



Mitchell Lake Audubon Center Entry Improvement Project (RFCSP)

Solicitation Number: CO-00726

Job No.: 23-7708

ADDENDUM 1

February 29, 2024

To Respondent of Record:

This addendum, applicable to work referenced above, is an amendment to the price proposal, plans and specifications and as such will be a part of and included in the Contract Documents. Acknowledge receipt of this addendum by entering the Addendum number and issue date on the space provided in submitted copies of the Respondent Questionnaire.

RESPONSES TO QUESTIONS

1. **Question:** Please confirm whether the contractor is responsible for contracting and payment for construction materials testing.

Response: Yes, the contractor will be responsible for contracting and payment for construction materials testing.

CHANGES TO THE SPECIFICATIONS

1. Project Manual Table of Contents, 4 pages, **REMOVE** in its entirety and **REPLACE** with the revised version attached to this addendum.
2. Division 10 – Specialties, **INSERT** Section 104413 – Emergency Key Cabinet, 4 pages, attached to this addendum into the Technical Specifications.
3. **REMOVE** Section 32 31 19 Decorative Metal Fence and Gates from Division 32 – Exterior Improvements in its entirety and **REPLACE** with the revised version attached to this addendum, 8 pages.
4. **REMOVE** sheet A2.1 New Construction Site Plan and **REPLACE** with the revised version attached to this addendum, 1 page.

END OF ADDENDUM 1

This addendum is eighteen (18) pages in its entirety.

Attachments:

Revised Project Manual Table of Contents (Addendum 01) (4 Pages)

Section 104413 – Emergency Key Cabinet (Addendum 01) (4 Pages)

Section 323119 – Decorative Metal Fences and Gates (Addendum 01) (8 Pages)

Sheet A2.1 New Construction – Site Plan (1 page)



02.29.2024

PROJECT MANUAL
TABLE OF CONTENTS
DIVISION 0 thru DIVISION 33
FOR
SAN ANTONIO WATER SYSTEM
MITCHELL LAKE AUDUBON CENTER
ENTRY IMPROVEMENTS PROJECT

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

00 01 15 List of Drawing sheets

DIVISION 01 - GENERAL REQUIRMENTS

01 10 00 Summary
01 23 00 Alternates
01 25 00 Substitution Procedures
01 26 00 Contract Modification Procedures
01 29 00 Payment Procedures
01 31 00 Project Management and Coordination
01 32 00 Construction Progress Documentation
01 33 00 Submittal Procedures
01 40 00 Quality Requirements
01 50 00 Temporary Facilities and Controls
01 60 00 Product Requirements
01 73 00 Execution
01 74 19 Construction Waste Management and Disposal
01 77 00 Closeout Procedures
01 78 23 Operation and Maintenance Data
01 78 39 Project Record Documents
01 91 00 Building Systems Commissioning

DIVISION 02 - EXISTING CONDITIONS

02 41 19 Selective Demolition

DIVISION 03 - CONCRETE

NOT USED

DIVISION 04 - MASONRY

NOT USED

DIVISION 05 - METALS

05 40 00 Cold Formed Metal Framing

DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES

06 10 00 Rough Carpentry

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

NOT USED

DIVISION 08 - OPENINGS

NOT USED

DIVISION 09 - FINISHES

09 24 00 Portland Cement Plastering
09 91 13 Exterior Painting

DIVISION 10 - SPECIALTIES

10 14 19 Dimensional Letter Signage
10 44 13 Emergency Key Cabinet

Addendum 01 - Section Added



02 28 24 Addendum 01

DIVISION 11 - EQUIPMENT

NOT USED

DIVISION 12 - FURNISHINGS

NOT USED

DIVISION 13 - SPECIAL CONSTRUCTION

NOT USED

DIVISION 14 - CONVEYING SYSTEMS

NOT USED

DIVISION 21 - FIRE SUPPRESSION

NOT USED

DIVISION 22 - PLUMBING

NOT USED

DIVISION 23 - HEATING VENTILATING AND AIR CONDITIONING (HVAC)

NOT USED

DIVISION 26 - ELECTRICAL

26 00 00	Summary
26 00 05	Electrical Demolition
26 00 15	General Conditions for All Electrical Work
26 00 50	Basic Electrical Materials and Methods
26 05 19	Conductors and Cables
26 05 26	Grounding and Bonding
26 05 33	Raceways and Boxes
26 05 53	Electrical Identification
26 08 00	Electrical Systems Commissioning
26 13 10	Pull and Junction Boxes
26 27 26	Wiring Devices
26 28 16	Disconnect Switches and Circuit Breakers
26 47 50	Overcurrent Protection System
26 56 00	Exterior Lighting

DIVISION 27 - COMMUNICATIONS

NOT USED

DIVISION 28 - ELECTRONIC SAFETY AND SECURITY

NOT USED

DIVISION 31 - EARTHWORK

NOT USED

DIVISION 32 - EXTERIOR IMPROVEMENTS

32 31 19	Decorative Metal Fence and Gates
32 32 36	Gabion Walls
32 84 23	Irrigation
32 93 00	Landscape Planting
32 93 45	Treatment of Existing Trees

Addendum 01 - Section
modified as indicated



02 28 24 Addendum 01

DIVISION 33 – UTILITIES

NOT USED

SECTION 104413 – EMERGENCY KEY CABINET

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Pedestal Mounted Emergency Key Cabinet (boxes).
 - 2. Fire Department, Emergency Medical Service, Police (first responders) high security key box(es) at Gates.
- B. Related Sections:
 - 1. Section 013300 Submittal Requirements

1.3 SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for fire protection cabinets.
 - 1. Key Box Cabinets: Include roughing-in dimensions, details showing mounting methods, relationships of box and trim to surrounding construction as approved by local authorities.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
- C. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below:
 - 1. Size: 6 by 6 inches (150 by 150 mm) square.
- D. Maintenance Data: Fire protection cabinets to include in maintenance manuals.
- E. Project Record Documents: Indicate actual locations of each box.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section and approved by the City of San Antonio Fire Department.
- B. Key Box: The key box shall be of an approved type listed in accordance with UL 1037 and City of San Antonio Fire Department and shall contain keys to gain access as required by the code official.

1. UL 437 Standard for Safety for Key Locks (keyway).
 2. UL 1332 Organic Coatings for Steel Enclosures for Outdoor Use Electrical Equipment.
- C. Installer Qualifications: Company specializing in performing work of the type specified and with at least ten years of documented experience.
- D. Documents at Project Site: Maintain at project site one copy of reference standard documents containing execution requirements.

1.5 COORDINATION

- A. Coordinate size, location, and mounting height of key cabinets with pedestal mount.

1.6 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.
- B. Manufacturer Warranty: Provide lifetime manufacturer warranty for SAWS. Complete forms in Owner's name and register with manufacturer.
- C. Installer Warranty: Provide 1 year warranty for installation defects commencing on the Date of Substantial Completion. Complete forms in Owner's name and register with installer.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Knox Company; KnoxBox 3200: www.knoxbox.com.
- B. Substitutions: See Section 01 60 00 - Product Requirements.

2.2 EMERGENCY KEY CABINET

- A. Cabinet to be surface mount on steel pedestal with hinged door, without UL Listed tamper switches. 1/4" plate steel housing, 1/2" thick steel door with interior gasket seal and stainless steel door hinge. Box and lock to meet UL1037 and UL 437. Lock has 1/8" thick stainless steel dust cover with tamper seal mounting capability.
1. Exterior Dimensions:
 - a. Surface Mount Body is 4 inch H x 5 inch W x 3-7/8 inch D.
 - b. Lock: UL Listed. Double-action rotating tumblers and hardened steel pins accessed by a biased cut key.
 - c. Finish: Knox-Coat® proprietary finishing process
 - 1) Colors: Black, Dark Bronze or Aluminum as selected by Architect
 - d. Manufacturer:
 - 1) KNOX Company Model No. 3200

2.3 PEDESTAL

- A. Provide painted steel pedestal post similar to adjacent gate control pedestal capable of supporting box.

PART 3 - EXECUTION

3.1 INSTALLERS

- A. Installation of this product must be performed by individuals skilled in the use of the tools and equipment necessary for installation.

3.2 EXAMINATION

- A. Verification of Conditions: Verify that mounting pedestal is ready to ready to receive work.

3.3 INSTALLATION

- B. Install in accordance with manufacturer's written instructions and applicable codes.
 - 1. Knox-Box must be mounted to a secure, solid post.
 - 2. Mount box maximum height of 48" to top of box.
 - 3. Do not overtighten mounting bolts which will distort the flange.
- C. For hinged door models: Exercise caution when handling Knox-Box prior to installation. When not mounted, the door will be open. Always hold box and door securely to prevent door closing on finger and causing injury.
- D. Tamper Switch: If applicable, remove the tamper switch assembly and set aside for installation after the box is mounted.
 - 1. Install tamper switch assembly after the box is mounted. Pull wiring tight so that any attempts to force the box out of the wall will break the wire or pull the terminals loose. Engage a qualified alarm installer to perform alarm wiring, testing and adjusting.
- E. Install plumb and square.
- F. Mount the Knox-Box so the small moisture drain hole inside of vault is on the bottom.
- G. Use at least 4 (four) Grade 5 or Grade 8 fasteners (carriage bolts, etc.) of 3/8 inch diameter. Units may also be welded in place.
- H. For proper weatherproofing, seal the back of box across top and down each side. Leave the bottom open for drainage. Use sealant type GPX.
- I. Use of a professional locksmith or alarm products installer is highly recommended.
- J. Interface with other work:
 - 1. Verify that tamper switch, if used, properly works with alarm system.

3.4 TOLERANCES

- A. Maximum Variation From True Position: 1/8 inch.
- B. Maximum Offset From True Alignment: 1/8 inch.

3.5 CLEANING

- A. Clean all exposed surfaces of emergency key cabinet.

3.6 CLOSEOUT ACTIVITIES

- B. Box Lock Up:
 - 1. When emergency key cabinet is for Fire Department use, contact the appropriate local fire department after the installation to inform them the box(es) is (are) ready for lock up as they have the only key.

3.7 SCHEDULE

- A. Main Entry Gate: 1 (one) box, pedestal mounted. Locate at exterior entrance drive side. Verify exact location with Owner and City of San Antonio Fire Department or authorities having jurisdiction prior to installation.
- B. Installation of this product must be performed by individuals skilled in the use of the tools and equipment necessary for installation.

END OF SECTION 104413

SECTION 323119 - DECORATIVE METAL FENCES AND GATES

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Decorative steel fences.
 - 2. Horizontal-slide gates.
 - 3. Gate Operators
- B. Related Requirements:
 - 1. Cast-In-Place Concrete: Refer to Structural Drawings.
 - 2. Division 26 Sections for electrical service and connections for system disconnect switches and powered devices including, but not limited to, motor operators, controls, and limit switches.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For fencing and gates.
 - 1. Include plans, elevations, sections, post spacing, track, guides, accessories, and mounting attachment.
- C. Samples: For each fence material and for each color specified.
 - 1. Provide Samples 12 inches in length for linear materials.
 - 2. Provide Samples 24 inches square for infill materials.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: Provide information and contact for digital panel design for future reference in the event a replacement panel is required.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Fabricator of products.

PART 2 - PRODUCTS

2.1 WELDED WIRE ROLLED FENCING (BASE BID)

- A. T-Post: 1.75" x 1.75" x 1/4" wall thickness, height as indicated on drawings. Set 2' deep
- B. Infill: 2"x4" 12.5 gauge galvanized welded wire, GBW

2.2 HOGWIRE FENCING (ADD ALTERNATE 1)

- A. Posts: 2" diameter steel pipe rail, painted.
- B. Rails: 2" diameter steel pipe rail, painted.
- C. Infill: 4" x 4" Rigid Galvanized Mesh, 0.25" wire diameter
- D. Fabrication: Assemble fences into sections by welding rails.
- E. Finish exposed welds to comply with NOMMA Guideline 1, Finish #3 - partially dressed weld with splatter removed.
- F. Galvanizing: For items other than hardware that are indicated to be galvanized, hot-dip galvanize to comply with ASTM A123/A123M. For hardware items, hot-dip galvanize to comply with ASTM A153/A153M. Hot-dip galvanize posts and rails.
- G. Finish: Painted posts and rails, infill mesh Galvanized

2.3 HORIZONTAL-SLIDE GATES

- A. Gate Configuration: Single leaf.
- B. Gate Frame Height: As indicated.
- C. Gate Opening Width: As indicated.
- D. Automated vehicular gates shall comply with ASTM F2200, Class II.
- E. Steel Frames and Bracing: Fabricate members from square tubing. Hot-dip galvanize frames after fabrication.
 1. Frame Members: Steel tubing 4 by 4 inches with 3/16-inch wall thickness.
 2. Bracing Members: Steel tubing 3 by 3 inches with 3/16-inch wall thickness.
- F. Frame Corner Construction: Welded frame.

- G. Additional Rails: Provide intermediate rail if required for rigidity.
- H. Infill:
 1. 5mm thick painted decorative cut panels welded to frame for front facing visible portion of gate as indicated on drawings.
 2. Round and grind all cut edges on gate and panel prior to painting.
 3. 2x2 welded wire mesh weld attached to back side of panels. Paint same color as gate panels.
 4. Ensure gate has no openings greater than 2.25”.
- I. Hardware: Locking devices, wheels, guide roller assemblies, operator attachments, guidepost, gate v-track, gate receivers, stops as required.
- J. Finish exposed welds to comply with NOMMA Guideline 1, Finish #2 - completely sanded joint, some undercutting and pinholes okay.
- K. Galvanizing: For items other than hardware that are indicated to be galvanized, hot-dip galvanize to comply with ASTM A123/A123M. For hardware items, hot-dip galvanize to comply with ASTM A153/A153M.
- L. Steel Finish: High-performance coating.
- M. Horizontal-Slide Gate Post, Openings Wider Than 12 Feet (3.7 m): 4 by 4 inches (102 by 102 mm) with 3/16-inch (4.76-mm) wall thickness.
- N. Guide Posts for Class 1 Horizontal-Slide Gates: 4 by 4 inches (102 by 102 mm with 3/16-inch (4.76-mm) wall thickness; installed adjacent to gate post to permit gate to slide in space between.

2.4 GATE OPERATORS

- A. MANUFACTURERS
 1. Doorking
 2. Liftmaster
 3. Nice Apollo
 4. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 – Product Requirements.
- B. Gate Operators:
 1. Provide factory-assembled automatic operating system designed for gate size, type, weight, and operation frequency. Provide operation control system with characteristics suitable for Project conditions, with remote-control stations, safety devices, and weatherproof enclosures; coordinate electrical requirements with building electrical system.
 2. Provide operator designed so motor may be removed without disturbing limit-switch adjustment and without affecting auxiliary emergency operator.
 3. Provide operator with UL approval.
 4. Provide electronic components with built-in troubleshooting diagnostic feature.
 5. Provide unit designed and wired for both right-hand/left-hand opening, permitting universal installation.

- C. Comply with NFPA 70.
- D. UL Standard: Manufacturer and label gate operators to comply with UL 325.
- E. Emergency Access Requirements: Comply with requirements of authorities having jurisdiction for automatic gate operators on gates that must provide emergency access.
- F. Motor Characteristics: Sufficient to start, accelerate, and operate connected loads at designated speeds, within installed environment, with indicated operating sequence, and without exceeding nameplate rating or considering service factor. Comply with NEMA MG 1 and the following:
1. Voltage: 120 V / 208-220 V, single phase.
 2. Horsepower: Not less than 1/2.
 3. Enclosure: Totally enclosed.
 4. Duty: Continuous duty at ambient temperature of 105 deg F (40 deg C) and at altitude of 3300 feet (1005 m) above sea level.
 5. Service Factor: 1.0 for totally enclosed motors.
- G. Gate Operators: Concrete base mounted and as follows:
1. Mechanical Slide Gate Operators:
 - a. Duty: Heavy duty, commercial/industrial.
 - b. Gate Speed: Minimum 45 feet per minute.
 - c. Maximum Gate Weight: 1500 lb.
 - d. Frequency of Use: Continuous duty.
 - e. Operating Type: Roller chain.
 - f. Drive Type: V-belt and chain-and-sprocket reducers, roller-chain drive.
- H. Remote Controls: Electric controls separated from gate and motor and drive mechanism, with NEMA ICS 6, Type 4 enclosure (contractor supplied, contractor installed) for pedestal mounting, and with space for additional optional equipment. Provide the following remote-control device(s):
1. Control Station: Keyed, three-position switch with open, stop, and close function; located remotely from gate. Provide two keys per station. Enclose in NEMA 3R junction box.
 2. Pedestal: Contractor to provide and install pedestal, pedestal foundation, and enclosure to house the following:
 - a. Card Reader: Owner provided, Owner Installed
 - b. Video Communication Entry System: Owner provided, Owner Installed
 - c. Emergency Key Cabinet (“Knox Box”): Contractor provided, Contractor Installed
- I. Vehicle Loop Detector: System includes automatic closing timer with adjustable time delay, timer cutoff switch, and loop detector designed to open and close gate and hold gate open until traffic clears. System includes electronic detector with adjustable detection patterns, adjustable sensitivity and frequency settings, and panel indicator light designed to detect presence or transit of a vehicle over an embedded loop of wire and to emit a signal activating the gate operator. System includes number of loops consisting of multiple strands of wire, number of turns, loop size, and method of placement, as recommended in writing by detection system manufacturer for function indicated, at location indicated on Drawings.

Addendum 1

- J. Obstruction Detection Devices: Provide each motorized gate with automatic safety sensor(s). Activation of sensor(s) causes operator to immediately function as follows:
1. Action: Reverse gate in both opening and closing cycles, and hold until clear of obstruction.
 2. Internal Sensor: Built-in torque or current monitor senses gate is obstructed.
 3. Sensor Edge: Contact-pressure-sensitive safety edge, profile, and sensitivity designed for type of gate and component indicated, in locations as follows. Connect to control circuit using gate edge transmitter and operator receiver system.
 - a. Along entire gate leaf leading edge.
 - b. Along entire gate leaf trailing edge.
 - c. Across entire gate leaf bottom edge.
 - d. Along entire length of gate posts.
 4. Photoelectric/Infrared Sensor System: Enforcer E-960-D90GQ Twin Photobeam Detector Designed to detect an obstruction in gate's path when infrared beam in the zone pattern is interrupted.
- K. Limit Switches: Adjustable switches, interlocked with motor controls and set to automatically stop gate at fully retracted and fully extended positions.
- L. Emergency Release Mechanism: Quick-disconnect release of operator drive system of the following type, permitting manual operation if operator fails. Design system so control-circuit power is disconnected during manual operation.
1. Type: Integral fail-safe release, allowing gate to be pushed open without mechanical devices, keys, cranks, or special knowledge.
- M. Operating Features:
1. Digital Microprocessor Control: Electronic programmable means for setting, changing, and adjusting control features with capability for monitoring and auditing gate activity. Provide unit that is isolated from voltage spikes and surges.
 2. System Integration: With controlling circuit board capable of accepting any type of input from external devices.
 3. Automatic Closing Timer: With adjustable time delay before closing and timer cutoff switch.
 4. Open Override Circuit: Designed to override closing commands.
 5. Reversal Time Delay: Designed to protect gate system from shock load on reversal in both directions.
 6. Maximum Run Timer: Designed to prevent damage to gate system by shutting down system if normal time to open gate is exceeded.
 7. Clock Timer: Seven-day programmable for regular events.
- N. Accessories:
1. Battery Backup System: Battery-powered drive and access-control system, independent of primary drive system.
 - a. Fail-Secure: Gate cycles on battery power, then fail-safe when battery is discharged.

- Addendum 1
2. External electric-powered solenoid or magnetic lock with delay timer allowing time for lock to release before gate operates.
 3. Emergency Fire Key Switch accessible from exterior of gate capable of opening gate upon switch activation.
 4. Intercom System: Owner supplied; Owner installed at pedestal.
 5. Instructional, Safety, and Warning Labels and Signs: According to UL 325
 6. Equipment Bases/Pads: Concrete as indicated on Drawings.

2.5 COATING MATERIALS

- A. Shop Primer for Steel: Manufacturer's standard lead- and chromate-free, nonasphaltic, rust-inhibiting primer complying with MPI#79 and compatible with topcoat.
- B. Epoxy Primer for Galvanized Steel: Epoxy primer recommended in writing by topcoat manufacturer.
- C. Polyurethane Intermediate Coat and Topcoat: Complying with MPI #72 and compatible with undercoat.

2.6 STEEL FINISHES

- A. Surface Preparation: Clean surfaces according to SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning." After cleaning, apply a conversion coating compatible with the organic coating to be applied over it.
- B. Primer Application: Apply zinc-rich epoxy primer immediately after cleaning, to provide a minimum dry film thickness of 2 mils (0.05 mm) per applied coat, to surfaces that are exposed after assembly and installation, and to concealed surfaces.
- C. High-Performance Coating: Apply intermediate and polyurethane topcoats to prime-coated surfaces. Comply with coating manufacturer's written instructions and with requirements in SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting. Apply at spreading rates recommended by coating manufacturer.
 1. Match approved Samples for color, texture, and coverage. Remove and refinish, or recoat work that does not comply with specified requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, pavement work, construction layout, and other conditions affecting performance of the Work.
- B. Do not begin installation before final grading is completed unless otherwise permitted by Architect.

- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of **500 feet (152.5 m)** or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.
 - 1. Construction layout and field engineering are specified in Section 017300 "Execution."

3.3 DECORATIVE FENCE INSTALLATION

- A. Install fences according to manufacturer's written instructions.
- B. Install fences by setting posts as indicated and fastening rails and infill panels to posts.
- C. Post Setting: Set posts in concrete into firm, undisturbed soil.
 - 1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
 - 2. Concrete Fill: Place concrete around posts and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.
 - a. Concealed Concrete: Top 2 inches (51 mm) below grade to allow covering with surface material. Slope top surface of concrete to drain water away from post.
 - 3. Posts Set in Concrete: Extend post to within 6 inches (150 mm) of 3' excavation depth, but not closer than 3 inches (75 mm) to bottom of concrete.
 - 4. Space posts uniformly at 5 feet o.c.

3.4 GATE INSTALLATION

- A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

3.5 GATE OPERATOR INSTALLATION

- A. General: Install gate operators according to manufacturer's written instructions, aligned and true to fence line and grade.
- B. Concrete Bases: Cast-in-place, dimensioned and reinforced according to gate operator component manufacturer's written instructions and as indicated on Drawings.
- C. Vehicle Loop Detector System: Bury and seal wire loop according to manufacturer's written instructions. Connect to equipment operated by detector.

- D. Comply with NFPA 70 and manufacturer's written instructions for grounding of electric-powered motors, controls, and other devices.

3.6 ADJUSTING

- A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.
- B. Automatic Gate Operators: Energize circuits to electrical equipment and devices. Adjust operators, controls, safety devices, alarms, and limit switches.
 - 1. Hydraulic Operators: Purge operating system, adjust pressure and fluid levels, and check for leaks.
 - 2. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
 - 3. Test and adjust controls, alarms, and safeties. Replace damaged and malfunctioning controls and equipment.
- C. Lubricate hardware, gate operators, and other moving parts.

3.7 DEMONSTRATION

- A. Train Owner's personnel to adjust, operate, and maintain gates.

END OF SECTION 323119

