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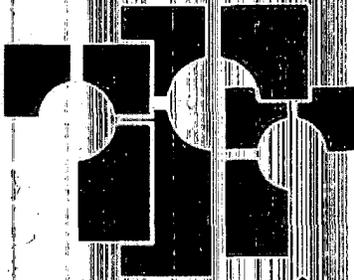
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04/12/2016

# PROJECT SPECIFICATIONS AND CONTRACT DOCUMENTS

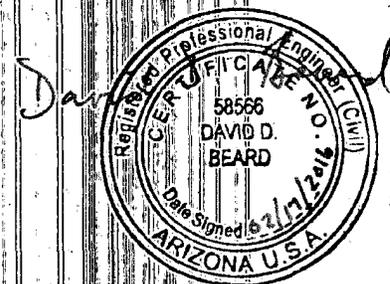
PROJECT NO. 151614

P1 PARKING, 91ST & MARYLAND AVENUES

FEBRUARY 2016



GLENDALÉ



Expires: 09/30/2017

CITY OF GLENDALE

ENGINEERING DEPARTMENT

5850 W. Glendale Avenue, Glendale, Arizona 85301 (623) 930-3630

# PROJECT SPECIFICATIONS AND CONTRACT DOCUMENTS

## **MAYOR**

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Pamela Hanna

## **CITY ENGINEER**

David D. Beard





# Engineering Department

# Memorandum

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DATE: March 2, 2016  
TO: All Plan and Specification Holders  
FROM: Engineering  
SUBJECT: PROJECT 151614 - P1 PARKING, 91ST & MARYLAND AVENUES

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## ADDENDUM NO. 3

In accordance with the contract documents "Information for Bidders," Page 4, Paragraph 12 CHANGES TO PLANS AND DOCUMENTS, the following revisions to the plans and specifications shall become a part of the contract documents and the bidder shall acknowledge receipt thereof as directed in Paragraph 13 of the Information for Bidders.

### CHANGES TO SPECIFICATIONS

#### Alt #2-1 – Turf Installation and Irrigation System

Attached is the drawing for Item Alt#2-1

#### Disposal of Debris and Clean Fill at City of Glendale Landfill

Attached is a revised map of the landfill showing the locations where the clean material shall be delivered. The times on the map have been changed to match the text in Addendum #2. Please disregard the map that was provided in Addendum #2.

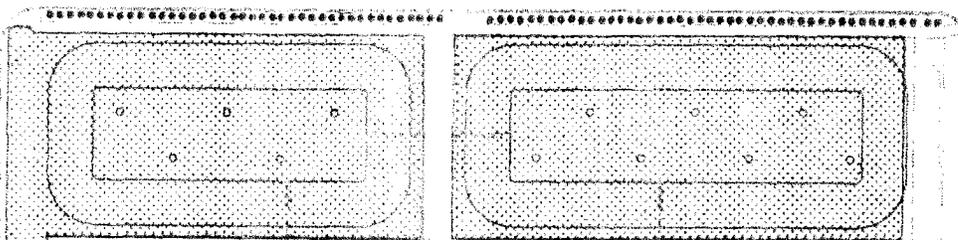
END OF ADDENDUM

THIS ADDENDUM CONSISTS OF 3 PAGES INCLUDING THE COVER PAGE



Expires: 09/30/2017

6250 ACCESS DRIVE

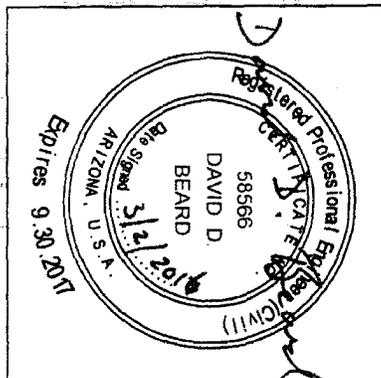


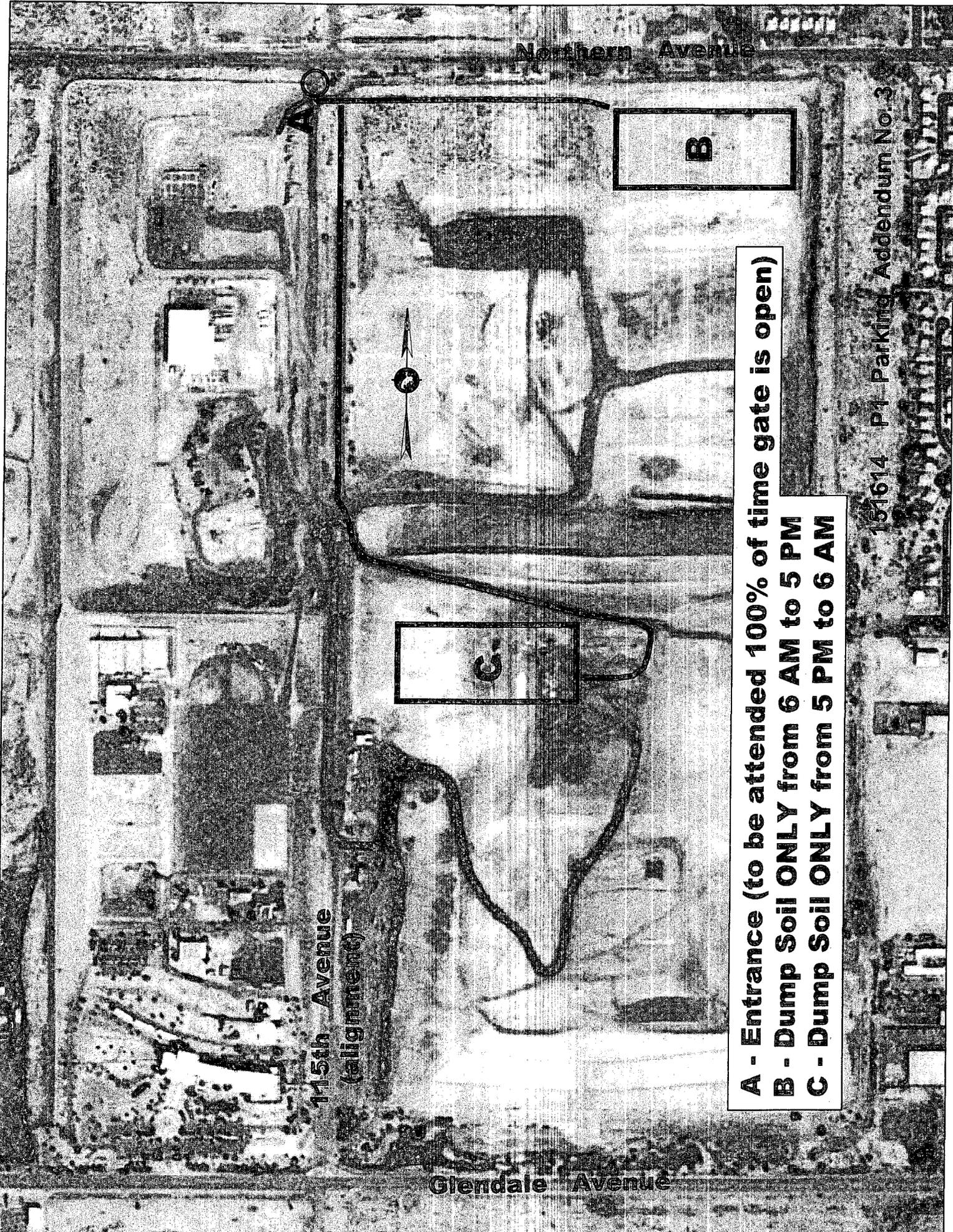
**Bid Alternate No. 2**

Area to be Seeded = 112,400 S.F. = 2.58 Acres  
Hydro-mulched Bermuda Seed - athletic field mix  
(seed, fertilizer and wood mulch), apply 215 lbs. seed/Acre  
Service line to be sized by contractors Landscape Architect  
12" waterline in 91st Ave., 20' west of monument line  
Trench Pavement Replacement Per MAG Std Dtl 200-1 "T-Top"  
Tapping Sleeve, Valve Box and Cover  
Meter

Back Flow Preventer with Cage/Guard Posts  
Gate Valves 2 1/2" and Smaller - Brass, 3" and Larger - Cast Iron  
Owner side of meter - Mainline Pipe, P.V.C. Class 200 Rubber Gasketed, 4" and Smaller Schedule 40 P.V.C.  
Controller (automatic), including Protected power source - Motorola® Irt-net, M Model, Scorpio ready  
Pressure Reducer - Febco®  
Electric Control Valves - Hunter® ICV Series  
Sprinkler heads - Hunter® 1-40 Series  
Contractor to Maintain a vegetation establishment period of 1 Year from acceptance

91st Avenue





Northern Avenue

115th Avenue  
(alignment)

Glendale Avenue

A

B

C



**A - Entrance (to be attended 100% of time gate is open)**  
**B - Dump Soil ONLY from 6 AM to 5 PM**  
**C - Dump Soil ONLY from 5 PM to 6 AM**

151614 P1 Parking Addendum No. 3



## Engineering Department

# Memorandum

---

DATE: March 1, 2016  
TO: All Plan and Specification Holders  
FROM: Engineering  
SUBJECT: PROJECT 151614 - P1 PARKING, 91ST & MARYLAND AVENUES

---

### ADDENDUM NO. 2

In accordance with the contract documents "Information for Bidders," Page 4, Paragraph 12 CHANGES TO PLANS AND DOCUMENTS, the following revisions to the plans and specifications shall become a part of the contract documents and the bidder shall acknowledge receipt thereof as directed in Paragraph 13 of the Information for Bidders.

#### CLARIFICATIONS

##### **Mandatory Pre-bid Sign-in Sheet**

Attached is the sign-in sheet from the Mandatory Pre-bid meeting held on February 25, 2016.

##### **Geotechnical – Preliminary Recommendations**

Attached are the preliminary recommendations from Ninyo and Moore.

##### **Disposal of Debris and Clean Fill at City of Glendale Landfill**

Disposal of debris from demolition and other activities shall be the responsibility of the Contractor. If this debris/material is delivered to the City of Glendale Landfill, all applicable fees will apply. If desired, the successful Contractor will be able to establish an account with the City of Glendale Landfill and take advantage of the automated scale.

All clean material (18" Top Material, Detention Basin Excavation, Mass Grading) removed from the site shall be delivered to the City of Glendale Landfill (no charge). The Landfill will be accessible from Northern Ave (north entrance). All materials, equipment, and labor to deliver and stockpile this material shall be the responsibility of the Contractor (see attached "Millings and Dirt Haulers - Standard Operating Procedures (SOP)").

Attached is a map of the landfill showing the locations where the clean material shall be delivered. The preferred location shall be at the top of South Cell (Location C). The secondary location shall be the borrow pit located at the northeast corner of the North Cell (Location B). No more than 50,000 CY of material may be delivered to the top of the South Cell (Location C) without approval of the Engineer.

24 hour access to the north entrance of City of Glendale Landfill for Hauling of clean material will be allowable; however, material delivered to the borrow pit (Location C) will be restricted to 6:00 am – 5:00 pm. Delivery of material to the top of the South Cell (Location B) will be restricted to 5:00 pm to 6:00 am.

## **Bollard Installation**

### **Item #16 – Bollard Installation, Complete**

The intent of this bid item is to establish a lump sum price for the installation of **all** of the bollards along the south side of the parking lot and along the pedestrian path leading from the parking lot to the sidewalk along Road 6250.

Wood bollards shall be treated with environmentally friendly ACQ to a chemical retention of 0.40 lbs per cubic foot.

## **Water Wellhead/Casing Removal**

The two water wells on-site have been abandoned. Abandonment required that the casing be cemented to the NG surface. The contractor will be required to remove the wellhead and casing to a point 5' below the NG surface. This work shall be considered subsidiary to Item #2 - Demolition and Disposal.

## **Storm Drain Pipe**

Storm Drain pipe shall be ADS N-12 WT Series 35 or equivalent.

## **Construction Traffic**

All construction traffic shall enter the site off of 91<sup>st</sup> Ave.

## **Alt #1 – Turf and Irrigation System**

Electric service for the irrigation system shall be powered from the new panel located at the southern end of the property.

## **CHANGES TO BID SCHEDULE**

### **Item #12 – Lime Stabilized Subgrade**

Item #12 was changed from “Subgrade Preparation” to “Lime Stabilized Subgrade (12” Thickness)

### **Item #12A – Lime (3.0% or 32 lbs/SY)**

Item #12A was added to the bid schedule to cover the delivery of lime to the site.

### **Item #13 – 8” Aggregate Base Course**

Item #13 was changed from “12” Aggregate Base Course” to “8” Aggregate Base Course”

### **Item 13A – Additional Aggregate Base (Delivered and Processed)**

Item #13A was added to the bid schedule to cover the cost of any additional Aggregate Base required to meet the Mass/Rough Grading requirements. Any additional Aggregate Base must be requested by the Contractor and approved by the Engineer prior to delivery.

### **Item #14 – 3” of D½ Surface Course**

Change text in the Asphalt Concrete specification, Section V- Concrete Acceptance from "1" lift of D $\frac{1}{2}$  and a 2" lift of D $\frac{3}{4}$ " to "3" lift of COP (Residential) - D $\frac{1}{2}$  surface course."

Replace the existing bid schedule with the attached is a revised bid schedule. Below is a discussion of the revisions.

**Item #29 – Electrical, Complete**

Add approximately 418 LF of  $\frac{3}{4}$ " PVC Conduit and a junction box serving the southwest corner of the property. The new conduit will extend from the relocated junction box at the midpoint of Roadway 6250 to the southwest corner of the property (See attached drawing).

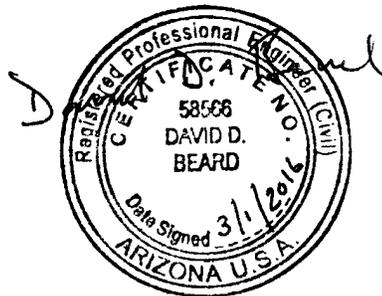
**Alt #2-2 – Vegetation Establishment**

Item Alt#2-2 was added to the bid schedule to separate the cost of the 1 year vegetation establishment period from Item Alt #2 -1 Turf and Irrigation System (Retention Basins)

REPLACE CURRENT BID SCHEDULE WITH ATTACHED REVISED BID SCHEDULE.

**END OF ADDENDUM**

**THIS ADDENDUM CONSISTS OF 14 PAGES INCLUDING THE COVER PAGE**



**Expires: 09/30/2017**







February 24, 2016  
Project No. 604944003

Mr. Dave Kohnert  
City of Glendale - Engineering Department  
5850 West Glendale Avenue, Suite 315  
Glendale, Arizona 85301

Subject: Preliminary Recommendations  
Former Agriculture Property  
Southwest Corner of 91st Avenue and Maryland Avenue  
Glendale, Arizona

Dear Mr. Kohnert:

As promised, please find below our preliminary recommendations as they pertain to the geotechnical evaluation for the aforementioned project.

**GENERAL**

Due to the relatively widely spaced nature of our borings, differing subsurface conditions may be encountered during construction in areas that are in between or away from the boring locations. Tilled alluvium was encountered in the upper 12 inches of some of the borehole locations explored; as such, select bulk samples were tested and organic content ranged between approximately 1.5 to 2.0 percent.

**GEOLOGY**

No known or reported geologic hazards are present underlying, or adjacent, to the site.

**GROUNDWATER**

Groundwater was not observed in our borings. The groundwater table is anticipated to be deeper than 117 feet below ground surface (bgs). Groundwater levels can fluctuate due to the proximity of the Agua Fria River, the Gila River, the New River, the Glendale Recharge Ponds, seasonal variations, irrigation, groundwater withdrawal or injection, and other factors.

**SITE PREPARATION**

Prior to construction activities, it may be desirable to recognize the condition of the existing buildings, existing utilities, underground structures, or other features that are near the planned construction and to

survey or document (e.g., photographs, video, official documentation, etc.) their pre-construction condition.

Vegetation, existing structures to be demolished, unsuitable materials, or debris from the clearing operation should be removed from the site and disposed of at a legal dumpsite. Plastic debris (trash) was encountered in Boring B-3 at approximately 8½ feet bgs.

### **EXCAVATION CHARACTERISTICS**

The on-site soils should generally be rippable with heavy-duty excavation equipment in good working condition. However, very dense and hard soils, varying amounts of gravel, plastic debris (trash), and scattered caliche nodules may be encountered, which may be more difficult to excavate and may slow the rate of excavation.

### **RE-USE OF SITE SOILS**

Imported soils and soils generated from on-site excavation activities that exhibit a relatively low plasticity can generally be used as engineered fill.

The Atterberg limits tests performed on the soil samples taken from our borings indicated that the plasticity index (PI) of the on-site soils ranged from 13 to 28. As such, it is our opinion that some of the on-site soils are not suitable for re-use as engineered fill during construction. Additional field sampling and laboratory testing may need to be conducted by the contractor during construction to evaluate unsuitable materials, if encountered during construction.

### **PAVEMENTS**

Design parameters for the asphaltic concrete (AC) pavement section include a 20-year design life, equivalent single axle loading of 18,000 kips, and a traffic load of 60,000 or less equivalent single axles loads (ESALs). The pavement section given below is assumed to bear on imported or on-site soils with an average soil R-value of 20 or more.

An asphalt pavement section consisting of 3 or more inches of plant-mix AC (per MAG Section 710) over 8 or more inches of aggregate base (AB) can be considered in the standard duty parking area.

The AB should meet Section 702 of the MAG specifications and/or any City of Glendale requirements. We recommend the underlying subgrade soils be prepared as described below. Aggregate base material

should be compacted to a relative compaction of 95 percent or more of the maximum dry density, as evaluated by American Society for Testing and Materials (ASTM D 698), at a moisture content generally above optimum

#### **SUBGRADE SUPPORT**

New pavements should be supported on improved subgrade. Recommended alternatives are illustrated on the attached figure.

#### **FILL CRITERIA**

Engineered fill should be placed in lifts of approximately 8 inches in loose thickness and compacted by appropriate mechanical methods to a relative compaction of 95 percent, as evaluated by ASTM D 698 and at a moisture content generally above the optimum. Engineered fill should not include construction debris, organic material, or other non-soil fill materials.

#### **CORROSIVITY**

Corrosivity test results indicate that subgrade soils at the site are considered to be corrosive to ferrous metals and the sulfate content of the soils presents a negligible sulfate exposure to concrete. A Type II cement should be considered and a water to cement ratio of 0.5 or less.

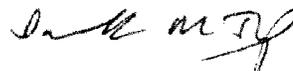
We will issue a final report on Friday, March 4, 2016 presenting our findings, conclusions, and recommendations regarding the design and construction of the project.

We appreciate the opportunity to be of service to you during this phase of the project.

Sincerely,  
**NINYO & MOORE**



Sabrina N. Perez, EIT  
Project Manager

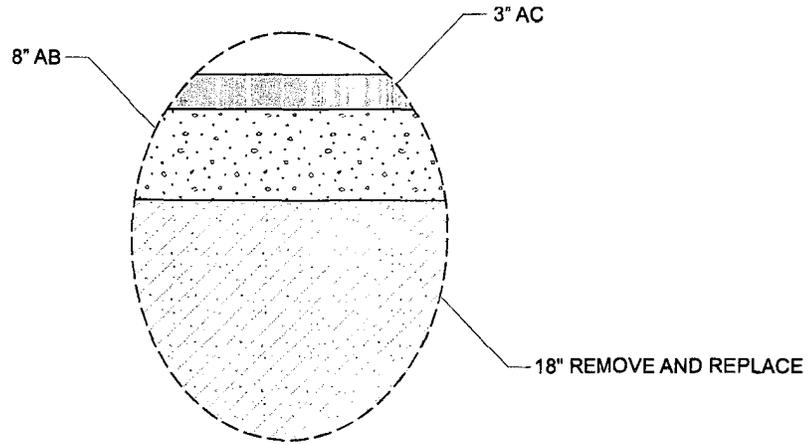


Donald M. Tharp, PE  
Principal Engineer

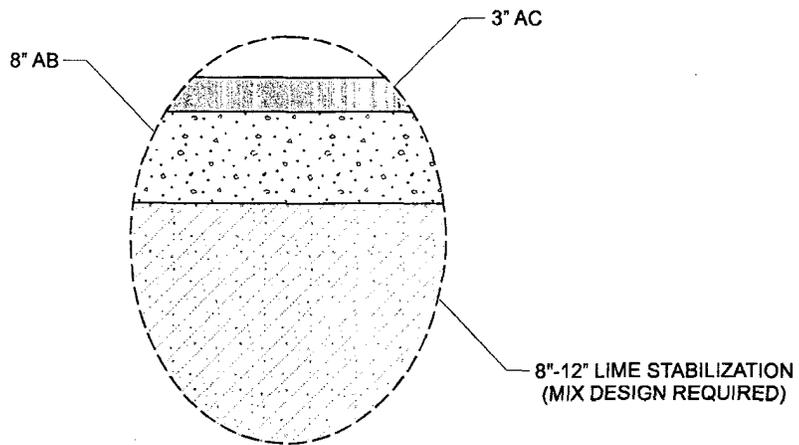
SNP/DT/tlp

Attachment: Figure - Subgrade Preparation Recommendations (Preliminary)

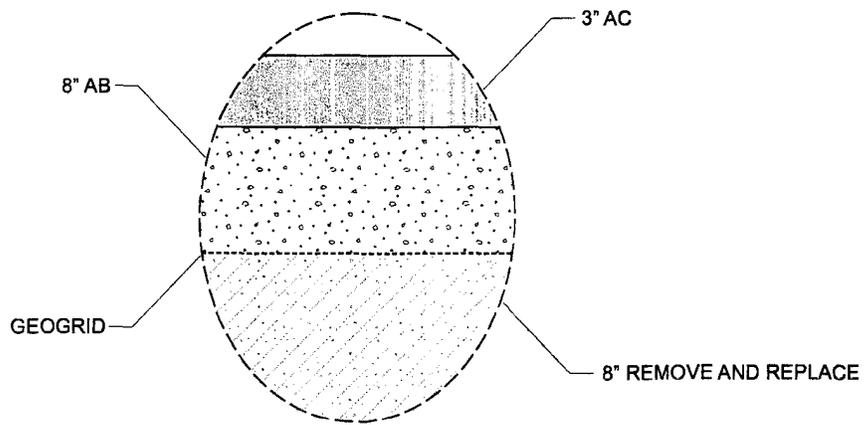
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**OPTION A**



**OPTION B**



**OPTION C**

NOT TO SCALE

Note: Dimensions, directions and locations are approximate.

		<b>SUBGRADE PREPARATION RECOMMENDATIONS - PRELIMINARY</b>		<b>FIGURE</b>



## Millings and Dirt Haulers - Standard Operating Procedures (SOP)

Created by: Ernie Ruiz, Landfill Superintendent

E-mail: [eruiz@glendaleaz.com](mailto:eruiz@glendaleaz.com)

Office: 623-930-4722 Cell: 623-640-1046

Last Updated: 4/07/15

The following procedures/items need to be in place/adhered to while operating equipment on City of Glendale Landfill (LF) property:

- An insurance certificate naming the city as additionally insured must be on file in the LF office.
- Advance notice of upcoming projects must be communicated to a designated LF staff member at least 2 weeks in advance of material coming to the site (other projects may be taking place, communication is key).
- A flag person must be provided by the hauler/contractor and in place at all times if trucks will be utilizing the Northern Avenue gate. The gate should never be left unattended at any time!
- If hauling operations will be taking place at night, adequate lighting will be needed and is the responsibility of the hauler/contractor to allow for safe entry and exit and for travel to and from the stock pile.
- Depending on the project size, a dedicated operator may be required to push the materials pile. The hauler/operator will be responsible to provide the necessary equipment and personnel to safely receive said material at the Glendale Landfill.
- Depending on the size of the project the hauler/contractor may be required to supply a water truck and operator. Water will be supplied at no charge and a log documenting water use must be maintained by the contractor and turned into the LF at the end of the project (month) for LF records.
- Depending on the project size the hauler/contractor may be required to obtain a Maricopa County dust control permit. Landfill staff will make that determination based on estimated project duration, estimated material quantity and material type.
- A dust control certificate issued by Maricopa County must be on file at the LF office for the contractor's employee(s) who will be operating the water truck or water pull if dust support is required.
- Placement of stockpile will be coordinated with the LF Supervisor.
- A start time and end time for hauling must be communicated to LF staff so notification can be passed on to the on site security guard.
- If different types of materials are to be hauled to the site, ie: millings, dirt, sub grade/ABC mix, LF staff must approve the material prior to it being dumped. Dirt is required to be processed through a LF Waste Profile sheet that will be approved by the LF staff. Mixed piles of ABC and millings will be segregated from the millings pile.
- Track out - hauler/contractor is responsible for all clean up on Northern Avenue should there become a need to have a sweeper.
- If at anytime a Maricopa County Inspector arrives on site, IMMEDIATE notification (DAY OR NIGHT) will be made in the following order 1) Landfill Crew Leader, Cheryl Topete (623) 340-2395 2) Landfill Supervisor, Bill Stout (602) 885-1230 3) Landfill-MRF Superintendent, Ernie Ruiz (623) 640-1046.

Northern Avenue

B

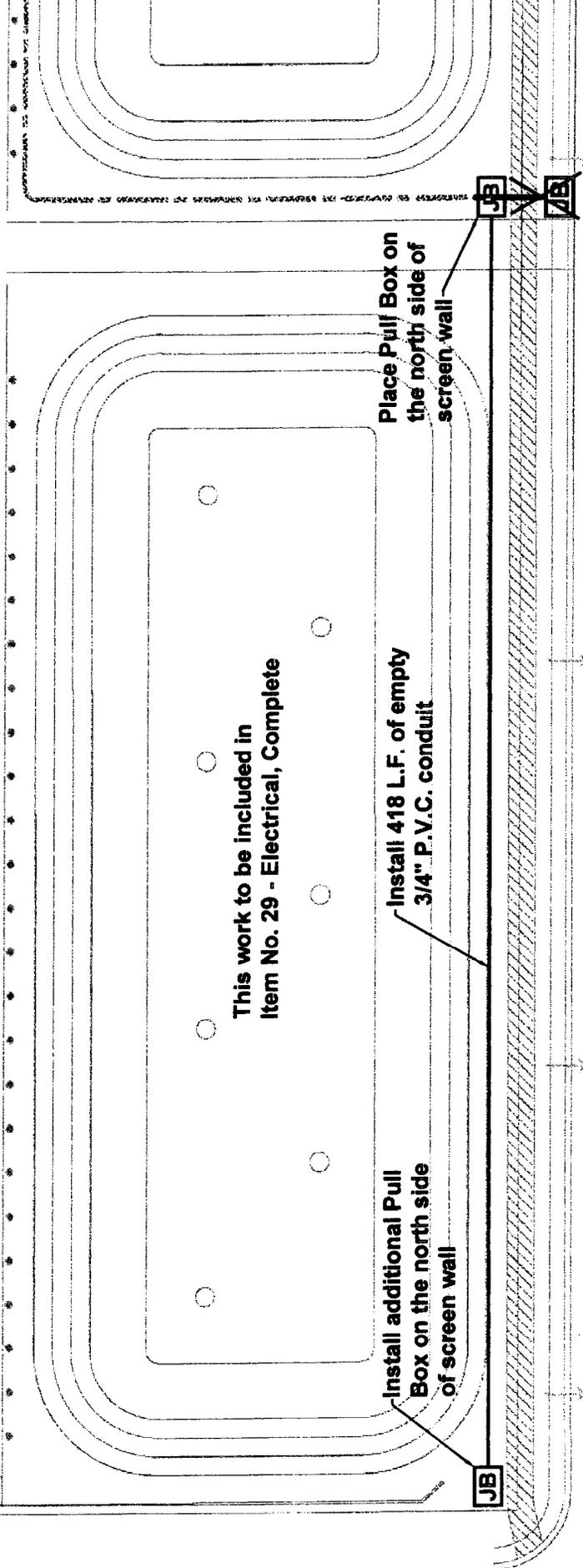
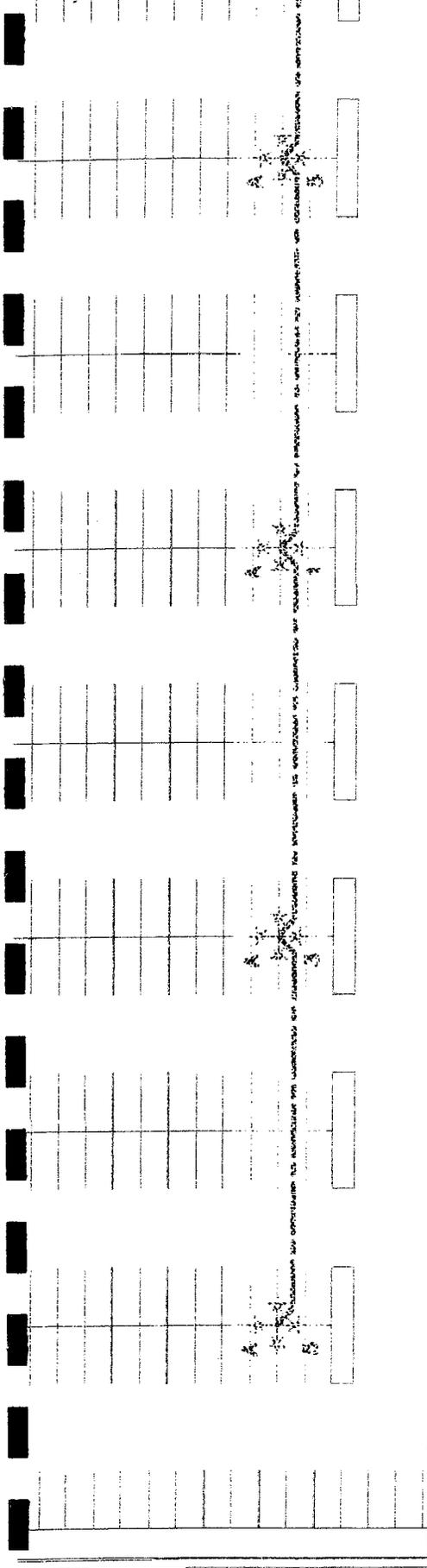


C

115th Avenue  
(alignment)

Glendale Avenue

**A - Entrance (to be attended 100% of time gate is open)**  
**B - Dump Soil ONLY from 6 AM to 4 PM**  
**C - Dump Soil ONLY from 4 PM to 6 AM**



This work to be included in  
Item No. 29 - Electrical, Complete

Install additional Pull  
Box on the north side  
of screen wall

Install 418 L.F. of empty  
3/4" P.V.C. conduit

Place Pull Box on  
the north side of  
screen wall

**Addendum No. 2**

**6250 ACCESS DRIVE**

SHT. 14  
OF 16

## PROJECT #151614 - P1 PARKING, 91ST &amp; MARYLAND AVENUE'S

## BID SCHEDULE - BASE BID

(REVISED 3/1/16)

Item No.	Description	Quantity	Unit	Unit Cost	Total Cost
1	Mobilization/Demobilization	1	L.S.		
2	Demolition and Disposal	1	L.S.		
3	Removal of Block Wall and Footing	2,021	L.F.		
4	Finish Block Wall End Treatment/Pilaster where wall is removed	8	EA.		
5	Reconstruct Rolling Gates	5	EA.		
6	Remove 18" of Top Material (Haul Excess to Landfill)	54,065	C.Y.		
7	Mass/Rough Grading (Haul Excess to Landfill)	88,034	S.Y.		
8	Excavate Detention Basins	18,180	C.Y.		
9	Remove & Replace Curb & Gutter	201	L.F.		
10	Miscellaneous Utility relocations and Abandonments	1	L.S.		
11	Miscellaneous Removals and Other Work	1	L.S.		
12	Lime Stabilized Subgrade (12" thickness)	89,708	S.Y.		
12A	Lime (3.0% or 32lbs/SY)	1,435	TN		
13	8" Aggregate Base Course	89,708	S.Y.		
13A	Additional Aggregate Base (Delivered and Processed)	1,000	TN		
14	3" of D1/2" Surface Course	89,708	S.Y.		
15	MAG Std. Dtl. 222-B Curb	3,530	L.F.		
16	Bollard Installation, Complete	1	L.S.		
17	Parking Stall Stripping	65,816	L.F.		
18	Painted Islands and Walkways	7,345	L.F.		
19	4" Sidewalks/Driveways	7,734	S.F.		

20	8" Sidewalks/Driveways	7,331	S.F.		
21	32" Screen Wall	675	L.F.		
22	3" Decomposed Granite, 1/2" Screened, Stabilized	189,024	S.F.		
23	Dual Stage Drywell	12	EA.		
24	18" H.D.P.E. Dual Wall Pipe	900	L.F.		
25	24" H.D.P.E. Dual Wall Pipe	950	L.F.		
26	Double Inlet Catch Basins	6	EA.		
27	Concrete Headwalls, Complete	6	EA.		
28	Install 4 Luminaire Light Poles, Complete	54	EA.		
29	Electrical, Complete	1	L.S.		
30	Construction Materials Sampling and Testing (Allowance)	1	L.S.	\$25,000	\$25,000
31	Construction Staking, Survey and Layout	1	L.S.		
32	Arizona Pollutant Discharge Elimination System/SWPPP	1	L.S.		
33	Traffic Control	1	L.S.		
34	Allowance for Construction Contingency	1	L.S.	\$400,000	\$400,000
<b>TOTAL BASE BID</b>					

**ALTERNATE ONE**

Item No.	Description	Quantity	Unit	Unit Cost	Total Cost
1	Removal of Additional Block Wall and Footing (same unit price as #3)	2,000	L.F.		
<b>TOTAL ALTERNATE ONE</b>					

**ALTERNATE TWO (REVISED 3/1/16)**

Item No.	Description	Quantity	Unit	Unit Cost	Total Cost
1	Turf and Irrigation System Installation In Lieu of Decomposed Granite (Retention Basins Only)	1	L.S.		
2	Vegetation Establishment period (1 year)	1	L.S.		
<b>TOTAL ALTERNATE TWO</b>					



# Engineering Department

# Memorandum

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DATE: February 19, 2016  
TO: All Plan and Specification Holders  
FROM: Engineering  
SUBJECT: PROJECT 151614 - P1 PARKING, 91ST & MARYLAND AVENUES

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## ADDENDUM NO. 1

In accordance with the contract documents "Information for Bidders," Page 4, Paragraph 12 CHANGES TO PLANS AND DOCUMENTS, the following revisions to the plans and specifications shall become a part of the contract documents and the bidder shall acknowledge receipt thereof as directed in Paragraph 13 of the Information for Bidders.

### CHANGES TO NOTICE TO CONTRACTORS & INFORMATION FOR BIDDERS

The date of the pre-bid conference has been changed to February 25, 2016 at 10:00a.m., in the Engineering Department Conference Room, 5850 West Glendale Avenue, Glendale, Arizona. This pre-bid meeting will be MANDATORY for interested bidders to attend. No bids will be accepted from contractors who did not attend the pre-bid meeting.

The bid date has been changed to March 8, 2016 at 10:00a.m. Any bid received after that time will not be considered and will be returned to the bidder.

END OF ADDENDUM



Expires: 09/30/2017

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CASH FLOW REPORT (EXAMPLE)  
CONSTRUCTION SIGN DETAIL

NOTICE TO CONTRACTORS

Sealed bids shall be either mailed to the City of Glendale Engineering Department, 5850 West Glendale Avenue, Glendale, Arizona, 85301, or hand-delivered to the Engineering Department office, third floor, 5850 West Glendale Avenue, Glendale, Arizona, for furnishing all plant, material, equipment and labor, and to complete construction of: **PROJECT NO. 151614 - P1 PARKING, 91ST & MARYLAND AVENUES.** Project includes Removal of existing farm buildings and homes located on 22 Acres of prior farm/feedlot. Site is being developed for automobile parking with storm retention, catch basins and related piping, commercial lighting, sidewalk, curbing, minor block and chain link fence work.

Bids must be received by the Engineering Department of the City of Glendale no later than 10:00a.m., February 22, 2016. Any bid received after that time will not be considered and will be returned to the bidder. At that time, the bids will be publicly opened and read aloud in the Engineering Department Conference Room, 5850 West Glendale Avenue, Glendale, Arizona.

A pre-bid conference will be held on February 16, 2016, at 10:00a.m., in the Engineering Department Conference Room, 5850 West Glendale Avenue, Glendale, Arizona. Bidders, contractors, and other interested parties are invited to attend this conference which will be conducted by the Owner and Engineer to answer any questions.

Plans, specifications and contract documents may be examined, and copies may be obtained at City of Glendale Engineering Department, 5850 West Glendale Avenue, Glendale, Arizona. A non-refundable charge of \$30.00 shall be paid for each set of plans and specifications issued from this office.

Each bid shall be in accordance with the plans, specifications and contract documents, and shall be set forth and submitted on the BID DOCUMENTS included with the project specifications book. The BID DOCUMENTS may be removed from the project specifications book and submitted independently of such book. Each bid shall be accompanied by a proposal guarantee, in the form of a certified or cashier's check or bid bond for ten percent (10%) of the amount of bid, made payable to the order of the City of Glendale, Arizona, to insure that the successful bidder will enter into the contract if awarded to him and submit the required Certificate of Insurance, Payment Bond and Performance Bond. All proposal guarantees, except those of the three lowest qualified bidders, will be returned immediately following the opening and checking of proposals. The proposal guarantees of the three lowest qualified bidders will be returned immediately after the contract documents have been executed by the successful bidder. The proposal guarantee shall be declared forfeited as liquidated damages if the successful bidder refuses to enter into said contract or submit the Certificate of Insurance, Payment Bond and Performance Bond after being requested to do so by the City of Glendale, Arizona.

The City of Glendale reserves the right to reject any or all bids or waive any informality or irregularity in a bid. No bidder may withdraw his bid for a period of fifty (50) days after opening and reading of the bids.

The City of Glendale is an equal opportunity employer and minority business enterprises and women's business enterprises are encouraged to submit bids.

CITY OF GLENDALE, ARIZONA

INFORMATION FOR BIDDERS

1. **ELIGIBILITY OF CONTRACTORS:** When calling for bids for contracts for public work to be performed on behalf of the State or any political subdivision thereof, which will be paid for from public funds, no bid shall be considered for performance of a contract, including construction work which is not submitted by a bidder duly licensed as a contractor in this State. No bid shall be awarded to any contractor or entity not authorized to do business in the State of Arizona by the Arizona Corporation Commission, as required by statute.

2. **PROPOSAL:** Bids to receive consideration shall be made in accordance with the following instructions:

(a) Before submitting a bid, bidders shall carefully examine the plans and specifications and contract documents, visit the site of the work, fully inform themselves as to all existing conditions and limitations.

(b) Bids shall be submitted on the "PROPOSAL" forms provided and delivered to the City of Glendale Engineering Department on or before the day and hour set in the "NOTICE TO CONTRACTORS," as published. Bids shall be enclosed in a sealed envelope marked on the outside lower right-hand corner indicating:

1. The bidder's name and address.
2. The project number.
3. The title of the project.
4. The time and date the bids are to be received.

(c) It is the sole responsibility of the bidder to see that his bid is received in proper time. Any bids received after the scheduled closing time for receipt of bids will be returned to the bidder unopened.

(d) The signatures of all persons shall be in longhand. Any interlineations, alterations, or erasures must be initialed by the signer of the bid.

(e) Bids shall not contain any recapitulations of the work to be done. No oral, telegraphic, telephonic, or modified proposals will be considered.

3. **BID SECURITY:** Each proposal shall be accompanied by a proposal guarantee in the form of a certified or cashier's check or bid bond, with a properly executed Power of Attorney attached, in an amount equal at least to ten percent (10%) of the proposal payable without condition to the City. If a bid bond is submitted with the bid it shall be issued by a company licensed with the Arizona Department of Insurance and authorized to issue such bonds in this state. **NO BONDS ISSUED BY INDIVIDUAL SURETIES WILL BE ACCEPTED. The company issuing the bid bond shall have a rating of not less than A- in the BEST rating available at the time this project was let to bid.** The proposal guarantee shall guarantee that the bidder, if awarded the contract, will, within ten (10) working days after the award, execute such contract in accordance with the proposal and in manner and form required by the contract documents, and will furnish good and sufficient bond for the faithful performance of the same, a payment bond and a certificate of insurance. The bid securities of the three (3) lowest bidders will be retained until the contract is awarded, or other disposition made thereof. The bid securities of all bidders, except the three (3) lowest, will be returned promptly after the canvass of bids. In the event the Contractor fails, within ten (10)

working days after the award, to execute said Contract and deliver the Performance and Labor and Material Payment Bonds and the Certificate of Insurance, the Bid Security shall become the property of the City.

4. **WITHDRAWAL OF BID:** Any bidder may withdraw his bid, either personally, by telegram or by written request, at any time prior to the scheduled closing time for receipt of bids. No bid may be withdrawn by telephone. Any bid withdrawn will not be opened and will be returned to the bidder. After opening and reading of the bids, no bidder may withdraw his bid for a period of fifty (50) days from the date of opening and reading.

5. **LATE BIDS:** Bids received after the scheduled closing time for receipt of bids, as contained in the "Notice to Contractors," will not be considered and will be returned to the bidder.

6. **AWARD OR REJECTION OF BIDS:** The contract will be awarded to the lowest and best qualified responsive bidder complying with these instructions and with the "NOTICE TO CONTRACTORS." The City of Glendale, Arizona, however, reserves the right to accept or reject any or all bids or to waive any or all informalities or irregularities in the bid. Alternates may be accepted depending upon the availability of City funds. Accepted alternates will be considered in determining the lowest responsive and responsible bidder.

7. **BIDDERS INTERESTED IN MORE THAN ONE BID:** No person, firm or corporation shall be allowed to make, file, or be interested in more than one (1) bid for the same work unless alternate bids are called for in the specifications or any addenda. A person, firm, or corporation who has submitted a sub-proposal to a bidder, or who has quoted prices on materials to a bidder is not thereby disqualified from submitting a sub-proposal or quoting prices to other bidders.

8. **CONTRACT AND BONDS:** The form of contract, which the successful bidder as Contractor will be required to execute and the forms of bonds which he shall be required to furnish are included in the contract documents and should be carefully examined by the bidder. The successful bidder shall use the forms provided or such other forms as are acceptable by the City. The Contract and Performance and Labor and Material Payment Bonds will be executed in three (3) original counterparts. All bonds shall be issued by companies licensed with the Arizona Department of Insurance and authorized to issue such bonds in this state. **NO BONDS ISSUED BY INDIVIDUAL SURETIES WILL BE ACCEPTED. The company issuing any bond shall have a rating of not less than A- in the BEST rating available at the time this project was let to bid.**

9. **INSURANCE REQUIREMENTS:** Contractor, and each Sub-contractor performing work or providing materials related to this Agreement must procure and maintain the insurance coverages described (collectively, "Contractor's Policies"), until each Parties' obligations under this Agreement are completed. Contractor must at all times relevant hereto carry a commercial general liability policy with a combined single limit of at least \$1,000,000 per occurrence and \$2,000,000 annual aggregate. **Contracts in excess of \$250,000 shall require \$2,000,000 single occurrence/\$5,000,000 annual aggregate.**

Sub-contractors must at all times relevant hereto carry a general commercial liability policy with a combined single limit of at least \$1,000,000 per occurrence.

This commercial general liability insurance must include independent contractors' liability, contractual liability, broad form property coverage, products and completed operations, XCU

hazards if requested by the City, and a separation of insurance provision.

These limits may be met through a combination of primary and excess liability coverage.

Auto. A business auto policy providing a liability limit of at least \$1,000,000 per accident for Contractor and \$1,000,000 per accident for Sub-contractors and covering owned, non-owned and hired automobiles.

Workers' Compensation and Employer's Liability. A workers' compensation and employer's liability policy providing at least the minimum benefits required by Arizona law.

Equipment Insurance. Contractor must secure, pay for, and maintain all-risk insurance as necessary to protect the City against loss of owned, non-owned, rented or leased capital equipment and tools, equipment and scaffolding, staging, towers and forms owned or rented by Contractor or its Sub-contractors.

10. **SUBCONTRACTORS LISTING AND CERTIFICATION OF CONTRACT COMPLIANCE:** The contractor will be required to furnish the form of subcontractors listing and certification of contract compliance with the executed contract documents. This information is requested for tracking and insurance purposes only.

11. **INTERPRETATION OF PLANS AND DOCUMENTS:** If any person contemplating a bid for proposed contract is in doubt as to the true meaning of any part of the plans, specifications, or other proposed contract documents, or finds discrepancies in or omissions from the plans and specifications, he may submit to the Engineering Department, a written request for an interpretation or correction thereof. The person submitting the request will be responsible for its prompt delivery. Questions received less than ninety-six (96) hours before the bid opening time may not be answered. Any interpretation or correction of the documents will be made only by Addendum, duly issued and a copy of such Addendum will be mailed or delivered to each person receiving a set of such documents. The City of Glendale will not be responsible for any other explanations or interpretations of the proposed documents.

12. **CHANGES TO PLANS AND DOCUMENTS:** Any changes to the plans and documents shall be made only by Addendum. No verbal or other changes to the plans and documents will be valid. A copy of each Addendum will be mailed or delivered as provided in Section 13 below.

13. **ADDENDUM:** Any addenda will be faxed, mailed or delivered to all who are known by the City to have received a complete set of bid documents, and to offices where bid documents have been filed for review purposes. It is the responsibility of each bidder to ascertain that he has received all addenda issued by telephoning the office identified in the NOTICE TO CONTRACTORS as the location where bid documents are available prior to submitting his bid.

Bidders shall acknowledge all addenda in the appropriate location on the "PROPOSAL" form. Failure to acknowledge receipt of Addenda shall render the bid proposal non-responsive and it will be rejected.

14. **ASSIGNMENT OF CONTRACT:** No assignment by the Contractor of any contract to be entered into hereunder, or any part thereof, or of funds to be received thereunder by the Contractor, will be recognized by the Owner unless such assignment has had prior approval of the Owner, and

the Surety has been given due notice of such assignment in writing and has consented thereto in writing.

15. **PLANS AND SPECIFICATIONS TO SUCCESSFUL BIDDER:** The successful bidder may obtain five (5) sets of plans and specifications for this project from the City.

16. **TIME OF COMPLETION:** The Contractor shall commence work under this project on or before the tenth day following receipt of the Notice to Proceed for that project from the City of Glendale and shall fully complete all work under the project **by August 1, 2016**. Time is of the essence in the completion of all work required under this contract. The Contractor shall, at all times, during the continuance of the contract, prosecute the work with such force and equipment as is sufficient to complete all work within the time specified.

17. **CITY OF GLENDALE TRANSACTION PRIVILEGE TAX:** The City of Glendale transaction privilege tax shall **NOT** be waived under the provisions of this contract. The current privilege tax rate can be obtained from the City of Glendale Sales Tax and Licenses Department. The Contractor shall be responsible for reporting and payment of all city, county, state or federal taxes.

18. **PRE-BID CONFERENCE:** A pre-bid conference will be held on February 16, 2016 , at 10:00a.m., in the Engineering Department Conference Room, 5850 West Glendale Avenue, Glendale, Arizona. Bidders, contractors, and other interested parties are invited to attend this conference which will be conducted by the Owner and Engineer to answer any questions.

19. **ALTERNATES:** Alternate proposals will not be considered unless called for in the documents or any addenda thereto. When alternates are requested, all requested alternates or alternate bid items, unless otherwise stated, shall be bid. If no change in the base bid will occur with the alternate, enter "No Change."

20. **APPROVAL OF SUBSTITUTIONS:** The materials, products and equipment described in the Documents and Addenda establish a standard or required function, dimension, appearance and quality to be met by any proposed substitution. No substitute will be considered, before bid opening, unless written request for approval has been received by the City Engineer at least ten (10) working days prior to the scheduled closing time for receipt of bids. Each such request shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitute including any drawings, cuts, performance and test data and any other information necessary for evaluation of the substitute. Bidder shall not be entitled to approval of a substitute.

If a substitute is approved, the approval shall be set forth in an Addendum. Bidders shall not rely upon approvals made in any other manner.

21. **USE OF "EQUALS":** When the specifications for materials, articles, products and equipment state "or equal," contractor may bid upon, and use materials, articles, products and equipment which will perform equally the duties imposed by the general design. The City Engineering Department will have the final approval of all materials, articles, products and equipment proposed to be used as an "equal." It shall not be purchased or installed without the prior written approval from the City Engineering Department.

Approvals for "equals," before bid opening, may be requested in writing to the City Engineering Department for approval. Requests must be received at least ten (10) days prior to the date set for opening the Bid Proposals. The request shall state the name of the material, article, product or equipment for which the item is sought to be considered an equal and a complete description of the proposed equal including any drawings, cuts, performance and test data and any other information necessary for approval of the equal. All approvals will be issued in the form of an addendum.

22. EXAMINATION OF CONTRACT DOCUMENTS AND VISIT SITE: Before submitting a Bid Proposal, bidders should carefully examine the Contract Documents, visit the site of the work, fully inform themselves as to all existing conditions and limitations. No consideration will be granted for any alleged misunderstanding of the material, articles or piece of equipment to be furnished or work to be done. It is understood that the tender of the Bid Proposal carries with it the agreement to all items and conditions referred to herein or indicated in the Contract Documents.

23. BIDDERS IN DEFAULT: No bid will be awarded to any person, firm or corporation that is not authorized by the Arizona Corporation Commission to do business in the State of Arizona, in arrears or is in default to the City of Glendale upon any debt or contract, or that is a defaulter as surety or otherwise upon any obligation to the City of Glendale, or has failed to faithfully perform any previous contract with the City of Glendale.

\*\*\*END OF INFORMATION FOR BIDDERS\*\*\*

PROPOSAL

Place Phoenix, AZ

Date March 8, 2016

Proposal of Combs Construction Company, Inc., a Corporation organized and existing under the laws of

the State of Arizona. a partnership consisting of \_\_\_\_\_; or an

individual trading as \_\_\_\_\_.

TO THE HONORABLE MAYOR AND COUNCIL  
CITY OF GLENDALE  
GLENDALE, ARIZONA

Gentlemen:

The undersigned hereby proposes and agrees to furnish any and all required labor, materials, construction equipment, transportation and services for the construction of: **PROJECT 151614 - P1 PARKING, 91ST & MARYLAND AVENUES**, in strict conformity with the plans and specifications for the following unit prices:

(Extension of these unit prices on the basis of estimated quantities and the totaling of these extensions are for the purpose of comparing bids only. The mathematics of such extensions and totaling will be checked and corrected by the Engineering Department, before evaluating the bids, and the lowest of such corrected and checked totals will determine the lowest bids.)

PROJECT #151614 - P1 PARKING, 91ST & MARYLAND AVENUE'S					
BID SCHEDULE - BASE BID					
(REVISED 3/1/16)					
Item No.	Description	Quantity	Unit	Unit Cost	Total Cost
1	Mobilization/Demobilization	1	L.S.	175,000 <sup>00</sup>	175,000 <sup>00</sup>
2	Demolition and Disposal	1	L.S.	50,000 <sup>00</sup>	50,000 <sup>00</sup>
3	Removal of Block Wall and Footing	2,021	L.F.	8 <sup>50</sup>	17,178 <sup>80</sup>
4	Finish Block Wall End Treatment/Pilaster where wall is removed	8	EA.	2500 <sup>00</sup>	20,000 <sup>00</sup>
5	Reconstruct Rolling Gates	5	EA.	1,100 <sup>00</sup>	5,500 <sup>00</sup>
6	Remove 18" of Top Material (Haul Excess to Landfill)	54,065	C.Y.	<del>78</del> 6 <sup>05</sup>	327,093. <sup>25</sup> <del>78</del>
7	Mass/Rough Grading (Haul Excess to Landfill)	88,034	S.Y.	1.85	74,828 <sup>90</sup>
8	Excavate Detention Basins	18,180	C.Y.	3 <sup>50</sup>	63,630 <sup>00</sup>
9	Remove & Replace Curb & Gutter	201	L.F.	20 <sup>00</sup>	4020 <sup>00</sup>
10	Miscellaneous Utility relocations and Abandonments	1	L.S.	10,000 <sup>00</sup>	10,000 <sup>00</sup>
11	Miscellaneous Removals and Other Work	1	L.S.	25,500 <sup>00</sup>	25,500 <sup>00</sup>
12	Lime Stabilized Subgrade (12" thickness)	89,708	S.Y.	1 <sup>10</sup>	98,678 <sup>80</sup>
12A	Lime (3.0% or 32lbs/SY)	1,435	TN	125 <sup>00</sup>	179,375 <sup>00</sup>
13	8" Aggregate Base Course	89,708	S.Y.	4 <sup>00</sup>	358,832 <sup>00</sup>
13A	Additional Aggregate Base (Delivered and Processed)	1,000	TN	8 <sup>00</sup>	8000 <sup>00</sup>
14	3" of D1/2" Surface Course	89,708	S.Y.	11 <sup>00</sup>	986,788 <sup>00</sup>
15	MAG Std. Dtl. 222-B Curb	3,530	L.F.	10 <sup>00</sup>	35,300 <sup>00</sup>
16	Bollard Installation, Complete	1	L.S.	14,000 <sup>00</sup>	14,000 <sup>00</sup>
17	Parking Stall Stripping	65,816	L.F.	.62	40,805 <sup>92</sup>
18	Painted Islands and Walkways	7,345	L.F.	.62	4553 <sup>90</sup>
19	4" Sidewalks/Driveways	7,734	S.F.	3 <sup>00</sup>	23,202 <sup>00</sup>

20	8" Sidewalks/Driveways	7,331	S.F.	4 <sup>50</sup>	32,989 <sup>50</sup>
21	32" Screen Wall	675	L.F.	50 <sup>00</sup>	33,750 <sup>00</sup>
22	3" Decomposed Granite, 1/2" Screened, Stabilized	189,024	S.F. <sup>MS</sup>	.52	98,292 <sup>48 MS</sup>
23	Dual Stage Drywell	12	EA.	10,500 <sup>00</sup>	126,000 <sup>00</sup>
24	18" H.D.P.E. Dual Wall Pipe	900	L.F.	30 <sup>00</sup>	27,000 <sup>00</sup>
25	24" H.D.P.E. Dual Wall Pipe	950	L.F.	40 <sup>00</sup>	38,000 <sup>00</sup>
26	Double Inlet Catch Basins	6	EA.	4700 <sup>00</sup>	28,200 <sup>00</sup>
27	Concrete Headwalls, Complete	6	EA.	5200 <sup>00</sup>	31,200 <sup>00</sup>
28	Install 4 Luminaire Light Poles, Complete	54	EA. <sup>MS</sup>	5,700 <sup>00</sup>	307,800 <sup>00 MS</sup>
29	Electrical, Complete	1	L.S. <sup>MS</sup>	100,000 <sup>00</sup>	100,000 <sup>00 MS</sup>
30	Construction Materials Sampling and Testing (Allowance)	1	L.S.	\$25,000	\$25,000
31	Construction Staking, Survey and Layout	1	L.S.	25,000 <sup>00</sup>	25,000 <sup>00</sup>
32	Arizona Pollutant Discharge Elimination System/SWPPP	1	L.S.	10,000 <sup>00</sup>	10,000 <sup>00</sup>
33	Traffic Control	1	L.S.	43,000 <sup>00</sup>	43,000 <sup>00</sup>
34	Allowance for Construction Contingency	1	L.S.	\$400,000	\$400,000
<b>TOTAL BASE BID</b>					<b>3,848,518.25 MS</b>

ALTERNATE ONE					
Item No.	Description	Quantity	Unit	Unit Cost	Total Cost
1	Removal of Additional Block Wall and Footing (same unit price as #3)	2,000	L.F.	8 <sup>50</sup>	17,000 <sup>00</sup>
<b>TOTAL ALTERNATE ONE</b>					<b>17,000<sup>00</sup></b>

ALTERNATE TWO (REVISED 3/1/16)					
Item No.	Description	Quantity	Unit	Unit Cost	Total Cost
1	Turf and Irrigation System Installation In Lieu of Decomposed Granite (Retention Basins Only)	1	L.S.	76,150 <sup>00</sup>	76,150 <sup>00</sup>
2	Vegetation Establishment period (1 year)	1	L.S.	30,000 <sup>00</sup>	30,000 <sup>00</sup>
<b>TOTAL ALTERNATE TWO</b>					<b>106,150.00</b>

The undersigned hereby declares that he has visited the site(s) and has carefully examined the contract documents relating to the work covered by the above bid or bids.

Upon receipt of notice of the acceptance of this bid, we will execute the formal contract attached within ten (10) days, and will deliver a one hundred percent (100%) Performance Bond for the faithful performance of this Contract, together with a one hundred percent (100%) Payment Bond and Certificate of Insurance.

The bid security attached, with endorsement, in the sum of ten percent (10%) of the total bid, is to become the property of the City of Glendale, Arizona, in the event the Contract and Bonds are not executed within the time set forth, as liquidated damages for the delay and additional work caused thereby.

The undersigned has checked carefully all the above figures and understands that the City of Glendale, Arizona, will not be responsible for any errors or omissions on the part of the undersigned in making up this bid.

The undersigned understands that the Mayor and Council of the City of Glendale, Arizona, reserves the right to reject any or all bids or to waive any informalities or irregularities in the bid.

Respectfully submitted,

Combs Construction Company, Inc.

Contractor

Arizona Contractor's  
Classification and  
License No.

100380 A

By

MRS  
Michael R. Steg, Vice President

PO BOX 10789

Glendale, AZ 85318

(Complete business address)

Telephone Number: 602-237-4029

Fax Number 602-237-4182

Bidder shall signify receipt of all Addenda here (if any):

#1 - 2/19/16, #2 - 3/1/16, #3 - 3/2/16

Failure to acknowledge receipt of all Addenda shall render the bid proposal non-responsive and will be rejected.

Acknowledged by

MRS  
Michael R. Steg, Vice President

**CITY OF GLENDALE**

**Subcontractor Listing and Certification of Contract Compliance**

**PROJECT 151614 - P1 PARKING, 91ST & MARYLAND AVENUES**

The undersigned contractor hereby submits the following list of firms to be employed as subcontractors on the above referenced project:

<u>SUBCONTRACTOR</u>	<u>WORK ELEMENTS</u>	<u>CONTRACT VALUE</u>	<u>DBE(Y/N)*</u>	<u>AGENCY**</u>
Paveco	Paving	44,600 <sup>00</sup>	N	
Faloverde	LIME	235,701 <sup>44</sup>	N	
SUNNY SIDE MASONRY	MASONRY	46,266 <sup>00</sup>	Y	ADOT
STORM WATER PRO	DRYWELLS	114,600 <sup>00</sup>	N	
Daves CONSTRUCTION	Building Demo	50,065 <sup>90</sup>	N	
MS Continental Lighting	ELECTRICAL	394,951.45 <sup>MS</sup>	N	
ROADSALC	STRIPING	43,897 <sup>60</sup>	N	
WOOD PATCL	Survey	19,590 <sup>00</sup>	N	
VIRCON LLC	CONCRETE	115,206.35	N	
OTTO TRUCKING	TRUCKING	232,693	N	
Landtech	LANDSCAPE	94,513.00	N	
SPECIALTY CONTRACTORS	Billboards	12,240	N	
LP FENCE	gates	5,000	N	

The undersigned hereby certifies that all subcontracts shall be in writing and shall provide that all work to be performed shall be in accordance with the terms of the Contract. All subcontracts shall be subject to approval by the City. Certified copies of all subcontracts shall be furnished to the Engineer; however, prices may be omitted. Subcontracts shall conform to the regulations governing employment of labor.

Combs Construction Company, Inc.

Name of Firm

DBE?(Y/N)\*: N Agency\*\*: N/A

Signature: Michael R. Steg  
Title: Vice President

\*Firms certified as Disadvantaged Business Enterprises. \*\*Indicate certifying agency, e.g., ADOT, MCHD, COP, etc. **This information is requested for tracking purposes only.** The City of Glendale is an equal opportunity employer and minority business enterprises and women's business enterprises are encouraged to submit bids.

CONSTRUCTION AGREEMENT

This Construction Agreement ("Agreement") is entered into and effective between the CITY OF GLENDALE, an Arizona municipal corporation ("City"), and Combs Construction Company, Inc., an Arizona corporation, authorized to do business in Arizona ("Contractor") as of the 12 day of April, 2016.

RECITALS

- A. City intends to undertake a project for the benefit of the public and with public funds that is more fully set forth in the **Notice to Contractors** and the attached **Exhibit A** ("Project");
- B. City desires to retain the services of Contractor to perform those specific duties and produce the specific work as set forth in the Project, the plans and specifications, the **Information for Bidders**, and the **Maricopa Association of Governments ("MAG") General and Supplemental Conditions and Provisions**;
- C. City and Contractor desire to memorialize their agreement with this document.

AGREEMENT

In consideration of the Recitals, which are confirmed as true and correct and incorporated by this reference, the mutual promises and covenants contained in this Agreement, and other good and valuable consideration, City and Contractor agree as follows:

1. **Project.**

- 1.1 **Scope.** Contractor will provide all services and material necessary to assure the Project is completed timely and efficiently consistent with Project requirements, including, but not limited to, working in close interaction and interfacing with City and its designated employees, and working closely with others, including other contractors, providers or consultants retained by City.
- 1.2 **Documents.** The following documents are, by this reference, entirely incorporated into this Agreement and attached Exhibits as though fully set forth herein:

- (A) Notice to Contractors;
- (B) Information for Bidders;
- (C) MAG General Conditions, Supplemental General Conditions, Special and Technical Provisions;
- (D) Proposal;
- (E) Bid Bond;
- (F) Payment Bond;
- (G) Performance Bond;
- (H) Certificate of Insurance;
- (I) Appendix; and
- (J) Plans and Addenda thereto.

Should a conflict exist between this Agreement (and its attachments), and any of the incorporated documents as listed above, the provisions of this Agreement shall govern.

1.3 **Project Team.**

- (A) Project Manager. Contractor will designate an employee as Project Manager with sufficient training, knowledge, and experience to, in the City's opinion, to complete the project and handle all aspects of the Project such that the work produced by Contractor is consistent with applicable standards as detailed in this Agreement.
- (B) Project Team.

- (1) The Project manager and all other employees assigned to the project by Contractor will comprise the "Project Team."
- (2) Project Manager will have responsibility for and will supervise all other employees assigned to the project by Contractor.

(C) Sub-contractors.

- (1) Contractor may engage specific technical contractor (each a "Sub-contractor") to furnish certain service functions.
- (2) Contractor will remain fully responsible for Sub-contractor's services.
- (3) Sub-contractors must be approved by the City, unless the Sub-contractor was previously mentioned in the response to the solicitation.
- (4) Contractor shall certify by letter that contracts with Sub-contractors have been executed incorporating requirements and standards as set forth in this Agreement.

2. **Schedule.** The Project will be undertaken in a manner that ensures it is completed in a timely and efficient manner. If not otherwise stated in **Exhibit A**, the Project shall be completed by August 1, 2016, following receipt of the Notice to Proceed.

3. **Contractor's Work.**

3.1 **Standard.** Contractor must perform services in accordance with the standards of due diligence, care, and quality prevailing among contractors having substantial experience with the successful furnishing of services and materials for projects that are equivalent in size, scope, quality, and other criteria under the Project and identified in this Agreement.

3.2 **Licensing.** Contractor warrants that:

- (A) Contractor and Sub-contractors will hold all appropriate and required licenses, registrations and other approvals necessary for the lawful furnishing of services ("Approvals"); and
- (B) Neither Contractor nor any Sub-contractor has been debarred or otherwise legally excluded from contracting with any federal, state, or local governmental entity ("Debarment").
  - (1) City is under no obligation to ascertain or confirm the existence or issuance of any Approvals or Debarments or to examine Contractor's contracting ability.
  - (2) Contractor must notify City immediately if any Approvals or Debarment changes during the Agreement's duration and the failure of the Contractor to notify City as required will constitute a material default of this Agreement.

3.3 **Compliance.** Services and materials will be furnished in compliance with applicable federal, state, county and local statutes, rules, regulations, ordinances, building codes, life safety codes, or other standards and criteria designated by City.

3.4 **Coordination; Interaction.**

- (A) If the City determines that the Project requires the coordination of professional services or other providers, Contractor will work in close consultation with City to proactively interact with any other contractors retained by City on the Project ("Coordinating Entities").

- (B) Subject to any limitations expressly stated in the budget, Contractor will meet to review the Project, schedules, budget, and in-progress work with Coordinating Entities and the City as often and for durations as City reasonably considers necessary in order to ensure the timely work delivery and Project completion.
- (C) If the Project does not involve Coordinating Entities, Contractor will proactively interact with any other contractors when directed by City to obtain or disseminate timely information for the proper execution of the Project.

**3.5 Hazardous Substances.** Contractor is responsible for the appropriate handling, disposal of, and if necessary, any remediation and all losses and damages to the City, associated with the use or release of hazardous substances by Contractor in connection with completion of the Project.

**3.6 Warranties.** At any time within two years after completion of the Project, Contractor must, at Contractor's sole expense and within 20 days of written notice from the City, uncover, correct and remedy all defects in Contractor's work. City will accept a manufacturer's warranty on approved equipment as satisfaction of the Contractor's warranty under this subsection.

**3.7 Bonds.** Upon execution of this Agreement, and if applicable, Contractor must furnish Payment and Performance bonds as required under A.R.S. § 34-608.

**4. Compensation for the Project.**

**4.1 Compensation.** Contractor's compensation for the Project, including those furnished by its Sub-contractors will not exceed \$3,848,518.25, as specifically detailed in the Contractor's bid and set forth in **Exhibit B** ("Compensation").

**4.2 Change in Scope of Project.** The Compensation may be equitably adjusted if the originally contemplated scope of services as outlined in the Project is significantly modified by the City.

- (A) Adjustments to the Scope or Compensation require a written amendment to this Agreement and may require City Council approval.
- (B) Additional services which are outside the scope of the Project and not contained in this Agreement may not be performed by the Contractor without prior written authorization from the City.

**5. Billings and Payment.**

**5.1 Applications.**

- (A) The Contractor will submit monthly invoices (each, a "Payment Application") to City's Project Manager and City will remit payments based upon the Payment Application as stated below.
- (B) The period covered by each Payment Application will be one calendar month ending on the last day of the month.

**5.2 Payment.**

- (A) After a full and complete Payment Application is received, City will process and remit payment within 30 days.
- (B) Payment may be subject to or conditioned upon City's receipt of:

- (1) Completed work generated by Contractor and its Sub-contractors; and
- (2) Unconditional waivers and releases on final payment from Sub-contractors as City may reasonably request to assure the Project will be free of claims arising from required performances under this Agreement.

**5.3 Review and Withholding.** City's Project Manager will timely review and certify Payment Applications.

- (A) If the Payment Application is rejected, the Project Manager will issue a written listing of the items not approved for payment.
- (B) City may withhold an amount sufficient to pay expenses that City reasonably expects to incur in correcting the deficiency or deficiencies rejected for payment.
- (C) Contractor will provide, by separate cover, and concurrent with the execution of this Agreement, all required financial information to the City, including City of Glendale Transaction Privilege License and Federal Taxpayer identification numbers.
- (D) City will temporarily withhold Compensation amounts as required by A.R.S. 34-221(C).

**6. Termination.**

**6.1 For Convenience.** City may terminate this Agreement for convenience, without cause, by delivering a written termination notice stating the effective termination date, which may not be less than 15 days following the date of delivery.

- (A) Contractor will be equitably compensated any services and materials furnished prior to receipt of the termination notice and for reasonable costs incurred.
- (B) Contractor will also be similarly compensated for any approved effort expended and approved costs incurred that are directly associated with Project closeout and delivery of the required items to the City.

**6.2 For Cause.** City may terminate this Agreement for cause if Contractor fails to cure any breach of this Agreement within seven days after receipt of written notice specifying the breach.

- (A) Contractor will not be entitled to further payment until after City has determined its damages. If City's damages resulting from the breach, as determined by City, are less than the equitable amount due but not paid Contractor for Service and Repair furnished, City will pay the amount due to Contractor, less City's damages.
- (B) If City's direct damages exceed amounts otherwise due to Contractor, Contractor must pay the difference to City immediately upon demand; however, Contractor will not be subject to consequential damages more than \$1,000,000 or the amount of this Agreement, whichever is greater.

**7. Insurance.**

**7.1 Requirements.** Contractor must obtain and maintain the following insurance ("Required Insurance"):

- (A) Contractor and Sub-contractors. Contractor, and each Sub-contractor performing work or providing materials related to this Agreement must procure and maintain the insurance coverages described below (collectively, "Contractor's Policies"), until each Parties' obligations under this Agreement are completed.

- (B) General Liability.
  - (1) Contractor must at all times relevant hereto carry a commercial general liability policy with a combined single limit of at least \$1,000,000 per occurrence and \$2,000,000 annual aggregate.
  - (2) Sub-contractors must at all times relevant hereto carry a general commercial liability policy with a combined single limit of at least \$1,000,000 per occurrence.
  - (3) This commercial general liability insurance must include independent contractors' liability, contractual liability, broad form property coverage, products and completed operations, XCU hazards if requested by the City, and a separation of insurance provision.
  - (4) These limits may be met through a combination of primary and excess liability coverage.
- (C) Auto. A business auto policy providing a liability limit of at least \$1,000,000 per accident for Contractor and 1,000,000 per accident for Sub-contractors and covering owned, non-owned and hired automobiles.
- (D) Workers' Compensation and Employer's Liability. A workers' compensation and employer's liability policy providing at least the minimum benefits required by Arizona law.
- (E) Equipment Insurance. Contractor must secure, pay for, and maintain all-risk insurance as necessary to protect the City against loss of owned, non-owned, rented or leased capital equipment and tools, equipment and scaffolding, staging, towers and forms owned or rented by Contractor or its Sub-contractors.
- (F) Notice of Changes. Contractor's Policies must provide for not less than 30 days' advance written notice to City Representative of:
  - (1) Cancellation or termination of Contractor or Sub-contractor's Policies;
  - (2) Reduction of the coverage limits of any of Contractor or and Sub-contractor's Policies; and
  - (3) Any other material modification of Contractor or Sub-contractor's Policies related to this Agreement.
- (G) Certificates of Insurance.
  - (1) Within 10 business days after the execution of the Agreement, Contractor must deliver to City Representative certificates of insurance for each of Contractor and Sub-contractor's Policies, which will confirm the existence or issuance of Contractor and Sub-contractor's Policies in accordance with the provisions of this section, and copies of the endorsements of Contractor and Sub-contractor's Policies in accordance with the provisions of this section.
  - (2) City is and will be under no obligation either to ascertain or confirm the existence or issuance of Contractor and Sub-contractor's Policies, or to examine Contractor and Sub-contractor's Policies, or to inform Contractor or Sub-contractor in the event that any coverage does not comply with the requirements of this section.
  - (3) Contractor's failure to secure and maintain Contractor Policies and to assure Sub-contractor policies as required will constitute a material default under this

Agreement.

(H) Other Contractors or Vendors.

- (1) Other contractors or vendors that may be contracted by Contractor with in connection with the Project must procure and maintain insurance coverage as is appropriate to their particular agreement.
- (2) This insurance coverage must comply with the requirements set forth above for Contractor's Policies (e.g., the requirements pertaining to endorsements to name the parties as additional insured parties and certificates of insurance).

(I) Policies. Except with respect to workers' compensation and employer's liability coverages, the City must be named and properly endorsed as additional insureds on all liability policies required by this section.

- (1) The coverage extended to additional insureds must be primary and must not contribute with any insurance or self insurance policies or programs maintained by the additional insureds.
- (2) All insurance policies obtained pursuant to this section must be with companies legally authorized to do business in the State of Arizona and acceptable to all parties.

**7.2 Sub-contractors.**

- (A) Contractor must also cause its Sub-contractors to obtain and maintain the Required Insurance.
- (B) City may consider waiving these insurance requirements for a specific Sub-contractor if City is satisfied the amounts required are not commercially available to the Sub-contractor and the insurance the Sub-contractor does have is appropriate for the Sub-contractor's work under this Agreement.
- (C) Contractor and Sub-contractors must provide to the City proof of Required Insurance whenever requested.

**7.3 Indemnification.**

- (A) To the fullest extent permitted by law, Contractor must defend, indemnify, and hold harmless City and its elected officials, officers, employees and agents (each, an "Indemnified Party," collectively, the "Indemnified Parties"), for, from, and against any and all claims, demands, actions, damages, judgments, settlements, personal injury (including sickness, disease, death, and bodily harm), property damage (including loss of use), infringement, governmental action and all other losses and expenses, including attorneys' fees and litigation expenses (each, a "Demand or Expense"; collectively, "Demands or Expenses") asserted by a third-party (i.e. a person or entity other than City or Contractor) and that arises out of or results from the breach of this Agreement by the Contractor or the Contractor's negligent actions, errors or omissions (including any Sub-contractor or other person or firm employed by Contractor), whether sustained before or after completion of the Project.
- (B) This indemnity and hold harmless policy applies even if a Demand or Expense is in part due to the Indemnified Party's negligence or breach of a responsibility under this Agreement, but in that event, Contractor shall be liable only to the extent the Demand or Expense results from the negligence or breach of a responsibility of Contractor or of any person or entity for whom Contractor is responsible.

- (C) Contractor is not required to indemnify any Indemnified Parties for, from, or against any Demand or Expense resulting from the Indemnified Party's sole negligence or other fault solely attributable to the Indemnified Party.

7.4 **Waiver of Subrogation.** Contractor waives, and will require any Subcontractor to waive, all rights of subrogation against the City to the extent of all losses or damages covered by any policy of insurance.

8. **E-verify, Records and Audits.** To the extent applicable under A.R.S. § 41-4401, the parties warrant their compliance with all federal immigration laws and regulations that relate to their employees and compliance with the E-verify requirements under A.R.S. § 23-214(A). A party's breach of this warranty shall be deemed a material breach of the Agreement and may result in the termination of the Agreement by either party under the terms of this Agreement. The parties each retain the legal right to randomly inspect the papers and records of the other party to ensure that the other party is complying with the above-mentioned warranty. The parties warrant to keep their respective papers and records open for random inspection during normal business hours by the other party. The parties shall cooperate with the other party's random inspections, including granting the inspecting party entry rights onto their respective properties to perform the random inspections and waiving their respective rights to keep such papers and records confidential.

9. **Conflict.** Contractor acknowledges this Agreement is subject to A.R.S. § 38-511, which allows for cancellation of this Agreement in the event any person who is significantly involved in initiating, negotiating, securing, drafting, or creating the Agreement on City's behalf is also an employee, agent, or consultant of any other party to this Agreement.

10. **Non-Discrimination Policies.** Contractor must not discriminate against any employee or applicant for employment on the basis of race, religion, color sex or national origin. Contractor must develop, implement and maintain non-discrimination policies and post the policies in conspicuous places visible to employees and applicants for employment. Contractor will require any Sub-contractor to be bound to the same requirements as stated within this section.

11. **Notices.**

11.1 A notice, request or other communication that is required or permitted under this Agreement (each a "Notice") will be effective only if:

- (A) The Notice is in writing, and
- (B) Delivered in person or by private express overnight delivery service (delivery charges prepaid), certified or registered mail (return receipt requested).
- (C) Notice will be deemed to have been delivered to the person to whom it is addressed as of the date of receipt, if:
  - (1) Received on a business day, or before 5:00 p.m., at the address for Notices identified for the Party in this Agreement by U.S. Mail, hand delivery, or overnight courier on or before 5:00 p.m.; or
  - (2) As of the next business day after receipt, if received after 5:00 p.m.
- (D) The burden of proof of the place and time of delivery is upon the Party giving the Notice.
- (E) Digitalized signatures and copies of signatures will have the same effect as original signatures.

11.2 **Representatives.**

- (A) Contractor. Contractor's representative ("Contractor's Representative") authorized to act on

Contractor's behalf with respect to the Project, and his or her address for Notice delivery is:

Combs Construction Company, Inc.  
Attn: Michael R. Steg, Vice-President  
P. O. Box 10789  
Glendale, Arizona 85318

- (B) City. City's representative ("City's Representative") authorized to act on City's behalf, and his or her address for Notice delivery is:

City of Glendale  
Attn: David D. Beard  
5850 West Glendale Avenue  
Glendale, Arizona 85301

With required copies to:

City of Glendale  
City Manager  
5850 West Glendale Avenue  
Glendale, Arizona 85301

City of Glendale  
City Attorney  
5850 West Glendale Avenue  
Glendale, Arizona 85301

- (C) Concurrent Notices.

- (1) All notices to City's representative must be given concurrently to City Manager and City Attorney.
- (2) A notice will not be considered to have been received by City's representative until the time that it has also been received by City Manager and City Attorney.
- (3) City may appoint one or more designees for the purpose of receiving notice by delivery of a written notice to Contractor identifying the designee(s) and their respective addresses for notices.

- (D) **Changes.** Contractor or City may change its representative or information on Notice, by giving Notice of the change in accordance with this section at least ten days prior to the change.

12. **Financing Assignment.** City may assign this Agreement to any City-affiliated entity, including a non-profit corporation or other entity whose primary purpose is to own or manage the Project.

13. **Entire Agreement; Survival; Counterparts; Signatures.**

- 13.1 **Integration.** This Agreement contains, except as stated below, the entire agreement between City and Contractor and supersedes all prior conversations and negotiations between the parties regarding the Project or this Agreement.

- (A) Neither Party has made any representations, warranties or agreements as to any matters concerning the Agreement's subject matter.
- (B) Representations, statements, conditions, or warranties not contained in this Agreement will not be binding on the parties.
- (C) Any solicitation, addendums and responses submitted by the Contractor are incorporated fully into this Agreement as Exhibit A. Any inconsistency between Exhibit A and this Agreement

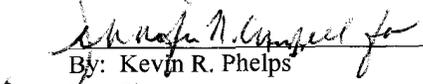
will be resolved by the terms and conditions stated in this Agreement.

- 13.2 Interpretation.**
- (A) The parties fairly negotiated the Agreement's provisions to the extent they believed necessary and with the legal representation they deemed appropriate.
  - (B) The parties are of equal bargaining position and this Agreement must be construed equally between the parties without consideration of which of the parties may have drafted this Agreement.
  - (C) The Agreement will be interpreted in accordance with the laws of the State of Arizona.
- 13.3 Survival.** Except as specifically provided otherwise in this Agreement each warranty, representation, indemnification and hold harmless provision, insurance requirement, and every other right, remedy and responsibility of a Party, will survive completion of the Project, or the earlier termination of this Agreement.
- 13.4 Amendment.** No amendment to this Agreement will be binding unless in writing and executed by the parties. Any amendment may be subject to City Council approval.
- 13.5 Remedies.** All rights and remedies provided in this Agreement are cumulative and the exercise of any one or more right or remedy will not affect any other rights or remedies under this Agreement or applicable law.
- 13.6 Severability.** If any provision of this Agreement is voided or found unenforceable, that determination will not affect the validity of the other provisions, and the voided or unenforceable provision will be reformed to conform to applicable law.
- 14.7 Counterparts.** This Agreement may be executed in counterparts, and all counterparts will together comprise one instrument.
- 14. Dispute Resolution.** Each claim, controversy and dispute ("Dispute") between Contractor and City will be resolved in accordance with Exhibit C. The final determination will be made by the City.
- 15. Exhibits.** The following exhibits, with reference to the term in which they are first referenced, are incorporated by this reference.
- |           |                    |
|-----------|--------------------|
| Exhibit A | Project            |
| Exhibit B | Compensation       |
| Exhibit C | Dispute Resolution |

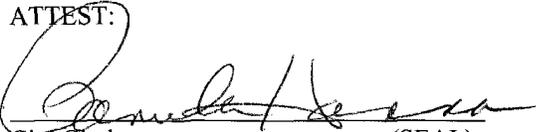
Project 151614

The parties enter into this Agreement as of the date shown above.

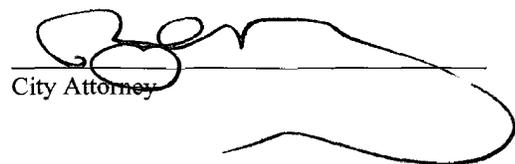
City of Glendale,  
an Arizona municipal corporation

  
By: Kevin R. Phelps  
Its: City Manager

ATTEST:

  
City Clerk (SEAL)

APPROVED AS TO FORM:

  
City Attorney

Combs Construction Company, Inc.  
an Arizona corporation

  
By: James L. Combs  
Its: CEO

WOMEN-OWNED/MINORITY BUSINESS [ ] YES [ ] NO  
CITY OF GLENDALE TRANSACTION PRIVILEGE TAX NO. \_\_\_\_\_  
FEDERAL TAXPAYER IDENTIFICATION NO. \_\_\_\_\_

Project 151614

**EXHIBIT A  
CONSTRUCTION AGREEMENT**

**PROJECT**

Project includes Removal of existing farm buildings and homes located on 22 Acres of prior farm/feedlot. Site is being developed for automobile parking with storm retention, catch basins and related piping, commercial lighting, sidewalk, curbing, minor block and chain link fence work.

Project 151614

**EXHIBIT B  
CONSTRUCTION AGREEMENT**

**COMPENSATION**

**METHOD AND AMOUNT OF COMPENSATION**

By bid, including all services, materials and costs.

**NOT-TO-EXCEED AMOUNT**

The total amount of compensation paid to Contractor for full completion of all work required by the Project during the entire term of the Project must not exceed \$3,848,518.25.

**DETAILED PROJECT COMPENSATION**

As shown in detail on the Bid Schedule attached to the original bid documents.

**EXHIBIT C  
CONSTRUCTION AGREEMENT**

**DISPUTE RESOLUTION**

**1. Disputes.**

- 1.1 Commitment. The parties commit to resolving all disputes promptly, equitably, and in a good-faith, cost-effective manner.
- 1.2 Application. The provisions of this Exhibit will be used by the parties to resolve all controversies, claims, or disputes ("Dispute") arising out of or related to this Agreement-including Disputes regarding any alleged breaches of this Agreement.
- 1.3 Initiation. A party may initiate a Dispute by delivery of written notice of the Dispute, including the specifics of the Dispute, to the Representative of the other party as required in this Agreement.
- 1.4 Informal Resolution. When a Dispute notice is given, the parties will designate a member of their senior management who will be authorized to expeditiously resolve the Dispute.
  - (A) The parties will provide each other with reasonable access during normal business hours to any and all non-privileged records, information and data pertaining to any Dispute in order to assist in resolving the Dispute as expeditiously and cost effectively as possible;
  - (B) The parties' senior managers will meet within 10 business days to discuss and attempt to resolve the Dispute promptly, equitably, and in a good faith manner, and
  - (C) The Senior Managers will agree to subsequent meetings if both parties agree that further meetings are necessary to reach a resolution of the Dispute.

**2. Arbitration.**

- 2.1 Rules. If the parties are unable to resolve the Dispute by negotiation within 30 days from the Dispute notice, and unless otherwise informal discussions are extended by the mutual agreement, the Dispute will be decided by binding arbitration in accordance with Construction Industry Rules of the AAA, as amended herein. Although the arbitration will be conducted in accordance with AAA Rules, it will not be administered by the AAA, but will be heard independently.
  - (A) The parties will exercise best efforts to select an arbitrator within 5 business days after agreement for arbitration. If the parties have not agreed upon an arbitrator within this period, the parties will submit the selection of the arbitrator to one of the principals of the mediation firm of Scott & Skelly, LLC, who will then select the arbitrator. The parties will equally share the fees and costs incurred in the selection of the arbitrator.
  - (B) The arbitrator selected must be an attorney with at least 15 years experience with commercial construction legal matters in Maricopa County, Arizona, be independent, impartial, and not have engaged in any business for or adverse to either Party for at least 10 years.
- 2.2 Discovery. The extent and the time set for discovery will be as determined by the arbitrator. Each Party must, however, within ten (10) days of selection of an arbitrator deliver to the other Party copies of all documents in the delivering party's possession that are relevant to the dispute.
- 2.3 Hearing. The arbitration hearing will be held within 90 days of the appointment of the arbitrator. The arbitration hearing, all proceedings, and all discovery will be conducted in Glendale, Arizona unless otherwise agreed by the parties or required as a result of witness location. Telephonic hearings and

other reasonable arrangements may be used to minimize costs.

- 2.4 Award. At the arbitration hearing, each Party will submit its position to the arbitrator, evidence to support that position, and the exact award sought in this matter with specificity. The arbitrator must select the award sought

by one of the parties as the final judgment and may not independently alter or modify the awards sought by the parties, fashion any remedy, or make any equitable order. The arbitrator has no authority to consider or award punitive damages.

- 2.5 Final Decision. The Arbitrator's decision should be rendered within 15 days after the arbitration hearing is concluded. This decision will be final and binding on the Parties.

- 2.6 Costs. The prevailing party may enter the arbitration in any court having jurisdiction in order to convert it to a judgment. The non-prevailing party shall pay all of the prevailing party's arbitration costs and expenses, including reasonable attorney's fees and costs.

3. **Services to Continue Pending Dispute.** Unless otherwise agreed to in writing, Contractor must continue to perform and maintain progress of required services during any Dispute resolution or arbitration proceedings, and City will continue to make payment to Contractor in accordance with this Agreement.

4. **Exceptions.**

- 4.1 Third Party Claims. City and Contractor are not required to arbitrate any third-party claim, cross-claim, counter claim, or other claim or defense of a third-party who is not obligated by contract to arbitrate disputes with City and Contractor.

- 4.2 Liens. City or Contractor may commence and prosecute a civil action to contest a lien or stop notice, or enforce any lien or stop notice, but only to the extent the lien or stop notice the Party seeks to enforce is enforceable under Arizona Law, including, without limitation, an action under A.R.S. § 33-420, without the necessity of initiating or exhausting the procedures of this Exhibit.

- 4.3 Governmental Actions. This Exhibit does not apply to, and must not be construed to require arbitration of, any claims, actions or other process filed or issued by City of Glendale Building Safety Department or any other agency of City acting in its governmental permitting or other regulatory capacity.

**INDIVIDUAL SURETIES WILL NOT BE ACCEPTED**  
STATUTORY PERFORMANCE BOND PURSUANT TO TITLE 34,  
CHAPTER 2, ARTICLE 2, OF THE ARIZONA REVISED STATUTES  
(Penalty of this bond must be 100% of the Contract Amount)

KNOW ALL MEN BY THESE PRESENTS:

That Combs Construction Company Inc. (hereinafter called the Principal), as Principal, and Western Surety Company, a corporation organized and existing under the laws of the State of South Dakota with its principal office in the City of Sioux Falls, (hereinafter called the Surety), as Surety, are held and firmly bound unto the City of Glendale, a municipal corporation, (hereinafter called the Oblige), in the amount of Three Million Eight Hundred Forty Eight Thousand Five Hundred Eighteen & Twenty Five cents Dollars (\$3,848,518.25), for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, The Principal has entered into a certain written contract with the Oblige, dated the 12 day of April, 2016, to construct **PROJECT 151614 - P1 PARKING, 91ST & MARYLAND AVENUES**, which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall faithfully perform and fulfill all undertakings, covenants, terms, conditions and agreements of said contract during the original term of said contract any extension thereof, with or without notice to the Surety, and during the life of any guaranty required under the contract and shall also perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the Surety being hereby waived; then the above obligation shall be void, otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2, of the Arizona Revised Statutes, and all liabilities on this bond shall be determined in accordance with the provisions of said Title, Chapter, and Article, to the extent as if it were copied at length herein.

The prevailing party or any party which recovers judgment on this bond shall be entitled to such reasonable attorney's fees as may be fixed by the court or a judge thereof.

Witness our hands this 26 day of April, 2016.

Combs Construction Company Inc.  
Principal Seal

By [Signature]  
JAMES L COMBS, CEO

Western Surety Company  
Surety Seal

AVI Risk Management  
Agency of Record

7901 S. Gilbert Rd, Chandler 85249, AZ  
Agency Address

Telephone Number: 480 678 3427

**INDIVIDUAL SURETIES WILL NOT BE ACCEPTED**  
STATUTORY PAYMENT BOND PURSUANT TO TITLE 34,  
CHAPTER 2, ARTICLE 2, OF THE ARIZONA REVISED STATUTES  
(Penalty of this bond must be 100% of the Contract Amount)

KNOW ALL MEN BY THESE PRESENTS:

That, Combs Construction Company Inc (hereinafter called the Principal), as Principal, and  
, a corporation organized and existing under the laws of the State of South Dakota with its principal  
office in the City of Sioux Falls, (hereinafter called the Surety), as Surety, are held and firmly  
bound unto the City of Glendale, a municipal corporation, (hereinafter called the Oblige), in the  
amount of Three Million Dollars (\$3,000,000.00), for the payment whereof; the said Principal and  
Surety bind themselves, (and their heirs, administrators, successors and assigns, jointly and severally,  
firmly by these presents. Eight Hundred Forty Eight Thousand Five Hundred Eighteen & Twenty Five

12 WHEREAS, The Principal has entered into a certain written contract with the Oblige, dated the  
day of April, 20 16, to construct **PROJECT 151614 - P1 PARKING, 91ST & MARYLAND**  
**AVENUES** which contract is hereby referred to and made a part hereof as fully and to the same  
extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said  
Principal shall promptly pay all monies due to all persons supplying labor or materials to him or his  
subcontractors in the prosecution of the work provided for in said Contract, then this obligation shall  
be void, otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond having been required of the said Principal in order to  
comply with the provisions of Title 34, Chapter 2, Article 2, of the Arizona Revised Statutes, all  
rights and remedies on this bond shall inure solely to such persons and shall be determined in  
accordance with the provisions, conditions, and limitations of said Title, Chapter and Article, to the  
same extent as if they were copied at length herein.

The prevailing party or any party which recovers judgment on this bond shall be entitled to such  
reasonable attorney's fees as may be fixed by the court or a judge thereof.

Witness our hands this 26 day of April, 20 16.

Combs Construction Company Inc  
Principal Seal

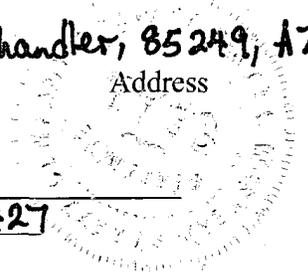
By [Signature]  
JAMES L. COMBS, CEO

Western Surety Company  
Surety Seal

AVI Risk Management  
Agency of Record

7901 S. Gilbert Rd, Chandler, 85249, AZ  
Agency Address

Telephone 480 678 3427



# Western Surety Company

## POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That WESTERN SURETY COMPANY, a South Dakota corporation, is a duly organized and existing corporation having its principal office in the City of Sioux Falls, and State of South Dakota, and that it does by virtue of the signature and seal herein affixed hereby make, constitute and appoint

**John Dennis Schnulo Jr, Individually**

of Chandler, AZ, its true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on its behalf bonds, undertakings and other obligatory instruments of similar nature

**- In Unlimited Amounts -**

and to bind it thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of the corporation and all the acts of said Attorney, pursuant to the authority hereby given, are hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law printed on the reverse hereof, duly adopted, as indicated, by the shareholders of the corporation.

In Witness Whereof, WESTERN SURETY COMPANY has caused these presents to be signed by its Vice President and its corporate seal to be hereto affixed on this 4th day of September, 2015.

WESTERN SURETY COMPANY

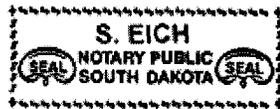


Paul T. Bruflat  
Paul T. Bruflat, Vice President

State of South Dakota }  
County of Minnehaha } ss

On this 4th day of September, 2015, before me personally came Paul T. Bruflat, to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is the Vice President of WESTERN SURETY COMPANY described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed pursuant to authority given by the Board of Directors of said corporation and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporation.

My commission expires  
February 12, 2021



S. Eich  
S. Eich, Notary Public

### CERTIFICATE

I, L. Nelson, Assistant Secretary of WESTERN SURETY COMPANY do hereby certify that the Power of Attorney hereinabove set forth is still in force, and further certify that the By-Law of the corporation printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said corporation this 27th day of April 2016.



WESTERN SURETY COMPANY

L. Nelson  
L. Nelson, Assistant Secretary

**CITY OF GLENDALE, ARIZONA  
ENGINEERING DEPARTMENT CERTIFICATE OF INSURANCE**

The AVI Risk Management and Insurance Brokers  
 Certifies that the following insurance policies have been issued on behalf of:

Name of Insured Combs Construction Company, Inc  
 Address of Insured PO Box 10789; Glendale, AZ 85318

Name and Address of Additional Named Insured:  
 City of Glendale, Arizona  
 Attention Engineering Dept.  
 5850 West Glendale Avenue  
 Glendale, Arizona 85301

Type of Insurance	Carrier Name	Policy No.	Effective Date	Expiration Date	Minimum Limits of Liability
(1) Workmen's Compensation and Employers Liability	The Standard Fire Insurance Co.	UB5G76803	1/1/2016	1/1/2017	1,000,000 each accident 1,000,000 each employee 1,000,000 policy limit
(2) Commercial General Liability including: - Explosion, Collapse & Underground - Blanket contractual - Personal Injury - Broad Form Property Damage - Products/Completed Operations	Phoenix Insurance Company	CO5G768030	1/1/2016	1/1/2017	\$1,000,000 Each Occurrence Bodily Injury 1,000,000 Each Occurrence Property Damage  \$2,000,000 annual aggregate products/completed operations
(3) Commercial Auto Liability including owned, non-owned and hired vehicles	Travelers Property Casualty Co	8105G768030	1/1/2016	1/1/2017	1,000,000 Each Occurrence Bodily Injury 1,000,000 Each Occurrence Property Damage
(4) Other Umbrella- \$10,000 retention	Travelers Property Casualty Co	CUP5G768030	1/1/2016	1/1/2017	8,000,000 each occurrence 8,000,000 aggregate

When the project includes construction of a new, or modification of an existing building **(in addition to the above coverage)** property coverage shall be maintained in the full amount of the contract naming City of Glendale as a loss payee as their interests may appear.

Type of Insurance	Carrier Name	Policy No.	Effective Date	Expiration Date	Policy Limit
(5) Fire, extended coverage, vandalism and malicious mischief					

All policies shall remain in effect after until all work has been completed, the City has issued final acceptance and until the time limit for filing against the project has passed. If any policy expires during the life of the Contract, a renewal Certificate of the required coverage shall be sent to the City of Glendale not less than five (5) days prior to expiration date. Failure of the Contractor to provide renewal certificates or the failure of the City to request renewal of certificates shall not waive the requirement and the City shall retain all rights to coverage as if the policy(ies) had not expired or been non-renewed.

It is agreed that none of these policies will be canceled or changed so as to affect this certificate until ten (10) days written notice of such cancellation or change has been delivered to the City of Glendale.

It is further agreed that:

This certificate is not valid unless countersigned by an authorized representative of the Insurance Company.

Date:

4/28/2016

Countersigned by:

Bill Fortner

*Bill Fortner*

Signature

PO Box 5220

Farmington, NM 87499

Agency Address

Contact Name: Jamie Snapp

Telephone # 505-566-4623

CITY OF GLENDALE, ARIZONA  
PUBLIC WORKS/ENGINEERING DEPARTMENT

CONTRACTOR'S AFFIDAVIT  
REGARDING  
SETTLEMENT OF CLAIMS

**PROJECT 151614 - P1 PARKING, 91ST & MARYLAND AVENUES**

To the City of Glendale, Arizona

Gentlemen:

This is to certify that all lawful claims for materials, rental of equipment and labor used in connection with the construction of the above project, whether by subcontractor or claimant in person, have been duly discharged.

The undersigned, for the consideration of \$ \_\_\_\_\_, as set out in the final pay estimate, as full and complete payment under the terms of the contract, hereby waives and relinquishes any and all further claims or right of lien under, in connection with, or as a result of the above described project. The undersigned further agrees to indemnify and save harmless the City of Glendale against any and all liens, claims of liens, suits, actions, damages, charges, costs, litigation expenses, attorneys' fees and any other and expenses whatsoever, which said City may suffer arising out of the failure of the undersigned to pay for all labor performance and materials furnished for the performance of said installation.

Signed and dated at \_\_\_\_\_, this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Contractor

By \_\_\_\_\_

STATE OF ARIZONA            )  
  ) ss.  
COUNTY OF MARICOPA        )

The foregoing instrument was subscribed and sworn to before me this \_\_\_\_ day of \_\_\_\_\_, 20\_\_

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_

SUPPLEMENTAL GENERAL CONDITIONS

1. GENERAL: By Ordinance No. 1110 New Series, the City of Glendale adopted the "Uniform Standard Specifications for Public Works Construction," which are sponsored and distributed by the Maricopa Association of Governments. Copies of these documents, with revisions, are on file in the office of the City Engineer of the City of Glendale, and are hereby made a part of these Contract Documents.

Whenever in the Uniform Standard Specifications, the words "The Contracting Agency" are used, the meaning shall be the City of Glendale.

In all cases where ASTM, AASHTO, AWWA, USAG, Federal, City of Phoenix, MAG Specifications, Maricopa County, Arizona State Highway, City of Glendale or other standard specifications are referred to, unless otherwise stated, revisions, supplements or addenda issued on or before the date of this contract, shall prevail. In the event of any conflict between these project specifications and the requirements of the plans, detail drawings, MAG Standard Details and Specifications, these project specifications shall prevail.

2. DEFINITIONS: The following terms, as used in or pertaining to the Contract Documents, are defined as follows:

CITY: The word "City" refers to the City of Glendale, Arizona. The official representative of said City in these proceedings shall be the City Engineer.

CONTRACTOR: The word "Contractor" means the person, firm, or corporation with whom the Contract is made by the City.

MATERIALS: The term "Materials" includes, in addition to materials incorporated in the project, equipment and other material used and/or consumed in the performance of the work.

SUBCONTRACTOR: The word "Subcontractor" includes those having a direct contract with the Contractor and those who furnish material worked to a special design according to the plans and/or specifications for this work, but does not include those who merely furnish materials not so worked.

ENGINEER: The word "Engineer" means a person, firm or corporation duly authorized by the City, to act for the City in staking out the work, inspecting materials and construction, and interpreting plans and specifications.

CONTRACT DOCUMENTS: The words "Contract Documents" mean the Notice to Contractors, Information for Bidders, "Uniform Standard Specifications for Public Works Construction," MAG General Conditions, Supplemental General Conditions, Special Provisions, Supplemental Specifications, Proposal, Contract, Payment Bond, Performance Bond, Certificates of Insurance, Plans and Addenda thereto.

3. PROPOSAL QUANTITIES: It is expressly understood and agreed by the parties hereto that the quantities of the various classes of work to be done and material to be furnished under this Contract, which have been estimated as stated in the Proposal, are only approximate and are to be used SOLELY for the purpose of comparing, on a consistent basis, the proposals offered for the work under this Contract; and the Contractor further agrees that the City will not be held responsible if any of the quantities shall be found incorrect; and the Contractor will not make any claim for damages or for loss of profits because of a difference between the quantities of the various classes of work as estimated and the work actually done. If any error, omission, or mis-statement is found to occur in the estimated quantities, the same shall not invalidate this Contract or release the Contractor from the execution and completion of the whole or any part of the work in accordance with the specifications and the plans herein mentioned, or for the prices herein agreed upon and fixed therefore, or excuse him from any of the obligations or liabilities hereunder, or entitle him to any damages or compensation except as may be provided for in this Contract.

4. WITHDRAWAL OF PROPOSALS: No proposal shall be withdrawn following the opening and reading of the bids for a period of 50 days from the date of opening without the consent of the contracting agency through the body or agent duly authorized to accept or reject the proposal.

5. LOSSES AND DAMAGES: All loss or damage arising out of the nature of the work to be done or from the action of the elements, or from any unforeseen circumstances in the prosecution of the same, or from any unusual obstructions or difficulties which may be encountered in and/or during the prosecution of the work, or from any casualty whatsoever of every description, shall be sustained and borne by the Contractor at his own cost and expense except as otherwise provided by the contract documents or the laws of the State of Arizona.

6. DUST PREVENTION: The Contractor shall take whatever steps, procedures or means required to prevent abnormal dust conditions due to his construction operations in connection with this contract. The dust control measures shall be maintained at all times during construction of the project, to the satisfaction of the Engineer, in accordance with the requirements of the "Maricopa County Health Department Air Pollution Control Regulations" which have been adopted pursuant to A.R.S. § 36-779.

The Contractor shall be required to obtain the necessary permit from the Maricopa County Air Pollution Control Bureau, 1001 N. Central Ave., Phoenix, Arizona 85004 - telephone (602) 506-6727.

7. EXCESS MATERIAL: Excess material shall be removed from the work site and wasted at a location approved by the Engineer. Broken concrete and asphalt may be delivered to the Glendale Sanitary Landfill located at 115th Avenue and Glendale Avenue. The prevailing regulations and fee schedule will not be waived for work under this project. All materials, to be disposed of at the landfill, shall be weighed and disposed of at the prevailing rate.

8. STOCKPILE OF MATERIALS: The Contractor may place or stockpile materials in the public right-of-way, if approved by the Engineer, provided they do not prevent access to adjacent properties or prevent compliance with traffic regulations.

Traffic shall not be required to travel over stockpiled materials, and proper dust control shall be maintained.

9. REFUSE COLLECTION ACCESS: At any time the project construction shall require the closure or disruption of traffic in any roadway, alley, or refuse collection easement such that normal refuse collection will be interfered with, the Contractor shall, at least 48 hours prior to causing such closure or disruption, make arrangements with the Field Operations Department in order that refuse collection service can be maintained.

10. CLEAN-UP: After all work under this contract is completed, the Contractor shall remove all loose concrete, lumber, wire, reinforcing, debris, and other materials not incorporated in the work, from the site of the work. Clean-up shall include the removal of all excess pointing mortar materials within pipes and removal of over-size rocks and boulders left after finish grading. The contractor shall provide for the legal disposal of all waste products, debris, etc., and shall make necessary arrangements for such disposal.

11. SHOP DRAWINGS: The Contractor shall provide shop drawings as may be necessary for the prosecution of the work as required by the contract documents. The Engineer shall promptly review all shop drawings. The Engineer's approval of any shop drawing shall not release the Contractor from responsibility for deviations from the contract documents. The approval of any shop drawing which substantially deviates from the requirements of the contract documents shall be evidenced by a change order.

When submitted for the Engineer's review, shop drawings shall bear the contractor's certification that he has reviewed, checked, and approved the shop drawings and that they are in conformance with the requirements of the contract documents.

Portions of the work requiring a shop drawing or sample submission shall not begin until the shop drawing or sample submission has been approved by the Engineer. A copy of each approved shop drawing and each approved sample shall be kept in good order by the Contractor at the site and shall be available to the Engineer.

12. PROTECTION OF FINISHED OR PARTIALLY FINISHED WORK: The Contractor shall properly guard and protect all finished or partially finished work, and shall be responsible for the same until the entire contract is completed and accepted, in writing, by the City. The Contractor shall turn over the entire work in full accordance with the specifications before final settlement shall be made.

13. STATUS OF EMPLOYEES: Contractor shall be responsible for assuring the legal working status of its employees and its subcontractor's employees.

14. LAWS AND REGULATIONS: This Contract shall be governed by and constructed in accordance with the laws of the State of Arizona. The Contractor shall keep himself fully informed of all existing and future City and County Ordinances and Regulations and State and Federal Laws and Occupational Safety and Health Standards (OSHA) in any manner affecting the work herein specified. He shall at all times observe and comply with said Ordinances, Regulations, or Laws.

15. PERMITS: The City has obtained certain required permits which are included in the project specifications, but it will be the duty of the Contractor to determine that all the necessary permits have been obtained. The Contractor shall, at his own expense, obtain all required permits which have not been furnished by the City. A no-fee permit will be issued for work in the City of Glendale right-of-way and easement. (Also see Paragraph 7. Dust Prevention.)

16. ELECTRIC POWER AND WATER: The Contractor shall make his own arrangements for electric power and water. Subject to the convenience of the City, he may be permitted to connect to existing facilities where available, but he shall meter and bear the cost of such power or water. Fire hydrant meters may be obtained from the City of Glendale. Installation and removal of meters should be scheduled through the City's Water Services/Utilities Division at 930-2700. For details and current rates, please visit <http://www.glendaleaz.com/CrossConnection/firehydrantmeterprogram.cfm>.

17. SURVEY CONTROL POINTS AND MONUMENTS: Existing survey monuments indicated on the plans or found during construction shall be protected by the Contractor, and in the event removal is necessary, removal and replacement shall be performed by permission of the Engineer, under direct supervision of the Engineer or his authorized representative. Survey monuments shall be constructed to conform to the requirements of MAG Specifications, Section 405, and Standard Details.

18. EXISTING UTILITIES: The Contractor is hereby advised that the location of all utilities, as shown on the plans, may not be complete nor exact and the Contractor shall satisfy himself as to the exact location of the utilities by contacting Blue Stake or the utility companies before proceeding with the work. After the underground utilities are located by Blue Stake or the utility company, the contractor shall excavate in a careful and prudent manner to prevent unwillful damage to the underground utilities.

In the event the Contractor or its Subcontractor damages an existing, properly identified underground City of Glendale water or sewer line, the Contractor shall be responsible for the repairs at its expense.

The exact location of all existing underground service utilities, whether or not indicated on the plans, shall be determined by the Contractor at no expense to the City, and he shall conduct his work so as to prevent interruption of service or damage to them.

The Contractor shall protect existing utility services and be responsible for their replacement if damaged by him, or to make necessary adjustment in their location, if required, in order to complete the work for his Contract.

Utility companies and other interested parties have been provided with construction plans and the

construction schedule for this project. The Contractor shall comply with MAG Specifications 105.6 to cooperate with the utility companies.

19. MAINTENANCE OF IRRIGATION FACILITIES: Where irrigation facilities interfere with construction, the Contractor shall remove and replace the affected irrigation facilities to its original condition. Final acceptance of replaced facilities will depend upon final approval of the Engineer.

20. OVERHEAD UTILITY LINES AND POLES: Contractor is advised that when work around overhead lines and poles is required on a project the Contractor is required to coordinate with Utility Companies who own and operate overhead lines and poles. The coordination may include, but not be limited to the following activities: pole bracing, de-energizing of lines, and temporary relocations. Contractor is responsible to contact the applicable Utility Company representative and discuss his proposed construction methods; in order to determine what actions the Utility Company must take and the costs related to those actions. The Contractor shall include these costs in the applicable bid items for this project.

The primary and the backup representatives for this review and cost determinations are as follows:

Arizona Public Service:	Mr. Bobby Garza	602-371-7989
Qwest:	Mr. Ron Floyd	602-630-1932
Salt River Project:	Mr. Tim Rinn	602-236-8694
Salt River Project:	Ms. Mariann Ward	602-236-6389
Cox Communications:	Mr. Ron Pint	623-328-3529
Cox Communications:	Ms. Linda Facio	623-328-3500

21. SOUTHWEST GAS FACILITIES EXPOSED DURING CONSTRUCTION: The Contractor, upon exposing a gas line during construction, shall call SOUTHWEST GAS at 602-271-4277. The Southwest Gas patrolman will respond, usually within an hour, to inspect the line. Minor cuts or abrasions to the pipe coating will be rewrapped and tracer wire will be reconnected at no cost to the City.

22. UNDERGROUND UTILITIES' BEDDING: All water, sewer, storm drain, irrigation and other conduits installed within the City of Glendale shall be bedded from bottom of excavation to one foot above the pipe with granular bedding material meeting the requirements of Section 601.4.6 of MAG Uniform Standard Specifications. The initial bedding under the pipe shall follow City of Glendale Detail G-690.

23. SEWER SERVICE LINES: The Contractor shall be responsible for locating, and protecting from damage during construction, all sewer service lines within the project which are not owned by the City. Contractor will be permitted to review the "as-builts" to assist Contractor in locating the non-City owned sewer service lines. These "as-builts" were prepared, and supplied to the City, by private developers or contractors who installed the non-City owned sewer service lines. Therefore, the City does not guarantee or warranty the accuracy of such "as-builts" and the contractor, as a condition for being allowed to review such "as-builts", hereby agrees to hold the City harmless for any and all damages or other expenses contractor may incur as a result of any inaccuracies or incorrect information in these "as-builts".

24. RIGHTS-OF-WAY: The City will provide rights-of-way and easements for all work specified in this Contract, and the Contractor shall not enter or occupy with man, tools, equipment or materials any private ground outside the property of the City of Glendale, Maricopa County, Arizona, without the consent of the property owner.

25. SUBCONTRACTS: Subcontracts shall be in accordance with, and the Contractor shall be bound by, the following provisions:

All subcontracts shall be subject to the approval of the City.

All subcontracts shall be in writing and shall provide that all work to be performed thereunder shall be performed in accordance with the terms of the Contract.

Certified copies of any and all subcontracts shall be furnished to the City Engineering Department; however, prices may be omitted.

Subcontracts shall conform to the regulations governing employment of labor.

The subcontracting of any part of the work will in no way relieve the Contractor of his responsibility under the Contract.

26. **PRE-CONSTRUCTION CONFERENCE:** After completion of the Contract Documents, to include bonds, insurance and signatures, and prior to the commencement of any work on the project, the Engineer will schedule a Pre-Construction Conference. This will be held at the City of Glendale, 5850 West Glendale Avenue, Glendale, Arizona.

The purpose of this Conference is to establish a working relationship between the Contractor, Utility Companies, and the Engineer. The agenda will include critical elements of the construction schedule, procedures for handling shop drawings and other submittals, cost breakdown of major lump sum items, payment application and processing, coordination with the involved utility companies, emergency telephone numbers for all representatives involved in the course of construction, and establishment of the Notice to Proceed date.

Minimum attendance by the Contractor shall be a responsible official of the company/corporation, who is authorized to execute and sign documents on behalf of the company/corporation.

27. **OVERTIME:**

Regular Work Hours: The work required to be performed by the Plans and Specifications for the Project shall be performed only during regular working hours, unless the City has authorized overtime work in accordance with the procedures set forth below. Regular working hours shall be defined as one 8-1/2 hour shift per day, Monday through Friday, or, upon prior approval of the City, one 10-1/2 hour shift per day on a compressed four day work week during Monday through Friday. Regular working hours shall not include Saturdays, Sundays or City recognized legal holidays.

Authorization and Costs: If the Contractor desires to schedule work for times other than regular work hours (overtime), the Contractor shall make a written request to the City at least two business days prior to the scheduled overtime. The City reserves the right to deny the request to work overtime based on the best interest and needs of the City. If an overtime request is denied, the City may, at its sole discretion, extend the contract time at no additional costs to the City.

In the event the Contractor does perform work overtime, with or without the prior approval of the City, the Contractor shall be responsible to the City for all additional costs that may be incurred by the City as a result of the Contractor's overtime work, including costs for engineering, inspections, testing, surveying and construction administration, all in accordance with MAG Section 108.5. However, the Contractor shall not be responsible for City's costs incurred as a result of overtime work requested by the City or overtime work resulting from an emergency which is not the responsibility of the Contractor or its employees, subcontractors or suppliers. The City's cost will be billed directly to the Contractor or may, at the City's option, be deducted from monies due the Contractor.

28. **CONTRACTOR'S CONSTRUCTION SCHEDULE:** Concurrently, with the execution of the contract and prior to the pre construction conference, the Contractor shall submit a preliminary schedule for the Engineer's review and acceptance. The schedule shall be in sufficient detail to allow the Engineer to determine if the proposed schedule will conform to an acceptable program of construction operations, as determined by the contracting agency. Within ten calendar days after the preliminary schedule, described above, has been accepted by the Engineer, the Contractor shall submit a progress schedule, utilizing the critical path method scheduling technique, showing the order in which he proposes to carry out the work, the dates on which he will start each phase of the work, and the contemplated date for completion of each phase. The Contractor shall not be permitted to commence construction until the schedule complying with this paragraph has been submitted to the

City. The Contractor will not be granted any extension to the contract time or compensation for any damages as a result of the City's refusal to allow Contractor to commence construction until the critical path method progress schedule has been submitted and accepted by the Engineer.

The critical path method (CPM) scheduling technique requires a breakdown of the entire work into individual tasks and an analysis of the number of days required to perform each task. The schedule submitted to the City should highlight and identify the critical path for the project. After the work is in progress, the Contractor shall submit supplementary progress schedules, using the critical path method technique, of the progress to date and projection for completion. The supplementary progress schedules shall be submitted with each pay request in accordance with the paragraph, "Payments to Contractors," of these Supplemental General Conditions. The progress schedules shall be subject to the acceptance of the Engineer. In the event the Contractor fails to submit a supplementary progress schedule acceptable to the Engineer, the City may withhold further progress payments to the Contractor until the Contractor submits an acceptable supplementary progress schedule, which is accepted by the Engineer, to the City. Schedule changes requiring an increase in the City's engineering personnel on the project shall not be put into effect until the Engineer has approved such increase and made arrangements for the required additional personnel.

29. CHARACTER OF WORKMEN: None but skilled foremen and workmen shall be employed on work requiring special qualifications. When required by the Engineer, the Contractor shall discharge any person who is, in the opinion of the Engineer, disorderly, dangerous, insubordinate, incompetent, or otherwise objectionable. The Contractor shall keep the City harmless from damages or claims for compensation that may occur in the enforcement of this section of the specifications.

30. HINDRANCES AND DELAYS: Except as otherwise provided herein, no charge shall be made by the Contractor for hindrances or delays from any cause during the progress of the work embraced in this Contract; but such delays, if due to no fault or neglect of the Contractor, shall entitle the Contractor to an extension of time allowed for completing the work, sufficient to compensate for the delay, the amount of the delay to be determined by the Engineer, provided the Contractor shall give said Engineer immediate notice in writing of the cause of such delay.

30.1 Delay: In the event of a delay for which the City is solely responsible, which is unreasonable under the circumstances and which was not within the contemplation of City and Contractor at the time this Contract is executed, City and Contractor shall negotiate, in good faith, a payment by the City to Contractor for the expenses incurred by Contractor as a result of such delay, in accordance with the City of Glendale Engineering Department's POLICY STATEMENT FOR CALCULATING DELAYS AND DAMAGES. This provision shall not be construed to void any provision in the contract which requires notice of delay or provides for liquidated damages. However, if the delay is the result of any act or neglect of a third party, including the architect, engineer or other contractor employed by the City, or by labor disputes, fire, unusual delay in transportation, adverse weather conditions not reasonably foreseeable, unavoidable casualties, or any causes beyond the Contractor's control, the Contractor shall not be entitled to any payments or compensation for expenses incurred as a result of such delay, but the Contract Time shall be extended by Change Order for such reasonable time as the Engineer may determine. No extension or compensation will be granted for any delay which is the result, wholly or partially, of any act or neglect of Contractor or any Subcontractor hired by Contractor.

### 31. LIQUIDATED DAMAGES:

31.1 Should the contractor fail to substantially complete the work under this contract within the time for completion stated in the paragraph "Time of Completion," in the Information for Bidders, then the contractor shall pay the City of Glendale, Arizona, liquidated damages, pursuant to the provisions of Section 108.9, Standard Specifications for Public Works Construction, Maricopa Association of Governments, until the work is substantially complete.

31.2 Should the contractor fail to fully and finally complete the work under this contract within the time for completion set forth in the paragraph "Time of Completion," in the Information for Bidders, even though the contractor has achieved substantial completion of the work within such time, then the

contractor shall pay the City of Glendale, liquidated damages (pursuant to the provisions of Section 108.9, Standard Specifications for Public Works Construction, Maricopa Association of Governments), in an amount equal to 100% of the applicable liquidated damage rate set forth in MAG Section 108.9 for each and every calendar day of delay until the work is fully and finally complete and accepted.

31.3 The date of substantial completion shall be the date when the work is sufficiently complete, in accordance with the contract documents, so the owner can fully occupy and utilize the work or designated portion thereof for the use for which it is intended, with all the project's parts and systems operable as required by the contract documents and all the work is complete, accessible, operable, and usable by the owner for its intended purpose(s), and all parts, systems and sitework are 100% complete and cleaned for the owner's use. Only incidental corrective work and final cleaning (if required), beyond cleaning needed for the owner's full use, may remain for final completion.

31.4 Full and final completion shall be that date when all work under the project, including incidental corrective work under punch list and final cleaning, has been completed and the entire project is accepted by the owner.

32. PAYMENTS TO CONTRACTOR: The measurements of quantities and the payments to the Contractor shall be in accordance with MAG Uniform Standard Specifications for Public Works Construction, Part 100 - General Conditions, Section 109 - Measurements and Payments.

Payments will be made on the basis of itemized, monthly statements prepared by the City and signed by the Contractor. The Contractor shall submit an itemized, duly certified and approved estimate for work completed through the last day of the preceding month in accordance with MAG Specifications, as amended by these Supplemental General Conditions. Upon approval of the pay estimate, the City will mail the check directly to the Contractor.

The pay estimate shall be accompanied by an updated progress schedule as required by these Supplemental General Conditions and a cash flow report when required by the Special Provisions. Approval of progress payments shall be conditional upon submittal of progress schedules and cash flow reports, when required, which are acceptable to the Engineer.

Upon 100% completion and acceptance of the project, and with the request for final payment, the Contractor shall complete and submit the "Contractor's Affidavit Regarding Settlement of Claims" form which is included in these specifications. Before final payment and release of retention, Contractor must arrange for its Surety to provide the City with a fully executed AIA Consent of Surety form. To avoid delays in the final payment, the Surety may send the Consent of Surety directly to the City via fax at (623) 915-2861, and mail the original to the City of Glendale Engineering Department, 5850 West Glendale Avenue, Glendale, Arizona 85301. Should any ambiguity arise between the Contract and these Conditions, the provisions of the Contract shall prevail.

33. WARRANTY: This project shall have a 2 year warranty. The warranty period shall begin upon final acceptance of the work by the City of Glendale.

\*\*\*END OF SUPPLEMENTAL GENERAL CONDITIONS\*\*\*

### SPECIAL PROVISIONS

1. **SCOPE OF WORK:** The work on this project includes Removal of existing farm buildings and homes located on 22 Acres of prior farm/feedlot. Site is being developed for automobile parking with storm retention, catch basins and related piping, commercial lighting, sidewalk, curbing, minor block and chain link fence work.

2. **DEFINITIONS:**

A. **Section:** Reference to a Section on the plans or in these Specifications shall mean a Section of the Uniform Standard Specifications for Public Works Construction, sponsored and distributed by Maricopa Association of Governments (MAG), latest revision. The provisions of MAG Uniform Standard Specifications and Details for Public Works Construction, which are not altered or modified by the drawings or by these Special Provisions or by any subsequently issued Addendum, shall apply to the contract even though the Contractor's attention is not specifically drawn to such provisions.

B. **Standard Detail:** Reference to a MAG Standard Detail (MAG S.D.) on the plans or in these specifications shall mean a standard detail drawing in the latest revision of the Uniform Standard Specifications for Public Works Construction, sponsored and distributed by Maricopa Association of Governments. City of Glendale Standard Detail (C.O.G. S.D.) shall mean a standard detail drawing in the City of Glendale Design Guidelines for Site Development and Infrastructure Construction, latest revision. City of Phoenix Standard Detail (C.O.P. S.D.) shall mean a standard detail drawing in the Phoenix Supplemental Standard Details for Public Works Construction, latest revision.

3. **CONSTRUCTION SURVEYING AND LAYOUT:** The work under this item shall consist of furnishing all materials, personnel, equipment, and traffic control necessary to perform all surveying, staking, and verification of the accuracy of all control points per the plans and as directed by the Engineer. Included in this work shall be all calculations required for the satisfactory completion of the project in conformance with the plans and these Special Provisions. The work shall be done under the direction of a registered professional engineer or a registered land surveyor employed by the Contractor. The crew chief shall be NICET Certified Level III or a registered Land Surveyor.

Throughout the work, the Contractor shall set all stakes including offset stakes; reference point stakes; pavement lines, curb lines and grade stakes at intervals not greater than 25 feet; stakes for blue tops of subgrade, subbase and base courses; permanent as-built elevation marks; and all other horizontal or vertical controls necessary for complete and accurate layout and construction of the work.

When utility adjustments are a part of the contract, the Contractor shall perform all layout work and set all control points, stakes and references necessary for carrying out all such adjustments.

Any errors, omissions or discrepancies in the project plans shall be immediately brought to the attention of the Engineer. The Contractor shall promptly notify the Engineer in writing, explaining the problem in detail. The Engineer will advise the Contractor within five working days of any corrective actions deemed necessary. No changes in the project plans will be allowed without the approval of the Engineer.

The Contractor shall be compensated for additional work associated with survey and layout when:

- A. The project plans do not provide sufficient information and new calculations must be performed.
- B. The Contractor performs survey work based on erroneous plan information, which results in the duplication of the work.
- C. Changes by the Engineer to the plan information for which the Contractor has already performed the work and results in the duplication of such work.

The Contractor shall not be due compensation for any survey and layout work when:

- A. Information provided on the plans is sufficiently complete to allow any additional information necessary for the complete layout of the work to be routinely calculated.
- B. The Contractor fails to inform the Engineer of discovered plan errors before the performance of any survey or layout work.
- C. Work is included in any other pay item.

The Contractor shall inform the Engineer in a timely manner of any omissions, ambiguities, or errors which the Contractor feels may result in extra calculations or survey work, so as not to delay the project or create any unnecessary work.

All additional survey work shall be documented by the Contractor and verified by the Engineer before compensation may be granted. Documentation shall consist of a detailed diary specifically addressing the work involved in the alleged problem area. The Contractor may be required to provide calculations, charts, graphs, drawings, or any other physical evidence, which will verify additional work.

The Contractor shall be responsible for verifying curb and gutter grades before placement of concrete using a steel straightedge, string line or other method approved by the Engineer. The field verification shall be performed in the presence of the Engineer or designated representative.

The Engineer reserves the right to make inspections and random checks of the staking and layout. Inspection or acceptance of all or any part of the Contractor's staking and layout by the Engineer does not relieve the Contractor of full responsibility to secure the proper dimensions, grades and elevations of the work.

If, in the Engineer's opinion, the work is not being performed in a manner that will assure proper controls and accuracy, the Engineer will order any or all of the staking and layout work redone at no additional cost to the City. If any portion of the Contractor's staking and layout work is ordered redone and requires additional rechecking by the Engineer, the City shall be reimbursed for all costs for such additional checking. The amount of such costs will be deducted from the Contractor's monthly estimate.

All survey field books and documentation shall be available for inspection by the Engineer and shall become the property of the City upon completion of the work.

Payment for this item will be made at the contract lump sum price bid for CONSTRUCTION SURVEYING AND LAYOUT.

4. **SUSPENSION OF WORK:** The Engineer reserves the right to suspend the work wholly or in part if deemed necessary for the best interest of the City. This suspension will be without compensation to the Contractor, other than to adjust the contract time in accordance with Section 108.

5. **COMPLIANCE WITH MANUFACTURER'S INSTRUCTIONS:** In all instances wherein the item and/or specifications require installation or construction in accordance with either manufacturer's or supplier's recommendations and/or instructions, said recommendations and/or instructions shall be submitted with the applicable portions clearly marked for approval prior to the commencement of work on that item or portion of the contract.

6. **TRAFFIC REGULATIONS:**

6.1 All traffic affected by this construction shall be regulated in accordance with the City of Phoenix "Traffic Barricade Manual," and these Special Provisions. The following traffic restrictions are minimum requirements throughout the construction period:

6.1.1 All traffic restrictions listed herein are to supplement the City of Phoenix "Traffic Barricade Manual," and are not intended to delete any part of the manual. All reference in the "Traffic Barricade

Manual" to "arterial" and/or "collector" streets shall mean "arterial and/or major arterial" streets and are referred to as "major" streets in the following sections.

6.1.2 A minimum of two travel lanes (one for each direction) shall be maintained open to traffic at all times on all major streets. All work that enters or crosses a major street must be done at times other than 6:00 a.m. to 8:30 a.m., and 4:00 p.m. to 7:00 p.m.

6.1.3 A travel lane shall be defined as ten (10) feet of roadway with a safe motor vehicle operating speed of twenty-five (25) miles per hour.

6.1.4 A travel lane will not be considered as satisfactorily open to traffic until it has been graded reasonably smooth and is paved with a minimum of two (2) inches of asphalt. This shall be considered temporary pavement and shall be removed completely before proceeding with final surfacing.

6.1.5 The Contractor shall provide and maintain all necessary traffic controls, and must provide flashing arrow boards to protect and guide traffic for all work in the construction area.

6.1.6 Intersection area shall be defined as all of the area within the right-of-way of intersecting streets, plus two-hundred fifty (250) feet beyond the center of the intersected streets on all legs of the intersection.

6.1.7 The Contractor shall maintain all existing traffic signs erect, clean and in full view of the intended traffic at all times. Street name signs at major street intersections shall be maintained erect at all times. If any signs interfere with construction, the Contractor shall notify the Inspector at least 48 hours in advance for City forces to remove said signs. The Contractor shall be responsible for having all temporary traffic control signs installed and maintained during construction. The Transportation Department will re-set all traffic and street name signs to permanent locations when notified by the Engineer that construction is complete.

6.1.8 Local access to all properties on the subject project shall be maintained at all possible times in the form of a safe and reasonable direct route to at least one of the above defined major streets. Whenever local access cannot be maintained, the Contractor shall notify the affected property owner or user and the Engineer at least twenty-four (24) hours in advance.

6.1.9 The Contractor shall be required to provide a uniformed off-duty City of Glendale police officer to assist with traffic control whenever traffic in any one direction is restricted to one lane at a signalized major intersection or at other locations if it should become necessary in the opinion of the Engineer. During construction activities that do not restrict a major signalized intersection, police officer assisted traffic control is not required. If the Contractor chooses to use a police officer at other locations during peak traffic hours or to assist with his other traffic control operations, the cost shall be included in the lump sum for "Traffic Control" and not paid out of the hours allowed for "Off Duty Glendale Police Officer." All requests for off-duty officers will be made through the Glendale Police Department, Off-Duty Work Administrator. The Contractor must provide evidence of workmen's compensation coverage before any officer will be permitted to work.

Measurement for payment of the uniformed off-duty Glendale police officer hours will be made by the actual number of man-hours used for traffic control at signalized major intersections or as approved by the Engineer. Because the quantity of hours is dependent on the Contractors schedule of activities, the unit price bid for this item will be administered as a contingency bid item and any adjustment in hours will not be subject to the 20 percent limitation.

Payment for the off-duty Glendale police officer will be made at the contract unit price bid per hour for OFF DUTY GLENDALE POLICE OFFICER and shall include the net hourly rate of \$30.00 per police officer with a three (3) hour minimum. The net hourly rate shall be increased to include withholding for Federal, State, FICA, Medicare, Workmen's Compensation insurance and any payroll administrative costs.

6.1.10 The Contractor shall prepare a traffic control plan for the project and submit it to the City Transportation Director for review and approval at least seven (7) working days before the

pre-construction conference. The traffic control plan shall include flashing arrow boards, barricades and signs, and shall address how local access to adjacent properties will be handled in accordance with the specifications herein. Any changes to the traffic control plan during construction shall be submitted to the City Transportation Director for approval at least seventy-two (72) hours before implementation.

Payment for this item shall be made at the contract lump sum price for TRAFFIC CONTROL.

6.1.11 It is the City's desire to maintain one lane of traffic in each direction on minor streets whenever possible. Should it become imperative for the Contractor to close off a portion of any minor street or reduce the travel way to a single lane, he must obtain approval from the City Transportation Director twenty-four (24) hours prior to implementing a traffic control change. He must provide all the necessary signs to detour traffic and/or flagmen to control traffic for a single lane. The maximum amount of time that the street may be closed is from 9:00 a.m. until 4:00 p.m.

7. **ENERGIZED AERIAL ELECTRICAL POWER LINES:** The utility company maintains energized aerial electrical power lines in the immediate vicinity of this project. Do not consider these lines to be insulated. Construction personnel working in proximity to these lines are exposed to an extreme hazard from electrical shock. Contractors, their employees, and all other construction personnel working on this project must be warned of the danger and instructed to take adequate protective measures, including maintaining a minimum ten (10) feet clearance between the lines and all construction equipment and personnel. (See: OSHA Standard 1926.550(a)15.) As an additional safety precaution, Contractors should also be instructed to call the utility company to arrange, if possible, to have these lines de-energized or relocated when the work reaches their immediate vicinity. The cost of such temporary arrangements would be borne by the Contractor. The utility company can often respond to such requests if two days advance notice is given, but some situations may require up to sixty (60) days lead time for relocation or other arrangements.

8. **CONCRETE GUTTER WATER TESTING:** The MAG Uniform Standard Specifications, Section 340.3, **CONSTRUCTION METHODS**, shall be modified as follows: The ½ inch referenced in Paragraph 16 beginning, "When required by the Engineer, gutter having a slope of 0.8 foot...", shall be changed to 1/4 inch.

9. **RECORD DRAWINGS:** The Contractor shall maintain one set of contract drawings with all changes, deviations, additions and deletions clearly marked thereon. Upon completion of the work, this set of drawings, shall be marked "RECORD DRAWINGS," dated, and delivered to the Engineer prior to approval of the Contractor's final payment request.

10. **CASH FLOW REPORT:** The Contractor shall prepare a Cash Flow Report for projected monthly project cash flow on a City provided form and submit it for approval prior to issuance of the Notice to Proceed. The accumulation of monthly pay estimate costs shall be plotted versus time in accordance with the proposed construction schedule. After approval, the Contractor shall submit an updated Cash Flow Report prior to the receipt of each Progress Payment. Each updated Cash Flow Report shall reflect the Contractor's actual monthly payment versus the actual elapsed contract time.

At the City's request, if the projected monthly project cash flow varies by more than ten percent of the total contract price, the Contractor shall prepare a revised Cash Flow Report. Each revised Cash Flow Report is subject to approval by the City prior to issuance of the progress payment.

Revisions to the report resulting from Contractor initiated delays or work schedule changes shall be at no cost to the City. Any revisions required by City initiated delays or changes to the work shall be paid as an integral part of the approved Change Order.

11. **CONSTRUCTION SIGN:** There shall be two signs required on this project, located at the southwest corner of 91st and Maryland Avenue's, facing north and the northwest corner of 6250 Access Drive, facing south. The project type to be indicated on the sign shall be P1 PARKING, 91<sup>ST</sup> & MARYLAND AVENUES. See "Construction Sign Detail." There shall be no separate payment for the Construction Signs.

12. ALLOWANCE FOR CONSTRUCTION CONTINGENCIES: Bid schedule includes a lump sum contingency allowance. This allowance is for the sole purpose of reimbursing Contractor for any unforeseen issues not apparent at the time of bidding work performed.

No work anticipated for reimbursement under this Bid Item shall be initiated by Contractor until Contractor, Engineer and COG agree on scope and cost to perform additional work. The Contractor shall prepare and submit to Engineer a cost itemization and summary for the additional work. Engineer and COG shall review and approve prior to Contractor proceeding with additional work. Any portion of the stated sum not expended remains the property of the City of Glendale.

Work under this section shall consist of any additional work identified by the owner and contractor due to construction activity. All work under this item shall be itemized as per MAG requirements and deducted from the set amount of \$400,000.00. All additional work under this item shall be approved by the resident engineer or landscape architect and the City of Glendale prior to commencing. All work under this section shall include but is not limited to all necessary materials, tools, layout, survey and labor required to complete each task.

Measurement and payment for this item shall be made on individual basis per task and as described above. Limit for this item is set at \$400,000.00 on bid form for ALLOWANCE FOR CONSTRUCTION CONTINGENCY.

13. MISCELLANEOUS REMOVAL AND OTHER WORK: The work under this section shall include all labor, equipment and materials for miscellaneous removals, restorations and other work not covered under any other bid item. Removals and other work shall include, but not be limited to, Installation of 4" PVC Conduits and Pull Boxes under drive/walkways, removal of back flow preventer, meter and abandonment of water service at the corporation stop, removal of trees, vegetation and other landscaping materials, and restoring landscaping areas to original condition or replacement per plans. Existing irrigation systems shall be replaced and/or modified as necessary to provide a complete working system.

Payment for this item shall be made at the contract lump sum price for MISCELLANEOUS REMOVALS AND OTHER WORK.

14. REMOVAL OF EXISTING ASPHALT CONCRETE PAVEMENT: The work under this item shall consist of the saw cutting and removal of existing asphalt concrete pavement as indicated on the plans or as directed by the Engineer, and shall include the hauling and legal disposal of the removed materials and debris. The work shall include the removal of the base material down to the subgrade if indicated on the plans or directed by the Engineer. The removal of the base material down to the subgrade shall be considered incidental to the related removals and no separate payment will be made for this work. Work shall be performed in accordance with Section 350 of the MAG Standard Specifications.

There shall be no separate payment for this item.

15. MOBILIZATION: The work under this section shall consist of preparatory work and operations, including but not limited to, the movement of personnel, equipment, supplies and incidentals to the project site; the establishment of all offices, buildings and other facilities necessary for the work on the project, and for all other work and operations that must be performed and costs incurred prior to beginning work on the various items on the project site.

16. CONTRACTOR'S MARSHALLING YARD: The Contractor shall obtain approval of the Engineer when using vacant property to park and service equipment and store materials for use on this project.

- A. The contractor shall notify adjacent property owners/residents of this proposed use.
- B. Any use of vacant property adjacent to or near the project for parking or servicing equipment and/or storing of materials will require the contractor to obtain written approval from the

- property owner. This approval shall contain any requirements which are a condition of this approval.
- C. A copy of the property owner's approval shall be submitted along with the contractor's request to the Engineer for approval of the use of the marshaling yard in connection with the project. An appropriate distance from adjacent property will be set by the Engineer on a case by case basis based on the size and type of equipment to be used on the project.
  - D. The yard shall be fenced and adequately dust-proofed in a manner such as to preclude tracking of mud onto paved City streets.
  - E. Work in yard shall be scheduled so as to comply with the City Noise Ordinance.
  - F. Equipment, materials, etc., shall be located so as to minimize impact on adjacent properties. A sound barrier may be required if deemed necessary by the Engineer.
  - G. The contractor shall clean up property promptly upon completion of use and shall provide a signed property release as a condition of final acceptance.
  - H. Contractor's request for approval shall specify in detail how he or she proposes to comply with (D) through (G) above.

Mobilization will be measured for payment by the lump sum as a single complete unit of work.

Payment for mobilization, measured as provided above, will be made at the contract lump sum basis for MOBILIZATION/DEMobilIZATION, which shall be compensation for supplying and furnishing all materials, facilities and services and performing all work involved as specified herein.

Partial payments under this item will be made in accordance with the following provision: (Reference herein to the original contract amount shall mean the original contract amount exclusive of mobilization).

When five percent of the original contract amount is earned, either 50 percent of the amount bid for mobilization, or five percent of the original contract amount, whichever is the lesser, will be paid.

When ten percent of the original contract amount is earned, either 100 percent of the amount bid for mobilization, or ten percent of the original contract amount, whichever is the lesser, will be paid.

17. **PROPERTY ACCESS:** Local access shall be maintained to all properties during construction. When local access cannot be maintained, the contractor shall notify the affected property owner 24 hours in advance and restore access as soon as possible. A safe access to properties must be maintained at all times.

18. **CONCRETE SIDEWALK, DRIVEWAY, ALLEY ENTRANCE, VALLEY GUTTER AND APRON:** The work covered by this section consists of furnishing all labor, equipment, and materials in connection with the construction of Portland Cement concrete items, complete. All work shall be in accordance with this section of the specifications and as indicated on the plans and shall conform to the appropriate M.A.G. Standard Details and Specifications. All grading, fill, compaction of subgrade, concrete base, reinforcing, and surfacing shall be considered incidental to the unit prices.

19. **CONCRETE SIDEWALKS, DRIVEWAYS:** Concrete sidewalks and driveways shall be constructed to the size and thickness shown on the plans in accordance with the applicable M.A.G. and City of Glendale Standard Details and Specifications. Concrete sidewalks and driveways shall be constructed to match existing conditions and adjusted to provide grades in a smooth, consistent manner, as directed by the Engineer.

Bituminous felt expansion joints shall be installed where new concrete walks, driveways and alley entrances abut existing curbs, walks, or walls and per M.A.G. Standard Specifications, Section 340.

Payment for concrete sidewalks and driveways shall be made at the contract unit price bid per square foot for 4" SIDEWALKS/DRIVEWAYS; 8" SIDEWALKS/DRIVEWAYS which price shall be full compensation for the work, complete in place, including all materials, equipment, labor, and layout.

20. **PARKING LOT LIGHTS:** Contractor shall install street lights as indicated on the plans, complete and operational. The items supplied by the Contractor shall include, but not be limited to, poles, luminaires, junction boxes, wiring, conduit, controls, connections, and all related appurtenances for a complete installation. These items shall be considered incidental to the related work and no separate payment will be made. Installation shall be as per supplemental specifications, plan specifications, and details on plans.

Payment for Parking Lot Lights, will be made at the contract lump sum basis for INSTALL 4 LUMINAIRE LIGHT POLES, COMPLETE, which price shall be full compensation for the work, complete in place, including all materials, equipment, labor, and layout.

21. **DECOMPOSED GRANITE AND WEED CONTROL:** Contractor shall furnish and install decomposed granite as indicated on the plans, details and supplemental specifications. Areas shall be totally free of weeds and grass prior to placing decomposed granite. All removals shall be in accordance with Section 350 of the MAG Standard Specifications, as modified by these Special Provisions and Supplemental Specifications. An application of pre-emergent herbicide weed control shall be applied, according to manufacturer's recommendations, before placement of decomposed granite. Decomposed granite shall be ½" Diameter, screened and Red in color, evenly distributed in the areas indicated in the plans and compacted to a minimum three-inch depth. A second application of pre-emergent herbicide shall be applied after decomposed granite is in place. The Contractor shall guarantee total control and elimination of weeds and grass for a period of one year from the time of final acceptance. Weed control shall be considered incidental to the installation of the decomposed granite and no separate payment will be made for this work.

Payment for furnishing and installing decomposed granite shall be made at the contract unit price bid per square foot for 3" DECOMPOSED GRANITE, ½" SCREENED, STABILIZED, which price shall be full compensation for the work, complete in place, including all materials, equipment and labor.

22. **SUBGRADE PREPARATION:** Subgrade Preparation shall conform to Section 301 of the Uniform Standard Specifications, as modified by these Special Provisions and as directed by the Engineer.

The subgrade shall be constructed in accordance with Subsection 301.3 of the Uniformed Standard Specifications except for the following densities when tested in accordance with AASHTO T-99, METHOD A:

- A. Major streets: 95 percent
- B. Other streets and traffic ways: 95 percent
- C. Decorative concrete paver areas: 95 percent
- D. Curbs, gutters, and sidewalks: 90 percent
- E. Planting beds and decomposed granite: 85 percent

Shoulders and dirt sidewalk areas shall be rolled and compacted to a minimum density of 90 percent when tested in accordance with Subsection 301.1 of the Uniform Standard Specifications.

If used in fill locations, the crushed asphalt shall be placed at least two feet below the subgrade elevation unless it is sufficiently milled to conform to the gradations of Type "B" Select Material as defined in Table 702, Section 702 of the Uniform Standard Specifications.

Any disposal area selected by the Contractor shall be approved by the Engineer prior to its use. Disposal of waste in approved areas shall be made in such a manner that natural drainage will not be blocked or diverted unless so directed by the Engineer.

All surplus and/or waste material may be disposed of at the Contractor's discretion subject to the following conditions:

- A. If the City landfills are used, the Contractor shall pay the normal dumping fee(s).
- B. If private property within the City limits is used, the Contractor shall obtain written permission from the property owner and deliver a copy of this agreement to the Engineer prior to any hauling or dumping. All disposal and grading shall be in strict conformance with the City of Glendale Grading and Drainage Ordinance. The Contractor shall obtain and pay for the necessary permit(s).
- C. If the surplus material is disposed of outside the City limits, the Contractor shall comply with all applicable laws/ordinances of the agency concerned and be responsible for all costs incurred. On any project when the quantity of fill or excavation to be hauled exceeds 10,000 C.Y. or when the duration of the haul is for more than 20 working days, the Contractor shall:
  - A. Obtain a written (no fee) haul permit from the City of Glendale Development Services Department.
  - B. Obtain approval of the proposed haul route, number of trucks, etc., by the City of Glendale Transportation Department.

NOTE: Obtaining the haul permit and the approval by the City of Glendale does not release the Contractor from strict compliance with Subsection 108.5 of the Uniform Standard Specifications and these Special Provisions.

If, at the time of opening any portion of the work, materials from which the subgrade is to be constructed contain an excess of moisture so that the required compaction cannot be obtained without additional manipulation, the Engineer will determine the cause of such condition. If the cause of such condition is determined to have been unforeseeable and beyond the control and without fault or negligence of the Contractor, the Engineer will determine whether the material shall be aerated or removed and replaced. Such work shall be done as directed and will be paid for as provided for in Section 109.5 of the Uniform Standard Specifications.

After any portion of the work has been opened, saturation of material caused by irrigation water, storm drainage, weather or similar causes will be considered as within the responsibility of the contractor. No measurement or payment will be made for the hauling and disposal of surplus and/or waste material, the cost of which shall be considered incidental to this item. No measurement or payment will be made for any saw cutting for this project, the cost of which shall be considered incidental to this item.

No measurement or payment will be made for any borrow and roadway embankment for this project, the cost of which shall be considered incidental to this item.

Payment for subgrade preparation shall be made at the contract unit price bid per square yard for SUBGRADE PREPARATION, which price shall be full compensation for the work, complete in place, including all materials, equipment and labor.

Any necessary grading outside of the above mentioned areas including shoulders, dirt sidewalks, special side ditches, dirt driveways and roads, embankment and cut slopes is considered incidental to this item. Excavation, filling, and exporting material to achieve the necessary grades for this project are also considered incidental to this item.

23. **AGGREGATE BASE COURSE:** The work under this item shall consist of placing a compacted thickness of twelve (12) inches of crushed aggregate base course (ABC) under new asphaltic concrete pavement in conformance with Sections 310 and 702 of the MAG Uniform Standard Specifications. Payment will be made at the contract unit price per square yard of 12" AGGREGATE BASE COURSE.

24. **ASPHALTIC CONCRETE:** Mix designs shall meet the following requirements when tested with the applicable test methods.

## I. General Information

All producers of hot asphalt concrete whose mixes may be placed within the rights-of-way of the City of Glendale will be required to submit complete asphaltic concrete mix designs for all such material.

Where to submit: Three (3) copies of the reports shall be submitted to the City of Glendale, City Engineer, 5850 W. Glendale Ave., 3<sup>rd</sup> Floor, Engineering Department, Glendale, Arizona 85301-2599. Faxed copies are unacceptable and will not be reviewed.

When to submit: A new mix design will be required each January for each product code to be supplied. Verification tests for each product code shall be provided each July. A complete mix design will be required of any new product code at the time of its initial submittal. Laboratory certifications will be required on an annual basis. Mix submittals must be made at least seven working days prior to the paving date, in order to allow time for review and revision if necessary. No exceptions will be permitted.

## II. Laboratory Requirements:

The mix designs must be performed by a laboratory knowledgeable in asphalt mix design. The laboratory can be the producers laboratory or a commercial geotechnical/materials laboratory provided they comply with the following:

A. The laboratory, at the time of testing and submittal, remains certified by the AASHTO Accreditation Program in the field of Bituminous Materials. Further subfields of Hot-Mix Asphalt and Hot-Mix Asphalt Aggregate are additionally required. A copy of the certifications will be required with each submittal as described.

B. The laboratory is under direct supervision of an experienced, registered professional engineer. This will require the Engineer be physically present on a routine basis while the mix design testing is being done and be the responsible person in charge of the work.

C. The Engineer in charge of the laboratory shall submit a resume that details the Engineer's knowledge and experience in the field of asphalt concrete and the design of the same. The resume will be submitted with the suppliers mix design. New resumes will be required whenever a change occurs with the Engineer. If the laboratory is approved by the Arizona Department of Transportation (ADOT) to perform asphalt concrete mixture designs, a copy of the personnel resource data that is supplied to ADOT, along with a copy of their approved letter will suffice.

D. The Engineer shall seal (stamp), sign and date each mix design or verification.

## III. Mix Designs

A. Mix designs or verifications will be required as indicated in Part I above for all asphalt mixes. The seal date must be current to within six months. Mix designs, without current verification, older than six months will be rejected. If, in the opinion of the Assistant City Engineer, the production test data from the mix is not meeting the approved design or if conditions at the plant change, quality control charts and/or additional submittals will be required. The scope of the additional submittals may vary depending on the degree of proof required to establish or reestablish a workable design. The following conditions are to be considered sufficient grounds justifiable for reevaluation of the mix designs.

1. A change in the producers pit.
2. When material is taken from a different or new source.
3. A change in the producers method of aggregate production.
4. Any other change that would require an adjustment in the asphaltic concrete mix design, in the opinion of the Engineer.

#### IV. Hot Mix Facilities

The following information regarding the hot mix facilities will need to be submitted for review with the annual laboratory certifications, whenever a new facility is placed in operation or whenever a facility is moved.

- A. Listing of all hot mix facility numbers, their physical locations, and the mix product codes that the producer intends to supply.
- B. Annual certificates on all weights and metering devices used in the production and weighing of the asphalt mix, for each such facility that the supplier intends to use to manufacture material for use within the City.
- C. Each supplier must submit annually the Arizona Rock Products Association (ARPA) "Certification of Hot Mix Asphalt Production Facilities".

#### V. Compaction Acceptance

Acceptance testing for asphalt mixtures which have been designed using Marshall methods will continue to be as specified under MAG 321.5.4.

The work under this item shall consist of placing a 1" lift of D $\frac{1}{2}$ " and a 2" lift of D $\frac{3}{4}$ " asphaltic concrete to the compacted thickness indicated on the plans and in conformance with Sections 321 and 710 of the MAG Uniform Standard Specifications with the following modifications:

- A. No preservative seal is required on new asphalt.
- B. The Contractor shall have a certified, independent testing laboratory collect samples and submit a job mix formula to the Engineer for approval at least seven (7) calendar days prior to commencing work.
- C. An acceptable surface shall not vary more than one fourth (1/4) inch from the lower edge of a sixteen (16) foot rolling straightedge when the straightedge is placed parallel to the centerline of the roadway. The straightedge will be furnished by the City.

Payment of this item will be made at the contract unit price bid per square yard 1" OF D  $\frac{1}{2}$ " ASPHALT SURFACE COURSE OVER 2" OF D  $\frac{3}{4}$ " BASE COURSE. The cost of pavement termination is considered incidental to this item and therefore included in the contract unit price for asphaltic concrete.

25. BITUMINOUS TACK: The tack coat shall be grade SS-1h (diluted). Tack coat shall be applied in accordance with Section 329 of the Uniform Standard Specifications.

Bituminous tack coat will be measured by the ton of diluted mixture.

There shall be no separate pay item for Bituminous Tack Coat. The cost for Tack Coat shall be considered as incidental to the overall project and the costs shall be included in other items.

26. PAVEMENT MARKINGS: The work under this section consists of furnishing all materials, preparing the pavement surface and placing the pavement markings.

Installation for all striping shall be performed in accordance with SECTION 704 of the Arizona Department of Transportation (ADOT) Standard Specifications for Road and Bridge Construction.

Material for all striping shall be alkyd thermoplastic. All pavement marking materials shall be approved by the City prior to installation.

The contractor shall install all parallel parking striping. Parallel parking striping shall be the extruded type applied at a thickness of 90 mils.

Payment of this item will be made at the contract unit price bid per lineal foot for PARKING STALL STRIPING; PAINTED ISLANDS AND WALKWAYS, which price shall be full compensation for the work, complete in place, including all materials, equipment, labor, and layout.

27. AZPDES / SWPPP PERMIT REQUIREMENTS

A. This project is subject to the Arizona Pollutant Discharge Elimination System (AZPDES) Stormwater requirements for construction sites under the Arizona Department of Environmental Quality General Permit for Arizona. Under provisions of that permit, the Contractor shall be designated as permittee, and shall take all necessary measures to assure compliance with the AZPDES General Permit for Arizona as well as all other applicable Federal, State and local laws, ordinances, statutes, rules and regulations pertaining to stormwater discharge. As the permittee, the Contractor is responsible for preparing, in a manner acceptable to **ADEQ and the City of Glendale**, all documents required by this regulation, including but not necessarily limited to:

1. Stormwater Pollution Prevention Plan (SWPPP) for the project, including certification of compliance form. Contractor shall be required to develop, implement, update and revise the SWPPP, as necessary, in order to assure compliance with the ADEQ permit requirements. **All SWPPP revisions must be reviewed by the City of Glendale's Land Development Engineer prior to implementation.** The SWPPP shall be retained on the project site at all times during construction.
2. Notice of Intent (NOI) to assure compliance with the AZPDES General Permit for Arizona, including certification of signatures.
3. Notice of Termination (NOT) of coverage under AZPDES General Permit for Arizona.

B. Preliminary copies of the NOI and the SWPPP shall be submitted to Owner during the preconstruction meeting and shall be subject to review by Owner prior to start of construction.

C. Contractor shall submit the completed and duly signed NOI forms no later than forty-eight (48) hours prior to the pre-construction meeting for the project to the following agencies:

Stormwater Coordinator  
Arizona Department of Environmental Quality  
P.O. Box 600  
Phoenix, AZ 85001-0600

Engineering Department  
City of Glendale  
5850 W Glendale Ave  
3rd Floor  
Glendale, AZ 85301-2599

Failure by the Contractor (or Subcontractors of any tier) to submit NOI's within the mandated time frame shall result in delay of the construction start date, and no claim for extension of time will be granted for such delay. A copy of the completed NOI shall be posted at the construction site.

D. Inspections of all stormwater pollution control devices on the project shall be performed by Contractor on a monthly basis and following each rainfall of 0.50 inches or more in a 24-hour period at the project site as required under provisions of the AZPDES General Permit for Arizona. Contractor shall prepare reports on such inspections and retain the reports for a period of three years following the completion of the project. Inspection reports shall be submitted monthly to Owner along with progress payment requests. Additionally, Contractor shall maintain all stormwater pollution control devices on the project in proper working order, which shall include cleaning and/or repair during the duration of the project.

E. Contractor warrants that its employees and Subcontractors of any tier and their employees shall at all times comply with all applicable laws, ordinances, statutes, rules and regulations set forth by all federal, state and local governments in connection with AZPDES Permitting requirements and laws and regulations pertaining to air, groundwater and surface water quality.

Fines and penalties imposed by the ADEQ against Owner or the Contractor, for Contractor's failure to comply with any of the requirements of AZPDES General Permit of Arizona, shall be borne by the Contractor.

F. Upon project completion, acceptance and demobilization, Contractor shall submit its completed, duly executed NOT form to the Arizona Department of Environmental Quality and the City of Glendale, at the addresses listed in Section C above, thereby terminating all AZPDES permit coverage for the project. Contractor shall then surrender to Owner copies of the SWPPP, inspection information and all other documents prepared and maintained by the Contractor in compliance of the AZPDES General Permit. Contractor shall retain the originals of such documents for a period of three (3) years following the completion of the project.

G. The Lump Sum price for the SWPPP shall include all material, labor, and all other costs relating to the preparation, installation and maintenance of the SWPPP during project construction, including assuring proper operation of the pollution control devices installed, and all maintenance, cleaning, and disposal costs associated with clean-up and repair following storm events, runoff or releases on the project. The Lump Sum price for the SWPPP shall be inclusive of all costs, and no additional claims shall be made by Contractor under any other specification provision of these documents, including Change Conditions. Payment for this bid item shall be upon final completion and acceptance of the project, as per Section 109.1.

H. Copies of all required forms and guidance for preparing the SWPPP are available in the "Drainage Design Manual for Maricopa County, Volume III Erosion Control". The manual is available at the Flood Control District, 2801 West Durango Street, Phoenix, Arizona 85009. Forms and guidance is also available at the ADEQ web-site ([www.azdeq.gov](http://www.azdeq.gov)) under Publications and Forms.

I. Payment for AZPDES / SWPPP permit requirements shall be made on the basis of lump sum for all work described in Subsection 107.2.1 for M1070110 ARIZONA POLLUTANT DISCHARGE ELIMINATION SYSTEM (AZPDES).

\* \* \*END OF SPECIAL PROVISIONS\* \* \*

# CONSTRUCTION SIGN DETAIL

CONSTRUCTION SIGNS ARE TO BE IN PLACE BEFORE PHYSICAL CONSTRUCTION BEGINS

SIGNS SHALL BE MADE OF 3/4" AC EXTERIOR PLYWOOD OR OTHER MATERIAL APPROVED BY THE ENGINEER

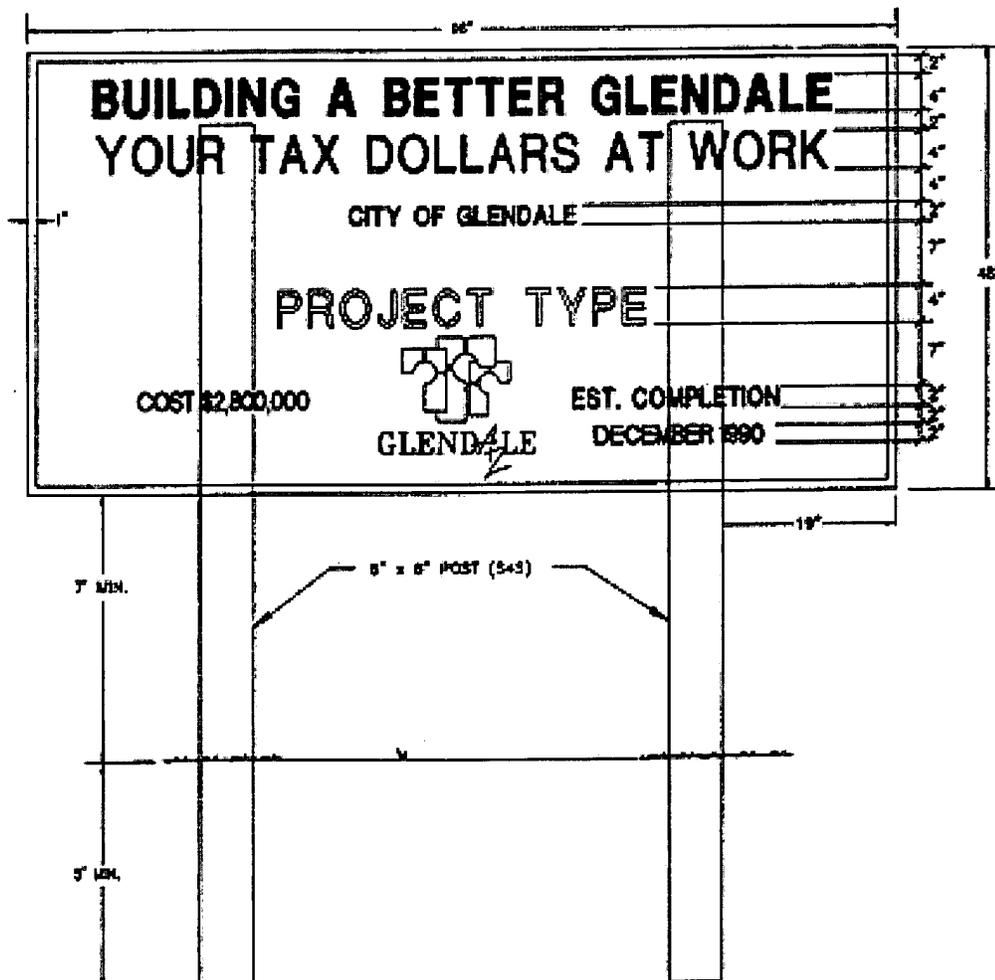
BACKGROUND TO BE PAINTED WHITE WITH STENCIL BLACK LETTERS, NUMERALS AND BORDER.

POSTS SHALL BE PAINTED WHITE. ALL MOUNTING HARDWARE TO BE RUST PROOF MATERIAL

SIGNS SHALL BE SO PLACED THAT THEY WILL NOT OBSCURE OR DETRACT FROM OTHER SIGNING.

CONTRACTOR TO FILL IN THE PROJECT TYPE, COMPLETION DATE, AND COST AS DIRECTED.

THE 12" X 13" TWO COLOR GLENDALE LOGO IS AVAILABLE BY CONTACTING THE CITY OF GLENDALE ENGINEERING DEPT. AT 623-930-3630. COST \$18.00



# Project Life Cycle Cash Flow Schedule



Project No.: 0 Date: \_\_\_\_\_

Project Name: 0

Company Name: \_\_\_\_\_

Project Start Date: 0 Project Completion Date: 0

Original  Updated  Revised

Qtr.	Fiscal Yr.	Estimated		Actual	
		Amount	Accum.	Amount	Accum.
1st	07/13 - 09/13	\$ -	\$ -		
2nd	10/13 - 12/13	\$ -			
3rd	01/14 - 03/14	\$ -			
4th	04/14 - 06/14				
1st	07/14 - 09/14				
2nd	10/14 - 12/14				
3rd	01/15 - 03/15				
4th	04/15 - 06/15				
1st	07/15 - 09/15	\$ -	\$ -	\$ -	\$ -
2nd	10/15 - 12/15	\$ -	\$ -		
3rd	01/16 - 03/16	\$ -	\$ -		
4th	04/16 - 06/16	\$ -	\$ -		
1st	07/16 - 09/16	\$ -	\$ -	\$ -	\$ -
2nd	10/16 - 12/16				
3rd	01/17 - 03/17				
4th	04/17 06/17				
1st	07/17 - 09/17				
2nd	10/17 - 12/17				
3rd	01/18 - 03/18	\$ -	\$ -	\$ -	\$ -
4th	04/18 - 06/18				
<b>Totals</b>		\$ -		\$ -	\$ -

\* COG's fiscal year is July 1, (current year) through June 30, (following year)

**For Engineering Use Only:**

Account No: \_\_\_\_\_ PO No. \_\_\_\_\_

Electrical Specifications  
For  
City of Glendale  
91<sup>st</sup> Ave. & Maryland – P1 Parking Lot

Index	Description
26 05 00	General Electrical Requirements
26 05 01	Basic Materials and Methods
26 05 09	Conduits
26 05 15	Concrete Pull Boxes
26 05 19	600 Volt Class Cable
26 05 26	Grounding
26 05 27	Electrical Identification
26 24 16	Panelboards
26 24 17	Low Voltage (600V and below) Circuit Breakers
26 56 00	Lighting



## SECTION 26 05 00

### GENERAL ELECTRICAL REQUIREMENTS

#### PART 1 - GENERAL

##### 1.01 SCOPE OF WORK

- A. It is the intent of this part of the Contract Documents to cover the work and materials necessary for erecting a complete electrical system, tested and ready for continuous use. The system shall be constructed in accordance with the Contract Documents, and Federal, State, and Local codes and regulations.

##### 1.02 RELATED SECTIONS

- A. The Contractor shall coordinate the work with other trades, and furnish and install the equipment in accordance with the manufacturers' requirements.

##### 1.03 GENERAL PROVISIONS

- A. Minimum sizes of equipment, and electrical devices, are indicated but it is not intended to show every offset and fitting, nor every structural or mechanical difficulty that will be encountered during the installation of the work.
- B. Work indicated on the Plans is approximately to scale. Actual dimensions and detailed Plans should be followed as closely as field conditions permit. Field verification of scaled dimensions on Plans is governed by field conditions. Installation of systems and equipment is subject to clarifications as indicated in reviewed shop drawings and field coordination.
- C. Discrepancies indicated on different Plans, between Plans and actual field conditions, or between Plans and Contract Documents shall be promptly brought to the attention of the Engineer for clarification, prior to purchasing and installing equipment.
- D. The alignment of equipment and conduit shall be adjusted to accommodate architectural changes, and coordinate with work of other trades, without extra expense to the Owner.
- E. The Contractor shall furnish and install the parts and pieces necessary to the installation of equipment, in accordance with the best practice of the trade, and in conformance with the requirements of these Contract Documents and equipment manufacturer's recommendations.
- F. Items not specifically mentioned in these Contract Documents, or noted on the Plans, or indicated on reviewed shop drawings, but which are necessary to make a complete working installation, shall be deemed to be included herein.
- G. The Contractor shall lay out and install electrical work prior to completion of floors and walls. Furnish and install sleeves and openings through floors and walls, required for installation of conduits. Sleeves shall be rigidly supported and suitably packed, or sealed, to prevent ingress of wet concrete. Spacers shall be installed in order to prevent conduit movement. Dimensions indicated for electrical equipment and their installation are minimum dimensions.
- H. The Contractor shall furnish and install inserts and hangers required to support conduits and other electrical equipment. If the inserts, hangers, sleeves, or other mounting hardware are improperly placed, or installed, the Contractor shall do necessary work, at his/her own expense, to rectify the errors.
- I. Electrical equipment shall be capable of operating successfully at full-rated load, without failure, at an ambient air temperature of 60 degrees C, and specifically rated for the altitude indicated on the Plans. Electrical equipment not rated for operation at that temperature shall be provided with air conditioning to meet the manufacturers' operating temperature.
- J. If any contradictions, nonhomogeneity, or inconsistency appears, the most strict criteria noted and the collective requirements in any and all of the project documents shall apply.

- K. The Contractor shall perform necessary saw cutting, core drilling, excavating, removal, shoring, backfilling, and other work required for the proper installation of conduits, whether inside, or outside of the buildings and structures. The Contractor shall repair and patch where demolition has taken place in a manner to match existing original structure.

1.04 REGULATIONS, CODES, AND STANDARDS

- A. Electrical work, including connection to electrical equipment integral with mechanical equipment, shall be performed in accordance with the latest published regulations, codes, and standards, of the following:
1. National Electrical Code (NEC)
  2. State and local codes
  3. Institute of Electrical and Electronic Engineers (IEEE)
  4. American National Standards Institute (ANSI)
  5. American Society for Testing and Materials (ASTM)
  6. Insulated Cable Engineers Association (ICEA)
  7. National Electrical Manufacturers Association (NEMA) Standards
  8. Federal Occupational Safety and Health Act (OSHA)
  9. National Fire Protection Association (NFPA)
- B. When applicable, the material used in the performance of the electrical work shall be listed by the Underwriters' Laboratories, Inc. (UL) for the class of service for which they are intended.

1.05 SUBMITTALS

- A. It is the obligation of the Contractor to organize his/her work, so that a complete electrical, instrumentation, and control system for the facility will be provided, and will be supported by accurate shop and record drawings, and O&M manuals.
- B. The Contractor shall submit detailed shop drawings and data prepared and organized by the suppliers. The quantity of submittal sets required shall be as specified in the Contract Documents.
- C. The submittals shall be neatly grouped and organized by specification section number, and sub-section. Related information shall be highlighted, and the specific product shall be indicated. All submittals shall be complete, and presented in one package. Incomplete submittals will be returned without review. If a portion of the project requires a fast track schedule, that portion only may be submitted earlier under a separate cover letter after securing the Engineer's written permission. The following shall be submitted to the Engineer and returned, reviewed to the Contractor before fabrication is started.
1. A complete list of the equipment and materials, including the manufacturer's name, product specification, descriptive data, technical literature, performance charts, catalog cuts, installation instructions, and spare part recommendations for each different item of equipment specified. The above shall clearly show all the specified requirements as described in the Specifications including but not limited to specific U.L. and NEMA rating, technical capabilities, test result verifications, and acceptance letters.
  2. Drawings containing complete wiring and schematic diagrams, control diagrams, and any other details required to demonstrate that the system has been coordinated and will operate as intended. Drawings shall show proposed layout, anchoring, support, and appurtenances of equipment, and equipment relationship to other parts of the work including clearances for maintenance and operations.
  3. Upon Project acceptance, the Contractor shall submit four sets of "Record Drawings" of the electrical, control, and instrumentation, along with step-by-step procedure manuals for the installation, operation start-up, and maintenance of the equipment. Each set shall include installation, operating, troubleshooting, and maintenance and overhaul instructions in complete detail. It shall also include possible breakdowns and repairs, and troubleshooting guides, as well as simplified wiring and control diagrams of the system installed. This shall provide the Owner with comprehensive information on all systems and components to enable operation, service,

maintenance and repair. Exploded or other detailed views of all equipment, devices, assemblies, and accessory components shall be included, together with complete parts lists and ordering instructions.

4. Record Drawings:
  - a. The Contractor shall maintain a marked up set of Contract Document Plans showing actual installed circuit numbers, conduit sizes, cable tray routing, number of conductors, conductor sizes (larger than #12 AWG), and all other deviations from the design Plans.
  - b. Underground conduit and concealed items shall be dimensioned on the Plans from permanent, visible, building features.
  - c. The Contractor shall provide actual motor size, starter size, and overload heater size, along with all other protective equipment for all 480 V and 4160 V motor circuits as part of the one-line record drawings.
  - d. The Contractor shall revise all conductor identification and panel schedules to indicate as-built conditions.

## **PART 2 - PRODUCTS**

### **2.01 GENERAL MATERIALS AND METHODS**

- A. Materials, equipment, and parts comprising any unit, or part thereof, specified or indicated on the Plans, shall be new and unused, of current manufacture, and of highest grade consistent with the state of the art. Damaged materials, equipment, and parts, are not considered to be new and unused, and will not be accepted.
- B. Field verification of scaled dimensions on Plans is directed, since actual locations, distances, and levels will be governed by actual field conditions. The Contractor shall also review architectural, structural, yard, mechanical, and other Plans, and the accepted electrical and mechanical shop drawings, and shall adjust their work to conform to the conditions indicated therein.
- C. The fabricator of major components, such as distribution panelboards, switchgear, and motor control centers, shall also be the manufacturer of the major devices therein.
- D. Refer to various Division sections for individual equipment manufacturers. Indicated manufacturers are subject to strict compliance with the specifications and complete project documents. The reference to a particular manufacturer does not relieve the Contractor from conforming to the specified requirements.

### **2.02 NAMEPLATES**

- A. Where indicated elsewhere in these specifications, or on the Plans, the Contractor shall furnish and install nameplates, which shall be black laminate with white letters. The nameplates shall be fastened to the various devices with round head stainless steel screws. Each disconnect means for service, feeder, branch, or equipment conductors, shall have nameplates indicating its purpose.

### **2.03 SHOP WORK**

- A. The assembly of process control panels and/or modifications to equipment assemblies shall be done at a UL approved shop. The entire unit shall be completely assembled and tested prior to shipment to the project site. In addition, owner personnel shall be allowed to inspect the unit(s) prior to job-site shipping. This inspection shall not be construed as final acceptance of unit(s) by the owner.

### **2.04 LISTED EQUIPMENT ASSEMBLIES**

- A. Service Entrance equipment, Switchgear, Switchboards, Panelboards, Control and Distribution Panels, and other factory assembled electrical enclosures shall bear a UL label. Custom built electrical enclosures and control panels shall bear a UL508 label. Where UL listing is not available, CSA or ETL shall be considered during submittal review.

### **2.05 SUBSTITUTION OF MATERIAL AFTER AWARD OF CONTRACT**

- A. Any exceptions to these specifications shall be submitted to the Engineer, with the reasons for requesting such exceptions, with calculations and drawings for redesign of related components, including detailed

drawings showing internal and assembly details, with installation instructions. Proposed layout changes showing any modifications or exceptions to related work made necessary by the(se) exception(s), with calculations and drawings showing such modifications or exceptions, shall also be included.

- B. Items if material and equipment may be offered (at the Contractor's option) as alternates to specified items. Such offer shall be in writing under Bidder's letterhead.
- C. Such alternate proposals shall be accompanied by full descriptive data on the proposed equipment. If alternate material proposals are considered, the Contractor shall submit a list of the proposed alternate substitution items in accordance with the requirements of "Review of Proposed Substitutions".

### **PART 3 - EXECUTION**

#### **3.01 INSTALLATION OF ELECTRICAL EQUIPMENT**

- A. Coordinate the installation of electrical equipment with other trades.
  - 1. Arrange for the building in of equipment during structure construction.
  - 2. Where equipment cannot be built-in during construction, arrange for sleeves, box-outs, and other openings, as required to allow installation of equipment after structure construction is complete.
- B. Verify that equipment will fit support layouts indicated.
- C. Equipment Dimensions and Clearances:
  - 1. Do not use equipment that exceeds the indicated dimensions. Except as approved in writing by the Engineer.
  - 2. Do not use equipment or arrangements of equipment that reduce required clearances or exceed the space allocation.
- D. Install equipment in accordance with the manufacturer's instructions.
- E. Equipment Access:
  - 1. Install equipment so it is readily accessible for operation and maintenance.
  - 2. Equipment shall not be blocked or concealed.
  - 3. Do not install electrical equipment such that it interferes with normal maintenance requirements of other equipment.
- F. Equipment shall be installed plumb, square and true with the building construction, and shall be securely fastened.
- G. Outdoor wall-mounted equipment, and indoor equipment mounted on earth, or water bearing walls, shall be provided with corrosion-resistant spacers to maintain ¼-inch separation between the equipment and the wall.
- H. Screen or seal all openings in outdoor equipment to prevent the entrance of rodents and insects.
- I. Equipment fabricated from aluminum shall not be imbedded in earth or concrete.
- J. Provide all necessary anchoring devices and supports.
  - 1. Use supports as detailed on the Plans and as specified.
  - 2. Supports and anchoring devices shall be rated and sized based on dimensions and weights verified from approved equipment submittals.
  - 3. Hardware shall be stainless steel.
  - 4. Do not cut, or weld to, building structural members.
  - 5. Do not mount safety switches and external equipment to other equipment enclosures, unless enclosure mounting surface is properly braced to accept mounting of external equipment.
- K. Contractor shall verify exact rough-in location and dimensions for connection to electrical items furnished by others.

1. Shop drawings shall be obtained from those furnishing the equipment.
  2. Proceeding without proper information may require the Contractor to remove and replace work that does not meet the conditions imposed by the equipment supplied.
  3. Provide sleeves wherever openings are required through new concrete or masonry members. Place sleeves accurately and coordinate locations with the Engineer.
  4. Should any cutting and patching be required on account of failure of the Contractor to coordinate penetrations, such cutting and patching shall be done at the expense of the Contractor.
    - a. The Contractor shall not endanger the stability of any structural member by cutting, digging, chasing, or drilling and shall not, at any time, cut or alter the work without the Engineer's written consent.
      - 1) Provide additional reinforcing if required.
      - 2) Cutting shall be done neatly using proper tools and methods.
    - b. Subsequent patching to restore walls, ceilings, or floors to their original condition shall be done by the Contractor.
- L. Provide concrete foundations or pads required for electrical equipment as indicated or specified. Floor-mounted equipment shall be mounted on a 4-inch concrete housekeeping pad. Pad shall be poured on top of the finished floor or slab.
- 3.02 TEMPORARY POWER
- A. The Contractor shall furnish, install, and maintain, temporary power and lighting systems needed for construction. This temporary system shall include weatherproof panel(s) for the Contractor's main breakers and distribution system. Ground fault interrupting equipment shall be installed. Connections shall be watertight, with wiring done with Type SO portable cable. After construction is completed, the Contractor shall remove temporary power equipment and devices.
- 3.03 CUTTING AND REPAIRING
- A. Where it becomes necessary to cut into existing work for the purpose of making electrical installations, core drills shall be used for making circular holes. Other demolition methods for cutting or removing shall be reviewed by the Engineer prior to starting the work.
- B. The Contractor shall repair damage caused by construction, or demolition work, and restore damaged areas to original condition.
- 3.04 CORROSION PROTECTION
- A. Wherever dissimilar metals, except conduit and conduit fittings, come in contact, the Contractor shall isolate these metals, as required, with neoprene washers, 9 mil polyethylene tape, or gaskets. Where fastening conduit, electro plated, or equivalent fasteners and stainless steel bolts shall be used.
- B. Factory finishes damaged during shipping, or construction, shall be restored to original new condition. Rust shall be removed, and bare metal surfaces shall be primed and painted to match the original surrounding finish.
- C. Electrical panels, switchgear, motor control centers, and other electrical equipment, shall be shipped in sealed dust and moisture proof plastic sheet enclosures, and the seal maintained until units are installed. Said units shall be new and free of any dirt, dust, water, grease, rust, damaged parts or components. Relays, starters, circuit breakers, switches, contacts, insulators, mechanisms, and buses shall be free of dust, dirt, oil, moisture, metal shavings, and other debris before testing and energizing.
- D. Once equipment is installed, it shall be protected at all times with plastic sheet covers until the area is free of dirt, dust, paint spray, water, and other trades. Heat shall be provided to eliminate condensation.
- 3.05 COORDINATION OF THE ELECTRICAL SYSTEM
- A. The Contractor shall verify actual equipment, and motor full-load, and locked-rotor current ratings. The necessary minimum equipment, wire, and conduit sizes are indicated on the Plans. If the Contractor

furnishes equipment of different ratings, the Contractor shall coordinate the actual current rating of equipment furnished with the branch circuit conductor size, the overcurrent protection, the controller size, the motor starter, and the branch circuit overcurrent protection. The branch circuit conductors shall have a current carrying capacity of not less than 125 percent of the actual full-load current rating.

3.06 TEST

- A. The electrical work shall be free from improper grounds, and from short circuits. The correctness of the wiring shall be verified first by visual comparison of the conductor connections with connection diagrams. Next, individual circuit continuity checks shall be made by using electrical circuit testers. Last, the correctness of the wiring shall be verified by the actual electrical operation of the electrical and mechanical devices. Any deviation from the wiring indicated on the Plans, or accepted Drawings, shall be corrected and indicated on the record drawings.
  
- B. Each conductor shall be identified as required by the Contract Documents. This identification shall be indicated on the record drawings to enable rapid and accurate circuit tracing by maintenance personnel.

3.07 SINGLE LINE DIAGRAMS

- A. Single line diagrams, as indicated on the Drawings, show circuit voltages, circuit protection rating, and other pertinent data. Where conflicts exist on the Drawings, the single line diagrams shall take precedence. Grounding conductors are not necessarily indicated. See grounding requirements specified elsewhere herein.

End of Section

## SECTION 26 05 01

### BASIC MATERIALS AND METHODS

#### PART 1 - GENERAL

##### 1.01 DESCRIPTION

- A. This section consists of general electrical materials and methods. Electrical materials that are a part of equipment specified under other sections shall meet the requirements of this section, unless part of larger factory-assembled equipment.

##### 1.02 SUBMITTALS

- A. Submit manufacturer's literature for raceways and fittings, boxes, wires and cables, wiring devices, nameplates, legend plates, labels, panelboards, and safety switches, service entrance equipment, control panels and any other electrical component utilized in this project.

##### 1.03 QUALITY ASSURANCE

- A. Refer to Section 16000.

##### 1.04 SPARE PARTS

- A. Provide spare components as indicated on plans and elsewhere herein.

#### PART 2 - PRODUCTS

##### 2.01 BASIC MATERIALS

- A. Electrical safety switches, distribution and control equipment shall be rated for heavy duty service.
- B. Wiring devices shall be specifications grade.

##### 2.02 MISCELLANEOUS METAL AND MOUNTING CHANNELS

- A. Metal Framing:
  - 1. Unless otherwise shown, mounting channels shall be cold rolled from mild strip steel, 12-gauge, 1-5/8 inches by 1-5/8 inches, with a galvanized finish by Unistrut, Unistrut P-1000, as manufactured by Unistrut, or equal.
  - 2. Screws, bolts, washers and nuts shall be stainless steel. Parts and brackets for assembly of channels shall be hot dipped galvanized.
- B. Miscellaneous Metal: Galvanized steel, unless otherwise shown.

##### 2.03 NAMEPLATES, LEGEND PLATES, AND LABELS

- A. Nameplates: Laminated sheet plastic, approximately 1/16 inch-thick, with engraved white letters on a black background, with adhesive backing and mounting screw holes. Stainless steel or brass screws, minimum height of letters, 5/16 inch. Card holders are not acceptable.
- B. Legend Plates: Type KN-3 standard legend plates, Square D, or equal.
- C. Control Wire Markers: Pressure-sensitive or heat shrink sleeve types, manufactured by W.H. Brady Company, or equal.

#### PART 3 - EXECUTION

##### 3.01 BASIC MATERIALS

- A. The completed installation shall conform to all applicable federal, state, and local code ordinances and regulations. Contractor shall obtain necessary permits and inspections required by the governing authorities. Work shall be done in a neat, workmanlike, finished and safe manner, according to the latest published

N.E.C.A. standards of installation, under competent supervision. Install grounding as required by the National Electrical Code.

3.02 MISCELLANEOUS METAL AND MOUNTING CHANNELS

- A. Install where electrical equipment is to be surface mounted to walls and where indicated on Plans. Where two or more devices are to be installed side by side, support on metal framing, bolt together, and brace as required to form a rigid structure.
- B. Clean cuts and welds. Coat unpainted surfaces with cold application zinc galvanizing. Coat cuts and welds on painted surfaces with zinc chromate primer and finish to match existing paint.

3.03 NAMEPLATES, LEGEND PLATES, AND LABELS

- A. Nameplates: Identify panels, switchgear, regulators, load-break junction boxes, disconnect switches, and component enclosures. Fasten nameplates with stainless steel, self-tapping screws or rivets.
  - 1. Panels: Identify panel number, voltage and amperage of panel bus.
  - 2. Switchgear: Identify equipment, voltage, amperage and phase and number of wires.
  - 3. Safety Switches and Relays: Identify equipment controlled and circuits from which they are fed.
- B. Legend Plates: Install on selector switches, pushbuttons, pilot lights, starters, and other components.
- C. Control Wire Markers: Install at both ends of each control wire interconnecting between such items as control panels, sensors, and control devices, and each end of control wires within control panels, and other such enclosures. Wiring markers shall correspond to control wire numbers on approved wiring diagrams.

End of Section

## SECTION 26 05 09

### CONDUITS

#### PART 1 - GENERAL

##### 1.01 SCOPE OF WORK

- A. Furnish and install conduits as required, and as shown on the Plans. Materials employed shall be as shown on the Plans.

##### 1.02 SUBMITTALS

- A. Submit product literature including manufacturer part number, model number, material, size, and specifications. Material shall not be installed until the Engineer has reviewed the submittal data.
- B. Shop Drawings shall be submitted for review and acceptance showing routing, conduit size, and number and size of wires in each conduit before installation of conduit and any related work.
- C. Proposed routing of conduits buried under floor slabs-on-grade.
- D. Identify conduit by tag number of equipment served or by circuit schedule number.
- E. Proposed routing and details of construction including conduit and rebar embedded in floor slabs, columns, etc. Identify conduit by tag number of equipment served or by circuit schedule number.
- F. Proposed location and details of construction for openings in slabs and walls for raceway runs.
- G. Refer to Section 16000 for further submittal requirements.

##### 1.03 REFERENCES

- A. American National Standards Institute (ANSI): C80.1, Rigid Steel Conduit - Zinc-Coated, and C80. 3, Electrical Metallic Tubing, Steel Galvanized.
- B. National Electric Manufacturers Association (NEMA): RN-1, Polyvinyl-Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit, and FB-1, EMT Conduit Fittings.
- C. Underwriters Laboratories Inc. (UL):
  - 1. 1, Flexible Metal Conduit.
  - 2. 6, Rigid Metal Conduit.
  - 3. 360, Liquid-Tight Flexible Steel Conduit.
  - 4. 467, Grounding and Bonding Equipment.
  - 5. 514, Nonmetallic Outlet Boxes, Flush-Device Boxes and Covers, and 514B, EMT fittings.
  - 6. 651, Schedule 40 and 80 Rigid PVC Conduit.
  - 7. 870, Wireways, Auxiliary Gutters, and Associated Fittings.
  - 8. 884, Underfloor Raceways and Fittings.
  - 9. 886, Outlet Boxes and Fittings for Use in Hazardous (Classified) Locations.
  - 10. 797, Electrical Metallic Tubing.

#### PART 2 - PRODUCTS

##### 2.01 RACEWAYS

- A. Exposed conduit in an unclassified or hazardous area shall be galvanized rigid steel (GRS) unless specifically indicated otherwise on the Plans. Conduits in the corrosive areas shall be PVC coated GRS unless otherwise indicated. Underground and/or concrete encased conduits shall be PVC, unless otherwise indicated. All wiring, except as otherwise noted, shall be in conduit. Conduit size shall not be less than the National Electrical Code (NEC) size required for the conductors therein and shall not be smaller than 3/4-inch. No underground conduit shall be less than one inch, unless otherwise indicated on Plans.

- B. Condulet type fittings shall be Crouse-Hinds, Appleton, or equal with wedge nut covers. All condulets located outdoors or in wet locations shall be weathertight.
- C. In unclassified areas, flexible conduit shall be grounding type, weatherproof, corrosion resistant, and watertight.
- D. Couplings, connectors, and fittings shall be standard types specifically designed and manufactured for the purpose. They shall be installed to provide a firm mechanical assembly and electrical conductivity throughout.
- E. Expansion fittings shall be OZ type AX with jumper for exposed locations and type DX at structural expansion joints, Spring City, or equal. Conduits shall have expansion fittings in accordance with NEC.
- F. The conduits and fittings shall be supported per NEC requirements as a minimum.

#### 2.02 GALVANIZED RIGID STEEL (GRS)

- A. Conduit and couplings shall be hot-dipped galvanized with zinc coated threads and outer coating of zinc bichromate, in accordance with ANSI C80.1 standards, as manufactured by Jones & Laughlin Steel Corporation, Allied Tube & Conduit Corporation, Triangle PWC, or equal.
- B. Steel conduit shall not be buried in earth without concrete encasement and additional corrosion protection. A half lapped rapping of 20 mil PVC based corrosion protection tape shall be used.

#### 2.03 RIGID NONMETALLIC - PVC

- A. Where specifically indicated on the Plans, or elsewhere specified, conduit may be high density Schedule 40, 90 degrees C, heavy-duty PVC. The conduit shall be manufactured from virgin polyvinyl chloride compound which meets ASTM D1784, NEMA TC-2, ANSI C33.91, and UL 651 standards. Smoke emissions shall be limited to less than 6 grams per 100 grams of material tested.
- B. Where conduit concrete encasement is indicated on the Plans, conduit supports shall be installed at eight foot intervals. PVC conduit shall be manufactured by Carlon, Triangle Conduit & Cable, or equal.

### **PART 3 - EXECUTION**

#### 3.01 INSTALLATION

- A. Conduit runs are schematic only, and shall be modified as required to suit field conditions, subject to review and acceptance by the Engineer.
- B. Conduit shall run continuously between outlets and shall be provided with junction boxes where connections are made. Couplings, connectors, and fittings shall be acceptable types designed and manufactured for the purpose, and shall provide a firm mechanical assembly, and electrical conductivity throughout.
- C. Conduit runs shall be straight and true. Elbows, offsets, and bends shall be uniform and symmetrical. Changes in direction shall be made with long radius bends, or with fittings of the condulet type.
- D. Conduit runs in buildings and structures shall be exposed except as specifically noted, or accepted by the Engineer.
- E. Conduit runs shall not interfere with the proper and safe operation of equipment, and shall not block or interfere with ingress or egress, including equipment removal hatches.
- F. Exposed conduits shall be securely fastened with clamps, or straps, intended for conduit use. All exposed conduit shall be run on the walls and ceiling only and shall be parallel to the planes of the walls or ceiling. No diagonal runs will be permitted. Flexible conduit shall be used only for short lengths required to facilitate connections between rigid conduit to motors from junction boxes, or control equipment. The maximum length of flexible conduit shall be 3 feet.

- G. Conduit runs on water-bearing walls shall be supported one inch away from the wall on an accepted channel. When channel galvanizing, or other coating, is cut or otherwise damaged, it shall be field coated to original condition. No conduit shall be run in water-bearing walls, unless specifically designated otherwise.
- H. Conduit shall be thoroughly reamed to remove burrs. IMC or GRS shall be reamed during the treading process, and Rigid Nonmetallic PVC or EMT shall be reamed before applying fittings. A zinc rich cold galvanizing shall be used to restore corrosion protection on field cut threads. Bushings and lock nuts or hubs shall be used at conduit termination's. The total number of bends in any run between pull points shall not exceed 360 degrees. Junction boxes and pull boxes shall be installed at points acceptable to the Engineer. Conduit ends shall be plugged to prevent the entrance of moisture or debris during construction. All spare conduits shall be adequately capped and shall contain a suitable pull string.
- I. Joints shall be set up tight. Hangers and fastenings shall be secure, and of a type appropriate in design, and dimensions, for the particular application.
- J. Conduit runs shall be cleaned and internally sized (obstruction tested) so that no foreign objects, or obstructions remain in the conduit prior to pulling in conductors.
- K. After installation of complete conduit runs 2 inches and larger, conduits shall be snaked with a conduit cleaner equipped with a cylindrical mandrel of a diameter not less than 85 percent of the nominal diameter of the conduit. Conduits through which the mandrel will not pass shall be prepared or replaced.
- L. Expansion fittings shall be installed across all expansion joints and at other locations where necessary to compensate for thermal expansion and contraction.
- M. Provide trenching, backfill, and compaction for conduits installed underground. Multiple underground conduits shall maintain a 7 1/2" separation measured from the center of each conduit for M.V. cable and a 2" separation measured from outside wall to outside wall for low voltage and signal wires, or as otherwise noted on the drawings.

End of Section

**SECTION 26 05 15**

**CONCRETE PULL BOXES**

**PART 1 - GENERAL**

1.01 SCOPE OF WORK

- A. The Contractor shall furnish and install pre-cast concrete pull boxes in the locations indicated on the Plans and as required.

1.02 SUBMITTALS

- A. Products shall be submitted for review prior to installation in accordance with the Contract Documents, and Section 26 05 00.

**PART 2 - PRODUCTS**

- A. The pull boxes shall be designed for traffic conditions, and the pull box and cover shall be designed for heavy traffic bridge loading unless otherwise noted. The pull boxes shall have dimensions indicated on the plans. The pull boxes shall be constructed of concrete.
- B. The pull boxes shall be Quikset, Utility Vault Co., or equal, with covers. The covers shall be engraved "ELECTRICAL".

**PART 3 - EXECUTION**

3.01 INSTALLATION

- A. The pull boxes shall be installed on 12 inches of compacted gravel and shall be installed in such a manner that the cover of the pull box will be flush with finished grade.

End of Section

## SECTION 26 05 19

### 600 VOLT CLASS CABLE

#### PART 1 - GENERAL

##### 1.01 SCOPE OF WORK

- A. This section covers the furnishing and installation of 600 Volt Class cables and conductors, terminations and splicing, and pulling lubricants.

##### 1.02 SUBMITTALS

- A. Products shall be submitted in accordance with Section 26 05 00, and elsewhere in the Contract Documents, prior to installation.

##### 1.03 REFERENCES

- A. Insulated Cable Engineers Association/National Electrical Manufacturers Association (ICEA/NEMA):
  1. S-68-516/WC 8, ethylene-propylene rubber-insulated wire and cable for the transmission and distribution of electrical energy.
  2. S-61-402/WC 5, thermoplastic-insulated wire and cable for the transmission and distribution of electrical energy.
  3. S-66-524/WC 7, cross-linked thermosetting-polyethylene-insulated wire and cable for transmission and distribution of electrical energy.
- B. Underwriters Laboratory, Inc.
  1. 44, rubber insulated wires and cables.
  2. 83, thermoplastic-insulated wires and cables.
  3. 486A, wire connectors and soldering lugs for use with copper conductors.
  4. 486B, wire connectors for use with aluminum conductors.
  5. 510, insulating tape.
- C. National Electric Code
- D. Insulated Cable Engineers Association

#### PART 2 - PRODUCTS

##### 2.01 ACCEPTED MANUFACTURERS

- A. Conductors and Multi Conductor Cables (MCC), subject to compliance with Contract Documents, the following manufacturers are acceptable: American Insulated Wire Corporation, Cablec Corporation, Okonite Company, Southwire Company, or equal.

##### 2.02 CONDUCTORS

- A. Wire sizes shall be American Wire Gauge (AWG) sizes with Class B stranded construction. Number 2 AWG and smaller shall be factory color coded with a separate color for each phase and neutral, which shall be used consistently throughout the system. Larger cables shall be coded by the use of colored tape. Conductors sized No. 1 and larger shall be Type 2, rated for 90 degrees C. All circuit conductors, #6 or smaller shall be "THWN" stranded copper. All other conductors shall be "XHHW" stranded copper.
- B. Individual or multiple conductor cables for power, control, and alarm circuits of 480 volts or less shall be insulated for not less than 600 volts and shall have insulation type as indicated on the Plans. "THWN" shall conform to ICEA S-61-402/NEMA WC 5 and UL 83 and "XHHW" shall conform to ICEA S-66-524/NEMA WC 7 and UL 44. Where wire size is not indicated, they shall be of the size required by the NEC, except that no wire external to panels and motor control centers shall be less than No. 12 AWG, unless specifically noted on the Plans. Panel control wiring shall not be less than No. 14 AWG. Where cable is indicated to be run in cable tray, said cable shall be UL listed for cable tray use.

- C. All wiring shall be as indicated on the Plans. Wires shall be new and shall be soft drawn copper with not less than 97 percent conductivity. The wire and cable shall have size, grade of insulation, voltage, and manufacturer's name permanently marked on the outer covering at not more than 2-foot intervals. All wires shall conform to the latest Standards of the ASTM, and ICEA, and shall be tested for their full length by these Standards. Insulation thickness shall be not less than that specified by the National Electrical Code.

2.03 TERMINATIONS AND SPLICES

- A. Cable shall be rated 600 volts. Other parts of cable systems such as splices and terminations shall be rated at not less than 600 volts. Splicing shall join conductors mechanically and electrically to provide a complete circuit prior to installation of insulation.
- B. Splices in wires No. 10 AWG and smaller shall be made with an insulated, solderless, pressure type connector, Type I, Class 1, Grade B, Style G, or Type II, Class 1 of FS W-S-610 and conforming to the applicable requirements of UL 486A.
- C. Splices in wires No. 8 AWG and larger shall be made with noninsulated, solderless, pressure type connector, Type II, Class 2 of FS W-S-610, conforming to the applicable requirements of UL 486A and UL 486B. They shall then be covered with an insulation and jacket material equivalent to the conductor insulation and jacket.
- D. All splices below grade or in wet locations shall be sealed type conforming to ANSI C119.1 or shall be waterproofed by a sealant-filled, thick wall, heat shrinkable, thermosetting tubing or by pouring a thermosetting resin into a mold that surrounds the joined conductors.
- E. Conductors, including grounding conductors, of different sizes shall be spliced and then soldered or welded. Splices in wet locations and all splices below grade shall be of the Exothermic type.

2.04 PULLING LUBRICANT

- A. All cables shall be properly coated with pulling compound (Aqua Gel, CRC, or equal) before being pulled into conduits so as to prevent mechanical damage to the cables during installation. "Yellow 77" is not acceptable.
- B. Other lubricants to be substituted must be accompanied by a statement from the cable manufacturer as to its acceptable use with the cable being installed.

2.05 IDENTIFICATION

- A. All conductors shall be numbered with "tube sleeve" type tags with heat impressed letters and numbers.
- B. Color code all wiring as follows:

		<u>120/208 VAC</u>	<u>480VAC</u>	<u>24V DC</u>	<u>120 VAC Control/ Power</u>
1.	Lighting and power wiring:				
	a. Phase 1	Black	Brown	Blue	Red
	b. Phase 2	Red	Orange		
	c. Phase 3	Blue	Yellow		
	d. Neutrals	White	White		White
	e. Ground	Green	Green		
2.	Color code ends of feeder phase conductors only.				

**PART 3 - EXECUTION**

3.01 INSTALLATION

- A. The pulling tension and side-wall pressures, as recommended by the cable manufacturer, shall not be exceeded. Additional pull boxes shall be installed, as required, to meet the cable manufacturer's recommendations.

- B. As far as practical, all circuits shall be continuous from origin to termination without splices in intermediate pull boxes. Sufficient slack shall be left at the termination to make proper connections. In no case shall a splice be pulled into the conduit. Conductor splicing shall not be permitted without the Engineer's approval.
- C. Install all cables in conduit.
- D. Each feeder and branch circuit shall be installed in its own individual conduit unless combining feeder and branch circuits is permitted as defined in the following:
  - 1. As specifically indicated on the Plans.
  - 2. For lighting, multiple branch circuits may be installed in a conduit as allowed by the NEC and with the wire ampacity derated in accordance with the requirements of the NEC. Conduit fill shall not exceed the limits established by the NEC.
  - 3. When field conditions dictate and written permission is obtained from the Engineer.
- E. Feeder and branch circuits shall be isolated from each other and from all instrumentation and control circuits.
- F. Control circuits shall be isolated from all other feeder, branch and instrumentation circuits, except as noted above.
  - 1. 12 V DC, 24 V DC and 48 V DC control circuits may be combined in common conduit.
  - 2. 125 V DC control circuits shall be isolated from all other DC and AC control circuits.
  - 3. 120 V AC control circuits shall be isolated from all DC control circuits.
- G. Make splices only at pull or junction boxes.
  - 1. Crimp or indenter-type connectors are not allowed, except for control circuits landed on terminal strips.
  - 2. For wire smaller than #6 AWG: Use insulated conical spring type connectors, or "wirenuts".
  - 3. For #6 AWG and larger wire: Use solderless lugs and screw type connectors.

End of Section

## SECTION 26 05 26

### GROUNDING

#### PART 1 - GENERAL

##### 1.01 SCOPE OF WORK

- A. A ground grid system consisting of the indicated configuration of copper wires, and ground rods, or concrete encased grounding electrodes ("UFERS") shall be provided to minimize station potential gradient irregularities and drain leakage and fault currents to earth.
- B. Whether indicated on the Plans or not, neutral conductors, cable shields, metallic conduits, cable terminations, junction boxes, poles, surge arresters, and other noncurrent-carrying metallic parts of equipment shall be grounded.

##### 1.02 SUBMITTALS

- A. Products shall be submitted in accordance with Section 16000, and elsewhere in the Contract Documents, prior to installation.

##### 1.03 REFERENCES

- A. National Electrical Code (NEC) Article 250

#### PART 2 - PRODUCTS

##### 2.01 GENERAL REQUIREMENTS

- A. A resistance of not greater than 25 ohms shall be provided, unless otherwise specified. Ground resistances shall be measured as herein described. Resistances of systems requiring separate ground rods shall be measured separately before bonding below grade. The combined ground resistance of separate systems bonded together below grade may be used to meet the specified ground resistance, but the minimum number of rods indicated must still be provided.

##### 2.02 GROUND RODS

- A. Ground rods shall be copper-clad steel conforming to UL 467, 3/4 inch in diameter by 10 feet in length. Unless otherwise indicated, ground rods shall be driven into the ground until tops of rods are approximately 6 inches below finished grade. Where the specified ground resistance cannot be met with the indicated number of ground rods, additional ground rods, longer ground rods, or deep-driven sectional rods shall be installed and connected until the specified resistance is obtained, except that not more than three additional ground rods shall be required at any one installation. Ground rods shall be spaced as evenly as possible at least 6 feet apart and connected below grade.

##### 2.03 CONNECTIONS

- A. Connections above grade shall be made with bolted solderless connectors, and those below grade shall be made by a fusion-welding process. In lieu of a fusion-welding process, a compression ground grid connector of a type which uses a hydraulic compression tool to provide the correct circumferential pressure may be used. Tools and dies shall be as recommended by the manufacturer. An embossing die code or other standard method shall provide visible indication that a connector has been adequately compressed on the ground wire.

##### 2.04 GROUNDING ELECTRODE CONDUCTOR

- A. Service entrance ground wires shall be sized in accordance with NEC Table 250-66, unless otherwise indicated on the Plans. After being located to provide maximum physical protection, exposed ground wires shall be securely attached to structural supports at not more than 2-foot intervals with suitable fasteners. Bends greater than 45 degrees in ground wires are not permitted. Routing of ground conductors through concrete should be avoided, except where specifically called for in these Documents. When concrete penetration is necessary, nonmetallic conduit shall be cast flush with the points of concrete entrance and exit, so as to provide an opening for the ground wire. The opening shall be sealed with a suitable compound after installation of the ground wire.

2.05 EQUIPMENT GROUNDING CONDUCTOR

- A. Neutral conductors shall be grounded where indicated. Equipment grounding conductors shall be sized in accordance with NEC Table 250-122, unless otherwise indicated. Ground wires shall be protected by conduit, where such wires run exposed above grade in nonfence-enclosed areas, or are run through concrete construction. Where concrete penetration is necessary, nonmetallic conduit shall be cast flush with the points of concrete entrance and exit, so as to provide an opening for the ground wire. The opening shall be sealed with a suitable compound after installation of the ground wire. Bends greater than 45 degrees in ground wire connections to the ground rods are not permitted.

2.06 EQUIPMENT GROUNDING

- A. Equipment frames of motor housings, metallic tanks, metallic equipment enclosures, metal splicing boxes, and other metallic noncurrent-carrying metal items, shall be grounded. Connections to earth shall be made in the same manner as required for system grounding. Equipment or devices operating at less than 750 volts may be connected to secondary neutral grounding electrodes.

2.07 SURGE ARRESTER GROUNDING

- A. Surge arresters shall be grounded. Resistance to ground for intermediate-class arresters shall be not more than 10 ohms and for distribution-class arresters shall be not more than 25 ohms. Ground wire connections shall be not less than No. 4 AWG for distribution arresters and No. 1/0 AWG for intermediate arresters. Connections to earth shall be made in the same manner as required for neutral conductors. Surge arrester grounds may use the same ground wires provided for equipment operating at more than 750 volts. Surge arrester and secondary neutral grounds shall be separate from and independent of each other but both grounds shall be bonded together below grade at the ground rods or may utilize a common counterpoise.

2.08 LIGHTING POLE GROUNDING

- A. Base of lighting poles shall be connected to a concrete encased grounding electrode (minimum 20' #4 AWG) coiled 2" from the bottom of foundation as indicated on Plans. A ground connection from poles back to neutral ground points shall also be provided utilizing the equipment grounding conductor.

2.09 METALLIC STRUCTURES

- A. Metallic structures and buildings shall be grounded per NEC.

2.10 GROUNDING RINGS

- A. When required, grounding rings shall be installed using 4.0 bare copper cable with ground rods at least 25 feet intervals using exothermic weld connecting means as indicated on the plans in accordance with NEC requirements.

**PART 3 - EXECUTION**

3.01 INSTALLATION

- A. It is the intent of these Contract Documents that all device and equipment grounds shall be run as a separate conductor in the conduit from the equipment to the distribution panels or system ground. Wireways and enclosures shall be properly bonded and grounded, and ground conductors shall be run for all circuits.
- B. Equipment cases and devices shall be grounded. Ground rods shall be driven, and concrete encased conduits installed, before a building, or structure is built, and ground conductors brought through the concrete to accessible points for grounding equipment. These systems shall be installed at each structure, where transformers, switchboards, panelboards, and MCCs are installed.
- C. Duct banks shall contain a concrete encased system bare copper ground conductor. The system ground conductors shall run continuously in duct banks, through handholes and other raceway boxes. The system ground shall be connected to the structure grounding systems to provide a continuous grounding system. Each metallic raceway, panel, switchboard, and other metallic devices associated with the electrical and control systems shall be bonded to this grounding system.

- D. Ground rod shall be installed not less than 6 inches below grade. Equipment, neutral, and surge arrester ground wires shall be connected to the ground grid as indicated.

3.02 TESTS

A. Pre-Energization Tests

Pre-energization tests shall include, but shall not be limited to tests that the equipment engineer is required to perform under paragraph "GENERAL REQUIREMENTS." No part of the electrical system shall be energized until all station grounding system components have been tested and demonstrated to comply with the requirements specified, and until associated test reports have been submitted and approved.

B. Operating Test

After the installation is completed, the Contractor shall conduct an operating test for approval. Equipment shall be demonstrated to operate in accordance with the requirements herein. Tests shall be performed in the presence of the Engineer. The Contractor shall furnish instruments and personnel required for the test.

C. Ground-Resistance Measurements

Ground-resistance measurements of each ground rod shall be taken and certified by the Contractor to the Engineer. No part of the electrical distribution system shall be energized prior to the resistance testing of that system's ground rods and grounding system and submission of test results to the Engineer. Test reports shall indicate the location of the ground rod and grounding system and the resistance and the soil conditions at the time the test was performed. When the building water service is used as a ground or part of the grounding system, ground-resistance measurements shall also be made of this connection. Ground-resistance measurements shall be made in normally dry weather, not less than 48 hours after rainfall, and with the ground under test isolated from other grounds. The resistance to ground shall be measured using the fall-of-potential method described in IEEE Std 142 and Std 81.

3.03 TEST RESULTS

- A. The Contractor shall perform the above tests and complete the following report:

GROUNDING REPORT

1. Pre-Energization Tests
  - a.
  - b.
  - c.
2. Operating Test
  - a.
  - b.
  - c.
3. Ground-Resistance Measurements
  - a.
  - b.
  - c.

End of Section

## SECTION 26 05 27

### ELECTRICAL IDENTIFICATION

#### PART 1 - GENERAL

##### 1.01 SCOPE OF WORK

- A. Electrical identification work specified in this section covers the following:
1. Buried cable warnings
  2. Electrical power, control and communication conductors
  3. Operational instructions and warnings
  4. Danger signs
  5. Equipment/system identification signs

##### 1.02 SUBMITTALS

- A. Submittals to the engineer shall include the following:
1. Manufacturers data on electrical identification materials and products
  2. Samples of each color, lettering style and other graphic representation required for each identification material or system

##### 1.03 MANUFACTURERS

- A. Subject to compliance with requirements, manufacturers offering electrical identification products maybe incorporated in the work include, but not limited to, the following:
1. Brady, W.H. Co.
  2. Ideal Industries, Inc.
  3. Panduit Corp.
  4. Equivalent

##### 1.04 QUALITY COMPLIANCE

- A. Comply with applicable requirements of UL Std. 969, "Marking and Labeling Systems", pertaining to electrical identification systems.
- B. Comply with applicable requirements of NEMA Std. No's WC-1 and WC-2 pertaining to identification of power and control conductors.

#### PART 2 - PRODUCTS

##### 2.01 GENERAL

- A. Except as otherwise indicated, provide manufacturer's standard products of categories and types required for each application. Where more than single type is specified for an application, selection is Installer's option, but provide single selection for each application.

##### 2.02 COLOR-CODED CONDUIT MARKERS

- A. Provide manufacturer's standard pre-printed, flexible or semi-rigid, permanent, plastic-sheet conduit markers, extending 360 degrees around conduits; designed for attachment to conduit by adhesive, adhesive lap joint of marker, matching adhesive plastic tape at each end of marker, or pretensioned snap-on. Except as otherwise indicated, provide lettering which indicates voltage of conductor(s) in conduit. Provide 8" minimum length for 2" and smaller conduit, 12" length for larger conduit.
- B. Unless otherwise indicated or required by governing regulations, provide white markers with black letters.

##### 2.03 CABLE AND CONDUCTOR WIRE MARKERS

- A. Cable and conductor wire markers shall be self laminating vinyl on white background, printed using a BRADY XC PLUS printer, or equal. Handwritten wire markers are not acceptable.

##### 2.04 SELF-ADHESIVE PLASTIC SIGNS

A. Provide manufacturer's standard, self-adhesive or pressure-sensitive, pre-printed, flexible vinyl signs for operational instructions or warnings; of sizes suitable for application areas and adequate for visibility, with proper wording for each application, e.g., 208V, EXHAUST FAN, RECTIFIER.

B. Unless otherwise indicated or required by governing regulations, provide white signs with black lettering.

2.05 LETTERING AND GRAPHICS

A. Coordinate names, abbreviations and other designations used in electrical identification work, with corresponding designations shown, specified or scheduled. Provide numbers, lettering and wording as indicated or, if not otherwise indicated, as recommended by manufacturers or as required for proper identification and operation/maintenance of electrical systems and equipment. Comply with ANSI A13.1 pertaining to minimum sizes for letters and numbers.

**PART 3 - EXECUTION**

3.01 INSTALLATION

A. Install electrical identification products as indicated, in accordance with manufacturer's written instructions, and requirements of NEC.

B. Where identification is to be applied to surfaces which require finish, install identification after completion of painting.

C. Comply with governing regulations and requests of governing authorities for identification of electrical work.

3.02 CONDUIT IDENTIFICATION

A. Where electrical conduit is exposed in spaces with exposed mechanical piping which is identified by a color-coded method, apply color-coded identification on electrical conduit in manner similar to piping identification. Except as otherwise indicated use white as coded color for conduit.

3.03 CABLE/CONDUCTOR IDENTIFICATION

A. Apply cable/conductor identification, including voltage, phase and feeder number, on each cable/conductor in each box/enclosure/cabinet where wires of more than one circuit or communication/signal system are present, except where another form of identification (such as color-coded conductors) is provided. Match identification with marking system used in panelboards, shop drawings, contract documents, and similar previously established identification for project's electrical work.

3.04 EQUIPMENT/SYSTEM IDENTIFICATION

A. Install engraved plastic-laminate sign on each major unit of electrical equipment in building; including central or master unit of each electrical system including communication-control-signal systems, unless unit is specified with its own self-explanatory identification or signal system. Except as otherwise indicated, provide single line of text, 1/2" high lettering on 1-1/2" high sign (2" high where 2 lines are required), white lettering in black field. Provide text matching terminology and numbering of the contract documents and shop drawings. Provide signs for each unit of the following categories of electrical work:

1. Panelboards, electrical cabinets and enclosures.
2. Access panel/doors to electrical facilities.
3. Major electrical switchgear.

B. Install signs at locations indicated or, where not otherwise indicated, at location for best convenience of viewing without interference with operation and maintenance of equipment. Secure to substrate with brass or stainless steel screws, except use adhesive where screws should not or cannot penetrate the substrate.

3.05 CIRCUIT IDENTIFICATION

A. The 3-phase wires shall be identified at the switchgear, panelboards and motor control centers as Phases A, B, and C. At 277/480V, Phase A shall be brown, Phase B shall be orange, and Phase C shall be yellow. The neutral shall be grey.

- B. In addition to color coding all conductors, each conductor shall be identified in each pull box, manhole, panelboard, cable tray, or termination with circuit identification markers. This identification is applicable to all power, control, alarm, and instrumentation conductors and these markings shall be recorded on the Record Documents. Markers shall be slip-on PVC sleeve type as manufactured by Brady, Seaton, or equal.
  - C. Markers for other cabling shall be B-292 vinyl as manufactured by Brady, Seaton, or equal.
  - D. Exposed medium voltage conduits shall be labeled at 50 foot intervals with 1 inch letters stating the voltage - example - "12,470 volts". Labels shall be vinyl plastic as manufactured by Brady, Seton, or equal.
- 3.06 CONDUCTOR FASTENERS
- A. Glue-on type conductor fasteners shall not be used in any panels, panelboards, switchboards, switchgear, motor control centers, or other enclosures containing electrical devices and/or conductors.

End of Section

## SECTION 26 24 16

### PANELBOARDS

#### PART 1 - GENERAL

##### 1.01 SCOPE OF WORK

- A. This section covers electrical panelboards.

##### 1.02 SUBMITTALS

- A. Products shall be submitted in accordance with Section 26 05 00, and the Contract Documents, prior to installation.
- B. Panel layout with alphanumeric designation, branch circuit breaker sizes and types, AIC rating, bus sizes, and other characteristics.

##### 1.03 QUALITY ASSURANCE

- A. NEMA PB-1, Panelboards
- B. NEC
- C. UL67, Panelboards

#### PART 2 - PRODUCTS

##### 2.01 PANELBOARDS

- A. Dead-front panelboards, including lighting distribution and control panels, shall be furnished and installed as indicated on the Plans. Buses shall be copper. Mounting and type of enclosures shall be as indicated on the Plans. Where not indicated on the plans, indoor enclosures shall be NEMA 12 and outdoor enclosures shall be NEMA 3R. The minimum interrupting capacity of any device shall be as indicated on the Plans.
- B. Protective devices shall be bolt on type and replaceable without disturbing adjacent units. Wire connectors shall be suitable for wire sizes indicated. Branch circuits shall be numbered as indicated on the Plans, and a complete typed circuit schedule shall be furnished under a transparent cover, and affixed to the panel. Phase busing shall be full height without reduction. Full size neutral bars shall be included, and shall have suitable lug for each outgoing circuit requiring neutral connection. Spaces for future protective devices provided in lighting panels shall be bused for the maximum device that can be fitted into them.
- C. Panelboards shall be finished with a primer, rust resistant phosphate undercoat and two coats of oven baked enamel with finish ANSI grey. They shall be sized to provide a minimum of 4 inches of gutter space on all sides. Doors shall not uncover any live parts, and shall be hinged and have latches that require no tool to operate. Panelboard doors shall be lockable. Lock and two keys shall be furnished.
- D. Each panelboard shall have, on the outside of the door, a lamicoïd nameplate with 3/4 inch letters as specified elsewhere in these Contract Documents.
- E. Panelboards shall be as manufactured by Square D, General Electric, Cutler-Hammer, or equal.
- F. Panelboards shall be service entrance rated where required, and as shown on the Plans.

#### PART 3 - EXECUTION

##### 3.01 INSTALLATION

- A. Panelboards shall be installed as indicated on the plans and according to manufacturer's instructions.
- B. Provide grounding per NEC, and Section 26 05 26.

C. Contractor shall verify all NEC clearance requirements prior to installation.

End of Section

## SECTION 26 24 17

### LOW VOLTAGE (600V AND BELOW) CIRCUIT BREAKERS

#### PART 1 - GENERAL

##### 1.01 SCOPE OF WORK

- A. The Contractor shall furnish and install, low voltage circuit breakers, as indicated on the Plans and specified herein.

##### 1.02 SUBMITTALS

- A. Products shall be submitted in accordance with Section 26 05 00, and elsewhere in the Contract Documents, prior to installation.

#### PART 2 - PRODUCTS

##### 2.01 GENERAL

- A. Circuit breakers shall be as manufactured by Square D, Cutler-Hammer, General Electric, or equal.
- B. Circuit breaker frame, trip, short circuit, and interruption ratings shall be as indicated on the Plans, except that they shall be coordinated with the ratings of the equipment actually furnished, and shall be modified where necessary to suit the equipment.
- C. Circuit breakers shall conform to the applicable requirements of NEMA Standards Publication No. AB1.
- D. Circuit breakers for mounting inside panelboards shall be bolt-on type with a short circuit rating equal to or greater than the bracing of the panelboard bus.
- E. Circuit breakers for mounting inside existing panelboards shall match existing circuit breaker type and shall have circuit rating equal to or greater than the bracing of the panelboard bus.

#### PART 3 - EXECUTION

##### 3.01 INSTALLATION

- A. Circuit breakers shall be installed as indicated on the plans and per manufacturer's instructions.

End of Section

- D. Light poles shall be as indicated on the Plans. Include base template, stainless steel anchor bolts and hardware, and pole grounding lug, handhole, anchor base and bolt covers. Pole foundations shall be as indicated on the Plans.

## 2.02 MATERIALS

### A. General:

1. Lamps:
  - a. See lighting fixture schedule on Plans for wattage, voltage and number required.
2. All Fixtures:
  - a. There shall be no live parts normally exposed to contact.
  - b. When intended for use in wet area:
    - (1) Mark fixtures "suitable for wet locations."
  - c. When intended for use in damp areas:
    - (1) Mark fixtures "suitable for damp locations" or "suitable for wet locations."
  - d. In wet or damp area, install fixtures so that water cannot enter or accumulate in the wiring compartment, lampholder, or other electrical parts.
  - e. Gasket seals: Urethane foam
  - f. Diffusers: UV stabilized acrylic plastic
3. Underground wiring:
  - a. Provide all wiring runs with separate green grounding conductor.
  - b. Ground all pole bases.
4. Pole wiring from base to ballast:
  - a. No. 12 type XHHW.
  - b. Each phase shall be protected by a 30A, 600V, type Tron waterproof fuseholder, Bussman "Limitron" type fuse, size rating 3-times load current.

## 2.03 FIXTURES

### A. Light Emitting Diode (LED) Fixtures:

1. Drivers for Light emitting Diode (LED) fixtures:
  - a. Type: Solid State
  - b. Operates at 50-60Hz with a power factor greater than 95%
  - c. 9Kv surge suppression
  - d. Power supply shall operate between -40°F to +140°F.
  - e. Vibration test to ANSI C136.31-2001 for Roadway Luminaire Vibration.
  - f. Salt fog tested to ASTM B117 for a minimum of 1,000 hours.
  - g. Intrusion Protection 66
  - h. Integral heat sink
  - i. Optical system (Full cut-off)
  - j. Dual driver (175mA/525mA)

## **PART 3 - EXECUTION**

### 3.01 INSTALLATION

- A. Install lamps in all luminaires.
- B. Replace all failed metal halide lamps with new lamps prior to final acceptance by Owner.
- C. Provide mounting brackets and/or structural mounting support for fixtures.
  1. Do not support fixture from conduit system.
  2. Do not support fixture from outlet boxes.
- D. Install with approved mounting hardware following manufacturer's recommendations.
- E. Pole mounted fixtures shall be mounted on concrete poles as indicated on the Plans. All poles shall be bonded to the facility ground system. Poles shall have adequate handholes where indicated.

F. Fixture mounting heights and locations indicated on the Plans are approximate and are subject to revision in the field where necessary to avoid conflicts and obstructions.

3.02 ADJUSTING AND CLEANING

A. Wipe all lighting fixture reflectors, lenses, lamps, and trims clean after installation and prior to acceptance of Project by Owner.

End of Section