	
	FLEXIBLE METAL CONDUIT "WHIP" (2#12, #12G, 3/4"C UNLESS OTHERWISE NOTED) FOR RECESSED LIGHTING FIXTURES AND				R- DENOTES FIXED TEMPERATURE RATE-OF-RISE TYPE.	- INST		V VFD	VOLTS VARIABLE FREQUENCY DRIVE	
LP#-1,3	LIQUID TIGHT MOTOR CONNECTIONS	-			FIRE ALARM MANUAL PULL STATION, MOUNT AT 4'-0" ALARM HORN, MOUNT AT 7'-6"	LA LC	LIGHTNING CONTACTOR	vo	VALVE OPERATOR	
	HOMERUN, CIRCUITS 1 AND 3 RUN TO PANEL LP-1				★: F- DENOTES FIRE ALARM	- 1	LOCAL CONTROL PANEL LIGHTS	W WP	WIRE WEATHERPROOF	
<b>•</b>	SINGLE POLE SWITCH "b"- INDICATES SWITCH LEG SHALL CONTROL LIGHT FIXTURES	-			ALARM STROBE, MOUNT AT 6'-8" X: F- DENOTES FIRE ALARM		LIGHTING PANEL CONTINUED ABOVE RIGHT	XP XFMR	EXPLOSION PROOF TRANSFORMER	
	WITH "b" DESIGNATION	-		₩4	ALARM HORN AND STROBE LIGHT COMBINATION, MOUNT AT 6'-8" X: F- DENOTES FIRE ALARM					
\$b <sup>×</sup>	MULTI POLE SWITCH "x"- INDICATES NUMBER OF POLE "b"- NOTATIONS SAME AS ABOVE									
р П	SINGLE POLE SWITCH AND PILOT LIGHT,	EQUIPMENT	TAGGING EQUIPMENT TAG CONDUIT TAG	EXAMPLE LEGEND:						
502/1/6 \$€	"b"- NOTATIONS SAME AS ABOVE	MOTOR CONTROL CENTER	MCC-1 MC1-XX	-						
Dotted: d€	DIMMER LIGHTING CONTROL SWITCH,	SWITCHBOARD	SWBD-1 SB1-XX	EQUIPMENT						
- 6мр. 7.	"b"- NOTATIONS SAME AS ABOVE	SWITCHGEAR	SWGR-1 SG1-XX	MC#-8						g
A ting lE_0	TIME SWITCH, "b"-NOTATIONS SAME AS ABOVE	PROGRAMMABLE LOGIC CABINE	T PLC-1 PL1-XX		٦					5238
™ <sup>M</sup>	MANUAL MOTOR STARTER /DISCONNECT	VARIABLE FREQUENCY DRIVE	VFD-1 VF1-P	BREAKER NO.						ن Š
sectri	SINGLE POLE SWITCH WITH OCCUPANCY SENSOR	LOW VOLTAGE TRANSFORMER	TX-LX OR TX-HX TXLX-P OR TXHX-F		ENT					ION RING
Drawing MD		SERVICE TRANSFORMER	TX-1 TX1-P	TYPE DEFINED ON LC	OP					NEE NEE
¢	SINGLE POLE DIMMER SWITCH SWITCH ENCLOSURE	GENERATOR	GEN-1 GN1-X	FIT-101						U CIST
Case Road	"x"- NOTATIONS SAME AS ABOVE "b"- NOTATIONS SAME AS ABOVE	LIGHTING/POWER PANELBOARD								L T G E
	"xx"- INDICATES ENCLOSURE TYPE			└─ INDICATES LOOF NO.	۔					
	LIGHTING CONTACTOR WITH NUMBER OF POLES AS INDICATED	TYPICAL TAG FOR CONDUIT FROM STREAM LOAD FOR EXAMPLE.	I HIS EQUIPMENT TO DOWN							BE -
[1214_L	1									
illaneou:									GENE	RAL NOTE DESIGN BY: DRAWN BY: S.AKTER J.MEAM
V.IMISCe										ANDARD LEGEND. DATE: JOB NUMBER: 09-07-2023
										ABOLS MAY NOT SHEET

ELECTRICAL	GENERAL	NOTES

1.	THE NOTES CONTAINED ON THIS SHEET ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR WHEN WORKING IN THE FIELD, AND CONTAIN EXCERPTS FROM THE SPECIFICATION SECTIONS. HOWEVER THE CONTRACTOR IS HEREBY ADVISED THAT THE CONTRACT DOCUMENTS CONSIST OF BOTH THE DRAWINGS AND THE SPECIFICATIONS, AND THAT THE CONTRACTOR MUST COMPLY FULLY WITH BOTH THE BOUND DRAWINGS AND THE BOUND SPECIFICATIONS.	21. LOCATE 22. ALL SLO
		ALL THR
2.	ALL EQUIPMENT WIRING, RACEWAYS, ETC. SHALL BE INSTALLED AND GROUNDED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE, LOCAL CODES, AND INDUSTRY STANDARDS (IE. UL, NEMA, IEEE, ANSI, ETC.) THE DRAWING NOTES AND DETAILS SHALL BE COMPLIED WITH IN ADDITION TO THE REQUIREMENTS IN THE SPECIFICATIONS. REFER TO EACH SPECIFICATION SECTION FOR SPECIFIC REQUIREMENTS.	23. LIGHTING MOUNTIN FLOOR.
3.	ALL RACEWAY INSTALLATIONS SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EQUIPMENT	24. CONDUI
	AND STRUCTURAL CONDITIONS. ALL EXPOSED RACEWAY SHALL BE INSTALLED AS PER ANSI/ NECA 1 PARALLEL TO BEAMS, CEILINGS, FLOORS AND WALLS. SEE SPECIFICATION ON RACEWAYS FOR ADDITIONAL REQUIREMENTS.	A. 3/4" (N
		B. NO.14
4.	CONDUITS SHALL BE TERMINATED IN A NEAT MANNER AND STRICTLY IN ACCORDANCE WITH THE SPECIFICATIONS AND DRAWING DETAILS.	C. IN ACC
5.	CONDUITS TERMINATED INTO ENCLOSURES SHALL BE PERPENDICULAR TO THE WALLS OF THE ENCLOSURE. THE USE OF SHORT SEALTIGHT ELBOW FITTINGS FOR SUCH TERMINATIONS IS NOT PERMITTED.	25. INSTALL CONTRA OWNER.
6.	ALL RACEWAY INSTALLATIONS, CROSSING EXPANSION JOINTS OR TRANSITIONS FROM BELOW GRADE TO EXPOSED ABOVE GRADE, SHALL HAVE EXPANSION OR EXPANSION/DEFLECTION TYPE FITTINGS AS SPECIFIED FOR THE APPLICATION. SEE THE DRAWINGS AND THE SPECIFICATION ON RACEWAYS FOR THE EXACT TYPE OF FITTING TO BE USED.	26. ALL CON SCREW I
7.	NO CONDUIT SMALLER THAN 3/4", NOR WIRE SMALLER THAN NO. 12 AWG, SHALL BE USED UNLESS SPECIFICALLY NOTED.	27. ALL BAR ALL EXP INSULAT
8.	ALL UNDERGROUND SINGLE CONDUITS AND DUCTBANKS OF MULTIPLE CONDUITS SHALL BE RIGID PVC CONDUIT ENCASED IN REINFORCED RED CONCRETE. CONCRETE DYED RED BEFORE PLACEMENT. MINIMUM SIZE IS 2 INCH. FIELD VERIFY THE ROUTING OF ALL EXISTING UNDERGROUND CONDUIT AND DUCTBANKS. COORDINATE ROUTING OF NEW CONDUIT AND DUCTBANKS TO AVOID INTERFERENCE WITH EXISTING CONDUIT, DUCTBANKS, AND OTHER UNDERGROUND UTILITIES.	28. WHERE I THE CON TO BIDD THE CON
9.	ALL CHANGES OF DIRECTION GREATER THAN 20 DEGREES IN UNDERGROUND SINGLE, OR DUCTBANKS OF MULTIPLE CONDUITS, SHALL BE ACCOMPLISHED USING PVC COATED RIGID ALUMINUM LONG RADIUS BENDS. BENDS OF PVC CONDUIT GREATER THAN 20 DEGREES, OR THE USE OF FLEXIBLE CONDUIT OF ANY TYPE, WILL NOT BE PERMITTED. SEE THE SPECIFICATIONS FOR MORE REQUIREMENTS.	NON-HAZARD OUTDOOR: GENERAL AR
10.	LIQUID TIGHT FLEXIBLE ALUMINUM CONDUIT SHALL BE USED FOR THE PRIMARY AND SECONDARY OF TRANSFORMERS, GENERATOR TERMINATIONS AND OTHER EQUIPMENT WHERE VIBRATION IS PRESENT. USE IN OTHER LOCATIONS IS NOT PERMITTED, EXCEPT FOR CONNECTIONS TO INSTRUMENTATION TRANSMITTERS, WHERE MULTIPLE PENETRATIONS ARE REQUIRED. LIQUID TIGHT FLEXIBLE ALUMINUM CONDUIT SHALL HAVE A MAXIMUM LENGTH NOT GREATER THAN THAT OF A FACTORY MANUFACTURED LONG RADIUS ELBOW OF THE CONDUIT SIZE BEING USED. THE MAXIMUM BENDING RADIUS SHALL NOT BE LESS THAN THAT SHOWN IN THE NEC CHAPTER 9, TABLE 2, "OTHER BENDS". BX OR AC TYPE PREFABRICATED CABLES WILL NOT BE PERMITTED.	OUTDOOR; CHEMICAL AF INDOOR; CHEMICAL ROO INDOOR; CONDITIONED S INDOOR; NON-CONDITION INDOOR; NON-CONDITION
11.	THE WIRING DIAGRAMS, BLOCK DIAGRAMS, QUANTITY/SIZES OF WIRES/CONDUITS REPRESENT A SUGGESTED ARRANGEMENT BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL EQUIPMENT. MODIFICATIONS ACCEPTABLE TO THE ENGINEER MAY BE MADE BY THE CONTRACTOR TO ACCOMMODATE EQUIPMENT ACTUALLY APPROVED. ALL MODIFICATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. THE BASIC SEQUENCE AND METHOD OF CONTROL MUST BE MAINTAINED AS INDICATED ON THE DRAWINGS AND/OR SPECIFIED.	INDOOR, ADMIN BUILDING CLASS I, DIVISION 1 CLASS I, DIVISION 2 <u>GENERAL NOTES:</u> • EQUIPMENT SU
12.	ALL JUNCTION BOXES, PULL BOXES AND TERMINATION BOXES IN NEMA 12 AREAS SHALL BE ALUMINUM. FOR NEMA 4X AREAS SEE SPECIFICATIONS FOR BOX DETAILS AND SPECIFICATIONS.	SHOWN ON DR     NEMA 1 ENCLO
13.	SEAL ALL RACEWAYS ENTERING JUNCTION BOXES OR CONTROL PANELS CONTAINING ELECTRICAL OR INSTRUMENTATION EQUIPMENT WITH WATERTIGHT SEALANT. REFER TO THE SPECIFICATIONS FOR DETAILS.	NEMA 4X* ENCI     CONDUIT INSID     RIGID ALUMINU
14.	ALL EQUIPMENT AND ELECTRICAL EQUIPMENT ENCLOSURE LOCATIONS, OR TERMINAL BOX LOCATIONS, ARE APPROXIMATE. THE EXACT LOCATIONS SHALL BE COORDINATED WITH AND APPROVED BY THE OWNER, DURING CONSTRUCTION, AT NO ADDITIONAL COST TO THE OWNER.	USE OF NEMA 3
15.	ALL EQUIPMENT AND ELECTRICAL EQUIPMENT ENCLOSURES DIMENSIONS ARE APPROXIMATE. ALL EQUIPMENT	CON
-	AND ELECTRICAL EQUIPMENT ENCLOSURES OR TERMINAL BOX DIMENSIONS SHALL BE VERIFIED WITH THE EQUIPMENT SUPPLIER. ALLOW FOR LOCATION CHANGES AND INCLUDE IN THE CONTRACT PRICE. THE EXACT LOCATIONS OF ALL ELECTRICAL EQUIPMENT AND ROUTING OF ALL CABLES AND CONDUITS SHALL BE COORDINATED WITH AND APPROVED BY THE OWNER/ENGINEER DURING CONSTRUCTION.	RIGID GALVANIZED CON
16.	CORING OF AN EXISTING STRUCTURE SHALL BE COORDINATED WITH AND APPROVED BY THE OWNER/ENGINEER. CORING THROUGH STRUCTURAL BEAMS IS STRICTLY PROHIBITED WITHOUT PRIOR WRITTEN APPROVAL FROM THE OWNER/ENGINEER.	PVC COATED ALUMINUM
		LIQUID TIGHT FLEXIBLE A
17.	THE LOCATION OF ALL ELECTRICAL EQUIPMENT AND ROUTING OF CABLES AND CONDUITS SHALL BE COORDINATED AND APPROVED BY THE OWNER.	RIGID NON-METALLIC, SC
18.	THE DUCTBANK ROUTING AS SHOWN ON THE DRAWING IS APPROXIMATE. FIELD VERIFY THE EXACT DUCTBANK	RIGID NON-METALLIC, SC
	ROUTING, CABLE LENGTH AND CONDUIT LENGTH.	FLEXIBLE ALUMINUM CO
	PROVIDE CONDUIT SEALS FOR CONDUIT PENETRATIONS AS PER NEC AND NFPA820.	ALUMINUM RIGID METAL
20.	COORDINATE ALL WORK WITH THE OWNER.	ELECTRIC METALLIC TUE

- OTTED CHANNEL, SLOTTED CHANNEL SUPPORT MATERIAL, WASHERS, SCREWS, NUTS, CONDUIT CLAMPS, READ SPRING NUTS AND MISC. MOUNTING HARDWARE SHALL BE 316 STAINLESS STEEL.
- IG FIXTURES SHALL BE MOUNTED ACCORDING TO THE MOUNTING HEIGHT GIVEN ON THE DRAWINGS. THE ING HEIGHT SHALL BE MEASURED FROM THE BOTTOM OF THE LIGHTING FIXTURE TO THE FINISHED
- T AND WIRE FOR THE HVAC EQUIPMENT AND MISCELLANEOUS DEVICES SHALL BE:
- MIN) RIGID ALUMINUM.
- 4 XHHW CU. WIRE XHHW (MIN.)
- CORDANCE WITH ALL ELECTRICAL AND HVAC SPECIFICATIONS REQUIREMENTS.
- LALL CONDUITS AND WIRES SHOWN ON THE INTERFACE DIAGRAM SHALL BE INSTALLED BY THE ACTOR. GROUPING OF CONDUIT AND WIRE MAY BE CHANGED, IF APPROVED BY THE ENGINEER AND
- NDULETS SHALL BE FORM 7 AND SHALL HAVE 316 SS CLAMP COVERS WITH 316 SS CLAMPS AND SCREWS. DOWN COVERS ARE UNACCEPTABLE. REFER TO THE SPECIFICATIONS FOR MORE INFORMATION.
- RE COPPER GROUNDING CONDUCTORS SHALL BE TINNED, ALL GROUND RODS SHALL BE 3/4" BY 10' LONG. POSED COPPER GROUND CABLES SHALL BE GREEN INSULATED CONDUCTORS. PROVIDE XHHW FION.
- NOTES ON THE DRAWING INDICATE THAT THE CONTRACTOR SHALL FIELD-VERIFY, THE INTENT IS FOR INTRACTOR TO INVESTIGATE TO THE EXTENT NECESSARY TO PROVIDE THE WORK AND MATERIALS PRIOR NING AND INCLUDE ALL COSTS IN THE BID PRICE. THE CONTRACT PRICE SHALL NOT BE INCREASED WHEN NTRACTOR HAS NOT INVESTIGATED PER THE NOTES DIRECTING THAT BE DONE.

TYPICAL	ENC	LOS	URE	TYF	'ES E	BY AREA TYPE
		BOXES	& ENCI	LOSURI	ES	
ZARDOUS AREAS	1	3R	4X	4X*	12	CONDUIT
AL AREAS		X	Х			RIGID ALUMINUM
CAL AREAS				Х		SCHEDULE 80 PVC
L ROOM				Х		SCHEDULE 80 PVC
NED SPACE					Х	RIGID ALUMINUM
DITIONED SHOP SPACE					Х	RIGID ALUMINUM
DITIONED PROCESS AREA			Х			RIGID ALUMINUM
IILDING	Х					EMT/RIGID ALUMINUM
1	REFI		NEC, NF	-PA-820	), AND (	CONTRACT CONSTRUCTION SPECIFICATIONS
2	REFI		NEC, NF	-PA-820	), AND (	CONTRACT CONSTRUCTION SPECIFICATIONS
	-					

- UCH AS MOTOR CONTROL CENTER, SWITCHGEAR, VFDS, AND OTHER STAND-ALONE MOTOR STARTERS ARE AS RAWINGS.
- OSURES ARE TO BE NEMA 1 GASKETED.
- LOSURES ARE TO BE NON-METALLIC (ie PVC) NEMA 4X
- DE ADMIN BUILDING LOCATION IS TO BE EMT IF CONCEALED IN DRY WALL (AKA SHEET ROCK WALL): OTHERWISE
- 3R OR 4X IN OUTDOOR GENERAL AREAS IS A SHOWN ON DRAWINGS.

CONDUIT TYPE	LOCATION
D CONDUIT	NOT ACCEPTABLE FOR USE ON THIS PROJECT EXCEPT FOR THE UTILITY COMPANY'S CONDUCTORS. ALL UTILITY COMPANY'S DUCTS SHALL BE AS SPECIFIED BY UTILITY COMPANY.
MINUM CONDUIT	ALL EMBEDDED CONDUIT BENDS, UNDERGROUND DUCTBANK OF MORE THAN 20 DEGREES, AND ALL CONDUIT STUB-UPS TO A MINIMUM OF 6" ABOVE FINISHED FLOOR OR GRADE AND IN CHLORINE AND CAUSTIC ROOMS.
KIBLE ALUMINUM CONDUIT	RACEWAY CONNECTION TO VIBRATING EQUIPMENT ONLY, IN ALL AREAS LIMITED TO 36" UNLESS APPROVED BY OWNER AND ENGINEER.
LIC, SCHEDULE 40 PVC CONDUIT	UNDERGROUND ENCASED IN RED DYE REINFORCED CONCRETE. (AS WHERE SPECIFIED)
LIC, SCHEDULE 80 PVC CONDUIT	FOR USE IN CHLORINE AND CAUSTIC ROOMS, AND UNDERGROUND. ENCASED IN RED DYED REINFORCED CONCRETE. (AS WHERE SPECIFIED)
JM CONDUIT	FIXTURE WHIP CONNECTION TO LIGHTING FIXTURES IN NEMA 12 AREAS (MAXIMUM 3-FT). BX OR AC TYPE PREFABRICATED CABLES ARE NOT PERMITTED.
METAL CONDUIT	ALL ABOVE GRADE AREAS, EXCEPT FOR CONCRETE EMBEDDED AND THOSE AREAS ALREADY DESCRIBED IN THIS TABLE
IC TUBING (EMT) CONDUIT	FOR USE ONLY ON CONCEALED, ABOVE GROUND, INTERIOR ELECTRICAL WIRING IN AIR-CONDITIONED ADMINISTRATIVE BUILDINGS REMOTE TO THE PROCESS AREA, AND CLEARLY DEFINED AS SUCH ON THE DRAWINGS OR IN THE SPECIFICATIONS.

- ALL DEMOLITION WORK IN THE CONTRACT PRICE.
- BUT TO REMAIN IN SERVICE.
- BY DEMOLITION WORK.
- PAINTED TO MATCH THE SURROUNDING SURFACE.
- SPECIFIED.
- ADDITIONAL COST TO THE OWNER.
- CONDUITS BEFORE DIGGING.
- OWNER. SEE SPECIFICATIONS.
- BEEN DONE:
- CONTRACTOR SHALL NOTE DOWN ANY DEFECTS OR DEFICIENCIES.
- CONTRACTOR SHALL NOTE DOWN ANY DEFECTS OR DEFICIENCIES.
- SHALL SIGN ON THE FORM.
- THAT IT FUNCTIONS CORRECTLY.

# MCC, CONTROL PANELS, PANELBOARDS

THESE NOTES APPLY TO CONTROL PANELS, MCC ETC WHICH HAS TO BE REFURBISHED, MODIFIED, DISCONNECTED & RECONNECTED OR REWORKED.

THE CONTRACTOR SHALL NOT MAKE ANY MODIFICATION UNTIL THE FOLLOWING HAS BEEN DONE:

- THE CONTRACTOR SHALL NOTE DOWN ANY DEFECTS OR DEFICIENCY.

- PARTIES SHALL SIGN ON THE FORM.
- DEMONSTRATE THAT IT FUNCTIONS CORRECTLY.

## **DEMOLITION NOTES**

COORDINATE THE DEMOLITION OF ELECTRICAL CONDUIT, WIRE, EQUIPMENT AND DEVICES WITH THE GENERAL DEMOLITION AND SCHEDULE. THE DRAWINGS ARE INTENDED TO CONVEY THE GENERAL NATURE AND SCOPE OF THE DEMOLITION WORK. EVERY ITEM TO BE DEMOLISHED MAY NOT BE SHOWN. FIELD VERIFY, AND INCLUDE

2. PROVIDE TEMPORARY WIRE AND CONDUIT FOR THE EQUIPMENT WHICH MAY BE AFFECTED BY THE DEMOLITION

3. RELOCATE AND RECONNECT POWER AND CONTROL RACEWAYS AND CONDUCTORS TO EQUIPMENT AFFECTED

4. ALL CONDUCTORS BEING DEMOLISHED SHALL BE DISCONNECTED AND REMOVED FROM THE LOAD TO THE SOURCE. SURFACE MOUNTED CONDUITS AND MOUNTING HARDWARE SHALL BE REMOVED. UNDERGROUND CONDUITS WHICH ARE NOT BEING REMOVED OR OTHERWISE NOT BEING MADE UNUSABLE SHALL BE CAPPED AND TAGGED AS SPARE, WITH INFORMATION CLEARLY INDICATING THE LOCATION OF THE OTHER END.

5. ALL SURFACES WHERE DEMOLISHED EQUIPMENT OR CONDUIT IS REMOVED SHALL BE CLEANED, PATCHED AND

6. CHECK THE FUNCTION OF EACH CONDUCTOR BEFORE REMOVING OR DISCONNECTING.

7. IF A CONDUCTOR WHICH HAS TO STAY IN SERVICE (NOT BEING DEMOLISHED) IS INSTALLED IN A COMMON CONDUIT WITH CONDUCTORS WHICH ARE BEING DEMOLISHED, THE CONTRACTOR SHALL REMOVE ALL CONDUCTORS FROM THE CONDUIT, PROVIDE NEW CONDUCTORS WHICH ARE REPLACEMENTS FOR THE CONDUCTORS THAT ARE TO REMAIN IN SERVICE AND RE-INSTALL THE NEW CONDUCTORS. AFTER THE CONDUCTORS ARE PULLED. MEGGER OR VFL TEST EACH CONDUCTOR. CONNECT BOTH ENDS OF THE NEW CONDUCTORS AND TEST THE SYSTEM FOR PROPER FUNCTION. DO NOT RE-PULL USED CONDUCTORS UNLESS

8. WHERE EQUIPMENT IS BEING RE-FED FROM A NEW SOURCE, EXISTING CONDUIT MAY BE REUSED ONLY IF THE CONDUIT AND FITTINGS ARE OF THE TYPE SPECIFIED FOR NEW WORK ON THIS CONTRACT. IF NOT, THE CONDUIT AND CONDUCTORS SHALL BE REPLACED WITH NEW MATERIAL MEETING THE SPECIFICATIONS, AT NO

9. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER/ENGINEER TO FLAG EXISTING UNDERGROUND

10. THE OWNER HAS THE RIGHT OF FIRST REFUSAL TO THE EQUIPMENT BEING REMOVED. THE CONTRACTOR SHALL DELIVER THE EQUIPMENT WHICH THE OWNER WISHES TO KEEP AT A LOCATION DESIGNATED BY THE

11. DO NOT MAKE ANY MODIFICATIONS TO THE EXISTING ELECTRICAL EQUIPMENT UNTIL THE FOLLOWING HAS

A. THE OWNER/CONTRACTOR SHALL WITNESS AND RECORD THE CONDITION OF THE EXISTING EQUIPMENT, THE

B. THE OWNER SHALL OPERATE THE EQUIPMENT TO DEMONSTRATE THE CURRENT CONDITIONS. THE

C. A WRITTEN AND PHOTOGRAPHIC RECORD OF THE OPERATION AND EXISTING CONDITION SHALL BE KEPT IN A THREE RING BINDER AT THE OWNER/CONTRACTOR TRAILER. IN FORM OF PICTURES AND INFORMATION.

D. A FORM SHALL BE GENERATED BY THE CONTRACTOR TO RECORD THE OBSERVATIONS. BOTH PARTIES

E. REPLACE ALL MATERIAL OR EQUIPMENT DAMAGED DURING THE COURSE OF WORK.

F. AFTER THE CHANGES ARE MADE, THE EQUIPMENT SHALL BE INSPECTED AND RE-TESTED TO DEMONSTRATE

G. NO PORTION OF EXISTING CONDUCTORS SHALL BE SPLICED TO NEW CONDUCTORS FOR RE-USE WITHOUT SPECIFIC APPROVAL FROM THE OWNER/ENGINEER ON A CASE-BY-CASE BASIS.

A. THE OWNER/CONTRACTOR SHALL WITNESS THE CONDITION OF THE EXISTING EQUIPMENT,

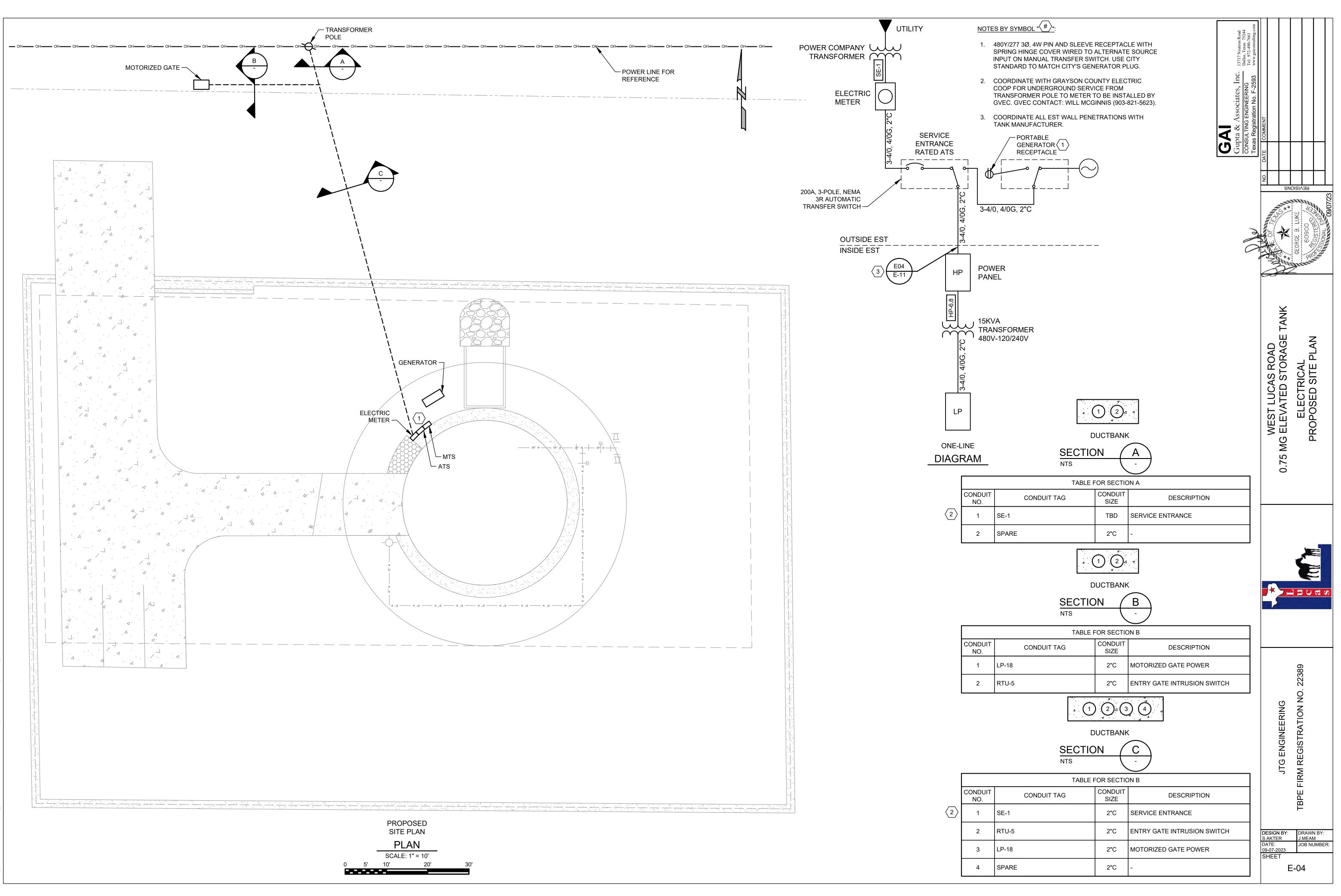
B. THE OWNER SHALL OPERATE THE EQUIPMENT TO DEMONSTRATE THE CURRENT CONDITIONS. THE CONTRACTOR SHALL NOTE DOWN ANY DEFECTS OR DEFICIENCIES.

C. A RECORD OF THE OPERATION AND EXISTING CONDITION SHALL BE KEPT IN A THREE RING BINDER AT THE OWNER/CONTRACTOR TRAILER, IN FORM OF PICTURES AND INFORMATION. D. A FORM SHALL BE GENERATED BY THE CONTRACTOR TO RECORD THE OBSERVATIONS. BOTH

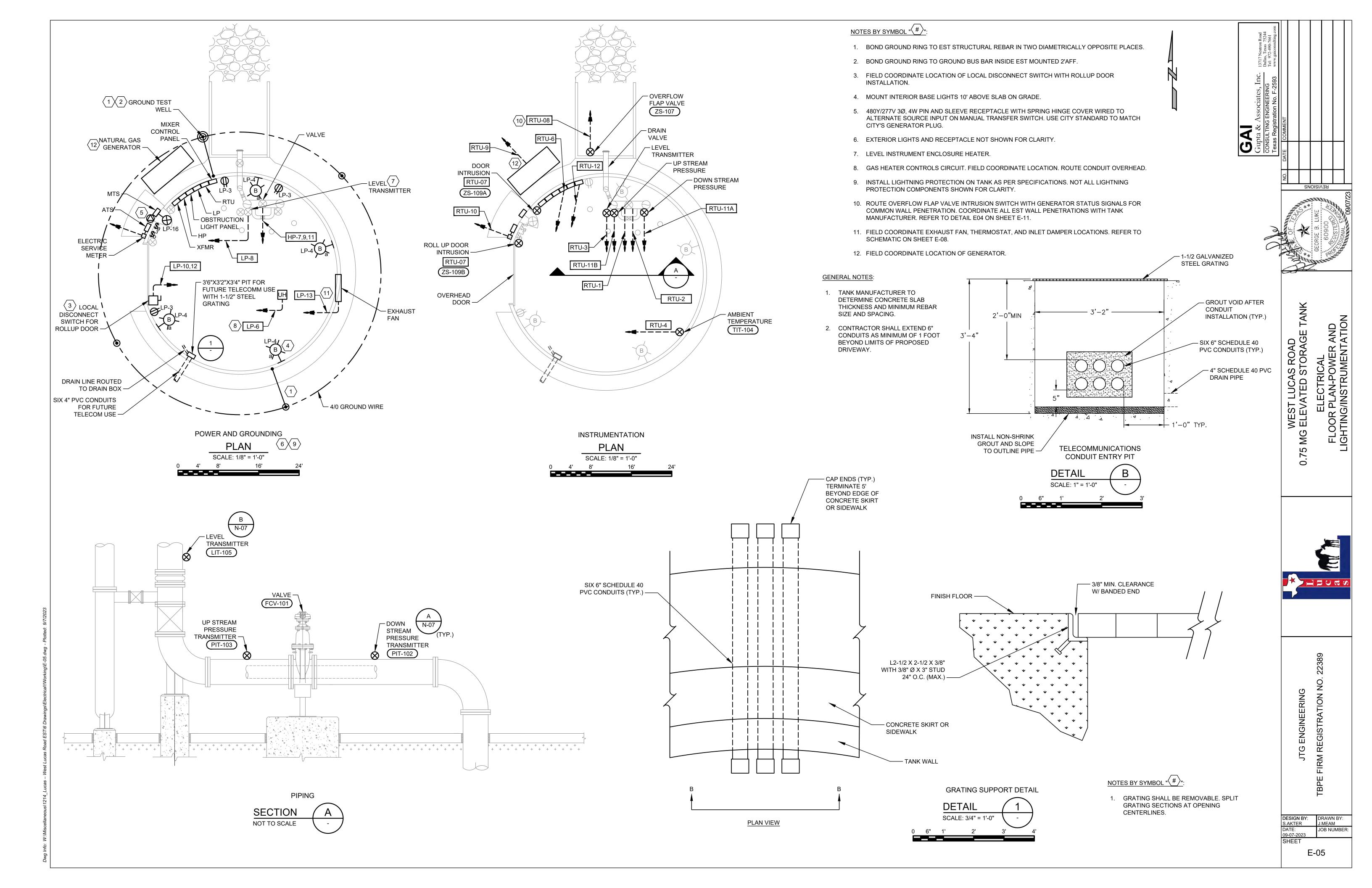
E. REPLACE ALL MATERIAL OR EQUIPMENT DAMAGED DURING THE COURSE OF WORK.

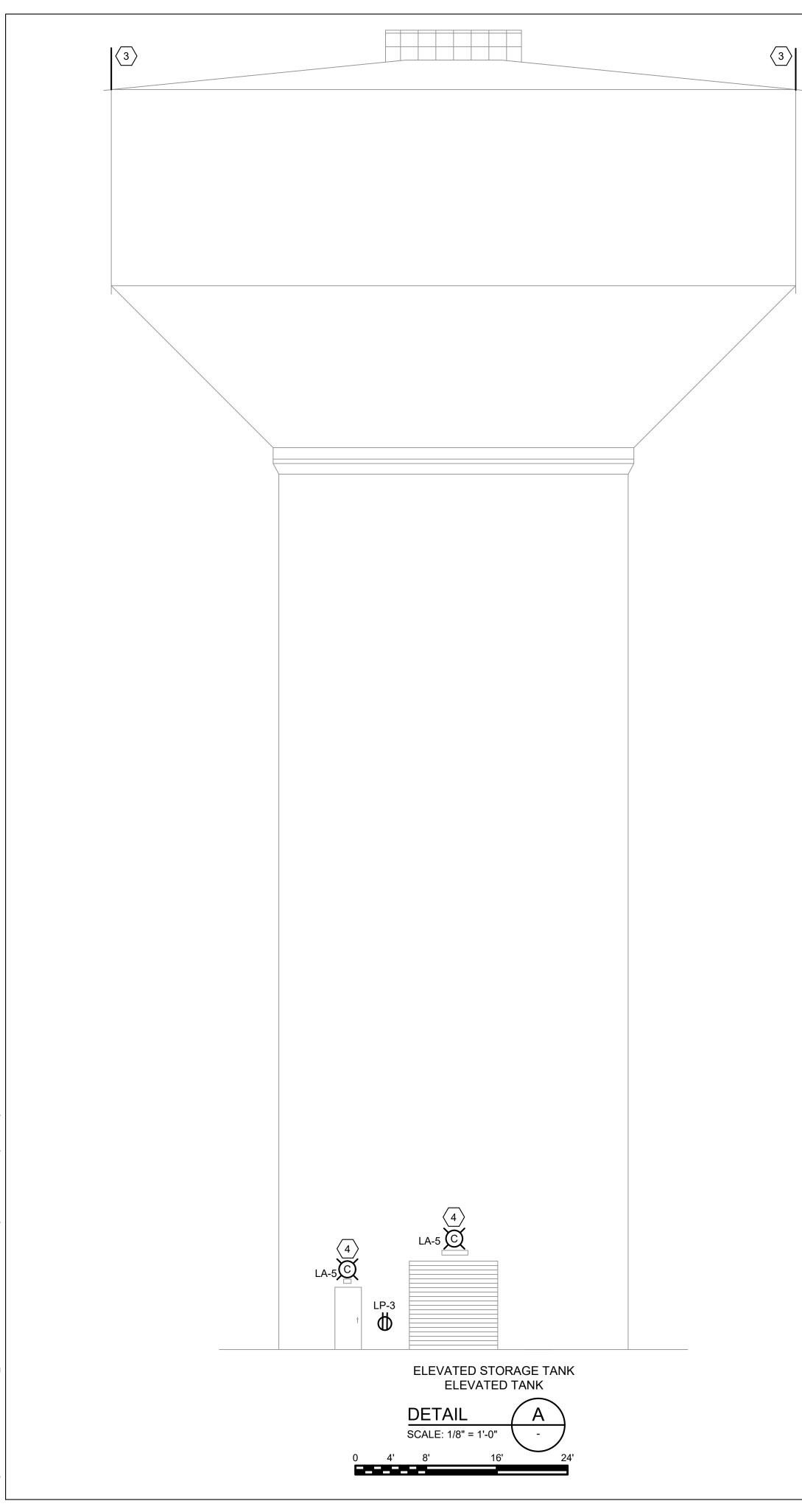
F. AFTER THE CHANGES ARE MADE, THE EQUIPMENT SHALL BE INSPECTED AND RE-TESTED TO

Gupta & Associates, Inc.13717 Neutron RoadGupta & Associates, Inc.13717 Neutron RoadCONSULTING ENGINEERINGTel: 972-490-7661Texas Registration No. F-2593www.gaiconsulting.com	NO. DATE COMMENT NO. DATE COMMENT
	GEORGE B. LUKE
	WEST LUCAS ROAD 0.75 MG ELEVATED STORAGE TANK ELECTRICAL GENERAL NOTES
	JTG ENGINEERING TBPE FIRM REGISTRATION NO. 22389
	DESIGN BY: S.AKTER J.MEAM DATE: JOB NUMBER: 09-07-2023 SHEET E-03

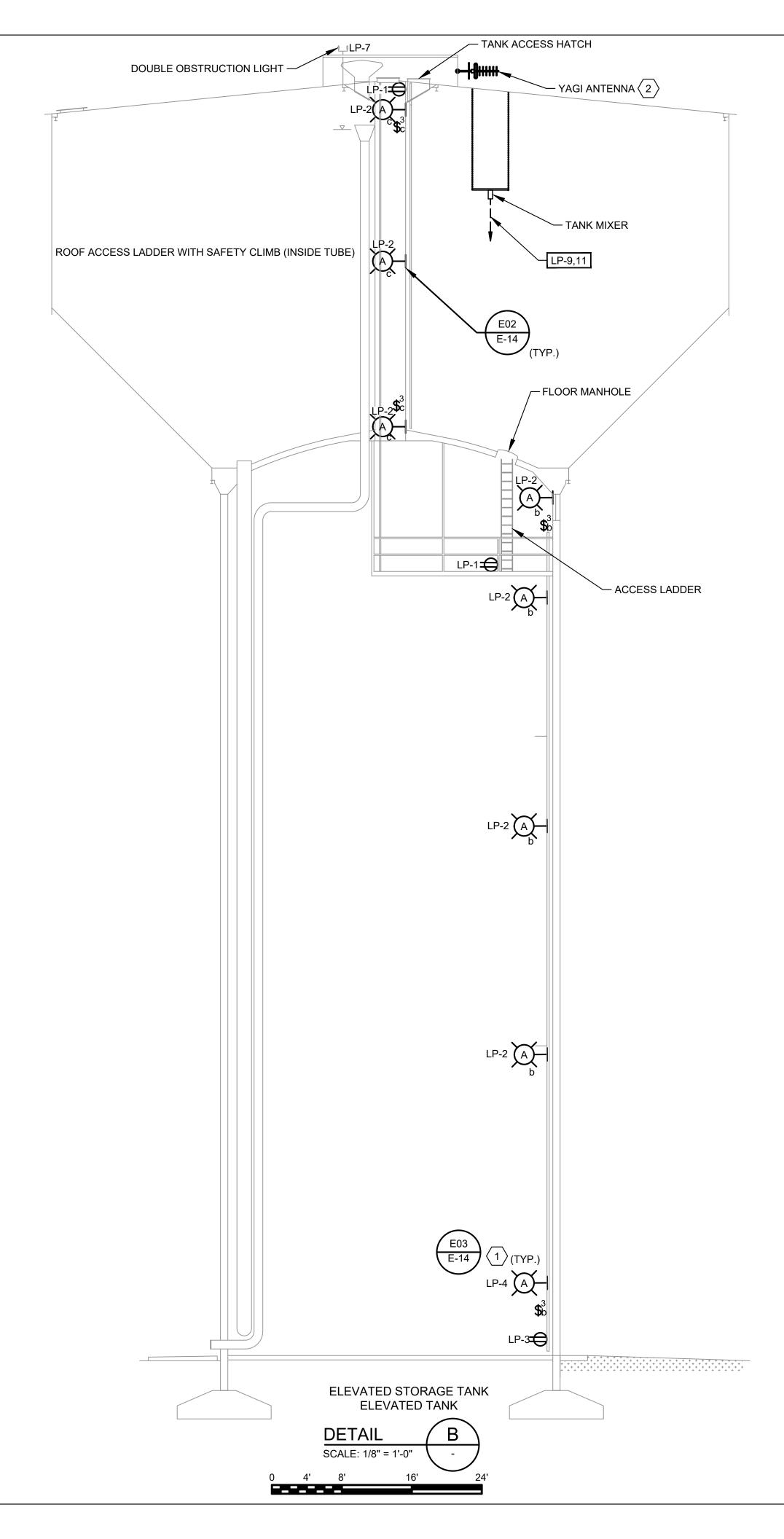


Info: W:IMiscellaneous\1214 Lucas – West Lucas Road EST\6 Drawings\Electrical\!Working\E-04.dwg - Plotted: 9/7/2023



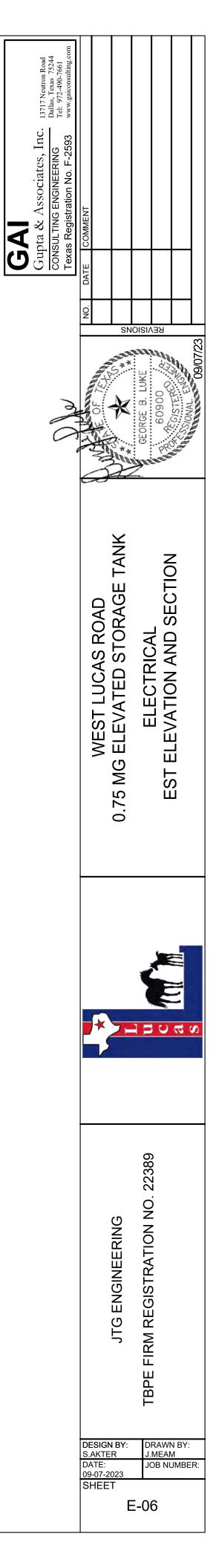


ig Info: W:IMiscellaneous\1214 Lucas – West Lucas Road EST\6 Drawings\Electrical\!Working\E-06.dwg - Plotted: 9/7/2



NOTES BY SYMBOL "

- USE 12" LONG PIECE OF C-CHANNEL STRUT FOR CONDUIT SUPPORT. MOUNT CONDUIT ON ONE END OF STRUT TO MAXIMIZE SPARE SPACE FOR FUTURE USE.
- 2. FIELD COORDINATE THE LOCATION AND ORIENTATION FOR SPECIFIC RADIO PATH.
- 3. INSTALL LIGHTING PROTECTION ON TANK AS PER SPECIFICATIONS. NOT ALL LIGHTING PROTECTION COMPONENTS SHOWN FOR CLARITY.
- 4. MOUNT EXTERIOR DOOR LIGHT 1' DIRECTLY ABOVE CENTER OF DOOR.



		INTERFACE DIAGRAM	
LOOP NO.	DESCRIPTION	FIELD WIRING $\langle 3 \rangle$	
FCV-101	VALVE ACTUATOR	VO <u>C6</u>	RTU-1 RTU-2
LIT-105	LEVEL TRANSMITTER	LIT A1	RTU-3
TIT-104	AMBIENT TEMPERATURE	TI A1	RTU-4
ZS-108	ENTRY GATE INTRUSION SWITCH	ZS C1	RTU-5
OLP-XXX	OBSTRUCTION LIGHT CONTROL PANEL	CP C3	RTU-6
ZS-109A	DOOR INTRUSION SWITCH	zs C1 C2	RTU-7
ZS-109B	ROLLUP DOOR INTRUSION SWITCH	ZS C1	
ZS-107	OVERFLOW/DRAIN LINE FLAP VALVE	ZS C1	RTU-8
GEN-XXX	GENERATOR STATUS	CP C7	RTU-9
ATS-XXX	ATS NORMAL/STAND BY STATUS	ATS C3	RTU-10
PIT-102	DOWN STREAM PRESSURE	PT A1 RTU-11A A2	RTU-11
PIT-103	UPSTREAM PRESSURE	PT A1 RTU-11B	
-	MIXER	CP C5	RTU-12

							LI	GHT FIXTU	RE SCH	EDULE								
YPE	DESCRIPTION			MANUFAC	MANUFACTURER / CATALOG #				VOLTAGE	L	АМР Т	YPE	MOUN	ring hi	EIGHT			
A	RESISTA AND 0-1	NT THE	RMOSET ABLE E	F POLYESTER, STAI	4000K), WITH CORROSION F NLESS STEEL FASTENERS. R. WALL MOUNT INCLUDES J (OUTS.	SILCONE GASKETS	, <u>fixture</u> : (	CANLET 02 12	W PC W F	BE 18 OR EQUAL	12 W	120V or 277V		.ED LAI INCLU[		WALL M FLOOR		AS INDICATED ON T
в					) LUMINAIRE, WITH ELECTR NS MAX WITH ADJUSTABLE		FIXTURE: L	ITHONIA TWX	2 LED ALO	40K MVOLT FINISH OR EQUAL	54 W	MVOLT		.ED LAI				AS INDICATED ON T (15 FOOT AFF)
с					) LUMINAIRE WITH ELECTRO , TM-21-11 LM92@100,000HF		<u>FIXTURE</u> : L OR EQUAL	ITHONIA WDG	E3 LED P3	40K 70CRI R3 MVOLT DNATXD	71 W	MVOLT		.ED LAI	ין טרא		IOUNT II NCE DO	NSIDE 1FT ABOVE OR
				<u>FIXTURE</u> : C LIGHTING	ROUSE HIND	S 860-1R01	-002 OR EQUAL BY POINT	18 W	MVOLT		.ED LAI		ON POL	E TOP (	OF TANK			
x	LED EXI	T LIGHT '	MTH RE	D LETTERS RATED	FOR WET LOCATION AND (	CORROSIVE AREA	FIXTURE: L	ITHONIA LVS	(1) R 120/2	77 ELN 4X SD OR EQUAL	3.3 W	MVOLT		.ED LAI INCLU[	VIPS		IOUNT II NCE DO	NSIDE 1FT ABOVE OR
	PANEL	BOARD:	LP			MAIN B	REAKER		OCATION:	TANK PEDESTAL					-			
			-	0 V, 1PH, 3W			E: <none></none>			NEMA 3RX / 316SS								
WIT	HSTAND					RATIN	G: 100 A		BUS SIZE:				SPD:	T	′PE 1, E	EXTERN	AL	
	MO		SURFA					E	US TYPE:	TIN-PLATED COPPER						<u> </u>		
	NO. NO. POLE		COND SIZE		DESCRIPTION	L1 (VA	.) L2 (VA)	L1 (VA)	L2 (VA)	DESCRI	PTION			WIRE SIZE	BRKR AMPS POLES		NOTES	
	1 20/1			RECEPTACLES NE						INTERIOR LIGHTS NEAR LADE			3/4"	10	20/1	2		
	3 20/1			RECEPTACLES GR						INTERIOR LIGHTS AT GROUN			3/4"	10	20/1	4		
	5 20/1			EXTERIOR LIGHTS						SPACE HEATER CONTROLS			3/4"	14	-			
	7 20/1 9 20/2			OBSTRUCTION LIG						ROLLUP DOOR	JRE HEATER		<u>3/4"</u> 3/4"	12"	20/1	8 10 12		
	13 20/1	12	3/4"	EXHAUST FAN						PLC ENCLOSURE			3/4 3/4"	10 12	20/2	14		
	15 20/1			GENERATOR SHOP	REPOWER					EXITLIGHT			3/4"	12	20/1	16		
	17 15/1			SPARE						MOTORIZED GATE			3/4"	10	20/1	18		
				SUBTOTAL VA BY			0 0	0	0							_		
				TOTAL VA BY PHAS	SE		0 0									_		
				TOTAL VA			0											
				L-L VOLTAGE			-											
				TOTAL AMPS (AVE	RAGE PER LEG)	0	0.0											
NERA	L NOTES:							KEYED N	OTES									
					REQUIRED FOR INDIVIDU					CI CIRCUIT BREAKER FOR EQ	JIPMENT PRO	TECTION ONLY	(HEA	T TRAC	CE)			
			DINAS	INGLE CONDUIT FO	OR FIELD ROUTING PROVID	DED NEC MAXIMUM	CONDUIT FILI		5 mA GFC	CIRCUIT BREAKER								
			0E 1001					3.										
<u> </u>	ACH SIN	GLE PHA	SE 1201	V CIRCUIT SHALL H	IAVE A SEPARATE NEUTRA			4.										
								6.										
								<b>J</b> .										

EST-RTU

5 È

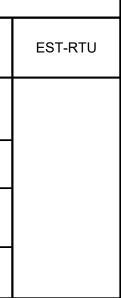
ш

₩ 2

	F	ANELB	OARD:	HP		MAIN BRI	EAKER			L	OCATION:	INDOOR
		VOL	TAGE:	480Y/2	277 V, 3PH, 4W		TYPE	CB		ENC	LOSURE:	NEMA 3RX / 316SS
W	ITHS	and R	ATING:	42 kA			RATING	: 125 A			BUS SIZE:	
		MOU	NTING:	SURFA	ACE					B	US TYPE:	TIN-PLATED COPPER
NOTES	CKT NO.	BRKR AMPS / POLES			DESCRIPTION	PHASE A (VA)	PHASE B (VA)	PHASE C (VA)	PHASE A (VA)	PHASE B (VA)	PHASE C (VA)	D
	1	20/3	12	3/4"	SPD							
	5											ना
	9	20/3	10	3/4"	ACTUATOR							
	11											
	13				SPACE							
	15											
	17											
	_				SUBTOTAL VA BY PHASE	0	0	0 0	C	0 0	0	
					TOTAL VA BY PHASE	0	C	0 0				
					TOTAL VA	0						
					L-L VOLTAGE							
					TOTAL AMPS (AVERAGE PER PHASE)	0.0						
SENER		OTES:							KEYED N	IOTES		
*	CON	DUIT SI	ZE SHC	WNIS	THE MINIMUM SIZE REQUIRED FOR INDIVIDUAL CIRCUITS	S. MULTIP	LE CIRCUI	TS	1.	30 mA GF	CI CIRCUI	T BREAKER FOR EQUIP
	MAY	BE CO	MBINED	D IN A S	SINGLE CONDUIT FOR FIELD ROUTING PROVIDED NEC MA	AXIMUM CC	ONDUIT FIL	LIS	2	5 mA GFC	I CIRCUIT	BREAKER
	NOT	EXCEE	DED.						3.			
*	EAC	H SINGL	E PHA	SE 120	V CIRCUIT SHALL HAVE A SEPARATE NEUTRAL WIRE.				4.			
									5.			
									6			

			RFACE DIAGRAM	
LOOP NO.	DESCRIPTION		FIELD WIRING $\langle 3 \rangle$	
ACT	INNINGKOFF EST VALVE CTUATOR INNINGKOFF EST VAULT OOD ALARM	VO	A1 RTU-21 C6 RTU-22 C1 RTU-23	

							-
	SPD:	τv	′PE 1, EX		ΝΔΙ		-
R	JFD.						
DESCRIPTION	COND SIZE	WIRE SIZE	BRKR AMPS / POLES	CKT NO.	NOTES		<b>JAI</b> Finta & Associates Inc.
				2			ate
				4			.Ę
TRANSFORMER	3/4''	8	30/2	6			555
				8			A
				10 12			<b>_</b>
				12		<	CD D D D
				16		1	Ŋį
				18			
IPMENT PROTECTION ONLY (HEAT T	RACE)						



NOTES BY SYMBOL "

1. CONDUIT SIZES SHOWN ARE MINIMUM. COMBINATION OF SIMILAR CIRCUIT TYPES PERMISSIBLE. ADJUST CONDUIT SIZING ACCORDINGLY AND REFLECT FINAL CONFIGURATION ON AS-BUILT DOCUMENTATION.

137 Dal Tel

SNOISIVAR

- 2. TERMINATE ALL WIRING ON TERMINAL BLOCKS INSIDE PANEL. NO NON-TERMINATED WIRES ALLOWED.
- 3. INSTALL ALL WIRING WHETHER SHOWN ON FLOOR PLANS OR NOT.
- 4. SUBSTITUTE CAT-6 CABLE FOR CAT-5E WHERE REQUIRED BY CONTRACT DOCUMENTS.

	CONTROL & II WIRE/CONI		
C1	2#14, 3/4"C	A1	1-1Pr#16 TSP, 3/4"C
C2	4#14, 3/4"C	A2	2-1Pr#16 TSP, 3/4"C
C3	6#14, 1"C	A3	3-1Pr#16 TSP, 3/4"C
C4	8#14, 1"C	A4	4-1Pr#16 TSP, 1"C
C5	10#14, 1"C	A5	5-1Pr#16 TSP, 1"C
C6	12#14, 1-1/4"C	A6	6-1Pr#16 TSP, 1-1/2"C
C7	14#14, 1-1/4"C	A7	7-1Pr#16 TSP, 2"C
C8	16#14, 1-1/4"C	A8	8-1Pr#16 TSP, 2"C
C9	18#14, 1-1/4"C	A9	9-1Pr#16 TSP, 2"C
C10	20#14, 1-1/4"C	A10	10-1Pr#16 TSP, 2"C
C11	22#14, 1-1/2"C	A11	11-1Pr#16 TSP, 2"C
C12	24#14, 1-1/4"C	M1	1-CAT-5e, 1"C
C14	28#14, 1-1/4"C	M2	2-CAT-5e, 1-1/2"C
C30	60#14, 3-1/2"C	М3	3-CAT-5e, 2"C
C37	74#14, 4"C	M4	4-CAT-5e, 2"C



ELECTRICAL INTERFACE DIAGRAMS AND SCHEDULES

WEST LUCAS ROAD ELEVATED STORAGE TANK

0.75 MG

JTG ENGINEERING	TBPE FIRM REGISTRATION NO. 22389
DESIGN BY: S.AKTER DATE:	DRAWN BY: J.MEAM JOB NUMBER:
09-07-2023 SHEET	JOB NUMBER:
	Ξ-07
	_ 01

EXAMPLE C20 = 40#14 WIRES C#  $\angle c = CONTROL$ 

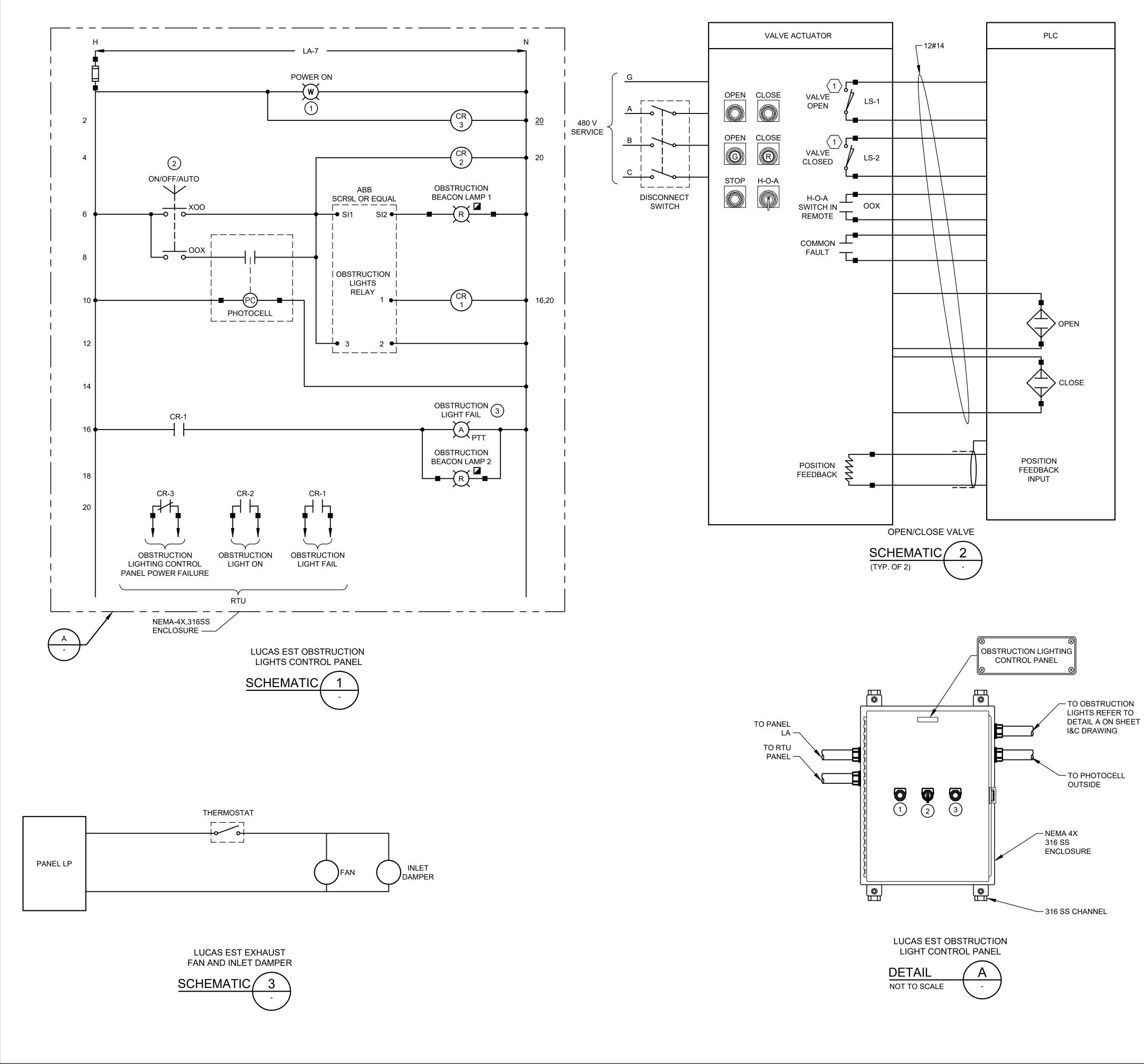
2) ANALOG CABLES ARE INTENDED TO BE INDIVIDUALLY INSULATED TWISTED SHIELDED PAIRS UNLESS OTHERWISE NOTED ON THE DRAWING.

CONTROL & INSTRUMENTATION WIRE/CONDUIT TABLE NOTES:

SEPARATE GROUND WIRE IN EACH CONDUIT RUN.

# REPRESENTS PAIR OF WIRE EXAMPLE C10 = 20#14 WIRES

1) NOT ALL POSSIBLE COMBINATIONS ARE LISTED. INCLUDE A

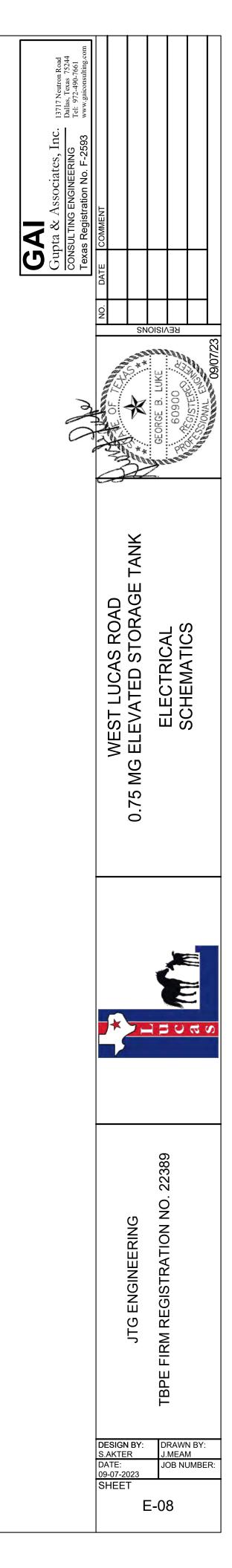


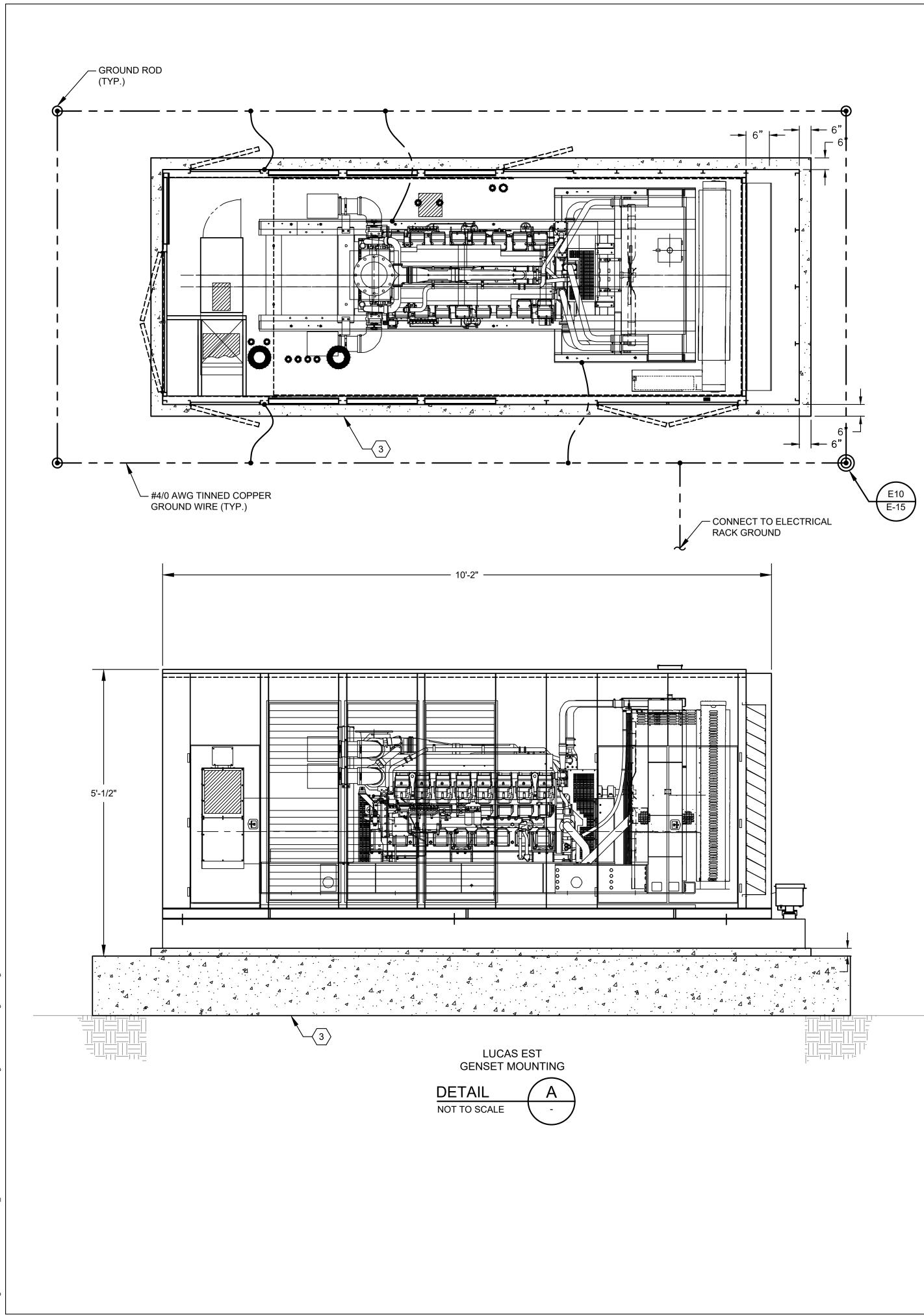
## NOTES BY SYMBOL "

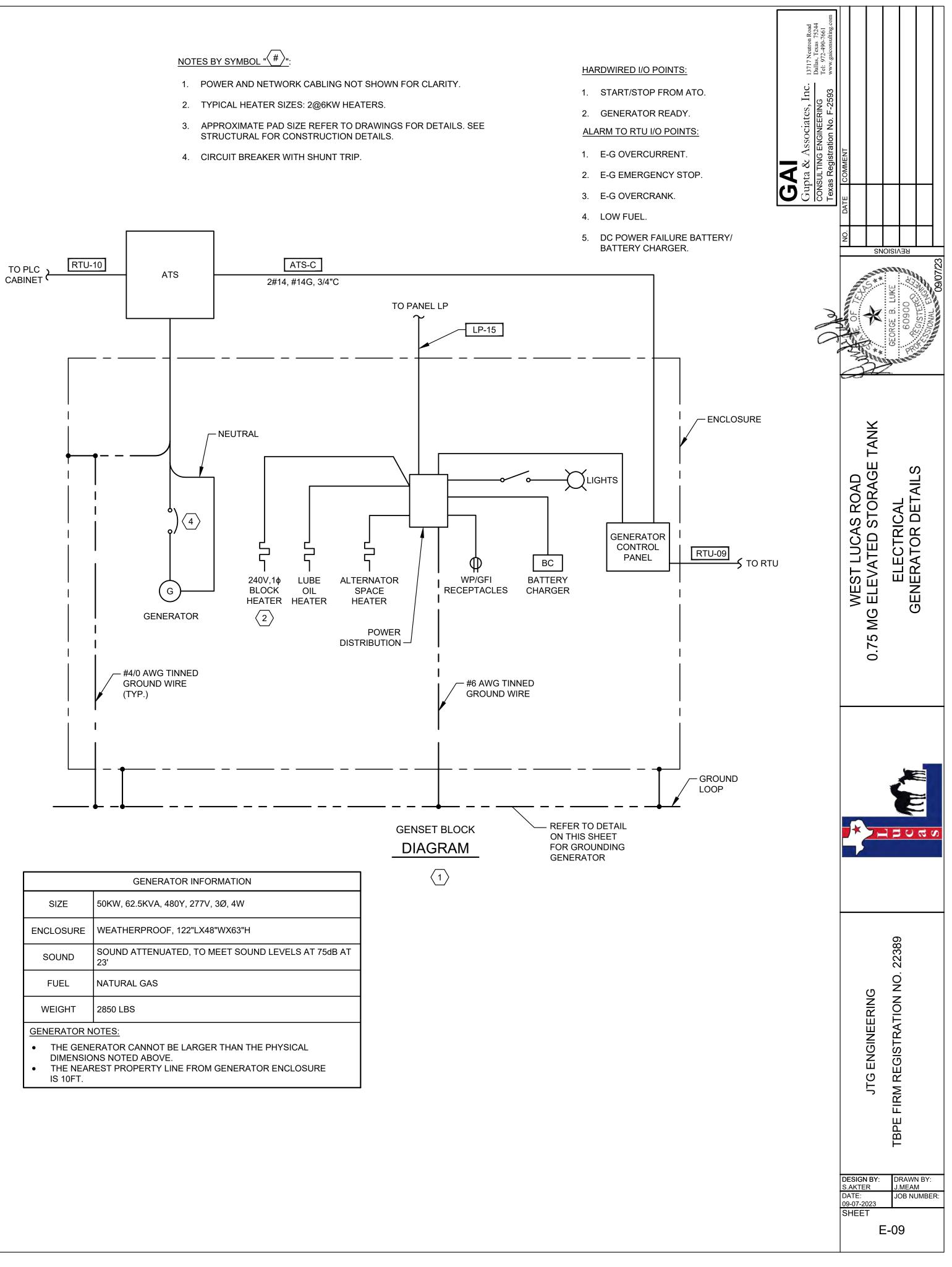
1. SWITCH CLOSES WHEN VALVE IN POSITION INDICATED.

### LEGEND:

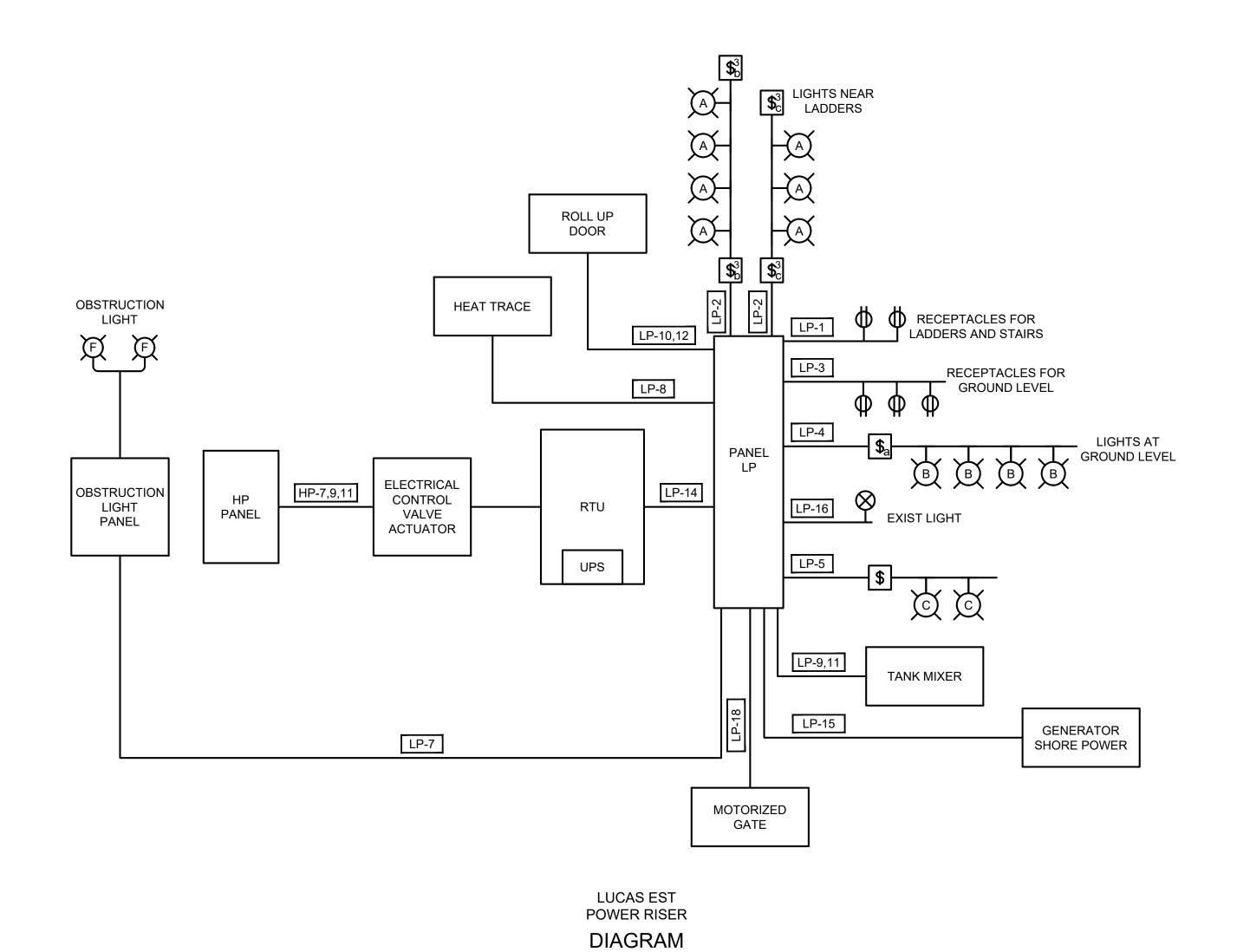
- DEVICE LOCATED IN THE FIELD.
- LOCATED AT PLC.
- ▲ DEVICE LOCATED AT THE LCP.
- TERMINAL IN MCC FOR FIELD WIRING.
- CONNECTION IN MCC.

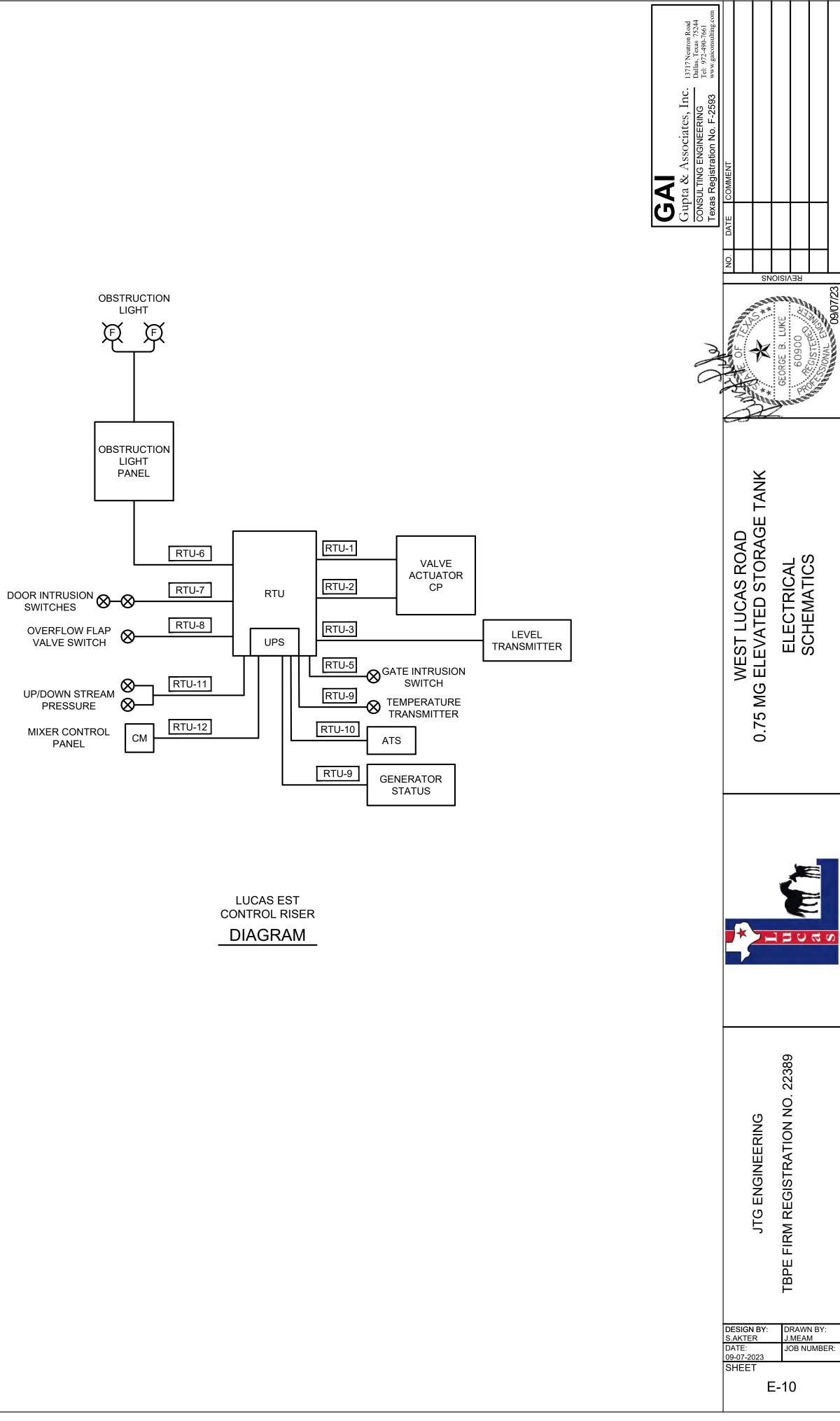


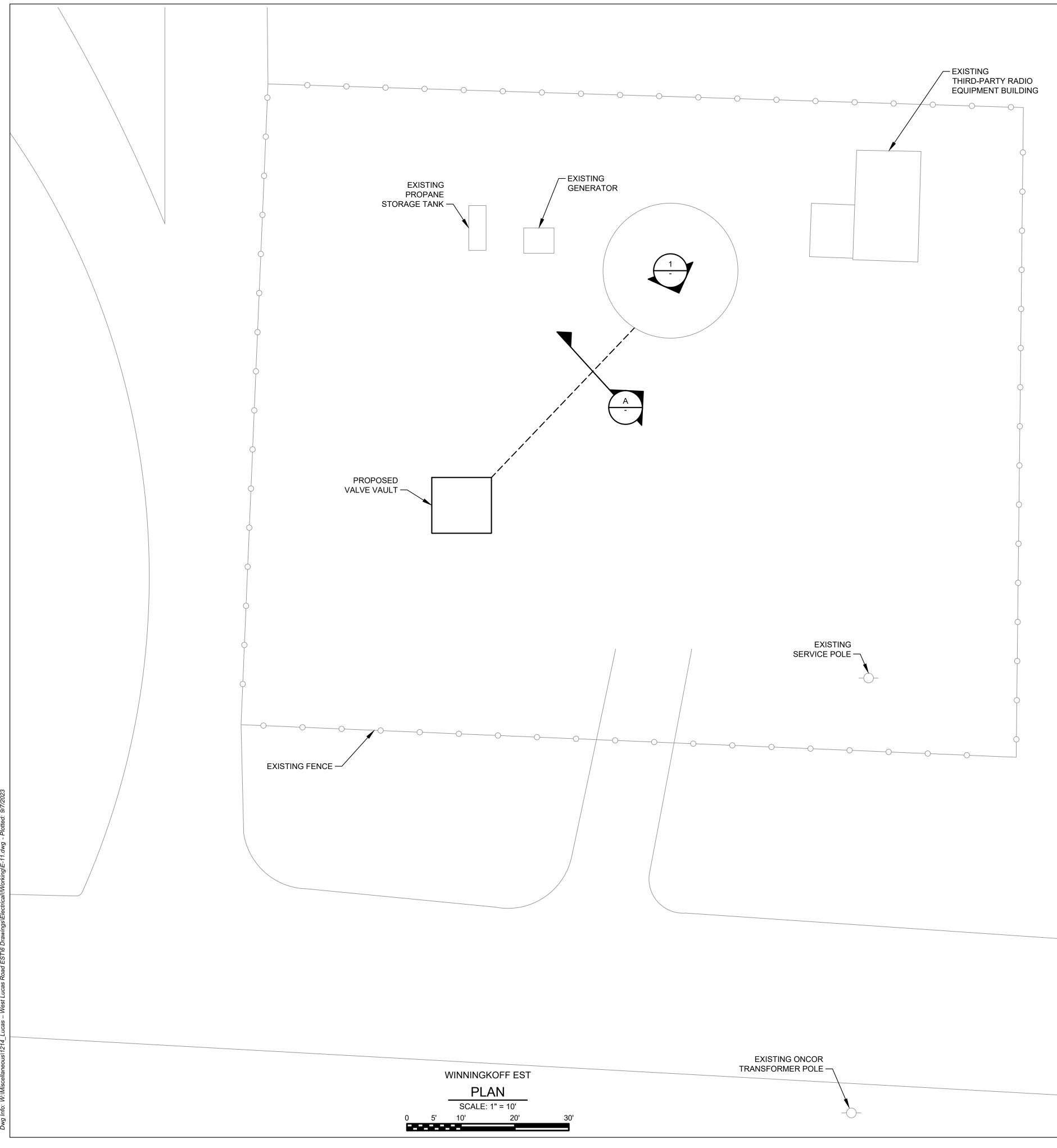




GENERATOR INFORMATION							
SIZE 50KW, 62.5KVA, 480Y, 277V, 3Ø, 4W							
ENCLOSURE WEATHERPROOF, 122"LX48"WX63"H							
SOUND	SOUND ATTENUATED, TO MEET SOUND LEVELS AT 75dB AT 23'						
FUEL	NATURAL GAS						
WEIGHT	2850 LBS						
GENERATOR NOTES:							
THE GENERATOR CANNOT BE LARGER THAN THE PHYSICAL							



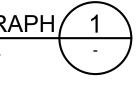


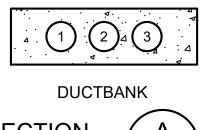




VALVE VAULT PHOTOGRAPH/ SCALE/TYP.

	TABLE FOR SECTION E								
CONDUIT NO.	CONDUIT TAG	CONDUIT SIZE	DESCRIPTION						
1	LB-2,4,5	2"C	VAULT POWER						
2	RTU-22	2"C	VALVE DISCRETE SIGNALS						
3	RTU-21	2"C	VALVE ANALOG SIGNALS						

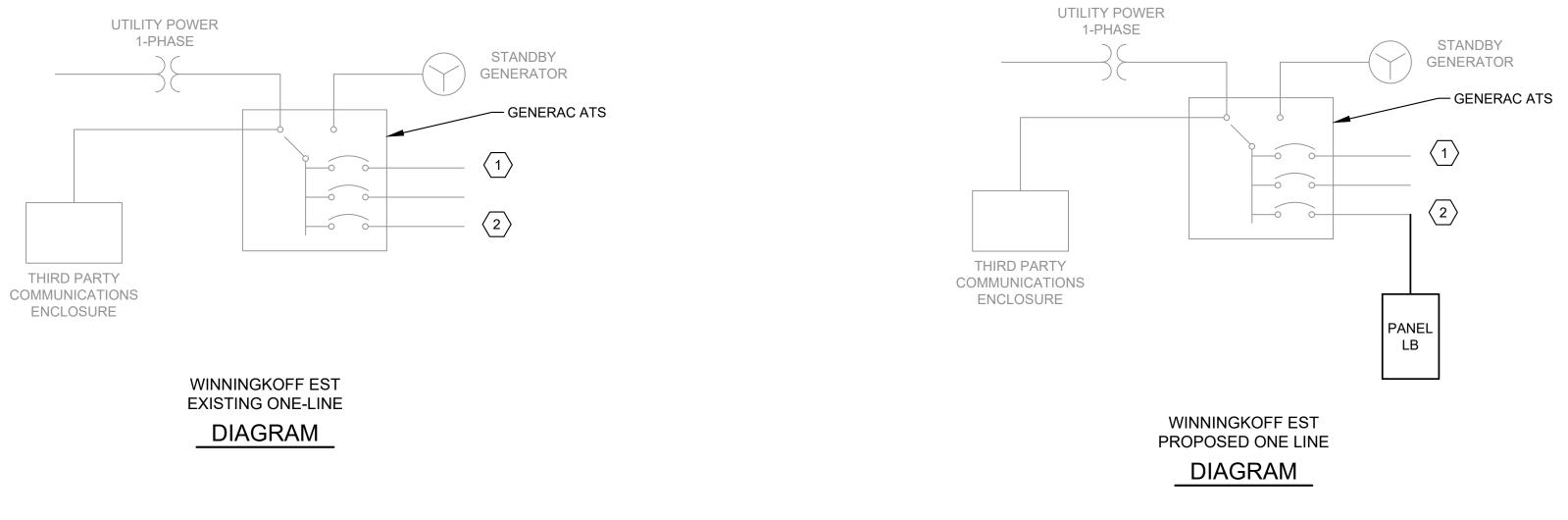




SCALE/TYP.

SECTION Ά -

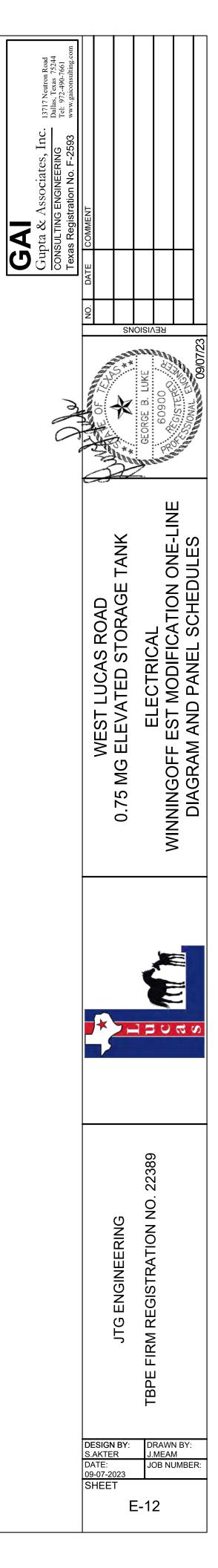
Gupta & Associates, Inc.       13717 Neutron Road         Consulting Engineering       Dallas, Texas 75244         Texas Registration No. F-2593       www.gaiconsulting.com	NO. DATE COMMENT
	WEST LUCAS ROAD 0.75 MG ELEVATED STORAGE TANK ELECTRICAL WINNINGKOFF EST SITE PLAN
	JTG ENGINEERING TBPE FIRM REGISTRATION NO. 22389
	DESIGN BY: S.AKTER J.MEAM DATE: 09-07-2023 SHEET E-11



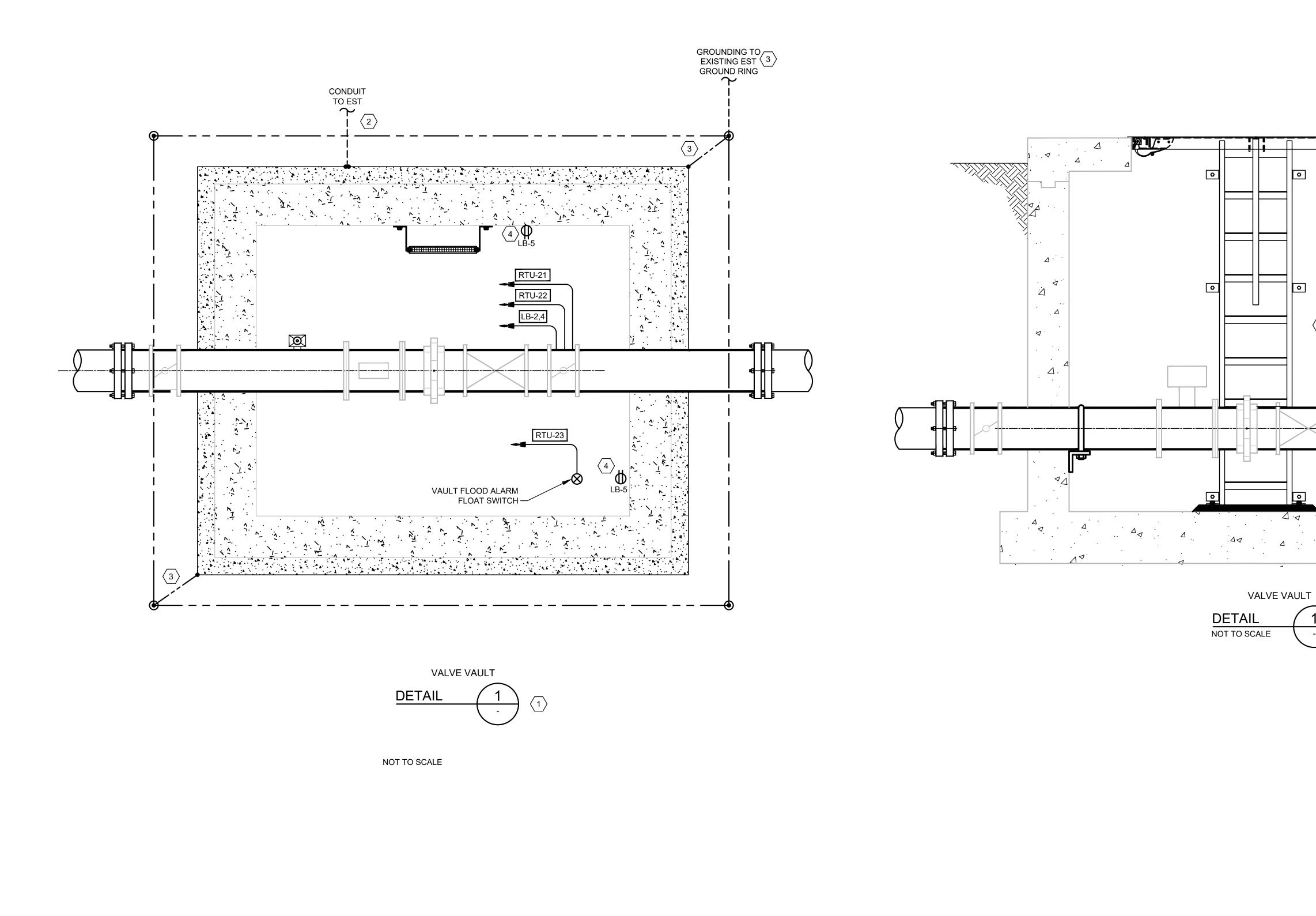
PANELB	OARD:	LB		MAIN BRE	AKER		OCATION:	INDOOR WALL MOUNTED					
VOL	TAGE:	120/24	0 V, 1PH, 3W	TYPE:	СВ	ENG	CLOSURE:	NEMA 4X 316SS					
WITHSTAND R/	ATING:	22 kA		RATING:	100 A		BUS SIZE:	100 A	SPD:	TYF	'E 1, INT	EGRATI	ΈD
MOUN	NTING:	SURFA	ACE			E	BUS TYPE:	TIN-PLATED COPPER					
NOTES CKT AMPS / NO. POLES			DESCRIPTION	L1 (VA)	L2 (VA)	L1 (VA)	L2 (VA)	DESCRIPTION	COND SIZE	WIRE SIZE	BRKR AMPS / POLES		IOTI
1 30/2	10	1/2"	SKY BEAM RHIND EXISTING					VALVE POWER	1/2"	10	30/2	2 4	
5 20/1	12	3/4"	VAULT RECEPTACLES					SPARE	3/4"	12	20'1	6	
7 20/1	12	3/4"	SPARE					SPACE				8	
9			SPACE					SPACE				10	
11			SPACE					SPACE				12	
13			SPACE					SPACE				14	
15			SPACE					SPACE				16	
17			SPACE					SPACE				18	
GENERAL NOTES:			SUBTOTAL VA BY PHASE TOTAL VA BY PHASE TOTAL VA L-L VOLTAGE TOTAL AMPS (AVERAGE PER LEG)	0 0 0 240 0.0	0	KEYED N							
						-					·۲ )		
MAY BE CON NOT EXCEE	MBINED DED.	DINAS	THE MINIMUM SIZE REQUIRED FOR INDIVIDUAL CIF SINGLE CONDUIT FOR FIELD ROUTING PROVIDED N V CIRCUIT SHALL HAVE A SEPARATE NEUTRAL WIF	EC MAXIMUM COI		-	5 mA GFC	CI CIRCUIT BREAKER FOR EQUIPMENT PROTECTIO	N ONLY (HEA		·E)		

1. EXISTING CIRCUITS NOT ALL CIRCUITS SHOWN FOR CLARITY.

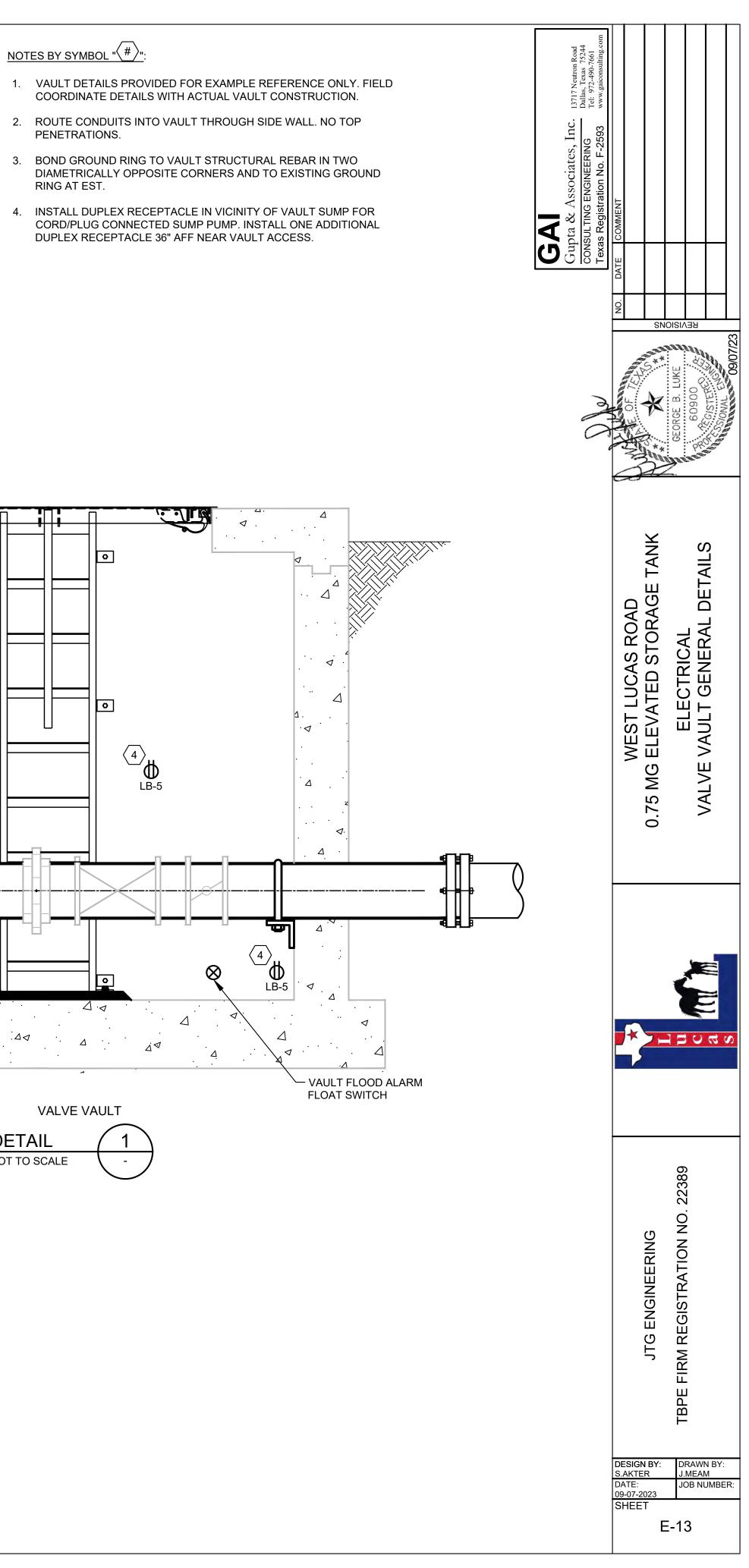
2. DISCONNECT CIRCUIT FOR SKYBEAM RHIND AND REPURPOSE CIRCUIT BREAKER TO SERVE NEW PANEL BOARD LB.

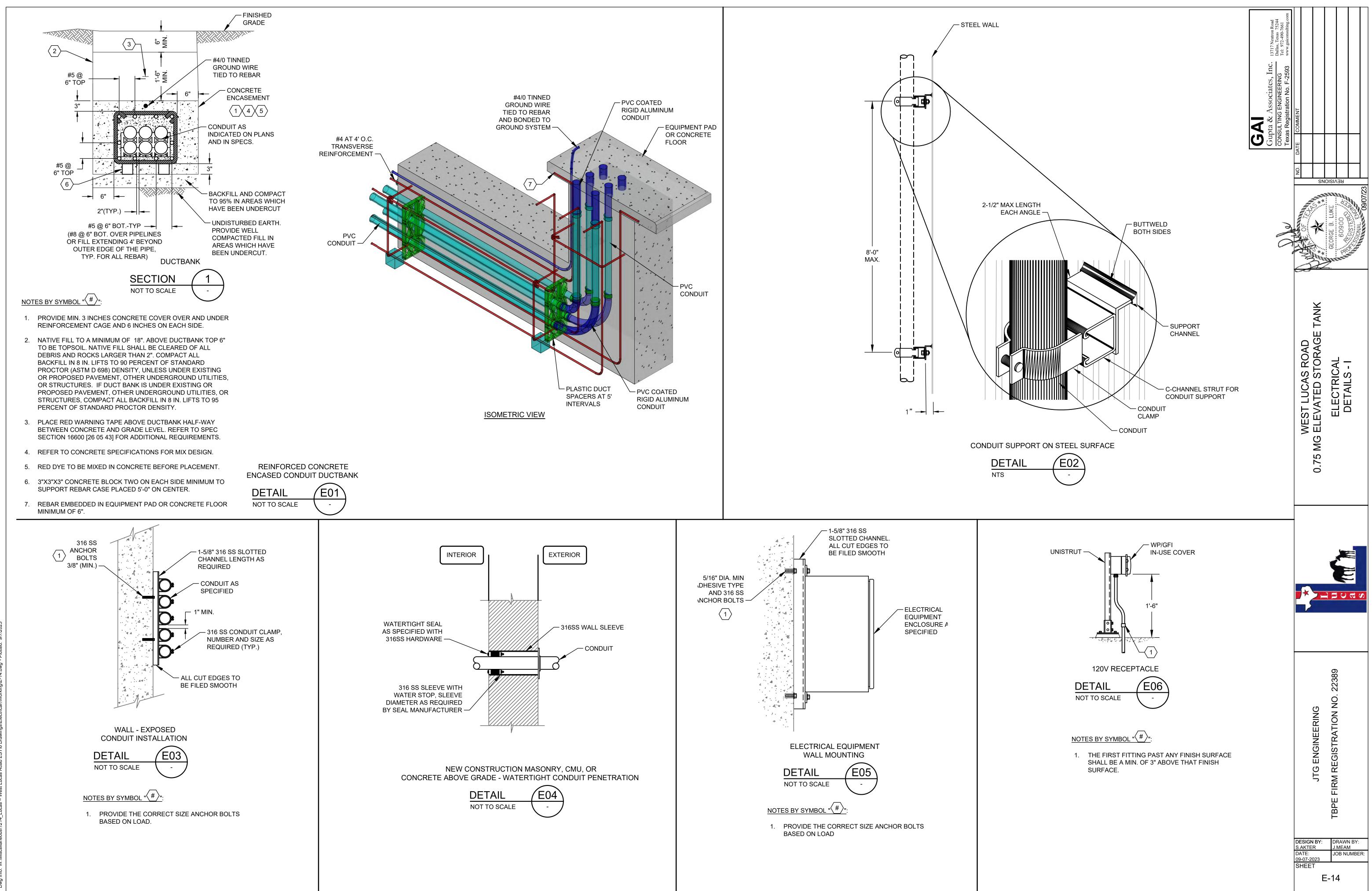




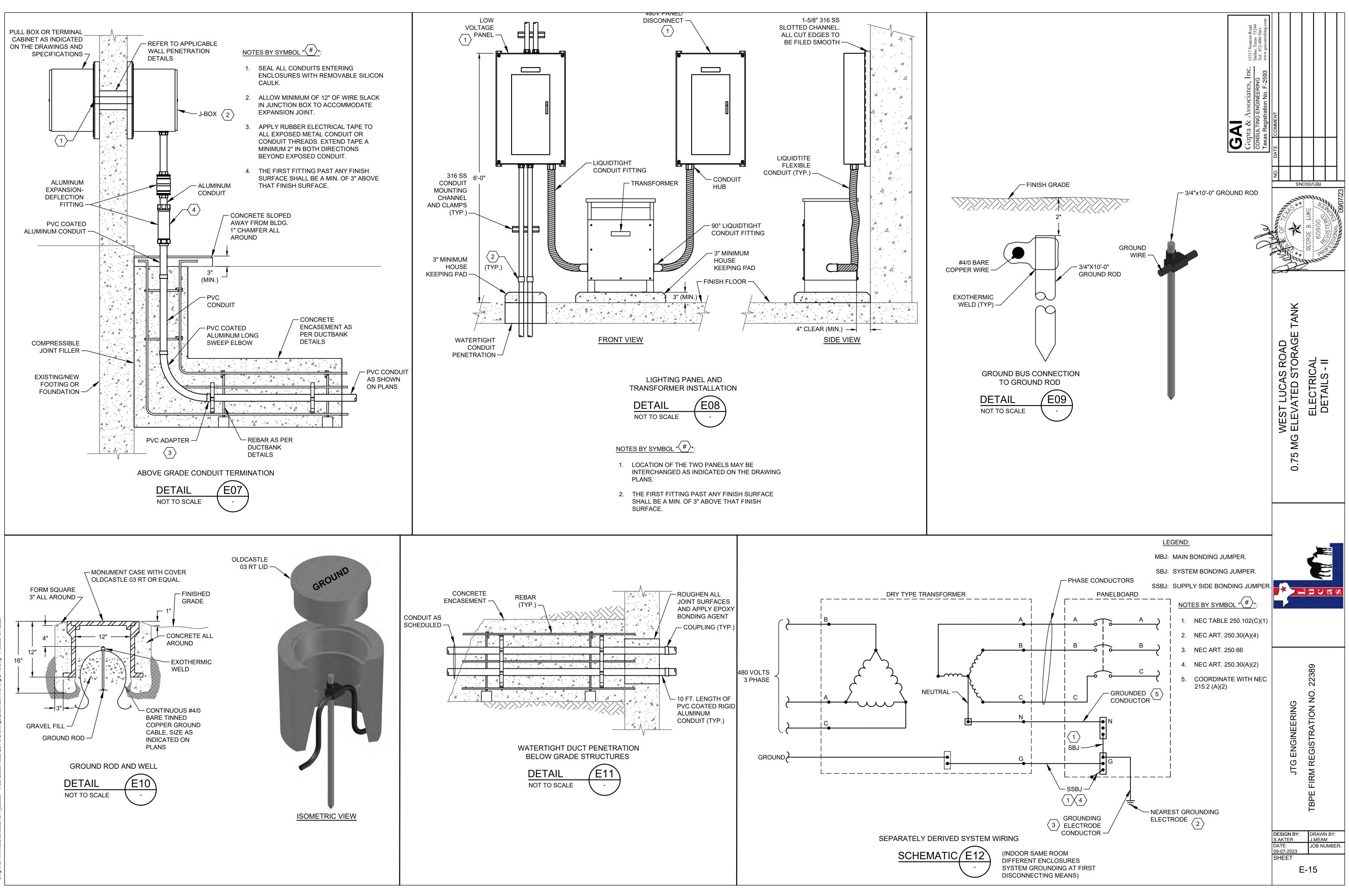


## NOTES BY SYMBOL "





ifo: W:\Miscellaneous\1214 Lucas – West Lucas Road EST\6 Drawings\Electrica\\!Working\E-14.dwg - Plotted: 9/7/20



nfo: W:IMiscellaneous\1214\_Lucas - West Lucas Road ESTI6 Drawings\Electrical\!Working\E-15.dwg - Plotted:

	PRIMARY FLOW ELEMENTS		VALVES
	MAGNETIC FLOW METER	S	SOLENOID ACTUATED VALVE
S I	ULTRASONIC DOPPLER FLOW METER		"X" P AIR CYLINDER
Ţ	ULTRASONIC TIME TRANSIT FLOW METER		O OIL CYLINDER H HYDRAULIC CYLINDER
	VORTEX FLOW METER		E ELECTRIC MOTOR S SOLENOID VALVE
	VENTURI TUBE	OR NO SYMBOL	MANUAL VALVE
	TURBINE OR PROPELLER TYPE METER		MISC PROCESS SYMBOLS
	ROTAMETER		ANNULAR TYPE SEAL
-IQF	PITOT TUBE	• 	CHEMICAL INJECTION POINT
-M-	WEIR FLOW METER		STRAINER
×	PARSHALL FLUME OR TRAPEZOIDAL FLUME	¥	DRAIN
	ORIFICE PLATE		NORMAL OPERATING LEVEL
	THERMAL MASS FLOWMETER		UV CHAMBER
	PRIMARY LEVEL ELEMENTS		FLOW STRAIGHTENER
	ULTRASONIC LEVEL TRANSDUCER		LOAD CELL
			SPRAY NOZZLE
	PRIMARY ELEMENT PRESSURE PROBE LEVEL TRANSMITTER		BLIND FLANGE
	BUBBLER LEVEL TUBE ELEMENT		FLANGE
	CONDUCTIVE LEVEL PROBE		DIAPHRAGM SEAL
	FLOAT SWITCH	-12	PRESSURE RELIEF (OUT)
	VALVES VALVE - OTHER IN-LINE TYPE NOT OTHERWISE IDENTIFIED		VACUUM RELIEF (IN)
<i>₩</i>	THREE-WAY VALVE		
	BALL VALVE	X	SLUICE/SLIDE GATE
	GLOBE VALVE		FLOW CONTROL GATE
×	PINCH VALVE		MOTORS
	GATE VALVE		VARIABLE SPEED MOTOR
	NEEDLE VALVE		CONSTANT SPEED MOTOR
	DIAPHRAGM VALVE		POSITIVE DISPLACEMENT BLOWER
	BUTTERFLY VALVE		
	CHECK VALVE WITH FLOW DIRECTION		CENTRIFUGAL BLOWER
	PLUG VALVE		FAN
	PRESSURE-REDUCING REGULATOR INTERNAL PRESSURE TAP		
	BACK PRESSURE REGULATOR INTERNAL PRESSURE TAP		CENTRIFUGAL PUMP
	PRESSURE-REDUCING REGULATOR EXTERNAL PRESSURE TAP		DIAPHRAGM PUMP AND
	BACK PRESSURE REGULATOR EXTERNAL PRESSURE TAP		MOTOR

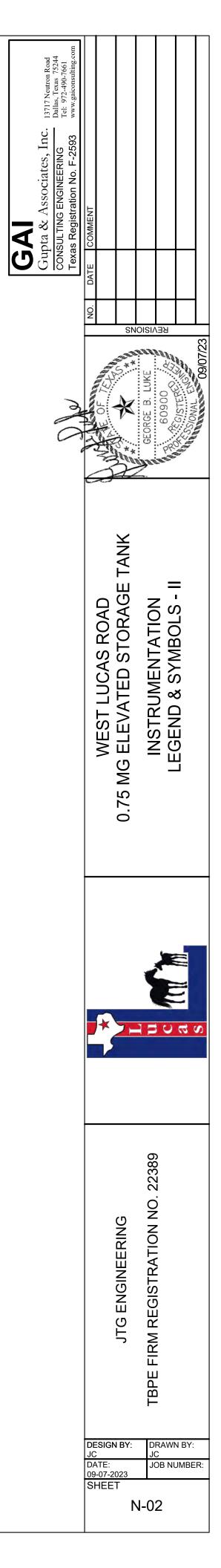
	PUMPS,	BLOWERS AND MISC EQUIPMENT	<u>CONTROL E</u>	ENCLOSURE, INSTRUMENTS AND SCADA			aad 244 ii ig.com
VALVE		PROGRESSIVE CAVITY PUMP		DIGITAL/ANALOG INSTRUMENT          AAA       ISA TAG (REFER TO TABLE)         BBB       LOOP NUMBER         CCC       LOOP NUMBER SUB			13717 Neutron Road Dallas, Texas 75244 Tel: 972-490-7661 www.gaiconsulting.cc
R R CYLINDER DTOR		SUBMERSIBLE PUMP	P AAA YY	D     DIVISION NUMBER       P     POWER REQUIREMENT       XXX     DESCRIPTION (USED ON PANEL INSTRUMENTS)       YY     CHEMICAL			occiates, Inc. GINEERING on No. F-2593
ALVE		MIXER/FLOCCULATOR/AERATOR	BBB CCC D ZZZ	DIGITAL/ANALOG INSTRUMENT -LOCATED IN THE FIELD		Ā	Gupta & Ass consul Ting EN Texas Registrati
<u>}</u>				-NOT INSIDE OF PANEL -VISIBLE AT FIELD LOCATION -NORMALLY OPERATOR ACCESSIBLE			
		VERTICAL PUMP-1 USED WHEN DISCHARGE LINE IS IN WETWELL	XXX PAAA BBB CCC D ZZZ	DIGITAL/ANALOG INSTRUMENT -LOCATED ON PANEL -VISIBLE TO OPERATOR -NORMALLY OPERATOR ACCESSIBLE		CONTROL ENCLOSURE, INSTRUMENTS AND SCADA         PLC/RTU LOGIC       FUNCTION SYMBOLS AND ABBREVIATIONS         k       PROPORTIONAL GAIN OR ATTENUATE (INPUT:OUTPUT)	BOOUT23
		VERTICAL PUMP-2	XXX PAAA BBB CCC ZZZ	DIGITAL/ANALOG INSTRUMENT -LOCATED INSIDE PANEL -NOT VISIBLE TO OPERATOR -NORMALLY NOT ACCESSIBLE	F(X)	- k       REVERSE PROPORTIONAL GAIN OR ATTENUATE (INPUT:OUTPL $\Sigma$ SUMMING $\Sigma_{n}$ AVERAGING $\Delta$ SUBTRACTING $$	CEORGE B. COF
2		USED WHEN DISCHARGE LINE IS EXPOSED.		DISPLAY (INDICATION/CONTROLLER)          AAA       ISA TAG (REFER TO TABLE)         BBB       LOOP NUMBER         CCC       LOOP NUMBER SUB         XXX       DESCRIPTION		S       INTEGRATE         +       BIAS POSITIVE         -       BIAS NEGATIVE         F(X)       NONLINEAR OR UNSPECIFIED FUNCTION         >       HIGH SELECT         <	TANK
	۲ ۲	VERTICAL PUMP SHAFT USED WHEN INTAKE OF PUMP IS ENCASED.	BBB	DISPLAY (INDICATION/CONTROLLER) -LOCATED IN THE FIELD -NOT INSIDE OF PANEL -VISIBLE AT FIELD LOCATION -NORMALLY OPERATOR ACCESSIBLE	INSTRUMENT (COMMON HOUSIN	▶ HIGH LIMIT         I LOW LIMIT         IG)       INSTRUMENT (SEPERATOR HOUSING)         IG)	ທ ໄດ້ ⊢ ≥
	← <u>□</u>			DISPLAY (INDICATION/CONTROLLER) -LOCATED ON PANEL -VISIBLE TO OPERATOR			
		SUBMERSIBLE MIXER	BBB CCC	-NORMALLY OPERATOR ACCESSIBLE DISPLAY (INDICATION/CONTROLLER)	GENERAL NOTES:		MG ELEV/ INSTR LEGEND
UT)			AAA BBB CCC	-LOCATED INSIDE PANEL -NOT VISIBLE TO OPERATOR -NORMALLY NOT ACCESSIBLE		LEGEND SHEET, SOME SYMBOLS AND ABBREVIATIONS MAY NOT APPL DJECT.	75
		COMPRESSOR		INTERLOCKING RELAY	LEGENDS FOR OTH 3. IN GENERAL THIS L	EGEND SHEET AND THE INSTRUMENTATION DIAGRAMS ARE BASED ON	1
		HEAT EXCHANGER		NTROL ENCLOSURE AND SCADA	INSTRUMENTATION HAVE BEEN MADE A	DCIETY OF AUTOMATION, STANDARDS FOR PRACTICES FOR I, STANDARD S5.1 SOME MODIFICATIONS, ADDITIONS AND ALTERATION AS REQUIRED TO ACCOMMODATE THE PROJECT REQUIREMENTS. EMS, SUCH AS EQUIPMENT ISOLATION VALVES, BYPASS LINES, ETC., W	
<u> </u>		FEED PUMP		DIGITAL INPUT DIGITAL OUTPUT	ARE NOT CRITICAL FUNCTIONS ARE NO 5. SEE ELECTRICAL S	FOR AN UNDERSTANDING OF THE INSTRUMENTATION AND CONTROL OT SHOWN ON THE INSTRUMENTATION SHEETS. HEETS AND SPECIFICATIONS FOR ADDITIONAL CONTROL AND INTERLO	оск
TOR		GRINDER/MACERATOR		ANALOG INPUT	SUPPLIER. 6. IN THE EVENT OF D	OR EQUIPMENT NOT SHOWN OR NOT PROVIDED BY THE INSTRUMENTA DISCREPANCY BETWEEN THE PROCESS & INSTRUMENTATION DIAGRAM MS, THE INFORMATION FROM THE LOOP DIAGRAMS SHALL BE USED.	
JIPMENT				ANALOG OUTPUT	HAND SWITCH ABBREV		
ENT		METERING PUMP		SURGE SUPPRESSOR	HOA HAND/OFF/AUTO HOR HAND/OFF/REMO LOC LOCAL/OFF/COM	OTE MPUTER	
R		PLUNGER PUMP		SIGNAL CONVERTER/ ISOLATOR */* - (INPUT/OUTPUT) * DEFINED AS FOLLOWS:	LOR LOCAL/OFF/REM LOS LOCKOUT STOP OSC OPEN/STOP/CLO RSL RAISE/STOP/LOV L/C LOCAL/COMPUT	o OSE WER TER	NO. 22389
		PERISTALTIC METERING PUMP		<ul> <li>E - VOLTAGE</li> <li>I - CURRENT</li> <li>P - PNEUMATIC</li> <li>PD - PULSE DURATION</li> <li>H - HYDRAULIC</li> <li>O - ELECTROMAGNETIC, SONIC</li> </ul>	L/R LOCAL/REMOTE O/C OPEN/CLOSE S/S START/STOP A/M AUTO/MANUAL H/C HAND/COMPUTE PB PUSHBUTTON		NGINEERING
		CENTRIFUGE		R - RESISTANCE (ELECTRIC)			JTG ENG RM REGIS
D		PULSATION DAMPENER					TBPE FIF
							DESIGN BY: JC DATE: 09-07-2023 SHEET N-01

	LINE SYMBOLS				
	MAJOR PROCESS LINE				
	MINOR PROCESS LINE				
	FUTURE PROCESS LINE				
	EXISTING PROCESS LINE				
	HARDWIRED SIGNAL				
	SOFT LINK				
— L — L —	HYDRAULIC LINK				
// //	PNEUMATIC LINK				
<u> </u>	CAPILLARY TUBE OR FILLED SYSTEM SIGNAL				
$\sim \sim \sim \sim$	ELECTROMAGNET OR SONIC SIGNAL (GUIDED)				
DESCRIPTION	(USED WHEN REFERRING TO A SHEET IN THE DESIGN SET) DESCRIPTION - WHERE FLOW IS GOING SHEET# - WHAT SHEET PROCESS CONTINUES				
X SHEET# Y	ON X - USED WHEN TWO OR MORE ARROWS ARE REFERING TO THE SAME SHEET.				
	Y - USED WHEN TWO OR MORE ARROWS ARE REFERRING TO THE SAME SHEET.				
DESCRIPTION	(USED WHEN REFERRING TO A SHEET NOT IN THE DESIGN SET)				
	DESCRIPTION - WHERE FLOW IS GOING				
CAT5e CAT5e	CAT-5e ETHERNET CABLE				
——————————————————————————————————————	CAT-6 ETHERNET CABLE				
—— MB+ —— MB+ ——	MODBUS PLUS CABLE				
	RS-485 CABLE				
	RS-232 CABLE				
POE POE	POWER OVER ETHERNET CABLE				
— T1 — T1 — T1 —	T1 FIBER CONNECTION				
—— FOC —— FOC ——	NON-SPECIFIC FIBER OPTIC CABLE				
100 100	FIBER 100BASE-FX				
1000 1000	FIBER 1000BASE-FX				
	SIGNAL CROSSING				
	PROCESS LINE CROSSING				

K         USED TO DEMITY NON-NOTITALINENT COMMENT USED TO DE HERPOCESS FLOW DISCIPLICATION DEFINICATION DESCRIPTION TO ALCONDUCTION DESCRIPTION DALACIDE DESCRIPTION DESCRIPTION DALACIDE DESCRIPTION DESCRIPTION DALACIDE DESCRIPTION DESCRIPTION DALACIDE DESCRIPTION DESCRIPTIO		EQUIPMENT/LOOP TAGGING EQUIPMENT TAG	AI	GENERAL ABBREVIATIONS ANALOG INPUT		THIS TABLE	APPLIES ONLY TO	MEANINGS OF IDENTIFIC			3
		USED TO IDENTIFY NON-INSTRUMENT	AL	ALARM PILOT LIGHT							J.
Image: constant with a set of the set of th						MEASURE			RE		
Exclusion: 2004 to 0.0 BPHR 10028         Heritage	X							MODIFIER			
Image: Second	s				A	ANALYSIS/	ANALYTICAL		ALA	RM	
Image: Source and sou					В	BURNER, (	COMBUSTION				
$ \begin{vmatrix} \mathbf{r} \\ \mathbf{r}$					С						
Image: second		BLOCK/BLEED VALVE ARRANGEMENT			D	OR SPECIF	MASS) FIC GRAVITY	DIFFERENTIAL			
Image: State of the control					E	VOLTAGE	(EMF)		PRI	MARY ELEMENT	
Image: Second					F	FLOW RAT	E	RATIO (FRACTION)			
Image:					G	GAUGING	(DIMENSIONAL)		GLA	ASS VIEWING DEVICE	E
Image: Second		INSTRUMENTS WITH VALVE ONLY					· · ·				
Image: second						_					
Image: Construct of the construction of the consthe construction of the construction of the constructio								IND	ICATE		
Production         Product					J			SCAN			
Production         Produci					K						
Image: State of the state is write state is defined as a state of the sta			ESW		L	LEVEL			LIG	HT (PILOT)	
Image: Construct synthesis         Construct synthesis <thconstynthesis< th="">         Construct synthesin synth</thconstynthesis<>		INSTRUMENTS WITH DIAPHRAGM SEAL			М	MOISTURE	OR HUMIDITY				
Image: State of the second					N USERS CHOICE			USE	R'S CHOICE		
Image: Second					0						)
Image: Second					P		EOR				
Image: Provide intervention     Image: Provide intervention     Provide intervention     Provide intervention     Provide intervention       Image: Provide intervention     Provide intervention     Provide intervention     Provide intervention     Provide intervention       Image: Provide intervention     Provide intervention     Provide intervention     Provide intervention     Provide intervention       Image: Provide intervention     Provide intervention     Provide intervention     Provide intervention     Provide intervention       Image: Provide intervention     Provide intervention     Provide intervention     Provide intervention     Provide intervention       Image: Provide intervention     Provide intervention     Provide intervention     Provide intervention     Provide intervention       Image: Provide intervention     Provide intervention     Provide intervention     Provide intervention     Provide intervention       Image: Provide intervention     Provide intervention     Provide intervention     Provide intervention     Provide intervention       Image: Provide intervention     Provide intervention     Provide intervention     Provide intervention     Provide intervention       Image: Provide intervention     Provide intervention     Provide intervention     Provide intervention     Provide intervention       Image: Provide intervention     Provention     Provide interventintervention					Q					,	
Image: Second		INSTRUMENTS WITH ANNUL AR SEAL			R			TOTALIZE	REC		
B         Index And LETAL SYNERGLS           BUX         Index And Let All SYNERGLS         Index Andex All SYNERGLS         Index And Let All SYNERGLS					6	SPEED OR					
JANE         JANE TENDETON SOC         JANE TENDETON           HUNA G GREEN CONTROL DE LACASMARTA OTO IS ORDITOTION DE LACASMARTICAL OCOLUMNATION DE LACASMARTICAL IS ORDITOTION DE LACASMARTICAL OCOLUMNATION DE LACASMARTICAL OCOLUMNATION IS ORDITOTION DE LACASMARTICAL OCOLUMNATION DE LACASMARTICAL OCOLUMNATION IS ORDITOTION DE LACASMARTICAL OCOLUMNATION IS						-		SAFETT			
Important Link is subject to the second se						-			MU		
NUN     PRED ACTIVE EQUIPMENT - OREENANDURENT - OREE					V						
Image: Note the induced in the processing of the proc	RUN	-R RED (ACTIVE EQUIPMENT)			W	WEIGHT O	R FORCE		WE	L	
Image:		-W WHITE (POWER) -B BLUE (CONDITION IE BACKWASH IN PROGRESS)						X AXIS	UNCLASSIFIED		
SWITCH							ATE	Y AXIS			
HOA       MICH					Z	POSITION,	DIMENSION	Z AXIS			
Image: Image	ЦЮЛА										
INIT       NUT		· · · · · · · · · · · · · · · · · · ·		NAOCL SODIUM HYPOCHLORIDE							
Image: Hook (HAAD - OFF - REMOTE)     NIM     NIETWORK INTERFACE RODULE     ABBREVIATION     MEANING     ABBREVIATION     ABBREVIATION     ABBREVIATION     ABBREVIATION     ABBREVIATION     ABBREVIATION     AIT     ANALYTICAL IELEMENT     SIC     SIC <td></td> <td></td> <td colspan="2"></td> <td colspan="2">COMMON F</td> <td>MON HMI/INSTRUM</td> <td colspan="2"></td> <td colspan="2"></td>					COMMON F		MON HMI/INSTRUM				
START     PUSHBUTTON     Inc.     MCC     MOTOR CONTROL CENTER     AII     Inc.     AIII     AIII     AIII     AIII <td>-</td> <td></td> <td></td> <td></td> <td colspan="2">ABBREVIATION</td> <td colspan="2">MEANING</td> <td></td> <td colspan="2">ABBREVIATION</td>	-				ABBREVIATION		MEANING			ABBREVIATION	
Image: Normal state of the	OTADT					AIT	ANALYTICAL INC	DICATING TRANSMITTER		SI	SPE
Image: Stop P       EMERGENCY MUSHROOM PUSHBUTTON       Image: Morror Reformations interface terminal. DL OVERLOAD       Image: Morror Reformations interface terminal. PE (PURPLOAD       Image: Morror Reformations interface terminal. POIN POORES MONTCONTROLLER       Image: Morror Reformations interface terminal. POIN POWER SUPPLY UNIT       Image: Morror Reformations interface terminal. PUP POWER SUPPLY UNIT       Image: Morror Reformation terminal. PUP POWER SUPPLY INT       Image: Morror Reformation terminal. PUP POWER SUPPLY INT       Image: Morror Reformation terminal. PUP POWER SUPPLY INT       Image: Morror Refore Terminal. PUP POWER SUPPLY INT		PUSHBUTTON				AE	ANALYTICAL ELE	ANALYTICAL ELEMENT		SIC	SPE
E-STOP       EMERGENCY MUSHROOM PUSHBUTTON       IT       OPERATOR WORKSTATION       FIT       FLOW INDICATING TRANSMITTER       TE         Image: Display the process control system integration       Display to operator workstation       PE       PLOW ELEVENT       Tit         Image: Display to operator workstation       PE       PLOSE BUTTON       PROCESS CONTROL System INTEGRATOR       PI       FIT       FLOW INDICATING TRANSMITTER       Tit         Image: Display to operator workstation       PE       PROCESS CONTROL System INTEGRATOR       PI       FIT       FLOW INDICATING TRANSMITTER       WIT         Image: Display to operator workstation       PROCESS CONTROL System INTEGRATOR       PI       PROCESS CONTROL System INTEGRATOR       WIT         Image: Display to operator workstation       PROCESS CONTROL System INTEGRATOR       PI       PROCESS CONTROLES       WIT         Image: Display to operator workstation       POWER SUPPLY UNIT       PU       UIT       Level INDICATING TRANSMITTER       VL         Image: Display to operator workstop to workstation       POWER SUPPLY UNIT       PU       UIT       Level INDICATING TRANSMITTER       VL         Image: Display to work supply to work supp		FUSHBUTTON				Al	CHEMICAL RESIDUAL/INDICATION			ТІТ	TEN
PSION       EMERGENCY MUSHROOM PUSHBUTTON       OUS       OVERATOR WORKSTATION       FE       FLOW ELEMENT       TI         PB       PUSH BUTTON       PB       PUSH BUTTON       PB       FI       FLOW INDICATION         PB       PUSH BUTTON       PB       PUSH BUTTON       PB       FI       FLOW INDICATION         PB       PUSH BUTTON       PB       PUSH BUTTON       PB       PUSH BUTTON       PB         PB       PUSH BUTTON       PB       PUSH BUTTON       PB       PUSH BUTTON       PB       PUSH BUTTON       PB       PUSH PUSH BUTTON       PD       PUSH PUSH PUSH BUTTON       PD       PUSH PUSH PUSH PUSH PUSH PUSH PUSH PUSH						FIT	FLOW INDICATING TRANSMITTER			TE	TEN
Visit Distribution       Visit Dis	E-STOP	EMERGENCY MUSHROOM PUSHBUTTON				FE FLOW ELEMEN					TEN
PCSI     PROCESS CONTROL SYSTEM INTEGRATOR PH     HYDROCESS CONTROL SYSTEM INTEGRATOR PH     HS     HAND SWITCH     WIT       Image: Photomatic pho							FLOW INDICATIO	OW INDICATION			TEN
Image: Phone in the product of the process monitoring control system     into the product of the pro							HAND SWITCH				WE
Image: Constant of the second of the seco		HORN	· ·				-	LOW			WE
POLY     POLY     POLYMER     III     IIII     IIIII     IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII			PMCS			07.12					WE
Image: Beacon     POM     POM     POMER QUALITY METER     Image: Chi construction     Image: Chi constrution     Image: Chi c							-				MIS
Image: Control operator interface terminal     100 memory operator interface     100 memory operator interface <td></td> <td>BEACON</td> <td></td> <td></td> <td></td> <td></td> <td colspan="2"></td> <td></td> <td></td> <td>OPI</td>		BEACON									OPI
Image: constraint of the symbols o											CLC
OIT       OPERATOR INTERFACE TERMINAL       NBC       REMOTE DASE CONTROLLER       LEVEL SWITCH LOW       ZEL         Image: NBC       REMOTE INPUT OUTPUT       RID       REMOTE TERMINAL UNIT       LEVEL ALARM LOW       ZEL       ZEL         Image: NBC       REMOTE TERMINAL UNIT       SCADA       SUPERVISORY CONTROL AND DATA AQUISITION       LAL       LEVEL ALARM LOW       ZLH       ZLH         Image: NBC       CLOSED CIRCUIT TELEVISION CAMERA       SO       SULFUR DIOXIDE       SOL       SOLENOID       PIT       PRESSURE INDICATING TRANSMITTER       ZIL         Image: NBC       SOL       SOLENOID       SOLENOID       SOL       SOLENOID       PIT       PRESSURE INDICATING TRANSMITTER       ZIT         Image: NBC       TERMINATION CABINET       TO       TERMINATION CABINET       PI       PRESSURE INDICATION       ZIT         Image: NBC       VIB       VIBRATION       VIB       VIBRATION       PSI       PRESSURE SWITCH HIGH       ZIT			PV								POS
Image: Security system symbols       RTU       REMOTE TERMINAL UNIT       Image: Scala Supervisory control and data aquisition         Image: Security system symbols       Scada Supervisory control and data aquisition       Image: Scala Supervi											
SECURITY SYSTEM SYMBOLS       SCADA       SUPERVISORY CONTROL AND DATA AQUISITION         CCTV       CLOSED CIRCUIT TELEVISION CAMERA       SN       SINGLE MODE FIBER OPTIC CABLE       LAL       LEVEL ALARM LOW       ZLH         DTZ       CLOSED CIRCUIT TELEVISION CAMERA       SO       SULFUR DIOXIDE       PIT       PRESSURE INDICATING TRANSMITTER       ZLH         DTZ       PAN, TILT, ZOOM CAMERA       SOL       SOLENOID       SUPERVISORY CONTROL AND DATA AQUISITION       PE       PRESSURE ELEMENT       ZIT         VIB       UNINTERRUPTIBLE POWER SUPPLY       TC       TERMINATION CABINET       PSH       PRESSURE SWITCH HIGH       YES       YES         VIB       VIBRATION       VFD       VARIABLE FREQUENCY DRIVE       PSL       PRESSURE SWITCH HIGH       YES       YES					LOL						POS
Image: Control of Closed Circuit Television CAMERA       SM       SINGLE MODE FIBER OPTIC CABLE       PIT       PAN, TILT, ZOOM CAMERA       SINGLE MODE FIBER OPTIC CABLE       PIT       PRESSURE INDICATING TRANSMITTER       ZLL         Image: Pote Circuit Television CAMERA       SO2       SULFUR DIOXIDE       PIT       PRESSURE ELEMENT       ZIT         Image: Pote Circuit Television CAMERA       SUNDE PROTECTION DEVICE       PI       PRESSURE INDICATION       ZIT         Image: Pote Circuit Television CAMERA       TO       TERMINATION CABINET       PI       PRESSURE SWITCH HIGH       ZIT         Image: Pote Circuit Television CAMERA       TO       TO       TERMINATION CABINET       PI       PRESSURE SWITCH HIGH       ZIT         Image: Pote Circuit Television Camera       TO       TERMINATION CABINET       PI       PRESSURE SWITCH HIGH       ZIT         Image: Pote Circuit Television Camera       TO       TERMINATION CABINET       PI       PRESSURE SWITCH HIGH       ZIT         Image: Pote Circuit Television Camera       VIB       VIBRATION       PI       PRESSURE SWITCH HIGH       ZIT		SECURITY SYSTEM SYMBOLS	SCAD	A SUPERVISORY CONTROL AND DATA AQUISITION							VAL
Sol Solenoid       Sol Solenoid         PTZ       PAN, TILT, ZOOM CAMERA         VPS       UNINTERRUPTIBLE POWER SUPPLY         TC       TERMINATION CABINET         TURB       TURBIDITY         VIB       VIBRATION         VFD       VARIABLE FREQUENCY DRIVE											VAL
PTZ       PAN, TILT, ZOOM CAMERA       SPD       SURGE PROTECTION DEVICE       PE       PRESSURE ELEMENT         UPS       UNINTERRUPTIBLE POWER SUPPLY       TC       TERMINATION CABINET       PI       PRESSURE SWITCH HIGH         TURB       TURBIDITY       VIB VIBRATION       VIB       VIBRATION       PI       PRESSURE SWITCH HIGH         VFD       VARIABLE FREQUENCY DRIVE       VIB       PI       PRESSURE SWITCH HIGH		CLOSED CIRCUIT TELEVISION CAMERA								ZIT	POS
TC     TERMINATION CABINET       TURB     TURBIDITY       VIB     VIBRATION       VFD     VARIABLE FREQUENCY DRIVE											
TURBTURBIDITYVIBVIBRATIONVFDVARIABLE FREQUENCY DRIVE						PI	_				
VIB     VIBRATION       VFD     VARIABLE FREQUENCY DRIVE						PSH					
						PSL	PRESSURE SWIT	ICH HIGH			
VLV VALVE											
			[ VLV	VALVE							

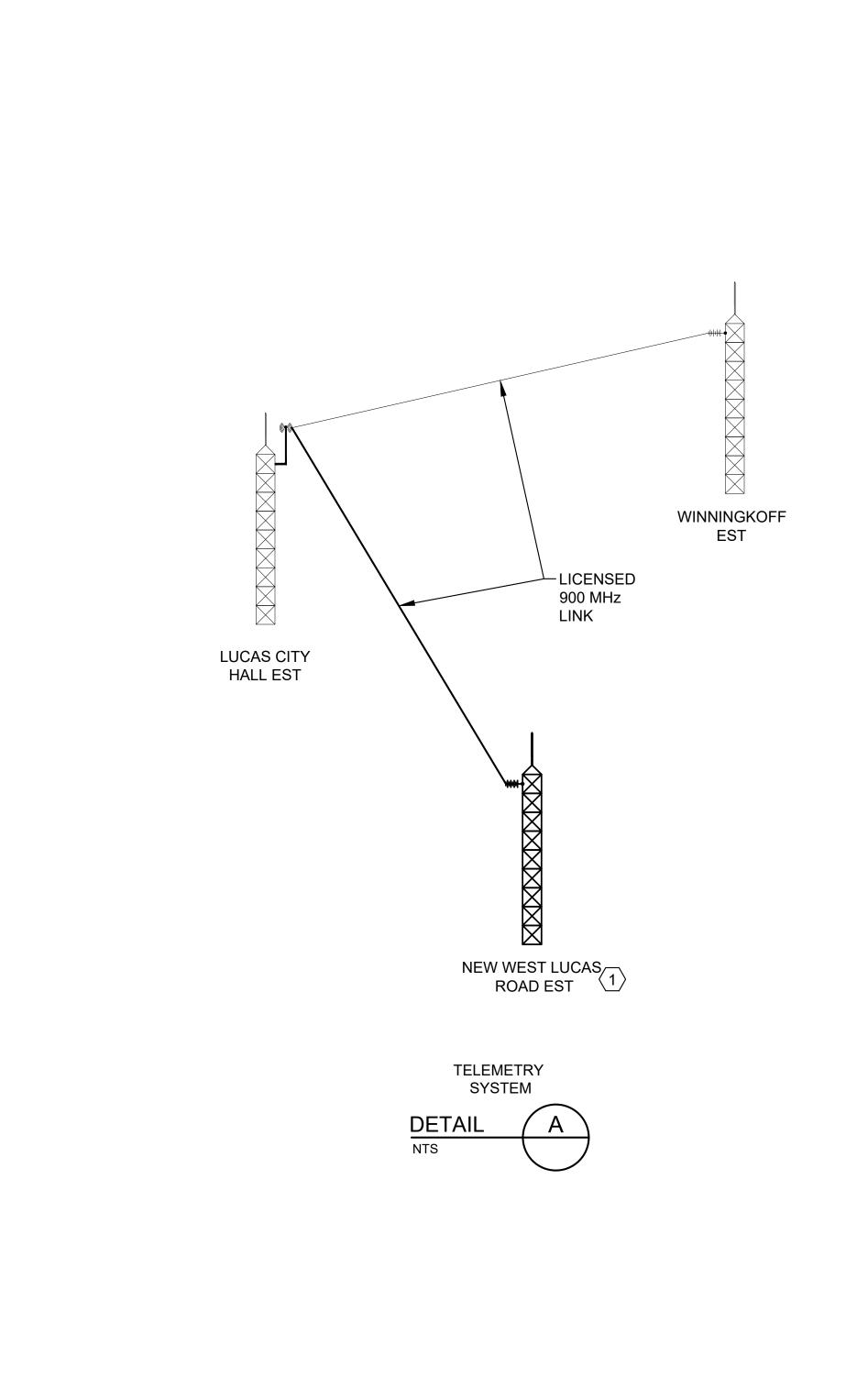
JMENTS.		
	SUCCEEDING LETTERS	
PASSIVE ON	OUTPUT FUNCTION	MODIFIER
	CONTROL	
ENT		
DEVICE		
		HIGH OR OPEN
	CONTROL STATION	
		LOW OR CLOSED
		MIDDLE OR INTERMEDIATE
		USER'S CHOICE
ICTION)		
	SWITCH	
	TRANSMIT	
	MULTIFUNCTION	MULTIFUNCTION
	VALVE, DAMPER OR LOUVER	
		UNCLASSIFIED
	UNCLASSIFIED	UNCLASSIFIED
	RELAY, COMPUTE, CONVERT	
	DRIVE, ACTUATE OR UNCLASSIFIED CONTROL ELEMENT	

ON HMI/INSTRUMENT ISA TAGGING
MEANING
SPEED INDICATION
SPEED INDICATING CONTROLLER
TEMPERATURE INDICATING TRANSMITTER
TEMPERATURE ELEMENT
TEMPERATURE INDICATION
TEMPERATURE SWITCH HIGH
WEIGHT INDICATING TRANSMITTER
WEIGHT ELEMENT
WEIGHT INDICATION
MISC. EVENT LIGHT (IN REMOTE)
OPEN GATE/VALVE
CLOSE GATE/VALVE
POSITION SWITCH HIGH
POSITION SWITCH LOW
VALVE/GATE OPEN
VALVE/GATE CLOSED
POSITION INDICATING TRANSMITTER





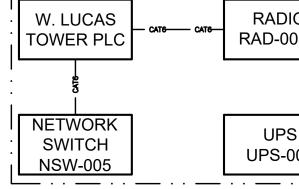
1. CONTRACTOR WILL CONDUCT A PATH STUDY AND A PHYSICAL RADIO LINK TEST TO FIND OPTIMAL HEIGHT FOR ANTENNA

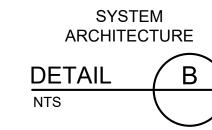


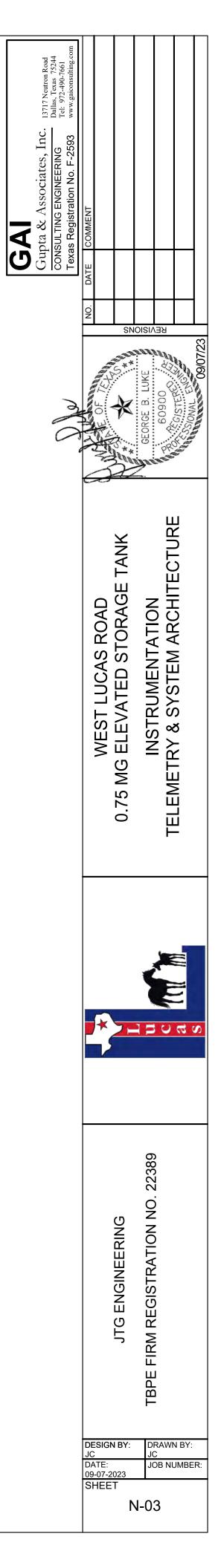
Info: W:\Miscellaneous\1214\_Lucas – West Lucas Road EST\6 Drawings\Instrumentation and Control\!Working\N-03.dwg - Plotted: 9/7/2

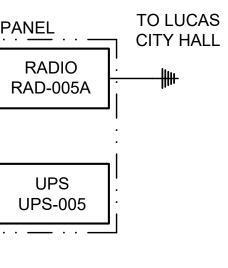
### DENOTED BY SYMBOL $\langle X \rangle$

### WEST LUCAS TOWER PLC PANEL

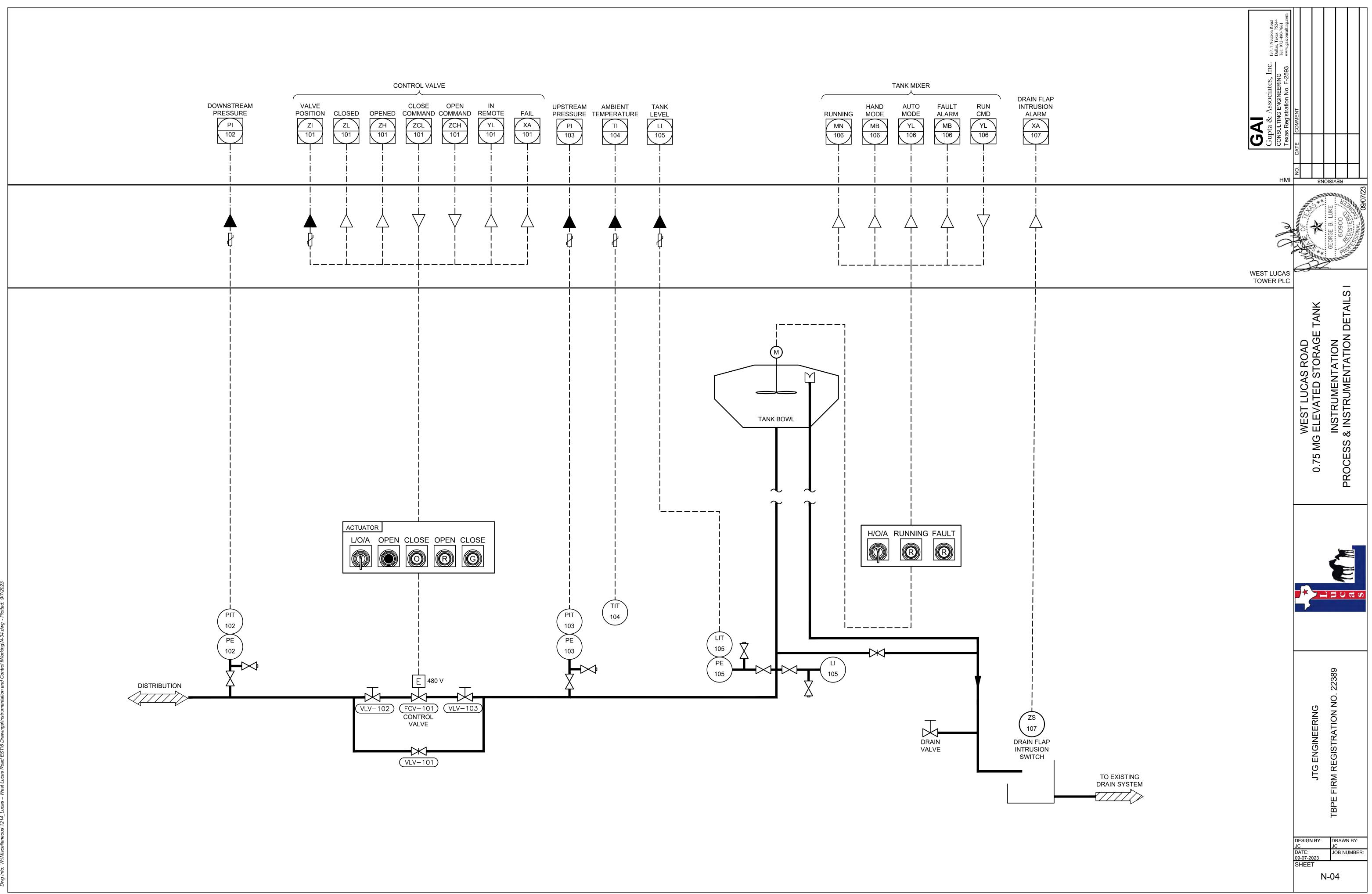


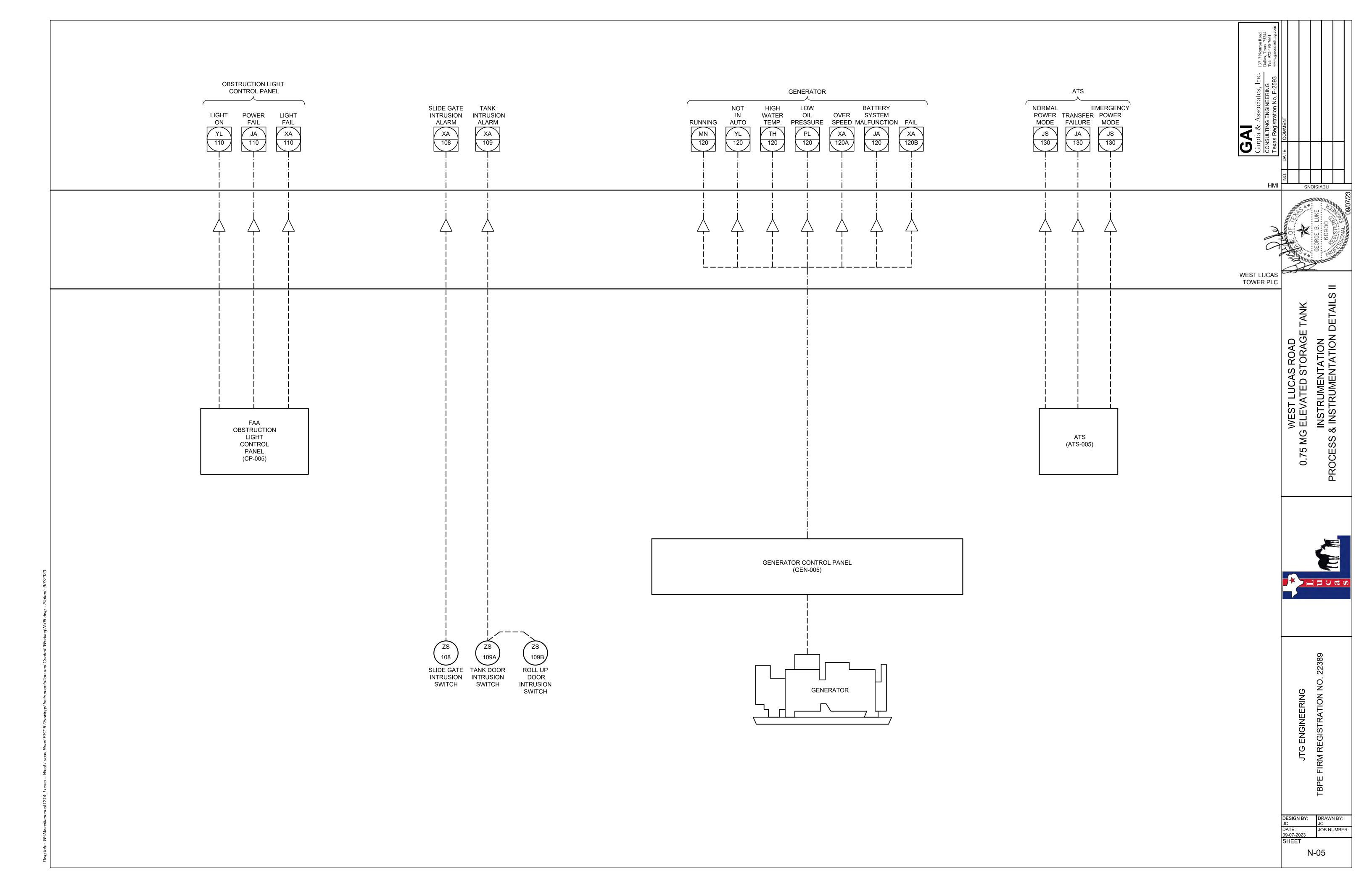


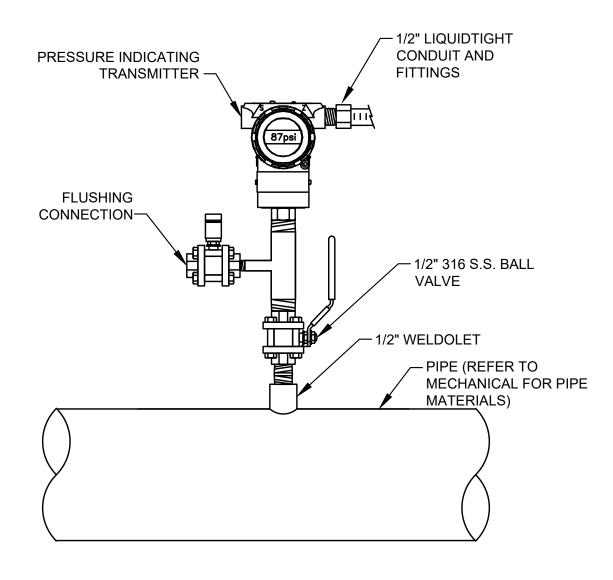


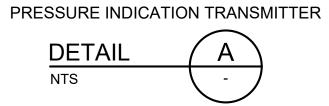


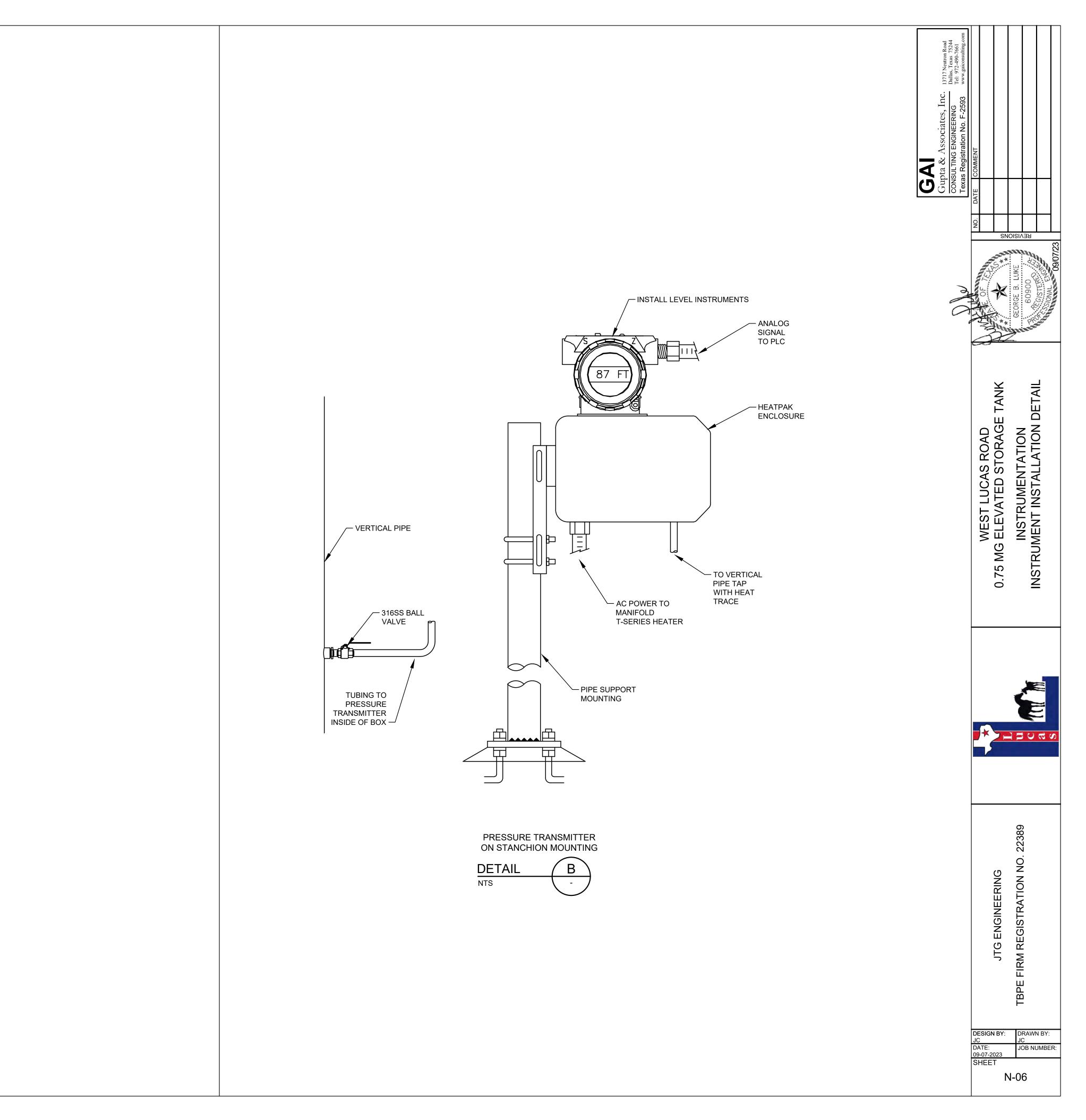


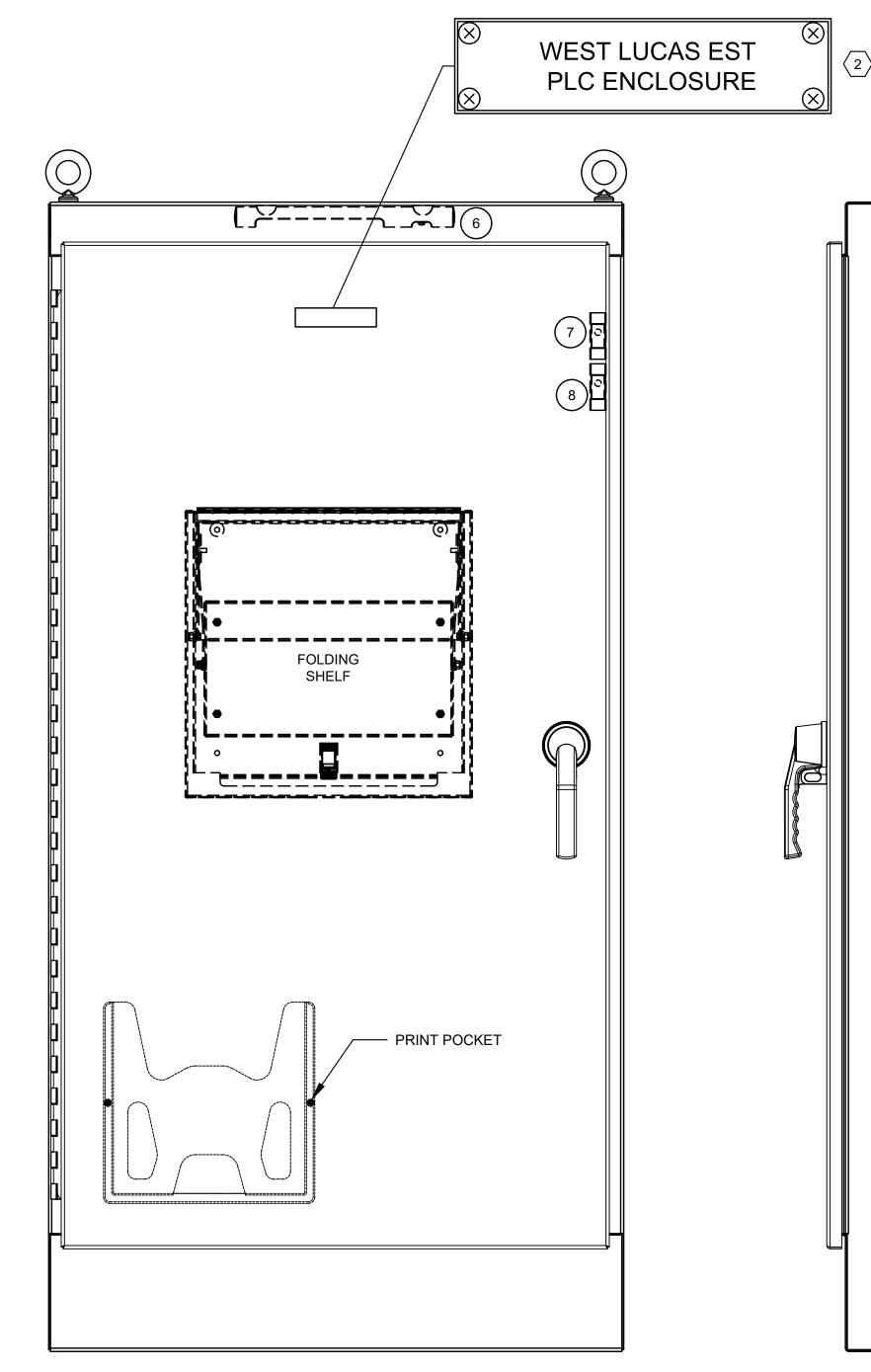








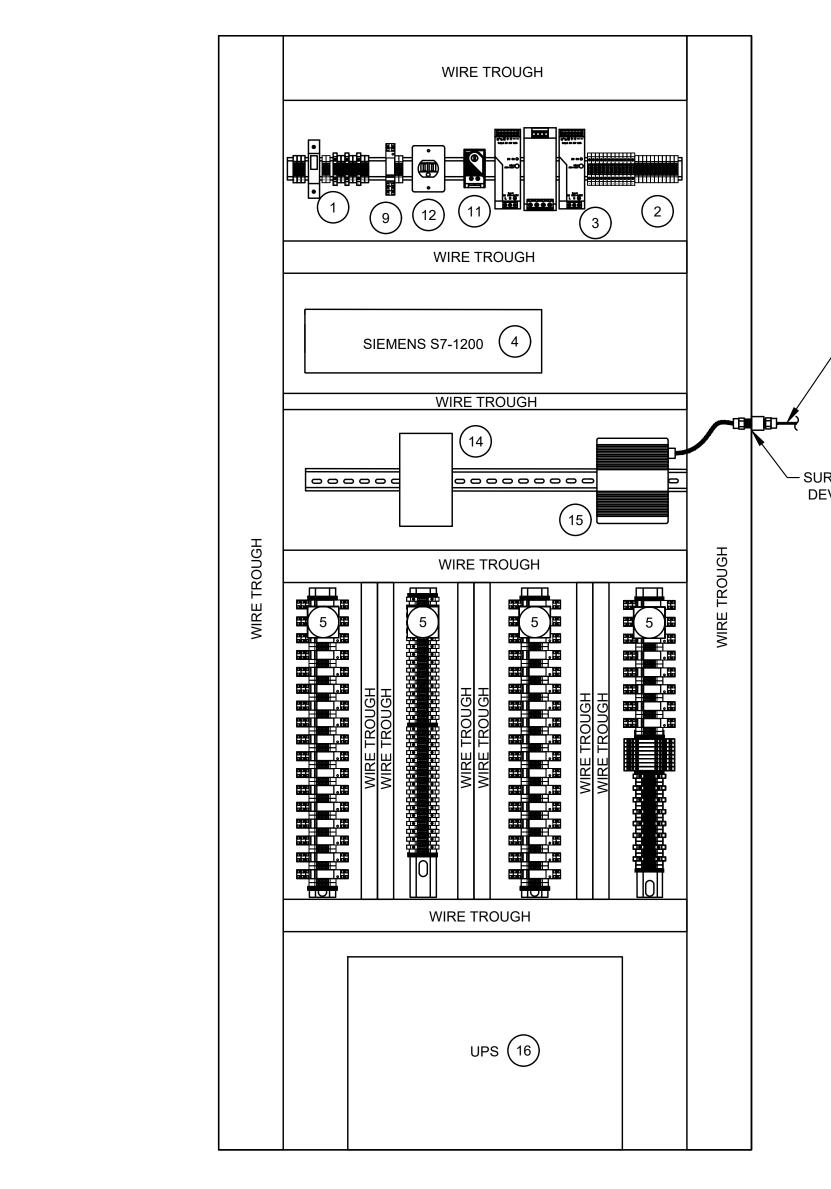




EXTERIOR ENCLOSURE FRONT

### KEYNOTES:

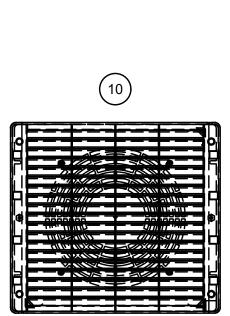
- 2. LABEL SHALL BE AFFIXED TO FRONT OF PANEL.
- STANDARDS.

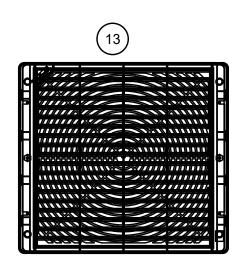


EXTERIOR ENCLOSURE SIDE

**BACKPANEL** 

WEST LUCAS EST PLC ENCLOSURE LAYOUT DETAIL  $\left< 1 \right> 3 \left< 4 \right>$ NTS





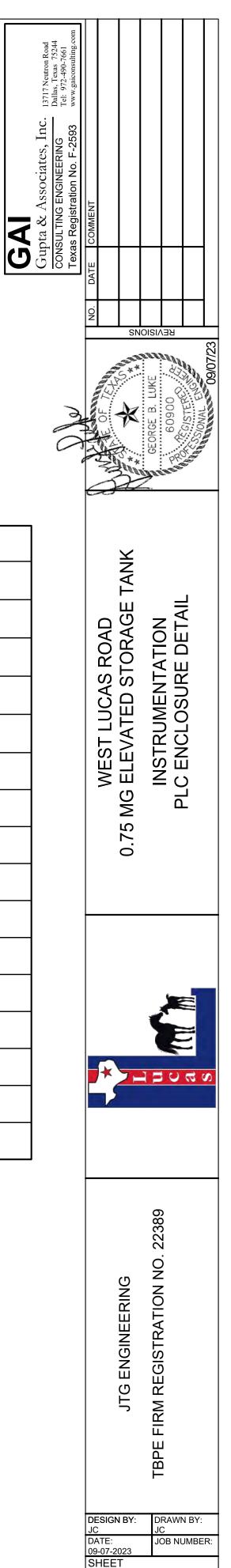
### DENOTED BY SYMBOL $\langle X \rangle$

1. ENCLOSURE SHALL BE NEMA 4X, 316S.S., 72"H MIN. X 36"W MIN. X 24"D MIN.

3. PANEL INTERNAL LAYOUTS ARE PROVIDED FOR INITIAL DESIGN PURPOSES ONLY. CONTRACTOR SHALL DETERMINE THE FINAL PANEL DESIGN WHICH SHALL COMPLY WITH ALL COMPONENT MANUFACTURER INSTALLATION RECOMMENDATIONS AND ALL APPLICABLE CODES, REGULATIONS, AND

4. ENCLOSURE MOUNTING DETAILS ARE PROVIDED FOR INITIAL DESIGN PURPOSES ONLY. CONTRACTOR SHALL FIELD VERIFY THERE IS SUFFICIENT ROOM AT THE MOUNTING LOCATION PRIOR TO FABRICATING ENCLOSURES.

NO.	EQUIPMENT
1	AC DISTRIBUTION
2	DC DISTRIBUTION
3	REDUNDANT DC POWER SUPPLY
4	PLC
5	I/O TERMINATION/RELAYS
6	LIGHT
7	INTRUSION SWITCH
8	LIGHT SWITCH
9	AC LOSS RELAY
10	FAN
(11)	FAN THERMOSTAT
12	120VAC OUTLET
(13)	EXHAUST
14	ETHERNET SWITCH
15	SCHNEIDER TRIO 900 MHZ RADIO
(16)	UPS



- TO YAGI ANTENNA

- SURGE PROTECTION DEVICE

010110		
nomer i ferre	DISTRIBUTION	
		EAST WINNINGKOFF EST VALVE VAULT

