FILED
AT 2 O'CLOCK 1 M

08 2016

ARTURO GUAJARDO, JR., COUNTY CLERK
HIDALGO COUNTY, TEXAS
BY _____ DEPUTY

CONTRACT DOCUMENTS

FOR THE

HIDALGO COUNTY PRECINCT NO. 4

Concrete Walking Trail at

San Carlos CRC and Sunflower Park

THE COUNTY OF HIDALGO TEXAS

Hidalgo County, Texas

May 2016

5/13/16

STATE OF TEXAS
WESLEY RICHARD LeFEVRE
102900
LICENSED PROFESSIONAL ENGINEER

Wesley Richard LeFevre, PE

Civil Engineer:

LeFEVRE ENGINEERING & MANAGEMENT CONSULTING, LLC
812 Nolana, Suite 520
McAllen, Texas 78504
Tel. 956.687.LEMC
Fax. 956.687.5363
Texas Registered Engineering Firm F-11722

LEMC No. 159

General Request for Bid Package
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"Concrete Walking Trail at San Carlos CRC and Sunflower Park"

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PURCHASING DEPARTMENT
County Of Hidalgo

May 25, 2016

RE:
ADDENDUM NO.1
FOR RFB PROJECT No.: 2016-226-06-08-YSS
"CONCRETE WALKING TRAIL AT SAN CARLOS CRC AND SUNFLOWER PARK FOR HIDALGO COUNTY PRECINCT FOUR"

Dear Gentlemen:

Attached you will find **ADDENDUM NO. 1, PAGE 1 OF 2** in connection with **"HIDALGO COUNTY PRECINCT NO 4"** -request for bids for **"CONCRETE WALKING TRAIL AT SAN CARLOS CRC AND SUNFLOWER PARK".**

Please add this **ADDENDUM NO. 1** to your bid packet so as to permit your company to submit a complete bid.

Acknowledge receipt of **ADDENDUM NO. 1** by signing and returning this notice to us VIA FAX AT (956) 687-5363 or via email at milo@lefevregroup.net.

If you do not receive all pages of **ADDENDUM NO. 1** please notify us immediately at (956) 687-5362.

Please be advised that this **ADDENDUM NO. 1** will complete your bid packet for **"HIDALGO COUNTY PRECINCT NO 4 – CONCRETE WALKING TRAIL AT SAN CARLOS CRC AND SUNFLOWER PARK".**

Thank you for your prompt attention to this matter.

Martha L. Salazar, CPPB
Hidalgo County Purchasing Agent

BY: _____
ADDENDUM NO. 1
ACKNOWLEDGMENT OF RECEIPT

2812 S. Business Highway 281 ★ Edinburg, Texas 78539 ★ 956.318.2650 ★ Fax 956.318.2651

ADDENDUM NO. 1

May 25, 2016

"HIDALGO COUNTY PRECINCT No. 4 – CONCRETE WALKING TRAIL AT SAN CARLOS CRC AND SUNFLOWER PARK"
RFB PROJECT NO.: 2016-226-06-08-YSS
Bid Opening Date: June 08, 2016

PLEASE NOTE CHANGES AS FOLLOWS:

1. **PRE-BID DATE REVISED TO: WEDNESDAY JUNE 1, 2016 AT 3:00 PM.**
2. Type-Written RFI's shall be sent to Engineer by Wednesday June 1, 2016 at 5:00 PM.
3. Replace the following forms (see attached):
   - Revised Exhibit "B" Bid Page & Attachments (Additional Alternate)
4. Replace the following forms (see attached):
   - Replace the following Civil Construction Plan Sheet 2 6.
5. Proposed Concrete Stamp Form and Color Detail Specification, or approved equal.
   - Section 03000 – Concrete Stamp Form and Color Detail

I, Rene Garza, acknowledge receipt of ADDENDUM NO. 1 dated, May 25, 2016, for RFB - HIDALGO COUNTY PRECINCT NO. 4 – CONCRETE WALKING TRAIL AT SAN CARLOS CRC AND SUNFLOWER PARK.

RG Enterprises, LLC dba G&G Contractors — Printed Bidder Name

6/6/2016 — Date

NOTE: PLEASE SUBMIT THIS ADDENDUM WITH YOUR BID PACKET, IN ORDER TO COMPLETE THE BID.....

Exhibit "B"

EXHIBIT "B"

BID PAGE

Hidalgo County
Hidalgo County Precinct No. 4 – Concrete Walking Trail at San Carlos CRC and Sunflower Park
Bid No.: 2016-226-06-08-YSS

SCOPE OF WORK DESCRIPTION:
Construction of Concrete Pedestrian Walking Trail at San Carlos CRC and Sunflower Park

BID PRICE: $_____

BIDDER/COMPANY NAME: _____

ADDRESS: _____

CITY/STATE/ZIP CODE: _____

PHONE & FAX NO.'S: _____

CELLULAR #: _____

AUTHORIZED SIGNATURE: _____

PRINTED NAME: _____

TITLE: _____

BID FOR UNIT PRICE CONTRACTS

PLACE _____
DATE_____
PROJECT NO. 2016-226-06-08-YSS

Proposal of _____(hereinafter called "Bidder") a corporation/ a partnership, or an individual doing business as: _____.

TO the **Hidalgo County – Precinct No. 4** (hereinafter called "Owner")

Gentlemen:

The Bidder, in compliance with your invitation for bids for the construction of _____ having examined the plans and specifications with related documents and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project including the availability of materials and labor, hereby proposes to furnish all labor, materials, and supplies; and to construct the project in accordance with the Contract Documents, within the time set forth therein, and at the prices stated below. These prices are to cover all expenses incurred in performing the work required under the Contract Documents, of which this proposal is part.

Bidder hereby agrees to commence work under this contract on or about date to be specified in written "Notice to Proceed" of the owner and to fully complete the project within 45 consecutive calendar days thereafter as stipulated in the specifications. Bidder further agrees to pay as liquidated damages the sum of $250.00 for each consecutive calendar day thereafter as herein after provided in Paragraph 19 of the General Conditions.

BIDDER ACKNOWLEDGES RECEIPT OF THE FOLLOWING ADDENDUM:

_____

_____

*Insert corporation, partnership or individual as applicable.

Bidder agrees to perform all of the _____ work described in the specifications and shown on plans, for the following unit prices:

ITEM NO.	ITEM DESCRIPTION		UNIT	UNIT QTY.	UNIT PRICE IN FIGURES (1)	TOTAL FIGURES
	General Project					
1-1	Mobilization, Bonds and Insurance (not to exceed 3% of Total Bid) and project signage.		LS	1		
		Total General Project				
	Concrete Walking Trail at San Carlos CRC and Sunflower Park					
2-1	Furnish and Install Concrete Walking Trail (30,805 SF) Colored Stamped concrete surface, Laydown Curb and Electrical Conduit, as per plans and specifications; complete in place.		LS	1		
		Concrete Walking Trail at San Carlos CRC and Sunflower Park				
		Total Base Bid				
	ALTERNATE NO. 1 – Concrete Walking Trail at San Carlos CRC and Sunflower Park					
3-1	Furnish and Install Concrete Walking Trail (30,805 SF), Laydown Curb and Electrical Conduit, as per plans and specifications; complete in place.		LS	1		
		ALTERNATE NO. 1 – Concrete Walking Trail at San Carlos CRC and Sunflower Park				
		Total Alternate No. 1				

		Total Base Bid	
		Total Base Bid + Alternate No. 1	

TOTAL BASE BID: $_____

(words) _____

TOTAL BASE BID + ALTERNATE NO. 1: $_____

(words) _____

(AMOUNTS ARE TO BE SHOWN IN BOTH WORDS AND FIGURES. IN CASE OF DISCREPANCY, THE AMOUNT SHOWN IN WORDS WILL GOVERN)

The above unit price shall include all labor, materials, bailing, shoring, removal, overhead, profit, insurance, etc., to cover the finished work of the several kinds called for.

Bidder understands that the Owner reserves the right to reject any or all bids and to waive any informalities in the bidding.

The Bidder agrees that this bid shall be good and may not be withdrawn for a period of 30 calendar days after the scheduled closing time for receiving bids.

Upon receipt of written notice of the acceptance of this bid, Bidder will execute the formal contract attached within 10 days and deliver a Surety Bond, or Bonds as required by Paragraph 29 of the General Conditions. The bid security attached in the sum of
$_____.

($ _____) is to become the property of the Owner in the event that contract and the bond are not executed within the time above set forth, as liquidated damages for the delay and additional expenses to the owner caused thereby.

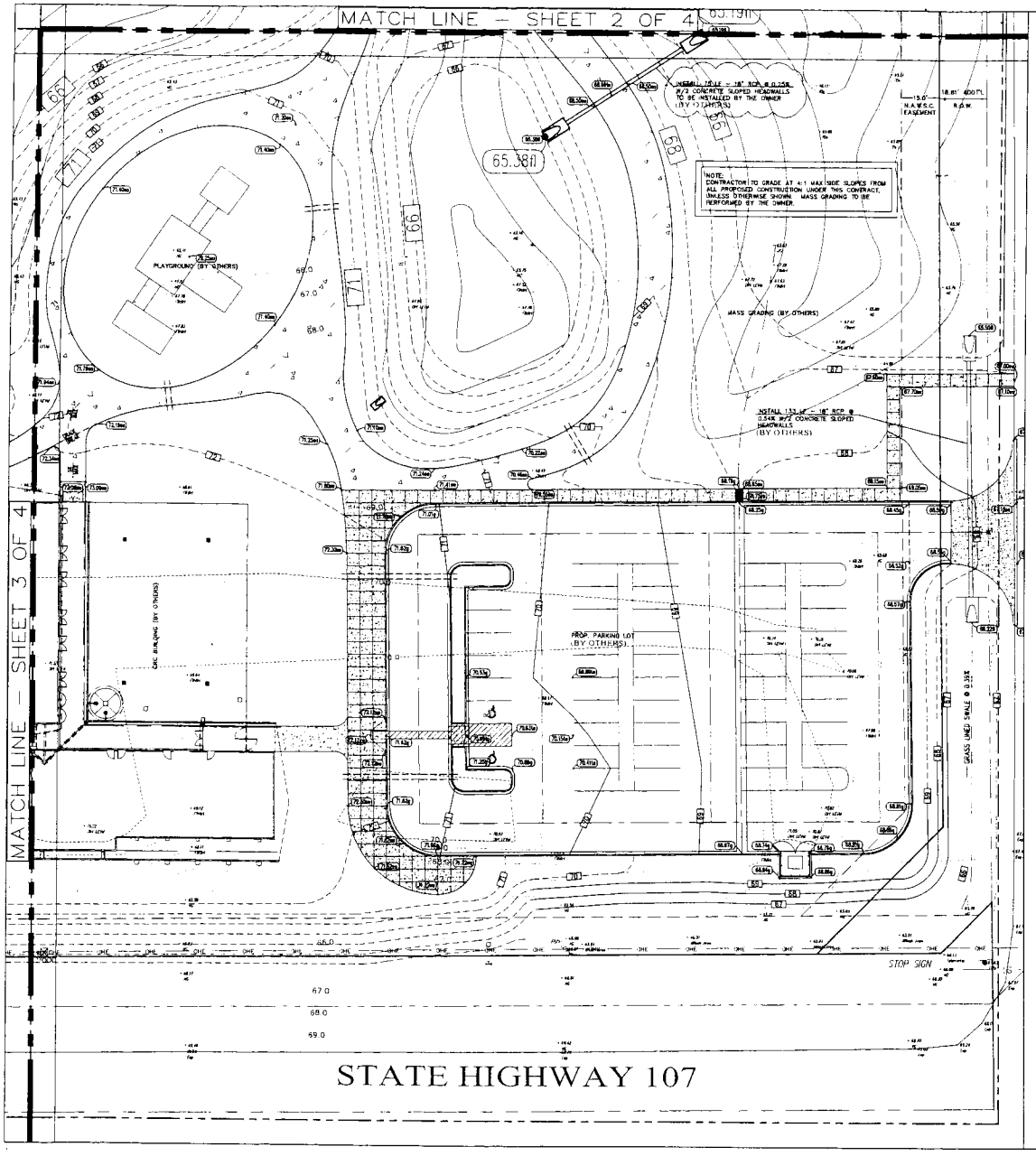
Respectfully submitted:

By: _____
(Title)

_____
(Business Address and Zip Code)

(SEAL – if bid is by a corporation)

Sheet 2.6



GRAPHIC SCALE 1" 20'

LEGEND

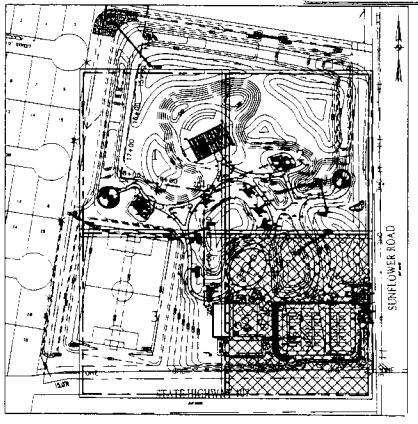
- 97.00 – MASS GRADING CONTOUR
- 100 – PROPOSED CONTOUR
- 100.00xx – PROPOSED SPOT ELEVATION
  - xx = ABBREVIATED DESIGNATORS
  - NG NATURAL GROUND
  - TC TOP OF CURB
  - G GUTTER
  - TG TOP OF GRATE
  - FF FINISHED FLOOR
  - FL FLOW LINE
  - SW SIDEWALK
  - EA EDGE OF ASPHALT
  - TA TOP OF ASPHALT
  - TW TOP OF WALL
  - BW BOTTOM OF WALL
- PROPOSED FLOW DIRECTION
- 38.50 – EXISTING SPOT ELEVATION

GRADING NOTES:

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE PLANS AND SPECIFICATIONS, EXCEPT AS NOTED HEREIN AND APPROVED BY THE COUNTY.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRENCH SAFETY REQUIREMENTS IN ACCORDANCE WITH CITY STANDARDS, TEXAS LAW, AND O.S.H.A. STANDARDS FOR ALL EXCAVATION IN EXCESS OF FIVE FEET IN DEPTH.
3. THE LOCATION OF ALL UTILITIES LOCATED ON THESE PLANS ARE TAKEN FROM EXISTING PUBLIC RECORDS. THE EXACT LOCATION AND ELEVATION OF ALL PUBLIC UTILITIES MUST BE DETERMINED BY THE CONTRACTOR. IT SHALL BE THE DUTY OF THE CONTRACTOR TO ASCERTAIN WHETHER ANY ADDITIONAL FACILITIES OTHER THAN THOSE SHOWN ON THE PLANS MAY BE PRESENT.
4. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL PUBLIC UTILITIES IN THE CONSTRUCTION OF THIS PROJECT. ALL MANHOLES, CLEAN-OUTS, VALVE BOXES, FIRE HYDRANTS, ETC. MUST BE ADJUSTED TO PROPER LINE AND GRADE BY THE CONTRACTOR PRIOR TO AND AFTER THE PLACING OF PERMANENT PAVING. UTILITIES MUST BE MAINTAINED TO PROPER LINE AND GRADE DURING CONSTRUCTION OF THE PAVING FOR THIS DEVELOPMENT.
5. DRAINAGE SHOULD BE MAINTAINED AWAY FROM THE FOUNDATIONS, BOTH DURING AND AFTER CONSTRUCTION.
6. BACKFILL FOR UTILITY LINES SHOULD BE CAREFULLY PLACED SO THAT THEY WILL BE STABLE. WHERE UTILITY LINES PASS THROUGH THE PARKING LOT, THE TOP 6" SHOULD BE COMPACTED SIMILARLY TO THE REMAINDER OF THE LOT. UTILITY DITCHES SHOULD BE VISUALLY INSPECTED DURING THE EXCAVATION PROCESS TO ENSURE THE UNDESIRABLE FILL IS NOT USED.
7. ALL EARTHWORK OPERATIONS SHALL CONFORM TO THE RECOMMENDATIONS PER THE GEO-TECHNICAL REPORT.
8. ALL PROPOSED SPOT SHOTS ARE GUTTER/TOP OF PAVEMENT/FINISHED GRADE ELEVATIONS UNLESS OTHERWISE SPECIFIED.
9. UPON COMPLETION OF CONSTRUCTION ALL DISTURBED AREAS SHALL BE SEEDED IN ACCORDANCE WITH SPECIFICATION.

CONTRACTOR SHALL CONTACT THE FOLLOWING ENTITIES 48 HOURS PRIOR TO CONSTRUCTION:

TEXAS ONE CALL:	1-800-245-4545
HC PCT 4:	956-381-3112
TxDOT:	956-702-6331
TEXAS GAS SERVICE:	956-444-3936
AT&T:	956-279-1985
NORTH ALAMO WSC:	956-383-1518



KEY MAP
SCALE: NTS

STATE OF TEXAS
WESLEY RICHARD LEFEVRE
102200
LICENSED
PROFESSIONAL ENGINEER
5/19/16

GRADING AND DRAINAGE PLAN 4/4
SCALE: 1:20

LeFEVRE ENGINEERING & MANAGEMENT CONSULTING, LLC.
912 Natana, Suite 520
McAllen, Texas 78504
Tel. 956.687.LEMC
Fax. 956.687.5363
Texas Registered Engineering Firm F-11722
Civil Engineering · Environmental Engineering · Planning · Project Management

PROJECT #: 201307
DATE: 00/00/13
DRAWN BY: MG
CHECKED BY: WRL
REVISION:
1. REV. HEADED LOADS
2.
3.
4.

PROJECT: PRECINT NO. 4 – PARKS, RECREATIONAL FACILITY IMPROVEMENTS PROJECT (SUNFLOWER PARK)
LOCATION: SAN CARLOS, TEXAS
OWNER: HIDALGO COUNTY

Mata & Garcia
architecture · project management · interior design
ARCHITECTS I.I.P.
Hector Rene Garcia R.A.
Partner
Fernando Mata A.I.A.
Partner
1514 West Ivy Avenue McAllen, Texas 78501
Tel.: (956) 631-1945

SHEET: 2.6

Concrete Stamp Form and Color Detail

SECTION 03000

CONCRETE STAMP FORM & COLOR DETAIL

PART 1 –GENERAL

1.1 SECTION INCLUDES

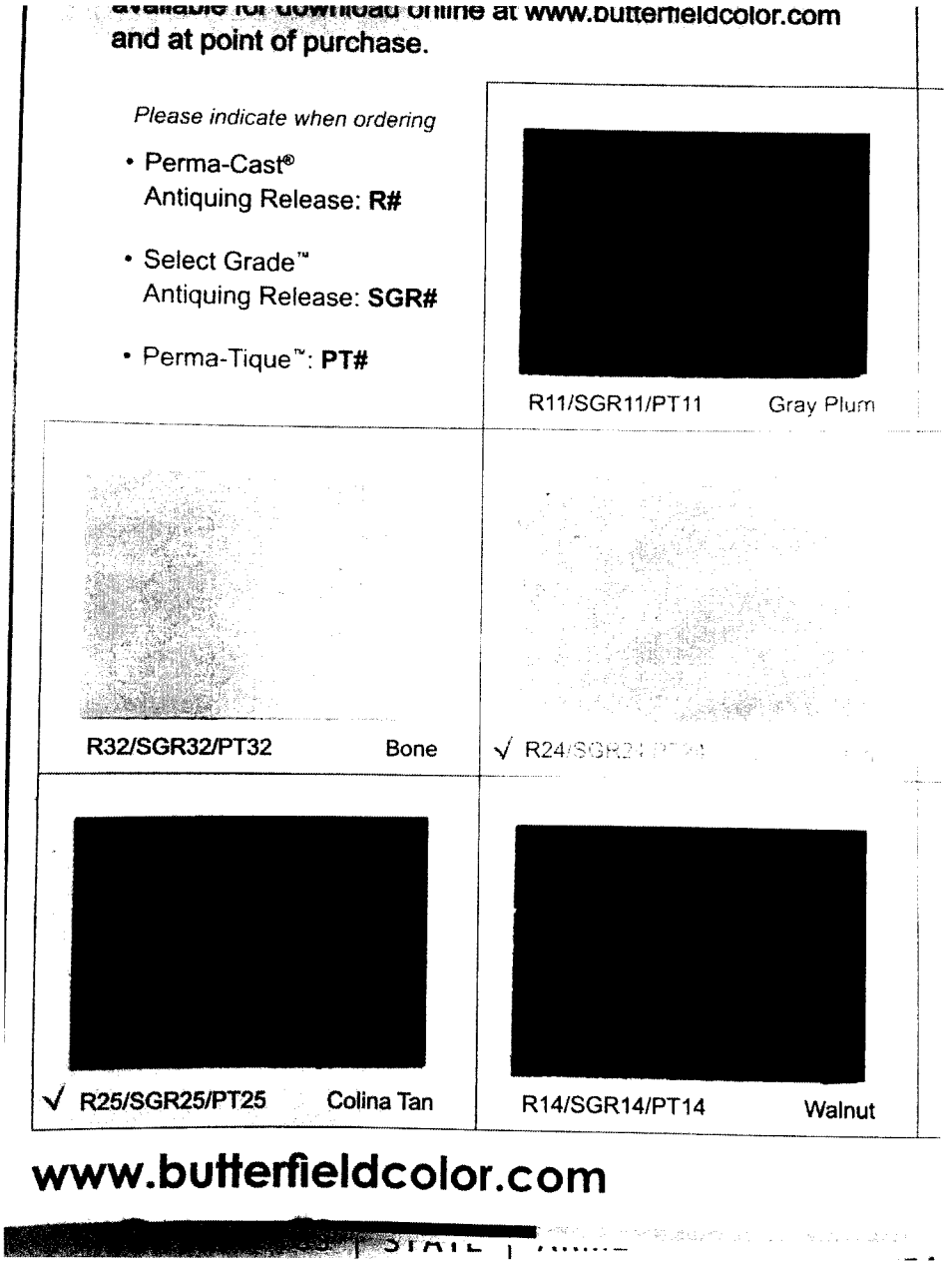
A. Stamping concrete patterns with special imprinting tools.
B. Color detail for stamped concrete surface.

PART 2 – FORM DETAILS

B. Stamped concrete surface detail



B. Color Detail for Stamped concrete surface.



PURCHASING DEPARTMENT
County Of Hidalgo

May 27, 2016

RE:
ADDENDUM NO.2
FOR RFB PROJECT No.: 2016-226-06-08-YSS
"CONCRETE WALKING TRAIL AT SAN CARLOS CRC AND SUNFLOWER PARK FOR HIDALGO COUNTY PRECINCT FOUR"

Dear Gentlemen:

Attached you will find **ADDENDUM NO. 2, PAGE 1 OF 2** in connection with **"HIDALGO COUNTY PRECINCT NO 4"** -request for bids for **"CONCRETE WALKING TRAIL AT SAN CARLOS CRC AND SUNFLOWER PARK".**

Please add this **ADDENDUM NO. 2** to your bid packet so as to permit your company to submit a complete bid.

Acknowledge receipt of **ADDENDUM NO. 2** by signing and returning this notice to us VIA FAX AT (956) 687-5363 or via email at milo@lefevregroup.net.

If you do not receive all pages of **ADDENDUM NO. 2** please notify us immediately at (956) 687-5362.

Please be advised that this **ADDENDUM NO. 2** will complete your bid packet for **"HIDALGO COUNTY PRECINCT NO 4 – CONCRETE WALKING TRAIL AT SAN CARLOS CRC AND SUNFLOWER PARK".**

Thank you for your prompt attention to this matter.

Martha L. Salazar, CPPB
Hidalgo County Purchasing Agent

BY: _____
ADDENDUM NO. 1
ACKNOWLEDGMENT OF RECEIPT

ADDENDUM NO. 2

May 27, 2016

"HIDALGO COUNTY PRECINCT No. 4 – CONCRETE WALKING TRAIL AT SAN CARLOS CRC AND SUNFLOWER PARK"
RFB PROJECT NO.: 2016-226-06-08-YSS
Bid Opening Date: June 08, 2016

PLEASE NOTE CHANGES AS FOLLOWS:

1. Clarification;
   - *Concrete Stamp Form and Color detail – Section 03000 is a sample and correct Stamp Form and Color for concrete surface will be chosen by Hidalgo County, Precinct No. 4 during submittal process.*

2. Replace the following forms (see attached):
   - Revised Exhibit "B" Bid Page & Attachments

I, Rene Garza, acknowledge receipt of ADDENDUM NO. 2 dated, May 27, 2016, for RFB - HIDALGO COUNTY PRECINCT NO. 4 – CONCRETE WALKING TRAIL AT SAN CARLOS CRC AND SUNFLOWER PARK.

RG Enterprises, LLC dba G&G Contractors
Printed Bidder Name

6/6/2016
Date

NOTE: PLEASE SUBMIT THIS ADDENDUM WITH YOUR BID PACKET, IN ORDER TO COMPLETE THE BID.....

Exhibit "B"

EXHIBIT "B"

BID PAGE

Hidalgo County
Hidalgo County Precinct No. 4 – Concrete Walking Trail at San Carlos CRC and Sunflower Park
Bid No.: 2016-226-06-08-YSS

SCOPE OF WORK DESCRIPTION:
Construction of Concrete Pedestrian Walking Trail at San Carlos CRC and Sunflower Park

BID PRICE: $_____

BIDDER/COMPANY NAME: _____

ADDRESS: _____

CITY/STATE/ZIP CODE: _____

PHONE & FAX NO.'S: _____

CELLULAR #: _____

AUTHORIZED SIGNATURE: _____

PRINTED NAME: _____

TITLE: _____

BID FOR UNIT PRICE CONTRACTS

PLACE _____
DATE _____
PROJECT NO. 2016-226-06-08-YSS

Proposal of _____(hereinafter called "Bidder") a corporation/ a partnership, or an individual doing business as: _____.

TO the **Hidalgo County – Precinct No. 4** (hereinafter called "Owner")

Gentlemen:

The Bidder, in compliance with your invitation for bids for the construction of _____ having examined the plans and specifications with related documents and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project including the availability of materials and labor, hereby proposes to furnish all labor, materials, and supplies; and to construct the project in accordance with the Contract Documents, within the time set forth therein, and at the prices stated below. These prices are to cover all expenses incurred in performing the work required under the Contract Documents, of which this proposal is part.

Bidder hereby agrees to commence work under this contract on or about date to be specified in written "Notice to Proceed" of the owner and to fully complete the project within 45 consecutive calendar days thereafter as stipulated in the specifications. Bidder further agrees to pay as liquidated damages the sum of $250.00 for each consecutive calendar day thereafter as herein after provided in Paragraph 19 of the General Conditions.

BIDDER ACKNOWLEDGES RECEIPT OF THE FOLLOWING ADDENDUM:

_____

_____

*Insert corporation, partnership or individual as applicable.

Bidder agrees to perform all of the _____ work described in the specifications and shown on plans, for the following unit prices:

ITEM NO.	ITEM DESCRIPTION		UNIT	UNIT QTY.	UNIT PRICE IN FIGURES (1)	TOTAL FIGURES
	General Project					
1-1	Mobilization, Bonds and Insurance (not to exceed 3% of Total Bid) and project signage.		LS	1		
					Total Base Bid	
	ALTERNATE NO. 1 – Concrete Walking Trail at San Carlos CRC and Sunflower Park					
2-1	Furnish and Install Concrete Walking Trail (30,805 SF) Colored Stamped concrete surface, Laydown Curb and Electrical Conduit, as per plans and specifications; complete in place.		LS	1		
					ALTERNATE NO. 1 – Concrete Walking Trail at San Carlos CRC and Sunflower Park	
					Total Alternate No. 1	
	ALTERNATE NO. 2 – Concrete Walking Trail at San Carlos CRC and Sunflower Park					
3-1	Furnish and Install Concrete Walking Trail (30,805 SF), Laydown Curb and Electrical Conduit, as per plans and specifications; complete in place.		LS	1		
					ALTERNATE NO. 2 – Concrete Walking Trail at San Carlos CRC and Sunflower Park	
					Total Alternate No. 2	

		Total Base Bid	
		Total Base Bid + Alternate No. 1	
		Total Base Bid + Alternate No. 2	

TOTAL BASE BID: $_____

(words) _____

TOTAL BASE BID + ALTERNATE NO. 1: $_____

(words) _____

TOTAL BASE BID + ALTERNATE NO. 2: $_____

(words) _____

(AMOUNTS ARE TO BE SHOWN IN BOTH WORDS AND FIGURES. IN CASE OF DISCREPANCY, THE AMOUNT SHOWN IN WORDS WILL GOVERN)

The above unit price shall include all labor, materials, bailing, shoring, removal, overhead, profit, insurance, etc., to cover the finished work of the several kinds called for.

Bidder understands that the Owner reserves the right to reject any or all bids and to waive any informalities in the bidding.

The Bidder agrees that this bid shall be good and may not be withdrawn for a period of 30 calendar days after the scheduled closing time for receiving bids.

Upon receipt of written notice of the acceptance of this bid, Bidder will execute the formal contract attached within 10 days and deliver a Surety Bond, or Bonds as required by Paragraph 29 of the General Conditions. The bid security attached in the sum of
$_____.

($ _____) is to become the property of the Owner in the event that contract and the bond are not executed within the time above set forth, as liquidated damages for the delay and additional expenses to the owner caused thereby.

Respectfully submitted:

By: _____
(Title)

_____
(Business Address and Zip Code)

(SEAL – if bid is by a corporation)

PURCHASING DEPARTMENT
County Of Hidalgo

June 3, 2016

RE:
ADDENDUM NO.3
FOR RFB PROJECT No.: 2016-226-06-08-YSS
"CONCRETE WALKING TRAIL AT SAN CARLOS CRC AND SUNFLOWER PARK FOR HIDALGO COUNTY PRECINCT FOUR"

Dear Gentlemen:

Attached you will find **ADDENDUM NO. 3, PAGE 1 OF 2** in connection with **"HIDALGO COUNTY PRECINCT NO 4"** -request for bids for **"CONCRETE WALKING TRAIL AT SAN CARLOS CRC AND SUNFLOWER PARK".**

Please add this **ADDENDUM NO. 3** to your bid packet so as to permit your company to submit a complete bid.

Acknowledge receipt of **ADDENDUM NO. 3** by signing and returning this notice to us VIA FAX AT (956) 687-5363 or via email at milo@lefevregroup.net.

If you do not receive all pages of **ADDENDUM NO. 3** please notify us immediately at (956) 687-5362.

Please be advised that this **ADDENDUM NO. 3** will complete your bid packet for **"HIDALGO COUNTY PRECINCT NO 4 – CONCRETE WALKING TRAIL AT SAN CARLOS CRC AND SUNFLOWER PARK".**

Thank you for your prompt attention to this matter.

Martha L. Salazar, CPPB
Hidalgo County Purchasing Agent

BY: _____
ADDENDUM NO. 3
ACKNOWLEDGMENT OF RECEIPT

2812 S. Business Highway 281 ★ Edinburg, Texas 78539 ★ (956) 318-2626 ★ Fax (956) 318-2639

ADDENDUM NO. 3

June 3, 2016

"HIDALGO COUNTY PRECINCT No. 4 – CONCRETE WALKING TRAIL AT SAN CARLOS CRC AND SUNFLOWER PARK"
RFB PROJECT NO.: 2016-226-06-08-YSS
Bid Opening Date: June 08, 2016

PLEASE NOTE CHANGES AS FOLLOWS:

1. Clarification:
   - Construction Staking – As per sheet 2.1 on Construction Plans, Item #14 in General Construction Notes states the following: "Construction Staking (Alignment and Grade) to be provided by the contractor at no separate pay".

2. Replace the following forms (see attached):
   - Revised Exhibit "B" Bid Page & Attachments

I, Rene Garza, acknowledge receipt of ADDENDUM NO. 3 dated, June 3, 2016, for RFB - HIDALGO COUNTY PRECINCT NO. 4 – CONCRETE WALKING TRAIL AT SAN CARLOS CRC AND SUNFLOWER PARK.

RG Enterprises, LLC dba G&G Contractors
Printed Bidder Name

6/6/2016
Date

NOTE: PLEASE SUBMIT THIS ADDENDUM WITH YOUR BID PACKET, IN ORDER TO COMPLETE THE BID.....

Exhibit "B"

EXHIBIT "B"

BID PAGE

Hidalgo County
Hidalgo County Precinct No. 4 – Concrete Walking Trail at San Carlos CRC and Sunflower Park
Bid No.: 2016-226-06-08-YSS

SCOPE OF WORK DESCRIPTION:
Construction of Concrete Pedestrian Walking Trail at San Carlos CRC and Sunflower Park

BID PRICE: $_____

BID PRICE + Alternate No. 1: $_____

BIDDER/COMPANY NAME: _____

ADDRESS: _____

CITY/STATE/ZIP CODE: _____

PHONE & FAX NO.'S: _____

CELLULAR #: _____

AUTHORIZED SIGNATURE: _____

PRINTED NAME: _____

TITLE: _____

BID FOR UNIT PRICE CONTRACTS

PLACE _____
DATE _____
PROJECT NO. 2016-226-06-08-YSS

Proposal of _____(hereinafter called "Bidder") a corporation/ a partnership, or an individual doing business as: _____.

TO the **Hidalgo County – Precinct No. 4** (hereinafter called "Owner")

Gentlemen:

The Bidder, in compliance with your invitation for bids for the construction of _____ having examined the plans and specifications with related documents and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project including the availability of materials and labor, hereby proposes to furnish all labor, materials, and supplies; and to construct the project in accordance with the Contract Documents, within the time set forth therein, and at the prices stated below. These prices are to cover all expenses incurred in performing the work required under the Contract Documents, of which this proposal is part.

Bidder hereby agrees to commence work under this contract on or about date to be specified in written "Notice to Proceed" of the owner and to fully complete the project within 45 consecutive calendar days thereafter as stipulated in the specifications. Bidder further agrees to pay as liquidated damages the sum of $250.00 for each consecutive calendar day thereafter as herein after provided in Paragraph 19 of the General Conditions.

BIDDER ACKNOWLEDGES RECEIPT OF THE FOLLOWING ADDENDUM:

_____

_____

*Insert corporation, partnership or individual as applicable.

Bidder agrees to perform all of the _____ work described in the specifications and shown on plans, for the following unit prices:

ITEM NO.	ITEM DESCRIPTION		UNIT	UNIT QTY.	UNIT PRICE IN FIGURES (1)	TOTAL FIGURES
	General Project					
1-1	Mobilization, Bonds and Insurance (not to exceed 3% of Total Bid) and project signage.		LS	1		
		Total General Project				
	Concrete Walking Trail at San Carlos CRC and Sunflower Park					
2-1	Furnish and Install Concrete Walking Trail (30,805 SF) concrete surface, Laydown Curb, Wire Mesh, Expansion Joints and Electrical Conduits, as per plans and specifications; complete in place. (This item does not include concrete. Concrete will be purchased by the County).		LS	1		
		Concrete Walking Trail at San Carlos CRC and Sunflower Park				
		Total Base Bid				
	ALTERNATE NO. 1 – Concrete Walking Trail at San Carlos CRC and Sunflower Park					
3-1	Additional Cost to Install coloring and stamp for concrete surface, as per plans and specifications; complete in place. (Coloring and Stamp to be chosen by the County during submittals).		LS	1		
		ALTERNATE NO. 1 – Concrete Walking Trail at San Carlos CRC and Sunflower Park				
		Total Alternate No. 1				

		Total Base Bid	
		Total Base Bid + Alternate No. 1	

TOTAL BASE BID: $_____

(words) _____

TOTAL BASE BID + ALTERNATE NO. 1: $_____

(words) _____

(AMOUNTS ARE TO BE SHOWN IN BOTH WORDS AND FIGURES. IN CASE OF DISCREPANCY, THE AMOUNT SHOWN IN WORDS WILL GOVERN)

The above unit price shall include all labor, materials, bailing, shoring, removal, overhead, profit, insurance, etc., to cover the finished work of the several kinds called for.

Bidder understands that the Owner reserves the right to reject any or all bids and to waive any informalities in the bidding.

The Bidder agrees that this bid shall be good and may not be withdrawn for a period of 30 calendar days after the scheduled closing time for receiving bids.

Upon receipt of written notice of the acceptance of this bid, Bidder will execute the formal contract attached within 10 days and deliver a Surety Bond, or Bonds as required by Paragraph 29 of the General Conditions. The bid security attached in the sum of
$_____.

($ _____) is to become the property of the Owner in the event that contract and the bond are not executed within the time above set forth, as liquidated damages for the delay and additional expenses to the owner caused thereby.

Respectfully submitted:

By: _____
(Title)

_____
(Business Address and Zip Code)

(SEAL – if bid is by a corporation)

PURCHASING DEPARTMENT
County Of Hidalgo

June 7, 2016

RE:
ADDENDUM NO.4
FOR RFB PROJECT No.: 2016-226-06-08-YSS
"CONCRETE WALKING TRAIL AT SAN CARLOS CRC AND SUNFLOWER PARK FOR HIDALGO COUNTY PRECINCT FOUR"

Dear Gentlemen:

Attached you will find **ADDENDUM NO. 4, PAGE 1 OF 2** in connection with **"HIDALGO COUNTY PRECINCT NO 4"** -request for bids for **"CONCRETE WALKING TRAIL AT SAN CARLOS CRC AND SUNFLOWER PARK".**

Please add this **ADDENDUM NO. 4** to your bid packet so as to permit your company to submit a complete bid.

Acknowledge receipt of **ADDENDUM NO. 4** by signing and returning this notice to us VIA FAX AT (956) 687-5363 or via email at milo@lefevregroup.net.

If you do not receive all pages of **ADDENDUM NO. 4** please notify us immediately at (956) 687-5362.

Please be advised that this **ADDENDUM NO. 4** will complete your bid packet for **"HIDALGO COUNTY PRECINCT NO 4 – CONCRETE WALKING TRAIL AT SAN CARLOS CRC AND SUNFLOWER PARK".**

Thank you for your prompt attention to this matter.

Martha L. Salazar, CPPB
Hidalgo County Purchasing Agent

BY: _____
ADDENDUM NO. 4
ACKNOWLEDGMENT OF RECEIPT

2512 S. Business Highway 281 ★ Edinburg, Texas 78539 ★ (956) 318-2100 ★ Fax (956) 318-2170

ADDENDUM NO. 4

June 7, 2016

"HIDALGO COUNTY PRECINCT No. 4 – CONCRETE WALKING TRAIL AT SAN CARLOS CRC AND SUNFLOWER PARK"
RFB PROJECT NO.: 2016-226-06-08-YSS
Bid Opening Date: June 08, 2016

PLEASE NOTE CHANGES AS FOLLOWS:

1. Clarification:
   - Bid Opening will be on June 8, 2016 at 9:30AM (See attached advertisement).

I, Rene Garza, acknowledge receipt of ADDENDUM NO. 4 dated, June 7, 2016, for RFB - HIDALGO COUNTY PRECINCT NO. 4 – CONCRETE WALKING TRAIL AT SAN CARLOS CRC AND SUNFLOWER PARK.

Rene Garza
Printed Bidder Name

6/7/2016
Date

NOTE: PLEASE SUBMIT THIS ADDENDUM WITH YOUR BID PACKET, IN ORDER TO COMPLETE THE BID.....

REQUEST FOR SEALED BIDS
(RFB)

TO SUPPLY HIDALGO COUNTY with sealed bids for the following Construction Project:

Request for Sealed Bids (RFB)	2016-226-06-08-YSS	**HIDALGO COUNTY PRECINCT NO. 4 "Concrete Walking Trail at San Carlos CRC & Sunflower Park"**

PROCUREMENT PACKETS. Interested contractors may obtain bid packets at project engineer's office: LeFevre Engineering, 612 W. Nolana, Suite 520, McAllen, TX 78504, Ph. 956-687-5362 for the amount of **$100.00 each.** General and/or Prime Contractors submitting bids and/or proposals to the County of Hidalgo shall be **non-refundable**.

PRE-BID CONFERENCE is scheduled for **Tuesday, May 31, 2016 at 3:00 P.M.** at HIDALGO COUNTY PURCHASING DEPARTMENT CONFERENCE ROOM: -2802 S. Business Hwy 281, Edinburg, TX 78539

A BIDDER'S BOND from a reliable surety company licensed to operate in the State of Texas or certified Cashier's Check, payable without recourse to the County of Hidalgo, for the amount of not less than **5%** of the total bid shall accompany the bid as guaranty that, if awarded the contract, the bidder will enter into a contract with the County of Hidalgo. A Payment Bond is required in the amount of one hundred percent (100%) of the Contract Amount, if the contract exceeds $25,000. A Performance Bond is required in the amount of one hundred percent (100%) of the Contract Amount, if the contract exceeds $100,000.

UPON SUBMITTING SEALED BID, bidders are required to properly identify (handwritten, typed or printed) sealed envelope and/or packet with Bidders' name and address on the upper left hand corner of the sealed envelope and/or package, and **Bid No. and project name** on the lower left hand corner of sealed envelope/and or packet. **OVERNIGHT MAIL MUST ALSO BE PROPERLY LABELED ON THE OUTSIDE OF EXPRESS ENVELOPE OR PACKAGE.**

The sealed bid must contain one (1) original and three (3) copies of bid and must be clearly identified and addressed for delivery to:

Martha L. Salazar, CPPB, Hidalgo County Purchasing Agent
Hidalgo County Purchasing Department

US Postal Mail/Courier Address: Hidalgo County New Administration Building, 2812 S. Business Hwy 281, Edinburg, TX 78539
Physical Location: Hidalgo County New Administration Building, 2802 S. Business Hwy. 281 (Southeast of Canton Rd & Business Hwy 281) Edinburg, TX

BIDS ACCEPTANCE: Sealed bids will be accepted until **9:30 AM on Wednesday, June 08, 2016** at which time they will be opened in the Hidalgo County Purchasing Department Conference Room at **Physical Location: 2802 S. Business Hwy 281, Hidalgo County New Administration Building, Edinburg, Texas 78539.** NO FACSIMILES OR LATE ARRIVALS WILL BE ACCEPTED. ANY BID RECEIVED AFTER THAT TIME WILL NOT BE OPENED AND WILL BE RETURNED.

Attention is called to the fact that not less than, the most current federally determined prevailing **(Davis-Bacon and Related Acts)** wage rate, as issued and contained in the contract documents, must be paid on this project. In addition the successful bidder must ensure that employees and applicants for employment are not discriminated against because of race, color, religion, sex, age, disability or national origin.

BIDS MAY BE HELD by the County of Hidalgo for a period not to exceed ninety (90) days from the date of the opening of bids for the purpose of reviewing the bids and investigating the qualifications of bidders, prior to awarding of the contract.

Typed-written RFI's shall be sent to Engineer. Please follow with a call to confirm receipt of RFI. RFI's will not be answered by phone. NO HAND WRITTEN RFI'S will be answered. All inquiries shall be forwarded by **May 31, 2016**. Inquiries beyond this date will not be responded to. Contact project engineer for copies of Addenda.

BY ORDER OF THE COMMISSIONERS COURT OF HIDALGO COUNTY, TEXAS ON THIS THE 17th DAY OF MAY, 2016.

MARTHA L. SALAZAR, CPPB
HIDALGO COUNTY PURCHASING AGENT

REPORT ROAD HAZARDS@1-866-HCR-SAFE OR 1-866-427-7233

REQUEST FOR SEALED BIDS
(RFB)

TO SUPPLY HIDALGO COUNTY with sealed bids for the following Construction Project:

Request for Sealed Bids (RFB)	**2016-226-06-08-YSS**	**-HIDALGO COUNTY PRECINCT NO. 4- "Concrete Walking Trail at San Carlos CRC and Sunflower Park"**

PROCUREMENT PACKETS. Interested contractors may obtain bid packets at project engineer's office: LeFevre Engineering, 612 W. Nolana, Suite 520, McAllen, TX 78504, Ph. 956-687-5362 for the amount of **$100.00 each.** General and/or Prime Contractors submitting bids and/or proposals to the County of Hidalgo shall be **non-refundable**.

PRE-BID CONFERENCE is scheduled for **Tuesday, May 31, 2016 at 3:00 P.M.** at HIDALGO COUNTY PURCHASING DEPARTMENT CONFERENCE ROOM: -2802 S. Business Hwy 281, Edinburg, TX 78539

A BIDDER'S BOND from a reliable surety company licensed to operate in the State of Texas or certified Cashier's Check, payable without recourse to the County of Hidalgo, for the amount of not less than **5%** of the total bid shall accompany the bid as guaranty that, if awarded the contract, the bidder will enter into a contract with the County of Hidalgo. A Payment Bond is required in the amount of one hundred percent (100%) of the Contract Amount, if the contract exceeds $25,000. A Performance Bond is required in the amount of one hundred percent (100%) of the Contract Amount, if the contract exceeds $100,000.

UPON SUBMITTING SEALED BID, bidders are required to properly identify (handwritten, typed or printed) sealed envelope and/or packet with Bidders' name and address on the upper left hand corner of the sealed envelope and/or package, and **Bid No. and project name** on the lower left hand corner of sealed envelope/and or packet. **OVERNIGHT MAIL MUST ALSO BE PROPERLY LABELED ON THE OUTSIDE OF EXPRESS ENVELOPE OR PACKAGE.**

The sealed bid must contain one (1) original and three (3) copies of bid and must be clearly identified and addressed for delivery to:

Martha L. Salazar, CPPB, Hidalgo County Purchasing Agent
Hidalgo County Purchasing Department

US Postal Mail/Courier Address: Hidalgo County New Administration Building, 2812 S. Business Hwy 281, Edinburg, TX 78539
Physical Location: Hidalgo County New Administration Building, 2802 S. Business Hwy. 281 (Southeast of Canton Rd & Business Hwy 281) Edinburg, TX

BIDS ACCEPTANCE: Sealed bids will be accepted until **3:00 P.M. on Wednesday, June 8, 2016** at which time they will be opened in the Hidalgo County Purchasing Department Conference Room at **Physical Location: 2802 S. Business Hwy 281, Hidalgo County New Administration Building, Edinburg, Texas 78539.** NO FACSIMILES OR LATE ARRIVALS WILL BE ACCEPTED. ANY BID RECEIVED AFTER THAT TIME WILL NOT BE OPENED AND WILL BE RETURNED.

Attention is called to the fact that not less than, the most current federally determined prevailing (**Davis-Bacon and Related Acts**) wage rate, as issued and contained in the contract documents, must be paid on this project. In addition the successful bidder must ensure that employees and applicants for employment are not discriminated against because of race, color, religion, sex, age, disability or national origin.

BIDS MAY BE HELD by the County of Hidalgo for a period not to exceed ninety (90) days from the date of the opening of bids for the purpose of reviewing the bids and investigating the qualifications of bidders, prior to awarding of the contract.

Typed-written RFI's shall be sent to Engineer. Please follow with a call to confirm receipt of RFI. RFI's will not be answered by phone. NO HAND WRITTEN RFI'S will be answered. All inquiries shall be forwarded by **June 3, 2016**. Inquiries beyond this date will not be responded. Contact project engineer for copies of Addenda.

BY ORDER OF THE COMMISSIONERS COURT OF HIDALGO COUNTY, TEXAS ON THIS THE 10th DAY OF MAY, 2016.

MARTHA L. SALAZAR, CPPB
HIDALGO COUNTY PURCHASING AGENT

REPORT ROAD HAZARDS@1-866-HCR-SAFE OR 1-866-427-7233

Bid No: 2016-226-06-08-YSS	Buyer : Yvette Salinas	Tel. No: (956) 318-2626

REQUEST FOR BIDS

HIDALGO COUNTY PRECINCT NO. 4
"Concrete Walking Trail at San Carlos CRC and Sunflower Park"

BID OPENING DATE

JUNE 08, 2016

Contact Person:

Martha L. Salazar, CPPB, Purchasing Agent
Hidalgo County Purchasing Department
Physical Address: 2802 S. Business Hwy. 281 -New Administration Building
Mailing/Postal Address: 2812 S. Business Hwy. 281
Edinburg, Texas 78539
956 318-2626

Form HCPD-03

1. Sealed bids will be received for **"Hidalgo County Precinct No. 4 – Concrete Walking Trail at San Carlos CRC and Sunflower Park"** in accordance with the specifications attached as Exhibit "A" hereto. Bids should address all specifications set forth. Bidders may suggest substitutions of features which they feel would be in the best interest of Hidalgo County ("County"). Strong rationale must be presented for any deviation from the specifications. Hidalgo County reserves the right to reject the deviation and its effect on the overall bid.

2. **One (1) original and Three (3) copies** of all bids are required with the bidders name and return address clearly typed and or/printed on upper left hand corner and the proper notation clearly typed/printed on the lower left hand corner of the envelope and/or package: **BID NO.: 2016-226-06-08-YSS -"Hidalgo County Precinct No. 4 – Concrete Walking Trail at San Carlos CRC and Sunflower Park"** and at County's Purchasing Department with a physical address: 2802 S. Business 281 and a mailing address: 2812 S. Business Hwy 281, New Administration Building, Edinburg, Texas, **on or before 3:00 P.M, WEDNESDAY, JUNE 08, 2016. NO FACSIMILES OR LATE ARRIVALS WILL BE ACCEPTED. ANY RFB RECEIVED AFTER THAT TIME WILL NOT BE OPENED AND WILL BE RETURNED. OVERNIGHT MAIL MUST ALSO BE PROPERLY LABELED ON THE OUTSIDE OF EXPRESS ENVELOPE OR PACKAGE WITH REFERENCE TO "Hidalgo County Precinct No. 4 – Concrete Walking Trail at San Carlos and Sunflower Park" - RFB NO.: 2016-226-06-08-YSS-** Hidalgo County reserves the right to refuse and reject any/all bids and to waive any/all formalities or technicalities, or to accept the bids considered the best and most advantageous to Hidalgo County.

3. Hidalgo County reserves the right to: A. separate and accept, or eliminate any item(s) listed under this bid that it deems necessary to accommodate budgetary and/or operational requirements; B. reject any or all bids submitted and further reserves the right to design the evaluation criteria to be used in selecting the lowest and best bid for approval; and C. award the bid to one bidder or to multiple bidders if the County determines it is in its best interest to do so."

4. The Bidder shall not substitute items named in the bid without the express written consent of Hidalgo County. Failure of the delivered item to perform as specified or failure to meet the stated delivery schedule shall release Hidalgo County from all obligations to the contracting party with regard to the item(s) in question. In such event, County may elect to award the contract to the next-lowest responsible bidder, or to reject all bids and re-advertise.

5. For work to be performed at a County owned or operated location, each bidder shall, in its sole discretion, visit the job site before preparing the bid and thoroughly familiarize himself/herself with existing conditions. Bidder should take field dimensions and note all circumstances which affect the dollar amount of the bid.

6. Descriptive specifications are referenced in this document to indicate the general kind and quality of equipment desired by Hidalgo County. Due to various styles and models of equipment, bidders are required to include illustrations, specifications, explanation of warranties, and service data with their bid including catalogue numbers and any necessary references.

7. No bid may be withdrawn within thirty (30) days from the scheduled time to open bids.

8. Proposed prices are to remain firm for a minimum of ninety (90) days after bid opening.

9. Any interpretations, amendments, corrections or changes to this bid document must be in a written addendum and signed by the County Judge or his designee. Addenda will be mailed to all who are known to have received a copy of the Request for Bids. Bidders shall acknowledge receipt of all addenda as a part of their bid.

10. County reserves the right to accept or reject any or all Bids.

11. Costs are to be net F.O.B., County Prepaid.

12. County is exempt from Federal Excise Tax, State Tax and Local Tax. Do Not include tax in cost figure. If it is determined that tax was included in the cost figures it will not be included in the tabulation of any awards. Tax exemption certificates will be furnished upon request.

13. Funds for this procurement have been provided through the County budget for this fiscal year only. County, on an annual basis, has the right to reconsider a contract during the budget process for ensuing years if financial resources of County are insufficient to meet the liabilities of said contract. The award of a bid or contract hereunder will not be construed to create a debt of the County which is payable out of funds beyond the current fiscal year.

14. Upon award and prior to execution of a contract, Sole Proprietorships are required to submit a copy of their social security cards to the Hidalgo County Auditor's Office in order to establish an account with the County. All awarded vendors must submit a completed W-9 and a copy o their Federal ID Number Certificate.

15. DELIVERY INSTRUCTIONS:

. No deliveries accepted after 3:00 P.M., Monday-Friday.

. At least seventy two (72) hours prior notice of delivery must be given to Martha L. Salazar, Purchasing Agent before delivery will be accepted.

. If you need additional information call the office listed below:

Hidalgo County Purchasing Department
Martha L. Salazar, Purchasing Agent
(956) 318-2626

16. BILLING AND PAYMENT INSTRUCTIONS:

. Invoices must include:

a) Name and address of successful bidder
b) Name and address of receiving department or official
c) Purchase Order Number (if any)
d) Notation - **"Hidalgo County Precinct No. 4 – Concrete Walking Trail at San Carlos CRC and Sunflower Park"**
Descriptive information as to the items or services delivered, including product code, item number, quantity, etc.
e) Contract number must be indicated on all invoices

. Discount payments will be considered when offered.

. Contact person for Billing and Payment questions:

Hidalgo County Auditor's Office
2808 S. Business Hwy 281
Edinburg, Tx 78539
(956) 318-2511

17. Schedule of Events

Bid Opening, 3:00 P.M.	**JUNE 08, 2016**
Award of Contract	_____, 2016
Commence Work or Deliver Products	_____, 2016

18. Bid or Performance Bond and Debarment Certification; Payment under Contract:

. If the contract proposed is for the construction of public works or is for a contract for goods & services exceeding $100,000, all bidders shall furnish a good and sufficient bid bond in the amount of five percent of the total contract price. A bid bond must be executed with a surety company authorized to do business in Texas. All bidders are also required to furnish a certification or acknowledgment stating that the contractor or vendor is free from suspension or debarment pursuant to federal regulation 45CFR Part 76.

. Together with the signing of a contract or issuance of a purchase order following the acceptance of a bid, and prior to commencement of the actual work, the bidder shall furnish a performance bond to the County for the full amount of the contract, if that contract exceeds $50,000.

. If the contract is for $50,000 or less, no money will be paid to the contractor until completion and acceptance of the work or the fulfillment of the purchase obligation to the County, and, if applicable, the receipt by County of satisfactory evidence that all subcontractors and material men have been paid.

. If a contract is for the construction, alteration or repair of public buildings or public works, the contractor *shall* provide a payment bond for a contract in excess of Twenty Five Thousand Dollars ($25,000.00), as required by Tex. Govt. Code Ch. 2253.

. For requirements contracts, bond requirements are determined by applying the proposed unit price to the estimated quantities included in the specifications.

19. Ethical Standards:

. It shall be a breach of ethics to offer, give or agree to give any elected official, department head or employee, or former elected official, department head or employee, of the County, or for any elected official, department head or employee or former elected official, department head or employee of the County, to solicit, demand, accept or agree to accept from

another person, entity or organization, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, preparation or any part of a program requirement or purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing, or in any other advisory capacity in any proceeding or application, request for ruling, determination, claim or controversy, or other particular matter pertaining to any program requirement or a contract or subcontract, or to any solicitation or proposal therefore pending before any department or agency of the County.

. It shall be a breach of ethics for any payment, gratuity or offer of employment to be made by or on behalf of a subcontractor under a contract to the prime contractor or higher tier subcontractor for any contract for the County, or any person associated therewith, as an inducement for the award of a subcontract or order.

. No public official shall have an interest in a contract awarded hereunder except in accordance with Tex. Loc. Govt. Code Chapter 171.

NOTICE:
ALL COMMUNICATIONS BY A VENDOR TO THE COUNTY, ITS OFFICIALS, AND DEPARTMENT HEADS REGARDING THIS PROCUREMENT SHALL BE DONE THROUGH THE HIDALGO COUNTY PURCHASING DEPARTMENT.

20. Disclosure of Conflict of Interest

. Effective January 1, 2016, Chapter 176 of the Texas Local Government Code requires that any vendor, person, consultant or contractor considering doing business with Hidalgo County ("the County") to disclose in the Conflict of Interest Questionnaire (the "CIQ") attached as Exhibit D-1, the vendor, person, consultant or contractor's affiliation or business relationship that might cause a conflict of interest with the County. By law, the CIQ must be filed with the Hidalgo County Clerk's Office no later than the seventh business day after the date the person becomes aware of facts that require that statement to be filed. The disclosure requirement applies to a person or business who contracts or seeks to contract with Hidalgo County for the sale or purchase of property, goods or service. Any purchase order or contract resulting from this process shall be considered null and void if the successful bidder fails to comply with Texas Local Government Code Chapter 176. Vendors, consultants, contractors and others who desire to conduct business with Hidalgo County are encouraged to refer to Texas Local Government Code Chapter 176 for the details of this law. An offense under Texas Local Government Code Chapter 176 is a Class C Misdemeanor. **Completed Form CIQ must be submitted to the Hidalgo County Clerk's Office located at 100 N. Closner, Edinburg, Texas 78539 - Hidalgo County Courthouse.**

COMPLETION AND SUBMISSION OF FORM CIQ IS THE SOLE RESPONSIBILITY OF THE PROSPECTIVE RESPONDENT. QUESTIONS REGARDING COMPLIANCE SHOULD BE DIRECTED TO YOUR LEGAL COUNSEL.

21. **CERTIFICATE OF INTERESTED PARTIES (FORM HB1295)**

As of January 1, 2016, to comply with Texas Government Code Section §2252.908, and the rules issued by the Texas Ethics Commission found in Title 1, Section 46.1, 46.3 and 46.5 of the Texas Administrative Code, we have updated and revised our RFB packet. In accordance with these requirements, business must submit a completed Certificate of Interested Parties Form 1295 to the County before the County may enter into a contract with the business entity. In box 3 of Form 1295, you will provide the RFB Project No. (2016-160-05-06-YSS), as shown on the packet. Once completed and filed with the Texas Ethics Commission, Form 1295 must be printed and signed in

the presence of a notary and submitted to our office either by facsimile transmission to (956) 292-7612 or via email to: yvette.salinas@co.hidalgo.tx.us . Hidalgo County cannot enter into a contract until Form 1295 is submitted. Therefore, failure to timely submit Form 1295 signed and notarized may result in delay of award. Full instructions for completion and submittal of Form 1295 may be found on the Texas Ethics Commission website:

https://www.ethics.state.tx.us/tec/1295-Info.htm

THE AWARDED VENDOR WILL HAVE THIRTY (30) DAYS TO SUBMIT THE SIGNED NOTARIZED FORM 1295. *HIDALGO COUNTY CANNOT ENTER INTO A CONTRACT UNTIL FORM 1295 IS SUBMITTED.*

22. If, during the life of any contract or bid awarded, the successful bidder's net prices generally available to other customers for items awarded herein are reduced below the contracted price, it is understood and agreed that the benefits of such reduction shall be extended to the County.

23. Bids, and all goods and services provided hereunder, shall comply with all federal, state and local laws concerning this type(s) of goods and/or services.

24. Minimum Standards for Responsible Prospective Bidders: A prospective bidder must affirmatively demonstrate bidder's responsibility. A prospective bidder, by submitting a bid, represents to County that it meets the following requirements:

- Possess or is able to obtain adequate financial resources as required to perform under the bid;
- Be able to comply with the required or proposed delivery schedule;
- Have a satisfactory record of performance;
- Have a satisfactory record of integrity and ethics;
- Be otherwise qualified and eligible to receive an award.

25. Successful bidder will pay or cause to be paid, without cost or expenses to County, all FICA, FUTA/SUTA and Federal Income Withholding Taxes of all employees, and all wages and benefits as required by Federal or State law. Successful bidder's officers, agents and/or employees will not be entitled to any benefits of an employee or elected official of County, including, but not limited to, benefits associated with County's civil service system.

26. Any contract award to a successful bidder will be in effect until (a) the contract expires, (b) delivery and acceptance of products, and/or performance of services ordered, or (c) terminated by County with thirty day's written notice prior to cancellation.

27. County reserves the right to enforce performance of any contract awarded hereunder in any manner prescribed by law or deemed to be in the best interest of the County in the event of breach or default by successful bidder; County reserves the right to terminate any contract immediately in the event a successful bidder fails to:

A. Meet schedules;
B. Pay any required fees or taxes; or
C. Otherwise perform in accordance with the specifications.

28. Successful bidder shall defend, indemnify and save harmless County and all its elected officials, officers, agents and employees from all suits, actions, or other claims of any character, name and

description brought for or on account of any injuries or damages received or sustained by any person, persons, or property on account of any negligent act or fault of the successful bidder, or of any agent, employee, subcontractor or supplier of successful bidder in the execution of, or performance under, any contract which may result from bid award or which arises from any event or casualty happening on or within County premises themselves or happening upon or in any halls, elevators, entrances, stairways or approaches of or to such County facilities. Successful bidder shall pay any judgment with costs which may be obtained against County growing out of such injury or damages, and shall, upon request, provide a defense to County by counsel reasonably acceptable to County. Successful bidder's indemnity hereunder shall include, but is not limited to, claims relating to patent, copyright or trademark infringement, and the like, arising out of the goods and services provided by successful bidder.

29. Successful bidder shall warrant that all items/services shall conform with the specifications and/or all warranties provided under the Uniform Commercial Code and be free from all defects in material, workmanship and the like. Items supplied under a contract pursuant to this Request for Bids shall be subject to County's approval. Items found to be defective or not meeting specifications shall be replaced by successful bidder within two business days at no expense to County. Items not picked up within one (1) week after notification shall be deemed a donation to County and may be used or disposed of at County's discretion and without waiver of any other rights of County as to the item's nonconformity.

30. This document and any disputes arising hereunder shall be governed and construed according to the laws of the State of Texas, and will be performable exclusively in Hidalgo County, Texas.

31. The successful bidder shall not assign, sell, transfer or convey its rights under any awarded contract, in whole or in part, without the prior written consent of County.

32. Respondents must provied all documentation requested with this (RFB), Request for Bid, in their response (except for the CIQ form if NON APPLICABLE). Failure to provide tis information may result in rejection of the RFB as nonconforming.

Bid
for
"HIDALGO COUNTY PRECINCT NO. 4
"Concrete Walking Trail at San Carlos and Sunflower Park"
BID NO.: 2016-226-06-08-YSS

To: Martha L. Salazar, CPPB, Purchasing Agent
Physical Address: 2802 S. Business Hwy. 281 -New Administration Building
Mailing/Postal Address: 2812 S. Business Hwy. 281
Edinburg, Texas 78539

In accordance with the Specifications, and subject to all laws and regulations of the United States and state and local laws, the undersigned bidder proposes and commits to furnish all labor, equipment, material, software and services as set forth in the documents hereinbefore mentioned. The undersigned bidder further agrees, upon acceptance of its bid, to execute a contract and/or Purchase Order issued by Hidalgo County for performing and completing the work described in the Specifications within the time stated and for the prices proposed in the documents attached hereto and made a part hereof.

Bidder acknowledges receipt of all of the pages of the documents referenced in the Invitation to Bid Checklist presented in connection with this procurement. Bidder understands that Hidalgo County reserves the right to reject any or all bids and further reserves the right to design the evaluation criteria to be used in selecting the lowest and best bid.

Bidder agrees that this bid shall be good and may not be withdrawn for a period of ninety (90) calendar days after the scheduled closing time for receiving bids, as contained in the Specifications.

Respectfully submitted,

Bidder:	RG Enterprises, LLC dba G&G Contractors
Address:	5125 S. US HWY 281 Edinburg, Tx 78539
By:	
Printed Name:	Rene Garza
Title:	Owner

INSURORS

P&C 877 282 1625
Bonds 800 231 [illegible]
[illegible] South [illegible]
PO Box [illegible]
Waco, Texas [illegible]

BID BOND

Bond No. CNB-22090-00

KNOW ALL MEN BY THESE PRESENTS:

THAT we, G & G Contractors, as Principal, hereinafter called the Principal, and INSURORS INDEMNITY COMPANY, Waco, Texas, as Surety, hereinafter called the Surety, are held and firmly bound unto Hidalgo County Precinct No. 4, as Obligee, hereinafter called the Obligee, in the amount of 5 % of the amount of this bid not to exceed 5% of the Greatest Amount Bid Dollars ($ 5% of G.A.B.), for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the principal has submitted a bid for San Carlos Concrete Walking Trail

NOW, THEREFORE, If the contract be timely awarded to the Principal and the Principal shall within such time as specified in the bid, enter into a contract in writing and give bond with good and sufficient surety, or, in the event of the failure of the Principal to enter into such Contract and give such bond or bonds; if the Principal shall pay to the Obligee the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the Obligee may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect

PROVIDED, HOWEVER, neither Principal nor Surety shall be bound hereunder unless Obligee prior to execution of the final contract shall furnish evidence of financing in a manner and form acceptable to Principal and Surety that financing has been firmly committed to cover the entire cost of the project.

SIGNED, SEALED AND DATED this 8th day of June, 2016

Principal
G & G Contractors
(Seal)
By _____
(title)

Surety:
INSURORS INDEMNITY COMPANY
(Seal)
By: _____
Andy Alvarez, Attorney-in-Fact

INSURORS

P&C 877 282 1625
Bonds 800 933 7444
225 South Fifth Street
PO Box 2683
Waco Texas 76702 2683

IMPORTANT NOTICE - AVISO IMPORTANTE

To obtain information or make a complaint:

You may call Insurors Indemnity Company's toll-free telephone number for information or to make a complaint at:

1-800-933-7444

You may also write to Insurors Indemnity Company at:

P.O. Box 2683
Waco, TX 76702-2683
Or
225 South Fifth Street
Waco, TX 76701

You may contact the Texas Department of Insurance to obtain information on companies, coverages, rights or complaints at

1-800-252-3439

You may write the Texas Department of Insurance at:

Consumer Protection (111-1A)
P.O. Box 149091
Austin, TX 78714-9091
Fax: 512-490-1007

Web: http://www.tdi.texas.gov

E-mail: ConsumerProtection@tdi.texas.gov

PREMIUM OR CLAIM DISPUTES:

Should you have a dispute concerning your premium or about a claim, you should contact the agent or the company first. If the dispute is not resolved, you may contact the Texas Department of Insurance.

ATTACH THIS NOTICE TO YOUR POLICY:

This notice is for information only and does not become a part or condition of the attached document.

Para obtener informacion o para someter una queja:

Usted puede llamar al numero de telefono gratis de Insurors Indemnity Company's para informacion o para someter una queja al

1-800-933-7444

Usted tanbien puede escribir a Insurors Indemnity Company:

P.O. Box 2683
Waco, TX 76702-2683
O
225 South Fifth Street
Waco, TX 76701

Puede comunicarse con el Departamento de Seguros de Texas para obtener informacion acerca de companias, coberturas, derechos o quejas al

1-800-252-3439

Puede escribir al Departamento de Seguros de Texas:

Consumer Protection (111-1A)
P.O. Box 149091
Austin, TX 78714-9091
Fax: 512-490-1007

Web: http://www.tdi.texas.gov

E-mail: ConsumerProtection@tdi.texas.gov

DISPUTAS SOBRE PRIMAS O RECLAMOS

Si tiene una disputa concerniente a su prima o a un reclamo, debe comunicarse con el agente o la compañía primero. Si no se resuelve la disputa, puede entonces comunicarse con el departamento (TDI).

UNA ESTE AVISO A SU POLIZA

Este aviso es solo para proposito de informacion y no se convierte en parte o condicion del documento adjunto.

INSURORS
INDEMNITY COMPANY

POWER OF ATTORNEY of INSURORS INDEMNITY COMPANY
Waco, Texas

KNOW ALL PERSONS BY THESE PRESENTS: **Number:** CNB-22090-00

That INSURORS INDEMNITY COMPANY, Waco, Texas, organized and existing under the laws of the State of Texas, and authorized and licensed to do business in the State of Texas and the United States of America, does hereby make, constitute and appoint

Andy Alvarez of the City of McAllen, State of TX

as Attorney in Fact, with full power and authority hereby conferred upon him to sign, execute, acknowledge and deliver for and on its behalf as Surety and as its act and deed, all of the following classes of document, to-wit.

Indemnity, Surety and Undertakings that may be desired by contract, or may be given in any action or proceeding in any court of law or equity; Indemnity in all cases where indemnity may be lawfully given and with full power and authority to execute consents and waivers to modify or change or extend any bond or document executed for this Company.

INSURORS INDEMNITY COMPANY

Attest: Tammy Tieperman
Tammy Tieperman, Secretary

By: Dave E. Talbert
Dave E. Talbert, President

State of Texas
County of McLennan

On the 11th day of November, 2014, before me a Notary Public in the State of Texas, personally appeared Dave E. Talbert and Tammy Tieperman, who being by me duly sworn, acknowledged that they executed the above Power of Attorney in their capacities as President and Corporate Secretary, respectively, of Insurors Indemnity Company, and acknowledged said Power of Attorney to be the voluntary act and deed of the Company.

Sherri Whitehouse
Notary Public, State of Texas

SHERRI WHITEHOUSE
Notary Public
STATE OF TEXAS
My Comm. Exp. May 21, 2017

Insurors Indemnity Company certifies that this Power of Attorney is granted under and by authority of the following resolutions of the Company adopted by the Board of Directors on November 11, 2014:

RESOLVED, that all bonds, undertakings, contracts or other obligations may be executed in the name of the Company by persons appointed as Attorney in Fact pursuant to a Power of Attorney issued in accordance with these Resolutions. Said Power of Attorney shall be executed in the name and on behalf of the Company either by the Chairman and CEO or the President, under their respective designation. The signature of such officer and the seal of the Company may be affixed by facsimile to any Power of Attorney, and, unless subsequently revoked and subject to any limitation set forth therein, any such Power of Attorney or certificate bearing such facsimile signature and seal shall be valid and binding upon the Company and any such power so executed and certified by facsimile signature and seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is validly attached.

RESOLVED, that Attorneys in Fact shall have the power and authority, subject to the terms and limitations of the Power of Attorney issued to them, to execute and deliver on behalf of the Company and to attach the seal of the Company to any and all bonds and undertakings, and any such instrument executed by such Attorneys in Fact shall be binding upon the Company as if signed by an Executive Officer and sealed and attested to by the Secretary or Assistant Secretary of the Company.

I, Tammy Tieperman, Secretary of Insurors Indemnity Company, do hereby certify that the foregoing is a true excerpt from the Resolutions of the said Company as adopted by its Board of Directors on November 11, 2014, and that this Resolution is in full force and effect. I certify that the foregoing Power of Attorney is in full force and effect and has not been revoked.

In Witness Whereof, I have set my hand and the seal of INSURORS INDEMNITY COMPANY on this 8th day of June, 2016.

Tammy Tieperman
Tammy Tieperman, Secretary

NOTE: IF YOU HAVE ANY QUESTION REGARDING THE VALIDITY OR WORDING OF THIS POWER OF ATTORNEY, PLEASE CALL 800 933 7444 OR WRITE TO US AT P. O. BOX 2683, WACO, TEXAS 76702-2683 OR EMAIL US AT CONFIRMATION@INSURORSINDEMNITY.COM.

EXHIBIT "A"

SPECIFICATIONS:

Hidalgo County
Hidalgo County Precinct No. 4 – Concrete Walking Trail at
San Carlos CRC and Sunflower Park
Bid No.: 2016-226-06-08-YSS

SCOPE OF WORK, SPECIFICATION REQUIREMENTS AND OTHER TERMS & CONDITIONS:

The County Of Hidalgo requests proposals for:
"Hidalgo County Precinct No. 4 – Concrete Walking Trail at
San Carlos CRC and Sunflower Park"
(See attached specifications as prepared by LeFevre Engineering & Management Consulting LLC.)

Engineering Firm Contact:
Emigdio "Milo" Salinas, P.E., Project Engineer
612 Nolana, Suite 520
McAllen, TX 78504
956-687-5362

Precinct Contact:
Maria Lucio, Executive Assistant
Hidalgo County Precinct No. 4
956-292-7000 Ext. 4026

Hidalgo County-Purchasing Department Contact:
Marth L. Salazar, CPPB, Purchasing Agent
956-318-2626

Hidalgo County Precinct No. 4
Concrete Walking Trail at San Carlos CRC and Sunflower Park
Hidalgo County, Texas

Technical Specifications

SPECIFICATIONS

DIVISION 1 - GENERAL REQUIREMENTS

01010	Scope of Work	1
01110	Summary of Work	1
01145	Use of Premises	3
01321	Construction Photography	2
01330	Submittal Procedures	4
01410	TPDES Requirements	3
01454	Testing Laboratory Services	3
01502	Mobilization	1
01504	Temporary Facilities and Controls	8
01555	Traffic Control and Regulation	1
01570	Storm Water Pollution Control	11
01572	Source Controls for Erosion and Sedimentation	4
01573	Filter Fabric Fence	3
01575	Stabilized Construction Exit	3
01576	Waste Material Disposal	1
01578	Control of Ground Water and Surface Water	4
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DIVISION 2 – SITE WORK

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02200	Earthwork & Site Grading	4
02233	Clearing and Grubbing	2
02270	Soil Erosion and Sediment Control	3
02316	Excavation and Backfill for Structures	7
02320	Utility Backfill Materials	8
02330	Embankment	3
02516	Cast In Place Concrete Sitework	7
02580	Pavement Marking	2
02751	Concrete Pavement	11
02752	Concrete Pavement Joints	4
02753	Concrete Pavement Curing	2
02771	Curb, Curb and Gutter, and Headers	3
02775	Concrete Sidewalks	4
02920	Topsoiling and Finished Grading	2
02921	Hydro Mulch Seeding	3

DIVISION 3 – CONCRETE

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03315	Concrete	11
03390	Concrete Curing	4

DIVISION X – CONSTRUCTION PLANS

DIVISION XX – GEOTECH REPORT

END OF DOCUMENT

Division 1

General Requirements

SECTION 01010

SCOPE OF WORK

This Scope of Work and any accompanying drawings are intended as a guide to the Contractor in identifying the work to be accomplished in completing this project. This Scope of Work may not be all inclusive and the Contractor shall be responsible for providing all supervision, labor, materials, equipment, direction, and coordination necessary to perform and totally complete the work in conformance with the drawings and specifications. If an "or equal" substitution is made for any of the recommended items shown in the specifications or drawings, the Contractor shall be responsible for providing all the necessary physical modifications to fully accommodate the substitution at no change in contract price.

PART 1. GENERAL

1.01 CIVIL

A. Work of the Project consists of embankment, electrical conduit, and paving of the concrete walking trail located inside the Sunflower Park Phase 1.

1.02 CONSTRUCTION RECORD DRAWINGS

A. The Contractor shall maintain a complete master set of construction "red-line" drawings to document any field changes to the "Issued for Construction" drawing set which shall accurately depict the "As-Built" construction of the plant. Following Mechanical completion, this drawing set shall be turned over to the Engineer for updating the for Record "As-Built" drawings.

B. Any drawings and documentation which are to be supplied by the Contractor, shall be updated to accurately depict the "As-Built" construction of the plant and turned over to the Engineer following Mechanical Completion of the project. These items shall be certified by the Contractor's Project Manager as accurate and complete.

1.03 SUBCONTRACTOR COORDINATION

The Contractor shall be responsible for coordination of the work between his various subcontractors to prevent conflicts and schedule interruptions.

1.04 SAFETY REQUIREMENTS

A. The Contractor shall provide all safety equipment required by his employees to meet Occupational Safety and Health Administration (OSHA) safety requirements.

END OF SECTION 01010

SECTION 01110

SUMMARY OF WORK

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. A. Summary of the Work includes: the embankment to meet the proposed grades, electrical conduit, and paving of the concrete walking trail located inside the Sunflower Park Phase 1. The Owner will be installing the proposed drainage pipes and another Contractor will be installing the Parking Lot. Coordination with both will be responsibility of the awarded Contractor for the Concrete Walking Trails.

1.02 WORK COVERED BY CONTRACT DOCUMENTS

A. Work of the Contract consist of the embankment to meet the proposed grades, electrical conduit, and paving of the concrete walking trail located inside the Sunflower Park Phase 1.

1.03 OWNER-FURNISHED PRODUCTS

A. Items will Furnish and install the drainage pipes under the concrete walking trails. Coordination with the Owner will necessary throughout construction of the Concrete Walking Trails.

B. Contractor's Responsibilities:

1. Arrange and pay for Product delivery to the site.

2. Receive and unload Products at the site; jointly with the Owner, inspect for completeness or damage.

3. Handle, store, Install, and finish Products.

4. Repair or replace damaged items.

1.04 CONTRACTOR USE OF PREMISES

A. Comply with procedures for access to the site and Contractor's use of rights-of-way.

B. Construction Operations: Limited to the Owner's rights-of-way provided by the Owner and areas shown or described in the Contract documents.

C. Utility Outages and Shutdown: Provide a minimum of 48 hours notice to the Owner and private utility companies (when applicable), excluding weekends and holidays, in advance of required utility shutdown. Coordinate all work as required.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION - 01110

Section 01145

USE OF PREMISES

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Section includes general use of the site including properties inside and outside of rights-of-way, work affecting road, ramps, streets and driveways and notification to adjacent occupants.

1.02 RIGHTS-OF-WAY

A. Confine access and operations and storage areas to rights-of-way provided by Owner as stipulated in Document 00700 - General Conditions; trespassing on abutting lands or other lands in the area is not allowed.

B. Contractor may make arrangements, at Contractor's cost, for temporary use of private properties, in which case Contractor and Contractor's surety shall indemnify and hold harmless the Owner against claims or demands arising from such use of properties outside of rights-of-way.

C. Restrict total length which materials may be distributed along the route of the construction at any one time to 1,000 linear feet unless otherwise approved in writing by Resident Project Representative.

1.03 PROPERTIES OUTSIDE OF RIGHTS-OF-WAY

A. Altering the condition of properties adjacent to and along rights-of-way will not be permitted.

B. Means, methods, techniques, sequences, or procedures which will result in damage to properties or improvements in the vicinity outside of rights-of-way will not be permitted.

C. Any damage to properties outside of rights-of-ways shall be repaired or replaced to the satisfaction of the Resident Project Representative and at no cost to the Owner.

1.04 USE OF SITE

A. Obtain approvals of governing authorities prior to impeding or closing public roads or streets. Do not close more than two consecutive intersections at one time.

B. Notify Resident Project Representative at least 48 hours prior to closing a street for a street crossing. Permission for street closures is required in advance and are the responsibility of the Contractor.

C. Maintain access for emergency vehicles including access to fire hydrants.

D. Avoid obstructing drainage ditches or inlets; when obstruction is unavoidable due to requirements of the Work, provide grading and temporary drainage structures to maintain unimpeded flow.

E. Locate and protect private lawn sprinkler systems which may exist on rights-of-ways within the site. Repair or replace damaged systems to condition equal to or better than that existing at start of Work at no separate payment.

F. Perform daily clean-up of dirt outside the construction zone, and debris, scrap materials, and other disposable items. Keep streets, driveways, and sidewalks clean of dirt, debris and scrap materials. Do not leave building, roads, streets or other construction areas unclean overnight.

1.05 NOTIFICATION TO ADJACENT OCCUPANTS

A. Notify individual occupants in areas to be effected by the Work of the proposed construction and time schedule. Notification shall be not less than 72 hours or more than 2 weeks prior to work being performed within 200 feet of the homes or businesses.

B. Include in notification names and telephone numbers of two company representatives for resident contact, who will be available on 24-hour call. Include precautions which will be taken to protect private property and identify potential access or utility inconvenience or disruption.

C. Consideration shall be given to the ethnicity of the neighborhood where English is not the dominant language. Notice shall be in an understandable language.

1.06 PUBLIC, TEMPORARY, AND CONSTRUCTION ROADS AND RAMPS

A. Construct and maintain temporary detours, ramps, and roads to provide for normal public traffic flow when use of public roads or streets is closed by necessities of the Work.

B. Provide mats or other means to prevent overloading or damage to existing roadways from tracked equipment or large or heavy trucks or equipment.

1.07 EXCAVATION IN STREETS AND DRIVEWAYS

A. Avoid needless hindering or inconveniencing public travel on a street or any intersecting alley or street for more than two blocks at any one time.

B. Remove surplus materials and debris and open each block for public use as work in that block is complete.

C. Acceptance of any portion of the Work will not be based on return of street to public use.

D. Avoid obstructing driveways or entrances to private property.

E. Provide temporary crossing or complete the excavation and backfill in one continuous operation to minimize the duration of obstruction when excavation is required across drives or entrances.

1.08 TRAFFIC CONTROL

A. Provide traffic control plan, traffic control, flagmen, signals, control devices, lights, traffic signals, barricades and signs in accordance with the State of Texas Manual on Uniform Traffic Control Devices.

1.09 SURFACE RESTORATION

A. Restore site to condition existing before construction to satisfaction of Resident Project Representative.

B. Repair paved area per the requirements of Section 02951 - Pavement Repair and Resurfacing.

C. Repair turf areas which become damaged, level with bank run sand conforming to Section 02317 - Excavation and Backfill for Utilities, or topsoil conforming to Section 02911 - Topsoil, as

approved by the Resident Project Representative and re-sod in accordance with Section 02922 - Sodding. Water and level newly sodded areas with adjoining turf using steel wheel rollers appropriate for sodding. Do not use spot sodding or sprigging.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01321

CONSTRUCTION PHOTOGRAPHS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Photographic requirements for construction photographs and submittals.

1.02 SUBMITTALS

A. Prints: Furnish 2 sets of 4-inch by 6-inch prints of each view and submit 1 print directly to the Engineer within 7 days of taking photographs. One print shall be retained by the Contractor in the field office at the Project site and available at all times for reference.

B. Extra Prints: When requested by the Engineer, the Contractor shall submit extra prints of photographs, with distribution directly to designated parties who will pay the costs for the extra prints directly to the photographer.

C. When required by individual sections, submit photographs taken prior to start of construction to show original site conditions.

D. When required by Contract Documents, submit photographs with monthly Pay Estimate.

E. Negatives: With each submittal, include photographic negatives, in protective envelopes, identified by Project name, Contractor, and date photographs were taken.

F. In lieu of negatives, Contractor may submit electronic files of digital photographs if using a digital camera, but must comply with Parts 1 and 2 of this section.

1.03 QUALITY ASSURANCE

A. Contractor shall be responsible for the timely execution of the photographs, their vantage point, and quality.

B. Photographs: Two prints; color, matte finish; 4 x 6 -inch size, mounted on 8-1/2 x 11- inch soft card stock, with left edge binding margin for three hole punch. Digital photos shall not be distorted to fit card stock.

PART 2 PRODUCTS

2.01 PRECONSTRUCTION PHOTOGRAPHS

A. Prior to the commencement of any construction, take 35 mm or digital color photographs of the site of the project and present two sets of prints to the Engineer for their use in contract administration and inspection. Subject matter of the photographs to be determined by the Engineer.

B. The photographs shall show on a non-reflective chalkboard readable in the photograph:

1. Job number.

2. Date and time photographs were taken.

3. Location and compass direction of the photograph, along with the project number.

4. Date shall be on negative (35mm) or on digital image.

5. Provide notation of vantage point marked for location and direction of shot, on a key plan of the site.

C. Sufficient number of photographs shall be taken to show the existence or non-existence of cracked paved surfaces and the condition of trees, shrubs, and grass.

D. Identify each photograph with an applied label or rubber stamp on the back with the following information:

1. Name of the Project.

2. Name and address of the photographer (if a professional photographer is used).

3. Name of the Contractor.

4. Date the photograph was taken.

5. Photographs shall be in plastic pockets and bound in three-ring notebook for easy access and viewing.

2.02 PROGRESS PHOTOGRAPHS

A. Take photographs of subject matter selected by Resident Project Representative at intervals, coinciding with the cutoff date associated with each application for payment. Select the vantage points for each shot each month to best show the status of construction and progress since the last photographs were taken.

1. Vantage Points: Follow direction by the Resident Project Representative to select vantage points. During each of the following construction phases take not less than 2 of the required shots from the same vantage point each time to create a time-lapse sequence.

2. Photos shall be submitted according to Paragraphs 1.03 B. and 2.01 B and D.

PART 3 E X E C U T I O N - Not Used

END OF SECTION

SECTION 01330

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Submittal procedures for:

1. Schedule of Values
2. Construction Schedules and Cash Flow Curve (billing forecast).
3. Shop Drawings, Product Data and Samples
4. Operations and Maintenance (O&M) Data
5. Manufacturer's Certificates
6. Construction Photographs
7. Project Record Documents and monthly certification.
8. Video Tapes
9. Design Mixes

1.02 SUBMITTAL PROCEDURES

A. Scheduling and Handling:

1. Submit Shop Drawings, data and Samples for related components as required by Specifications and Engineer.
2. Schedule submittals well in advance of need for construction Products. Allow time for delivery of Products after submittal approval.
3. Develop submittal schedule that allows sufficient time for initial review, correction, resubmission and final review of all submittals. Allow a minimum of 30 days for initial review. Engineer will review and return submittals to Contractor as expeditiously as possible but time required for review will vary depending on complexity and quantity of data submitted.
4. Engineer's review of submittals covers only general conformity to Drawings, Specifications and dimensions that affect layout. Contractor is responsible for quantity determination. No quantities will be verified by Engineer. Contractor is responsible for errors, omissions or deviations from Contract requirements; review of submittals does not relieve Contractor from the obligation to furnish required items in accordance with Drawings and Specifications.
5. Submit five copies of documents unless otherwise specified.
6. Revise and resubmit submittals as required. Identify all changes made since previous submittal.
7. Assume risk for fabricated Products delivered prior to approval. Do not

incorporate Products into the Work, or include payment for Products in periodic progress payments, until approved by Engineer.

B. Transmittal Form and Numbering:

1. Transmit each submittal to Engineer with Transmittal letter which includes:

   a. Date and submittal number

   b. Project title and number

   c. Names of Contractor, Subcontractor, Supplier and manufacturer

   d. Identification of Product being supplied

   e. Location of where Product is to be installed

   f. Applicable Specification section number

2. Identify deviations from Contract documents clouding submittal drawings. Itemize and detail on separate 8-1/2 by 11-inch sheets entitled "DEVIATIONS FOR _____." When no deviations exist, submit a sheet stating no deviations exist.

3. Have design deviations signed and sealed by an appropriate design professional, registered in the State of Texas.

4. Sequentially number transmittal letters beginning with number one. Use original number for re-submittals with an alphabetic suffix (i.e., 2A for the first re-submittal of submittal 2, or 15C for third re-submittal of submittal 15, etc.). Show only one type of work or Product on each submittal. **Mixed submittals will not be accepted.**

C. Contractor's Stamp:

1. Apply Contractor's Stamp certifying that the items have been reviewed in detail by Contractor and that they comply with Contract requirements, except as noted by requested variances.

2. As a minimum, Contractor's Stamp shall include:

   a. Contractor's name

   b. Job number

   c. Submittal number

   d. Certification statement Contractor has reviewed submittal and it is in compliance with the Contract

   e. Signature line for Contractor

D. Submittals will be returned with one of the following Responses:

1. "Reviewed" when no response and re-submittal is required.

2. "Reviewed" when sufficient information has supplied to determine that item described is accepted and that no re-submittal is required.

3. "Reviewed; see comments" when sufficient information has been supplied to determine that item will be acceptable subject to changes, or exceptions, which will be clearly stated. When exceptions require additional changes, the changes must be submitted for approval. Re-submittal is not required when exceptions require no further changes.

4. "Rejected" when submittal does not contain sufficient information, or when information provided does not meet Contract requirements. Additional data or details requested by Engineer must be submitted to obtain approval.

1.03 MANUFACTURER'S CERTIFICATES

A. When required by Specification sections, submit manufacturers' certificate of compliance for review by Engineer.

B. Place Contractor's Stamp on front of certification.

C. Submit supporting reference data, affidavits, and certifications as appropriate.

D. Product certificates may be recent or from previous test results, but must be acceptable to Engineer.

1.04 DESIGN MIXES

A. When required by Specification sections, submit design mixes for review.

B. Place Contractor's Stamp, as specified in this section, on the front of each design mix.

C. Mark each mix to identify proportions, gradations, and additives for each class and type of mix submitted. Include applicable test results from samples for each mix. Perform tests and certifications within 12 months of the date of the submittal.

D. Maintain copies of approved mixes at mixing plant.

1.05 CHANGES TO CONTRACT

A. Changes to Contract may be initiated by completing a Request for Information form. Engineer will provide a response to Contractor by completing the form and returning it to Contractor.

1. If Contractor agrees that the response will result in no increase in cost or time, a Minor Change in the Work will be issued by Engineer.

2. If Contractor and Engineer agree that an increase in time or cost is warranted, Engineer will forward the Request for Proposal for negotiation of a Change Order.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION - 01330

SECTION 01410

TPDES REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Documentation to be prepared and signed by Contractor before conducting construction operations, in accordance with the Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit Number TXR 150000 issued March 5, 2003 (the Construction General Permit).

B. Implementation, maintenance inspection, and termination of storm water pollution prevention control measures including, but not limited to, erosion and sediment controls, storm water management plans, waste collection and disposal, off-site vehicle tracking, and other appropriate practices shown on the Drawings or specified elsewhere in the contract.

C. Review of the Storm Water Pollution Prevention Plan (SWP3) implementation with Engineer prior to start of construction.

1.02 DEFINITIONS

A. Commencement of Construction Activities: The exposure of soil resulting from activities such as clearing, grading, and excavating.

B. Large Construction Activity: Project that:

1. disturbs five acres or more, or

2. disturbs less than five acres but is part of a larger common plan of development that will disturb five acres or more of land.

C. Small Construction Activity: Project that:

1. disturbs one or more acres but less than five acres, or

2. disturbs less than one acre but is part of a larger common plan of development that will ultimately disturb one or more acres but less than five acres.

D. TPDES Operator:

1. The person or persons who have day-to-day operational control of the construction activities which are necessary to ensure compliance with the SWP3 for the site or other Construction General Permit conditions.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.01 SITE SPECIFIC STORM WATER POLLUTION PREVENTION PLAN (SWP3)

A. Prepare a SWP3 following Part III of the Construction General Permit and the Storm Water Management Handbook for Construction Activities issued under Owner Ordinance Section 47-695(b). If conflicts exist between the Construction General Permit and the handbook, the more stringent requirements will apply.

B. Update or revise the SWP3 as needed during the construction following Part III, Section E of the Construction General Permit.

C. Submit the SWP3 and any updates or revisions to Engineer for review and address comments prior to commencing, or continuing, construction activities.

3.02 NOTICE OF INTENT for Large and Small Construction Activity

A. Fill out, sign, and date TCEQ Form 20022 (02/03) Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity under the TPDES Construction General Permit (TXR 150000), SEE ATTACHMENT of this Section 01410.

B. Transmit the signed Contractor's copy of TCEQ Form 20022 (02/03), along with a $100.00 check, made out to Texas Commission on Environmental Quality.

C. Submission of the Notice of Intent form by the Contractor to TCEQ is required a minimum of two days before Commencement of Construction Activities.

3.03 CERTIFICATION REQUIREMENTS

A. Fill out TPDES Operator's Information form, SEE ATTACHMENT of this Section 01410, including Contractor's name, address, and telephone number, and the names of persons or firms responsible for maintenance and inspection of erosion and sediment control measures. Use multiple copies as required to document full information.

B. Contractor and Subcontractors shall sign and date the Contractor's / Subcontractor's Certification for TPDES Permitting, SEE ATTACHMENT 4 this Section 01410.

C. Submit properly completed certification forms to Engineer for review before beginning construction operations.

D. Conduct inspections in accordance with TCEQ requirements. Ensure persons or firms responsible for maintenance and inspection of erosion and sediment control measures read, fill out, sign, and date the Erosion Control Contractor's Certification for Inspection and maintenance. Use the EPA NPDES Construction Inspection Form, SEE ATTACHMENT of this Section 01410; and the Owner's Storm Water Pollution Prevention Plan Construction Site Inspection Report, SEE ATTACHMENT of this Section 01410 to record maintenance inspections and repairs.

3.04 RETENTION OF RECORDS

A. Keep a copy of this document and the SWP3 in a readily accessible location at the construction site from Commencement of Construction Activity until submission of the Notice of Termination (NOT) for Storm Water Discharges Associated with Construction Activity under TPDES Construction General Permit (TXR 150000) to TCEQ. Contractors with day-to-day operational control over SWP3 implementation shall have a copy of the SWP3 available at a central location, on-site, for the use of all operators and those identified as having responsibilities under the SWP3. Upon submission of the NOT, to TCEQ submit a copy of the SWP3 with all revisions to Engineer.

3.05 REQUIRED NOTICES

A. Post the following notices from effective date of the SWP3 until date of final site stabilization as defined in the Construction General Permit:

1. Post the TPDES permit number for Large Construction Activity, or a signed TCEQ Construction Site Notice for Small Construction Activity. Signed copies of the Owner's

and Contractor's NOI must also be posted.

2. Post notices near the main entrance of the construction site in a prominent place for public viewing. Post name and telephone number of Contractor's local contact person, brief project description and location of the SWP3.

   a. If posting near a main entrance is not feasible due to safety concerns, coordinate posting of notice with Project Manager to conform to requirements of the Construction General Permit.

   b. If Project is a linear construction project (e.g.: road, utilities, etc.), post notice in a publicly accessible location near active construction. Move notice as necessary.

3. Post a notice to equipment and vehicles operators, instructing them to stop, check, and clean tires of debris and mud before driving onto traffic lanes. Post at each stabilized construction exit area.

4. Post a notice of waste disposal procedures in a readily visible location on site.

3.06 ON-SITE WASTE MATERIAL STORAGE

A. On-site waste material storage shall be self-contained and shall satisfy appropriate local, state, and federal rules and regulations.

B. Prepare list of waste material to be stored on-site. Update list as necessary to include up-to-date information. Keep a copy of updated list with the SWP3.

C. Prepare description of controls to reduce pollutants generated from on-site storage. Include storage practices necessary to minimize exposure of materials to storm water, and spill prevention and response measures consistent with best management practices. Keep a copy of the description with the SWP3.

3.08 NOTICE OF TERMINATION

A. Submit a NOTE, ATTACHMENT 7 of this Section 01410, to Project Manager within 30 days after:

1. Final stabilization has been achieved on all portions of the site that are the responsibility of the Contractor; or

2. Another operator has assumed control over all areas of the site that have not been stabilized; and

3. All silt fences and other temporary erosion controls have either been removed, scheduled to be removed as defined in the SWP3, or transferred to a new operator if the new operator has sought permit coverage.

B. Project Manager will complete Owner's NOT and submit Contractor and Owner's notices to the TCEQ and MS4 entities.

END OF SECTION

SECTION 01454

TESTING LABORATORY SERVICES

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Testing laboratory services and Contractor responsibilities related to those services.

1.02 REFERENCES

A. ASTM C 1077 - Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation.

B. ASTM D 3666 - Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Bituminous Paving Materials.

C. ASTM D 3740 - Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.

D. ASTM E 329 - Standard Specification for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction.

E. ISO/TEC Guide 25 - General Requirements for the Competence of Calibration and Testing Laboratories.

1.03 SELECTION AND PAYMENT

A. The Owner will select, employ, and pay for services of an independent testing laboratory to perform inspection and testing identified in individual Specification sections.

C. Employment of a testing laboratory by the Owner shall not relieve Contractor of its obligation to perform work in accordance with requirements of Contract documents.

D. The Owner will deduct a minimum two-hour charge for testing laboratory time from periodic progress payment when operations requiring testing or inspection are canceled without prior notification.

E. The Owner will deduct cost of retesting from periodic progress payment whenever failed work is removed, replaced and retested.

1.04 QUALIFICATION OF LABORATORY

A. Meet laboratory requirements of ASTM E 329 and applicable requirements of ASTM C 1077, ASTM D 3666, and ASTM D 3740.

B. Meet ISO/TEC Guide 17025 conditions for accreditation by the American

Association for Laboratory Accreditation (A2LA) in specific fields of testing required in individual Specification sections.

C. If laboratory subcontracts are part of the testing services, such work will be placed with a laboratory complying with the requirements of this Section.

1.05 LABORATORY REPORTS

A. Testing laboratory shall provide and distribute copies of laboratory reports to the distribution list Engineer provides at the pre-construction conference.

B. Keep one copy of each laboratory report distributed or faxed at the site field office for duration of the Work.

C. Laboratory will fax material supplier, Contractor and Engineer reports that indicate failing test results by no later than close of business on the working day following test completion and review.

1.06 LIMITS ON TESTING LABORATORY AUTHORITY

A. Laboratory may not release, revoke, alter, or enlarge requirements of the Contract.

B. Laboratory may not approve or accept any portion of the Work.

C. Laboratory may not assume Contractor duties.

D. Laboratory has no authority to stop the Work.

1.07 CONTRACTOR RESPONSIBILITIES

A. Provide safe access to the Work and to manufacturer's facilities for Engineer and for testing laboratory personnel.

B. Provide testing laboratory with a copy of the Construction Schedule and a copy of each update to Construction Schedule.

C. Notify Engineer and testing laboratory during normal working hours of the day previous to expected time for operations requiring inspection and testing services. When Contractor fails to make timely prior notification, do not proceed with the operations requiring inspection and testing services.

D. Request and monitor testing as required to provide timely results and to avoid delays to the Work. Provide samples to laboratory in sufficient time to allow required test to be performed in accordance with specified test methods before intended use of the Product.

E. Cooperate with laboratory personnel in collecting samples on site. Provide incidental labor and facilities for safe access to the Work to be tested, to obtain and handle samples at site or at source of Products to be tested, and

to facilitate tests and inspections including storage and curing of test samples.

G. Make arrangements with laboratory through Engineer.

1. Re-testing required for failed tests.

2. Re-testing for nonconforming work.

3. Additional sampling and tests requested beyond specified requirements.

4. Insufficient notification of cancellation of tests for work scheduled but not performed.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N

3.01 CONDUCTING TESTING

A. Conform to laboratory sampling and testing methods specified in individual Specification sections to the latest issues of ASTM standards, TxDOT methods, or other recognized test standards as approved by Project Manager.

B. Requirements of this Section shall also apply to those tests for approval of materials, for mix designs, and for quality control of materials as performed by employed testing laboratories.

END OF SECTION - 01454

Section 01502

MOBILIZATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Mobilization of construction equipment and facilities onto the site.

1.02 MEASUREMENT & PAYMENT

A. Measurement and payment for mobilization is on a stipulated price basis.

B. Mobilization payments will be made in accordance with the following provisions:

1. Authorization for payment of 50 percent of the Contract Price for mobilization will be made upon receipt and approval by Engineer of the following items, as applicable:

   a. Establishment of the field office for the Resident Project Representative where an office is required by other Sections;
   b. Establishment of the Contractor's office;.
   c. Establishment of Contractor's material and equipment storage areas (as evidenced by executed leases or rental agreement); and.
   d. Issuance of Notice to Proceed by Engineer to Contractor..

2. Authorization for payment of the remaining fifty (50) percent of the Contract Price for mobilization will be made upon completion of Work amounting to five (5) percent of the Contract Price less the mobilization unit price.

C. Mobilization payments will be subject to retainage amounts stipulated in the General Conditions.

D. All cost difference between the stipulated amount and the actual cost of the initial mobilization and the cost of all subsequent mobilization shall be included in the various other prices bid.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01504

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Temporary facilities and necessary controls for the Project, including utilities, telephone, sanitary facilities, storage sheds and building, safety requirements, first aid equipment, fire protection, security measures, protection of the Work and property, access roads and parking, environmental controls, pest and rodent control and disposal of trash, debris and excavated material.

B. Facilities and controls specified in this section are considered minimum for the Project. Provide additional facilities and controls for proper execution of the Work and to meet Contractor's responsibilities for protection of persons and property.

1.02 CONTRACTOR'S RESPONSIBILITY

A. Comply with applicable requirements specified in other sections of the Specifications.

1. Maintain and operate temporary facilities and systems to assure continuous service.

2. Modify and extend systems as the Work progress requires.

3. Completely remove temporary materials and equipment when no longer required.

4. Restore existing facilities used for temporary services to specified or original condition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 TEMPORARY UTILITIES

A. Obtaining Temporary Service:

1. Make arrangements with utility service companies for temporary services.

2. Abide by rules and regulations of the utility service companies or authorities having jurisdiction.

3. Responsible for utility service costs until Date of Substantial Completion. Included are fuel, power, light, heat, and other utility services necessary for execution, completion, testing, and initial operation of the Work.

B. Water:

1. Provide water required for and in connection with work to be performed and for specified tests of piping, equipment, devices, or for other use as required for proper completion of the Work.

2. Water to be drawn from public fire hydrants. Obtain transit meter from Owner. Pay required deposit based on rates established by latest ordinance.

3. Provide and maintain an adequate supply of potable water for domestic

consumption by Contractor personnel, Engineer and representatives of the Owner.

C. Electricity and Lighting:

1. Provide electric power service required for the Work including required testing, lighting, operation of equipment, and other Contractor use.

2. Electric power service includes temporary power or generators required to maintain plant operations during scheduled shutdowns.

3. Minimum lighting level shall be 10 foot-candles for open areas; 20-foot-candles for stairs and shops. Provide a minimum of one 300-watt lamp for each 200 square feet of work area.

D. Temporary Heat and Ventilation:

1. Provide temporary heat necessary for protection or completion of the Work.

2. Provide temporary heat and ventilation to assure safe working conditions; maintain enclosed areas at a minimum of 50 degrees F.

E. Telephone:

1. Provide emergency telephone service at Project site for use by Contractor personnel and others performing work or furnishing services at the site.

F. Sanitary Facilities:

1. Provide and maintain sanitary facilities for persons on the site; comply with regulations of State and local departments of health.

2. Enforce use of sanitary facilities by construction personnel at site. Enclose sanitary facilities. Pit-type toilets are not permitted. No discharge will be allowed from these facilities. Collect and store sewage and waste so as not to cause nuisance or health problems. Haul sewage and waste off-site and properly dispose in accordance with applicable regulations.

3. Locate toilets near the Work site and secluded from view insofar as possible. Keep toilets clean and supplied throughout the course of the Work.

3.02 STORAGE SHEDS AND BUILDINGS

A. Provide adequately ventilated, watertight storage facilities with floor above ground level for Products susceptible to weather damage.

B. Storage of Products not susceptible to weather damage may be on blocks off the ground.

C. Store Products in a neat and orderly manner. Place Products to permit easy access for identification, inspection and inventory.

D. Fill and grade site for temporary structures to provide drainage away from temporary and existing buildings.

3.03 SAFETY REQUIREMENTS

A. Submit a safety program at the pre-construction meeting and follow the Program. Include documented response to trench safety requirements of Section 02260 - Trench Safety

System.

B. Conduct operations in strict accordance with applicable Federal, State and local safety codes and statutes and with good construction practice. Establish and maintain procedures for safety of all work, personnel and equipment involved in the Work.

C. Observe and comply with Texas Occupational Safety Act (Art. 5182a, V.C.S.) and with all safety and health standards promulgated by Secretary of Labor under Section 107 of Contract Work Hours and Standards Act, published in 29 CFR Part 1926 and adopted by Secretary of Labor as occupational safety and health standards under Williams-Steiger Occupational Safety and Health Act of 1970, and to other legislation enacted for safety and health of Contractor employees. Safety and health standards apply to Subcontractors and Suppliers as well as to the Contractor.

D. Observance of and compliance with safety regulations is Contractor's responsibility without reliance or superintendence of or direction by Engineer. Immediately advise Engineer of investigation or inspection by Federal Safety and Health inspectors of Contractor's or Subcontractor's work or place of work on site under the Contract, and after investigation or inspection, advise Engineer of results. Submit one copy of accident reports to Engineer within 10 days of occurrence.

E. Protect areas occupied by workmen using the best available devices for detection of lethal and combustible gases. Test devices frequently to assure functional capability. Constantly observe infiltration of liquids into the Work area for visual or odor evidence of contamination, and immediately take appropriate steps to seal off entry of contaminated liquids to the Work area.

F. Implement safety measures, including but not limited to safety personnel, first-aid equipment, ventilating equipment and other safety equipment specified or detailed on Drawings.

G. Maintain required coordination with City Police and Fire Departments during entire period covered by the Contract.

H. Include Project safety analysis in safety plan. Itemize major tasks and potential safety hazards. Plan to eliminate hazards or protect workers and public from each hazard.

3.04 FIRST AID EQUIPMENT

A. Provide a first aid kit throughout the construction period. List telephone numbers for physicians, hospitals, and ambulance services in each first aid kit.

B. Have at least one person thoroughly trained in first aid and CPR procedures present on the site when work is in progress. Contractor to conform to protocols and requirements for training and protection against "blood borne pathogens".

3.05 FIRE PROTECTION

A. Conform to specified fire protection and prevention requirements established by Federal, State, or local governmental agencies and as provided in Safety Program.

3.06 SECURITY MEASURES

A. Protect the Work, materials, equipment, and property from loss, theft, damage, or vandalism. Protect Owner property used in performance of the Contract.

B. If existing fencing or barriers are breached or removed for purposes of construction, provide and maintain temporary security fencing equal to existing.

3.07 PROTECTION OF UTILITIES AND PIPELINES

A. Prevent damage to existing public utilities during construction. Approximate locations of known utilities are shown on Drawings, but all lines may not be shown. Excavate with caution and repair lines damaged by construction operations.

B. Use the Utility Coordinating Committee One Call System which must be called 48 hours in advance. The toll free telephone number is 1-800-669-8344, Texas One Call System.

C. Before excavating, locate underground utilities by appropriate means including the use of metal detection equipment, and probes, or by excavation or surveys. Repair damage caused by investigative work and by failure to locate or to preserve underground utilities.

D. Give utility owners a minimum five days notice before commencing excavation to allow time to locate utilities and make adjustments or relocations when they conflict with the Work. Include cost for temporary relocation of water, wastewater, and storm drainage lines, necessary to accommodate construction, in unit prices for utility construction unless otherwise noted. Bypassing of sanitary waste to storm drainage facilities is not allowed.

E. Prior to excavation near pipelines, request a representative of the pipeline company to meet with Contractor to locate the pipelines of proposed utility.

3.08 PROTECTION OF THE WORK AND PROPERTY

A. Preventive Actions

1. Take necessary precautions and actions to prevent damage, injury, or loss to the Work or public and private property, including:

a. Storage of apparatus, supplies, and Products in an orderly, safe manner to limit interference with progress of the Work or work of other contractors, utility service companies, or the Owner's operations.

b. Suitable storage for Products subject to damage by exposure to weather, theft, breakage, etc.

c. Limitation of loading pressures imposed upon portions of the Work.

d. Frequent clean up of refuse, scrap materials, and debris from construction operations, necessary to maintain the site in a safe and orderly condition.

e. Provision of barricades and guard rails to protect pedestrian and traffic around openings, scaffolding, temporary stairs and ramps, excavations, elevated walkways, and other hazardous areas.

2. Protect public and private property adjacent to the site. Obtain written consent before entering or occupying privately-owned land except on easements provided for construction. Restore property damaged by construction operations to condition equal to or better than that existing before the damage.

B. Barricades and Warning Systems

1. Where work is performed on or adjacent to roadways, rights-of-ways, or public land, provide barricades, fences, lights, warning signs, danger signals, and other precautionary measures necessary for protection of persons or property and for protection of the Work.

    a. Erect sufficient barricades to keep vehicles and pedestrians from entering the Work. Paint barricades to be visible at night. From sunset to sunrise, provide at least one light at each barricade.

    b. Maintain barricades, signs, lights, and provide watchmen until Engineer approves removal. Whenever work creates encroachment onto public roadways, station flagmen to manage traffic flow in accordance with approved traffic control plan.

    c. Conform to requirements of section 01555 - Traffic Control and regulation.

C. Protection of Existing Structures

1. Underground Facilities:

    a. Known Underground Facilities are shown on the Drawings but all Facilities may not be shown. Explore sufficiently ahead of trenching and excavation work to locate Underground Facilities in order to prevent damage to them and to prevent interruption of utility services. Restore damage to Underground Facilities to original condition at no additional cost to the Owner.

    b. If necessary to avoid unanticipated Underground Facilities, Engineer may make changes in location of the Work.

    c. If permanent relocation of an Underground Facility is required and not provided for in the Contract documents, Engineer will direct Contractor in writing to perform the Work.

2. Surface Structures include buildings, tanks, walls, bridges, roads, dams, channels, open drainage, piping, poles, wires, posts, signs, markers, curbs, walks, guard cables, fencing, and other facilities that are visible above the ground level.

3. Protection of Underground Facilities and Surface Structures:

    a. Support in place and protect Underground Facilities and Surface Structures located within or adjacent to the limits of the Work from damage. Install supports as required by the owner of the structure. Satisfy Engineer that the owner of the facility or structure has approved methods and procedures before installing structure supports.

    b. Avoid moving or changing public utility or private corporation property without prior written consent of a responsible official of the facility or structure. Allow representatives of utilities to enter the construction site for maintenance and repair purposes or to make necessary changes.

    c. Notify utility and pipeline owners and operators of the nature of construction operations and dates when operations will be performed. When construction operations are required in immediate vicinity of existing structures, pipelines, or utilities, give a minimum of five working

days advance notice. Probe and flag location of Underground Facilities prior to commencement of excavation. Keep flags in place until construction operations uncover the facility.

d. Assume risk for damages and expenses to Underground Facilities and Surface Structures within or adjacent to the Work.

e. Employ a structural engineer to ensure protection measures are adequate for the safety and integrity of structures and facilities.

E. Protection of Installed Products:

1. Provide protection of Installed Products to prevent damage from subsequent operations. Remove protection facilities when no longer needed, prior to completion of the Work.

2. Control traffic to prevent damage to Products and surfaces.

3. Provide coverings to protect Products from damage. Cover projections, wall corners, jambs, sills, and exposed sides of openings in areas used for traffic and passage of materials in subsequent work.

3.09 ROADS AND PARKING

A. Prevent interference with traffic and operations of the Owner on existing roads.

B. Designate temporary parking areas to accommodate construction and Owner personnel. When site space is not adequate, provide additional off-site parking.

C. Minimize use by construction traffic on existing streets and driveways.

D. Do not allow heavy vehicles or construction equipment in existing parking areas.

3.10 ENVIRONMENTAL CONTROLS

A. Use methods, equipment, and temporary construction necessary for control of environmental conditions at the site and adjacent areas.

B. Comply with statutes, regulations, and ordinances relating to prevention of environmental pollution and preservation of natural resources including National Environmental Policy Act of 1969, PL 91-190, Executive Order 11514.

C. Minimize impact to the surrounding environment. Do not use construction procedures that cause unnecessary excavation and filling of terrain, indiscriminate destruction of vegetation, air or stream pollution, or harassment or destruction of wildlife.

D. Limit disturbed areas to boundaries established by the Contract. Do not pollute on-site streams, sewers, wells, or other water sources.

E. Do not burn rubbish, debris or waste materials.

3.11 POLLUTION CONTROL

A. Provide methods, means, and facilities necessary to prevent contamination of soil, water or the atmosphere by discharge of Pollutants from construction operations.

B. Provide equipment and personnel to perform emergency measures to contain spillage, and to remove contaminated soils or liquids. Excavate and dispose of contaminated earth off-site in accordance with laws and regulations, and replace with suitable compacted fill

and topsoil.

C. Provide systems necessary for control of Pollutants.

1. Prevent toxic concentrations of chemicals.

2. Prevent harmful dispersal of Pollutants into the environment.

D. Use equipment that conforms to current Federal, State, and local laws and regulations.

3.12 PEST AND RODENT CONTROL

A. Provide rodent and pest control as necessary to prevent infestation of construction or storage areas.

B. Employ methods and use materials that will not adversely affect conditions at site or on adjoining properties.

3.13 NOISE CONTROL

A. Provide vehicles, equipment, and use construction activities that minimize noise to the greatest degree practicable. Conform to noise levels of Chapter 30 -Noise and Sound Level Regulation, City Code of Ordinances, and latest OSHA standards. Do not permit noise levels to interfere with the Work or create a nuisance to surrounding areas.

B. Conduct construction operations during daylight hours except as approved by Engineer.

C. Select construction equipment that operates with minimum noise and vibration. When directed by Engineer, correct objectionable noise or vibration produced by operation of equipment at no additional cost to the Owner. Sound Power Level (PWL) of equipment shall not exceed 85 dbA (re: 10-12 watts) measured five feet from the equipment, or at a lower level if prescribed by City Ordinances. Equipment noise requirements are contained in equipment specifications.

3.14 DUST CONTROL

A. Use water or other methods approved by Engineer to control amount of dust generated by vehicle and equipment operations.

3.15 WATER RUNOFF AND EROSION CONTROL

A. Comply with requirements of Section 01410 - TPDES Requirements.

B. Conduct fill, grading and ditching operations and provide adequate methods necessary to control surface water, runoff, subsurface water, and water from excavations and structures in order to prevent damage to the Work, the site, or adjoining properties.

1. Plan and execute construction and earthwork by methods that control surface drainage from cuts and fills, and from borrow and waste disposal areas.

2. Minimize area of bare soil exposed at one time.

3. Provide temporary control measures, such as berms, dikes, and drains.

4. Provide, operate, and maintain equipment and facilities of adequate size to control surface water.

5. Construct fill and waste areas by selective placement of materials to eliminate erosion of surface silts or clays that may erode.

6. Direct water away from excavations, pits, tunnels, and other construction areas to prevent erosion, sedimentation or damage.

7. Maintain existing drainage patterns adjacent to the site by constructing temporary earth berms, sedimentation basins, retaining areas, and temporary ground cover.

8. Dispose of drainage water in a manner to prevent flooding, erosion, or other damage to the site or adjoining areas, in conformance with environmental requirements.

9. Inspect earthwork periodically to detect any evidence of erosion. Take corrective measures as required to control erosion.

END OF SECTION - 01504

SECTION 01555

TRAFFIC CONTROL AND REGULATION

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Requirements for signs, signals, control devices, traffic barriers, flares, lights and traffic signals; construction parking control, designated haul routes, and bridging of trenches and excavations.

B. Qualifications and requirements for use of flagmen.

1.02 MEASUREMENT AND PAYMENT

A. Unit Price Contracts.

1. Traffic control and regulation. Payment for traffic control and regulation is on a lump sum basis. Include preparation and submittal of traffic control plan if different than shown on Drawings, and provision of traffic control devices, equipment, and personnel necessary to protect the Work and public. Payment will be based on Contractor's Schedule of Values for traffic control and regulation.

1.03 REFERENCES

A. Texas Manual on Uniform Traffic Control Devices (TMUTCD)

B. Article 4413 (29bb), commonly referred to as Private Investigators and Private Security Agencies Act, and Article 2.12, Texas Code of Criminal Procedure.

1.04 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Traffic control plan:

1. If using traffic control plan contained in the Contract without modification, submit a letter confirming use of the plan.

2. If using a different traffic control plan, submit the plan for approval. The plan must conform to TMUTCD requirements and be sealed by a Registered Texas Professional Engineer.

PART 2 PRODUCTS

2.01 SIGNS, SIGNALS, AND DEVICES

A. Comply with TMUTCD requirements.

B. Traffic cones and drums, flares and lights: Conform to local jurisdictions' requirements.

C. When working in the Central business district, provide pedestrian pathway signage approved by the Owner's Traffic Engineering Branch.

2.02 PORTABLE LOW PROFILE CONCRETE BARRIERS

A. The low profile concrete barrier is a patented design. Information concerning this barrier may be obtained from Texas Transportation Institute, Texas A&M University System, College Station, Texas 77843-3135, (409) 845-1712.

PART 3 EXECUTION

3.01 PUBLIC ROADS

A. Submit requests forms for lane closure and sidewalk closure to the City at least three working days prior to need for blocking vehicular lanes or sidewalks. Do not block lanes or sidewalks without approved permits.

B. Follow laws and regulations of governing jurisdictions when using public roads. Pay for and obtain permits from jurisdiction before impeding traffic or closing lanes. Coordinate activities with the City.

C. Give Engineer one-week notice before implementing approved traffic control phases. Inform local businesses of impending traffic control activities.

D. Notify police department, fire department, METRO, and local schools, churches, and businesses in writing a minimum of five business days prior to beginning work.

E. Maintain 10-foot-wide all-weather lanes adjacent to the Work for emergency vehicle use. Keep all-weather lanes free of construction equipment and debris.

F. Do not to obstruct normal flow of traffic from 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. on designated major arterials.

G. Maintain local driveway access to residential and commercial properties adjacent to work areas at all times. Use all-weather materials approved by Engineer to maintain temporary driveway access to commercial and residential driveways.

H. Keep streets entering and leaving job site free of excavated material, debris, and foreign material resulting from construction operations in compliance with applicable ordinances.

I. Remove existing signage and striping that conflict with construction activities or that may cause driver confusion.

J. Provide safe access for pedestrians along major cross streets.

K. Alternate closures of cross streets so that two adjacent cross streets are not closed simultaneously.

3.02 CONSTRUCTION PARKING CONTROL

A. Control vehicular parking to prevent interference with public traffic and parking, access by emergency vehicles, and the Owner's operations.

B. Monitor parking of construction personnel's vehicles in existing facilities. Maintain vehicular access to and through parking areas.

C. Prevent parking on or adjacent to access roads or in non-designated areas.

3.03 FLARES AND LIGHTS

A. Provide flares and lights during hours of low visibility to delineate traffic lanes and to guide traffic.

3.04 HAUL ROUTES

A. Utilize haul routes designated by authorities or shown on Drawings for construction traffic.

B. Confine construction traffic to designated haul routes.

C. Provide traffic control at critical areas of haul routes to regulate traffic and minimize interference with public traffic.

3.05 TRAFFIC CONTROL, REGULATION AND DIRECTION

A. Use Flagmen to control, regulate and direct an even flow and movement of vehicular and pedestrian traffic, for periods of time as may be required to provide for public safety and convenience, where:

1. multi-lane vehicular traffic must be diverted into single lane vehicular traffic,

2. vehicular traffic must change lanes abruptly,

3. construction equipment must enter or cross vehicular traffic lanes and walks,

4. construction equipment may intermittently encroach on vehicular traffic lanes and unprotected walks and crosswalks,

5. traffic regulation is needed due to rerouting of vehicular traffic around the Work site, and

6. where construction activities might affect public safety and convenience.

B. Use of Flagmen to assist in the regulation of traffic flow and movement does not relieve Contractor of responsibility to take other means necessary to protect the Work and public.

3.06 INSTALLATION STANDARDS

A. Place temporary pavement for single lane closures, in accordance with TMUTCD.

B. Reinstall temporary and permanent pavement markings as approved by Engineer. When weather conditions do not allow application according to manufacturer's requirements, alternate markings may be considered. Submit proposed alternate to Engineer for approval prior to installation. No additional payment will be made for use of alternate markings.

END OF SECTION - 01555

SECTION 01570

STORM WATER POLLUTION CONTROL

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Implementation of Storm Water Pollution Prevention Plans (SWP3) described in Section 01410 - TPDES Requirement.

B. Installation and maintenance of storm-water pollution prevention structures: diversion dikes, interceptor dikes, diversion swales, interceptor swales, down spout extenders, pipe slope drains, paved flumes and level spreaders. Structures are used during construction and prior to final development of the site.

C. Filter Fabric Fences:

1. Type 1: Temporary filter fabric fences for erosion and sediment control in non-channelized flow areas.

2. Type 2: Temporary reinforced filter fabric fences for erosion and sediment control in channelized flow areas.

D. Straw Bale Fence.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices

1. Payment for filter fabric fence if included in Bid Form is on a linear foot basis measured between limits of beginning and ending of stakes.

2. Payment for reinforced filter fabric fence if included in Bid Form is on a linear foot basis measured between limits of beginning and ending of stakes.

3. Payment for drop inlet baskets if included in Bid Form is on a unit price basis for each drop inlet basket.

4. Payment for storm inlet sediment traps if included in Bid Form is on a unit price basis for each storm inlet sediment trap.

5. Payment for storm-water-pollution-prevention structures if included in Bid Form is on a lump sum basis for the project. Earthen structures with outlet and piping includes diversion dikes, interceptor dikes, diversion swales, interceptor swales, and excavated earth-outlet sediment trap, embankment earth-outlet sediment trap, down spout extenders, pipe slope drains, paved flumes, stone outlet sediment trap, and level spreaders.

6. Payment for straw bale barrier, if included in Bid Form, is on a linear foot of accepted bale barriers, if not include in cost of storm-water-pollution-prevention structures.

7. Payment for brush berm, if included in Bid Form, is on a linear foot of accepted rush berm, if not include in cost of storm water-pollution-prevention structures.

8. Payment for sandbag barrier, if included in Bid Form, is on a linear foot basis measured between limits of beginning and ending of sandbags, if not include in

cost of storm-water-pollution prevention structures.

9. Payment for sediment basin with pipe outlet or stone outlet, if included in Bid Form, is on a square yard basis, if not include in cost of storm-water-pollution-prevention structures.

10. Payment for inlet protection barriers, if included in Bid Form, is on a linear foot basis measured along outside face of inlet protection barrier, if not include in cost of storm-water-pollution prevention structures.

11. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum) Contract. If Contract is Stipulated Price Contract, payment for Work in this Section is included in total Stipulated Price.

1.03 REFERENCE STANDARDS

A. ASTM

1. A 36 - Standard Specification for Carbon Structural Steel.

2. D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)).

3. D3786 - Standard Test Method for Hydraulic Bursting Strength for Knitted Goods and Nonwoven Fabrics.

4. D 4355 - Standard Test Method for Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus).

5. D 4491 - Standard Test Methods for Water Permeability of Geotextiles by Permittivity.

6. D 4632 - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.

7. D 4833 - Standard Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products.

8. D 6382 - Standard Practice for Dynamic Mechanical Analysis and Thermogravimetry of Roofing and Waterproofing Membrane Material.

1.04 SYSTEM DESCRIPTIONS

A. Filter Fabric Fence Type 1 and Type 2: Install to allow surface or channel runoff percolation through fabric in sheet-flow manner and to retain and accumulate sediment. Maintain Filter Fabric Fences to remain in proper position and configuration at all times.

B. Straw Bale Fence: Install to allow surface runoff percolation through straw in sheet-flow manner and to retain and accumulate sediment. Maintain Straw Bale Fence to remain in proper position and configuration at all times.

C. Interceptor Dikes and Swales: Construct to direct surface or channel runoff around the project area or runoff from project area into sediment traps.

D. Drop Inlet Baskets: Install to allow runoff percolation through the basket and to retain and accumulate sediment. Clean accumulation of sediment to prevent clogging and backups.

E. Sediment traps: Construct to pool surface runoff from construction area to allow sediment to settle onto the bottom of trap.

1.05 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit manufacturer's literature for product specifications and installation instructions.

C. Submit manufacture's catalog sheets and other product data on geotextile or filter fabrics, outlet pipe, perforated riser and connectors.

D. Submit proposed methods, equipment, materials, and sequence of operations for storm-water pollution prevention structures.

E. Submit shop drawings for Drop Inlet Baskets.

PART 2 P R O D U C T S

2.01 CONCRETE

A. Concrete: Class B in accordance with Section 03315 - Concrete for Utility Construction or as shown on the Drawings.

2.02 AGREGATE MATERIALS

A. Use poorly graded cobbles with diameter greater than 3 inches and less than 5 inches.

B. Provide gravel lining in accordance with Section 2320 - Utility Backfill Materials or as shown on the drawings.

C. Provide clean cobbles and gravel consisting of crushed concrete or stone. Use clean, hard crushed concrete or stone free from adherent coatings, salt, alkali, dirt, clay, loam, shale, soft or flaky materials, or organic matter.

D. Sediment Pump Pit Aggregate: Use nominal 2-inch diameter river gravel.

2.03 GEOTEXTILE FILTER FABRIC

A. Woven or nonwoven geotextile filter fabric made of either polypropylene, polyethylene, ethylene, or polyamide material, in continuous rolls of longest practical length.

B. Grab Strength: 100 psi in any principal direction (ASTM D-4632), Mullen burst strength >200 psi (ASTM D-3786), and equivalent opening size between 50 and 140.

C. Furnish ultraviolet inhibitors and stabilizers for minimum 6 months of expected usable construction life at temperature range of 0 degrees F to 120 degrees.

D. Mirafi, Inc., Synthetic Industries, or equivalent

2.05 FENCING

A. Wire Fencing: Woven galvanized steel wire, 14 gauge by 6-inch square mesh spacing, minimum 24 inch roll or sheet width of longest practical length.

B. Fence Stakes: Nominal 2 by 2 inch moisture-resistant treated wood or steel posts (min. of 1.25 lbs. per linear foot and Brinell Hardness greater than 140) with safety caps on top; length as required for minimum 8 inch bury and full height of filter fabric.

2.06 SANDBAGS

A. Provide woven material made of polypropylene, polyethylene, or polyamide material.

1. Minimum unit weight of four ounces per square yard.

2. Minimum grab strength of 100 psi in any principal direction (ASTM D4632).

3. Mullen burst strength exceeding 300 psi (ASTM D3786).

4. Ultraviolet stability exceeding 70 percent.

5. Size: Length:18 to 24 inches. Width: 12 to 18 inches. Thickness: 6 to 8 inches. Weight: 50 to 125 pounds.

2.07 DROP INLET BASKET

A. Provide steel frame members in accordance with ASTM A36.

B. Construct top frame of basket with two short sides of 2 inch by 2 inch and single long side of 1 inch by 1 inch, 1/8 inch angle iron. Construct basket hangers of 2 inch by 1/4 inch iron bars. Construct bottom frame of 1 inch by 1/4 inch iron bar or 1/4 inch plate with center 3 inches removed. Use minimum 1/4 inch diameter iron rods or equivalent for sides of inlet basket. Weld minimum of 14 rods in place between top frame/basket hanger and bottom frame. Exact dimensions for top frame and insert basket will be determined based on dimensions of type of inlet being protected.

2.08 STRAW BALE

A. Straw: Standard-baled agricultural hay bound by wire, nylon, or polypropylene rope. Do not use jute or cotton binding.

B. Straw Bale Stakes (applicable where bales are on soil): No. 3 (3/8 diameter) reinforcing bars, deformed or smooth at Contractor's option, length as required for minimum 18 inch bury and full height bales.

PART 3 E X E C U T I O N

3.01 PREPARATION, INSTALLATION AND MAINTAINANCE

A. Provide erosion and sediment control structures at locations shown on the Drawings.

B. Do not clear, grub or rough cut until erosion and sediment control systems are in place unless approved by Engineer to allow installation of erosion and sediment control systems, soil testing and surveying.

C. Maintain existing erosion and sediment control systems located within project site until acceptance of Project or until directed by Engineer to remove and discard existing system.

D. Regularly inspect and repair or replace damaged components of erosion and sediment control structures. Unless otherwise directed, maintain erosion and sediment control structure until project area stabilization is accepted. Redress and replace granular fill at outlets as needed to replenish depleted granular fill. Remove erosion and sediment control structures promptly when directed by Engineer.

E. Remove and dispose sediment deposits at the designated spoil site for the Project. If a project spoil site is not designated on Drawings, dispose of sediment off site at approved location.

F. Unless otherwise shown on the Drawings, compact embankments, excavations, and trenches in accordance with Section 02317 Excavation and Backfill for Utilities.

G. Prohibit equipment and vehicles from maneuvering on areas outside of dedicated right of way and easements for construction. Immediately repair damage caused by construction traffic to erosion and sediment control structures.

H. Protect existing trees and plants.

SEDIMENT TRAPS

A. Install sediment traps so that surface runoff shall percolate through system in sheet flow fashion and allow retention and accumulation of sediment.

B. Inspect sediment traps after each rainfall, daily during periods of prolonged rainfall, and at a minimum once each week. Repair or replace damaged sections immediately.

C. Use fill material for embankment in accordance with Section 02320 - Utility Backfill Materials.

D. Excavation length and height shall be as specified on Drawings. Use side slopes of 2:1 or flatter.

E. Stone outlet sediment traps:

1. Maintain minimum of 6 inches between top of core material and top of stone outlet, minimum of 4 inches between bottom of core material and existing ground and minimum of 1 foot between top of stone outlet and top of embankment.

2. Embed cobbles minimum of 4 inches into existing ground for stone outlet. Core shall be a minimum of 1 foot in height and in width and wrapped in triple layer of geotextile filter fabric.

F. Sediment Basin with Pipe Outlet Construction Methods: Install outlet pipe and riser as shown on the Drawings.

G. Remove sediment deposits when design basin volume is reduced by one third or sediment level is one foot below principal spillway crest, whichever is less.

3.03 FILTER FABRIC FENCE CONSTRUCTION METHODS

A. Fence Type 1:

1. Install stakes 3 feet on center maximum and firmly embed minimum 8 inches in soil. If filter fabric is factory preassembled with support netting, then maximum support spacing is 8 feet. Install wood stakes at a slight angle toward the source of anticipated runoff.

2. Trench in the toe of the fence lines so the downward face of the trenches is flat and perpendicular to direction of flow. V-trench configuration as shown on Drawings may also be used.

3. Lay fabric along edges of trenches in longest practical continuous runs to minimize joints. Make joints only at a support post. Splice with minimum 6-inch overlap and seal securely.

4. Staple filter fabric to stakes at maximum 3 inches on center. Extend fabric minimum 18 inches and maximum 36 inches above natural ground.

5. Backfill and compact trench.

B. Fence Type 2:

1. Layout fence same as for Type 1.

2. Install stakes at 6 feet on center maximum and at each joint in wire fence, firmly embedded 1-foot minimum, and inclined it as for Type 1.

3. Tie wire fence to stakes with wire at 6 inches on center maximum. Overlap joints minimum one bay of mesh.

4. Install trench same as for Type 1.

5. Fasten filter fabric wire fence with tie wires at 3 inches on center maximum.

6. Layout fabric same as for Type 1. Fasten to wire fence with wire ties at 3 inches on center maximum and, if applicable, to stakes above top of wire fence it as for Type 1.

7. Backfill and compact trench.

C. Attach filter fabric to wooden fence stakes spaced a maximum of 6 feet apart or steel fence stakes spaced a maximum of 8 feet apart and embedded a minimum of 12 inches. Install stakes at a slight angle toward source of anticipated runoff.

D. Trench in toe of filter fabric fence with spade or mechanical trencher so that downward face of trench is flat and perpendicular to direction of flow. A V-trench configuration may also be used. Lay filter fabric along edges of trench. Backfill and compact trench upon completion of Construction.

E. Filter fabric fence shall have a minimum height of 18 inches and a maximum height of 36 inches above natural ground.

F. Cut length of fence to minimize use of joints. When joints are necessary, splice fabric together only at support post with minimum 6 inch overlap and seal securely.

G. Triangular Filter Fabric Fence Construction Methods

1. Attach filter fabric to wire fencing, 18 inches on each side. Provide a fabric cover and skirt with continuous wrapping of fabric. Skirt should form continuous extension of fabric on upstream side of fence.

2. Secure triangular fabric filter fence in place using one of the following methods:

a. Toe-in skirt 6 inches with mechanically compacted material;

b. Weight down skirt with continuous layer of 3-inch to 5-inch graded rock; or

c. Trench-in entire structure 4 inches.

3. Anchor triangular fabric filter fence structure and skirt securely in place using 6-inch wire staples on 2-foot centers on both edges and on skirt, or staked using 18-inch by 3/8-inch diameter re-bar with tee ends.

4. Lap fabric filter material by 6 inches to cover segment joints. Fasten joints with galvanized shoat rings.

H. Reinforced Filter Fabric Barrier Construction Methods

1. Attach woven wire fence to fence stakes.

2. Securely fasten filter fabric material to wire fence with tie wires.

3. When used in swales, ditches or diversions, elevation of barrier at top of filter fabric at flow line location in channel shall be lower than bottom elevation of filter fabric at ends of barrier or top of bank, whichever is less, in order to keep storm water discharge in channel from overtopping bank.
4. Remove sediment deposits when silt reaches depth one-third height of barrier or 6 inches, whichever is less.

3.04 DIKE AND SWALE

A. Unless otherwise indicated, maintain minimum dike height of 18 inches, measured from cleared ground at up slope toe to top of dike. Maintain side slopes of 2:1 or flatter.

B. Dike and Swale Stabilization: When shown on the Drawings, place gravel lining 3 inches thick and compacted into the soil or 6 inches thick if truck crossing is expected. Extend gravel lining across bottom and up both sides of swale minimum height of 8 inches vertically, above bottom. Gravel lining on dike side shall extend up the up slope side of dike a minimum height of 8 inches, measured vertically from interface of existing or graded ground and up slope toe of dike, as shown on Drawings.

C. Divert flow from dikes and swales to sediment basins, stabilized outlets, or sediment trapping devices of types and at locations shown on Drawings. Grade dikes and swales as shown on Drawings, or, if not specified, provide positive drainage with maximum grade of 1 percent to outlet or basin.

E. Carry out excavation for swale construction so that erosion and water pollution is minimal. Minimum depth shall be 1 foot and bottom width shall be 4 feet, with level swale bottom. Excavation slopes shall be 2:1 or flatter. Clear, grub and strip excavation area of vegetation and root material.

3.05 DOWN SPOUT EXTENDER

A. Down spout extender shall have slope of approximately 1 percent. Use pipe diameter of 4 inches or as shown on the Drawings. Place pipe in accordance with Section 2317 - Bedding and Backfill for Utilities.

3.06 PIPE SLOPE DRAIN

A. Compact soil around and under drain entrance section to top of embankment in lifts appropriately sized for method of compaction utilized.

B. Inlet pipe shall have slope of 1 percent or greater. Use pipe diameter as shown on the Drawings.

C. Top of embankment over inlet pipe and embankments directing water to pipe shall be at least 1 foot higher at all points than top of inlet pipe.

D. Pipe shall be secured with hold-down grommets spaced 10 feet on centers.

E. Place riprap apron with a depth equal to pipe diameter with 2:1 side slopes.

3.07 PAVED FLUME

A. Compact soil around and under the entrance section to top of the embankment in lifts appropriately sized for method of compaction utilized.

B. Construct subgrade to required elevations. Remove and replace soft sections and unsuitable material. Compact subgrade thoroughly and shape to a smooth, uniform

surface.

C. Construct permanent paved flumes in accordance with Drawings.

D. Remove sediment from riprap apron when sediment has accumulated to depth of one foot.

3.08 LEVEL SPREADER

A. Construct level spreader on undisturbed soil and not on fill. Ensure that spreader lip is level for uniform spreading of storm runoff.

B. Maintain at required depth, grade, and cross section as specified on Drawings. Remove sediment deposits as well as projections or other irregularities which will impede normal flow.

3.09 INLET PROTECTION BARRIER

A. Place sandbags and filter fabric fences at locations shown on the SWP3.

3.10 DROP INLET BASKET CONSTRUCTION METHODS

A. Fit inlet insert basket into inlet without gaps around insert at locations shown on the SWP3.

B. Support for inlet insert basket shall consist of fabricated metal as shown on Drawings.

C. Push down and form filter fabric to shape of basket. Use sheet of fabric large enough to be supported by basket frame when holding sediment and extend at least 6 inches past frame. Place inlet grates over basket/frame to serve as fabric anchor.

D. Remove sediment deposit after each storm event and whenever accumulation exceeds 1-inch depth during weekly inspections.

3.11 STRAW BALE FENCE CONSTRUCTION METHODS

A. Place bales in row with ends tightly abutting adjacent bales. Place bales with bindings parallel to ground surface.

B. Embed bale in soil a minimum of 4 inches.

C. Securely anchor bales in place with Straw Bale Stakes driven through bales a minimum of 18-inches into ground. Angle first stake in each bale toward previously laid bale to force bales together.

D. Fill gaps between bales with straw to prevent water from channeling between bales. Wedge carefully in order not to separate bales.

E. Replace with new straw bale fence every two months or as required by Engineer.

3.12 BRUSH BERM CONSTRUCTION METHODS

A. Construct brush berm along contour lines by hand placing method. Do not use machine placement of brush berm.

B. Use woody brush and branches having diameter less than 2-inches with 6inches overlap. Avoid incorporation of annual weeds and soil into brush berm.

C. Use minimum height of 18-inches measured from top of existing ground at upslope toe to top of berm. Top width shall be 24 inches minimum and side slopes shall be 2:1 or flatter.

D. Embed brush berm into soil a minimum of 4-inches and anchor using wire, nylon or polypropylene rope across berm with a minimum tension of 50 pounds. Tie rope securely to 18-inch x 3/8-inch diameter rebar stakes driven into ground on 4-foot centers on both sides of berm.

3.13 STREET AND SIDEWALK CLEANING

A. Keep areas clean of construction debris and mud carried by construction vehicles and equipment. If necessary, install stabilized construction exits at construction, staging, storage, and disposal areas.

3.14 WASTE COLLECTION AREAS

A. Prevent water runoff from passing through waste collection areas, and prevent water runoff from waste collection areas migrating outside collection areas.

3.15 EQUIPMENT MAINTENANCE AND REPAIR

A. Confine maintenance and repair of construction machinery and equipment to areas specifically designated for that purpose, so fuels, lubricants, solvents, and other potential pollutants are not washed directly into receiving streams or storm water conveyance systems. Provide these areas with adequate waste disposal receptacles for liquid and solid waste. Clean and inspect maintenance areas daily.

B. Where designated equipment maintenance areas are not feasible, take precautions during each individual repair or maintenance operation to prevent potential pollutants from washing into streams or conveyance systems. Provide temporary waste disposal receptacles.

3.16 VEHICLE/ EQUIPMENT WASHING AREAS

A. Install wash area (stabilized with coarse aggregate) adjacent to stabilized construction exit(s), as required to prevent mud and dirt run-off. Release wash water into drainage swales or inlets protected by erosion and sediment controls. Install gravel or rock base beneath wash areas.

B. Wash vehicles only at designated wash areas. Do not wash vehicles such as concrete delivery trucks or dump trucks and other construction equipment at locations where runoff flows directly into watercourses or storm water conveyance systems.

C. Locate wash areas to spread out and evaporate or infiltrate wash water directly into ground, or collect runoff in temporary holding or seepage basins.

3.17 WATER RUNOFF AND EROSION CONTROL

A. Control surface water, runoff, subsurface water, and water from excavations and structures to prevent damage to the Work, the site, or adjoining properties.

B. Control fill, grading and ditching to direct water away from excavations, pits, tunnels, and other construction areas, and to direct drainage to proper runoff courses to prevent erosion, sedimentation or damage.

C. Provide, operate, and maintain equipment and facilities of adequate size to control surface water.

D. Dispose of drainage water to prevent flooding, erosion, or other damage to the site or adjoining areas. Follow environmental requirements.

E. Retain existing drainage patterns external to the site by constructing temporary earth berms, sedimentation basins, retaining areas, and temporary ground cover as required to control conditions.

F. Plan and execute construction and earth work to control surface drainage from cuts and fills, and from borrow and waste disposal areas, to prevent erosion and sedimentation.

1. Hold area of bare soil exposed at one time to a minimum.

2. Provide temporary controls such as berms, dikes, and drains.

G. Construct fill and waste areas by selective placement to eliminate surface silts or clays which will erode.

H. Inspect earthwork periodically to detect start of erosion. Immediately apply corrective measures as required to control erosion.

I. Dispose of sediments offsite, not in or adjacent to streams or floodplains, nor allow sediments to flush into streams or drainage ways. Assume responsibility for offsite disposal location.

J. Unless otherwise indicated, compact embankments, excavations, and trenches by mechanically blading, tamping, and rolling soil in maximum of 8 inch layers. Provide compaction density at minimum 90 percent Standard Proctor ASTM D-698-78 density. Make at least one test per 500 cubic yards of embankment.

K. Do not maneuver vehicles on areas outside of dedicated rights-of-way and easements for construction. Immediately repair damage to erosion and sedimentation control systems caused by construction traffic.

L. Do not damage existing trees intended to remain.

3.18 REMOVAL OF CONTROLS

A. Remove erosion and sediment controls when the site is finally stabilized or as directed by Engineer.

B. Dispose of sediments and waste products following Section 01504- Temporary Facilities.

END OF SECTION - 01570

Section 01572

SOURCE CONTROLS FOR EROSION AND SEDIMENTATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Description of erosion and sediment control and other control-related practices, which shall be utilized during construction activities.

1.02 UNIT PRICES

A. No separate payment will be made for work performed under this Section. Include cost of work performed under this Section in pay items of which this work is a component.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.01 PREPARATION AND INSTALLATION

A. No clearing and grubbing or rough cutting shall be permitted until erosion and sediment control systems are in place, other than site work specifically directed by the Resident Project Representative to allow soil testing and surveying.

B. Equipment and vehicles shall be prohibited by the Contractor from maneuvering on areas outside of dedicated rights-of-way and easements for construction. Damage caused by construction traffic to erosion and sediment control systems shall be repaired immediately by the Contractor.

C. The Contractor shall be responsible for collecting, storing, hauling, and disposing of spoil, silt, and waste materials as specified in this or other Specifications and in compliance with applicable federal, state, and local rules and regulations.

D. Contractor shall conduct all construction operations under this Contract in conformance with the erosion control practices described in the SWPPP, Drawings, and this Specification.

E. The Contractor shall install, maintain, and inspect erosion and sediment control measures and practices as specified in the SWPPP (if required), Drawings, and in this or other Specifications.

3.02 TOPSOIL PLACEMENT FOR EROSION AND SEDIMENT CONTROL SYSTEMS

A. When topsoil is specified as a component of another Specification, the Contractor shall conduct erosion control practices described in this Specification during topsoil placement operations.

1. When placing topsoil, maintain erosion and sediment control systems, such as swales, grade stabilization structures, berms, dikes, waterways, and sediment basins.

2. Maintain grades which have been previously established on areas to receive topsoil.

3. After the areas to receive topsoil have been brought to grade, and immediately prior to dumping and spreading the topsoil, loosen the subgrade by discing or by scarifying to a depth of at least 2 inches to permit bonding of the topsoil to the subsoil.

4. No sod or seed shall be placed on soil which has been treated with soil sterilants until sufficient time has elapsed to permit dissipation of toxic materials.

3.03 SEDIMENT CONTROL MAINTENANCE

A. All erosion, sediment, and water pollution controls will be maintained in good working order. A rain gauge provided by the Contractor shall be located on the project site. Within 24 hours of a rainfall event of 0.5 inches or more as measured by the project rain gauge, the Contractor and the Resident Project Representative shall inspect the entire project to determine the condition of the control measures. Sediment shall be removed and devices repaired as soon as practicable but no later than 7 days after the surrounding ground has dried sufficiently to prevent further damage from equipment operations needed for repairs.

B. In the event of continuous rainfall over a 24 hour period, or other circumstances that preclude equipment operation in the area, the Contractor shall install additional backup storm water pollution control devices, as determined by the Resident Project Representative, by other appropriate methods. The Contractor shall remove sediment accumulations and deposit the spoils in an area approved by the Resident Project Representative as soon as practical and in accordance with the SWPPP. Any corrective action needed for the control measures is to be accomplished in the sequence directed by the Resident Project Representative; however, areas adjacent to receiving waters shall generally have priority, followed by devices protecting storm sewer inlets.

3.04 DUST CONTROL

A. Implement dust control methods to control dust creation and movement on construction sites and roads and to prevent airborne sediment from reaching receiving streams or storm water conveyance systems, to reduce on-site and off-site damage, to prevent health hazards, and to improve traffic safety.

B. Control blowing dust by using one or more of the following methods:

1. Mulches bound with chemical binders.

2. Temporary vegetative cover.

3. Spray-on adhesives on mineral soils when not used by traffic.

4. Tillage to roughen surface and bring clods to the surface.

5. Irrigation by water sprinkling.

6. Barriers using solid board fences, snow fences, burlap fences, crate walls, bales of straw, or similar materials.

C. Implement dust control methods immediately whenever dust can be observed blowing on the project site.

3.05 KEEPING STREETS CLEAN

A. Keep streets clean of construction debris and mud carried by construction vehicles and equipment. If necessary to keep the streets clean, install stabilized construction exits at construction, staging, storage, and disposal areas. A vehicle/equipment wash area (stabilized with coarse aggregate) may be installed adjacent to the stabilized construction exit, as needed. Release wash water into a drainage swale or inlet protected by erosion and sediment control measures. Construction exit and wash areas are specified in Section 01575 - Stabilized Construction Exit.

B. In lieu of or in addition to stabilized construction exits, shovel or sweep the pavement to the extent necessary to keep the street clean. Waterhosing or sweeping of debris and mud off of the street into adjacent areas is not allowed.

3.06 EQUIPMENT MAINTENANCE AND REPAIR

A. Confine maintenance and repair of construction machinery and equipment to areas specifically designated for that purpose. Locate such areas so that oils, gasoline, grease, solvents, and other potential pollutants cannot be washed directly into receiving streams or storm water conveyance systems. Provide these areas with adequate waste disposal receptacles for liquid as well as solid waste. Clean and inspect maintenance areas daily.

B. On a construction site where designated equipment maintenance areas are not feasible, take precautions during each individual repair or maintenance operation to prevent potential pollutants from washing into streams or conveyance systems. Provide temporary waste disposal receptacles.

3.07 WASTE COLLECTION AND DISPOSAL

A. Contractor shall formulate and implement a plan for the collection and disposal of waste materials on the construction site. In plan, designate locations for trash and waste receptacles and establish a collection schedule. Methods for ultimate disposal of waste shall be specified and carried out in accordance with applicable local, state, and federal health and safety regulations. Make special provisions for the collection and disposal of liquid wastes and toxic or hazardous materials.

B. Keep receptacles and waste collection areas neat and orderly to the extent possible. Waste shall not be allowed to overflow its container or accumulate from day-to-day. Locate trash collection points where they will least likely be affected by concentrated storm water runoff.

3.08 WASHING AREAS

A. Vehicles such as concrete delivery trucks or dump trucks and other construction equipment shall not be washed at locations where the runoff will flow directly into a watercourse or storm water conveyance system. Designate special areas for washing vehicles. Locate these areas where the wash water will spread out and evaporate or infiltrate directly into the ground, or where the runoff can be collected in a temporary holding or seepage basin. Beneath wash areas construct a gravel or rock base to minimize mud production.

3.09 STORAGE OF CONSTRUCTION MATERIALS AND CHEMICALS

A. Isolate sites where chemicals, cements, solvents, paints, or other potential water pollutants are stored in areas where they will not cause runoff pollution.

B. Store toxic chemicals and materials, such as pesticides, paints, and acids in accordance with manufacturers' guidelines. Protect groundwater resources from leaching by placing a plastic mat,

packed clay, tar paper, or other impervious materials on any areas where toxic liquids are to be opened and stored.

3.10 DEMOLITION AREAS

A. Demolition activities which create large amounts of dust with significant concentrations of heavy metals or other toxic pollutants shall use dust control techniques to limit transport of airborne pollutants. However, water or slurry used to control dust contaminated with heavy metals or toxic pollutants shall be retained on the site and shall not be allowed to run directly into watercourses or storm water conveyance systems. Methods of ultimate disposal of these materials shall be carried out in accordance with applicable local, state, and federal health and safety regulations.

3.11 SANITARY FACILITIES

A. Provide and maintain sanitary facilities for persons on the job site; comply with the regulations of State and local departments of health.

B. Enforce the use of sanitary facilities by construction personnel at the job site. Such facilities shall be enclosed. Pit-type toilets will not be permitted. No discharge will be allowed form these facilities. Collect and store sewage and waste so as not to cause a nuisance or health problem; have sewer and waste hauled off-site and properly disposed in accordance with City regulations.

C. Located toilets near the Work site and secluded from view insofar as possible. Keep toilets clean and supplied throughout the course of the Work.

3.12 PESTICIDES

A. Use and store pesticides during construction in accordance with manufacturers' guidelines and with local, state, and federal regulations. Avoid overuse of pesticides which could produce contaminated runoff. Take great care to prevent accidental spillage. Never wash pesticide containers in or near flowing streams or storm water conveyance systems.

END OF SECTION

Section 01573

FILTER FABRIC FENCE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Installation of erosion and sediment control filter fabric fences used during construction and until final development of the site. The purpose of filter fabric fences is to contain pollutants from overland flow. Filter fabric fences are not for use in channelized flow areas.

1.02 UNIT PRICES

A. No separate payment will be made for Filter Fabric Fence under this section. Include payment in unit price for related sections.

1.03 SUBMITTALS

A. Manufacturer's catalog sheets and other product data on geotextile fabric.

1.04 REFERENCES

A. ASTM D3786 - Standard Test Method for Hydraulic Bursting Strength for Knitted Goods and Nonwoven Fabrics

B. ASTM D4632 - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles

PART 2 PRODUCTS

2.01 FILTER FABRIC

A. Provide woven or nonwoven geotextile filter fabric made of either polypropylene, polyethylene, ethylene, or polyamide material.

B. Geotextile fabric shall have a grab strength of 100 psi in any principal direction (ASTM D-4632), Mullen burst strength exceeding 200 psi (ASTM D-3786), and the equivalent opening size between 50 and 140.

C. Filter fabric material shall contain ultraviolet inhibitors and stabilizers to provide a minimum of 6 months of expected usable construction life at a temperature range of 0 degrees F to 120 degrees F.

D. Representative Manufacturers: Mirafi, Inc., or equal.

PART 3 EXECUTION

3.01 PREPARATION AND INSTALLATION

A. Provide erosion and sediment control systems at the locations shown on the SWPPP. Such systems shall be of the type indicated and shall be constructed in accordance with the requirements shown on the Drawings and specified in this Section.

B. No clearing and grubbing or rough cutting shall be permitted until erosion and sediment control systems are in place, other than site work specifically directed by the Resident Project Representative to allow soil testing and surveying.

C. Maintain existing erosion and sediment control systems located within the project site until acceptance of the project or until directed by the Resident Project Representative to remove and discard the existing system.

D. Regularly inspect and repair or replace damaged components of filter fabric fences as specified in this Section. Unless otherwise directed, maintain the erosion and sediment control systems until the project area stabilization is accepted by the City. Remove erosion and sediment control systems promptly when directed by the Resident Project Representative. Discard removed materials off site.

E. Remove sediment deposits and dispose of them at the designated spoil site for the project. If a project spoil site is not designated on the Drawings, dispose of sediment off site at a location not in or adjacent to a stream or floodplain. Off-site disposal is the responsibility of the Contractor. Sediment to be placed at the project site should be spread evenly throughout the site, compacted and stabilized. Sediment shall not be allowed to flush into a stream or drainage way. If sediment has been contaminated, it shall be disposed of in accordance with existing federal, state, and local rules and regulations.

F. Equipment and vehicles shall be prohibited by the Contractor from maneuvering on areas outside of dedicated rights-of-way and easements for construction. Damage caused by construction traffic to erosion and sediment control systems shall be repaired immediately.

G. Conduct all construction operations under this Contract in conformance with the erosion control practices described in Section 01572- Source Controls for Erosion and Sedimentation.

3.02 CONSTRUCTION METHODS

A. Provide filter fabric fence systems in accordance with the Drawing detail for Filter Fabric Fences. Filter fabric fences shall be installed in such a manner that surface runoff will percolate through the system in sheet flow fashion and allow sediment to be retained and accumulated.

B. Attach the filter fabric to steel posts spaced 6 to 8 feet and embedded a minimum of 18 inches. Steel posts shall have a minimum length of 4 feet. If filter fabric is factory preassembled with support netting, then maximum spacing allowable is 8 feet. Install stakes at a slight angle toward the source of anticipated runoff.

C. Trench in the toe of the filter fabric fence with a spade or mechanical trencher so that the downward face of the trench is flat and perpendicular to the direction of flow. The v-trench configuration as shown on the Drawings may also be used. Lay filter fabric along the edges of the trench. Backfill and compact trench.

D. Filter fabric fence shall have a minimum height of 18 inches and a maximum height of 36 inches above natural ground.

E. Provide the filter fabric in continuous rolls and cut to the length of the fence to minimize the use of joints. When joints are necessary, splice the fabric together only at a support post with a minimum 6-inch overlap and seal securely.

F. Inspect sediment filter barrier systems after each rainfall, daily during periods of prolonged rainfall, and at a minimum once each week. Repair or replace damaged sections immediately. Remove sediment deposits when silt reaches a depth one-third the height of the fence or 6 inches, whichever is less.

END OF SECTION

Section 01575

STABILIZED CONSTRUCTION EXIT

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Installation of erosion and sediment control for stabilized construction exits used during construction and until final development of the site.

1.02 SUBMITTALS

A. Manufacturer's catalog sheets and other product data on geotextile fabric.

B. Sieve analysis of aggregates conforming to requirements of this Specification.

1.03 UNIT PRICES

A. No separate payment will be made for work performed under this Section. Include cost of work performed under this Section in pay items for which this work is a component.

1.04 REFERENCES

A. ASTM D 4632 - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.

PART 2 P R O D U C T S

2.01 GEOTEXTILE FABRIC

A. Provide woven or nonwoven geotextile fabric made of either polypropylene, polyethylene, ethylene, or polyamide material.

B. Geotextile fabric shall have a minimum grab strength of 270 psi in any principal direction (ASTM D-4632), and the equivalent opening size between 50 and 140.

C. Both the geotextile and threads shall be resistant to chemical attack, mildew, and rot and shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of 6 months of expected usable life at a temperature range of 0°F to 120°F.

D. Representative Manufacturers: Mirafi, Inc., or equal.

2.02 COARSE AGGREGATES

A. Coarse aggregate shall consist of crushed stone, gravel, crushed blast furnace slag, or a combination of these materials. Aggregate shall be composed of clean, hard, durable materials free from adherent coatings, salt, alkali, dirt, clay, loam, shale, soft or flaky materials, or organic and injurious matter.

B. Coarse aggregates shall conform to the following gradation requirements.

Sieve Size (Square Mesh)	Percent Retained (By Weight)
2-1/2"	0
2"	0 - 20

1-1/2"	15 - 50
3/4"	60 - 80
No. 4	95 - 100

PART 3 EXECUTION

3.01 PREPARATION AND INSTALLATION

A. If necessary to keep the street clean of mud carried by construction vehicles and equipment, Contractor shall provide stabilized construction roads and exits at the construction, staging, parking, storage, and disposal areas. Such erosion and sediment controls shall be constructed in accordance with the details shown on the Drawings and specified in this Section.

B. No clearing and grubbing or rough cutting shall be permitted until erosion and sediment control systems are in place, other than as specifically directed by the Resident Project Representative to allow soil testing and surveying.

C. Maintain existing erosion and sediment control systems located within the project site until acceptance of the project or until directed by the Resident Project Representative to remove and discard the existing system.

D. Regularly inspect and repair or replace components of stabilized construction exits. Unless otherwise directed, maintain the stabilized construction roads and exits until the project is accepted by the City. Remove stabilized construction roads and exits promptly when directed by the Resident Project Representative. Discard removed materials off site.

E. Equipment and vehicles shall be prohibited by the Contractor from maneuvering on areas outside of dedicated rights-of-way and easements for construction. Damage caused by construction traffic to erosion and sediment control systems shall be repaired immediately.

F. Conduct all construction operation under this Contract in conformance with the erosion control practices described in the Specification 01572 - Source Controls for Erosion and Sedimentation.

3.02 CONSTRUCTION METHODS

A. Provide stabilized construction exits, and truck washing areas when approved by Resident Project Representative, of the sizes and locations where shown on SWPPP or as specified in this Section.

B. Vehicles leaving construction areas shall have their tires cleaned to remove sediment prior to entrance onto public right-of-way. When washing is needed to remove sediment, Contractor shall construct a truck washing area. Truck washing shall be done on stabilized areas which drain into a drainage system protected by erosion and sediment control measures.

C. Details for stabilized construction exit shall be shown on the SWPPP. Construction of all other stabilized areas shall be to the same requirements. Roadway width shall be at least 14 feet for one-way traffic and 20 feet for two-way traffic and shall be sufficient for all ingress and egress. Furnish and place geotextile fabric as a permeable separator to prevent mixing of coarse aggregate with underlaying soil. Exposure of geotextile fabric to the elements between laydown and cover shall be a maximum of 14 days to minimize damage potential.

D. Roads and parking areas shall be graded to provide sufficient drainage away from stabilized areas. Use sandbags, gravel, boards, or similar methods to prevent sediment from entering public right-of-way, receiving stream or storm water conveyance system.

E. The stabilized areas shall be inspected and maintained daily. Provide periodic top dressing with additional coarse aggregates to maintain the required depth. Repair and clean out damaged control measures used to trap sediment. All sediment spilled, dropped, washed, or tracked onto public right-of-way shall be removed immediately.

F. The length of the stabilized area shall be as shown on the SWPPP, but not less than 50 feet. The thickness shall not be less than 8 inches. The width shall not be less than the full width of all points of ingress or egress.

G. Stabilization for other areas shall have the same coarse aggregate, thickness, and width requirements as the stabilized construction exit, except where shown otherwise on the SWPPP.

H. Stabilized area may be widened or lengthened to accommodate truck washing area when authorized by Resident Project Representative.

I. Alternative methods of construction may be utilized when shown on SWPPP, or when approved by the Resident Project Representative. These methods include the following:

1. Cement-Stabilized Soil - Compacted cement-stabilized soil or other fill material in an application thickness of at least 8 inches.

2. Wood Mats/Mud Mats - Oak or other hardwood timbers placed edge-to-edge and across support wooden beams which are placed on top of existing soil in an application thickness of at least 6 inches.

3. Steel Mats - Perforated mats placed across perpendicular support members.

END OF SECTION

Section 01576

WASTE MATERIAL DISPOSAL

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Disposal of waste material and salvageable material.

1.02 UNIT PRICES

A. No separate payment will be made for waste material disposal under this Section. Include payment in unit price for related sections.

1.03 SUBMITTALS

A. Submittals shall conform to requirements of Section 01330 - Submittal Procedures.

B. Obtain and submit disposal permits for proposed disposal sites if required by local ordinances.

C. Submit a copy of written permission from property owner, along with description of property, prior to disposal of excess material adjacent to the Project. Submit a written and signed release from property owner upon completion of disposal work.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.01 SALVAGEABLE MATERIAL

A. Excavated Material: When indicated on Drawings, load, haul, and deposit excavated material at a location or locations shown on Drawings outside the limits of Project.

B. Other Salvageable Materials: Conform to requirements of individual Specification Sections.

3.02 EXCESS MATERIAL

A. Vegetation, rubble, broken concrete, debris, asphaltic concrete pavement, excess soil, and other materials not designated for salvage, shall become the property of Contractor and shall be removed from the job site and legally disposed of.

B. Excess soil may be deposited on private property adjacent to the Project when written permission is obtained from property owner. See Paragraph 1.03 C above.

C. Waste materials shall be removed from the site on a daily basis, such that the site is maintained in a neat and orderly condition.

D. All sanitary sewer wastes must be properly pumped into the sanitary sewer collection system. Cleaning of the lift station residue, sand blasting and prior to resurfacing material must be hauled to a City and State approved agency for disposal.

END OF SECTION

SECTION 01578

CONTROL OF GROUND AND SURFACE WATER

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Dewatering, depressurizing, draining, and maintaining trenches, shaft excavations, structural excavations and foundation beds in stable condition, and controlling ground water conditions for tunnel excavations.

B. Protecting work against surface runoff and rising floodwaters.

C. Trapping suspended sediment in the discharge form the surface and ground water control systems.

1.02 MEASUREMENT AND PAYMET

A. Unit Prices

1. Measurement for control of ground water, if included in Bid Form, will be on either a lump sum basis or a linear foot basis for continuous installations of wellpoints, eductor wells, or deep wells.

2. If not included in Bid Form, include the cost to control ground water in unit price for work requiring such controls.

3. No separate payment will be made for control of surface water. Include cost to control surface water in unit price for work requiring controls.

4. Follow Section 01270 – Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum) Contract. If the Contract is a Stipulated Price Contract, include payment for work under this section in the total Stipulated Price.

1.03 REFERENCES

A. ASTM D 698 - Standard Test Methods for Laboratory Compaction of Soils Using Standard Effort (12,400 ft-lbf/ft3 (600kN-m/m3)

B. Federal Regulations, 29 CFR Part 1926, Standards-Excavation, Occupational Safety and Health Administration (OSHA)

1.04 DEFINITIONS

A. Ground water control system: system used to dewater and depressurize water-bearing soil layers.

1. Dewatering: lowering the water table and intercepting seepage that would otherwise emerge from slopes or bottoms of excavations, or into tunnels and shafts; and disposing of removed water. Intent of dewatering is to increase stability of tunnel excavations and excavated slopes, prevent dislocation of material from slopes or bottoms of excavations, reduce lateral loads on sheeting and bracing, improve excavating and hauling characteristics of excavated material, prevent failure or heaving of bottom of excavations, and to provide suitable conditions for placement of backfill materials and construction of

structures and other installations.

2. Depressurization: includes reduction in piezometric pressure within strata not controlled by dewatering alone, necessary to prevent failure or heaving of excavation bottom or instability of tunnel excavations.

B. Excavation drainage: includes keeping excavations free of surface and seepage water.

C. Surface drainage: includes use of temporary drainage ditches and dikes and installation of temporary culverts and sump pumps with discharge lines necessary to protect Work from any source of surface water.

D. Monitoring facilities for ground water control system: includes piezometers, monitoring wells and flow meters for observing and recording flow rates.

1.05 PERFORMANCE REQUIREMENTS

A. Conduct subsurface investigations to identify groundwater conditions and to provide parameters for design, installation, and operation of groundwater control systems. Submit proposed method and spacing of readings for review prior to obtaining water level readings.

B. Design ground water control system, compatible with requirements of Federal Regulations 29 CFR Part 1926 and Section 02260 - Trench Safety Systems, to produce following results:

1. Effectively reduce hydrostatic pressure affecting:

a. Excavations

b. Tunnel excavation, face stability or seepage into tunnels

2. Develop substantially dry and stable subgrade for subsequent construction operations.

3. Preclude damage to adjacent properties, buildings, structures, utilities, installed facilities and other work.

4. Prevent loss of fines, seepage, boils, quick condition, or softening of foundation strata.

5. Maintain stability of sides and bottom of excavations.

C. Provide ground water control systems that include single-stage or multiple stage well point systems, eductor and ejector-type systems, deep wells, or combinations of these equipment types.

D. Provide drainage of seepage water and surface water, as well as water from other sources entering excavation. Excavation drainage may include placement of drainage materials, gravel filter fabric, together with sump pumping.

E. Provide ditches, berms, pumps and other methods necessary to divert and drain surface water from excavation and other work areas.

F. Locate ground water control and drainage systems so as not to interfere with utilities, construction operations, adjacent properties, or adjacent water wells.

G. Assume sole responsibility for ground water control systems and for any loss or damage

resulting from partial or complete failure of protective measures and settlement or resultant damage caused by ground water control operations. Modify ground water control systems or operations if they cause or threaten to cause damage to new construction, existing site improvements, adjacent property, adjacent water wells, or potentially contaminated areas. Repair damage caused by ground water control systems or resulting from failure of system to protect property as required.

H. Install an adequate number of piezometers installed at proper locations and depths, necessary to provide meaningful observations of conditions affecting excavation, adjacent structures and water wells.

I. Install environmental monitoring wells at proper locations and depths necessary to provide adequate observations of hydrostatic conditions and possible contaminant transport from contamination sources into work area or ground water control system.

1.06 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittals Procedures.

B. Submit Ground Water and Surface Water Control Plan for review by Engineer prior to start of excavation work. Include the following:

1. Results of subsurface investigations and description of extent and characteristics of water bearing layers subject to ground water control.

2. Names of equipment Suppliers and installation Subcontractors.

3. Description of proposed ground water control systems indicating arrangement, location, depth and capacities of system components, installation details and criteria and operation and maintenance procedures.

4. Description of proposed monitoring facilities indicating depths and locations of piezometers and monitoring wells, monitoring installation details and criteria, type of equipment and instrumentation with pertinent data and characteristics.

5. Description of proposed filters including types, sizes, capacities and manufacturer's application recommendations.

6. Design calculations demonstrating adequacy of proposed systems for intended applications. Define potential area of influence of ground water control operation near contaminated areas.

7. Operating requirements, including piezometric control elevations for dewatering and depressurization.

8. Excavation drainage methods including typical drainage layers, sump pump application and other means

9. Surface water control and drainage installations

10. Proposed methods and locations for disposing of removed water

C. Submit following records upon completion of initial installation:

1. Installation and development reports for well points, eductors, and deep wells.

2. Installation reports and baseline readings for piezometers and monitoring wells.

3. Baseline analytical test data of water from monitoring wells.

4. Initial flow rates

D. Submit the following records weekly during control of ground and surface water operations:

1. Records of flow rates and piezometric elevations obtained during monitoring of dewatering and depressurization. Refer to Paragraph.

2. Maintenance records for ground water control installations, piezometers and monitoring wells

1.07 ENVIRONMENTAL REQUIREMENTS

A. Comply with requirements of agencies having jurisdiction.

B. Comply with Texas Commission on Environmental Quality regulations and Texas Water Well Drillers Association for development, drilling, and abandonment of wells used in dewatering system.

C. Obtain necessary permits from agencies with jurisdiction over use of groundwater and matters affecting well installation, water discharge, and use of existing storm drains and natural water sources. Since review and permitting process may be lengthy, take early action to obtain required approvals.

D. Monitor ground water discharge for contamination while performing pumping in vicinity of potentially contaminated sites.

PART 2 P R O D U C T S

2.01 EQUIPMENT AND MATERIALS

A. Select equipment and materials necessary to achieve desired results for dewatering. Selected equipment and materials are subject to review by Engineer through submittals required in Paragraph 1.06, Submittals.

B. Use experienced contractors, regularly engaged in ground water control system design, installation, and operation, to furnish and install and operate eductors, well points, or deep wells, when needed.

C. Maintain equipment in good repair and operating condition.

D. Keep sufficient standby equipment and materials available to ensure continuous operation, where required.

E. Portable Sediment Tank System: Standard 55-gallon steel or plastic drums, free of hazardous material contamination.

1. Shop or field fabricate tanks in series with main inlet pipe, inter-tank pipes and discharge pipes, using quantities sufficient to collect sediments from discharge water.

PART 3 E X E C U T I O N

3.01 GROUND WATER CONTROL

A. Perform necessary subsurface investigation to identify water bearing layers, piezometric pressures and soil parameters for design and installation of ground water control

systems. Perform pump tests, if necessary to determine draw down characteristics. Present results in the Ground Water and Surface Water Control Plan.

B. Provide labor, material, equipment, techniques and methods to lower, control and handle ground water in manner compatible with construction methods and site conditions. Monitor effectiveness of installed system and its effect on adjacent property.

C. Install, operate, and maintain ground water control systems in accordance with the Ground Water and Surface Water Control Plan. Notify Engineer in writing of changes made to accommodate field conditions and changes to Work. Provide revised drawings and calculations with notification.

D. Provide continuous system operation, including nights, weekends, and holidays. Arrange appropriate backup if electrical power is primary energy source for dewatering system.

E. Monitor operations to verify systems lower ground water piezometric levels at rate required to maintain dry excavation resulting in stable subgrade for subsequent construction operations.

F. Depressurize zones where hydrostatic pressures in confined water bearing layers exist below excavations to eliminate risk of uplift or other instability of excavation or installed works. Define allowable piezometric elevations in the Ground Water and Surface Water Control Plan.

G. Removal of ground water control installations.

1. Remove pumping system components and piping when ground water control is no longer required.

2. Remove piezometers, including piezometers installed during design phase investigations and left for Contractor's use, upon completion of testing, as required in accordance with Part 3 of applicable specification.

3. Remove monitoring wells when directed by Engineer.

4. Grout abandoned well and piezometer holes. Fill piping that is not removed with cement-bentonite grout or cement-sand grout.

H. During backfilling, maintain water level a minimum of 5 feet below prevailing level of backfill. Do not allow the water level to cause uplift pressures in excess of 80 percent of downward pressure produced by weight of structure or backfill in place. Do not allow water levels to rise into cement-stabilized sand until at least 48 hour after placement.

I. Provide uniform pipe diameter for each pipe drain run constructed for dewatering. Remove pipe drains when no longer required. If pipe removal is impractical, grout connections at 50-foot intervals and fill pipe with cement bentonite grout or cement-sand grout after removal from service.

J. The extent of ground water control for structures with permanent perforated underground drainage systems may be reduced, for units designed to withstand hydrostatic uplift pressure. Provide a means to drain affected portions of underground systems, including standby equipment. Maintain drainage systems during construction operations.

K. Remove systems upon completion of construction or when dewatering and control of surface or ground water is no longer required.

L. Compact backfill to not less than 95 percent of maximum dry density in accordance with ASTM D 698.

M. Foundation Slab: Maintain saturation line at least 3 feet below lowest elevations where concrete is to be placed. Drain foundations in areas where concrete is to be placed before placing reinforcing steel. Keep free from water for 3 days after concrete is placed.

3.02 REQUIREMENTS FOR EDUCTOR, WELL POINTS, OR DEEP WELLS

A. For aboveground piping in ground water control system, include a 12-inch minimum length of clear, transparent piping between each eductor well or well point and discharge header to allow visual monitoring of discharge from each installation.

B. Install sufficient piezometers or monitoring wells to show that trench or shaft excavations in water bearing materials are pre-drained prior to excavation. Provide separate piezometers for monitoring of dewatering and for monitoring of depressurization. Install piezometers and monitoring wells for tunneling as appropriate for selected method of work.

C. Install piezometers or monitoring wells at least one week in advance of the start of associated excavation.

D. Dewatering may be omitted for portions of under drains or other excavations, where auger borings and piezometers or monitoring wells show that soil is pre-drained by existing systems and that ground water control plan criteria are satisfied.

E. Replace installations that produce noticeable amounts of sediments after development.

F. Provide additional ground water control installations, or change method of control if, ground water control plan does not provide satisfactory results based on performance criteria defined by plan and by specifications. Submit revised plan according to Paragraph 1.06B.

3.03 SEDIMENT TRAPS

A. Install sediment tank as shown on approved plan.

B. Inspect daily and clean out tank when one-third of sediment tank is filled with sediment.

3.04 SEDIMENT SUMP PIT

A. Install sediment sump pits as shown on approved plan.

B. Construct standpipe by perforating 12 inch to 24-inch diameter corrugated metal or PVC pipe.

C. Extend standpipe 12 inches to 18 inches above lip of pit.

D. Convey discharge of water pumped from standpipe to sediment trapping device.

E. Fill sites of sump pits, compact to density of surrounding soil and stabilize surface when construction is complete.

3.05 EXCAVATION DRAINAGE

A. Use excavation drainage methods if well-drained conditions can be achieved. Excavation drainage may consist of layers of gravel and filter fabric, and sump pumping, in combination with sufficient ground water control wells to maintain stable excavation and backfill conditions.

3.06 MAINTENANCE AND OBSERVATION

A. Conduct daily maintenance and observation of piezometers or monitoring wells while ground water control installations or excavation drainage is operating at the site, or water is seeping into tunnels, and maintain systems in good operating condition.

B. Replace damaged and destroyed piezometers or monitoring wells with new piezometers or wells as necessary to meet observation schedules.

C. Cut off piezometers or monitoring wells in excavation areas where piping is exposed, only as necessary to perform observation as excavation proceeds. Continue to maintain and make specified observations.

D. Remove and grout piezometers inside or outside of excavation area when ground water control operations are complete. Remove and grout monitoring wells when directed by Engineer.

3.07 MONITORING AND RECORDING

A. Monitor and record average flow rate of operation for each deep well, or for each wellpoint or eductor header used in dewatering system. Also, monitor and record water level and ground water recovery. Record observations daily until steady conditions are achieved and twice weekly thereafter.

B. Observe and record elevation of water level daily as long as ground water control system is in operation, and weekly thereafter until Work is completed or piezometers or wells are removed, except when Engineer determines more frequent monitoring and recording are required. Comply with Engineer's direction for increased monitoring and recording and take measures necessary to ensure effective dewatering for intended purpose.

3.08 SURFACE WATER CONTROL

A. Intercept surface water and divert it away from excavations through use of dikes, ditches, curb walls, pipes, sumps or other approved means. Requirement includes temporary works required to protect adjoining properties from surface drainage caused by construction operations.

B. Divert surface water and seepage water into sumps and pump it into drainage channels or storm drains, when approved by agencies having jurisdiction. Provide settling basins when required by agencies.

END OF SECTION – 01578

SECTION 01770

CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Procedures to establish Date of Substantial Completion.

B. Closeout procedures for final submittals, O&M data, warranties, spare parts and maintenance materials.

C. Texas Department of Licensing and Regulation (TDLR) inspection for Texas Accessibility Standards (TAS) compliance.

1.02 SUBSTANTIAL COMPLETION

A. Date of Substantial Completion when Contractor considers the Work, or portion thereof designated by Engineer, to be substantially complete.

B. Insure the following items have been completed when included in the Work, prior to presenting a list of items to be inspected by Engineer for issuance of a Certificate of Substantial Completion:

1. cutting, plugging, and abandoning of water, wastewater, and storm sewer lines, as required by Contract documents for each item;

2. construction of, and repairs to, pavement, driveways, sidewalks, and curbs and gutters;

3. sodding and hydromulch seeding, unless waived by Engineer in writing;

4. general clean up including pavement markings, transfer of services, successful testing and landscape;

5. additional requirements contained in Section 01110 - Summary of Work.

C. Assist Engineer with inspection of Contractor's list of items and complete or correct the items, including items added by Engineer, within specified time period.

D. Should Engineer's inspection show failure of Contractor to comply with requirements to obtain Date of Substantial Completion, including those items in Paragraph 1.02 B. of this section, Contractor shall complete or correct the items, before requesting another inspection by Engineer.

1.03 CLOSEOUT PROCEDURES

A. Comply with General Conditions regarding final completion and final payment when the Work is complete and ready for Engineer's final inspection.

B. Provide Project Record Documents.

C. Complete or correct items on punch list, with no new items added. Address new items during warranty period.

D. The Owner will occupy portions of the Work as specified in other sections.

1.04 FINAL CLEANING

A. Execute final cleaning prior to final inspection.

B. For facilities, clean interior and exterior glass and surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

C. Clean equipment and fixtures to sanitary condition.

D. Clean or replace filters of operating equipment.

E. Clean debris from roofs, gutters, down spouts, and drainage systems.

F. Clean site; sweep paved areas, and rake clean landscaped surfaces.

G. Remove waste and surplus materials, rubbish, and temporary construction facilities from site following final test of utilities and completion of the Work.

1.05 ADJUSTING

A. Adjust operating equipment to ensure smooth and unhindered operation. Value of this testing and adjusting is five percent of Lump Sum Price in the Schedule of Values for item being tested.

1.06 OPERATION AND MAINTENANCE DATA

A. Submit O&M data as noted in Section 01330 - Submittal Procedures.

B. Five percent of lump sum amount of each piece of equipment as indicated in Schedule of Unit Price Work or Schedule of Values will be paid after the required O&M data submittals are received and approved by Engineer.

1.07 WARRANTIES

A. Provide one original of each warranty from Subcontractors, Suppliers, and manufacturers.

B. Provide Table of Contents and assemble warranties in a 3-ring/D binder with durable plastic cover.

C. Submit warranties prior to final progress payment.

D. Warranties shall commence in accordance with the requirements in the General Conditions.

1.08 SPARE PARTS AND MAINTENANCE MATERIALS

A. Provide Products, spare parts, maintenance and extra materials in quantities specified in individual Specification sections.

B. Deliver to a location within the City limits as directed by Engineer. Applicable items must be delivered prior to issuance of a final Certificate for Payment.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION - 01770

Section 01785

PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Maintenance and Submittal of Project Record Documents and samples.

1.02 MAINTENANCE OF DOCUMENTS AND SAMPLES

A. Maintain one record copy of documents at the site in accordance with Document 00700 - General Conditions.

B. Store Record Documents and samples in Contractor's field office if a field office is required by Contract Documents, or in a secure location. Provide files, racks, and secure storage for Record Documents and samples.

C. Label each document "PROJECT RECORD" in neat, large, printed letters.

D. Maintain Record Documents in a clean, dry, and legible condition. Do not use Record Documents for construction purposes.

E. Keep Record Documents and Samples available for inspection by Resident Project Representative.

1.03 RECORDING

A. Record information concurrently with construction progress. Do not conceal any work until required information is recorded.

B. Contract Drawings and Shop Drawings: Legibly mark each item to record all actual construction, or "as built" conditions, including:

1. Measured depths of elements of foundation in relation to finish first floor datum.

2. Measured horizontal locations and elevations of underground utilities and appurtenances, referenced to permanent surface improvements.

3. Elevations of underground utilities referenced to bench mark utilized for project.

4. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of construction.

5. Field changes of dimension and detail.

6. Changes made by modifications.

7. Details not on original contract drawings.

8. References to related shop drawings and modifications.

C. Record information with a red felt-tip marking pen on a set of blue or black line opaque drawings, provided by Engineer.

1.04 SUBMITTALS

A. At contract closeout, deliver Project Record Documents to Engineer.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Division 2
Site Work

Section 02040

SEEDING FOR EROSION CONTROL

PART 1 GENERAL

1.01 SECTION INCLUDES

A. "Seeding for Erosion Control" shall consist of preparing ground, providing for sowing of seeds, mulching with straw, hay or cellulose fiber and other management practices along and across such areas as are designated on the plans and in accordance with these specifications.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for square yard of ground cover using manufacturer recommended application rates.

2. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

PART 2 PRODUCTS

2.01 GENERAL

A. All seed must meet the requirements of the Texas Seed Law including the labeling requirements for showing pure live seed, (PLS = Purity x Germination), name and type of seed.

B. Additional materials required shall be provided as required.

2.02 SEED

A. Seed furnished shall be of the previous season's crop and the date of analysis shown on each bag shall be within nine months of the time of use on the project.

B. Each variety of seed shall be furnished and delivered in separate bags or containers.

C. A sample of each variety of seed shall be furnished for analysis and testing when directed by the Engineer.

D. Buffalo grass shall be treated with a fungicide approved the Engineer.

E. The amount of seed planted per acre shall be of the type listed in the Table below.

Common Name	Scientific Name
Green Spragletop	Leptochloa dubia
Sidoats Grama (El Reno or Premier)	Boutleoua gracilis
Blue Grama (Texas Grown)	Bouteloua gracilis

Buffalo grass (Treated)	Buchloe dactyloides
Western Wheat grass	Agropyron smithii
Blackwell Switchgrass	Panicum virgatum
Caucasian Bluestem	Andropogon caucasicus
K.R. Bluestem	Andropogon lehmanniana
Lehmann Love grass	Pennisetum ciliare
Rhodegrass	Chloris gayana
Bermuda and Giant Bermunda Grass (Hulle)	Cynodon dactylon
Sand Dropseed	Sporobolus cryptandrum
Bahiagrass (Pensacola)	Paspalum noatum
Weeping Lovegrass	Eragrotis curvula
Sand Bluestem	Andropogon hallii

PART 3 E X E C U T I O N

3.01 PLANTING SEASON

A. All Planting shall be done between the dates specified for each highway district except as specifically authorized in writing

B. The pure live seed planted per acre shall be of the type specified with the mixture, rate and planting dates as follows except as specifically shown on plans.

a. September 15 to March 1: Seeding to be with combination of 2 pounds per 1,000 square feet of un-hulled Bermuda grass (Cynoden Dactolyn) and 2 pounds per 1,000 square feet of winter rye with a purity of 95% germination.

b. March 2 to September 14: Seeding to be with hulled Bermuda grass (Cynoden Dactolyn) at a rate of 2 pounds per 1,000 square feet with a purity of 95% with 85% germination.

END OF SECTION

SECTION 02200
EARTHWORK & SITE GRADING

PART 1 - GENERAL

1.1 SCOPE

A. Perform all work required to complete the project as indicated by the Contract Documents, and furnish all supplementary items necessary for the completion of all work specified in this Section.

B. The work included in this Section shall include furnishing all labor, tools, materials and incidentals required to complete the work; excavate and fill to the lines, elevations and limits shown on the drawings for all pavements, buildings, landscaped areas, etc. as indicated below and cleaning up. The landscaped areas shall be graded to an elevation 6 inches below finished grade allowing for topsoil placement. The pavement areas shall be graded to an elevation below finished grade allowing for pavement placement. Building foundation areas shall be prepared in accordance with the geotechnical investigation and these specifications. The Contractor shall comply with all requirements of the city standards, the E.P.A. requirements and with the standards and specifications stated herein. All earthwork shall be done in accordance with the Geotechnical Investigation.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 02100 - Site Clearing
B. Section 02270 - Soil Erosion and Sediment Control
B. Section 02515 - Portland Cement Concrete Paving

1.3 QUALITY ASSURANCE

A. Codes and Standards

1. Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction. The contractor shall have a trench safety plan prepared by a registered professional engineer for all excavations in excess of 5 feet deep.

B. Testing and Inspection Service

1. The owner will engage a soil testing and inspection service for quality control testing during earthwork operations to inspect and test all soil materials proposed for use in all excavation and fill operations.

1.4 JOB CONDITIONS

A. Existing Utilities

1. It shall be the Contractor's responsibility to verify the location (horizontal and vertical depth) of all utilities prior to beginning earthwork operations. If utilities are to remain in place, provide protection from damage during construction operations.

2. Should uncharted or incorrectly charted piping or other utilities be encountered during excavation, consult owner immediately for directions as to how to proceed. Cooperate with owner, public and private utility companies in keeping services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.

3. Do not interrupt existing utilities serving facilities occupied and used by owner or adjacent properties, except when permitted in writing by property owner and then only after temporary utility services have been provided.

B. Use of Explosives

1. The use of explosives is not permitted.

C. Protection of Persons and Property

1. Barricade open excavations occurring as part of this work and post with warning lights. Provide traffic control as required by the city and as required to protect the public.

2. Protect structures, utilities, sidewalks, pavements, and other facilities from damages caused by settlement, lateral movement, undermining, washout and other hazards created by excavation operations.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. Fill Material:

1. Onsite excavated material free from trash, vegetation, rocks and lumps of earth larger than 4 inches in diameter or other objectionable material. Imported fill, if required, shall also be clean and have a liquid limit less than 50 percent.

B. Select Material:

1. Uniformly blended clayey sand to very sandy with a plasticity index between 6 and 15 and liquid limit of less than 35 percent.

PART 3 - EXECUTION

3.1 INSPECTION

A. Examine the areas and conditions under which earthwork and site grading operations are to be performed. After excavation to subgrade, proofroll with a heavy pneumatic tired roller, loaded dump truck or similar equipment weighing approximately 25 tons or greater to help compact pockets of loose soil and expose additional areas of weak, soft or wet soils in the presence of the owner's representative. Do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.

3.2 EXCAVATION

A. The Contractor shall excavate to the lines and elevations shown on the drawings, as previously indicated herein, regardless of the type, condition, or moisture content of the material encountered. Conduct excavation operations to provide positive drainage, at contractor's expense, at all times during construction. If positive drainage cannot be maintained, contractor shall keep standing water out of all excavations with adequate dewatering equipment.

B. All areas shall be cut accurately to the indicated grades. Care shall be taken to prevent excavation below the grades indicated and any bottoms or slopes that have been undercut shall be backfilled with approved materials and compacted to the required fill density.

C. Excavation required for rough grading shall be finished within a tolerance of 0.10 foot above or below the rough grade and in no case shall depressions be left that will not completely drain.

3.3 BUILDING SUBGRADE

A. Follow recommendations in geotechnical report and on the structural drawings.

3.4 FILLING

A. Remove all vegetation, organic materials and debris prior to placing fill.

B. Fill used below the parking and landscape areas shall be onsite soils encountered in the excavation or imported fill except grass, weeds, roots, vegetation and similar materials. The largest rock, particle or clod shall be less than 4 inches in diameter prior to compaction.

C. Care should be taken that utility cuts are not left open for extended periods and that cuts are properly backfilled. A positive cut-off of 1' thick compacted clay at the building line shall be used to help prevent water from migrating in the utility trench.

D. Before fill is placed under pavement or if subgrade is in an excavation, subgrade soils shall be scarified to a depth of 8" and recompacted between 93 and 98 percent of maximum dry density per ASTM D698 at a moisture content from +2 to +5 percent above optimum moisture content.

E. Fill below all pavement and landscaped areas shall be placed in 6 to 8 inch loose lifts and compacted to a minimum dry density of 95 percent of the standard proctor density (ASTM D698) under pavement and 90 percent elsewhere. The moisture content shall be between -1 and +3 percent above optimum.

F. Compaction shall be obtained by use of sheeps foot rollers, rubber-tired rollers, or other approved equipment capable of obtaining the required density. In the event the embankment material is too wet or too dry for adequate compaction, the contractor shall add moisture or dry the material as required to the extent necessary to obtain the required density.

3.5 PAVEMENT SUBGRADE

A. Construct subgrades for paved areas to conform to the grades, lines and cross sections shown on the drawings and per the recommendations in the geotechnical report.

B After the pavement subgrades have been shaped and compacted, bring the surface to a firm, unyielding surface by rolling the entire area with an approved vibratory roller. Compact all areas inaccessible to the roller with hand tampers weighing not less than 50 pounds, and with face area not more than 100-square-inches. Unless the material at the time of the rolling contains sufficient moisture to insure proper compaction, add water as directed before compacting. Allow the material containing excess moisture to dry to the proper consistency and moisture content before being compacted.

3.6 MOISTURE CONTROL

A. Where soil material must be moisture conditioned before compaction, uniformly apply required amount of water to surface of soil material in such manner as to prevent free water appearing on surface during, or subsequent to, compaction operations.

B. Remove and replace, or scarify and air dry soil material that is too wet to permit compaction to specified percentage of maximum density.

C. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread on surface where directed by owner's representative and permitted to dry. Assist drying by discing, harrowing or pulverizing until moisture-density relation tests fall within the herein-specified range.

3.7 FIELD QUALITY CONTROL

A. Quality Control Testing During Construction

1. Testing laboratory services shall be in accordance with section 01410.
2. Allow owner's testing service to inspect and approve subgrades and fill layers before further construction work is performed. In the building areas, there will be at least 1 density test per 2500 square feet per lift with a minimum of 3. In the pavement areas there will be at least 1 density test per 5000 square feet per lift with a minimum of 3.
3. If, in the opinion of the owner, based on testing service and inspection, the subgrade or fills which have been placed are below the specified density, the contractor shall provide additional compaction and testing at no additional expense to the owner.
4. The results of density tests which may be selected will be considered satisfactory when they are in each instance equal to or greater than the specified density, and if not more than 1 density test out of 5 has a value greater than 2% below the required density.

3.8 MAINTENANCE

A. Protection of Graded Areas

1. Protect newly graded areas from traffic and erosion. Keep free of trash and debris.
2. Repair and re-establish grades in settled, eroded, and rutted areas to the specified tolerances.

B. Reconditioning Compacted Areas

1. Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify the surface, reshape, and compact to the required density prior to further construction. Use hand tamping for recompaction over underground utilities.

3.8 DISPOSAL OF EXCESS AND WASTE MATERIALS

Remove all excess excavation, trash, debris and waste materials, and legally dispose of off the owner's property, at no additional cost.

END OF SECTION

Section 02233

CLEARING AND GRUBBING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Removing surface debris and rubbish.

B. Clearing site of plant life and grass.

C. Removing trees and shrubs.

D. Removing root system of trees and shrubs.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. No Separate payment will be made for work performed under this Section. Include cost of work performed under this Section in pay items for which this work is a component.

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 REGULATORY REQUIREMENTS

A. Conform to applicable codes for disposal of debris.

B. Coordinate clearing work with utility companies.

1.04 SUBMITTALS

A. Conform to the requirements of Section 01330 – Submittal Procedures.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.01 PREPARATION

A. Verify that existing plant life and features designated to remain are identified and tagged. Submit preconstruction photographs in accordance with the applicable portions of Section 01321 – Construction Photographs.

3.02 PROTECTION

A. Protect the following from damage or displacement:

1. Living trees located 3 feet or more outside of the intersection of side slopes and original ground line.

2. Plants other than trees and landscape features designated to remain.

3. Utilities designated to remain.

4. Bench marks, monuments, and existing structures designated to remain.

3.03 CLEARING

A. Remove stumps, main root ball, and root system to:

1. A depth of 24 inches below the finished subgrade elevation in the area bounded by lines two feet behind back of curbs.

2. A depth of 24 inches below the finished surface of the required cross section for other areas.

B. Clear undergrowth and deadwood without disturbing subsoil.

C. Remove vegetation from top soil scheduled for reuse.

3.04 REMOVAL

A. Remove debris, rubbish, and extracted plant material life from the site in accordance with requirements of Section 01576 - Waste Material Disposal.

END OF SECTION

SECTION 02270
SOIL EROSION AND SEDIMENT CONTROL

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Furnish all labor, materials, tools, equipment, and services for all soil erosion and sediment control, as indicated, in accord with provisions of Contract Documents.

B. Completely coordinate with work of all other trades.

C. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation in order to meet the United States Environmental Protection Agency requirements.

1.2 QUALITY ASSURANCE

A. Erosion Control Standards:

1. United States Environmental Protection Agency, National Pollutant Discharge Elimination System (NPDES) - Storm Water Management for Construction Activities.

2. North Central Texas Council of Governments (NCTCOG) - Storm Water Quality Best Management Practices for Construction Activities.

1.3 EROSION CONTROL PRINCIPLES:

A. Perform demolition, construction and other soil disturbances in a manner which minimizes soil erosion.

B. Retain and protect existing vegetation as much as is feasible.

C. Keep area which is exposed and free of vegetative cover to a minimum, within practical limits.

D. Protect exposed critical areas during prolonged construction or other land disturbance by temporary seeding, mulching or other suitable stabilization measures.

1.4 JOB CONDITIONS:

A. Comply with all requirements of the EPA for implementation of the storm water pollution prevention plan, under the NPDES General Permits for Storm Water Discharges from Construction Sites.

1.5 SUBMITTALS

A. Project Information:

1. Submit copy of NPDES Storm Water Permit for Construction Activities to Owner prior to construction.

PART 2 - PRODUCTS

2.1 MATERIALS:

A. Filter Fabric: Sediment control silt fabrics, AMOCO Style #2125 or approved equal.

B. Crushed stone.

C. Metal clips or ties.

D. Steel fence posts.

E. Grass Seed: annual ryegrass or Bermuda depending on the season.

F. Concrete block.

G. Wire screen.

PART 3 - EXECUTION

3.1 BEGINNING CONSTRUCTION

A. Prior to general demolition, install temporary silt fences and stabilized construction entrance as indicated on the storm water pollution prevention plan or where directed by Owner.

B. Construct erosion control devices in accordance with the storm water pollution prevention plan and as directed by the Owner during demolition and as demolition progresses.

C. Seed disturbed areas where construction activities temporarily cease at rate necessary to achieve a full stand of grass. Reseed as required until good stand of grass is achieved.

3.2 DURING CONSTRUCTION

A. Maintain temporary silt fences.

B. Inspect regularly, especially after rainstorms.

C. Repair or replace damaged or missing items.

D. Sow temporary grass cover over disturbed areas where construction activities temporarily cease for more than 21 days and as required by NPDES permit.

E. Install inlet protection as indicated by the storm water pollution prevention plan at each inlet.

F. Provide swales and dikes as necessary to direct all water towards a protected device.

G. Do not disturb existing vegetation (grass and trees) outside limits of demolition.

H. Remove sediment from behind temporary silt fences when it reaches a depth of 6 in.

3.3 COMPLETION OF CONSTRUCTION AND STABILIZATION OF THE SITE

A. Remove from site all temporary erosion control devices.

END OF SECTION

Section 02316

EXCAVATION AND BACKFILL FOR STRUCTURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Clearing and grubbing, excavation, backfilling, and compaction of backfill for structures.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. No payment will be made for structural excavation and backfill under this Section. Include payment in unit price or lump sum for construction of structures.

2. No separate or additional payment will be made for clearing and grubbing, surface water control, ground water control, or for excavation drainage. Include in the unit price or lump sum construction of structures.

3. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 DEFINITIONS

A. Unsuitable Material: Unsuitable soil materials are the following:

1. Materials that are classified as ML, CL-ML, MH, PT, OH, and OL according to ASTM D 2487.

2. Materials that cannot be compacted to the required density due to either gradation, plasticity, or moisture content.

3. Materials that contain large clods, aggregates, stones greater than 4 inches in any dimension, debris, vegetation, waste or any other deleterious materials.

4. Materials that are contaminated with hydrocarbons or other chemical contaminants.

B. Suitable Material: Suitable soil materials are those meeting specification requirements. Unsuitable soils meeting specification requirements for suitable soils after treatment with lime or cement shall be considered suitable, unless otherwise indicated.

C. Select Material: Material as defined in Section 02320 - Utility Backfill Materials.

D. Backfill: Select material meeting specified quality requirements, placed and compacted under controlled conditions around structures.

E. Foundation Backfill Materials: Natural soil or manufactured aggregate meeting Class I requirements and geotextile filter fabrics as required, to control drainage and material separation. Foundation backfill material is placed and compacted as backfill where needed to provide stable support for the structure foundation base. Foundation backfill materials may include concrete fill and seal slabs.

F. Foundation Base: For foundation base material, use crushed stone aggregate with filter fabric as required, cement stabilized sand, or concrete seal slab. The foundation base provides a smooth, level working surface for the construction of the concrete foundation.

G. Foundation Subgrade: Foundation subgrade is the surface of the natural soil which has been excavated and prepared to support the foundation base or foundation backfill, where needed.

H. Ground Water Control Systems: Installations external to the excavation such as well points, eductors, or deep wells. Ground water control includes dewatering to lower the ground water, intercepting seepage which would otherwise emerge from the side or bottom of the excavation, and depressurization to prevent failure or heaving of the excavation bottom. Refer to Section 01578 - Control of Ground Water and Surface Water.

I. Surface Water Control: Diversion and drainage of surface water runoff and rain water away from the excavation. Remove rain water and surface water which accidentally enters the excavation as a part of excavation drainage.

J. Excavation Drainage: Removal of surface and seepage water in the excavation by sump pumping and using French drains surrounding the foundation to intercept the water.

K. Over-Excavation and Backfill: Excavation of subgrade soils with unsatisfactory bearing capacity or composed of otherwise unsuitable materials below the foundation as shown on Drawings, and backfilled with foundation backfill material.

L. Shoring System: A structure that supports the sides of an excavation to maintain stable soil conditions and prevent cave-ins.

1.04 REFERENCES

A. ASTM D 558 - Test Methods for Moisture-Density Relations of Soil Cement Mixtures.

B. ASTM D 698 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, using 5.5-lb (2.49-kg) Rammer and 12-in. (304.88-mm) Drop.

C. ASTM D 1556 - Density of Soil in Place by the Sand-Cone Method.

D. ASTM D 2487 - Classification of Soils for Engineering Purposes.

E. ASTM D 2922 - Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

F. ASTM D 3017 - Test Method for Moisture Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depths).

G. ASTM D 4318 - Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

H. TxDOT Tex-101-E - Preparation of Soil and Flexible Base Materials for Testing.

I. TxDOT Tex-110-E - Determination of Particle Size Analysis of Soils.

J. Federal Regulations, 29 CFR, Part 1926, Standards - Excavation, Occupational Safety and Health Administration (OSHA).

1.05 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit a work plan for excavation and backfill for each structure with complete written description which identifies details of the proposed method of construction and the sequence of operations for construction relative to excavation and backfill activities. The descriptions, with supporting illustrations, shall be sufficiently detailed to demonstrate to the Engineer that the procedures meet the requirements of the Specifications and Drawings.

C. Submit excavation safety system plan.

1. The excavation safety system plan shall be in accordance with applicable OSHA requirements for all excavations.

2. The excavation safety system plan shall be in accordance with the requirements of Section 01561 - Trench Safety System, for all excavations that fall under State and Federal trench safety laws.

D. Submit a ground and surface water control plan in accordance with requirements in this Section and Section 01578 - Control of Ground Water and Surface Water.

E. Submit backfill material sources and product quality information in accordance with requirements of Section 02320 - Utility Backfill Materials.

F. Submit project record documents under provisions of Section 01785 - Project Record Documents. Record location of utilities, as installed, referenced to survey benchmarks. Include location of utilities encountered or rerouted. Give horizontal dimensions, elevations, inverts and gradients.

1.06 TESTS

A. Testing and analysis of backfill materials for soil classification and compaction during construction will be performed by an independent laboratory in accordance with requirements of Section 01454 - Testing Laboratory Services and as specified in this Section.

B. Contractor shall perform embedment and backfill material source qualification testing in accordance with requirements of Section 02320- Utility Backfill Materials.

PART 2 P R O D U C T S

2.01 EQUIPMENT

A. Perform excavation with equipment suitable for achieving the requirements of this Specification.

B. Use equipment which will produce the degree of compaction specified. Backfill within 3 feet of walls shall be compacted with hand operated equipment. Do not use equipment weighing more than 10,000 pounds closer to walls than a horizontal distance equal to the depth of the fill at that time. Use hand operated power compaction equipment where use of heavier equipment is impractical or restricted due to weight limitations.

2.02 MATERIAL CLASSIFICATIONS

A. Backfill materials shall conform to the classifications and product descriptions of Section 02320 - Utility Backfill Materials. The classification or product description for backfill applications shall be as shown on the Drawings and as specified.

PART 3 E X E C U T I O N

3.01 PREPARATION

A. Conduct an inspection to determine condition of existing structures and other permanent installations.

B. Set up necessary street detours and barricades in preparation for excavation if construction will affect traffic. Conform to requirements of Section 01555 - Traffic Control and Regulation. Maintain barricades and warning devices at all times for streets and intersections where work is in progress, or where affected by the Work, and is considered hazardous to traffic movements.

C. Perform work in accordance with OSHA standards. Employ an excavation safety system as specified in Section 01561 - Trench Safety Systems.

D. Project sites, rights-of-way and easements shall be made ready for construction operations in accordance with Section 02233 – Clearing and Grubbing.

E. Remove existing pavements and structures, including sidewalks and driveways, in accordance with requirements of Section 02221 - Removing Existing Pavements and Structures.

F. Install and operate necessary dewatering and surface water control measures in accordance with requirements of Section 01578 - Control of Ground Water and Surface Water.

3.02 PROTECTION

A. Protect trees, shrubs, lawns, existing structures, and other permanent objects outside of grading limits and within the grading limits as designated on the Drawings, and in accordance with requirements of Section 01562 - Tree and Plant Protection.

B. Protect and support above-grade and below-grade utilities which are to remain.

C. Restore damaged permanent facilities to pre-construction conditions unless replacement or abandonment of facilities are indicated on the Drawings.

D. Prevent erosion of excavations and backfill. Do not allow water to pond in excavations.

E. Maintain excavation and backfill areas until start of subsequent work. Repair and recompact slides, washouts, settlements, or areas with loss of density at no additional cost to the Owner.

3.03 EXCAVATION

A. Perform excavation work so that the underground structure can be installed to depths and alignments shown on Drawings. Use caution during excavation work to avoid disturbing surrounding ground and existing facilities and improvements. Keep excavation to the absolute minimum necessary. No additional payment will be made for excess excavation.

B. The use of explosives or headache balls is prohibited.

C. Upon discovery of unknown utilities, badly deteriorated utilities not designated for removal, or concealed conditions, discontinue work at that location. Notify Resident Project Representative and obtain instructions before proceeding in such areas.

D. Immediately notify the agency or company owning any line which is damaged, broken or disturbed. Obtain approval from Resident Project Representative and agency for any repairs or relocations, either temporary or permanent.

E. Avoid settlement of surrounding soil due to equipment operations, excavation procedures, vibration, dewatering, or other construction methods.

F. Provide surface drainage during construction to protect work and to avoid nuisance to adjoining property. Where required, provide proper dewatering and piezometric pressure control during construction.

G. Maintain permanent benchmarks, monumentation, and other reference points. Unless otherwise directed by the Engineer, replace those which are damaged or destroyed by the Work.

H. Provide sheeting, shoring, and bracing where required to safely complete the Work, to prevent excavation from extending beyond limits indicated on Drawings, and to protect the Work and adjacent structures or improvements. Sheeting, shoring, and bracing used to protect workmen and the public shall conform to requirements of Section 01561 - Trench Safety Systems.

I. Prevent voids from forming outside of sheeting. Immediately fill voids with grout, concrete fill, cement stabilized sand, or other material approved by Resident Project Representative.

J. After completion of the structure, remove sheeting, shoring, and bracing unless shown on Drawings to remain in place or directed by Engineer in writing that such temporary structures may remain. Remove sheeting, shoring and bracing in such a manner as to maintain safety during backfilling operations and to prevent damage to the Work and adjacent structures or improvements.

K. Immediately fill and compact voids left or caused by removal of sheeting with cement stabilized sand or material approved by Resident Project Representative.

3.04 HANDLING EXCAVATED MATERIALS

A. Classify excavated materials. Place material which is suitable for use as backfill in orderly piles at a sufficient distance from excavation to prevent slides or cave-ins.

3.05 DEWATERING

A. Provide ground water control per Section 01578 - Control of Ground Water and Surface Water.

B. Keep ground water surface elevation a minimum of 2 feet below the bottom of the foundation base.

C. Maintain ground water control as directed by Section 01578 - Control of Ground Water and Surface Water and until the structure is sufficiently complete to provide the required weight to resist hydrostatic uplift with a minimum safety factor of 1.2.

3.06 FOUNDATION EXCAVATION

A. Notify Resident Project Representative at least 48 hours prior to planned completion of foundation excavations. Do not place the foundation base until the excavation is accepted by the Resident Project Representative.

B. Excavate to elevations shown on Drawings, as needed to provide space for the foundation base, forming a level undisturbed surface, free of mud or soft material. Remove pockets of soft or otherwise unstable soils and replace with foundation backfill material or a material as directed by the Resident Project Representative. Prior to placing material over it, recompact the subgrade where indicated on the Drawings, scarifying as needed, to 95 percent of the maximum Standard Dry Density according to ASTM D 698. If the specified level of compaction cannot be achieved, moisture condition the subgrade and recompact until 95 percent is achieved, over-excavate to provide a minimum layer of 24 inches of foundation backfill material, or other means acceptable to the Resident Project Representative.

C. Fill unauthorized excessive excavation with foundation backfill material or other material as directed by the Resident Project Representative.

D. Protect open excavations from rainfall, runoff, freezing groundwater, or excessive drying so as to maintain foundation subgrade in a satisfactory, undisturbed condition. Keep excavations free of standing water and completely free of water during concrete placement.

E. Soils which become unsuitable due to inadequate dewatering or other causes, after initial excavation to the required subgrade, shall be removed and replaced with foundation backfill material, as directed by Resident Project Representative, at no additional cost to the Owner.

F. Place foundation base, or foundation backfill material where needed, over the subgrade on same day that excavation is completed to final grade. Where base of excavations are left open for longer periods, protect them with a seal slab or cement-stabilized sand.

G. Crushed aggregate, and other free draining Class I materials, shall have a filter fabric as specified in Section 02621 - Geotextile. separating it from native soils or select material backfill. The fabric shall overlap a minimum of 12 inches beyond where another material stops contact with the soil.

H. Crushed aggregate, and other Class I materials, shall be placed in uniform layers of 8-inch maximum thickness. Compaction shall be by means of at least two passes of a vibratory compactor.

3.07 FOUNDATION BASE

A. After the subgrade is properly prepared, including the placement of foundation backfill where needed, the foundation base shall be placed. The foundation base shall consist of a 12-inch layer of crushed stone aggregate or cement stabilized sand. Alternately, a seal slab with a minimum thickness of 4 inches may be placed. The foundation base shall extend a minimum of 12 inches beyond the edge of the structure foundation, unless shown otherwise on the Drawings.

B. Where the foundation base and foundation backfill are of the same material, both may be placed in one operation.

3.08 BACKFILL

A. Complete backfill to surface of natural ground or to lines and grades shown on Drawings. Use existing material that qualifies as select material, unless indicated otherwise. Deposit backfill in uniform layers and compact each layer as specified.

B. Do not place backfill against concrete walls or similar structures until laboratory test breaks indicate that the concrete has reached a minimum of 85 percent of the specified compressive strength. Where walls are supported by slabs or intermediate walls, do not begin backfill operations until the slab or intermediate walls have been placed and concrete has attained sufficient strength.

C. Remove concrete forms before starting backfill and remove shoring and bracing as work progresses.

D. Maintain fill material at no less than 2 percent below nor more than 2 percent above optimum moisture content. Place fill material in uniform 8-inch maximum loose layers. Compaction of fill shall be to at least 95 percent of the maximum Standard Dry Density according to ASTM D 698 under paved areas. Compact to at least 90 percent around structures under unpaved areas.

E. Where backfill is placed against a sloped excavation surface, run compaction equipment across the boundary of the cut slope and backfill to form a compacted slope surface for placement of the next layer of backfill.

F. Place backfill using cement stabilized sand in accordance with Section 02321 - Cement Stabilized Sand.

3.09 FIELD QUALITY CONTROL

A. Testing will be performed under provisions of Section 01454 - Testing Laboratory Services.

B. Tests will be performed initially on minimum of one different sample of each material type for plasticity characteristics, in accordance with ASTM D 4318, and for gradation characteristics, in accordance with Tex-101-E and Tex-110-E. Additional classification tests will be performed whenever there is a noticeable change in material gradation or plasticity.

C. In-place density tests of compacted subgrade and backfill will be performed according to ASTM D 1556, or ASTM D 2922 and ASTM D 3017, and at the following frequencies and conditions:

1. A minimum of one test for every 100 cubic yards of compacted backfill material.

2. A minimum of three density tests for each full work shift.

3. Density tests will be performed in all placement areas.

4. The number of tests will be increased if inspection determines that soil types or moisture contents are not uniform or if compacting effort is variable and not considered sufficient to attain uniform density.

D. At least one test for moisture-density relationships will be initially performed for each type of backfill material in accordance with ASTM D 698. Additional moisture-density relationship tests will be performed whenever there is a noticeable change in material gradation or plasticity.

E. If tests indicate work does not meet specified compaction requirements, recondition, recompact, and retest at Contractor's expense.

3.10 DISPOSAL OF EXCESS MATERIAL

A. Dispose of excess materials in accordance with requirements of Section 01576 - Waste Material Disposal.

END OF SECTION

SECTION 02320

UTILITY BACKFILL MATERIALS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Material Classifications.

B. Utility Backfill Materials:

1. Pea gravel
2. Crushed aggregate
3. Bank run sand
7. Select backfill
8. Random backfill
9. Gravel

C. Material Handling and Quality Control Requirements.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. No payment will be made for backfill material. Include payment in unit price for applicable utility installation.

2. Payment for backfill material, when included as separate pay item or when directed by Engineer, is on cubic yard basis for material placed and compacted within theoretical trench width limits and thickness of material according to Drawings, or as directed by Engineer.

3. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 DEFINITIONS

A. Unsuitable Material:

1. Materials classified as ML, CL-ML, MH, PT, OH, and OL according to ASTM D 2487.

2. Materials that cannot be compacted to required density due to gradation, plasticity, or moisture content.

3. Materials containing large clods, aggregates, or stones greater than 4 inches in any dimension; debris, vegetation, or waste; or any other deleterious materials.

4. Materials contaminated with hydrocarbons or other chemical contaminants.

B. Suitable Material:

1. Materials meeting specification requirements.

C. Foundation Backfill Materials: Natural soil or manufactured aggregate meeting Class I requirements and geotextile filter fabrics as required, to control drainage and material separation.

Foundation backfill material is placed and compacted as backfill where needed to provide stable support for structure foundation base. Foundation backfill materials may include concrete fill and seal slabs.

D. Foundation Base: Crushed stone aggregate with filter fabric as required, cement stabilized sand, or concrete seal slab. Foundation base provides smooth, level working surface for construction of concrete foundation.

E. Backfill Material: Classified soil material meeting specified quality requirements for designated application as embedment or trench zone backfill.

F. Embedment Material: Soil material placed under controlled conditions within embedment zone extending vertically upward from top of foundation to an elevation 12 inches above top of pipe, and including pipe bedding, haunching and initial backfill.

G. Trench Zone Backfill: Classified soil material meeting specified quality requirements and placed under controlled conditions in trench zone from top of embedment zone to base course in paved areas or to surface grading material in unpaved areas.

H. Foundation: Either suitable soil of trench bottom or material placed as backfill of over excavation for removal and replacement of unsuitable or otherwise unstable soils.

I. Source: Source selected by Contractor for supply of embedment or trench zone backfill material. Selected source may be project excavation, off-site borrow pits, commercial borrow pits, or sand and aggregate production or manufacturing plants.

J. Refer to Section 02317 - Excavation and Backfill for Utilities for other definitions regarding utility installation by trench construction.

1.04 REFERENCES

A. ASTM C 33 - Standard Specification for Concrete Aggregate.

B. ASTM C 40 - Standard Test Method for Organic Impurities in Fine Aggregates for Concrete.

C. ASTM C 123 - Standard Test Method for Lightweight Particles in Aggregate.

D. ASTM C 131 - Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in Los Angeles Machine.

E. ASTM C 136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.

F. ASTM C 142 - Standard Test Method for Clay Lumps and Friable Particles in aggregates.

G. ASTM D 1140 - Standard Test Method for Amount of Material in Soils Finer Than No. 200 Sieve.

H. ASTM D 2487 - Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System).

I. ASTM D 4318 - Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

J. ASTM D 4643 - Standard Test Method for Determination of Water (Moisture) Content of Soil by Microwave Oven Method.

K. TxDOT Tex-110-E - Determining Particle Size Analysis of Soils.

L. TxDOT Tex-460-A - Material Finer Than 75 □m (No.200) Sieve In Mineral Aggregates (Decantation Test for Concrete Aggregates).

1.05 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit description of source, material classification and product description, production method, and application of backfill materials.

C. Submit test results for samples of off-site backfill materials. Comply with Paragraph 2.03, Material Testing.

D. Before stockpiling materials, submit copy of approval from landowner for stockpiling backfill material on private property.

E. Provide delivery ticket which includes source location for each delivery of material that is obtained from off-site sources or is being paid as specific bid item.

1.06 TESTS

A. Perform tests of sources for backfill material in accordance with Paragraph 2.03B.

B. Verification tests of backfill materials may be performed by City in accordance with Section 01454 - Testing Laboratory Services and in accordance with Paragraph 3.03.

PART 2 P R O D U C T S

2.01 MATERIAL CLASSIFICATIONS

A. Classify materials for backfill for purpose of quality control in accordance with Unified Soil Classification Symbols as defined in ASTM D 2487. Material use and application is defined in utility installation specifications and Drawings either by class, as described in Paragraph 2.01B, or by product descriptions, as given in Paragraph 2.02.

B. Class Designations Based on Laboratory Testing:

1. Class I: Well-graded gravels and sands, gravel-sand mixtures, crushed well-graded rock, little or no fines (GW, SW):

   a. Plasticity index: non-plastic.

   b. Gradation: D60/D10 - greater than 4 percent; amount passing No. 200 sieve – less than or equal to 5 percent.

2. Class II: Poorly graded gravels and sands, silty gravels and sands, little to moderate fines (GM, GP, SP, SM):

   a. Plasticity index: non-plastic to 4.

   b. Gradations:

      1. Gradation (GP, SP): amount passing No. 200 sieve - less than 5 percent.

      2. Gradation (GM, SM): amount passing No. 200 sieve - between 12 percent and 50 percent.

      3. Borderline gradations with dual classifications (e.g., SP-SM): amount passing No. 200 sieve - between 5 percent and 12 percent.

3. Class III: Clayey gravels and sands, poorly graded mixtures of gravel, sand, silt, and clay (GC, SC, and dual classifications, e.g., SP-SC):

a. Plasticity index: greater than 7.

b. Gradation: amount passing No. 200 sieve - between 12 percent and 50 percent.

4. Class IVA: Lean clays (CL).

a. Plasticity Indexes:

1. Plasticity index: greater than 7, and above A line.

2. Borderline plasticity with dual classifications (CL-ML): PI between 4 and 7. b. Liquid limit: less than 50.

b. Gradation: amount passing No. 200 sieve - greater than 50 percent.

5. Class IVB: Fat clays (CH)

a. Plasticity index: above A line.

b. Liquid limit: 50 or greater.

c. Gradation: amount passing No. 200 sieve - greater than 50 percent. d. Inorganic.

6. Use soils with dual class designation according to ASTM D 2487, and which are not defined above, according to more restrictive class.

2.02 PRODUCT DESCRIPTIONS

A. Soils classified as silt (ML) silty clay (CL-ML with PI of 4 to 7), elastic silt (MH), organic clay and organic silt (OL, OH), and organic matter (PT) are not acceptable as backfill materials. These soils may be used for site grading and restoration in unimproved areas as approved by Engineer. Soils in Class IVB, fat clay (CH) may be used as backfill materials where allowed by applicable backfill installation specification. Refer to Section 02316 - Excavation and Backfill for Structures and Section 02317 - Excavation and Backfill for Utilities.

B. Provide backfill material that is free of stones greater than 6 inches, free of roots, waste, debris, trash, organic material, unstable material, non-soil matter, hydrocarbon or other contamination, conforming to following limits for deleterious materials:

1. Clay lumps: Less than 0.5 percent for Class I, and less than 2.0 percent for Class II, when tested in accordance with ASTM C 142.

2. Lightweight pieces: Less than 5 percent when tested in accordance with ASTM C 123.

3. Organic impurities: No color darker than standard color when tested in accordance with ASTM C 40.

C. Bank Run Sand: Durable bank run sand classified as SP, SW, or SM by Unified Soil Classification System (ASTM D 2487) meeting following requirements:

1. Less than 15 percent passing number 200 sieve when tested in accordance with ASTM D1140. Amount of clay lumps or balls may not exceed 2 percent.

2. Material passing number 40 sieve shall meet the following requirements when tested in accordance with ASTM D 4318: Plasticity index: not exceeding 7.

D. Pea Gravel: Durable particles composed of small, smooth, rounded stones or pebbles and graded within the following limits when tested in accordance with ASTM C 136:

Sieve Percent Passing

1/2"	100
3/8"	85 to 100
No. 4	10 to 30
No. 8	0 to 10
No. 16	0 to 5

H. Crushed Aggregates: Crushed aggregates consist of durable particles obtained from an approved source and meeting the following requirements:

1. Materials of one product delivered for same construction activity from single source, unless otherwise approved by Engineer.

2. Non-plastic fines.

3. Los Angeles abrasion test wear not exceeding 45 percent when tested in accordance with ASTM C 131.

4. Crushed aggregate shall have minimum of 90 percent of particles retained on No. 4 sieve with 2 or more crushed faces as determined by Tex-460-A, Part I.

5. Crushed stone: Produced from oversize plant processed stone or gravel, sized by crushing to predominantly angular particles from naturally occurring single source. Uncrushed gravel is not acceptable materials for embedment where crushed stone is shown on applicable utility embedment drawing details.

6. Gradations, as determined in accordance with Tex-110-E.

Sieve	Percent Passing by Weight for Pipe Embedment by Ranges of Nominal Pipes Sizes		
	>15"	15"- 8"	<8"
1"	95-100	100	
¾"	60-90	90-100	100
½"	25-60		90-100
3/8"		20-55	40-70
No. 4	0-5	0-10	0-15
No. 8		0-5	0-5

I. Select Backfill: Class III clayey gravel or sand or Class IV lean clay with plasticity index between 7 and 20.

J. Random Backfill: Any suitable soil or mixture of soils within Classes I, II, III and IV; or fat clay (CH) where allowed by applicable backfill installation specification. Refer to Section 02316 - Excavation and Backfill for Structures and Section 02317 - Excavation and Backfill for Utilities.

2.03 MATERIAL TESTING

A. Source Qualification. Perform testing to obtain tests by suppliers for selection of material sources and products not from the project site. Test samples of processed materials from current production representing material to be delivered. Use tests to verify that materials meet specification requirements. Repeat qualification test procedures each time source characteristics change or there is planned change in source location or supplier. Include the following qualification tests, as applicable:

1. Gradation. Report complete sieve analyses regardless of specified control sieves from largest particle through No. 200 sieve.

2. Plasticity of material passing No. 40 sieve

3. Los Angeles abrasion wear of material retained on No. 4 sieve

4. Clay lumps

5. Lightweight pieces

6. Organic impurities

B. Production Testing. Provide reports to Engineer from an independent testing laboratory that backfill materials to be placed in Work meet applicable specification requirements.

C. Assist Owner in obtaining material samples for verification testing at source or at production plant.

PART 3 EXECUTION

3.01 SOURCES

A. Use of existing material in trench excavations is acceptable, provided applicable specification requirements are satisfied.

B. Identify off-site sources for backfill materials at least 14 days ahead of intended use so that Owner may obtain samples for verification testing.

C. Materials may be subjected to inspection or additional verification testing after delivery. Materials which do not meet requirements of specifications will be rejected. Do not use material which, after approval, has become unsuitable for use due to segregation, mixing with other materials, or by contamination.

D. Bank run sand, select backfill, and random backfill, if available in project excavation, may beobtained by selective excavation and acceptance testing. Obtain additional quantities of these materials and other materials required to complete work from off-site sources.

E. Owner does not represent or guarantee that any soil found in excavation work will be suitable and acceptable as backfill material.

3.02 MATERIAL HANDLING

A. When backfill material is obtained from either commercial or non-commercial borrow pit, open pit to expose vertical faces of various strata for identification and selection of approved material to be used. Excavate selected material by vertical cuts extending through exposed strata to achieve uniformity in product.

B. Establish temporary stockpile locations for practical material handling, control, and verification testing by Engineer in advance of final placement. Obtain approval from landowner for storage of backfill material on adjacent private property.

C. When stockpiling backfill material near project site, use appropriate covers to eliminate blowing of materials into adjacent areas and prevent runoff containing sediments from entering drainage system.

D. Place stockpiles in layers to avoid segregation of processed materials. Load material by making successive vertical cuts through entire depth of stockpile.

3.03 FIELD QUALITY CONTROL

A. Quality Control

1. The Engineer may sample and test backfill at:

a. Sources including borrow pits, production plants and Contractor's designated off-site stockpiles.

b. On-site stockpiles.

c. Materials placed in Work.

2. The Engineer may re-sample material at any stage of work or location if changes in characteristics are apparent.

B. Production Verification Testing: Owner's testing laboratory will provide verification testing on backfill materials, as directed by Engineer. Samples may be taken at source or at production plant, as applicable.

END OF SECTION - 02320

Section 02330

EMBANKMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Construction of embankments with excess excavated material and borrow.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. No separate payment will be made for material embankment under this section. Include payment in unit price for excavation or borrow.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 REFERENCES

A. ASTM D 698 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3 (600 kN-m/m^3)).

B. ASTM D 2922 – Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

C. ASTM D 3017 – Standard Test Method for Water content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

PART 2 PRODUCTS

2.01 MATERIALS

A. Refer to Section 02315 – Roadway Excavation for acceptable excess materials from roadway excavation.

B. Refer to Section 02317 – Excavation and Backfill For Utilities for acceptable excess materials from utility excavation and trenching.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify borrow and excess excavated materials to be reused are approved.

B. Verify removals and clearing and grubbing operations have been completed.

3.02 PREPARATION

A. Backfill tests pits, stump holes, small swales and other surface irregularities. Backfill and compact in designated lift depths to requirements for embankment compaction.

B. Record location and plug and fill inactive water and oil wells. Conform to Texas State Health Department, Texas Commission on Environmental Quality and Texas Railroad Commission requirements. Notify Project Manager prior to plugging wells.

C. Excavate and dispose of unsuitable soil and other unsuitable materials which will not consolidate. Backfill and compact to requirements for embankment. Unsuitable soil is defined in Section 02316 – Excavation and Backfill for Structures and Section 02320 – Utility Backfill Materials.

D. Backfill new utilities below future grade. Conform to requirements of each respective section.

3.03 PROTECTION

A. Protect trees, shrubs, lawns, existing structures, and other features outside of embankment limits.

B. Protect utilities above and below grade, which are to remain.

C. Conform to protection requirements of Section 02315 – Roadway Excavation.

3.04 PLACING EMBANKMENT

A. Do not conduct placement operations during inclement weather or when existing ground or fill materials exceed 3 percent of optimum moisture content. Contractor may manipulate wet material to facilitate drying, by disking or windrowing.

B. Do not place embankment fill until density and moisture content of previously placed material comply with the specified requirements.

C. Scarify areas to be filled to minimum depth of 4 inches to bond existing and new materials. Mix with first fill layer.

D. Spread fill material evenly, from dumped piles or windrows, into horizontal layers approximately parallel to finished grade. Place to meet specified compacted thickness. Break clods and lumps and mix materials by blading, harrowing, disking or other approved method. Extend each layer across full width of fill.

E. Each layer shall be homogenous and contain uniform moisture content before compaction. Mix dissimilar abutting materials to prevent abrupt changes in composition of fill.

F. Layers shall not exceed the following compacted thickness:

1. Areas indicated to be under future paving or shoulders, to be constructed within 6 months: 6 inches when compacted with pneumatic rollers, or 8 inches when compacted with other rollers.

2. Other areas: 12 inches

G. For steep slopes, cut benches into slope and scarify before placing fill. Place increasingly wider horizontal layers of specified depth to level of each bench.

H. Build embankment layers on back slopes, adjacent to existing roadbeds, to level of old roadbed. Scarify top of old roadbed to minimum depth of 4 inches and recompact with next fill layer.

I. Construct to lines and grades shown on Drawings.

J. Remove unsuitable material and excess soil not being used for embankment from site in accordance with requirements of Section 01576 – Waste Material Disposal.

K. Maintain moisture content of embankment materials to attain required density.

L. Compact to following minimum densities at moisture content of optimum to 3 percent above optimum as determined by ASTM D 698, unless otherwise indicated on Drawings:

1. Areas under future paving and shoulders: Minimum density of 95 percent of maximum dry density.

2. Other areas: Minimum density of 90 percent of maximum dry density.

3.05 TOLERANCES

A. Top of Compacted Surface: Plus or minus 1/2 inch in cross section or 16 foot length.

3.06 FIELD QUALITY CONTROL

A. Compaction testing will be performed in accordance with ASTM D 698 or ASTM D 2922 and ASTM D 3017 under provisions of Section 01454 - Testing Laboratory Services.

B. A minimum of three tests will be taken for each 1000 linear feet per lane of roadway or 500 square yards of embankment per lift.

C. If tests indicate work does not meet specified compaction requirements, recondition, recompact, and retest at no additional cost to the Owner.

END OF SECTION

SECTION 02516
CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Furnish all labor, materials, services and equipment as required in conjunction with or properly incidental to placing of concrete as described herein and/or as shown on the drawings.

B. Includes all cast-in-place concrete for paving, curbs, sidewalks, inlets, culverts and headwalls.

1.2 RELATED DOCUMENTS

A. Drawing and general provisions of Contract and Division 2 Specification sections, apply to work of this Section.

1.3 CODES AND STANDARDS

A. The work described in this Section, unless otherwise noted on the Drawings, or herein specified, shall be governed by the latest editions of the following codes or specifications.

1. ACI 304, "Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete".
2. ACI 305, "Hot Weather Concreting".
3. ACI 306, "Cold Weather Concreting".
4. ACI 309, "Standard Practice for Consolidation of Concrete:.
5. ACI 311, "ACI Manual of Concrete Inspection".
6. ASTM C33, Standard Specification for Concrete Aggregate.
7. ASTM C94, Standard Specification for Ready-Mix Concrete.
8. ASTM C136, Standard Method for Sieve Analysis of Fine and Coarse Aggregates.
9. ASTM C150, Standard Specification for Portland Cement.
10. ASTM C260, Standard Specification for Air-Entraining Admixtures.
11. ASTM C494, Standard Specification for Chemical Admixtures for Concrete.
12. ASTM C595, Standard Specification for Blended Hydraulic Cements.

1.4 QUALITY ASSURANCE

A. Concrete production facilities shall meet the requirements for certification by the National Ready Mixed Concrete Association.

B. Concrete batchers shall be completely interlocked semi-automatic or automatic batchers, as defined by the Concrete Plant Manufacturers Bureau.

C. Concrete batchers shall have graphic, digital, or photographic recorders, which shall register both empty balance and total weight (or volume of water or admixture) of each batched material, time to the nearest minute, date, identification of batch, and numerical count of each batch. Copies of the record shall be furnished to the Testing Laboratory.

1.5 CONCRETE MIX DESIGN

A. Design concrete mixes in accordance with ACI 318.

B. Submit proposed mix designs, including confirmation cylinder test results, in accordance with ACI 318 to the Engineer for evaluation a minimum of 14 days prior to placing concrete. Show:

1. Proportions of cement, fine and coarse aggregates, and water.
2. Combined aggregate gradation.
3. Aggregate specific gravities and gradations.
4. Water-cement ratio, design strength, slump and air content.
5. Type of cement and aggregates.
6. Type and dosage of admixtures.
7. Type, color and dosage of integral coloring compounds, where applicable.
8. Special requirements for pumping.
9. Range of ambient temperature and humidity for which design is valid.
10. Any special characteristics of mix which require precautions in mixing, placing, or finishing techniques to achieve finished product.

The use of fly ash is not permitted.

C. Mix designs based on record of past performance in accordance with ACI 301 Method 2, may be submitted in lieu of mix designs required above, provided all necessary information is included.

D. Check mix designs and revise if necessary wherever changes are made in aggregates or in surface water content of aggregate or workability of concrete. Slump shall be minimum to produce workable mix. Laboratory shall prescribe maximum quantity of water.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Mix and deliver concrete to project ready-mixed in accordance with ASTM C94. Mix concrete a minimum of 70 revolutions of transit mix drum at mixing speed. A minimum of 40 revolutions shall be at the production plant.

B. Schedule delivery so that continuity of any pour will not be interrupted for over 15 minutes.

C. Place concrete on site within 90 minutes after proportioning materials at batch plant.

1.7 JOB CONDITIONS

A. Hot Weather Requirements:
1. Follow ACI 301 and ACI 305.

2. Provide retarding type admixture conforming to ASTM C494, Type A or D in accordance with manufacturer's recommendations.

3. Maximum concrete temperature shall not exceed 95°F.
   a. Maximum concrete temperature for concrete with a specified strength greater than 6000 psi shall not exceed 90°F.

B. Cold Weather Concreting:

1. Follow ACI 301 and ACI 306.

2. When ambient temperature at site is below 40°F, or is expected to fall to that temperature within ensuing 24 hours, heat water and/or aggregate prior to adding to mix so that temperature of concrete will be between 60°F and 90°F at time of placement.

3. Maintain temperature of deposited concrete above 32°F and for a minimum of seven days after placing.

C. Temperature Changes: Maintain changes in concrete temperature as uniformly as possible, but in no case exceed change of 5°F per hour or 25°F in any 24 hour period.

D. Combustion heaters shall not be used during the first 48 hours without precautions to prevent exposure of concrete and workmen to exhaust gases containing carbon dioxide and/or carbon monoxide.

E. Admixtures intended to accelerate hardening of concrete or produce higher than normal strength at early periods will not be permitted unless specified. The use of calcium chloride is specifically prohibited.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cement:

1. Portland Cement, Type I or III, conforming to the requirements of ASTM C150.
2. Blended Hydraulic Cements, Type 1P, conforming to the requirements of ASTM C595.

B. Aggregate:

1. Fine: ASTM C33; clean, hard, durable, uncoated, natural sand, free from silt, loam or clay.

2. Coarse: ASTM C33; hard, durable, uncoated, crushed stone, gradation in accordance with Size No. 467 for piers and footings and Size No. 67 for all other concrete. Maximum aggregate size shall be in accordance with ACI 318.

3. Grading shall be in accordance with "Standard Method for Sieve Analysis of Fine and Coarse Aggregates" (ASTM C136).

C. Water: ASTM C94, Paragraph 4.1.3; potable, clean and free from oil, acid and injurious amounts of vegatable matter, alkalies, and other impurities.

D. Admixtures:

1. Cement-dispersing, water-reducing types that follow water-cement ratio law. Admixtures shall conform to ASTM C494, Type A or D, and shall be used strictly in accordance with manufacturer's recommendations and as determined by the Testing Laboratory. Admixture shall not discolor concrete or in any way affect the appearance of the concrete.

a. High-range water reducing admixture conforming to ASTM C494, Type F, may be used as required and shall be one of the following types or equal:
   1. Gifford-Hill PSI Super
   2. Master Builders Admixture LA-35
   3. SIKA Sikament
   4. W.R. Grace WRDA-19

2. An air-entraining admixture conforming to ASTM C260 shall be used and shall be one of the following types or equal:

   a. Gifford-Hill Air-Tite
   b. Master Builders MB-VR
   c. SIKA AER
   d. W.R. Grace Darex AEA

3. Use of calcium chloride is specifically prohibited.

E. Non-Shrink Cement Grout:

1. Qualities: Premixed non-shrink grout requiring only addition of water. Non-metallic type grout where grout will be sight exposed.

   a. Minimum compressive strength of 5000 psi at 7 days and 7500 psi at 28 days when placed at a plastic consistency of 115% flow factor.
   b. Free of chlorides, sulphates or gas producing agents.

2. Standards:

   a. Overall product: CRD - C-621.
   b. Compressive Strength: ASTM C109, 2 inch cubes.
   c. Bleed Performance: CRD - C-611.
   d. Flow Factor: ASTM C230.

2.2 CONCRETE MIXES

A. Strength: Concrete is classified and specified by ultimate compressive strength (f'c) at the age of 28 days.

B. Design concrete to yield strengths indicated on the Drawings.

C. Concrete permanently exposed to weather shall contain an air-entraining admixture to produce a range of 4.5% to 7.5% air by volume of concrete.

D. Proportions: Proportions of cement, aggregate, and water to attain required plasticity and compressive strength shall be in accordance with ACI 318.

PART 3 - EXECUTION

3.1 GENERAL

A. Inserts: Give the various trades and subcontractors ample notification and opportunity to furnish any and all anchors, nailers, pipes, conduits, boxes, inserts, thimbles, sleeves, frame vents, wires, supports, or other items required to be built into the concrete by the provisions of the drawings or of the specification governing the work of such trades and subcontractors, or as it may be necessary for the proper execution of their work. Obtain suitable templates or instructions for the installations of such items which are required to be placed in the forms.

B. Slump: Concrete shall not be placed when its plasticity, as measured by slump tests, is outside the following limits: 5 inches maximum, 2 inches minimum.

C. Classes of Concrete and Usage: Concrete of the several classes of concrete required shall have the characteristics shown on the Drawings.

D. Mixing: Transit-mixed concrete conforming to the requirements of ASTM C94 shall be used in lieu of concrete mixed at the job site. Concrete shall not be transported or used in any case after a period in excess of ninety (90) minutes has elapsed after the introduction of water into the mixer. The agency supplying transit-mixed concrete shall have a plant of sufficient capacity and adequate transportation facilities, to assure continuous delivery at the rate required. The frequency of deliveries to the site of the work must be such as to provide for placing the concrete continuously throughout any one (1) pour.

E. Conveying Concrete: Convey concrete from the mixer to the place of final deposit by methods which will prevent the separation or loss of the ingredients. Concrete to be conveyed by pumping shall be submitted to the Testing Laboratory for evaluation for each class of concrete specified before being used. Test cylinders for pumped concrete shall be taken at the discharge end of the pumping equipment.

F. Equipment for chuting, pumping, and pneumatically conveying concrete shall be of such size and design as to assure a practically continuous flow of concrete at the delivery end without separation of the materials. The use of gravity-flow or aluminum chutes or conveyors for transporting concrete horizontally will not be permitted.

3.2 FIELD CONCRETE CONTROL AND TESTING

A. Secure composite samples in accordance with ASTM C172. Each sample shall be obtained from a different batch of concrete on a random basis, avoiding any selection of the test batch other than by a number selected at random before commencement of concrete placement.

B. All concrete with required strength of 6000 psi or less shall be tested as follows:

1. Mold and cure five (5) specimens from each sample in accordance with ASTM C31.

2. Two (2) specimens shall be tested at seven days for information, two shall be tested at 28 days for acceptance, and the remaining cylinder shall be tested as directed.

C. Any deviations from the requirements of ASTM Specifications shall be recorded in the test report. Test concrete specimens in accordance with ASTM C39.

D. Make at least one strength test (five specimens) for each 100 cu. yd. or fraction thereof, of

each mix design of concrete placed in any one day. Determine slump of the concrete sample for each strength test and whenever consistency of concrete appears to vary, in accordance with ASTM C143.

E. Determine air content of air-entrained, normal weight and/or lightweight, concrete sample for each strength test, in accordance with either ASTM C231, ASTM C173, or ASTM C138. Determine temperature of concrete sample for each strength test.

F. Inspect each batch of concrete, adjust amounts of mixing water to assure uniform consistency from truck to truck. Check mixing from mixers before mix begins to set and within time limits set forth in ASTM C94.

1. Control addition of water to concrete at job site and length of time concrete is allowed to remain in truck during placement.
2. Certify each delivery ticket indicating class of concrete delivered, amount of water added and time at which cement and aggregate was discharged into truck, and time at which concrete was discharged from truck.

G. Should the strength of concrete fall below the minimum, then additional tests, including load tests, may be required. These tests, if required, shall be made at the contractor's expense and shall be in accordance with ASTM C42 and ACI 318. If tests do not meet the applicable requirements, then the structure, or any part of the structure, shall be removed and replaced at the contractor's expense. The specified strength must be met at 28 days. If not, the concrete is considered not acceptable and must be removed and replaced. The .85 factor in ACI 318 will not be allowed.

H. Test reports shall show concrete mix identification number or give proportions of ingredients, time test was made, truck ticket, number, slump and time of batching, and location of each placement.

I. Report promptly to Engineer all details of reasons for rejection of any and all quantities of concrete. Give all information concerning locations of the concrete pours, quantities, date of pours, and other pertinent facts concerning concrete represented by the specimens.

J. Grout: For every one third (1/3) cubic yards of grout placed, grout strength shall be tested with a set of cubes as follows:

1. A set of cubes shall consist of three cubes to be tested at 7 days, and three cubes to be tested at 28 days.
2. Test cubes shall be made and tested in accordance with ASTM C109, with the exception that the grout should be restrained from expansion by a top plate.

3.3 PLACING CONCRETE

A. Place concrete in reasonably uniform layers, approximately horizontal, and not more than eighteen inches (18") deep, exercising care to avoid vertical joints or inclined planes. The piling up of concrete in the forms in such a manner as to cause the separation or loss of any of its ingredients will not be permitted. Concrete which has partially set or hardened shall not, under any circumstances, be deposited in the work.

B. Place concrete in the forms as nearly in its final position as is practical to avoid rehandling. Exercise special care to prevent splashing the forms or reinforcement with concrete. Remove

any hardened or partially hardened concrete which has accumulated on the forms or reinforcement before the work proceeds. Do not place concrete on previously deposited concrete which has hardened sufficiently to cause the formation of seams or planes of weakness within the respective member or section, except as hereinafter specified.

C. Do not permit concrete to drop freely any distance greater than five feet (5'). Where longer drops are necessary, use a chute, tremie, or other acceptable conveyance to assist the concrete into place without separation. Do not pour directly into any excavations where water is standing.

D. Vibration: As soon as concrete is deposited, thoroughly agitate same by means of mechanical vibrators and suitable hand tools, so manipulated as to work the mixture well into all parts and corners of the forms, and entirely around the reinforcement and inserts. Mechanical vibrators shall maintain frequencies in accordance with the recommendations of ACI 309, Table 5.1.4 and shall be operated by competent workmen. Over vibrating and use of vibrators to transport concrete within forms shall not be allowed. A spare vibrator shall be kept on the job site during all concrete placing operations.

E. Bonding: Before depositing any new concrete on or against previously deposited concrete which has partially or entirely set, the surface of the latter shall be thoroughly roughened and cleaned of all foreign matter, scum and laitance.

F. Construction Joints: Except as otherwise specifically indicated on the drawings, each concrete member shall be considered as a single unit of operations, and all concrete for the same shall be placed continuously in order that such unit will be monolithic in construction. Should construction joints prove to be absolutely unavoidable, same shall be located at or near the midpoints of spans. Additional construction joints shall not be made under any circumstances without prior review by the engineer.

G. Protect all freshly placed concrete from washing by rain, flowing water, etc. Do not allow the concrete to dry out from the time it is deposited in the forms until the expiration of the curing period.

H. Grout shall be mixed only in such quantities as are needed for immediate use. No retempering shall be permitted and materials which have been mixed for a period exceeding thirty (30) minutes shall in no case be used upon any portion of the work.

I. Imperfect or damaged work, or any material damaged or determined to be defective before final completion and acceptance of the entire job, shall be satisfactorily replaced at the contractor's expense and shall be in conformity with all of the requirements of the contract documents. Removal and replacement of concrete work shall be done in such a manner as not to impair the appearance or strength of the structure in any way.

J. Cleaning: Upon completion of the work, all forms, equipment, protective coverings and any rubbish resulting therefrom shall be removed from the premises. Finished concrete surfaces shall be left in a clean and perfect condition, satisfactory to the owner. Sweep with an ordinary broom and remove all mortar, concrete droppings, loose dirt, mud, etc.

END OF SECTION

SECTION 02580
PAVEMENT MARKING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Pavement striping and handicap symbols.
2. Primer adhesive.

1.2 SUBMITTALS

A. Product Data: Submit manufacturer's product literature and installations instructions including guidelines and templates as required.

B. Samples: Submit test samples when requested.

1.3 QUALITY ASSURANCE

A. Regulatory Requirements: Handicap parking space marking shall comply with state of Texas and city requirements.

1.4 PROJECT CONDITIONS

A. Apply marking when surfaces are thoroughly dry and when air temperature is above 40 degrees F.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers:

1. Sherwin-Williams.
2. Pratt & Lambert.

2.2 MATERIALS

A. Latex Paint:

1. Colors: White, yellow, red, and blue as required.

2. Acceptable products - Sherwin-Williams:
   a. White or Yellow: Set Fast Latex Traffic Marking Paint or Acrylic Water Borne Traffic Marking Paint.
   b. Red or Blue: Metalatex Semi-Gloss Coatings.

3. Acceptable Products - Devoe:
   a. White or Yellow: #416XX Traffic-Line Water Based Traffic Marking Paint.
   b. Red or Blue: #83XX Mirrolac W.B.

B. Paint Primer: As recommended by paint manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Ensure new concrete and asphaltic concrete paving has cured for 30 days minimum prior to application of pavement marking.

3.2 PREPARATION

A. Clean surface of scale, dirt, mud, sand gravel, oil, grease and other foreign material.

B. On portland cement concrete, apply primer for striping as recommended by paint manufacturer to act as barrier coat with curing compound.

C. Layout lines and symbols in advance of making application. Space control points at intervals to ensure accurate location of markings.

3.3 PAINT STRIPING APPLICATION

A. Lay out markings using guide line, templates and forms as required. Use white or yellow, match existing paint to distinguish parking spaces. Use red paint for fire lanes.

B. Apply 4" wide stripes at manufacturer's recommended rate.

C. Stencil "FIRE LANE - NO PARKING" in 4" high white block letters on red background 6" high and of appropriate length for lettering background at intervals not closer than 25 ft. and not farther apart than 50 ft. on curbs and pavement throughout length of fire lane.

E. Place suitable warning signs near work site to alert approaching traffic from all directions to prevent damage to newly painted surfaces.

3.4 PROTECTION

A. Protect pavement markings in accordance with manufacturer's instructions.

END OF SECTION

Section 02751

CONCRETE PAVING

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Portland cement concrete paving.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for concrete paving is on square yard basis. Separate pay items are used for each different required thickness of pavement.

2. Payment for concrete paving, high early strength, is on square yard basis.

3. Measurement for utility projects: Match actual pavement replaced but no greater than maximum pavement replacement limits shown on Drawings.

a. When removed pavement is greater than one-half of pavement lane width or within 18 inches of longitudinal joint, replace pavement for full lane width or to nearest longitudinal joint.

b. No payment will be made for work outside pavement limits or in areas removed or replaced for Contractor's convenience. Maximum payment limits are shown on Drawings. When extent of pavement replacement is increased to full lane width or to nearest longitudinal joint, maximum payment limits are increased to same extent.

4. Refer to Section 01270 - Measurement and Payment for unit price procedures.

5. Refer to Paragraph 3.15, Unit Price Adjustment.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for Work in this Section is included in total Stipulated Price.

1.03 REFERENCES

A. ASTM A 82 - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.

B. ASTM A 185 - Standard Specifications for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.

C. ASTM A 615 - Standard Specification for Deformed and Plain Billet - Steel Bars for Concrete Reinforcement.

D. ASTM C 31 - Standard Practice for Making and Curing Concrete Test Specimens in the Field.

E. ASTM C 33 - Standard Specifications for Concrete Aggregates.

F. ASTM C 39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.

G. ASTM C 40 - Standard Test Method for Organic Impurities in Fine Aggregates for Concrete.

H. ASTM C 42 - Standard Test Method of Obtaining and Testing Drilled Cores and Sawed Beams of

Concrete.

I. ASTM C 78 - Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Third Point Loading).

J. ASTM C 94 - Standard Specification for Ready-Mixed Concrete.

K. ASTM C 131 - Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

L. ASTM C 136 - Standard Method for Sieve Analysis of Fine and Coarse Aggregates.

M. ASTM C 138 - Standard Test Method for Unit Weight, Yield, and Air Content (Gravimetric) of Concrete.

N. ASTM C 143 - Standard Test Method for Slump of Hydraulic Cement Concrete.

O. ASTM C 150 - Standard Specification for Portland Cement.

P. ASTM C 174 - Standard Test Method for Measuring Thickness of Concrete Elements Using Drilled Concrete Cores.

Q. ASTM C 231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.

R. ASTM C 260 - Standard Specification for Air-Entraining Admixtures for Concrete.

S. ASTM C 494 - Standard Specification for Chemical Admixtures for Concrete.

T. ASTM C 618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for use as a Mineral Admixture in Portland Cement Concrete.

U. TxDOT Tex-203-F - Sand Equivalent Test.

V. TxDOT Tex-406-A - Material Finer than 75 Fm (No. 200) Sieve In Mineral Aggregates (Decantation Test for Cement Aggregates).

1.04 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit proposed mix design and test data for each type and strength of concrete in Work. Include proportions and actual flexural strength obtained from design mixes at required test ages.

C. Submit for approval manufacturer's description and characteristics for mixing equipment, and for traveling form paver, when proposed for use.

D. Submit manufacturer's certificates giving properties of reinforcing steel. Include certificate of compliance with ASTM A 82. Provide specimens for testing when required by Engineer.

1.05 HANDLING AND STORAGE

A. Do not mix different classes of aggregate without written permission of Engineer.

B. Class of aggregate being used may be changed before or during Work with written permission of Engineer. Comply new class with specifications.

C. Reject segregated aggregate. Before using aggregate whose particles are separated by size, mix

them uniformly to grading requirements.

D. Reject aggregates mixed with dirt, weeds, or foreign matter.

E. Do not dump or store aggregate in road bed.

PART 2 P R O D U C T S

2.01 MATERIALS

A. Portland Cement:

1. Sample and test cement to verify compliance with Standards of ASTM C 150, Type I or Type III.

2. Bulk cement which meets referenced standards may be used when method of handling is approved by Engineer. When using bulk cement, provide satisfactory weighing devices.
3. Fly ash, which meets standards of ASTM C 618, may be used as mineral fill when method of handling is approved by Engineer.

B. Water: Conform to requirements for water in ASTM C 94.

C. Coarse Aggregate: Crushed stone, gravel, or combination thereof, which is clean, hard, durable, conforms to requirements of ASTM C 33, and has abrasion loss not more than 45 percent by weight when subjected to Los Angeles Abrasion Test (ASTM C 131).

1. Maximum percentage by weight of deleterious substances shall not exceed following values:

Item	Percent by Weight of Total Sample Maximum
Clay lumps and friable particles	3.0
Material finer than 75-µm (No. 200) sieve:	
Concrete subject to abrasion	3.0*
All Other concrete	5.0*
Coal and lignite:	
Where surface appearance of concrete	0.5
All other concrete	1.0

* In case of manufactured sand, when material finer than 75-µm (No. 200) sieve consists of dust of fracture, essentially free from clay or shale, these limits may be increased to 5 and 7 percent, respectively.

2. Conform coarse aggregate (size 12 inch to No. 4 sieve) to requirements of ASTM C 33. Use gradation within following limits when graded in accordance with ASTM C 136:

Sieve Designation (Square Openings)	Percentage by Weight
Retained on 1:" sieve	0
Retained on 12"sieve	0 to 5
Retained on :" sieve	30 to 65
Retained on d" sieve	70 to 90
Retained on No. 4 sieve	95 to 100
Loss by Decantation Test *Method Tex-406-A	1.0 maximum

* In case of aggregates made primarily from crushing of stone, when material finer than 200

sieve is dust of fracture essentially free from clay or shale as established by Part III of TxDOT Tex-406-A, percent may be increased to 1.5.

D. Fine Aggregate: Sand, manufactured sand, or combination thereof, composed of clean, hard, durable, uncoated grains, free from loams or other injurious foreign matter. Conform fine aggregate for concrete to requirements of ASTM C 33. Use gradation within following limits when graded in accordance with ASTM C 136:

Sieve Designation (Square Openings)	Percentage by Weight
Retained on 3/8" sieve	0
Retained on No. 4 sieve	0 to 5
Retained on No. 8 sieve	0 to 20
Retained on No. 16 sieve	15 to 50
Retained on No. 30 sieve	35 to 75
Retained on No. 50 sieve	65 to 90
Retained on No. 100 sieve	90 to 100
Retained on No. 200 sieve	97 to 100

1. When subjected to color test for organic impurities (ASTM C 40), fine aggregate shall not show color darker than standard color. Fine aggregate shall be subjected to Sand Equivalent Test (Tex-203-F). Sand equivalent value shall not be less than 80, unless higher value is shown on Drawings.

E. Mineral Filler: Class C fly ash of acceptable quality and meeting requirements of ASTM C 618 may be used as mineral admixture in concrete mixture. When fly ash mineral filler is used, store and inspect in accordance with ASTM C 618. Do not use fly ash in amounts to exceed 30 percent by absolute volume of cementitious material in mix design. Cement content may be reduced when strength requirements can be met. Note: When fly ash is used, term "cement" is defined as cement plus fly ash.

F. Air Entraining Agent: Furnish air-entraining agent conforming to requirements of ASTM C 260.

G. Water Reducer: Water reducing admixture conforming to requirements of ASTM C 494 may be used when required to improve workability of concrete. Amount and type of admixture subject to approval by Engineer.

H. Reinforcing Steel:

1. Provide new billet steel manufactured by open hearth process and conforming to ASTM A 615, Grade 60. Store steel to protect it from mechanical injury and rust. At time of placement, steel shall be free from dirt, scale, rust, paint, oil, or other injurious materials.

2. Cold bend reinforcing steel to shapes shown. Once steel has been bent, it may not be rebent.

3. Provide wire fabric conforming to ASTM A 82. Use fabric in which longitudinal and transverse wires have been electrically welded at points of intersection. Welds shall have sufficient strength not to be broken during handling or placing. Conform welding and fabrication of fabric sheets to ASTM A 185.

I. Fibrous Reinforcing: Conform to requirements of Section 03240 - Fibrous Reinforcing.

2.02 EQUIPMENT

A. Conform Equipment to requirements of ASTM C 94.

2.03 MIXING

A. Flexural strength shall be as specified using test specimens prepared in accordance with ASTM C 31 and tested in accordance with ASTM C78 (using simple beam with third-point loading). Compressive strength shall be as specified using test specimens prepared in accordance with ASTM C 31 and tested in accordance with ASTM C 39. Determine and measure batch quantity of each ingredient, including water for batch designs and all concrete produced for Work. Mix shall conform to these specifications and other requirements indicated on Drawings.

B. Mix design to produce concrete, which will have flexural strength of 500 psi at 7 days and 600 psi at 28 days. Slump of concrete shall be at least 2 inches but no more than 4 inches, when tested in accordance with ASTM C 143.

1. Concrete pavement, including curb, curb and gutter, and saw-tooth curb, shall contain at least 52 sacks (94 pounds per sack) of cement per cubic yard, with not more than 6.5 gallons of water, net, per sack of cement (water-cement ratio maximum 0.57). Determine cement content in accordance with ASTM C 138. Addition of mineral filler may be used to improve workability or plasticity of concrete to limits specified.

2. Coarse dry aggregate shall not exceed 85 percent of loose volume of concrete.

3. Add air-entraining admixture to ensure uniform distribution of agent throughout batch. Base air content of freshly mixed air-entrained concrete upon trial mixes with materials to be used in Work, adjusted to produce concrete of required plasticity and workability. Percentage of air entrainment in mix shall be 42 percent plus or minus 12 percent. Determine air content by testing in accordance with ASTM C 231.

4. Use retardant when temperature exceeds 90 degrees F. Proportion as recommended by manufacturer. Use same brand as used for air-entraining agent. Add and batch material using same methods as used for air-entraining agent.

C. Use high early strength concrete pavement to limits shown on Drawings. Design to meet following:

1. Concrete Mix: Flexural strength greater than or equal to 500 psi at 72 hours.

2. Cement: Minimum of 7 sacks of cement per cubic yard of concrete.

3. Water-Cement Ratio: Less than or equal to 5 gallons per sack. Changes in water-cement ratio and mix design including increase in cement factor when necessary, will be made when 72-hour flexural strength does not meet minimum value of 500 psi.

4. Other requirements for proportioning, mixing, execution, testing, etc., shall be in accordance with this Section 02751 - Concrete Paving.

PART 3 E X E C U T I O N

3.01 EXAMINATION

A. Verify compacted base is ready to support imposed loads and meets compaction requirements.

B. Verify lines and grades are correct.

3.02 PREPARATION

A. Properly prepare, shape and compact each section of sub grade before placing forms, reinforcing steel or concrete. After forms have been set to proper grade and alignment, use sub grade

planer to shape sub grade to its final cross section. Check contour of sub grade with template.

B. Remove sub grade that will not support loaded form. Replace and compact sub grade to required density.

3.03 EQUIPMENT

A. Alternate equipment and methods, other than those required by this Section, may be used provided equal or better results will be obtained. Maintain equipment for preparing sub grade and for finishing and compacting concrete in good working order.

B. Sub grade Planer and Template:

1. Use sub grade planer with adjustable cutting blades to trim sub grade to exact section shown on Drawings. Select planer mounted on visible rollers, which ride on forms. Planer frame must have sufficient weight so that it will remain on form, and have strength and rigidity that, under tests made by changing support from wheels to center, planer will not develop deflection of more than c inch. Tractors used to pull planer shall not produce ruts or indentations in sub grade. When slip form method of paving is used, operate sub grade planer on prepared track grade or have it controlled by electronic sensor system operated from string line to establish horizontal alignment and elevation of subbase.

2. Provide template for checking contour of sub grade. Template shall be long enough to rest upon side forms and have strength and rigidity that, when supported at center, maximum deflection shall not exceed c inch. Fit template with accurately adjustable rods projecting downward at 1-foot intervals. Adjust these rods to gauge cross sections of slab bottom when template is resting on side forms.

C. Machine Finisher: Provide power-driven, transverse finishing machine designed and operated to strike off and consolidate concrete. Machine shall have two screeds accurately adjusted to crown of pavement and with frame equipped to ride on forms. Use finishing machine with rubber tires when it operates on concrete pavement.

D. Hand Finishing:

1. Provide mechanical strike and tamping template 2 feet longer than width of pavement to be finished. Shape template to pavement section.

2. Provide two bridges to ride on forms and span pavement for finishing expansion and dummy joints. Provide floats and necessary edging and finishing tools.

E. Burlap Drag for Finishing Slab: Furnish four plies of 10-ounce burlap material fastened to bridge to form continuous strip of burlap full width of pavement. Maintain contact 3-foot width of burlap material with pavement surface. Keep burlap drags clean and free of encrusted mortar.

F. Vibrators: Furnish mechanically operated, synchronized vibrators mounted on tamping bar which rides on forms and hand-manipulated mechanical vibrators. Furnish vibrators with frequency of vibration to provide maximum consolidation of concrete without segregation.

G. Traveling Form Paver: Approved traveling form paver may be used in lieu of construction methods employing forms, consolidating, finishing and floating equipment. Meet requirements of this specification for sub grade, pavement tolerances, pavement depth, alignments, consolidation, finishing and workmanship. When traveling form paver does not provide concrete paving that meets compaction, finish, and tolerance requirements of this Specification, immediately discontinue its use and use conventional methods.

1. Equip traveling paver with longitudinal transangular finishing float adjustable to crown and

grade. Use float long enough to extend across pavement to side forms or edge of slab.

2. Ensure that continuous deposit of concrete can be made at paver to minimize starting and stopping. Use conventional means of paving locations inaccessible to traveling paver, or having horizontal or vertical curvature that traveling paver cannot negotiate.

3. Where Drawings require tie bars for adjacent paving, securely tie and support bars to prevent displacement. Tie bars may be installed with approved mechanical bar inserter mounted on traveling-form paver. Replace pavement in which tie bars assume final position other than that shown on Drawings.

3.04 FORMS

A. Side Forms: Use metal forms of approved shape and section. Preferred depth of form equal to required edge thickness of pavement. Forms with depths greater or less than required edge thickness of pavement will be permitted, provided difference between form depth and edge thickness when not greater than 1 inch, and further provided that forms of depth less than pavement edge are brought to required edge thickness by securely attaching wood or metal strips to bottom of form, or by grouting under form. Bottom flange of form shall be same size as thickness of pavement. Aluminum forms are not allowed. Forms shall be approved by Engineer. Length of form sections shall be not less than 10 feet and each section shall provide for staking in position with not less than 3 pins. Flexible or curved forms of wood or metal of proper radius shall be used for curves of 200-foot radius or less. Forms shall have ample strength and shall be provided with adequate devices for secure setting so that when in-place they will withstand, without visible springing or settlement, impact and vibration of finishing machine. In no case shall base width be less than 8 inches for form 8 inches or more in height. Forms shall be free from warp, bends or kinks and shall be sufficiently true to provide straight edge on concrete. Top of each form section, when tested with straight edge, shall conform to requirements specified for surface of completed pavement. Provide sufficient forms for satisfactory placement of concrete. For short radius curves, forms less than 10 feet in length or curved forms may be used. For curb returns at street intersections and driveways, wood forms of good grade and quality may be used.

B. Form Setting:

1. Rest forms directly on sub grade. Do not shim with pebbles or dirt. Accurately set forms to required grade and alignment and, during entire operation of placing, compacting and finishing of concrete, do not deviate from this grade and alignment more than c inch in 10 feet of length. Do not remove forms for at least 8 hours after completion of finishing operations. Provide supply of forms that will be adequate for orderly and continuous placing of concrete. Set forms and check grade for at least 300 feet ahead of mixer or as approved by Engineer.

2. Adjacent slabs may be used instead of forms, provided that concrete is well protected from possible damage by finishing equipment. Do not use adjacent slabs for forms until concrete has aged at least 7 days.

3.05 REINFORCING STEEL AND JOINT ASSEMBLIES

A. Place reinforcing steel and joint assemblies and position securely as indicated on Drawings. Wire reinforcing bars securely together at intersections and splices. Bars and coatings shall be free of rust, dirt or other foreign matter when concrete is placed. Secure reinforcing steel to chairs.

B. Position pavement joint assemblies at required locations and elevations, and rigidly secure in position. Install dowel bars in joint assemblies, each parallel to pavement surface and to centerline of pavement, as shown.

C. Cut header boards, joint filler, and other material used for forming joints to receive each dowel bar.

D. Secure in required position to prevent displacement during placing and finishing of concrete.

E. Drill dowels into existing pavement, secure with epoxy, and provide paving headers as required to provide rigid pavement sections.

F. Use sufficient number of chairs for steel reinforcement bars to maintain position of bars within allowable tolerances. Place reinforcement as shown on Drawings. In plane of steel parallel to nearest surface of concrete, bars shall not vary from plan placement by more than 1/12 of spacing between bars. In plane of steel perpendicular to nearest surface of concrete, bars shall not vary from plan placement by more than 3 inch.

3.06 FIBROUS REINFORCING

A. Do not use fibrous reinforcing to replace structural, load-bearing, or moment-reinforcing steel.

B. Mix and place in accordance with requirements of Section 03240.

3.07 PLACEMENT

A. Place concrete when air temperature taken in shade and away from artificial heat is above 35 degrees F and rising. Do not place concrete when temperature is below 40 degrees F and falling.

B. Place concrete within 90 minutes after initial water had been added. Remove and dispose of concrete not placed within this period.

C. Concrete slump during placement shall be 1 to 4 inches, except when using traveling-form paver, slump shall be maximum of 2 inches.

D. Deposit concrete continuously in successive batches. Distribute concrete in manner that will require as little rehandling as possible. Where hand spreading is necessary, distribute concrete with shovels or by other approved methods. Use only concrete rakes in handling concrete. At placement interruption of more than 30 minutes, place transverse construction joint at stopping point. Remove and replace sections less than 10 feet long.

E. Take special care in placing and spading concrete against forms and at longitudinal and transverse joints to prevent honeycombing. Voids in edge of finished pavement will be cause for rejection.

3.08 COMPACTION

A. Consolidate concrete using mechanical vibrators as specified herein. Extend vibratory unit across pavement, not quite touching side forms. Space individual vibrators at close enough intervals to vibrate and consolidate entire width of pavement uniformly. Mount mechanical vibrators to avoid contact with forms, reinforcement, transverse or longitudinal joints.

B. Furnish enough hand-manipulated mechanical vibrators for proper consolidation of concrete along forms, at joints and in areas not covered by mechanically controlled vibrators.

3.09 FINISHING

A. Finish concrete pavement with power-driven transverse finishing machines or by hand finishing methods.

1. Use transverse finishing machine to make at least two trips over each area. Make last trip

continuous run of not less than 40 feet. After transverse screeding, use hand-operated longitudinal float to test and level surface to required grade.

2. Hand finish with mechanical strike and tamping template in same width as pavement to be finished. Shape template to pavement section shown on Drawings. Move strike template forward in direction of placement, maintaining slight excess of material in front of cutting edge. Make minimum of two trips over each area. Screed pavement surface to required section. Work screed with combined transverse and longitudinal motion in direction work is progressing. Maintain screed in contact with forms. Use longitudinal float to level surface.

B. On narrow strips and transitions, finish concrete pavement by hand. Thoroughly work concrete around reinforcement and embedded fixtures. Strike off concrete with strike-off screed. Move strike-off screed forward with combined transverse and longitudinal motion in direction work is progressing, maintaining screed in contact with forms, and maintaining slight excess of materials in front of cutting edge. Tamp concrete with tamping template. Use longitudinal float to level surface.

C. After completion of straightedge operation, make first pass of burlap drag as soon as construction operations permit and before water sheen has disappeared from surface. Follow with as many passes as required to produce desired texture depth. Permit no unnecessary delays between passes. Keep drag wet, clean and free from encrusted mortar during use.

3.10 JOINTS AND JOINT SEALING

A. Conform to requirements of Section 02752 - Concrete Pavement Joints.

3.11 CONCRETE CURING

A. Conform to requirements of Section 02753 - Concrete Pavement Curing.

3.12 TOLERANCES

A. Test entire surface before initial set and correct irregularities or undulations. Bring surface within requirements of following test and then finish. Place 10-foot straightedge parallel to center of roadway to bridge depressions and touch high spots. Do not permit ordinates measured from face of straight edge to surface of pavement to exceed 1/16 inch per foot from nearest point of contact. Maximum ordinate with 10-foot straightedge shall not exceed c inch. Grind spots in excess of required tolerances to meet surface test requirements. Restore texture by grooving concrete to meet surface finishing specifications.

3.13 FIELD QUALITY CONTROL

A. Perform testing under provisions of Section 01454 - Testing Laboratory Services.

B. Compressive Strength Test Specimens: Make four test specimens for compressive strength test in accordance with ASTM C 31 for each 150 cubic yards or less of pavement that is placed in one day. Test two specimens at 7 days. Test remaining two specimens at 28 days. Test specimens in accordance with ASTM C 39. Minimum compressive strength shall be 3000 pounds per square inch at 7 days and 3500 pounds per square inch at 28 days.

C. When compressive test indicates failure, make yield test in accordance with ASTM C 138 for cement content per cubic yard of concrete. When cement content is found to be less than that specified per cubic yard, increase batch weights until amount of cement per cubic yard of concrete conforms to requirements.

D. Minimum of one 4-inch core will be taken at random locations per 375 feet per 12 feet lane or

500 square yards of pavement to measure in-place depth. Measure depth in accordance with ASTM C 174. Each core may be tested for 28-day compressive strength according to methods of ASTM C 42. 28-day compressive strength of each core tested shall be minimum of 3000 pounds per square inch.

E. Request, at option, three additional cores in vicinity of cores indicating nonconforming in-place depths at no cost to City. In-place depth at these locations shall be average depth of four cores.

F. Fill cores and density test sections with new concrete paving or non-shrink grout.

3.14 NONCONFORMING PAVEMENT

A. Remove and replace areas of pavement found deficient in thickness by more than 10 percent, or that fail compressive strength tests, with concrete of thickness shown on Drawings.

B. When measurement of any core is less than specified thickness by more than 10 percent, actual thickness of pavement in this area will be determined by taking additional cores at 10-foot intervals parallel to centerline in each direction from deficient core until, in each direction, core is taken which is not deficient by more than 10 percent. Exploratory cores for deficient thickness will not be used in averages for adjusted unit price. Exploratory cores are to be used only to determine length of pavement in unit that is to be removed and replaced. Replace nonconforming pavement sections at no additional cost to City.

3.15 UNIT PRICE ADJUSTMENT

A. Unit price adjustments shall be made for in-place depth determined by cores as follows:

1. Adjusted Unit Price shall be ratio of average thickness as determined by cores to thickness bid upon, times unit price.

2. Apply adjustment to lower limit of 95 percent and upper limit of 100 percent of unit price.

3. Average depth below 95 percent but greater than 90 percent may be accepted by Engineer at adjusted Unit Price of :

Unit Price Bid - [2 x (1-ratio) x Unit Price Bid]

4. Average depth below 90 percent will be rejected by Engineer.

3.16 PAVEMENT MARKINGS

A. Restore pavement markings to match those existing in accordance with standard specifications and details and Engineer's requirements.

3.17 PROTECTION

A. Barricade pavement section to prevent use until concrete has attained minimum design strength. Cure barricade pavement section for minimum 72 hours before use. Do not open pavement to traffic until concrete is at least 10 days old. Pavement may be open to traffic earlier provided Contractor pays for testing and additional beam once 7 day specified flexural strength is obtained. Pavement may be opened when high early strength concrete is used meeting specified 72-hour strength.

B. High early strength concrete may be used to provide access at driveways, street intersections, esplanades and other locations approved by Engineer.

C. On those sections of pavement to be opened to traffic, seal joints, clean pavement, and place earth against pavement edges before permitting use by traffic. Opening of pavement to traffic shall not relieve responsibility for Work.

D. Maintain concrete paving in good condition until completion of Work.

E. Repair defects by replacing concrete to full depth.

END OF SECTION

Section 02752

CONCRETE PAVEMENT JOINTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Joints for concrete paving; concrete sidewalks; concrete driveways, curbs, and curb and gutters.

B. Saw-cutting existing concrete or asphalt pavements for new joints.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for saw-cutting existing concrete or asphalt pavement for new joints is on linear foot basis. Saw-cutting existing standard concrete curb will be measured as 1-1/2 linear feet and existing standard concrete curb and gutter will be measured as 3 linear feet.

2. No separate payment will be made for expansion joints, formed or sawed street pavement contraction joints and longitudinal weakened plane joints. Include payment in unit price for Concrete Paving.

3. No separate payment will be made for joints for Curb, Curb and Gutter, Saw-tooth Curb, Concrete Sidewalks, and Concrete Driveways. Include payment in unit price for Curb and Gutter, Concrete Sidewalks, and Concrete Driveways.

4. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 REFERENCES

A. ASTM A 615 - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.

B. ASTM D 994 - Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type).

C. ASTM D 1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).

D. ASTM D 3405 - Standard Specification for Joint Sealants, Hot-Poured, for Concrete and Asphalt Pavements.

1.04 SUBMITTALS

A. Submit product data and samples in accordance with requirements of Section 01330 - Submittal Procedures.

B. Submit product data for joint sealing compound and proposed sealing equipment for approval.

C. Submit samples of dowel cup, metal supports, and deformed metal strip for approval.

PART 2 P R O D U C T S

2.01 MATERIALS

A. Board Expansion Joint Material: Filler board of selected stock. Use wood of density and type as follows:

1. Clear, all-heart cypress weighing no more than 40 pounds per cubic foot, after being oven dried to constant weight.

2. Clear, all-heart redwood weighing no more than 30 pounds per cubic foot, after being oven dried to constant weight.

B. Preformed Expansion Joint Material: Bituminous fiber and bituminous mastic composition material conforming to ASTM D 994 and ASTM D 1751.

C. Joint Sealing Compound: Hot-poured rubber-asphalt compound conforming to ASTM D 3405.

D. Load Transmission Devices:

1. Smooth, steel dowel bars conforming to ASTM A 615, Grade 60. When indicated on Drawings, encase one end of dowel bar in approved cap having inside diameter 1/16 inch greater than diameter of dowel bar.

2. Deformed steel tie bars conforming to ASTM A 615, Grade 60.

E. Metal Supports for Reinforcing Steel and Joint Assembly: Employ metal supports of approved shape and size that will secure reinforcing steel and joint assembly in correct position during placing and finishing of concrete.

PART 3 E X E C U T I O N

3.01 PLACEMENT

A. When new work is adjacent to existing concrete, place joints at same location as existing joints in adjacent pavement.

B. If the limit of removal of existing concrete or asphaltic pavement does not fall on existing joint, saw cut existing pavement minimum of 2 inches deep to provide straight, smooth joint surface without chipping, spalling or cracks.

3.02 CONSTRUCTION JOINTS

A. Place transverse construction joint wherever concrete placement must be stopped for more than 30 minutes. Place longitudinal construction joints at interior edges of pavement lanes using No. 6 deformed tie bars, 30 inches long and spaced 18 inches on centers.

3.03 EXPANSION JOINTS

A. Place 3/4-inch expansion joints at radius points of curb returns for cross street intersections, or as located in adjacent pavement but no further than 80 feet apart. Use no boards shorter than 6 feet. When pavement is 24 feet or narrower, use not more than 2 lengths of board. Secure pieces to form straight joint. Shape board filler accurately to cross section of concrete slab. Use load transmission

devices of type and size shown on Drawings unless otherwise specified or shown as "No Load Transfer Device". Seal with joint sealing compound.

3.04 CONTRACTION JOINTS

A. Place contraction joints at same locations as in adjacent pavement or at spaces indicated on Drawings. Place smoothed, painted and oiled dowels accurately and normal to joint. Seal groove with joint sealing compound.

3.05 LONGITUDINAL WEAKENED PLANE JOINTS

A. Place longitudinal weakened plane joints at spaces indicated on Drawings. Seal groove with joint sealing compound.

3.06 SAWED JOINTS

A. Use sawed joints as an alternate to contraction and weakened plane joints. Circular cutter shall be capable of cutting straight line groove minimum of 1/2 inch wide. Depth shall be one quarter of pavement thickness plus 1/2 inch. Commence sawing as soon as concrete has hardened sufficiently to permit cutting without chipping, spalling or tearing and prior to initiation of cracks. Once sawing has commenced, it shall be continued until completed. Make saw cut with one pass. Complete sawing within 24 hours of concrete placement. Saw joints at required spacing consecutively in sequence of concrete placement.

B. Concrete Saw: Provide sawing equipment adequate in power to complete sawing to required dimensions and within required time. Provide at least one standby saw in good working order. Maintain an ample supply of saw blades at work site at all times during sawing operations. Sawing equipment shall be on job at all times during concrete placement.

3.07 JOINTS FOR CURB, CURB AND GUTTER

A. Place 3/4-inch preformed expansion joints through curb and gutters at locations of expansion and contraction joints in pavement; at end of radius returns at street intersections and driveways; and at curb inlets. Maximum spacing shall be 120-foot centers.

3.08 JOINTS FOR CONCRETE SIDEWALKS

A. Provide 3/4-inch expansion joints conforming to ASTM A 1751 along and across sidewalk at back of curbs, at intersections with driveways, steps, and walls; and across walk at intervals not to exceed 36 feet. Provide expansion joint material conforming to ASTM D 994 for small radius curves and around fire hydrants and utility poles. Extend the expansion joint material full depth of the slab.

3.09 JOINTS FOR CONCRETE DRIVEWAYS

A. Provide 3/4-inch expansion joints conforming to ASTM D 1751 across driveway in line with street face of sidewalks, at existing concrete driveways, and along intersections with sidewalks and other structures. Extend expansion joint material full depth of slab.

3.10 JOINT SEALING

A. Seal joints only when surface and joints are dry, ambient temperature is above 50 degrees F and less than 85 degrees F, and weather is not foggy or rainy.

B. Joint sealing equipment shall be in like new working condition throughout the joint sealing operation, and be approved by Resident Project Representative. Use concrete grooving machine or power-

operated wire brush and other equipment such as plow, brooms, brushes, blowers or hydro or abrasive cleaning as required to produce satisfactory joints.

C. Clean joints of loose scale, dirt, dust and curing compound. The term joint includes wide joint spaces, expansion joints, dummy groove joints or cracks, either preformed or natural. Remove loose material from concrete surfaces adjacent to joints.

D. Fill joints neatly with joint sealer to depth shown. Pour sufficient joint sealer into joints so that, upon completion, surface of sealer within joint will be 1/4 inch above level of adjacent surface or at elevation as directed.

3.11 PROTECTION

A. Maintain joints in good condition until completion of Work.

B. Replace damaged joints material with new material as required by this Section.

END OF SECTION

Section 02753

CONCRETE PAVEMENT CURING

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Curing of Portland cement concrete paving.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. No separate payment will be made for concrete curing under this Section. Include payment in unit price for Concrete Paving, Concrete Sidewalks, Curbs, and Curb and Gutters.

2. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 REFERENCES

A. ASTM C 171 - Standard Specifications for Sheet Materials for Curing Concrete.

B. ASTM C 309 - Standard Specifications for Liquid Membrane-Forming Compounds for Curing Concrete.

1.04 SUBMITTALS

A. Submittals shall conform to requirements of Section 01330 - Submittal Procedures.

B. Submit manufacturer's product data for cover materials and liquid membrane-forming compounds.

PART 2 P R O D U C T S

2.01 COVER MATERIALS FOR CURING

A. Curing materials shall conform to one of the following:

1. Polyethylene Film: Opaque pigmented white film conforming to requirements of ASTM C 171.

2. Waterproofed Paper: Paper conforming to requirements of ASTM C 171.

3. Cotton Mats: Single layer of cotton filler completely enclosed in cover of cotton cloth. Mats shall contain not less than 3/4 of a pound of uniformly distributed cotton filler per square yard of mat. Cotton cloth used for covering materials shall weigh not less than 6 ounces per square yard. Mats shall be stitched so that mat will contact surface of pavement at all points when saturated with water.

2.02 LIQUID MEMBRANE-FORMING COMPOUNDS

A. Liquid membrane-forming compounds shall conform to ASTM C 309. Membrane shall restrict loss of water to not more than 0.55 kg/m^2 of surface in 72 hours.

PART 3 E X E C U T I O N

3.01 CURING REQUIREMENT

A. Concrete pavement shall be cured by protecting it against loss of moisture for period of not less than 72 hours immediately upon completion of finishing operations. Do not use membrane curing for concrete pavement to be overlaid by asphaltic concrete.

B. Failure to provide sufficient cover material shall be cause for immediate suspension of concreting operations.

3.02 POLYETHYLENE FILM CURING

A. Immediately after finishing surface, and after concrete has taken its initial set, apply water in the form of a fine spray. Cover surface with polyethylene film so film will remain in direct contact with surface during specified curing period.

B. Cover entire surface and both edges of pavement slab. Joints in film sheets shall overlap minimum of 12 inches. Immediately repair tears or holes occurring during curing period by placing acceptable moisture-proof patches or by replacing.

3.03 WATERPROOFED PAPER CURING

A. Immediately after finishing surface, and after concrete has taken its initial set, apply water in form of fine spray. Cover surface with waterproofed paper so paper will remain in direct contact with surface during specified curing period.

B. Prepare waterproofed paper to form blankets of sufficient width to cover entire surface and both edges of pavement slab, and not be more than 60 feet in length. Joints in blankets caused by joining paper sheets shall lap not less than 5 inches and shall be securely sealed with asphalt cement having melting point of approximately 180 degrees F. Place blankets to secure an overlap of at least 12 inches. Tears or holes appearing in paper during curing period shall be immediately repaired by cementing patches over defects.

3.04 COTTON MAT CURING

A. Immediately after finishing surface, and after concrete has taken its initial set, completely cover surface with cotton mats, thoroughly saturated before application, in such manner that they will contact surface of pavement equally at all points.

B. Mats shall remain on pavement for specified curing period. Keep mats saturated so that, when lightly compressed, water will drip freely from them. Keep banked earth or cotton mat covering edges saturated.

3.05 LIQUID MEMBRANE-FORMING COMPOUNDS

A. Immediately after finishing surface, and after concrete has taken its initial set, apply liquid membrane-forming compound in accordance with manufacturer's instructions.

END OF SECTION

Section 02771

CURB, CURB AND GUTTER, AND HEADERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Reinforced concrete curb, reinforced monolithic concrete curb and gutter, and mountable curb.

B. Paving headers and railroad headers poured monolithically with concrete base or pavement.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for curbs and for curbs and gutter is on linear foot basis measured along face of curb.

2. Payment for headers is on linear foot basis measured between lips of gutters adjacent to concrete base and measured between backs of curbs adjacent to streets.

3. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 SUBMITTALS

A. Submittals shall conform to requirements of Section 01330 - Submittal Procedures.

B. Submit details of proposed formwork for approval.

PART 2 PRODUCTS

2.01 MATERIALS

A. Concrete: Conform to material and proportion requirements for concrete of Section 02751 - Concrete Paving.

B. Reinforcing Steel: Conform to material requirements for welded wire fabric of Section 02751 - Concrete Paving.

C. Grout: Nonmetallic, nonshrink grout containing no chloride producing agents conforming to the following requirements.

1. Compressive strength
   a. at 7 days: 3500 psi
   b. at 28 days: 8000 psi

2. Initial set time: 45 minutes

3. Final set time: 1.5 hours

D. Preformed Expansion Joint Material: Conform to material requirements for preformed expansion joint material of Section 02752 - Concrete Pavement Joints.

E. Expansion Joint Filler: Conform to material requirements for expansion joint filler of Section 02752 - Concrete Pavement Joints.

F. Mortar: Mortar finish composed of one part Portland cement and 1-1/2 parts of fine aggregate. Use only when approved by Resident Project Representative.

PART 3 EXECUTION

3.01 PREPARATION

A. Prepare subgrade in accordance with applicable portions of sections on excavation and fill, embankment, and subgrade and roadbed.

3.02 PLACEMENT

A. Guideline: Set to follow top line of curb. Attach indicator to provide constant comparison between top of curb and guideline. Ensure flow lines for monolithic curb and gutters conform to slopes indicated on Drawings.

B. Forms: Brace to maintain position during pour. Use metal templates cut to section shown on Drawings.

C. Reinforcement: Secure in position so that steel will remain in place throughout placement. Reinforcing steel shall remain at approximate center of base or pavement as indicated on Drawings.

D. Joints: Place in accordance with Section 02752 - Concrete Pavement Joints. Place dummy groove joints at 6-foot centers at right angles to curb lines. Cut dummy grooves 1/4 inch deep using an approved edging tool.

E. Place concrete in forms to required depth. Consolidate thoroughly. Do not permit rock pockets in form. Entirely cover top surfaces with mortar.

3.03 MANUAL FINISHING

A. After concrete is in place, remove front curb forms. Form exposed portions of curb, and of curb and gutter, using mule which conforms to curb shape, as shown on Drawings.

B. Thin coat of mortar may be worked into exposed face of curb using mule and two-handled wooden darby at least 3 feet long.

C. Before applying final finish move 10-foot straightedge across gutter and up curb to back form of curb. Repeat until curb and gutter are true to grade and section. Lap straightedge every 5 feet.

D. Steel trowel finish surfaces to smooth, even finish. Make face of finished curb true and straight.

E. Edge outer edge of gutter with 1/4-inch edger. Finish edges with tool having 1/4-inch radius.

F. Finish visible surfaces and edges of finished curb and gutter free from blemishes, form marks and tool marks. Finished curb or curb and gutter shall have uniform color, shape and appearance.

3.04 MECHANICAL FINISHING

A. Mechanical curb forming and finishing machines may be used instead of, or in conjunction with, previously described methods. Use of mechanical methods shall provide specified curb design and finish.

3.05 CURING

A. Immediately after finishing operations, cure exposed surfaces of curbs and gutters in accordance with Section 02753 - Concrete Pavement Curing.

3.06 TOLERANCES

A. Top surfaces of curb and gutter shall have uniform width and shall be free from humps, sags or other irregularities. Surfaces of curb top, curb face and gutter shall not vary more than 1/8 inch from edge of straightedge laid along them.

3.07 PROTECTION

A. Maintain curbs and gutters in good condition until completion of the Work.

B. Replace damaged curbs and gutters to comply with this Section.

END OF SECTION

Section 02775

CONCRETE SIDEWALKS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Reinforced concrete sidewalks.

B. Wheelchair Ramps.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for concrete sidewalks is on square foot basis.

2. Payment for wheelchair ramps of each type specified is on a per ramp basis. The removal of existing sidewalk and curb or curb and gutter is included in the cost of the ramp.

3. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 REFERENCES

A. ASTM C 31 - Standard Practice for Making and Curing Concrete Test Specimens in the Field.

B. ASTM C 39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.

C. ASTM C 42 - Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.

D. ASTM C 138 - Standard Test Method for Unit Weight, Yield, and Air Content (Gravimetric) of Concrete.

E. ASTM C 143 - Test Method for Slump of Hydraulic Cement Concrete.

F. ASTM C 172 - Practice for Sampling Freshly Mixed Concrete.

G. ASTM D 698 - Standard Test Methods for Moisture - Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5-Pound Rammer and 12-inch Drop.

1.04 SUBMITTALS

A. Submittals shall conform to requirements of Section 01330 - Submittal Procedures.

B. Submit certified testing results and certificates of compliance.

PART 2 PRODUCTS

2.01 MATERIALS

A. Concrete: Conform to material and proportion requirements for concrete of Section 02751 - Concrete

Paving.

B. Reinforcing Steel: Conform to material requirements for welded wire fabric of Section 02751 - Concrete Paving.

C. Preformed Expansion Joint Material: Conform to material requirements for preformed expansion joint material of Section 02752 - Concrete Pavement Joints.

D. Expansion Joint Filler: Conform to material requirements for expansion joint material of Section 02752 - Concrete Pavement Joints.

E. Forms: Use straight, unwarped wood or metal forms with nominal depth equal to or greater than the proposed sidewalk thickness. The use of 2" by 4" lumber as forms will not be allowed.

F. Sand Bed: Conform to material requirements for bank run sand of Section 02320 - Utility Backfill Materials.

G. Sodding: Conform to material requirements for sodding of Section 02922 - Sodding.

PART 3 EXECUTION

3.01 REPLACEMENT

A. Replace sidewalks which are removed or damaged during construction with sidewalk of thickness and width equivalent to those removed or damaged.

B. Provide replaced and new sidewalks with wheelchair ramps if sidewalk intersects curb at street or driveway.

3.02 PREPARATION

A. Identify and protect utilities which are to remain.

B. Protect living trees, other plant growth, and features designated to remain.

C. Conduct clearing and grubbing operations in accordance with Section 02233 - Clearing and Grubbing.

D. Excavate subgrade to the line, grade, and cross section shown on Drawings. Remove soft spots and pumping soils and replace with select fill material in accordance with the applicable portions of Item 02317 - Excavation and Backfill for Utilities.

E. Immediately after subgrade is prepared, cover with compacted sand bed to depth as shown on Drawings. Pour concrete when sand is moist but not saturated.

3.03 PLACEMENT

A. Setting Forms: Securely stake forms to line and grade. Maintain position during concrete placement.

B. Reinforcement: Install 6x6, W2.9 x W2.9 welded wire fabric or No. 3 reinforcing steel bars on 18-inch centers longitudinally and transversely. Lay longitudinal bars in walk continuously, except through expansion joints. Support reinforcement in manner to maintain reinforcement in center of slab vertically during placement.

C. Expansion Joints: Install expansion joints in accordance with Section 02752 - Concrete Pavement Joints.

D. Colored Concrete: Apply coloring agent in accordance with Section 02761 - Colored Concrete for Medians and Sidewalks if called for on the Drawings.

E. Place concrete in forms to specified depth and consolidate with immersion type vibrator or manual tamping device. Manual tamping devices shall only be used with approval of the Resident Project Representative. Bring mortar to surface.

F. Strike off to smooth finish with wood strike board. Finish smoothly with wood hand float. Brush across sidewalk lightly with fine-haired brush.

G. Unless otherwise indicated on Drawings, mark off joints 1/8 inch deep, at spacing equal to width of walk. Use joint tool equal in width to edging tool.

H. Finish edges with tool having 1/4-inch radius.

I. After concrete has set sufficiently, refill space along sides of sidewalk to top of walk with suitable material. Tamp until firm and solid. Dispose of excess material in accordance with Section 01576 - Waste Material Disposal. Repair driveways and parking lots damaged by sidewalk excavation in accordance with Section 02951 - Pavement Replacement for Utility Construction.

3.04 CURING

A. Conform to requirements of Section 02753 - Concrete Pavement Curing.

3.05 FIELD QUALITY CONTROL

A. Testing will be performed under provisions of Section 01454 - Testing Laboratory Services.

B. Compressive Strength Test Specimens: Four test specimens for compressive strength test will be made in accordance with ASTM C 31 for each 30 cubic yards or less of sidewalk that is placed in one day. Two specimens will be tested at 7 days. The remaining two specimens will be tested at 28 days. Specimens will be tested in accordance with ASTM C 39.

C. Yield test for cement content per cubic yard of concrete will be made in accordance with ASTM C 138. If such cement content is found to be less than that specified per cubic yard, reduce batch weights until amount of cement per cubic yard of concrete conforms to requirements.

D. If the Contractor places concrete without notifying the laboratory, the Owner will have the concrete tested by means of a core test as specified in ASTM C 42. If the concrete does not meet the specification, the cost of the test will be deducted from payment due the Contractor.

E. Sampling of fresh concrete shall be in accordance with ASTM C 172.

F. Take slump tests when cylinders are made and when concrete slump appears excessive.

G. If any 28-day laboratory test indicates that concrete of low strength has been placed, the concrete in question shall be tested by taking cores as directed by the Resident Project Representative. At least three representative cores shall be taken and tested as specified in ASTM C 42 and the cost deducted from payment due the Contractor.

3.06 NONCONFORMING PAVEMENT

A. Remove and replace areas of sidewalk that fail compressive strength tests, with concrete of thickness shown on Drawings.

B. Nonconforming sidewalk sections shall be replaced at no additional cost to the Owner.

3.07 PROTECTION

A. Maintain sidewalks in good condition until completion of the Work.

B. Replace damaged sidewalks in accordance with Paragraph 3.01, Replacement.

END OF SECTION

SECTION 02920

TOPSOILING AND FINISHED GRADING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Furnish all labor, materials, tools, equipment, and services for all topsoiling and finished grading, as indicated, in accord with provisions of contract documents.

B. Completely coordinate with work of all other trades.

C. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.

1.2 LOCATION OF WORK

A. All areas within limits of construction, areas of surplus material disposal, and all areas which are disturbed in the course of the work.

1.3 RELATED SECTIONS

A. Section 02200 - Earthwork and Site Grading

B. Section 02233 - Clearing and Grubbing

1.4 QUALITY ASSURANCE

A. Finish Grading Tolerance:
   1. 0.1 ft. (30 mm) plus/minus from required elevations.

1.5 JOB CONDITIONS:

A. Verify amount of topsoil stockpiled and determine amount of additional topsoil, if necessary to complete work.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Topsoil:
   1. Original fertile, friable surface soil typical of the area, capable of supporting native plant growth, reasonably free of subsoil, clay, weeds, roots, and stones larger than 1 inch.
      a. Use existing topsoil stockpiled under Section 02100.
      b. If amount of topsoil stockpiled is less than amount necessary for the work, furnish all additional topsoil required at no additional cost to the Owner.
      c. Contractor may import topsoil to the site with prior review and approval by the Owner's Representative.

B. Surplus Material:
   1. Legally dispose of surplus material offsite.

PART 3 - EXECUTION

3.1 ROUGH GRADE REVIEW

A. Rough grading shall be inspected and approved by owner's representative before site work proceeds.

3.2 PREPARATION

A. Correct, adjust and/or repair rough graded areas.
   1. Cut off mounds and ridges.
   2. Fill gullies and depressions.
   3. Perform other necessary repairs.
   4. Bring all sub-grades to specified contours, even and properly compacted.

B. Remove all stones and debris over 2 in. (50 mm) in any dimension.

3.3 PLACING TOPSOIL

A. Do not place topsoil when subgrade is either wet or frozen enough to cause clodding.

B. Spread topsoil to minimum compacted depth of 6 in. (100 mm) for all disturbed earth areas.

C. Make finished surface free of stones, sticks, dirt clods or other material 1 in. (25 mm) or more in any dimension.

D. Drag finish with harrow (or hand rake) to insure smooth finish to the lines and grades indicated.

E. Restore areas occupied by stockpiles to condition of rest of finished work.

3.4 ACCEPTANCE

A. Upon completion of topsoiling, obtain owner's representative acceptance of grade and surface.

END OF SECTION

Section 02921

HYDRO MULCH SEEDING

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Seeding, fertilizing, mulching, and maintenance of areas indicated on Drawings.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.
   1. Payment for hydro mulch seeding is on an acre basis.
   2. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit certification from supplier that each type of seed conforms to these specifications and requirements of Texas Seed Law. Certification shall accompany seed delivery.

C. Submit certificate stating that fertilizer complies with these specifications and requirements of Texas Fertilizer Law.

PART 2 P R O D U C T S

2.01 MATERIALS

A. Topsoil: Conform to material requirements of Section 02911 - Topsoil.

B. Seed: Conform to U.S. Department of Agriculture rules and regulations of Federal Seed Act and Texas Seed Law. Seed shall be certified 90 percent pure and furnish 80 percent germination and meet following requirements:

1. Rye: Fresh, clean, Italian rye grass seed (lollium multi-florum), mixed in labeled proportions. As tested, minimum percentages of impurities and germination must be labeled. Deliver in original unopened containers.

2. Bermuda: Extra-fancy, treated, lawn type common bermuda (Cynodon dactylon). Deliver in original, unopened container showing weight, analysis, name of vendor, and germination test results.

3. Wet, moldy, or otherwise damaged seed will not be accepted.

4. Seed requirements, application rates, and planting dates are:

TYPE	APPLICATION RATE POUNDS/A	PLANTING DATE
Hulled Common Bermuda Grass 98/88 Unhulled Common Bermuda Grass 98/88	40 40	Jan 1 to Mar 31
Hulled Common Bermuda Grass 98/88	40	Apr 1 to Sep 30
Hulled Common Bermuda Grass 98/88 Unhulled Common Bermuda Grass 98/88 Annual Rye Grass (Gulf)	40 40 30	Oct 1 to Dec 31

C. Fertilizer: Dry and free flowing, inorganic, water-soluble commercial fertilizer, which is uniform in composition. Deliver in unopened containers, which bear manufacturers guaranteed analysis. Caked, damaged, or otherwise unsuitable fertilizer will not be accepted. Fertilizer shall contain minimum percentages of following elements:

1. Nitrogen: 10 Percent

2. Phosphoric Acid: 20 Percent

3. Potash: 10 Percent

D. Mulch:

1. Virgin wood cellulose fibers from whole wood chips having minimum of 20 percent fibers 0.42 inches in length and 0.01 inches in diameter.

2. Cellulose fibers manufactured from recycled newspaper and meeting same fiber content and size as for cellulose fibers from wood chips.

3. Dye mulch green for coverage verification purposes.

E. Soil Stabilizer: "Terra Tack 1" or approved equal.

F. Weed control agent: Pre-emergent herbicide for grass areas, such as "Benefin," or approved equal.

PART 3 EXECUTION

3.01 PREPARATION

A. Place and compact topsoil in accordance with requirements of Section 02911 - Topsoil.

B. Dispose of Objectionable and Waste Materials in accordance with Section 01576 - Waste Material Disposal.

3.02 APPLICATION

A. Seed: Apply uniformly at rates given in Paragraph 2.01 B for type of seed and planting date.

B. Fertilizer: Apply uniformly at rate of 500 pounds per acre.

C. Mulch: Apply uniformly at rate of 50 pounds per 1000 square feet.

D. Soil Stabilizer: Apply uniformly at rate of 40 pounds per acre.

E. Weed Control Agent: Apply at manufacturer's recommended rate prior to hydro mulching.

F. Sod: Lay single row of sod along perimeter where topsoil and pavement intersect.

G. Suspend operations under conditions of drought, excessive moisture, high winds, or extreme or prolonged cold. Obtain Engineer approval before resuming operations.

3.03 MAINTENANCE

A. Maintain grassed areas minimum of 90 days, or as required to establish an acceptable lawn. For areas seeded in fall, continue maintenance following spring until acceptable lawn is established.

B. Maintain grassed areas by watering, fertilizing, weeding, and trimming.

C. Repair areas damaged by erosion by regrading, rolling and replanting.

D. Reseed small, sparse grass areas. When sparse areas exceed 20 percent of planted area, reseed by hydro mulch.

E. Mow grass when height reaches 32 inches or greater on average before final acceptance. Mow to height of 22 inches.

END OF SECTION

Division 3
Concrete

Section 03211

REINFORCING STEEL

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Structural concrete reinforcement and grouting of reinforcement dowel bars into hardened concrete.

1.02 UNIT PRICES

A. No separate payment will be made for reinforcing steel or grouting that is part of the Work as bid. Include payment in unit price for structural concrete.

B. Measurement for reinforcing steel installed as extra work is on a per-pound basis.

C. Refer to Section 01270 - Measurement and Payment for unit price procedures.

1.03 REFERENCES

A. ACI 315 - Details and Detailing of Concrete Reinforcement.

B. ACI 318 - Building Code Requirements for Reinforced Concrete.

C. ASTM A 36 - Standard Specification for Structural Steel.

D. ASTM A 82 - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.

E. ASTM A 185 - Standard Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.

F. ASTM A 497 - Standard Specification for Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement.

G. ASTM A 615 - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.

H. ASTM A 675 - Standard Specification for Steel Bars, Carbon, Hot-Wrought, Special Quality, Mechanical Properties.

I. ASTM A 775/A 775M - Standard Specification for Epoxy-Coated Reinforcing Steel Bars.

J. ASTM C 881 - Specification for Epoxy-Resin-Base Bonding Systems for Concrete.

K. AWS D 1.4 - Structural Welding Code - Reinforcing Steel.

L. WRI - Manual of Standard Practice for Welded Wire Fabric.

M. CRSI MSP-1 - Manual of Standard Practice.

1.04 SUBMITTALS

A. Conform to Section 01330 – Submittal Procedures.

B. Shop Drawings:

1. Submit shop drawings detailing reinforcement fabrication, bar placement location, splices, spacing, bar designation, bar type, length, size, bending, number of bars, bar support type and other pertinent information, including dimensions. Provide sufficient detail for placement of reinforcement without use of Contract Drawings. Information shall correspond directly to data listed on bill of materials.

2. Use of reproductions of Contract Drawings by Contractor, Subcontractor, erector, fabricator or material supplier in preparation of shop drawings (or in lieu of preparation of shop drawings) signifies acceptance by that party of information shown thereon as correct, and acceptance of obligation to pay for any job expense, real or implied, arising due to errors that may occur thereon. Remove references to Design Engineer, including seals, when reproductions of Contract Drawings are used as shop drawings.

3. Detail shop drawings in accordance with ACI 315, Figure 6.

4. Submit shop drawings showing location of proposed additional construction joints as required under Section 03351 - Joints in Concrete Structures, and obtain approval of Engineer, prior to submitting reinforcing steel shop drawings.

C. Bill of Materials: Submit with shop drawings.

D. Product Data:

1. Mechanical Bar Splices: Submit manufacturer's technical literature, including specifications and installation instructions.

2. Epoxy grout proposed for anchoring reinforcing dowels to hardened concrete: Submit manufacturer's technical literature including recommended installation procedures.

E. Certificates:

1. Submit steel manufacturer's certificates of mill tests giving properties of steel proposed for use. List manufacturer's test number, heat number, chemical analysis, yield point, tensile strength and percentage of elongation. Identify proposed location of steel in work.

2. Foreign-manufactured reinforcing bars shall be tested for conformance to ASTM requirements by a certified independent testing laboratory located in United States. Certification from any other source is not acceptable. Submit test reports for review. Do not begin fabrication of reinforcement until material has been approved.

1.05 HANDLING AND STORAGE

A. Store steel reinforcement above ground on platforms, skids or other supports. Protect reinforcing from mechanical injury, surface deterioration and formation of excessive, loose or flaky rust caused by exposure to weather. Protect epoxy-coated reinforcing from formation of any amount of rust.

1.06 QUALITY ASSURANCE

A. Notify Resident Project Representative at least 48 hours before concrete placement so that reinforcement may be inspected, and errors corrected, without delaying Work.

PART 2 PRODUCTS

2.01 MATERIAL

A. Reinforcing Bars: Deformed bars conforming to ASTM A 615, grade as indicated on Drawings, except column spirals and those shown on Drawings to be smooth bars. Where grade is not shown on Drawings, use Grade 60.

B. Smooth Bars: Where indicated on Drawings, use smooth bars conforming to ASTM A 36; ASTM A 615, Grade 60; or ASTM A 675, Grade 70.

C. Column Spirals: Bars conforming to ASTM A 615, Grade 60, or wire conforming to ASTM A 82.

D. Epoxy-Coated Deformed Bars, Column Spirals and Smooth Bars: Conform to ASTM A 775/A 775M.

E. Welded Wire Fabric:

1. Welded Smooth Wire Fabric: Conform to ASTM A 185.

2. Welded Deformed Wire Fabric: Conform to ASTM A 497.

3. Provide wire size, type and spacing as shown. Where type is not shown on Drawings, use welded smooth wire fabric.

4. Furnish welded wire fabric in flat sheets only.

F. Tie Wire: 16-1/2 gage or heavier annealed steel wire. Use plastic-coated tie wire with epoxy-coated reinforcing steel.

G. Bar Supports: Provide chairs, riser bars, ties and other accessories made of plastic or metal, except as otherwise specified. Use bar supports and accessories of sizes required to provide required concrete cover. Where concrete surfaces are exposed to weather, water or wastewater, provide plastic accessories only; do not use galvanized or plastic-tipped metal in such locations. Provide metal bar supports and accessories rated Class 1 or 2 conforming to CRSI MSP-1 Manual of Standard Practice. Use epoxy-coated bar supports with epoxy-coated reinforcing bars.

H. Slabs on Grade: Provide chairs with sheet metal bases or provide precast concrete bar supports 3 inches wide, 6 inches long, and thick enough to allow required cover. Embed tie wires in 3-inch by 6-inch side.

I. Mechanical Bar Splices:

1. Conform to ACI 318; use where indicated on Drawings.

a. Compression splices shall develop ultimate stress of reinforcing bar.

b. Tension splices shall develop 125 percent of minimum yield point stress of reinforcing bar.

2. Regardless of chemical composition of steel, any heat effect shall not adversely affect performance of reinforcing bar.

J. Welded Splices:

1. Provide welded splices where shown and where approved by the Engineer. Welded splices of reinforcing steel shall develop a tensile strength exceeding 125 percent of the yield strength of the reinforcing bars connected.

2. Provide materials for welded splices conforming to AWS D1.4.

K. Epoxy Grout: High-strength rigid epoxy adhesive, conforming to ASTM C 881, Type IV, manufactured for purpose of anchoring dowels into hardened concrete and the moisture condition, application temperature and orientation of the hole to be filled. Unless otherwise shown, depth of embedment shall be as required to develop the full tensile strength (125 percent of yield strength) of dowel, but not less than 12 diameters.

2.02 FABRICATION

A. Bending: Fabricate bars to shapes indicated on Drawings by cold bending. Bends shall conform to minimum bend diameters specified in ACI 318. Do not straighten or rebend bars. Fabricate epoxy-coated reinforcing steel to required shapes in a manner that will not damage epoxy coating. Repair any damaged epoxy coating with patching material conforming to Item 4.4 of ASTM A 775/A 775M.

B. Splices:

1. Locate splices as indicated on Drawings. Do not locate splices at other locations without approval of Engineer. Use minimum number of splices located at points of minimum stress. Stagger splices in adjacent bars.

2. Length of lap splices: As shown on Drawings.

3. Prepare ends of bars at mechanical splices in accordance with splice manufacturer's requirements.

C. Construction Joints: Unless otherwise shown, continue reinforcing through construction joints.

D. Bar Fabrication Tolerances: Conform to tolerances listed in ACI 315, Figures 4 and 5.

E. Standard Hooks: Conform to the requirements of ACI 318.

F. Marking: Clearly mark bars with waterproof tags showing number of bars, size, mark, length and yield strength. Mark steel with same designation as member in which it occurs.

PART 3 EXECUTION

3.01 PREPARATION

A. Clean reinforcement of scale, loose or flaky rust and other foreign material, including oil, mud or coating that will reduce bond to concrete.

3.02 INSTALLATION

A. Placement Tolerances: Place reinforcement within tolerances of Table 03210A at the end of this Section. Bend tie wire away from forms to maintain the specified concrete coverage.

B. Interferences: Maintain 2-inch clearance from embedded items. Where reinforcing interferes with location of other reinforcing steel, conduit or embedded items, bars may be moved within

specified tolerances or one bar diameter, whichever is greater. Where greater movement of bars is required to avoid interference, notify Engineer. Do not cut reinforcement to install inserts, conduit, mechanical openings or other items without approval of Engineer.

C. Concrete Cover: Provide clear cover measured from reinforcement to face of concrete as listed in Table 03210B at the end of this Section, unless otherwise indicated on Drawings.

D. Placement in Forms: Use spacers, chairs, wire ties and other accessory items necessary to assemble, space and support reinforcing properly. Provide accessories of sufficient number, size and strength to prevent deflection or displacement of reinforcement due to construction loads or concrete placement. Use appropriate accessories to position and support bolts, anchors and other embedded items. Tie reinforcing bars at each intersection, and to accessories. Blocking reinforcement with concrete or masonry is prohibited.

E. Placement for Concrete on Ground: Support bar and wire reinforcement on chairs with sheet metal bases or precast concrete blocks spaced at approximately 3 feet on centers each way. Use minimum of one support for each 9 square feet. Tie supports to reinforcing bars and wires.

F. Vertical Reinforcement in Columns: Offset vertical bars by at least one bar diameter at splices. Provide accurate templates for column dowels to ensure proper placement.

G. Splices:

1. Do not splice bars, except at locations indicated on Drawings or reviewed shop drawings, without approval of Engineer.

2. Lap Splices: Unless otherwise shown or noted, Class B, conforming to ACI 318-89, Section 12.15.1. Tie securely with wire prior to concrete placement, to prevent displacement of splices during concrete placement.

3. Mechanical Bar Splices: Use only where indicated on Drawings or approved by the Engineer. Install in accordance with manufacturer's instructions.

   a. Couplers located at a joint face shall be of a type which can be set either flush or recessed from the face as shown. Seal couplers prior to concrete placement to completely eliminate concrete or cement paste from entering.

   b. Couplers intended for future connections: Recess 1/2 inch minimum from concrete surface. After concrete is placed, plug coupler and fill recess with sealant to prevent contact with water or other corrosive materials.

   c. Unless noted otherwise, match mechanical coupler spacing and capacity to that shown for the adjacent reinforcing.

H. Construction Joints: Place reinforcing continuous through construction joints, unless noted otherwise.

I. Welded Wire Fabric: Install wire fabric in as long lengths as practicable. Unless otherwise indicated on Drawings, lap adjoining pieces at least 6 inches or one full mesh plus 2 inches, whichever is larger. Lace splices with wire. Do not make end laps midway between supporting beams, or directly over beams of continuous structures. Offset end laps in adjacent widths to prevent continuous laps. Conform to WRI - Manual of Standard Practice for Welded Wire Fabric.

J. Field Bending: Shape reinforcing bent during construction operations to conform to Drawings.

Bars shall be cold-bent; do not heat bars. Closely inspect reinforcing for breaks. When reinforcing is damaged, replace, Cadweld, or otherwise repair, as directed by Engineer. Do not bend reinforcement after it is embedded in concrete.

K. Epoxy-coated Reinforcing Steel: Install in accordance with Paragraph 3.02J, Field Bending, and in a manner that will not damage epoxy coating. Repair damaged epoxy coating with patching material as specified in Paragraph 2.02A, Bending.

L. Field Cutting: Cut reinforcing bars by shearing or sawing. Do not cut bars with cutting torch.

M. Welding of reinforcing bars is prohibited, except where shown on Drawings.

3.03 GROUTING OF REINFORCING AND DOWEL BARS

A. Use epoxy grout for anchoring reinforcing and dowel steel to existing concrete in accordance with epoxy manufacturer's instructions. Drill hole not more than 1/4 inch larger than steel bar diameter (including height of deformations for deformed bars) in existing concrete. Just before installation of steel, blow hole clean of all debris using compressed air. Partially fill hole with epoxy, using enough epoxy so when steel bar is inserted, epoxy grout will completely fill hole around bar. Dip end of steel bar in epoxy and twist bar while inserting into partially-filled hole.

Table 03210A
REINFORCEMENT PLACEMENT TOLERANCES

PLACEMENT	TOLERANCE IN INCHES
Clear Distance -	
To formed soffit:	-1/4
To other formed surfaces:	"1/4
Minimum spacing between bars:	-1/4
Clear distance from unformed surface to top reinforcement -	
Members 8 inches deep or less:	"1/4
Members more than 8 inches deep but less than 24 inches deep:	
Members 24 inches deep or greater:	-1/4, +1/2
Uniform spacing of bars (but the required number of bars shall not be reduced):	-1/4, +1
Uniform spacing of stirrups and ties (but the required number of stirrups and ties shall not be reduced):	"2
	"1
Longitudinal locations of bends and ends of reinforcement -	
General:	"2
Discontinuous ends of members:	"1/2
Length of bar laps:	-1-1/2
Embedded length -	
For bar sizes No. 3 through 11:	-1
For bar sizes No. 14 and 18:	-2

Table 03210B
MINIMUM CONCRETE COVER FOR REINFORCEMENT

SURFACE	MINIMUM COVER IN INCHES
Slabs and Joists -	
Top and bottom bars for dry conditions -	
No. 14 and No. 18 bars:	1-1/2
No. 11 bars and smaller:	1
Formed concrete surfaces exposed to earth, water or weather; over, or in contact with, sewage; and for bottoms bearing on work mat, or slabs supporting earth cover -	
No. 5 bars and smaller:	1-1/2
No. 6 through No. 18 bars:	2
Beams and Columns -	
For dry conditions -	
Stirrups, spirals and ties:	1-1/2
Principal reinforcement:	2
Exposed to earth, water, sewage or weather -	
Stirrups and ties:	2
Principal reinforcement:	2-1/2
Walls -	
For dry conditions -	
No. 11 bars and smaller:	1
No. 14 and No. 18 bars:	1-1/2
Formed concrete surfaces exposed to earth, water, sewage or weather, or in contact with ground -	
Circular tanks with ring tension:	2
All others:	2
Footings and Base Slabs -	
At formed surfaces and bottoms bearing on concrete work mat:	
At unformed surfaces and bottoms in contact with earth:	2
Over top of piles:	3
Top of footings -- same as slabs	2

SECTION 03315

CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Cast-in-place concrete work for utility construction or rehabilitation, such as slabs on grade, small vaults, site-cast bases for precast units, and in-place liners for manhole rehabilitation.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. No payment will be made for concrete for utility construction under this Section. Include cost in applicable utility structure.

2. Obtain services of and pay for certified testing laboratory to prepare design mixes.

3. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 REFERENCES

A. ACI 117 - Standard Tolerances for Concrete Construction and Materials.

B. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight and Mass Concrete.

C. ACI 302.1R - Guide for Concrete Floor and Slab Construction.

D. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete.

E. ACI 308 - Standard Practice for Curing Concrete.

F. ACI 309R - Guide for Consolidation of Concrete.

G. ACI 311 - Guide for Concrete Plant Inspection and Field Testing of Ready-Mix Concrete.

H. ACI 315 - Details and Detailing of Concrete Reinforcement.

I. ACI 318 - Building Code Requirements for Reinforced Concrete and Commentary.

J. ACI 544 - Guide for Specifying, Mixing, Placing, and Finishing Steel Fiber Reinforced Concrete.

K. ASTM A 82 - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.

L. ASTM A 185 - Standard Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.

M. ASTM A 615 - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.

N. ASTM A 767 - Standard Specifications for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement.

O. ASTM A 775 - Standard Specification for Epoxy-Coated Reinforcing Steel Bars.

P. ASTM A 820 - Standard Specification for Steel Fibers for Fiber-Reinforced Concrete.

Q. ASTM A 884 - Specification for Epoxy-Coated Steel Wire and Welded Wire Fabric for Reinforcement.

R. ASTM C 31 - Standard Practice for Making and Curing Concrete Test Specimens in the Field.

S. ASTM C 33 - Standard Specification for Concrete Aggregates.

T. ASTM C 39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.

U. ASTM C 42 - Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.

V. ASTM C 94 - Standard Specification for Ready-Mixed Concrete.

W. ASTM C 138 - Standard Test Method for Unit Weight Yield and Air Content (Gravimetric) of Concrete.

X. ASTM C 143 - Standard Test Method for Slump of Hydraulic Cement Concrete.

Y. ASTM C 150 - Standard Specification for Portland Cement.

Z. ASTM C 172 - Standard Practice for Sampling Freshly Mixed Concrete.

AA. ASTM C 173 - Standard Test Method for Air Content of Freshly Mixed Concrete by Volumetric Method.

AB. ASTM C 231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.

AC. ASTM C 260 - Standard Specification for Air-Entraining Admixtures for Concrete.

AD. ASTM C 309 - Standard Specifications for Liquid Membrane-Forming Compounds for Curing Concrete.

AE. ASTM C 494 - Standard Specification for Chemical Admixtures for Concrete.

AF. ASTM C 595 - Standard Specification for Blended Hydraulic Cements.

AG. ASTM C 685 - Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing.

AH. ASTM C 1064 - Standard Test Method for Temperature of Freshly Mixed Portland Cement Concrete.

AI. ASTM C 1077 - Standard Practice for Laboratory Testing of Concrete and Concrete Aggregate for Use in Construction and Criteria for Laboratory Evaluation.

AJ. CRSI MSP-1 - Manual of Standard Practice.

AK. CRSI - Placing Reinforcing Bars.

AL. Federal Specification SS-S-210A - Sealing Compound, Preformed Plastic, for Expansion Joints

and Pipe Joints

AM. NRMCA - Concrete Plant Standards.

1.04 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit proposed mix design and test data for each type and strength of concrete in Work.

C. Submit laboratory reports prepared by independent testing laboratory stating that materials used comply with requirements of this Section.

D. Submit manufacturer's mill certificates for reinforcing steel. Provide specimens for testing when required by Engineer.

E. Submit certification from concrete supplier that materials and equipment used to produce and deliver concrete comply with this Specification.

F. Submit shop drawings showing reinforcement type, quantity, size, length, location, spacing, bending, splicing, support, fabrication details, and other pertinent information.

G. For waterstops, submit product information sufficient to indicate compliance with this Section, including manufacturer's descriptive literature and specifications.

1.05 HANDLING AND STORAGE

A. Cement: Store cement off of ground in well-ventilated, weatherproof building.

B. Aggregate: Prevent mixture of foreign materials with aggregate and preserve gradation of aggregate.

C. Reinforcing Steel: Store reinforcing steel to protect it from mechanical injury and formation of rust. Protect epoxy-coated steel from damage to coating.

PART 2 P R O D U C T S

2.01 CONCRETE MATERIALS

A. Cementitious Material:

1. Portland Cement: ASTM C 150, Type II, unless use of Type III is authorized by Engineer; or ASTM C 595, Type IP. For concrete in contact with sewage use Type II cement.

2. When aggregates are potentially reactive with alkalis in cement, use cement not exceeding 0.6 percent alkali content in form of Na2O + 0.658K20.

B. Water: Clean, free from harmful amounts of oils, acids, alkalis, or other deleterious substances, and meeting requirements of ASTM C 94.

C. Aggregate:

1. Coarse Aggregate: ASTM C 33. Unless otherwise indicated, use following ASTM standard sizes: No. 357 or No. 467; No. 57 or No. 67, No. 7. Maximum size: Not larger than 1/5 of narrowest dimension between sides of forms, nor larger than 3/4 of minimum clear spacing between reinforcing bars.

2. Fine Aggregate: ASTM C 33.

3. Determine potential reactivity of fine and coarse aggregate in accordance with Appendix to ASTM C 33.

D. Air Entraining Admixtures: ASTM C 260.

E. Chemical Admixtures:

1. Water Reducers: ASTM C 494, Type A.

2. Water Reducing Retarders: ASTM 494, Type D.

3. High Range Water Reducers (Superplasticizers): ASTM C 494, Types F and G.

F. Prohibited Admixtures: Admixtures containing calcium chloride, thiocyanate, or materials that contribute free chloride ions in excess of 0.1 percent by weight of cement.

G. Reinforcing Steel:

1. Use new billet steel bars conforming to ASTM A 615, ASTM A 767, or ASTM A 775, grade 40 or grade 60, as shown on Drawings. Use deformed bars except where smooth bars are specified. When placed in work, keep steel free of dirt, scale, loose or flaky rust, paint, oil or other harmful materials.

2. Where shown, use welded wire fabric with wire conforming to ASTM A 185 or ASTM A884. Supply gauge and spacing shown, with longitudinal and transverse wires electrically welded together at points of intersection with welds strong enough not to be broken during handling or placing.

3. Wire: ASTM A 82. Use 16 1/2 gauge minimum for tie wire, unless otherwise indicated.

H. Fiber:

1. Fibrillated Polypropylene Fiber:

a. Addition Rate: 1.5 pounds of fiber per cubic yard of concrete.

b. Physical Properties:

1. Material: Polypropylene

2. Length: 1/2 inch or graded

3. Specific Gravity: 0.9l

c. Acceptable Manufacturer: W. R. Grace Company, Fibermesh, or approved equal.

2. Steel Fiber: Comply with applicable provisions of ACI 544 and ASTM A 820.

a. Ratio: 50 to 200 pounds of fiber per cubic yard of concrete.

b. Physical Properties

1. Material: Steel

2. Aspect Ratio (for fiber lengths of 0.5 to 2.5 inch, length divided by

diameter or equivalent diameter): 30:1 to 100:1

3. Specific Gravity: 7.8

4. Tensile Strength: 40-400 ksi.

5. Young's Modulus: 29,000 ksi

6. Minimum Average Tensile Strength: 50,000 psi

7. Bending Requirements: Withstand bending around 0.125-inch diameter mandrel to angle of 90 degrees, at temperatures not less than 60 degrees F, without breaking

I. Curing Compounds: Type 2 white-pigmented liquid membrane-forming compounds conforming to ASTM C 309.

2.02 FORM WORK MATERIALS

A. Lumber and Plywood: Seasoned and of good quality, free from loose or unsound knots, knot holes, twists, shakes, decay and other imperfections which would affect strength or impair finished surface of concrete. Use S4S lumber for facing or sheathing. Forms for bottoms of caps: At least 2 inch (nominal) lumber or 3/4 inch form plywood backed adequately to prevent misalignment. For general use, provide lumber of 1-inch nominal thickness or form plywood of approved thickness.

B. Form work for Exposed Concrete Indicated to Receive Rubbed Finish: Form or form-lining surfaces free of irregularities; plywood of 1/4 inch minimum thickness, preferably oiled at mill.

C. Chamfer Strips and Similar Moldings: Redwood, cypress, or pine that will not split when nailed and which can be maintained to true line. Use mill-cut molding dressed on all faces.

D. Form Ties: Metal or fiberglass of approved type with tie holes not larger than 7/8 inch in diameter. Do not use wire ties or snap ties.

E. Metal Forms: Clean and in good condition, free from dents and rust, grease, or other foreign materials that tend to disfigure or discolor concrete in gauge and condition capable of supporting concrete and construction loads without significant distortion. Countersink bolt and rivet heads on facing sides. Use only metal forms which present smooth surface and which line up properly.

2.03 PRODUCTION METHODS

A. Use either ready-mixed concrete conforming to requirements of ASTM C 94, or concrete produced by volumetric batching and continuous mixing in accordance with ASTM C 685.

2.04 MEASUREMENT OF MATERIALS

A. Measure dry materials by weight, except volumetric proportioning may be used when concrete is batched and mixed in accordance with ASTM C 685.

B. Measure water and liquid admixtures by volume.

2.05 DESIGN MIX

A. Use design mixes prepared by certified testing laboratory in accordance with ASTM C 1077 and conforming to requirements of this section.

B. Proportion concrete materials based on ACI 211.1 to comply with durability and strength requirements of ACI 318, Chapters 4 and 5, and this specification. Prepare mix design of Class A concrete so minimum cementitious content is 564 pounds per cubic yard. Submit concrete mix designs to Engineer for review.

C. Proportioning on basis of field experience or trial mixtures in accordance with requirements at Section 5.3 of ACI 318 may be used, when approved by Engineer.

D. Classification:

Class	Cement Sks Per CY	Minimum Strength, psi (MPa)		Maximum W/C Ratio[1]	Air Entrain.
		28 Days	7 Days		
A	5.0 (280 kg/m^3)	3000 (20.6)	2100 (14.5)	0.6	Yes
B	4.0 (225 kg/m^3)	2000 (13.8)	1400 (9.7)	0.6	No
C	6.0 (335 kg/m^3)	3600(24.8)	2520 (17.4)	0.45	Yes
D	4.5 (252 kg/m^3)	2500 (17.2)	1750 (12.1)	0.6	No
H	6.0 (335 kg/m^3)	As indicated	As Indicated	0.45	Yes
I	5.5 (308 kg/m^3)	3500 (24.1)	2450 (16.9)	0.45	Yes
J	2.0 (112 kg/m^3)	800 (5.5)	560 (3.9)	N/A	No
S	6.0 (335 kg/m^3)	4000 (27.6)	2800 (19.3)	0.45	Yes

E. Add steel or polypropylene fibers only when called for on Drawings or in another section of these Specifications.

F. Determine air content in accordance with ASTM C 138, ASTM C 173 or ASTM C 231.

G. Use of Concrete Classes: Use classes of concrete as indicated on Drawings and other Specifications. Use Class B for unreinforced concrete used for plugging pipes, seal slabs, thrust blocks, trench dams, tunnel inverts and concrete fill unless indicated otherwise. Use Class A for all other applications.

2.06 PVC WATERSTOPS

A. Extrude from virgin polyvinyl chloride elastomer. Use no reclaimed or scrap material. Submit waterstop manufacturer's current test reports and manufacturer's written certification that material furnished meets or exceeds Corps of Engineers Specification CRD-C572 and other specified requirements.

B. Flat Strip and Center-Bulb Waterstops:

1. Thickness: not less than 3/8 inch

2. Acceptable Manufacturers:

a. Kirkhill Rubber Co., Brea, California

b. Water Seals, Inc., Chicago, Illinois

c. Progress Unlimited, Inc., New York, New York

d. Greenstreak Plastic Products Co., St. Louis, Missouri

e. Approved equal.

PART 3 E X E C U T I O N

3.01 FORMS AND SHORING

A. Provide mortar-tight forms sufficient in strength to prevent bulging between supports. Set and maintain forms to lines designated such that finished dimensions of structures are within tolerances specified in ACI 117. Construct forms to permit removal without damage to concrete. Forms may be given slight draft to permit ease of removal. Provide adequate clean out openings. Before placing concrete, remove extraneous matter from within forms.

B. Install rigid shoring having no excessive settlement or deformation. Use sound timber in shoring centering. Shim to adjust and tighten shoring with hardwood timber wedges.

C. Design Loads for Horizontal Surfaces of Forms and Shoring: Minimum fluid pressure, 175 pounds per cubic foot; live load, 50 pounds per square foot. Maximum unit stresses: 125 percent of allowable stresses used for form materials and for design of support structures.

D. Back form work with sufficient number of studs and wales to prevent deflection.

E. Re-oil or lacquer liner on job before using. Facing may be constructed of 3/4 inch plywood made with waterproof adhesive backed by adequate studs and wales. In such cases, form lining will not be required.

F. Unless otherwise indicated, form outside corners and edges with triangular 3/4 inch chamfer strips (measured on sides).

G. Remove metal form ties to depth of at least 3/4 inch from surface of concrete. Do not burn off ties. Do not use pipe spreaders. Remove spreaders which are separate from forms as concrete is being placed.

H. Treat facing of forms with approved form coating before concrete is placed. When directed by Engineer, treat both sides of face forms with coating. Apply coating before reinforcement is placed. Immediately before concrete is placed, wet surface of forms which will come in contact with concrete.

3.02 PLACING REINFORCEMENT

A. Place reinforcing steel accurately in accordance with approved Drawings. Secure steel adequately in position in forms to prevent misalignment. Maintain reinforcing steel in place using approved concrete and hot-dip galvanized metal chairs and spacers. Place reinforcing steel in accordance with CRSI Publication "Placing Reinforcing Bars." Request inspection of reinforcing steel by Engineer and obtain acceptance before concrete is placed.

B. Minimum spacing center-to-center of parallel bars: 2 1/2 times nominal bar diameter. Minimum cover measured from surface of concrete to face of reinforcing bar unless shown otherwise on Drawings: 3 inches for surfaces cast against soil or subgrade, 2 inches for other surfaces.

C. Detail bars in accordance with ACI 315. Fabricate reinforcing steel in accordance with CRSI Publication MSP-1, "Manual of Standard Practice." Bend reinforcing steel to required shape while steel is cold. Excessive irregularities in bending will be cause for rejection.

D. Do not splice bars without written approval of Engineer. Approved bar bending schedules or placing drawings constitute written approval. Splice and development length of bars shall conform to ACI 318, Chapters 7 and 12, and as shown on Drawings. Stagger splices or locate at points of low tensile stress.

3.03 EMBEDDED ITEMS

A. Install conduit and piping as shown on Drawings. Accurately locate and securely fasten conduit, piping, and other embedded items in forms.

B. Install waterstops as specified in other sections and according to manufacturer's instructions. Securely position waterstops at joints as indicated on Drawings. Protect waterstops from damage or displacement during concrete placing operations.

3.04 BATCHING, MIXING AND DELIVERY OF CONCRETE

A. Measure, batch, mix, and deliver ready-mixed concrete in accordance with ASTM C 94, Sections 8 through 11. Produce ready-mixed concrete using automatic batching system as described in NRMCA Concrete Plant Standards, Part 2 - Plant Control Systems.

B. Measure, mix and deliver concrete produced by volumetric batching and continuous mixing in accordance with ASTM C 685, Sections 6 though 8.

C. Maintain concrete workability without segregation of material and excessive bleeding. Obtain approval of Engineer before adjustment and change of mix proportions.

D. Ready-mixed concrete delivered to site shall be accompanied by batch tickets providing information required by ASTM C 94, Section 16. Concrete produced by continuous mixing shall be accompanied by batch tickets providing information required by ASTM C 685, Section 14.

E. When adverse weather conditions affect quality of concrete, postpone concrete placement. Do not mix concrete when air temperature is at or below 40 degrees F and falling. Concrete may be mixed when temperature is 35 degrees F and rising. Take temperature readings in shade, away from artificial heat. Protect concrete from temperatures below 32 degrees F until concrete has cured for minimum of 3 days at 70 degrees F or 5 days at 50 degrees F.

F. Clean, maintain and operate equipment so that it thoroughly mixes material as required.

G. Hand-mix only when approved by Engineer.

3.05 PLACING CONCRETE

A. Give sufficient advance notice to Engineer (at least 24 hours prior to commencement of operations) to permit inspection of forms, reinforcing steel, embedded items and other preparations for placing concrete. Place no concrete prior to Engineer's approval.

B. Schedule concrete placing to permit completion of finishing operations in daylight hours. However, when necessary to continue after daylight hours, light site as required. When rainfall occurs after placing operations are started, provide covering to protect work.

C. Use troughs, pipes and chutes lined with approved metal or synthetic material in placing concrete so that concrete ingredients are not separated. Keep chutes, troughs and pipes clean and free from coatings of hardened concrete. Allow no aluminum material to be in contact with concrete.

D. Limit free fall of concrete to 4 feet. Do not deposit large quantities of concrete at one location so that running or working concrete along forms is required. Do not jar forms after concrete has taken initial set; do not place strain on projecting reinforcement or anchor bolts.

E. Use tremies for placing concrete in walls and similar narrow or restricted locations. Use tremies made in sections, or provide in several lengths, so that outlet may be adjusted to proper height during placing operations.

F. Place concrete in continuous horizontal layers approximately 12 inches thick. Place each layer while layer below is still plastic.

G. Compact each layer of concrete with concrete spading implements and mechanical vibrators of approved type and adequate number for size of placement. When immersion vibrators cannot be used, use form vibrators. Apply vibrators to concrete immediately after depositing. Move vibrator vertically through layer of concrete just placed and several inches into plastic layer below. Do not penetrate or disturb layers previously placed which have partially set. Do not use vibrators to aid lateral flow concrete. Closely supervise consolidation to ensure uniform insertion and duration of immersion.

H. Handling and Placing Concrete: Conform to ACI 302.1R, ACI 304R and ACI 309R.

3.06 WATERSTOPS

A. Embed waterstops in concrete across joints as shown. Waterstops shall be continuous for extent of joint; make splices necessary to provide continuity in accordance with manufacturer's instructions. Support and protect waterstops during construction operations; repair or replace waterstops damaged during construction.

B. Install waterstops in concrete on one side of joints, leaving other side exposed until next pour. When waterstop will remain exposed for 2 days or more, shade and protect exposed waterstop from direct rays of sun during entire exposure and until exposed portion of waterstop is embedded in concrete.

3.07 CONSTRUCTION JOINTS

A. Definitions:

1. Construction joint: Contact surface between plastic (fresh) concrete and concrete that has attained initial set.

2. Monolithic: Manner of concrete placement to reduce or eliminate construction joints; joints other than those indicated on Drawings will not be permitted without written approval of Engineer. Where so approved, make additional construction joints with details equivalent to those indicated for joints in similar locations.

3. Preparation for Construction Joints: Roughen surface of concrete previously placed, leaving some aggregate particles exposed. Remove laitance and loose materials by sandblasting or high-pressure water blasting. Keep surface wet for several hours prior to placing of plastic concrete.

3.08 CURING

A. Comply with ACI 308. Cure by preventing loss of moisture, rapid temperature change and mechanical injury for period of 7 curing days when Type II or IP cement has been used and for 3 curing days when Type III cement has been used. Start curing as soon as free water has disappeared from concrete surface after placing and finishing. A curing day is any calendar day in which temperature is above 50 degrees F for at least 19 hours. Colder days may be counted when air temperature adjacent to concrete is maintained above 50 degrees F. In continued cold weather, when artificial heat is not provided, removal of forms and shoring may be permitted at end of calendar days equal to twice required number of curing days. However, leave soffit forms and shores in place until concrete has reached specified 28 day strength, unless directed otherwise by Engineer.

B. Cure formed surfaces not requiring rubbed-finished surface by leaving forms in place for full

curing period. Keep wood forms wet during curing period. Add water as needed for other types of forms. Or, at Contractor's option, forms may be removed after 2 days and curing compound applied.

C. Rubbed Finish:

1. At formed surfaces requiring rubbed finish, remove forms as soon as practicable without damaging surface.

2. After rubbed-finish operations are complete, continue curing formed surfaces by using either approved curing/sealing compounds or moist cotton mats until normal curing period is complete.

D. Unformed Surfaces: Cure by membrane curing compound method.

1. After concrete has received final finish and surplus water sheen has disappeared, immediately seal surface with uniform coating of approved curing compound, applied at rate of coverage recommended by manufacturer or as directed by Engineer. Do not apply less than 1 gallon per 180 square feet of area. Provide satisfactory means to properly control and check rate of application of compound.

2. Thoroughly agitate compound during use and apply by means of approved mechanical power pressure sprayers equipped with atomizing nozzles. For application on small miscellaneous items, hand-powered spray equipment may be used. Prevent loss of compound between nozzle and concrete surface during spraying operations.

3. Do not apply compound to dry surface. When concrete surface has become dry, thoroughly moisten surface immediately prior to application. At locations where coating shows discontinuities, pinholes or other defects, or when rain falls on newly coated surface before film has dried sufficiently to resist damage, apply additional coat of compound at specified rate of coverage.

3.09 REMOVAL OF FORMS AND SHORING

A. Remove forms from surfaces requiring rubbing only as rapidly as rubbing operation progresses. Remove forms from vertical surfaces not requiring rubbed-finish when concrete has aged for required number of curing days. When curing compound is used, do not remove forms before 2 days after concrete placement.

B. Leave soffit forms and shores in place until concrete has reached specified 28-day strength, unless directed otherwise by Engineer.

3.10 DEFECTIVE WORK

A. Immediately repair defective work discovered after forms have been removed. When concrete surface is bulged, uneven, or shows excess honeycombing or form marks which cannot be repaired satisfactorily through patching, remove and replace entire section.

3.11 FINISHING

A. Patch honeycomb, minor defects and form tie holes in concrete surfaces with cement mortar mixed one part cement to two parts fine aggregate. Repair defects by cutting out unsatisfactory material and replacing with new concrete, securely keyed and bonded to existing concrete. Finish to make junctures between patches and existing concrete as inconspicuous as possible. Use stiff mixture and thoroughly tamp into place. After each patch has stiffened sufficiently to allow for greatest portion of shrinkage, strike off mortar flush with surface.

B. Apply rubbed finish to exposed surfaces of formed concrete structures as noted on Drawings. After pointing has set sufficiently, wet surface with brush and perform first surface rubbing with No. 16 carborundum stone, or approved equal. Rub sufficiently to bring surface to paste, to remove form marks and projections, and to produce smooth, dense surface. Add cement to form surface paste as necessary. Spread or brush material, which has been ground to paste, uniformly over surface and allow to reset. In preparation for final acceptance, clean surfaces and perform final finish rubbing with No. 30 carborundum stone or approved equal. After rubbing, allow paste on surface to reset; then wash surface with clean water. Leave structure with clean, neat and uniform-appearing finish.

C. Apply wood float finish to concrete slabs.

3.12 FIELD QUALITY CONTROL

A. Testing shall be performed under provisions of Section 01454 - Testing Laboratory Services.

B. Unless otherwise directed by Engineer, following minimum testing of concrete is required. Testing shall be performed by qualified individuals employed by approved independent testing agency, and conform to requirements of ASTM C 1077.

1. Take concrete samples in accordance with ASTM C 172.

2. Make one set of four compression test specimens for each mix design at least once per day and for each 150 cubic yards or fraction thereof. Make, cure and test specimens in accordance with ASTM C 31 and ASTM C 39.

3. When taking compression test specimens, test each sample for slump according to ASTM C 143, for temperature according to ASTM C 1064, for air content according to ASTM C 231, and for unit weight according to ASTM C 138.

4. Inspect, sample and test concrete in accordance with ASTM C 94, Section 13, 14, and 15,and ACI 311-5R.

C. Test Cores: Conform to ASTM C 42.

D. Testing High Early Strength Concrete: When Type III cement is used in concrete, specified 7 day and 28 day compressive strengths shall be applicable at 3 and 7 days, respectively.

E. If 7-day or 3-day test strengths (as applicable for type of cement being used) fail to meet established strength requirements, extended curing or resumed curing on those portions of structure represented by test specimens may be required. When additional curing fails to produce required strength, strengthening or replacement of portions of structure which fail to develop required strength may be required by Engineer, at no additional cost to Owner.

3.13 PROTECTION

A. Protect concrete against damage until final acceptance by Owner.

B. Protect fresh concrete from damage due to rain, hail, sleet, or snow. Provide protection while concrete is still plastic, and whenever precipitation is imminent or occurring.

C. Do not backfill around concrete structures or subject them to design loadings until components of structure needed to resist loading are complete and have reached specified 28 day compressive strength, except as authorized otherwise by Engineer.

END OF SECTION

Section 03390

CONCRETE CURING

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Curing of structural concrete.

1.02 UNIT PRICES

A. No separate payment will be made for concrete curing under this Section. Include payment in unit price for structural concrete.

1.03 REFERENCES

A. ACI 308 - Standard Practice for Curing Concrete.

B. ASTM C 171 - Standard Specifications for Sheet Materials for Curing Concrete.

C. ASTM C 309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.

D. ASTM D 44587 - Conducting Tests on Paint and Related Coatings and Materials Using a Fluorescent UV-Condensation Light-and Water-Exposure Apparatus.

1.04 DEFINITIONS

A. Mass Concrete: Concrete sections 4 feet or more in least dimension.

1.05 SUBMITTALS

A. Conform to Section 01330 - Submittal Procedures.

B. Product Data: Submit description of proposed curing method for concrete. When use of membrane-forming compound is proposed, submit manufacturer's technical information including material specifications, installation instructions and recommendations, and evidence that compound is satisfactory for intended application. State locations where curing compound will be used.

C. When membrane-forming compounds are to be used, submit certification by the manufacturer of compliance with specified requirements and compatibility with toppings, coatings, finishes, and adhesives to be applied.

PART 2 P R O D U C T S

2.01 MATERIALS

A. Membrane-forming Curing Compound: Conform to ASTM C 309, Type 1D, and following requirements.

1. Minimum solids content: 30 percent.

2. Compound shall not permanently discolor concrete. When used for liquid- containing structures, curing compound shall be white-pigmented.

3. When used in areas that are to be coated, or that will receive topping or floor covering, material shall not reduce bond of coating, topping, or floor covering to concrete. Curing compound manufacturer's technical information shall state conditions under which compound will not prevent bond.

4. Conform to local, state and federal solvent emission requirements.

B. Clear Curing and Sealing Compound (VOC Compliant): Conform to ASTM C 309, Type 1, Class B, and the following requirements: 30 percent solids content minimum; non-yellowing under ultraviolet light after 500-hour test in accordance with ASTM D 4587. Sodium silicate compounds are not permitted. Conform to local, state and federal solvent emission requirements.

C. Sheet Material for Curing Concrete: ASTM C 171; waterproof paper, polyethylene film or white burlap-polyethylene sheeting.

D. Curing Mats (for use in Curing Method 2): Heavy shag rugs or carpets, or cotton mats quilted at 4 inches on center; 12 ounce per square yard minimum weight when dry.

E. Water for curing: Clean and potable.

PART 3 E X E C U T I O N

3.01 CURING PROCEDURES

A. Comply with ACI 308 and the requirements specified herein. Protect freshly-deposited concrete from premature drying and excessively hot or cold temperatures. Maintain minimal moisture loss and relatively constant temperature during time necessary for hydration of cement and proper hardening of concrete.

B. Unformed Surfaces: For concrete surfaces not in contact with forms, use one of following procedures immediately after completion of placement and finishing.

1. Ponding or continuous sprinkling.

2. Absorptive mat or fabric kept continuously wet.

3. Sand or other covering kept continuously wet.

4. Continuous steam bath (not exceeding 150 degrees F at surface of concrete).

5. Vapor mist bath.

6. Membrane-forming curing compound applied according to manufacturer's recommendations. After the curing compound has dried, wet slab surfaces and cover with waterproof paper, polyethylene film, or white burlap-polyethylene sheeting after the application of the curing compound. Tape sheet seams together and provide

sufficient weights to keep the sheeting in place. Wet the slab surface again if the sheeting becomes dislodged, and replace the sheeting.

7. Other moisture-retaining coverings as approved by Engineer.

C. Restrictions on Use of Curing Compounds: Unless curing compound manufacturer certifies that curing compound will not prevent bond to cured surface, do not use curing compound on surfaces that will be rubbed or receive additional concrete, mortar, topping, terrazzo or other cementitious finishing materials, on slabs under resilient floors or built-up roofing, or on surfaces to be waterproofed, sealed, hardened or painted.

D. Curing and Sealing Compounds: At locations indicated, cure exposed interior slabs and troweled slabs receiving mastic-applied adhesives with specified clear curing and sealing compound in accordance with manufacturer's recommendations. Do not store materials directly on curing membranes. Use plywood to protect curing membrane from damage. Immediately repair membranes damaged by foot traffic or other operations.

E. Duration of Curing: Continue curing until cumulative number of days or fractions of days during which ambient temperature is above 50 degrees F has totaled 7. Continue curing of water-retaining structures for a total of 14 days. When high-early-strength concrete has been used, continue curing for total of 3 days. Prevent rapid drying at end of curing period.

F. Formed Surfaces: During the curing period keep wet steel forms heated by sun and wood forms in contact with concrete. When forms are to be removed during curing period, employ curing materials or methods immediately. Continue such curing for remainder of curing period.

G. Temperature:

1. Cold Weather. When mean daily temperature of atmosphere is less than 40 degrees F, maintain temperature of concrete between 50 and 70 degrees F for required curing period. When necessary, make arrangements for heating, covering, insulating or housing concrete work in advance of placement to maintain required temperature and moisture conditions. Prevent damage or injury due to concentration of heat. When combustion heaters are necessary in enclosed or protected area where concrete slabs are being placed, vent heaters.

2. Hot Weather. In advance of placement make arrangements for shading, fog spraying, sprinkling, ponding or installation of windbreaks or wet covering of light color. Take such protective measures as quickly as concrete hardening and finishing operations will allow.

3. Temperature Changes. Control so rate of change in temperature of concrete is as uniform as possible. Do not permit temperature change to exceed 5 degrees F in any one hour or 50 degrees F in any 24-hour period.

H. Protection from Mechanical Injury. During curing period, protect concrete from damaging mechanical disturbances, particularly load stresses, heavy shock, and excessive vibration. Protect finished concrete surfaces from damage caused by construction equipment, materials or methods, and by rain or running water. Do not load self-supporting structures in a way that over stresses concrete.

3.02 CURING MASS CONCRETE

A. Observe the following additional restrictions when curing mass concrete.

1. Minimum curing period: 2 weeks.

2. When ambient air temperature falls below 32 degrees F, protect surface of concrete against freezing.

3. Do not use steam or other curing methods that will add heat to concrete.

4. Keep forms and exposed concrete continuously wet for at least the first 48 hours after placing, and whenever surrounding air temperature is above 90 degrees F during final curing period.

5. During 2-week curing period, provide necessary controls to prevent ambient air temperature immediately adjacent to concrete from falling more than 30 degrees F in 24 hours.

END OF SECTION

EXHIBIT "B"

BID PAGE

Hidalgo County
Hidalgo County Precinct No. 4 – Concrete Walking Trail at San Carlos CRC and Sunflower Park
Bid No.: 2016-226-06-08-YSS

SCOPE OF WORK DESCRIPTION:
Construction of Concrete Pedestrian Walking Trail at San Carlos CRC and Sunflower Park

BID PRICE: $ 82,936.65

BID PRICE + Alternate No. 1: $ 129,936.65

BIDDER/COMPANY NAME: RG Enterprises, LLC dba G&G Contractors

ADDRESS: 5125 S. US Hwy 281

CITY/STATE/ZIP CODE: Edinburg, Tx 78539

PHONE & FAX NO.'S: 956-283-7040-Phone/Fax

CELLULAR #: 956-929-1567

AUTHORIZED SIGNATURE:

PRINTED NAME: Rene Garza

TITLE: Owner

9-16 6-8-16

BID FOR UNIT PRICE CONTRACTS

PLACE Hidalgo County
DATE 6/8/2016
PROJECT NO. 2016-226-06-08-YSS

Proposal of RG Enterprises, LLC (hereinafter called "Bidder") a corporation/ a partnership, or an individual doing business as: G&G Contractors.

TO the **Hidalgo County – Precinct No. 4** (hereinafter called "Owner")

Gentlemen:

The Bidder, in compliance with your invitation for bids for the construction of Concrete Walking Trail at San Carlos CRC and Sunflower Park having examined the plans and specifications with related documents and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project including the availability of materials and labor, hereby proposes to furnish all labor, materials, and supplies; and to construct the project in accordance with the Contract Documents, within the time set forth therein, and at the prices stated below. These prices are to cover all expenses incurred in performing the work required under the Contract Documents, of which this proposal is part.

Bidder hereby agrees to commence work under this contract on or about date to be specified in written "Notice to Proceed" of the owner and to fully complete the project within 45 consecutive calendar days thereafter as stipulated in the specifications. Bidder further agrees to pay as liquidated damages the sum of $250.00 for each consecutive calendar day thereafter as herein after provided in Paragraph 19 of the General Conditions.

BIDDER ACKNOWLEDGES RECEIPT OF THE FOLLOWING ADDENDUM:

1-May 25, 2016	2-May 27, 2016 Revised	3-June 3, 2016	4-June 7, 2016

*Insert corporation, partnership or individual as applicable.

Bidder agrees to perform all of the _____ work described in the specifications and shown on plans, for the following unit prices:

ITEM NO.	ITEM DESCRIPTION		UNIT	UNIT QTY.	UNIT PRICE IN FIGURES (1)	TOTAL FIGURES
	General Project					
1-1	Mobilization, Bonds and Insurance (not to exceed 3% of Total Bid) and project signage.		LS	1	$5,000 00	$5,000.00
		Total General Project				$5,000 00
	Concrete Walking Trail at San Carlos CRC and Sunflower Park					
2-1	Furnish and Install Concrete Walking Trail (30,805 SF) concrete surface, Laydown Curb, Wire Mesh, Expansion Joints and Electrical Conduits, as per plans and specifications; complete in place. (This item does not include concrete. Concrete will be purchased by the County).		LS	1	$77,936.65 ($2.53/sf)	$77,936.65
		Concrete Walking Trail at San Carlos CRC and Sunflower Park				$77,936.65
		Total Base Bid				82,936 65
	ALTERNATE NO. 1 – Concrete Walking Trail at San Carlos CRC and Sunflower Park					
3-1	Additional Cost to Install coloring and stamp for concrete surface, as per plans and specifications; complete in place. (Coloring and Stamp to be chosen by the County during submittals).		LS	1	$47,000.00	$47,000.00
		ALTERNATE NO. 1 – Concrete Walking Trail at San Carlos CRC and Sunflower Park				$47,000.00
		Total Alternate No. 1				$47,000 00

		Total Base Bid	$82,936 65
		Total Base Bid + Alternate No. 1	$129,936.65

9.46 6-8-16

TOTAL BASE BID: $ 82,936.65

(words) Eighty two thousand nine hundred thirty-six dollars and sixty-five cents

TOTAL BASE BID + ALTERNATE NO. 1: $ 129,936.65

(words) One hundred twenty-nine thousand nine hundred thirty-six dollars and sixty-five cents

(AMOUNTS ARE TO BE SHOWN IN BOTH WORDS AND FIGURES. IN CASE OF DISCREPANCY, THE AMOUNT SHOWN IN WORDS WILL GOVERN)

The above unit price shall include all labor, materials, bailing, shoring, removal, overhead, profit, insurance, etc., to cover the finished work of the several kinds called for.

Bidder understands that the Owner reserves the right to reject any or all bids and to waive any informalities in the bidding.

The Bidder agrees that this bid shall be good and may not be withdrawn for a period of 30 calendar days after the scheduled closing time for receiving bids.

Upon receipt of written notice of the acceptance of this bid, Bidder will execute the formal contract attached within 10 days and deliver a Surety Bond, or Bonds as required by Paragraph 29 of the General Conditions. The bid security attached in the sum of

$ 5% of one hundred twenty-nine thousand nine hundred thirty-six dollars and sixty-five cents.

($ 5% of $129,936.65) is to become the property of the Owner in the event that contract and the bond are not executed within the time above set forth, as liquidated damages for the delay and additional expenses to the owner caused thereby.

Respectfully submitted:

By: _____, Owner

(Title)

5125 S. US Hwy 281 Edinburg, Tx 78539

(Business Address and Zip Code)

(SEAL – if bid is by a corporation)

6-8-16

EXHIBIT "C"
Insurance Requirements

The Bidder awarded the contract shall furnish proof of insurance, which will also include any subcontractor that is subcontracted by the bidder in at least the following limits, to be in place prior to providing any services under this Contract and to continue at all times in force in effect during the term of this Contract:

1. A Five Hundred Thousand Dollar ($500,000.00) Comprehensive General Liability insurance policy providing additional coverage to all underlying liabilities of County.

2. Automobile liability insurance policy with limits of at least Three Hundred Thousand Dollars ($300,000.00) per person and Five Hundred Thousand Dollars ($500,000.00) per occurrence. Coverage should include injury to or death of persons and property damage claims with limits up to Five Hundred Thousand ($500,000.00) arising out of the services provided to County hereunder.

3. Uninsured/Underinsured motorist coverage in an amount equal to the bodily injury limits set forth immediately above;

4. Workers compensation insurance in amounts established by Texas law, unless the Bidder is specifically exempted from the Texas Workers Compensation Act, Texas Labor Code Chapter 401, et. seq.

Certificates of insurance naming County as an additional insured shall be submitted to County for approval prior to any services being performed by Contractor. Each policy of insurance required hereunder shall extend for a period equivalent to, or longer than the term of the Contract, and any insurer hereunder shall be required to give at least thirty (30) days written notice to the County prior to the cancellation of any such coverage on the termination date, or otherwise. This Contract shall be automatically suspended upon the cancellation, or other termination, of any required policy of insurance hereunder, and such suspension shall continue until evidence adequate replacement coverage is provided to County. If replacement coverage is not provided within thirty (30) days following suspension of the Contract, this Contract shall automatically terminate.

Insurance Requirement Acknowledgment

I, Rene Garza, authorized representative for RG Enterprises, LLC dba G&G Contractors (Company/Vendor),

hereby acknowledge receipt of the County's required insurance limits. Said requirements:

☐ will be acquired within 10 working days after notification from Purchasing Department of bid awarded by the Hidalgo County Commissioners Court;

☐ will acquire additional amounts required to meet the County's requirements within 10 working days after notification from Purchasing Department of bid award by the Hidalgo County Commissioners Court; currently carry the following:

Automobile Liability: $ 1,000,000.00 General Liability: $ 1,000,000.00

☒ have already been met, see attached copy of insurance certificate.

Authorized Representative

6/8/2016
Date

Notice to Bidder:
A certificate of insurance for the required insurance limits shall be provided to the Purchasing Department's Contract Managers in order to qualify for award of bid and to execute a contract between your Company and the County

Failure to provide Certificates of Insurance to the Purchasing Department's Contract Managers will cause the bid award to be rescinded and re-awarded to next lowest bidder. Certificates of Insurance will be monitored and verified on a **quarterly basis** to ensure coverage policy is in place. It is the Company=s obligation to maintain the appropriate insurance coverage throughout the term of the contract.

THIS FORM MUST ACCOMPANY BID PACKET

PROJECT REQUIREMENTS ACKNOWLEDGMENT

This is to certify that I, Rene Garza, possess all of the APPLICABLE:

1. Licenses: _____.
2. Bonds: x _____.
3. Certificates: x _____.
4. Permits: _____.
5. Other: x _____.

necessary to carry out the required project. Furthermore, I am providing copies of the required documentation so that, if my company is awarded this bid, I may be eligible to enter into a contract with Hidalgo County and proceed to complete the project in a timely manner.

* Any licenses, bonds, certificates, permits, etc. which are required must be presented as part of the bid packet in order to expedite the bid evaluation process. Failure to provide said documentation will result in the disqualification of your bid.

Authorized Signature

6/8/2016
Date

RG Enterprises, LLC dba G&G Contractors
Company

5125 S. US Hwy 281
Address

Edinburg, Tx 78539
City, State, Zip

CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY): 7/5/2016

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
EDDIE VILLARREAL INSURANCE AGENCY
2167 S McColl Rd
Edinburg, TX 78539

CONTACT NAME: VIOLA ALLEN
PHONE (A/C, No, Ext): (956) 381-0951 FAX (A/C, No): (956) 318-0237
E-MAIL ADDRESS: viola.evillarreal@farmersagency.com

INSURER(S) AFFORDING COVERAGE	NAIC#
INSURER A: ESSEX INSURANCE COMPANY	39020
INSURER B: TEXAS COUNTY MUTUAL INS CO	24392
INSURER C: TEXAS MUTUAL INS CO	22945
INSURER D:	
INSURER E:	
INSURER F:	

INSURED
R G ENTERPRISES, LLC
G & G CONTRACTORS
5125 S US HWY 281 STE 1
EDINBURG, TX 78539
OFFICE: 956-283-7040

COVERAGES CERTIFICATE NUMBER: REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: X POLICY PRO-JECT LOC OTHER:			3ED8689	3/16/16	3/16/17	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 1,000,000 $ 100,000 $ 5,000 $ 1,000,000 $ 2,000,000 $ 2,000,000
B	AUTOMOBILE LIABILITY ANY AUTO ALL OWNED AUTOS SCHEDULED AUTOS HIRED AUTOS NON-OWNED AUTOS			604891354	3/14/16	3/14/17	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1,000,000 $ $ $
	UMBRELLA LIAB OCCUR EXCESS LIAB CLAIMS-MADE DED RETENTION $						EACH OCCURRENCE AGGREGATE	$ $
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N N/A If yes, describe under DESCRIPTION OF OPERATIONS below			SBP-0001221990	3/15/16	3/15/17	PER STATUTE X OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ $ 1,000,000 $ 1,000,000 $ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
GENERAL CONSTRUCTION

PROJECT: Hidalgo County Precinct No. 4
Concrete Walking Trails at San Carlos CRC and Sunflower Park

CERTIFICATE HOLDER

Hidalgo County Purchasing Dept
2812 S Business Hwy 281
Edinburg, Tx 78539

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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The ACORD name and logo are registered marks of ACORD

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 07/13/2016

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: VIOLA ALLEN	
Eddie Villarreal(1942363) 2167 S Mccoll Rd Edinburg TX 78539-8208	PHONE (A/C, No, Ext): 956-381-0951	FAX (A/C, No): 956-318-0237
	E-MAIL ADDRESS: evillarreal@farmersagent.com	

INSURED	INSURER(S) AFFORDING COVERAGE	NAIC #
RG ENTERPRISES LLC d/b/a G&G CONTRACTORS 5125 S US HWY 281 STE 1 EDINBURG TX 78539	INSURER A: Truck Insurance Exchange	21709
	INSURER B: Farmers Insurance Exchange	21652
	INSURER C: Mid Century Insurance Company	21687
	INSURER D: Farmers Texas County Mutual Insurance Company	24392
	INSURER E:	
	INSURER F:	

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	GENERAL LIABILITY						EACH OCCURRENCE	$
	☐ COMMERCIAL GENERAL LIABILITY						DAMAGE TO RENTED PREMISES (Ea occurrence)	$
	☐ CLAIMS-MADE ☐ OCCUR						MED EXP (Any one person)	$
							PERSONAL & ADV INJURY	$
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$
	☐ POLICY ☐ PRO-JECT ☐ LOC						PRODUCTS - COMP/OP AGG	$
								$
D	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
	☐ ANY AUTO						BODILY INJURY (Per person)	$
	☐ ALL OWNED AUTOS ☒ SCHEDULED AUTOS	Y		604891354	03/14/2016	03/14/2017	BODILY INJURY (Per accident)	$
	☐ HIRED AUTOS ☐ NON-OWNED AUTOS						PROPERTY DAMAGE (Per accident)	$
								$
	☐ UMBRELLA LIAB ☐ OCCUR						EACH OCCURRENCE	$
	☐ EXCESS LIAB ☐ CLAIMS-MADE						AGGREGATE	$
	☐ DED ☐ RETENTION $							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N						WC STATU-TORY LIMITS ☐ OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? ☐ N / A						E.L. EACH ACCIDENT	$
	(Mandatory in NH)						E.L. DISEASE - EA EMPLOYEE	$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - POLICY LIMIT	$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

2008 CHEVROLET SILVERADO; VIN: 2GCEK13M681137898

CERTIFICATE HOLDER

HIDALGO COUNTY
2812 S BUSINESS HIGHWAY 281
EDINBURG TX 78539

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE



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CONFLICT OF INTEREST QUESTIONNAIRE

FORM CIQ

For vendor doing business with local governmental entity

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. *See* Section 176.006(a-1), Local Government Code.

A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.

OFFICE USE ONLY

Date Received

1 **Name of vendor who has a business relationship with local governmental entity.**

RG Enterprises, LLC dba G&G Contractors

2 ☐ **Check this box if you are filing an update to a previously filed questionnaire.** (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)

3 **Name of local government officer about whom the information is being disclosed.**

None

Name of Officer

4 **Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.**

A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?

☐ Yes ☒ No

B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity?

☐ Yes ☒ No

5 **Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.**

6 ☐ Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).

7

Signature of vendor doing business with the governmental entity

6/8/2016

Date

CONFLICT OF INTEREST QUESTIONNAIRE
For vendor doing business with local governmental entity

A complete copy of Chapter 176 of the Local Government Code may be found at http://www.statutes.legis.state.tx.us/Docs/LG/htm/LG.176.htm. For easy reference, below are some of the sections cited on this form.

Local Government Code § 176.001(1-a): "Business relationship" means a connection between two or more parties based on commercial activity of one of the parties. The term does not include a connection based on:

(A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or an agency of a federal, state, or local governmental entity;

(B) a transaction conducted at a price and subject to terms available to the public; or

(C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency and that is subject to regular examination by, and reporting to, that agency.

Local Government Code § 176.003(a)(2)(A) and (B):

(a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:

***

(2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds $2,500 during the 12-month period preceding the date that the officer becomes aware that

(i) a contract between the local governmental entity and vendor has been executed or

(ii) the local governmental entity is considering entering into a contract with the vendor;

(B) has given to the local government officer or a family member of the officer one or more gifts that have an aggregate value of more than $100 in the 12-month period preceding the date the officer becomes aware that:

(i) a contract between the local governmental entity and vendor has been executed; or

(ii) the local governmental entity is considering entering into a contract with the vendor

Local Government Code § 176.006(a) and (a-1)

(a) A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with a local governmental entity and:

(1) has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);

(2) has given a local government officer of that local governmental entity, or a family member of the officer, one or more gifts with the aggregate value specified by Section 176.003(a)(2)(B), excluding any gift described by Section 176.003(a-1); or

(3) has a family relationship with a local government officer of that local governmental entity.

(a-1) The completed conflict of interest questionnaire must be filed with the appropriate records administrator not later than the seventh business day after the later of:

(1) the date that the vendor:

(A) begins discussions or negotiations to enter into a contract with the local governmental entity; or

(B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or

(2) the date the vendor becomes aware:

(A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);

(B) that the vendor has given one or more gifts described by Subsection (a); or

(C) of a family relationship with a local government officer.

LOCAL GOVERNMENT OFFICER CONFLICTS DISCLOSURE STATEMENT

FORM CIS

(Instructions for completing and filing this form are provided on the next page.)

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.

This is the notice to the appropriate local governmental entity that the following local government officer has become aware of facts that require the officer to file this statement in accordance with Chapter 176, Local Government Code.

OFFICE USE ONLY

1 **Name of Local Government Officer**

N/A

2 **Office Held**

N/A

3 **Name of vendor described by Sections 176.001(7) and 176.003(a), Local Government Code**

None

4 **Description of the nature and extent of each employment or other business relationship and each family relationship with vendor named in Item 3.**

N/A

5 **List gifts accepted by the local government officer and any family member, if aggregate value of the gifts accepted from vendor named in Item 3 exceeds $100 during the 12-month period described by Section 176.003(a)(2)(B).**

Date Gift Accepted _____ Description of Gift _____

Date Gift Accepted _____ Description of Gift _____

Date Gift Accepted _____ Description of Gift _____

(attach additional forms as necessary)

6 **AFFIDAVIT**

I swear under penalty of perjury that the above statement is true and correct. I acknowledge that the disclosure applies to each family member (as defined by Section 176.001(2), Local Government Code) of this local government officer. I also acknowledge that this statement covers the 12-month period described by Section 176.003(a)(2)(B), Local Government Code.

_____

Signature of Local Government Officer

AFFIX NOTARY STAMP / SEAL ABOVE

Sworn to and subscribed before me, by the said _____, this the _____ day

of _____, 20____, to certify which, witness my hand and seal of office.

_____ _____ _____

Signature of officer administering oath | Printed name of officer administering oath | Title of officer administering oath

LOCAL GOVERNMENT OFFICER CONFLICTS DISCLOSURE STATEMENT

Section 176.003 of the Local Government Code requires certain local government officers to file this form. A "local government officer" is defined as a member of the governing body of a local governmental entity; a director, superintendent, administrator, president, or other person designated as the executive officer of a local governmental entity; or an agent of a local governmental entity who exercises discretion in the planning, recommending, selecting, or contracting of a vendor. This form is required to be filed with the records administrator of the local governmental entity not later than 5 p.m. on the seventh business day after the date on which the officer becomes aware of the facts that require the filing of this statement.

A local government officer commits an offense if the officer knowingly violates Section 176.003, Local Government Code. An offense under this section is a misdemeanor.

Refer to chapter 176 of the Local Government Code for detailed information regarding the requirement to file this form.

INSTRUCTIONS FOR COMPLETING THIS FORM

The following numbers correspond to the numbered boxes on the other side.

1. **Name of Local Government Officer.** Enter the name of the local government officer filing this statement.

2. **Office Held.** Enter the name of the office held by the local government officer filing this statement.

3. **Name of vendor described by Sections 176.001(7) and 176.003(a), Local Government Code.** Enter the name of the vendor described by Section 176.001(7), Local Government Code, if the vendor: a) has an employment or other business relationship with the local government officer or a family member of the officer as described by Section 176.003(a)(2)(A), Local Government Code; b) has given to the local government officer or a family member of the officer one or more gifts as described by Section 176.003(a)(2)(B), Local Government Code; or c) has a family relationship with the local government officer as defined by Section 176.001(2-a), Local Government Code.

4. **Description of the nature and extent of each employment or other business relationship and each family relationship with vendor named in Item 3.** Describe the nature and extent of the employment or other business relationship the vendor has with the local government officer or a family member of the officer as described by Section 176.003(a)(2)(A), Local Government Code, and each family relationship the vendor has with the local government officer as defined by Section 176.001(2-a), Local Government Code.

5. **List gifts accepted, if the aggregate value of the gifts accepted from vendor named in Item 3 exceeds $100.** List gifts accepted during the 12-month period (described by Section 176.003(a)(2)(B), Local Government Code) by the local government officer or family member of the officer from the vendor named in item 3 that in the aggregate exceed $100 in value.

6. **Affidavit.** Signature of local government officer.

Local Government Code § 176.001(2-a): "Family relationship" means a relationship between a person and another person within the third degree by consanguinity or the second degree by affinity, as those terms are defined by Subchapter B, Chapter 573, Government Code.

Local Government Code § 176.003(a)(2)(A):

(a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if

***

(2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds $2,500 during the 12-month period preceding the date that the officer becomes aware that:

(i) a contract between the local governmental entity and vendor has been executed, or

(ii) the local governmental entity is considering entering into a contract with the vendor.

PROPOSER'S AFFIDAVIT
Exhibit "E"

PROPOSER'S AFFIDAVIT OF NON-COLLUSION
NON-CONFILICT OF INTERST, AND ANTI-LOBBYING

STATE OF TEXAS
COUNTY OF HIDALGO

Affiant, Rene Garza, being first duly sworn, deposes that:

(1) Affiant does hereby state neither the Proposer nor any of the Proposer's officers, partners, owners, agents, representatives, employees, or parties in interest, has in any way colluded, conspired, agreed, directly or indirectly with any person, firm, corporation, or other proposer, or potential proposer, to provide any money or other valuable consideration for assistance in procuring or attempting to procure a contract or fix the prices in the attached proposed or the proposal of any other proposer, and further states that no such money or other reward will be hereinafter paid.

(2) Affiant further states they have neither recommended or suggested to Hidalgo County or any of its officials or employees, any of the terms or provisions set forth in their Request for Proposal and subsequent agreement, except at a meeting open to all interested proposers, of which proper notice was given.

(3) Affiant, further states their officers, employees, or agents have not, and will not attempt to lobby, directly or indirectly, the Hidalgo County Commissioner's Court between proposal submission date and award by the Hidalgo County Commissioner's Court.

(4) Affiant further states no officer, or stockholder of the Proposer is a member of the staff, or related to any employee of the Hidalgo County except as noted herein below:

Signature/Title: _____

Subscribed and sworn to before me this 08 day of June, 20 16

Notary Public

My commission expires: March 25, 20 18

Certification
Regarding Debarment, Suspension and Ineligibility

As is required by the Federal Regulations Implementing Executive Order 12549, Debarment and Suspension, 45 CFR Part 76, Government-wide Debarment and Suspension, the applicant certifies, to the best of his or her knowledge and belief, that both it and its principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency;

b. Have not within a three-year period preceding this bid proposal and/or application been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state, or local) transaction or contract under a public transaction, violation of federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a government entity with commission of any of the offenses enumerated herein; and

d. Have not within a three-year period preceding this bid proposal and/or application had one or more public transactions terminated for cause or default.

Signature: _____
Print Name: Rene Garza
Title: Owner
Telephone Number: 956-929-1567
Date: 06/08/2016

If the bidder is unable to certify to all of the statements in this Certification, such bidder should attach an explanation to this proposal.

Non-Collusion Affidavit Of Prime Bidder

State of Texas §
§
County of Hidalgo §

Rene Garza, being first duly sworn, deposes and says that:

(1) He Owner, of

RG Enterprises, LLC dba G&G Contractors, the Bidder that has submitted the attached Bid

(2) He is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such bid:

(3) Such bid is genuine and is not a collusive or sham Bid:

(4) Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or of any other Bidder or to fix any overhead, profit or cost element of the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the Owner or any person interested in the proposed Contract; and

(5) The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant

(Signed) _____

Owner
(Title)

Subscribed and sworn to before me this
day of June 08, 20 16.

Irma Rodriguez Notary
(Title)

My Commission expires March 25, 2018

HIDALGO COUNTY
PURCHASING DEPARTMENT
Bidder/Vendor Application

Complete in print or type. Please return this application to the Hidalgo County Purchasing Department
thru Facsimile: (956) 318-2629 or (956) 292-7612
in person or regular mail to: 2812 S. Business Hwy. 281 , Edinburg, Texas 78539
or email: purchasing@co.hidalgo.tx.us

Company Name: RG Enterprises, LLC Telephone No. (956) 283-7040

dba Name: G&G Contractors

Legal Name: RG Enterprises, LLC dba G&G Contractors

Mailing Address : 5125 S. US Hwy 281 Fax No. (956) 283-7040

Physical Address:

City, State, Zip Edinburg, Texas 78539 Tax I.D. No. 80-0906079

Remit to Address : same as mailing City, State, Zip

E-Mail Address: rgarzajr26@yahoo.com irma.gandgcontractors@gmail.com

Representative(s) Name(s) & Title(s) Rene Garza, Owner

Type of Organization (check one): ____ Individual ____ Partnership ____ Corporation ____ Non-Profit
__X__ LLC ____ Sole Proprietor ____ Other, Specify

State Identification No._____ (Please attached completed W-9 form with this application)
Federal Identification No. or (if individual) SS No.

State of Incorporation: _____ **Date:**_____ **Other:**

Type of Business (check one): ____ Manufacturer ____ Wholesaler ____ Retailer ____ Broker
____ Distributor ____ Service Organization __X__ Other, Specify

Name & Title of Person(s) Authorized to Sign Bids, Proposals, and/or Contracts:
Rene Garza, Owner

Small and/or Disadvantaged Business Information (check application criteria)

Small Business:

☐ Less than 125,000 annual gross receipt
☐ Less than 250,000 annual gross receipt
☐ Less than 499,000 annual gross receipt
☒ More than 500,000 annual gross receipt

Disadvantaged Business (At Least 51% Ownership)

☐ Black American
☒ Hispanic American
☐ Asian Pacific American
☐ Native American
☐ Women
☐ Other

Have you been certified as a HUB or an MBE/WBE source?: ☒ Yes ☐ No

Indicate Certification No.(s): 1800906079100 or are Certificate(s) attached?: ☒ Yes ☐ No

What type of product(s) is/are solicited by your company?: Services

Would you like to be provided with specifications for procurements of such products?: ☒ Yes ☐ No

To Be Completed by the County: Rec'd by (Purchasing):_____ **Date Rec'd by (Purchasing):**

Date Forwarded Information to Auditor's Office:_____ **Entry Date:** _____ **Vendor No.:**

HISTORICALLY UNDERUTILIZED BUSINESS (HUB) DECLARATION

The primary objective of the Hidalgo County HUB Program is to ensure Historically Underutilized Businesses receive a fair and equal opportunity for participation in the County's procurement process. This fact holds true for Services (Professional & Non-Professional), Commodities, and Construction contracts and any subcontracts thereto. The program strongly encourages Prime Contractors to provide subcontracting opportunities to Certified Hub Contractors/Vendors. Our goal for HUB contractor/vendor participation, as well as HUB subcontractor participation is 30%. To be considered as a "Certified HUB Contractor/Vendor" the contractor/vendor must have been certified by, and hold a current and valid certification with any of the three agencies listed below.

Have you been Certified as a HUB or an MBE/WBE source?: ☒Yes ☐ No

If yes, by whom?: ☒Texas Building & Procurement Commission ☐ Other_____

Indicate Certification No(s).: 18009060679100 or Are Certificate(s) Attached?: ☒Yes ☐ No

---

LIST OF CERTIFIED HUB SUBCONTRACTORS

(Attach additional pages if necessary)

What percentage of the Bid, RFP,or RFQ is to be subcontracted with Certified HUB sources? _____ %
(List HUB Subcontractor information below).

HUB Subcontractor Name: _____ HUB Status:
Certifying Agency (Check all applicable): ☐Texas Building & Procurement Commission ☐ Other
Address: _____ City: _____ State: _____ Zip:
Contact Person: _____ Title: _____ Phone No.: ( )
Subcontract Amount: $_____ Description of Work to be Performed.

HUB Subcontractor Name: _____ HUB Status:
Certifying Agency (Check all applicable): ☐Texas Building & Procurement Commission ☐ Other
Address: _____ City: _____ State: _____ Zip:
Contact Person: _____ Title: _____ Phone No.: ( )
Subcontract Amount: $_____ Description of Work to be Performed:

HUB Subcontractor Name: _____ HUB Status:
Certifying Agency (Check all applicable): ☐Texas Building & Procurement Commission ☐ Other
Address: _____ City: _____ State: _____ Zip:
Contact Person: _____ Title: _____ Phone No.: ( )
Subcontract Amount: $_____ Description of Work to be Performed:

SUSAN COMBS

TEXAS COMPTROLLER of PUBLIC ACCOUNTS

PO Box 13186 • Austin TX 78711-3186

The Texas Comptroller of Public Accounts (CPA) administers the Statewide Historically Underutilized Business (HUB) Program for the State of Texas, which includes certifying minority and woman-owned businesses as HUBs and is designed to facilitate the participation of minority and woman-owned businesses in state agency procurement opportunities.

We are pleased to inform you that your application for certification/re-certification as a HUB has been approved. Your company's profile is listed in the State of Texas HUB Directory and may be viewed online at http://www.window.state.tx.us/procurement//cmbl/hubonly.html. Provided that your company continues to meet HUB eligibility requirements, the enclosed HUB certificate is valid for four years.

You must notify the HUB Program in writing of any changes affecting your company's compliance with the HUB eligibility requirements including changes in ownership, day-to-day management, control and/or principal place of business. *Note: Any changes made to your company's information may require the HUB Program to re-evaluate your company's eligibility.* As part of the HUB Program's monitoring efforts, you will be sent a HUB Certification Eligibility Affidavit in approximately 24 months. Failure to complete and submit the HUB Certification Eligibility Affidavit, and/or failure to notify us of changes affecting your company's compliance with HUB eligibility requirements may result in the revocation of your company's certification.

Please reference the enclosed pamphlet for additional resources, such as the state's Centralized Master Bidders List (CMBL), that can increase your chance of doing business with the state.

Thank you for your participation in the HUB Program! If you have any questions, you may contact a HUB Program representative at (512) 463-5872 or toll-free in Texas at (888) 863-5881.

Texas Historically Underutilized Business (HUB) Certificate

HUB
Statewide Historically Underutilized Business Program

Certificate/VID Number	1800906079100
File/Vendor Number	480666
Approval Date	02-MAY-2013
Scheduled Expiration Date	02-MAY-2017

The Texas Comptroller of Public Accounts (CPA) hereby certifies that

RG ENTERPRISES LLC

has successfully met the established requirements of the State of Texas Historically Underutilized Business (HUB) Program to be recognized as a HUB. This certificate printed 03-MAY-2013 supersedes any registration and certificate previously issued by the HUB Program. If there are any changes regarding the information (i.e., business structure, ownership, day-to-day management, operational control, business location) provided in the submission of the business' application for registration/certification as a HUB, you must immediately (within 30 days of such changes) notify the HUB Program in writing. The CPA reserves the right to conduct a compliance review at any time to confirm HUB eligibility. HUB certification may be suspended or revoked upon findings of ineligibility.

Paul A. Gibson

Paul Gibson, Statewide HUB Program Manager
Texas Procurement and Support Services

Note: In order for State agencies and institutions of higher education (universities) to be credited for utilizing this business as a HUB, they must award payment under the Certificate/VID Number identified above. Agencies and universities are encouraged to validate HUB certification prior to issuance of notice of award by accessing the Internet (http://www.window.state.tx.us/procurement/cmbl/cmblhub.html) or by contacting the HUB Program at 1-888-863-5881 or 512-463-5872.

THE STATE OF TEXAS §
§
COUNTY OF HIDALGO §

CONSTRUCTION CONTRACT
C-16-226-06-20

This Agreement, entered into this 20th day of June, 2016 by and between Hidalgo County (hereinafter called the "OWNER," and, RG Enterprises, LLC dba G&G Contractors (a limited liability company), of County of Hidalgo, and State of Texas, hereinafter called "CONTRACTOR".

WITNESSETH

That for and in consideration of the payments and agreement hereinafter mentioned, to be made and performed by the OWNER, the CONTRACTOR hereby agrees with the OWNER to commence and complete the construction described as follows:

Hidalgo County Precinct No. 4 – Concrete Walking Trial at San Carlos CRC and Sunflower Park

Hereinafter called the project, for the sum of ($82,936.65) – Eighty Two Thousand Nine Hundred Thirty-Six Dollars and Sixty Five Cents and all extra work in connection therewith, under the terms and stated in the General and Special Conditions of the Contract; and at his (its or their) own proper cost and expense to furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said project in accordance with the conditions and prices stated in the Proposal, the General Conditions and Special Conditions printed or written explanatory matter thereof, the specifications and contract documents therefore as prepared by LeFevre Engineering & Management Consulting, LLC, entitled the Engineer, and as enumerated in Paragraph 1.01.A.12 of the General Conditions, all of which are made a part hereof and collectively evidence and constitute the contract.

The CONTRACTOR hereby agrees to commence work under this contract on or after a date to be specified in written "Notice to Proceed" of the OWNER and to fully complete the project within 45 consecutive calendar days thereafter. The CONTRACTOR further agrees to pay, as liquidated damages, the sum of $250 for each consecutive calendar day thereafter.

The OWNER agrees to pay the CONTRACTOR in current funds for the performance of the contract, subject to additions and deductions, as provided in the General Conditions of the contract, and to make payments on account thereof as provided in Paragraphs 14.02.C and 14.07.C of the General Conditions.

IN WITNESS WHREOF, the parties to these present have executed this contract in four (4) counterparts, each of which shall be deemed an original, in year and day first above mentioned.

APPROVED BY COMMISIONERS COURT ON, **June 20, 2016**.

CONTRACTOR: RG Enterprises, LLC dba G&G Contractors
Signature: _____
Print Name & Title: Mr. Rene Garza, Owner
Name of Firm: RG Enterprises, LLC dba G&G Contractors
Address: 5125 S. US Hwy 281
Edinburg, Texas 78539
Fed I.D. #/SS #: 80-0906079

STATE OF TEXAS

COUNTY OF HIDALGO

This instrument was acknowledged before me on this the 18TH day of July, 2016, by Owner (Title) Of and on behalf of RG Enterprises, LLC dba G&G Contractors (a limited liability company) (a partnership) (a corporation)

IRMA H. RODRIGUEZ
Notary Public, State of Texas
My Commission Expires
March 25, 2018

_____
Notary Public-Signature

APPROVED AS TO FORM:
Atlas, Hall Rodriguez, L.L.P.

BY: _____

ATTEST:

_____
Arturo Guajardo, Jr. County Clerk

COUNTY COURT COMMISSIONERS HIDALGO COUNTY, TEXAS

COUNTY OF HIDALGO:

_____
Ramon Garcia, County Judge

APPROVED BY COMMISSIONERS' COURT ON: 7/26/16

CERTIFICATE OF INTERESTED PARTIES

FORM 1295

Complete Nos. 1 - 4 and 6 if there are interested parties.
Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.

OFFICE USE ONLY
CERTIFICATION OF FILING

Certificate Number:
2016-66790

Date Filed:
06/07/2016

Date Acknowledged:

1 Name of business entity filing form, and the city, state and country of the business entity's place of business.

RG Enterprises, LLC dba G&G Contractors
Edinburg, TX United States

2 Name of governmental entity or state agency that is a party to the contract for which the form is being filed.

HIDALGO COUNTY

3 Provide the identification number used by the governmental entity or state agency to track or identify the contract, and provide a description of the services, goods, or other property to be provided under the contract.

2016-226-06-08-YSS
Concrete Walking Trail at San Carlos CRC and Sunflower Park

4 Name of Interested Party	City, State, Country (place of business)	Nature of interest (check applicable)	
		Controlling	Intermediary
Garza, Rene	Edinburg, TX United States	X	

5 Check only if there is NO Interested Party. ☐

6 AFFIDAVIT

I swear, or affirm, under penalty of perjury, that the above disclosure is true and correct.

IRMA H. RODRIGUEZ
Notary Public, State of Texas
My Commission Expires
March 25, 2018

Signature of authorized agent of contracting business entity

AFFIX NOTARY STAMP / SEAL ABOVE

Sworn to and subscribed before me, by the said Rene Garza, this the 07 day of June, 20 16, to certify which, witness my hand and seal of office.

Signature of officer administering oath | Irma H Rodriguez — Printed name of officer administering oath | Notary — Title of officer administering oath

REQUEST FOR BIDS

HIDALGO COUNTY PRECINCT NO. 4
"Concrete Walking Trail at San Carlos CRC and Sunflower Park"

RFB PROJECT NO. 2016-226-06-08-YSS

RFB SUBMITTAL CHECK LIST

All forms listed below must be submitted in the RFB response. If forms are not submitted, your response may be considered as non responsive.

Indicate with a check mark (✓) the Forms completed and included in this response:

✓ Page 9 of Legal Notice

✓ Exhibit "C" – Acknowledgement forms (pages 3 and 4)

✓ Exhibit "D1 Revised CIQ Form –Copy of County Clerk File Recording fee receipt

✓ Exhibit "E" Proposers Affidavit

✓ Vendor Bidder Application and IRS form W-9

✓ Certification Regarding Debarment

✓ Statement of Credentials

✓ Submittal Check List

✓ One (1) Original, three (3) Copies of Response.

Signature

Rene Garza
Printed Name

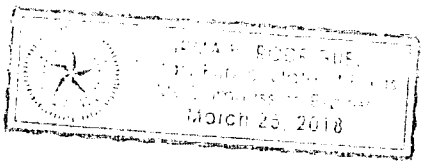
6/8/2016
Date

Subscribed and sworn to me this 08 day of June, 20 16.

By: _____

Notary Public In and for Hidalgo County, Texas

My commission expires March 25, 2018



Bidder shall have a significant business presence with the Rio Grande Valley Area the business must be headquartered in either Hidalgo, Cameron, or Starr County or a local office must be located in either of the three counties (Hidalgo, Cameron, Starr) with at least thirty percent (30%) of the total company workforce employed at the local office. County reserves the right to request payrolls and any necessary documentation to confirm that the local office meets these requirements.

Bidders shall carefully examine the plans, specifications and other documents, visit the site of the work, and fully inform themselves as to all conditions and matters which can affect the work or cost thereof. Should the bidder find discrepancies in, or omissions from the plans, specifications or other documents, or should he/she be in doubt as their meaning, he/she should at once notify the Engineer and obtain clarification by addendum prior to submitting any bid.

Bidder herby certifies that said company carried liability coverage and workers compensation insurance coverage that meets the requirements set forth in this Request for Bids/Proposals when performing work on this project for Hidalgo County.

Furthermore, bidder certifies that any subcontractor on the project shall provide the said company with a certificate relating that all employees of the subcontractor also are provided with workers' compensation insurance coverage. Bidder will provide copies of all of these certificates to Hidalgo County during the course of the project for all subcontractors working on the project.

All subcontractors must comply with federally determined prevailing Davis-Bacon and Related Acts wage rate.

Hidalgo County encourages the hiring of minority women subcontractors and/or suppliers whenever and wherever feasible.

The undersigned hereby authorizes and requests any person, firm, or corporation to furnish any information requested by the owner in verification of the recitals comprising this Statement of Credentials.

Executed this 08 day of June, 20 16.

By René Garza

Title Owner

City of Mission - Waste Water Plant Laboratory

City of Harlingen - CDBG

Hidalgo County San Carlos Landscaping and Irrigation

ECISD Richard R. Flores Stadium lighting and fencing

City of Mission CDBG

Willacy County Resource Center

4. **SUBCONTRACTORS:** List any subcontractors you propose to use on the Hidalgo County's project that will comprise at least 20% of the total project cost. Use additional page if necessary. This information is considered preliminary and may be revised prior if bid is awarded and re-submitted during the pre-construction phase. However, it is expressly understood that the use of any subcontractor other than those listed with bid shall require written approval from Hidalgo County.

Failure to submit the information as required may result in a disqualification of your bid.

Rio Irrigation

6. **PERFORMANCE OF WORK BY BIDDER:** Except as otherwise provided, the bidder shall perform no less than eighty percent (80%) of the work with his own organization, only twenty percent (20%) of the work may be subcontracted.

The organization of the specifications into divisions, sections, articles, etc., and the arrangement and titles of project drawings shall not control the Bidder in dividing the work among subcontractors or in establishing the extent of work to be performed by any trade.

Awarded bidder shall assign a project superintendent who is directly employed by the Bidder, that superintendent will be required to be on the job on a daily basis. No subcontractors will be allowed to act as project superintendents at any point during the construction of said project.

Ph/Fx Number: 956-787-8721 Email: guadalupe.garcia@co.hidalgo.tx.us

Scope of Work Description: irrigation, landscape, baseball & soccer field, benches

Date Completed: 2/2016 Total Cost: 349,000

****

3. Owner: City of Mission-Bentsen Palm Community Park Shade Canopies

Address: 1208 E. 8th St.

Ph/Fx Number: 956-580-8650 Email:

Scope of Work Description: Restroom, electrical, landscaping, plumbing,

Date Completed: 10/2015 Total Cost: 58,000

****

4. Owner: City of Mission - Hike & Bike Trail Restroom Facility

Address: 1208 E. 8th St.

Ph/Fx Number: 956-580-8650 Email:

Scope of Work Description: Plumbing Electrical Landscaping

Date Completed: 10/2015 Total Cost: 75,000

****

5. Owner: City of Mission-Catholic War Veterans

Address: 115 Mayberry

Ph/Fx Number: 956-580-8650 Email:

Scope of Work Description: Plumbing, electrical, landscaping, concrete, masonry, sidewalks etc

Date Completed: 02/2016 Total Cost: $297,000.00

****

3. **CONTRACTS ON HAND:** The Bidder shall provide below a list of any contracts/projects he/she currently has on hand:

City of Mission - CDBG

City of Mission - Demolition and Content Removal

STATEMENT OF CREDENTIALS

1. **GENERAL:** In order to assist the Owner in determining the ability of each Bidder to properly fulfill the requirements of this proposed contract, the Bidder will complete the following items. All questions must be answered and the data given must be clear and comprehensive. **This statement must be notarized.** If necessary, questions may be answered on separate attached sheets. The Bidder may submit any additional information he/she desires.

Name of Bidder: RG Enterprises LLC dba G&G Contractors

Address: 5125 S. US Hwy 281

Edinburg, Tx 78539

Date Organized: 2006 Date Incorporated:

Office Number: 956-283-7040 Fax Number: 956-283-7040

Number of years in business under present name: 3

Type of work performed by your company: Residential/Commercial construction

renovations, parks, irrigation landscaping canopies pavillions sewer etc

Have you ever failed to complete any work awarded to you? No

Have you ever defaulted on a contract? No

2. **EXPERIENCE:** The Bidder will give below a list of similar projects which he/she has completed within the last five (5) years.

1. Owner: Hidalgo County Urban County Program - City of Elsa 2013 Park & Recreational Facility

Address: 216 E. 4th St. Elsa, Tx

Ph/Fx Number: 956-787-8721 Email: monica.leal@co.hidalgo.tx.us

Scope of Work Description: site work, bbq pits, tables, restroom, lighting, parking, plaque

Date Completed: 9/2015 Total Cost: 170,000

****

2. Owner: Hidalgo County Urban County Program -City of La Joya Military Park

Address: 101 N. Leo Ave

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if items 1, 4, and 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). Exempt recipients, see *Exempt From Backup Withholding* on page 2.

Signature requirements. Complete the certification as indicated in 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account)	The actual owner of the account or, if combined funds, the first individual on the account [1]
3. Custodian account of a minor (Uniform Gift to Minors Act)	The minor [2]
4. a. The usual revocable savings trust (grantor is also trustee)	The grantor-trustee [1]
b. So-called trust account that is not a legal or valid trust under state law	The actual owner [1]
5. Sole proprietorship or single-owner LLC	The owner [3]
For this type of account:	**Give name and EIN of:**
6. Sole proprietorship or single-owner LLC	The owner [3]
7. A valid trust, estate, or pension trust	Legal entity [4]
8. Corporate or LLC electing corporate status on Form 8832	The corporation
9. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
10. Partnership or multi-member LLC	The partnership
11. A broker or registered nominee	The broker or nominee
12. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity

[1] List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

[2] Circle the minor's name and furnish the minor's SSN.

[3] You must show your individual name and you may also enter your business or "DBA" name on the second name line. You may use either your SSN or EIN (if you have one). If you are a sole proprietor, IRS encourages you to use your SSN.

[4] List first and circle the name of the legal trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules regarding partnerships* on page 1.

Note. If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons who must file information returns with the IRS to report interest, dividends, and certain other income paid to you, mortgage interest you paid, the acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA, or Archer MSA or HSA. The IRS uses the numbers for identification purposes and to help verify the accuracy of your tax return. The IRS may also provide this information to the Department of Justice for civil and criminal litigation, and to cities, states, the District of Columbia, and U.S. possessions to carry out their tax laws. We may also disclose this information to other countries under a tax treaty, to federal and state agencies to enforce federal nontax criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism.

You must provide your TIN whether or not you are required to file a tax return. Payers must generally withhold 28% of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to a payer. Certain penalties may also apply.

Generally, individuals (including sole proprietors) are not exempt from backup withholding. Corporations are exempt from backup withholding for certain payments, such as interest and dividends.

Note. If you are exempt from backup withholding, you should still complete this form to avoid possible erroneous backup withholding.

Exempt payees. Backup withholding is not required on any payments made to the following payees:

1. An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2),

2. The United States or any of its agencies or instrumentalities,

3. A state, the District of Columbia, a possession of the United States, or any of their political subdivisions or instrumentalities,

4. A foreign government or any of its political subdivisions, agencies, or instrumentalities, or

5. An international organization or any of its agencies or instrumentalities.

Other payees that may be exempt from backup withholding include:

6. A corporation,

7. A foreign central bank of issue,

8. A dealer in securities or commodities required to register in the United States, the District of Columbia, or a possession of the United States,

9. A futures commission merchant registered with the Commodity Futures Trading Commission,

10. A real estate investment trust,

11. An entity registered at all times during the tax year under the Investment Company Act of 1940,

12. A common trust fund operated by a bank under section 584(a),

13. A financial institution,

14. A middleman known in the investment community as a nominee or custodian, or

15. A trust exempt from tax under section 664 or described in section 4947.

The chart below shows types of payments that may be exempt from backup withholding. The chart applies to the exempt recipients listed above, 1 through 15.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt recipients except for 9
Broker transactions	Exempt recipients 1 through 13. Also, a person registered under the Investment Advisers Act of 1940 who regularly acts as a broker
Barter exchange transactions and patronage dividends	Exempt recipients 1 through 5
Payments over $600 required to be reported and direct sales over $5,000 [1]	Generally, exempt recipients 1 through 7 [2]

[1] See Form 1099-MISC, Miscellaneous Income, and its instructions.

[2] However, the following payments made to a corporation (including gross proceeds paid to an attorney under section 6045(f), even if the attorney is a corporation) and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees; and payments for services paid by a federal executive agency.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-owner LLC that is disregarded as an entity separate from its owner (see *Limited liability company (LLC)* on page 2), enter your SSN (or EIN, if you have one). If the LLC is a corporation, partnership, etc., enter the entity's EIN.

Note. See the chart on page 4 for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local Social Security Administration office or get this form online at *www.socialsecurity.gov*. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at *www.irs.gov/businesses* and clicking on Employer ID Numbers under Related Topics. You can get Forms W-7 and SS-4 from the IRS by visiting *www.irs.gov* or by calling 1-800-TAX-FORM (1-800-829-3676).

If you are asked to complete Form W-9 but do not have a TIN, write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note. Writing "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: *A disregarded domestic entity that has a foreign owner must use the appropriate Form W-8.*

- The U.S. grantor or other owner of a grantor trust and not the trust, and
- The U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person, do not use Form W-9. Instead, use the appropriate Form W-8 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the recipient has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity not subject to backup withholding, give the requester the appropriate completed Form W-8.

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments (after December 31, 2002). This is called "backup withholding." Payments that may be subject to backup withholding include interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the Part II instructions on page 4 for details),
3. The IRS tells the requester that you furnished an incorrect TIN,
4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or
5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See the instructions below and the separate Instructions for the Requester of Form W-9.

Also see *Special rules regarding partnerships* on page 1.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of $50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a $500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Name

If you are an individual, you must generally enter the name shown on your income tax return. However, if you have changed your last name, for instance, due to marriage without informing the Social Security Administration of the name change, enter your first name, the last name shown on your social security card, and your new last name.

If the account is in joint names, list first, and then circle, the name of the person or entity whose number you entered in Part I of the form.

Sole proprietor. Enter your individual name as shown on your income tax return on the "Name" line. You may enter your business, trade, or "doing business as (DBA)" name on the "Business name" line.

Limited liability company (LLC). If you are a single-member LLC (including a foreign LLC with a domestic owner) that is disregarded as an entity separate from its owner under Treasury regulations section 301.7701-3, enter the owner's name on the "Name" line. Enter the LLC's name on the "Business name" line. Check the appropriate box for your filing status (sole proprietor, corporation, etc.), then check the box for "Other" and enter "LLC" in the space provided.

Other entities. Enter your business name as shown on required federal tax documents on the "Name" line. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on the "Business name" line.

Note. You are requested to check the appropriate box for your status (individual/sole proprietor, corporation, etc.).

Exempt From Backup Withholding

If you are exempt, enter your name as described above and check the appropriate box for your status, then check the "Exempt from backup withholding" box in the line following the business name, sign and date the form.

Form **W-9**
(Rev. August 2013)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Give Form to the requester. Do not send to the IRS.

Print or type
See Specific Instructions on page 2.

Name (as shown on your income tax return)
RG Enterprises LLC

Business name/disregarded entity name, if different from above
dba G&G Contractors

Check appropriate box for federal tax classification:
☐ Individual/sole proprietor ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate

☑ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶ S

☐ Other (see instructions) ▶

Exemptions (see instructions)
Exempt payee code (if any)
Exemption from FATCA reporting code (if any)

Address (number, street, and apt. or suite no.)
5125 S. US Hwy 281

Requester's name and address (optional)

City, state, and ZIP code
Edinburg, Texas 78539

List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on the "Name" line to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.

Social security number
			–			–				

Employer identification number
8	0	–	0	9	0	6	0	7	9

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
3. I am a U.S. citizen or other U.S. person (defined below), and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign Here Signature of U.S. person ▶ [signature] Date ▶ 6/8/2016

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. The IRS has created a page on IRS.gov for information about Form W-9, at *www.irs.gov/w9*. Information about any future developments affecting Form W-9 (such as legislation enacted after we release it) will be posted on that page.

Purpose of Form

A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, payments made to you in settlement of payment card and third party network transactions, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting is correct.

Note. If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are

- An individual who is a U.S. citizen or U.S. resident alien,
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States,
- An estate (other than a foreign estate), or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

INSURORS
INDEMNITY COMPANIES

P&C 877 282 1625
Bonds 800 933 7444

225 South Fifth Street
PO Box 2683
Waco, Texas 76702-2683

TEXAS STATUTORY PERFORMANCE BOND
(PUBLIC WORKS)

Bond Number: CNB-22090-00

KNOW ALL MEN BY THESE PRESENTS:

THAT, RG Enterprises, LLC dba G & G Contractors, (hereinafter called the Principal), as Principal, and INSURORS INDEMNITY COMPANY, a corporation organized and existing under the laws of the State of Texas, licensed to do business in the State of Texas and admitted to write bonds, as surety, (hereinafter called the Surety), with its principal place of business in the City of Waco, Texas, are held and firmly bound unto the Hidalgo County (hereinafter called the Obligee), in the amount of Eighty Two Thousand Nine Hundred Thirty Six Dollars and Sixty Five Cents ($82,936.65) for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain Contract with the Obligee, dated the 20th day of June, 2016, for the construction of C-16-226-06-20 Hidalgo County Precinct No. 4; Concrete Walking Trail at San Carlos CRC and Sunflower Park.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall faithfully perform the work in accordance with the Contract and the Contract Documents, including the plans and specifications, then this obligation shall be null and void; otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Chapter 2253 of the Texas Government Code as amended and all liabilities on this bond shall be determined in accordance with the provisions, conditions and limitations of said Chapter to the same extent as if it were copied at length herein.

PROVIDED FURTHER, that this bond is conditioned upon the Obligee having fully and completely discharged its obligations under the Contract, and the Contract Documents, including, but not limited, to having paid the Principal in strict accordance with the Contract and the Contract Documents; and

PROVIDED FURTHER, that in order to invoke the Surety's obligations to the Obligee, the Obligee shall have defaulted and terminated the Principal in accordance with the Contract and the Contract Documents and shall have mailed notice to the Surety, within seven (7) days of the default and termination of the Principal, at:

Insurors Indemnity Company
P.O. Box 2683
Waco, TX 76702-2683

Or

Insurors Indemnity Company
225 South Fifth Street
Waco, TX 76710

of said default and termination; and

PROVIDED FURTHER, that the Surety shall have Twenty (20) businesses days, not including the date of receipt, after the receipt of the notice of default and termination to review the default and termination of the Principal to decide whether it will:

1) Proceed to arrange for completion of the work by either:

A) Taking over the work; or
B) Financing the Principal; or

C) Tendering a replacement contractor to the Obligee and paying the difference between the replacement contractor's contract price and the remaining contract funds to the Obligee; or
D) Arranging for the completion of the work in some other manner; or

2) Deny liability and coverage under this bond; and

PROVIDED FURTHER, that the Obligee, in the event of a default and termination of the Principal, shall:

1) Fully cooperate in the Surety's review of the default and termination by providing a copy of all the Contract Documents and all other documents requested by the Surety;

2) Allow the Surety or the Surety's representatives full and complete access to the construction site; and

3) In the event the Surety takes over the work, finances the Principal, or arranges for the completion of the work by paying to the Surety, or as the Surety may designate, the unpaid Contract proceeds in accordance with the terms and conditions of the Contract; and

PROVIDED FURTHER, that any payments by the Surety shall reduce the penal sum of this bond to the extent that the Obligee does not reimburse the Surety by paying to the Surety the remaining Contract balances; and

PROVIDED FURTHER, that the Surety is NOT bound by any arbitration term, condition, clause or provision imposed by the underlying Contract or Contract Documents; and

PROVIDED FURTHER, that the Surety is NOT bound by any indemnification term, condition, clause or provision imposed by the underlying Contract or Contract Documents; and

PROVIDED FURTHER, that this bond is NOT a substitute for and is NOT meant to, or intended to, supplement the insurance required to be furnished by the Principal in accordance with the Contract and the Contract Documents; and

PROVIDED FURTHER, that this bond does not provide coverage for and the Surety shall not be liable for molds, living or dead fungi, bacteria, allergins, histamines, spores, hyphae, mycrotoxins, toxins, viruses, or their related parts, nor the remediation thereof, nor the consequences or the results of their occurrence, existence, or appearance, whether or not they were caused by Principal's actions or inactions; and

PROVIDED FURTHER, that this bond does not provide coverage for, and the surety shall not be liable for, losses caused by acts of terrorism, riot, civil insurrection, or acts of war; and

PROVIDED FURTHER, that in any lawsuit involving this bond the prevailing party shall be awarded its attorney fees.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this 11th day of July, 2016.

APPROVED AS TO FORM:

By:_____ Obligee (Seal)

PRINCIPAL: RG Enterprises, LLC dba G&G Contractors
(Seal)

By: _____
(title)

INSURORS INDEMNITY COMPANY
(Seal)

By: _____
Andy Alvarez, Attorney-in-Fact

INSURORS
INDEMNITY COMPANIES

P&C 877 282 1625
Bonds 800 933 7444

225 South Fifth Street
PO Box 2683
Waco, Texas 76702-2683

TEXAS STATUTORY PAYMENT BOND
(PUBLIC WORKS)

Bond Number CNB-22090-00

KNOW ALL PERSONS BY THESE PRESENTS:

THAT RG Enterprises, LLC dba G & G Contractors (hereinafter called the Principal), as Principal, and INSURORS INDEMNITY COMPANY, a corporation organized and existing under the laws of the State of Texas, licensed to do business in the State of Texas and admitted to write bonds, as surety, (hereinafter called the Surety), with its principal place of business in the City of Waco, Texas, are held and firmly bound unto Hidalgo County (hereinafter called the Obligee), in the amount of Eighty Two Thousand Nine Hundred Thirty Six Dollars and Sixty Five Cents ($82,936.65) for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain contract with the Obligee, dated the 20th day of June, 2016, for the construction of

C-16-226-06-20 Hidalgo County Precinct No. 4, Concrete Walking Trail at San Carlos CRC and Sunflower Park.

NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION IS SUCH, that if the said Principal shall pay all claimants supplying labor and material to him or a subcontractor in the prosecution of the work provide for in said contract, then, this obligation shall be null and void; otherwise to remain in full force and effect;

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Chapter 2253 of the Texas Government Code as amended and all liabilities on this bond shall be determined in accordance with the provisions, conditions and limitations of said Chapter to the same extent as if it were copied at length herein.

PROVIDED FURTHER, that the Surety's address for giving notice in compliance with section 2253.041 *et seq.* of the Texas Government Code is:

Insurors Indemnity Company
P.O. Box 2683
Waco, TX 76702-6683;

Or

Insurors Indemnity Company
225 South Fifth Street
Waco, TX 76710.

SIGNED, SEALED AND DATED this 11th day of July, 2016.

PRINCIPAL:

RG Enterprises, LLC dba G & G Contractors
(Seal)

By: _____
(title)

APPROVED AS TO FORM:

By: _____
Obligee (Seal)

INSURORS INDEMNITY COMPANY

By: _____
Andy Alvarez, Attorney-In-Fact

INSURORS
INDEMNITY COMPANIES

P&C 877 282 1625
Bonds 800 933 7444

225 South Fifth Street
PO Box 2683
Waco, Texas 76702-2683

IMPORTANT NOTICE - AVISO IMPORTANTE

To obtain information or make a complaint:

You may call Insurors Indemnity Company's toll-free telephone number for information or to make a complaint at:

1-800-933-7444

You may also write to Insurors Indemnity Company at:

P.O. Box 2683
Waco, TX 76702-2683
Or
225 South Fifth Street
Waco, TX 76701

You may contact the Texas Department of Insurance to obtain information on companies, coverages, rights or complaints at

1-800-252-3439

You may write the Texas Department of Insurance at:

Consumer Protection (111-1A)
P.O. Box 149091
Austin, TX 78714-9091
Fax: 512-490-1007

Web: http://www.tdi.texas.gov

E-mail: ConsumerProtection@tdi.texas.gov

PREMIUM OR CLAIM DISPUTES:

Should you have a dispute concerning your premium or about a claim, you should contact the agent or the company first. If the dispute is not resolved, you may contact the Texas Department of Insurance.

ATTACH THIS NOTICE TO YOUR POLICY:

This notice is for information only and does not become a part or condition of the attached document.

Para obtener informacion o para someter una queja:

Usted puede llamar al numero de telefono gratis de Insurors Indemnity Company's para informacion o para someter una queja al

1-800-933-7444

Usted tanbien puede escribir a Insurors Indemnity Company:

P.O. Box 2683
Waco, TX 76702-2683
O
225 South Fifth Street
Waco, TX 76701

Puede comunicarse con el Departamento de Seguros de Texas para obtener informacion acerca de companias, coberturas, derechos o quejas al

1-800-252-3439

Puede escribir al Departamento de Seguros de Texas:

Consumer Protection (111-1A)
P.O. Box 149091
Austin, TX 78714-9091
Fax: 512-490-1007

Web: http://www.tdi.texas.gov

E-mail: ConsumerProtection@tdi.texas.gov

DISPUTAS SOBRE PRIMAS O RECLAMOS:

Si tiene una disputa concemiente a su prima o a un reclamo, debe comunicarse con el agente o la compania primero. Si no se resuelve la disputa, puede entonces comunicarse con el departamento (TDI).

UNA ESTE AVISO A SU POLIZA:

Este aviso es solo para proposito de informacion y no se convierte en parte o condicion del documento adjunto.

INSURORS
INDEMNITY COMPANIES

POWER OF ATTORNEY of INSURORS INDEMNITY COMPANY
Waco, Texas

KNOW ALL PERSONS BY THESE PRESENTS: **Number:** CNB-22090-00

That INSURORS INDEMNITY COMPANY, Waco, Texas, organized and existing under the laws of the State of Texas, and authorized and licensed to do business in the State of Texas and the United States of America, does hereby make, constitute and appoint

Andy Alvarez of the City of McAllen, State of TX

as Attorney in Fact, with full power and authority hereby conferred upon him to sign, execute, acknowledge and deliver for and on its behalf as Surety and as its act and deed, all of the following classes of document, to-wit:

Indemnity, Surety and Undertakings that may be desired by contract, or may be given in any action or proceeding in any court of law or equity; Indemnity in all cases where indemnity may be lawfully given and with full power and authority to execute consents and waivers to modify or change or extend any bond or document executed for this Company.

INSURORS INDEMNITY COMPANY

Attest: Tammy Tieperman
Tammy Tieperman, Secretary

By: Dave E. Talbert
Dave E. Talbert, President

State of Texas
County of McLennan

On the 11th day of November, 2014, before me a Notary Public in the State of Texas, personally appeared Dave E. Talbert and Tammy Tieperman, who being by me duly sworn, acknowledged that they executed the above Power of Attorney in their capacities as President and Corporate Secretary, respectively, of Insurors Indemnity Company, and acknowledged said Power of Attorney to be the voluntary act and deed of the Company.

Sherri Whitehouse
Notary Public, State of Texas

SHERRI WHITEHOUSE
Notary Public
STATE OF TEXAS
My Comm. Exp. May 21, 2017

Insurors Indemnity Company certifies that this Power of Attorney is granted under and by authority of the following resolutions of the Company adopted by the Board of Directors on November 11, 2014:

RESOLVED, that all bonds, undertakings, contracts or other obligations may be executed in the name of the Company by persons appointed as Attorney in Fact pursuant to a Power of Attorney issued in accordance with these Resolutions. Said Power of Attorney shall be executed in the name and on behalf of the Company either by the Chairman and CEO or the President, under their respective designation. The signature of such officer and the seal of the Company may be affixed by facsimile to any Power of Attorney, and, unless subsequently revoked and subject to any limitation set forth therein, any such Power of Attorney or certificate bearing such facsimile signature and seal shall be valid and binding upon the Company and any such power so executed and certified by facsimile signature and seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is validly attached.

RESOLVED, that Attorneys in Fact shall have the power and authority, subject to the terms and limitations of the Power of Attorney issued to them, to execute and deliver on behalf of the Company and to attach the seal of the Company to any and all bonds and undertakings, and any such instrument executed by such Attorneys in Fact shall be binding upon the Company as if signed by an Executive Officer and sealed and attested to by the Secretary or Assistant Secretary of the Company.

I, Tammy Tieperman, Secretary of Insurors Indemnity Company, do hereby certify that the foregoing is a true excerpt from the Resolutions of the said Company as adopted by its Board of Directors on November 11, 2014, and that this Resolution is in full force and effect. I certify that the foregoing Power of Attorney is in full force and effect and has not been revoked.

In Witness Whereof, I have set my hand and the seal of INSURORS INDEMNITY COMPANY on this 11th day of July, 2016.

Tammy Tieperman
Tammy Tieperman, Secretary

NOTE: IF YOU HAVE ANY QUESTION REGARDING THE VALIDITY OR WORDING OF THIS POWER OF ATTORNEY, PLEASE CALL 800 933 7444 OR WRITE TO US AT P. O. BOX 2683, WACO, TEXAS 76702-2683 OR EMAIL US AT CONFIRMATION@INSURORSINDEMNITY.COM.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE
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GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Contract Documents and printed with initial or all capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof.

1. *Addenda*--Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the Contract Documents.

2. *Agreement*--The written instrument which is evidence of the agreement between OWNER and CONTRACTOR covering the Work.

3. *Application for Payment*--The form acceptable to ENGINEER which is to be used by CONTRACTOR during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Asbestos*--Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. *Bid*--The offer or proposal of a bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidding Documents*--The Bidding Requirements and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

7. *Bidding Requirements*--The Advertisement or Invitation to Bid, Instructions to Bidders, Bid security form, if any, and the Bid form with any supplements.

8. *Bonds*--Performance and payment bonds and other instruments of security.

9. *Change Order*--A document recommended by ENGINEER which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

10. *Claim*--A demand or assertion by OWNER or CONTRACTOR seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. *Contract*--The entire and integrated written agreement between the OWNER and CONTRACTOR concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*--The Contract Documents establish the rights and obligations of the parties and include the Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR's Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Notice to Proceed, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all Written Amendments, Change Orders, Work Change Directives, Field Orders, and ENGINEER's written interpretations and clarifications issued on or after the Effective Date of the Agreement. Approved Shop Drawings and the reports and drawings of subsurface and physical conditions are not Contract Documents. Only printed or hard copies of the items listed in this paragraph are Contract Documents. Files in electronic media format of text, data, graphics, and the like that may be furnished by OWNER to CONTRACTOR are not Contract Documents.

13. *Contract Price*--The moneys payable by OWNER to CONTRACTOR for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*--The number of days or the dates stated in the Agreement to: (i) achieve Substantial Completion; and (ii) complete the Work so that it is ready for final payment as evidenced by ENGINEER's written recommendation of final payment.

15. *CONTRACTOR*--The individual or entity with whom OWNER has entered into the Agreement.

16. *Cost of the Work*--See paragraph 11.01.A for definition.

17. *Drawings*--That part of the Contract Documents prepared or approved by ENGINEER which graphically shows the scope, extent, and character of the Work to be performed by CONTRACTOR. Shop Drawings and other CONTRACTOR submittals are not Drawings as so defined.

18. *Effective Date of the Agreement*--The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

19. *ENGINEER*--The individual or entity named as such in the Agreement.

20. *ENGINEER's Consultant*--An individual or entity having a contract with ENGINEER to furnish services as ENGINEER's independent professional associate or consultant with respect to the Project and who is identified as such in the Supplementary Conditions.

21. *Field Order*--A written order issued by ENGINEER which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

22. *General Requirements*--Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

23. *Hazardous Environmental Condition*--The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

24. *Hazardous Waste*--The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

25. *Laws and Regulations; Laws or Regulations*--Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

26. *Liens*--Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

27. *Milestone*--A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

28. *Notice of Award*--The written notice by OWNER to the apparent successful bidder stating that upon timely compliance by the apparent successful bidder with the conditions precedent listed therein, OWNER will sign and deliver the Agreement.

29. *Notice to Proceed*--A written notice given by OWNER to CONTRACTOR fixing the date on which the Contract Times will commence to run and on which CONTRACTOR shall start to perform the Work under the Contract Documents.

30. *OWNER*--The individual, entity, public body, or authority with whom CONTRACTOR has entered into the Agreement and for whom the Work is to be performed.

31. *Partial Utilization*--Use by OWNER of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work.

32. *PCBs*--Polychlorinated biphenyls.

33. *Petroleum*--Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

34. *Project*--The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part as may be indicated elsewhere in the Contract Documents.

35. *Project Manual*--The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

36. *Radioactive Material*--Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

37. *Resident Project Representative*--The authorized representative of ENGINEER who may be assigned to the Site or any part thereof.

38. *Samples*--Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

39. *Shop Drawings*--All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for CONTRACTOR and submitted by CONTRACTOR to illustrate some portion of the Work.

40. *Site*--Lands or areas indicated in the Contract Documents as being furnished by OWNER upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by OWNER which are designated for the use of CONTRACTOR.

41. *Specifications*--That part of the Contract Documents consisting of written technical descriptions of materials, equipment, systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto.

42. *Subcontractor*--An individual or entity having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the Site.

43. *Substantial Completion*--The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

44. *Supplementary Conditions*--That part of the Contract Documents which amends or supplements these General Conditions.

45. *Supplier*--A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with CONTRACTOR or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by CONTRACTOR or any Subcontractor.

46. *Underground Facilities*--All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

47. *Unit Price Work*--Work to be paid for on the basis of unit prices.

48. *Work*--The entire completed construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

49. *Work Change Directive*--A written statement to CONTRACTOR issued on or after the Effective Date of the Agreement and signed by OWNER and recommended by ENGINEER ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

50. *Written Amendment*--A written statement modifying the Contract Documents, signed by OWNER and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the nonengineering or nontechnical rather than strictly construction-related aspects of the Contract Documents.

1.02 *Terminology*

A. *Intent of Certain Terms or Adjectives*

1. Whenever in the Contract Documents the terms "as allowed," "as approved," or terms of like effect or import are used, or the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of ENGINEER as to the Work, it is intended that such action or determination will be solely to evaluate, in general, the completed Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to ENGINEER any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.10 or any other provision of the Contract Documents.

B. *Day*

1. The word "day" shall constitute a calendar day of 24 hours measured from midnight to the next midnight.

C. *Defective*

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it does not conform to the Contract Documents or does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER's recommendation of final payment (unless responsibility for the protection thereof has been assumed by OWNER at Substantial Completion in accordance with paragraph 14.04 or 14.05).

D. *Furnish, Install, Perform, Provide*

1. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. When "furnish," "install," "perform," or "provide" is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of CONTRACTOR, "provide" is implied.

E. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 - PRELIMINARY MATTERS

2.01 *Delivery of Bonds*

A. When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as CONTRACTOR may be required to furnish.

2.02* *Copies of Documents*

A. OWNER shall furnish to CONTRACTOR up to ten copies of the Contract Documents. Additional copies will be furnished upon request at the cost of reproduction.

2.03 *Commencement of Contract Times; Notice to Proceed*

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times com-

mence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 *Starting the Work*

A. CONTRACTOR shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

*See Supplementary Conditions

2.05* *Before Starting Construction*

A. *CONTRACTOR's Review of Contract Documents:* Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error, ambiguity, or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless CONTRACTOR knew or reasonably should have known thereof.

B. *Preliminary Schedules:* Within ten days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), CONTRACTOR shall submit to ENGINEER for its timely review:

1. a preliminary progress schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2. a preliminary schedule of Shop Drawing and Sample submittals which will list each required submittal and the times for submitting, reviewing, and processing such submittal; and

3. a preliminary schedule of values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

* C. *Evidence of Insurance:* Before any Work at the Site is started, CONTRACTOR and OWNER shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which CONTRACTOR and OWNER respectively are required to purchase and maintain in accordance with Article 5.

2.06 *Preconstruction Conference*

A. Within 20 days after the Contract Times start to run, but before any Work at the Site is started, a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in paragraph 2.05.B, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

2.07 *Initial Acceptance of Schedules*

A. Unless otherwise provided in the Contract Documents, at least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to review for acceptability to ENGINEER as provided below the schedules submitted in accordance with paragraph 2.05.B. CONTRACTOR shall have an additional ten days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to CONTRACTOR until acceptable schedules are submitted to ENGINEER.

1. The progress schedule will be acceptable to ENGINEER if it provides an orderly progression of the Work to completion within any specified Milestones and the Contract Times. Such acceptance will not impose on ENGINEER responsibility for the progress schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve CONTRACTOR from CONTRACTOR's full responsibility therefor.

2. CONTRACTOR's schedule of Shop Drawing and Sample submittals will be acceptable to ENGINEER if it provides a workable arrangement for reviewing and processing the required submittals.

3. CONTRACTOR's schedule of values will be acceptable to ENGINEER as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

*See Supplementary Conditions

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01* *Intent*

A. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to OWNER.

C. Clarifications and interpretations of the Contract Documents shall be issued by ENGINEER as provided in Article 9.

3.02 *Reference Standards*

A. *Standards, Specifications, Codes, Laws, and Regulations*

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of OWNER, CONTRACTOR, or ENGINEER, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall any such provision or instruction be effective to assign to OWNER, ENGINEER, or any of ENGINEER's Consultants, agents, or employees any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. If, during the performance of the Work, CONTRACTOR discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, CONTRACTOR shall report it to ENGINEER in writing at once. CONTRACTOR shall not proceed with the Work affected thereby (except in an emergency as required by paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in paragraph 3.04; provided, however, that CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any such conflict, error, ambiguity, or discrepancy unless CONTRACTOR knew or reasonably should have known thereof.

B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof in one or

*See Supplementary Conditions

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways: (i) a Field Order; (ii) ENGINEER's approval of a Shop Drawing or Sample; or (iii) ENGINEER's written interpretation or clarification.

3.05 *Reuse of Documents*

A. CONTRACTOR and any Subcontractor or Supplier or other individual or entity performing or furnishing any of the Work under a direct or indirect contract with OWNER: (i) shall not have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER or ENGINEER's Consultant, including electronic media editions; and (ii) shall not reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adaption by ENGINEER. This prohibition will survive final payment, completion, and acceptance of the Work, or termination or completion of the Contract. Nothing herein shall preclude CONTRACTOR from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

4.01 *Availability of Lands*

A. OWNER shall furnish the Site. OWNER shall notify CONTRACTOR of any encumbrances or restrictions not of general application but specifically related to use of the Site with which CONTRACTOR must comply in performing the Work. OWNER will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If CONTRACTOR and OWNER are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in OWNER's furnishing the Site, CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

B. Upon reasonable written request, OWNER shall furnish CONTRACTOR with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and OWNER's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02* *Subsurface and Physical Conditions*

A.* *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that ENGINEER has used in preparing the Contract Documents; and

2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that ENGINEER has used in preparing the Contract Documents.

B. *Limited Reliance by CONTRACTOR on Technical Data Authorized:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER, or any of ENGINEER's Consultants with respect to:

1. the completeness of such reports and drawings for CONTRACTOR's purposes, includ-

ing, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

*See Supplementary Conditions

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If CONTRACTOR believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which CONTRACTOR is entitled to rely as provided in paragraph 4.02 is materially inaccurate; or

2. is of such a nature as to require a change in the Contract Documents; or

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.A), notify OWNER and ENGINEER in writing about such condition. CONTRACTOR shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *ENGINEER's Review:* After receipt of written notice as required by paragraph 4.03.A, ENGINEER will promptly review the pertinent condition, determine the necessity of OWNER's obtaining additional exploration or tests with respect thereto, and advise OWNER in writing (with a copy to CONTRACTOR) of ENGINEER's findings and conclusions.

C. *Possible Price and Times Adjustments*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in CONTRACTOR's cost of, or time required for, performance of the Work; subject, however, to the following:

a. such condition must meet any one or more of the categories described in paragraph 4.03.A; and

b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of paragraphs 9.08 and 11.03.

2. CONTRACTOR shall not be entitled to any adjustment in the Contract Price or Contract Times if:

a. CONTRACTOR knew of the existence of such conditions at the time CONTRACTOR made a final commitment to OWNER in respect of Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for CONTRACTOR prior to CONTRACTOR's making such final commitment; or

c. CONTRACTOR failed to give the written notice within the time and as required by paragraph 4.03.A.

3. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be

made therefor as provided in paragraph 10.05. However, OWNER, ENGINEER, and ENGINEER's Consultants shall not be liable to CONTRACTOR for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by CONTRACTOR on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to OWNER or ENGINEER by the owners of such Underground Facilities, including OWNER, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. OWNER and ENGINEER shall not be responsible for the accuracy or completeness of any such information or data; and

2. the cost of all of the following will be included in the Contract Price, and CONTRACTOR shall have full responsibility for:

a. reviewing and checking all such information and data.

b. locating all Underground Facilities shown or indicated in the Contract Documents,

c. coordination of the Work with the owners of such Underground Facilities, including OWNER, during construction, and

d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to OWNER and ENGINEER. ENGINEER will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility.

2. If ENGINEER concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price of Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that CONTRACTOR did not know of and could not reasonably have been expected to be aware of or to have anticipated. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, OWNER or CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

4.05* *Reference Points*

A. OWNER shall provide engineering surveys to establish reference points for construction which in ENGINEER's judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 *Hazardous Environmental Condition at Site*

A. *Reports and Drawings:* Reference is made to the Supplementary Conditions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the ENGINEER in the preparation of the Contract Documents.

B. *Limited Reliance by CONTRACTOR on Technical Data Authorized:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER or any of ENGINEER's Consultants with respect to:

1. the completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto; or

*See Supplementary Conditions

2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

3. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

C. CONTRACTOR shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. CONTRACTOR shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by CONTRACTOR, Subcontractors, Suppliers, or anyone else for whom CONTRACTOR is responsible.

D. If CONTRACTOR encounters a Hazardous Environmental Condition or if CONTRACTOR or anyone for whom CONTRACTOR is responsible creates a Hazardous Environmental Condition, CONTRACTOR shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by paragraph 6.16); and (iii) notify OWNER and ENGINEER (and promptly thereafter confirm such notice in writing). OWNER shall promptly consult with ENGINEER concerning the necessity for OWNER to retain a qualified expert to evaluate such condition or take corrective action, if any.

E. CONTRACTOR shall not be required to resume Work in connection with such condition or in any affected area until after OWNER has obtained any required permits related thereto and delivered to CONTRACTOR written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If OWNER and CONTRACTOR cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by CONTRACTOR, either party may make a Claim therefor as provided in paragraph 10.05.

F. If after receipt of such written notice CONTRACTOR does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then OWNER may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If OWNER and CONTRACTOR cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in paragraph 10.05. OWNER may have such deleted portion of the Work performed by OWNER's own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, OWNER shall indemnify and hold harmless CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and the officers, directors, partners, employees, agents, other consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or

Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by CONTRACTOR or by anyone for whom CONTRACTOR is responsible. Nothing in this paragraph 4.06.E shall obligate OWNER to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

H. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, other consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by CONTRACTOR or by anyone for whom CONTRACTOR is responsible. Nothing in this paragraph 4.06.F shall obligate CONTRACTOR to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

I. The provisions of paragraphs 4.02, 4.03, and 4.04 are not intended to apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

*See Supplementary Conditions

ARTICLE 5 - BONDS AND INSURANCE

5.01* *Performance, Payment, and Other Bonds*

A. CONTRACTOR shall furnish performance and payment Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date when final payment becomes due, except as provided otherwise by Laws or Regulations or by the Contract Documents. CONTRACTOR shall also furnish such other Bonds as are required by the Contract Documents.

B.* All Bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.

C. If the surety on any Bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of paragraph 5.01.B, CONTRACTOR shall within 20 days thereafter substitute another Bond and surety, both of which shall comply with the requirements of paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

A. All Bonds and insurance required by the Contract Documents to be purchased and maintained by OWNER or CONTRACTOR shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue Bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 *Certificates of Insurance*

A. CONTRACTOR shall deliver to OWNER, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by OWNER or any other additional insured) which CONTRACTOR is required to purchase and maintain. OWNER shall deliver to CONTRACTOR, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by CONTRACTOR or any other additional insured) which OWNER is required to purchase and maintain.

5.04* *CONTRACTOR's Liability Insurance*

A. CONTRACTOR shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from CONTRACTOR's performance of the Work and CONTRACTOR's other obligations under the Contract Documents, whether it is to be performed by CONTRACTOR, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to

perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;

2. claims for damages because of bodily injury, occupational sickness or disease, or death of CONTRACTOR's employees;

3. claims for damages because of bodily injury, sickness or disease, or death of any person other than CONTRACTOR's employees;

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained: (i) by any person as a result of an offense directly or indirectly related to the employment of such person by CONTRACTOR, or (ii) by any other person for any other reason;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance so required by this paragraph 5.04 to be purchased and maintained shall:

*See Supplementary Conditions

1. with respect to insurance required by paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insureds (subject to any customary exclusion in respect of professional liability) OWNER, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering CONTRACTOR's indemnity obligations under paragraphs 6.07, 6.11, and 6.20;

5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least thirty days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the CONTRACTOR pursuant to paragraph 5.03 will so provide);

6. remain in effect at least until final payment and at all times thereafter when CONTRACTOR may be correcting, removing, or replacing defective Work in accordance with paragraph 13.07; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment (and CONTRACTOR shall furnish OWNER and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to OWNER and any such additional insured of continuation of such insurance at final payment and one year thereafter).

5.05 *OWNER's Liability Insurance*

A.* In addition to the insurance required to be provided by CONTRACTOR under paragraph 5.04, OWNER, at OWNER's option, may purchase and maintain at OWNER's expense OWNER's own liability insurance as will protect OWNER against claims which may arise from operations under the Contract Documents.

5.06* *Property Insurance*

A. Unless otherwise provided in the Supplementary Conditions, OWNER shall purchase and maintain property

insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an additional insured;

2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

*See Supplementary Conditions

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by OWNER prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by ENGINEER;

5. allow for partial utilization of the Work by OWNER;

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by OWNER, CONTRACTOR, and ENGINEER with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

B.* OWNER shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

C.* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with paragraph 5.07.

D.* OWNER shall not be responsible for purchasing and maintaining any property insurance specified in this paragraph 5.06 to protect the interests of CONTRACTOR, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by CONTRACTOR, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

E.* If CONTRACTOR requests in writing that other special insurance be included in the property insurance policies provided under paragraph 5.06, OWNER shall, if possible, include such insurance, and the cost thereof will be charged to CONTRACTOR by appropriate Change Order or Written Amendment. Prior to commencement of the Work at the Site, OWNER shall in writing advise CONTRACTOR whether or not such other insurance has been procured by OWNER.

5.07 *Waiver of Rights*

A.* OWNER and CONTRACTOR intend that all policies purchased in accordance with paragraph 5.06 will protect OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and all other

individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. OWNER and CONTRACTOR waive all rights against each other and their respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) under such policies for losses and damages so caused.

None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by OWNER as trustee or otherwise payable under any policy so issued.

B. OWNER waives all rights against CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for:

*See Supplementary Conditions

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to OWNER's property or the Work caused by, arising out of, or resulting from fire or other peril whether or not insured by OWNER; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by OWNER during partial utilization pursuant to paragraph 14.05, after Substantial Completion pursuant to paragraph 14.04, or after final payment pursuant to paragraph 14.07.

C. Any insurance policy maintained by OWNER covering any loss, damage or consequential loss referred to in paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against CONTRACTOR, Subcontractors, ENGINEER, or ENGINEER's Consultants and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them.

5.08* *Receipt and Application of Insurance Proceeds*

A.* Any insured loss under the policies of insurance required by paragraph 5.06 will be adjusted with OWNER and made payable to OWNER as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of paragraph 5.08.B. OWNER shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order or Written Amendment.

B.* OWNER as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to OWNER's exercise of this power. If such objection be made, OWNER as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, OWNER as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, OWNER as fiduciary shall give bond for the proper performance of such duties.

5.09* *Acceptance of Bonds and Insurance; Option to Replace*

A.* If either OWNER or CONTRACTOR has any objection to the coverage afforded by or other provisions of the Bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the

certificates (or other evidence requested) required by paragraph 2.05.C. OWNER and CONTRACTOR shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the Bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent Bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

A. If OWNER finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

A. CONTRACTOR shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with

*See Supplementary Conditions

the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences,
and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of OWNER or ENGINEER in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents. CONTRACTOR shall be responsible to see that the completed Work complies accurately with the Contract Documents.

B. At all times during the progress of the Work, CONTRACTOR shall assign a competent resident superintendent thereto who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. The superintendent will be CONTRACTOR's representative at the Site and shall have authority to act on behalf of CONTRACTOR. All communications given to or received from the superintendent shall be binding on CONTRACTOR.

6.02 *Labor; Working Hours*

A. CONTRACTOR shall provide competent, suitably qualified personnel to survey, lay out, and construct the

Work as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, and CONTRACTOR will not permit overtime work or the performance of Work on Saturday, Sunday, or any legal holiday without OWNER's written consent (which will not be unreasonably withheld) given after prior written notice to ENGINEER.

6.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the General Requirements, CONTRACTOR shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly

run to the benefit of OWNER. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

A. CONTRACTOR shall adhere to the progress schedule established in accordance with paragraph 2.07 as it may be adjusted from time to time as provided below.

1. CONTRACTOR shall submit to ENGINEER for acceptance (to the extent indicated in paragraph 2.07) proposed adjustments in the progress schedule that will not result in changing the Contract Times (or Milestones). Such adjustments will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the progress schedule that will change the Contract Times (or Milestones) shall be submitted in accordance with the requirements of Article 12. Such adjustments may only be made by a Change Order or Written Amendment in accordance with Article 12.

6.05 *Substitutes and "Or-Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to ENGINEER for review under the circumstances described below.

1. *"Or-Equal" Items:* If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by ENGINEER as an "or-equal" item, in which case review and approval of the proposed item may, in ENGINEER's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment ENGINEER determines that: (i) it is at least equal in quality, durability, appearance, strength, and design characteristics; (ii) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole, and:

b. CONTRACTOR certifies that: (i) there is no increase in cost to the OWNER; and (ii) it will conform substantially, even with deviations, to the detailed requirements of the item named in the Contract Documents.

2. Substitute Items

a. If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR does not qualify as an "or-equal" item under paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. CONTRACTOR shall submit sufficient information as provided below to allow ENGINEER to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR.

c. The procedure for review by ENGINEER will be as set forth in paragraph 6.05.A.2.d. as supplemented in the General Requirements and as ENGINEER may decide is appropriate under the circumstances.

d. CONTRACTOR shall first make written application to ENGINEER for review of a proposed substitute item of material or equipment that CONTRACTOR seeks to furnish or use. The application shall certify

that the proposed substitute item will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified. The application will state the extent, if any, to which the use of the proposed substitute item will prejudice CONTRACTOR's achievement of Substantial Completion on time, whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute item and whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute item from that specified will be identified in the application, and available engineering, sales, maintenance, repair, and replacement services will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change, all of which will be considered by ENGINEER in evaluating the proposed substitute item. ENGINEER may require CONTRACTOR to furnish additional data about the proposed substitute item.

B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is shown or indicated in and expressly required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by ENGINEER. CONTRACTOR shall submit sufficient information to allow ENGINEER, in ENGINEER's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review by ENGINEER will be similar to that provided in subparagraph 6.05.A.2.

C. *Engineer's Evaluation:* ENGINEER will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to paragraphs 6.05.A and 6.05.B. ENGINEER will be the sole judge of acceptability. No "or-equal" or substitute will be ordered, installed or utilized until ENGINEER's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." ENGINEER will advise CONTRACTOR in writing of any negative determination.

D. *Special Guarantee:* OWNER may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any substitute.

E. *ENGINEER's Cost Reimbursement:* ENGINEER will record time required by ENGINEER and ENGINEER's Consultants in evaluating substitute proposed or submitted by CONTRACTOR pursuant to paragraphs 6.05.A.2 and 6.05.B and in making changes in the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) occasioned thereby. Whether or not ENGINEER approves a substitute item so proposed or submitted by CONTRACTOR, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER's Consultants for evaluating each such proposed substitute.

F. *CONTRACTOR's Expense:* CONTRACTOR shall provide all data in support of any proposed substitute or "or-equal" at CONTRACTOR's expense.

6.06 *Concerning Subcontractors, Suppliers, and Others*

A. CONTRACTOR shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to OWNER as indicated in paragraph 6.06.B), whether initially or as a replacement, against whom OWNER may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to OWNER in advance for acceptance by OWNER by a specified date prior to the Effective Date of the Agreement, and if CONTRACTOR has submitted a list thereof in accordance with the Supplementary Conditions, OWNER's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. CONTRACTOR shall submit an acceptable replacement

for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued or Written Amendment signed. No acceptance by OWNER of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of OWNER or ENGINEER to reject defective Work.

C. CONTRACTOR shall be fully responsible to OWNER and ENGINEER for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between OWNER or ENGINEER and any such Subcontractor, Supplier or other individual or entity, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

D. CONTRACTOR shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR.

E. CONTRACTOR shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with ENGINEER through CONTRACTOR.

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for CONTRACTOR by a Subcontractor or Supplier will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and ENGINEER. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in paragraph 5.06, the agreement between the CONTRACTOR and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against OWNER, CONTRACTOR, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, CONTRACTOR will obtain the same.

6.07 *Patent Fees and Royalties*

A. CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of OWNER or ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in the Contract Documents. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees or agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 *Permits*

A. Unless otherwise provided in the Supplementary Conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for

the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the Work, and OWNER shall pay all charges of such utility owners for capital costs related thereto, such as plant investment fees.

6.09 *Laws and Regulations*

A. CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor ENGINEER shall be responsible for monitoring CONTRACTOR's compliance with any Laws or Regulations.

B. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, CONTRACTOR shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work; however, it shall not be CONTRACTOR's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve CONTRACTOR of CONTRACTOR's obligations under paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work may be the subject of an adjustment in Contract Price or Contract Times. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in paragraph 10.05.

6.10* *Taxes*

A. CONTRACTOR shall pay all sales, consumer, use, and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.11* *Use of Site and Other Areas*

A.* *Limitation on Use of Site and Other Areas*

1. CONTRACTOR shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations,

*See Supplementary Conditions

and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultant, and the officers, directors, partners, employees, agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against OWNER, ENGINEER, or any other party indemnified hereunder to the extent caused by or based upon CONTRACTOR's performance of the Work.

B. *Removal of Debris During Performance of the Work:* During the progress of the Work CONTRACTOR shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. *Cleaning:* Prior to Substantial Completion of the Work CONTRACTOR shall clean the Site and make it ready for utilization by OWNER. At the completion of the Work CONTRACTOR shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading Structures:* CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 *Record Documents*

A. CONTRACTOR shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to ENGINEER for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to ENGINEER for OWNER.

6.13 *Safety and Protection*

A. CONTRACTOR shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. CONTRACTOR shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property. All damage, injury, or loss to any property referred to in paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of OWNER or ENGINEER or ENGINEER's Consultant, or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of CONTRACTOR or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them). CONTRACTOR's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

A. CONTRACTOR shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

A. CONTRACTOR shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, CONTRACTOR is obligated to act to prevent threatened damage, injury, or loss. CONTRACTOR shall give ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If ENGINEER determines that a change in the Contract Documents is required because of the action taken by CONTRACTOR in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17* *Shop Drawings and Samples*

A.* CONTRACTOR shall submit Shop Drawings to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. All submittals will be identified as ENGINEER may require and in the number of copies specified in the General Requirements. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show ENGINEER the services, materials, and equipment CONTRACTOR proposes to provide and to enable ENGINEER to review the information for the limited purposes required by paragraph 6.17.E.

B.* CONTRACTOR shall also submit six (6) Samples to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. Each Sample will be identified clearly as to material, Supplier, pertinent data such as catalog numbers, and the use for which intended and otherwise as ENGINEER may require to enable ENGINEER to review the submittal for the limited purposes required by paragraph 6.17.E. The numbers of each Sample to be submitted will be as specified in the Specifications.

C. Where a Shop Drawing or Sample is required by the Contract Documents or the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER as required by paragraph 2.07, any related Work performed prior to ENGINEER's review and approval of the pertinent submittal will be at the sole expense and responsibility of CONTRACTOR.

D. *Submittal Procedures*

1. Before submitting each Shop Drawing or Sample, CONTRACTOR shall have determined and verified:

a. all field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

b. all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work:

c. all information relative to means, methods, techniques, sequences, and procedures of construction and safety precautions and programs incident thereto: and

d. CONTRACTOR shall also have reviewed and coordinated each Shop Drawing or

*See Supplementary Conditions

Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

2. Each submittal shall bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's obligations under the Contract Documents with respect to CONTRACTOR's review and approval of that submittal.

3. At the time of each submittal, CONTRACTOR shall give ENGINEER specific written notice of such variations, if any, that the Shop Drawing or Sample submitted may have from the requirements of the Contract Documents, such notice to be in a written communication separate from the submittal; and, in addition, shall cause a specific notation to be made on each Shop Drawing and Sample submitted to ENGINEER for review and approval of each such variation.

E. *ENGINEER's Review*

1. ENGINEER will timely review and approve Shop Drawings and Samples in accordance with the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER. ENGINEER's review and approval will be only to determine if the items covered by the submittals

will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. ENGINEER's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. ENGINEER's review and approval of Shop Drawings or Samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of each submittal as required by paragraph 6.17.D.3 and ENGINEER has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for complying with the requirements of paragraph 6.17.D.1.

F. *Resubmittal Procedures*

1. CONTRACTOR shall make corrections required by ENGINEER and shall return the required number of corrected copies of Shop Drawings and submit as required new Samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals.

6.18 *Continuing the Work*

A. CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by paragraph 15.04 or as OWNER and CONTRACTOR may otherwise agree in writing.

6.19 *CONTRACTOR's General Warranty and Guarantee*

A. CONTRACTOR warrants and guarantees to OWNER, ENGINEER, and ENGINEER's Consultants that all Work will be in accordance with the Contract Documents and will not be defective. CONTRACTOR's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors, Suppliers, or any other individual or entity for whom CONTRACTOR is responsible; or

2. normal wear and tear under normal usage.

B. CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents:

1. observations by ENGINEER;

2. recommendation by ENGINEER or payment by OWNER of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by ENGINEER or any payment related thereto by OWNER;

4. use or occupancy of the Work or any part thereof by OWNER;

5. any acceptance by OWNER or any failure to do so;

6. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by ENGINEER;

7. any inspection, test, or approval by others; or

8. any correction of defective Work by OWNER.

6.20 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage:

1. is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom; and

2. is caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by any negligence or omission of an individual or entity indemnified hereunder or whether liability is imposed upon such indemnified party by Laws and Regulations regardless of the negligence of any such individual or entity.

B. In any and all claims against OWNER or ENGINEER or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for CONTRACTOR or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of CONTRACTOR under paragraph 6.20.A shall not extend to the liability of ENGINEER and ENGINEER's Consultants or to the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them arising out of:

1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or

2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

ARTICLE 7 - OTHER WORK

7.01 *Related Work at Site*

A. OWNER may perform other work related to the Project at the Site by OWNER's employees, or let other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to CONTRACTOR prior to starting any such other work; and

2. if OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in paragraph 10.05.

B. CONTRACTOR shall afford each other contractor who is a party to such a direct contract and each utility owner (and OWNER, if OWNER is performing the other work with OWNER's employees) proper and safe access to the Site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work and shall properly coordinate the Work with theirs. Unless otherwise provided in the Contract Documents, CONTRACTOR shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of ENGINEER and the others whose work will be affected. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of

such utility owners and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between OWNER and such utility owners and other contractors.

C. If the proper execution or results of any part of CONTRACTOR's Work depends upon work performed by others under this Article 7, CONTRACTOR shall inspect such other work and promptly report to ENGINEER in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of CONTRACTOR's Work. CONTRACTOR's failure to so report will constitute an acceptance of such other work as fit and proper for integration with CONTRACTOR's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

A. If OWNER intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;

2. the specific matters to be covered by such authority and responsibility will be itemized; and

3. the extent of such authority and responsibilities will be provided.

B. Unless otherwise provided in the Supplementary Conditions, OWNER shall have sole authority and responsibility for such coordination.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, OWNER shall issue all communications to CONTRACTOR through ENGINEER.

8.02 *Replacement of ENGINEER*

A. In case of termination of the employment of ENGINEER, OWNER shall appoint an engineer to whom CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former ENGINEER.

8.03 *Furnish Data*

A. OWNER shall promptly furnish the data required of OWNER under the Contract Documents.

8.04 *Pay Promptly When Due*

A. OWNER shall make payments to CONTRACTOR promptly when they are due as provided in paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

A. OWNER's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.01 and 4.05. Paragraph 4.02 refers to OWNER's identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by ENGINEER in preparing the Contract Documents.

*See Supplementary Conditions

8.06* *Insurance*

A.* OWNER's responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

A. OWNER is obligated to execute Change Orders as indicated in paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

A. OWNER's responsibility in respect to certain inspections, tests, and approvals is set forth in paragraph 13.03.B.

8.09 *Limitations on OWNER's Responsibilities*

A. The OWNER shall not supervise, direct, or have control or authority over, nor be responsible for, CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. OWNER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

A. OWNER's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

A. If and to the extent OWNER has agreed to furnish CONTRACTOR reasonable evidence that financial arrangements have been made to satisfy OWNER's obligations under the Contract Documents, OWNER's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *OWNER'S Representative*

A. ENGINEER will be OWNER's representative during the construction period. The duties and responsibilities and the limitations of authority of ENGINEER as OWNER's representative during construction are set forth in the Contract Documents and will not be changed without written consent of OWNER and ENGINEER.

9.02 *Visits to Site*

A. ENGINEER will make visits to the Site at intervals appropriate to the various stages of construction as ENGINEER deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of CONTRACTOR's executed Work. Based on information obtained during such visits and observations, ENGINEER, for the benefit of OWNER, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. ENGINEER will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. ENGINEER's efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, ENGINEER will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defective Work.

B. ENGINEER's visits and observations are subject to all the limitations on ENGINEER's authority and responsibility set forth in paragraph 9.10, and particularly, but without limitation, during or as a result of ENGINEER's visits or observations of CONTRACTOR's Work ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work.

9.03* *Project Representative*

A. If OWNER and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in providing more extensive observation of the Work. The responsibilities and authority and limitations thereon of any such Resident Project Representative and assistants will be as provided in paragraph 9.10 and in the Supplementary Conditions. If OWNER designates another representative or agent to represent OWNER at the Site who is not ENGINEER's Consultant, agent or employee,

*See Supplementary Conditions

the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Clarifications and Interpretations*

A. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents as ENGINEER may determine necessary, which shall be consistent with the intent of and reasonably inferable from the Contract Docu-

ments. Such written clarifications and interpretations will be binding on OWNER and CONTRACTOR. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a written clarification or interpretation, a Claim may be made therefor as provided in paragraph 10.05.

9.05 *Authorized Variations in Work*

A. ENGINEER may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on OWNER and also on CONTRACTOR, who shall perform the Work involved promptly. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of a Field Order, a Claim may be made therefor as provided in paragraph 10.05.

9.06 *Rejecting Defective Work*

A. ENGINEER will have authority to disapprove or reject Work which ENGINEER believes to be defective, or that ENGINEER believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. ENGINEER will also have authority to require special inspection or testing of the Work as provided in paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.07 *Shop Drawings, Change Orders and Payments*

A. In connection with ENGINEER's authority as to Shop Drawings and Samples, see paragraph 6.17.

B. In connection with ENGINEER's authority as to Change Orders, see Articles 10, 11, and 12.

C. In connection with ENGINEER's authority as to Applications for Payment, see Article 14.

9.08 *Determinations for Unit Price Work*

A. ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER will review with CONTRACTOR the ENGINEER's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). ENGINEER's written decision thereon will be final and binding (except as modified by ENGINEER to reflect changed factual conditions or more accurate data) upon OWNER and CONTRACTOR, subject to the provisions of paragraph 10.05.

9.09 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work, the quantities and classifications of Unit Price Work, the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, and Claims seeking changes in the Contract Price or Contract Times will be referred initially to ENGINEER in writing, in accordance with the provisions of paragraph 10.05, with a request for a formal decision.

B. When functioning as interpreter and judge under this paragraph 9.09, ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by ENGINEER pursuant to this paragraph 9.09 with respect to any such Claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.07) will be a condition precedent to any exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter.

*See Supplementary Conditions

9.10 *Limitations on ENGINEER's Authority and Responsibilities*

A. Neither ENGINEER's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such

authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by ENGINEER shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. ENGINEER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

C. ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. ENGINEER's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.

E. The limitations upon authority and responsibility set forth in this paragraph 9.10 shall also apply to ENGINEER's Consultants, Resident Project Representative, and assistants. See Article 18.

ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

A. Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Written Amendment, a Change Order, or a Work Change Directive. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If OWNER and CONTRACTOR are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

A. CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in paragraph 3.04, except in the case of an emergency as provided in paragraph 6.16 or in the case of uncovering Work as provided in paragraph 13.04.B.

10.03 *Execution of Change Orders*

A. OWNER and CONTRACTOR shall execute appropriate Change Orders recommended by ENGINEER (or Written Amendments) covering:

1. changes in the Work which are: (i) ordered by OWNER pursuant to paragraph 10.01.A, (ii) required because of acceptance of defective Work under paragraph 13.08.A or OWNER's correction of defective Work under paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by ENGINEER pursuant to paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 6.18.A.

10.04 *Notification to Surety*

A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR's responsibility. The amount of each applicable Bond will be adjusted to reflect the effect of any such change.

10.05 *Claims and Disputes*

A. *Notice:* Written notice stating the general nature of each Claim, dispute, or other matter shall be delivered by the claimant to ENGINEER and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. Notice of the amount or extent of the Claim, dispute, or other matter with supporting data shall be delivered to the ENGINEER and the other party to the Contract within 60 days after the start of such event (unless ENGINEER allows additional time for claimant to submit additional or more accurate data in support of such Claim, dispute, or other matter). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to ENGINEER and the claimant within 30 days after receipt of the claimant's last submittal (unless ENGINEER allows additional time).

B. *ENGINEER's Decision:* ENGINEER will render a formal decision in writing within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any. ENGINEER's written decision on such Claim, dispute, or other matter will be final and binding upon OWNER and CONTRACTOR unless:

1. an appeal from ENGINEER's decision is taken within the time limits and in accordance with the dispute resolution procedures set forth in Article 16; or

2. if no such dispute resolution procedures have been set forth in Article 16, a written notice of intention to appeal from ENGINEER's written decision is delivered by OWNER or CONTRACTOR to the other and to ENGINEER within 30 days after the date of such decision, and a formal proceeding is instituted by the appealing party in a forum of competent jurisdiction within 60 days after the date of such decision or within 60 days after Substantial Completion, whichever is later (unless otherwise agreed in writing by OWNER and CONTRACTOR), to exercise such rights or remedies as the appealing party may have with respect to such Claim, dispute, or other matter in accordance with applicable Laws and Regulations.

C. If ENGINEER does not render a formal decision in writing within the time stated in paragraph 10.05.B, a decision denying the Claim in its entirety shall be deemed to have been issued 31 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.

D. No Claim for an adjustment in Contract Price or Contract Times (or Milestones) will be valid if not submitted in accordance with this paragraph 10.05.

ARTICLE 11 - COST OF THE WORK; CASH ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to CONTRACTOR will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items, and shall not include any of the costs itemized in paragraph 11.01.B.

1. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Such employees shall include without limitation superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work

shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by OWNER.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

3. Payments made by CONTRACTOR to Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from subcontractors acceptable to OWNER and CONTRACTOR and shall deliver such bids to OWNER, who will then determine, with the advice of ENGINEER, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as CONTRACTOR's Cost of the Work and fee as provided in this paragraph 11.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

a. The proportion of necessary transportation, travel, and subsistence expenses of CONTRACTOR's employees incurred in discharge of duties connected with the Work.

b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of CONTRACTOR.

c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of ENGINEER, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by CONTRACTOR in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expressage, and similar petty cash items in connection with the Work.

i. When the Cost of the Work is used to determine the value of a Change Order or of a Claim, the cost of premiums for additional Bonds and insurance required because of the changes in the Work or caused by the event giving rise to the Claim.

j. When all the Work is performed on the basis of cost-plus, the costs of premiums for all Bonds and insurance CONTRACTOR is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnerships and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by CONTRACTOR, whether at the Site or in CONTRACTOR's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 11.01.A.1 or specifically covered by paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the CONTRACTOR's fee.

2. Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the Site.

3. Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.

4. Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraphs 11.01.A and 11.01.B.

C. *CONTRACTOR's Fee:* When all the Work is performed on the basis of cost-plus, CONTRACTOR's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, CONTRACTOR's fee shall be determined as set forth in paragraph 12.01.C.

D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to paragraphs 11.01.A and 11.01.B, CONTRACTOR will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to ENGINEER an itemized cost breakdown together with supporting data.

11.02 *Cash Allowances*

A. It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums as may be acceptable to OWNER and ENGINEER. CONTRACTOR agrees that:

1. the allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. CONTRACTOR's costs for unloading and handling on the Site, labor, installation costs, overhead, profit, and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

B. Prior to final payment, an appropriate Change Order will be issued as recommended by ENGINEER to reflect actual amounts due CONTRACTOR on account of

that might entitle CONTRACTOR to be paid additionally by OWNER or entitle OWNER to withhold payment to CONTRACTOR.

4. Neither ENGINEER's review of CONTRACTOR's Work for the purposes of recommending payments nor ENGINEER's recommendation of any payment, including final payment, will impose responsibility on ENGINEER to supervise, direct, or control the Work or for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for CONTRACTOR's failure to comply with Laws and Regulations applicable to CONTRACTOR's performance of the Work. Additionally, said review or recommendation will not impose responsibility on ENGINEER to make any examination to ascertain how or for what purposes CONTRACTOR has used the moneys paid on account of the Contract Price, or to determine that title to any of the Work, materials, or equipment has passed to OWNER free and clear of any Liens.

5. ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER's opinion, it would be incorrect to make the representations to OWNER referred to in paragraph 14.02.B.2. ENGINEER may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in ENGINEER's opinion to protect OWNER from loss because:

a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;

b. the Contract Price has been reduced by Written Amendment or Change Orders;

c. OWNER has been required to correct defective Work or complete Work in accordance with paragraph 13.09; or

d. ENGINEER has actual knowledge of the occurrence of any of the events enumerated in paragraph 15.02.A.

C. *Payment Becomes Due*

1. Ten days after presentation of the Application for Payment to OWNER with ENGINEER's recommendation, the amount recommended will (subject to the provisions of paragraph 14.02.D) become due, and when due will be paid by OWNER to CONTRACTOR.

D. *Reduction in Payment*

1. OWNER may refuse to make payment of the full amount recommended by ENGINEER because:

a. claims have been made against OWNER on account of CONTRACTOR's performance or furnishing of the Work;

b. Liens have been filed in connection with the Work, except where CONTRACTOR has delivered a specific Bond satisfactory to OWNER to secure the satisfaction and discharge of such Liens;

c. there are other items entitling OWNER to a set-off against the amount recommended; or

d. OWNER has actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.02.B.5.a through 14.02.B.5.c or paragraph 15.02.A.

2. If OWNER refuses to make payment of the full amount recommended by ENGINEER, OWNER must give CONTRACTOR immediate written notice (with a copy to ENGINEER) stating the reasons for such action and promptly pay CONTRACTOR any amount remaining after deduction of the amount so withheld. OWNER shall promptly pay CONTRACTOR the amount so withheld, or any adjustment thereto agreed to by OWNER and CONTRACTOR, when CONTRACTOR corrects to OWNER's satisfaction the reasons for such action.

3. If it is subsequently determined that OWNER's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by paragraph 14.02.C.1.

14.03 *CONTRACTOR's Warranty of Title*

A. CONTRACTOR warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

14.04 *Substantial Completion*

A. When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall notify OWNER and ENGINEER in writing that the entire Work is substantially complete (except for items specifically listed by CONTRACTOR as incomplete) and request that ENGINEER issue a certificate of Substantial Completion. Promptly thereafter, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers the Work substantially complete, ENGINEER will prepare and deliver to OWNER a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. OWNER shall have seven days after receipt of the tentative certificate during which to make written objection to ENGINEER as to any provisions of the certificate or attached list. If, after considering such objections, ENGINEER concludes that the Work is not substantially complete, ENGINEER will within 14 days after submission of the tentative certificate to OWNER notify CONTRACTOR in writing, stating the reasons therefor. If, after consideration of OWNER's objections, ENGINEER considers the Work substantially complete, ENGINEER will within said 14 days execute and deliver to OWNER and CONTRACTOR a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as ENGINEER believes justified after consideration of any objections from OWNER. At the time of delivery of the tentative certificate of Substantial Completion ENGINEER will deliver to OWNER and CONTRACTOR a written recommendation as to division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless OWNER and CONTRACTOR agree otherwise in writing and so inform ENGINEER in writing prior to ENGINEER's issuing the definitive certificate of Substantial Completion, ENGINEER's aforesaid recommendation will be binding on OWNER and CONTRACTOR until final payment.

B. OWNER shall have the right to exclude CONTRACTOR from the Site after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

14.05 *Partial Utilization*

A. Use by OWNER at OWNER's option of any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which OWNER, ENGINEER, and CONTRACTOR agree constitutes a separately functioning and usable part of the Work that can be used by OWNER for its intended purpose without significant interference with CONTRACTOR's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following conditions.

1. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees that such part of the Work is substantially complete, CONTRACTOR will certify to OWNER and ENGINEER that such part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. CONTRACTOR at any time may notify OWNER and ENGINEER in writing that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers that part of the Work to be substantially complete, the provisions of paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

2. No occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

A. Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, ENGINEER will promptly make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. *Application for Payment*

1. After CONTRACTOR has, in the opinion of ENGINEER, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, Bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in paragraph 6.12), and other documents, CONTRACTOR may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by: (i) all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by subparagraph 5.04.B.7; (ii) consent of the surety, if any, to final payment; and (iii) complete and legally effective releases or waivers (satisfactory to OWNER) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in paragraph 14.07.A.2 and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full and an affidavit of CONTRACTOR that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or OWNER's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

B. *Review of Application and Acceptance*

1. If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR's other obligations under the Contract Documents have been fulfilled, ENGINEER will, within ten days after receipt of the final Application for Payment, indicate in writing ENGINEER's recommendation of payment and present the Application for Payment to OWNER for payment. At the same time ENGINEER will also give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.09. Otherwise, ENGINEER will return the Application for Payment to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application for Payment.

C. *Payment Becomes Due*

1. Thirty days after the presentation to OWNER of the Application for Payment and accompanying documentation, the amount recommended by ENGINEER will become due and, when due, will be paid by OWNER to CONTRACTOR.

14.08 *Final Completion Delayed*

A. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed, and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not

fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by OWNER against CONTRACTOR, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from CONTRACTOR's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by CONTRACTOR against OWNER other than those previously made in writing which are still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 OWNER May Suspend Work

A. At any time and without cause, OWNER may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to CONTRACTOR and ENGINEER which will fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if CONTRACTOR makes a Claim therefor as provided in paragraph 10.05.

15.02 *OWNER May Terminate for Cause*

A. The occurrence of any one or more of the following events will justify termination for cause:

1. CONTRACTOR's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.07 as adjusted from time to time pursuant to paragraph 6.04);

2. CONTRACTOR's disregard of Laws or Regulations of any public body having jurisdiction;

3. CONTRACTOR's disregard of the authority of ENGINEER; or

4. CONTRACTOR's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in paragraph 15.02.A occur, OWNER may, after giving CONTRACTOR (and the surety, if any) seven days written notice, terminate the services of CONTRACTOR, exclude CONTRACTOR from the Site, and take possession of the Work and of all CONTRACTOR's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case, CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by OWNER arising out of or relating to completing the Work, such excess will be paid to CONTRACTOR. If such claims, costs, losses, and damages exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such claims, costs, losses, and damages incurred by OWNER will be reviewed by ENGINEER as to their reasonableness and, when so approved by ENGINEER, incorporated in a Change Order. When exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

C. Where CONTRACTOR's services have been so terminated by OWNER, the termination will not affect any rights or remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

15.03 *OWNER May Terminate For Convenience*

A. Upon seven days written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy of OWNER, elect to terminate the Contract. In such case, CONTRACTOR shall be paid (without duplication of any items):

1. for completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. for expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

3. for all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. for reasonable expenses directly attributable to termination.

B. CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *CONTRACTOR May Stop Work or Terminate*

A. If, through no act or fault of CONTRACTOR, the Work is suspended for more than 90 consecutive days by OWNER or under an order of court or other public authority, or ENGINEER fails to act on any Application for Payment within 30 days after it is submitted, or OWNER fails for 30 days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven days written notice to OWNER and ENGINEER, and provided OWNER or ENGINEER do not remedy such suspension or failure within that time, terminate the Contract and recover from OWNER payment on the same terms as provided in paragraph 15.03. In lieu of terminating the Contract and without prejudice to any other right or remedy, if ENGINEER has failed to act on an Application for Payment within 30 days after it is submitted, or OWNER has failed for 30 days to pay CONTRACTOR any sum finally determined to be due, CONTRACTOR may, seven days after written notice to OWNER and ENGINEER, stop the Work until payment is made of all such amounts due CONTRACTOR, including interest thereon. The provisions of this paragraph 15.04 are not intended to preclude CONTRACTOR from making a Claim under paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to CONTRACTOR's stopping the Work as permitted by this paragraph.

ARTICLE 16 - DISPUTE RESOLUTION*

16.01 *Methods and Procedures*

A. Dispute resolution methods and procedures, if any, shall be as set forth in the Supplementary Conditions. If no method and procedure has been set forth, and subject to the provisions of paragraphs 9.09 and 10.05, OWNER and CONTRACTOR may exercise such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any dispute.

ARTICLE 17 - MISCELLANEOUS*

17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

A. When any period of time is referred to in the Contract Documents by days, it will be computed to

exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Agreement.

17.05 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

SUPPLEMENTAL GENERAL CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (No. 1910-8, 1996 Edition) and other provisions of the Contract Documents as indicated below. All provisions, which are not so amended or supplemental, remain in full force and effect.

The terms used in these Supplementary Conditions will have the meanings indicated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings indicated below, which are applicable to both the singular and plural thereof.

SC-6.10 Delete paragraph 6.10 in its entirely and insert the following in its place:

The owner qualifies for the state and local tax exemption in the purchase of certain materials and equipment the Contractor shall utilize the form provided herewith in exhibit "D".

SC-11.01 Delete paragraph 11.01 in its entirety.

SC-11.02 Delete paragraph 11.02 in its entirety.

SC-12.01B.25 & B.3. Delete paragraph 12.01B.2 & B.3 in its entirety.

SC-12.01.C.2 Delete paragraph 12.01.C.2 in its entirety.

SC Article 14.02 C.1 Replace **"Ten days"** with **"Thirty days"** to read as follows: Thirty days after presentation of the Application for Payment to OWNER with ENGINEER'S recommendation, the amount recommended will (subject to the provisions of paragraph 14.02.D) become due, and when due will be paid by OWNER TO CONTRACTOR.

SC Article 16 Add the following language at the end of the paragraph of Article 16:

There are no dispute resolution methods and procedures set forth in the Supplemental Conditions:

GENERAL PREVAILING WAGE LEGAL REQUIREMENTS

The Contractor's attention is called to Texas Government Code Chapter 2258, which must be complied with attached herewith as Exhibit "C"

General Decision Number: TX160008 01/08/2016 TX8

Superseded General Decision Number: TX20150008

State: Texas

Construction Types: Heavy and Highway

Counties: Cameron, Hidalgo and Webb Counties in Texas.

HEAVY & HIGHWAY CONSTRUCTION PROJECTS

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.15 for calendar year 2016 applies to all contracts subject to the Davis-Bacon Act for which the solicitation was issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.15 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2016. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/08/2016

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Modification Number	Publication Date
0	01/08/2016

* SUTX2011-003 09/02/2011

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER (Paving & Structures)	$ 12.46	
FORM BUILDER/FORM SETTER (Structures)	$ 12.30	
FORM SETTER (Paving & Curb)	$ 12.16	
LABORER		
Asphalt Raker	$ 10.61	
Flagger	$ 9.10	
Laborer, Common	$ 9.86	
Laborer, Utility	$ 11.53	
Pipelayer	$ 11.87	
Work Zone Barricade Servicer	$ 12.88	
POWER EQUIPMENT OPERATOR:		
Asphalt Distributor	$ 13.48	
Asphalt Paving Machine	$ 12.25	
Broom or Sweeper	$ 10.33	
Crane, Lattice Boom 80 Tons or Less	$ 14.39	

Crawler Tractor.....$ 16.63

Excavator, 50,000 lbs or

less.....$ 13.56

Excavator, over 50,000 lbs..$ 15.23

Foundation Drill, Truck

Mounted.....$ 16.86

Front End Loader Operator,

Over 3 CY.....$ 13.69

Front End Loader, 3 CY or

less.....$ 13.49

Loader/Backhoe.....$ 12.77

Mechanic.....$ 15.47

Milling Machine.....$ 14.64

Motor Grader Operator,

Rough.....$ 14.62

Motor Grader, Fine Grade....$ 16.52

Scraper.....$ 11.07

Servicer.....$ 12.34

Steel Worker (Reinforcing).....$ 14.07

TRUCK DRIVER

Lowboy-Float.....$ 13.63

Single Axle.....$ 10.82

Single or Tandem Axle Dump..$ 14.53

Tandem Axle Tractor with

Semi Trailer.....$ 12.12

WELDER.....$ 14.32

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and

non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.

Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

Title 29 – LABOR

Subtitle A – Office of The Secretary of Labor

PART 3 - CONTRACTORS AND SUBCONTRACTORS ON PUBLIC BUILDING OR PUBLIC WORK FINANCED IN WHOLE OR IN PART BY LOANS OR GRANTS FROM THE UNITED STATES

Sect. Name
3.1 Purpose and scope.
3.2 Definitions.
3.3 Weekly statement with respect to payment of wages.
3.4 Submission of weekly statements and the preservation and inspection of weekly payroll records.
3.5 Payroll deductions permissible without application to or approval of the Secretary of Labor.
3.6 Payroll deductions permissible with the approval of the Secretary of Labor.
3.7 Applications for the approval of the Secretary of Labor.
3.8 Action by the Secretary of Labor upon applications.
3.9 Prohibited payroll deductions.
3.10 Methods of payment of wages.
3.11 Regulations part of contract.

Authority: R.S. 161, sec. 2, 48 Stat. 848; Reorg. Plan No. 14, of 1950, 64 Stat. 1267; 5 U.S.C. 301; 40 U.S.C. 276c.
Source: 29 FR 97, Jan. 4, 1964, unless otherwise noted.

29 CFR 3.1 - Purpose and scope.

This part prescribes ``anti-kickback'' regulations under section 2 of the Act of June 13, 1934, as amended (40 U.S.C. 276c), popularly known as the Copeland Act. This part applies to any contract which is subject to Federal wage standards and which is for the construction, prosecution, completion, or repair of public buildings, public works or buildings or works financed in whole or in part by loans or grants from the United States. The part is intended to aid in the enforcement of the minimum wage provisions of the Davis-Bacon Act and the various statutes dealing with federally assisted construction that contain similar minimum wage provisions, including those provisions which are not subject to Reorganization Plan No. 14 (e.g., the College Housing Act of 1950, the Federal Water Pollution Control Act, and the Housing Act of 1959), and in the enforcement of the overtime provisions of the Contract Work Hours Standards Act whenever they are applicable to construction work. The part details the obligation of contractors and subcontractors relative to the weekly submission of statements regarding the wages paid on work covered thereby; sets forth the circumstances and procedures governing the making of payroll deductions from the wages of those employed on such work; and delineates the methods of payment permissible on such work.

29 CFR 3.2 - Definitions.

As used in the regulations in this part:
(a) The terms building or work generally include construction activity as distinguished from manufacturing, furnishing of materials, or servicing and maintenance work. The terms include, without limitation, buildings, structures, and improvements of all types, such as bridges, dams, plants, highways, parkways, streets, subways, tunnels, sewers, mains, powerlines, pumping stations, railways, airports, terminals, docks, piers, wharves, ways, lighthouses, buoys, jetties, breakwaters, levees, and canals; dredging, shoring, scaffolding, drilling, blasting, excavating, clearing, and landscaping. Unless conducted in connection with and at the site of such a building or work as is described in the foregoing sentence, the manufacture or furnishing of materials, articles, supplies, or equipment (whether or not a Federal or State agency acquires title to such materials, articles, supplies, or equipment during the course of the manufacture or furnishing, or owns the materials from which they are manufactured or furnished) is not a building or work within the meaning of the regulations in this part.

(b) The terms construction, prosecution, completion, or repair mean all types of work done on a particular building or work at the site thereof, including, without limitation, altering, remodeling, painting and decorating, the transporting of materials and supplies to or from the building or work by the employees of the construction contractor or construction subcontractor, and the manufacturing or furnishing of materials, articles, supplies, or equipment on the site of the building or work, by persons employed at the site by the contractor or subcontractor.
(c) The terms public building or public work include building or work for whose construction, prosecution, completion, or repair, as defined above, a Federal agency is a contracting party, regardless of whether title thereof is in a Federal agency.
(d) The term building or work financed in whole or in part by loans or grants from the United States includes building or work for whose construction, prosecution, completion, or repair, as defined above, payment or part payment is made directly or indirectly from funds provided by loans or grants by a Federal agency. The term includes building or work for which the Federal assistance granted is in the form of loan guarantees or insurance.
(e) Every person paid by a contractor or subcontractor in any manner for his labor in the construction, prosecution, completion, or repair of a public building or public work or building or work financed in whole or in part by loans or grants from the United States is employed and receiving wages, regardless of any contractual relationship alleged to exist between him and the real employer.
(f) The term any affiliated person includes a spouse, child, parent, or other close relative of the contractor or subcontractor; a partner or officer of the contractor or subcontractor; a corporation closely connected with the contractor or subcontractor as parent, subsidiary, or otherwise, and an officer or agent of such corporation.
(g) The term Federal agency means the United States, the District of Columbia, and all executive departments, independent establishments, administrative agencies, and instrumentalities of the United States and of the District of Columbia, including corporations, all or substantially all of the stock of which is beneficially owned by the United States, by the District of Columbia, or any of the foregoing departments, establishments, agencies, and instrumentalities.

[29 FR 97, Jan. 4, 1964, as amended at 38 FR 32575, Nov. 27, 1973]

29 CFR 3.3 - Weekly statement with respect to payment of wages.

(a) As used in this section, the term employee shall not apply to persons in classifications higher than that of laborer or mechanic and those who are the immediate supervisors of such employees.
(b) Each contractor or subcontractor engaged in the construction, prosecution, completion, or repair of any public building or public work, or building or work financed in whole or in part by loans or grants from the United States, shall furnish each week a statement with respect to the wages paid each of its employees engaged on work covered by this part 3 and part 5 of this chapter during the preceding weekly payroll period. This statement shall be executed by the contractor or subcontractor or by an authorized officer or employee of the contractor or subcontractor who supervises the payment of wages, and shall be on form WH 348, ``Statement of Compliance'', or on an identical form on the back of WH 347, ``Payroll (For Contractors Optional Use)'' or on any form with identical wording. Sample copies of WH 347 and WH 348 may be obtained from the Government contracting or sponsoring agency, and copies of these forms may be purchased at the Government Printing Office.
(c) The requirements of this section shall not apply to any contract of $2,000 or less.
(d) Upon a written finding by the head of a Federal agency, the Secretary of Labor may provide reasonable limitations, variations, tolerances, and exemptions from the requirements of this section subject to such conditions as the Secretary of Labor may specify.

[29 FR 97, Jan. 4, 1964, as amended at 33 FR 10186, July 17, 1968; 47 FR 23679, May 28, 1982]

29 CFR 3.4 - Submission of weekly statements and the preservation and inspection of weekly payroll records.

(a) Each weekly statement required under Sec. 3.3 shall be delivered by the contractor or subcontractor, within seven days after the regular payment date of the payroll period, to a representative of a Federal or State agency in charge at the site of the building or work, or, if there is no representative of a Federal or State agency at the site of the building or work, the statement shall be mailed by the contractor or subcontractor, within such time, to a Federal or State agency contracting for or financing the building or work. After such examination and check as may be made, such statement, or a copy thereof, shall be kept available, or shall be transmitted together with a report of any violation, in accordance with applicable procedures prescribed by the United States Department of Labor.
(b) Each contractor or subcontractor shall preserve his weekly payroll records for a period of three years from date of completion of the contract. The payroll records shall set out accurately and completely the name and address of each laborer and mechanic, his correct classification, rate of pay, daily and weekly number of hours worked, deductions made, and actual wages paid. Such payroll records shall be made available at all times for inspection by the contracting
officer or his authorized representative, and by authorized representatives of the Department of Labor.
(Reporting and recordkeeping requirements in paragraph (b) have been approved by the Office of Management and Budget under control number 1215-0017)

[29 FR 97, Jan. 4, 1964, as amended at 47 FR 145, Jan. 5, 1982]

29 CFR 3.5 - Payroll deductions permissible without application to or approval of the Secretary of Labor.

Deductions made under the circumstances or in the situations described in the paragraphs of this section may be made without application to and approval of the Secretary of Labor:

(a) Any deduction made in compliance with the requirements of Federal, State, or local law, such as Federal or State withholding income taxes and Federal social security taxes.
(b) Any deduction of sums previously paid to the employee as a bona fide prepayment of wages when such prepayment is made without discount or interest. A bona fide prepayment of wages is considered to have been made only when cash or its equivalent has been advanced to the person employed in such manner as to give him complete freedom of disposition of the advanced funds.
(c) Any deduction of amounts required by court process to be paid to another, unless the deduction is in favor of the contractor, subcontractor, or any affiliated person, or when collusion or collaboration exists.
(d) Any deduction constituting a contribution on behalf of the person employed to funds established by the employer or representatives of employees, or both, for the purpose of providing either from principal or income, or both, medical or hospital care, pensions or annuities on retirement, death benefits, compensation for injuries, illness, accidents, sickness, or disability, or for insurance to provide any of the foregoing, or unemployment benefits, vacation pay, savings accounts, or similar payments for the benefit of employees, their families and dependents: Provided, however, That the following standards are met:

(1) The deduction is not otherwise prohibited by law;
(2) It is either:
(i) Voluntarily consented to by the employee in writing and in advance of the period in which the work is to be done and such consent is not a condition either for the obtaining of or for the continuation of employment, or
(ii) provided for in a bona fide collective bargaining agreement between the contractor or subcontractor and representatives of its employees;
(3) No profit or other benefit is otherwise obtained, directly or indirectly, by the contractor or subcontractor or any affiliated person in the form of commission, dividend, or otherwise; and
(4) The deductions shall serve the convenience and interest of the employee.

(e) Any deduction contributing toward the purchase of United States Defense Stamps and Bonds when voluntarily authorized by the employee.

(f) Any deduction requested by the employee to enable him to repay loans to or to purchase shares in credit unions organized and operated in accordance with Federal and State credit union statutes.
(g) Any deduction voluntarily authorized by the employee for the making of contributions to governmental or quasi-governmental agencies, such as the American Red Cross.
(h) Any deduction voluntarily authorized by the employee for the making of contributions to Community Chests, United Givers Funds, and similar charitable organizations.
(i) Any deductions to pay regular union initiation fees and membership dues, not including fines or special assessments: Provided, however, That a collective bargaining agreement between the contractor or subcontractor and representatives of its employees provides for such deductions and the deductions are not otherwise prohibited by law.
(j) Any deduction not more than for the ``reasonable cost'' of board, lodging, or other facilities meeting the requirements of section 3(m) of the Fair Labor Standards Act of 1938, as amended, and part 531 of this title. When such a deduction is made the additional records required under Sec. 516.25(a) of this title shall be kept.
(k) Any deduction for the cost of safety equipment of nominal value purchased by the employee as his own property for his personal protection in his work, such as safety shoes, safety glasses, safety gloves, and hard hats, if such equipment is not required by law to be furnished by the employer, if such deduction is not violative of the Fair Labor Standards Act or prohibited by other law, if the cost on which the deduction is based does not exceed the actual cost to the employer where the equipment is purchased from him and does not include any direct or indirect monetary return to the employer where the equipment is purchased from a third person, and if the deduction is either

(1) Voluntarily consented to by the employee in writing and in advance of the period in which the work is to be done and such consent is not a condition either for the obtaining of employment or its continuance; or
(2) Provided for in a bona fide collective bargaining agreement between the contractor or subcontractor and representatives of its employees.

[29 FR 97, Jan. 4, 1964, as amended at 36 FR 9770, May 28, 1971]

29 CFR 3.6 - Payroll deductions permissible with the approval of the Secretary of Labor.

Any contractor or subcontractor may apply to the Secretary of Labor for permission to make any deduction not permitted under Sec. 3.5. The Secretary may grant permission whenever he finds that:

(a) The contractor, subcontractor, or any affiliated person does not make a profit or benefit directly or indirectly from the deduction either in the form of a commission, dividend, or otherwise;
(b) The deduction is not otherwise prohibited by law;
(c) The deduction is either (1) voluntarily consented to by the employee in writing and in advance of the period in which the work is to be done and such consent is not a condition either for the obtaining of employment or its continuance, or (2) provided for in a bona fide collective bargaining agreement between the contractor or subcontractor and representatives of its employees; and
(d) The deduction serves the convenience and interest of the employee.

29 CFR 3.7 - Applications for the approval of the Secretary of Labor.

Any application for the making of payroll deductions under Sec. 3.6 shall comply with the requirements prescribed in the following paragraphs of this section:

(a) The application shall be in writing and shall be addressed to the Secretary of Labor.
(b) The application need not identify the contract or contracts under which the work in question is to be performed. Permission will be given for deductions on all current and future contracts of the applicant for a period of 1 year. A renewal of permission to make such payroll deduction will be granted upon the submission of an application which makes reference to the original application, recites the date of the Secretary of Labor's approval of such deductions, states affirmatively that there is continued compliance with the standards set forth in the provisions of Sec. 3.6, and specifies any conditions which have changed in regard to the payroll deductions.

(c) The application shall state affirmatively that there is compliance with the standards set forth in the provisions of Sec. 3.6. The affirmation shall be accompanied by a full statement of the facts indicating such compliance.
(d) The application shall include a description of the proposed deduction, the purpose to be served thereby, and the classes of laborers or mechanics from whose wages the proposed deduction would be made.
(e) The application shall state the name and business of any third person to whom any funds obtained from the proposed deductions are to be transmitted and the affiliation of such person, if any, with the applicant.

[29 FR 97, Jan. 4, 1964, as amended at 36 FR 9771, May 28, 1971]

29 CFR 3.8 - Action by the Secretary of Labor upon applications.

The Secretary of Labor shall decide whether or not the requested deduction is permissible under provisions of Sec. 3.6; and shall notify the applicant in writing of his decision.

29 CFR 3.9 - Prohibited payroll deductions.

Deductions not elsewhere provided for by this part and which are not found to be permissible under Sec. 3.6 are prohibited.

29 CFR 3.10 - Methods of payment of wages.

The payment of wages shall be by cash, negotiable instruments payable on demand, or the additional forms of compensation for which deductions are permissible under this part. No other methods of payment shall be recognized on work subject to the Copeland Act.

29 CFR 3.11 - Regulations part of contract.

All contracts made with respect to the construction, prosecution, completion, or repair of any public building or public work or building or work financed in whole or in part by loans or grants from the United States covered by the regulations in this part shall expressly bind the contractor or subcontractor to comply with such of the regulations in this part as may be applicable. In this regard, see Sec. 5.5(a) of this subtitle.

U.S. Department of Housing
and Urban Development

Labor Relations Desk Guide
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DAVIS-BACON
LABOR STANDARDS

A Contractor's Guide to Prevailing Wage Requirements for Federally-Assisted Construction Projects



January 2012
Previous versions obsolete

INTRODUCTION

This Guide has been prepared for you as a contractor performing work on construction projects that are assisted by the Department of Housing and Urban Development and subject to Davis-Bacon prevailing wage requirements. This Guide does not address contractor requirements involved in direct Federal contracting where HUD or another Federal agency enters into a procurement contract. In this latter case, the Federal Acquisition Regulations (FAR) are applicable. While the guidance contained in this Guide is generally applicable to any Davis-Bacon covered project, specific questions pertaining to direct Federal contracts should be addressed to the Contracting Officer who signed the contract for the Federal agency.

Our objective here is to provide you with a guide which is simple and non-bureaucratic yet comprehensive and which will help you better understand and comply with Davis-Bacon labor standards. HUD's Office of Labor Relations worked closely with the Department of Labor's Wage and Hour Division to make sure that the labor standards provisions in your contract and the specifics of complying with them represent the latest information. It is the Department of Labor which has general administrative oversight of all Federal contracting agencies, such as HUD, which administer the day-to-day responsibilities of enforcing Davis-Bacon provisions in construction contracts they either fund or assist in funding.

There are three chapters in this Guide. The first chapter offers a brief description of the laws and regulations associated with Federal labor standards administration and enforcement and discusses both what's in your contract that requires Davis-Bacon compliance and your responsibilities. The second chapter deals with labor standards and payroll reporting requirements. The third chapter discusses what can happen in the event there is a dispute about the wage rates that should be (or have been) paid and any back wages that may be due.

Finally, not all HUD construction projects are covered by Davis-Bacon wage rates. For the purpose of this Guide, we are assuming that a determination has already been made that Davis-Bacon wage rates are applicable. Should you wish assistance in determining whether Davis-Bacon wage rates apply to a particular project or if you need other related technical assistance, please consult with the HUD Labor Relations Field staff for your area. If you don't know which staff to contact, a list of Labor Relations field offices and their geographic areas and telephone numbers can be found on HUD's Home Page at the address below.

Visit the Office of Labor Relations on-line:

http://www.hud.gov/offices/olr

Obtain additional copies of this Guide and other publications at our website or by telephone from HUD's Customer Service Center at (800)767-7468.

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CHAPTER 1 LAWS, REGULATIONS, CONTRACTS AND RESPONSIBILITIES

The following paragraphs describe what the labor standards laws and regulations actually say and what they mean to you on HUD projects:

1-1 DAVIS-BACON AND OTHER LABOR LAWS.

a. **The Davis-Bacon Act (DBA).** The Davis-Bacon Act requires the payment of prevailing wage rates (which are determined by the U.S. Department of Labor) to all laborers and mechanics on Federal government and District of Columbia construction projects in excess of $2,000. Construction includes alteration and/or repair, including painting and decorating, of public buildings or public works.

Most HUD construction work is not covered by the DBA itself since HUD seldom contracts directly for construction services. Most often, if Davis-Bacon wage rates apply to a HUD project it is because of a labor provision contained in one of HUD's "Related Acts" such as the U. S. Housing Act of 1937, the National Housing Act, the Housing and Community Development Act of 1974, the National Affordable Housing Act of 1990, and the Native American Housing Assistance and Self-Determination Act of 1996. The Related Acts are often referred to as the Davis-Bacon and Related Acts or DBRA.

b. **The Contract Work Hours and Safety Standards Act (CWHSSA).** CWHSSA requires time and one-half pay for overtime (O/T) hours (over 40 in any workweek) worked on the covered project. The CWHSSA applies to both direct Federal contracts and to indirect Federally-assisted contracts ***except*** where the assistance is solely in the nature of a loan guarantee or insurance. CWHSSA violations carry a liquidated damages penalty ($10/day per violation). Intentional violations of CWHSSA standards can be considered for Federal criminal prosecution.

CWHSSA does not apply to prime contracts of $100,000 or less. In addition, some HUD projects are not covered by CWHSSA because some HUD programs only provide loan guarantees or insurance. CWHSSA also does not apply to construction or rehabilitation contracts that are not subject to Federal prevailing wage rates (e.g., Davis-Bacon wage rates, or HUD-determined rates for operation of public housing and Indian block grant-assisted housing). However, even though CWHSSA overtime pay is not required, Fair Labor Standards Act (FLSA) overtime pay is probably still applicable. (See also Labor Relations Letter SL-95-01, CWHSSA Coverage threshold for overtime and health and safety provision, available on-line at the HUD Labor Relations Library at: www.hud.gov/offices/olr/library.cfm)

c. **The Copeland Act (Anti-Kickback Act).** The Copeland Act makes it a Federal crime for anyone to require any laborer or mechanic (employed on a Federal or Federally-assisted project) to kickback (i.e., give up or pay back) any part of their wages. The Copeland Act requires every employer (contractors and subcontractors) to submit weekly certified payroll reports (CPRs) and regulates permissible payroll deductions.

d. **The Fair Labor Standards Act (FLSA).** The FLSA contains Federal minimum wage rates, overtime (O/T), and child labor requirements. These requirements generally apply to any labor performed. The DOL has the authority to administer and enforce FLSA. HUD will refer to the DOL any possible FLSA violations that are found on HUD projects.

1-2 DAVIS-BACON REGULATIONS.

The Department of Labor (DOL) has published rules and instructions concerning Davis-Bacon and other labor laws in the Code of Federal Regulations (CFR). These regulations can be found in ***Title 29 CFR Parts 1, 3, 5, 6 and 7***. Part 1 explains how the DOL establishes and publishes DBA wage determinations (aka wage decisions) and provides instructions on how to use the determinations. Part 3 describes Copeland Act requirements for payroll deductions and the submission of weekly certified payroll reports. Part 5 covers the labor standards provisions that are in your contract relating to Davis-Bacon Act wage rates and the responsibilities of contractors and contracting agencies to administer and enforce the provisions. Part 6 provides for administrative proceedings enforcing Federal labor standards on construction and service contracts. Last, Part 7 sets parameters for practice before the Administrative Review Board. These regulations are used as the basis for administering and enforcing the laws.

DOL Regulations are available on-line on the World Wide Web:
http://www.dol.gov/dol/allcfr/Title_29.htm

1-3 CONSTRUCTION CONTRACT PROVISIONS

Each contract subject to Davis-Bacon labor standards requirements must contain labor standards clauses and a Davis-Bacon wage decision. These documents are normally bound into the contract specifications.

a. The labor standards clauses. The labor standards clauses describe the responsibilities of the contractor concerning Davis-Bacon wages and obligate the contractor to comply with the labor requirements. The labor standards clauses also provide for remedies in the event of violations, including withholding from payments due to the contractor to ensure the payment of wages or liquidated damages which may be found due. These contract clauses enable the contract administrator to enforce the Federal labor standards applicable to the project. HUD has standard forms that contain contract clauses. For example, the HUD-2554, Supplementary Conditions to the Contract for Construction, which is issued primarily for FHA multifamily housing and other construction projects

administered by HUD; the HUD-4010, Federal Labor Standards Provisions, which is used for CDBG and HOME projects, and the HUD-5370, General Conditions of the Contract for Construction or the HUD-5370-EZ (construction contracts ≤$100,000) which are used for Public and Indian Housing projects.

HUD program labor standards forms are available on-line at:
www.hud.gov/offices/adm/hudclips/index.cfm

b. Davis-Bacon Wage Decisions. The Davis-Bacon wage decision (or wage determination) is a listing of various construction work classifications, such as Carpenter, Electrician, Plumber and Laborer, and the minimum wage rates (and fringe benefits, where prevailing) that people performing work in those classifications must be paid.

Davis-Bacon wage decisions are established by the DOL for various types of construction (e.g., residential, heavy, highway) and apply to specific geographic areas, usually a county or group of counties. Wage decisions are modified from time to time to keep them current. In most cases, when the contract is awarded or when construction begins, the wage decision is "locked-in" and no future modifications are applicable to the contract or project involved.

All current Davis-Bacon wage decisions can be accessed on-line at no cost at:
http://www.wdol.gov

1-4 RESPONSIBILITY OF THE PRINCIPAL CONTRACTOR

The principal contractor (also referred to as the ***prime*** or ***general contractor***) is responsible for the full compliance of all employers (the contractor, subcontractors and any lower-tier subcontractors) with the labor standards provisions applicable to the project. Because of the contractual relationship between a prime contractor and his/her subcontractors, subcontractors generally should communicate with the contract administrator only through the prime contractor. (See Contract Administrator, below.)

To make this Guide easier to understand, the term "prime contractor" will mean the principal contractor; "subcontractor" will mean all subcontractors including lower-tier subcontractors; and the term "employer" will mean all contractors as a group, including the prime contractor and any subcontractors and lower-tier subcontractors.

1-5 RESPONSIBILITY OF THE CONTRACT ADMINISTRATOR.

The ***contract administrator*** is responsible for the proper administration and enforcement of the Federal labor standards provisions on contracts covered by Davis-Bacon requirements. We use this term to represent the person (or persons) who will provide labor standards advice and support to you and other project principals (e.g., the owner, sponsor, architect), including providing the proper Davis-Bacon wage decision (see 2-1, ***The Wage Decision***) and ensuring that the wage decision and contract clauses are incorporated into the contract for construction. The contract administrator also monitors labor standards compliance (see 2-6, ***Compliance Reviews***) by conducting interviews with construction workers at the job site and reviewing payroll reports, and oversees any enforcement actions that may be required.

The contract administrator could be an employee or agent of HUD, or of a city or county or public housing agency. For HUD projects administered directly by HUD staff, usually FHA-insured multifamily projects, the contract administrator will be the HUD Labor Relations field staff. But many HUD-assisted projects are administered by local contracting agencies such as Public Housing Agencies (PHAs), Indian tribes and tribally-designated housing entities (TDHEs), and States, cities and counties under HUD's Community Development Block Grant (CDBG) and HOME programs. In these cases, the contract administrator will likely be local agency staff. In either case, the guidance for you remains essentially the same.

The DOL also has a role in monitoring Davis-Bacon administration and enforcement. In addition, DOL has independent authority to conduct investigations. A DOL investigator or other DOL representative may visit Davis-Bacon construction sites to interview construction workers or review payroll information.

CHAPTER 2 HOW TO COMPLY WITH LABOR STANDARDS AND PAYROLL REPORTING REQUIREMENTS

WHERE TO START? Now that you know you're on a Davis-Bacon project and you know some of the legal and practical implications, what's next?

SECTION I - THE BASICS

2-1 THE WAGE DECISION.

Davis-Bacon labor standards stipulate the wage payment requirements for Carpenters, Electricians, Plumbers, Roofers, Laborers, and other construction work classifications that may be needed for the project. The Davis-Bacon wage decision that applies to the project contains a schedule of work classifications and wage rates that must be followed. If you don't have it already (and by now you should), you'll want to get a copy of the applicable Davis-Bacon wage decision.

Remember, the wage decision is contained in the contract specifications along with the labor standards clauses. See 1-3, Construction Contract Provisions.

a. **The work classifications and wage rates.** A Davis-Bacon wage decision is simply a listing of different work classifications and the minimum wage rates that must be paid to anyone performing work in those classifications. You'll want to make sure that the work classification(s) you need are contained in the wage decision and make certain you know exactly what wage rate(s) you will need to pay. Some wage decisions cover several counties and/or types of construction work (for example, residential and commercial work) and can be lengthy and difficult to read. Contact the contract administrator (HUD Labor Relations field staff or local agency staff) if you have any trouble reading the wage decision or finding the work classification(s) you need.

To make reading lengthy wage decisions easier for you, the contract administrator may prepare a Project Wage Rate Sheet (HUD-4720). This Sheet is a one-page transcript that will show only the classifications and wage rates for a particular project. A blank copy of a Project Wage Rate Sheet is provided for you in the appendix. Also, a fillable version of this form is available on-line at HUDClips (see web address in the Appendix). Contact the contract administrator monitoring your project for assistance with a Project Wage Rate Sheet.

b. **Posting the wage decision.** If you are the prime contractor, you will be responsible for posting a copy of the wage decision (or the Project Wage Rate Sheet) and a copy of the DOL Davis-Bacon poster titled Employee Rights under the Davis-Bacon Act (Form WH-1321) at the job site in a place that is easily accessible to all of the construction workers employed at the project and where the wage decision and poster won't be destroyed by wind or rain, etc. The Employee Rights under the Davis-Bacon Act poster is available in English and Spanish on-line at HUDClips (see address in the Appendix).

The Employee Rights under the Davis-Bacon Act poster (WH-1321) replaces the Notice to all Employees. The new poster is available in English and Spanish on-line at HUDClips (see address in the Appendix).

2-2 ADDITIONAL "TRADE" CLASSIFICATIONS AND WAGE RATES.

What if the work classification you need isn't on the wage decision? If the work classification(s) that you need doesn't appear on the wage decision, you will need to request an additional classification and wage rate. This process is usually very simple and you'll want to start the request right away. Basically, you identify the classification you need and recommend a wage rate for DOL to approve for the project. There are a few rules about additional classifications; you'll find these rules in the DOL regulations, Part 5, and in the labor clauses in your contract. The rules are summarized for you here:

a. **Additional classification rules.** Additional classifications and wage rates can be approved if:

1. The requested classification is used by construction contractors in the area of the project. (The area is usually defined as the county where the project is located).

2. The work that will be performed by the requested classification is not already performed by another classification that is already on the wage decision. (In other words, if there already is an Electrician classification and wage rate on the wage decision you can't request another Electrician classification and rate.)

3. The proposed wage rate for the requested classification "fits" with the other wage rates already on the wage decision. (For example, the wage rate proposed for a trade classification such as Electrician must be at least as much as the lowest wage rate for other trade classifications already contained in the wage decision.) And,

4. The workers that will be employed in the added classification (if it is known who the workers are/will be), or the workers' representatives, must agree with the proposed wage rate.

b. **Making the request.** A request for additional classification and wage rate must be made in writing through the contract administrator. (If the contract administrator is a local agency, the agency will send the request to the HUD Labor Relations staff.) If you are a subcontractor, your request should also go through the prime contractor. All you need to do is identify the work classification that is missing and recommend a wage rate (usually the rate that employer is already paying to the employees performing the work) for that classification. You may also need to describe the work that the new classification will perform.

c. **HUD review.** The HUD Labor Relations field staff will review the requested classification and wage rate to determine whether the request meets the DOL rules outlined in paragraph 2-2(a), above. If additional information or clarification is needed, the staff will contact the prime contractor (or contract administrator for local agency projects) for more information, etc. If the Labor Relations review finds that the request meets the rules, the staff will give preliminary approval on the request and refer it to the DOL for final approval. The staff will send to you a copy of the preliminary approval/referral letter to the DOL.

   If the HUD Labor Relations staff doesn't think the request meets the rules and if agreement can't be reached on the proper classification or wage rate for the work described, the HUD Labor Relations staff will not approve the request. In this case, the staff will send your request to the DOL with an explanation why HUD believes that the request shouldn't be approved. The DOL still has final decision authority. You will receive a copy of the disapproval/referral letter to the DOL.

d. **DOL decision.** The DOL will respond to HUD Labor Relations in writing about the additional classification and wage rate request. HUD Labor Relations will notify you of the DOL decision in writing. If the DOL approves the request, the prime contractor must post the approval notice on the job site with the wage decision.

   If the DOL does not approve the request, you will be notified about what classification and wage rate should be used for the work in question. You will also receive instructions about how to ask for DOL reconsideration if you still want to try to get your recommendation approved.

It's always a good idea to talk to the contract administrator before submitting an additional classification and wage rate request. The contract administrator can offer suggestions and advice that may save you time and increase the likelihood that DOL will approve your request. Usually, the contract administrator can give you an idea about what the DOL will finally decide.

2-3 CERTIFIED PAYROLL REPORTS.

You'll need to submit a weekly certified payroll report (CPR) beginning with the first week that your company works on the project and for every week afterward until your firm has completed its work. It's always a good idea to number the payroll reports beginning with #1 and to clearly mark your last payroll for the project "Final."

a. **Payroll formats.** The easiest form to use is DOL's WH-347, Payroll. A sample copy of the WH-347 is included in the back of this Guide. You may access a fillable version of the WH-347 on-line at HUDClips (see web address in the Appendix). Also, the contract administrator can provide a few copies of the WH-347 that you can reproduce.

> You are not required to use Payroll form WH-347. You are welcome to use any other type of payroll, such as computerized formats, as long as it contains all of the information that is required on the WH-347.

b. **Payroll certifications.** The weekly payrolls are called certified because each payroll is signed and contains language certifying that the information is true and correct. The payroll certification language is on the reverse side of the WH-347. If you are using another type of payroll format you may attach the certification from the back of the WH-347, or any other format which contains the same certification language on the WH-347 (reverse).

> DOL's website has Payroll Instructions and the Payroll form WH-347 in a "fillable" PDF format at this address:
> www.dol.gov/whd/forms/wh347.pdf

c. **"No work" payrolls.** "No work" payrolls may be submitted whenever there is a temporary break in your work on the project, for example, if your firm is not needed on the project right now but you will be returning to the job in a couple of weeks. (See tip box, for "no work" payroll exemption!) However, if you know that your firm will not be working on the project for an extended period of time, you may wish to send a short note to the contract administrator to let them know about the break in work and to give an approximate date when your firm will return to the project. If you number payrolls consecutively or if you send a note, you do not need to send "no work" payrolls.

> If you number your payroll reports consecutively, you do not need to submit "no work" payrolls!

d. **Payroll review and submission.** The prime contractor should review each subcontractor's payroll reports for compliance prior to submitting the reports to the contract administrator. Remember, the prime contractor is responsible for the full compliance of all subcontractors on the contract and will be held accountable for any wage restitution that may be found due to any laborer or mechanic that is underpaid and for any liquidated damages that may be assessed for overtime violations. All of the payroll reports for any project must be submitted to the contract administrator through the prime contractor.

An alert prime contractor that reviews subcontractor payroll submissions can detect any misunderstandings early, prevent costly underpayments and protect itself from financial loss should underpayments occur.

e. **Payroll retention.** Every contractor (including every subcontractor) must keep a complete set of their own payrolls and other basic records such as employee addresses and full SSNs, time cards, tax records, evidence of fringe benefit payments, for a Davis-Bacon project for at least 3 years after the project is completed. The prime contractor must keep a complete set of all of the payrolls for every contractor (including subcontractors) for at least 3 years after completion of the project.

f. **Payroll inspection.** In addition to submitting payrolls to the contract administrator, every contractor (including subcontractors) must make their own copy of the payrolls and other basic records available for review or copying to any authorized representative from HUD or from DOL.

2-4 DAVIS-BACON DEFINITIONS.

Before we discuss how to complete the weekly payroll forms, we need to review a couple of definitions. These definitions can help you understand what will be required of you:

a. **Laborer or mechanic.** "Laborers" and "mechanics" mean anyone who is performing construction work on the project, including trade journeymen (carpenters, plumbers, sheet metal workers, etc.), apprentices, and trainees and, for CWHSSA purposes, watchmen and guards. "Laborers" and "mechanics" are the two groups of workers that must be paid not less than Davis-Bacon wage rates.

1. **Working foremen**. Foremen or supervisors that regularly spend more than 20% of their time performing construction work and do not meet the exclusions in paragraph 2 below are covered "laborers" and "mechanics" for labor standards purposes for the time spent performing construction work.

2. **Exclusions.** People whose duties are primarily administrative, executive or clerical are not laborers or mechanics. Examples include superintendents, office staff, timekeepers, messengers, etc. (Contact the contract administrator if you have any questions about whether a particular employee is excluded.)

b. **Employee.** Every person who performs the work of a laborer or mechanic is "employed" regardless of any contractual relationship which may be alleged to exist between a contractor or subcontractor and such person. This means that even if there is a contract between a contractor and a worker, the contractor must make sure that the worker is paid at least as much as the wage rate on the wage decision for the classification of work they perform. Note that there are no exceptions to the prevailing wage requirements for relatives or for self-employed laborers and mechanics.

For more information about working subcontractors, ask the contract administrator or your HUD Labor Relations Field Staff for a copy of Labor Relations Letter LR-96-01, Labor standards compliance requirements for self-employed laborers and mechanics. Labor Relations Letters and other helpful Labor Relations publications are available at HUD's Labor Relations web site (see the list of web site addresses in the Appendix).

c. **Apprentices and trainees.** The only workers who can be paid less than the wage rate on the wage decision for their work classification are "apprentices" and "trainees" registered in approved apprenticeship or training programs. Approved programs are those which have been registered with the DOL or a DOL-recognized State Apprenticeship Council (SAC). Apprentices and trainees are paid wage rates in accordance with the wage schedule in the approved program.

Most often, the apprentice/trainee wage rate is expressed as a series of percentages tied to the amount of time spent in the program. For example, 0-6 months: 65%; 6 months - 1 year: 70%; etc. The percentage is applied to the journeyman's wage rate. On Davis-Bacon projects, the percentage must be applied to the journeyman's wage rate on the applicable wage decision for that craft.

1. **Probationary apprentice.** A "probationary apprentice" can be paid as an apprentice (less than the rate on the wage decision) if the DOL or SAC has certified that the person is eligible for probationary employment as an apprentice.

2. **Pre-apprentice.** A "pre-apprentice", that is, someone who is not registered in a program and who hasn't been DOL- or SAC-certified for probationary apprenticeship is not considered to be an "apprentice" and must be paid the full journeyman's rate on the wage decision for the classification of work they perform.

3. **Ratio of apprentices and trainees to journeymen.** The maximum number of apprentices or trainees that you can use on the job site cannot exceed the ratio of apprentices or trainees to journeymen allowed in the approved program.

d. **Prevailing wages or wage rates.** Prevailing wage rates are the wage rates listed on the wage decision for the project. The wage decision will list a minimum basic hourly rate of pay for each work classification. Some wage decisions include fringe benefits which are usually listed as an hourly fringe rate. If the wage decision includes a fringe benefit rate for a classification, you will need to add the fringe benefit rate to the basic hourly rate unless you provide bona fide fringe benefits for your employees.

   1. **Piece-work.** Some employees are hired on a piece-work basis, that is, the employee's earnings are determined by a factor of work produced. For example, a Drywall Hanger's earnings may be calculated based upon the square feet of sheetrock actually hung, a Painter's earnings may be based upon the number of units painted. Employers may calculate weekly earnings based upon piece rates provided the weekly earnings are sufficient to satisfy the wage rate requirement based upon actual hours, including any overtime, worked. Accurate time records must be maintained for any piece-work employees. If the weekly piece rate earnings are not sufficient, the employer must recompute weekly earnings based upon the actual hours worked and the rate on the wage decision for the work classification(s) involved.

e. **Fringe benefits** Fringe benefits can include health insurance premiums, retirement contributions, life insurance, vacation and other paid leave as well as some contributions to training funds. Fringe benefits do not include employer payments or contributions required by other Federal, State or local laws, such as the employer's contribution to Social Security or some disability insurance payments.

Note that the total hourly wage rate paid to any laborer or mechanic (basic wage or basic wage plus fringe benefits) may be no less than the total wage rate (basic wage or basic wage plus fringe benefits) on the wage decision for their craft. If the value of the fringe benefit(s) you provide is less than the fringe benefit rate on the wage decision, you will need to add the balance of the wage decision fringe benefit rate to the basic rate paid to the employee. For example, if the wage decision requires $10/hour basic rate plus $5/ hour fringe benefits, you must pay no less than that total ($15/hour) in the basic rate or basic rate plus whatever fringe benefit you may provide. You can meet this obligation in several ways: you could pay the base wage and fringe benefits as stated in the wage decision, or you could pay $15 in base wage with no fringe benefits, or you could pay $12 basic plus $3 fringe benefits. You can also off-set the amount of the base wage if you pay more in fringe benefits such as by paying or $9 basic plus $6 fringe benefits; as long as you meet the total amount. The amount of the base wage that you may off-set with fringe benefits is limited by certain IRS and FLSA requirements.

f. **Overtime.** Overtime hours are defined as all hours worked on the contract in excess of 40 hours in any work week. Overtime hours must be paid at no less than one and one-half times the regular rate of basic pay plus the straight-time rate of any required fringe benefits.

g. **Deductions.** You may make payroll deductions as permitted by DOL Regulations 29 CFR Part 3. These regulations prohibit the employer from requiring employees to "kick-back" (i.e., give up) any of their earnings. Allowable deductions which do not require prior DOL permission include employee obligations for income taxes, Social Security payments, insurance premiums, retirement, savings accounts, and any other legally-permissible deduction authorized by the employee. Deductions may also be made for payments on judgments and other financial obligations legally imposed against the employee.

Referring, again, to our example above where the wage decision requiring a $15 total wage obligation ($10 basic wage plus $5 fringe benefits) was met by paying $9 base wage plus $6 fringe benefits: Note that overtime rates must be based on one and one-half times the basic rate as stated on the wage decision. In the above example, the employer must pay for overtime: $15/hr ($9 basic + $6 fringe) plus $5 (one-half of $10, the wage decision basic rate) for a total of $20 per hour.

h. **Proper designation of trade.** You must select a work classification on the wage decision for each worker based on the actual type of work he/she performed and you must pay each worker no less than the wage rate on the wage decision for that classification regardless of their level of skill. In other words, if someone is performing carpentry work on the project, they must be paid no less than the wage rate on the wage decision for Carpenters even if they aren't considered by you to be fully trained as a Carpenter. Remember, the only people who can be paid less than the rate for their craft are apprentices and trainees registered in approved programs.

1. **Split-classification.** If you have employees that perform work in more than one trade during a work week, you can pay the wage rates specified for each classification in which work was performed only if you maintain accurate time records showing the amount of time spent in each classification of work. If you do not maintain accurate time records, you must pay these employees the highest wage rate of all of the classifications of work performed.

i. **Site of work.** The "site of work" is where the Davis-Bacon wage rates apply. Usually, this means the boundaries of the project. "Site of work" can also include other adjacent or virtually adjacent property used by a contractor or subcontractor in the construction of the project, like a fabrication site that is dedicated exclusively, or nearly so, to the project.

SECTION II - REPORTING REQUIREMENTS

2-5 COMPLETING A PAYROLL REPORT.

What information has to be reported on the payroll form? The weekly payroll form doesn't ask for any information that you don't already need to keep for wage payment and tax purposes. For example, you need to know each employee's name; his or her work classification (who is working for you and what do they do?), the hours worked during the week, his or her rate of pay, the gross amount earned (how much did they earn?), the amounts of any deductions for taxes, etc., and the net amount paid (how much should the paycheck be made out for?). No more information than you need to know in order to manage your work crew and make certain they are paid properly. And, certainly, no more information than you need to keep for IRS, Social Security and other tax and employment purposes.

For many contractors, the Weekly Certified Payroll is the only Davis-Bacon paperwork you need to submit!

You are required to submit certified payrolls to illustrate and document that you have complied with the prevailing wage requirements. The purpose of the contract administrator's review of your payrolls is to verify your compliance. Clearer and complete payroll reports will permit the contract administrator to complete reviews of your payroll reports quickly.

a. **Project and contractor/subcontractor information.** Each payroll must identify the contractor or subcontractor's name and address, the project name and number, and the week ending date. Indicate the week dates in the spaces provided. Numbering payrolls is optional but strongly recommended.

b. **Employee information.** Effective January 18, 2009, payrolls shall not report employee addresses or full Social Security Numbers (SSNs). Instead, the first payroll on which each employee appears shall include the employee's name and an individually identifying number, usually the last 4 digits of the employee's SSN. Afterward, the identifying number does not need to be reported unless it is necessary to distinguish between employees, e.g., if two employees have the same name.

   Employers (prime contractors and subcontractors) must maintain the current address and full SSN for each employee and must provide this information upon request to the contracting agency or other authorized representative responsible for federal labor standards compliance monitoring. Prime contractors may require a subcontractor(s) to provide this information for the prime contractor's records. DOL has modified form WH-347, Payroll, to accommodate these reporting requirements.

c. **Work classification.** Each employee must be classified in accordance with the wage decision based on the type of work they actually perform.

1. **Apprentices or trainees.** The first payroll on which any apprentice or trainee appears must be accompanied by a copy of that apprentice's or trainee's registration in a registered or approved program. A copy of the portions of the registered or approved program pertaining to the wage rates and ratios shall also accompany the first payroll on which the first apprentice or trainee appears.

2. **Split classifications.** For an employee that worked in a split classification, make a separate entry for each classification of work performed distributing the hours of work to each classification, accordingly, and reflecting the rate of pay and gross earnings for each classification. Deductions and net pay may be based upon the total gross amount earned for all classifications.

d. **Hours worked.** The payroll should show ONLY the regular and overtime hours worked on this project. Show both the daily and total weekly hours for each employee. If an employee performs work at job sites other than the project for which the payroll is prepared, those "other job" hours should not be reported on the payroll. In these cases, you should list the employee's name, classification, hours for this project only, the rate of pay and gross earnings for this project, and the gross earned for all projects. Deductions and net pay may be based upon the employee's total earnings (for all projects) for the week.

e. **Rate of pay.** Show the basic hourly rate of pay for each employee for this project. If the wage decision includes a fringe benefit and you do not participate in approved fringe benefit programs, add the fringe benefit rate to the basic hourly rate of pay. Also list the overtime rate if overtime hours were worked.

1. **Piece-work.** For any piece-work employees, the employer must compute an effective hourly rate for each employee each week based upon the employee's piece-work earnings for that week. To compute the effective hourly rate, divide the piece-work earnings by the total number of hours worked, including consideration for any overtime hours.

   The effective hourly rate must be reflected on the certified payroll and this hourly rate may be no less than the wage rate (including fringe benefits, if any) on the wage decision for the classification of work performed. It does not matter that the effective hourly rate changes from week-to-week, only that the rate is no less than the rate on the wage decision for the classification of work performed.

Remember, the overtime rate is computed at one and one-half times the basic rate of pay plus any fringe benefits. For example, if the wage decision requires $10/hour basic plus $5/hour fringe benefits, the overtime rate would be: ($10 x 1 ½) + $5 = $20/hour.

f. **Gross wages earned.** Show the gross amount of wages earned for work performed on this project. Note: For employees with work hours and earnings on other projects, you may show gross wages for this project over gross earnings all projects (for example, $425.40/$764.85) and base deductions and net pay on the "all projects" earnings.

g. **Deductions.** Show the amounts of any deductions from the gross earnings. "Other" deductions should be identified (for example, Savings Account or Loan Repayment). Any voluntary deduction (that is, not required by law or by an order of a proper authority) must be authorized in writing by the employee or provided for in a collective bargaining (union) agreement. A short note signed by the employee is all that is needed and should accompany the first payroll on which the other deduction appears.

Only one employee authorization is needed for recurring (e.g., weekly) other deductions. Written employee authorization is not required for income tax and Social Security deductions.

h. **Net pay.** Show the net amount of wages paid.

i. **Statement of compliance.** The Statement of Compliance is the certification. It is located on the reverse side of a standard payroll form (WH-347). Be sure to complete the identifying information at the top, particularly if you are attaching the Statement of Compliance to an alternate payroll form such as a computer payroll. Also, you must check either 4(a) or 4(b) if the wage decision contains a fringe benefit. Checking 4(a) indicates that you are paying required fringe benefits to approved plans or programs; and 4(b) indicates that you are paying any required fringe benefit amounts directly to the employee by adding the fringe benefit rate to the basic hourly rate of pay. If you are paying a portion of the required fringe benefit to programs and the balance directly to the employee, explain those differences in box 4(c).

Only one Statement of Compliance is required for each employer's weekly payroll no matter how many pages are needed to report the employee data.

j. **Signature.** Make sure the payroll is signed with an original signature in ink. The payroll must be signed by a principal of the firm (owner or officer such as the president, treasurer or payroll administrator) or by an authorized agent (a person authorized by a principal in writing to sign the payroll reports). Signature authorization (for persons other than a principal) should be submitted with the first payroll signed by such an agent. Signatures in pencil; signature stamps; xerox, pdf and other facsimiles are not acceptable.

SECTION III - PAYROLL REVIEWS AND CORRECTIONS

2-6 COMPLIANCE REVIEWS.

The contract administrator or other inspector may visit the project site and interview some of the workers concerning their employment on the project. The DOL may also independently conduct its own reviews (see 1-5). In addition, the contract administrator will periodically review payrolls and related submissions, comparing the interview information to the payrolls, to ensure that the labor standards requirements have been met. You will be notified by the contract administrator if these reviews find any discrepancies or errors. You will be given instructions about what steps must be taken to correct any problems.

a. **On-site interviews.** Every employer (contractor, subcontractor, etc.) must make their employees available for interview at the job site with the contract administrator or other agency representative, or HUD or DOL representative. The interviews are confidential and the employee will be asked about the kind of work they perform and their rate of pay. Every effort will be made to ensure that these interviews cause as little disruption as possible to the on-going work. The interviewer will record the interview information, usually on a form HUD-11, Record of Employee Interview, and forward the interviews to the contract administrator.

b. **Project payroll reviews.** The contract administrator will compare the information on the interview forms to the corresponding payrolls to ensure that the workers are properly listed on the payrolls for the days and hours worked on the job site, work classification and rate of pay. The contract administrator will also review the payroll submissions to make certain that the payrolls are complete and signed; that employees are paid no less than the wage rate for the work classification shown; apprentice and trainee certifications are submitted (where needed); employee or other authorizations for other deductions are submitted (where needed); etc.

2-7 TYPICAL PAYROLL ERRORS AND REQUIRED CORRECTIONS.

The following paragraphs describe common payroll errors and the corrective steps you must take.

a. **Inadequate payroll information.** If an alternate payroll format used by an employer (such as some computer payrolls) is inadequate, e.g., does not contain all of the necessary information that would be on the optional form WH-347, the employer will be asked to resubmit the payrolls on an acceptable form.

b. **Missing identification numbers.** If the first payroll on which an employee appears does not contain the employee's individually identifying number, the employer will be asked to supply the missing information. This information can be reported on the next payroll submitted by the employer if the employer is still working on the project. Otherwise, the employer will be asked to submit a correction certified payroll.

c. **Incomplete payrolls.** If the information on the payroll is not complete, for example, if work classifications or rates of pay are missing, the employer will be asked to send a correction certified payroll.

d. **Classifications.** If the payrolls show work classifications that do not appear on the wage decision, the employer will be asked to reclassify the employees in accordance with the wage decision or the employer may request an additional classification and wage rate (see 2-2). If reclassification results in underpayment (i.e., the wage rate reported on the payroll is less than the rate required for the new classification), the employer will be asked to pay wage restitution to all affected reclassified employees. (see 2-8 for instructions about wage restitution.)

e. **Wage rates.** If the wage rates on the payroll are less than the wage rates on the wage decision for the work classifications reported, the employer will be asked to pay wage restitution to all affected employees.

f. **Apprentices and trainees.** If a copy of the employee's registration or the approved program ratio and wage schedule are not submitted with the first payroll on which an apprentice or trainee appears, the employer will be asked to submit a copy of each apprentice's or trainee's registration and/or the approved program ratio and wage schedule. If the ratio of apprentices or trainees to journeymen on the payroll is greater than the ratio in the approved program, the employer will be asked to pay wage restitution to any excess apprentices or trainees. Also, any apprentice or trainee that is not registered in an approved program must receive the journeyman's wage rate for the classification of work they performed.

g. **Overtime.** If the employees did not receive at least time and one-half for any overtime hours worked on the project, the following will occur:

   1. If the project is subject to CWHSSA overtime requirements, the employer will be asked to pay wage restitution for all overtime hours worked on the project. The employer may also be liable to the United States for liquidated damages computed at $10 per day per violation. Or,

   2. If the project is not subject to CWHSSA, the employer will be notified of the possible FLSA overtime violations. Also, the contract administrator may refer the matter to the DOL for further review.

h. **Computations.** If the payroll computations (hours worked times rate of pay) or extensions (deductions, net pay) show frequent errors, the employer will be asked to take greater care. Wage restitution may be required if underpayments resulted from the errors.

i. **Deductions.** If there are any "Other" deductions that are not identified, or if employee authorization isn't provided, or if there is any unusual (very high, or large number) deduction activity, the employer will be asked to identify the deductions, provide employee authorization or explain unusual deductions, as necessary.

HUD does not enforce or attempt to provide advice on employer obligations to make deductions from employee earnings for taxes or Social Security. However, HUD may refer to the IRS or other responsible agency copies of certified payroll reports that show wages paid in gross amounts (i.e., without tax deduction) for its review and appropriate action.

j. **Fringe benefits.** If the wage decision contains fringe benefits but the payroll does not indicate how fringe benefits were paid [neither 4(a) nor 4(b) is marked on the Statement of Compliance], the employer may be asked to submit correction certified payrolls and will be required to pay wage restitution if underpayments occurred. However, if the basic hourly rates for the employees are at least as much as the total wage rate on the wage decision (basic hourly rate plus the fringe benefit rate), no correction is necessary.

k. **Signature.** If the payroll Statement of Compliance is not signed or is missing, the employer will be asked to submit a signed Statement of Compliance for each payroll affected. If the Statement of Compliance is signed by a person who is not a principle of the firm and that person has not been authorized by principle to sign, the employer will be asked to provide an authorization or to resubmit the Statement(s) of Compliance bearing the signature of a principle or other authorized signatory.

l. **On-site interview comparisons.** If the comparison of on-site interviews to the payrolls indicates any discrepancies (for example, the employee does not appear on the payroll for the date of the interview), the employer will be asked to submit a correction certified payroll report.

m. **Correction certified payroll.** Any and all changes to data on a submitted payroll report must be reported on a certified correction payroll. In no case will a payroll report be returned to the prime contractor or employer for revision.

2-8 RESTITUTION FOR UNDERPAYMENT OF WAGES.

Where underpayments of wages have occurred, the employer will be required to pay wage restitution to the affected employees. Wage restitution must be paid promptly in the full amounts due, less permissible and authorized deductions. All wages paid to laborers and mechanics for work performed on the project, including wage restitution, must be reported on a certified payroll report.

a. **Notification** to the Employer/Prime contractor. The contract administrator will notify the employer and/or prime contractor in writing of any underpayments that are found during payroll or other reviews. The contract administrator will describe the underpayments and provide instructions for computing and documenting the restitution to be paid. The employer/ prime contractor is allowed 30 days to correct the underpayments. Note that the prime contractor is responsible to the contract administrator for ensuring that restitution is paid. If the employer is a subcontractor, the subcontractor will usually make the computations and restitution payments and furnish the required documentation through the prime contractor.

The contract administrator may communicate directly with a subcontractor when the underpayments are plainly evident and the subcontractor is cooperative. It is best to work through the prime contractor when the issues are complex, when there are significant underpayments and/or the subcontractor is not cooperative. In all cases, the subcontractor must ensure that the prime contractor receives a copy of the required corrective documentation.

b. **Computing wage restitution.** Wage restitution is simply the difference between the wage rate paid to each affected employee and the wage rate required on the wage decision for all hours worked where underpayments occurred. The difference in the wage rates is called the adjustment rate. The adjustment rate times the number of hours involved equals the gross amount of restitution due. You may also compute wage restitution by calculating the total amount of Davis-Bacon wages earned and subtracting the total amount of wages paid. The difference is the amount of back wages due.

c. **Correction certified payrolls.** The employer will be required to report the restitution paid on a correction certified payroll. The correction payroll will reflect the period of time for which restitution is due (for example, Payrolls #1 through #6; or a beginning date and ending date). The correction payroll will list each employee to whom restitution is due and their work classification; the total number of work hours involved (daily hours are usually not applicable for wage restitution); the adjustment wage rate (the difference between the required wage rate and the wage rate paid); the gross amount of restitution due; deductions and the net amount actually paid. A properly signed Statement of Compliance must accompany the correction payroll.

HUD no longer requires the signature of the employee on the correction payroll to evidence employee receipt of restitution payment. In addition, except in the most extraordinary cases, HUD no longer requires employers to submit copies of restitution checks (certified, cashiers, canceled or other), or employee-signed receipts or waivers.

d. **Review of correction CPR.** The contract administrator will review the correction certified payroll to ensure that full restitution was paid. The prime contractor shall be notified in writing of any discrepancies and will be required to make additional payments, if needed, documented on a correction certified payroll within 30 days.

e. **Unfound workers.** Sometimes, wage restitution cannot be paid to an affected employee because, for example, the employee has moved and can't be located. After wage restitution has been paid to all of the workers who could be located, the employer must submit a list of any workers who could not be found and paid (i.e., unfound workers) providing their names, Social Security Numbers, last known addresses and the gross amount due. In such cases, at the end of the project the prime contractor will be required

to place in a deposit or escrow account an amount equal to the total gross amount of restitution that could not be paid because the employee(s) could not be located. The contract administrator will continue attempts to locate the unfound workers for 3 years after the completion of the project. After 3 years, any amount remaining in the account for unfound workers will be credited and/or forwarded by the contract administrator to HUD.

CHAPTER 3 LABOR STANDARDS DISPUTES, ADMINISTRATIVE REVIEWS, WITHHOLDING, DEPOSITS AND ESCROW ACCOUNTS, AND SANCTIONS

WHAT HAPPENS WHEN THINGS GO WRONG?

3-1 INTRODUCTION.

Even in the best of circumstances, things can go wrong. In a Davis-Bacon context, "things going wrong" usually means there's a difference of opinion or a dispute about whether and to what extent underpayments have occurred. These disputes are usually between the contract administrator and one or more employers (the prime contractor and/ or a subcontractor). The dispute may involve something simple such as an additional classification request that is pending before the DOL; or something as significant as investigative findings following a complaint of underpayment. This chapter discusses some of what you may expect and what you can do to make your views known and to lessen any delays in resolving the problem or issue.

3-2 ADMINISTRATIVE REVIEW ON LABOR STANDARDS DISPUTES.

As mentioned in the Introduction above, a dispute about labor standards and compliance can arise for a number of reasons. The labor standards clauses in your contract and DOL regulations provide for administrative review of issues where there is a difference of views between the contract administrator and any employer. The most common circumstances include:

a. **Additional classifications and wage rates.** Additional classification and wage rate requests are sometimes denied by the DOL. An employer that is dissatisfied with the denial can request reconsideration by the DOL Wage and Hour Administrator. The employer may continue to pay the wage rate, as requested, until a final decision is rendered on the matter. When the final decision is known, the employer will be required to pay any additional wages that may be necessary to satisfy the wage rate that is established.

1. **Reconsideration.** The DOL normally identifies the reasons for denial in its response to the request. Any interested person (for example, the contract administrator, employer, representatives of the employees) may request reconsideration of the decision on the additional classification request. The request for reconsideration must be made in writing and must thoroughly address the denial reasons identified by the DOL. Employer requests for reconsideration should be made through the contract administrator but may be made directly to the DOL. (See 2-2(d), and also DOL Regulations 29 CFR 1.8.) All requests initiated by or made through the contract administrator or HUD must be submitted through the HUD Headquarters Office of Labor Relations.

2. **Administrative Review Board.** Any interested party may request a review of the Administrator's decision on reconsideration by the DOL's Administrative Review Board. DOL regulations 29 CFR Part 7 explain the procedures for such reviews. (See also 29 CFR 1.9.)

b. **Findings of underpayment.** Compliance reviews and other follow-up enforcement actions may result in findings of underpayment. The primary goal in every case and at every step in this process is to reach agreements about who may have been underpaid and how much wage restitution may be due and, of course, to promptly deliver restitution to any underpaid workers. The contract administrator will usually work informally with you to reach such agreements. You will have an opportunity to provide additional information to the contract administrator that may explain apparent inconsistencies and/or resolve the discrepancies.

If informal exchanges do not result in agreement, the final determination and schedule of back wages due will be presented to you in writing and you will be permitted 30 days in which to correct the underpayment(s) or to request a hearing on the matter before the DOL. The request for hearing must be made in writing through the contract administrator and must explain what findings are in dispute and the reasons. In such cases, HUD is required to submit a report to DOL for review and further consideration. All requests for DOL hearing must be submitted through the HUD Headquarters Office of Labor Relations.

1. **DOL review.** The DOL will review the contract administrator's report and the arguments against the findings presented in the hearing request. The DOL may affirm or modify the findings based upon the materials presented. You will be notified in writing by the DOL of the results of its review. If DOL concludes that violations have occurred, you will be given an opportunity to correct any underpayments or to request a hearing before a DOL Administrative Law Judge (ALJ). (See DOL Regulations 29 CFR 5.11 (b) and 29 CFR Part 6, Rules of Practice for Administrative Proceedings.)

2. **Administrative Review Board.** Contractors and/or subcontractors may request a review by the Administrative Review Board of the decision(s) rendered by the DOL ALJ in the administrative hearing process. See DOL regulations 29 CFR Part 7 for more information about this proceeding.

3-3 WITHHOLDING.

The contract administrator shall cause withholding from payments due to the prime contractor to ensure the payment of wages which are believed to be due and unpaid, for example, if wage underpayments or other violations are not corrected within 30 days after written notification to the prime contractor. DOL may also direct the withholding of contract payments for alleged wage underpayments. Withholding is considered to be serious and is not taken unless warranted. If withholding is deemed necessary, you will be notified in writing. Only the amounts needed to meet the contractor's (and/or subcontractors') liability shall be withheld.

3-4 DEPOSITS AND ESCROWS.

In every case, we attempt to complete compliance actions and resolve any disputes before the project is completed and final payments are made. Sometimes, corrective actions or disputes continue after completion and provisions must be made to ensure that funds are available to pay any wage restitution that is ultimately found due. In these cases, we allow projects to proceed to final closing and final payments provided the prime contractor deposits an amount equal to the potential liability for wage restitution and liquidated damages, if necessary, in a special account. The deposit or escrow account is controlled by the contract administrator. When a final decision is rendered, the contract administrator makes disbursements from the account in accordance with the decision. Deposit/escrow accounts are established for one or more of the following reasons:

Remember, the prime contractor is responsible and will be held liable for any wage restitution that is due to any worker employed in the construction of the project, including workers employed by subcontractors and any lower-tier subcontractors. See 1-4, Responsibility of the Principal Contractor, and 2-8, Restitution for Underpayment of Wages.

a. **Where the parties have agreed to amounts of wage restitution that are due** but the employer hasn't furnished evidence yet that all of the underpaid workers have received their back wages, e.g., some of the workers have moved and could not be located. The amount of the deposit is equal to the total gross amount of restitution due to workers lacking payment evidence. As these workers are paid and proper documentation is provided to the contract administrator, amounts corresponding to the documented payments are returned to the depositor. Amounts for any workers who cannot be located are held in the deposit/escrow account for three years and disposed as described in 2-8(f) of this Guide.

b. **Where underpayments are suspected or alleged and an investigation has not yet been completed.** The deposit is equal to the amount of wage restitution and any liquidated damages, if applicable, that are estimated to be due. If the final determination of wages due is less than the amount estimated and placed in the escrow account, the escrow will be reduced to the final amount and the difference will be returned to the depositor.

   If the parties agree to the investigative findings, the amounts due to the workers will be paid by the employer. As these workers are paid and proper documentation is provided to the contract administrator, the gross amounts corresponding to the documented payments are returned to the depositor.

   1. If the employer is unable to make the payments to the workers, e.g., lacks the funds necessary, the contract administrator may make disbursements directly to the workers in the net amounts calculated by the employer. The amounts withheld from the workers for tax deduction will be returned to the employer as payments to workers are made. The employer shall be responsible for reporting and transmitting withholdings to the appropriate agencies.

2. If the employer is not cooperating in the resolution, the contract administrator shall make disbursements to the workers in accordance with the schedule of wages due. Amounts for unfound workers will be retained as described above (See 2-8(f) and 3-4(a)).

If the parties do not agree and an administrative hearing is requested, the escrow will be maintained as explained in 3-4(c), below.

Remember, if you have any questions or need assistance concerning labor standards requirements help is always available. Contact the contract administrator for the project you're working on or the HUD Field Labor Relations staff in your area.

c. **Where the parties are waiting for the outcome of an administrative hearing** that has been or will be requested contesting a final determination of wages due. The deposit shall be equal to the amount of wage restitution and liquidated damages, if applicable, that have been determined due. Once a final decision is rendered, disbursements from the escrow account are made in accordance with the decision.

3-5 ADMINISTRATIVE SANCTIONS.

Contractors and/or subcontractors that violate the labor standards provisions may face administrative sanctions imposed by HUD and/or DOL.

a. **DOL debarment.** Contractors and/or subcontractors that are found by the Secretary of Labor to be in aggravated or willful violation of the labor standards provisions of the Davis-Bacon and Related Acts (DBRA) will be ineligible (debarred) to participate in any DBRA or Davis-Bacon Act contracts for up to 3 years. Debarment includes the contractor or subcontractor and any firm, corporation, partnership or association in which the contractor or subcontractor has a substantial interest. Debarment proceedings can be recommended by the contract administrator or can be initiated by the DOL. Debarment proceedings are described in DOL regulations 29 CFR 5.12.

b. **HUD sanctions.** HUD sanctions may include Limited Denials of Participation (LDPs), debarments and suspensions.

1. **Limited Denial of Participation.** HUD may issue to the employer a limited denial of participation (LDP) which prohibits the employer from further participation in HUD programs for a period up to one year. The LDP is usually effective for the HUD program in which the violation occurred and for the geographic jurisdiction of the issuing HUD Office. HUD regulations concerning LDP's are found at 24 CFR 24.700-24.714.

2. **Debarment and suspensions.** In certain circumstances, HUD may initiate its own debarment or suspension proceedings against a contractor and/or subcontractor in connection with improper actions regarding Davis-Bacon obligations. For example, HUD may initiate debarment where a contractor has been convicted for making false statements (such as false statements on certified payrolls or other prevailing wage certifications) or may initiate suspension where a contractor has been indicted for making false statements. HUD regulations concerning debarment and suspension are found at 24 CFR Part 24.

3-6 FALSIFICATION OF CERTIFIED PAYROLL REPORTS.

Contractors and/or subcontractors that are found to have willfully falsified payroll reports (Statements of Compliance), including correction certified payroll reports, may be subject to civil or criminal prosecution. Penalties may be imposed of $1,000 and/or one year in prison for each false statement (see Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code).

Remember, if you have any questions or need assistance concerning labor standards requirements help is always available. Contact the contract administrator for the project you're working on or the HUD Field Labor Relations staff in your area.

ACRONYMS AND SYMBOLS

CDBG -	Community Development Block Grant
CFR -	Code of Federal Regulations
CPR -	Certified Payroll Report
CWHSSA -	Contract Work Hours and Safety Standards Act
DBA -	Davis-Bacon Act
DBRA -	Davis-Bacon and Related Acts
DOL -	Department of Labor
FHA -	Federal Housing Administration
FLSA -	Fair Labor Standards Act
HUD -	Housing and Urban Development (Department of)
IHA -	Indian Housing Authority
LCA -	Local Contracting Agency
LDP -	Limited Denial of Participation
O/T -	Overtime
PHA -	Public Housing Agency
S/T -	Straight-time
SAC -	State Apprenticeship Council/Agency
TDHE -	Tribally-Designated Housing Entity
§ -	Section
¶ -	Paragraph

DAVIS-BACON - RELATED WEB SITES*

HUD Office of Labor Relations:
www.hud.gov/offices/olr

HUD Regulations:
http://www.gpo.gov/fdsys/browse/collectionCfr.action?collectionCode=CFR

HUDClips (HUD Forms and Publications):
www.hud.gov/offices/adm/hudclips/index.cfm

DOL Davis-Bacon and Related Acts Homepage:
http://www.dol.gov/whd/contracts/dbra.htm

DOL Regulations:
http://www.gpo.gov/fdsys/browse/collectionCfr.action?collectionCode=CFR

Davis-Bacon Wage Decisions:
www.wdol.gov

DOL Forms:
www.dol.gov/whd/programs/dbra/forms.htm

***Web addresses active as of January 2012**

Project Wage Rate Sheet	U.S. Department of Housing and Urban Development Office of Labor Relations	

Project Name:	Wage Decision Number/Modification Number:
Project Number:	Project County:

Work Classification	Basic Hourly Rate (BHR)	Fringe Benefits	Total Hourly Wage Rate	Laborers Fringe Benefits		$
Bricklayers			$	Group #	BHR	Total Wage
Carpenters			$			$
Cement Masons			$			$
Drywall Hangers			$			$
Electricians			$			$
Iron Workers			$			$
Painters			$	Operators Fringe Benefits:		$
Plumbers			$	Group #	BHR	Total Wage
Roofers			$			$
Sheet Metal Workers			$			$
Soft Floor Workers			$			$
Tapers			$			$
Tile Setters			$	Truck Drivers Fringe Benefits:		$
Other Classifications				Group #	BHR	Total Wage
			$			
			$			
			$			

Additional Classifications (HUD Form 4230-A)					
Work Classification	Basic Hourly Rate (BHR)	Fringe Benefits	Total Hourly Wage Rate	Date of HUD Submission to DOL	Date of DOL Approval
			$		
			$		
			$		

U.S. Department of Labor
Wage and Hour Division

PAYROLL

(For Contractor's Optional Use; See Instructions at www.dol.gov/whd/forms/wh347instr.htm)

Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number.

U.S. Wage and Hour Division
Rev. Dec. 2008

NAME OF CONTRACTOR ☐ OR SUBCONTRACTOR ☐ | ADDRESS | OMB No. 1215-0149 Expires 12/31/2011

PAYROLL NO.	FOR WEEK ENDING	PROJECT AND LOCATION	PROJECT OR CONTRACT NO.

(1) NAME AND INDIVIDUAL IDENTIFYING NUMBER (e.g., LAST FOUR DIGITS OF SOCIAL SECURITY NUMBER) OF WORKER	(2) NO. OF WITHHOLDING EXEMPTIONS	(3) WORK CLASSIFICATION	(4) DAY AND DATE — HOURS WORKED EACH DAY							(5) TOTAL HOURS	(6) RATE OF PAY	(7) GROSS AMOUNT EARNED	(8) DEDUCTIONS						(9) NET WAGES PAID FOR WEEK
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While completion of Form WH-347 is optional, it is mandatory for covered contractors and subcontractors performing work on Federally financed or assisted construction contracts to respond to the information collection contained in 29 C.F.R. §§ 3.3, 5.5(a). The Copeland Act (40 U.S.C. § 3145) contractors and subcontractors performing work on Federally financed or assisted construction contracts to "furnish weekly a statement with respect to the wages paid each employee during the preceding week." U.S. Department of Labor (DOL) regulations at 29 C.F.R. § 5.5(a)(3)(ii) require contractors to submit weekly a copy of all payrolls to the Federal agency contracting for or financing the construction project, accompanied by a signed "Statement of Compliance" indicating that the payrolls are correct and complete and that each laborer or mechanic has been paid not less than the proper Davis-Bacon prevailing wage rate for the work performed. DOL and Federal contracting agencies receive this information review the information to determine that employees have received legally required wages and fringe benefits.

Public Burden Statement

We estimate that it will take an average of 55 minutes to complete this collection, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments regarding these estimates or any other aspect of this collection, including suggestions for reducing this burden, send them to the Administrator, Wage and Hour Division, U.S. Department of Labor, Room S3502, 200 Constitution Avenue, N.W. Washington, D.C. 20210

over)

Date _____

I, _____ _____
(Name of Signatory Party) (Title)

do hereby state:

(1) That I pay or supervise the payment of the persons employed by

_____ on the
(Contractor or Subcontractor)

_____ that during the payroll period commencing on the
(Building or Work)

_____ day of _____, _____, and ending the _____ day of _____, _____,

all persons employed on said project have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said

_____ from the full
(Contractor or Subcontractor)

weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part 3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948, 63 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. § 3145), and described below

_____

_____

_____

_____

(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor

(4) That:

(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

☐ – in addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate programs for the benefit of such employees, except as noted in section 4(c) below

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

☐ – Each laborer or mechanic listed in the above referenced payroll has been paid, as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the contract, except as noted in section 4(c) below

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION

REMARKS

NAME AND TITLE	SIGNATURE

THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 231 OF TITLE 31 OF THE UNITED STATES CODE.

U.S. Department of Housing and Urban Development
Office of Departmental Operations and Coordination
Washington, DC 20410

Email: www.OfficeofLaborRelations@hud.gov

Labor Relations Desk Guide
LR01.DG





U.S. Department of Labor
Wage and Hour Division

PAYROLL

(For Contractor's Optional Use; See Instructions at www.dol.gov/whd/forms/wh347instr.htm)

Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number.

U.S. Wage and Hour Division
Rev. Dec. 2008

OMB No.: 1235-0008
Expires: 01/31/2015

NAME OF CONTRACTOR ☐ OR SUBCONTRACTOR ☐ | ADDRESS

PAYROLL NO. | FOR WEEK ENDING | PROJECT AND LOCATION | PROJECT OR CONTRACT NO.

(1) NAME AND INDIVIDUAL IDENTIFYING NUMBER (e.g., LAST FOUR DIGITS OF SOCIAL SECURITY NUMBER) OF WORKER	(2) NO. OF WITHHOLDING EXEMPTIONS	(3) WORK CLASSIFICATION	OT. OR ST.	(4) DAY AND DATE / HOURS WORKED EACH DAY	(5) TOTAL HOURS	(6) RATE OF PAY	(7) GROSS AMOUNT EARNED	(8) DEDUCTIONS: FICA	WITH-HOLDING TAX			OTHER	TOTAL DEDUCTIONS	(9) NET WAGES PAID FOR WEEK
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While completion of Form WH-347 is optional, it is mandatory for covered contractors and subcontractors performing work on Federally financed or assisted construction contracts to respond to the information collection contained in 29 C.F.R. §§ 3.3, 5.5(a). The Copeland Act (40 U.S.C. § 3145) contractors and subcontractors performing work on Federally financed or assisted construction contracts to "furnish weekly a statement with respect to the wages paid each employee during the preceding week." U.S. Department of Labor (DOL) regulations at 29 C.F.R. § 5.5(a)(3)(ii) require contractors to submit weekly a copy of all payrolls to the Federal agency contracting for or financing the construction project, accompanied by a signed "Statement of Compliance" indicating that the payrolls are correct and complete and that each laborer or mechanic has been paid not less than the proper Davis-Bacon prevailing wage rate for the work performed. DOL and federal contracting agencies receiving this information review the information to determine that employees have received legally required wages and fringe benefits.

Public Burden Statement

We estimate that is will take an average of 55 minutes to complete this collection, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments regarding these estimates or any other aspect of this collection, including suggestions for reducing this burden, send them to the Administrator, Wage and Hour Division, U.S. Department of Labor, Room S3502, 200 Constitution Avenue, N.W. Washington, D.C. 20210

(over)

Date _____

I, _____ _____
(Name of Signatory Party) (Title)

do hereby state:

(1) That I pay or supervise the payment of the persons employed by

_____ on the
(Contractor or Subcontractor)

_____; that during the payroll period commencing on the
(Building or Work)

_____ day of _____, _____, and ending the _____ day of _____, _____,

all persons employed on said project have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said

_____ from the full
(Contractor or Subcontractor)

weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part 3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948, 63 Start. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. § 3145), and described below:

_____

_____

_____

_____

(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:

(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

☐ – in addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate programs for the benefit of such employees, except as noted in section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

☐ – Each laborer or mechanic listed in the above referenced payroll has been paid, as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the contract, except as noted in section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION

REMARKS:

NAME AND TITLE	SIGNATURE

THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 231 OF TITLE 31 OF THE UNITED STATES CODE.

Federal Labor Standards Provisions

U.S. Department of Housing
and Urban Development
Office of Labor Relations

Applicability

The Project or Program to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

A. 1. (i) Minimum Wages. All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section l(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible, place where it can be easily seen by the workers.

(ii) (a) Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefor only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

(c) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

(d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(ii)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

2. Withholding. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work, all or part

of the wages required by the contract, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

3. (i) **Payrolls and basic records.** Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section l(b)(2)(B) of the Davis-bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5 (a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section l(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)

(ii) (a) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i). This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U.S. Government Printing Office, Washington, DC 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)

(b) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be maintained under 29 CFR 5.5 (a)(3)(i) and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(c) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph A.3.(ii)(b).

(d) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under subparagraph A.3.(i) available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. **Apprentices and Trainees.**

(i) **Apprentices.** Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the

journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under 29 CFR Part 5 shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract

6. Subcontracts. The contractor or subcontractor will insert in any subcontracts the clauses contained in subparagraphs 1 through 11 of this paragraph A and such other clauses as HUD or its designee may by appropriate instructions require, and a copy of the applicable prevailing wage decision, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this paragraph.

7. Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act Requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.

10. (i) Certification of Eligibility. By entering into this contract the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001. Additionally, U.S. Criminal Code, Section 1 01 0, Title 18, U.S.C., "Federal Housing Administration transactions", provides in part: "Whoever, for the purpose of . . . influencing in any way the action of such Administration..... makes, utters or publishes any statement knowing the same to be false..... shall be fined not more than $5,000 or imprisoned not more than two years, or both."

11. Complaints, Proceedings, or Testimony by Employees. No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer

B. Contract Work Hours and Safety Standards Act. The provisions of this paragraph B are applicable only where the amount of the prime contract exceeds $100,000. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in subpara-

graph (1) of this paragraph, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by the clause set forth in sub paragraph (1) of this paragraph.

(3) Withholding for unpaid wages and liquidated damages. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contract, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

C. Health and Safety. The provisions of this paragraph C are applicable only where the amount of the prime contract exceeds $100,000.

(1) No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

(2) The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act, 40 USC 3701 et seq.

(3) The Contractor shall include the provisions of this paragraph in every subcontract so that such provisions will be binding on each subcontractor. The Contractor shall take such action with respect to any subcontract as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

EMPLOYEE RIGHTS
UNDER THE DAVIS-BACON ACT
FOR LABORERS AND MECHANICS EMPLOYED ON FEDERAL OR FEDERALLY ASSISTED CONSTRUCTION PROJECTS

THE UNITED STATES DEPARTMENT OF LABOR WAGE AND HOUR DIVISION

PREVAILING WAGES — You must be paid not less than the wage rate listed in the Davis-Bacon Wage Decision posted with this Notice for the work you perform.

OVERTIME — You must be paid not less than one and one-half times your basic rate of pay for all hours worked over 40 in a work week. There are few exceptions.

ENFORCEMENT — Contract payments can be withheld to ensure workers receive wages and overtime pay due, and liquidated damages may apply if overtime pay requirements are not met. Davis-Bacon contract clauses allow contract termination and debarment of contractors from future federal contracts for up to three years. A contractor who falsifies certified payroll records or induces wage kickbacks may be subject to civil or criminal prosecution, fines and/or imprisonment.

APPRENTICES — Apprentice rates apply only to apprentices properly registered under approved Federal or State apprenticeship programs.

PROPER PAY — If you do not receive proper pay, or require further information on the applicable wages, contact the Contracting Officer listed below:

or contact the U.S. Department of Labor's Wage and Hour Division.

For additional information:

1-866-4-USWAGE

(1-866-487-9243) TTY: 1-877-889-5627

WHD U.S. Wage and Hour Division

WWW.WAGEHOUR.DOL.GOV

DERECHOS DEL EMPLEADO
BAJO LA LEY DAVIS-BACON
PARA OBREROS Y MECÁNICOS EMPLEADOS EN PROYECTOS DE CONSTRUCCIÓN FEDERAL O CON ASISTENCIA FEDERAL

LA SECCIÓN DE HORAS Y SUELDOS DEL DEPARTAMENTO DE TRABAJO DE EEUU

SALARIOS PREVALECIENTES No se le puede pagar menos de la tasa de pago indicada en la Decisión de Salarios Davis-Bacon fijada con este Aviso para el trabajo que Ud. desempeña.

SOBRETIEMPO Se le ha de pagar no menos de tiempo y medio de su tasa básica de pago por todas las horas trabajadas en exceso de 40 en una semana laboral. Existen pocas excepciones.

CUMPLIMIENTO Se pueden retener pagos por contratos para asegurarse que los obreros reciban los salarios y el pago de sobretiempo debidos, y se podría aplicar daños y perjuicios si no se cumple con las exigencias del pago de sobretiempo. Las cláusulas contractuales de Davis-Bacon permiten la terminación y exclusión de contratistas para efectuar futuros contratos federales hasta tres años. El contratista que falsifique los registros certificados de las nóminas de pago o induzca devoluciones de salarios puede ser sujeto a procesamiento civil o criminal, multas y/o encarcelamiento.

APRENDICES Las tasas de aprendices sólo se aplican a aprendices correctamente inscritos bajo programas federales o estatales aprobados.

PAGO APROPIADO Si Ud. no recibe el pago apropiado, o precisa de información adicional sobre los salarios aplicables, póngase en contacto con el Contratista Oficial que aparece abajo:

o póngase en contacto con la Sección de Horas y Sueldos del Departamento de Trabajo de EEUU.

Para obtener información adicional:

1-866-4-USWAGE

(1-866-487-9243) TTY: 1-877-889-5627

WWW.WAGEHOUR.DOL.GOV

WHD U.S. Wage and Hour Division

Equal Employment Opportunity is
THE LAW

Private Employers, State and Local Governments, Educational Institutions, Employment Agencies and Labor Organizations

Applicants to and employees of most private employers, state and local governments, educational institutions, employment agencies and labor organizations are protected under Federal law from discrimination on the following bases:

RACE, COLOR, RELIGION, SEX, NATIONAL ORIGIN
Title VII of the Civil Rights Act of 1964, as amended, protects applicants and employees from discrimination in hiring, promotion, discharge, pay, fringe benefits, job training, classification, referral, and other aspects of employment, on the basis of race, color, religion, sex (including pregnancy), or national origin. Religious discrimination includes failing to reasonably accommodate an employee's religious practices where the accommodation does not impose undue hardship.

DISABILITY
Title I and Title V of the Americans with Disabilities Act of 1990, as amended, protect qualified individuals from discrimination on the basis of disability in hiring, promotion, discharge, pay, fringe benefits, job training, classification, referral, and other aspects of employment. Disability discrimination includes not making reasonable accommodation to the known physical or mental limitations of an otherwise qualified individual with a disability who is an applicant or employee, barring undue hardship.

AGE
The Age Discrimination in Employment Act of 1967, as amended, protects applicants and employees 40 years of age or older from discrimination based on age in hiring, promotion, discharge, pay, fringe benefits, job training, classification, referral, and other aspects of employment.

SEX (WAGES)
In addition to sex discrimination prohibited by Title VII of the Civil Rights Act, as amended, the Equal Pay Act of 1963, as amended, prohibits sex discrimination in the payment of wages to women and men performing substantially equal work, in jobs that require equal skill, effort, and responsibility, under similar working conditions, in the same establishment.

GENETICS
Title II of the Genetic Information Nondiscrimination Act of 2008 protects applicants and employees from discrimination based on genetic information in hiring, promotion, discharge, pay, fringe benefits, job training, classification, referral, and other aspects of employment. GINA also restricts employers' acquisition of genetic information and strictly limits disclosure of genetic information. Genetic information includes information about genetic tests of applicants, employees, or their family members; the manifestation of diseases or disorders in family members (family medical history); and requests for or receipt of genetic services by applicants, employees, or their family members.

RETALIATION
All of these Federal laws prohibit covered entities from retaliating against a person who files a charge of discrimination, participates in a discrimination proceeding, or otherwise opposes an unlawful employment practice.

WHAT TO DO IF YOU BELIEVE DISCRIMINATION HAS OCCURRED
There are strict time limits for filing charges of employment discrimination. To preserve the ability of EEOC to act on your behalf and to protect your right to file a private lawsuit, should you ultimately need to, you should contact EEOC promptly when discrimination is suspected:
The U.S. Equal Employment Opportunity Commission (EEOC), 1-800-669-4000 (toll-free) or 1-800-669-6820 (toll-free TTY number for individuals with hearing impairments). EEOC field office information is available at www.eeoc.gov or in most telephone directories in the U.S. Government or Federal Government section. Additional information about EEOC, including information about charge filing, is available at www.eeoc.gov.

Employers Holding Federal Contracts or Subcontracts

Applicants to and employees of companies with a Federal government contract or subcontract are protected under Federal law from discrimination on the following bases:

RACE, COLOR, RELIGION, SEX, NATIONAL ORIGIN
Executive Order 11246, as amended, prohibits job discrimination on the basis of race, color, religion, sex or national origin, and requires affirmative action to ensure equality of opportunity in all aspects of employment.

INDIVIDUALS WITH DISABILITIES
Section 503 of the Rehabilitation Act of 1973, as amended, protects qualified individuals from discrimination on the basis of disability in hiring, promotion, discharge, pay, fringe benefits, job training, classification, referral, and other aspects of employment. Disability discrimination includes not making reasonable accommodation to the known physical or mental limitations of an otherwise qualified individual with a disability who is an applicant or employee, barring undue hardship. Section 503 also requires that Federal contractors take affirmative action to employ and advance in employment qualified individuals with disabilities at all levels of employment, including the executive level.

DISABLED, RECENTLY SEPARATED, OTHER PROTECTED, AND ARMED FORCES SERVICE MEDAL VETERANS
The Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended, 38 U.S.C. 4212, prohibits job discrimination and requires affirmative action to employ and advance in employment disabled veterans, recently separated veterans (within three years of discharge or release from active duty), other protected veterans (veterans who served during a war or in a campaign or expedition for which a campaign badge has been authorized), and Armed Forces service medal veterans (veterans who, while on active duty, participated in a U.S. military operation for which an Armed Forces service medal was awarded).

RETALIATION
Retaliation is prohibited against a person who files a complaint of discrimination, participates in an OFCCP proceeding, or otherwise opposes discrimination under these Federal laws.

Any person who believes a contractor has violated its nondiscrimination or affirmative action obligations under the authorities above should contact immediately:

The Office of Federal Contract Compliance Programs (OFCCP), U.S. Department of Labor, 200 Constitution Avenue, N.W., Washington, D.C. 20210, 1-800-397-6251 (toll-free) or (202) 693-1337 (TTY). OFCCP may also be contacted by e-mail at OFCCP-Public@dol.gov, or by calling an OFCCP regional or district office, listed in most telephone directories under U.S. Government, Department of Labor.

Programs or Activities Receiving Federal Financial Assistance

RACE, COLOR, NATIONAL ORIGIN, SEX
In addition to the protections of Title VII of the Civil Rights Act of 1964, as amended, Title VI of the Civil Rights Act of 1964, as amended, prohibits discrimination on the basis of race, color or national origin in programs or activities receiving Federal financial assistance. Employment discrimination is covered by Title VI if the primary objective of the financial assistance is provision of employment, or where employment discrimination causes or may cause discrimination in providing services under such programs. Title IX of the Education Amendments of 1972 prohibits employment discrimination on the basis of sex in educational programs or activities which receive Federal financial assistance.

INDIVIDUALS WITH DISABILITIES
Section 504 of the Rehabilitation Act of 1973, as amended, prohibits employment discrimination on the basis of disability in any program or activity which receives Federal financial assistance. Discrimination is prohibited in all aspects of employment against persons with disabilities who, with or without reasonable accommodation, can perform the essential functions of the job.

If you believe you have been discriminated against in a program of any institution which receives Federal financial assistance, you should immediately contact the Federal agency providing such assistance.

La igualdad de oportunidades de empleo es

LA LEY

Empleadores privados, gobiernos locales y estatales, instituciones educativas, agencias de empleo y organizaciones de trabajo

Los postulantes y empleados de la mayoría de los empleadores privados, los gobiernos locales y estatales, las instituciones educativas, las agencias de empleo y las organizaciones de trabajo están protegidos por la ley federal contra la discriminación en función de:

RAZA, COLOR, RELIGIÓN, SEXO, PROCEDENCIA

El Título VII de la Ley de Derechos Civiles (Civil Rights Act) de 1964, con sus modificaciones, protege a los postulantes y a los empleados contra la discriminación en lo que respecta a la contratación, los ascensos, los despidos, los pagos, las compensaciones adicionales, la capacitación laboral, la clasificación, las referencias y los demás aspectos del empleo, en función de raza, color, religión, sexo (incluidas las embarazadas) o procedencia. La discriminación religiosa se refiere a la falta de adaptación razonable a las prácticas religiosas de un empleado, siempre y cuando dicha adaptación no provoque una dificultad económica desmedida para la compañía.

DISCAPACIDAD

Los Títulos I y V de la Ley de Estadounidenses con Discapacidades (Americans with Disabilities Act) de 1990, con sus modificaciones, protege a las personas idóneas contra la discriminación por discapacidad en lo que respecta a la contratación, los ascensos, los despidos, los pagos, las compensaciones adicionales, la capacitación laboral, la clasificación, las referencias y los demás aspectos del empleo. La discriminación por discapacidad se refiere a la falta de adaptaciones razonables para las limitaciones físicas o mentales de una persona idónea que tiene una discapacidad y que es un postulante o un empleado, salvo que dichas adaptaciones provoquen una dificultad económica desmedida para la compañía.

EDAD

La Ley contra la Discriminación Laboral por Edad (Age Discrimination in Employment Act) de 1967, con sus modificaciones, protege a los postulantes y empleados de 40 años o más contra la discriminación por cuestiones de edad en lo que respecta a la contratación, los ascensos, los despidos, los pagos, las compensaciones adicionales, la capacitación laboral, la clasificación, las referencias y los demás aspectos del empleo.

SEXO (SALARIOS)

Además de lo establecido en el Título VII de la Ley de Derechos Civiles, con sus modificaciones, la Ley de Igualdad en las Remuneraciones (Equal Pay Act) de 1963, con sus modificaciones, también prohíbe la discriminación sexual en el pago de los salarios a las mujeres y los hombres que realicen básicamente el mismo trabajo, en empleos que requieran las mismas habilidades, esfuerzo y responsabilidad, en condiciones laborales similares, en el mismo establecimiento.

GENÉTICA

El Título II de la Ley de No Discriminación por Información Genética (Genetic Information Nondiscrimination Act, GINA) de 2008 protege a los postulantes y empleados contra la discriminación basada en la información genética en lo que respecta a la contratación, los ascensos, los despidos, los pagos, las compensaciones adicionales, la capacitación laboral, la clasificación, las referencias y los demás aspectos del empleo. La GINA también limita la adquisición de información genética por parte de los empleadores y condiciona de manera estricta su divulgación. La información genética incluye las pruebas genéticas de los postulantes, empleados o integrantes de sus familias, la manifestación de enfermedades o trastornos de los miembros de la familia (historia médica familiar) y las solicitudes o la recepción de servicios genéticos por parte de los postulantes, empleados o integrantes de sus familias.

REPRESALIAS

Todas estas leyes federales prohíben a las entidades cubiertas que tomen represalias en contra de una persona que presenta una cargo por discriminación, participa en un procedimiento por discriminación o que, de algún otro modo, se opone a una práctica laboral ilícita.

QUÉ DEBE HACER SI CONSIDERA QUE ES VÍCTIMA DE LA DISCRIMINACIÓN

Existen plazos estrictos para presentar cargos por discriminación laboral. A fin de preservar la capacidad de la Comisión para la Igualdad de Oportunidades en el Empleo (Equal Employment Opportunity Commission, EEOC) de actuar en representación suya y proteger su derecho a iniciar una demanda privada si fuese necesario en última instancia, debe comunicarse con la EEOC apenas sospeche que se produjo un hecho de discriminación: Comisión para la Igualdad de Oportunidades en el Empleo de los Estados Unidos, 1-800-669-4000 (línea gratuita) o 1-800-669-6820 (línea gratuita TTY para las personas con problemas auditivos). Puede encontrar información sobre las sucursales de la EEOC en www.eeoc.gov o en la mayoría de las guías telefónicas en la sección Gobierno Federal o Gobierno de los Estados Unidos. También puede obtener información adicional sobre la EEOC, incluso cómo presentar un cargo, en www.eeoc.gov.

Empleadores que tengan contratos o subcontratos con el gobierno federal

Los postulantes y empleados de las compañías que tengan un contrato o subcontrato con el gobierno federal están protegidos por la ley federal contra la discriminación en función de:

RAZA, COLOR, RELIGIÓN, SEXO, PROCEDENCIA
El Decreto Ejecutivo 11246, con sus modificaciones, prohíbe la discriminación en el trabajo en función de raza, color, religión, sexo o procedencia y exige que se implementen acciones afirmativas para garantizar la igualdad de oportunidades en todos los aspectos laborales.

PERSONAS CON DISCAPACIDADES
La Sección 503 de la Ley de Rehabilitación *(Rehabilitation Act)* de 1973, con sus modificaciones, protege a las personas idóneas contra la discriminación por discapacidad en lo que respecta a la contratación, los ascensos, los despidos, los pagos, las compensaciones adicionales, la capacitación laboral, la clasificación, las referencias y los demás aspectos del empleo. La discriminación por discapacidad se refiere a la falta de adaptaciones razonables para las limitaciones físicas o mentales de una persona idónea que tiene una discapacidad y que es un postulante o un empleado, salvo que dichas adaptaciones provoquen una dificultad económica desmedida para la compañía. La Sección 503 también exige que los contratistas federales implementen acciones afirmativas para emplear y avanzar en el empleo de personas idóneas con discapacidades en todos los niveles laborales, incluido el nivel ejecutivo.

VETERANOS DISCAPACITADOS, RECIÉN RETIRADOS, BAJO PROTECCIÓN Y CON MEDALLA POR SERVICIO A LAS FUERZAS ARMADAS
La Ley de Asistencia a la Readaptación de Veteranos de Vietnam *(Vietnam Era Veterans' Readjustment Assistance Act)* de 1974, con sus modificaciones, 38 U.S.C. 4212, prohíbe la discriminación laboral y exige que se implementen acciones afirmativas para emplear y avanzar en el empleo de los veteranos discapacitados, recién retirados (en el plazo de los tres años posteriores a la baja o al cese del servicio activo), otros veteranos bajo protección (los veteranos que prestaron servicio durante una guerra o en una campaña o expedición para la cual se les autorizó una insignia de campaña) y los veteranos con medalla por servicio a las Fuerzas Armadas (aquellos que durante el servicio activo, participaron en una operación militar de los Estados Unidos por la cual se los reconoció con una medalla por servicio a las Fuerzas Armadas).

REPRESALIAS
Quedan prohibidas las represalias contra una persona que presenta una demanda por discriminación, participa en un procedimiento de la Oficina de Programas de Cumplimiento de Contratos Federales (*Office of Federal Contract Compliance Programs*, OFCCP) o que se oponga, de algún otro modo, a la discriminación según estas leyes federales.

Toda persona que considere que un contratista violó sus obligaciones de acción afirmativa o no discriminación según las autoridades mencionadas anteriormente debe comunicarse de inmediato con:

La Oficina de Programas de Cumplimiento de Contratos Federales (OFCCP), Departamento de Trabajo de los Estados Unidos, 200 Constitution Avenue, N.W., Washington, D.C. 20210, teléfono 1-800-397-6251 (línea gratuita) o (202) 693-1337 (línea TTY). También puede enviar un mensaje de correo electrónico a la OFCCP (OFCCP-Public@dol.gov) o bien, llamar a una de sus oficinas regionales o del distrito, las cuales aparecen en la mayoría de las guías telefónicas en la sección Gobierno de los Estados Unidos, Departamento de Trabajo.

Programas o actividades que reciben asistencia financiera federal

RAZA, COLOR, PROCEDENCIA, SEXO
Además de las protecciones establecidas en el Título VII de la Ley de Derechos Civiles de 1964 y sus modificaciones, el Título VI de dicha ley, con sus modificaciones, prohíbe la discriminación por raza, color o procedencia en los programas o las actividades que reciban asistencia financiera federal. La discriminación laboral está cubierta por el Título VI si el objetivo principal de la asistencia financiera es brindar empleo, o si la discriminación laboral provoca o puede provocar discriminación cuando se proporcionan los servicios de dichos programas. El Título IX de las Reformas Educativas de 1972 prohíbe la discriminación laboral según el sexo en los programas o las actividades educativas que reciben asistencia financiera federal.

PERSONAS CON DISCAPACIDADES
La Sección 504 de la Ley de Rehabilitación de 1973, con sus modificaciones, prohíbe la discriminación laboral por discapacidad en cualquier programa o actividad que reciba asistencia financiera federal. Queda prohibida la discriminación en todos los aspectos laborales contra las personas discapacitadas que, con o sin adaptaciones razonables, pueden desempeñar las funciones esenciales del trabajo.

Si cree que ha sido víctima de discriminación en algún programa de una institución que reciba asistencia financiera federal, debe comunicarse de inmediato con la agencia federal que brinda dicha asistencia.

Versiones utilizables de la EEOC 9/02 y la OFCCP 8/08 con el Suplemento 11/09

EEOC-P/E-1 (Revisado 11/09)

EMPLOYEE RIGHTS AND RESPONSIBILITIES
UNDER THE FAMILY AND MEDICAL LEAVE ACT

Basic Leave Entitlement
FMLA requires covered employers to provide up to 12 weeks of unpaid, job-protected leave to eligible employees for the following reasons:

- For incapacity due to pregnancy, prenatal medical care or child birth;
- To care for the employee's child after birth, or placement for adoption or foster care;
- To care for the employee's spouse, son or daughter, or parent, who has a serious health condition; or
- For a serious health condition that makes the employee unable to perform the employee's job.

Military Family Leave Entitlements
Eligible employees with a spouse, son, daughter, or parent on active duty or call to active duty status in the National Guard or Reserves in support of a contingency operation may use their 12-week leave entitlement to address certain qualifying exigencies. Qualifying exigencies may include attending certain military events, arranging for alternative childcare, addressing certain financial and legal arrangements, attending certain counseling sessions, and attending post-deployment reintegration briefings.

FMLA also includes a special leave entitlement that permits eligible employees to take up to 26 weeks of leave to care for a covered servicemember during a single 12-month period. A covered servicemember is a current member of the Armed Forces, including a member of the National Guard or Reserves, who has a serious injury or illness incurred in the line of duty on active duty that may render the servicemember medically unfit to perform his or her duties for which the servicemember is undergoing medical treatment, recuperation, or therapy; or is in outpatient status; or is on the temporary disability retired list.

Benefits and Protections
During FMLA leave, the employer must maintain the employee's health coverage under any "group health plan" on the same terms as if the employee had continued to work. Upon return from FMLA leave, most employees must be restored to their original or equivalent positions with equivalent pay, benefits, and other employment terms.

Use of FMLA leave cannot result in the loss of any employment benefit that accrued prior to the start of an employee's leave.

Eligibility Requirements
Employees are eligible if they have worked for a covered employer for at least one year, for 1,250 hours over the previous 12 months, and if at least 50 employees are employed by the employer within 75 miles.

Definition of Serious Health Condition
A serious health condition is an illness, injury, impairment, or physical or mental condition that involves either an overnight stay in a medical care facility, or continuing treatment by a health care provider for a condition that either prevents the employee from performing the functions of the employee's job, or prevents the qualified family member from participating in school or other daily activities.

Subject to certain conditions, the continuing treatment requirement may be met by a period of incapacity of more than 3 consecutive calendar days combined with at least two visits to a health care provider or one visit and a regimen of continuing treatment, or incapacity due to pregnancy, or incapacity due to a chronic condition. Other conditions may meet the definition of continuing treatment.

Use of Leave
An employee does not need to use this leave entitlement in one block. Leave can be taken intermittently or on a reduced leave schedule when medically necessary. Employees must make reasonable efforts to schedule leave for planned medical treatment so as not to unduly disrupt the employer's operations. Leave due to qualifying exigencies may also be taken on an intermittent basis.

Substitution of Paid Leave for Unpaid Leave
Employees may choose or employers may require use of accrued paid leave while taking FMLA leave. In order to use paid leave for FMLA leave, employees must comply with the employer's normal paid leave policies.

Employee Responsibilities
Employees must provide 30 days advance notice of the need to take FMLA leave when the need is foreseeable. When 30 days notice is not possible, the employee must provide notice as soon as practicable and generally must comply with an employer's normal call-in procedures.

Employees must provide sufficient information for the employer to determine if the leave may qualify for FMLA protection and the anticipated timing and duration of the leave. Sufficient information may include that the employee is unable to perform job functions, the family member is unable to perform daily activities, the need for hospitalization or continuing treatment by a health care provider, or circumstances supporting the need for military family leave. Employees also must inform the employer if the requested leave is for a reason for which FMLA leave was previously taken or certified. Employees also may be required to provide a certification and periodic recertification supporting the need for leave.

Employer Responsibilities
Covered employers must inform employees requesting leave whether they are eligible under FMLA. If they are, the notice must specify any additional information required as well as the employees' rights and responsibilities. If they are not eligible, the employer must provide a reason for the ineligibility.

Covered employers must inform employees if leave will be designated as FMLA-protected and the amount of leave counted against the employee's leave entitlement. If the employer determines that the leave is not FMLA-protected, the employer must notify the employee.

Unlawful Acts by Employers
FMLA makes it unlawful for any employer to:

- Interfere with, restrain, or deny the exercise of any right provided under FMLA;
- Discharge or discriminate against any person for opposing any practice made unlawful by FMLA or for involvement in any proceeding under or relating to FMLA.

Enforcement
An employee may file a complaint with the U.S. Department of Labor or may bring a private lawsuit against an employer.

FMLA does not affect any Federal or State law prohibiting discrimination, or supersede any State or local law or collective bargaining agreement which provides greater family or medical leave rights.

FMLA section 109 (29 U.S.C. § 2619) requires FMLA covered employers to post the text of this notice. Regulations 29 C.F.R. § 825.300(a) may require additional disclosures.

For additional information:
1-866-4US-WAGE (1-866-487-9243) TTY: 1-877-889-5627
WWW.WAGEHOUR.DOL.GOV

U.S. Wage and Hour Division

EMPLOYEE RIGHTS
UNDER THE FAIR LABOR STANDARDS ACT

THE UNITED STATES DEPARTMENT OF LABOR WAGE AND HOUR DIVISION

FEDERAL MINIMUM WAGE

$7.25 PER HOUR

BEGINNING JULY 24, 2009

OVERTIME PAY

At least 1½ times your regular rate of pay for all hours worked over 40 in a workweek.

CHILD LABOR

An employee must be at least **16** years old to work in most non-farm jobs and at least **18** to work in non-farm jobs declared hazardous by the Secretary of Labor.

Youths **14** and **15** years old may work outside school hours in various non-manufacturing, non-mining, non-hazardous jobs under the following conditions:

No more than

- **3** hours on a school day or **18** hours in a school week;
- **8** hours on a non-school day or **40** hours in a non-school week.

Also, work may not begin before **7 a.m.** or end after **7 p.m.**, except from June 1 through Labor Day, when evening hours are extended to **9 p.m.** Different rules apply in agricultural employment.

TIP CREDIT

Employers of "tipped employees" must pay a cash wage of at least $2.13 per hour if they claim a tip credit against their minimum wage obligation. If an employee's tips combined with the employer's cash wage of at least $2.13 per hour do not equal the minimum hourly wage, the employer must make up the difference. Certain other conditions must also be met.

ENFORCEMENT

The Department of Labor may recover back wages either administratively or through court action, for the employees that have been underpaid in violation of the law. Violations may result in civil or criminal action.

Employers may be assessed civil money penalties of up to $1,100 for each willful or repeated violation of the minimum wage or overtime pay provisions of the law and up to $11,000 for each employee who is the subject of a violation of the Act's child labor provisions. In addition, a civil money penalty of up to $50,000 may be assessed for each child labor violation that causes the death or serious injury of any minor employee, and such assessments may be doubled, up to $100,000, when the violations are determined to be willful or repeated. The law also prohibits discriminating against or discharging workers who file a complaint or participate in any proceeding under the Act.

ADDITIONAL INFORMATION

- Certain occupations and establishments are exempt from the minimum wage and/or overtime pay provisions.
- Special provisions apply to workers in American Samoa and the Commonwealth of the Northern Mariana Islands.
- Some state laws provide greater employee protections; employers must comply with both.
- The law requires employers to display this poster where employees can readily see it.
- Employees under 20 years of age may be paid $4.25 per hour during their first 90 consecutive calendar days of employment with an employer.
- Certain full-time students, student learners, apprentices, and workers with disabilities may be paid less than the minimum wage under special certificates issued by the Department of Labor.

For additional information:

1-866-4-USWAGE (1-866-487-9243) TTY: 1-877-889-5627

WHD U.S. Wage and Hour Division

WWW.WAGEHOUR.DOL.GOV

U.S. Department of Labor | Wage and Hour Division

WHD Publication 1088 (Revised July 2009)

DERECHOS DEL EMPLEADO
BAJO LA LEY DE NORMAS JUSTAS DE TRABAJO

SECCIÓN DE HORAS Y SUELDOS DEL DEPARTAMENTO DE TRABAJO DE EEUU

SALARIO MÍNIMO FEDERAL

$7.25 POR HORA

A PARTIR DEL 24 DE JULIO DE 2009

PAGO DE SOBRETIEMPO

Por lo menos tiempo y medio (1½) de su tasa regular de pago por todas las horas trabajadas en exceso de 40 en una semana laboral.

EMPLEO DE MENORES DE EDAD

El empleado ha de tener por lo menos **16** años de edad para trabajar en la mayoría de los trabajos no agrícolas y por lo menos tener **18** años para trabajar en trabajos no agrícolas declarados arriesgados por el/la Secretario(a) de Trabajo.

Jóvenes de **14** y **15** años de edad pueden trabajar fuera de horas escolares en varios trabajos que no sean en fabricación, minería, o arriesgados, bajo las siguientes condiciones:

No más de

- **3** horas en un día escolar o **18** horas en una semana escolar;
- **8** horas en un día no escolar o **40** horas en una semana no escolar.

Además, el trabajo no puede empezar antes de las **7 de la mañana** o terminar después de las **7 de la tarde** salvo del primero de junio hasta el Día de Labor, cuando las horas de la tarde se extienden hasta las **9 de la noche**. Se aplican reglas distintas al empleo agrícola.

CRÉDITO POR PROPINAS

Empresarios de empleados que reciben propinas han de pagar un salario en efectivo de por lo menos $2.13 por hora si declaran un crédito por propina contra sus obligaciones hacia el salario mínimo. Si las propinas del empleado combinadas con el salario en efectivo que paga el empresario de por lo menos $2.13 por hora no equivalen al salario mínimo por hora, el empresario ha de suplir la diferencia. También se tiene que cumplir con otras condiciones.

CUMPLIMIENTO

El Departamento de Trabajo puede recuperar salarios atrasados administrativamente o mediante acción legal en los tribunales, para empleados a los cuales se les haya pagado por debajo y en violación de la ley.

A los empresarios se les puede imponer penas pecuniarias civiles de hasta $1,100 por cada infracción intencional o repetida de las provisiones de la ley del pago del salario mínimo y del pago de sobretiempo y hasta $11,000 por cada empleado que sea empleado en violación de las provisiones de la ley sobre el empleo de menores. Adicionalmente, se puede imponer una pena pecuniaria civil de hasta $50,000 por cada infracción de las provisiones sobre el empleo de menores si causa la muerte o una lesión seria de un empleado menor de edad, y se pueden doblar dichas avaluaciones, hasta $100,000, cuando se determinan que las infracciones son intencionales o repetidas. La ley también prohibe la discriminación o el despido del trabajador por haber presentado una denuncia o por participar en cualquier procedimiento bajo la Ley.

INFORMACIÓN ADICIONAL

- Ciertas ocupaciones y ciertos establecimientos están exentos de las provisiones de pago de salario mínimo y de sobretiempo.
- Se aplican provisiones especiales a trabajadores de Samoa Americana y de la Comunidad de las Islas Marianas del Norte.
- Algunas leyes estatales proveen más protecciones al empleado; el empresario ha de cumplir con ambas.
- La ley exige que los empresarios pongan este cartel donde los empleados lo puedan ver fácilmente.
- A los empleados menores de 20 años de edad se les puede pagar menos de $4.25 por hora durante los primeros 90 días civiles consecutivos de empleo con un empresario.
- Se les puede pagar menos del salario mínimo bajo ciertos certificados especiales emitidos por el Departamento de Trabajo a ciertos estudiantes de tiempo completo, estudiantes aprendices y a trabajadores con impedimentos.

Para información adicional:

1-866-4-USWAGE

(1-866-487-9243) TTY: 1-877-889-5627

WHD
U.S. Wage and Hour Division

WWW.WAGEHOUR.DOL.GOV

WHSCA Rev. and Rep. 2009

CONSTRUCTION IDENTIFICATION SIGN:

Size, 4' – 0" X 8' – 0"
Letters to be brown with beige background

Construction Identification Signs To Be Erected Prior To Beginning of Actual Construction

Wood for Signs Shall Be ¾" Waterproofing Resin Bonded Exterior Grade Plywood (Douglas Fir Plywood Association of Equal)

Payment for Furnishing, Erecting, Maintenance and Removing Construction Identification Signs Will Not Be made Directly. Such Costs Shall be Included in the Overall Bid Submitted.

To Be Erected as Indicated on title Sheet.

Your Tax Dollars at Work
Hidalgo County Pct. 4
JOSEPH PALACIOS, Commissioner

"Concrete Walking Trail at San Carlos CRC and Sunflower Park

Hidalgo County Commissioner's Court

RAMON GARCIA	-	COUNTY JUDGE
A.C. CUELLAR	-	COMMISSIONER PCT #1
EDDIE CANTU	-	COMMISSIONER PCT #2
JOE M. FLORES	-	COMMISSIONER PCT #3
JOSEPH PALACIOS	-	COMMISSIONER PCT #4

Project Contractor: _____

LeFEVRE ENGINEERING & MANAGEMENT CONSULTING, LLC
612 Nolana, Suite 520
McAllen, Texas 78504
Tel. 956.687.LEMC
Fax. 956.687.5363
Texas Registered Engineering Firm F-11722

ASAGO CONSTRUCTION
"QUALITY AND SERVICE"

RAUL IGLESIAS
Manger

ASAGO, LLC
2113 Pecos
Mission, TX 78572
(956)607-0741 office
(956)585-7040 fax
iglesias@hiline.net

October 1, 2008

Mr. Javier Hinojosa, P.E.
Javier Hinojosa Engineering
4126 E. Dove Ave.
Mcallen, TX 78504

RE: Hidalgo County Colonia Access Program
Drainage and Paving Construction at El Sol Subdivision Unit # 1 & 2
Contract No.: C-CAP-08-021-7-01

Mr. Hinojosa:

The following is the list of suppliers used in the above mentioned projects as per the County's request:

Rio Valley Pipe	7301 W. Exp. 83 Mission, TX 78572	(956)-584-5770

If you have any questions, please call me at (956) 607-0741

Best regards,
Raul Iglesias
Raul Iglesias, Manger

Exhibit E-H

PARTIAL/FINAL WAIVER OF LEIN

THE STATE OF TEXAS

COUNTY OF_____

The undersigned contracted with _____
_____to furnish_____
in connection with certain improvements to real property located in_____
County, Texas, and owned by_____
Which improvements are described as follows:

_____
_____
_____

In consideration of Pay Estimate No _____in the amount of_____
_____DOLLAR($_____)and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged and confessed, the undersigned does hereby waive and release any mechanic's lien or materialmen's lien or claims of lien that the undersigned has or hereafter has on the above mentioned real property on account of any labor performed or materials furnished or to be furnished or labor performed and materials furnished by the undersigned pursuant to the above-mentioned contract or any constitutional lien that the undersigned may have.

Undersigned hereby guarantees that all bids for labor performed and/or materials furnished in the erection and construction of such improvements on the Property have been fully paid and satisfied and Undersigned does further guarantee that if for any reason a lien or liens are filed for material or labor against said Property arising out of any bills for material or labor in connection with the erection or construction of said improvements thereon, Undersigned will obtain a settlement of such lien or liens and a proper release thereof shall be obtained.

_____
CONTRACTOR

BY:_____
TITLE

SWORN TO AND SUBSCRIBED BEFORE ME, on this the_____day of_____,20__to certify which witness my hand and seal of office.

_____
NOTARY PUBLIC in and for the State of Texas

My Commission Expires: _____

Prevailing Wage Rates
Certification Statement

Date _____

Project Name _____ **CSJ#** _____

Contractor _____ **Application#** _____

I, _____ **do hereby state:**
(Name of Project Director)

1. That a payroll (form WH-347 or similar form) was submitted for contract work Performed for the period covered by the attached application.
2. That a statement of compliance(form WH-347 or similar form) was submitted with the payroll.
3. The certified payroll complies with the classifications and minimum wage rates Stipulated in the contract.
4. That a minimum of one interview was conducted with laborers using Form HUD-11 or similar.

_____
Signature

CONTRACTOR'S AFFIDAVIT OF PAYMENTS OF DEBTS AND CLAIMS

PROJECT: **PROJECT NO.**
OWNER:
CONTRACTOR:
ENGINEER:

The Contactor in accordance with the Contract Documents, hereby certifies that, except as listed below, all obligations for all materials and equipment furnished, for all work labor, and services performed, and for all known indebtedness and claims against the Contractor for damages arising in any manner in connection with the performance of the Contract referenced above for which the Owner or his property might in any way be held responsible have been paid in full or have otherwisse been satisfied in full.

EXCEPTIONS: (If none, write "NONE". The Contractor shall furnish a bond acceptable to the Owner for each exception.)

CONTRACTOR

By

Title

Subscribed and sworn to before me this day of

Notary Public:

My Commission Expires:

CERTIFICATE OF CONSTRUCTION COMPLETION

THIS IS TO CERTIFY THAT ON _____ DAY OF _____A FINAL INSPECTION was made of the project herein described.

CONTRACT

CONTRACT DATE: _____
OWNER: _____
CONSTRUCTION CONTRACTOR: _____
OF THE CITY OF _____ STATE OF _____

PROJECT DESCRIPTION

CONSTRUCTION OF _____

CONTRACT NO: _____
Located in or near the City/Precinct Of _____

THIS IS TO CERTIFY"

1. That the work has been completed in accordance with the plans and specifications and all addenda, change orders, supplemental agreements thereto, and with the following exceptions:

   _____

2. That the sum of _____, deducted from the final payment of the Contractor is a fair and equitable settlement for the foregoing except work.

3. That the contractor has presented a "Certificate of Release" starting under oath, that all claims arising out of the performance of work have been fulfilled, and the Owner is released from all claims arising under or by virtue of said contract.

4. That the CONTRACTOR has presented in behalf of itself and its sureties, satisfactory evidence that it is bound to repair, replace, and make good any faulty workmanship and/or materials discovered in the work within a period of one year from this date, as provided in said contract.

5. Amount of Original Contract _____
   Present Amount of Contract _____
   Total Amount of earned to Date _____
   Less: previous payments _____
   Balance _____
   Authorized deductions _____
   AMOUNTY OF FINAL PAYMENT _____

CONTRACTOR'S AFFIDAVIT OF RELEASE OF LIENS

PROJECT: **PROJECT NO.**
OWNER:
CONTRACTOR:
ENGINEER:

The Contractor, in accordance with the Contract Documents, and in consideration for the full and final payment to the Contractor for all services in connection with the project, does hereby waive and release any and all liens, or any and all claims to liens which the Contractor may have on or affecting the project as a result of its contract(s) for the Project or for performing labor and/or furnishing materials in any way connected with the construction of any aspect of the project. The Contractor further certifies and warrants that all subcontractors of labor and/or materials for the Project, except as listed below, have been paid in full for all labor and/or materials supplied to, for through or at the direct or indirect request of the Contractor prior to, through and including the date of this affidavit.

EXCEPTIONS: (If none, write "NONE". The Contractor shall furnish a bond acceptable to the Owner for each exception.)

CONTRACTOR

By

Title

Subscribed and sworn to before me this day of

Notary Public:

My Commission Expires:

Form L

6. That the final payment in the amount of _____ _____ is now due and payable.

_____
Engineer's Signature & License #

CONCURRED BY:

_____
Contractor's Name

By:_____

Title: _____

CONCURRED BY:

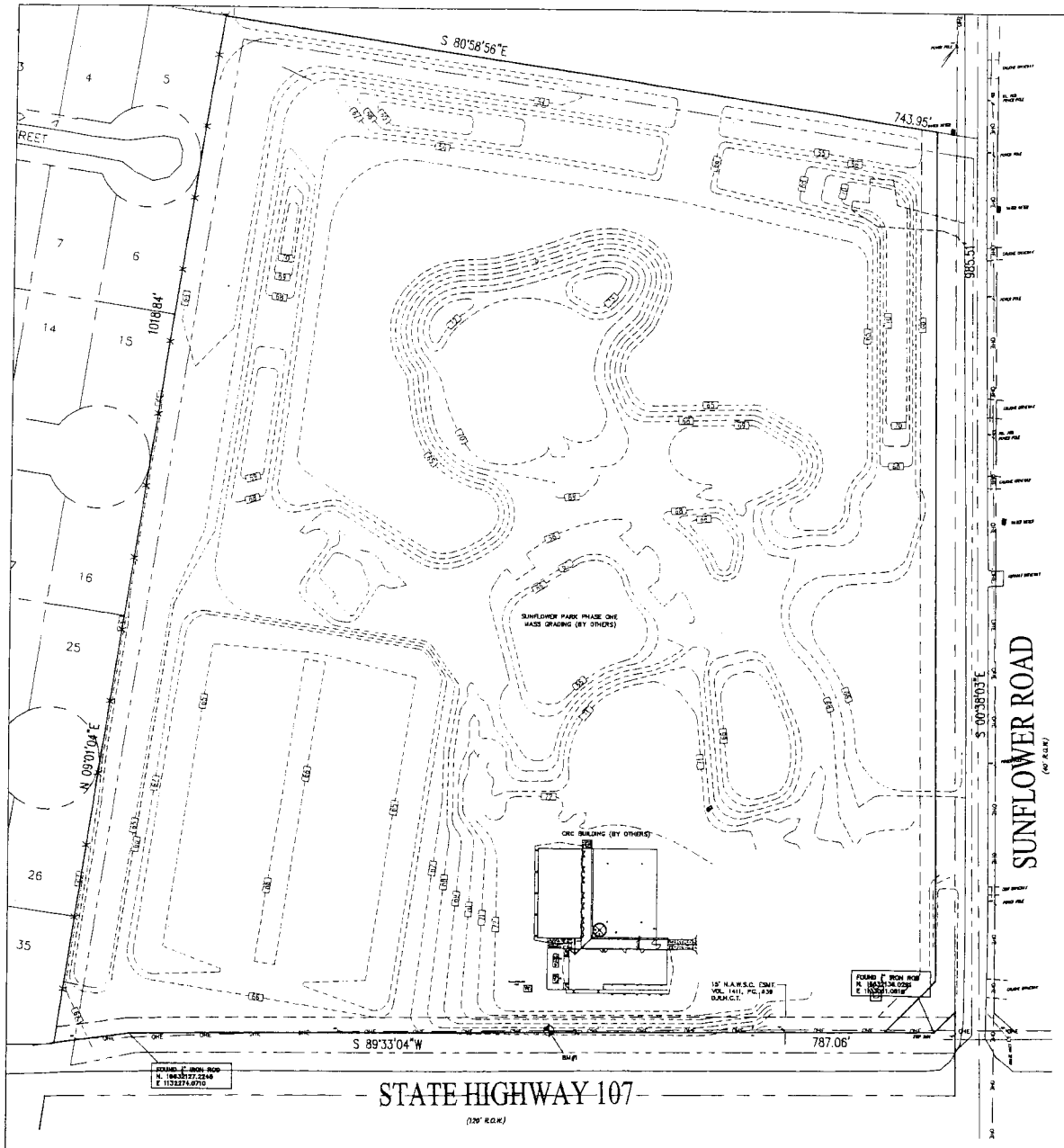
_____
City/Precinct

By:_____

Title: _____

Division X

Construction Plans



50 0 50

GRAPHIC SCALE 1"=50'

GENERAL CONSTRUCTION NOTES

1. CONTRACTOR SHALL CONTACT LEFEVRE ENGINEERING & MANAGEMENT CONSULTING (956-687-5363) 48 HOURS PRIOR TO START OF ANY CONSTRUCTION WITHIN PROJECT SITE.
2. CONTRACTOR TO NOTIFY ALL UTILITY COMPANIES WITHIN THE CONSTRUCTION AREA 48 HOURS PRIOR TO EXCAVATION NEAR THEIR UTILITIES.
3. CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF EXISTING FACILITIES PRIOR TO CONSTRUCTION OF PROPOSED FACILITIES (NO SEPARATE PAY). ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF LEMC IN WRITING PRIOR TO CONSTRUCTION. ANY DAMAGE TO EXISTING FACILITIES INCURRED AS A RESULT OF THIS CONSTRUCTION OPERATION WILL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE.
4. CONTRACTOR TO OBTAIN ALL CONSTRUCTION PERMITS NOT SUPPLIED BY OWNER AT HIS EXPENSE PRIOR TO COMMENCEMENT OF WORK.
5. CONTRACTOR SHALL GIVE NOTICE TO ALL AUTHORIZED INSPECTORS, SUPERINTENDENTS, OR PERSONS IN CHARGE OF PRIVATE AND PUBLIC UTILITIES OR RAILROADS AFFECTED BY HIS OPERATIONS PRIOR TO COMMENCEMENT OF WORK. CONTRACTOR SHALL ASSURE HIMSELF THAT ALL CONSTRUCTION PERMITS HAVE BEEN OBTAINED PRIOR TO COMMENCEMENT OF WORK. REQUIRED PERMITS THAT CAN ONLY BE ISSUED TO CONTRACTOR WILL BE OBTAINED AT HIS EXPENSE.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ADEQUATE DRAINAGE AT ALL TIMES DURING CONSTRUCTION OF PROPOSED FACILITIES. NATURAL GROUND ADJACENT TO UTILITY TRENCH EXCAVATION TO BE CLEARED AND GRUBBED PRIOR TO PLACEMENT OF EXCESS TRENCH MATERIAL. DE-WATERING OF THE TRENCH MAY BE REQUIRED DURING THE INSTALLATION OF THE IMPROVEMENTS AND FACILITIES/STRUCTURES. SAID DE-WATERING SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST AND REFLECTED IN THE UNIT BID PRICES FOR VARIOUS ITEMS LISTED IN THE PROPOSAL.
7. CONTRACTOR IS RESPONSIBLE FOR CLEANING MUD AND/OR DIRT TRACKED ON TO EXISTING STREETS BY HIS WORKMEN'S, SUPPLIER'S, OR SUBCONTRACTOR'S VEHICLES. STREETS MUST BE CLEANED WITHIN 2 HOURS OF WHEN THE TRACKING OCCURS. NO SEPARATE PAY.
8. RETESTING OF ALL UTILITIES AND ACCEPTANCE BY OWNER SUBSEQUENT TO THE PAVEMENT CONSTRUCTION WILL BE THE UTILITY CONTRACTOR'S RESPONSIBILITY. NO SEPARATE PAY.
9. WHERE CONTRACTOR'S WORK AND/OR EQUIPMENT CAUSES AN OBSTRUCTION TO TRAFFIC, CONTRACTOR SHALL PROVIDE AND INSTALL TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH PART IV OF THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (TEXAS M.U.U.C.D., MOST RECENT EDITION AS REVISED) DURING CONSTRUCTION. A WRITTEN TRAFFIC CONTROL PLAN SHALL BE SUBMITTED PRIOR TO CONSTRUCTION FOR REVIEW BY THE ENGINEER & OTHER APPROPRIATE PERSONS.
10. LOCATION OF EXISTING UNDERGROUND UTILITIES AND SERVICE LINES (WATER, SEWER, GAS, TELEPHONE, ELECTRICAL, ETC.) ARE DETERMINED FROM AVAILABLE RECORDS AND ARE APPROXIMATE. CONTRACTOR TO LOCATE LINES AND/OR OBSTRUCTIONS AHEAD OF EXCAVATION.
11. ANY SOIL WORKINGS THE CONTRACTOR REQUIRES ARE TO BE DONE BY THE CONTRACTOR AT HIS EXPENSE.
12. OVERHEAD LINES MAY EXIST ON THE PROPERTY. CLEARLY VISIBLE LINES ARE NOT MARKED, AND CONTRACTOR TO NOTE THEIR LOCATION PRIOR TO CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH & SAFETY CODE, FORBIDS ALL ACTIVITIES IN WHICH PERSONS OR OBJECTS MAY COME WITHIN SIX (6) FEET OF LINE OVERHEAD HIGH VOLTAGE LINES. CONTRACTORS AND OWNERS ARE LEGALLY RESPONSIBLE FOR SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY.
13. CONTRACTOR TO MAKE ARRANGEMENTS WITH THE APPROPRIATE UTILITY COMPANY FOR SECURING POLES, IF NECESSARY, WHILE CONSTRUCTION PASSES BY POLES. COSTS OF SECURING POLES WILL BE PAID FOR BY THE CONTRACTOR, NO SEPARATE PAY.
14. CONSTRUCTION STAKING (ALIGNMENT AND GRADE) TO BE PROVIDED BY THE CONTRACTOR AT NO SEPARATE PAY.
15. SURPLUS EXCAVATED MATERIAL SHALL BE REMOVED AND DISPOSED OF OFF SITE AS DIRECTED BY THE ENGINEER. IF THE ENGINEER NOTIFIES THE CONTRACTOR THAT THE OWNER DOES NOT HAVE USE FOR THIS MATERIAL, THE SURPLUS MATERIAL BECOMES THE PROPERTY OF THE CONTRACTOR, AND IT IS HIS RESPONSIBILITY TO DISPOSE OF THE MATERIAL.
16. ALL WORK SHALL BE DONE IN ACCORDANCE WITH APPLICABLE LOCAL REQUIREMENTS.
17. CONTRACTOR SHALL PROTECT EXISTING UNDERGROUND FACILITIES DURING INSTALLATION OF PROPOSED WORK.
18. PAVED SURFACES SHALL BE PROTECTED FROM DAMAGE FROM TRACKED EQUIPMENT.
19. IRON RODS DISTURBED DURING CONSTRUCTION TO BE REPLACED BY REGISTERED PUBLIC LAND SURVEYOR TO ORIGINAL PROPERTY CORNER AT NO SEPARATE PAY.
20. WORK PERFORMED UNDER THIS CONTRACT IS GOVERNED BY REQUIREMENTS OF SEVERAL PUBLIC, GOVERNMENTAL, AND PRIVATE ENTITIES. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF GOVERNING ENTITIES.
21. TOPOGRAPHIC SURVEY PERFORMED BY HIDALGO COUNTY PLANNING DEPARTMENT-- JUNE 2013

BENCHMARKS:

1 NAIL IN POWER POLE
ELEVATION: 68.37'

CONTRACTOR SHALL CONTACT THE FOLLOWING ENTITIES 48 HOURS PRIOR TO CONSTRUCTION:	
TEXAS ONE CALL:	1-800-245-4545
HC PCT 4:	956-381-3112
TXDOT:	956-702-6331
TEXAS GAS SERVICE:	956-444-3938
AT&T:	956-279-1985
NORTH ALAMO WSC:	956-383-1618

STATE OF TEXAS
WESLEY REMINGTON LEFEVRE
102200
LICENSED
PROFESSIONAL ENGINEER
5/19/16

EXIST. CONDITION AND SURVEY CONTROL PLAN

SCALE: 1:50'

PROJECT #: 201307
DRAWN BY: HG
CHECKED BY: WRL
REVISION:
1.
2.
3.
4.

PRECINCT NO. 4 - PARKS, RECREATIONAL FACILITY IMPROVEMENTS PROJECT (SUNFLOWER PARK)

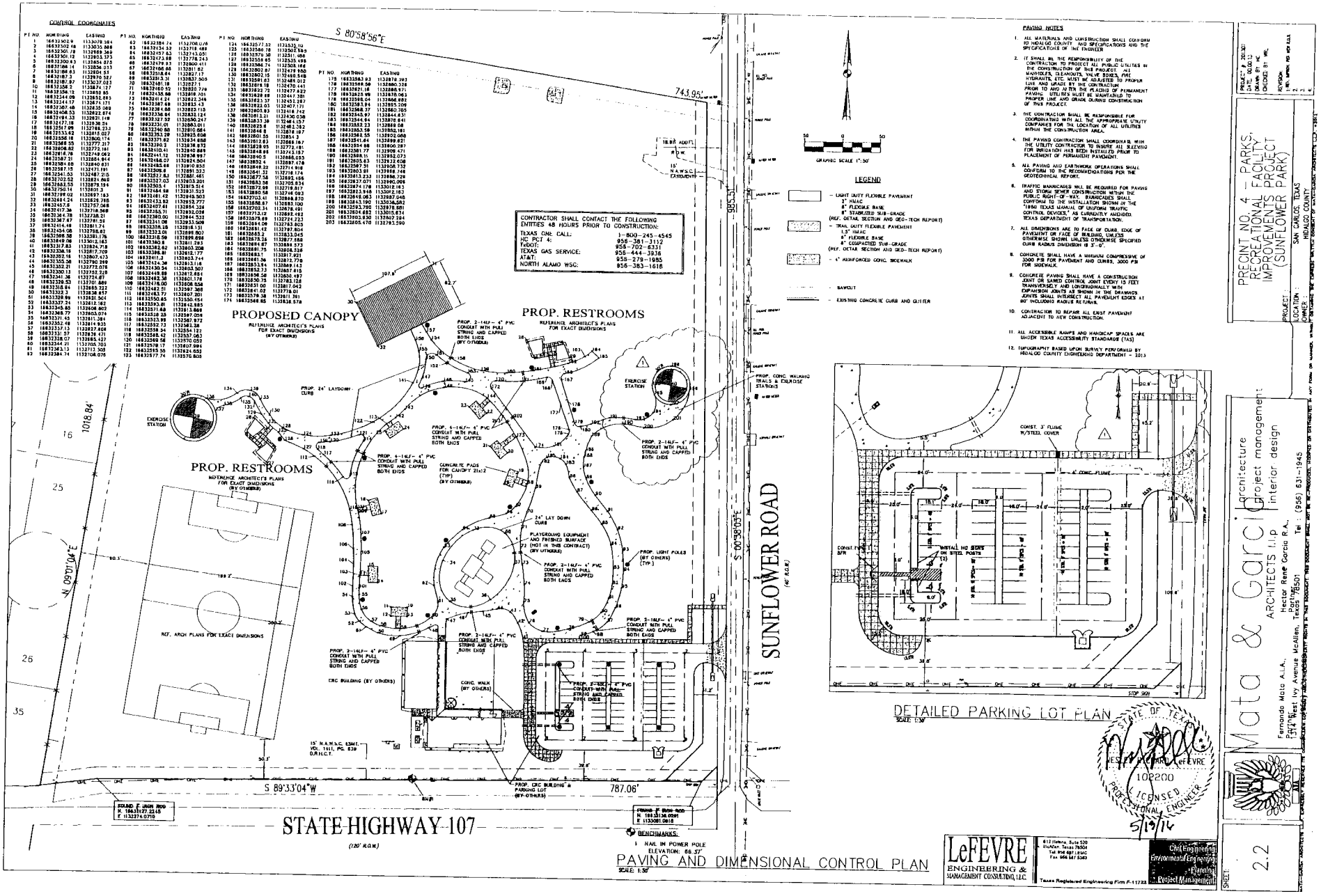
PROJECT: SAN CARLOS, TEXAS
LOCATION: HIDALGO COUNTY
OWNER:

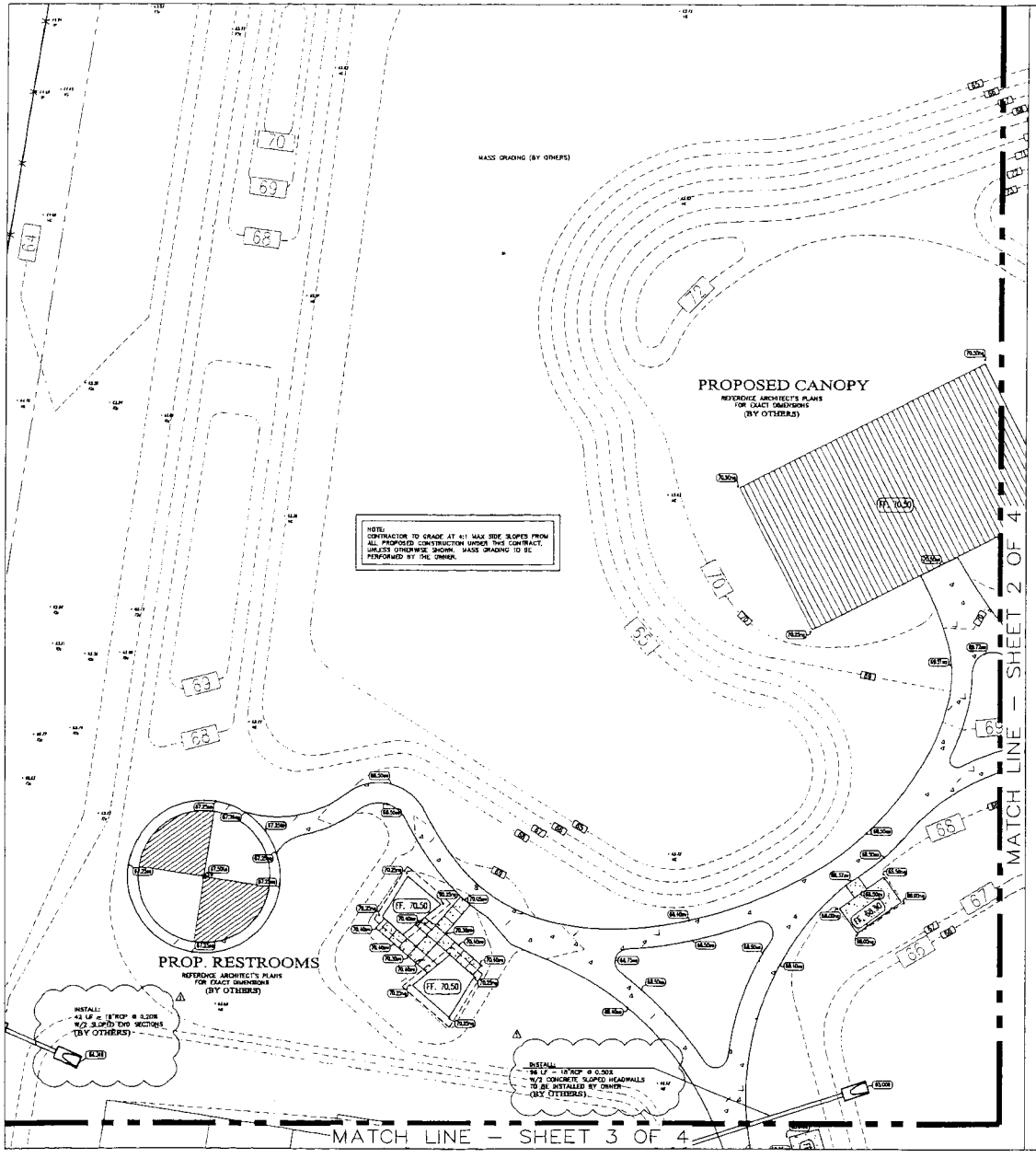
Mata & Garcia
architecture
project management
interior design
ARCHITECTS II.p
Fernando Mata A.I.A.
Hector Rene Garcia R.A.
Partner
511 West Ivy Avenue McAllen, Texas 78501
Tel: (956) 631-1945

LeFEVRE
ENGINEERING & MANAGEMENT CONSULTING, LLC
612 Hebbronville, Suite 520
McAllen, Texas 78503
Tel. 956.687.LEMC
Fax. 956.687.5363
Texas Registered Engineering Firm F-11222
Civil Engineering
Environmental Engineering
Planning
Project Management

SHEET: 2.1

THESE PLANS ARE THE PROPERTY OF MATA & GARCIA ARCHITECTS II.p AND ARE NOT TO BE USED IN WHOLE OR IN PART FOR ANY OTHER PROJECT WITHOUT THE WRITTEN CONSENT OF MATA & GARCIA ARCHITECTS II.p


CONTROL COORDINATES
PT NO. NORTHING EASTING
S 80°58'56"E
743.95'
PROPOSED CANOPY
REFERENCE ARCHITECT'S PLANS FOR EXACT DIMENSIONS (BY OTHERS)
PROP. RESTROOMS
REFERENCE ARCHITECT'S PLANS FOR EXACT DIMENSIONS (BY OTHERS)
PROP. RESTROOMS
REFERENCE ARCHITECT'S PLANS FOR EXACT DIMENSIONS (BY OTHERS)
CONTRACTOR SHALL CONTACT THE FOLLOWING ENTITIES 48 HOURS PRIOR TO CONSTRUCTION:
TEXAS ONE CALL: 1-800-245-4545
HC PCT 4: 956-381-3112
TxDOT: 956-702-6331
TEXAS GAS SERVICE: 956-444-3936
AT&T: 956-279-1985
NORTH ALAMO WSC: 956-383-1618
PAVING NOTES
1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO HIDALGO COUNTY AND SPECIFICATIONS AND THE SPECIFICATIONS OF THE ENGINEER.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL PUBLIC UTILITIES IN THE CONSTRUCTION OF THIS PROJECT. ALL MANHOLES, CLEANOUTS, VALVE BOXES, FIRE HYDRANTS, ETC. MUST BE ADJUSTED TO PROPER GRADE BY THE CONTRACTOR PRIOR TO AND AFTER THE PLACING OF PERMANENT PAVING. UTILITIES MUST BE MAINTAINED TO PROPER LINE AND GRADE DURING CONSTRUCTION OF THIS PROJECT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH ALL THE APPROPRIATE UTILITY COMPANIES FOR THE LOCATION OF ALL UTILITIES WITHIN THE CONSTRUCTION AREA.
4. THE PAVING CONTRACTOR SHALL COORDINATE WITH THE UTILITY CONTRACTOR TO INSURE ALL SLEEVING FOR IRRIGATION HAS BEEN INSTALLED PRIOR TO PLACEMENT OF PERMANENT PAVEMENT.
5. ALL PAVING AND EARTHWORK OPERATIONS SHALL CONFORM TO THE RECOMMENDATIONS FOR THE GEOTECHNICAL REPORT.
6. TRAFFIC BARRICADES WILL BE REQUIRED FOR PAVING AND STORM SEWER CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY. BARRICADES SHALL CONFORM TO THE INSTALLATION SHOWN IN THE TXDOT TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AS CURRENTLY AMENDED. TEXAS DEPARTMENT OF TRANSPORTATION.
7. ALL DIMENSIONS ARE TO FACE OF CURB, EDGE OF PAVEMENT OR FACE OF BUILDING, UNLESS OTHERWISE SHOWN UNLESS OTHERWISE SPECIFIED CURB RADIUS DIMENSION IS 2'-0".
8. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE OF 3000 PSI FOR PAVEMENT AND CURBS, 3000 PSI FOR SIDEWALK.
9. CONCRETE PAVING SHALL HAVE A CONSTRUCTION JOINT OR SAWED CONTROL JOINT EVERY 15 FEET TRANSVERSELY AND LONGITUDINALLY WITH EXPANSION JOINTS AS SHOWN IN THE DRAWINGS. JOINTS SHALL INTERSECT ALL PAVEMENT EDGES AT 90° INCLUDING RADIUS RETURNS.
10. CONTRACTOR TO REPAIR ALL EXIST PAVEMENT ADJACENT TO NEW CONSTRUCTION.
11. ALL ACCESSIBLE RAMPS AND HANDICAP SPACES ARE UNDER TEXAS ACCESSIBILITY STANDARDS (TAS)
12. TOPOGRAPHY BASED UPON SURVEY PERFORMED BY HIDALGO COUNTY ENGINEERING DEPARTMENT - 2013
LEGEND
- LIGHT DUTY FLEXIBLE PAVEMENT 2" HMAC 8" FLEXIBLE BASE 8" STABILIZED SUB-GRADE (REF. DETAIL SECTION AND GEO-TECH REPORT)
- TRAIL DUTY FLEXIBLE PAVEMENT 1.5" HMAC 6" FLEXIBLE BASE 8" COMPACTED SUB-GRADE (REF. DETAIL SECTION AND GEO-TECH REPORT)
- 4" REINFORCED CONC. SIDEWALK
- SAWCUT
- EXISTING CONCRETE CURB AND GUTTER
GRAPHIC SCALE 1":50'
SUNFLOWER ROAD (60' R.O.W.)
STATE HIGHWAY 107 (120' R.O.W.)
S 89°33'04"W
787.06'
N 09°01'04"E
1018.84'
S 00°26'05"E
985.15'
DETAILED PARKING LOT PLAN
SCALE: 1:50'
PAVING AND DIMENSIONAL CONTROL PLAN
SCALE: 1:50'
BENCHMARKS:
1 NAIL IN POWER POLE
ELEVATION: 86.27'
PROJECT: PRECINCT NO. 4 - PARKS, RECREATIONAL FACILITY IMPROVEMENTS PROJECT (SUNFLOWER PARK)
LOCATION: SAN CARLOS, TEXAS
OWNER: HIDALGO COUNTY
Mata & Garcia architecture project management interior design
ARCHITECTS L.L.P.
Fernando Mata A.I.A. Hector René Garcia R.A.
1217 West Ivy Avenue McAllen, Texas 78501
Tel: (956) 631-1945
LeFEVRE ENGINEERING & MANAGEMENT CONSULTING, LLC
612 Historic Suite 500 McAllen, Texas 78504
Tel: 956 687 1866 Fax: 956 687 5363
Texas Registered Engineering Firm F-11733
Civil Engineering Environmental Engineering Planning Project Management
STATE OF TEXAS
JESSE R. LEFEVRE
100200
LICENSED
PROFESSIONAL ENGINEER
5/19/14
SHEET: 2.2



GRAPHIC SCALE 1" :20'

LEGEND

- 97.00 — MASS GRADING CONTOUR
- 103 — PROPOSED CONTOUR
- 99.00xx — PROPOSED SPOT ELEVATION
  - xx = ABBREVIATED DESIGNATORS
  - NG NATURAL GROUND
  - TC TOP OF CURB
  - G GUTTER
  - TG TOP OF GRATE
  - FF FINISHED FLOOR
  - FL FLOW LINE
  - SW SIDEWALK
  - EA EDGE OF ASPHALT
  - TA TOP OF ASPHALT
  - TW TOP OF WALL
  - BW BOTTOM OF WALL
- PROPOSED FLOW DIRECTION
- 38.50 — EXISTING SPOT ELEVATION

GRADING NOTES:

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE PLANS AND SPECIFICATIONS, EXCEPT AS NOTED HEREIN AND APPROVED BY THE COUNTY.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRENCH SAFETY REQUIREMENTS IN ACCORDANCE WITH CITY STANDARDS, TEXAS LAW, AND O.S.H.A. STANDARDS FOR ALL EXCAVATION IN EXCESS OF FIVE FEET IN DEPTH.

3. THE LOCATION OF ALL UTILITIES LOCATED ON THESE PLANS ARE TAKEN FROM EXISTING PUBLIC RECORDS. THE EXACT LOCATION AND ELEVATION OF ALL PUBLIC UTILITIES MUST BE DETERMINED BY THE CONTRACTOR. IT SHALL BE THE DUTY OF THE CONTRACTOR TO ASCERTAIN WHETHER ANY ADDITIONAL FACILITIES OTHER THAN THOSE SHOWN ON THE PLANS MAY BE PRESENT.

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5. DRAINAGE SHOULD BE MAINTAINED AWAY FROM THE FOUNDATIONS, BOTH DURING AND AFTER CONSTRUCTION.

6. BACKFILL FOR UTILITY LINES SHOULD BE CAREFULLY PLACED SO THAT THEY WILL BE STABLE. WHERE UTILITY LINES PASS THROUGH THE PARKING LOT, THE TOP 4' SHOULD BE COMPACTED SIMILARLY TO THE REMAINDER OF THE LOT. UTILITY DITCHES SHOULD BE VISUALLY INSPECTED DURING THE EXCAVATION PROCESS TO ENSURE THE UNDESIRABLE FILL IS NOT USED.

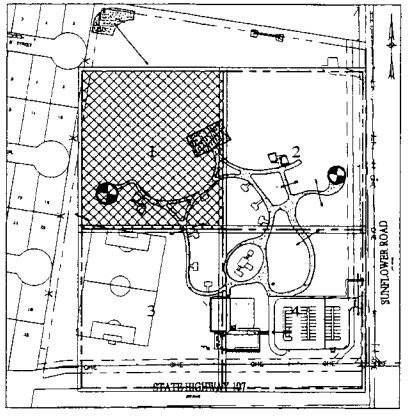
7. ALL EARTHWORK OPERATIONS SHALL CONFORM TO THE RECOMMENDATIONS PER THE GEO-TECHNICAL REPORT.

8. ALL PROPOSED SPOT SHOTS ARE GUTTER/TOP OF PAVEMENT/FINISHED GRADE ELEVATIONS UNLESS OTHERWISE SPECIFIED.

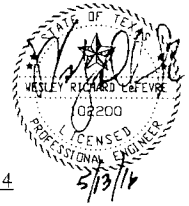
9. UPON COMPLETION OF CONSTRUCTION ALL DISTURBED AREAS SHALL BE SEEDED IN ACCORDANCE WITH SPECIFICATION.

CONTRACTOR SHALL CONTACT THE FOLLOWING ENTITIES 48 HOURS PRIOR TO CONSTRUCTION:

TEXAS ONE CALL:	1-800-245-4545
HC PCT 4:	956-381-3132
TxDOT:	956-702-6331
TEXAS GAS SERVICE:	956-444-3936
AT&T:	956-279-1985
NORTH ALAMO WSC:	956-383-1616



KEY MAP
SCALE: NTS



GRADING AND DRAINAGE PLAN 1/4

SCALE: 1:20'

LeFEVRE ENGINEERING & MANAGEMENT CONSULTING, LLC
512 Nolana, Suite 520
McAllen, Texas 78504
Tel. 956.687.LEAC
Fax. 956.687.5363
Texas Registered Engineering Firm F-11795
Civil Engineering
Environmental Engineering
Planning
Project Management

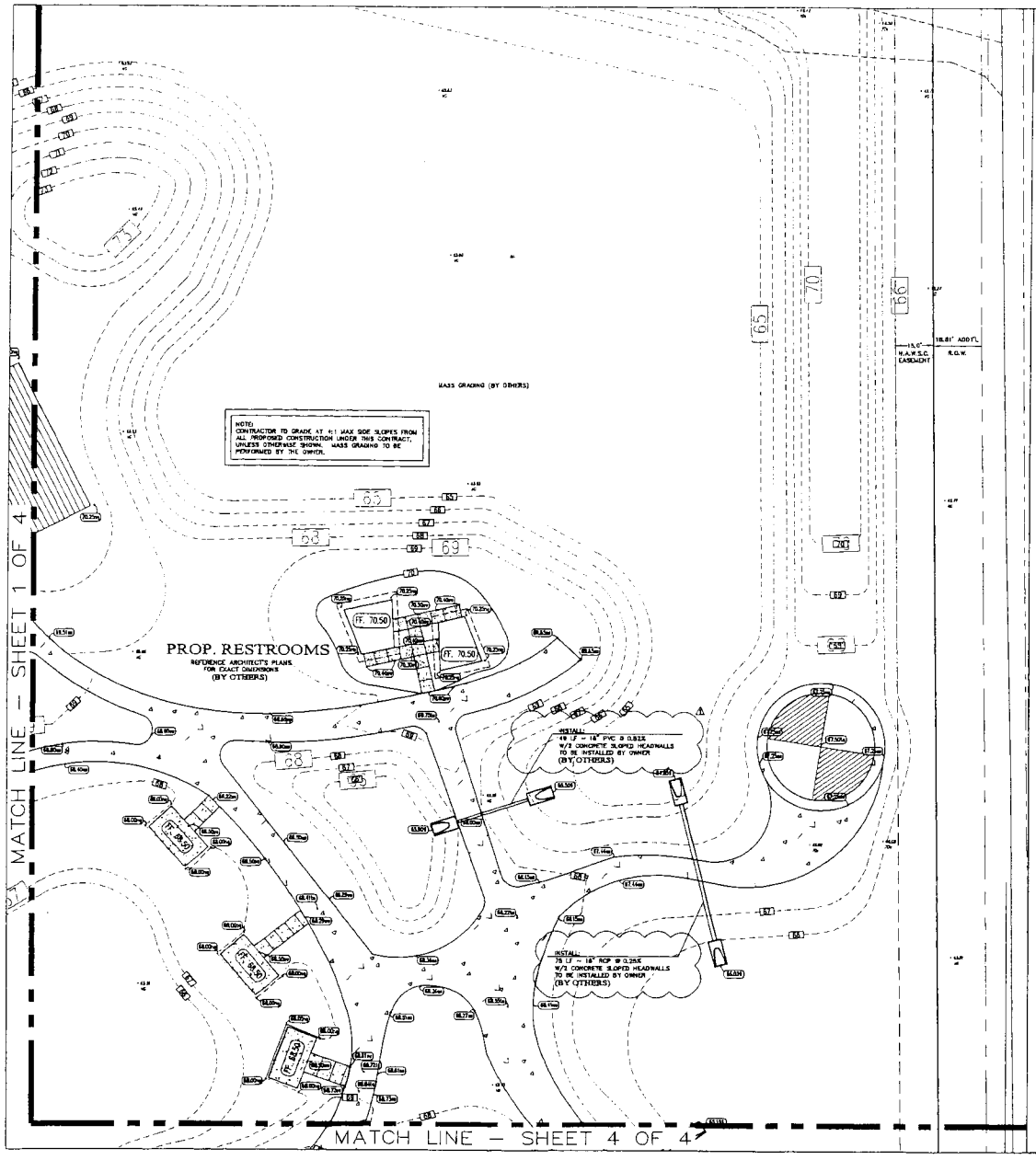
PROJECT #: 10.107
DATE: 5.13.14
DRAWN BY: MG
CHECKED BY: WRL
REVISION:
1.
2.
3.
4.

PRECINCT NO. 4 - PARKS, RECREATIONAL FACILITY IMPROVEMENTS PROJECT (SUNFLOWER PARK)

PROJECT: SAN CARLOS, TEXAS
LOCATION: HIDALGO COUNTY
AREA:

Mata & Garcia architecture project management interior design
ARCHITECTS L.L.P.
Fernando Mata A.I.A.
Hector Rene Garcia R.A.
1311 West Ivy Avenue McAllen, Texas 78501
Tel.: (956) 631-1945

SHEET: 2.3



GRAPHIC SCALE 1" = 20'

LEGEND

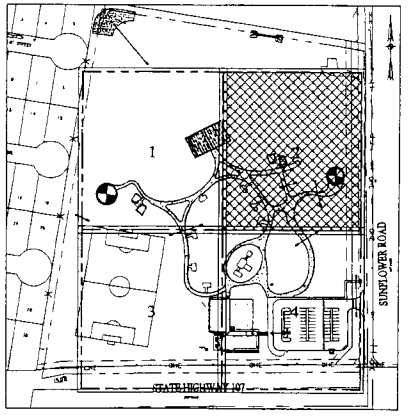
- 97.0' – MASS GRADING CONTOUR
- 103 – PROPOSED CONTOUR
- 00.00xx – PROPOSED SPOT ELEVATION
  - xx = ABBREVIATED DESIGNATORS
  - NG NATURAL GROUND
  - TC TOP OF CURB
  - G GUTTER
  - TG TOP OF GRATE
  - FF FINISHED FLOOR
  - FL FLOW LINE
  - SW SIDEWALK
  - EA EDGE OF ASPHALT
  - TA TOP OF ASPHALT
  - TW TOP OF WALL
  - BW BOTTOM OF WALL
- PROPOSED FLOW DIRECTION
- 38.50 – EXISTING SPOT ELEVATION

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TEXAS ONE CALL:	1-800-245-4545
HIC PCT 4:	956-381-3112
TxDOT:	956-702-6331
TEXAS GAS SERVICE:	956-444-3938
AT&T:	956-279-1985
NORTH ALAMO WSC:	956-383-1618



KEY MAP
SCALE: NTS

GRADING AND DRAINAGE PLAN 2/4
SCALE: 1:20'

STATE OF TEXAS
LESLIE CHARLES LeFEVRE
102200
LICENSED
PROFESSIONAL ENGINEER
5/13/14

LeFEVRE ENGINEERING & MANAGEMENT CONSULTING, LLC.
612 Historic, Suite 320
Weslaco, Texas 78596
Tel. 956.687.LEVC
Fax. 956.687.5363
Civil Engineering
Environmental Engineering
Planning
Project Management
Texas Registered Engineering Firm F-11722

PROJECT # 201307
DATE: 3/26/13
DRAWN BY: HG
CHECKED BY: MRL

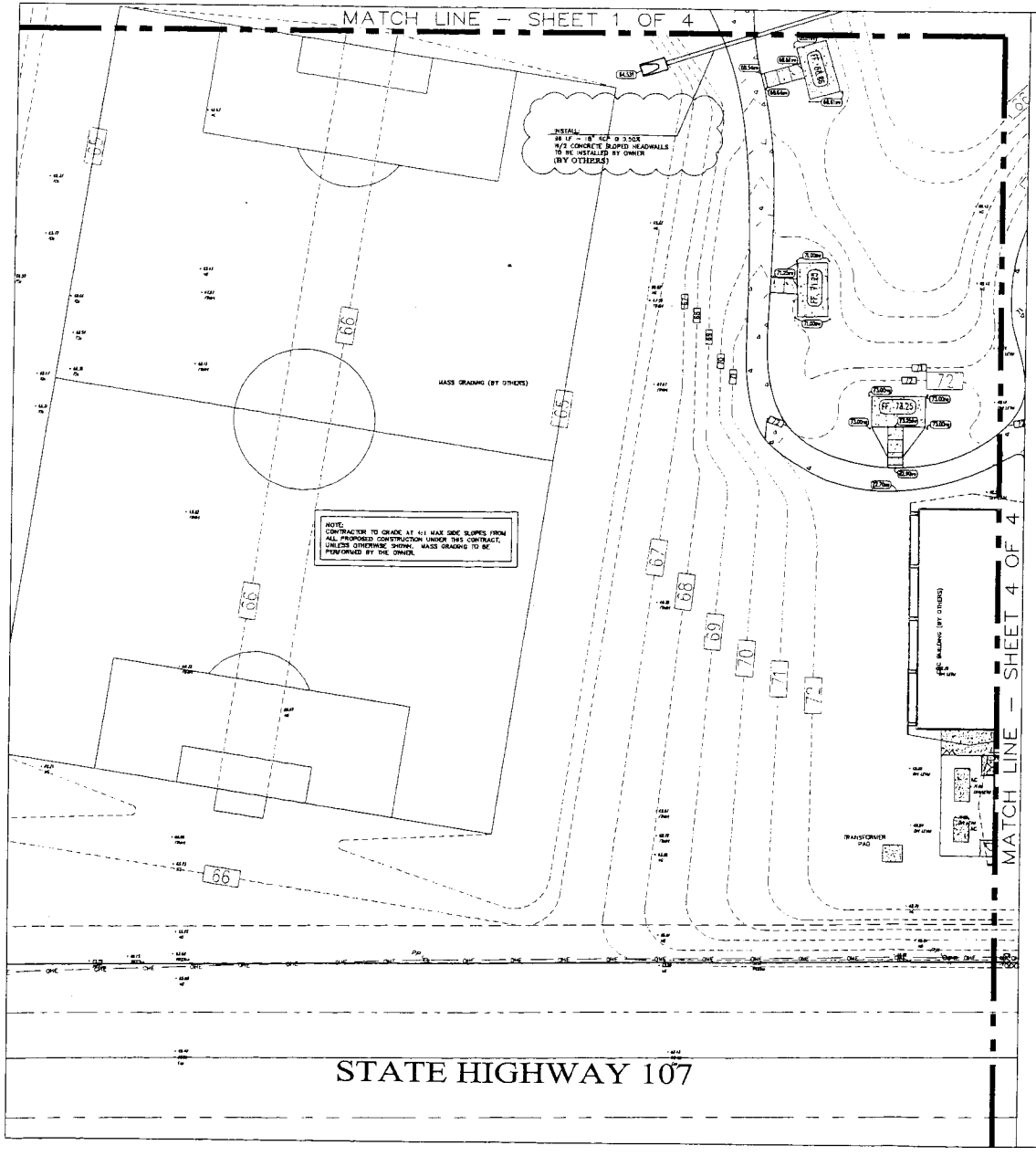
REVISION
1. Rev. Paving Plans
2.
3.
4.

PRECINCT NO. 4 – PARKS, RECREATIONAL FACILITY IMPROVEMENTS PROJECT (SUNFLOWER PARK)

PROJECT: SAN CARLOS, TEXAS
LOCATION: HIDALGO COUNTY
OWNER:

Mata & Garcia architecture project management interior design
ARCHITECTS L.L.P.
Fernando Mata A.I.A., Hector Rene Garcia R.A.
1314 West Ivy Avenue McAllen, Texas 78501 Tel.: (956) 631-1945

SHEET: 2.4





LEGEND

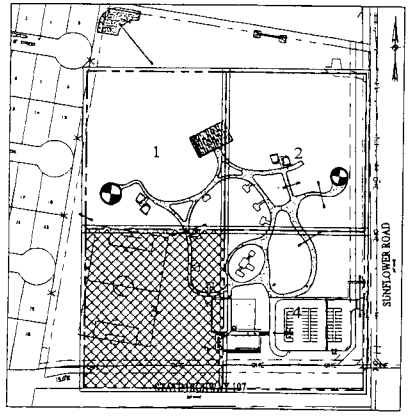
- 97.00 – MASS GRADING CONTOUR
- 101 – PROPOSED CONTOUR
- 100.00TW – PROPOSED SPOT ELEVATION
- TW – ABBREVIATED DESIGNATORS
  - NG NATURAL GROUND
  - TC TOP OF CURB
  - G GUTTER
  - TG TOP OF GRATE
  - FF FINISHED FLOOR
  - FL FLOW LINE
  - SW SIDEWALK
  - EA EDGE OF ASPHALT
  - TA TOP OF ASPHALT
  - TW TOP OF WALL
  - BW BOTTOM OF WALL
- PROPOSED FLOW DIRECTION
- K 38.50 – EXISTING SPOT ELEVATION

GRADING NOTES:

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HC PCT 4:	956-381-3112
TxDOT:	956-702-6331
TEXAS GAS SERVICE:	956-444-3838
AT&T:	956-279-1985
NORTH ALAMO WSC:	956-383-1618



KEY MAP
SCALE: NTS

STATE OF TEXAS
RENE GARCIA LEFEVRE
103200
LICENSED
PROFESSIONAL ENGINEER
5/13/16

GRADING AND DRAINAGE PLAN 3/4
SCALE: 1:20'

LeFEVRE ENGINEERING & MANAGEMENT CONSULTING, LLC
612 Fortuna, Suite 520
McAllen, Texas 78504
Tel. 956.687.1346
Fax. 956 687 5363
Texas Registered Engineering Firm F-11722
Civil Engineering
Environmental Engineering
Planning
Project Management

PROJECT # 20167
DATE: 04.04.16
DRAWN BY: MG
CHECKED BY: MRL
REVISION
1.
2.
3.
4.

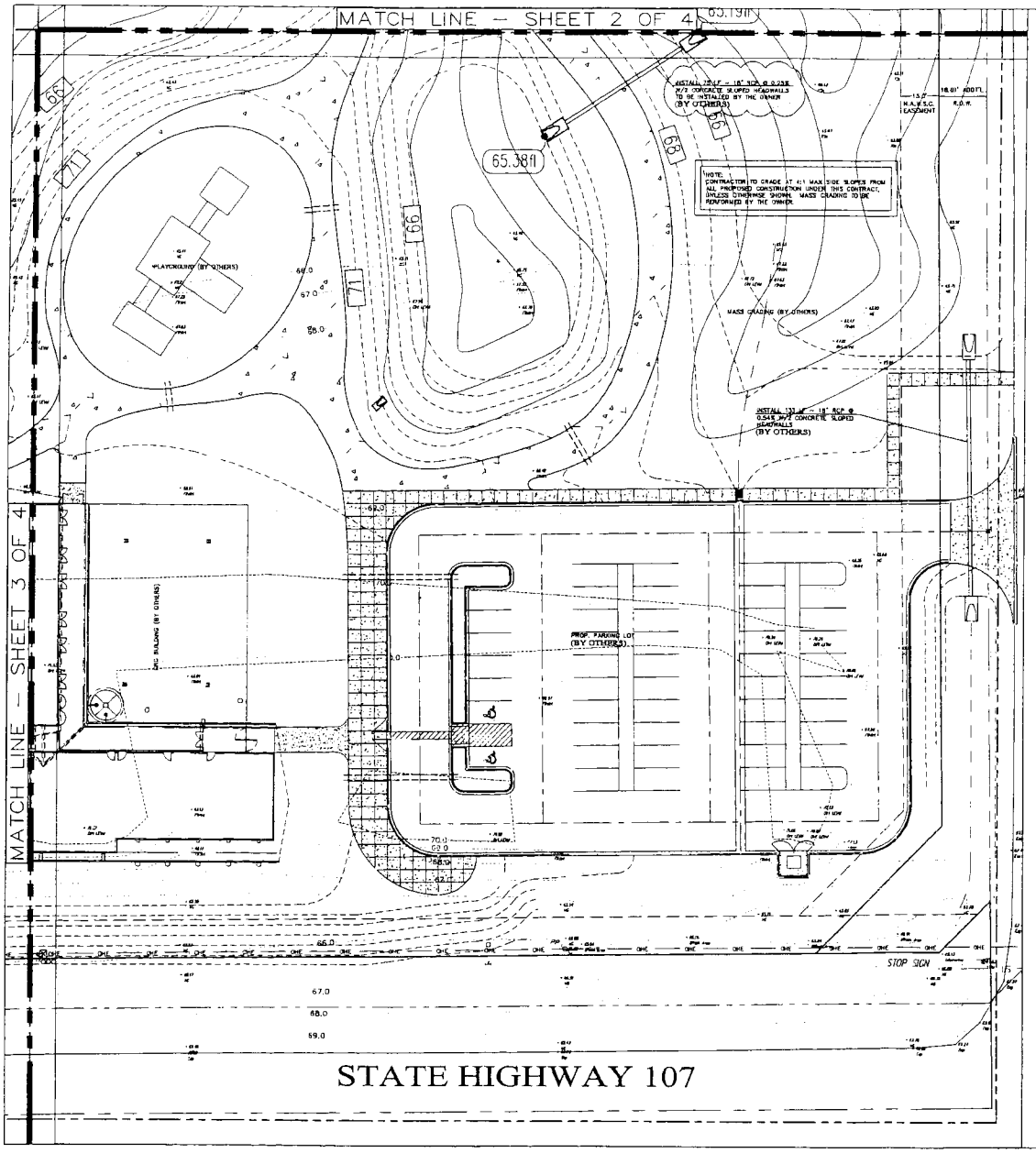
PRECINT NO. 4 – PARKS, RECREATIONAL FACILITY IMPROVEMENTS PROJECT (SUNFLOWER PARK)

PROJECT: SAN CARLOS, TEXAS
LOCATION: HIDALGO COUNTY, TEXAS
OWNER:

Mata & Garcia
architecture
project management
interior design
ARCHITECTS L.L.P.
Fernando Mata A.I.A.
Hector Rene Garcia R.A.
Partners
1201 West Ivy Avenue McAllen, Texas 78501 Tel.: (956) 631-1945

SHEET: 2.5

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GRAPHIC SCALE 1" 20'

LEGEND

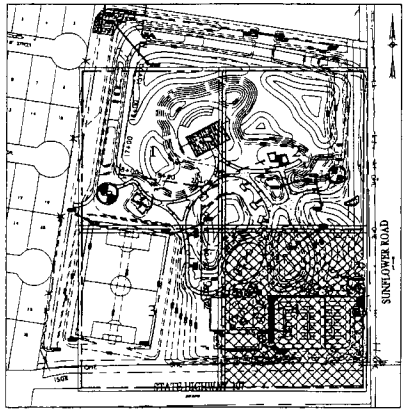
- 97.00 – MASS GRADING CONTOUR
- 104 – PROPOSED CONTOUR
- (90.00fs) – PROPOSED SPOT ELEVATION
- ABBREVIATED DESIGNATORS
  - NG NATURAL GROUND
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  - FL FLOW LINE
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  - EA EDGE OF ASPHALT
  - TA TOP OF ASPHALT
  - TW TOP OF WALL
  - BW BOTTOM OF WALL
- PROPOSED FLOW DIRECTION
- 38.50 – EXISTING SPOT ELEVATION

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CONTRACTOR SHALL CONTACT THE FOLLOWING ENTITIES 48 HOURS PRIOR TO CONSTRUCTION:

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HC PCT 4:	956-381-3112
TxDOT:	956-702-6331
TEXAS GAS SERVICE:	956-444-3838
AT&T:	956-279-1985
NORTH ALAMO WSC:	956-383-1818



KEY MAP
SCALE: NTS

GRADING AND DRAINAGE PLAN 4/4
SCALE 1:20

STATE OF TEXAS
WESLEY RICHARD LEFEVRE
103200
LICENSED
PROFESSIONAL ENGINEER
5/13/16

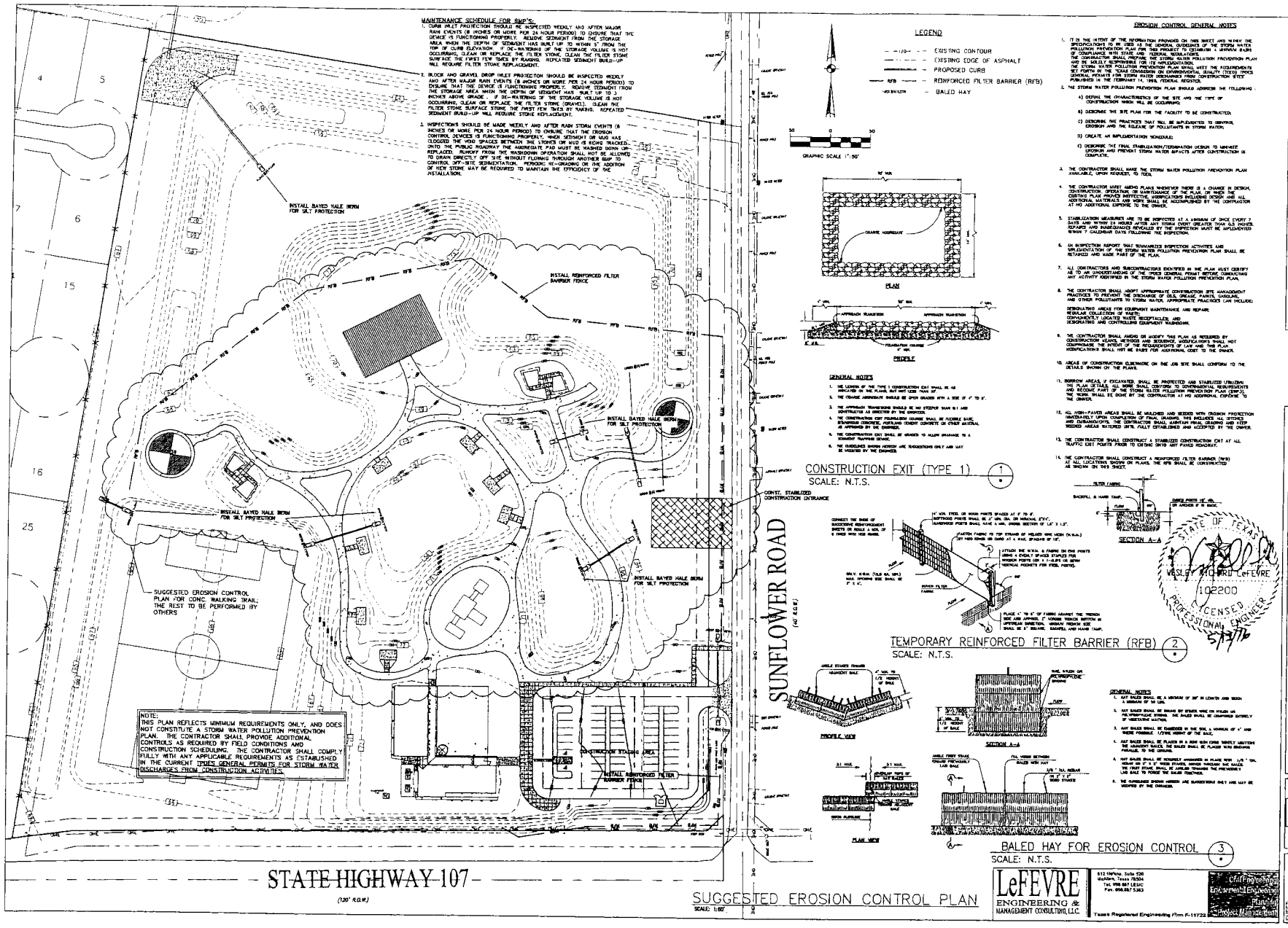
PROJECT #: 20.307
DATE: 10.06.15
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CHECKED BY: WRL
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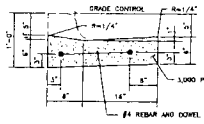
PROJECT: PRECINCT NO. 4 – PARKS, RECREATIONAL FACILITY IMPROVEMENTS PROJECT (SUNFLOWER PARK)
LOCATION: SAN CARLOS, TEXAS
OWNER: HIDALGO COUNTY

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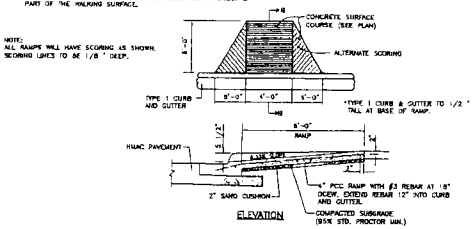

MAINTENANCE SCHEDULE FOR BMP'S:
1. CURB INLET PROTECTION SHOULD BE INSPECTED WEEKLY AND AFTER MAJOR RAIN EVENTS (6 INCHES OR MORE PER 24 HOUR PERIOD) TO ENSURE THAT THE DEVICE IS FUNCTIONING PROPERLY. REMOVE SEDIMENT FROM THE STORAGE AREA WHEN THE DEPTH OF SEDIMENT HAS BUILT UP TO WITHIN 1" FROM THE TOP OF CURB ELEVATION. IF OC-WATERING OF THE STORAGE VOLUME IS NOT OCCURRING, CLEAN OR REPLACE THE FILTER STONE. CLEAN THE FILTER STONE SURFACE THE FIRST FEW TIMES BY RAKING. REPLICATED SEDIMENT BUILD-UP WILL REQUIRE FILTER STONE REPLACEMENT.
2. BLOCK AND GRAVEL DROP INLET PROTECTION SHOULD BE INSPECTED WEEKLY AND AFTER MAJOR RAIN EVENTS (6 INCHES OR MORE PER 24 HOUR PERIOD) TO ENSURE THAT THE DEVICE IS FUNCTIONING PROPERLY. REMOVE SEDIMENT FROM THE STORAGE AREA WHEN THE DEPTH OF SEDIMENT HAS BUILT UP TO 2 INCHES ABOVE GRADE. IF DE-WATERING OF THE STORAGE VOLUME IS NOT OCCURRING, CLEAN OR REPLACE THE FILTER STONE (GRAVEL). CLEAN THE FILTER STONE SURFACE STONE THE FIRST FEW TIMES BY RAKING. REPEATED SEDIMENT BUILD-UP WILL REQUIRE STONE REPLACEMENT.
3. INSPECTIONS SHOULD BE MADE WEEKLY AND AFTER RAIN STORM EVENTS (6 INCHES OR MORE PER 24 HOUR PERIOD) TO ENSURE THAT THE EROSION CONTROL DEVICES IS FUNCTIONING PROPERLY. WHEN SEDIMENT OR MUD HAS CLOGGED THE VOID SPACES BETWEEN THE STONES OR MUD IS BEING TRACKED ONTO THE PUBLIC ROADWAY THE AGGREGATE PAD MUST BE WASHED DOWN OR REPLACED. RUNOFF FROM THE WASHDOWN OPERATION SHALL NOT BE ALLOWED TO DRAIN DIRECTLY OFF SITE WITHOUT FLOWING THROUGH ANOTHER BMP TO CONTROL OFF-SITE SEDIMENTATION. PERIODIC RE-GRADING OR THE ADDITION OF NEW STONE MAY BE REQUIRED TO MAINTAIN THE EFFICIENCY OF THE INSTALLATION.
INSTALL BAYED HALE BERM FOR SILT PROTECTION
INSTALL REINFORCED FILTER BARRIER FENCE
INSTALL BAYED HALE BERM FOR SILT PROTECTION
INSTALL BAYED HALE BERM FOR SILT PROTECTION
SUGGESTED EROSION CONTROL PLAN FOR CONC. WALKING TRAIL; THE REST TO BE PERFORMED BY OTHERS
NOTE:
THIS PLAN REFLECTS MINIMUM REQUIREMENTS ONLY, AND DOES NOT CONSTITUTE A STORM WATER POLLUTION PREVENTION PLAN. THE CONTRACTOR SHALL PROVIDE ADDITIONAL CONTROLS AS REQUIRED BY FIELD CONDITIONS AND CONSTRUCTION SCHEDULING. THE CONTRACTOR SHALL COMPLY FULLY WITH ANY APPLICABLE REQUIREMENTS AS ESTABLISHED IN THE CURRENT TPDES GENERAL PERMITS FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES.
CONSTRUCTION STAGING AREA
INSTALL REINFORCED FILTER BARRIER FENCE
SUNFLOWER ROAD
(40' R.O.W.)
STATE HIGHWAY 107
(120' R.O.W.)
SUGGESTED EROSION CONTROL PLAN
SCALE: 1:60'
LEGEND
EXISTING CONTOUR
EXISTING EDGE OF ASPHALT
PROPOSED CURB
REINFORCED FILTER BARRIER (RFB)
BALED HAY
GRAPHIC SCALE 1"=50'
EROSION CONTROL GENERAL NOTES
1. IT IS THE INTENT OF THE INFORMATION PROVIDED ON THIS SHEET AND WITHIN THE SPECIFICATIONS TO BE USED AS THE GENERAL GUIDELINES OF THE STORM WATER POLLUTION PREVENTION PLAN FOR THIS PROJECT TO ESTABLISH A MINIMUM BASIS OF COMPLIANCE WITH STATE AND FEDERAL REGULATIONS. THE CONTRACTOR SHALL PREPARE THE STORM WATER POLLUTION PREVENTION PLAN AND BE SOLELY RESPONSIBLE FOR ITS IMPLEMENTATION.
THE STORM WATER POLLUTION PREVENTION PLAN SHALL MEET THE REQUIREMENTS OF TCEQ CONSTRUCTION ON ENVIRONMENTAL QUALITY (TCEQ) TPDES GENERAL PERMIT NO. TXR150000 FOR STORM WATER DISCHARGES FROM CONSTRUCTION SITES PUBLISHED IN THE FEBRUARY 14, 1998, FEDERAL REGISTER.
2. THE STORM WATER POLLUTION PREVENTION PLAN SHOULD ADDRESS THE FOLLOWING:
A) DEFINE THE CHARACTERISTICS OF THE SITE AND THE TYPE OF CONSTRUCTION THAT WILL BE OCCURRING;
B) DESCRIBE THE SITE PLAN FOR THE FACILITY TO BE CONSTRUCTED;
C) DESCRIBE THE PRACTICES THAT WILL BE IMPLEMENTED TO CONTROL EROSION AND THE RELEASE OF POLLUTANTS IN STORM WATER;
D) CREATE AN IMPLEMENTATION SCHEDULE;
E) DESCRIBE THE FINAL STABILIZATION/TERMINATION DESIGN TO MINIMIZE EROSION AND PREVENT STORM WATER IMPACTS AFTER CONSTRUCTION IS COMPLETE.
3. THE CONTRACTOR SHALL MAKE THE STORM WATER POLLUTION PREVENTION PLAN AVAILABLE UPON REQUEST TO TCEQ.
4. THE CONTRACTOR MUST AMEND PLANS WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE OF THE PLAN, OR WHEN THE EXISTING PLAN PROVES INEFFECTIVE. MODIFICATIONS INCLUDING DESIGN AND ALL ADDITIONAL MATERIALS AND WORK SHALL BE ACCOMPLISHED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
5. STABILIZATION MEASURES ARE TO BE INSPECTED AT A MINIMUM OF ONCE EVERY 7 DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCHES. REPAIRS AND INADEQUACIES REVEALED BY THE INSPECTION MUST BE IMPLEMENTED WITHIN 7 CALENDAR DAYS FOLLOWING THE INSPECTION.
6. AN INSPECTION REPORT THAT SUMMARIZES INSPECTION ACTIVITIES AND IMPLEMENTATION OF THE STORM WATER POLLUTION PREVENTION PLAN SHALL BE RETAINED AND MADE PART OF THE PLAN.
7. ALL CONTRACTORS AND SUBCONTRACTORS IDENTIFIED IN THE PLAN MUST CERTIFY AS TO AN UNDERSTANDING OF THE TPDES GENERAL PERMIT BEFORE CONDUCTING ANY ACTIVITY IDENTIFIED IN THE STORM WATER POLLUTION PREVENTION PLAN.
8. THE CONTRACTOR SHALL ADOPT APPROPRIATE CONSTRUCTION SITE MANAGEMENT PRACTICES TO PREVENT THE DISCHARGE OF OILS, GREASE, PAINTS, GASOLINE, AND OTHER POLLUTANTS TO STORM WATER. APPROPRIATE PRACTICES CAN INCLUDE:
DESIGNATING AREAS FOR EQUIPMENT MAINTENANCE AND REPAIR;
REGULAR COLLECTION OF WASTE;
CONVENIENTLY LOCATED WASTE RECEPTACLES; AND
DESIGNATING AND CONTROLLING EQUIPMENT WASHDOWN.
9. THE CONTRACTOR SHALL AMEND OR MODIFY THIS PLAN AS REQUIRED BY CONSTRUCTION ACTIVITIES, METHODS AND SEQUENCE. MODIFICATIONS SHALL NOT COMPROMISE THE INTENT OF THE REQUIREMENTS OF LAW AND THIS PLAN. MODIFICATIONS SHALL NOT BE MADE FOR ADDITIONAL COST TO THE OWNER.
10. AREAS OF CONSTRUCTION EGRESS/INGRESS ON THE JOB SITE SHALL CONFORM TO THE DETAILS SHOWN ON THE PLANS.
11. BORROW AREAS, IF EXCAVATED, SHALL BE PROTECTED AND STABILIZED UNLESS THE PLAN DETAILS ALL WORK SHALL CONFORM TO CONTINGENCIAL REQUIREMENTS AND BECOME PART OF THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP). THIS WORK SHALL BE DONE BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
12. ALL NON-PAVED AREAS SHALL BE MULCHED AND SEEDED WITH EROSION PROTECTION IMMEDIATELY UPON COMPLETION OF FINAL GRADING AND INCLUDING ALL DITCHES AND DRAINAGEWAYS. THE CONTRACTOR SHALL WATER AND MAINTAIN SEEDED AREAS WATERED UNTIL FULLY ESTABLISHED AND ACCEPTED BY THE OWNER.
13. THE CONTRACTOR SHALL CONSTRUCT A STABILIZED CONSTRUCTION EXIT AT ALL TRAFFIC EXIT POINTS PRIOR TO EXISTING OR NEW PAVED ROADWAY.
14. THE CONTRACTOR SHALL CONSTRUCT A REINFORCED FILTER BARRIER (RFB) AT ALL LOCATIONS SHOWN ON PLANS. THE RFB SHALL BE CONSTRUCTED AS SHOWN ON THIS SHEET.
PLAN
PROFILE
GENERAL NOTES
1. THE LENGTH OF THE TYPE 1 CONSTRUCTION EXIT SHALL BE AS INDICATED ON THE PLANS, BUT NOT LESS THAN 50'.
2. THE COARSE AGGREGATE SHALL BE OPEN GRADED WITH A SIZE OF 3" TO 6".
3. THE APPROACH TRANSITIONS SHALL BE NO STEEPER THAN 8:1 AND CONSTRUCTED AS DIRECTED BY THE INSPECTOR.
4. THE CONSTRUCTION EXIT FOUNDATION COURSE SHALL BE FLEXIBLE BASE, STABILIZED CONCRETE, ASPHALTIC CONCRETE OR OTHER MATERIAL AS APPROVED BY THE ENGINEER.
5. THE CONSTRUCTION EXIT SHALL BE GRADED TO ALLOW DRAINAGE TO A SEDIMENT TRAPPING DEVICE.
6. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.
CONSTRUCTION EXIT (TYPE 1) 1
SCALE: N.T.S.
CONST. STABILIZED CONSTRUCTION ENTRANCE
SECTION A-A
TEMPORARY REINFORCED FILTER BARRIER (RFB) 2
SCALE: N.T.S.
PROFILE VIEW
SECTION A-A
PLAN VIEW
GENERAL NOTES
1. HAY BALES SHALL BE A MINIMUM OF 36" IN LENGTH AND WEIGH A MINIMUM OF 50 LBS.
2. HAY BALES SHALL BE BINDED BY EITHER WIRE OR NYLON OR POLYPROPYLENE STRING. THE BALES SHALL BE CONFINED ENTIRELY OF WEED-FREE MATERIAL.
3. HAY BALES SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4" AND WHERE POSSIBLE, 1/2 THE HEIGHT OF THE BALE.
4. HAY BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES. THE BALES SHALL BE PLACED WITH BINDINGS PARALLEL TO THE GROUND.
5. HAY BALES SHALL BE SECURELY ANCHORED IN PLACE WITH 1/2" DIA. REBAR OR 2" X 2" WOOD STAKES, DRIVEN THROUGH THE BALES. THE FIRST STAKE ON EACH BALE SHALL BE DRIVEN TOWARDS THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER.
6. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.
BALED HAY FOR EROSION CONTROL 3
SCALE: N.T.S.
LEGAL DESCRIPTION
PRECINCT NO. 4 - PARKS, RECREATIONAL FACILITY, IMPROVEMENTS PROJECT (SUNFLOWER PARK)
PROJECT : SAN CARLOS, TEXAS
LOCATION : HIDALGO COUNTY
OWNER : HIDALGO COUNTY
PROJECT # 030307
DATE: 04/01/13
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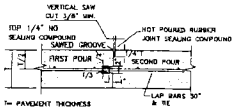
LAY DOWN CURB DETAIL (1)
SCALE: N.T.S.

NOTE:
WALKING SURFACE WILL HAVE DETECTABLE WARNING THAT CONSISTS OF CONTRACTION JOINTS SPACED 2 IN. CENTER-TO-CENTER AND SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT (REF. ADA SECTION 4.29.2). MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.

NOTE:
ALL RAMPS WILL HAVE SCORING AS SHOWN. SCORING LINES TO BE 1/8 " DEEP.

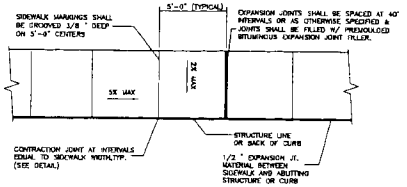


BARRIER FREE RAMP – TYPE I (2)
SCALE: N.T.S.

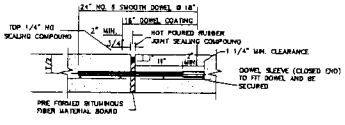


NOTE: CONTRACTOR SHALL PROTECT KEYWAY PRIOR TO SECOND POUR. IF LONGITUDINAL KEYWAY IS DAMAGED, CONTRACTOR SHALL REPAIR WITH THE USE OF LONGITUDINAL BUTT JOINT. DRILL DOWELS INTO FIRST POUR.

CONSTRUCTION JOINT (3)
SCALE: N.T.S.

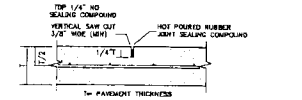


SIDEWALK PLAN (4)
SCALE: N.T.S.



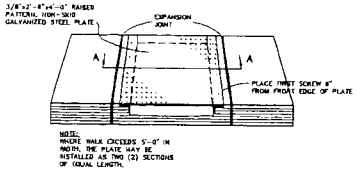
NOTE:
DOWELS AND REINFORCING BARS SHALL BE SUPPORTED BY AN APPROVED DEVICE.

EXPANSION JOINT (5)
SCALE: N.T.S.

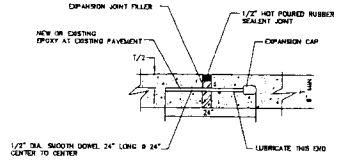


NOTE:
MAXIMUM JOINT SPACING SHALL BE 15'

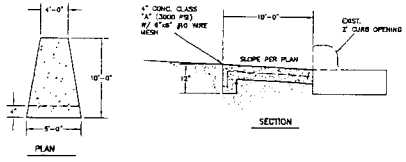
SAWED DUMMY (CONTROL) JOINT (6)
SCALE: N.T.S.



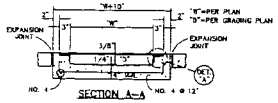
NOTE:
WHERE WALK EXCEEDS 5'-0" IN WIDTH, THE PLATE MAY BE INSTALLED AS TWO (2) SECTIONS OF EQUAL LENGTH.

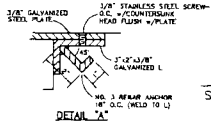


EXPANSION JOINT (8)
SCALE: N.T.S.

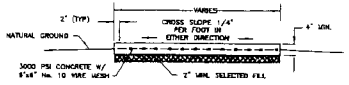


CONCRETE RIP-RAP AT CURB OPENINGS (10)
SCALE: N.T.S.





FLUME AT SIDEWALK (7)
SCALE: N.T.S.



TYPICAL CONC. WALK SECTION (9)
SCALE: N.T.S.



PROJECT #: 201307
DATE: 06/03/13
DRAWN BY: MG
CHECKED BY: WEL

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PRECINCT NO. 4 – PARKS, RECREATIONAL FACILITY IMPROVEMENTS PROJECT (SUNFLOWER PARK)

PROJECT:
LOCATION: SAN CARLOS, TEXAS
OWNER: HIDALGO COUNTY

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Division XX

Geotechnical Report

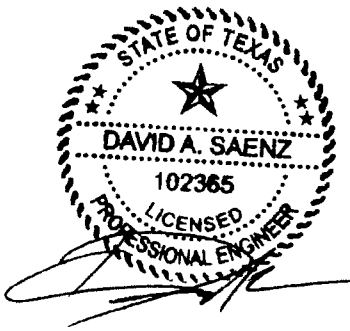
L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

GEOTECHNICAL INVESTIGATION
FOR THE
SUNFLOWER PARK RECREATIONAL FACILITY IMPROVEMENT PROJECT
HIDALGO COUNTY, TEXAS

Prepared For:
Hidalgo County Pct. No. 4

Prepared By:
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L&G Project No. GL13012
July 18, 2013



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INTRODUCTION

L&G Engineering Laboratory, L.L.C. (L&G) was contracted by **Hidalgo County Precinct No 4. (HC Pct. 4)** to perform a subsurface geotechnical investigation for the proposed Sunflower Park Recreational Facility Improvement Project. This report addresses several foundation recommendations, parameters for slab foundation design criteria based on the Post Tension Institute (3rd Edition) and Wire Reinforcement Institute specifications, as well as recommendations for maximum allowable bearing capacity of shallow foundations. In addition, geotechnical soil parameters are provided for a lateral earth pressure coefficient profile at the potential lift station location. Also included in this report are pavement recommendations, boring logs, and several figures addressing the potential vertical rise, existing geology and general contour of the proposed construction site.

GENERAL PROJECT OVERVIEW

Project Description

L&G is pleased to submit this document presenting our findings as the result of a subsurface geotechnical exploration performed at the request of **HC Pct. 4**. The project site is located within San Carlos, Texas, at the north-west intersection of SH 107 and Sunflower Rd. It is our understanding that the project involves the construction of an 8,000 square foot concrete slab on grade Community Resource Center (general office, classroom, and multi-purpose space), a 6,000 square foot concrete slab on grade basketball court area and open pavilion (metal frame system), a centrally located park pavilion amphitheater structure (only illustrated on the layout - unknown size and details), two (2) 500 square foot concrete slab on grade restroom facility locations, a parking lot area (typical flexible pavement) and general landscape grading on the site. In addition, we understand the project may include a lift station built on the southwest corner of the site (in the vicinity of Boring B-1). A preliminary general site plan sheet / project layout and minimal structure detail sheets for the proposed park recreational facility improvements project were provided by the Client (**HC Pct. 4**) and are included in Appendix D. No grading plans or structural loads for the building/structures were provided; thus all foundation and site improvement recommendations as provided in this report are based on the geotechnical properties of the soils and generalized assumptions as noted.

Scope and Limitations of Investigation

This report has been prepared in general accordance with accepted geotechnical engineering practices for the subject project site and the anticipated construction. No specific warranty program or other special standards, except acceptable industry standards for the general South Texas area, were followed during the course of this investigation and analysis. This geotechnical report is intended for use by **HC Pct. 4**, and any direct representatives or affiliates. This geotechnical report may not contain sufficient information for purposes of other parties, or other uses in determining construction means and methods.

The strata, shown on the boring logs (included in Appendix B), represent the subsurface conditions at the boring locations at the time of our investigation. These strata designate approximate boundaries between subsurface materials; however, their actual transition may be gradual or may occur at varying depths. Variations may occur due to unexpected deposits of soft

clays, silts or other undesirable soil material not detected through our investigation. It should be noted that the exploratory borings were performed within the limits of the proposed project as approved and agreed upon by all previously noted parties prior to the commencement of our field operations.

The benchmarks of this geotechnical study are to:

1. explore the general existing subsurface conditions at the site
2. evaluate the relevant engineering properties of the subsurface materials
3. provide the potential vertical rise and recommendations to minimize shrink/swell
4. provide the maximum allowable bearing capacity of in-situ soils for shallow foundations
5. provide design parameters for several foundation design methods including WRI and PTI
6. provide design lateral earth pressure coefficients profile for lift station location
7. provide recommendations for foundation construction
8. provide recommendations for pavement thicknesses and materials

The scope of this geotechnical engineering study does not include an environmental assessment of the air, soil, rock or water conditions on or adjacent to the site. No environmental opinions are presented in this report. If environmental clearances are needed prior to construction, please contact our offices for assistance in this matter.

EXISTING SURFACE AND SUB-SURFACE CONDITIONS

Site Location / Description

The project site is located within the city limits of San Carlos, Texas, at the north-west corner of the intersection of SH 107 and Sunflower Rd. The proposed park facilities (Community Resource Center, pavilions, and restrooms) are to be set throughout the site location (locations of specific facilities not explicitly denoted by the Client). The proposed parking lot will run along the south east corner of the lot and adjacent to (on the east side of) the resource center (as shown in the provided layout in Appendix D and on the figures in Appendix A). The proposed lift station would be located at the southwest corner of the site (in the vicinity of Boring B-1). The boring locations were drilled as close as possible to the locations specified by the Client as shown on Figure 2 in Appendix A. No surveyor was contracted to determine the exact coordinates for the borings, as this was not a part of the scope of work for the project; however, field handheld GPS coordinates were retrieved and are noted on the boring logs in Appendix B. The property had minimal to medium vegetation at the time of drilling including short to medium grasses and light to medium brush. A fill section (approximate 2 to 3 feet deep and 20,000 square feet in area) is located on the southeast side of the lot. The current topography shows this area as a typically lightly sloping (0.5%), mid lying area, with the natural ground sloping north to south through the site as shown on the Digital Elevation Model. (See Figure 4 in Appendix A).

Geology

The Geologic Atlas of Texas, McAllen-Brownsville Sheet, dated 1976, indicates that the subject site is located primarily within the *Windblown Deposits - Stabilized Sand Dune Deposits Formation* consisting of *"Strong relict eolian grain, sparse grass; includes active blowout areas*

with depressed relief, hummocky, locally becomes fresh-water marsh in wet season, and well-stabilized sand dunes with dense live-oak mottes and scrub; 'moderate to very high permeability, low to moderate water-holding capacity, low compressibility, low shrink-swell potential, good to fair drainage, high shear strength, low plasticity, shallow water table'" (See Figure 5 in Appendix A for Geologic Atlas of Texas Map).

Soil Survey Description

According to the Soil Survey of Hidalgo County, Texas, published by the United States Department of Agriculture, the proposed site is located primarily within the Hidalgo Sandy Clay Loam (0 to 1 % slopes) soil map unit (#28) (see Figure 3 in Appendix A for USDA Soils Map).

Hidalgo Sandy Clay Loam (0 to 1 % slopes) soil map unit (#28) is a deep, nearly level formation on convex uplands. The soil is well drained, with moderate permeability, slow surface runoff, and no frequency of flooding or ponding. The available water capacity is high (about 9.3 inches), and the soil is classified as non-saline to very slightly saline (0.0 to 4.0 mmhos/cm). The maximum content of calcium carbonate in the soil is 35 percent. The typical soil profile for this map unit consists of 0 to 17 inches: dark grayish brown sandy clay loam, 17 to 28 inches: brown sandy clay loam, and 28 to 80 inches: pale brown sandy clay loam. This soil classification is calcareous throughout. The main limitations of this soil map unit are shrinking and swelling of the soil and high corrosivity to uncoated steel.

Rainfall

The mean annual precipitation for this area of Hidalgo County is approximately 20-30 inches, as reported by the U.S. Department of Agriculture Soil Conservation Service. Our geotechnical investigation, performed in April 2013 was conducted during an exceptional drought condition (D4, as noted by the National Weather Service and U.S. Drought Monitor), with moisture and precipitation levels below the annual averages. The National Oceanic and Atmospheric Administration (NOAA) reports for the subject date indicated that no significant rainfall observations (at least one inch) occurred prior to or during our exploration that could have significant effects on any groundwater levels or moisture content of surface soils.

SITE INVESTIGATION

Soil Borings and Laboratory Tests

Subsurface conditions at the site were evaluated through nine (9) borings (designated as B-#). Two (2) structural borings were drilled to a depth of thirty (30) feet (Borings B-1 and B-2), five (5) structural borings were drilled to a depth of ten (10) feet (Borings B-5 through B-9), and two (2) pavement borings were drilled to a depth of five (5) feet (Borings B-3 and B-4) below natural ground at the locations shown on Figure 2 in Appendix A. It should be noted, based on a fill section encountered on a portion of the site (minor grading on the site showing 2 to 5 feet increase from natural grade), Borings B-2 and B-3 were extended 5 feet in depth to thirty-five (35) feet and ten (10) feet respectively. The soil borings were drilled and sampled in general accordance with American Society of Testing Materials Procedures (ASTM) D1452 and D1586 using a truck mounted drilling rig (Simco 2800 HS (HT)) and solid stem augers.

As part of the sampling procedures, split barrel (spoon) and Standard Penetration Tests (SPT) were performed and recorded. Standard Penetration Test results are noted on the boring logs as blows per foot or twelve (12) inch increment. The sampler was advanced through three (3) consecutive six inch increments; however, the first six inch increment is considered the seating drive, which eliminates the effect of cuttings or disturbances on the test result. The sum of the blows for the last two six (6) inch increments is considered the "standard penetration resistance value" or "field N-value". Where hard or very dense materials were encountered, the SPT was terminated and noted on the boring log when one of the following situations occurred:

1. *a total of 50 blows were applied on one six inch increment*
2. *a total of 100 blows were applied during the test*
3. *no observation of advancement of the sampler was detected during the application of ten (10) consecutive blows from the hammer*

Representative portions of the split barrel samples were identified, packaged, sealed in containers to reduce moisture loss, and transported to our laboratory for subsequent testing. In the laboratory, each sample was evaluated and visually classified by a member of our geotechnical engineering staff. The properties of each stratum were evaluated by a series of laboratory index tests. A summary of the laboratory data and their corresponding depths are presented on the boring logs. Samples will be retained in our laboratory for 30 days after submittal of this report. Other arrangements may be provided at the request of the Client to hold the samples through the construction process.

Subsurface Stratigraphy

Based on the results of the field and laboratory sample analyses, the subsurface stratigraphy at the project location can be characterized as follows (Tables 1A-1C):

Structural Borings (B-1 through B-2)			
Description	***Approximate Depth Range (ft.)**	**Material Type**	**Consistency / Density**
Stratum I	0 to 6	Sandy Clay[1]	Soft
Stratum II	6 to 18	Clayey Sand, Silty Clayey Sand[2]	Very Loose to Medium Dense
Stratum III	18 to 30	Poorly Graded Sand w/ Clay[3]	Dense to Very Dense

1. This stratum contained dark brown to brown, sandy lean clay (CL) with moderately low plasticity indices (ranging from 14 to 16). These soils contained approximately 52 to 56% fine soil particle contents (clays & silts). Soil samples showed evidence of small roots / wood fragments (primarily in B-1) and calcareous nodules / calcareous streaks (primarily in B-2). SPT N-values ranged from 3 to 4 blows per foot (outlier noted in B-1 showing 14 blows per foot from 0 to 2 not included). Samples were noted as dry to wet (very moist to wet below 4 feet).

2. This stratum contained a mixture of brown, clayey sand (SC) and silty clayey sand (SC-SM) with moderately low to low plasticity indices (ranging from Non-Plastic to 16). These soils contained approximately 13 to 49% fine soil particle contents (clays & silts). SPT N-values ranged from 3 to 21 blows per foot (ranging from 3 to 4 blows per foot in the upper 4 feet and 14 to 21 blows per foot below that). Samples were noted as moist to wet. It should be noted; this layer extended an additional 5 feet at B-2.

3. This stratum contained brown, poorly graded sand w/ clay (SP-SC) with low plasticity indices (PI = 12). These soils contained approximately 11 to 12% fine soil particle contents (clays & silts). SPT N-values ranged from 27 to 51 blows per foot. Samples were noted as wet. It should be noted, B-2 which was extended due to fill noted in the area, showed a hard reddish brown sandy lean clay below 30 feet with a PI = 18.

Table 1A – Existing Soil Strata & Description (Structural Borings B-1 through B-2)
**all depths are referenced from existing natural ground*

Structural Borings (B-5 through B-9)			
Description	***Approximate Depth Range (ft.)**	**Material Type**	**Consistency / Density**
Stratum I	0 to 2	Clayey Sand, Silty Clayey Sand[1]	Very Loose
Stratum II	2 to 10	Silty Clayey Sand, Silty Sand[2]	Very Loose to Medium Dense

1. This stratum contained a mixture of very dark blackish brown to brown, clayey sand (SC) and silty clayey sand (SC-SM) with low plasticity indices (ranging from 6 to 12). These soils contained approximately 31 to 32% fine soil particle contents (clays & silts). Soil samples showed evidence of small roots. SPT N-values ranged from 2 to 4 blows per foot (outlier noted in B-6 showing 10 blows per foot not included). Samples were noted as dry to moist.

2. This stratum contained a mixture of brown, silty clayey sand (SC-SM) and silty sand (SM) with low plasticity indices (ranging from Non-Plastic to 7). These soils contained approximately 10 to 39% fine soil particle contents (clays & silts). SPT N-values ranged from 2 to 23 blows per foot (ranging from 2 to 7 blows per foot in the upper 5 feet and 6 to 23 blows per foot below that). Samples were noted as moist to wet.

Table 1B – Existing Soil Strata & Description (Structural Borings B-5 through B-9)
**all depths are referenced from existing natural ground*

Pavement Borings (B-3 through B-4)			
Description	***Approximate Depth Range (ft.)**	**Material Type**	**Consistency / Density**
Stratum I	0 to 5	Clayey Sand, Sandy Clay[1]	Very Loose to Medium Stiff
1. This stratum contained a mixture of very dark blackish brown to brown, clayey sand (SC) and sandy lean clay (CL) with low plasticity indices (ranging from 10 to 13). These soils contained approximately 34 to 51% fine soil particle contents (clays & silts). Soil samples showed evidence of small roots in the upper 2 feet of depth. SPT N-values ranged from 4 to 6 blows per foot. Samples were noted as moist to wet.			

Table 1C – Existing Soil Strata & Description (Pavement Borings B-3 through B-4)
**all depths are referenced from existing natural ground*

It should be noted, the Soil Strata and Description illustrated in Table 1, is a typical summarized representation of the site stratigraphy. The lines designating the interfaces between strata on the boring logs represent approximate boundaries. Transitions between strata may be gradual and may occur at varying depths.

Water Strikes

The solid auger and mud rotary drilling techniques were used to complete soil borings in accordance with ASTM procedure D1452. Water strikes were encountered during the drilling operations at all structural boring locations (water strikes not encountered at any of the pavement boring locations; however moist to wet soils conditions were evident in the lower strata). Water strikes were noted at approximately 7 to 10 feet below top of natural ground at the boring locations (elevation 56 to 59 feet). 24-hour after-drill water level readings were not obtained at the boring locations due to cave-ins in the shallow holes and use of mud rotary drilling fluid in the deeper holes. Water strikes are noted on the boring logs in Appendix B.

It should be noted that fluctuations in groundwater levels are influenced by variations in rainfall and surface water run-off from season to season. The construction process itself may also cause variations in the groundwater level. If the subsurface water elevation is critical to the construction process the Contractor should check the subsurface water conditions just prior to construction excavation using piezometer wells.

GEOTECHNICAL BORING ANALYSIS

Moisture Content

The moisture content of a soil is defined as the ratio of the weight of the water in the sample to the dry weight of the soil sample. The moisture contents for the samples obtained as part of our geotechnical exploration were performed in compliance with ASTM procedure D2216. The results varied from eight (8) percent to twenty-seven (27) percent. The variance in percentages within a given exploratory boring can be attributed to a multitude of issues including, range in depth, distance between samples, location of groundwater table and seasonal moisture zone. The variation could also be caused by differences in soil classifications, as some soils such as loose gravels and sands are made up of larger particles and thus exhibit more voids as a soil structure (higher capability to hold water than fine grained soils). Finer grained denser soils, though, due to high impermeability, may also exhibit high moisture contents in certain instances due to the

slower movement of water through the soil structure. All samples in this geotechnical exploration exhibited dry field moisture conditions. A list of all the moisture contents by corresponding depth can be found on the boring logs.

Plasticity Index

The Plasticity Index (PI) is defined as the difference between the liquid limit and the plastic limit of a soil. These limits are commonly referred to as the Atterberg limits, which describe the consistency of soils with respect to their varying moisture contents. The liquid limit is defined as the moisture content at which soil begins to transition from a plastic to a liquid state and begins to behave as a liquid material by beginning to flow. The plastic limit refers to the water content of a soil at the point of transition from a semisolid to a plastic state where soil starts to exhibit plastic behavior. A soils behavior can be divided into four basic states: liquid, plastic, semisolid and solid. The plasticity index shows the range in which a soil acts in a plastic state. Experience has shown that the more plastic a soil is the more expansive and compressive it will act. The plasticity indices for the samples obtained as part of our geotechnical exploration were performed in compliance with ASTM procedure D4318. PI values for the borings performed for this report range from Non-Plastic (NP) (very low plasticity to non-plastic silty, clayey sand or sand with silt) to 18 (moderate plasticity clay).

Particle Size Analysis (Determination of Fines Content)

The standard grain size analysis is used to determine the relative proportions of different grain sizes as they are distributed along a range of different sized sieves. The minus 200 sieve analysis is used commonly as a tool for soil classification and identification using the Unified Soils Classification System. Results for this test are reported as a percentage of soil passing the No. 200 sieve, which has openings 0.075mm wide. This test is also used to determine the suitability of soil for construction purposes and to estimate probable seepage through soils. Generally a % -200 greater than 50% indicates a non-granular cohesive soil with large amounts of fines in the soil composition. The particle size analyses for the samples obtained as part of our geotechnical exploration were performed in compliance with ASTM procedure D1140. The % -200 values for the samples collected range from 10% to 56%.

FOUNDATION RECOMMENDATIONS

Proposed Project Foundation System Information

The proposed facilities, as previously noted, will be constructed throughout the proposed project site. At the time this report was written, the Client had specified general slab on grade construction with potential shallow square footings at column/high load locations and perimeter grade beams was to be the primary foundation system (if possible) for shallow foundations on-site. No information was provided for the potential lift station at the southwest corner of the site. No specific construction techniques were provided to **L&G** at the time this report was written. It should be noted, the selection of an appropriate type of foundation design is based on several factors including, but not limited to, soil conditions, site drainage, economics, climate, vegetation, city/government codes, and the level of risk acceptable to the owner/developer.

The most commonly constructed and typically most cost effective foundation system built in the South Texas Area is the Slab on Grade system (including a steel reinforced concrete slab). The Slab on Grade foundation is intended to be supported in the shallow surface soils through the use of a monolithic slab; however, these foundations can be complemented through the use of exterior and interior stiffened grade beams and/or shallow footings to support concentrated perimeter or wall loads and column loads respectively. For these systems, the compatibility between foundation rigidity and the type of superstructure (building type) to be built on the foundation must be considered in order to avoid damage to the building superstructure and architectural components.

The foundation system selected for construction must be designed with sufficient bearing capacity to resist the imposed loadings without experiencing failure of the underlying soils. The foundation system must also resist soil movements, or volume change, from expansion and contraction of soils due to changes in moisture content. The following sections will provide allowable bearing capacities, potential vertical rise (including earthwork recommendations to minimize shrink and swell), and Slab on Grade design parameters (Welded Reinforcement Institute – WRI, Post-Tensioning Institute – PTI). It should be noted that the recommendations provided are based on geotechnical properties of the project soils and assumptions of construction of this type since no structural loadings were provided. If structural loadings exceed capacities as provided in this report, **L&G** should be advised of the loadings to re-analyze and provide alternate recommendations if needed.

It is important to stress the fact that maintenance of Slab on Grade foundations will help to reduce the potential for structural damage in the present and for the life of the structure. Maintenance can include, but is not limited to procedures such as:

1. Ensure positive drainage around the perimeter of the foundation through site grading
2. Incorporate paving or sidewalks adjacent to foundations for moisture protection
3. Do not plant vegetation closer to the foundation than its mature height
4. Extend canopies or roof drains away from foundation to prevent ponding near foundation
5. Avoid excess wetting or drying of soils around foundations

Bearing Capacity of Soils (Shallow Foundations)

The bearing capacity of the existing natural ground is defined as the ability of a foundation to safely support the imposed loadings (surcharge), without experiencing any form of shear failure. The ultimate bearing capacity is a measure of the soil's maximum resistance immediately prior to a bearing capacity failure. The ultimate bearing capacity was estimated using the methods and equations, as recommended by the USACE in Manual EM 1110-1-1905 titled "Bearing Capacity of Soils":

$$q_u = c\,N_c\zeta_c + \tfrac{1}{2}\,B\,\gamma_h\,N_\gamma\zeta_\gamma + \sigma\,N_q\zeta_q$$

where:

q_u = ultimate bearing capacity
c = soil cohesion
B = effective width of foundation
γ_h = effective unit weight of soil within failure zone
σ = effective soil surcharge pressure at depth
N_c, N_γ, N_q = Bearing capacity factors
ζ_c ζ_γ ζ_q = dimensionless correction factors for cohesion, soil unit weight, and surcharge

Nc, Nγ, and Nq are the dimensionless bearing capacity factors developed by Meyerhof, Hansen, and Vesic for general shear failure listed in Table 4-4 of EM 1110-1-1905. Cohesion values for cohesive soils and angle of friction values for granular soils were estimated using a correlation with the Standard Penetration Tests performed in the field. All correlations used were in accordance with the applicable USACE manuals. Where cohesive material was prevalent, the angle of friction value was conservatively assumed to equal zero.

The factor of safety used in our analysis was equal to 3.0, as recommended by Chapter 1 of EM 1110-1-1905. The absolute minimum factor of safety, as recommended by Chapter 1 of EM 1110-1-1905 for this construction is 2.0. The maximum allowable bearing capacity was calculated by dividing the ultimate bearing capacity by the factor of safety. All recommendations reflect the maximum allowable bearing capacity in pounds per square foot.

Bearing Capacity of Slab on Grade Foundation

The maximum allowable bearing capacity for the Slab on Grade foundation is 600 pounds per square foot. It should be noted, bearing capacity was calculated assuming square or rectangular foundation geometry with width to length ratio of 1:2.

Bearing Capacity of Shallow Square Footings

Square footings may be used to support concentrated column loads for the structure. **The maximum allowable bearing capacity for Square Footings is 700 pounds per square foot**. Footings should bear in subgrade material at a minimum twenty-four (24) inches below proposed bottom of slab (bottom of footing shall be placed at least 6 inches into subgrade). This recommendation is for the proper development of bearing capacity and is not based on structural considerations. The footing reinforcement should be designed by a structural engineer to resist the dead load of the structure and the live loadings caused by all pertinent loadings using the load combinations and factors of safety provided by the applicable building codes.

Bearing Capacity of Perimeter Footings (Grade Beams)

Perimeter footings (also called Grade Beams) may be constructed around the slab foundation to support the exterior wall loads of the structure. **The maximum allowable bearing capacity for Perimeter Footings (Grade Beams) is 600 pounds per square foot.** Footings should bear in subgrade material at a minimum twenty-four (24) inches below proposed bottom of slab (bottom of footing shall be placed at least 6 inches into

subgrade). This recommendation is for the proper development of bearing capacity and is not based on structural considerations. The footing reinforcement should be designed by a structural engineer to resist the dead load of the structure and the live loadings caused by all pertinent loadings using the load combinations and factors of safety provided by the applicable building codes.

Potential Vertical Rise (Slab on Grade)

The soils at this site consisted of primarily low to moderately low plasticity sandy lean clays, clayey sands, silty sands and poorly graded sands throughout the soil profile (becoming less plastic with depth), which have an low to moderately low potential for exhibiting appreciable differential movements or swell/shrink capabilities with moisture changes. The Potential Vertical Rise (PVR) calculations for the general soil profile were performed using the Texas Department of Transportation's (TxDOT) TEX 124-E method. Based on review of the soil log (lean clay in top 5 to 6 feet and silty or clayey sand below that depth), water table observation (water strike observed at depths of 7 to 10 feet), geometric configuration of the area, and typical climatic conditions of the area (generally very hot humid climate), the typical zone of seasonal moisture was assumed to extend to an assumed 10 feet (the predicted water table location) (in accordance with Tex 124-E).

Based on the soil profile and assumptions previously noted, the average existing PVR was calculated to be approximately **0.3 to 0.4 inches**. This value represents total vertical in-situ movements and does not consider differential swell between any two points on the ground; nor does it take into account movements caused by uncontrolled water sources such as poor drainage, migration of subsurface water from off-site locations, and utility line leaks. Typically, PVR values of around **1 inch** are considered acceptable for most at grade or shallow foundation designs. Based on the results of the calculations as noted, the project site soil conditions do not warrant any major earthwork to counteract potential shrink/swell capabilities. **L&G** does recommend, however, building pad be constructed in accordance with 'Site Grading', 'Site Drainage' and 'Site Preparation' sections of this report. In addition, **L&G** recommends building pad be constructed atop a minimum 12 inches of **Structural Fill** (Recommended). Fill shall meet the requirements of and shall be installed in accordance with the 'Select Fill & Structural Fill Recommendations' section of this report.

Post-Tensioning Institute (PTI) Slab Design Parameters

The recommendations for foundation design criteria in this section have been calculated using the method described by the Post-Tensioning Institute manual, "Design of Post-Tensioned Slabs-on-Ground" Third Edition; also know as the PTI method. This method gives soil parameters for ribbed or uniform thickness (monolithic) foundations that can be used in the design of post-tensioned or traditionally reinforced foundations. The PTI method does not allow for the development of design parameters for collapsing soils or other highly unusual conditions. It must be emphasized that the determination of these parameters is based upon normal climate-moisture variance from season to season in the local area and are invalid when influenced to any significant degree by other conditions, including but not limited to those mentioned in the previous sections.

The edge moisture variation distances (e_m) for the center and edge lift conditions were derived based on a Thornthwaite index of -32 for the project site. The Thornthwaite index is based on the average rainfall over a significant period of time (e.g. 20 or 30 years) in excess or deficit of the average evapotranspiration rates of the area. Other parameters and influencing variables were derived using information collected from the laboratory tests performed on the recovered soil samples as stated in the PTI guidelines for geotechnical exploration and laboratory testing schedule. Table 2 lists the PTI design parameters for a slab-on-grade foundation supported in the shallow surface soils.

	Center Lift Conditions		Edge Lift Conditions	
Equilibrium Soil Suction (pF)	Edge Moisture Variation Distance e_m (ft)	Est. Differential Movement y_m (in)	Edge Moisture Variation Distance e_m (ft)	Est. Differential Movement y_m (in)
4.07	9.00	0.14	4.90	0.61

Table 2 - Recommended PTI Slab Design Parameters

Wire Reinforcement Institute (WRI) Slab Design Parameters

The Wire Reinforcement Institute (WRI) method is an empirically derived foundation design method that was developed by observing slab performance over time and creating and modifying equations to give results which approximate foundation designs that exhibit the best results. While the WRI method deals only with foundations reinforced with reinforcing bars or welded wire reinforcement, the procedure has been developed to be independent of the type of reinforcement used.

The climatic rating reflects the stability of the moisture content which may be expected in the soil due to the climatic conditions which may vary from year to year. The effective design Plasticity Index was obtained by weighting the test values in each boring as described in the WRI procedures. The slope correction factor is based on the average slope of the tract of land. Since the slope is relatively small (as shown on Figure 4 in Appendix A) the adjustment factor was negligible. Table 3 lists these WRI design parameters for a slab-on-grade foundation supported in the shallow surface soils.

Effective PI	Climatic Rating	Slope Coefficient	Soil Support Index, C
14	15	1.0	1.0

Table 3 - Recommended WRI Slab Design Parameters

Lateral Earth Pressure Coefficients (Prop. Lift Station)

Lateral earth pressure coefficients and unit weight profiles were established from the field and laboratory testing performed on the samples recovered during the completion of the exploratory boring at the southwest corner of the project (Boring B-1). The "at-rest", "active" and "passive" coefficients (K_O, K_A and K_P) were derived using Rankine's theories of lateral earth pressures and drained (long term) soil parameters. Table 4 shows the tabular representations of the lateral earth pressures and unit weight profile at the proposed lift station location.

Stratum	Soil Type	*Depth (ft)	Effective Unit Weight (lb/ft^3)	At-Rest Earth Pressure Coefficient, K_O	Active Earth Pressure Coefficient, K_A	Passive Earth Pressure Coefficient, K_P
I	CL/SC	0-14	120 / 60	0.577	0.406	2.464
II	SC-SM	14-18	60	0.441	0.283	3.537
III	SP-SC	18-30	60	0.412	0.260	3.852

Table 4 - Lateral Earth Pressure Coefficients (for Prop. Lift Station – Boring B-1)

**depths noted are measured from existing natural ground at the boring location*

***Effective Unit Weight reflects Submerged Unit Weight (Total Weight - Weight of Water) below Observed Water Table at Depth of 8 ft below top of hole at boring location*

As previously noted, no details for the proposed lift station were provided at the time this report was written. If supplementary assistance is required in the providing of additional geotechnical design parameters for the proposed lift station, typical details and plans shall be provided.

GENERAL CONSTRUCTION CONSIDERATIONS

General Site Soils & Conditions Construction Recommendations

Loose, silty, clayey sands were found near the surface in most of the borings at this site, and are especially prevalent in Borings B-5 through B-9. While these soils (in their present state) will safely support the loads indicated in the 'Foundation Recommendations' section of this report, they are particularly susceptible to disturbance during construction. If site grading or structural excavations penetrate these materials, special measures will be necessary to limit disturbance and maintain the strength of these soils. Drainage sumps, wells, or other methods should be utilized to prevent accumulation of water and resulting mixing with and weakening of these soils. Prior to placement of structures onto this material it should be proof rolled and evaluated by **L&G** representatives (if material has softened it should be re-evaluated for engineering design). If severe disturbance / soil softening are noted, it may be necessary to place and compact additional layers of structural fill prior to installation of structures.

Site Grading Recommendations

Site grading plans can result in changes in almost all aspects of foundation recommendations. We have prepared the foundation recommendations based on the existing ground surface and the stratigraphic conditions encountered at the time of our study. We recommend gradual slopes away from foundations at structure locations to assist with site drainage, ponding, and potential shrink/swell issues. Based on the upper site soils, erosion and slope sloughing, causing for periodic maintenance are limitations when utilizing 2:1 slopes or steeper. We recommend the use of 3:1 slopes (or flatter) for general site grading.

Site Drainage Recommendations

Drainage is one of the most important aspects to be addressed to ensure the successful performance of any foundation. Positive surface drainage should be implemented prior to, during and maintained after construction to prevent water ponding at or adjacent to the proposed

facilities. We advise that construction drainage programs be implemented to assist with standing waters from precipitation, general surface runoff or other moisture intrusion. It is recommended that the site design include site drainage features to channel runoff away from the proposed site location and most importantly away from all shallow foundations.

Site Preparation Recommendations

The proposed site areas and all areas used to support foundation construction should be cleared and grubbed of all vegetation, organic topsoil and other miscellaneous debris up to a minimum of two (2) feet beyond the proposed site perimeters. This shall include the removal of all trees, brush, roots, weeds, or other organic debris that will interfere with construction. After clearing, the contractor should follow the earthwork procedures outlined in the 'Foundation Recommendations' section of this report. Any soft and/or compressible soft spots noted during compaction activities shall be over-excavated and replaced with Select Fill. All placements of **Select Fill** and **Structural Fill** shall be in accordance with the 'Select Fill & Structural Fill Recommendations' section of this report. Any excavation/backfill activities should be observed by **L&G** representatives to document subgrade preparation.

L&G understands that the existing site may require minimal amounts of cut and fill to level or flatten the existing topography (mass balance). It should be noted; existing site soils in the upper strata generally fell within or near the requirements of **Select Fill** as denoted in the "Select Fill & Structural Fill Recommendations" section of this report. The contractor may utilize areas of cut to balance the fill areas required to achieve the desired contour provided they meet the requirements of select fill as presented in this report.

Select Fill & Structural Fill Recommendations

Materials used for **Select Fill** (General Site Grading) shall meet the following requirements:

1. Soils classified according to the Unified Soils Classification System as SM, SC, GM, GC, CL, ML and combinations of these soils. These soils shall be free of organic material, topsoil, debris, or other deleterious material that cannot be properly compacted. In addition to the USCS classification, select materials shall have a **liquid limit of less than 40 and a plasticity index between 8 and 20**.

2. Soils classified as CH, MH, OH, OL and PT, under the USCS are not considered suitable for use as select fill materials at this site.

3. **L&G** recommends additional quality control of all 'General Site Fill' materials as they are placed and compacted to ensure that they meet the requirements specified.

Select Fill shall be placed in lifts not to exceed 8 inches loose (6 inches compacted) and compacted to a minimum 95 percent of the maximum dry density as determined in accordance with ASTM D698. The water content of the fill shall be maintained within the range of optimum moisture to three (3) percentage points above the optimum moisture content until the fill is permanently covered. The fill should be properly compacted in accordance with these recommendations and tested for compaction as specified.

Materials used for **Structural Fill** shall meet the following requirements:

1. Soils classified as Base Material meeting the requirements of TxDOT 2004 Specification Item 247 Type E, Grade 4 - Caliche (see Table 5 for specifications and requirements) or Item 247 Type A, Grade 1 - Limestone (see Table 6 for specifications and requirements).

2. **L&G** recommends additional quality control of all **Structural Fill** materials as they are placed and compacted to ensure that they meet the requirements specified.

Structural Fill shall be compacted to a minimum 98 percent of the maximum dry density as determined by the ASTM D698 at moisture contents ranging between minus two (-2) and plus two (+2) percentage points of the optimum moisture content. **Structural Fill** shall be placed in loose lifts not to exceed 8 inches (6 inches compacted). The fill should be properly compacted in accordance with these recommendations and tested for compaction as specified.

Retained on Square Sieve	Percent Retained
2"	0
1/2"	20-60
No. 4	40-75
No. 40	70-90
Plasticity Index, max	15
Wet Ball PI, max	15
Wet Ball Mill, % max	50

Table 5 – Structural Fill - Type E Grade 4 Specifications

Retained on Square Sieve	Percent Retained
2–1/2"	0
1–3/4"	0
7/8"	10-35
3/8"	30-50
No. 4	45-65
No. 40	70-85
Liquid Limit, % max	35
Plasticity Index, % max	10
Wet Ball Mill, % max	40

Table 6 – Structural Fill - Type A Grade 1 Specifications

Excavation, Sloping, Benching and Utility Considerations

If trenches are to extend to or below a depth of five (5) ft, the contractor or persons doing the trenching should adhere to the current Occupational Health and Safety Administration (OSHA) guidelines on trench excavation safety and protection measures or other applicable industry standards. The collection of specific geotechnical data and development of a plan for trench safety, sloping, benching or various types of temporary shoring, is beyond the scope of the this study. Utilities that protrude through the slab-on-grade should be designed with some degree of flexibility or with sleeves. Such features will help reduce the risk of damage to utility facilities from soil movements related to shrinkage and expansion. Furthermore, when trenching for utility installation, we recommend that the backfill used to protect these utilities conform to the recommendations presented in the 'Select Fill Recommendations' section of this report.

PAVEMENT RECOMMENDATIONS

Background Information

The pavement recommendations contained in this report were limited to the data recovered from the field and laboratory testing performed for the borings. No traffic loading data was presented for the proposed parking lot. Our recommendations are based on design procedures found in the Army Corps of Engineers Manuals EM 1110-3-131 (Flexible Pavement Design) and our experience with similar soils and site conditions. The traffic composition used in our analysis was grouped under 'Category I', which is comprised of traffic essentially free of trucks (not more than 1% two-axle trucks). The road type selected was 'Class E', with a flat slope and low volume (under 1,000 average daily vehicles).

Subgrade Analysis

The existing subgrade index properties (plasticity index and grain size) were used to correlate the Modulus of Soil Reaction (k) and the California Bearing Ratio (CBR) values of the subgrade. These values were then applied to the corresponding design procedures, according to the applicable Army Corps of Engineers manuals to determine the recommended minimum pavement thickness for flexible pavement designs. A subgrade k value of **170 pci** and a CBR value of 7 were utilized in the pavement designs.

Pavement Section Recommendations

After completing the pavement designs and analyzing several options for construction, **L&G** has provided the following options within Table 7 for pavement thickness:

Flexible Pavement Design Recommendations		
Materials	**Design #1**	**Design #2**
Asphalt Pavement (ACP)	**2.0 in.**	**2.0 in.**
Crushed Limestone (Ty.A Gr.1)	**6.0 in.**	
Caliche Base (Ty.E Gr.4)		**8.0 in.**
Compacted Subgrade	**6.0 in.**	**6.0 in.**

Table 7 – Flexible Pavement Options

Pavement Material Specification Recommendations

Asphaltic Concrete Pavement (ACP) Surface

The asphalt concrete pavement (ACP) surface shall meet the requirements of the current TxDOT 2004 Specification Item 340 for Type D Hot Mix Asphaltic Concrete. The hot mix asphaltic surface will be compacted to between 91 and 96 percent of the maximum theoretical density in conformance with the specification. The grade of the asphalt cement should contain a minimum PG 64-22 asphalt binder. It is recommended that the testing required by this specification be performed during production and placement by a representative of **L&G**.

Flexible Base Material (Crushed Limestone)

The crushed limestone material shall meet the requirements of TxDOT 2004 Specification Item 247 Type A, Grade 1. The limestone base shall conform to the gradation and properties requirements as previously presented in Table 6 – Structural Fill - Type A Grade 1 Specifications. The Wet Ball Test (Tex-116-E) and the Plasticity Index shall be run with the material passing the No. 40 sieve. The base shall be compacted to a minimum 98 percent of the maximum dry density as determined by the standard moisture density relation at moisture contents ranging between minus two (-2) and plus two (+2) percentage points of the optimum moisture content. The base shall be placed in loose lifts not to exceed 8 inches (6 inches compacted).

Flexible Base Material (Caliche)

The caliche base material shall meet the requirements of TxDOT 2004 Specification Item 247 Type E, Grade 4 as approved by the engineer. Caliche base shall conform to the gradation and properties requirements as previously presented in Table 5 – Structural Fill - Type E Grade 4 Specifications requirements **before** lime or admixtures are added. The Wet Ball Test (Tex-116-E) and the Plasticity Index shall be run with the material passing the No. 40 sieve. The base shall be compacted to a minimum 98 percent of the maximum dry density as determined by the standard moisture density relation at moisture contents ranging between minus two (-2) and plus two (+2) percentage points of the optimum moisture content. The base shall be placed in loose lifts not to exceed 8 inches (6 inches compacted). Lime treated caliche base material shall meet all the previous requirements and contain a minimum of two (2) percent lime or Portland Cement by weight. Lime and cement treatments shall be in compliance with all applicable sections of TxDOT Item 260 and 275 specifications.

Compacted Subgrade

The subgrade layer shall be compacted and moisture conditioned to a minimum 95 percent of the maximum dry density at moisture contents ranging from minus two (-2) to plus three (+3) percentage points of the optimum moisture content. Based on the soil properties and in-situ strength conditions, no further treatment is warranted. It should be noted, however, the addition of small percentage of lime and/or cement (usually no more than 3%) is typically utilized to enhance strength and provide a solid working platform for the construction.

General and Miscellaneous Recommendations

Adequate perimeter drainage is essential for long-term performance of any pavement structure. Infiltration of surface water from unpaved areas surrounding the pavement should be minimized. Base materials under curb and gutters should be compacted to the same requirements as other areas. It is recommended that these curb and gutters be extended through the base and a minimum of three (3) inches into the subgrade. This will reduce the potential of intrusion of moisture from adjacent areas. An adequate seal should be provided at all base-asphalt interfaces.

A maintenance plan is recommended for the long-term performance of paved areas. Asphaltic pavements have a tendency to strip and become oxidized with exposure to the elements. Thus cracks may become present in the pavement. It is recommended that a maintenance schedule of biannual crack sealing, fog seals and overlays every five to ten years be used over the life of the pavement.

REFERENCES

1. Jacobs, Jerry L., 1981, "Soil Survey of Hidalgo County, Texas", Washington, D.C.

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3. Post-Tensioning Institute, 2004, "Design of Post-Tensioned Slabs on Ground", Phoenix, AZ.

4. Wire Reinforcement Institute, 1981, "Design of Slab-on-Ground Foundations", Hartford, CT.

5. TxDOT, 2004, "Standard Specification for the Construction of Highways, Streets, and Bridges", Austin, TX.

6. TxDOT, 2005, "100-E, Soils & Aggregates Test Procedures", Austin, TX.

7. American Society of Testing Materials, Volume 04.08, Soil and Rock (I): D420- D5779 March 2003.

8. United Stated Army Corps of Engineers, "Bearing Capacity of Soils", EM 1110-1-1905

9. United Stated Army Corps of Engineers, "Flexible Pavements for Roads, Streets, Walks and Open Storage Areas", EM 1110-3-131

10. United Facilities Criteria (UFC), "Soils & Geology Procedures for Foundation Design of Building and Other Structures", UFC 3-220-03FA, (January 2004).

11. Das, Braja M., "Principles of Foundation Engineering, 6th Edition", July 2006.

APPENDIX A – FIGURES

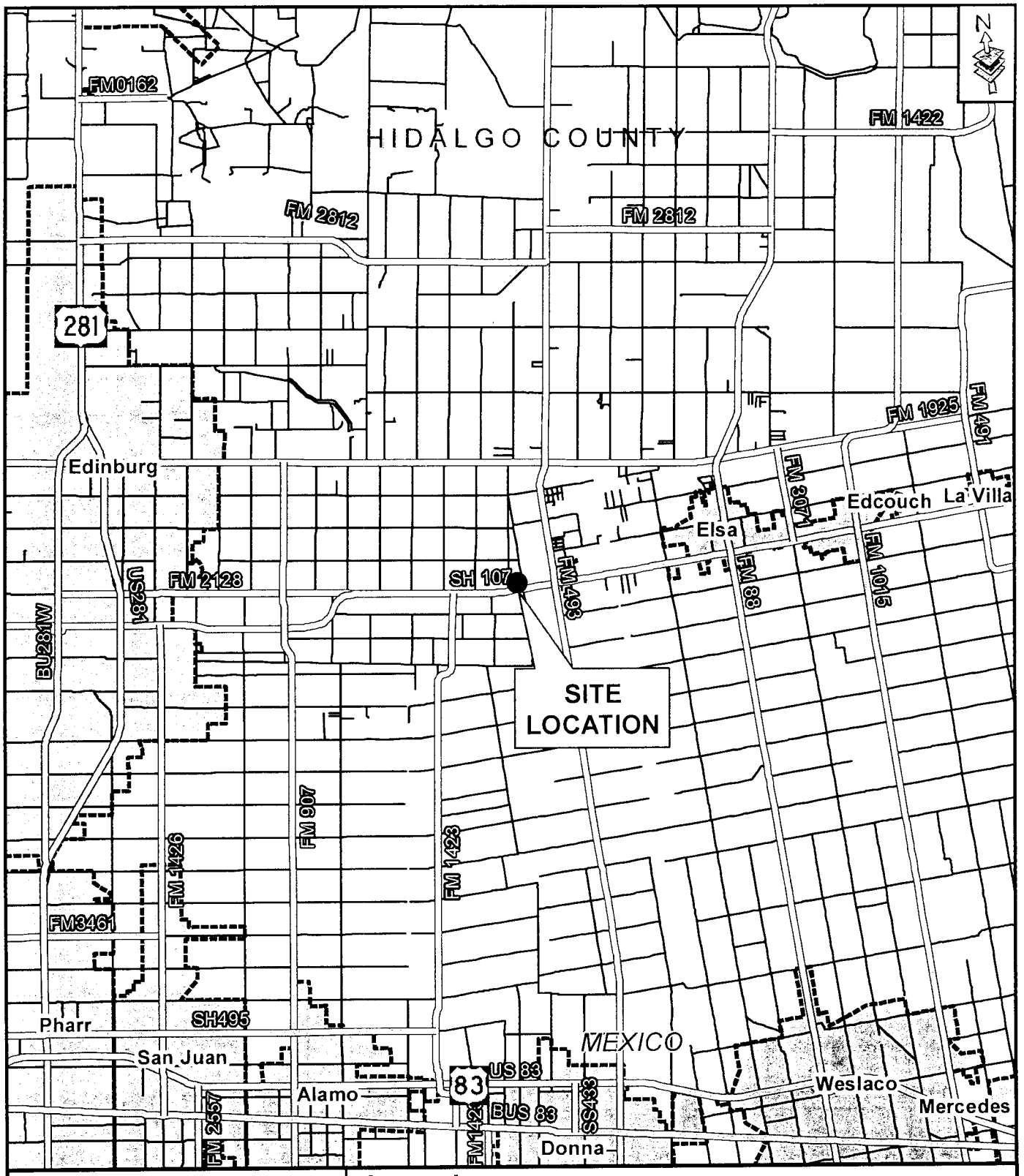


Figure. 1
Sunflower Park Rec Facility Imp. Project Location Map

Legend

- Site Location
- State Roads
- Roads

11,000 Feet
1 inch = 11,120 feet

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Document Path: H:\GIS Data\Lab\Projects\Year 2013 Projects\Sunflower Park Rec Facility Imp Project\SunflowerPark-Figure1_Location_Map.mxd

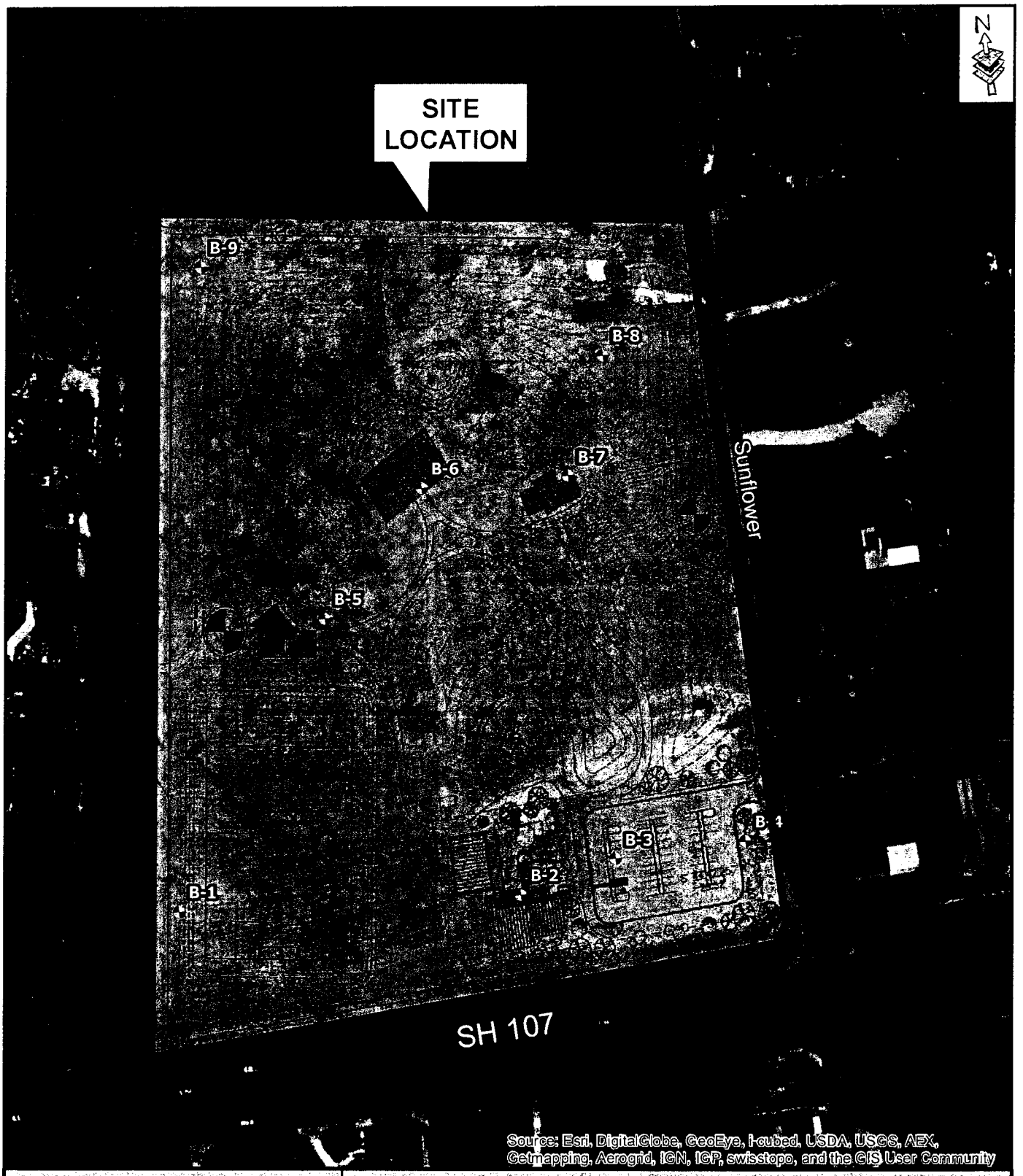


Figure. 2
Sunflower Park Rec Facility Imp. Project
Boring Map

Legend

- Bore Locations
- Site Location

160 Feet
1 inch = 167 feet

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Document Path: H:\GIS Data\Lab\Projects\Year 2013 Projects\Sunflower Park Rec Facility Imp Project\SunflowerPark-Figure2_Boring_Map.mxd

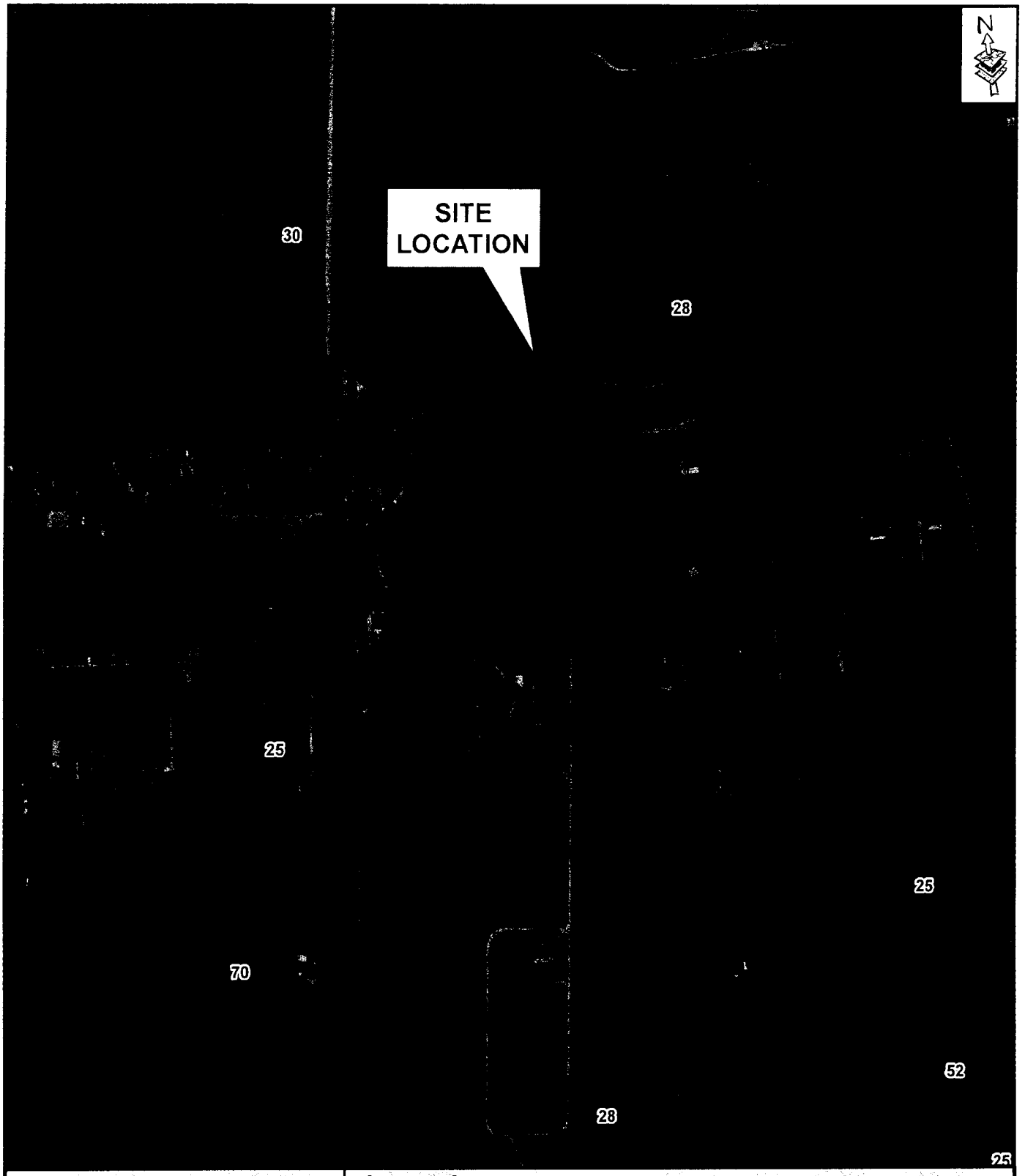


Figure. 3
Sunflower Park Rec Facility Imp. Project
Soil Classification Map
USDA SOIL CONSERVATION SERVICE

Legend

- Site Location
- 25 - Hidalgo Fine Sandy Loam, 0 to 1% Slopes
- 28 - Hidalgo Sandy Clay Loam, 0 to 1% Slopes

500 Feet
1 inch = 500 feet

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Document Path: H:\GIS Data\Lab\Projects\Year 2013 Projects\Sunflower Park Rec Facility Imp Project\SunflowerPark-Figure3_Soils_Map.mxd

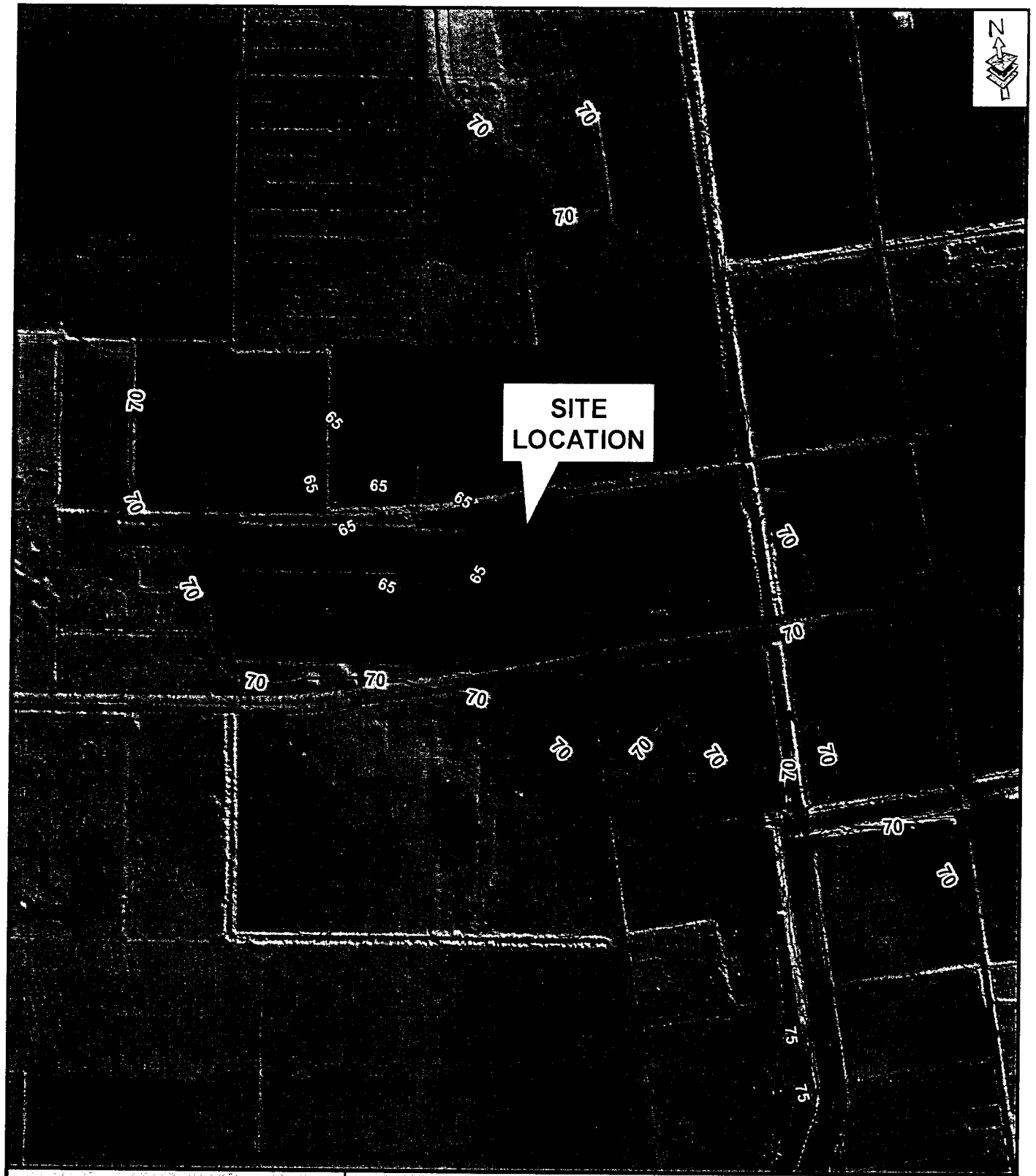


Figure. 4
Sunflower Park Rec Facility Imp. Project
Digital Elevation Map

Legend

- Site Location
- 1 ft Contours
- 5 ft Contours
- 10 ft Contours

Value
High
Low

1,000 Feet
1 inch = 1,000 feet

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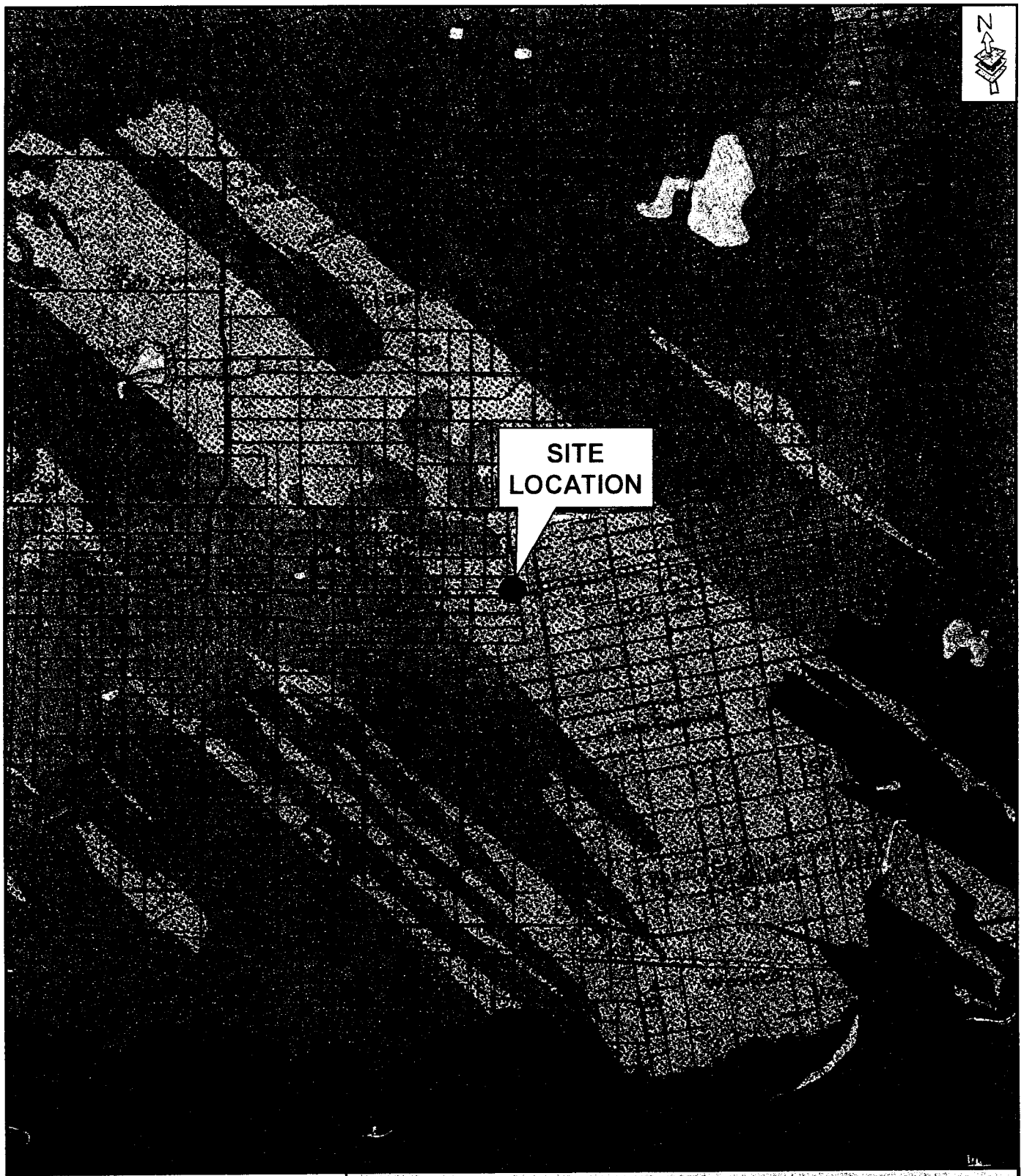


Figure. 5
Sunflower Park Rec Facility Imp. Project
Geological Atlas of Texas Map

Legend

Site Location

Stabilized Sand Dune Deposits

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APPENDIX B – BORING LOGS

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KEY TO SYMBOLS

CLIENT Hidalgo County Pct. 4 **PROJECT NAME** Sunflower Park Rec. Facility Improve. Project

PROJECT NUMBER GL13012 **PROJECT LOCATION** Hidalgo County

LITHOLOGIC SYMBOLS
(Unified Soil Classification System)

- CL: USCS Low Plasticity Clay
- FILL: Fill (made ground)
- SC: USCS Clayey Sand
- SC-SM: USCS Clayey Sand
- SM: USCS Silty Sand
- SP-SC: USCS Poorly-graded Sand with Clay
- SP-SM: USCS Poorly-graded Sand with Silt

SAMPLER SYMBOLS

- Standard Penetration Test

WELL CONSTRUCTION SYMBOLS

ABBREVIATIONS

LL - LIQUID LIMIT (%)
PI - PLASTIC INDEX (%)
W - MOISTURE CONTENT (%)
DD - DRY DENSITY (PCF)
NP - NON PLASTIC
-200 - PERCENT PASSING NO. 200 SIEVE
PP - POCKET PENETROMETER (TSF)
TV - TORVANE
PID - PHOTOIONIZATION DETECTOR
UC - UNCONFINED COMPRESSION
ppm - PARTS PER MILLION
Water Level at Time Drilling, or as Shown
Water Level at End of Drilling, or as Shown
Water Level After 24 Hours, or as Shown

KEY TO SYMBOLS - GINT STD US LAB.GDT - 7/17/13 10:06 - L:\GINT\PROJECTS\HID CO PCT 4 - SUNFLOWER PARK REC FACILITY IMP PRJ.GPJ

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BORING NUMBER B-1

CLIENT Hidalgo County Pct. 4
PROJECT NAME Sunflower Park Rec. Facility Improve. Project
PROJECT NUMBER GL13012
PROJECT LOCATION Hidalgo County
DATE STARTED 6/19/13 **COMPLETED** 6/19/13
GROUND ELEVATION 66 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR L&G Engineering Laboratory
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
▽ **AT TIME OF DRILLING** 8.00 ft / Elev 58.00 ft
LOGGED BY O. Contreras **CHECKED BY** D. Saenz, P.E.
AT END OF DRILLING —
NOTES GPS 26°17'36.54"N, 98°02'52.98"W (Elev. Approx.)
AFTER DRILLING —

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CL) Sandy Lean Clay, Brown, w/ Small Roots and Wood Fragments, Stiff, Dry	SPT 1		7-8-6 (14)			8				52
		(CL) Sandy Lean Clay, Dark Brown, Soft, Moist	SPT 2		2-2-2 (4)			16	28	12	16	
5			SPT 3		1-2-1 (3)			23				56
		(SC) Clayey Sand, Lean, Brown, Very Loose, Moist to Wet ▽	SPT 4		1-1-2 (3)			20	27	11	16	
10			SPT 5		1-1-2 (3)			27				32
15		(SC-SM) Silty, Clayey Sand, Brown, Medium Dense, Wet	SPT 6		7-10-11 (21)			21	NP	NP	NP	
20		(SP-SC) Poorly Graded Sand w/ Clay, Brown, Dense to Very Dense, Wet	SPT 7		11-21-30 (51)			22				12
25			SPT 8		14-14-20 (34)			27	29	17	12	
30			SPT 9		19-19-25 (44)			24				11

Bottom of borehole at 30.0 feet.

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BORING NUMBER B-2

CLIENT Hidalgo County Pct. 4 **PROJECT NAME** Sunflower Park Rec. Facility Improve. Project
PROJECT NUMBER GL13012 **PROJECT LOCATION** Hidalgo County
DATE STARTED 6/19/13 **COMPLETED** 6/19/13 **GROUND ELEVATION** 69 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR L&G Engineering Laboratory **GROUND WATER LEVELS:**
DRILLING METHOD Solid Stem Auger / Mud Rotary ▽ **AT TIME OF DRILLING** 10.00 ft / Elev 59.00 ft
LOGGED BY O. Contreras **CHECKED BY** D. Saenz, P.E. **AT END OF DRILLING** —
NOTES GPS 26°17'36.12"N, 98°02'48.36"W (Elev. Approx.) **AFTER DRILLING** —

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Fill Section at Boring Location (Approximately 2 Ft. in Height Above Natural Ground), No Soil Sampling or Testing Completed in the Layer										
		(CL) Sandy Lean Clay, Dark Brown to Brown, w/ Calcareous Nodules and Calcareous Streaks (Noted From 4.5 ft to 8.5 ft), Soft, Moist to Wet	SPT 1		2-2-2 (4)			20	28	14	14	
5			SPT 2		1-1-2 (3)			24				54
			SPT 3		1-2-2 (4)			21	27	13	14	
10		▽ (SC) Clayey Sand, Lean, Brown, w/ Calcareous Nodules and Calcareous Streaks (Noted From 8.5 ft to 10 ft), Very Loose to Medium Dense, Wet	SPT 4		2-2-2 (4)			20				49
			SPT 5		3-6-8 (14)			20	28	16	12	
15												
			SPT 6		9-10-11 (21)			20				13
20												
			SPT 7		8-13-14 (27)			23				
25												
		(SP-SC) Poorly Graded Sand w/ Clay, Brown, Dense, Wet	SPT 8		16-20-28 (48)			22				12
30												
		(CL) Sandy Lean Clay, Reddish Brown, Hard, Wet	SPT 9		12-17-20 (37)			23	37	19	18	
35												

Bottom of borehole at 35.0 feet.

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BORING NUMBER B-3

CLIENT Hidalgo County Pct. 4
PROJECT NAME Sunflower Park Rec. Facility Improve. Project
PROJECT NUMBER GL13012
PROJECT LOCATION Hidalgo County
DATE STARTED 6/20/13 **COMPLETED** 6/20/13
GROUND ELEVATION 68 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR L&G Engineering Laboratory
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger
AT TIME OF DRILLING — No Water Strike Encountered
LOGGED BY O. Contreras **CHECKED BY** D. Saenz, P.E.
AT END OF DRILLING ---
NOTES GPS 26°17'36.38"N, 98°02'47.02"W (Elev. Approx.)
AFTER DRILLING —

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Fill Section at Boring Location (Approximately 3 Ft. in Height Above Natural Ground), No Soil Sampling or Testing Completed in the Layer										
5		(SC) Clayey Sand, Lean, Blackish Dark Brown to Brown, Loose, Moist	SPT 1		2-2-3 (5)			18	23	12	11	34
10		(CL) Sandy Lean Clay, Brown, Medium Stiff, Moist to Wet	SPT 2		3-3-3 (6)			21	25	15	10	51

Bottom of borehole at 10.0 feet.

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BORING NUMBER B-4

CLIENT Hidalgo County Pct. 4
PROJECT NAME Sunflower Park Rec. Facility Improve. Project
PROJECT NUMBER GL13012
PROJECT LOCATION Hidalgo County
DATE STARTED 6/20/13 **COMPLETED** 6/20/13
GROUND ELEVATION 67 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR L&G Engineering Laboratory
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger
AT TIME OF DRILLING — No Water Strike Encountered
LOGGED BY O. Contreras **CHECKED BY** D. Saenz, P.E.
AT END OF DRILLING —
NOTES GPS 26°17'36.35"N, 98°02'45.23"W (Elev. Approx.)
AFTER DRILLING —

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		(SC) Clayey Sand, Lean, Blackish Dark Brown to Brown, w/ Small Roots (Noted From 0.5 ft to 2 ft), Very Loose to Loose, Moist to Wet	SPT 1		3-2-2 (4)			14	30	19	11	36
5			SPT 2		2-3-3 (6)			21	24	11	13	44
		Bottom of borehole at 5.0 feet.										

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BORING NUMBER B-5

CLIENT Hidalgo County Pct. 4
PROJECT NAME Sunflower Park Rec. Facility Improve. Project
PROJECT NUMBER GL13012
PROJECT LOCATION Hidalgo County
DATE STARTED 6/19/13 **COMPLETED** 6/19/13
GROUND ELEVATION 65 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR L&G Engineering Laboratory
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger
▽ **AT TIME OF DRILLING** 9.00 ft / Elev 56.00 ft
LOGGED BY O. Contreras **CHECKED BY** D. Saenz, P.E.
AT END OF DRILLING —
NOTES GPS 26°17'39.78"N, 98°02'50.46"W (Elev. Approx.)
AFTER DRILLING —

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(SC) Clayey Sand, Lean, Blackish Dark Brown, w/ Small Roots, Very Loose, Dry	SPT 1		2-2-2 (4)			11	29	17	12	
		(SC-SM) Silty, Clayey Sand, Brown, Very Loose to Medium Dense, Moist to Wet	SPT 2		2-3-3 (6)			22				31
5			SPT 3		1-1-1 (2)			21	22	16	6	
			SPT 4		1-2-2 (4)			20				33
10		▽	SPT 5		2-4-7 (11)			21				

Bottom of borehole at 10.0 feet.

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Mercedes TX 78570
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BORING NUMBER B-6

CLIENT Hidalgo County Pct. 4
PROJECT NAME Sunflower Park Rec. Facility Improve. Project
PROJECT NUMBER GL13012
PROJECT LOCATION Hidalgo County
DATE STARTED 6/19/13 **COMPLETED** 6/19/13
GROUND ELEVATION 66 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR L&G Engineering Laboratory
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger
▽ **AT TIME OF DRILLING** 8.00 ft / Elev 58.00 ft
LOGGED BY O. Contreras **CHECKED BY** D. Saenz, P.E.
AT END OF DRILLING —
NOTES GPS 26°17'41.16"N, 98°02'48.90"W (Elev. Approx.)
AFTER DRILLING —

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		(SC-SM) Silty, Clayey Sand, Blackish Dark Brown, w/ Small Roots (Noted From 0.5 ft to 2 ft), Very Loose to Loose, Dry to Moist	SPT 1		3-5-5 (10)			15				32
			SPT 2		2-3-3 (6)			22	24	18	6	
5			SPT 3		1-2-2 (4)			25				39
		(SM) Silty Sand, Brown, Loose to Medium Dense, Wet ▽	SPT 4		2-2-3 (5)			21	19	18	1	
10			SPT 5		4-7-10 (17)			19				16

Bottom of borehole at 10.0 feet.

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Mercedes TX 78570
Telephone: 956-565-0760

BORING NUMBER B-7

CLIENT Hidalgo County Pct. 4
PROJECT NAME Sunflower Park Rec. Facility Improve. Project
PROJECT NUMBER GL13012
PROJECT LOCATION Hidalgo County
DATE STARTED 6/19/13 **COMPLETED** 6/19/13
GROUND ELEVATION 66 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR L&G Engineering Laboratory
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger
▽ **AT TIME OF DRILLING** 7.00 ft / Elev 59.00 ft
LOGGED BY O. Contreras **CHECKED BY** D. Saenz, P.E.
AT END OF DRILLING —
NOTES GPS 26°17'41.04"N, 98°02'46.92"W (Elev. Approx.)
AFTER DRILLING —

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(SC) Clayey Sand, Lean, Blackish Dark Brown, Very Loose to Loose, Dry to Moist	SPT 1		2-2-2 (4)			15	23	15	8	
		(SC-SM) Silty, Clayey Sand, Brown, Loose to Medium Dense, Moist to Wet	SPT 2		2-3-3 (6)			21				33
5		▽	SPT 3		3-3-4 (7)			20	23	17	6	
			SPT 4		4-6-8 (14)			21				27
10			SPT 5		5-8-15 (23)			21				

Bottom of borehole at 10.0 feet.

GEOTECH BH COLUMNS - GINT STD US LAB.GDT - 7/17/13 10:06 - L:\GINT\PROJECTS\HID CO PCT 4 - SUNFLOWER PARK REC FACILITY IMP PRJ.GPJ

L & G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
Mercedes TX 78570
Telephone: 956-565-0760

BORING NUMBER B-8

CLIENT Hidalgo County Pct. 4
PROJECT NAME Sunflower Park Rec. Facility Improve. Project
PROJECT NUMBER GL13012
PROJECT LOCATION Hidalgo County
DATE STARTED 6/20/13 **COMPLETED** 6/20/13
GROUND ELEVATION 66 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR L&G Engineering Laboratory
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger
▽ **AT TIME OF DRILLING** 7.50 ft / Elev 58.50 ft
LOGGED BY O. Contreras **CHECKED BY** D. Saenz, P.E.
AT END OF DRILLING —
NOTES GPS 26°17'42.41"N, 98°02'46.22"W (Elev. Approx.)
AFTER DRILLING —

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		(SC-SM) Silty, Clayey Sand, Brown to Light Brown, Very Loose, Moist to Wet	SPT 1		2-1-1 (2)			16	25	19	6	31
			SPT 2		2-2-2 (4)			22	19	14	5	
5			SPT 3		3-2-2 (4)			22				27
		▽ (SP-SM) Poorly Graded Sand w/ Silt, Brown, Loose to Medium Dense, Wet	SPT 4		2-4-6 (10)			21	NP	NP	NP	
10			SPT 5		4-7-9 (16)			24				10

Bottom of borehole at 10.0 feet.

GEOTECH BH COLUMNS - GINT STD US LAB.GDT - 7/17/13 10:06 - L:\GINT\PROJECTS\HID CO PCT 4 - SUNFLOWER PARK REC FACILITY IMP PRJ.GPJ

L & G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
Mercedes TX 78570
Telephone: 956-565-0760

BORING NUMBER B-9

CLIENT Hidalgo County Pct. 4
PROJECT NUMBER GL13012
DATE STARTED 6/20/13 COMPLETED 6/20/13
DRILLING CONTRACTOR L&G Engineering Laboratory
DRILLING METHOD Solid Stem Auger
LOGGED BY O. Contreras CHECKED BY D. Saenz, P.E.
NOTES GPS 26°17'44.20"N, 98°02'51.44"W (Elev. Approx.)

PROJECT NAME Sunflower Park Rec. Facility Improve. Project
PROJECT LOCATION Hidalgo County
GROUND ELEVATION 65 ft HOLE SIZE 4 inches
GROUND WATER LEVELS:
▽ AT TIME OF DRILLING 8.00 ft / Elev 57.00 ft
AT END OF DRILLING —
AFTER DRILLING —

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(SC) Clayey Sand, Lean, Blackish Dark Brown, w/ Small Roots, Very Loose, Dry	SPT 1		3-2-2 (4)			12	24	16	8	
		(SC-SM) Silty, Clayey Sand, Brown, Very Loose to Loose, Moist to Wet	SPT 2		2-2-2 (4)			21				33
5			SPT 3		1-1-2 (3)			21	22	15	7	
		▽	SPT 4		2-3-3 (6)			20				31
10			SPT 5		2-2-4 (6)			26				15

Bottom of borehole at 10.0 feet.

GEOTECH BH COLUMNS - GINT STD US LAB.GDT - 7/17/13 10:06 - L:\GINT\PROJECTS\HID CO PCT 4 - SUNFLOWER PARK REC FACILITY IMP PRJ.GPJ

APPENDIX C – POTENTIAL VERTICAL RISE

Project: Sunflower Park Geo
Number: GL13012
Boring: B-1
Date: 7/16/13
Engineer: David A. Saenz, P.E.

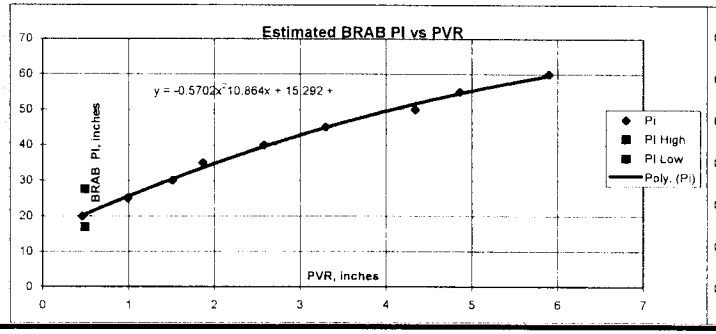
Existing in-situ soil has a PVR of approximately 0.5 inches at this location.

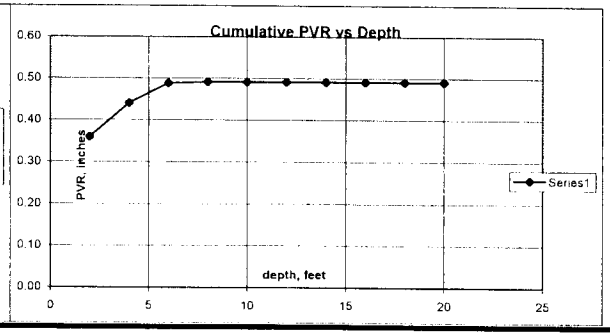
L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

Additional Surcharge 0 psi
Wet Density 125 pcf

Layer	Top	Bottom	PI	Load Top	Load Bottom	Average Load, psi	Moisture content	Minus No. 40	Free Swell	Top of Layer	Bottom of Layer	Differential PVR	PVR in Layer	Cumulative PVR
1	0	2	16	0	2	1	dry	100%	6.0	0.00	0.36	0.36	0.36	0.36
2	2	4	16	2	4	3	wet	100%	4.0	0.19	0.28	0.08	0.08	0.44
3	4	6	16	4	6	5	wet	100%	4.0	0.28	0.32	0.05	0.05	0.49
4	6	8	16	6	8	7	wet	100%	4.0	0.32	0.33	0.00	0.00	0.49
5	8	10	16	8	10	9	wet	100%	4.0	0.33	0.33	0.00	0.00	0.49
6	10	12	16	10	12	11	wet	100%	4.0	0.33	0.33	0.00	0.00	0.49
7	12	14	7	12	14	13	wet	100%	3.0	0.25	0.25	0.00	0.00	0.49
8	14	16	7	14	16	15	wet	100%	3.0	0.25	0.25	0.00	0.00	0.49
9	16	18	12	16	18	17	wet	100%	3.0	0.25	0.25	0.00	0.00	0.49
10	18	20	12	18	20	19	wet	100%	3.0	0.25	0.25	0.00	0.00	0.49

* Note PI = 7 was utilizied as the lowest bound number (all NP to 7 were modeled as at least PI=7)





Equivalent BRAB PI
15

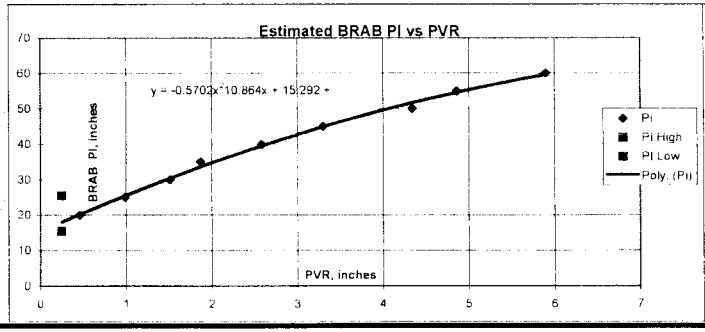
Project: Sunflower Park Geo
Number: GL13012
Boring: B-2
Date: 7/16/13
Engineer: David A. Saenz, P.E.

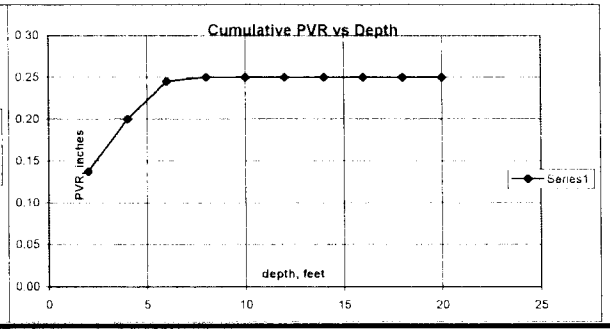
Existing in-situ soil has a PVR of approximately 0.3 inches at this location.

L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

Additional Surcharge 0 psi
Wet Density 125 pcf

Layer	Top	Bottom	PI	Load Top	Load Bottom	Average Load, psi	Moisture content	Minus No. 40	Free Swell	Top of Layer	Bottom of Layer	Differential PVR	PVR in Layer	Cumulative PVR
1	0	2	14	0	2	1	wet	100%	3.0	0.00	0.14	0.14	0.14	0.14
2	2	4	14	2	4	3	wet	100%	3.0	0.14	0.20	0.06	0.06	0.20
3	4	6	14	4	6	5	wet	100%	3.0	0.20	0.25	0.05	0.05	0.25
4	6	8	14	6	8	7	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
5	8	10	14	8	10	9	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
6	10	12	12	10	12	11	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
7	12	14	12	12	14	13	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
8	14	16	12	14	16	15	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
9	16	18	12	16	18	17	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
10	18	20	12	18	20	19	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25





Equivalent BRAB PI
14

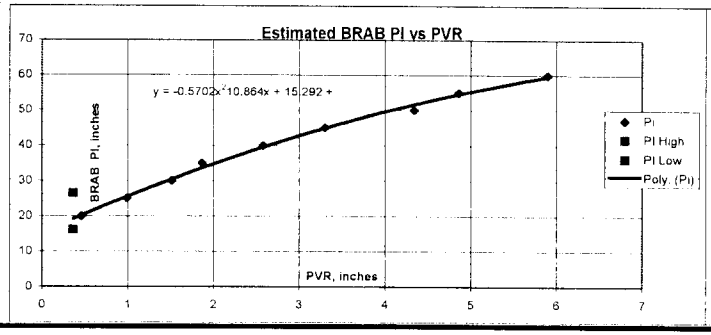
Project: Sunflower Park Geo
Number: GL13012
Boring: B-5
Date: 7/16/13
Engineer: David A. Saenz, P.E.

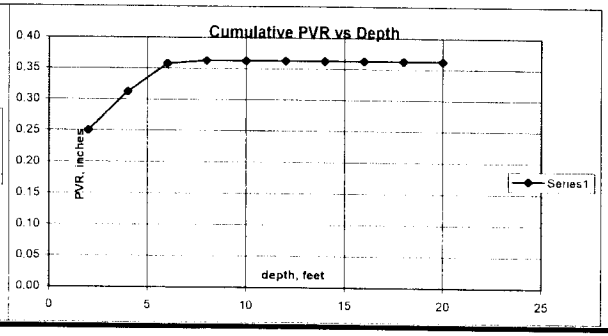
Existing in-situ soil has a PVR of approximately 0.4 inches at this location.

L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

Additional Surcharge 0 psi
Wet Density 125 pcf

Layer	Top	Bottom	PI	Load Top	Load Bottom	Average Load, psi	Moisture content	Minus No. 40	Free Swell	Top of Layer	Bottom of Layer	Differential PVR	PVR in Layer	Cumulative PVR
1	0	2	12	0	2	1	dry	100%	5.0	0.00	0.25	0.25	0.25	0.25
2	2	4	12	2	4	3	wet	100%	3.0	0.14	0.20	0.06	0.06	0.31
3	4	6	7	4	6	5	wet	100%	3.0	0.20	0.25	0.05	0.05	0.36
4	6	8	7	6	8	7	wet	100%	3.0	0.25	0.25	0.00	0.00	0.36
5	8	10	7	8	10	9	wet	100%	3.0	0.25	0.25	0.00	0.00	0.36
6	10	12	7	10	12	11	wet	100%	3.0	0.25	0.25	0.00	0.00	0.36
7	12	14	7	12	14	13	wet	100%	3.0	0.25	0.25	0.00	0.00	0.36
8	14	16	7	14	16	15	wet	100%	3.0	0.25	0.25	0.00	0.00	0.36
9	16	18	7	16	18	17	wet	100%	3.0	0.25	0.25	0.00	0.00	0.36
10	18	20	7	18	20	19	wet	100%	3.0	0.25	0.25	0.00	0.00	0.36





Equivalent BRAB PI
9

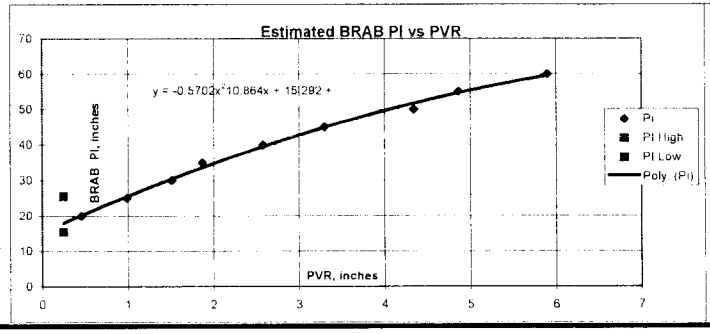
Project: Sunflower Park Geo
Number: GL13012
Boring: B-6
Date: 7/16/13
Engineer: David A. Saenz, P.E.

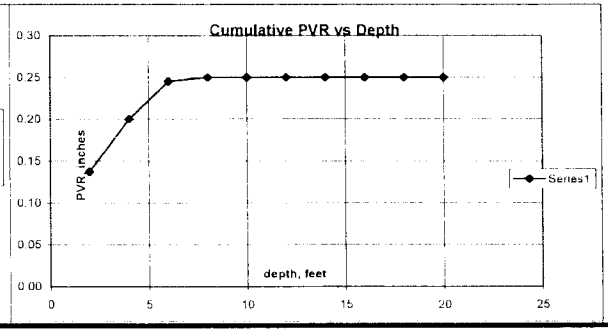
L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

Existing in-situ soil has a PVR of approximately 0.3 inches at this location.

Additional Surcharge 0 psi
Wet Density 125 pcf

Layer	Top	Bottom	PI	Load Top	Load Bottom	Average Load, psi	Moisture content	Minus No. 40	Free Swell	Top of Layer	Bottom of Layer	Differential PVR	PVR in Layer	Cumulative PVR
1	0	2	7	0	2	1	dry	100%	3.0	0.00	0.14	0.14	0.14	0.14
2	2	4	7	2	4	3	wet	100%	3.0	0.14	0.20	0.06	0.06	0.20
3	4	6	7	4	6	5	wet	100%	3.0	0.20	0.25	0.05	0.05	0.25
4	6	8	7	6	8	7	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
5	8	10	7	8	10	9	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
6	10	12	7	10	12	11	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
7	12	14	7	12	14	13	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
8	14	16	7	14	16	15	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
9	16	18	7	16	18	17	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
10	18	20	7	18	20	19	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25





Equivalent BRAB PI
7

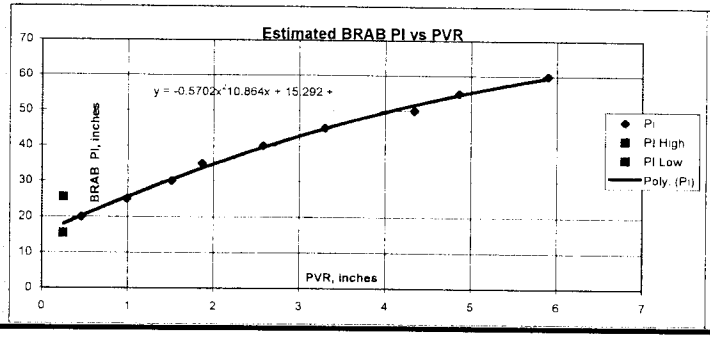
Project: Sunflower Park Geo
Number: GL13012
Boring: B-7
Date: 7/16/13
Engineer: David A. Saenz, P.E.

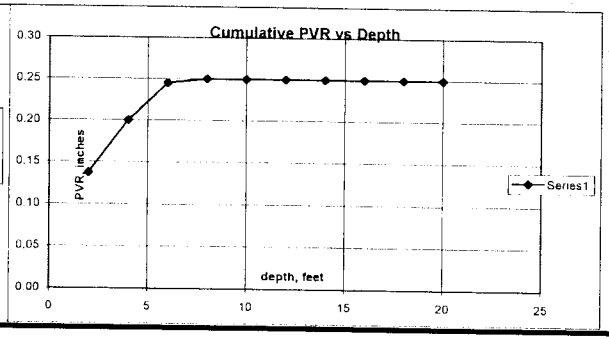
L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

Existing in-situ soil has a PVR of approximately 0.3 inches at this location.

Additional Surcharge 0 psi
Wet Density 125 pcf

Layer	Top	Bottom	PI	Load Top	Load Bottom	Average Load, psi	Moisture content	Minus No. 40	Free Swell	Top of Layer	Bottom of Layer	Differential PVR	PVR in Layer	Cumulative PVR
1	0	2	8	0	2	1	dry	100%	3.0	0.00	0.14	0.14	0.14	0.14
2	2	4	8	2	4	3	wet	100%	3.0	0.14	0.20	0.06	0.06	0.20
3	4	6	7	4	6	5	wet	100%	3.0	0.20	0.25	0.05	0.05	0.25
4	6	8	7	6	8	7	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
5	8	10	7	8	10	9	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
6	10	12	7	10	12	11	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
7	12	14	7	12	14	13	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
8	14	16	7	14	16	15	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
9	16	18	7	16	18	17	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
10	18	20	7	18	20	19	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25





Equivalent BRAB PI
7

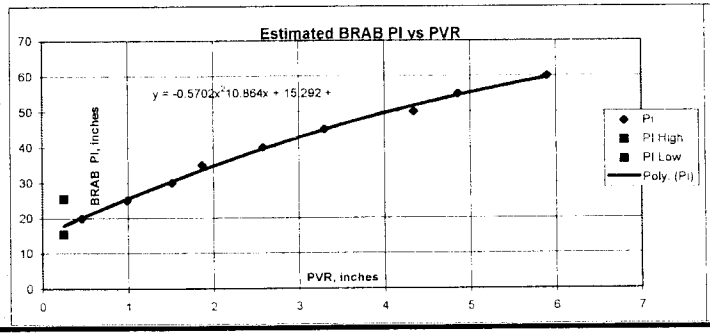
Project: Sunflower Park Geo
Number: GL13012
Boring: B-8
Date: 7/16/13
Engineer: David A. Saenz, P.E.

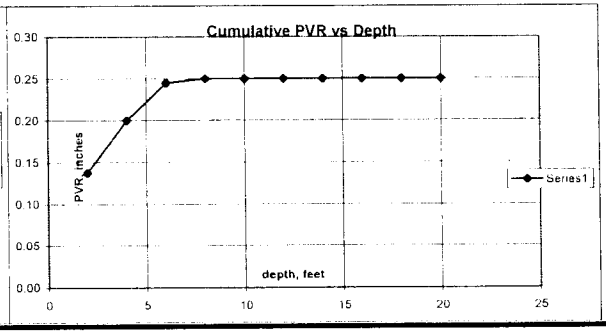
L & G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

Existing in-situ soil has a PVR of approximately 0.3 inches at this location.

Additional Surcharge 0 psi
Wet Density 125 pcf

Layer	Top	Bottom	PI	Load Top	Load Bottom	Average Load, psi	Moisture content	Minus No. 40	Free Swell	Top of Layer	Bottom of Layer	Differential PVR	PVR in Layer	Cumulative PVR
1	0	2	7	0	2	1	dry	100%	3.0	0.00	0.14	0.14	0.14	0.14
2	2	4	7	2	4	3	wet	100%	3.0	0.14	0.20	0.06	0.06	0.20
3	4	6	7	4	6	5	wet	100%	3.0	0.20	0.25	0.05	0.05	0.25
4	6	8	7	6	8	7	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
5	8	10	7	8	10	9	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
6	10	12	7	10	12	11	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
7	12	14	7	12	14	13	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
8	14	16	7	14	16	15	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
9	16	18	7	16	18	17	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
10	18	20	7	18	20	19	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25





Equivalent BRAB PI
7

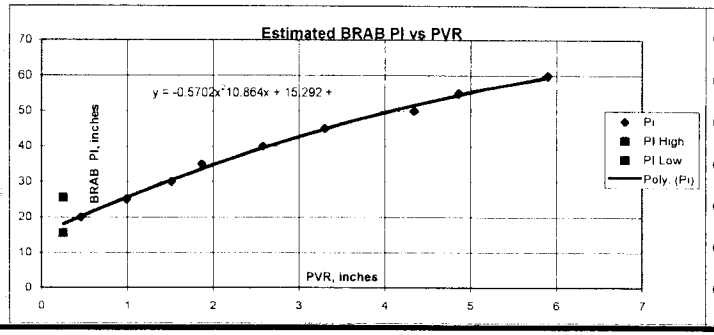
Project: Sunflower Park Geo
Number: GL13012
Boring: B-9
Date: 7/16/13
Engineer: David A. Saenz, P.E.

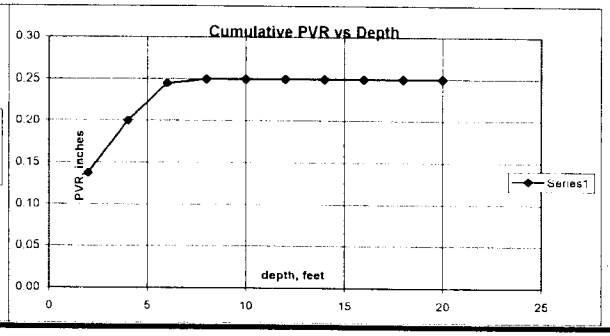
L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

Existing in-situ soil has a PVR of approximately 0.3 inches at this location.

Additional Surcharge 0 psi
Wet Density 125 pcf

Layer	Top	Bottom	PI	Load Top	Load Bottom	Average Load, psi	Moisture content	Minus No. 40	Free Swell	Top of Layer	Bottom of Layer	Differential PVR	PVR in Layer	Cumulative PVR
1	0	2	8	0	2	1	dry	100%	3.0	0.00	0.14	0.14	0.14	0.14
2	2	4	8	2	4	3	wet	100%	3.0	0.14	0.20	0.06	0.06	0.20
3	4	6	7	4	6	5	wet	100%	3.0	0.20	0.25	0.05	0.05	0.25
4	6	8	7	6	8	7	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
5	8	10	7	8	10	9	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
6	10	12	7	10	12	11	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
7	12	14	7	12	14	13	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
8	14	16	7	14	16	15	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
9	16	18	7	16	18	17	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25
10	18	20	7	18	20	19	wet	100%	3.0	0.25	0.25	0.00	0.00	0.25





Equivalent BRAB PI
7

Project: Sunflower Park Geo
Number: GL13012
Boring: Proposed Slab on Grade Str (Based on B-1)
Date: 7/16/13
Engineer: David A. Saenz, P.E.

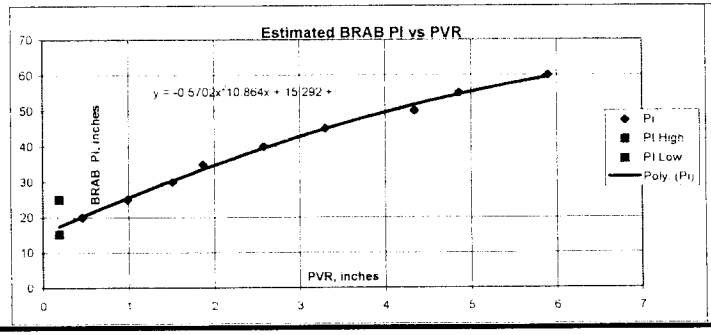
Proposed Conditions show a PVR of approximately 0.2 inches based on the 'Foundation Recommendations' section of the report.

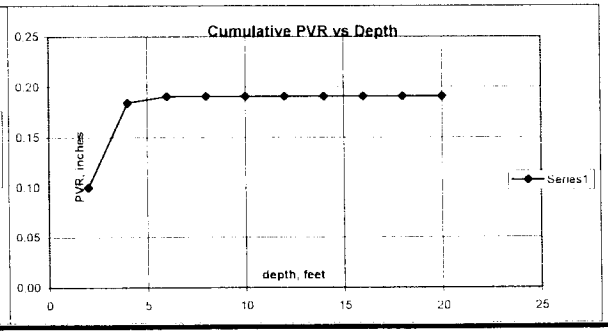
L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

Additional Surcharge 1 psi Assume from SOG Found.
Wet Density 125 pcf

	Layer	Top	Bottom	PI	Load Top	Load Bottom	Average Load, psi	Moisture content	Minus No. 40	Free Swell	Top of Layer	Bottom of Layer	Differential PVR	PVR in Layer	Cumulative PVR
Replace Top 12" Struc Fill	1	0	2	16	1	3	2	avg	100%	5.0	0.20	0.30	0.10	0.10	0.10
	2	2	4	16	3	5	4	wet	100%	4.0	0.23	0.32	0.08	0.08	0.18
	3	4	6	16	5	7	6	wet	100%	4.0	0.32	0.33	0.01	0.01	0.19
	4	6	8	16	7	9	8	wet	100%	4.0	0.33	0.33	0.00	0.00	0.19
	5	8	10	16	9	11	10	wet	100%	4.0	0.33	0.33	0.00	0.00	0.19
	6	10	12	16	11	13	12	wet	100%	4.0	0.33	0.33	0.00	0.00	0.19
	7	12	14	7	13	15	14	wet	100%	3.0	0.25	0.25	0.00	0.00	0.19
	8	14	16	7	15	17	16	wet	100%	3.0	0.25	0.25	0.00	0.00	0.19
	9	16	18	12	17	19	18	wet	100%	3.0	0.25	0.25	0.00	0.00	0.19
	10	18	20	12	19	21	20	wet	100%	3.0	0.25	0.25	0.00	0.00	0.19

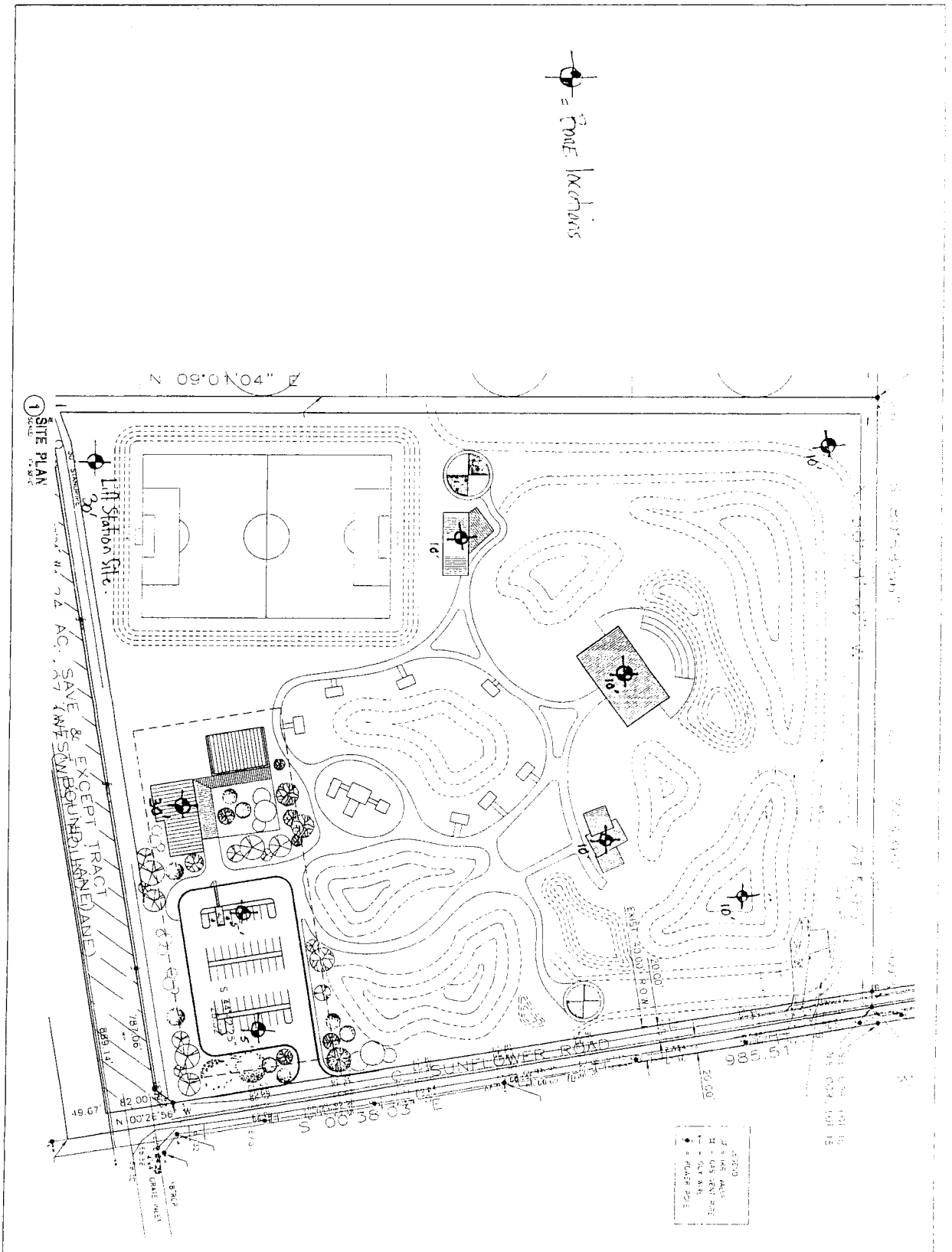
* Note PI = 7 was utilizied as the lowest bound number (all NP to 7 were modeled as at least PI=7)





Equivalent BRAB PI
15

APPENDIX D – PLANS & SPECS (PROVIDED BY CLIENT)



SHEET

Mata & Garcia
ARCHITECTS L.L.P.

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project management
interior design

Fernando Mata A.I.A. Partner Hector Rene Garcia R.A. Partner

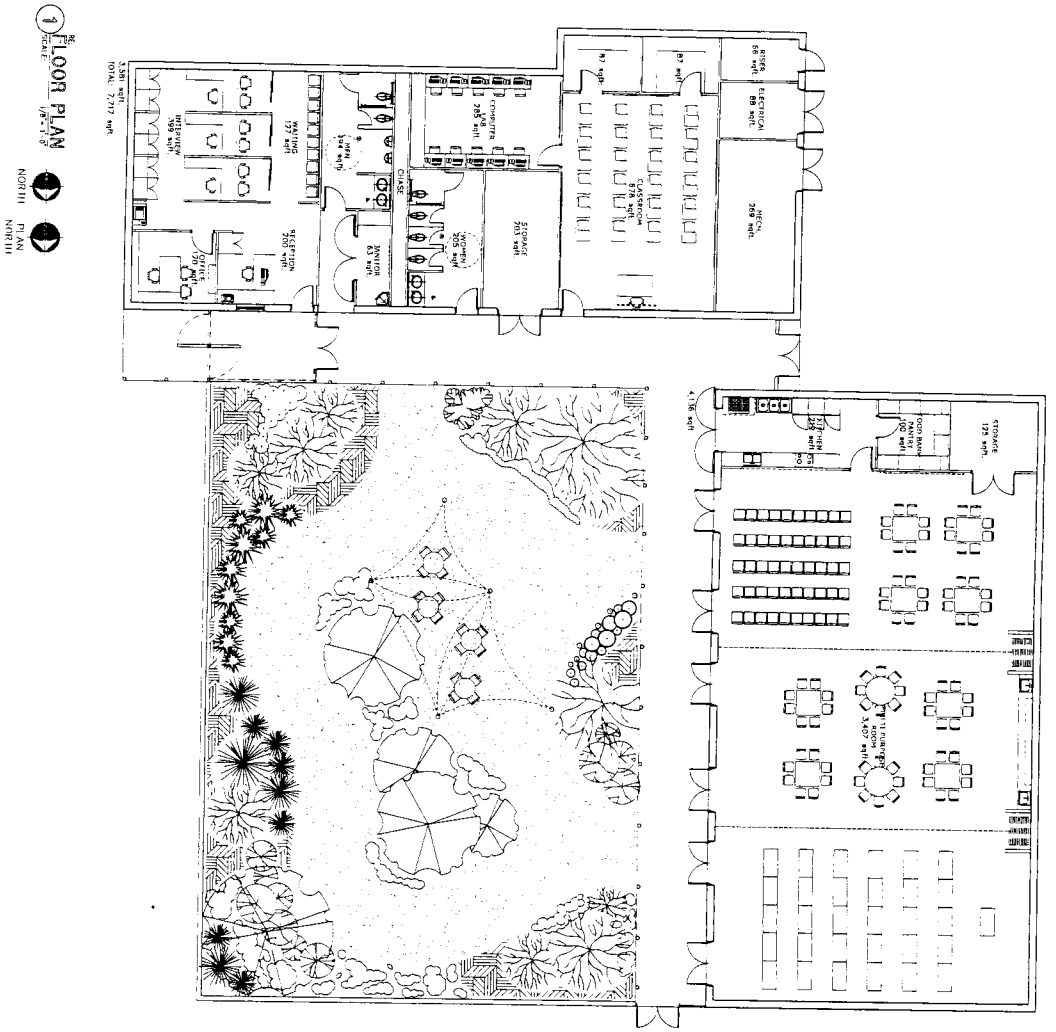
801 West Ivy Avenue McAllen, Texas 78501 Tel.: (956) 618-8686 Fax.: (956) 631-1031

HECTOR R. GARCIA 13967
LICENSE EXPIRES 03/31/14

PROJECT: PRECINT NO. 4 - PARKS, RECREATIONAL FACILITY IMPROVEMENTS PROJECT (SUNFLOWER PARK)

LOCATION: SAN CARLOS, TEXAS

OWNER: HIDALGO COUNTY



SHEET:

Mata & Garcia
ARCHITECTS L.L.P.

architecture
project management
interior design

Fernando Mata A.I.A., Partner
Hector Rene Garcia R.A., Partner

814 West Ivy Avenue McAllen, Texas 78501
Tel.: (956) 631-1945
Fax: (956) 631-1968

HECTOR R. GARCIA 13961
LICENSE EXPIRES: 12/31/14

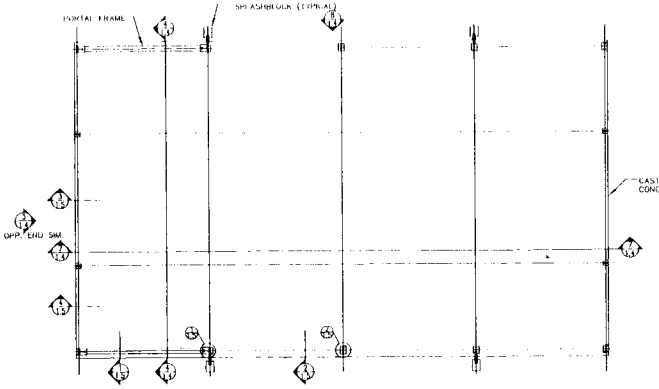
PROJECT:
COMMUNITY RESOURCE CENTER

LOCATION: SAN CARLOS, TEXAS
OWNER: HIDALGO COUNTY

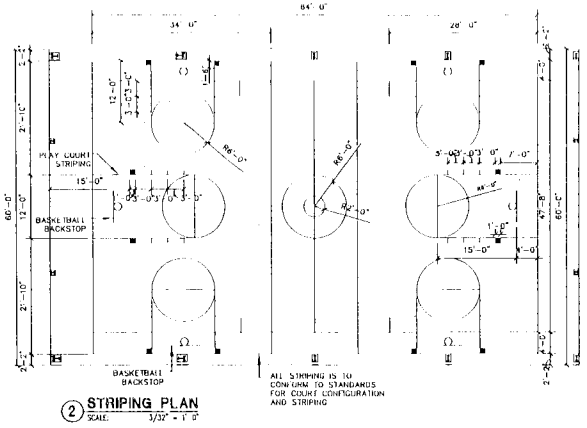
PROJECT #: 201305
DATE: 00.00.13
DRAWN BY: MG
CHECKED BY: H.R.G.

REVISION:
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4.

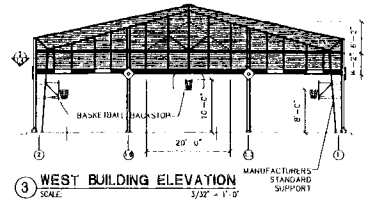
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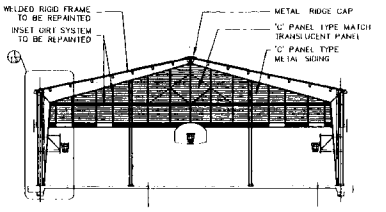
1 FLOOR PLAN
SCALE: 3/32" = 1'-0"



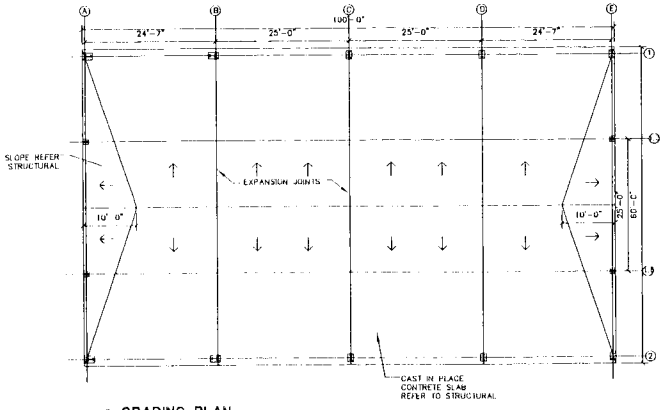
2 STRIPING PLAN
SCALE: 3/32" = 1'-0"



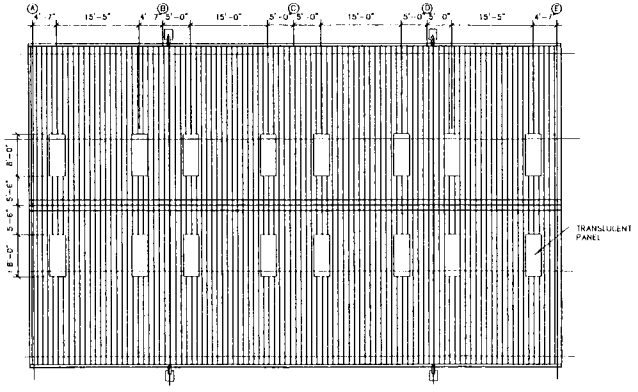
3 WEST BUILDING ELEVATION
SCALE: 3/32" = 1'-0"



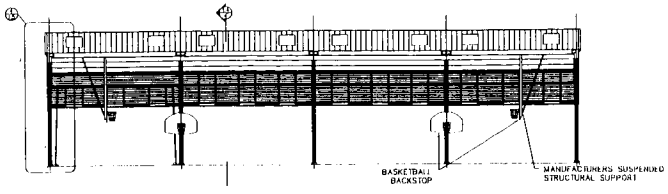
4 EAST BUILDING SECTION
SCALE: 3/32" = 1'-0"



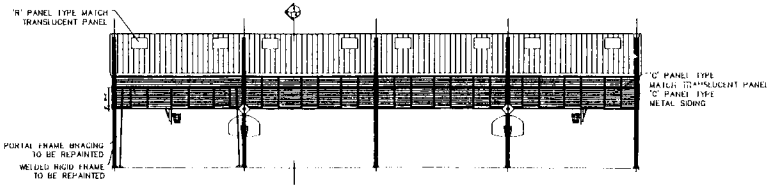
5 GRADING PLAN
SCALE: 3/32" = 1'-0"



6 ROOF PLAN
SCALE: 3/32" = 1'-0"



7 NORTH BUILDING SECTION
SCALE: 3/32" = 1'-0"



8 SOUTH SIDE ELEVATION
SCALE: 3/32" = 1'-0"

PROJECT NO. 4 - PARKS, RECREATIONAL FACILITY IMPROVEMENTS PROJECT (SUNFLOWER PARK)

PROJECT #: 20130
DATE: 06/2013
DRAWN BY: MC
CHECKED BY: HRG

REVISION
1.
2.
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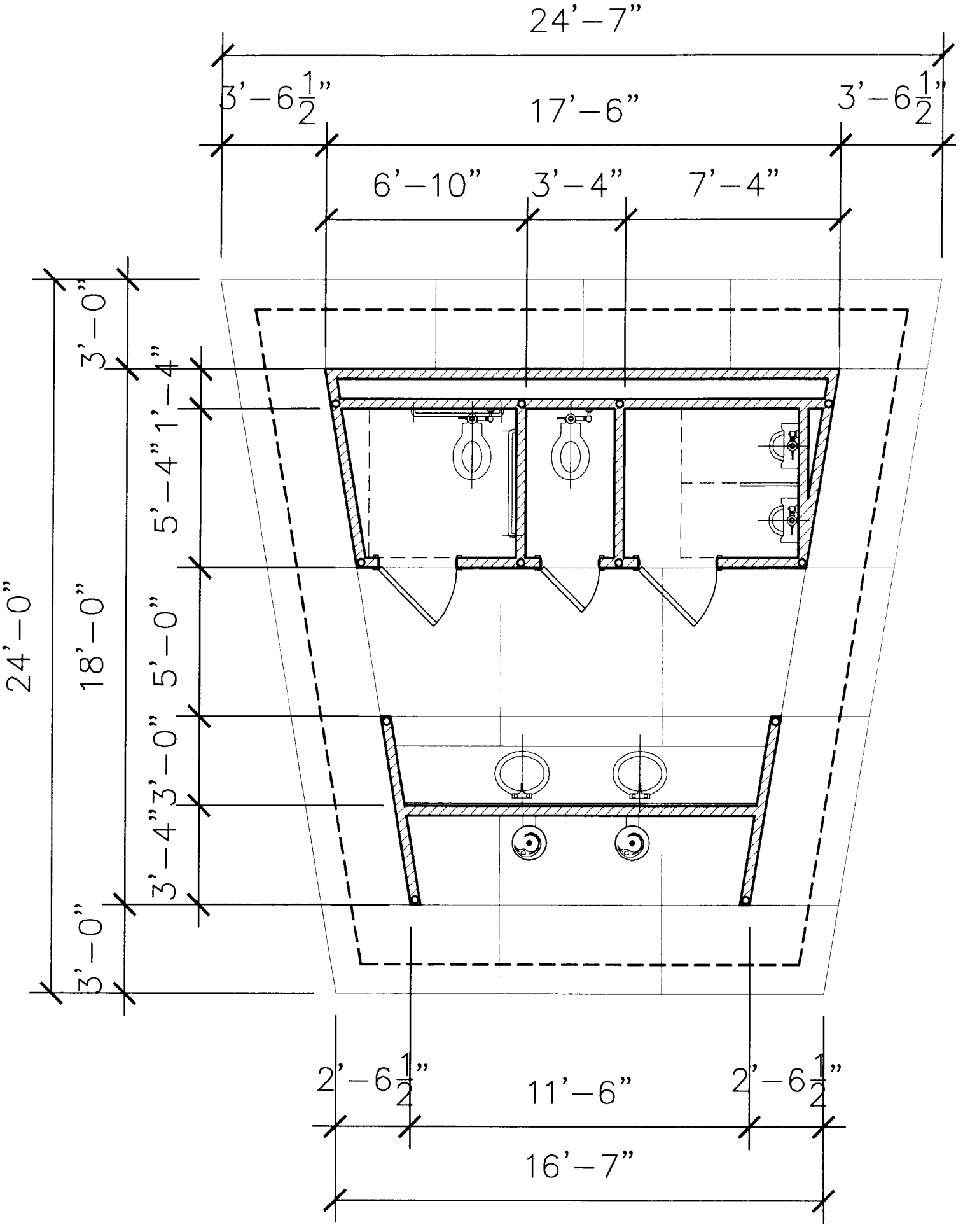
PROJECT: SAN CARLOS, TEXAS
LOCATION: HIDALGO COUNTY
OWNER:

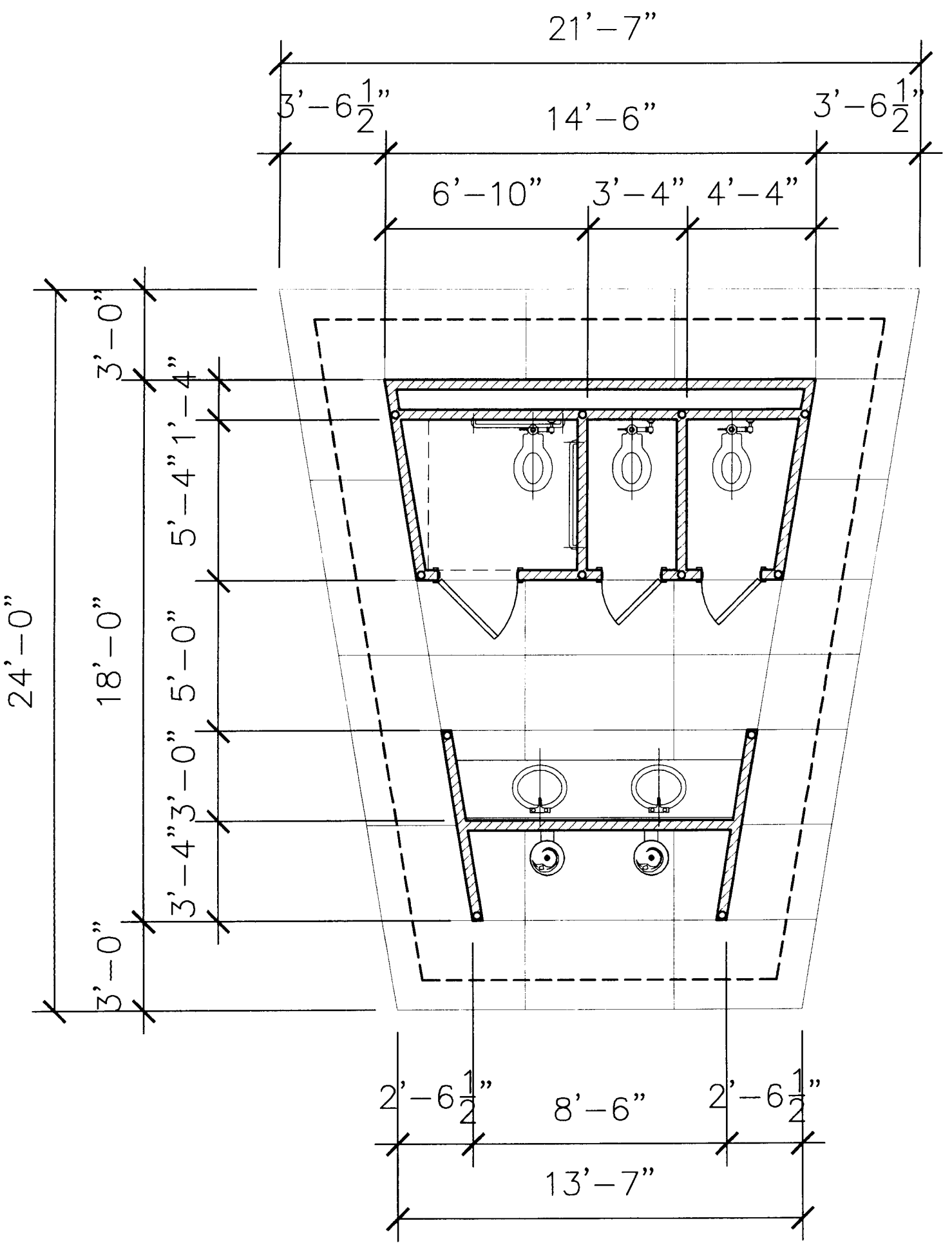
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Tel: (956) 631-1445
Fax: (956) 631-1488

SHEET:


24'–7"
3'–6 1/2"
17'–6"
3'–6 1/2"
6'–10"
3'–4"
7'–4"
3'–0"
1'–4"
5'–4"
5'–0"
3'–0"
3'–4"
24'–0"
18'–0"
3'–0"
2'–6 1/2"
11'–6"
2'–6 1/2"
16'–7"


21'–7"
3'–6 1/2"
14'–6"
3'–6 1/2"
6'–10"
3'–4"
4'–4"
3'–0"
1'–4"
5'–4"
5'–0"
3'–0"
3'–4"
3'–0"
24'–0"
18'–0"
2'–6 1/2"
8'–6"
2'–6 1/2"
13'–7"

