

NOTIFICATION OF ADDENDUM

ADDENDUM NO. 1

DATED 4/01/2014

Control	<u>2121-02-152, ETC.</u>
Project	<u>CC 2121-2-152, ETC.</u>
Highway	<u>IH 10</u>
County	<u>EL PASO</u>

Ladies/Gentlemen:

Attached please find an addendum on the above captioned project. Included in the attachment is an addendum notification which details the changes and the respective proposal pages which were added and/or changed.

Except for new bid insert pages, it is unnecessary to return any of the pages attached.

Bid insert pages must be returned with the bid proposal submitted to the Department, unless your firm is submitting a bid using a computer print out. The computer print out must be changed to reflect the new bid item information.

Contractors and material suppliers, etc. who have previously been furnished informational proposals are not being furnished a copy of the addendum. If you have a subcontractor on the above project, please advise them of this addendum. Acknowledgment of this addendum is not requested if your company has been issued a proposal stamped "This Proposal Issued for Informational Purposes."

You are required to acknowledge receipt of this addendum on the Addendum Acknowledgement form contained in your bid proposal by placing a mark in the box next to the respective addendum.

Failure to Acknowledge receipt of this addendum in your bid proposal will result in your bid not being read.

SUBJECT: PLANS AND PROPOSAL ADDENDUMS

PROJECT: CC 2121-2-152

CONTROL: 2121-02-152

COUNTY: EL PASO

LETTING: 04/03/2014

REFERENCE NO: 0331

PROPOSAL ADDENDUMS

_ PROPOSAL COVER

X BID INSERTS (SH. NO.: 2,4 & 5 of 5)

X GENERAL NOTES (SH. NO.: A THRU J)

X SPEC LIST (SH. NO.: 2 & 3 of 3)

X SPECIAL PROVISIONS:

ADDED: 450---001

DELETED:

X SPECIAL SPECIFICATIONS:

ADDED: 2233

DELETED: 8916

_ OTHER:

DESCRIPTION OF ABOVE CHANGES

(INCLUDING PLANS SHEET CHANGES)

GENERAL NOTES - MODIFIED SHEETS A THRU J (PLAN SHEET 4, 4A-4D, VOLUME I)

MODIFIED MARGINS, ADDED REQUIREMENTS TO ITEM 446

AND MODIFIED TCP REQUIREMENTS

UNDER ITEM 502 (PLAN SHEETS 4, 4A-4D)

MODIFIED SHEETS 5 (VOLUME I), 12,86,87, (VOLUME II) CHANGED ITEM 8916 TO 2233

REVISED SHEET 10 (VOLUME I) REVISED TCP GENERAL NOTES

PLAN SHEET 2 (VOLUME II, INDEX) ADDED SHEET 67A TOWER ELEVATIONS

PLAN SHEET 69 REVISED LANTERN BASE PLATE AND GLASS DETAILS

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	104	2009		REMOVING CONC (RIPRAP) DOLLARS and CENTS	SY	464.000	1
	104	2024		REMOVING CONC (RETAINING WALLS) DOLLARS and CENTS	SY	39.000	2
	192	2023		PLANT MATERIAL (15 GAL) (TREE) DOLLARS and CENTS	EA	2.000	3
	192	2030		PLANT MATERIAL (3 GAL) (SHRUB) DOLLARS and CENTS	EA	74.000	4
	403	2001		TEMPORARY SPL SHORING DOLLARS and CENTS	SF	7,070.000	5
	423	2014		RET WALL (SPREAD FOOTING)(SPL) DOLLARS and CENTS	SF	162.000	6
	427	2009		CONCRETE PAINT (EXISTING CONCRETE) DOLLARS and CENTS	SF	181,981.000	7
	429	2007		CNC STR REP (HORIZONTAL) DOLLARS and CENTS	SF	196.000	8
	429	2008		CNC STR REP (VERTICAL OR OVERHEAD) DOLLARS and CENTS	SF	125.000	9
	432	2001		RIPRAP (CONC)(4 IN) DOLLARS and CENTS	CY	40.000	10
	438	2002		CLEAN AND SEAL EXIST JOINTS DOLLARS and CENTS	LF	1,949.000	11

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	438	2006		CLEAN AND SEAL CRACKS DOLLARS and CENTS	LF	2,233.000	12
	446	2001		CLEAN & PAINT EXIST STR (SYSTEM I) DOLLARS and CENTS	LS	1.000	13
	450	2044	001	RAIL (PEDESTRIAN) (SPL) DOLLARS and CENTS	LF	3,556.000	14
	500	2001	011	MOBILIZATION DOLLARS and CENTS	LS	1.000	15
	502	2001	033	BARRICADES, SIGNS AND TRAFFIC HAN- DLING DOLLARS and CENTS	MO	9.000	16
	512	2008	002	PORT CTB (FUR & INST)(LOW PROF)(TY 1) DOLLARS and CENTS	LF	200.000	17
	512	2009	002	PORT CTB (FUR & INST)(LOW PROF)(TY 2) DOLLARS and CENTS	LF	40.000	18
	512	2026	002	PORT CTB (MOVE)(LOW PROF)(TY 1) DOLLARS and CENTS	LF	200.000	19
	512	2027	002	PORT CTB (MOVE)(LOW PROF)(TY 2) DOLLARS and CENTS	LF	40.000	20
	512	2044	002	PORT CTB (REMOVE)(LOW PROF)(TY 1) DOLLARS and CENTS	LF	200.000	21

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	512	2045	002	PORT CTB (REMOVE)(LOW PROF)(TY 2) DOLLARS and CENTS	LF	40.000	22
	550	2003		CHAIN LINK FENCE (REMOVE) DOLLARS and CENTS	LF	5,271.000	23
	618	2018		CONDT (PVC) (SCHD 40) (2") DOLLARS and CENTS	LF	1,395.000	24
	618	2019		CONDT (PVC) (SCHD 40) (2") (BORE) DOLLARS and CENTS	LF	2,115.000	25
	618	2052		CONDT (RM) (2") DOLLARS and CENTS	LF	2,060.000	26
	620	2010	001	ELEC CONDR (NO. 6) INSULATED DOLLARS and CENTS	LF	131,450.000	27
	620	2012	001	ELEC CONDR (NO. 8) INSULATED DOLLARS and CENTS	LF	11,695.000	28
	624	2008	014	GROUND BOX TY A (122311) W/APRON DOLLARS and CENTS	EA	17.000	29
	628	2002	003	ELC SRV TY A 120/240 060 (NS)SS(E)GC(O) DOLLARS and CENTS	EA	4.000	30
	662	2060		WK ZN PAV MRK REMOV (TRAF BTN) TY W DOLLARS and CENTS	EA	28.000	31
	662	2062		WK ZN PAV MRK REMOV (TRAF BTN) TY Y DOLLARS and CENTS	EA	15.000	32

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	740	2005	001	ANTI-GRAFFITI COATING (PERMANENT) DOLLARS and CENTS	SF	181,981.000	33
	784	2064		REP STL BRIDGE MEMBER (STRINGER) DOLLARS and CENTS	EA	1.000	34
	1122	2016	001	CONSTRUCTION EXITS (INSTALL) (TY 1) DOLLARS and CENTS	SY	25.000	35
	1122	2019	001	CONSTRUCTION EXITS (REMOVE) DOLLARS and CENTS	SY	25.000	36
	1122	2031	001	SANDBAGS FOR EROSION CONTROL DOLLARS and CENTS	EA	6.000	37
	1122	2033	001	SANDBAGS FOR EROSION CONTROL (12") DOLLARS and CENTS	LF	740.000	38
	1122	2047	001	BIOGRD EROSN CONT LOGS (8" DIA) INSTALL DOLLARS and CENTS	LF	660.000	39
	1122	2056	001	BIODEGRADBLE EROSION CONTROL LOGS REMOV DOLLARS and CENTS	LF	660.000	40
	2185	2001		AESTHETIC PEDESTRIAN RAILING DOLLARS and CENTS	LF	1,715.000	41
	2233	2002		LIGHTED TOWER (60') DOLLARS and CENTS	EA	4.000	42

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	2233	2003		LIGHTED TOWER (80') DOLLARS and CENTS	EA	1.000	43
	2233	2004		LIGHTED TOWER (100') DOLLARS and CENTS	EA	1.000	44
	4628	2001		AESTHETIC WALL - FREESTANDING DOLLARS and CENTS	LF	13.000	45
	6834	2002	002	PORTABLE CHANGEABLE MESSAGE SIGN DOLLARS and CENTS	EA	5.000	46
	8888	2001		DECOR MEDALLION ASSM W/LED BACK- LIGHT 2' DOLLARS and CENTS	EA	16.000	47

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GENERAL NOTES:

General Requirements

References to manufacturer's trade name or catalog numbers are for the purpose of identification only. Similar materials from other manufacturers are permitted if they are of equal quality, comply with the specifications for this project, and are approved by the Engineer, except for roadway illumination, electrical, and traffic signal items which shall come from the approved source list.

The cost for materials, labor, and incidentals to provide for traffic across the roadway and for ingress and egress to private property in accordance with Section 7.7 of the Standard Specifications is subsidiary to the various bid items.

Procure permits and licenses, which are to be issued by the City, County, or Municipal Utility District.

Scope of contract and sequence of work

This Contract includes work consisting of aesthetic bridge railing, cleaning/painting bridges, accent lighting and construction of aesthetic towers.

Upon issuance of a work order by the Department, submit for approval, a proposed sequence of construction, to which changes will not be permitted unless approved in writing.

Provide vehicular and pedestrian access at all times, including Saturdays, Sundays, and holidays. This access includes, but is not limited to, driveways, streets, parking areas, and walkways. This requirement is subsidiary to the various bid items.

Existing pavement, utilities, structures, etc., damaged as a result of the operations, will be repaired at no additional cost to the Department.

Do not leave vehicles, equipment or material within 30 feet of any mainlane nor within 9 feet of any service roads when not in use.

Maintain traveled surfaces used in hauling operations clear and free of dirt or other material.

When moving or crossing equipment on public highways, protect pavement from damage as directed.

Maintain the entire project area in a neat, orderly manner throughout duration of the project.

Become familiar with the project site prior to submitting bids.

Schedule and perform work to assure proper drainage during the course of construction operations. All labor, tools, equipment, and supervision required to assure such drainage and any removal or handling of

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water in order to maintain dry conditions shall be considered incidental work to various bid items on the project.

Roadway Illumination and Electrical

For roadway illumination and electrical items, use materials from pre-qualified producers as shown on the Department's Material Producers list Construction Division (CST) website. Check the latest link on the TxDOT website for this list. The category/item is "Roadway Illumination and Electrical Supplies." No substitutions will be allowed for materials found on this list.

Perform electrical work in conformance with the National Electrical Code (NEC) and Department standard sheets.

The Contractor may make the electrical grounding connections and permissible splices using the thermal fusion process, Cadweld, Thermaweld or approved equal, instead of bolted connections and splices.

The Area Engineer will arrange with the Contractor, an inspection of the completed electrical systems for the highway lighting systems before final acceptance for compliance with plans and specifications. The inspection will be made with personnel from the Electrical section of the Department's District Transportation Operations Office. The city's electrical division personnel will also inspect lighting systems within the city limits. Portions of the work found to be deficient during this inspection will not be accepted.

Utilities

Consider the locations of underground utilities depicted in the plans as approximate and employ responsible care to avoid damaging utility facilities. Depending upon scope and magnitude of planned construction activities, advanced field confirmation by the utility owner or operator may be prudent. Where possible, protect and preserve permanent signs, markers, and designations of underground facilities.

If the Contractor damages or cause damage (breaks, leaks, nicks, dents, gouges, etc.) to the utility, contact the utility facility owner or operator immediately.

ITEM 6 – CONTROL OF MATERIALS

Comply with Buy America provisions as listed in 23 CFR 635.410, for all new materials including ornamental fence.

ITEM 7 - LEGAL RELATIONS AND RESPONSIBILITIES TO THE PUBLIC

Maintain access to adjacent property at all times.

ITEM 8 – PROSECUTION AND PROGRESS

There are two main construction phases in this Contract as follows:

1. CSJ 2121-02-152 – IH 10 Bridge Enhancements

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- a. Complete in **138** Working Days, in accordance with Section 8.3.A.3. “Seven-Day Workweek.”
2. CSJ 2121-02-155 – IH 10/US 54 Renovation Phase III.
 - a. Complete in **80** Working Days, in accordance with Section 8.3.A.2. “Standard Workweek.”

There is a suggested sequence of construction defined for this project; however, a milestone has been established for CSJ 2121-02-152. Adhere to the special provisions amended for this project.

ITEM 9 – MEASUREMENT AND PAYMENT

Submit Material On Hand (MOH) payment requests at least **three (3)** working days before the end of the month for payment consideration on that month's estimate.

ITEM 104 – REMOVING CONCRETE

All work required to saw-cut the existing pavement, concrete sidewalks, driveways, etc., as shown on the plans, or as directed, will not be paid for directly, but shall be considered subsidiary to this item.

All items removed under this Item shall become the property of the Contractor.

ITEM 420 – CONCRETE STRUCTURES

Unless otherwise noted, use Class C concrete with an ordinary surface finish for signal, lighting, or sign structure foundations.

ITEM 446 – CLEANING AND PAINTING STEEL

Clean and paint all areas noted in the scope of work and in accordance with the following:

Clean and paint all steel (except any steel areas specifically identified in the plans as not to be cleaned or painted) in accordance with Item 446, “Cleaning and Painting Steel,” and SSPC-PA 1, “Shop, Field, and Maintenance Painting.” Estimated quantities shown are for bidding purposes only.

Only one paint manufacturer will be allowed to supply the coatings for the entire project. Supply either of the following approved one-coat maintenance coatings:

- a. Carbomastic 15
- b. SiCoat 579
- c. Eneseal CR

The contractor shall tint the proposed color to match the existing bridge paint color. The proposed paint color shall be selected from the Federal Standard Colors. Proposed paint color samples to be submitted to owner for approval before paint purchase.

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Follow all written recommendations as indicated on manufacturer's data sheets including but not limited to shelf life, mixing and thinning, pot life, handling and storage, recoat windows, thicknesses of coat(s) applied, and curing times between coats. Do not use partial mixes.

The existing paint system contains hazardous materials including but not limited to lead based paint. Comply with all applicable federal, state, and local regulations related to worker, public, and environmental health and/or safety.

Provide a copy of the Quality Control Plan before beginning work and copies of all quality control documentation prepared in accordance with SSPC certification requirements not more than 24 hours after the completion of each workweek.

Submit the following for approval prior to the pre-construction conference. No work may commence until these plans are submitted and approved by the Engineer. Engineer's approval of Contractor's submittals does not relieve Contractor of requirement to comply with project specifications.

- a. Containment system plan and engineering analysis (w/ Texas P.E. seal);
- b. Waste management plan (incl. storage and disposal);
- c. Environmental and health safety plan;
- d. Paint removal/application plan;
- e. Paint material product data sheets and MSDS;
- f. Inclement weather contingency plan (e.g., containing waste during severe weather);
- g. Coating repair procedure.
- h. SSPC QP1 and QP2 certification

Construct a containment system in accordance with SSPC Guide 6 "Guide for Containing Debris Generated During Paint Removal Operations." Approval of the constructed containment system is required before cleaning or painting operations begin, or to restart after a work stoppage. Construct a structure meeting the following minimum requirements:

- a. Rigid floor system formed from 20 gauge (min) steel
- b. Capable of withstanding winds of at least 45 MPH
- c. Enclosed on all sides with full-height side walls
- d. Watertight, and contoured to eliminate ponding
- e. Meet SSPC Guide 6, Level 1 emissions
- f. Meet SSPC Guide 6, Class 2W requirements
- g. Illuminate for inspection per SSPC Guide 12
- h. Maintain coordinated foot clearance above the roadway at all times
- i. A system for collection, storage and proper disposal of all water, paint chips and other debris or waste.

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Provide initial cleaning to all steel prior to any other work per SSPC-SP 1, to remove grease-like contaminants and SSPC-SP WJ-4 waterjet cleaning of metals-light cleaning to remove salts, loose rust and paint, or other foreign matter that may be spread or imbedded in steel profile by subsequent cleaning operations.

Provide SSPC-SP 11 (Power Tool Cleaning to Bare Metal) to all rusted surfaces. Provide a minimum 2 mil anchor profile.

Feather the edges of all tightly adhering existing paint that surrounds either powertool cleaned steel or exposed existing primer.

Apply 4-10 mils of the maintenance overcoat to all steel surfaces.

Provide safe access to allow verification of compliance for all work that will be concealed from inspection by subsequent work at hold-points (to be established at the preconstruction meeting). No work may proceed beyond established hold-points until the Engineer has reviewed the work and provided interim approval of the work. To uncover evidence of improperly applied paint the Engineer may, at any time during construction, explore underneath the surface of any paint coats already applied. Repair areas of destructive testing at no additional expense to the Department. Provide the following hold points (at a minimum):

- a. After any surface preparation operation;
- b. Immediately prior to coating application;
- c. After coating application;
- d. After each coat of paint has cured; and,
- e. After preparation of areas to be repaired.

The sequence of work to be performed shall be as follows:

- a. Grease and contaminant removal per SSPC-SP1 and SSPC-SP WJ-4 waterjet cleaning to all steel surfaces.
- b. SSPC-SP 11 surface preparation of rusted areas only and feathering of all paint edges.
- c. Application of maintenance overcoat to all steel surfaces.

Final acceptance of the applied paint system occurs at the end of the project. Any defective areas such as: areas with pinholes, blisters, mud cracking, bubbling, peeling; imbedded debris or other contamination; areas with spot, pinpoint, or general rusting; areas where paint has been applied improperly, applied to improperly cleaned surfaces, fails to cure properly, fails to adhere tightly to underlying metal; or areas displaying other evidence that the work is out of compliance with the specification must be repaired or replaced at no additional expense to the Department.

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ITEM 502 – BARRICADES, SIGNS, AND TRAFFIC HANDLING

Provisions will be made for the safe crossing of the general public through the work area. Use the current Texas M.U.T.C.D (Part VI, Section 6B.01), and to the traffic control plan sheets for guidance in pedestrian control.

Construction shall be phased so that traffic will have access to intersecting side roads and driveways at all times, unless otherwise directed.

For any change to the sequence of work or traffic control plan, with approval, Contractor assumes the responsibility for any additional barricade signs and devices.

Furnishing, placement, relocation and removal of plastic-mesh pedestrian fencing required in the traffic control plans, or as directed, will be subsidiary to this item. All such fencing will be orange in color and 4 ft. high with 4 ft. metal t-posts placed at approximately 10 ft. spacing, as approved.

Use uniformed law enforcement officers when directed. Rates for law enforcement officers and marked vehicles shall be invoiced plus 5%.

All special signs including M4-12T signs, and all detour signing, on the traffic control plan, will be subsidiary to this Item or as directed.

Sheeting used for all signs, barricades, channelizing devices and construction warning signs must conform to Departmental Material Specification 8300.

Use flaggers when required. Provide intercommunication between flaggers.

Place and maintain sufficient additional warning signs, beacons, delineators and barricades to warn and guide the public of all hazards through the construction zone at all times, and as directed.

Flashing arrow boards will be used on all tapers for each lane closure.

Some signs, barricades and channelization devices may not be shown at the precise or measured position. Place the barricades, devices, and/or signs, with approval, in positions to meet field conditions.

Any existing regulatory signs, route marker auxiliaries, guide signs and warning signs that must be removed due to construction shall be relocated temporarily and erected on approved supports at locations shown in the plans or as directed. This work will not be paid for directly, but will be considered subsidiary to this Item.

Lane closures along I-10 are only allowed between 9:00 P.M. to 5:00 A.M. from Sunday thru Thursday, unless otherwise approved. Contractor shall inform the Area Engineer in advance of any lane closures.

Use Type “A” flashing warning lights and/or delineators to mark open excavation, footings, foundations, or other obstructions near lanes that may be open to traffic, as directed.

Remove or cover signs that do not apply at the end of each day’s work.

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ITEM 618 – CONDUIT

When backfilling bore pits, ensure that the conduit is not damaged during installation or due to settling backfill material. Compact select backfill in 3 equal lifts to the bottom of the conduit; or if using sand, place it 2 in. above the conduit. Ensure backfill density is equal to that of the existing soil. Prevent material from entering the conduit.

Construct bore pits a minimum of 5 ft. from the edge of the base or pavement. Close the bore pit holes overnight.

Unless shown on the plans, install underground conduit a minimum of 24 in. deep. Install the conduit in accordance with the latest national electrical code (NEC) and applicable Department standard sheets. Place conduit under driveways or roadways a minimum of 24 in. below the pavement surface.

If using casing to place bored conduit, the casing is subsidiary to the conduit.

If placing the conduit under existing pavement to reach the service poles, bore the conduit in place and extend it a minimum distance of 5 ft. beyond the edge of shoulder or the back of curb.

Where PVC, duct cable, and HDPE conduit 1 in. and larger is allowed and installed per Department standards, provide a PVC elbow in place of the galvanized rigid metal elbow required by the electrical details standards. Ensure the PVC elbow is of the same schedule rating as the conduit to which it is connected. Use only a flat, high tensile strength polyester fiber pull tape to pull conductors through the PVC conduit system.

Remove conductor and conduit to be abandoned to 1 ft. below the ground level. This work is subsidiary to the various bid items.

Use materials from pre-qualified producers as shown on the Department's Construction Division (CST) Material Producers List. Check the latest links on the TxDOT website for the list. The category is "Roadway Illumination and Electrical Supplies." The polymer concrete barrier box is subsidiary to Item 618, "Conduit."

Locate the underground utilities within the project limits. Provide the equipment necessary for locating these utilities, locate, and mark them before starting any excavation work in the area. This work is subsidiary to the various bid items. Repair any damage done to any existing underground utilities at no cost to the Department.

Provide liquid-tight flexible metal (LTFM) conduit if the plans refer to flexible metal conduit. Do not use flexible metal conduit.

Unless otherwise shown on the plans, place conduit runs behind curbs at locations where curbs exist.

Use schedule 40 PVC conduit to house conductor runs under paved riprap, roadway, or driveways, unless otherwise shown on the plans.

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Use rigid metal conduit (RMC) for exposed conduit.

Conduit elbows and rigid metal extensions required when installing PVC conduit systems are subsidiary to the various bid items.

Install a continuous bare or green insulated copper wire no. 8 awg or larger in every conduit throughout the electrical system in accordance with the electrical detail standard sheets, and the latest edition of the NEC.

ITEM 620 – ELECTRICAL CONDUCTORS

Test each wire of each cable or conductor after installation. Incomplete circuits or damage to the wire or the cable are cause for immediate rejection of the entire cable being tested. Remove and replace the entire cable at no expense to the Department. Also test the replacement cable after installation.

When pulling cables or conductors through the conduit, do not exceed the manufacturer's recommended pulling tensions. Lubricate the cables or conductors with a lubricant recommended by the cable manufacturer.

For both transformer and shoe-base type illumination poles, provide double-pole breakaway fuse holders as shown on the Department's Construction Division (CST) Material Producers List. Check the latest link on the department website for this list. The category is "Roadway Illumination and Electrical Supplies." The fuse holder is shown on the list under Items 610 and 620. Provide 10 amp time delay fuses.

Ensure that circuits test clear of faults, grounds, and open circuits.

Split bolt connectors are allowed only for splices on the grounding conductors.

ITEM 624 – GROUND BOXES

The ground box locations are approximate. Alternate ground box locations may be used as directed, to avoid placing in sidewalks or driveways.

During construction and until project completion, provide personnel and equipment necessary to remove ground box lids for inspection. Provide this assistance within 24 hours of notification.

Construct concrete aprons in accordance with the latest standard sheet ED(3).

ITEM 628 – ELECTRICAL SERVICES

Furnish a UL-listed meter can for electrical service poles. Furnish a size and style of meter can in accordance with the requirements of the local electrical service provider. This work is subsidiary to the Item 628, "Electrical Services."

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Verify and coordinate the electrical service location with the Engineering section of the appropriate utility district or company.

Identify the electrical service pole with an address number assigned by the utility service provider. Provide 2-in. Numerals visible from the highway. Provide numbers cut out aluminum figures nailed to wood poles or painted figures on steel poles or service cabinets.

ITEM 1122 – TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL CONTROLS

Place Best Method Practices (BMP's) in locations as designated in the plans or as directed to meet field conditions.

Place a weatherproof bulletin board containing the Texas Commission on Environmental Quality (TCEQ) required information on the project at a site as directed. Post the following documents:

- (1) TCEQ "TPDES Storm Water Program" Primary & Secondary Construction Site Notice (Both must be filled out and signed);
- (2) TCEQ "TPDES Permit"
- (3) TCEQ "TPDES Certificate of Payment"

Place rain gauge(s) at locations as designated.

The total disturbed area for this project is 0.01 acres. The soil disturbed area in this project, all project locations in the Contract, and Contractor Project Specific Locations (PSLs), within one mile of the project limits, for the Contract will further establish the authorization requirements for Storm Water Discharges. The Department will obtain an authorization to discharge storm water from TCEQ for the construction activities shown on the plans. The Contractor is to obtain any required authorization from the TCEQ for any Contractor PSLs for construction support activities on or off right of way. When the total area disturbed for all projects in the Contract and PSLs within one mile of the project limits exceeds five acres, provide a copy of the Contractor NOI PSLs on the right of way to the Engineer (to the appropriate MS4 Operator when on an Off-system State route).

Place BMP's as shown on the plans, or as directed. Maintain and properly place the erosion control measures to prevent storm water pollution to the Waters of the United States, as directed. Within the project limits, keep all inlets functional as long as possible to accept storm water as part of the Storm Water Pollution Prevention Plan (SWP3), as directed.

Quantities are approximate and may be adjusted in the field as conditions dictate, as directed.

ITEM 6834 – PORTABLE CHANGEABLE MESSAGE SIGN

Provide and maintain five portable changeable message signs for the duration of the project.

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TEXAS DEPARTMENT OF TRANSPORTATION

GOVERNING SPECIFICATIONS AND SPECIAL PROVISIONS

ALL SPECIFICATIONS AND SPECIAL PROVISIONS APPLICABLE TO THIS PROJECT ARE IDENTIFIED AS FOLLOWS:

STANDARD SPECIFICATIONS: ADOPTED BY THE TEXAS DEPARTMENT OF
----- TRANSPORTATION JUNE 1, 2004.
STANDARD SPECIFICATIONS ARE INCORPORATED
INTO THE CONTRACT BY REFERENCE.

ITEMS 1 TO 9 INCL., GENERAL REQUIREMENTS AND COVENANTS
ITEM 104 REMOVING CONCRETE
ITEM 192 LANDSCAPE PLANTING (161)(166)
ITEM 403 TEMPORARY SPECIAL SHORING (423)
ITEM 423 RETAINING WALLS (110)(132)(400)(420)(421)(424)(440)(445)
(458)(556)
ITEM 427 SURFACE FINISHES FOR CONCRETE (420)
ITEM 429 CONCRETE STRUCTURE REPAIR (420)(421)(431)(440)
ITEM 432 RIPRAP (247)(420)(421)(427)(431)(440)
ITEM 438 CLEANING AND SEALING JOINTS AND CRACKS (RIGID PAVEMENT
AND BRIDGE DECKS)
ITEM 446 CLEANING AND PAINTING STEEL
ITEM 450 RAILING (420)(421)(424)(440)(441)(442)(445)(446)(448)
(540)
ITEM 500 MOBILIZATION
ITEM 502 BARRICADES, SIGNS, AND TRAFFIC HANDLING
ITEM 512 PORTABLE CONCRETE TRAFFIC BARRIER (420)(421)(424)(440)
(442)
ITEM 550 CHAIN LINK FENCE (421)(445)
ITEM 618 CONDUIT (400)(445)(476)(622)
ITEM 620 ELECTRICAL CONDUCTORS
ITEM 624 GROUND BOXES (420)(421)(432)(440)(618)(620)
ITEM 628 ELECTRICAL SERVICES (441)(445)(449)(618)(620)(627)(656)
ITEM 662 WORK ZONE PAVEMENT MARKINGS (666)(668)(672)(677)
ITEM 740 GRAFFITI REMOVAL AND ANTI-GRAFFITI COATING (427)(446)
ITEM 784 REPAIRING STEEL BRIDGE MEMBERS (421)(441)(442)(446)(448)
(780)

SPECIAL PROVISIONS: SPECIAL PROVISIONS WILL GOVERN AND TAKE

----- PRECEDENCE OVER THE SPECIFICATIONS ENUMERATED
HEREON WHEREVER IN CONFLICT THEREWITH.

REQUIRED CONTRACT PROVISIONS, FEDERAL-AID CONSTRUCTION CONTRACTS
(FORM FHWA 1273, MAY, 2012)

WAGE RATES

SPECIAL PROVISION "NOTICE TO ALL BIDDERS" (000---003)
SPECIAL PROVISION "NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO
ENSURE EQUAL EMPLOYMENT OPPORTUNITY" (000---004)
SPECIAL PROVISION "STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY
CONSTRUCTION CONTRACT SPECIFICATIONS" (000---006)
SPECIAL PROVISION "CERTIFICATION OF NONDISCRIMINATION IN EMPLOYMENT"
(000---009)
SPECIAL PROVISION "DEPARTMENT DIVISION MAILING AND PHYSICAL ADDRESS"
(000---011)
SPECIAL PROVISION "NOTICE OF CHANGES TO U.S. DEPARTMENT OF LABOR
REQUIRED PAYROLL INFORMATION" (000--1483)
SPECIAL PROVISION "DISADVANTAGED BUSINESS ENTERPRISE IN FEDERAL AID
CONTRACTS" (000--1966)
SPECIAL PROVISION "PARTNERING" (000--2329)
SPECIAL PROVISION "SCHEDULE OF LIQUIDATED DAMAGES" (000--2332)
SPECIAL PROVISION "NONDISCRIMINATION" (000--2607)
SPECIAL PROVISION "IMPORTANT NOTICE TO CONTRACTORS" (000--2839)
SPECIAL PROVISION "ON-THE-JOB TRAINING PROGRAM"
(000--2638)
SPECIAL PROVISION TO ITEM 1 (001---015)
SPECIAL PROVISION TO ITEM 2 (002---017)
SPECIAL PROVISION TO ITEM 3 (003---033)
SPECIAL PROVISION TO ITEM 4 (004---017)
SPECIAL PROVISION TO ITEM 5 (005---004)
SPECIAL PROVISIONS TO ITEM 6 (006---030)(006---047)
SPECIAL PROVISION TO ITEM 7 (007---918)
SPECIAL PROVISIONS TO ITEM 8 (008---119)(008---163)
SPECIAL PROVISIONS TO ITEM 9 (009---009)(009---015)
SPECIAL PROVISION TO ITEM 161 (161---006)
SPECIAL PROVISION TO ITEM 420 (420---002)
SPECIAL PROVISION TO ITEM 421 (421---035)
SPECIAL PROVISION TO ITEM 424 (424---003)
SPECIAL PROVISION TO ITEM 431 (431---001)
SPECIAL PROVISION TO ITEM 440 (440---006)
SPECIAL PROVISION TO ITEM 441 (441---008)
SPECIAL PROVISION TO ITEM 442 (442---016)
SPECIAL PROVISION TO ITEM 448 (448---002)
SPECIAL PROVISION TO ITEM 450 (450---001)
SPECIAL PROVISION TO ITEM 476 (476---003)
SPECIAL PROVISION TO ITEM 500 (500---011)
SPECIAL PROVISION TO ITEM 502 (502---033)
SPECIAL PROVISION TO ITEM 512 (512---002)
SPECIAL PROVISION TO ITEM 540 (540---031)
SPECIAL PROVISION TO ITEM 620 (620---001)
SPECIAL PROVISION TO ITEM 624 (624---014)
SPECIAL PROVISION TO ITEM 628 (628---003)
SPECIAL PROVISION TO ITEM 672 (672---034)

SPECIAL PROVISION TO ITEM 740 (740---001)
SPECIAL PROVISION TO SPECIAL SPECIFICATION ITEM 1122 (1122--001)
SPECIAL PROVISION TO SPECIAL SPECIFICATION ITEM 6834 (6834--002)

SPECIAL SPECIFICATIONS:

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- ITEM 1122 TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL CONTROLS (161)(432)(556)
 - ITEM 2185 AESTHETIC PEDESTRIAN RAILING
 - ITEM 2233 LIGHTED TOWER
 - ITEM 4628 AESTHETIC WALL - FREESTANDING
 - ITEM 6834 PORTABLE CHANGEABLE MESSAGE SIGN
 - ITEM 8888 DECORATIVE MEDALLION ASSEMBLY W/LED BACKLIGHTING

GENERAL: THE ABOVE-LISTED SPECIFICATION ITEMS ARE THOSE UNDER WHICH
----- PAYMENT IS TO BE MADE. THESE, TOGETHER WITH SUCH OTHER
PERTINENT ITEMS, IF ANY, AS MAY BE REFERRED TO IN THE ABOVE-
LISTED SPECIFICATION ITEMS, AND INCLUDING THE SPECIAL
PROVISIONS LISTED ABOVE, CONSTITUTE THE COMPLETE SPECIFI-
CATIONS FOR THIS PROJECT.

SPECIAL PROVISION

450---001

Railing

For this project, Item 450, "Railing," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 450.2. Materials is supplemented with the following:

Where epoxy anchors are allowed or required, provide an approved Type III, Class C epoxy in accordance with DMS-6100, "Epoxies and Adhesives," for installing drilled and epoxied rail anchorage reinforcement or rail anchor bolts. Use other materials if shown in the plans. Provide only dual cartridge epoxy systems mixed with a static mixing nozzle supplied by the epoxy adhesive manufacturer and dispensed with a tool supplied by the epoxy adhesive manufacturer. Do not use bulk epoxies. Drill and install anchorage reinforcement or anchor bolts to the embedment depth shown in the plans or the depth recommended by the manufacturer, whichever is deeper. No additional payment will be made for providing embedment deeper than shown in the plans. If no resistance or embedment depth is specified in the plans, select an embedment depth capable of developing the yield strength of the steel anchor.

Article 450.3. Construction, Section B. Concrete Railing. The last paragraph is voided and replaced by the following:

Obtain approval to slipform railing. Slipforming equipment must be approved. Do not slipform railing with cast-in-place anchor bolts unless noted otherwise. Provide additional reinforcing, at Contractor's expense, as needed to prevent movement of the reinforcement cage. Clear cover and epoxy coating requirements for additional reinforcement are the same as shown for the rail reinforcement. The rail reinforcing cage may be tack welded to the rail anchorage reinforcement provided the rail and anchorage reinforcement are not epoxy coated and weld locations measured along the rail are no closer than 3 ft. If epoxy coated reinforcement is required for the railing proposed to be slipformed, tie all bar intersections. Provide a wire line to maintain vertical and horizontal alignment of the slipform machine. Attach a grade line gauge or pointer to the machine so a continuous comparison can be made between the rail being placed and the established grade line. Rails or supports at the required grade are allowed instead of sensor controls. Prior to placing concrete, make one or more passes with the slipform over the rail segment to ensure proper operation and maintenance of grades and clearances. Provide slipformed rail within a vertical and horizontal alignment tolerance of +/- 1/4 in. in 10 ft. Construct rail with a smooth and uniform appearance. Consolidate concrete so it is free of honeycomb. Provide concrete with a consistency that will maintain the shape of the rail without support. Minimize starting and stopping of the slipform operation by ensuring a continuous supply of concrete.

Do not exceed the manufacturer's recommended speed for the slipform machine. If slipforming causes movement of the reinforcement such that plan clearances are not achieved, stop slipforming and take remedial action. Remove and replace unsatisfactory slipformed rail at the Contractor's expense.

Install epoxy adhesive anchorages in accordance with the manufacturer's instructions including hole size, drilling equipment and method, hole cleaning equipment and method, mixing and dispensing epoxy, and anchor insertion. Do not alter the manufacturer's mixing nozzle or dispenser. Anchorage bars or bolts must be clean and free of grease, oil, or any other foreign material. Do not weld to an anchor bar or anchor bolt that is anchored with epoxy adhesive. Do not expose rail to traffic until epoxy adhesive has cured.

Article 450.3. Construction, Section C. Tests is supplemented with the following:

The Engineer will select three anchor bars or bolts of the first day's production to be tested after the epoxy has cured. Test the bars or bolts in the presence of the Engineer in accordance with ASTM E 1512, using a restrained test, to evaluate the epoxy adhesive's bond strength. Verify that the anchor bars or bolts develop the required pullout resistance in the plans or 75 percent of the yield strength of the bars or bolts, whichever is less, without a bond failure of the epoxy. The Engineer may require additional tests during production. If any of the tests do not meet the required test load, perform corrective measures to provide adequate capacity. Repair damage from testing.

Article 450.5. Payment is voided and replaced with the following:

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Railing" of the type specified. This price will be full compensation for furnishing, preparing, and placing concrete, expansion joint material, reinforcing steel, structural steel, aluminum, cast steel, pipe, anchor bolts or bars, testing of epoxy anchors, and all other materials required in the finished railing; removal and disposal of salvageable materials; and hardware, paint and painting of metal railing, galvanizing, equipment, labor, tools, and incidentals.

SPECIAL SPECIFICATION**2233****Lighted Tower**

- 1. Description.** Furnish, construct and install lighted towers consisting of painted precast or cast in place structural panels, foundation of drilled concrete piers, reinforced cast-in-place concrete pier cap foundation plinth, exterior stone cladding (local native stone), cast stone caps, concrete masonry units (CMU), mortar and grout, reinforcing steel, masonry joint reinforcement, ties and anchors, miscellaneous masonry accessories, exterior formed-metal-shaped panels (Ornamental Formed Metal), door with integral frame and hardware, light fixtures mounting brackets, and interior ladder for a complete design of a tower with light fixtures as detailed per the drawings.
- 2. Materials.** Use materials conforming to the pertinent requirements of the following Standard Specification Items:

Item 400, "Excavation and Backfill for Structures"
Item 416, "Drilled Shaft Foundations"
Item 420, "Concrete Structures"
Item 424, "Precast Concrete Structures (Fabrication)"
Item 427, "Surface Finishes For Concrete"
Item 440, "Reinforcing Steel"
Item 441, "Steel Structures"
Item 442, "Metal for Structures"
Item 445, "Galvanizing"
Item 446, "Cleaning and Painting Steel"
Item 616, "Performance Testing of Lighting Systems"
Item 618, "Conduit"
Item 620, "Electrical Conductors"
DMS – 4640 "Chemical Admixtures for Concrete"
DMS – 6100 "Epoxies and Adhesives"
DMS – 6310 "Joint Sealants and Fillers"

Construct concrete elements using Class "F" concrete with $f'_c = 4000$ psi minimum.

Use approved joint fillers, grout, and other incidental materials as shown on the plans.

Ensure fixtures are UL-listed; meet NEMA, NEC, and the Electrical Detail standard sheet requirements.

A. Lighted Tower custom materials.

- A.** Provide local stone from the local area, 3”-5” thick saw-cut chop stone (pattern “random ashlar coursing”) that complies with ASTM C 568 to sizes and thicknesses shown on the drawings. Stone shall match or be coordinated with the stone used in the landscaping portion of the project. Provide stainless steel fasteners (stone anchors) complying with No. 200 corrugated buck anchor 16” oc, length as required to project $\frac{3}{4}$ way into the masonry joint; Width to be 2”; 16” gauge mill galvanized with 2’ bend and staggered $\frac{3}{16}$ ” holes; Stainless Steel as shown on the drawings. Provide Portland Cement-Lime Setting Mortar complying with ASTM C 270, Proportion Specification. Set limestone with Type N mortar. Point limestone with Type N mortar.
- B.** Provide Concrete Masonry Units that comply with ASTM C 90. Provide units with minimum average net-area compressive strength of 1900 psi. Provide units with a Lightweight classification manufactured to dimensions $\frac{3}{8}$ in. less than nominal sizes as shown on drawings.
- C.** Provide packaged blend Hydraulic cement complying with ASTM C 150, Type I or Type III, and hydrated lime complying with ASTM, Type S. Provide aggregate for mortar that complies with ASTM C 144.
- D.** Provide masonry joint reinforcement complying with ASTM A 951 that is hot-dip galvanized, carbon steel W1.7 for multiwythe masonry with adjustable (2-piece), either ladder or truss design, with one side rod at each face shell of backing wythe and with separate ties that extend into facing wythe. Ties have 2 hooks that engage eyes or slots in reinforcement and resist movement perpendicular to wall. Ties have hooks or clips to engage a continuous horizontal wire in the facing wythe.
- E.** Cast Stone Materials shall comply with ASTM C 1364 and Hydraulic cement to comply with ASTM C Type I, containing not more than 0.60% total alkali when tested according to ASTM C114. Coarse aggregates granite, quartz, or limestone shall comply with ASTM C 33, gradation as needed to produce required textures and colors, fine aggregates natural sand or crushed stone complying with ASTM C 33 gradation as needed to produce required textures and colors. Reinforce with deformed bars complying with ASTM A 615/A 615M. Use galvanized or epoxy-coated reinforcement when covered with less than 1-1/2 in. of cast stone material. Epoxy coating complying with ASTM A 775/A 767M.
- F. Lighted Tower Lantern Cap** shall be a fabricated unit, formed of steel shapes fully welded, all joints ground smooth & hot-dipped galvanized per Item 445; glazing shall be laminated composite glass sheets with a frosted color and PVB interlayer cut and fitted into galvanized framing with neoprene gaskets to form a water-tight assembly. Provide a fabricated star of galvanized steel coating prior to mounting to the top of lantern (coordinate star fabrication with lightning protection aerial). Units are referenced on the drawings.

- G.** Glass Panes/Sheets shall be frosted laminated glass consisting of 3mm(1/8”) thick heat strengthen float glass bonded each side to a frosted color and 1.59mm(1/16”) PVB interlayer to produce a single sheet of safety glass; minimum composite thickness of 7.94 mm(5/16”).

Glass shall comply with ASTM C 1036, Type I, Class 2, Quality Q3 and ASTM C 1048 and 16 CFR 1201 test requirements for Category II; panes shall be individually cut to shape to fit steel framed openings.

- H. Illumination of Tower and Lantern** shall be with electrical fixtures of the following types listed below. At each group of towers, the external & internal illumination sets shall be controlled together. System shall be coordinated with the current roadway illumination system. Illumination system shall be a complete design, production & installation of an exterior lighted tower with the “tower lantern cap” illuminated internally including the control system inside the base of the structural tower.

- a. Exterior illumination shall be high intensity spot light fixtures mounted at grade of tower base and at fixed points on cast stone shelves of tower structure.
- b. Lantern illumination shall be LED Light inside the base of the tower structure (floor light fixtures as specified in the plans.
- c. Ensure fixtures are UL-listed; meet NEMA, NEC, and the Electrical Detail standard sheet requirements.
- d. All lighting fixtures shall comply with the most recent City of El Paso Outdoor Lighting Ordinance.

3. General Requirements.

Submission & Verification. All materials and equipment used to construct this item shall be submitted to the Engineer for approval prior to ordering the equipment and beginning work. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify pertinent products or models applicable to this project. Indicate all optional equipment and delete non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment for which they apply on each submittal sheet. Markings shall be boldly and clearly made with arrows or circles (highlighting is not acceptable). Contractor is solely responsible for delays in project accruing directly or indirectly from late submissions or resubmissions of submittals.

Lightning Protection Requirements. Lightning protection shall comply with NFPA-780, Standard for the Installation of Lightning Protection Systems. All materials shall comply with Class II requirements regardless of tower height. Ground rods and underground cables shall be installed in accordance with and paid for as described in Item L-108, Underground Power Cable for Airports.

Grounding anode shall be concealed and set into the ground adjacent to the tower base. Lighting protection shall be a complete design, production & installation of the protection system.

4. Documentation and Fabrication.

A. Shop Drawings. Prior to fabricating, prepare and submit shop drawings. Submit drawings on 11 in. x 17 in. size sheets. Submit 7 sets of shop drawings for each detail of the plans. Ensure drawings reflect the shape and dimension of components, the size, quantity and details of the cut stone, concrete masonry units, face brick, ornamental formed metal, tower lantern cap, laminated glazing, and the light fixtures, the quantity, type, size and details of connection and hardware, and any necessary additional details. Include all information needed to construct the elements, construction procedure for connecting the elements of the Obelisk to its footing. Upon completing construction, submit 1 set of reproducible as-built drawings.

B. Samples.

1. Samples. Contractor to provide samples of all stone, masonry, paint, glass panes before construction of the towers. Samples shall be approved prior to production of architectural design elements. Samples shall be considered subsidiary to the "Lighted Towers" Item.

5. Construction Methods. Construct elements conforming to the design and details shown on the plans and to the pertinent requirements of the following Items:

Item 420, "Concrete Structures"

Exercise care while constructing elements. Contractor shall have provisions for repairing elements that are damaged. These provisions should be provided to the Engineer before the repair is made. Final acceptance of any repairs shall be at the discretion of the Engineer.

A. Erection. Detail erection drawings furnished by the manufacturer shall be strictly followed during construction. All towers shall be erected in sections from the ground up unless otherwise specified. In final assembly, all bolts and fastenings shall be installed, and the structure shall be plumb, true, square, and level. Nuts shall be taken up to a firm bearing after which the bolts shall, if necessary, be cut to proper length to protrude three full threads. Approved locknuts shall be placed on each bolt over the regular nut. Ladder bolts shall be inserted with the head to the outer face of the tower. Diagonal, leg, and handrail bolts shall be installed with nuts on the outer face of the tower, unless otherwise specified. Bent parts shall be straightened before erection without damage to the protective coating. Surfaces abraded or bared of protective coating shall be painted with the proper priming paint as specified in these specifications.

- B. Lightning Protection.** The Contractor shall furnish and install an air terminal, down conductor, and at least one ground plate or rod for each tower or as indicated in the plans. The air terminal shall be installed at the top of the tower with the tip of the rod extending not less than 12 in. (300 mm) above the top of the tower (three dimensional star).
- C. Painting.** The Contractor shall furnish all materials and labor for painting the exposed precast concrete tower structure.
- 1. Color Scheme Coordination:** The color scheme for the steel tower shall be as coordinated with the finished color selections used for other components of this project.
 - 2. Finishes and Colors.** Refer to the drawing for specific color palette (for each component) with color designations and location & extent of color finish and area.

Coordinate decorative luminaire mounting details with Architect and Tower construction contractor for typical Tower Lighting Assembly as shown on the plans. Submit mounting details for Department / Architect / Engineer approval.

- 6 Measurement.** This Item will be measured by each Tower installed complete with the specified lighting fixtures and drill shaft foundations as specified in the plans.
- 7, Payment.** The work performed and material furnished in accordance with this Item and measured as provided for under "Measurement" will be paid for at the unit price bid for "Lighted Tower." This price is full compensation for furnishing, and installing materials; for element manufacturing, hauling and erection; and for labor, tools, equipment and incidentals and for furnishing, installing, and testing lighting fixtures; tower, ballasts, lamps, leds, led drivers, transformers, internal conductors, conduit in the tower, junction boxes and connections; system performance testing; and equipment, labor, tools, and incidentals. New concrete riprap placed around foundations will be paid for under Item 432, "Riprap." New conduit, except the conduit in the tower, will be paid for under Item 618, "Conduit." New conductors, except the conductors internal to the tower, will be paid for under Item 620, "Electrical Conductors." New duct cable will be paid for under Item 622, "Duct Cable." New ground boxes will be paid for under Item 624, "Ground Boxes." New electrical services will be paid for under Item 628, "Electrical Services."