The Housing Authority of the City of El Paso, Texas

Requests Proposals for:

Design for Juan Hart and Lt. Palmer Baird Memorial Apartments

Solicitation No. OPS 19-R-0008

Bid Closing Date: June 25, 2019 @ 3:00PM

Housing Authority of the City of El Paso, Texas Gerald Cichon Chief Executive Officer	An Equal Opportunity Employer and Contracting Agency

Housing Authority of the City of El Paso

RFP: OPS 19-R-0008
Design for Juan Hart and Lt. Palmer Baird Memorial Apartments

Housing Authority of the City of El Paso

REQUEST FOR PROPOSALS (RFP)

The Housing Authority of the City of El Paso, Texas (HACEP) is requesting proposals for:

Design for Juan Hart and Lt. Palmer Baird Memorial Apartments

Request for Proposal will be available online at 10:00 A.M. Mountain Daylight Time (MDT) beginning **June 6, 2019**, To view the solicitation. **Refer to Request for Proposal No. OPS 19-R-0008.** This solicitation is only available electronically. To view the solicitation, please visit www.hacep.org/procurement.sstg, and click on the "E-Procurement" link. You will have the opportunity to register and view the solicitation. There is no fee associated with the use of this system.

A pre-proposal conference will be held on June 13, 2019 at 2:00PM MDT at 5300 E. Paisano Dr. Any questions regarding the RFP may be directed to Ms. Eddie Rocha, at (915) 849-3789 or erocha@hacep.org. If you would like to join in the tele-conference, call (877) 226-9790, access code 9217791.

The closing date and time for receipt of sealed proposals is June 25, 2019 at 3:00P.M. MDT. All proposals shall be submitted in "Sealed Envelopes" and may be delivered or hand carried to: Housing Authority of the City of El Paso Texas, Attn: Ms. Eddie Rocha, Contract Specialist, 5300 E. Paisano Dr., El Paso, Texas 79905-2051.

Juan Pulido

Procurement Manager

Advertisement
El Paso Times: **Sunday: June 9, 2019**
Sunday: June 16, 2019

Executive Summary Notice
Request for Proposal (RFP)

Solicitation No.: OPS 19-R-0008

1. The purpose of this Executive Notice is to highlight the key requirements of the Request for Proposal (RFP).
2. The Housing Authority of the City of El Paso, Texas is requesting proposals from qualified Contractor/Contractors to provide Design for Juan Hart and Lt. Palmer Baird Memorial Apartments. **HACEP reserves the right to award multiple Contractors.**
3. **For projects less than ONE HUNDRED THOUSAND DOLLARS ($100,000.00), the General Contractor may agree to a "TURN-KEY" project option. Performance Bond and Payment Bond will not be required. Therefore, there will be no progressive payments. If ONE HUNDRED THOUSAND DOLLARS ($100,000.00) and over a Payment and Performance Bonds is required by the Owner.**
4. The Housing Authority of the City of El Paso, Texas contemplates award of a contract to Design for Juan Hart and Lt. Palmer Baird Memorial Apartments. Contractor/Contractors in response to this solicitation will be evaluated using the Technical Proposal Evaluation Process. Contractor/Contractors must submit in accordance with the instructions provided in the Request for Proposal. Failure to furnish a complete offer at the time and date specified in the solicitation may result in elimination from consideration. **Term of this contract is for 120 calendar days or until project completion not to exceed a total of 120 calendar days**.
5. Formal communications such as requests for clarifications and/or information concerning this solicitation shall be submitted in writing no later than **June 17, 2019 at 3:00 p.m**. **MDT** local time and directed to **Ms. Eddie Rocha** Contract Specialist, at erocha@hacep.org.
6. It is strongly recommended that interested Contractor/Contractors do a walk thru to the locations of interest to inspect and assess.
7. **Any form of contact by an offeror or potential offeror regarding this RFP, at any time during the solicitation process from initial advertisement through award, with Commissioners of the Housing Authority of the City of El Paso, Texas (HACEP) or any person employed by HACEP, other than through the communication channels stipulated in the Request for Proposal, or as subsequently instructed by HACEP through the solicitation process, will constitute grounds for rejection of their Proposal.**
8. Since HACEP is interested in limiting costs associated with the acquisition process, offerors not intending to continue with the RFP are requested to submit a letter requesting they be taken off the mailing list for this solicitation. HACEP reserves the right to reject any or all proposals.
9. Offerors will submit one (1) unbound master copy (so marked) and three (3) copies of their proposal and One electronic copy on a flash drive to 5300 E. Paisano as per directed in the Scope of Work.
10. This solicitation and subsequent amendments shall supersede any posting made through the NAHRO e-procurement system. Potential offerors are advised to review the dates contained in this solicitation in the event of a discrepancy between dates listed in this solicitation and dates listed on the NAHRO e-procurement system.
11. Thank you for your interest in this project. We look forward to receiving your proposal.

Juan Pulido

Date Issued: **June 10, 2019**

Subject: Request for Proposal (RFP)
Solicitation No.: OPS 19-R-0008

Separate sealed proposals for Design for Juan Hart and Lt. Palmer Baird Memorial Apartments for the Housing Authority of the City of El Paso, Texas will be received at the following address:

Contract Compliance & Procurement Administration

Housing Authority of the City of El Paso, Texas

5300 Paisano

El Paso, Texas 79905 - 2931

until 2:00 p.m., MDT, June 25, 2019. Proposals will be held in confidence and not released in any manner until after contract award.

For any Contract which requires the Contractor to provide services, the Contractor shall, prior to commencement of work**, provide HACEP with Certificates of Insurance in the below amounts and shall maintain such coverage in effect for the full duration of the Contract. HACEP must be named as additional insured in the insurance certificate(s).**

General Liability	**$1,000,000**
Automobile (if contractor has vehicles on HACEP premises)	**$1,000,000**
Workman's Compensation Insurance (for onsite work)	**$1,000,000**
Applicable bonding requirements (for onsite work)	

For projects less than ONE HUNDRED THOUSAND DOLLARS ($100,000.00), the General Contractor may agree to a "TURN-KEY" project option. Performance Bond and Payment Bond will not be required. Therefore, there will be no progressive payments. If ONE HUNDRED THOUSAND DOLLARS ($100,000.00) and over a Payment and Performance Bonds is required by the Owner.

By submission of a proposal, the offeror agrees, if its proposal is accepted, to enter into a contract with HACEP in the form included in the solicitation documents, to complete all work as specified or indicated in the contract documents for the contract price and within the time parameters indicated in the attached RFP. The offeror further accepts all of the terms and conditions of the Request for Proposal.

All proposals will be evaluated on eligibility criteria and factors for award stated in this proposal.

The Housing Authority of the City of El Paso, Texas specifically reserves the right to reject any or all proposals, waive technicalities and to award the contract in the best interest of the Housing Authority. Price alone will not be the sole determining criteria in the selection process.

Effective immediately, all proposals delivered to 5300 E. Paisano must be received by Procurement Staff. The receptionist will notify a procurement staff member to accept your proposal. Receptionist staff cannot accept your proposal and is not responsible for mishandling your proposal.

Each offeror is responsible to ensure that they have received all amendments related to this solicitation. Contract Compliance will send amendments through e-procurement, through fax, etc. For those companies that download this solicitation through e-procurement, amendments will be posted to e-procurement. Companies that receive this solicitation in electronic format through other than e-procurement may not receive notifications.

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OPS 19-R-0008

***All documents listed as attachments must be submitted in order for your offer to be considered responsive, as well as HUD Form 5369-C (Certifications and Representations of Offerors), found in Section F**

****Executed after award**

SECTION A Solicitation, Offer and Award

1. Contract No. _____

2. Solicitation No. OPS 19-R-0008

3. Type of Solicitation

☐ Sealed Bid (IFB)

☒ Negotiated (RFP)

4. Date issued: June 10, 2019

5. Issued By: **HACEP**
Procurement Administration Department

6. Address: **5300 E. Paisano Dr.**
El Paso, Texas 79905 – 2931

SOLICITATION

7.

NOTE: All offers are subject to all applicable terms and conditions contained in this solicitation.

8. For information call: **Ms. Eddie Rocha, Contract Specialist** Telephone No.: **(915) 849-3789**

Technical questions may be emailed to erocha@hacep.org no later than

9. June 17, 2019 by 3:00PM MDT.

(X)	SEC.	DESCRIPTION		PAGES	(X)	SEC.	DESCRIPTION	PAGES
		PART I – THE SCHEDUL					PART – II CONTRACT CLAUSES	
X	A	Solicitation Offer & Award		1 of 2	X	D	Incorporated by Reference General Contract Conditions Section 3 Clause	1 of 1 1 of 5 1 of 2
	B	Price Schedule		N/A			PART III – LIST OF DOCUMENTS, EXHIBITS, AND OTHER ATTACHMENTS	
X	C	Scope of Work			X	E	**List of Attachments –** Non-collusive Affidavit Certificate of Equal Employment Federal Labor Standards Certification Statement of Offeror's Qualifications Form of Contract Payment/Performance Bond Debarment Certification Disclosure of Lobbying Activities Davis- Bacon Act	 1 of 1 1 of 1 1 of 1 1 of 4 1 of 2 1 of 4 1 of 2 1 of 2 1 of 6
							PART IV – REPRESENTATIONS AND INSTRUCTIONS	
		Deliveries or Performanc			X	F	Certifications and Representations of Offerors	1 of 2

		Contract Administration Data			**X**	**G**	Instructions, Conditions to Offerors Solicitation Provisions Incorporated by Reference	**1 of 2** **1 of 3**
		Special Contract			**X**	**H**	Evaluation Criteria	**1 of 4**

In accordance with above, the undersigned agrees, if this offer is accepted within ninety (90) calendar days from the date for receipt of offers specified above, to furnish any or all items upon which prices are offered.

SOLICITATION OFFER AND AWARD

(Must be completed by Offeror) **Offeror acknowledges receipt of amendment(s)**

	Number(s)	**Date(s)**

11.	**Name and Address of Offeror:**	**12.**	**Name and Title of Person Authorized to Sign Offer (TYPE OR PRINT)**
13.	**Telephone No. (include area code)**	**14.**	☐ **Check if remittance address is different from Above – Enter such address in** Federal ID No. _____
15.	**Signature:** _____		**Offer Date:** _____

AWARD (To be completed by Authority)

16.	**Accepted as to items numbered:**	**17.**	**Amount:**
18.	**Submit invoices to:** Accounting and Finance Department accountspayable@hacep.org Attn: Accounts Payable HACEP 5300 E. Paisano Dr. El Paso, Texas 79905 – 2931	**19.**	**Technical Representative** **Name:** **Luis Hernandez** **Telephone No.** **915-849 -3666**
20.	**Administered by:** Procurement and Contract Compliance Department HACEP 5300 E. Paisano Dr. El Paso, Texas 79905 – 2931 (915) 849-3776	**21.**	**Payment will be made by:** Accounts Payable Department HACEP 5300 E. Paisano Dr. El Paso, Texas 79905 – 2931 (915) 849-3742
22.	**Name of Contracting Officer (Type or Print)** **Gerald Cichon, Chief Executive Officer**	**23.**	**Signature of Contracting Officer:**
Award Date:		**IMPORTANT:** Award will be made by formation of contract. Award notice will be generated by NAHRO e-procurement or similar manner.	

PART I

THE SCHEDULE

SECTION B

PRICE SCHEDULE

Juan Hart and Lt. Palmer Baird Memorial Apartments fee schedule

BID ITEM	ITEM DESCRIPTION (all prices includes freight and install)	UNIT	Qty	Unit Price	Amount	TOTAL
DEMOLITION						
1	Earthwork, includes over-excavation	LS	1			
2	Selective Demolition (incl. S/W, D/W, curb, ex. Non-compliant ramps & complete existing stamped concrete in parkways for irrigation install and plant trees) HACEP properties	LS	1			
3	Selective Demolition (incl. curb, ex. Non-compliant ramps & complete existing stamped concrete in parkways for irrigation install and plant trees)	LS	1			
					Subtotal	
CONSTRUCTION						
	Futsal Court Area (sidewalks, etc.)					
4	Concrete Paving 4" depth	SF	1,400			
	Futsal Court					
5	Earthwork, Concrete Pad, Markings & Goals for Futsal Court, etc.	SF	4,100			
6	Post Tensioning of Concrete Pad, Futsal Court	LS	1			
7	Fence at Futsal Court (includes gates)	LF	280			

	Frontage of Atlas Rd.					
8	New Sidewalk to meet ADA (in front of HACEP properties only)	SY	400			
9	New Sidewalk to meet ADA (along Atlas where missing)	SY	68			
10	New Driveways to meet ADA (in front of HACEP properties only)	SY	300			
11	New Curbs (City Standard)	LF	80			
12	New ADA Ramps (in front of HACEP properties only)	EA	4			
13	New ADA Ramps (along Atlas Ave.)	EA	4			
				Subtotal		
SITE & PLAYGROUND FURNISHINGS						
14	Benches	EA	12			
15	Trash Receptacle	EA	6			
16	Fabric Canopy for Playground	EA	2			

17	Signs	EA	10			
18	Poured-in-Place Safety Surfacing at Playground	SF	1,500			
19	Independent Play Pieces (8 to 10 pieces total, include installation work)	LS	1			
					Subtotal	

LANDSCAPE

20	Rock Mulch (3"depth with weed barrier fabric) properties only	SF	10,200			
21	Rock Mulch (3"depth with weed barrier fabric) Atlas Ave.	SF	3,500			
22	Trees 2" Cal. (HACEP properties only in ROW in front of properties)	EA	64			
23	Trees 2" Cal. (along Atlas between properties)	EA	17			
24	5 Gallon Plants	EA	248			
					Subtotal	

ELECTRICAL

25	Electrical Improvements to accommodate irrigation controllers (both properties)	LS	1			
26	Lighting costs* (both properties - estimated allowance working to get exact cost from EP Electric, includes fixtures & installation)	LS	12			
27	Lighting costs* (1 light on Atlas Ave. to meet City standard - estimated waiting on cost from EP Electric)	LS	1			
					Subtotal	
IRRIGATION						
28	Irrigation System Additions (both properties)	LS	1			
29	Irrigation System, (Atlas Ave.) includes new yard meter	LS	1			
					Subtotal	
				TOTAL ESTIMATE:		

SECTION C

SCOPE OF SERVICES

DRAWINGS

ATTACHMENT A

PART II

CONTRACT CLAUSES

SECTION D

MANDATORY CLAUSE

Federal Acquisition Regulation (FAR) FAR 2005-83/07-02-2015
Part II – Contract Clauses Section D
Clauses Incorporated by Reference As applicable:

FAR#:	CLAUSE TITLE	DATE
52.202-1	Definitions	November 2013
52.203-3	Gratuities	April 1984
52.203-5	Covenant Against Contingent Fees	May 2014
52.203-7	Anti-Kickback Procedures	May 2014
52.209-6	Protecting the Governments Interest when Sub-contracting with Contractors Debarred, Suspended or Proposed for Debarment	October 2015
52.215-2	Audit and Records – Negotiation	October 2010
52.215-8	Order of Precedence – Uniform Contract Format	October 1997
52.215-14	Integrity of Unit Prices	October 2010
52.217-6	Option for Increased Quantity	March 1989
52.217-9	Option to Extend the Term of the Contract	March 2000
52.222-4	Contract Work Hours and Safety Standards Act – Overtime Compensation	May 2014
52.222-6	Construction Wage Rate Requirements	May 2014
52.222-18	Certification Requiring Knowledge of Child Labor for Listed End Products	February 2001
52.222-20	Contracts for Materials, Supplies, Articles and Equipment Exceeding $15,000	May 2014
52.222-26	Equal Opportunity	September 2016
52.222-35	Equal Opportunity for Veterans	July 2014
52.222-36	Equal Opportunity for Workers With Disabilities	July 2014
52.223-2	Affirmative Procurement of Biobased Products Under Services and Construction Contracts	September 2013
52.223-6	Drug Free Work Place	May 2001

52.227-1	**Authorization and Consent**	**December 2007**
52.228-5	**Insurance – Work on a Government Installation**	**January 1997**
52.229-3	**Federal, State and Local Taxes**	**February 2013**
52.232-7	**Payments Under Time-and-Materials and Labor-Hour Contracts**	**August 2012**
52.232-18	**Availability of Funds**	**April 1984**
52.232-23	**Assignment of Claims**	**May 2014**
52.236-3	**Site Investigation and Conditions Affecting the Work**	**July 1995**
52.237-2	**Protection of Government Buildings, Equipment and Vegetation**	**April 1984**
52.237-3	**Continuity of Services**	**January 1991**
52.242-13	**Bankruptcy**	**July 1995**
52.243-3	**Changes – Time-and-Materials or Labor-Hours**	**September 2000**
52.243-7	**Notification of Changes**	**January 2017**
52.246-17	**Warranty of Supplies of a Non-complex Nature**	**June 2003**
52.248-1	**Value Engineering**	**October 2010**
52.249-2	**Termination for Convenience of the Government (Fixed Price)**	**April 2012**
52.249-8	**Default (Fixed Price Supply & Service)**	**April 1984**
52.249-14	Excusable Delays	**April 1984**
52.252-2	**Clauses Incorporated by Reference:** **This contract incorporates one or more clauses by reference, with the same forced effect as if they were given in full text.**	**February 1998**

General Contract Conditions for Small Construction/Development Contracts

U.S. Department of Housing and Urban Development
Office of Public and Indian Housing
OMB Approval No. 2577-0157 (exp. 3/31/2020)

Applicability. The following contract clauses are applicable and must be inserted into **small construction/development contracts, greater than $2,000 but not more than $150,000.**

1. Definitions

Terms used in this form are the same as defined in form HUD-5370

2. Prohibition Against Liens

The Contractor is prohibited from placing a lien on the PHA's property. This prohibition shall apply to all subcontractors at any tier and all materials suppliers. The only liens on the PHA's property shall be the Declaration of Trust or other liens approved by HUD.

3. Disputes

(a) Except for disputes arising under the **Labor Standards** clauses, all disputes arising under or relating to this contract, including any claims for damages for the alleged breach thereof which are not disposed of by agreement, shall be resolved under this clause.
(b) All claims by the Contractor shall be made in writing and submitted to the Contracting Officer for a written decision. A claim by the PHA against the Contractor shall be subject to a written decision by the Contracting Officer.
(c) The Contracting Officer shall, within 30 days after receipt of the request, decide the claim or notify the Contractor of the date by which the decision will be made.
(d) The Contracting Officer's decision shall be final unless the Contractor (1) appeals in writing to a higher level in the PHA in accordance with the PHA's policy and procedures, (2) refers the appeal to an independent mediator or arbitrator, or (3) files suit in a court of competent jurisdiction. Such appeal must be made within 30 days after receipt of the Contracting Officer's decision.
(e) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under or relating to the contract, and comply with any decision of the Contracting Officer.

4. Default

(a) If the Contractor refuses or fails to prosecute the work, or any separable part thereof, with the diligence that will insure its completion within the time specified in this contract, or any extension thereof, or fails to complete said work within this time, the Contracting Officer may, by written notice to the Contractor, terminate the right to proceed with the work (or separable part of the work) that has been delayed. In the event, the PHA may take over the work and complete it by contract or otherwise, and may take possession of and use any materials, equipment, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the PHA resulting from the Contractor's refusal or failure to complete the work within the specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the PHA in completing the work.
(b) The Contractor's right to proceed shall not be terminated or the Contractor charged with damages under this clause if –
  (1) The delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor; and
  (2) The Contractor, within 10 days from the beginning of such delay notifies the Contracting Officer in writing of the causes of delay. The Contracting Officer shall ascertain the facts and the extent of the delay. If, in the judgment of the Contracting Officer, the findings of Fact warrant such action, time for completing the work shall be extended by written modification to the contract. The findings of the Contracting Officer shall be reduced to a written decision which shall be subject to the provisions of the **Disputes** clause of this contract.
(c) If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligation of the parties will be the same as if the termination had been for convenience of the PHA.

5. Termination for Convenience

(a) The Contracting Officer may terminate this contract in whole, or in part, whenever the Contracting Officer determines that such termination is in the best interest of the PHA. Any such termination shall be effected by delivery to the Contractor of a Notice of Termination specifying the extent to which the performance of the work under the contract is terminated, and the date upon which such termination becomes effective.
(b) If the performance of the work is terminated, either in whole or in part, the PHA shall be liable to the Contractor for reasonable and proper costs resulting from such termination upon the receipt by the PHA of a properly presented claim setting out in detail: (1) the total cost of the work performed to date of termination less the total amount of contract payments made to the Contractor; (2) the cost (including reasonable profit) of settling and paying claims under subcontracts and material orders for work performed and materials and supplies delivered to the site, payment for which has not been made by the PHA to the Contractor or by the Contractor to the subcontractor or supplier; (3) the cost of preserving and protecting the work already performed until the PHA or assignee takes possession thereof or assumes responsibility therefore; (4) the actual or estimated cost of legal and accounting services reasonably necessary to prepare and present the termination claim to the PHA; and (5) an amount constituting a reasonable profit on the value of the work performed by the Contractor.
(c) The Contracting Officer will act on the Contractor's claim within days (60 days unless otherwise indicated) of receipt of the Contractor's claim.
(d) Any disputes with regard to this clause are expressly made subject to the provisions of the Disputes clause of this contract.

6. Insurance

(a) Before commencing work, the Contractor and each subcontractor shall furnish the PHA with certificates of insurance showing the following insurance is in force and will insure all operations under the Contract:

(1) Workers' Compensation, in accordance with state or Territorial Workers' Compensation laws.

(2) Commercial General Liability with a combined single limit for bodily injury and property damage of not less than $ _____ [Contracting Officer insert amount] per occurrence to protect the Contractor and each subcontractor against claims for bodily injury or death and damage to the property of others. This shall cover the use of all equipment, hoists, and vehicles on the site(s) not covered by Automobile Liability under (3) below. If the Contractor has a "claims-made" policy, then the following additional requirements apply: the policy must provide a "retroactive date" which must be on or before the execution date of the Contract; and the extended reporting period may not be less than five years following the completion date of the Contract.

(3) Automobile Liability on owned and non -owned motor vehicles used on the site(s) or in connection therewith for a combined single limit for bodily injury and property damage of not less than $ _____ [Contracting Officer insert amount] per occurrence.

(b) Before commencing work, the Contractor shall furnish the PHA with a certificate of insurance evidencing that Builder's Risk (fire and extended coverage) Insurance on all work in place and/or materials stored at the building site(s), including foundations and building equipment, is in force. The Builder's Risk Insurance shall be for the benefit of the Contractor and the PHA as their interests may appear and each shall be named in the policy or policies as an insured. The Contractor in installing equipment supplied by the PHA shall carry insurance on such equipment from the time the Contractor takes possession thereof until the Contract work is accepted by the PHA. The Builder's Risk Insurance need not be carried on excavations, piers, footings, or foundations until such time as work on the superstructure is started. It need not be carried on landscape work. Policies shall furnish coverage at all times for the full cash value of all completed construction, as well as materials in place and/or stored at the site(s), whether or not partial payment has been made by the PHA. The Contractor may terminate this insurance on buildings as of the date taken over for occupancy by the PHA. The Contractor is not required to carry Builder's Risk Insurance for modernization work which does not involve structural alterations or additions and where the PHA's existing fire and extended coverage policy can be endorsed to include such work.

(c) All insurance shall be carried with companies which are financially responsible and admitted to do business in the State in which the project is located. If any such insurance is due to expire during the construction period, the Contractor (including subcontractors, as applicable) shall not permit the coverage to lapse and shall furnish evidence of coverage to the Contracting Officer. All certificates of insurance, as evidence of coverage, shall provide that no coverage may be canceled or non-renewed by the insurance company until at least 30 days prior written notice has been given to the Contracting Officer.

7. Contract Modifications

(a) Only the Contracting Officer has authority to modify any term or condition of this contract. Any contract modification shall be authorized in writing.

(b) The Contracting Officer may modify the contract unilaterally (1) pursuant to a specific authorization stated in a contract clause (e.g., Changes); or (2) for administrative matters which do not change the rights or responsibilities of the parties (e.g., change in the PHA address). All other contract modifications shall be in the form of supplemental agreements signed by the Contractor and the Contracting Officer.

(c) When a proposed modification requires the approval of HUD prior to its issuance (e.g., a change order that exceeds the PHA's approved threshold), such modification shall not be effective until the required approval is received by the PHA.

8. Changes

(a) The Contracting Officer may, at any time, without notice to the sureties, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract including changes:
(1) In the specifications (including drawings and designs);
(2) In the method or manner of performance of the work;
(3) PHA-furnished facilities, equipment, materials, services, or site; or,
(4) Directing the acceleration in the performance of the work.

(b) Any other written order or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the Contracting Officer that causes a change shall be treated as a change order under this clause; provided, that the Contractor gives the Contracting Officer written notice stating (1) the date, circumstances and source of the order and (2) that the Contractor regards the order as a change order.

(c) Except as provided in this clause, no order, statement or conduct of the Contracting Officer shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment.

(d) If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for the performance of any part of the work under this contract, whether or not changed by any such order, the Contracting Officer shall make an equitable adjustment and modify the contract in writing. However, except for a adjustment based on defective specifications, no proposal for any change under paragraph (b) above shall be allowed for any costs incurred more than 20 days (5 days for oral orders) before the Contractor gives written notice as required. In the case of defective specifications for which the PHA is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with the defective specifications.

(e) The Contractor must assert its right to an adjustment under this clause within 30 days after (1) receipt of a written change order under paragraph (a) of this clause, or (2) the furnishing of a written notice under paragraph (b) of this clause, by submitting a written statement describing the general nature and the amount of the proposal. If the facts justify it, the Contracting Officer may extend the period for submission. The proposal may be included in the notice required under paragraph (b) above. No proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this contract.

(f) The Contractor's written proposal for equitable adjustment shall be submitted in the form of a lump sum proposal supported with an itemized breakdown of all increases and decreases in the contract in at least the following details:
(1) Direct Costs. Materials (list individual items, the quantity and unit cost of each, and the aggregate cost); Transportation and delivery costs associated with materials; Labor

breakdowns by hours or unit costs (identified with specific work to be performed); Construction equipment exclusively necessary for the change; Costs of preparation and/ or revision to shop drawings resulting from the change; Worker's Compensation and Public Liability Insurance; Employment taxes under FICA and FUTA; and, Bond Costs - when size of change warrants revision.

(2) Indirect Costs. Indirect costs may include overhead, general and administrative expenses, and fringe benefits not normally treated as direct costs.

(3) Profit. The amount of profit shall be negotiated and may vary according to the nature, extent, and complexity of the work required by the change.

The allowability of the direct and indirect costs shall be determined in accordance with the Contract Cost Principles and Procedures for Commercial Firms in Part 31 of the Federal Acquisition Regulation (48 CFR 1-31), as implemented by HUD Handbook 2210.18, in effect on the date of this contract. The Contractor shall not be allowed a profit on the profit received by any subcontractor. Equitable adjustments for deleted work shall include a credit for profit and may include a credit for indirect costs. On proposals covering both increases and decreases in the amount of the contract, the application of indirect costs and profit shall be on the net-change in direct costs for the Contractor or subcontractor performing the work.

(g) The Contractor shall include in the proposal its request for time extension (if any), and shall include sufficient information and dates to demonstrate whether and to what extent the change will delay the completion of the contract in its entirety.

(h) The Contracting Officer shall act on proposals within 30 days after their receipt, or notify the Contractor of the date when such action will be taken.

(i) Failure to reach an agreement on any proposal shall be a dispute under the clause entitled Disputes herein. Nothing in this clause, however, shall excuse the Contractor from proceeding with the contract as changed.

(j) Except in an emergency endangering life or property, no change shall be made by the Contractor without a prior order from the Contracting Officer.

9. Examination and Retention of Contractor's Records

The HA, HUD, or Comptroller General of the United States, or any of their duly authorized representatives shall, until three years after final payment under this contract, have access to and the right to examine any of the Contractor's directly pertinent books, documents, papers, or other records involving transactions related to this contract for the purpose of making audit, examination, excerpts, and transcriptions.

10. Rights in Data and Patent Rights (Ownership and Proprietary Interest)

The HA shall have exclusive ownership of, all proprietary interest in, and the right to full and exclusive possession of all information, materials, and documents discovered or produced by Contractor pursuant to the terms of this Contract, including but not limited to reports, memoranda or letters concerning the research and reporting tasks of this Contract.

11. Energy Efficiency

The Contractor shall comply with all mandatory standards and policies relating to energy efficiency which are contained in the energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub.L. 94-163) for the State in which the work under this contract is performed.

12. Procurement of Recovered Materials

(a) In accordance with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, the Contractor shall procure items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition. The Contractor shall procure items designated in the EPA guidelines that contain the highest percentage of recovered materials practicable unless the Contractor determines that such items: (1) are not reasonably available in a reasonable period of time; (2) fail to meet reasonable performance standards, which shall be determined on the basis of the guidelines of the National Institute of Standards and Technology, if applicable to the item; or (3) are only available at an unreasonable price.

(b) Paragraph (a) of this clause shall apply to items purchased under this contract where: (1) the Contractor purchases in excess of $10,000 of the item under this contract; or (2) during the preceding Federal fiscal year, the Contractor: (i) purchased any amount of the items for use under a contract that was funded with Federal appropriations and was with a Federal agency or a State agency or agency of a political subdivision of a State; and (ii) purchased a total of in excess of $10,000 of the item both under and outside that contract.

13. Training and Employment Opportunities for Residents in the Project Area (Section 3, HUD Act of 1968; 24 CFR 135)

(a) The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

(b) The parties to this contract agree to comply with HUD's regulations in 24 CFR Part 135, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the Part 135 regulations.

(c) The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the

qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

(d) The contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR Part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR Part 135. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR Part 135.

(e) The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR Part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR Part 135.

(f) Noncompliance with HUD's regulations in 24 CFR Part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

14. Labor Standards - Davis-Bacon and Related Acts

(a) Minimum Wages.

(1) All laborers and mechanics employed under this contract in the construction or development of the project(s) involved 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 1(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 regular 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 in 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.

(2) (i) Any class of laborers or mechanics, including helpers, 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 all the following criteria have been met:

(a) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(b) The classification is utilized in the area by the construction industry; and

(c) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(ii) 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 shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employee Standards Administration, U.S. Department of Labor, Washington, DC 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.

(iii) 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 of the Wage and Hour Division 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.

(iv) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (a)(2)(ii) or (iii) of this clause 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.

(3) 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.

(4) 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.

(b) Withholding of Funds. 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 in the construction or development of the project, all or part of the wages required by the contract, HUD or its designee may, after written notice to the Contractor, 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.

(c) Payrolls and Basic Records.

(1) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working in the construction or development of the project. 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 1(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 costs reasonably anticipated in providing benefits under a plan or program described in section 1(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.

(2) (i) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Contracting Officer 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 subparagraph (c)(1) of this clause. This information may be submitted in any form desired. Optional Form WH-347 (Federal Stock Number 029-005-00014-1) is available for this purpose and may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 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 1214-0149.)

(ii) 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:

(A) That the payroll for the payroll period contains the information required to be maintained under paragraph (c)(1) of this clause and that such information is correct and complete;

(B) 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; and

(C) 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.

(iii) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirements for submission of the "Statement of Compliance" required by subparagraph (c)(2)(ii) of this clause.

(iv) 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 3729 of Title 31 of the United States Code.

(3) The Contractor or subcontractor shall make the records required under subparagraph (c)(1) available for inspection, copying, or transcription by authorized representatives of HUD or its designee, the Contracting Officer, 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, 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.

(d) 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 (OATELS), or with a State Apprenticeship Agency recognized by OATELS, 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 OATELS 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 in this paragraph, 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 journeyman 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 of the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event OATELS, or a State Apprenticeship Agency recognized by OATELS, 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.

(e) 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 in 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 in 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 in the wage determination for the classification of 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 in 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.

(f) Equal Employment Opportunity. The utilization of apprentices, trainees, and journeymen under this clause shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

(g) Compliance with Copeland Act Requirements. The Contractor shall comply with the requirements of 29 CFR Part 3, which are hereby incorporated by reference in this contract.

(h) Contract Termination; Debarment. A breach of the labor standards clauses in this contract may be grounds for termination of the contract and for debarment as a Contractor and a subcontractor as provided in 29 CFR 5.12.

(i) 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.

(j) Disputes Concerning Labor Standards. Disputes arising out of the labor standards provisions of this clause 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 the PHA, HUD, the U.S. Department of Labor, or the employees or their representatives.

(k) Certification of Eligibility.

(1) 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 contracts by the United States Government by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(2) No part of this contract shall be subcontracted to any person or firm ineligible for award of a United States Government

contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(3) The penalty for making false statements is prescribed in the U. S. Criminal Code, 18 U.S.C. 1001.

(l) Subcontracts. The Contractor or subcontractor shall insert in any subcontracts all the provisions contained in this clause, and such other clauses as HUD or its designee may by appropriate instructions require, and also a clause requiring the subcontractors to include these provisions in any lower tier subcontracts. The prime Contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all these provisions.

(m) Non-Federal Prevailing Wage Rates. Any prevailing wage rate (including basic hourly rate and any fringe benefits), determined under State law to be prevailing, with respect to any employee in any trade or position employed under the contract, is inapplicable to the contract and shall not be enforced against the Contractor or any subcontractor, with respect to employees engaged under the contract whenever such non-Federal prevailing wage rate exceeds:

(i) the applicable wage rate determined by the Secretary of Labor pursuant to the Davis-Bacon Act (40 U.S.C. 3141 et seq.) to be prevailing in the locality with respect to such trade;

(ii) an applicable apprentice wage rate based thereon specified in an apprenticeship program registered with the U.S. Department of Labor (DOL) or a DOL-recognized State Apprenticeship Agency; or

(iii) an applicable trainee wage rate based thereon specified in a DOL-certified trainee program.

SECTION 3 SPECIFICATIONS CLAUSE (revised 1/22/16 –Compliance Coord,)

The Section 3 information contained in the following pages is to be inserted in its entirety into every solicitation for work or contracts by Housing Authority of the City of El Paso (HACEP), the contractor and sub-contractors. All required forms and the Section 3 Clause are already included along with instructions to all contractors bidding work.

All contractors requiring any sub-contractors MUST issue this package and receive these completed **required Section 3 forms** before issuing any contracts:

- Section 3 Business Certification (if applicable)
- Section 3 Action Plan
- Section 3 Self-Certification and Skills Data Form (For Section 3 residents and New hires when applicable)

  If the contractor is claiming certification as a 51% Resident Owned Business (ROB) or is certifying as a 30% employer the following form must be returned for all employees that meet the low- or Very low-income requirement

- Section 3 Self-Certification and Skills Data Form

Overview and Instructions for Contractors

HACEP's Section 3 policy requires that when the **Section 3 regulation is triggered by a need for new hires (whether individual employees, contractors or sub-contractors),** every effort within the contractor's disposal must be made to the greatest extent feasible to offer all available employment and contracting opportunities to its residents based on the tiers below. Only when the regulation is triggered by a contractor and they are unable to offer employment or contracting. The contractor may offer employment related training to the Section 3 residents.

I. Tiers for offering all opportunities to Section 3 Residents and Resident Owned Businesses

1. At the site where the work is being performed
2. At any other HACEP owned or managed property
3. Other HUD funded beneficiaries including Section 8 Voucher holders
4. Other low-income people in the HACEP service area

II. What is a Section 3 Business Concern and how do they receive Preference in contract award?

A business that meets these certification definitions must receive Preference in contracting:

1. Is 51% or more owned by Section 3 residents;
2. Employs Section 3 residents for at least 30% of its full-time, permanent staff; or (**During the entire life of the contrac**t)
3. Provides evidence of a commitment to subcontract to Section 3 business concerns, 25% or more of the dollar amount of the awarded contract.

- YOU MUST MAINTAIN THOSE PREFERENCE LEVELS DURING THE ENTIRE CONTRACT OR RISK HAVING THE CONTRACT TERMINATED FOR FAILURE TO COMPLY

III. Other Methods of Compliance

Contractors can provide an array of trainings to Section 3 residents that are employment related, skills enhancing or employment readiness in nature. Here are the methods of achieving compliance through training. Training and other employment opportunities must receive prior approval from HACEP.

1. Contractor must develop a solid professional curriculum and it must be pre-approved by HACEP.
2. Contractor may identify a person or persons that are qualified to provide the training within their staff.

3. Contractors can partner with other groups that provide the desired training and pay them directly for the service.
4. The contractor can sub-contract the Section 3 compliance training to an outside firm specializing in training and educational programs to Section 3 residents.

IV. All Contracts and All Contractors must meet Section 3 compliance by:

Step 1 Give notice of any and all opportunities for employment and contracting to HACEP residents and other low and very low-income area residents and businesses by posting the position (s) in community sources that are generally available to low income residents and the general-public.

(1) Local community newspapers

(2) Widely distributed newspapers

(3) Company agency website

(4) HACEP communities and HACEP website

(5) Upper Rio Grande Workforce Solutions

(6) Other locations as approved by HACEP

Step 2 Hiring notices should clearly state the requirements for applying and achieving the opportunity and that the position is a "Section 3"covered position under the HUD Act of 1968.

Step 3 Utilize the Section 3 Clause in RFB's, RFP', RFQ's, etc., contracts and subcontracts.

Step 4 Hold informational meetings when possible prior to requesting bids or taking applications so the residents or businesses are encouraged to apply for the employment or contracting.

Step 5 Provide preference in hiring and contracting to Section 3 applicants and contractors when all factors are equal for the opportunity, including price and salary requests.

Section 3 Clause

Training and Employment Opportunities for Residents in the Project Area (Section 3, HUD Act of 1968; 24 CFR 135)

(a) The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

(b) The parties to this contract agree to comply with HUD's regulations in 24 CFR Part 135, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the Part 135 regulations.

(c) The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the section 3 preference, shall set forth minimum number and job titles subject to hire, availability of Section 3 apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

(d) The contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR Part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR Part 135. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR Part 135.

(e) The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR Part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR Part 135.

(f) Noncompliance with HUD's regulations in 24 CFR Part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

Public Housing Authority
Required Submittal
Section 3 Certification and Action Plan

Name of Business _____

Address of Business _____

Type of Business (Check One): ☐Corporation ☐Partnership ☐Sole Proprietorship ☐Other

Contract/Solicitation Name or Number: _____

All firms and individuals intending to do business with RECIPIENT and contractors MUST complete and submit this Action Plan and submit it with the bid, offer, or proposal. Any solicitation response that does not include this document (completed and signed) will be considered non-responsive and not eligible for award.

I am Certifying as a Section 3 Concern and requesting Preference accordingly (Select only One Option):

51% Resident Owned

A business claiming status as a Section 3 Resident-Owned Business Concern (ROB) entity:

Initial here to select this option _____

Provide Certification for Section 3 Residents and proof that they own a minimum 51% of the business

25% Sub-Contracting

A business claiming Section 3 status by subcontracting 25% of the dollar award to qualified Section 3 Business:

Initial here to select this option _____

Provide a list of intended subcontract Section 3 business (es) with amount Provide certification & all supporting documentation for each planned Section 3 Business Concern

IMPROTANT NOTICE: Preference must be maintained for the entire contract or the contract will be in non-compliance and at risk of termination.

30% Employer of Section 3 Residents Currently or New Hires

Section 3 status, because at least 30% of the existing or newly hired workforce for this specific contract will be Section 3 residents throughout the entire contract period. If a Prime or General Contractor is electing this option, the 30% employment requirement will be for the entire project including all the sub-contractors employees.

Initial here to select this option _____

I anticipate my total number of employees for this contract to be ____ and _____ will be qualified Section 3.

Check all methods you will employ to secure Section 3 Residents/Persons. Posting the position in community sources that are generally available to low income residents and the general public is a standard requirement. Check at least three (3) methods you will employ

- ☐ The local community newspaper
- ☐ Widely distributed newspaper
- ☐ Company or agency website
- ☐ HACEP communities and HACEP website
- ☐ Upper Rio Grande Workforce Solutions
- ☐ Other locations as approved by HACEP

Other: _____

IF CONTRACTOR DOES NOT ANTICIPATE TRIGGERING THE REGULATION, CHECK BOTH BOXES.

☐ I do not anticipate any new employees on this contract.

☐ I do not anticipate any new contracting on this contract.

I am certifying that I have complied with the HUD Section 3 Regulations in my past contracts **when required** by the recipient, contractor by employing the following:

1. I was a Section 3 Resident-Owned Business (ROB). List the Contracts and HUD Funded Entity and Contact:

____
____
____
____
____

2. I complied with Section 3 by employing at least 30% of my workforce. List the Contracts and HUD Funded Entity and Contact:

____
____
____
____
____

3. I complied with Section 3 by subcontracting 25% of the total dollar award to a qualified Section 3 Business. List the Contracts and HUD Funded Entity and Contact:

____
____
____

4. I complied with Section 3 on a previous HUD funded contract by doing these things and with these entities: Describe:

____
____
____
____
____
____
____

5. I completed HUD Section 3 covered contracts in the past three years but was not required to meet compliance.

Check the box of the corresponding reason below.

☐ I did not trigger the regulation by hiring any new employees on my Previous contract(s) in violation of the Section 3 regulation.

☐ I did not trigger the regulation by hiring any contractors on previous, contract(s) in violation of the Section 3 regulation.

6. ☐ I certify that I have not performed previous Section 3 covered contracts

_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Signature

_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Print Name

_ _ _ _ _ _ _ _ _ _ _ _ _ _

Date

SECTION 3 SELF-CERTIFICATION AND SKILLS DATA FORM

Certification for Section 3 Residents or other Low-Income Persons Seeking Employment, Training or Contracting

Eligibility for Preference

A Section 3 resident seeking the preference in training and employment provided by this part shall certify, or submit evidence to the recipient contractor or subcontractor, if requested, that the person is a Section 3 resident, as defined in Section 135.5. (An example of evidence of eligibility for the preference is evidence of receipt of public assistance, or evidence of participation in a public assistance program).

I, _____, am legal resident of the United States and meet the income eligibility and federal guidelines for a Section 3 Resident as defined on the next page.

My home address is:

_____

Must be a **Street** address not a P O Box # Apt Number

_____

City State Zip Home # Cell #

I have attached the following documentation as evidence of my status:

____ Copy of lease

____ Copy of recipient of public assistance

____ Copy of Evidence of Participation In a public assistance program

____ other evidence: _____

Graduated High School or GED (month/year) _____ I Read and Speak English Fluently Yes or No

Attended College, Trade, or Technical School ___Yes/No Graduated___ Yes/No Year Graduated ____

Check the Skills, Trades, and/or Professions you have been employed in or contracted to do for others:

☐Drywall Hanging	☐Drywall Finishing	☐Interior Painting	☐Framing
☐HVAC	☐Electrical	☐Interior Plumbing	☐Exterior Plumbing
☐Siding	☐Cabinet Hanging	☐Door Replacement	☐Trim/Carpentry
☐Stucco	☐Window/Door Repl.	☐Construction Cleaning	☐Exterior Framing

☐Data Entry	☐Receptionist	☐ Sales	☐Telephone Customer Service
☐Administrative	☐Teaching/Training	☐Personal Care Aid	☐Landscaping
☐CDL License	☐Roofing	☐Concrete/Asphalt Work	☐Heavy Equipment Operator
☐Fencing	☐Metal/Steel Work	☐Welding	☐Other _____

Continued in other page

I am certifying as a Section 3**:** ☐ **Person seeking Training** **or** ☐ **Person seeking employment**

(Check all that apply):

☐ **I am a public housing leaseholder**

☐ **I am a Section 8 leaseholder**

☐ **I live in the service area of the Authority (El Paso, TX)**

My total annual household income is $_____ There are a total of _____ people living in my household

I certify that all of the information given above is true and correct. If found to be inaccurate, I understand that I may be disqualified as an applicant and/or a certified Section 3 individual which may be grounds for termination of training, employment, or contracts that resulted from this certification. I attest under penalty of perjury that my total household income annually, based on my total household size as listed above is at or below the income amount for that specific size at the time of this document is being signed. I understand that proof of this statement may be requested in the future.

_____

Signature

_____ _____

Print Name Date

FY 2019 INCOME LIMITS

El Paso, TX

FY 2019 Income Limit Area	Median Income	FY 2019 Income Limit Category	1 Person	2 Person	3 Person	4 Person	5 Person	6 Person	7 Person
El Paso County	$50,300	Very Low (50%) Income Limits	$20,550	$23,500	$26,450	$29,350	$31,700	$34,050	$36,400
		Extremely Low (30%) Income Limits	$12,490	$16,910	$21,330	$25,750	$30,170	$34,050	$36,400
		Low (80%) Income Limits	$32,900	$37,600	$42,300	$46,950	$50,750	$54,500	$58,250

As part of the Housing and Urban Development's (HUD) Section III initiative for providing employment opportunities for public housing residents, the Engineer will identify construction labor opportunities that may be performed by skilled and unskilled residents.

All Section 3 covered contracts shall include the following clause (referred to as the Section 3 Clause):

A. The work to be performed under this Contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (Section 3). The purpose of Section 3 is to ensure that employment and other economic opportunities generated by HUD assistance of HUD-assisted projects covered by Section 3, shall, to the greatest extent feasible, be directed to low-and very low-income persons, particularly persons, who are recipients of HUD assistance for housing.

The parties to this Contract agree to comply with HUD's regulations in 24 CFR Part 135, which implement Section 3. As evidenced by their execution of this Contract, the parties to this Contract certify that they are under no contractual or other impediment that would prevent them from complying with part 135 regulations.

B. The Contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement of other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this Section 3 Clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the Section 3 reference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and anticipated date the work shall begin.

C. The Contractor agrees to include this Section 3 Clause in every subcontract subject to compliance with regulations in 24 CFR Part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this Section 3 Clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR Part 135. The Contractor will not subcontract with any subcontractor where the Contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR Part 135.

D. The Contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the Contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR Part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR Part 135.

E. Noncompliance with HUD's regulations in 24 CFR Part 135 may result in sanctions, termination of this Contract for default, and debarment of suspension from HUD assisted contracts.

PREFERENCE FOR SECTION 3 BUSINESS CONCERNS IN CONTRACTING OPPORTUNITIES:

Order of providing preference:

Contractor and subcontractor shall direct their efforts to award Section 3 covered contracts, to the greatest extent feasible, to Section 3 business concerns in the following order of priority:

1. Public and Indian housing programs. In public and Indian housing programs, efforts shall be directed to award contracts to Section 3 business concerns in the following order of priority:

    a. Business concerns that are 51% percent or more owned by residents of the housing development or developments for which the Section 3 covered assistance is expended, or whose full-time, permanent workforce includes 30% percent of these persons as employees (category 1 businesses);

    b. Business concerns that are 51% percent or more owned by residents of other housing developments or developments managed by the HA that is expending the Section 3 covered assistance, or whose full-time, permanent workforce includes 30% percent of these persons as employees (category 2 businesses); or

    c. HUD Youth build programs being carried out in the metropolitan area (or Non- metropolitan county) in which the Section 3 covered assistance is expended (category 3 businesses).

    d. Business concerns that are 51% percent or more owned by Section 3 residents, or whose permanent, full-time workforce includes no less than 30% percent Section 3 residents (category 4 businesses), or that subcontract in excess of 25% percent of the total amount of subcontracts to Section 3 business concerns.

Housing and community development programs. In housing and community development programs, priority considerations shall be given, where feasible, to:

    a. Section 3 business concerns that provide economic opportunities for Section 3 residents in the service area or neighborhood in which the Section 3 covered project is located (category 1 businesses); and

    b. Applicants (as this term is defined in 42 U.S.C. 12899) selected to carry out HUD Youth build programs (category 2 businesses);

    c. Other Section 3 business concerns.

Eligibility to preference.

A business concern seeking to qualify for a Section 3 contracting preference shall certify or submit evidence, if requested, that the business concern is a Section 3 business concern as defined in Sec. 135.5.

Ability to complete contract. A section 3 business concern seeking a contract or a subcontract shall submit evidence to the Contractor, or subcontractor (as applicable), if requested, sufficient to demonstrate to the satisfaction of the party awarding the contract that the business concern is responsible and has the ability to perform successfully under the terms and conditions of the proposed contract. (The ability to perform successfully under the terms and conditions of the proposed contract is required of all Contractors and subcontractors subject to the procurement standards of 24 CFR 85.36 (see 24 CFR 85.36 (b)(8)). This regulation requires consideration of, among other factors, the potential Contractor's record in complying with public policy requirements. Section 3 compliance is a matter properly considered as part of this determination.

PART III

DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS

SECTION E

LIST OF ATTACHMENTS

FORM OF NON-COLLUSIVE AFFIDAVIT
PRIME OFFEROR

State of Texas
County of El Paso

_____, being first duly sworn, deposes and says:

That he is_____(state whether a partner or officer of the firm, corp., etc.) of the party making the foregoing proposal and attests to the following:

1. That affiant employed no person, corporation, firm, association, or other organization, either directly or indirectly, to secure the public contract under which he received payment, other than persons regularly employed by the affiant whose services in securing the public contract were in the regular course of their duties for affiant; and

2. That no part of the contract price received by affiant was paid or will be paid to any person, corporation, firm, association, or other than the payment of their normal compensation to persons regularly employed by the affiant whose service in connection with the project were in the regular course of their duties for affiant.

3. That such proposal is genuine and not collusive or sham; that said offeror has not colluded, conspired, connived, or agreed, directly or indirectly, with any offeror or person, to put in a sham offer or to refrain from submitting an offer and has not in any manner, directly or indirectly, sought by agreement or collusion, or communication or conference, with any person, to fix to any overhead profit or cost element of said price, or of that of any other offeror, or to secure any advantage against the Housing Authority of the City of El Paso, Texas, or any person interested in the proposed contract, and that all statements in said proposal are true.

_____

: Signature of Offeror if Offeror is an individual

: Signatures of all partners if Offer is a partnership

: Signature of Corporate Principal if Offeror is a corporation

Subscribed and sworn to before me

This_____day of_____, 20_____.

My Commission expires_____, 20_____.

CERTIFICATION OF

EQUAL EMPLOYMENT OPPORTUNITY AGREEMENT

I_____ _____
(Official's Name) (Title)

of the_____do hereby certify that I have read and understand the EEO requirements throughout the life of this contract.

Attachment of this executed form, as such, is required to complete a valid bid/proposal.

For Project: _____

Job to be Performed: _____

_____
Official's Signature

_____
Date

FEDERAL LABOR STANDARDS CERTIFICATION

I,_____, the Offeror, certify that I and all subcontractors involved in the proposed contract will comply with Federal Labor Standards and prevailing wage rates.

_____

Signature of Offeror if Offeror is an individual
Signature of all partners of Offeror is a partnership

_____

Company

_____

Date

AGREEMENT TO CONTRACT ELECTRONICALLY

PARTIES:

1. The parties to this agreement are the Housing Authority of the City of El Paso (HACEP) with its principals place of business at 5300 E. Paisano Dr. El Paso, Texas 79905 and _____, (herein known as "Contractor") a corporation/other with its principal place of business at _____ (address).

METHOD OF CONTRACTING:

2. The parties intend to enter into a contact that will be completed electronically. The parties agree that their communications will consist of emails and other communication methods as appropriate.

The following hardware and software are needed to allow these transactions:

RECEIPIENT (SIGNER) REQUIREMENTS

Operations Systems: Windows XP, Windows Vista, Windows 7; Mac OS X

Browsers: Final release versions of Internet Explorer 7.0 or above (Windows only); Mozilla Firefox 3.0 or Mobile Signing: Apple iOS 4.0 or above. Android 2.2 or above.

PDF Reader: Acrobat® or similar software may be required to view and print PDF files.

Screen Resolution: 1024 X 768 minimum.

Enabled Security Settings: Allow per session cookies.

SECURITY:

3. In order to ensure the security of the transaction(s), the following procedures will be employed: the contract and subsequent contract modifications will be signed with the digital signature of a company representative that will be encrypted to bank grade security. DocuSign will be the company website retained to process electronic signatures on the above-mentioned documents. Documents stored in DocuSign's ISO 27001 and SSAE 16 data centers are encrypted with the AES-256 standard and use 256-bit SSL document transmission. Further information regarding DocuSign's security can be found at https://www.docusign.com/how-it-works/security.

REVOCATION:

4. The parties acknowledge that the signing of this agreement binds them to conduct the transaction that is the subject of the agreement electronically, but that they are not bound to use electronic means in connection with any future transactions.

_____ _____

Contractor

Gerald Cichon

Chief Executive Officer

STATEMENT OF OFFEROR'S QUALIFICATIONS

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 Offeror may submit any additional information he/she desires.

1. Name of Firm (Legal Name)

_____

_____

a. Name of President: _____

2. Permanent main office address. Including city, state and zip code, main phone number.

_____

_____

_____

_____

3. When organized (year).

_____

_____

4. If a Corporation, where incorporated.

_____

_____

5. The offeror represents that the following persons are authorized to negotiate on its behalf with the PHA in connection with this request for proposals: (list names, titles, and telephone numbers of the authorized negotiators):

Name: _____

Title: _____

Telephone Number: _____

Email: _____

(Please attach sheets if more than one person is authorized to negotiate on the firm's behalf)

5. How many years have you been engaged in practice under your present firm name?

_____
_____
_____

6. Contracts on hand: (schedule this showing gross amount of each contract and the appropriate anticipated dates of completion.)

_____
_____
_____

7. General character of work performed by your company.

_____
_____
_____
_____

8. Have you ever failed to complete any work awarded to you? If so, where why? (Be specific and attach separate sheets if needed)

_____
_____
_____

9. Have you ever defaulted on a contract? If so, where and why? (Be specific, attach separate sheet if needed.)

_____
_____
_____
_____

10. List the more important contracts recently completed by you, stating approximate gross cost for each, and the month and year completed.

11. List your major areas of expertise and resources available for this contract.

_____
_____
_____

12. Experience in this type of work similar in size to this project.

_____
_____
_____

13. Background and experience of the President, principal members of your organization and officers. (Attach separate sheets.)

14. Please attach a letter from your bank (on bank letterhead) referencing the following information: Is your account in good standing? What year was the account established? What is the account balance ($50,000 can be expressed as mid-five figures)?

15. Attach letters of reference from (3) firms that do business with your company, (strictly those firms who have awarded contracts to your company).

16. Will you, upon request, fill out a detailed financial statement and furnish any other information that may be required by the Housing Authority of the City of El Paso, Texas?

☐ YES ☐ NO

a. Have you ever been a party to or otherwise involved in any action or legal proceeding involving matters related to race, color, nationality, sex, disability, age or religion? If so, give full details. (Attach separate sheets.)

_____
_____
_____

b. Have you ever been accused of discrimination based upon race, color, nationality, sex, disability, age, or religion in any action or legal proceeding including any

proceeding related to any Federal Agency? If so, give full details. (Attach separate sheets.)

_____

_____

_____

17. Do you provide safety training for your employees?_____ Please attach details.

18. The undersigned hereby authorized and request any person, firm or corporation to furnish any information requested by the Housing Authority of the City of El Paso, Texas in verification of the recitals comprising this Statement of Offeror's Qualifications.

Date_____this_____day of_____, 20_____.

_____
(Name of Offeror)

By: _____

Title: _____

State of_____)

ss

City/County of_____)

_____Being duly sworn, deposes

and says that he/she is the_____of

_____and that the answers to the foregoing questions and all statements therein contained are true and correct.

Subscribed and sworn to before me this_____day of_____, 20____.

_____
(Notary Public)

My Commission Expires_____.

Certification Regarding Debarment and Suspension

U.S. Department of Housing and Urban Development

Certification A: Certification Regarding Debarment, Suspension, and Other Responsibility Matters - Primary Covered Transactions

1. The prospective primary participant certifies to the best of its knowl- edge and belief that its principals;

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal debarment or agency;

b. Have not within a three-year period preceding this proposal, been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtain- ing, 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 governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

d. Have not within a three-year period preceding this application/ proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Instructions for Certification (A)

1. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

2. The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certifi- cation or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such person from participation in this transaction.

3. The certification in this clause is a material representation of fact upon which reliance was place when the department or agency deter- mined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.

4. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if at any time the prospective primary participant learns that its certification was erroneous when submitted or has become errone- ous by reason of changed circuMDTances.

5. The terms **covered transaction, debarred, suspended, ineligible, lower tier covered transaction, participant, person, primary covered transaction, principal, proposal, and voluntarily excluded**, as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is being submitted for assistance in obtaining a copy of these regulations.

6. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

7. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

8. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines this eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

9. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

10. Except for transactions authorized under paragraph (6) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.

Certification B: Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Instructions for Certification (B)

1. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

3. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circuMDTances.

4. The terms **covered transaction, debarred, suspended, ineligible, lower tier covered transaction, participant, person, primary cov- ered transaction, principal, proposal, and voluntarily excluded**, as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assis- tance in obtaining a copy of these regulations.

5. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this trans- action originated.

6. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

9. Except for transactions authorized under paragraph (5) of these instructions, if a participant in a lower covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies including suspension and/or debarment.

Applicant	Date

Signature of Authorized Certifying Official	Title

DISCLOSURE OF LOBBYING ACTIVITIES

Approved by OMB

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352

0348-0046

(See reverse for public burden disclosure.)

1. Type of Federal Action: ☐ a. contract b. grant c. cooperative agreement d. loan e. loan guarantee f. loan insurance	**2. Status of Federal Action:** ☐ a. bid/offer/application b. initial award c. post-award	**3. Report Type:** ☐ a. initial filing b. material change **For Material Change Only:** year_____ quarter _____ date of last report _____

4. Name and Address of Reporting Entity: **Prime** **Subawardee** Tier_____, *if known*: **Congressional District**, *if known* :	**5. If Reporting Entity in No. 4 is a Subawardee, Enter Name and Address of Prime:** **Congressional District**, *if known* :
6. Federal Department/Agency:	**7. Federal Program Name/Description:** CFDA Number, *if applicable* : _____
8. Federal Action Number, *if known* **:**	**9. Award Amount,** *if known* **:** $
10. a. Name and Address of Lobbying Registrant (*if individual, last name, first name, MI*):	**b. Individuals Performing Services** (*including address if different from No. 10a*) (*last name, first name, MI*):
11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.	Signature:_____ Print Name: _____ Title:_____ Telephone No.:_____ Date: _____
Federal Use Only:	Authorized for Local Reproduction Standard Form LLL (Rev. 7-97)

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether sub awardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make

payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.

2. Identify the status of the covered Federal action.

3. Identify the appropriate classification of this report. If this is a follow up report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.

4. Enter the full name, address, city, State and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or sub award recipient. Identify the tier of the sub awardee, e.g., the first sub awardee of the prime is the 1st tier. Sub awards include but are not limited to subcontracts, sub grants and contract awards under grants.

5. If the organization filing the report in item 4 checks "Sub awardee," then enter the full name, address, city, State and zip code of the prime Federal recipient. Include Congressional District, if known.

6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.

7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.

8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP-DE-90-001."

9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.

10. (a) Enter the full name, address, city, State and zip code of the lobbying registrant under the Lobbying Disclosure Act of 1995 engaged by the reporting entity identified in item 4 to influence the covered Federal action.

    (b) Enter the full names of the individual(s) performing services, and include full address if different from 10 (a). Enter Last Name, First Name, and Middle Initial (MI).

11. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

According to the Paperwork Reduction Act, as amended, no persons are required to respond to a collection of information unless it displays a valid OMB Control Number. The valid OMB control number for this information collection is OMB No. 0348-0046. Public reporting burden for this collection of information is estimated to average 10 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0046), Washington, DC 20503.

CONTRACT SAMPLE - ATTACHMENT B

Bond Number _____

TEXAS STATUTORY PERFORMANCE BOND

(Penalty of This Bond must be 100% of Contract Amount)
Public Work - State of Texas

STATE OF TEXAS
COUNTY OF EL PASO

KNOW ALL MEN BY THESE PRESENTS:

That_____, a_____of_____, hereinafter called the Principal, and_____,

a corporation organized and existing under the laws of the State of_____, and whose principal office is located in the City of_____, and duly authorized to do business in the State of Texas, hereinafter called the Surety, are held and firmly bound into

THE HOUSING AUTHORITY OF THE CITY OF EL PASO, TEXAS, hereinafter called Owner, in the penal sum of___ DOLLARS ($_____)in lawful money of the United States, to be paid in EL PASO COUNTY, TEXAS for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents. Whereas, the Principal entered into a certain contract with the Owner, dated the _____

of_____,20____, a copy of which is hereto attached and made a part hereof, for

_____, herein called the "work".

NOW THEREFORE, THE CONDITIONS OF THIS OBLIGATION IS SUCH that if the Principal shall faithfully perform the work in accordance with plans, specifications and contract documents then this obligation shall be 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, and all liabilities on this bond shall be determined in accordance with the provisions thereof to the same extent as if copied at length herein.

PROVIDED FURTHER, that if any legal action to be filed upon this bond, venue shall lie in EL PASO COUNTY, State of Texas, and that the Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder or the plans, specifications or drawings accompanying the same shall in anywise affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder.

IN WITNESS WHEREOF, this instrument is executed in six counterparts, each one of which shall be deemed an original, this the_____day of_____, A.D. 2008.

_____

Principal

Attested:

By_____

(Principal) Secretary

_____ (Address)

_____

(Address)

NOTE: If Contractor is Partnership, all partners should execute bond.

PAYMENT BOND

Public Work - State of Texas

KNOW ALL MEN BY THESE PRESENTS:

That_____of the City of_____, County of_____, and State of_____, hereinafter called Principal, and

_____,

authorized under the laws of the State of Texas to act as surety on bonds for Principals, hereinafter called the Surety, are held and firmly bound unto THE HOUSING AUTHORITY OF THE CITY OF EL PASO, TEXAS, hereinafter called the Owner, in the penal sum of

_____DOLLARS

$_____) in lawful money of the United States, to be paid in EL PASO COUNTY, TEXAS for the payment whereof, the said Principal and Surety bind themselves and their heirs, administrators, executors,

successors, jointly and severally, firmly by these presents.

WHEREAS, the Principal entered into a certain contract with the Owner, dated the_____day of _____, 20 , for _____

_____, to which the contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length , herein called the Work.

NOW THEREFORE, THE CONDITION 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 provided for in said contract, then this obligation shall be null and void: otherwise it shall 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, and all liabilities on this bond shall be determined in accordance with the provision of said Chapter to the same extent as if it were copied at length herein.

PROVIDED FURTHER, that if any legal action be filed upon this bond, venue shall lie in EL PASO COUNTY, State of Texas, and that Surety, for the value received, stipulates and agrees that no change, extention of time, alteration or addition to the terms of the contract, or to the work to be performed thereunder, or the plans, specifications or drawings accompanying the same, shall in anywise affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder.

MASTERS.NEW\PAYBOND.FRM L-1

PROVIDED FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in six counterparts, each one of which shall be deemed an original, this the _____day of_____, 20 _

Attested:

_____
Principal

By _____

_____
(Principal) Secretary

_____

_____

_____
Witness as to Principal

_____
(Address)

_____
Surety
Attested:

By _____

_____
(Surety) Secretary

_____

_____
(Address)

(SEAL)

_____
Witness as to Surety

_____
(Address)

Note: If Contractor is Partnership, all partners should execute Bond.

General Decision Number: TX190036 01/04/2019 TX36

Superseded General Decision Number: TX20180053

State: Texas

Construction Type: Residential

County: El Paso County in Texas.

RESIDENTIAL CONSTRUCTION PROJECTS (consisting of single family homes and apartments up to and including 4 stories.)

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.60 for calendar year 2019 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any 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 $10.60 per hour (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 2019. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/04/2019

* SUTX1981-001 05/01/1981

	Rates	Fringes
BRICKLAYER	$ 7.25	
CARPENTER	$ 7.25	
CEMENT MASON/CONCRETE FINISHER	$ 7.25	
ELECTRICIAN	$ 7.25	
FLOOR LAYER: CARPET (SOFT) FLOOR	$ 7.34	
GLAZIER	$ 7.25	
Insulation Installer	$ 7.25	

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IRONWORKER.....................$  7.25

Laborers:
     Ashpalt Rakers............$  7.25
     Mason Tenders.............$  7.25
     Unskilled.................$  7.25

LATHER.........................$  7.25

Painters:
     Brush.....................$  7.25
     Spray.....................$  7.25

PLASTERER......................$  7.25

Plumbers and Pipefitters.........$  7.25

Power equipment operators:
     Backhoes..................$  7.25
     Forklifts; Front End
     Loaders...................$  7.25
     Graders...................$  7.25

Rockmason (FENCE)..............$  7.25

ROOFER, Including Built Up,
Composition and Single Ply
Roofs..........................$  7.25

Sheet metal worker.............$  7.25

Taper..........................$  7.25

TILE SETTER....................$  8.00

  WELDERS - Receive rate prescribed for craft performing
  operation to which welding is incidental.
----------------------------------------------------------------

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

================================================================

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave
for Federal Contractors applies to all contracts subject to the
Davis-Bacon Act for which the contract is awarded (and any
solicitation was issued) on or after January 1, 2017.  If this
contract is covered by the EO, the contractor must provide
employees with 1 hour of paid sick leave for every 30 hours
they work, up to 56 hours of paid sick leave each year.
Employees must be permitted to use paid sick leave for their
own illness, injury or other health-related needs, including
preventive care; to assist a family member (or person who is
like family to the employee) who is ill, injured, or has other
health-related needs, including preventive care; or for reasons
resulting from, or to assist a family member (or person who is
like family to the employee) who is a victim of, domestic
violence, sexual assault, or stalking.  Additional information
on contractor requirements and worker protections under the EO
is available at www.dol.gov/whd/govcontracts.

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
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(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

PART IV

REPRESENTATIONS AND INSTRUCTIONS

SECTION F

REQUIRED CERTIFICATIONS

Certifications and Representations of Offerors

Non-Construction Contract

U.S. Department of Housing and Urban Development

Office of Public and Indian Housing

OMB Approval No: 2577-0180 (Gxp. 7130/96)

Public reporting burden for this collection of information is estimated to average 0.08 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspects of this collection of information, including suggestions for reducing this burden, to the Reports Management Officer, Paperwork Reduction Project (2577-0180), Office of Information Technology, U.S. Department of Housing and Urban Development, Washington, D.C@ 20410-3600@

Do not send this form to the above address.

1. Contingent Fee Representation and Agreement

(a) The bidder/offeror represents and certifies as part of its bid/offer that, except for full-time bona fide employees working solely for the bidder/offeror, the bidder/offeror:

(1) [ ] has, [ ] has not employed or retained any person or company to solicit or obtain this contract; and

(2) [ ] I has, [ ] has not paid or agreed to pay to any person or company employed or retained to solicit or obtain this contract any commission, percentage, brokerage, or other fee contingent upon or resulting from the award of this contract.

(b) If the answer to either (a)(1) or (a) (2) above is affirmative, the bidder/offeror shall make an immediate and full written disclosure to the PHA Contracting Officer**.**

(c) Any misrepresentation by the bidder/offeror shall give the PHA the right to (1) terminate the resultant contract; (2) at its discretion, to deduct from contract payments the amount of any commission, percentage, brokerage, or other contingent fee; or (3) take other remedy pursuant to the contract.

2. Small, Minority, Women-Owned Business Concern Represetation

The bidder/offeror represents and certifies as part of its bid/ offer that it:

(a) [ ] is, [ ] is not a small business concern. "Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding, and qualified as a small business under the criteria and size standards in 13 CFR 12 1.

(b) [ ] is, [ ] is not a women-owned small business concern. "Women-owned," as used in this provision, means a small business that is at least 51 percent owned by a woman or women who are U.S. citizens and who also control and operate the business.

(c) [ ] is, [ ] is not a minority enterprise which, pursuant to Executive Order 1 1625, is defined as a business which is at least 51 percent owned by one or more minority group members or, in the case of a publicly owned business, at least 51 per cent of its voting stock is owned by one or more minority group members, and whose management and daily operations are controlled by one or more such individuals. For the purpose of this definition, minority group members are:

(Check the block applicable to you)

3. Certificate of Independent Price Determination

(a) The bidder/offeror certifies that-

(1) The prices in this bid/offer have been arrived at independently, without, for the purpose of restricting competition. any consultation, communication, or agreement with any other bidder/offeror or competitor relating to (i) those prices, (ii) the intention to submit a bid/offer, or (iii) the methods or factors used to calculate the prices offered-.

(2) The prices in this bid/offer have not been and will not be knowingly disclosed by the bidder/offeror, directly or indirectly, to any other bidder/offero or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the bidder/ offeror to induce any other concern to submit or not to submit a bid/offer for the purpose of restricting competition.

(b) Each signature on the bid/offer is considered to be a certification by the signatory that the signatory:

(1) Is the person in the bidder/offeror's organization responsible for determining the prices being offered in this bid or proposal,

[ ] Black Americans

[ ] Hispanic Americans

[ ] Native Americans

[ ] Asian Pacific Americans

[ ] Asian Indian Americans

[ ] Hasidic Jewish Americans

and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above; or

(2) (i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above (insert full name of person(s) in the bidder/offeror's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the bidder/ offeror's organization);

(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above.

(c) If the bidder/offeror deletes or modifies subparagraph (a)2 above, the bidder/offeror must furnish with its bid/offer a signed statement setting forth in detail the circuMDTances of the disclosure.

4. Organizational Conflicts of Interest Certification

(a) The Contractor warrants that to the best of its knowledge and belief and except as otherwise disclosed, it does not have any organizational conflict of interest which is defined as a situation in which the nature of work under a proposed contract and a prospective contractor's organizational, financial, contractual

or other interest are such that:

(i) Award of the contract may result in an unfair competitive advantage;

(ii) The Contractor's objectivity in performing the contract work may be impaired; or

(iii) That the Contractor has disclosed all relevant information and requested the HA to make a determination with respect to this Contract.

(b) The Contractor agrees that if after award he or she discovers an organizational conflict of interest with respect to this contract, he or she shall make an immediate and full disclosure in writing to the HA which shall include a description of the action which the Contractor has taken or intends to eliminate or neutralize the conflict. The HA may, however, terminate the Contract for the convenience of HA if it would be in the best interest of HA.

(c) In the event the Contractor was aware of an organizational conflict of interest before the award of this Contract and intentionally did not disclose the conflict to the HA, the HA may terminate the Contract for default.

(d) The Contractor shall require a disclosure or representation from subcontractors and consultants who may be in a position to influence the advice or assistance rendered to the HA and shall include any necessary provisions to eliminate or neutralize conflicts of interest in consultant agreements or subcontracts involving performance or work under this Contract. -

5. Authorized Negotiators (RFPs only)

The offeror represents that the following persons are authorized to negotiate on its behalf with the PHA in connection with this request for proposals: (list names, titles, and telephone numbers of the authorized negotiators):

6. Conflict of interest

In the absence of any actual or apparent conflict, the offeror, by submission of a proposal, hereby warrants that to the best of its knowledge and belief, no actual or apparent conflict of interest exists with regard to any possible performance of this procurement, as described in the clause in this solicitation titled "Organizational Conflict of Interest."

7. Offeror's Signature

The offeror hereby certifies that the information contained in these certifications and representations is accurate, complete, and current.

_____

Signature & Date:

_____

Typed or Printed Name:

_____

Title:

_____

SECTION G

INSTRUCTIONS TO OFFERORS

Instructions to Offerors Non-Construction

U.S. Department of Housing and Urban Development

Office of Public and Indian Housing- 03291 -

1. Preparation of Offers

(a) Offerors are expected to examine the statement of work, the proposed contract terms and conditions, and all instructions. Failure to do so will be at the offeror's risk.

(b) Each offeror shall furnish the information required by the solicitation. The offeror shall sign the offer and print or type its name on the cover sheet and each continuation sheet on which it makes an entry. Erasures or other changes must be initialed by the person signing the offer. Offers signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to the HA.

(c) Offers for services other than those specified will not be considered.

2. Submission of Offers

(a) Offers and modifications thereof shall be submitted in sealed envelopes or packages (1) addressed to the office specified in the solicitation, and (2) showing the time specified for receipt, the solicitation number, and the name and address of the offeror.

(b) Telegraphic offers will not be considered unless authorized by the solicitation; however, offers may be modified by written or telegraphic notice.

(c) Facsimile offers, modifications or withdrawals will not be considered unless authorized by the solicitation.

3. Amendments to Solicitations

(a) If this solicitation is amended, then all terms and conditions which are not modified remain unchanged.

(b) Offerors shall acknowledge receipt of any amendments to this solicitation by

(1) Signing and returning the amendment;

(2) identifying the amendment number and date in the space provided for this purpose on the form for submitting an offer,

(3) letter or telegram, or

(4) facsimile, if facsimile offers are authorized in the solicitation. The HA/HUD must receive the acknowledgment by the time specified for receipt of offers.

4. Explanation to Prospective Offerors

Any prospective offeror desiring an explanation or interpretation of the solicitation, statement of work, etc., must request it in writing soon enough to allow a reply to reach all prospective offers before the submission of their offers. Oral explanations or instructions given before the award of the contract will not be binding. Any information given to a prospective offeror concerning a solicitation will be furnished promptly to all other prospective offers as an amendment of the solicitation, if that information is necessary in submitting offers or if the lack of it would be prejudicial to any other prospective offerors.

5. Responsibility of Prospective Contractor

(a) The HA shall award a contract only to a responsible prospective contractor who is able to perform successfully under the terms and conditions of the proposed contract. To be determined responsible, a prospective contractor must -

(1) Have adequate financial resources to perform the contract, or the ability to obtain them;

(2) Have a satisfactory performance record;

(3) Have a satisfactory record of integrity and business ethics;

(4) Have a satisfactory record of compliance with public policy (e.g., Equal Employment Opportunity); and

(5) Not have been suspended, debarred, or otherwise determined to be ineligible for award of contracts by the Department of Housing and Urban Development or any other agency of the U.S. Government. Current lists of ineligible contractors are available for inspection at the HA/HUD.

(b) Before an offer is considered for award, the offeror may be requested by the HA to submit a statement or other documentation regarding any of the foregoing requirements. Failure by the offeror to provide such additional information may render the offeror ineligible for award.

6. Late Submissions, Modifications, and Withdrawal of Offers

(a) Any offer received at the place designated in the solicitation after the exact time specified for receipt will not be considered unless it is received before award is made and it -

(1) Was sent by registered or certified mail not later than the fifth calendar day before the date specified for receipt of offers (e.g., an offer submitted in response to a solicitation requiring receipt of offers by the 20th of the month must have been mailed by the 15th);

(2) Was sent by mail, or if authorized by the solicitation was sent by telegram or via facsimile, and it is determined by the HA/ HUD that the late receipt was due solely to mishandling by the HA/HUD after receipt at the HA;

(3) Was sent by U.S. Postal Service Express Mail Next Day Service - Post Office to Addressee, not later than 5:00 p.m. at the place of mailing two working days prior to the date specified for receipt of proposals. The term "working days" excludes weekends and U.S. Federal holidays; or

(4) Is the only offer received.

(b) Any modification of an offer, except a modification resulting from the HA's request for "best and final" offer (if this solicitation is a request for proposals), is subject to the same conditions as in subparagraph (a)(1), (2), and (3) of this provision.

(c) A modification resulting from the HA's request for "best and final" offer received after the time and date specified in the request will not be considered unless received before award and the late receipt is due, solely to mishandling by the HA after receipt at the HA.

(d) The only acceptable evidence to establish the date of mailing of late offer, modification, or withdrawal sent either by registered or certified mail is the U.S. or Canadian Postal Service postmark both on the envelope or wrapper and on the original receipt from the U.S. or Canadian Postal Service. Both postmarks must show a legible date or the offer, modification, or withdrawal shall be processed as if mailed late. "Postmark" means a printed, stamped, or otherwise place impression (exclusive of a postage meter machine impression) that readily identifiable without further action as having been supplied and fixed by employees

of the U.S. or Canadian Postal Service on the date of mailing. Therefore, offerors should request the postal clerk place a hand Cancellation bull's-eye postmark on both the ~~receipt and the envelope or wrapper~~.

(e) The only acceptable evidence to establish the time of receipt at the HA is the time/date stamp of HA on the offer wrapper or other documentary evidence of receipt maintained by the HA.

(f) The only acceptable evidence to establish the date of mailing of a late offer, modification, or withdrawal sent by Express Mail Next Day Service- Post Office to Addressee is the date entered by the post office receiving clerk on the "Express Mail Next Day Service-Post Office to Addressee" label and the postmark on both the envelope or wrapper and on the original receipt from the U.S. Postal Service. "Postmark" has the same meaning as defined in paragraph (c) of this provision, excluding postmarks of the Canadian Postal Service. Therefore, offerors should request the postal clerk to place a legible hand cancellation bull's eye postmark on both the receipt and the envelope or wrapper.

(g) Notwithstanding paragraph (a) of his provision, a late modification of an otherwise successful offer that makes its terms more favorable to the HA will be considered at any time it is received and may be accepted.

(h) If this solicitation is a request for proposals, proposals may be withdrawn by written notice, or if authorized by this solicitation, by telegram (including mailgram) or facsimile machine transmission received at any time before award. Proposals may be withdrawn in person by a offeror or its authorized representative if the identify of the person requesting withdrawal is established and the person signs a receipt for the offer before award. If this solicitation is an invitation for bids, bids may be withdrawn at any time prior to bid opening.

7. Contract Award

(a) The HA will award a contract resulting from this solicitation to the responsible offeror whose offer conforming to the solicitation will be most advantageous to the HA, cost or price and other factors, specified elsewhere in this solicitation, considered.

(b) The HA may

(1) Reject any or all offers if such action is in the HA's interest,
(2) accept other than the lowest offer,
(3) waive informalities and minor irregularities in offers received, and
(4) award more than one contract for all or part of the requirements stated.

(c) If this solicitation is a request for proposals, the HA may award a contract on the basis of initial offers received, without discussions. Therefore, each initial offer should contain the offeror's best terms from a cost or price and technical standpoint.

(d) A written award or acceptance of offer mailed or otherwise furnished to the successful offeror within the time for acceptance specified in the offer shall result in a binding contract without further action by either party. If this solicitation is a request for proposals, before the offer's specified expiration time, the HA may accept an offer, whether or not there are negotiations after its receipt, unless a written, notice of withdrawal is received before award. Negotiations conducted after receipt of an offer do not constitute a rejection or counteroffer by the HA.

(e) Neither financial data submitted with an offer, nor representations concerning facilities or financing, will form a part of the resulting contract.

8. Service of Protest

Any protest against the award of a contract pursuant to this solicitation shall be served on the HA by obtaining written and dated acknowledgement of receipt from the HA at the address shown on the cover of this solicitation. The determination of the HA with regard to such protest or to proceed to award notwithstanding such protest shall be final unless appealed by the protestor.

9. Offer Submission

Offers shall be submitted as follows and shall be enclosed in a sealed envelope and addressed to the office specified in the solicitation. The proposal shall show the hour and date specified in the solicitation for receipt, the solicitation number, and the name and address of the offeror, on the face of the envelope.

It is very important that the offer be properly identified on the face of the envelope as set forth above in order to insure that the date and time of receipt is stamped on the face of the offer envelope. Receiving procedures are: date and time stamp those envelopes identified as proposals and deliver them immediately to the appropriate contracting official, and only date stamp those envelopes which do not contain identification of the contents and deliver them to the appropriate procuring activity only through the routine mail delivery procedure.

PART IV – REPRESENTATIONS AND

INSTRUCTIONS SECTION G

INSTRUCTIONS, CONDITIONS, AND NOTICES TO

OFFERORS

G-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE

FAR NO.	PROVISION TITLE	DATE
52.215-1	Instructions to Offerors – Competitive Acquisition	OCT 1987
52.216-1	Type of Contract	APR 1984

G-2 All proposals must be mailed or delivered to:

Housing Authority of the City of El Paso, Texas
5300 E. Paisano Dr.

El Paso, Texas 79905

NOTE: It is the vendor's sole responsibility to see that his/her proposal is received at the proper place on time.

G-3 If any prospective vendor is in doubt as to the true meaning of any portion of the proposal documents or requires any additional information to prepare his/her proposal response, he/she shall contact, in writing, to the Contracts Division at the above referenced address no later than 7 days before the closing date of the solicitation.

G-4 Proposals shall be dated with each page numbered and displaying the offeror's identification. Signatures required shall be in longhand and by those authorized to execute an eventual contract.

G-5 No oral, telegraphic, or telephonic proposals or modifications will be considered.

G-6 The completed proposal shall answer all questions on a point-by-point basis in a concise manner, avoiding ambiguous statements and shall be without interlineations, alterations, and erasures.

G-7 All deviations to the proposal Statement of Work or any items or features that cannot or should not be solicited must be specifically identified. If no such areas of controversy are identified, the proposal should so state and it shall be understood that all items, features and costs have been included.

G-8 If the offeror is unable to comply with a requirement but is uncertain to the specific nomenclature in any specification, it shall enter a reference number of any supporting documents, etc., describing or interpreting the requirement.

G-9 All statements made by the offeror must be capable of being included into a written contract.

G-10 All documentation submitted automatically becomes the property of the Housing Authority of the City of El Paso, Texas.

G-11 Expenses for proposal development are entirely the responsibility of the offeror and will not be chargeable in any manner to the Housing Authority of the City of El Paso, Texas.

G-12 The Housing Authority of the City of El Paso, Texas reserves the right to accept or reject any proposal, or any part of a proposal. Any resulting order will be awarded to that responsive, responsible offeror, whose proposal is most advantageous to the Housing Authority of the City of El Paso, Texas, all other factors considered.

G-13 Offeror must submit proof of all insurance coverages and be prepared to provide additional proof of same

should the Housing Authority of the City of El Paso, Texas so request.

G-14 Offeror must provide financial information, including bank references, annual report, and a detailed financial statement at the request of HACEP.

G-15 All offers will be evaluated according to the criteria listed in the proposal. To be considered responsive the offer must respond to the criteria.

G-16 PROTEST TO THE AGENCY

(a) When a protest is filed with the agency, an award shall not be made until the matter is resolved unless the Director of Contracting or other designated official first determines that one of the following applies:

(1) The supplies or services to be contracted for are urgently required.

(2) Delivery or performance will be unduly delayed by failure to make award promptly.

(3) A prompt award will otherwise be advantageous to the Housing Authority of the City of El Paso, Texas.

G-17 (52.252-1) **SOLICITATIONS PROVISIONS INCORPORATED BY REFERENCE (JUNE 1988)**

This solicitation incorporates one or more solicitation provisions by reference with the same force and effect as if they were given in full text. Upon request, the Director of Contract Compliance will make their full text available.

G-18 AWARD

The Housing Authority of the City of El Paso, Texas, at its discretion, may award multiple contracts for this requirement.

G-19 INCURRING COSTS

(a) Costs shall not be incurred by receipts of the solicitation document in the anticipation of receiving direct reimbursement from the Housing Authority of the City of El Paso, Texas without the written authorization of the proper authority.

The Housing Authority of the City of El Paso, Texas assumes no liability for and shall not be obligated to the Contractor for payment for the Contractor's costs incurred prior to award.

G-20 PRE-AWARD SURVEY OF PROSPECTIVE CONTRACTOR

(a) If an offer submitted in response to this solicitation that is favorably considered, a survey team may contact your facility to determine your ability to perform. Current financial statements and other pertinent data should be available for review at that time if not already on file with the office having cognizance over your facility. Areas that may be investigated or evaluated are listed below:

1. Technical Capability
2. Facilities
3. Financial Capability
4. Accounting System
5. Quality Assurance
6. Performance record

(b) Offerors are advised that accomplishment of this survey is a part of the evaluation process and is not to be construed as an indication that an will receive or is in the best position to receive the resultant award.

(c) The Housing Authority of the City of El Paso, Texas may conduct a pre-award survey on more than one at a time.

G – 21 **FAILURE TO SUBMIT OFFER**

Recipients of this solicitation not responding with an offer should not return this solicitation, unless it specifies otherwise. Instead, they should advise the issuing office by letter, postcard, or established electronic commerce methods, whether they want to receive future solicitations for similar requirements. If a recipient does not submit an offer and does not notify the issuing office that future solicitations are desired, the recipient's name may be removed from the applicable mailing list.

G-22 (9505**)** **ORGANIZATIONAL CONFLICTS OF INTEREST**

The Contracting Officer shall award the contract to the apparent successful offeror unless a conflict of interest is determined to exist that cannot be avoided or mitigated.

SECTION H

EVALUATION FACTORS FOR AWARD

CONTRACT AWARD

Only written proposals will be considered. HACEP reserves the right to reject any proposals without further discussion or negotiations, and may waive technical errors or discrepancies if it serves the public interest. This solicitation for proposals is not to be considered a contract of any kind.

It highly recommended that interested Contractor/Contractors do a walk thru to the various locations of interest to inspect and assess the roof/roofs to get a correct roof measurement and requirements. Such visit must take place prior to Bid closing. Please make appointment prior to your visits to our locations by contacting Ms. Eddie Rocha @ 915-849-3789.

Written proposals will be reviewed, with emphasis on capacity and services proposed. Negotiations (interviews) may be conducted with all Offerors in the acceptable range, at the discretion of the Housing Authority of the City of El Paso, Texas. All Offerors in the competitive range will be asked to submit their Best and Final Offer. Thereafter, a recommendation for award of contract will be made to the Board of Commissioners. Upon approval by the HACEP Board of Commissioners, a contract/contracts will be awarded. HACEP reserves the right to exclude identified services from the contract and to award more than one contract.

After demonstrating full compliance with federal regulations at 24 CFR Part 85, Administrative Requirements (Federal Procurement, Competitive Negotiation Standards) and with all required approvals, HACEP will prepare a final contract document for execution and approval by the Contracting Officer and the contracting party.

No contract will be awarded for proposals that do not meet the satisfaction of the Board of Commissioners. Any contract/contracts awarded as a result of this Request for Proposals will be made only for the term outlined in the RFP. HACEP reserves the right to cancel unilaterally any contract derived from this Request for Proposals for failure to perform services satisfactorily. Any contract for the stated services or products herein is not an exclusive contract. HACEP reserves the right to assign other service providers to such matters as it deems necessary.

AFFIRMATIVE ACTION

HACEP is an equal opportunity employer and requires all of its contractors to comply with policies and regulations concerning equal employment opportunity. Proposals should refer to affirmative action guidelines published by the Department of Housing and Urban Development regarding minority, women-owned, handicapped, and small business enterprises. In addition, HACEP requests information regarding the ethnicity of each partner, shareholder, and personnel employed by the company.

BASIS FOR AWARD

The Housing Authority of the City of El Paso, Texas will award this contract/contracts to the most qualified Contractor/Contractors based on experience in the stated services as designated in the scope of services and fees negotiated.

The Housing Authority of the City of El Paso, Texas has the right to award to multiple Contractors. Contractor/Contractors can bid on one location or multiple locations in accordance to the contractor/contractors capability.

The Housing Authority of the City of El Paso, Texas reserves the right to consider historic information and facts, whether gained from the firm's proposal, question and answer conferences, references or any other source in the evaluation.

Contractor will be responsible to inspect and assess the roofs repairs required per location of interest, if there are items that are not listed on the SOW on the existing roof needed and/or require, Contractor/Contractors will need approval for any items not listed on the SOW from HACEP before replacement. The bid price is a firm fixed amount and will not be adjusted due to any subsequent measurements and/or omissions after.

The individual or firm is cautioned that it is the individual's or firm's sole responsibility to submit information related to the evaluation categories and the Housing Authority of the City of El Paso, Texas is under no obligation to solicit such information if it is not included with the individual's or firm's statement. Failure of an individual or firm to submit such information may cause an adverse impact on the evaluation of the individual or firm or lead to disqualification from consideration.

TECHNICAL EVALUATION

WORK SHEET

Name: _____

Reviewer: _____

Date: _____

INSTRUCTIONS: Evaluation of technical proposals will be based upon an analysis of the Offeror's proposal in relation to the criteria contained in the request for proposal. This evaluation sheet is keyed to those criteria. Reviewers should record their evaluation of each proposal in terms of its strengths and weaknesses, the degree to which the proposal possesses or lacks the attributes set forth in the specific factors for award Points scores are to be assigned to each evaluation factor as indicated below. Reviewer's comments should be provided on this form. Additional sheets may be attached as necessary.

OVERALL SCORE: Evaluation sheets are provided for assistance in evaluated factors and weights contained in the **RFP**. Predetermined cut-off scores designed for determining overall rating shall not be employed.

COMPOSITE SCORE:

STRENGTHS/WEAKNESSES: (Evaluators should comment here on strengths/weakness of the technical proposal. Comments may be used to formulate the Housing Authority of the City of El Paso, Texas position if continued negotiations are required).

Acceptable: _____

("This means that based upon the proposal as submitted, the PHA could contract with the offeror and expect that the work would be completed. The proposal is not perfect, but it contains no significant weaknesses")

Potentially Acceptable: _____

("This means that the technical part of the proposal contains weaknesses that keep it from being acceptable, but with relatively minor changes or additional information from the offeror, it might be made acceptable. Once additional information is obtained via initial negotiations, this type of proposal must become either acceptable or unacceptable")

Unacceptable: _____

("This means that the proposal is seriously flawed to the point that no amount of negotiation would lead to improve it, or the offer would have to be substantially rewritten to be found acceptable. Either the offeror simply did not understand the PHA's requirement or did not elect to prepare a sufficient proposal. Technically unacceptable proposals should never be included in a competitive range")

EVALUATION CRITERIA FACTORS FOR AWARD

Design for Juan Hart and Lt. Palmer Baird Memorial Apartments

OPS 19-R-0008

Any award to be made pursuant to this RFP will be based upon the proposal that would provide the best value to HACEP, with appropriate consideration given to operational, technical, cost, and management requirements. Evaluation of offers will be based upon the Vendor's responsiveness to the RFP and the total price quoted for all items covered by the RFP.

The following elements will be the primary considerations in evaluating all submitted proposals and in the selection of Vendors:

1. Experience, Qualifications and Experience **20**

2. Quality of the work plan and accomplish within the lead time of 120 days **20**

3. Demonstrated Understanding of the Requirement **15**

4. Price/Cost **40**

5. Section 3 Plan **05**

HACEP may, at its discretion and without explanation to the prospective Vendors, at any time choose to discontinue this RFP without obligation to such prospective Vendors.

Effective July 1, 2014, the Housing Authority of the City of El Paso (HACEP) implemented the following guidelines applicable to all contractor business travel.

HACEP will reimburse based on the **GSA Per Diem Rates** www.gsa.gov/perdiem for the City of El Paso, TX:

- Lodging
- Meals and Incidentals Expenses

The following categories define HACEP expectations for Contractor travel and meal expenses. Proper documentation must be submitted with the Contractor invoice before HACEP will consider reimbursement of travel or meal expenses. Such documentation must include detailed receipts for all requested amounts and the valid business reason for the expense. In addition, where HACEP management approval is required prior to reimbursement, Contractor must submit a memo detailing management's approval or the signature of the appropriate HACEP management representative on the detailed receipt. HACEP reserves the right to request additional information when assessing payment and may refuse or limit payment based on the documentation, or lack thereof, provided.

- **Airfare** - Airfare is reimbursed at commercial Coach Class using lowest logical airfare and advance purchase options. Airfare should be booked as soon as practical to obtain best pricing options. HACEP allows non-stop service to be considered as lowest logical airfare. HACEP will not reimburse unused tickets, airport ticket class changes, or seat location upgrades. Use of non-commercial air service is expressly prohibited.

- **Tolls and Parking** – Parking will be reimbursed at actual cost for business trip expense. Commuter tolls and parking within city metropolitan area where work is performed is not reimbursable.

- **Transportation Services** - While scheduled transportation service using airport shuttles is permitted with proper receipts, private limousine or luxury shuttle service is ***not reimbursable***. Taxi service is allowed in lieu of auto rental, however receipts must be provided.

- **Personal Vehicle** - Use of a personal vehicle in lieu of public transportation or a rental car is permitted when pre-approved by HACEP management. Mileage must be tracked on a daily trip log and reimbursement will be calculated at IRS standard mileage rates. Reported mileage must exclude normal commute mileage in accordance with IRS commute definitions. No personal vehicle expense, including gasoline or car repairs, is allowed for reimbursement.

- **Entertainment** - Casual entertainment including alcoholic beverages is ***not reimbursable***. HACEP management must pre-authorize any scheduled group events and such events must be limited to specific milestone or project recognition events. HACEP will not reimburse Contractor for entertaining HACEP employees without prior HACEP management approval.

Sincerely,

Satish Bhaskar

HACEP Chief Financial Officer

☐ **I certify that I have Read and acknowledge HACEP's Travel/expense Guidelines.**

Name and title: _____ date: _____

Vendor Information Form

Firm Name	
Firm Address (full address):	
Firm Telephone Number:	
Firm Fax Number	
Firm Year Established:	
Types of services provided by the Firm	
Federal TAX ID #	

Management person responsible for direct contact with the HACEP and services required for this Request for Proposal (RFP):

Name:	
Title:	
Telephone Number:	
Fax:	
Email:	

Person responsible for day-to-day servicing of the account:

Name:	
Title:	
Telephone Number:	
Fax:	
Email:	

ATTACHMENT A

DESIGN FOR JUAN HART AND LT. PALMER BAIRD MEMORIAL APARTMENTS
SPECIFICATIONS:

Housing Authority of the City of El Paso

Sites Southwest, LLC
4110 Rio Bravo • Suite 217
El Paso, TX 79902
Phone: 915.351.8800 • Fax 915.351.9299

SITES SOUTHWEST

TABLE OF CONTENTS

SECTION 006000 – FORMS

PART 1 - GENERAL

1.1 FORM OF AGREEMENT AND GENERAL CONDITIONS

A. The following form of Owner/Contractor Agreement and form of the General Conditions shall be used for Project:

1. AIA Document A101, "Standard Form of Agreement between Owner and Contractor, Stipulated Sum."

a. The General Conditions for Project are AIA Document A201, "General Conditions of the Contract for Construction."

2. AIA Document A102, "Standard Form of Agreement between Owner and Contractor, Cost Plus Fee, Guaranteed Maximum Price."

a. The General Conditions for Project are AIA Document A201, "General Conditions of the Contract for Construction."

3. AIA Document A103, "Standard Form of Agreement between Owner and Contractor, Cost Plus Fee."

a. The General Conditions for Project are AIA Document A201, "General Conditions of the Contract for Construction."

4. AIA Document A105, "Standard Form of Agreement between Owner and Contractor for a Small Project, Where the Basis of Payment Is a Stipulated Sum."

a. The General Conditions for Project are AIA Document A205, "General Conditions of the Contract for Construction of a Small Project."

5. AIA Document A132, "Standard Form of Agreement between Owner and Contractor, Construction Manager as Adviser Edition."

a. The General Conditions for Project are AIA Document A232, "General Conditions of the Contract for Construction, Construction Manager as Adviser Edition."

6. AIA Document A133, "Standard Form of Agreement between Owner and Contractor, Construction Manager as Constructor, Guaranteed Maximum Price."

a. The General Conditions for Project are AIA Document A201, "General Conditions of the Contract for Construction."

7. AIA Document A133, "Standard Form of Agreement between Owner and Contractor for Integrated Project Delivery."

a. The General Conditions for Project are AIA Document A295, "General Conditions of the Contract for Integrated Project Delivery."

8. The General Conditions are included in the Project Manual incorporated by reference.
9. The Supplementary Conditions for Project are incorporated into a modified copy of the General Conditions included in the Project Manual are separately prepared and included in the Project Manual.
10. Owner's document(s) bound following this Document.

1.2 ADMINISTRATIVE FORMS

A. Administrative Forms: Additional administrative forms are specified in Division 01 General Requirements.

B. Copies of AIA standard forms may be obtained from the American Institute of Architects; http://www.aia.org/contractdocs/purchase/index.htm ; docspurchases@aia.org ; (800) 942-7732.

C. Preconstruction Forms:

1. Form of Performance Bond and Labor and Material Bond: AIA Document A312, "Performance Bond and Payment Bond."
2. Form of Certificate of Insurance: AIA Document G715, "Supplemental Attachment for ACORD Certificate of Insurance 25-S."

D. Information and Modification Forms:

1. Form for Requests for Information (RFIs): AIA Document G716, "Request for Information (RFI)."
2. Form of Request for Proposal: AIA Document G709, "Work Changes Proposal Request."
3. Change Order Form: AIA Document G701, "Change Order."
4. Form of Architect's Memorandum for Minor Changes in the Work: AIA Document G707, "Architect's Supplemental Instructions."
5. Form of Change Directive: AIA Document G714, "Construction Change Directive."

E. Payment Forms:

1. Schedule of Values Form: AIA Document G703, "Continuation Sheet."
2. Payment Application: AIA Document G702/703, "Application and Certificate for Payment and Continuation Sheet."
3. Form of Contractor's Affidavit: AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
4. Form of Affidavit of Release of Liens: AIA Document G706A, "Contractor's Affidavit of Payment of Release of Liens."
5. Form of Consent of Surety: AIA Document G707, "Consent of Surety to Final Payment."

END OF SECTION - 006000

SECTION 011000 - GENERAL REQUIREMENTS SUMMARY

PART 1 - GENERAL

1.0 PROJECT DESCRIPTION:

A. The work contemplated under this contract consists of the furnishing of all labor, materials, equipment, and tools necessary for the construction of the project titled as follows:

DESIGN FOR JUAN HART & LT. PALMER BAIRD MEMORIAL APARTMENTS

1.1 CONTRACT DRAWINGS OR PLANS

A. The details for the above-mentioned work are shown on a set of drawings **05/07/19**. These drawings together with these specifications and contract documents form the Contract. Where figures are shown on the drawings, they shall take precedence over any scaled distances or dimensions.

1.2 COMMON REFERENCE STANDARDS

A. Reference in the Specifications to known standards such as codes, specifications, etc., promulgated by professional or technical associations, institutes and societies, are intended to mean the latest edition of each such standard adopted and published as of the date of the invitation to bid on this project except where otherwise specifically indicated. Each such standard referred to shall be considered a part of the specifications to the same extent as if reproduced herein in full.

PART 2 - PRODUCTS

2.0 EQUIPMENT

A. Equipment of a condition and design sufficient to insure a thorough and workmanlike prosecution of the project shall be used at all times and any equipment which, in the opinion of the Engineer or his representative, has outlived its efficiency or is inadequate in design, shall be removed from the project within forty-eight (48) hours after receipt of written notice from the Engineer or representative.

2.1 PROFILE AND ELEVATION

A. Profile and elevations of the ground as shown on the plans are believed to be reasonably correct but are not guaranteed. Elevations are referred to NGVD 88 datum.

2.2 MATERIALS AND APPLIANCES

A. If at any time before the commencement, or during the progress of the work, the materials and appliances used appear to the Engineer or representative as not sufficient and improper for securing the quality of the work required, he may order the Contractor to improve their character and the Contractor shall conform to such order. The failure of the Engineer or representative to demand any improvement shall not release the Contractor from his obligation

to secure the quality of the work as specified.

2.3 DISPOSAL OF WASTE MATERIALS

A. All waste materials including excavation, concrete curbs, sidewalks and driveways shall be disposed of at designated points approved by the Engineer or representative.

PART 3 - EXECUTION

3.0 DAMAGE TO PUBLIC PROPERTY

A. The Contractor shall be responsible for any damage to public property caused by the construction project. The Contractor upon receipt of a complaint of damage, shall, within 10 days, respond in writing with a
proposal to repair said damage or a letter stating reason why the damage was not caused by the construction.

B. Except for extenuating circumstances beyond the control of the Contractor the damage shall be repaired completely within 10 days of the complaint.

3.1 CONTRACTOR'S SUPERINTENDENT

A. The Contractor shall keep on the project, at all times during its progress, a qualified, competent, Resident Superintendent satisfactory to the Engineer or his/her representative. The Resident Superintendent shall be fluent in English and capable of communicating with the public, Engineer, Inspector, and Owner.

3.2 SANITARY FACILITIES

A. The Contractor shall provide temporary toilets, wash facilities, and drinking water facilities with potable water approved by local health authorities. Comply with governing regulations including safety and health codes for the type, number, location, operation, and maintenance of fixtures and facilities; provide not less than specified requirements. Install facilities in locations that will best serve the project's needs.

B. Supply and maintain toilet tissue, paper towels, paper cups, and similar disposable materials as appropriate for each facility. Provide appropriate covered waste containers for used materials.

END OF SECTION 011000

SECTION 012200 - UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for unit prices.

B. Related Requirements:

1. Section 012600 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.
2. Section 014000 "Quality Requirements" for general testing and inspecting requirements.

1.3 DEFINITIONS

A. Unit price is an amount incorporated in the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES

A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.

B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.

C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.

D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

3.1.0 BASE BID- Items shall indicate quantities in the base bid which encompasses the areas on the Contract Documents.

A. Base Bid Item 1: Provide and Implement Mobilization/Demobilization

Shall include all costs for Contractor's mobilization and demobilization, insurance and bond, construction permits and fees, job trailers, 6' temporary chain line construction site fencing with gates at construction entrances, site administration expenses, and utilities to the job, including power, telephone, etc. Contractor shall create and maintain a Construction Project Sign as a component of this bid item. Surveying for improvements shall be incidental to this bid item. This item shall also include all costs for contract closeout, site cleanup, and all costs associated with Contractor's demobilization from the site.

Payment for mobilization and demobilization shall be on a Lump Sum basis as noted in the Bid Schedule. Mobilization Bid Item shall be limited to a maximum of five (5) percent of the total base bid price.

B. Bid Item 2: Provide and Implement an Approved Traffic Control Plan

Contractor shall provide and implement an approved Traffic Control Plan. It shall be paid for on a Lump Sum basis and shall include preparation of a TCP ; submitting and obtaining approval of the TCP from the required governing agencies; furnishing, installing, and maintaining the approved TCP Plan complete for the duration of the project; implementing and maintaining the TCP in conformance to the specifications and principles given in the "Texas Manual on Uniform Traffic Control Devices" over the entire project area; and all other incidentals required for Contractor to complete, implement, and maintain the TCP requirements. Restoration of, landscaped areas, parkways, sidewalks, roadway pavement structure and any other areas affected by the TCP, including areas that go beyond the limits of construction as shown on the drawings, to equal or better conditions, shall be considered subsidiary to this item. All costs for this work shall be included in the Contractor's lump sum price and shall be complete compensation for complete performance of this work.

Payment for Traffic Control Plan shall be on a Lump Sum basis as noted in the Bid Schedule.

C. Bid Item 3: Provide and Implement the Storm Water Pollution Prevention Plan (SWPPP)

Contractor shall implement the Storm Water Pollution Prevention Plan (SWPPP). It shall be paid for on a Lump Sum basis and shall include furnishing all labor, material, equipment and performing operations required, but shall not be limited to, obtaining T.P.D.E.S. permit, filing NOI and NOT, providing temporary earthen berms, silt fencing, stabilized construction en-

trances, and any other BMP's in accordance with applicable governing rules and regulations and as indicated in the plans and specifications. Restoration of, landscaped areas, parkways, sidewalks, roadway pavement structure and any other areas affected by the SWPPP, including areas that go beyond the limits of construction as shown on the drawings, to equal or better conditions, shall be considered subsidiary to this item. All costs for this work shall be included in the Contractor's lump sum price and shall be complete compensation for complete performance of this work.

Payment for Storm Water Pollution Prevention Plan (SWPPP) shall be on a Lump Sum basis as noted in the Bid Schedule.

D. Bid Item 4: Provide and Implement Earthwork /Grading (Including Over-Excavation & Swales)

Measurement of the Earthwork, Grading & Storm Drainage which includes over excavation and swales shall be determined in lump sum. This item includes all earthwork, grading, and all components & associated appurtenances as provided in the Construction Documents. The acquisition and delivery of any materials obstructing the renovations shall be subsidiary to this item. Amounts shall not exceed those defined in the Construction Documents.

Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Drawings and Specifications.

E. Bid Item 5: Implement Selective Demolition (incl. S/W, D/W, curb, ex. Non-compliant ramps & complete existing stamped concrete in parkways for irrigation install and plan trees) HACEP Properties.

Measurement of the Selective Demolition shall be determined in lump sum. This item includes all demolition as provided in the Construction Documents. The removal and proper disposal of all sidewalks, driveways, curbing, Non-compliant ramps and concrete in parkways to plant trees, in front of HACEP Properties only and existing underlying unclassified materials obstructing the renovations shall be subsidiary to this item. Saw-cutting requirements shall be incidental to this item. Amounts shall not exceed those defined in the Construction Documents.

Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Drawings and Specifications.

F. Bid Item 6: Implement Selective Demolition (incl. curb, ex. Non-compliant ramps & complete existing stamped concrete in parkways for irrigation install and plant trees)

Measurement of the Selective Demolition shall be determined in lump sum. This item includes all demolition as provided in the Construction Documents. The removal and proper disposal of all concrete, curbing, Non-compliant ramps and concrete in parkways to plant trees along Atlas Ave. and existing underlying unclassified materials obstructing the renovations shall be subsidiary to this item. Saw-cutting requirements shall be incidental to this item. Amounts shall not exceed those defined in the Construction Documents.

Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Drawings and Specifications.

G. Bid Item 7: Provide and Install 4" Depth Standard Broom Finish Concrete Paving

Measurement of the 4-inch depth Standard Broom Finish Concrete Paving shall include the area (in square feet) shown on the Construction Documents. Concrete sidewalk shall include forming, reinforcement, subgrade preparation and all associated appurtenances in accordance with the Construction Documents. Saw-cutting requirements, expansion joints, control joints, etc. shall be subsidiary to this item. Limits shall not exceed those defined in the Construction Documents.

Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Drawings and Specifications.

H. Bid Item 8: Provide and Install Futsal Court Concrete Pad (Full Size with Court Painting & Markings)

Measurement of the full-size Futsal Court with court painting and markings shall be determined as per lump sum. These items shall include subgrade preparation, 4" depth reinforced concrete slab, paint, and all associated appurtenances in accordance with the Construction Documents. Reinforcement, removal and proper disposal of existing underlying unclassified materials shall be subsidiary to this item. Limits shall not exceed those defined in the Construction Documents.

Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Drawings and Specifications.

I. Bid Item 9: Provide and Install Post Tension Slab for Futsal Court

Measurement of the Post Tension Slab for Futsal Court shall include the area (lump sum) shown on the Construction Documents. This item shall include subgrade preparation and all associated appurtenances in accordance with the Construction Documents. Saw-cutting requirements, reinforcement, etc. shall be subsidiary to this item. Limits shall not exceed those defined in the Construction Documents.

Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Drawings and Specifications.

J. Bid Item 10: Provide and Install Welded Wire Fence (Futsal Court), includes gates.

Measurement of the Welded Wire Fence shall be determined in linear feet. This item includes forming, reinforcement, trench protection, subgrade preparation, backfilling requirements and all associated appurtenances in accordance with the Construction Documents. The removal and

proper disposal of existing underlying unclassified materials obstructing the installation of pipe shall be subsidiary to this item. Amounts shall not exceed those defined in the Construction Documents.

Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Drawings and Specifications.

K. Bid item 11: Provide and Install Sidewalk to meet ADA in HACEP Properties.

Measurement of the Sidewalk to meet ADA in HACEP Properties shall be determined in square yards on the Construction Documents. Sidewalk shall include forming, reinforcement, subgrade preparation and all associated appurtenances in accordance with the Construction Documents. Saw-cutting requirements, expansion joints, control joints, etc. shall be subsidiary to this item. Limits shall not exceed those defined in the Construction Documents.

Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Drawings and Specifications.

L. Bid item 12: Provide and Install Sidewalk to meet ADA along Atlas Ave.

Measurement of the Sidewalk to meet ADA along Atlas Ave. shall be determined in square yards on the Construction Documents. Sidewalk shall include forming, reinforcement, subgrade preparation and all associated appurtenances in accordance with the Construction Documents. Saw-cutting requirements, expansion joints, control joints, etc. shall be subsidiary to this item. Limits shall not exceed those defined in the Construction Documents.

Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Drawings and Specifications.

M. Bid item 13: Provide and Install Driveways to meet ADA in HACEP Properties.

Measurement of the Driveways to meet ADA in HACEP Properties shall be determined in square yards on the Construction Documents. Driveways shall include forming, reinforcement, subgrade preparation and all associated appurtenances in accordance with the Construction Documents. Saw-cutting requirements, expansion joints, control joints, etc. shall be subsidiary to this item. Limits shall not exceed those defined in the Construction Documents.

Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Drawings and Specifications.

N. Bid Item 14: Provide and Install (City Standard) Curbs.

Measurement of the (City Standard) Curb shall be determined in linear feet. This item includes forming, reinforcement, trench protection, subgrade preparation, backfilling requirements and all associated appurtenances in accordance with the Construction Documents. The removal and proper disposal of existing underlying unclassified materials obstructing the installation of pipe

shall be subsidiary to this item. Amounts shall not exceed those defined in the Construction Documents.

Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Drawings and Specifications.

O. Bid Item 15: Provide and Install New ADA Ramps in HACEP Properties.

Measurement of the ADA Ramp HACEP Properties. shall be determined as per item on the Construction Documents. ADA Ramp HACEP Properties. shall include forming, reinforcement, subgrade preparation and all associated appurtenances in accordance with the Construction Documents. Saw-cutting requirements, expansion joints, control joints, etc. shall be subsidiary to this item. Limits shall not exceed those defined in the Construction Documents.

Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Drawings and Specifications.

P. Bid Item 16: Provide and Install New ADA Ramp along Atlas Ave.

Measurement of the ADA Ramp @Atlas Avenue. shall be determined as per item on the Construction Documents. ADA Ramp @Atlas Avenue. shall include forming, reinforcement, subgrade preparation and all associated appurtenances in accordance with the Construction Documents. Saw-cutting requirements, expansion joints, control joints, etc. shall be subsidiary to this item. Limits shall not exceed those defined in the Construction Documents.

Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Drawings and Specifications.

Q. Bid Item 17: Provide and Install Bench

Measurement of the Bench shall be determined as per item. This item includes delivery, storage as necessary, installation, footings, backfilling requirements and all associated appurtenances in accordance with the Construction Documents. The removal and proper disposal of existing underlying unclassified materials shall be subsidiary to this item. Amounts shall not exceed those defined in the Construction Documents.

Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Drawings and Specifications.

R. Bid Item 18: Provide and Install Trash Receptacle

Measurement of the Trash Receptacle shall be determined as per item. This item includes delivery, storage as necessary, installation, footings, backfilling requirements and all associated appurtenances in accordance with the Construction Documents. The removal and proper disposal of existing underlying unclassified materials shall be subsidiary to this item. Amounts shall not exceed those defined in the Construction Documents.

Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Drawings and Specifications.

S. Bid Item 19: Provide and Install Fabric Canopy for Playground.

Measurement of the Fabric Canopy shall be determined as per item. This item includes delivery, storage as necessary, installation, footings, backfilling requirements and all associated appurtenances in accordance with the Construction Documents. The removal and proper disposal of existing underlying unclassified materials shall be subsidiary to this item. Amounts shall not exceed those defined in the Construction Documents.

Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Drawings and Specifications.

T. Bid Item 20: Provide and Install Name and Rules Sign

Measurement of the Name & Rules Sign shall be determined as per item. This item includes assembly, adhesion, subgrade preparation, and all manner of installation requirements and all associated appurtenances in accordance with the Construction Documents. The removal and proper disposal of existing underlying unclassified materials shall be subsidiary to this item. Amounts shall not exceed those defined in the Construction Documents.

Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Drawings and Specifications.

U. Bid Item 21: Provide and Install Poured-in-Place safety Surface

Measurement of the Poured-in-Place over Concrete Base shall be determined by the Square feet. This item includes all pouring, forming, reinforcement, subgrade preparation, backfilling requirements related to poured-in-place. Concrete base shall include forming, reinforcement, subgrade preparation. All associated appurtenances in accordance with the Construction Documents. Saw-cutting requirements, expansion joints, control joints, etc. shall be subsidiary to this item. The removal and proper disposal of existing underlying unclassified materials obstructing the installation of the Poured-in-Place over concrete base shall be subsidiary to this item. Amounts shall not exceed those defined in the Construction Documents.

Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Drawings and Specifications.

V. Bid Item 22: Provide and Install Independent Play Pieces (8 to 10 pieces total, include installation work)

Measurement of the Fabric Independent Play Pieces shall be determined as per item. This item includes delivery, storage as necessary, installation, footings, backfilling requirements and all associated appurtenances in accordance with the Construction Documents. The removal and proper disposal of existing underlying unclassified materials shall be subsidiary to this item. Amounts shall not exceed those defined in the Construction Documents.

Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Drawings and Specifications.

W. Bid Item 23: Provide and Install 1” Rainbow Rock Mulch, 3” depth without weed fabric Barrier Fabric. (Properties Only)

Measurement 1” Rainbow Rock Mulch, 3” depth without weed fabric Barrier Fabric, shall be determined in square feet. This item includes minor grading, pre-emergent application, subgrade preparation, pre-em5ergent, backfilling requirements and all associated appurtenances in accordance with the Construction Documents. The removal and proper disposal of existing underlying unclassified materials shall be subsidiary to this item. Amounts shall not exceed those defined in the Construction Documents.
Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Drawings and Specifications

X. Bid Item 24: Provide and Install 1” Rainbow Rock Mulch, 3” depth without weed fabric Barrier Fabric. (Atlas Ave.)

Measurement 1” Rainbow Rock Mulch, 3” depth without weed fabric Barrier Fabric, shall be determined in square feet. This item includes minor grading, pre-emergent application, subgrade preparation, pre-emergent, backfilling requirements and all associated appurtenances in accordance with the Construction Documents. The removal and proper disposal of existing underlying unclassified materials shall be subsidiary to this item. Amounts shall not exceed those defined in the Construction Documents.
Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Drawings and Specifications

Y. Bid Item 25: Provide and Install 2 Inch Caliper Trees in front of HACEP Properties.

Measurement of the 2-inch Caliper Trees in HACEP Properties shall be determined as per item. This item includes fertilizer, staking, subgrade preparation, backfilling requirements and all associated appurtenances in accordance with the Construction Documents. The removal and proper disposal of existing underlying unclassified materials shall be subsidiary to this item. Amounts shall not exceed those defined in the Construction Documents.

Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Drawings and Specifications.

Y. Bid Item 26: Provide and Install 2 Inch Caliper Trees along Atlas Ave.

Measurement of the 2 inch Caliper Trees along Atlas Ave. shall be determined as per item. This item includes fertilizer, staking, subgrade preparation, backfilling requirements and all associated appurtenances in accordance with the Construction Documents. The removal and proper disposal of existing underlying unclassified materials shall be subsidiary to this item. Amounts shall not exceed those defined in the Construction Documents.

Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Drawings and Specifications.

Z. Bid Item 27: Provide and Install 5 Gallon Plant Material

Measurement of the 5 Gallon Plant Material shall be determined as per item. This item includes fertilizer, staking, subgrade preparation, backfilling requirements and all associated appurtenances in accordance with the Construction Documents. The removal and proper disposal of existing underlying unclassified materials shall be subsidiary to this item. Amounts shall not exceed those defined in the Construction Documents.

Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Drawings and Specifications.

AA. Bid Item 28: Provide and Install Electrical Improvements as shown on Electrical sheets.

Measurement of the Electrical Improvements as shown on Electrical sheets shall include all Installation, connections, concrete bases, anchor bots, reinforcement, ground rods, mounting, rough-in, wiring, conduit for future extension, all work, material, hardware, etc. required for a complete, safe, functional installation shall be subsidiary to this item.

Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Documents.

BB. Bid Item 29: Provide and Install Irrigation System in HACEP Properties

Measurement of the Irrigation System in HACEP Properties shall be determined as per lump sum. This item includes all components, piping, pump, pump house, pump house slab, footings, backfilling requirements, etc. and all associated appurtenances to provide a working irrigation system in accordance with the Construction Documents. The removal and proper disposal of existing underlying unclassified materials shall be subsidiary to this item. Amounts shall not exceed those defined in the Construction Documents.

Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Drawings and Specifications.

CC. Bid Item 30: Provide and Install Irrigation System along Atlas

Measurement of the Irrigation System along Atlas shall be determined as per lump sum. This item includes all components, piping, pump, pump house, pump house slab, footings, backfilling requirements, etc. and all associated appurtenances to provide a working irrigation system in accordance with the Construction Documents. The removal and proper disposal of existing underlying unclassified materials shall be subsidiary to this item. Amounts shall not exceed those defined in the Construction Documents.

Payment shall be made at the unit price as stated in the bid schedule and will be compensated in full for the necessary materials and Work in accordance with the Construction Drawings and Specifications.

END OF SECTION 012200

SECTION 01 25 00 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

B. Related Requirements:

1. Section 012100 "Allowances" for products selected under an allowance.
2. Section 012300 "Alternates" for products selected under an alternate.
3. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.3 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.4 ACTION SUBMITTALS

A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Contractor to provide RFI with substitute clearly indicated.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.

c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
e. Samples, where applicable or requested.
f. Certificates and qualification data, where applicable or requested.
g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
i. Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
j. Cost information, including a proposal of change, if any, in the Contract Sum.
k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Landscape Architect's Action: If necessary, Landscape Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor through Project Manager of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
b. Use product specified if Landscape Architect does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.

1. Conditions: Landscape Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
b. Substitution request is fully documented and properly submitted.
c. Requested substitution will not adversely affect Contractor's construction schedule.
d. Requested substitution has received necessary approvals of authorities having jurisdiction.
e. Requested substitution is compatible with other portions of the Work.
f. Requested substitution has been coordinated with other portions of the Work.
g. Requested substitution provides specified warranty.
h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Landscape Architect will consider requests for substitution if received within 10 days after commencement of the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Landscape Architect.

1. Conditions: Landscape Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Landscape Architect will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
b. Requested substitution does not require extensive revisions to the Contract Documents.
c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
d. Substitution request is fully documented and properly submitted.
e. Requested substitution will not adversely affect Contractor's construction schedule.
f. Requested substitution has received necessary approvals of authorities having jurisdiction.
g. Requested substitution is compatible with other portions of the Work.
h. Requested substitution has been coordinated with other portions of the Work.

i. Requested substitution provides specified warranty.
j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SECTION 013323 - MATERIAL APPROVAL SUBMITTAL

PART 1-GENERAL

1.1 SECTION INCLUDES

A. Schedule of submittals
B. Number and type of submittals/re-submittals for shop drawings, product data and samples
C. Contractor and Engineer's responsibilities
D. Distribution

1.2 SCHEDULE OF SUBMITTALS

A. Schedule submittals to expedite the Project. Coordinate submission of related items. Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for re-submittals. The Owner's Representative reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

B Submit schedule in duplicate within ten (10) days after effective date of Owner-Contractor Agreement.

1. Submit a bar chart or "time-line" type schedule with separate line for each major section of Work or operation. Indicate submittal dates required for shop drawings, product data, samples, and product delivery dates.
2. Submit a schedule of shop drawing submissions indicating submittal number, specification section, items covered, date submitted and action taken by Owner's Representative.

C. Participate in review of schedule jointly with Owner's Representative. Reviews shall be limited to verifying that specific activities and dates pertaining to the following have been included:

1. Adequate review times for Owner's Representative to review product data and samples.
2. Dates for Owner occupancy requirements.

D. If required, make necessary revisions to schedule and resubmit within seven days.
E. Submit updated schedules with each Application for Payment, identifying changes since previous version. Indicate percentage of completion of each item of work at each submission. Participate in joint reviews when requested by Owner's Representative. If required, make necessary revisions and resubmit within ten (10) days. Submit updated schedule of shop drawing submissions along with each individual submittal.
F. Prepare the schedule in chronological order.

G. Neither the requirement to submit construction schedules; the authority of the Owner's Representative to review the schedules; or any decision made in good faith by the Owner's Representative to exercise or not exercise such authority; shall give rise to any duty or

responsibility of Owner or Owner's Representative to the Contractor, Subcontractor, material and equipment suppliers, their agents or employees, or other persons performing Work.

1.3 SHOP DRAWINGS

A. Submit documentation on materials as may be required by the Contract Documents or the Owner. Review all submittals prior to submission. Submit in a timely manner so as not to delay the project. Allow sufficient time for Project Representative's review and resubmission, if necessary. Include certifications from manufacturer that the product complies with appropriate ASTM standards.

B. The Contractor shall furnish all required submittals which shall include, but not be limited to, the following tabulation of Contractor submissions.

1. The Contractor shall prepare and submit five (5) hardcopies and electronic files of his shop drawings submissions to the Project Representative for review and approval.
2. Shop drawings shall be submitted without fail in time to permit correction, resubmission and final approval, as hereinafter specified, without causing any delay in the construction of any work. The Contractor may begin the preparation of shop drawings as soon as possible after signing of the Contract. Formal submission of shop drawings will begin after execution of the Contract.

C. Where the nature of the work of the Contract makes it necessary, or where so required by the Project Representative, Contractor shall submit scale and full-size shop drawings of his/her work for the approval of the Project Representative. The shop drawings shall be complete in every detail including provisions required of various trades, connections with other work, all cutting fitting and drilling required and any and all other necessary information in accordance with usual trade practice as particularly required for any special purposes.

D. Shop drawings include, but are not limited to, shop drawings, layout and installation drawings in plan and elevation, certified wiring diagrams, interconnecting wiring diagrams, manufacturer's data, etc. Contractor shall be responsible for securing all of the information, details, dimensions, drawings, etc., necessary to prepare the Shop Drawings required and necessary under this Contract and to fulfill all other requirements of his Contract. Contractor shall secure such information, details, drawings, etc., from all possible sources including the Contract Drawings, drawings prepared by subcontractors, suppliers, etc.

E. Shop drawings shall accurately and clearly present the following:

1. All working and installation dimensions.
2. Arrangement and sectional views.
3. Units of equipment in the proposed positions for installation, details of required attachments and connections, and dimensioned locations between units and in relation to the structures.
4. Necessary details and information for making connections between the various trades including, but not limited to, power supplies, controls and interconnecting wiring between units, accessories appurtenances, etc.

F. Structural and all other layout drawings prepared specifically for the Project shall have a plan scale of not less than 1/4-inch equal to 1 foot and they shall be not larger than the size of the Contract Drawings.

Where manufacturer's publications in the form of catalogs, brochures, illustrations, compliance certificates, or other data sheets are submitted in lieu of prepared shop drawings, such submissions shall specifically indicate the item for which approval is requested. Identification of items shall be made in ink, and submissions showing only general information are not acceptable.

PART 2 -MATERIALS

2.1 PRODUCT DATA

A. Submit pages which are pertinent; mark each copy of standard printed data to identify pertinent products, referenced to Specification Section and number. Show reference standards; component parts; finishes; dimensions; and required clearances.

2. 2 SAMPLES

A. Submit appropriate range of manufacturer’s standard finishes except when more restrictive requirements are specified, indicating colors, textures, and patterns, for Owner selection.

B. Submit samples to illustrate functional characteristics of products, including parts and attachments.

C. Label each sample with identification required for transmittal letter.

D. Provide field samples of finishes for Project, at location acceptable to Owner, as required by individual Specifications section. Install each sample complete and finished. Acceptable finishes in place may be retained in completed work.

PART 3-EXECUTION

3.1 RESUBMITTALS

A. Make re-submittals under procedures specified for initial submittals; identify changes made since previous submittal.

3.2 CONTRACTOR REVIEW

A. Review submittals prior to transmittal; determine and verify field measurements, field construction criteria, quantities and details, manufacturer’s catalog numbers, and conformance of submittal with requirements of Contract Documents.

B. Coordinate submittals with requirements of Work and of Contract Documents.

C. Sign or initial in a rubber-stamped review block format, each sheet of shop drawing and product data, and each sample label to certify compliance with requirements of Contract Documents.

Notify Owner in writing at time of submittal, of any deviation from requirements of Contract Documents.

D. Do not fabricate products or begin work that requires submittals until return of approved submittal.

E. Contractor's responsibility for errors and omissions in submittals is not relieved by Owner's review of submittals

F. Contractor's responsibility for deviations in submittals from requirements of Contract representative will review submittals for general conformance to design intent only.

3.3 ENGINEER REVIEW

A. The Engineer will review shop drawings, product data, and samples and return submittals generally within 7 days.

3.4 DISTRIBUTION

A. Duplicate and distribute reproductions of shop drawings, copies of product data, and samples, which bear Engineer stamp of approval, to job site file, Record Documents file, subcontractors, suppliers and other entities requiring information.

END SECTION 013323

SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
3. Requirements for Contractor to provide quality-assurance and -control services required by Landscape Architect, Owner’s Representative, or authorities having jurisdiction are not limited by provisions of this Section.
4. Specific test and inspection requirements are not specified in this Section.

C. Related Requirements:

1. Section 012100 "Allowances" for testing and inspecting allowances.

1.3 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Landscape Architect or Owner’s Representative.

C. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to

show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.

E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

F. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.

G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).

J. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Landscape Architect for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.5 ACTION SUBMITTALS

A. Shop Drawings: For integrated exterior mockups, provide plans, sections, and elevations, indicating materials and size of mockup construction.

1. Indicate manufacturer and model number of individual components.
2. Provide axonometric drawings for conditions difficult to illustrate in two dimensions.

1.6 INFORMATIONAL SUBMITTALS

A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.

B. Qualification Data: For Contractor's quality-control, playground, site furnishings and irrigation installation personnel.

C. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the following systems:
1. Main wind-force-resisting system or a wind-resisting component listed in the wind-force-resisting system quality-assurance plan prepared by Landscape Architect.

D. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

E. Schedule of Tests and Inspections: Prepare in tabular form and include the following:

1. Specification Section number and title.
2. Entity responsible for performing tests and inspections.
3. Description of test and inspection.
4. Identification of applicable standards.
5. Identification of test and inspection methods.
6. Number of tests and inspections required.
7. Time schedule or time span for tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

1.7 CONTRACTOR'S QUALITY-CONTROL PLAN

A. Quality-Control Plan, General: Submit quality-control plan within 10 days of Notice to Proceed or at the preconstruction conference whichever comes first. Submit in format acceptable to Architect. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's construction schedule.

B. Quality-Control Personnel Qualifications: Engage qualified full-time personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.

1. Project quality-control manager may also serve as Project superintendent shall not have other Project responsibilities.

C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.

D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:

1. Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.
2. Special inspections required by authorities having jurisdiction and indicated on the "Statement of Special Inspections."
3. Owner-performed tests and inspections indicated in the Contract Documents**,** including tests and inspections indicated to be performed by the Commissioning Authority.

E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.

F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.8 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and re-inspecting.

B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of technical representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement weather conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of factory-authorized service representative making report.
2. Statement that equipment complies with requirements.
3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
4. Statement weather conditions, products, and installation will affect warranty.
5. Other required items indicated in individual Specification Sections.

D. Permits, Licenses, and Certificates: Contractor is responsible for all permits, licenses and certificates, necessary for the scope of work which includes but is not limited to building permit, irrigation permit, SWPPP, Playground Inspection. For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.9 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

E. Professional Surveyor's Qualifications: A professional surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or products that are similar in material, design, and extent to those indicated for this Project.

F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.

G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329, and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:

1. Contractor responsibilities include the following:

a. Provide test specimens representative of proposed products and construction.
b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
f. When testing is complete, remove test specimens, assemblies, and mockups, and laboratory mockups; do not reuse products on Project.

2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Landscape Architect, and Owner's Representative with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

K. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups in location and of size indicated or, if not indicated, as directed by Landscape Architect.
2. Notify Landscape Architect [**seven**] 7 days in advance of dates and times when mockups will be constructed.
3. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction at Project.
4. Demonstrate the proposed range of aesthetic effects and workmanship.
5. Obtain LANDSCAPE ARCHITECT and Owner's Representative's approval of mockups before starting work, fabrication, or construction.

    a. Allow seven days for initial review and each re-review of each mockup.

6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
7. Demolish and remove mockups when directed unless otherwise indicated.

L. Integrated Exterior Mockups: Construct integrated exterior mockup according to approved Shop Drawings and/or as indicated on Drawings. Coordinate installation of exterior envelope materials and products for which mockups are required in individual Specification Sections, along with supporting materials.

M. Laboratory Mockups: Comply with requirements of preconstruction testing and those specified in individual Specification Sections.

1.10 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
2. Payment for these services will be made from testing and inspecting allowances, as authorized by Change Orders.
3. Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.

B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.

1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.

    a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing.

D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in pre-installation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

E. Retesting/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and re-inspecting, for construction that replaced Work that failed to comply with the Contract Documents.

F. Testing Agency Responsibilities: Cooperate with LANDSCAPE ARCHITECT or Owner’s Representative and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify LANDSCAPE ARCHITECT, Owners’ Representative and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform any duties of Contractor.

G. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at Project site.

H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents as a component of Contractor's quality-control plan. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.

1. Distribution: Distribute schedule to Owner’s Representative or Landscape Architect, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.11 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Owner will engage a qualified testing agency special inspector to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner**,** as indicated in Statement of Special Inspections attached to this Section, and as follows:

B. Special Tests and Inspections: Conducted by a qualified testing agency special inspector as required by authorities having jurisdiction, as indicated in individual Specification Sections and in Statement of Special Inspections attached to this Section], and as follows:

1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviews the completeness and adequacy of those procedures to perform the Work.
2. Notifying Architect, Commissioning Authority, Construction Manager, and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect and Commissioning Authority, through Construction Manager, with copy to Contractor and to authorities having jurisdiction.

4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retesting and re-inspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 ACCEPTABLE TESTING AGENCIES

3.2 TEST AND INSPECTION LOG

A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Architect.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Owner’s Representative or LANDSCAPE ARCHITECT reference during normal working hours.

3.3 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching.

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

B. Related Requirements:

1. Section 012100 "Allowances" for products selected under an allowance.
2. Section 012300 "Alternates" for products selected under an alternate.
3. Section 012500 "Substitution Procedures" for requests for substitutions.
4. Section 014200 "References" for applicable industry standards for products specified.

1.3 DEFINITIONS

A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.4 ACTION SUBMITTALS

A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
2. Landscape Architect's Action: If necessary, Landscape Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Landscape Architect will notify Contractor through Owner's Project Manager of approval or rejection of proposed comparable product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is less.

a. Form of Approval shall require written documentation
b. Use product specified if Landscape Architect does not issue a decision on use of a comparable product request within time allocated.

B. Basis-of-Design Product Specification Submittal: Show compliance with requirements.

1.5 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

B. Delivery and Handling:

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.
7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.7 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
3. See other Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Landscape Architect will make selection.
5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
3. Products:

    a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered.
    b. Non-restricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.

4. Manufacturers:

    a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered.
    b. Non-restricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.

5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics

that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

C. Visual Matching Specification: Where Specifications require "match Landscape Architect's sample", provide a product that complies with requirements and matches Landscape Architect's sample. Landscape Architect's decision will be final on whether a proposed product matches.

1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.

D. Visual Selection Specification: Where Specifications include the phrase "as selected by Landscape Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Landscape Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

A. Conditions for Consideration: Landscape Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Landscape Architect may return requests without action, except to record noncompliance with these requirements:

1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects with project names and addresses and names and addresses of Landscape architects and owners, if requested.
5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 02 41 13 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building or structure.
2. Demolition and removal of selected site elements.
3. Salvage of existing items to be reused or recycled.
4. Salvage of existing items to be returned to owner.

B. Related Requirements:

1. Section 011000 "Summary" for restrictions on the use of the premises, Owner-occupancy requirements, and phasing requirements.
2. Section 015639 "Temporary Tree and Plant Protection" for temporary protection of existing trees and plants that are affected by selective demolition.
3. Section 017300 "Execution" for cutting and patching procedures.
4. Section 311000 "Site Clearing" for site clearing and removal of above- and below-grade improvements.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner.

C. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.

D. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.5 PREINSTALLATION MEETINGS

A. Pre-demolition Conference: Location to be determined.

1. Inspect and discuss condition of construction to be selectively demolished.
2. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
3. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
4. Review areas where existing construction is to remain and requires protection.

1.6 INFORMATIONAL SUBMITTALS

A. Proposed Protection Measures: Submit report, including drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and, for noise control. Indicate proposed locations and construction of barriers.

B. Schedule of Selective Demolition Activities: Indicate the following:

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's Representatives on-site operations are uninterrupted.
2. Interruption of utility services. Indicate how long utility services will be interrupted.
3. Coordination for shutoff, capping, and continuation of utility services.
4. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of Work.

C. Inventory: Submit a list of items to be removed and salvaged and deliver to Owner prior to start of demolition.

D. Warranties: Documentation indicated that existing warranties are still in effect after completion of selective demolition.

1.7 CLOSEOUT SUBMITTALS

A. Inventory: Submit a list of items that have been removed and salvaged.

B. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.8 FIELD CONDITIONS

A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

B. Notify Landscape Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

C. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
   1. If suspected hazardous materials are encountered, do not disturb; immediately notify Landscape Architect and Owner's Representative. Hazardous materials will be removed by Owner under a separate contract.

D. Storage or sale of removed items or materials on-site is not permitted.

E. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

   1. Maintain fire-protection facilities in service during selective demolition operations.

1.9 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties. Notify warrantor before proceeding.

B. Notify warrantor on completion of selective demolition, and obtain documentation verifying that existing system has been inspected and warranty remains in effect. Submit documentation at Project closeout.

PART 2 - PRODUCTS

2.1 PEFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected, capped or removed before starting selective demolition operations.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

C. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Landscape Architect.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

1. Comply with requirements for existing services/systems interruptions.

3.3 PREPARATION

A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Comply with requirements for access and protection specified in Section 015000 "Temporary Facilities and Controls."

B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of site.
2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water damage.
3. Provide tree, plant and native area protection as indicated on Construction Drawings and as specified in Section 024119 “Existing Tree Plant Protection.

C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of existing site conditions.

1. Strengthen or add new supports when required during progress of selective demolition.

3.4 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
   1. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on tree roots, vulnerable slopes or areas outside project limits.
   2. Dispose of demolished items and materials promptly at an approved location.

B. Removed and Salvaged Items:

   1. Clean salvaged items.
   2. Store items in a secure area until delivery to Owner.
   3. Transport items to Owner's storage area designated by Owner.
   4. Protect items from damage during transport and storage.

C. Removed and Reinstalled Items:

   1. Clean and repair items to functional condition adequate for intended reuse.
   2. Pack or crate items after cleaning and repairing. Identify contents of containers.
   3. Protect items from damage during transport and storage.
   4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Landscape Architect or City’s Engineer, items may be removed to a suitable, protected storage location during selective demolition after selective demolition operations are complete.

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete: Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least 3/4 inch (19 mm) at junctures with construction to remain. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete. Neatly trim openings to dimensions indicated.

B. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, then remove concrete between saw cuts.

C. Concrete Slabs-On-Grade: Saw-cut perimeter of area to be demolished, then break up and remove.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
4. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.7 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024113

SECTION 024119 - EXISTING TREE AND PLANT PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and Supplementary Special Provisions, apply to this Section.

1.2 SUMMARY

A. Section includes general protection and pruning of existing trees and plants that are affected by execution of the Work, whether temporary or permanent construction.

B. Related Sections:
   1. Section 32 84 00 “Landscape Irrigation System” for all piping and equipment installation in and around existing trees and shrubs to remain.

1.3 DEFINITIONS

A. Caliper: Diameter of a trunk measured by tree caliper at 6 inches above the ground for trees up to, and including, 4-inch size; and 12 inches above the ground for trees larger than 4-inch size.

B. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction, and defined by a circle concentric with each tree with a radius equal to the dripline unless otherwise indicated on Drawings.

C. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction, and indicated on Drawings.

D. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples for Verification: For each type of the following:
   1. Protection-Zone Fencing: Assembled Samples of manufacturer's standard size made from full-size components.

C. Tree Pruning Schedule: Written schedule detailing scope and extent of pruning of trees to remain that interfere with or are affected by construction.
   1. Species and size of tree.
   2. Location on site plan. Include unique identifier for each.

3. Reason for pruning.
4. Description of pruning to be performed.
5. Description of maintenance following pruning.

1.5 INFORMATIONAL SUBMITTALS

A. Existing Conditions: Documentation of existing trees and plantings indicated to remain, which establishes preconstruction conditions that might be misconstrued as damage caused by construction activities.
   1. Use sufficiently detailed photographs or video.
   2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.

1.6 QUALITY ASSURANCE

A. Pre-installation Conference: Conduct conference at Project site.
   1. Review methods and procedures related to temporary tree and plant protection including, but not limited to, the following:
      a. Construction schedule. Verify availability of materials, personnel, and equipment needed to make progress and avoid delays.
      b. Enforcing requirements for protection zones.
      c. Field quality control.

1.7 PROJECT CONDITIONS

A. The following practices are prohibited within protection zones:
   1. Storage of construction materials, debris, or excavated material.
   2. Parking vehicles or equipment.
   3. Foot traffic.
   4. Erection of sheds or structures.
   5. Impoundment of water.
   6. Excavation or other digging unless otherwise indicated.
   7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

B. Do not direct vehicle or equipment exhaust toward protection zones.

C. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Topsoil: Natural or cultivated top layer of the soil profile or manufactured topsoil; containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 1 inch in diameter; and free of weeds, roots, and toxic and other nonsoil materials.
   1. Obtain topsoil only from well-drained sites where topsoil is 4 inches deep or more; do not obtain from bogs or marshes.

B. Topsoil: Stockpiled topsoil from location shown on Drawings or Imported or manufactured topsoil complying with ASTM D 5268.

C. Protection-Zone Fencing: Fencing fixed in position and meeting one of the following requirements. Previously used materials may be used when approved by Landscape Architect.
   1. Plastic Protection-Zone Fencing: Plastic construction fencing constructed of high-density extruded and stretched polyethylene fabric with 2-inch maximum opening in pattern and weighing a minimum of 0.4 lb/ft.; remaining flexible from minus 60 to plus 200 deg F; inert to most chemicals and acids; minimum tensile yield strength of 2000 psi and ultimate tensile strength of 2680 psi; secured with plastic bands or galvanized-steel or stainless-steel wire ties; and supported by tubular or T-shape galvanized-steel posts spaced not more than 8 feet apart.
      a. Height: 4 feet.
      b. Color: High-visibility orange or bright color, non-fading.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Erosion and Sedimentation Control: Examine the site to verify that temporary erosion- and sedimentation-control measures are in place. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

B. For the record, prepare written report, endorsed by arborist, listing conditions detrimental to tree and plant protection.

3.2 PREPARATION

C. Locate and clearly identify trees, shrubs, and other vegetation to remain or to be relocated. Flag each tree trunk at 54 inches above the ground.

D. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.

3.3 TREE- AND PLANT-PROTECTION ZONES

E. Protection-Zone Fencing: Install protection-zone fencing along edges of protection zones before materials or equipment are brought on the site and construction operations begin in a manner that will prevent people and animals from easily entering protected area except by entrance gates. Construct fencing so as not to obstruct safe passage or visibility at vehicle intersections where fencing is located adjacent to pedestrian walkways or in close proximity to street intersections, drives, or other vehicular circulation.

F. Maintain protection zones free of weeds and trash.

G. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Landscape Architect.

H. Maintain protection-zone fencing in good condition as acceptable to Landscape Architect and remove when construction operations are complete and equipment has been removed from the site.
1. Do not remove protection-zone fencing, even temporarily, to allow deliveries or equipment access through the protection zone.
2. Temporary access is permitted subject to preapproval in writing by arborist or Landscape Architect if a root buffer effective against soil compaction is constructed as directed by arborist or Landscape Architect. Maintain root buffer so long as access is permitted.

3.4 EXCAVATION

I. Trenching near Trees: Where utility or irrigation trenches are required within protection zones, hand excavate under or around tree roots or tunnel under the roots by drilling, auger boring, or pipe jacking. Do not cut main lateral tree roots or taproots; cut only smaller roots that interfere with installation of utilities. No roots exceeding 2” shall be cut.

J. Do not allow exposed roots to dry out before placing permanent backfill. Provide temporary earth cover or wrap with burlap. Water and maintain in a moist condition. Temporarily support and protect roots from damage until they are covered with soil.

3.5 ROOT PRUNING

K. Prune roots that are affected by temporary and permanent construction. Prune roots as follows:
1. Cut roots manually by digging a trench and cutting exposed roots with sharp pruning instruments; do not break, tear, chop, or slant the cuts. Do not use a backhoe or other equipment that rips, tears, or pulls roots.
2. Cut Ends: Do not paint cut root ends.
3. Temporarily support and protect roots from damage until they are permanently redirected and covered with soil.
4. Cover exposed roots with burlap and water regularly.
5. Backfill as soon as possible.

L. Root Pruning at Edge of Protection Zone: Prune roots flush with the edge of the protection zone, by cleanly cutting all roots to the depth of the required excavation.

M. Root Pruning within Protection Zone: Clear and excavate by hand to the depth of the required excavation to minimize damage to root systems. Use narrow-tine spading forks, comb soil to expose roots, and cleanly cut roots as close to excavation as possible.

3.6 REGRADING

N. Lowering Grade: Where new finish grade is indicated below existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.

O. Raising Grade: Where new finish grade is indicated above existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.

P. Minor Fill within Protection Zone: Where existing grade is 2 inches or less below elevation of finish grade, fill with topsoil. Place topsoil in a single uncompacted layer and hand grade to required finish elevations.

3.7 FIELD QUALITY CONTROL

Q. Inspections: If required by Landscape Architect or Owner's Representative, Contractor shall engage a qualified arborist to direct plant-protection measures in the vicinity of trees, shrubs, and other vegetation indicated to remain and to prepare inspection reports.

3.8 REPAIR AND REPLACEMENT

R. General: Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Landscape Architect.
1. Submit details of proposed root cutting and tree and shrub repairs.
2. Have arborist perform the root cutting, branch pruning, and damage repair of trees and shrubs.
3. Treat damaged trunks, limbs, and roots according to arborist's written instructions.
4. Perform repairs within 24 hours.
5. Replace vegetation that cannot be repaired and restored to full-growth status, as determined by Landscape Architect.

S. Trees: Remove and replace trees indicated to remain that are more than 25 percent dead or in an unhealthy condition any time within the warranty period or are damaged during construction operations that Architect determines are incapable of restoring to normal growth pattern.
1. Provide new trees of same size and species as those being replaced for each tree that measures 4 inches or smaller in caliper size.
2. Provide two new tree(s) of 4-inch caliper size for each tree being replaced that measures more than 4 inches in caliper size.

a. Species: Species selected by Landscape Architect.

3. All tree replacements shall be incidental to existing tree and plant protection.
4. Plant and maintain new trees as specifies in Section 32 93 00 “Planting”

3.9 DISPOSAL OF SURPLUS AND WASTE MATERIALS

T. Disposal: Remove excess excavated material, displaced trees, trash and debris, and legally dispose of them off Owner's property.

3.10 MEASUREMENT AND PAYMENT

U. The measurement of Temporary Tree and Plant Protection shall be per Linear Foot and shall include all work identified with the drawings and specification.

V. Payment shall be made at the contract unit price per Linear Foot and shall include all work identified with the drawings and specification.

END OF SECTION 024119

SECTION 03 30 00 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:

1. Footings.
2. Foundation walls.
3. Slabs-on-grade.
4. Suspended slabs.
5. Concrete toppings.
6. Building frame members.
7. Building walls.

B. Related Sections:

1. Section 033300 "Architectural Concrete" for general building applications of especially finished formed concrete.
2. Section 035300 "Concrete Topping" for emery- and iron-aggregate concrete floor toppings.
3. Section 312000 "Earth Moving" for drainage fill under slabs-on-grade.
4. Section 321313 "Concrete Paving" for concrete pavement and walks.
5. Section 321316 "Decorative Concrete Paving" for decorative concrete pavement and walks.

1.3 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1. Indicate amounts of mixing water to be withheld for later addition at Project site.

C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.

D. Formwork Shop Drawings: Prepared by or under the supervision of a qualified professional engineer detailing fabrication, assembly, and support of formwork.

1. Shoring and Re-shoring: Indicate proposed schedule and sequence of stripping formwork, shoring removal, and re-shoring installation and removal.

E. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.

1. Location of construction joints is subject to approval by the Landscape Architect.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer, manufacturer and testing agency.

B. Welding certificates.

C. Material Certificates: For each of the following, signed by manufacturers:

1. Cementitious materials.
2. Admixtures.
3. Form materials and form-release agents.
4. Steel reinforcement and accessories.
5. Fiber reinforcement.
6. Waterstops.
7. Curing compounds.
8. Floor and slab treatments.
9. Bonding agents.
10. Adhesives.
11. Vapor retarders.
12. Semirigid joint filler.
13. Joint-filler strips.
14. Repair materials.

D. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:

1. Aggregates.

E. Floor surface flatness and levelness measurements indicating compliance with specified tolerances.

F. Field quality-control reports.

G. Minutes of pre-installation conference.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.

B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."

C. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.

1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.
2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician - Grade I. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.

D. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.

E. Welding Qualifications: Qualify procedures and personnel according to AWS D1.4/D 1.4M, "Structural Welding Code - Reinforcing Steel."

F. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:

1. ACI 301, "Specifications for Structural Concrete,"
2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

G. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.

H. Mockups: Cast concrete slab-on-grade and formed-surface panels to demonstrate typical joints, surface finish, texture, tolerances, floor treatments, and standard of workmanship.

1. Build panel minimum 50 sq. ft. (9.3 sq. m) in the location indicated or, if not indicated, as directed by Landscape Architect or City’s Representative.
2. Approved mockups may become part of the completed Work if accepted and undisturbed at time of Substantial Completion.

I. Pre-installation Conference: Conduct conference at Project site.

1. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:

    a. Contractor's superintendent.
    b. Independent testing agency responsible for concrete design mixtures.
    c. Ready-mix concrete manufacturer.
    d. Concrete subcontractor.
    e. Special concrete finish subcontractor.

2. Review special inspection and testing and inspecting agency procedures for field quality control, concrete finishes and finishing, cold- and hot-weather concreting procedures, curing procedures, construction contraction and isolation joints, and joint-filler strips, semi rigid joint fillers, forms and form removal limitations, shoring and reshoring procedures, vapor-retarder installation, anchor rod and anchorage device installation tolerances, steel reinforcement installation, floor and slab flatness and levelness measurement, concrete repair procedures, and concrete protection.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage. Avoid damaging coatings on steel reinforcement.

B. Water stops: Store water stops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

PART 2 - PRODUCTS

2.1 FORM-FACING MATERIALS

A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.

1. Plywood, metal, or other approved panel materials.
2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:

    a. High-density overlay, Class 1 or better.
    b. Medium-density overlay, Class 1 or better; mill-release agent treated and edge sealed.
    c. Structural 1, B-B or better; mill oiled and edge sealed.
    d. B-B (Concrete Form), Class 1 or better; mill oiled and edge sealed.

B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

C. Forms for Cylindrical Columns, Pedestals, and Supports: Metal, glass-fiber-reinforced plastic, paper, or fiber tubes that will produce surfaces with gradual or abrupt irregularities not

exceeding specified formwork surface class. Provide units with sufficient wall thickness to resist plastic concrete loads without detrimental deformation.

D. Pan-Type Forms: Glass-fiber-reinforced plastic or formed steel, stiffened to resist plastic concrete loads without detrimental deformation.

E. Void Forms: Biodegradable paper surface, treated for moisture resistance, structurally sufficient to support weight of plastic concrete and other superimposed loads.

F. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch (19 by 19 mm), minimum.

G. Rustication Strips: Wood, metal, PVC, or rubber strips, kerfed for ease of form removal.

H. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

1. Formulate form-release agent with rust inhibitor for steel form-facing materials.

I. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.

1. Furnish units that will leave no corrodible metal closer than 1 inch (25 mm) to the plane of exposed concrete surface.
2. Furnish ties that, when removed, will leave holes no larger than 1 inch (25 mm) in diameter in concrete surface.
3. Furnish ties with integral water-barrier plates to walls indicated to receive damp proofing or waterproofing.

2.2 STEEL REINFORCEMENT

A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of pre-consumer recycled content not less than 25percent.

B. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.

C. Low-Alloy-Steel Reinforcing Bars: ASTM A 706/A 706M, deformed.

D. Galvanized Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed bars, ASTM A 767/A 767M, Class I after fabrication and bending.

E. Epoxy-Coated Reinforcing Bars: ASTM A 615/A 615M, Grade 60, ASTM A 706/A 706M, deformed bars, ASTM A 775/A 775M, epoxy coated, with less than 2 percent damaged coating in each 12-inch (300-mm) bar length.

F. Stainless-Steel Reinforcing Bars: ASTM A 955/A 955M, Grade 60 (Grade 420), deformed.

G. Steel Bar Mats: ASTM A 184/A 184M, fabricated from ASTM A 615/A 615M, Grade 60 (Grade 420), deformed bars, assembled with clips.

H. Plain-Steel Wire: ASTM A 82/A 82M galvanized.

I. Deformed-Steel Wire: ASTM A 496/A 496M.

J. Epoxy-Coated Wire: ASTM A 884/A 884M, Class A, Type 1 coated, as-drawn, plain steel wire, with less than 2 percent damaged coating in each 12-inch (300-mm) wire length.

K. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, plain, fabricated from as-drawn steel wire into flat sheets.

L. Deformed-Steel Welded Wire Reinforcement: ASTM A 497/A 497M, flat sheet.

M. Galvanized-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, plain, fabricated from galvanized-steel wire into flat sheets.

N. Epoxy-Coated Welded Wire Reinforcement: ASTM A 884/A 884M, Class A coated, Type 1, plain steel.

2.3 REINFORCEMENT ACCESSORIES

A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60, plain-steel bars, cut true to length with ends square and free of burrs.

B. Epoxy-Coated Joint Dowel Bars: ASTM A 615/A 615M, Grade 60, plain-steel bars, ASTM A 775/A 775M epoxy coated.

C. Epoxy Repair Coating: Liquid, two-part, epoxy repair coating; compatible with epoxy coating on reinforcement and complying with ASTM A 775/A 775M.

D. Zinc Repair Material: ASTM A 780, zinc-based solder, paint containing zinc dust, or sprayed zinc.

E. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:

1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.
2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.
3. For zinc-coated reinforcement, use galvanized wire or dielectric-polymer-coated wire bar supports.

2.4 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:

1. Portland Cement: ASTM C 150

B. Silica Fume: ASTM C 1240, amorphous silica.

C. Normal-Weight Aggregates: ASTM C 33, coarse aggregate or better, graded. Provide aggregates from a single source [with documented service record data of at least 10 years' satisfactory service in similar applications and service conditions using similar aggregates and cementitious materials].

1. Maximum Coarse-Aggregate Size: 1-1/2 inches (38 mm) nominal.
2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

D. Lightweight Aggregate: ASTM C 330, 1-inch (25-mm) nominal maximum aggregate size.

E. Water: ASTM C 94/C 94M and potable.

2.5 ADMIXTURES

A. Color Pigment: ASTM C 979, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable, [free of carbon black,] non-fading, and resistant to lime and other alkalis.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ChemMasters.
b. Davis Colors.
c. Dayton Superior Corporation.
d. Hoover Color Corporation.
e. Lambert Corporation.
f. QC Construction Products.
g. Rockwood Pigments NA, Inc.
h. Scofield, L. M. Company.
i. Solomon Colors, Inc.

2.6 FIBER REINFORCEMENT

A. Carbon-Steel Fiber: ASTM A 820/A 820M, deformed, minimum of 1.5 inches (38 mm) long, and aspect ratio of 35 to 40.

1. Products: Subject to compliance with requirements available products that may be incorporated into the Work include, but are not limited to, the following:

a. Fiber: Type 1, Cold-Drawn Wire:

1) Bekaert; Dramix.
2) Fibercon International, Inc.; Fibercon Drawn Wire.
3) Nycon, Inc.; Nycon SF Type I.

4) Propex Concrete Systems Corp.; Novocon 1050.
5) Sika Corporation; Sika Fiber SH.

b. Fiber: Type 2, Cut Sheet:

1) Bekaert; Wiremix.
2) Fibercon International, Inc.; Fibercon Cut Sheet.
3) Nycon, Inc.; Nycon SF Type II.

B. Synthetic Micro-Fiber: Monofilament or fibrillated polypropylene micro-fibers engineered and designed for use in concrete, complying with ASTM C 1116/C 1116M, Type III.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. Monofilament Micro-Fibers:

1) Axim Italcementi Group, Inc.; Fibrasol II P.
2) Euclid Chemical Company (The), an RPM company; Fiberstrand [100] [150].
3) FORTA Corporation; FORTA Econo-Mono.
4) Grace Construction Products, W. R. Grace & Co.; Grace MicroFiber.
5) Metalcrete Industries; Polystrand 1000.
6) Nycon, Inc.; ProConM.
7) Propex Concrete Systems Corp.; Fibermesh 150.
8) Sika Corporation; Sika Fiber PPM.

b. Fibrillated Micro-Fibers:

1) Axim Italcementi Group, Inc.; Fibrasol F.
2) Euclid Chemical Company (The), an RPM company; Fiberstrand F.
3) FORTA Corporation; FORTA [Econo-Net] [Ultra-Net].
4) Grace Construction Products, W. R. Grace & Co.; Grace Fibers.
5) Nycon, Inc.; ProConF.
6) Propex Concrete Systems Corp.; Fibermesh 300.
7) Sika Corporation; Sika Fiber PPF.

C. Synthetic Macro-Fiber: Polyolefin macro-fibers engineered and designed for use in concrete, complying with ASTM C 1116/C 1116M, Type III.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. 3M; Scotchcast Polyolefin Fibers [1"] [2"].
b. Euclid Chemical Company (The), an RPM company; Tuf-Strand SF.
c. FORTA Corporation; FORTA FERRO.
d. Grace Construction Products, W. R. Grace & Co.; Strux 90/40.
e. Nycon, Inc.; XL.
f. Propex Concrete Systems Corp.; Fibermesh 650.
g. Sika Corporation; Sika Fiber [MS] [MS10].

2.7 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.

B. Semirigid Joint Filler: Two-component, semirigid, 100 percent solids, epoxy resin with a Type A shore durometer hardness of 80 per ASTM D 2240.

1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

C. Slabs-on-Grade: Proportion normal-weight concrete mixture as follows:

1. Minimum Compressive Strength: 3000 psi (20.7 MPa) at 28 days.
2. Minimum Cementitious Materials Content: 520 lb/cu. yd. (309 kg/cu. m).
3. Slump Limit: 4 inches (100 mm), plus or minus 1 inch (25 mm).
4. Air Content: 5.5 percent, plus or minus 1.5 percent at point of delivery for 1-1/2-inch (38-mm) nominal maximum aggregate size.
5. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 1-inch (25-mm) nominal maximum aggregate size.
6. Air Content: Do not allow air content of trowel-finished floors to exceed 3 percent.
7. Steel-Fiber Reinforcement: Add to concrete mixture, according to manufacturer's written instructions, at a rate of 50 lb/cu. yd. (29.7 kg/cu. m).
8. Synthetic Micro-Fiber: Uniformly disperse in concrete mixture at manufacturer's recommended rate, but not less than 1.0 lb/cu. yd. (0.60 kg/cu. m).

D. Concrete Toppings: Proportion normal-weight concrete mixture as follows:

2.8 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.9 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and ASTM C 1116/C 1116M, and furnish batch ticket information.

1. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 FORMWORK

A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

C. Limit concrete surface irregularities, designated by ACI 347 as abrupt or gradual, as follows:

1. Class A, 1/8 inch (3.2 mm) for smooth-formed finished surfaces.
2. Class B, 1/4 inch (6 mm) for rough-formed finished surfaces.

D. Construct forms tight enough to prevent loss of concrete mortar.

E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.

1. Install keyways, reglets, recesses, and the like, for easy removal.
2. Do not use rust-stained steel form-facing material.

F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

H. Chamfer exterior corners and edges of permanently exposed concrete.

I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.

J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."

2. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.
3. Install dovetail anchor slots in concrete structures as indicated.

3.3 REMOVING AND REUSING FORMS

A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F (10 deg C) for 24 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations and curing and protection operations need to be maintained.

1. Leave formwork for beam soffits, joists, slabs, and other structural elements that supports weight of concrete in place until concrete has achieved at least 70 percent of its 28-day design compressive strength.
2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.

B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.

C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

3.4 SHORES AND RESHORES

A. Comply with ACI 318 and ACI 301 for design, installation, and removal of shoring and reshoring.

1. Do not remove shoring or reshoring until measurement of slab tolerances is complete.

B. Plan sequence of removal of shores and reshore to avoid damage to concrete. Locate and provide adequate reshoring to support construction without excessive stress or deflection.

3.5 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.

1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.

1. Weld reinforcing bars according to AWS D1.4/D 1.4M, where indicated.

D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

E. Install welded wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

F. Epoxy-Coated Reinforcement: Repair cut and damaged epoxy coatings with epoxy repair coating according to ASTM D 3963/D 3963M. Use epoxy-coated steel wire ties to fasten epoxy-coated steel reinforcement.

G. Zinc-Coated Reinforcement: Repair cut and damaged zinc coatings with zinc repair material according to ASTM A 780. Use galvanized steel wire ties to fasten zinc-coated steel reinforcement.

3.6 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.

1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches (38 mm) into concrete.
3. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
5. Space vertical joints in walls [as indicated] <Insert spacing>. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.
6. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
7. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least [one-fourth] <Insert depth> of concrete thickness as follows:

1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch (3.2 mm). Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- (3.2-mm-) wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.

D. Isolation Joints in Slabs-On-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.

1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface unless otherwise indicated.
2. Terminate full-width joint-filler strips not less than 1/2 inch (13 mm) or more than 1 inch (25 mm) below finished concrete surface where joint sealants, specified in Section 079200 "Joint Sealants," are indicated.
3. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.

E. Doweled Joints: Install dowel and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

3.7 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect.

C. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.

1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

D. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.

1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration

to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
2. Maintain reinforcement in position on chairs during concrete placement.
3. Screed slab surfaces with a straightedge and strike off to correct elevations.
4. Slope surfaces uniformly to drains where required.
5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

F. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

1. When average high and low temperature is expected to fall below 40 deg F (4.4 deg C) for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

G. Hot-Weather Placement: Comply with ACI 301 and as follows:

1. Maintain concrete temperature below 90 deg F (32 deg C) at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

3.8 FINISHING FORMED SURFACES

A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

1. Apply to concrete surfaces not exposed to public view.

B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

1. Apply to concrete surfaces exposed to public view, to be covered with a coating or covering material applied directly to concrete.

C. Rubbed Finish: Apply the following to smooth-formed finished as-cast concrete where indicated:

D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.9 FINISHING FLOORS AND SLABS

A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce a profile amplitude of 1/4 inch (6 mm) in one direction.

1. Apply scratch finish to surfaces indicated.

C. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.

1. Apply float finish to surfaces indicated.

D. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.

1. Apply a trowel finish to surfaces indicated.
2. Finish surfaces to the following tolerances, according to ASTM E 1155 (ASTM E 1155M), for a randomly trafficked floor surface:

    a. Specified overall values of flatness, F(F) 25; and of levelness, F(L) 20; with minimum local values of flatness, F(F) 17; and of levelness, F(L) 15.
    b. Specified overall values of flatness, F(F) 35; and of levelness, F(L) 25; with minimum local values of flatness, F(F) 24; and of levelness, F(L) 17; for slabs-on-grade.
    c. Specified overall values of flatness, F(F) 30; and of levelness, F(L) 20; with minimum local values of flatness, F(F) 24; and of levelness, F(L) 15; for suspended slabs.
    d. Specified overall values of flatness, F(F) 45; and of levelness, F(L) 35; with minimum local values of flatness, F(F) 30; and of levelness, F(L) 24.

3. Finish and measure surface so gap at any point between concrete surface and an unleveled, freestanding, 10-ft.- (3.05-m-) long straightedge resting on two high spots and placed anywhere on the surface does not exceed 1/4 inch (6 mm).

E. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces [indicated] [where ceramic or quarry tile is to be installed by either thickset or thin-set method]. While concrete is still plastic, slightly scarify surface with a fine broom.

1. Comply with flatness and levelness tolerances for trowel-finished floor surfaces.

F. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and elsewhere as indicated.

1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

3.10 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures after work of other trades is in place unless otherwise indicated. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

C. Equipment Bases and Foundations:

1. Coordinate sizes and locations of concrete bases with actual equipment provided.
2. Construct concrete bases as indicated; and extend base not less than 6 inches (150 mm) in each direction beyond the maximum dimensions of supported equipment unless otherwise indicated or unless required for seismic anchor support.
3. Minimum Compressive Strength 3000 psi (20.7 MPa) at 28 days.
4. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch (450-mm) centers around the full perimeter of concrete base.
5. For supported equipment, install epoxy-coated anchor bolts that extend through concrete base, and anchor into structural concrete substrate.
6. Prior to pouring concrete, place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
7. Cast anchor-bolt insert into bases. Install anchor bolts to elevations required for proper attachment to supported equipment.

3.11 CONCRETE PROTECTING AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.

D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.

E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

    a. Water.
    b. Continuous water-fog spray.
    c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

    a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
    b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
    c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies will not interfere with bonding of floor covering used on Project.

3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

    a. Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound

manufacturer [unless manufacturer certifies curing compound will not interfere with bonding of floor covering used on Project].

4. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

F. Sealing Coat: Uniformly apply a continuous sealing coat of curing and sealing compound to hardened concrete by power spray or roller according to manufacturer's written instructions.

3.12 JOINT FILLING

A. Prepare, clean, and install joint filler according to manufacturer's written instructions.

1. Defer joint filling until concrete has aged at least one month. Do not fill joints until construction traffic has permanently ceased.

B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.

C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches (50 mm) deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

3.13 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 (1.18-mm) sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch (13 mm) in any dimension to solid concrete. Limit cut depth to 3/4 inch (19 mm). Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.

3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect.

D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch (0.25 mm) wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
2. After concrete has cured at least 14 days, correct high areas by grinding.
3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch (6 mm) to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
6. Repair defective areas, except random cracks and single holes 1 inch (25 mm) or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch (19-mm) clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
7. Repair random cracks and single holes 1 inch (25 mm) or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Architect's approval.

3.14 FIELD QUALITY CONTROL

A. Testing and Inspecting: Owner may engage a special inspector or qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.

B. Inspections:

1. Steel reinforcement placement.
2. Steel reinforcement welding.
3. Headed bolts and studs.
4. Verification of use of required design mixture.
5. Concrete placement, including conveying and depositing.
6. Curing procedures and maintenance of curing temperature.
7. Verification of concrete strength before removal of shores and forms from beams and slabs.

C. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd. (4 cu. m), but less than 25 cu. yd. (19 cu. m), plus one set for each additional 50 cu. yd. (38 cu. m) or fraction thereof.
2. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. (76 cu. m) or fraction thereof of each concrete mixture placed each day.

    a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

3. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
4. Air Content: ASTM C 231, pressure method, for normal-weight concrete; ASTM C 173/C 173M, volumetric method, for structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
5. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F (4.4 deg C) and below and when 80 deg F (27 deg C) and above, and one test for each composite sample.
6. Unit Weight: ASTM C 567, fresh unit weight of structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
7. Compression Test Specimens: ASTM C 31/C 31M.

    a. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.
    b. Cast and field cure [two] <Insert number> sets of two standard cylinder specimens for each composite sample.

8. Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.

    a. Test one set of two field-cured specimens at 7 days and one set of two specimens at 28 days.
    b. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.

9. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
10. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa).
11. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
12. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
13. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Architect.
14. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
15. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

D. Measure floor and slab flatness and levelness according to ASTM E 1155 within 24 48 hours of finishing.

END OF SECTION 033000

SECTION 11 68 00 - PLAY FIELD EQUIPMENT AND STRUCTURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes freestanding and composite structure playground equipment.

B. Related Sections:

1. Section 321816.13 "Playground Protective Surfacing" for protective surfacing under and around playground equipment.

1.3 DEFINITIONS

A. Fall Height: According to ASTM F 1487, "the vertical distance between a designated play surface and the protective surfacing beneath it."

B. HDPE: High-density polyethylene.

C. IPEMA: International Play Equipment Manufacturers Association.

D. LLDPE: Linear low-density polyethylene.

E. MDPE: Medium-density polyethylene.

F. Use Zone: According to ASTM F 1487, the "area beneath and immediately adjacent to a play structure or equipment that is designated for unrestricted circulation around the equipment and on whose surface it is predicted that a user would land when falling from or exiting the equipment."

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

1.5 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:

1. Extent of surface systems and use zones for equipment.

2. Critical heights for playground surfaces and fall heights for equipment.

B. Qualification Data: For qualified ASTM approved Manufacturer.

C. Product Certificates: For each type of playground equipment, from manufacturer.

D. Material Certificates: For the following items, signed by manufacturers:

1. Shop finishes.
2. Wood-Preservative Treatment: Include certification by treating plant that states type of preservative solution and pressure process used, net amount of preservative retained, and compliance with applicable standards.
3. Recycled plastic.

E. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each type of playground equipment.

F. Field quality-control reports.

G. Warranty: Sample of special warranty.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For playground equipment and finishes to include in maintenance manuals.

1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications: A firm whose playground equipment components have been certified by IPEMA's third-party product certification service.

1. Provide playground equipment and play structure components bearing the IPEMA Certification Seal.
2. Provide the following playground equipment and play structure components bearing the IPEMA Certification Seal:

a. Playbooster LSI 177330A, LSI 174018A, LSI 182503c

b. Playbooster LSI 164075B, LSI 176038G, LSI 177336A, LSI 182503A

B. Installer Qualifications: An employer of workers approved by manufacturer.

C. Safety Standards: Provide playground equipment complying with or exceeding requirements in ASTM F 1487 & CPSC No. 325.

D. Preinstallation Conference: Conduct conference at project site. Coordinate with owner representative.

1.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of playground equipment that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures.
b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.

1. Extruded Bars, Profiles, and Tubes: ASTM B 221 (ASTM B 221M).
2. Cast Aluminum: ASTM B 179.
3. Flat Sheet: ASTM B 209 (ASTM B 209M).

B. Steel: Comply with the following:

1. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M, hot-dip galvanized.
2. Steel Pipe: ASTM A 53/A 53M or ASTM A 135/A 135M standard-weight, hot-dip galvanized.
3. Steel Tubing: ASTM A 513, cold formed, hot-dip galvanized.
4. Steel Sheet: ASTM A 1011/A 1011M, hot-dip galvanized not less than G60 (Z180) coating designation.
5. Perforated Metal: Steel sheet not less than 0.120-inch (3.0-mm) uncoated thickness; hot-dip galvanized; manufacturer's standard perforation pattern.
6. Expanded Metal: Manufacturer's standard carbon-steel sheets complying with ASTM F 1267, Type II (expanded and flattened); deburred after expansion.
7. Woven Wire Mesh: Manufacturer's standard, with wire complying with ASTM A 510 (ASTM A 510M).

C. Stainless-Steel Sheet: ASTM A 240/A 240M or ASTM A 666; Type 304; finished on exposed faces with No. 2B finish.

D. Opaque Plastic: Color impregnated, UV stabilized, and mold resistant.

1. Polyethylene: Fabricated from a minimum of 96 percent recycled, plastic resin; rotationally molded HDPE, LLDPE, or MDPE with not less than 1/4-inch (6-mm) wall thickness.

E. Transparent Plastic: Abrasion-resistant, UV-stabilized monolithic polycarbonate sheet; clear & colorless; not less than 3/16 inch (5 mm) thick.

F. Chain and Fittings: ASTM A 467/A 467M, Class CS, 4/0 or 5/0, welded-straight-link coil chain; hot-dip galvanized. With commercial-quality, hot-dip galvanized steel connectors and swing or ring hangers.

G. Castings and Hangers: Malleable iron, ASTM A 47/A 47M, Grade 32510, hot-dip galvanized.

H. Post Caps: Cast aluminum, UV-stabilized, mold-resistant polyethylene; color to match posts.

I. Platform Clamps and Hangers: Zinc-plated steel, not less than 0.105-inch- (2.7-mm-).

J. Hardware: Manufacturer's standard; commercial-quality; corrosion-resistant; hot-dip galvanized steel and iron, stainless steel, or aluminum; of a secure and vandal-resistant design.

K. Fasteners: Manufacturer's standard; corrosion-resistant; hot-dip galvanized or plated steel and iron, or stainless steel; permanently capped, and theft resistant.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Preservative Treatment: Pressure-treat wood according to AWPA U1 and the following:

1. Use preservative chemicals acceptable to authorities having jurisdiction and containing no arsenic or chromium. Use chemical formulations that do not bleed through or otherwise adversely affect finishes. Do not use colorants to distinguish treated materials from untreated materials.
2. Kiln-dry lumber and plywood after treatment to a maximum moisture content, respectively, of 19 and 15 percent. Do not use materials that are warped or do not comply with requirements for untreated materials.

2.3 PLAYGROUND EQUIPMENT FABRICATION

A. General: Provide sizes, strengths, thicknesses, wall thickness, and weights of components as indicated but not less than required to comply with structural performance and other requirements in ASTM F 1487. Factory drill components for field assembly. Unnecessary holes in components, not required for field assembly, are not permitted. Provide complete play structure, including supporting members and connections, means of access and egress, designated play surfaces, barriers, guardrails, handrails, handholds, and other components indicated or required to comply with referenced standards for equipment indicated.

1. Composite Play Structure: Provide complete play structure, designed to be modular, linked, and expandable, forming one integral unit for more than one play activity.

B. Metal Frame: Fabricate main-frame upright support posts from metal pipe or tubing with cross-section profile and dimensions as indicated. Unless otherwise indicated, provide each pipe or tubing main-frame member with manufacturer's standard drainable bottom plate or support flange. Fabricate secondary frame members, bracing, and connections from either steel or aluminum.

C. Wood Frame: Fabricate main-frame upright support posts from wood species and with profile and dimensions as indicated. Fabricate secondary frame members, bracing, and connections from wood, steel, or aluminum.

D. Composite Frame: Fabricate main-frame upright support posts from metal and plastic with profile and dimensions as indicated. Fabricate secondary frame members, bracing, and connections from either steel or aluminum.

E. Play Surfaces: Provide manufacturer's standard elevated drainable decks, platforms, landings, walkways, ramps, and similar transitional play surfaces, designed to withstand loads; fabricated from perforated or expanded metal made into floor units with slip-resistant foot surfaces. Fabricate units in manufacturer's standard modular sizes and shapes to form assembled play surfaces indicated.

1. Elevated Play Surfaces: Provide protective devices, completely surrounding play surface except for access openings, if play-surface heights above protective surfacing exceed requirements in [ASTM F 1487] [CPSC No. 325].
2. Stepped Play Surfaces: Provide protective infill between stepped platforms.

F. Protective Barriers: Fabricated such that openings within the barrier and between the barrier and the play surface preclude passage of the torso probe according to [ASTM F 1487] [CPSC No. 325] [the most stringent requirements in ASTM F 1487 and CPSC No. 325]. Provide barriers designed to minimize the possibility of climbing, free of hand- and footholds, and configured to completely surround the protected area except for access openings. Extend barriers above the protected elevated surface for use by age group indicated. Fabricate as recommended by manufacturer.

G. Guardrails: Provide guardrails configured to completely surround the protected area except for access openings. Fabricate from welded metal pipe or tubing. Extend guardrails to comply with requirements for use by age group indicated.

H. Handrails: Welded metal pipe or tubing, OD between 0.095 to 1.55 inches (24.1 to 39.4 mm).

1. Provide handrails at heights to comply with requirements for use by age group indicated according to ASTM F 1487 CPSC No. 325.

I. Roofs and Canopies: Manufacturer's standard, designed to be positioned overhead and to discourage and minimize climbing by users.

1. Fabricated from metal.

J. Signs: Manufacturer's standard sign panels, fabricated from opaque plastic with graphics molded in, attached to upright support posts.

1. Text: As required by Manufacturer and HACEP
2. Colors: To match play equipment.

2.4 FREESTANDING PLAYGROUND EQUIPMENT AND STRUCTURES

A. Swing Set Contemporary style with single post legs and Contemporary T-style upright support.

1. Manufacturers: Subject to compliance with requirements, [**provide products by one of the following**] [**available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following**]:

2. Basis-of-Design Product: Subject to compliance with requirements, provide [**product indicated on Drawings**] <**Insert manufacturer's name; product name or designation**> or comparable product by one of the following:

    a. American Swing Products Inc.
    b. BCI Burke Company, LLC.
    c. Big Toys, Inc.
    d. Blue Imp.
    e. Columbia Cascade Company.
    f. GameTime; a PlayCore company.
    g. Henderson Recreation Equipment Ltd.
    h. Kidstuff Playsystems, Inc.
    i. Kompan, Inc.
    j. Krauss Craft, Inc.
    k. Landscape Structures Inc.
    l. L. A. Steelcraft Products, Inc.
    m. Little Tikes Commercial, Inc; Playpower LT Farmington, Inc.
    n. Miracle Recreation Equipment Co.; a division of PlayPower, Inc.
    o. Play & Park Structures; a PlayCore company.
    p. Playland International, LLC; a division of Superior International Industries, Inc.
    q. Playworld Systems, Inc.
    r. PlayTown; a division of SportsPlay Equipment Inc.
    s. Recreation Creations, Inc.
    t. <**Insert manufacturer's name**>.

3. Frame: [**Galvanized-steel**] [**Aluminum**] pipe or tubing connected frame sections.

    a. Leg Upright(s): Not less than [**1-7/8-inch (48-mm)**] [**2-3/8-inch (60-mm)**] [**3-1/2-inch (89-mm)**] [**4-1/2-inch (114-mm)**] [**5-inch (127-mm)**] <**Insert dimension**> OD.
    b. Overhead Beam: [**Match leg upright**] [**Not less than 2-3/8-inch (60-mm)**] [**Not less than 3-1/2-inch (89-mm)**] <**Insert dimension**> OD.
    c. Color: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

4. Frame: Wood connected frame sections with leg upright(s) and overhead beam not less than [**4 inches (100 mm) square**] [**6 inches (150 mm) square**] [**6 inches (150 mm) round**] <**Insert dimension**> or larger.
5. Overhead Beam Height: [**96 inches (2440 mm)**] [**10 ft. (3 m)**] [**Height as indicated on Drawings**] <**Insert dimension**> from pivot point above protective surfacing.
6. Chain: [**Standard link**] [**Short link not permitting finger penetration**] [**Manufacturer's standard**].

    a. Color: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

7. Swing Connector: [**S-hook**] [**Double clevis and bolt link**].
8. Swing Hanger: Galvanized [**stamped steel clamp and ductile-iron pivot**] [**heavy-duty ductile iron**] [**manufacturer's standard**].
9. Swing Seats: [**Enclosed, full-bucket infant/tot**] [**Half-bucket**] [**U-shaped flexible belt**] [**Rigid rectangular**] [**Rigid disk**] [**Tire**] <**Insert style**> seat made from [**rubber**] [**plastic**] <**Insert material**>.

a. Color: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

10. Capacity: [**One**] [**Two**] [**Three**] <**Insert number**> swing(s).
11. Age Appropriateness: [**Two through five years**] [**5 through 12 years**] <**Insert age group**>.

B. Slide <**Insert drawing designation**>: [**Single**] [**Double-side-by-side**] [**Double-diverging**] <**Insert description**> descending chute(s).

1. Manufacturers: Subject to compliance with requirements, [**provide products by one of the following**] [**available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following**]:
2. Basis-of-Design Product: Subject to compliance with requirements, provide <**Insert manufacturer's name; product name or designation**> or a comparable product by one of the following:

a. American Swing Products Inc.
b. BCI Burke Company, LLC.
c. Big Toys, Inc.
d. Blue Imp.
e. Columbia Cascade Company.
f. GameTime; a PlayCore company.
g. Henderson Recreation Equipment Ltd.
h. Kidstuff Playsystems, Inc.
i. Kompan, Inc.
j. Krauss Craft, Inc.
k. Landscape Structures Inc.
l. L. A. Steelcraft Products, Inc.
m. Little Tikes Commercial, Inc; Playpower LT Farmington, Inc.
n. Miracle Recreation Equipment Co.; a division of PlayPower, Inc.
o. Play & Park Structures; a PlayCore company.
p. Playland International, LLC; a division of Superior International Industries, Inc.
q. Playworld Systems, Inc.
r. PlayTown; a division of SportsPlay Equipment Inc.
s. Recreation Creations, Inc.
t. <**Insert manufacturer's name**>.

3. Configuration: [**Straight-aligned**] [**Quarter-turn**] [**Half-turn**] [**Three-quarter-turn**] [**Full-turn spiral**] [**S-shaped**] [**Squiggle-shaped**] <**Insert description**> descending chute(s).
4. Access: [**Stair or step ladder with handrails**] [**Vertical ladder**] [**Vertical ladder with side handrails**].
5. Sit-Down Entrance: With [**protective barriers**] [**opaque plastic panel barriers**] [**canopy or hood enclosure**] and overhead [**handhold**] [**and side handholds**].
6. Frame: Manufacturer's standard [**galvanized-steel pipe or tubing**] [**aluminum pipe or tubing**] [**wood**] <**Insert material**>.
7. Sliding Surface: [**Inclined**] [**Wavy**] [**Washboard rollers**].
8. Sliding Surface Construction: [**Flat, continuous stainless-steel sheet with integral, full-length side rails**] [**U-shaped, continuous stainless-steel sheet with integral, full-length side rails**] [**One-piece plastic with integral, full-length side rails**] [**Plastic tube,**

ID not less than 24 inches (610 mm)] [**Plastic tube, ID not less than 30 inches (760 mm)**] <**Insert description**>.

9. Colors: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].
10. Age Appropriateness: [**Two through five years**] [**5 through 12 years**] <**Insert age group**>.

C. Tunnels (Crawl Tubes) <**Insert drawing designation**>: [**Straight-aligned**] [**Quarter-turn**] [**Half-turn**] [**S-shaped**] [**Zigzag**] [**Wavy**] [**Inclined**] <**Insert description**> configuration.

1. Manufacturers: Subject to compliance with requirements, [**provide products by one of the following**] [**available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following**]:
2. Basis-of-Design Product: Subject to compliance with requirements, provide <**Insert manufacturer's name; product name or designation**> or a comparable product by one of the following:

    a. BCI Burke Company, LLC.
    b. Big Toys, Inc.
    c. Blue Imp.
    d. Columbia Cascade Company.
    e. GameTime; a PlayCore company.
    f. Henderson Recreation Equipment Ltd.
    g. Kidstuff Playsystems, Inc.
    h. Kompan, Inc.
    i. Krauss Craft, Inc.
    j. Landscape Structures Inc.
    k. Little Tikes Commercial, Inc; Playpower LT Farmington, Inc.
    l. Miracle Recreation Equipment Co.; a division of PlayPower, Inc.
    m. Play & Park Structures; a PlayCore company.
    n. Playland International, LLC; a division of Superior International Industries, Inc.
    o. Playworld Systems, Inc.
    p. PlayTown; a division of SportsPlay Equipment Inc.
    q. Recreation Creations, Inc.
    r. <**Insert manufacturer's name**>.

3. Material: [**Plastic tube, ID not less than 24 inches (610 mm)**] [**Plastic tube, ID not less than 30 inches (760 mm)**] <**Insert description**>.
4. Color: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

D. Climbers <**Insert drawing designation**>: [**Arch**] [**Tower**] [**Dome**] [**Overhead horizontal ladder**] [**Overhead pole**] [**Flexible cable net**] [**Flexible chain net**] [**Vertical ladder**] [**Vertical panel wall**] <**Insert description**>.

1. Manufacturers: Subject to compliance with requirements, [**provide products by one of the following**] [**available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following**]:
2. Basis-of-Design Product: Subject to compliance with requirements, provide <**Insert manufacturer's name; product name or designation**> or a comparable product by one of the following:

a. American Swing Products Inc.
b. BCI Burke Company, LLC.
c. Big Toys, Inc.
d. Blue Imp.
e. Columbia Cascade Company.
f. GameTime; a PlayCore company.
g. Henderson Recreation Equipment Ltd.
h. Kidstuff Playsystems, Inc.
i. Kompan, Inc.
j. Krauss Craft, Inc.
k. Landscape Structures Inc.
l. L. A. Steelcraft Products, Inc.
m. Little Tikes Commercial, Inc; Playpower LT Farmington, Inc.
n. Miracle Recreation Equipment Co.; a division of PlayPower, Inc.
o. Play & Park Structures; a PlayCore company.
p. Playland International, LLC; a division of Superior International Industries, Inc.
q. Playworld Systems, Inc.
r. PlayTown; a division of SportsPlay Equipment Inc.
s. Recreation Creations, Inc.
t. <**Insert manufacturer's name**>.

3. Frame: Manufacturer's standard [**galvanized-steel pipe or tubing**] [**aluminum pipe or tubing**] [**wood**] <**Insert material**>.
4. Accessories:

a. Sliding Pole(s): [**One**] [**Two**] [**Three**] [**Four**].
b. Handhold rings.

5. Colors: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].
6. Capacity: [**Five**] [**10**] <**Insert number**> users.
7. Age Appropriateness: [**Two through five years**] [**5 through 12 years**] <**Insert age group**>.

E. Merry-Go-Rounds and Whirls <**Insert drawing designation**>: Rotating [**platform**] [**seating**] around a vertical axis.

1. Manufacturers: Subject to compliance with requirements, [**provide products by one of the following**] [**available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following**]:
2. Basis-of-Design Product: Subject to compliance with requirements, provide <**Insert manufacturer's name; product name or designation**> or a comparable product by one of the following:

a. BCI Burke Company, LLC.
b. Big Toys, Inc.
c. Blue Imp.
d. Columbia Cascade Company.
e. GameTime; a PlayCore company.
f. Henderson Recreation Equipment Ltd.
g. Kidstuff Playsystems, Inc.
h. Kompan, Inc.

i. Krauss Craft, Inc.
j. Landscape Structures Inc.
k. Little Tikes Commercial, Inc; Playpower LT Farmington, Inc.
l. Miracle Recreation Equipment Co.; a division of PlayPower, Inc.
m. Play & Park Structures; a PlayCore company.
n. Playland International, LLC; a division of Superior International Industries, Inc.
o. Playworld Systems, Inc.
p. PlayTown; a division of SportsPlay Equipment Inc.
q. Recreation Creations, Inc.
r. <**Insert manufacturer's name**>.

3. Rotating Mechanism: Permanently sealed and lubricated ball bearings with [**hydraulic**] [**mechanical**] speed-limiting device.
4. Platform: Round, [**dish-shaped**] [**flat**] [**flat, dimpled**] steel sheet, not less than 0.12-inch- (3.0-mm-) nominal thickness, with slip-resistant footing.

   a. Color: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

5. Handholds and Handrails: Metal pipe or tubing.

   a. Color: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

6. Capacity: [**Single**] [**Two**] [**Five**] <**Insert number**> user(s).
7. Age Appropriateness: [**Two through five years**] [**5 through 12 years**] <**Insert age group**>.

F. Rocking/Springing Equipment <**Insert drawing designation**>: [**Rocking rider**] [**Rocking platform**] [**Seesaw**] <**Insert description**>.

1. Manufacturers: Subject to compliance with requirements, [**provide products by one of the following**] [**available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following**]:
2. Basis-of-Design Product: Subject to compliance with requirements, provide <**Insert manufacturer's name; product name or designation**> or a comparable product by one of the following:

   a. American Swing Products Inc.
   b. BCI Burke Company, LLC.
   c. Big Toys, Inc.
   d. Blue Imp.
   e. Columbia Cascade Company.
   f. GameTime; a PlayCore company.
   g. Henderson Recreation Equipment Ltd.
   h. Kidstuff Playsystems, Inc.
   i. Kompan, Inc.
   j. Krauss Craft, Inc.
   k. Landscape Structures Inc.
   l. L. A. Steelcraft Products, Inc.
   m. Little Tikes Commercial, Inc; Playpower LT Farmington, Inc.
   n. Miracle Recreation Equipment Co.; a division of PlayPower, Inc.

o. Play & Park Structures; a PlayCore company.
p. Playland International, LLC; a division of Superior International Industries, Inc.
q. Playworld Systems, Inc.
r. PlayTown; a division of SportsPlay Equipment Inc.
s. Recreation Creations, Inc.
t. <**Insert manufacturer's name**>.

3. Seat(s): [**Cast aluminum**] [**Molded HDPE or other plastic**] [**Wood**] <**Insert materials**>[**; with handholds**] [**; with handholds and footrests**].

a. Seat Style: <**Insert type animal, vehicle, or other description**>.
b. Color: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

4. Multiple Seating and Standing Platform: [**Manufacturer's standard platform with slip-resistant surface**] <**Insert description**>.

a. Color: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

5. Frame: [**Galvanized-steel pipe or tubing**] [**Aluminum pipe or tubing**] [**Wood**] and [**one**] [**two**] <**Insert number**> coil spring(s); two or more steel springs with steel base plate.

a. Color: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

6. Capacity: [**Single**] [**Two**] <**Insert number**> user(s).
7. Age Appropriateness: [**Two through five years**] [**5 through 12 years**] <**Insert age group**>.

2.5 COMPOSITE PLAYGROUND EQUIPMENT AND STRUCTURES

A. Composite Structure <**Insert drawing designation**>: Assembled from manufacturer's standard modular-sized units.

1. Manufacturers: Subject to compliance with requirements, [**provide products by one of the following**] [**available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following**]:
2. Basis-of-Design Product: Subject to compliance with requirements, provide <**Insert manufacturer's name; product name or designation**> or a comparable product by one of the following:

a. BCI Burke Company, LLC.
b. Big Toys, Inc.
c. Blue Imp.
d. Columbia Cascade Company.
e. GameTime; a PlayCore company.
f. Henderson Recreation Equipment Ltd.
g. Kidstuff Playsystems, Inc.
h. Kompan, Inc.

i. Krauss Craft, Inc.
j. Landscape Structures Inc.
k. Little Tikes Commercial, Inc; Playpower LT Farmington, Inc.
l. Miracle Recreation Equipment Co.; a division of PlayPower, Inc.
m. Play & Park Structures; a PlayCore company.
n. Playland International, LLC; a division of Superior International Industries, Inc.
o. Playworld Systems, Inc.
p. PlayTown; a division of SportsPlay Equipment Inc.
q. Recreation Creations, Inc.
r. <**Insert manufacturer's name**>.

3. Frame: [**Galvanized-steel**] [**Aluminum**] pipe or tubing frame sections connected with [**bolts**] [**clamps**].

   a. Main Frame Posts: Not less than [**4-inch (102-mm)**] [**5-inch (127-mm)**] [**6-inch (150-mm)**] <**Insert dimension**> OD.
   b. Color: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

4. Frame: Wood frame sections connected with bolts.

   a. Main Frame Posts: Not less than [**4 inches (102 mm) square**] [**6 inches (150 mm) square**] [**6 inches (152 mm) round**] <**Insert dimension**>.

5. Platforms: [**Perforated metal**] [**Wood**] [**Manufacturer's standard**] <**Insert material**>.

   a. Color: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

6. Roofs: [**Perforated metal**] [**Plastic**] [**Wood**] [**Manufacturer's standard**] <**Insert material**>.

   a. Color: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

7. Play Structure Access Component(s): [**Ladder**] [**Step ladder**] [**Stairs**] [**Ramp**] [**Accessible crawl ramp**] [**Accessible transfer platform**] <**Insert description**>.

   a. Handholds: [**Protective barriers**] [**Guardrails**] [**Handrails**] [**Handholds**] [**on each side**].

8. Equipment: Include the following play event components:

   a. Activity panel.
   b. Balance beam.
   c. Bridge.
   d. Climber: [**Overhead horizontal ladder**] [**Vertical ladder**] [**Flexible net**] [**Panel**] [**Pole**].
   e. Log roll.
   f. Slide.
   g. Track ride.
   h. Tunnel.

i. Colors: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**].

9. Arrangement: [**As indicated**] [**Manufacturer's standard**].
10. Capacity: [**10**] [**20**] <**Insert number**> users.
11. Age Appropriateness: [**Two through five years**] [**5 through 12 years**] <**Insert age group**>.

2.6 CAST-IN-PLACE CONCRETE

A. Concrete Materials and Properties: Comply with requirements in [**Section 033000 "Cast-in-Place Concrete"**] [**ACI 301**] [**ACI 301M**] to produce normal-weight[**, air-entrained**] concrete with a minimum 28-day compressive strength of 3000 psi (20.7 MPa), 3-inch (75-mm) slump, and 1-inch- (25-mm-) maximum-size aggregate.

B. Concrete Materials and Properties: Dry-packaged concrete mix complying with ASTM C 387/C 387M and mixed at site with potable water, according to manufacturer's written instructions, to produce normal-weight concrete with a minimum 28-day compressive strength of 3000 psi (20.7 MPa), 3-inch (75-mm) slump, and 1-inch- (25-mm-) maximum-size aggregate.

2.7 ALUMINUM FINISHES

A. Baked-Enamel or Powder-Coat Finish: A minimum dry film thickness of [**1.5 mils (0.04 mm)**] [**3 to 5 mils (0.076 to 0.127 mm)**] <**Insert thickness**>, medium gloss. Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.

B. PVC Finish: Manufacturer's standard, UV-stabilized, mold-resistant, slip-resistant, matte-textured, dipped or sprayed-on, PVC-plastisol finish, with flame retardant added, complying with coating manufacturer's written instructions for pretreatment, application, and minimum dry film thickness of [**80 mils (2 mm)**] [**100 mils (2.5 mm)**] <**Insert thickness**>.

2.8 IRON AND STEEL FINISHES

A. Galvanizing: Hot-dip galvanized products made from rolled-, pressed-, and forged-steel shapes, castings, plates, bars, and strips indicated to be galvanized to comply with ASTM A 123/A 123M.

1. Hot-dip galvanized steel and iron hardware indicated to be galvanized to comply with ASTM A 153/A 153M.
2. Galvanized-Steel Sheet: Commercial steel sheet, hot-dip galvanized, complying with ASTM A 653/A 653M for not less than G60 (Z180) coating designation; mill phosphatized.

B. Baked-Enamel or Powder-Coat Finish: Immediately after cleaning and pretreating, apply manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat. Comply with coating manufacturer's written instructions for applying and baking to achieve a minimum dry film thickness of [**1.5 mils (0.04 mm)**] [**2 mils (0.05 mm)**] <**Insert thickness**>.

C. PVC Finish: Manufacturer's standard, UV-stabilized, mold-resistant, slip-resistant, matte-textured, dipped or sprayed-on, PVC-plastisol finish, with flame retardant added, complying with coating manufacturer's written instructions for pretreatment, application, and minimum dry film thickness of [**80 mils (2 mm)**] [**100 mils (2.5 mm)**] <**Insert thickness**>.

2.9 STAINLESS-STEEL FINISHES

A. Surface Preparation: Remove tool and die marks and stretch lines, or blend into finish.

B. Bright, Cold-Rolled, Unpolished Finish: No. 2B.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, site surface and subgrade drainage, and other conditions affecting performance of the Work.

1. Do not begin installation before final grading required for placing protective surfacing is completed unless otherwise permitted by Architect.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Verify locations of playground perimeter and pathways. Verify that playground layout and equipment locations comply with requirements for each type and component of equipment.

3.3 INSTALLATION, GENERAL

A. General: Comply with manufacturer's written installation instructions unless more stringent requirements are indicated. Anchor playground equipment securely, positioned at locations and elevations indicated.

1. Maximum Equipment Height: Coordinate installed heights of equipment and components with finished elevations of protective surfacing. Set equipment so fall heights and elevation requirements for age group use and accessibility are within required limits. Verify that playground equipment elevations comply with requirements for each type and component of equipment.

B. Post and Footing Excavation: Excavate holes for posts and footings as indicated in firm, undisturbed or compacted subgrade soil.

C. Post Set on Subgrade: Level bearing surfaces with drainage fill to required elevation.

D. Post Set with Concrete Footing: Comply with [**ACI 301**] [**ACI 301M**] for measuring, batching, mixing, transporting, forming, and placing concrete.

1. Set equipment posts [**in**] [**on**] concrete footing. Protect portion of posts above footing from concrete splatter. Verify that posts are set plumb or at the correct angle, alignment, height, and spacing.

    a. Place concrete around posts and vibrate or tamp for consolidation. Hold posts in position during placement and finishing operations until concrete is sufficiently cured.

2. Embedded Items: Use setting drawings and manufacturer's written instructions to ensure correct installation of anchorages for equipment.
3. Concrete Footings: Smooth top, and shape to shed water.

3.4 FIELD QUALITY CONTROL

A. Testing Agency: [**Owner will engage**] [**Engage**] a qualified testing agency to perform tests and inspections.

B. Perform tests and inspections.

1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.

C. Tests and Inspections: For playground and playground equipment and components [**during installation and**] at final completion and to certify compliance with [**ASTM F 1487**] [**CPSC No. 325**] <**Insert requirements**>.

D. Prepare test and inspection reports.

E. Notify [**Architect**] [**Owner**] 48 hours in advance of date and time of final inspection.

END OF SECTION 116800

SECTION 12 93 00 - SITE FURNISHINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Seating.
2. Trash receptacles.

B. Related Requirements:

1. Section 033000 "Cast-in-Place Concrete" for installing pipe sleeves cast installing anchor bolts cast formed voids in concrete footings.
2. Section 312000 "Earth Moving" for excavation for installing concrete footings.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed installation of benches similar in material, design, and extent to that indicated for this project and whose work has resulted in construction with a record of successful in-service performance.

B. Manufacturer Qualifications: A firm experienced in manufacturing benches similar to those required for this project.

C. Source Limitations: Obtain each color, finish, shape and type of bench from a single source with resources to provide components of consistent quality in appearance and physical properties.

D. Product Options: Drawings indicate size, shape and dimensional requirements of benches and are based on the specific system indicated.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For each product and for each color and texture specified.

C. Samples for Initial Selection: For units with factory-applied finishes.

Samples for Verification: For each type of exposed finish, not less than 6-inch- (152-mm-) long linear components and 4-inch- (102-mm-) square sheet components of each: (1) the color

of the powder coat finish, powder coat from the same material to be used to finish the product.

D. Product Schedule: For site furnishings. Use same designations indicated on Drawings.

1.5 INFORMATIONAL SUBMITTALS

A. Material Certificates: For site furnishings.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For site furnishings to include in maintenance manuals.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Trash Receptacle: No fewer than two (2) fasteners for liner and lid and container.

2. Anchors: no fewer than five (5).

1.8 DELIVERY, STORAGE, AND HANDLING

A. Store site furnishings in original undamaged packaging and containers until ready for installation.

B. Handle powder coated site furnishings with sufficient care to prevent any scratches or damage to the finish.

1.9 WARRANTY

A. Site furnishings are to carry a five year manufacturer’s limited warranty against defects in materials and workmanship.

PART 2 - PRODUCTS

2.1 SEATING

A. Products: Subject to compliance with requirements, provide the following provide one of the following available products that may be incorporated into the work.

B. Basis-of-Design Product: Subject to compliance with requirements.

C. Construction:
1. Frame: Flat Bar.
a. ASTM A36 Carbon Structural Steel

1. End (and center) frames shall be constructed of ½ x 2 ½" (12.7mm x 63.5mm) carbon steel flat bar.

2. Seat support shall be 1-5/8" O.D. 12 ga. (41.3mm) carbon steel tubing.

2. Seating Material
   a.. Flat and Round Bar:
      a. ASTM A36 Carbon Structural Steel
   b. Tubing:
      a. ASTM A513 Electric Welded Carbon Steel mechanical Tubing
      Vertical Steel Straps:
   c. Straps
      a. 1/4" x 1-1/2" (6.4mm x 38.1mm) carbon structural steel flat bar.
   d. Strap stabilizers shall be 1/2" (12.7mm) diameter carbon structural steel round bar.
3. Style: Armless 6 ft. bench

   a. Overall Height: As indicated.
   b. Overall Width: As indicated
   c. Overall Depth: As indicated

D. Finish: Epoxy / Powder Coating:
1. 18 stage finishing process to insure an extremely durable finish to resist corrosion, chipping, abrasion, cracking and UVA damage. The steel substrate shall be mechanically and chemically etched to insure proper finish adhesion, followed by a zinc phosphate bath for corrosion resistance. The site furnishing shall then be primed by immersion into a non-chrome seal rinse to enhance and supplement the corrosion resistance. The site furnishing shall then be immersed into an environmentally friendly e-coat epoxy liquid bath to ensure that all surfaces, joints and crevices are covered. (The use of silicone caulk for gap filling of joints shall not be allowed.) The site furnishing shall be powder coated after complete fabrication with triglycidyl isocyanurate (TGIC) powder, a polyester coating that is electrostatically applied and baked at 400 degrees for 20 minutes. Powder coat shall not exceed thickness greater than (6 mils).

2. Color: As indicated by manufacturer's designation Match Architect's samples as selected by Architect from manufacturer's full range as indicated in a site furnishing schedule.

3. .

2.2 TRASH RECEPTACLES

A. Basis-of-Design Product: Subject to compliance with requirements.

B. Trash Receptacle Construction:
   1. Frame: Tubing: ASTM A500 Carbon Structural Steel
      a. Rim shall be 1.315" (33.4mm) diameter steel tubing. Horizontal rings, cross braces and strap supports shall be 1/4" x 2" (6.4mm x 50.8mm) steel flat bar. Anchor bracket shall be 3" (76.2mm) 'C' Channel.

   2. Siding:
      Flat Bar: ASTM A36 Carbon Structural Steel

Vertical steel straps shall be 1/4” x 1-1/2” (6.4mm x 38.1mm) steel flat bar.

3. Fasteners:
   All assembly fasteners shall be stainless steel.

1. Style: Trash receptacle with liner and flat lid.

   a. Overall Height: As indicated.
   b. Overall Width: As indicated
   c. Overall Depth: As indicated

C. Finish: Epoxy / Powder Coating:

1. 18 stage finishing process to insure an extremely durable finish to resist corrosion, chipping, abrasion, cracking and UVA damage. The steel substrate shall be mechanically and chemically etched to insure proper finish adhesion, followed by a zinc phosphate bath for corrosion resistance. The site furnishing shall then be primed by immersion into a non-chrome seal rinse to enhance and supplement the corrosion resistance. The site furnishing shall then be immersed into an environmentally friendly e-coat epoxy liquid bath to ensure that all surfaces, joints and crevices are covered. (The use of silicone caulk for gap filling of joints shall not be allowed.) The site furnishing shall be powder coated after complete fabrication with triglycidyl isocyanurate (TGIC) powder, a polyester coating that is electrostatically applied and baked at 400 degrees for 20 minutes. Powder coat shall not exceed thickness greater than (6 mils).

2. Color: As indicated by manufacturer's designation Match Architect's samples as selected by Architect from manufacturer's full range as indicated in a site furnishing schedule.

2.2 FABRICATION

A. Metal Components: Form to required shapes and sizes with true, consistent curves, lines, and angles. Separate metals from dissimilar materials to prevent electrolytic action.

B. Welded Connections: Weld connections continuously. Weld solid members with full-length, full-penetration welds and hollow members with full-circumference welds. At exposed connections, finish surfaces smooth and blended so no roughness or unevenness shows after finishing and welded surface matches contours of adjoining surfaces.

C. Pipes and Tubes: Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain cylindrical cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of handrail and railing components.

D. Exposed Surfaces: Polished, sanded, or otherwise finished; all surfaces smooth, free of burrs, barbs, splinters, and sharpness; all edges and ends rolled, rounded, or capped.

E. Factory Assembly: Assemble components in the factory to greatest extent possible to minimize field assembly. Clearly mark units for assembly in the field.

2.3 GENERAL FINISH REQUIREMENTS

A. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for correct and level finished grade, mounting surfaces, installation tolerances, and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Comply with manufacturer's written installation instructions unless more stringent requirements are indicated. Complete field assembly of site furnishings where required.

B. Unless otherwise indicated, install site furnishings after landscaping and paving have been completed.

C. Install site furnishings level, plumb, true, and securely anchored positioned at locations indicated on Drawings.

D. Post Setting: Set cast-in support posts in concrete footing with smooth top, shaped to shed water. Protect portion of posts above footing from concrete splatter. Verify that posts are set plumb or at correct angle and are aligned and at correct height and spacing. Hold posts in position during placement and finishing operations until concrete is sufficiently cured.

E. Posts Set into Voids in Concrete: Form or core-drill holes for installing posts in concrete to depth recommended in writing by manufacturer of site furnishings and 3/4 inch (19 mm) larger than OD of post. Clean holes of loose material, insert posts, and fill annular space between post and concrete with non-shrink, nonmetallic grout or anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions, with top smoothed and shaped to shed water.

F. Pipe Sleeves: Use steel pipe sleeves preset and anchored into concrete for installing posts. After posts have been inserted into sleeves, fill annular space between post and sleeve with non-shrink, nonmetallic grout or anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions, with top smoothed and shaped to shed water.

END OF SECTION 129300

SECTION 26 00 00 – BASIC ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.1 WORK INCLUDED

A. General Requirements specifically applicable to Division 26.

B. The Contractor shall be responsible for:

1. The work included consists of furnishing all materials, supplies, equipment and tools, and performing all labor and services necessary for installation of a completely functional power, lighting, and CCTV systems. Complete systems in accordance with the intent of Contract Documents.

2. Coordinating the details of facility equipment and construction for all Specification Divisions, which affect the work covered under this Division.

3. Furnishing and installing all incidental items not actually shown or specified, but which are required by good practice to provide complete functional systems.

C. Intent of Drawings:

1. The Drawings are necessarily diagrammatic by their nature, and are not intended to show every connection in detail or every device or raceway in its exact location, unless specifically dimensioned. The Contractor shall carefully investigate structural and finish conditions and shall coordinate the work in order to avoid interference between the various phases of work. The Contractor shall be responsible for the proper routing of raceway, subject to prior review by the Owner and Engineer. Work shall be organized and laid out so that it will be concealed in furred chases and suspended ceilings, etc., in finished portions of the building, unless specifically noted to be exposed. All work shall be installed parallel or perpendicular to the lines of the building unless otherwise noted.

2. The intent of the Drawings is to establish the type of systems and functions, but not to set forth each item essential to the functioning of the system. The drawings and specifications are cooperative, and work or materials called for in one and not mentioned in the other shall be provided. Review pertinent drawings and adjust the work to conditions shown. In case of doubt as to work intended, or where discrepancies occur between drawings, specifications, and actual conditions, immediately notify the Architect/Engineer and the Owner’s representative, and propose a resolution.

1.2 RELATED WORK

A. This Section shall be used in conjunction with the following other specifications and related Contract Documents to establish the total general requirements for the project electrical systems and equipment.

1. Division 01 Sections included in the project specifications.
2. The contract.

1.3 DESIGN CRITERIA

A. Equipment and devices to be installed outdoors or in enclosures where the temperatures are not controlled shall be capable of continuous operation under such conditions per manufacturer's requirements.

B. Compliance by the Contractor with the provisions of this Specification does not relieve him of the responsibilities of furnishing equipment and materials of proper design, mechanically and electrically suited to meet operating guarantees at the specified service conditions.

C. Electrical components shall be UL listed and labeled.

1.4 REFERENCE CODES AND STANDARDS, REGULATORY REQUIREMENTS

A. Standards of the following organizations as well as those listed in Division 01, may be referenced in the specification. Unless noted otherwise, references are to standards or codes current at the time of bidding.

1. Association of Edison Illuminating Companies (AEIC)
2. American National Standards Institute (ANSI)
3. Institute of Electrical and Electronics Engineers (IEEE)
4. Insulated Cable Engineers Association (ICEA)
5. National Electrical Code (NEC)
6. National Electrical Manufacturers Association (NEMA)
7. Electrical Safety in the Workplace
8. National Fire Protection Association (NFPA)
9. Underwriter's Laboratories (UL)

B. Work, materials and equipment must comply with the latest rules and regulations of the following.

1. National Electrical Code (NEC)
2. Electrical Safety in the Workplace
3. Occupational Safety and Health Act (OSHA)
4. American with Disability Act (ADA)
5. American Society for Testing and Materials (ASTM)
6. Applicable state and federal codes, ordinances and regulations

C. Discrepancies. The drawings and specifications are intended to comply with listed codes, ordinances, regulations and standards. Where discrepancies occur, immediately notify the Owner's representative in writing and ask for an interpretation. Should installed materials or workmanship fail to comply, the Contractor is responsible for correcting the improper installation. Additionally, where sizes, capacities, or other such features are required in excess of minimum code or standards requirements, provide those specified shown.

D. Contractor shall obtain permits and arrange inspections required by codes applicable to this Section and shall submit written evidence to the Owner and Engineer that the required permits, inspections and code requirements have been secured.

1.5 SUBMITTALS

A. Submit the following in addition to and in accordance with the requirements of Division 01 for submittal requirement.

1. Include inspection and permit certificates and certificates of final inspection and acceptance from the authority having jurisdiction.

2. Manufacturer's standardized schematic diagrams and catalog cuts shall not be acceptable unless applicable portions of it are clearly indicated and non-applicable portions clearly deleted or crossed out.

3. All schematic, connection and/or interconnection diagrams in accordance with the latest edition of NEMA.

4. Provide submittals as required by individual specification Section.

B. Provide the following with each submittal:

1. Catalog cuts with manufacturer's name clearly indicated. Applicable portions shall be circled and non-applicable portions shall be crossed out.

2. Line-by-line specification review by equipment manufacturer and contractor with any exceptions explicitly defined.

C. Within the specified time window after award of contract, submit list of equipment and materials to be furnished.

1. Itemize equipment and material by specification Section number; include manufacturer and identifying model or catalog numbers.

2. Replace rejected items with an acceptable item within 2 weeks after notification of rejection.

3. If a satisfactory replacement is not submitted within a two-week period, owner will notify contractor as to equipment manufacturer or type and make or material to be furnished. Provide designated items at no additional cost to owner.

D. As-Built Record Drawings: The Contractor shall maintain a master set of As-Built Record Drawings that show changes and any other deviations from the drawings. The markups must be made as the changes are done. At the conclusion of the job, these As-Built Record Drawings shall be transferred to AutoCad electronic files, in a format acceptable to the Owner, and shall be complete and delivered to the Owner's Representative prior to final acceptance. Refer to 01210 Project Administration for other requirements.

1.6 SAFETY

A. The Contractor shall follow the safety procedures in addition to, and in accordance with, the requirements of Project Safety Manual (PSM).

1. The Contractors shall be responsible for training all personnel under their employ in areas concerning safe work habits and construction safety. The Contractor shall continually inform personnel on hazards particular to this project and update the information as the project progresses.

2. The Contractor shall secure all electrical rooms, to limit access, prior to energizing any

high voltage switchgear and shall control access during the project after energization. The Contractor shall post and maintain warning and caution signage in areas where work is on going near energized equipment. The Contractor shall cover all energized live parts when work is not being done in the equipment. This includes lunch and breaks.

3. The Contractor shall strictly enforce OSHA lock out/tag out procedures. Initial infractions shall result in a warning; a second infraction shall result in the removal of the workman and his foreman from the site. Continued infractions shall result in removal of the Contractor from the site.

1.7 SHORING AND EQUIPMENT SUPPORTS

A. The Contractor shall provide all permanent and temporary shoring, anchoring, and bracing required to make all parts absolutely stable and rigid; even when such shoring, anchoring, and bracing are not explicitly called for.

B. The Contractor shall adequately support all enclosures and other equipment. Under no condition shall equipment be fastened to non-rigid building steel (i.e., removable platform steel gratings, handrails, etc.).

C. The Contractor shall provide racks and supports, independently mounted at structure, to support electrical equipment and systems supplied and installed under this contract. At no time shall the Contractor mount or suspend equipment from other disciplines' supports.

1.8 SUBSTITUTION OF MATERIALS AND EQUIPMENT:

A. Refer to Uniform General Conditions and Supplementary General Conditions for substitution of materials and equipment.

B. The intent of the Drawings and/or Specifications is neither to limit products to any particular manufacturer nor to discriminate against an "APPROVED EQUAL" product as produced by another manufacturer. Some proprietary products are mentioned to set a definite standard for acceptance and to serve as a reference in comparison with other products. When a manufacturer's name appears in these Specifications, it is not to be construed that the manufacturer is unconditionally acceptable as a provider of equipment for this project. The successful manufacturer or supplier shall meet all of the provisions of the appropriate specification(s).

C. The specified products have been used in preparing the Drawings and Specifications and thus establish minimum qualities with which substitutes must at least equal to be considered acceptable. The burden of proof of equality rests with the Contractor. The decision of the designer is final.

D. When requested by the Architect/Engineer, the Contractor shall provide a sample of the proposed substitute item. In some cases, samples of both the specified item and the proposed item shall be provided for comparison purposes.

E. Timeliness: The burden of timeliness in the complete cycle of submittal data, shop Drawings, and sample processing is on the Contractor. The Contractor shall allow a minimum of six (6) weeks time frame for review of each submission by the office of the design discipline involved after receipt of such submissions by that design discipline. The Contractor is responsible for allowing sufficient time in the construction schedule to cover the aforementioned cycles of data processing, including time for all resubmittal cycles on

unacceptable materials, equipment, etc. covered by the data submitted. Construction delays and/or lack of timeliness in the above regard are the responsibility of the Contractor and will not be considered in any request for scheduled construction time extensions and/or additional costs to the Owner.

F. All equipment installed on this project shall have local representation; local factory authorized service, and a local stock of repair parts.

G. Acceptance of materials and equipment will be based on manufacturer's published data and will be tentative subject to the submission of complete shop Drawings indicating compliance with the contract documents and that adequate and acceptable clearances for entry, servicing, and maintenance will exist. Acceptance of materials and equipment under this provision shall not be construed as authorizing any deviations from the Specifications, unless the attention of the Architect/Engineer has been directed in writing to the specific deviations. Data submitted shall not contain unrelated information unless all pertinent information is properly identified.

H. Certification: The Contractor shall carefully examine all data forwarded for approval and shall sign a certificate to the effect that the data has been carefully checked and found to be correct with respect to dimensions and available space and that the equipment complies with all requirements of the Specifications.

I. Physical Size of Equipment: Space is critical; therefore, equipment of larger sizes than shown, even though of specified manufacturer, will not be acceptable unless it can be demonstrated that ample space exists for proper installation, operation, and maintenance.

J. Should a substitution be accepted, and should the substitute material prove defective, or otherwise unsatisfactory for the service intended within the guarantee period, this material or equipment shall be replaced with the material or equipment specified at no additional cost to the Owner.

1.9 The Architectural and Civil Plans and Specifications including the General Conditions of the Contract, Special Requirements, Instructions to Bidders, and all supplements issued thereto, information to Bidders and other pertinent documents issued by the Architect, are a part of these specifications and the accompanying electrical plans, and shall be complied with in every respect. All the above is included herewith, and shall not relieve the Contractor of responsibility or be used as a basis for additional compensation due to omission of architectural and civil details from the electrical drawings.

1.10 The Contractor shall obtain all permits, inspections, and approvals as required by all authorities having jurisdiction. All fees and costs of any nature whatsoever incidental to these permits, inspections, and approvals shall be waived by the owner.

1.11 All work shall be executed in accordance with the current local and state codes, ordinances, regulations, standards and requirements governing the particular class of work involved. The Contractor shall be responsible for the final execution of the work under this heading to suit these requirements. On completion of the various portions of the work, the installation shall be tested by the constituted authorities and approved, and upon completion of the work, the Contractor shall obtain and deliver to the Owner final certificate of acceptance.

1.12 Contractor shall be responsible for final arrangement of all equipment in electrical rooms and for compliance with code required clearances and working spaces. Layout of

equipment is shown on the plans for illustration and informational purposes. Prior to any rough-in work, Contractor shall provide a layout of all equipment in the electrical rooms for review and acceptance. Layout shall show all equipment to scale at a scale of 1/4" = 1'-0". Working clearances on the sides and front of all equipment shall be outlined using a dashed line. If equipment does not fit, Contractor shall notify the Architect and Engineer so that the space may be modified as necessary. Rough-in work may proceed only after the layout has been reviewed and accepted.

1.13 Contractor shall be responsible for final coordination of service points with all utilities. Any adjustments required to accommodate changes in service points and metering provisions shall be made by the contractor at no additional cost to the Owner.

1.14 All wiring and cabling of every type, size and description shall be run in conduit unless noted or specified otherwise. Minimum size shall be 3/4".

PART 2 – PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. Materials and Equipment: Labeled and/or listed as acceptable to the authority having jurisdiction as suitable for the use intended. Materials shall be of a standard industrial quality if no specifications or specific model numbers are given.

B. Where two or more units of the same class of material are required, provide products of a single manufacturer. Component parts of materials or equipment need not be products of the same manufacturer.

C. All materials shall be new and unused.

PART 3 – EXECUTION

3.1 WORKMANSHIP

A. Install work in compliance with NEC latest edition.

B. Install material and equipment in accordance with manufacturers' instructions. Provide calibrated torque wrenches and screwdrivers and tighten all terminals, lugs, and bus joints using it.

C. Comply with startup procedures as defined by Construction Manager and Owner.

D. Arrange electrical work in a neat, well-organized manner. Do not block future connection points of electrical service. Install all electrical work parallel or perpendicular to building lines unless noted otherwise, properly supported with purpose-designed apparatus, in a neat manner.

E. Store, apply, install, connect, erect, use, clean, adjust, and condition materials and equipment as recommended by the manufacturers in their published literature.

F. Make opening through masonry and concrete by core drilling in acceptable locations. Restore openings to original condition to match remaining surrounding materials.

3.2 SERVICE CONTINUITY

A. Maintain continuity of electric service to all functioning portions of process or buildings during the hours of normal use. Phase construction work to accommodate Owner's occupancy requirements.

B. Arrange temporary outages for cutover work with the Owner. Keep the outages to a minimum number and minimum length of time.

C. All service outages shall be requested in writing a minimum of two weeks prior to the date. Owner reserves the right to postpone shutdowns up to 24 hours prior to the shutdown at no additional cost. Outage requests shall include a schedule of the work to be performed and the time requirements.

D. The Contractor shall obtain all appropriate Owner permits for working in equipment.

3.3 SLEEVES AND SEALS

A. Provide sealing and/or fire stopping where electrical equipment passes through roofs, walls, ceilings, and floors. Seals shall be watertight and/or fire rated as applicable.

3.4 CONSTRUCTION REVIEW

A. The Engineer or Owner's representative will review and observe installation work to insure compliance by the Contractor with requirements of the Contract Documents.

B. Review, observation, assistance, and actions by the Engineer or Owner's representative shall not be construed as undertaking supervisory control of the work or of methods and means employed by the Contractor. The review and observation activities shall not relieve the Contractor from the responsibilities of these Contract Documents.

C. The fact that the Engineer or Owner's representative do not make early discovery of faulty or omitted work shall not bar the Engineer or Owner's representative from subsequently rejecting this work and insisting that the Contractor make the necessary corrections.

D. Regardless of when discovery and rejection are made, and regardless of when the Contractor is ordered to correct such work, the Contractor shall have no claim against the Engineer or Owner's representative for an increase in the Contract price, or for any payment on account of increased cost, damage, or loss.

3.5 WARRANTY

A. Provide warranties in accordance with the requirements of Uniform General and Supplementary Conditions (UGC).

END OF SECTION 26 00 00

SECTION 26 05 00 – BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 – GENERAL

1.1 WORK INCLUDED

A. Hinged cover enclosures and cabinets

B. Contactors

C. Control relays

D. Push buttons, and selector switches

E. Terminal blocks and accessories

F. Penetration sealing systems (fire stops)

G. Electrical/control portion of HVAC work covered by Division 23 pertaining to basic electrical materials and methods shall follow the requirement set forth by this specification.

1.2 APPLICABLE CODES AND STANDARDS

A. NFPA 70, National Electrical Code (latest edition)

B. American National Standard, National Electrical Safety Code, (latest edition)

C. Applicable publications of NEMA, ANSI, IEEE, and ICEA

D. Underwriters Laboratories, Inc. Standards (UL)

E. Federal, city, state, and local codes and regulations having jurisdiction

F. OSHA requirements

G. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum)

1.3 INTENT

A. This Section is not, and shall not be interpreted to be, a complete listing of all materials or equipment that is Contractor furnished and erected. It is intended to clarify and further define the Contractor scope of work, procurement, and responsibilities for those incidental materials that are not specified by other specifications, but important to a complete and operational system.

B. The Contractor shall furnish all equipment and materials, whether or not specified in other Sections of specification and on drawings, for installation and connection required to place equipment into satisfactory operating service. The Contractor shall review the Drawings and specifications for clarification of his responsibility in the handling and installation of equipment and material. Where applicable, and not in contradiction with the Drawings and specifications, the Contractor shall install and connect the equipment in accordance with the manufacturer's recommendations and instructions.

C. All materials and equipment shall be of types and manufacturer specified wherever practical. Should materials or equipment so specified be unattainable, the Contractor shall submit the description and manufacturer's literature, reason for substitution request and

shall secure the approval of the Engineer before substitution of other material or equipment is purchased. This Section establishes performance requirements and the quality of equipment acceptable for use and shall in no way be construed to limit procurement from other manufacturers.

1.4 SUBMITTALS

A. Provide submittals in addition and in accordance with Section 26 00 00, Basic Electrical Requirements, and Division 01 for submittal requirement.

B. Submit manufacturer's literature and specification data sheets for each type of basic material, which is applicable to the project.

1.5 DELIVERY, STORAGE AND HANDLING

A. Provide factory-wrapped waterproof flexible barrier material for covering materials, where applicable, to protect against physical damage in transit. Damaged materials shall be removed from project site.

B. In their factory-furnished coverings, store materials in a clean, dry indoor space, which provides protection against the weather and elements.

PART 2 – PRODUCTS

2.1 ENCLOSURES AND CABINETS

A. Enclosures and cabinets for all Contractor furnished electrical equipment and devices shall be suitable for the location and environmental conditions and shall be of the NEMA type as shown in Table 16050-1. Exceptions shall be specifically designated on the Drawings.

Table 16050-1

Enclosures

Location	Environment	Enclosure Type
Indoor Utility	Dry, subject to dust, falling dirt and dripping non-corrosive liquids	NEMA 12
Indoor	Clean, Dry	NEMA 1
Outdoor	Subject to windblown dust and rain, splashing water, and hose-directed water	NEMA 4
Indoor	Wet, subject to hose-directed water	NEMA 4
Outdoor	Subject to falling rain, sleet, and external ice formation	NEMA 3R
Indoor or Outdoor	Subject to corrosion, windblown dust and rain, splashing water and hose-directed water	NEMA 4X

B. Enclosures shall have the following properties:

1. Hinged Cover Enclosures: NEMA 250.

a. Type 1: Steel.

b. Type 3R: Steel

c. Type 4: Steel with gasket door, rain tight.

d. Type 4X: Stainless steel, (polycarbonate or fiberglass reinforced polyester (FRP) in corrosive areas).

e. Type 12: Steel with gasketed door, dust-tight.

C. Finish: Exterior, manufacturer's standard gray enamel finish; interior, white enamel finish.

D. Covers: Continuous hinge, held closed by flush latch operable by hasp and staple for padlock. Where required for NEMA ratings, gaskets shall be neoprene rubber.

E. Interior Panel for Mounting Terminal Blocks or Electrical Components: 14-gauge steel, white enamel finish.

F. Provide protective pocket inside front cover with schematic diagram, connection diagram, and layout drawing of control wiring and components within enclosure.

2.2 CONTACTORS

A. Acceptable Manufacturers

1. General Electric Company

2. Square D Company

3. Other manufacturers equal in design and function will be considered upon A/E approval following substitution procedure in 26 00 00 and Division 01 for substitution requirement.

B. Contactors: NEMA ICS 2; electrically held or mechanically held as indicated on Drawings. Two-wire control for electrically held contactors and three-wire control for mechanically held contactors.

C. Enclosure: NEMA 1 unless indicated otherwise on Drawings.

D. Control Transformer: Provide when indicated on Drawings. Minimum capacity shall be 100 VA. Provide primary and secondary fuse protection.

E. Coil operating voltage; 110 volts, 60 Hz or as per drawings.

F. Size: NEMA ICS 2; size as indicated on Drawings.

G. Contacts: As indicated on Drawings; 600 Volts, 60 Hz.

H. Provide solderless pressure wire terminals on bus terminals suitable for mounting in panelboard as indicated on Drawings.

2.3 CONTROL RELAYS

A. Acceptable Manufacturers

1. General Electric Type CR120A
2. Cutler-Hammer Type M-300
3. Square D Company
4. Allen-Bradley
5. Other manufacturers equal in design and function will be considered upon A/E approval following substitution procedure in 26 00 00 and Division 01 for substitution requirement.

B. Provide magnetic control relays, NEMA Class A: A300 (300 volts, 10 amps continuous, 7,200 VA make, 720 VA break), industrial control type with field-convertible contacts, and meeting the requirements of NEMA ICS 2.

C. Where time delay relays are specified or required, unless otherwise noted, provide magnetic control relays with a solid-state timer attachment adjustable from 0.2 to 60 seconds (minimum) or with range as indicated. Provide with field convertible from ON delay to OFF delay and vice versa.

D. Where latching (mechanically held) relays or motor thermal detector relays are specified, provide magnetic control relays with mechanical latch attachment with unlatching coil and coil clearing contacts.

2.4 PUSH BUTTONS, AND SELECTOR SWITCHES

A. Acceptable Manufacturers

1. Allen-Bradley
2. Square D
3. Cutler Hammer
4. Seimens
5. Other manufacturers equal in design and function will be considered upon A/E approval following substitution procedure in 26 00 00 and Division 01 for substitution requirement.

B. For non-hazardous, indoor, dry locations, including control panels, and individual stations, provide heavy duty, NEMA 13, oil tight type pushbuttons, indicating lights, selector switches, and stations for these devices.

C. For non hazardous, outdoor, or normally wet locations, or where otherwise indicated, provide heavy duty corrosion resistant, NEMA 4, watertight type pushbuttons, indicating lights, or selector switches mounted in NEMA 4 watertight enclosures. Provide special gasketing required to make complete station watertight.

D. Provide devices meeting the requirements of NEMA ICS 2, and having individual, extra large nameplates indicating their specific function. Provide push-button stations with laminated plastic nameplates indicating the drive they control. Provide contacts with NEMA designation rating A600. Install provisions for locking pushbuttons and selector switches in the OFF position wherever lockout provisions are indicated. Nameplates shall be as specified in Section 16195.

E. Utilize selector switches having standard operating levers. All indicating lights shall be LED type, push-to-test type. Provide ON or START pushbuttons colored black. Provide OFF or STOP pushbuttons colored red.

2.5 TERMINAL BLOCKS AND ACCESSORIES

A. Signal And Control Terminals

1. Acceptable Manufacturers

a. Phoenix Contact

b. Buchanan

c. Weidmüller

d. Entrelec

e. Other manufacturers equal in design and function will be considered upon A/E approval following substitution procedure in 23 00 00 and Division 01 for substitution requirement.

2. Signal and Control Terminals: Modular construction type, DIN 46 277/3 channel mounted; screw clamp compression connectors, rated 300 volts. Minimum terminal width of 0.24-inch, capable of holding two No. 12 or two No. 14 AWG conductors in each connector. Terminal identification numbers shall be thermoset characters (black) on a white background. Provide 25 percent spare terminals.

B. Power Terminals

1. Acceptable Manufacturers

a. Buchanan

b. Ilsco

c. Square D Company

d. Burndy

e. Other manufacturers equal in design and function will be considered upon A/E approval following substitution procedure in 26 00 00 and Division 01 for substitution requirement.

2. Power Terminals: Unit construction type, closed-back type, with tubular pressure screw connectors, rated 600 volts, size as required. Provide 25 percent spare terminals.

2.6 PENETRATION SEALING SYSTEMS (FIRE STOPS)

A. Provide penetration sealing where conduit, cable tray, etc. pass through rated walls, ceilings, and floors. See Section 07840, Fire Stopping, and Section 07900, Joint Sealants, for sealing requirements and systems.

2.7 UL LISTING

A. All equipment and materials shall be new and conform to the requirements of this Section. All equipment and materials shall be UL listed, and shall bear their label whenever standards have been established and level service is regularly furnished. All equipment and materials shall be of the best grade of their respective kind for the purpose.

PART 3 – EXECUTION

3.1 FABRICATION - CONTROL ENCLOSURES AND CABINETS

A. Shop assembles enclosures and cabinets housing terminal blocks or electrical components in accordance with NEMA ICS 6.

3.2 INSTALLATION - ENCLOSURES AND CABINETS

A. Install cabinets and enclosures plumb; anchor securely to wall and structural supports at each corner, minimum. Direct attachment to dry wall is not permitted.

B. Provide accessory feet for freestanding equipment enclosures.

C. Install trim plumb.

3.3 ERECTION OF EQUIPMENT

A. Manufacturer's Installation Instructions: Where furnished or called for by the manufacturer equipment manufacturer's installation instructions shall be considered a part of this specification and fully complied with. Where the Contractor damages the finishing coat of paint in existing or completed areas, he shall refinish with matching paint.

B. Mounting Heights: Individual safety switches and buttons and devices shall normally be installed at the following mounting heights, when not specified on the Drawings.

1. Safety Switches: 6 feet 0 inches (to top).

2. Pushbuttons: 4 feet 0 inches (to center).

3. Control Panels: 6 feet 0 inches (to top).

C. Mounting: Equipment and control devices shall be supported independent of conduit connections. Panels or cabinets shall be mounted on metal frame supports independently of equipment. Control devices and metal enclosures shall be bolted or welded to steel channel or steel plate. All electrical equipment and devices not covered by the above, such as miscellaneous switches, thermostats, duct switches, temperature switches, floats, photoelectrical devices, and similar electrical devices shall be located and set as suitable for the application. Where control panels are provided as part of the equipment racks mounted on the floor, they shall be provided to support conduits and flexible connections to control panels.

3.4 COORDINATION

A. Exact location of all electrical equipment, devices and fixtures shall be determined in field by contractor and verified by Engineer's field representative prior to installation.

END OF SECTION 26 05 00

SECTION 26 05 19 – CABLE, WIRE AND CONNECTORS, 600 VOLT

PART 1 – GENERAL

1.1 WORK INCLUDED

A. Building wire.

1. Appliance and equipment circuitry.
2. Outdoors lighting and power.
3. Other systems circuitry as designated.

B. Cable.

C. Wiring connections and terminations.

1.2 REFERENCES

A. NEMA WC 3 - Rubber-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.

B. NEMA WC 5 - Thermoplastic-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.

C. ANSI/UL 83 – Thermoplastic-Insulated Wire and Cables

D. NFPA 70 – National Electrical Code, latest edition

E. NEFA – Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.

F. Where application of National Electrical Code, trade association standards or publications appears to be in conflict with the requirements of this Section, the Architect/Engineer shall be asked for an interpretation.

1.3 SUBMITTALS

A. Provide submittals in accordance with and in additional to Section 26 00 00, Basic Electrical Requirements, and Division 01 for submittal requirement.

B. Submit manufacturer's literature and specification data sheets for each item of cable, wire connectors.

C. Qualification of cable and wire manufacturer: Company specializing in manufacturing products specified in this Section with minimum ten years experience.

1.4 DELIVERY, STORAGE AND HANDLING

A. Provide factory-wrapped waterproof flexible barrier material for covering wire and cable wood reels, where applicable; and weather resistant fiberboard containers for factory packaging of cable, wire and connectors, to protect against physical damage in transit. Damaged cable, wire or connectors shall be removed from project site.

B. Store cable, wire and connectors in a clean, dry indoor space in their factory-furnished coverings, which provides protection against the weather and elements.

PART 2 – PRODUCTS

2.1 GENERAL REQUIREMENTS

A. Generally, cable, wire and connectors shall be of manufacturer's standard materials, as indicated by published product information.

B. Provide factory-fabricated wire of the size, rating, material and type as indicated for each service. Where not indicated, provide proper selection as required to comply with installation requirements and with NEC standards. The minimum size wire to be used for power or lighting circuits shall be #12 copper with insulation as noted below. Minimum size for control shall be #14 copper.

C. The conductors of wires and cables shall be of copper (tinned where specified), and have conductivity in accordance with the standardization rules of the IEEE. The conductor and each strand shall be round and free of kinks and defects.

D. Grounding conductors, where insulated, shall be colored solid green or identified with green color as required by the NEC. Conductors intended as a neutral shall be colored solid white, or identified as required by the NEC. All motor or equipment power wiring shall be colored according to Section 26 05 53, Electrical Identification.

G. Use compression lugs for all wiring termination's, except on breakers or terminal strips in panel boards.

2.2 BUILDING WIRE

A. Thermoplastic-insulated Building Wire: NEMA WC 5.

B. Rubber-insulated Building Wire: NEMA WC 3.

C. Feeders and Branch Circuits Larger Than 10 AWG: 98% conductivity copper, soft-drawn, stranded conductor, 600 volt insulation, THHN/THWN Use XHHW conductors where installed in conduit underground.

D. Feeders and Branch Circuits 10 AWG and Smaller: 98% conductivity copper, soft-drawn, stranded conductor, 600-volt insulation, THWTHHN/THWN.

2.3 REMOTE CONTROL AND SIGNAL CABLE

A. Security/Access Control/CCTV Cable

1. All security/access control wiring shall be installed in dedicated conduits.

2. Security/access control wiring shall be rated and as specified below:

Circuit Type	No. of Conductors	Conductor Specifications	Cable Specifications
20 mA Current Loop	2	18-gauge, stranded copper	2 cables, 1 twisted pair each required
Card Reader Coaxial	--	18-gauge, solid copper, center conductor	Schlage Model No. SE9284PL or Anicom 5910PL
Contact Circuits	2	18-gauge, stranded copper	Nonshielded, twisted
CCTV Coaxial	--	--	Belden 89259 plenum rated, or approved equal

2.4 WIRING CONNECTIONS AND TERMINATIONS

A. Provide factory-fabricated, metal connectors of the size, rating, material, type and class as indicated for each service. Where not indicated, provide proper selection as required to comply with installation requirements and with NEC standards. Select from only following types, classes, kinds and styles.

1. Type:

a. Solderless pressure connectors

b. Crimp.

c. Threaded.

d. Insulated spring wire connectors with plastic caps for 10 AWG and smaller.

2. Class: Insulated.

3. Material: Copper (for CU to CU connection).

4. Style:

a. Insulated terminals. Use ring-terminal for control wiring. Use flange (fork) spade compression terminal for termination of stranded conductors at wiring devices, including ground connection.

b. Split bolt-parallel connector.

c. Pigtail connector.

d. Pre-insulated multi-tap connector.

PART 3 – EXECUTION

3.1 INSPECTION

A. Installer must examine the areas and conditions under which cable, wire and connectors are to be installed and notify the Contractor in writing of conditions detrimental to the proper and timely completion of the work. Inspect wire and cable for physical damage. Do not proceed with the work until unsatisfactory conditions have been corrected.

3.2 GENERAL WIRING METHODS

A. Install electrical cable, wire and connectors as indicated, in accordance with the manufacturer's written instructions, the applicable requirements of NEC and the National Electrical Contractors Association's "Standard of Installation", and as required to ensure that products serve the intended functions.

B. Coordinate cable and wire installation work with electrical raceway and equipment installation work, as necessary for proper interface. Do not install the conductors until raceway system is complete and properly cleaned.

C. Cables shall be selected on the basis of their purpose and UL listing. Generally, use Types THWN and THHN in building interiors and other dry locations. Outdoors and underground in raceways, use Type XHHW. Conductors subject to abrasion, such as in lighting poles, shall be Type THWN or THHN.

D. No conductor smaller than No. 12 wire shall be used for lighting purposes. In the case of "home runs" over 50' in length (100' for 277 volt) no conductor smaller than a No. 10 wire shall be used. The sizing of all wire except remote control wire shall be accomplished in the case of both feeder and branch circuits by conforming to the following provisions. Separate neutral conductors shall be provided for each phase of the same size for 120V/277V single-phase application. Voltage drop on feeders and branch circuits shall not exceed NEC requirement.

E. Remote control wires shall be no smaller than No. 14 conductors. Control wires shall be run in separate conduits. Departures from the sizes so determined shall be made only in those cases in which the National Electrical Code requires the use of larger conductors. The sizes as determined from these tables shall be regarded as the acceptable minimum under all other circumstances. In no case, however, shall there be a voltage drop greater than that specified in any feeder or branch circuit. The Contractor may, if he deems it necessary or advisable, use larger sized conductors than those shown. Under no circumstances, however, shall the Contractor use any conductors sized in a manner which does not conform to the above mentioned tables without having first secured the written approval of the Owner's duly authorized representative.

F. Install exposed wire and cable, parallel and perpendicular to surface or exposed structural members and follow the surface contours, where possible.

G. Splice branch circuits only in accessible junction or outlet boxes. Control cable shall never be spliced except the final connection to field devices. Where terminations of cables that are installed under this Section are to be made by others, provide pigtail of adequate length for neat, trained and bundles connections, minimum 5 feet at each location, unless noted otherwise on drawings.

H. Wiring Within An Enclosure: Contractor shall bundle ac and dc wiring separately within an enclosure. The Contractor shall utilize panel wire-ways when they are provided. Where wireways are not provided the Contractor shall neatly tag, bundle wires and secure to sub-panel at a minimum of every three inches with T&B Type TC5355 heavy duty mounting bases.

I. Do not bend any conductor either permanently or temporarily during installation to radii less than four times the outer diameter of 600-volt insulated conductors.

3.3 WIRING INSTALLATION IN RACEWAYS

A. Wire and cable shall be pulled into clean dry conduit. Do not exceed manufacturer's recommended values for maximum pulling tension.

B. Pull conductors together where more than one is being installed in a raceway.

C. Use UL listed pulling compound or lubricant, when necessary; compound must not deteriorate conductor and insulation.

D. Do not use a pulling means, including fish tape, cable or rope, which can damage the raceway.

E. Install wire in raceway after interior of building has been physically protected from the weather and all mechanical work likely to injure conductors has been completed.

F. Place an equal number of conductors for each phase of a circuit in same raceway.

G. Provide separate conduit or raceway for line and load conductors of motor starters, safety disconnect switches, and similar devices. Those devices shall not share the same raceway.

H. All conduits shall contain a green grounding conductor. Conduit, wireways, or boxes shall not be used as the equipment grounding conductor.

3.4 WIRING CONNECTIONS AND TERMINATIONS

A. Install splices, taps and terminations, which have equivalent-or-better mechanical strength and insulation as the conductor. Make splices, taps and terminations to carry full ampacity of conductors without perceptible temperature rise.

B. Keep conductor splices and taps accessible and to a minimum, and in junction boxes only. Control circuit conductors shall terminate at terminal blocks only. Splices below grade shall only be in handholes or manholes and shall be made watertight with epoxy resin type splicing kits similar to Scotchcast.

C. Use splice, tap and termination connectors, which are compatible with the conductor material.

D. Thoroughly clean wires before installing lugs and connectors.

E. Terminate spare conductors with electrical tape and label as spare.

F. Power and Lighting Circuits: Use solderless pressure connectors with insulating covers for copper wire splices and taps, 8 AWG and larger. For 10 AWG and smaller, use insulated spring wire connectors with plastic caps on lighting and receptacle circuits.

G. Use split bolt connectors for copper wire splices and taps, 6 AWG and larger. Tape un-insulated conductors and connectors with electrical tape to 150 percent of the insulation value of conductor.

H. Connections for all wire sizes in motor terminal boxes where the motor leads are furnished with crimped-on lugs shall be made by installing ring type compression terminals on the motor branch circuit ends and then bolting the proper pairs of lugs together. First one layer of No. 33 scotch tape reversed (sticky side out), then a layer of rubber tape, then two layers of No. 33 half-lapped.

I. Identify conductors per Section 26 05 53 - Electrical Identification.

3.5 FIELD QUALITY CONTROL

A. Torque test conductor connections and terminations to manufacturer's recommended values.

B. Perform continuity test on all power and equipment branch circuit conductors. Verify proper phasing connections.

C. Conductors in vertical conduits or raceways shall be supported in the manner set forth in the appropriate section of the latest revision of the National Electrical Code. Lighting fixtures shall not be used for raceways for circuits other than parallel wiring of fixtures.

D. Conductors may be run in parallel on sizes 1/0 to 500 MCM inclusive provided all paralleled conductors are the same size, length, and type of insulation. Except as otherwise shown on drawings, no more than three conductors may be run in parallel, and they shall be so arranged and terminated as to insure equal division of the total current between all conductors involved. Where parallel connection is contemplated, approval of the Owner's representative must be obtained before installation is made.

3.6 TESTING AND ACCEPTANCE

A. Before final acceptance, the Contractor shall make voltage, insulation, and load tests, necessary to demonstrate to the Owner's representative the satisfactory installation and proper performance of all circuits.

B. Test feeder conductors clear of faults. Insulation-resistance test shall be conducted per NETA – Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems. Test results below 50 megohms shall be cause for rejection of the wiring installation. Replace and retest all such rejected conductors.

C. At the completion of this project, the Contractor shall provide for the Owner three (3) complete and finally corrected sets of working drawings. These sets of working drawings shall be new, unused and in good condition, and shall include the nature, destination, path, size and type of wire and all other characteristics for complete identification of each and every conduit and circuit.

3.7 All stranded conductors shall be terminated at solderless connectors. Mains and feeders shall run their entire length in continuous pieces without joints or splices.

3.8 All joints or splices in dry locations shall be made with approved solderless connectors, and after the joint or splice is complete, it shall be covered with an insulating device to make insulation of the splice equal to that of the conductor itself.

END OF SECTION 26 05 19

SECTION 26 05 26 - GROUNDING

PART 1 – GENERAL

1.1 WORK INCLUDED

A. Electrical equipment and raceway grounding and bonding.

1.2 REFERENCES

A. NFPA 70 – National Electrical Code, latest edition

B. ANSI/UL 467 – Electrical Grounding and Bonding Equipment

C. ANSI/IEEE STD 142 – Recommended Practice for Grounding of Industrial and Commercial Power Systems

1.3 SYSTEM DESCRIPTION

A. Bond together system neutrals, service equipment enclosures, exposed non-current carrying metal parts of electrical equipment, metal raceway systems, grounding conductor in raceways and cables.

B. Bonding jumpers shall be installed around non-metal fittings or insulating joints to ensure electrical continuity. Bonding shall be provided where necessary to ensure electrical continuity and the capacity to conduct safely any fault current likely to be imposed.

1.4 SUBMITTALS

A. Provide submittals in accordance with and in additional to Section 26 00 00, Basic Electrical Requirements, and Division 01 for submittal requirement.

PART 2 – PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. Grounding system components shall be as required to comply with the design and construction of the system indicated. Components shall be as indicated in manufacturer's submittal data.

B. Ground conductors shall be stranded tinned, annealed copper cable of the sizes indicated on drawings. Bond grounding conductors at both ends of metallic conduit.

C. Grounding clips shall be Steel City Type G, or equal.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Install ground system as indicated, in accordance with the applicable requirements of the National Electrical Code and the National Electrical Contractors Association's "Standard of Installation".

B. Install grounding conductors continuous, without splice or connection, between equipment and grounding electrodes.

C. In feeder and branch circuits, provide a separate, insulated equipment grounding conductor. Terminate each end on a grounding lug, bus, or bushing.

D. Conductor connections shall be made by means of solderless connectors such as serrated bolted clamps or split bolt and nut type connectors. .

3.2 FIELD QUALITY CONTROL

A. Inspect grounding and bonding system conductors and connections for tightness and proper installation.

END OF SECTION 26 05 26

SECTION 26 05 29 – SECURING AND SUPPORTING METHODS

PART 1 – GENERAL

1.1 WORK INCLUDED

A. Raceway and equipment supports

B. Fastening hardware

1.2 QUALITY ASSURANCE

A. Support systems shall be adequate for weight of equipment and conduit, including wiring, which they carry. Support systems shall be sized adequately to support an additional 25% for future loads

1.3 COORDINATION

A. Coordinate with other trades where conduit and cable tray supports are in the same location as piping, ductwork, and work of other trades and where supports are furnished and installed under other Divisions. Supporting from the work or supports of other Contractors shall not be allowed except by express, written permission of the Owner.

1.4 SUBMITTALS

A. Provide submittals in accordance with and in additional to Section 26 00 00, Basic Electrical Requirements, and Division 01for submittal requirement.

PART 2 – PRODUCTS

2.1 MATERIAL

A. Support Channel:

1. All non-corrosive locations: Hot-dip galvanized steel.

B. Hardware:

1. All non-corrosive locations: Hot-dip galvanized steel.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Fasten hanger rods, conduit clamps, and outlet and junction boxes to building structure using precast insert system, expansion anchors, or beam clamps. Do not use spring steel clips and clamps. Provide necessary calculations to select proper support materials for

electrical equipment, raceway, and cable tray supports. Provide cable tray supports for cable tray filled to 125 percent capacity per NEC.

B. Install hangers, anchors, sleeves and seals as indicated, in accordance with manufacturer's written instructions and with recognized industry practices to insure supporting devices comply with requirements. Comply with requirements of NEC for installation of supporting devices. Install supports with spacing in compliance with NEC requirements.

C. Use toggle bolts or hollow wall fasteners in hollow masonry, plaster, or gypsum board partitions and walls; expansion anchors in solid masonry walls; or concrete surfaces; sheet metal screws in sheet metal studs; and wood screws in wood construction.

D. Do not fasten supports to piping, ductwork, mechanical equipment, or conduit.

E. Do not use powder actuated anchors without written permission from the Engineer.

F. Do not drill structural steel members without written permission from the Structural Engineer.

G. Fabricate supports from structural steel or steel channel, rigidly welded or bolted to present a neat appearance. Use hexagon head bolts with spring lock washers under all nuts.

H. Install surface mounted cabinets with a minimum of four anchors. Provide strut channel supports to stand cabinet 1-5/8 inches off wall. Utilize "Post Bases" where support channel is attached to structural floor.

I. Provide extra care in supporting PVC conduit to protect it from potential damage.

J. Coordinate with other electrical work, including raceway and wiring work, as necessary to interface installation of supporting devices with other work.

K. Do not anchor supports to columns. Where panelboards, cables, or conduits are routed on the face of a column provide "column hugging" channel supports.

3.2 TOUCH-UP

A. Touch-up all scratches on securing and supporting system, and paint the ends of channel after cutting with an approved zinc chromate or 90 percent zinc paint.

3.3 SUPPORT METHODS

A. Conduit, junction boxes, outlet boxes, special systems devices, etc shall not be anchored to or secured from the metal roof deck. Provide unistrut supports attached to roof structural members. No weight of any conduit, boxes, equipment, etc shall be borne by the metal roof deck. Do not penetrate metal roof deck unless authorized in writing by the Architect. Method of penetration and sealing shall be as directed by the Architect.

END OF SECTION 26 05 29

SECTION 26 05 33 – RACEWAYS, CONDUITS AND BOXES

PART 1 – GENERAL

1.1 WORK INCLUDED

A. Conduit:
   1. Rigid metal conduit and fittings. (RGS)
   2. Intermediate metal conduit and fittings. (IMC)
   3. Electrical metallic tubing and fittings. (EMT)
   4. Non-metallic conduit and fittings. (underground use only)
   5. PVC coated rigid steel conduit.

B. Boxes:
   1. Pull and junction boxes.

1.2 REFERENCES

A. NFPA 70 – National Electrical Code, latest edition
B. ANSI C80.1 - Rigid Steel Conduit, Zinc-Coated
C. ANSI C80.3 - Electrical Metallic Tubing, Zinc-Coated
D. ANSI/NEMA FB 1 - Fittings and Supports for Conduit and Cable Assemblies
E. EMA TC 3 - PVC Fittings for Use with Rigid PVC Conduit and Tubing
F. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum)
G. ANSI/NEMA TC 2 – Electrical Plastic Tubing (EPT) and Conduit (EPC-40 and EPC-80)
H. ANSI/UL 1 – Flexible Metal Conduit
I. ANSI/UL 5 – Surface Metal Raceways and Fittings
J. ANSI/UL 360 – Liquid-tight Flexible Steel Conduit
K. ANSI/UL 467 – Electrical Grounding and Bonding Equipment
L. ANSI/UL 651 – Schedule 40 and 80 Rigid PVC Conduit (underground use only)
M. ANSI/UL 797 – Electrical Metal Tubing
N. NEMA RN 1 – Polyvinyl Chloride (PVC) Externally Coated galvanized Rigid Steel Conduit and Intermediate Metal Conduit
O. UL 6 – Rigid Metal Conduit
P. ANSI/UL 943 – Ground Fault Circuit Interrupters

1.3 SUBMITTALS

A. Provide submittals in accordance with and in additional to Section 26 00 00, Basic Electrical Requirements, and Section 01330, Submittal Procedures.

B. Shop drawings consisting of a complete list of equipment and materials, which will be used for the project, including manufacturer's descriptive and technical literature, catalog cuts and installation instructions.

C. Sealing/fire stopping materials and details.

1.4 STORAGE AND HANDLING

A. Handle materials carefully to avoid damage, breaking, denting and scoring. Damaged equipment or materials shall not be installed.

B. Store materials in a clean dry space and protected from the weather and elements.

PART 2 – PRODUCTS

2.1 CONDUIT AND FITTINGS

A. Conduit and fittings for all electrical systems on this project shall include the following:

1. Electrical power and lighting feeders
2. Electrical power and lighting circuits
3. CCTV system

B. For each electrical wireway system indicated, provide a complete assembly of conduit, tubing or duct with fittings including, but not necessarily limited to, connectors, nipples, couplings, locknuts, bushings, expansion fittings, other components and accessories as needed to form a complete system of the same type indicated.

C. Conduit fittings shall be designed and approved for the specific use intended. Conduit fittings, including flexible, shall have insulated throats or bushings. Rigid conduits shall have insulated bushings, unless grounding bushings are required by N.E.C. Article 250. Grounding bushings shall have insulated throats.

D. Rigid and intermediate metal conduit shall be hot-dipped galvanized. Fittings shall be threaded type. Expansion fittings shall be OZ Type DX.

E. Electrical metallic tubing shall be galvanized. Fittings shall be all steel compression type. Expansion fittings shall be OZ Type TX.

F. Liquid-tight flexible metallic conduit and fittings shall consist of single strip, continuous, flexible interlocked, double-wrapped steel, galvanized inside and outside, forming smooth internal wiring channel with liquid-tight covering of flexible polyvinyl chloride (PVC). It shall be furnished with a sealing O-ring where entering an enclosure subject to moisture. Where O-Rings are used, ground type bushings shall be used in the box or enclosure.

G. Nonmetallic conduit and fittings shall be suitable for temperature rating of conductor but not less than 90°C. Nonmetallic conduit and fittings shall be molded of high impact PVC compound having noncombustible, nonmagnetic, non-corrosive and chemical resistant properties and shall be of the same manufacturer. Where located outdoors and above ground, the conduit and fittings shall be UV resistant. Solvent cement shall be of the same manufacturer as the conduit and shall be of the brush-on type. Spray solvents are prohibited. PVC coated metallic fittings shall not be permitted for PVC conduit connections.

H. Crimp or set-screw type fittings are not acceptable.

I. Minimum conduit size shall be 3/4 inch.

J. PVC coated rigid steel conduit shall be externally coated with a 40 mil PVC coating and internal phenolic coating over a galvanized surface.

2.2 PULL AND JUNCTION BOXES

A. Boxes shall be galvanized sheet metal conforming to ANSI/NEMA OS 1 with screw-on cover and welded seams, stainless steel nuts, bolts, screws and washers.

B. Boxes larger than 12 inches in any dimension shall be panelboard code gauze galvanized steel with hinged cover.

C. Boxes shall be sized in accordance with NEC.

D. Provide cast-in-place, pre-cast concrete or die-molded fiberglass handholes/pull boxes as per design for underground installations. Cast-in-place and pre-cast boxes shall be provided with reinforcing bars with material compressive strength no less than 11,000 psi, and shall be approved by Owner/Structural Engineer.

PART 3 – EXECUTION

3.1 INSTALLATION - CONDUIT

A. Install products as indicated, in accordance with the applicable requirements of NEC, NEMA and the National Electrical Contractors Association's "Standard of Installation".

B. Cut conduit square using a saw or pipe cutter. De-burr cut ends. Joints in steel conduit must be painted with T&B Kopr shield and drawn up tight. Threads for rigid metal conduit and IMC shall be deep and clean. Running threads shall not be used. Wipe plastic conduit clean and dry before joining. Apply full, even coat of cement with brush to entire area that will be inserted into fitting. Let joint cure for 20 minutes minimum. Spray type of cement is not acceptable. Install raceway and conduit system from point of origin in outlets shown, complete with support assemblies including all necessary hangers, beam clamps, hanger rods, turnbuckles, bracing, rolls, clips angles, through bolts, brackets, saddles, nuts, bolts, washers, offsets, pull boxes, junction boxes and fittings to ensure a complete functional raceway system. Where vertical drops of conduit are made to equipment in open space, the vertical conduit shall be rigidly supported from racks supported on the floor.

C. Install rigid wall hot-dipped galvanized steel conduit or hot-dipped galvanized intermediate metal conduit for service entrance; feeders; wall or floor penetrations; mechanical rooms electrical rooms and exposed locations where there is a high potential subject to physical damage; exposed outdoor locations; damp locations or any location as per design drawing. The following exceptions permitted:

1. EMT

a. In sizes up to and including 1-1/2 inch, may be used inside dry locations where not subject to mechanical damage. EMT may be used in air-conditioned spaces, such as accessible ceilings, dry wall partitions and exposed where 6 feet above the floor. EMT may not be used outside, in concrete, underground, in under floor spaces, in

masonry walls, in locations likely to be damp, in electrical rooms subject to mechanical damage due to future installation, or exposed within 6 feet of the floor. EMT shall not be used for medium voltage circuits.

b. Where used for feeder circuits receptacle branch circuits and motor branch circuits EMT shall also contain a NEC grounding conductor.

c. All conduits shall be concealed in walls or ceilings unless otherwise noted.

2. PVC (underground use only; below finished grade)

a. Install PVC schedule 40 conduit where direct buried in earth.

D. Install conduits parallel and supported on Unistrut, or equal, trapezes and anchored with split ring hangers, conduit straps or other devices specifically designed for the purpose. No raceways or boxes shall be supported using wire. Arrange conduit to maintain headroom and present a neat appearance. Conduit routes shall follow the contour of the surface it is routed on. Route exposed conduit and tray above accessible ceilings parallel and perpendicular to walls and adjacent piping. Maintain 12-inch clearance between conduit and heat sources, such as flues, steam pipes, and heating appliances. Wire ties or "wrap lock" are not permitted to support or secure conduit system. Fasten conduit with the following material:

1. Wood screws on wood
2. Toggle bolts on hollow masonry
3. Bolts and expansion anchors in concrete or brick
4. Machine screws, threaded rods and clamps on steel
5. Conduit clips on steel joists.
6. 4 inch x 4 inch penta-treated pine installed in pitch pans on roof, spaced at intervals not to exceed 5 feet.

E. Install conduits outside of building lines at a minimum depth of 30 inches below finished grade. Maintain twelve inches earth or two inches concrete separation between electrical conduits and other services or utilities underground. Encase all plastic service entrance conduits with concrete unless otherwise specifically detailed or noted on the drawings.

F. Install underground conduits with sealing glands equal to OZ Type FSK exterior to the conduit and OZ type CSB, or equal internally at the point where conduits enter the building to prevent water seepage into the building.

G. Fittings shall be approved for grounding purposes or shall be jumpered with a copper grounding conductors of appropriate ampacity. Leave termination of such jumpers exposed.

H. Install expansion fittings in metal and PVC conduit as follows:

1. Conduit Crossing Building Expansion Joints:

a. EMT all sizes

b. IMC all sizes

c. RMC all sizes

d. PVC all sizes

2. Conduits entering environmental rooms and other locations subject to thermal expansion and as required by NEC.

3. Unless expansion fitting has an integral bonding braid, as in Crouse-Hinds Type XC, a green insulated grounding conductor shall be pulled in the conduit. Both ends of this green grounding conductors shall be accessible for inspection.

I. Install conduit concealed in walls, partitions and above ceilings. Install conduit exposed in ceiling area (at structure) of boiler rooms, mechanical rooms and in other similar rooms where ceilings are not called for. Install conduit concealed in slab when finished areas below do not have ceiling. A written approval shall be obtained from Owner/Structural Engineer prior to construction.

J. Avoid moisture traps where possible; where unavoidable, provide junction box with drain fitting at conduit low point.

K. Use suitable conduit caps to protect installed conduit against entrance of dirt and moisture if cable or wire are not installed immediate after conduit run. Tape covering conduit ends is not acceptable.

L. Provide 200 lb. nylon cord full length in empty conduit.

M. Where conduit penetrates fire-rated walls and floors, provide pipe sleeve two sizes larger than conduit; pack void around conduit with oakum and fill ends of sleeve with fire-resistive compound or provide mechanical fire-stop fittings with UL listed fire-rating or seal opening around conduit with UL listed foamed silicone elastomer compound equal to fire-rating of floor or wall.

N. Install no more than the equivalent of three 90-degree bends between boxes. Where four 90 degree bends are required, prior approval by the Engineer is required. Use conduit bodies to make sharp changes in direction, as around beams. Conduit bodies shall be readily accessible and sized for the cables installed. Running or rolling offsets are not approved. Use factory long radius elbows for bends in conduit larger than 2-inch size. All parallel bends shall be concentric.

O. Pull string shall be provided full length in conduit designated for future use.

P. All conduit buried in earth, under buildings, in or under concrete or installed in damp or wet locations shall be galvanized rigid steel conduit wrapped with plastic tape to provide a 50% overlap. Rigid plastic conduit PVC schedule 40, sunlight resistant, may only be used underground where allowed by the local code. All exposed and above grade conduit shall be rigid galvanized steel or EMT. Burial depth for all underground conduits shall be 30” minimum regardless of cover material over conduits.

3.2 WALL AND FLOOR PENETRATIONS:

A. Core drilling shall be approved in writing by the Structural Engineer prior to execution. Avoid anchor bolt on structural column by installing “column hugging” type of unistrut support for electrical installation. PVC shall not be used for wall and floor penetration.

END OF SECTION 26 05 33

SECTION 26 05 53 – ELECTRICAL IDENTIFICATION

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Nameplates and tape labels

B. Wire and cable markers

C. Conduit color coding and labeling

1.2 REFERENCES

A. NFPA 70 – National Electrical Code (latest edition)

1.3 SUBMITTALS

A. Provide submittals in accordance with and in additional to Section 26 00 00, Basic Electrical Requirements, and Division 01for submittal requirement.

1. Furnish nameplate identification schedules listing equipment type and nameplate data with letter sizes and nameplate material.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Equipment Nameplates:

1. For normal power electrical equipment, provide engraved three-layer laminated plastic nameplates, engraved white letters on a black background.

2. For CCTV system panels, provide engraved three-layer laminated plastic nameplates with white letters on a blue background.

B. Underground Warning Tape

1. Manufactured polyethylene material and unaffected by acids and alkalines.

2. 3.5 mils thick and 6 inches wide.

3. Tensile strength of 1,750 psi lengthwise.

4. Printing on tape shall include an identification note BURIED ELECTRIC LINE, and a caution note CAUTION. Repeat identification and caution notes over full length of tape. Provide with black letters on a red background.

C. Conductor Color Tape and Heat Shrink:

1. Colored vinyl electrical tape shall be applied perpendicular to the long dimension of the cable or conductor.

2. In applications utilizing tray cable, heat shrinkable tubing shall be used to obtain the proper color coding for the length of the conductor in the cabinet or enclosure.

Variations to the cable color coding due to standard types of wire or cables are not acceptable.

D. Warning labels: Provide warning labels with black lettering on red background with a minimum of 1/2" lettering.

E. Tape Labels: Embossed adhesive tape, with minimum 1/4-inch letters for labeling receptacles, switches, control device stations, junction and pull boxes and manual motor starter units, etc.

1. White letters on black background for normal power.
2. White letters on red background for emergency/standby power.
3. White letters on orange background for UPS power.

F. J-Box and Cover plate Voltage Labels: Black stenciled letters 1/4" high. Adhesive back tapes may be used if a clear tape is applied over the label for protection.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Degrease and clean surfaces to receive nameplates or tape labels.

B. Install nameplates parallel to equipment lines.

C. Secure plastic nameplates to equipment fronts using screws or rivets. Use of adhesives shall be per Owner’s approval. Secure nameplate to outside face of flush mounted panelboard doors in finished locations.

3.2 WIRE IDENTIFICATION

A. Provide wire markers on each conductor in panelboard gutters, pull boxes, outlet and junction boxes, and at load connection. Identify with branch circuit or feeder number for power and lighting circuits. Label control wire with number as indicated on schematic and interconnection diagrams or equipment manufacturer's shop drawings for control wiring.

B. Conductors for power circuits to be identified per the following schedule.

	System Voltage
Conductor	208/120V
Phase A	Black
Phase B	Red
Phase C	Blue
Neutral	White
Grounding	Green
IG	Green w/Yellow

3.3 NAMEPLATE ENGRAVING SCHEDULE

A. Provide nameplates of minimum letter height as scheduled below. Nameplates shall be same as equipment names indicated on the Drawings.

B. Individual Circuit Breakers in Distribution Panelboards, Disconnect Switches, Motor Starters, and Contactors: 1/4-inch; identify source to device and the load it serves, including location.

C. Panelboards: 3/8-inch; identify equipment designation. 1/4 -inch; identify source, voltage and bus rating.

END OF SECTION 26 05 53

SECTION 26 24 16 - PANELBOARDS

PART 1 – GENERAL

1.1 WORK INCLUDED

A. Branch circuit panelboards.

1.2 REFERENCES

A. NEMA AB 1 - Molded Case Circuit Breakers and Molded Case Switches.

B. NAME KS 1 - Enclosed and Miscellaneous Distribution Equipment Switches (600 Volts Maximum).

C. NEMA PB 1 - Panelboards.

D. NEMA PB 1.1 - Instructions for Safe Installation, Operation and Maintenance of Panelboards Rated 600 Volts or Less.

E. NEMA PB 1.2 - Application Guide for Ground-fault Protective Devices for Equipment.

F. NEMA AB 3 – Molded Case Breakers and Their Application

G. ANSI/UL 67 – Electric Panelboards

H. ANSI/UL 50 – Cabinets and Boxes

I. ANSI/UL 508 – Industrial Control Equipment

1.3 SUBMITTALS

A. Provide submittals in accordance with and in additional to Section 26 00 00, Basic Electrical Requirements, and Division 01for submittal requirement.

B. Submit dimensioned drawings showing size, circuit breaker arrangement and equipment ratings including, but not limited to, voltage, main bus ampacity, integrated short circuit ampere rating, and temperature rating of circuit breaker terminations.

1.4 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver distribution panelboards in factory-fabricated water-resistant wrapping.

B. Handle panelboards carefully to avoid damage to material component, enclosure and finish.

C. Store in a clean, dry space and protected from the weather and elements.

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Square D Company

B. General Electric Company

C. Eaton

D. Other manufacturers equal in design and function will be considered upon A/E approval following substitution procedure in 26 00 00, and Division 01 for substitution requirement.

2.2 PANELBOARD CONSTRUCTION

A. General: Provide flush or surface mounted, or surface mounted deadfront circuit breaker type distribution or branch circuit panelboards with electrical ratings and configurations, as indicated on the drawings and schedules. Load center type panelboards are not acceptable.

B. Enclosure:

1. Enclosure shall be proper NEMA type as shown on the drawings.

2. NEMA 1

a. Back box shall be galvanized steel for flush mounted branch circuit panelboards. Back box shall have gray enamel electro-deposited finish over cleaned phoshatized steel for all other type panelbaords.

b. Provide panelboard fronts as scheduled with flush lock.

c. Where power monitors or metering are specified on the Drawings, the manufacturer shall cut the doors for field mounting of the unit.

3. Construct cabinet in accordance with UL 50. Use not less than 16-guage galvanized sheet steel, with all cut edge galvanized. Provide a minimum 4-inch gutter wiring space on each side. Provide large gutter where required to accommodate the size and quantity of conductors to be terminated in the panel, and where required by code.

4. Exterior and interior steel surfaces shall be cleaned and finished with gray enamel over rust inhibiting phosphatized coating. Color shall be ANSI 61 gray.

5. Doors shall be equipped with flush-type combination catch and key lock. All locks shall be keyed alike.

6. Branch circuit panelboards shall be 5 ¾ inches deep.

7. A directory holder with heavy plastic plate, metal frame, and index card shall be mounted inside of each door.

8. Reinforce enclosure and securely support bus bars and overcurrent devices to prevent vibration and breakage in handling.

9. Rating: Minimum integrated short-circuit rating, voltage and current rating as shown on drawings.

10. Labeling: The Contractor shall furnish and install engraved, laminated plastic nameplates on the trim per Section 26 05 53, Electrical Identification

C Bus:

1. Provide panelboards with rounded edge phase, neutral and ground buses, rated full capacity as scheduled on drawings. Buses shall be full-length copper and braced for the maximum available fault current as shown on drawings. Neutral bus shall be 200% rated for those panels feeding non-linear loads.

2. Phase bussing shall be stacked front-to-back, A-B-C.

3. The neutral and ground bus bars shall have termination locations for each of the individual feeders and the lugs sized appropriately. In addition, space shall be provided to terminate the neutrals and grounds in two feeders equal to the largest size circuit breaker that can be installed in the panelboard. The ground bus shall be mounted in the panelboard, opposite the incoming line and neutral lugs and shall be accessible to allow easy installation of bolts, nuts and lock washers used to attach ground lugs. The neutral and ground buses in branch circuit panelboards shall have spaces to terminate 42 neutral and 42 ground wires.

4. All lugs for phase, neutral, and ground buses shall be tin-plated copper.

D. Panelboards shall consist of an interior and an enclosure to form a complete assembly. This assembly shall be the product of a single manufacturer regularly engaged in the manufacture of such assemblies. The interior and enclosure shall each be U.L. listed. The assembly shall be U.L. recognized and shall have a corresponding U.L. File Number. Interiors and enclosures purchased separately by the contractor and assembled by the contractor shall not be acceptable. File numbers for each panelboard shall be provided to the Owner if requested to prove compliance. Panelboards shall be manufactured in accordance with NEMA standards.

2.3 SWITCHING AND OVERCURRENT PROTECTIVE DEVICES

A. Provide molded case circuit breakers with manufacturer’s standard construction, bolt on type, with integral inverse time delay thermal and instantaneous magnetic trip in each pole. Circuit breakers shall be constructed using glass reinforced polyester insulating material providing superior dielectric strength. Provide circuit breakers UL listed as Type HACR for air-conditioning equipment branch circuits.

B. Circuit breakers shall have an over center, trip-free, toggle operating mechanism that will provide a quick-make, quick-break contact action.

C. Provide handle padlock attachments on circuit breakers where indicated on drawings. Device shall be capable of accepting a single padlock. All circuit breakers shall be capable of being individually padlocked in the off position.

D. The circuit breakers shall be connected to the bus by means of solidly bolted connection. In multi-pole breakers, the phase connections on the bussing shall be made simultaneously without additional connectors or jumpers. Multi-pole breakers shall be two or three pole as specified. Handle ties are not permitted. The circuit breaker shall have common tripping for all poles.

E. All circuit breakers shall be provided with visible ON and OFF indications.

F. Provide GFI circuit breakers as indicated on drawing or per NEC requirement.

G. Breaker voltage and trip rating shall be per drawings. Breaker faceplate shall indicate UL certificate standards with applicable voltage systems and corresponding short current rating as per drawings.

H. Molded Case Circuit Breakers:

1. Breakers 400 ampere frame and less shall be manufacturer's standard industrial construction, bolt-on type, integral inverse time delay thermal and instantaneous

magnetic trip. Breakers 225 ampere through 400 ampere shall have continuously adjustable magnetic pick-ups of approximately five to ten times trip rating.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Install panelboards in accordance with manufacturer's written instructions and the applicable requirements of the NEC, NEMA, ANSI and the National Electrical Contractors Association's "Standard of Installation".

B. Anchor enclosed firmly to walls and structural surfaces, ensuring that they are permanently and mechanically secured. Direct attachment to dry wall is not permitted. Freestanding panelboards shall be installed on a concrete housekeeping pad with anchors per manufacturer’s recommendation.

C. Mounting height:

1. Branch Circuit Panelboards: As per Drawings, but such that highest operating handle is no greater than 79 inches above finished floor.

2. Where panelboards occur in groups, the tops shall be aligned if it can be done without exceeding items 1 and 2 above.

D. Install panelboards plumb. Adjust trim to cover all openings. Seal all conduit openings and cap all used knockout holes.

E. Provide blank plates for unused open spaces in panelboards. Keep the front door closed after work to protect from damage, dirt, and debris at all times.

F. Install identification nameplates in accordance with Section 26 05 53, Electrical Identification.

3.2 FIELD QUALITY CONTROL

A. Visual and Mechanical Inspection: Inspect for physical damage, proper alignment, anchorage, and grounding. Check proper installation and tightness of connections for circuit breakers and lugs.

B. Provide testing and start-up as indicated in Section 26 08 00 – Commissioning of Electrical Systems.

3.3 PANELBOARD SCHEDULE

A. The Contractor shall provide engraved, laminated plastic nameplates for circuit identification as indicated on the Drawings for distribution panelboards.

B. The Contractor shall fill the index directory inside the front door of branch circuit panelboards identifying each circuit as shown on Panel Schedule drawings. Where changes are made, the schedule shall reflect the changes. At the end of the job, these schedules shall reflect as-built record conditions.

C. Branch breakers shall be arranged as scheduled on the plans so that these plans can serve as "AS-BUILT" drawings of record. Each and every circuit shall be connected to panelboards as shown and as scheduled on the Panel Schedules. Install typewritten Circuit Index in each panelboard indicating loads being served by each branch breaker and location of loads.

END OF SECTION 26 24 16

SECTION 26 51 00 – EXTERIOR LIGHTING

PART 1 – GENERAL

1.1 WORK INCLUDED

A. Exterior lighting fixtures and accessories

B. Site lighting poles

C. Lighting controls

1.2 REFERENCES

A. NEMA LE - H-I-D Lighting System Noise Criterion (LS-NC) Ratings

B. IESNA – Lighting Handbook

C. NEMA WD 1 - General Color Requirements for Wiring devices

D. NFPA 70 – National Electrical Code

1.3 DESIGN CRITERIA

A. Lighting level design shall be per IESNA (Illuminating Engineering Society of North America) recommendation.

B. The power consumption for interior and exterior lighting shall not exceed power allowance as per ASHRAE 90.1 latest revision.

1.4 SUBMITTALS

A. Provide submittals in accordance with and in additional to Section 26 00 00, Basic Electrical Requirements, and Division 1 for submittal requirement.

B. Submit manufacturer's data on interior and exterior lighting fixtures in booklet form, with separate sheet for each fixture, assembled by luminaire "type" in alphabetical order, with the proposed fixture and accessories clearly labeled.

C. Submit dimensioned drawings and performance data including complete photometric test data for each luminaire, candlepower distribution curves in two or more planes, candlepower chart zero to 90 degrees, lumen output zonal summary chart, average and maximum brightness data, and coefficients of utilization for zonal cavity calculations, , spacing to mounting height ration, efficiency and visual comfort probability. Also provide luminaire weights, mounting data, and accessory information for each luminaries type.

D. Lamps: Catalog cuts showing voltages, colors, approximate hours life, approximate initial lumens, lumen maintenance curve, lamp type and base.

E. Site lighting pole data and catalog cuts, including wind loading, complete dimensions and finish.

F. Shop drawings for site lighting luminaries showing pertinent physical characteristics, including fastening details, ballast type and location.

G. Controls: Catalog cuts and/or shop drawings showing dimensions, voltage capacity, contact ratings, wiring diagrams, operating levels, and temperature ratings.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver lighting fixtures individually wrapped in factory-fabricated fiberboard type containers.

B. Handle lighting fixtures carefully to prevent breakage, denting and scoring the fixture finish. Do not install damaged lighting fixtures.

C. Store lighting fixtures in a clean, dry space and protected from the weather and elements.

PART 2 – PRODUCTS

2.1 GENERAL

A. Lighting fixtures and accessories shall comply with the design and function requirements of the project. Design characteristics shall be as noted in manufacturer's submittal data.

B. Provide lighting fixtures of the size, type and rating as scheduled, complete with, but not limited to, reflectors, poles and wiring.

2.2 EXTERIOR LIGHTING FIXTURES

A. Enclosures shall be complete with gaskets to form weatherproof seal and UL approved for wet locations.

B. Provide low temperature drivers with reliable starting to 0 degrees F.

2.3 LIGHTING POLES

A. Lighting poles shall be metal, type and finish as specified Schedules as shown on the drawings.

B. Site lighting poles shall meet wind load rating requirements per local building code.

C. Pole foundation shall be design by A/E. Refer to pole base details as shown on the drawings for specific pole base requirements.

D. The entire pole assembly shall be designed to withstand a steady wind load rating requirements per local building code and a gust factor of 1.3 without permanent deflection.

E. Anchor bolts shall be fabricated from commercial quality hot rolled carbon steel bar with guaranteed minimum yield strength of 55,000 psi. Bolts shall have an "L" bend on one end and be galvanized a minimum of 12" on the tread end. Furnish four bolts and bolt setting template with each set of anchor bolts. Furnish one hex nut, 2 hardened steel washers, and one hex nut with a stainless steel locking pin with each bolt. Furnish two leveling shims with each anchor bolt set.

F. Standard finish for pole and accessories shall be a factory applied polyester thermosetting powder coating electro-statically applied to the surface of the substrate to a minimum thickness of 3 mil. Color as specified.

G. Provide and install pole base covers on all poles. Each pole to have internal grounding lug and ground rod.

2.4 LIGHTING CONTROL

B. Photocell shall be automatic dawn on, dusk off switching; moisture, temperature, and vibration-resistant die-cast aluminum housing; time delay feature to prevent false switching; field adjustable to control operating levels.

PART 3 – EXECUTION

3.1 INSPECTION

A. Prior to ordering lighting fixtures, check the building electrical system requirements. Any discrepancies of compatibility pertaining trim, frames, color, mounting, voltage and etc. shall be brought to the attention of A/E by written notice. Do not proceed with procurement until discrepancies are resolved in a satisfactory manner.

B. Installer shall examine the areas and conditions that light fixtures are to be installed and notify the Contractor in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF LIGHTING FIXTURES

A. Install light fixtures in accordance with the manufacturer's written instructions, the applicable requirements of NEC and national and local code, standard, and regulations. Install in accordance with manufacturer's instructions.

B. Install luminaries at locations as shown on the Drawings; install aligned, aimed, and leveled. Install fixtures in accordance with manufacturer's installation instructions complete with mounting accessories, trim and support materials.

C. Pole Mount Lighting

1. Provide in-line fusing at hand-hole for all pole-mounted luminaries.
2. Construct base of concrete with dimension and depth as noted on the drawings.
3. Install anchor bolts with minimum projection above top of bases, as specified by pole manufacturer. Ground as indicated on drawings.
4. Mount standards on bases plumb and true utilizing shims as necessary. Grout thoroughly between base-plate and foundation.
5. Touch up chips and scratches on poles (to match new finish) upon completion.

D. Lighting Fixtures Adjustment

1. Adjust to illuminate intended areas as directed.
2. Adjust exterior fixtures during hours of darkness.

E. Immediately before final observation, clean all fixtures, inside and out, including plastics and glassware, and adjust all trim to properly fit adjacent surface, replace broken or damaged parts, and lamp and test all fixtures for electrical as well as mechanical operation.

F. Protect installed fixtures from damage during the remainder of the construction period.

G. Upon completion of installation of lighting fixtures, and after circuitry has been energized, apply electrical energy to demonstrate capability and compliance with requirements. When possible, correct malfunctioning units at the site, then retest to demonstrate compliance; otherwise, remove and replace with new units, and proceed with retesting.

END OF SECTION 26 51 00

SECTION 311100 – SITE CLEARING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Protecting existing vegetation to remain.
2. Protecting existing structures
3. Coordinate all clearing with other disciplines involved.
4. Stripping and stockpiling topsoil.
5. Removing above- and below-grade site improvements.
6. Disconnecting, capping or sealing site utilities.
7. Temporary erosion- and sedimentation-control measures.

1.2 MATERIAL OWNERSHIP

A. Except for stripped topsoil and other materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.3 PROJECT CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

B. Salvable Improvements: Carefully remove items indicated to be salvaged and store where indicated by Owner.

C. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.

D. Do not commence site clearing operations until temporary erosion- and sedimentation-control and plant-protection measures are in place.

E. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Foot traffic.
4. Erection of sheds or structures.
5. Impoundment of water.

6. Excavation or other digging unless otherwise indicated.
7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Division 31 Section "Site Earthwork."

1. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction.

B. Locate and clearly identify trees, shrubs, and other vegetation to remain or to be relocated.

C. Protect existing site improvements to remain from damage during construction.

1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

A. Provide temporary erosion- and sedimentation-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings and requirements of authorities having jurisdiction.

B. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

C. Inspect, maintain, and repair erosion- and sedimentation-control measures during construction until permanent vegetation has been established.

D. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.3 TREE AND PLANT PROTECTION

A. General: Protect trees and plants remaining on-site.

B. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Owner.

3.4 EXISTING UTILITIES

A. Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place.

1. Arrange with utility companies to shut off indicated utilities.

B. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Owner not less than two days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Owner’s written permission.

3.5 CLEARING AND GRUBBING

A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.

1. Grind down stumps and remove roots, obstructions, and debris to a depth of 18 inches below exposed subgrade.
2. Use only hand methods for grubbing within protection zones.

B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.
1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches and compact each layer to a density equal to adjacent original ground.

3.6 SITE IMPROVEMENTS

A. Remove existing above- and below-grade improvements as indicated and necessary to facilitate new construction.

3.7 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property and haul off to a site approved by the City of El Paso’s inspection department.
B. Separate recyclable materials produced during site clearing from other non-recyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities. Do not interfere with other Project work.

END OF SECTION 311100

SECTION 312300 – SITE EARTHWORK

PART I - GENERAL

1.1 DESCRIPTION OF WORK

A. The extent of work consists of furnishing all plant, equipment, labor and materials required for the general site excavation, preparation of excavated subgrade, procurement, placement and compaction of fill material and site finish grading.

B. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

C. Use equipment adequate in size, capacity, and numbers to accomplish the work of this section in a timely manner.

1.2 GOVERNING STANDARDS

A. American Society for Testing Materials (ASTM):
Sampling Stone, Slag, Gravel, Sand and Stone Block for Use as Highway Materials (ASTM D 75)

1. Grain-size Analysis of Soils (ASTM D 422)
2. Test for Liquid Limit of Soils (ASTM D 423)
3. Test for Plastic Limit and Plasticity Index of Soils, (ASTM D 424)
4. Test for Shrinkage Facts of Soils (ASTM D 427)
5. Test for Moisture Density Relations of Soil Using 10 lbs. Hammer 18" drop (ASTM D 1557)
6. Test for Density of Soil in Place by the Sand Cone Method (ASTM D 1556)
7. Test for Density of Soil in Place by the Rubber Balloon Method ASTM D 2167)
8. Test for Density of Soil and Soil Aggregate in Place by Nuclear Methods, (ASTM D2922) Latest edition of each of the above Governing Standards shall apply.

1.3 SUBMITTALS

A. Soil test results of proposed fill material shall be submitted to the Owner or designated representative for approval before any filling is begun.

1.4 COORDINATION OF WORK

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

B. All work performed under this section of the Specification shall be coordinated with all other trades or work that are affected to ensure that all requirements of the Contract Documents are complied with.

C. During placement and compaction of fill, coordinate and cooperate with the Soils Engineer and soils testing laboratory.

D. No filling shall be installed until the Owner or designated representative has reviewed the scarified and compacted existing surface.

PART 2 - PRODUCTS

2.1 FILL AND BACKFILL SOIL

A. Provide soil materials free from organic matter and deleterious substances, containing no rocks or lumps over 6 inches in a greatest dimension, and with not more than 15% of the rocks or lumps larger than 2-3/8 inches in their greatest dimension.

B. Fill material removed from excavations or imported from off-site borrow areas, predominantly granular, non-expansive soils free from roots and other deleterious matter is subject to the approval Owner or designated representative.

C. Imported fill material as required shall be taken from any source provided that it complies with the above fill material requirements. Approval of the material is required before it is used and will be based on tests of representative samples from the source. Sampling shall be done in accordance with ASTM D 75.

D. All fill material shall be free of any organic or other deleterious substances such as brush, roots, sod, etc.

E. Do not permit rocks having a dimension greater than 1 inch in the upper 12 inch of fill or embankment

2.2 TOPSOIL

A. Where and if shown on the Drawings or otherwise required, provide topsoil consisting of friable, fertile soil of loamy character, containing an amount of organic matter normal to the region, capable of sustaining healthy plant life, and reasonably free from subsoil, roots, heavy or stiff clay, stones larger than 2 inches in greatest dimension, weeds, sticks, brush, litter, and other deleterious matter.

PART 3 - EXECUTION

3.1 GENERAL SITE PREPARATION

A. Unless shown to be removed, protect active utility lines shown on the Drawings or otherwise made known to the Contractor prior to excavating. If damaged, repair or replace at no additional cost to the Owner.

B. If active utility lines are encountered and are not shown on the Drawings or otherwise made known to the Contractor, promptly take necessary steps to assure that service is not interrupted.

C. If service is interrupted as a result of work under this Section, immediately restore service by repairing the damaged utility at no additional cost to the Owner.

D. If existing utilities are found to interfere with the permanent facilities being constructed under this Section, immediately notify the Owner or designated representative and secure his instructions.

E. Do not proceed with permanent relocation of utilities until instructions are received from the Owner or designated representative.

F. Remove all water, including rain water, encountered during trench and sub-structure work to an approved location.

G. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, washout, and other hazards created by operations under this Section.

H. Barricade open holes and depressions occurring as part of the work, and post warning lights on property adjacent to or with public access.

I. Operate warning lights during hours from dusk to dawn each day and as otherwise required.

J. Use means necessary to prevent dust becoming a nuisance to the public, to neighbors, and to other work being performed on or near the site.

K. Maintain access to adjacent site construction areas at all times.

L. Areas to receive fill shall be cleaned of all debris, vegetation, and organic matter.

M. The exposed surface resulting from the general site preparation will be inspected by the owner or designated representative before construction is begun. Additional excavation and/or preparation may be required as directed by owner or designated representative.

3.2 PREPARATION OF AREA TO BE FILLED

A. After acceptance by the Owner or designated representative of all the surfaces to receive fill, they shall be scarified to a depth of 6" and compacted to the same density as the compacted fill.

B. No debris shall be left within the area to be filled. All soils loosened or weakened by clearing shall be over excavated and removed.
   1. When existing ground surface has a density less than that specified under “compacting” for the particular area, break up the ground surface, pulverize, moisture-condition to the optimum moisture content, and compact to required depth and percentage of maximum density.

C. Plow, strip, or break up sloped surfaces steeper than one vertical to four horizontal so that fill material will bond with existing surface.

D. Obtain material required for fill or embankment in excess of that produced within the grading limits of the Work from borrow areas selected and paid for by the Contractor and approved by the Owner or designated representative.

3.3 PLACING OF FILL MATERIAL

A. Fill material shall be spread in layers not to exceed eight (8) inches after compaction in depth on the previously prepared exposed surface.

B. Fill material that does not contain sufficient moisture to compact properly shall be sprinkled and material that contains excess moisture shall be allowed to dry to a water content that will permit compaction.

C. Do not place backfill or fill material on surfaces that are muddy, frozen, or ice.

D. Place backfill and fill materials evenly adjacent to structures, to required elevations.

E. Take care to prevent wedging action of backfill against structures by carrying the material uniformly around the structure to approximately the same elevation in each lift.

F. Where the construction includes basement or other underground walls having structural floors over them, do not backfill such walls until the structural floors are in place and have attained sufficient strength to support the walls.

G. Backfill excavations as promptly as progress of the Work permits, but not until completion of the following.

1. Acceptance of construction below finish grade including, where applicable, damp-proofing and waterproofing.

2. Inspecting, testing, approving, and recording locations of underground utilities.

3. Removing concrete form-work.

4. Removing shoring and bracing, and backfilling of voids with satisfactory materials.

5. Removing trash and debris.

6. Placement of horizontal bracing on horizontally supported walls.

3.4 COMPACTION OF FILL MATERIAL

A. Compaction of fill material shall be done with approved types of power, pneumatic, or tamping rollers. Compaction by earth moving equipment, vibratory compaction water settling, or jetting will not be acceptable.

B. Each layer of fill in the "building area" shall be compacted to a relative compaction which is no less than 95% of the maximum density determined for the fill material by ASTM D 1557. The upper 2'-0" of fill in nonstructural areas of the site shall also be compacted to not less than 95% of maximum density

C. Determination of in-place density in the field shall be in accordance with the requirements of ASTM D 1556 or ASTM D 2167 or by Nuclear Methods (ASTM D 2922). Moisture content in the field shall be within ± 3% as per Geotechnical Engineer’s recommendations.

D. Where subgrade or layer of soil material must be moisture-conditioned before compacting, uniformly apply water to surface of subgrade or layer of soil material to prevent free water appearing on surface during or subsequent to compacting operations.

E. Remove and replace, or scarify and air dry, soil material that is too wet to permit compacting to the specified density.

F. Soil material that has been removed because it is too wet to permit compacting may be stockpiled or spread and allowed to dry. Assist drying by disking, harrowing, or pulverizing until moisture content is reduced to a satisfactory value as determined by moisture-density relation tests approved by the Owner or designated representative.

G. Fill material outside the "building area" and below the upper 2'-0" shall be compacted to 90% of the maximum density determined for the fill material ASTM D 1556 or ASTM D 2167 or by Nuclear Methods (ASTM 2922).

3.5 CONTROL AND TESTS

A. Control of the fill shall consist of field inspection and testing at the direction of the Owner or designated representative to determine that all existing undesirable material is removed and that each layer of new fill has been compacted to the required density and to assure that the proper moisture is being obtained.

B. Field density tests and corresponding moisture content determination shall be made for each layer of compacted fill. If any areas of doubtful compaction appear, additional tests may be required. Provide at least the following tests to the approval of the Owner or designated representative:

C. In each compacted fill layer, one field density test for every 2,000 square feet but not less than two tests.

D. Any layer or portion of a layer that does not attain the compaction required shall be scarified and re- compacted until the required density is obtained at no additional expense to the Owner, including costs of additional testing.

E. Secure the Owner or designated representative's inspection and approval of subgrade and fill layers before subsequent construction is permitted thereon.

3.6 TESTING LABORATORY

A. All field inspection, testing and reporting shall be done by a Soils Engineer together with an independent testing laboratory, both selected and paid for by the Owner. All re-testing costs shall be paid by the Contractor.

3.7 SITE GRADING

A. Uniformly grade the areas within limits of grading under this Section, including adjacent transition areas.

B. Smooth the finished surfaces within specified tolerance.

C. Shape the surface of areas scheduled to be under walks to line, grade, and cross-section, with finished surface not more than 0.10 feet above or below the required subgrade elevation.

D. Shape the surface of areas scheduled to be under pavement to line, grade, and cross-section, with finished surface not more than 0.05 feet above or below the required subgrade elevation.

E. Grade areas adjacent to buildings to achieve drainage away from the structures, and to prevent

ponding.

F. All other areas shall be finish graded to elevations shown on the Contract Drawings. Finish the surfaces to be free from irregular surface changes.

G. In general, all other areas which do not require grading shall be disturbed as little as possible and new graded areas shall be graded to match the existing contours with smooth uniform transitions.

3.8 EXCAVATING

A. Perform excavating of every type of material encountered with the limits of the Work to the lines, grades, and elevations indicated and specified herein.

B. Satisfactory excavated materials may be transported to, and placed in, fill or embankment areas within the limits of the Work.

C. Excavate unsatisfactory material to a distance below grade as directed by the Engineer or designated representative and replace with satisfactory materials. Include excavation of unsatisfactory materials, and replacement by satisfactory materials, parts of the work of this Section.

D. Where rocks, boulders, granite, or similar material is encountered, and where such material cannot be removed or excavated by conventional earth moving or ripping equipment, take required steps to proceed with the general grading operations of the work, and remove or excavate such material by means which will neither cause additional cost to the Owner nor endanger buildings or structures whether on or off the site.

E. Do not use explosives without written permission from the Owner or designated representative.

F. Excavate and backfill in a manner and sequence that will provide proper drainage at all times.

G. Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific instruction from the Owner or designated representative.

H. Under footings, foundations, or retaining walls: Fill unauthorized excavations by extending the indicated bottom elevation of the footing or base to the excavation bottom, without altering the required top elevation.

I. When acceptable to the Owner or designated representative, lean concrete fill may be used to bring the bottom elevation to proper position.

J. Elsewhere, backfill and compact unauthorized excavations as specified for authorized excavations, unless otherwise directed by the Owner or designated representative.

K. Slope sides of excavations to 2:1 or flatter, unless otherwise directed by the Owner or designated sensitive. Shore and brace where sloping is not possible because of space restrictions or stability of the materials being excavated.

1. On adverse weather, scarify the surface, reshape, and compact to the required density prior to further construction.

L. Provide materials for shoring and bracing as may be necessary for safety of personnel, protection

of work, and compliance with requirements of governmental agencies having jurisdiction. Maintain sides and slopes of excavations in a safe condition until completion of backfilling.

M. The Contractor shall control the grading around the excavated areas to the extent that the ground shall be sloped away from the several excavations to prevent water from running into them.

N. Protect excavation bottoms against freezing when atmospheric temperature is less than 35°F.

1. DISPOSAL OF REMOVED MATERIALS

a. All surface organic materials, lumber, rubbish, etc., classified as waste found on the site shall be disposed of outside the project site, at legal locations, approved by the Owner or designated representative.

3.9 DISPOSAL OF EXCESS EXCAVATED MATERIAL

A. Excess excavated material, if any, shall be disposed of off the site, at legal approved locations.

3.10 MAINTENANCE

A. Protect newly graded areas from traffic and erosion, and keep free from trash and weeds;

B. Repair and reestablish grades in settled, eroded, and rutted areas to the specified tolerances where completed compacted areas are disturbed by subsequent construction operations.

END OF SECTION 312300

SECTION 312316 - SUBGRADE EXCAVATION, BACKFILL & COMPACTION

PART 1-GENERAL

1.0SECTION INCLUDES

A. This item covers excavation, disposal, placement, and compaction of all materials within the limits of the work required to construct areas for utilities, or other purposes in accordance with these specifications and in conformity to the dimensions and typical sections shown on the plans.

1.1RELATED SECTIONS

A. NOT USED

1.2REFERENCES

A. ASTM D698 - Tests for Moisture Density Relations of Soils and Soil Aggregate Mixtures, using 5.5-pound (2.5 kg) Rammer and 12 inch (304.8 mm) Drop, or as per Geo Technical Report recommendations

B. ASTM D1556 - Test for Density of Soil in Place by the Sand Cone Method.

C. ASTM D1557 - Tests for Moisture Density Relations of Soils and Soil Aggregate Mixtures, using 10-pound (4.5 kg) Rammer and 18 inch (457 mm) Drop, or as per Geo Technical report recommendations

D. ASTM D2922 - Test for Density of Soil and Soil Aggregate in Place by Nuclear Methods (Shallow Depth).

PART 2 - MATERIALS

2.0CLASIFICATION**.**

A. All material excavated shall be classified as defined below:

B. Unclassified Excavation. Unclassified excavation shall consist of the excavation of all material, regardless of its nature, which is not otherwise classified or defined.

C. Rock Excavation. Rock excavation shall include all solid rock in ledges, in bedded deposits, in unstratified masses, and conglomerate deposits which are so firmly cemented they cannot be removed without blasting or using rippers. All boulders containing a volume of more than ½ cubic yard will be classified as "rock excavation".

D. Muck Excavation. Muck excavation shall consist of the removal and disposal of deposits of mixtures of soils and organic matter not suitable for foundation material. Muck shall include materials which will decay or produce subsidence in the subgrade. It may be made up of decaying stumps, roots, logs, humus, or other material not satisfactory for incorporation in the subgrade.

E. Drainage Excavation. Drainage excavation shall consist of all excavation made for the primary purpose of drainage and includes drainage ditches intercepting inlets or outlets; temporary levee

construction; or any other type shown on the plans.

F. Borrow Excavation. Borrow excavation shall consist of approved material required for the construction of subgrade or for other portions of the work in excess of the quantity of usable material available from required excavations. Borrow material shall be obtained from areas withinthe limits of the construction but outside the normal limits of necessary grading, or from areas outside the construction.

G. Unsuitable Excavation. Any material containing vegetable or organic matter, such as muck, peat, organic silt, or sod shall be considered unsuitable for use in subgrade construction. Material when approved by the Engineer or designated representative as suitable to support vegetation, may be used on the subgrade slope.

PART 3 - EXECUTION

3.0GENERAL

A. Before beginning excavation, grading, and subgrade operations in any area, the area shall be completely cleaned.

B. The suitability of material to be placed in subgrade shall be subject to approval by the Engineer or designated representative. All unsuitable material shall be disposed by Contractor in waste areas approved by the Engineer or designated representative. All waste areas shall be graded to allow positive drainage of the area and of adjacent areas. The surface elevation of waste areas shall not extend above the surface elevation of adjacent usable areas of the construction site, unless specified on the plans or approved by the Engineer or designated representative.

C. When the Contractor's excavating operations encounter artifacts of historical or archaeological significance, the operations shall be temporarily discontinued. At the direction of an archeologist, the Contractor shall excavate the site in such a manner as to preserve the artifacts encountered and allow for their removal. Such excavation will be paid for as extra work.

3.1EXCAVATION

A. No excavation shall be started until the work has been staked out by the Contractor and the Engineer or designated representative has obtained elevations and measurements of the ground surface. All suitable excavated material shall be used in the formation of subgrade, or for other purposes shown on the plans.
All unsuitable material shall be disposed by Contractor at sites approved by the Engineer or designated representative.

B. When the volume of the excavation exceeds that required to construct the subgrade to the grades indicated, the excess shall be disposed of at sites selected by the Contractor and approved by the Engineer or designated representative. When the volume of excavation is not sufficient for constructing the fill to the grades indicated, the deficiency shall be obtained from approved borrow areas.

The grade shall be maintained so that the surface is well drained at all times. When necessary, temporary drains and drainage ditches shall be installed to intercept or divert surface water which may affect the work.

C. Selective Grading: When selective grading is indicated on the plans, the more suitable material as designated by the Engineer or designated representative shall be used in constructing the subgrade or in capping the pavement subgrade.

D. Undercutting: Rock, shale, hardpan, loose rock, boulders, or other material unsatisfactory for subgrades, roads, shoulders, or any areas intended for turfing shall be excavated to a minimum depth of 12 inches, or to the depth specified by the Engineer or designated representative, below the subgrade. Muck, peat, matted roots, or other yielding material, not satisfactory for subgrade foundation, shall be removed to the depth specified.

E. Unsuitable Materials: Unsuitable materials shall be disposed of by Contractor at sites approved by the Engineer or designated representative. The excavated area shall be refilled with suitable material, obtained from the grading operations or borrow areas and thoroughly compacted by rolling. The necessary refilling will constitute a part of the subgrade. Where rock cuts are made and refilled with selected material, any pockets created in the rock surface shall be drained.

F. Overbreak: Overbreak, including slides, is that portion of any material displaced or loosened beyond the finished work as planned or authorized by the Engineer or designated representative. The Engineer or designated representative shall determine if the displacement of such material was unavoidable and the Engineer or designated representative's decision shall be final. All overbreak shall be graded or removed by the Contractor and disposed of as directed.

G. Compaction: The subgrade under areas to be paved shall be compacted to a minimum depth of 12 inches and to a density of not less than 95% of the maximum density for no cohesive soils; and 90% of maximum density for cohesive soils, as determined by ASTM D1557. No vibratory roller or any other type of vibratory machine shall be permitted without the written authorization from the Engineer or designated representative.

H. The in-place field density shall be determined in accordance with ASTM D1556 or ASTM D2167, or ASTM D 2922 Stones or rock fragments larger than 3 inches in their greatest dimension will not be permitted in the top 6 inches of the subgrade. The finished grading operations, conforming to the typical cross section, shall be completed and maintained at least 1,000 feet ahead of the paving operations or as directed by the Engineer or designated representative.

I. In cuts, all loose or protruding rocks on the back slopes shall be barred loose or otherwise removed to line of finished grade of slope. All cut-and-fill slopes shall be uniformly dressed to the slope, cross section, and alignment shown on the plans or as directed by the Engineer or designated representative.

J. Borrow Excavation: When borrow sources are outside the boundaries of the project property, it shall be the Contractor's responsibility to locate and obtain the supply, subject to the approval of the Engineer or designated representative. The Contractor shall notify the Engineer or designated representative, at least 15 days prior to beginning the excavation, so necessary measurements and tests can be made. All unsuitable material shall be disposed of by the Contractor. All borrow pits shall be opened up to expose the vertical face of various strata of acceptable material to enable obtaining a uniform product. Borrow pits shall be excavated to regular lines to permit accurate measurements, and they shall be drained and left in a neat, presentable condition with all slopes dressed uniformly.

K. Drainage Excavation: Shall be performed in the proper sequence with the other construction. All satisfactory material shall be placed in fills; unsuitable material shall be placed in approved waste

areas. Intercepting ditches shall be constructed prior to starting adjacent excavation operations. Allnecessary work shall be performed to secure a finish true to line, elevation, and cross section.

The Contractor shall maintain ditches constructed on the project to the required cross section and shall keep them free of debris or obstructions until the project is accepted.

L. No blasting shall be permitted unless authorized by the Engineer or designated representative. The Contractor must obtain all necessary blasting permits. Proper precautions are to be taken for the safety of all persons, the work, and the property. All damage done to the work, property and adjacent property shall be repaired at the Contractor's expense. All operations of the Contractor in connection with the transportation, storage, and use of explosives shall conform to El Paso's City Code - Chapter 9, Article V and all related City Ordinances.

3.2BACKFILL

A. Preparation of Subgrade Backfill (Embankment) Area: Where a subgrade(embankment) is to be constructed to a height of 4 feet or less, all sod and vegetable matter shall be removed from the surface upon which the subgrade(Embankment) is to be placed, and the cleared surface shall be completely broken up by plowing or scarifying to a minimum depth of 6 inches. This area shall then be compacted as indicated above under EXCAVATION paragraph titled Compaction. When theheight of fill is greater than 4 feet, sod not required to be removed shall be thoroughly disked and recompacted to the density of the surrounding ground before construction of subgrade.

Where subgrade (Embankment) is to be placed on natural slopes steeper than 3 to 1, horizontal benches shall be constructed as directed by the Engineer.

B. Formation of Subgrade Backfill (Embankment): Subgrades (Embankments) shall be formed in successive horizontal layers of not more than 8 inches in loose depth for the full width of the cross section, unless otherwise approved by the Engineer or designated representative. Wherever a culvert is installed, embankments shall be formed and compacted simultaneously on both sides of the culvert.

1. The grading operations shall be conducted, and the various soil strata shall be placed, to produce a soil structure as shown on the typical cross section. Materials such as brush, hedge, roots, stumps, grass and other organic matter, shall not be incorporated or buried in the subgrade.

2. Operations on earthwork shall be suspended at any time when satisfactory results cannot be obtained because of rain, freezing, or other unsatisfactory conditions of the field. The Contractor shall drag, blade, or slope the subgrade to provide proper surface drainage.

3. The material in the layer shall be within ± 3% of optimum moisture content or as per Geo Technical report recommendations before rolling to obtain the prescribed compaction. In order to achieve a uniform moisture content throughout the layer, wetting or drying of the material and manipulation shall be required when necessary. Should the material be too wet to permit proper compaction or rolling, all work on all of the affected portions of the subgrade shall be delayed until the material has dried to the required moisture content. Sprinkling of dry material to obtain the proper moisture content shall be done with approved equipment that will sufficiently distribute the water. Sufficient equipment to furnish the required water shall be available at all times. Samples of all subgrade materials for testing,

both before and after placement and compaction, will be taken for each 500 cyd. Based on these tests, the Contractor shall make the necessary corrections and adjustments in methods, materials or moisture content in order to achieve the correct subgrade density.

4. Rolling operations shall be continued until the subgrade is compacted to not less than 95% of maximum density as determined by ASTM D1557.

   The in-place field density shall be determined in accordance with ASTM D1556 or ASTM D2167 or ASTM D2922.

5. Compaction areas shall be kept separate, and no layer shall be covered by another until the proper density is obtained.

6. During construction of the subgrade, the Contractor shall route his equipment at all times, both when loaded and when empty, over the layers as they are placed and shall distribute the travel evenly over the entire width of the subgrade. The equipment shall be operated in such a manner that hardpan, cemented gravel, clay, or other chunky solid material will be broken up into small particles and become incorporated with the other material in the layer.

7. In the construction of subgrades, layer placement shall begin in the deepest portion of the fill; as placement progresses, layers shall be constructed approximately parallel to the finished pavement grade line.

8. When rock and other subgrade material are excavated at approximately the same time, the rock shall be incorporated into the outer portion of the subgrade and the other material shall be incorporated under the future paved areas. Stones or fragmentary rock larger than 3 inches in their greatest dimensions will not be allowed in the top 6 inches of the subgrade.

9. Rockfill shall be brought up in layers as specified or as directed and every effort shall be exerted to fill the voids with the finer material forming a dense, compact mass. Rock or boulders shall not be disposed of outside the excavation or subgrade areas, except at places and in the manner designated by the Engineer or designated representative.

10. When the excavated material consists predominantly of rock fragments of such size that the material cannot be placed in layers of the prescribed thickness without crushing, pulverizing or further breaking down the pieces, such material may be placed in the subgrade as directed in layers not exceeding 2 feet in thickness. Each layer shall be leveled and smoothed with suitable leveling equipment and by distribution of spalls and finer fragments of rock. These type lifts shall not be constructed above an elevation 4 feet below the finished subgrade.

11. Density requirements will not apply to portions of subgrade constructed of materials which cannot be tested in accordance with specified methods.

12. Frozen material shall not be placed in the subgrade nor shall subgrade be placed upon frozen material.

13. There will be no separate measurement or payment for compacted subgrade incidental to placing in layers, compacting, disking, watering, mixing, sloping, and other necessary operations for construction of subgrade. All costs will be included in the contract.

3.3 FINISHING AND PROTECTION OF SUBGRADE

A. After the subgrade has been substantially completed the full width shall be conditioned by removing any soft or other unstable material which will not compact properly. The resulting areas and all other low areas, holes or depressions shall be brought to grade with suitable select materials.Scarifying, blading, rolling and other methods shall be performed to provide a thoroughly compacted subgrade shaped to the lines and grades shown on the plans.

B. Grading of the subgrade shall be performed so that it will drain readily. The Contractor shall take all precautions necessary to protect the subgrade from damage. Hauling over the finished subgrade shall be limited to that which is essential for construction purposes.

1. All ruts or rough places that develop in a completed subgrade shall be smoothed and recompacted.

2. No subbase, base, or surface course shall be placed on the subgrade until the subgrade has been approved by the Engineer or designated representative.

3.4HAULING

A. All hauling will be considered a necessary and incidental part of the work. Its cost shall be considered by the Contractor and included in the contract. No payment will be made separately or directly for hauling on any part of the work.

3.5TOLERANCES

A. In those areas upon which a subbase or base course is to be placed, the top of the subgrade shall be of such smoothness that, when tested with a 16 foot straightedge applied parallel and at right angles to the centerline, it shall not show any deviation in excess of ½ inch, or shall not be more than 0.05 foot from true grade as established by grade hubs or pins. Any deviation in excess of these amounts shall be corrected by loosening, adding, or removing materials; reshaping; and recompacting by sprinkling and rolling.

3.6TESTING

A. ASTM D1557 – Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb. (4.54 kg) Rammer and 18 inch (457 mm) Drop. Or as per Geo-Technical Report recommendations

B. ASTM D2922 – Test methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

C. ASTM D3017 – Test Methods for Moisture Content of Soil and Soil-Aggregate Mixtures. Or as per Geo-Technical Report recommendations

END OF SECTION 312316

SECTION 312333 – EXCAVATION AND SUPPORT

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes temporary excavation support and protection systems.

1.2 PERFORMANCE REQUIREMENTS

A. Design, furnish, install, monitor, and maintain excavation support and protection system capable of supporting excavation sidewalls and of resisting soil and hydrostatic pressure and superimposed and construction loads.

1. Provide professional engineering services needed to assume engineering responsibility, including preparation of Shop Drawings and a comprehensive engineering analysis by a qualified professional engineer.

1.3 SUBMITTALS

A. Shop Drawings for Information: Prepared by or under the supervision of a qualified professional engineer for excavation support and protection systems.

1. Include Shop Drawings signed and sealed by the qualified professional engineer responsible for their preparation.

1.4 PROJECT CONDITIONS

A. Survey adjacent structures and improvements, employing a qualified professional engineer or land surveyor; establish exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.

1. During installation of excavation support and protection systems, regularly resurvey benchmarks, maintaining an accurate log of surveyed elevations and positions for comparison with original elevations and positions. Promptly notify Contracting Officer if changes in elevations or positions occur or if cracks, sags, or other damage is evident in adjacent construction.

PART 2 - PRODUCTS

2.1 NOT USED

PART 3 - EXECUTION

3.0 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards that could develop during excavation support and protection system operations.

B. Install excavation support and protection systems to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.

C. Monitor excavation support and protection systems daily during excavation progress and for as long as excavation remains open. Promptly correct bulges, breakage, or other evidence of movement to ensure that excavation support and protection systems remain stable.

D. Promptly repair damages to adjacent facilities caused by installing excavation support and protection systems.

3.1 REMOVAL AND REPAIRS

A. Remove excavation support and protection systems when construction has progressed sufficiently to support excavation and bear soil and hydrostatic pressures. Remove in stages to avoid disturbing underlying soils or damaging structures, pavements, facilities, and utilities.

1. Repair or replace, as approved by Contracting Officer, adjacent work damaged or displaced by removing excavation support and protection systems.

END OF SECTION 312333

SECTION 312500 - TEMPORARY CONTROLS

PART 1-GENERAL

1.0 SECTION INCLUDES

A. Temporary Controls: Barriers and fencing, protection of the Work, water control, dust control, erosion and sediment control, noise control, and pollution control.

1.2 RELATED SECTIONS

A. General Conditions

B. Section 01 10 00 – General Requirements

PART 2-MATERIALS

2.0 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

B. Provide barricades on walkways required by governing authorities for public rights-of-way.

C. Provide protection for plant life designated to remain. Replace damaged plant life.

D. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

PART3-EXECUTION

3.0 WATER CONTROL

A. Grade site to drain. Maintain excavations free of water.

B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.

3.1 DUST CONTROL

A. Execute Work by methods to minimize raising dust from construction operations.

B. Provide positive means to prevent air-borne dust from dispensing into atmosphere.

3.2 EROSION AND SEDIMENT CONTROL

A. Plan and execute construction by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.

B. Minimize amount of bare soil exposed at one time.

C. Provide temporary measures such as berms, dikes, and drains, to prevent water flow.

D. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.

E. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.

F. All phases of sedimentation and erosion control shall comply with the U.S. Environmental Protection Agency NPDES Regulations and the state regulations, which require the preparation of a Storm water Pollution Prevention Plan (SWPPP). The Contractor shall conform to the plans and maintain the SWPPP at all times.

3.3 NOISE CONTROL

A. Provide methods, means, and facilities to minimize noise produced by construction operations.

3.4 POLLUTION CONTROL

A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.

B. Comply with all applicable federal, state, and local laws and regulations concerning environmental pollution control and abatement.

3.5 MEASUREMENT AND PAYMENT

No additional payments will be made for temporary controls. Cost of temporary controls shall be incorporated into the project cost.

END OF SECTION 312500

SECTION 312513 – EROSION CONTROL

PART 1 - GENERAL

1.1 SILT FENCE

A. DESIGN CRITERIA

1. Silt fences are appropriate at the following general locations:

    a. Immediately upstream of the point(s) of runoff discharge from a site before flow becomes concentrated (maximum design flow rate should not exceed 0.5 cubic feet per second).
    b. Below disturbed areas where runoff may occur in the form of overland flow.

2. Ponding should not be allowed behind silt fences since they will collapse under high pressure; the design should provide sufficient outlets to prevent overtopping.

3. The drainage area should not exceed 0.25 acre per 100 feet of trench length.

4. For slopes between 1:50 (V):(H) and 1:5, the maximum allowable upstream flow path length to the fence is 100 feet; for slopes of 1:2 and steeper, the maximum is 20 feet.

5. The maximum upslope grade perpendicular to the fence line should not exceed 1:1.

6. Synthetic silt fences should be designed for 6 months of service.

1.2 TEMPORARY SEDIMENT TRAP

A. DESIGN CRITERIA

1. Temporary sediment traps are appropriate in the following locations:

    a. At the outlet of the perimeter controls installed during the first stage of construction.

    b. At the outlet of any structure which concentrates sediment-laden runoff, the discharge point of diversions, channels, slope drains, or other conveyances.

    c. Above a storm water inlet that is in line to receive sediment-laden runoff.

2. Temporary sediment traps may be constructed by excavation alone or by excavation in combination with an embankment.

3. Temporary sediment traps are often used in conjunction with a diversion dike or swale.

4. The drainage area for the sediment trap should not exceed 5 distribute acres.

5. The trap must be accessible for ease of regular maintenance, which is critical to its functioning properly.

6. Sediment traps are temporary measures and should not be planned to remain in place longer than between 18 and 24 months.

7. The capacity of the sedimentation pool should provide storage volume for 3.600 cubic feet/acre drainage area.

8. The outlet should be designed to provide a 2-foot settling depth and an additional sediment storage area 1-1/2-foot-deep at the bottom of the trap.

9. The embankment may not exceed 5 feet in height.

10. The recommended minimum width at the top of the embankment is between 2 feet and 5 feet.

11. Table 2 illustrates the typical relationship between the embankment height, the height of the outlet (H_o) and the width (W) at the top of the embankment.

TABLE 2 – EMBANKMENT HEIGHT VS. OUTLET HEIGHT AND WIDTH

H	H_o	W
1.5	0.5	2.0
2.0	1.0	2.0
2.5	1.5	2.5
3.0	2.0	2.5
3.5	2.5	3.0
4.0	3.0	3.0
4.5	3.5	4.0
5.0	4.0	4.5

PART 2 - PRODUCTS

2.1 SILT FENCE

A. Synthetic filter fabric should be a previous sheet of polypropylene, nylon, polyester or polyethylene yarn conforming to the requirements in Table 1 below.

B.

TABLE 1 – SYNTHETIC FILTER FABRIC REQUIREMENTS

PHYSICAL PROPERTY	REQUIREMENTS
Filtering Efficiency	75% - 85% (minimum)
Tensile Strength at 20% (maximum elongations)	Standard Strength – 30 lb/linear inch (minimum) Extra Strength – 50 lb/linear inch (minimum)
Slurry Flow Rate	0.3 gal/ft^2/min (minimum)

C. Synthetic filter fabric should contain ultraviolet ray inhibitors and stabilizers to provide a minimum of 6 months of expected usable construction life at a temperature range of 0 to 120 degrees Fahrenheit.

D. The filter fabric should be purchased in a continuous roll to avoid joints.

E. While not required, wire fencing may be used as a backing to reinforce standard strength filter fabric. The wire fence (14-gauge minimum) should be at 22-48 inches should have a maximum mesh spacing of 6 inches.

F. Posts should be 2-4 feet long and should be composed of 2" x 2". Steel T-Posts should have projections for fastening wire and fabric to them.

2.2. TEMPORARY SEDIMENT TRAP

A. Filter fabric (see fabric requirement for silt fence)

B. Coarse aggregate or riprap 2 inches to 14 inches in diameter.

C. Washed gravel 3/4 to 1-1/2 inches in diameter.

D. Line the outlet area with filter fabric prior to placing stone or gravel.

E. Construct the gravel outlet using heavy stones between 6 inches and 14 inches in diameter and face the upstream side with a 12-inch layer of 3/4 inch to 1-1/2-inch washed gravel on the upstream side.

F. Seed and mulch the embankment as soon as possible to ensure stabilization.

PART 3 – EXECUTION

3.1 SILT FENCE CONSTRUCTION SPECIFICATIONS

A. The minimum height of the filter fence should be 36 inches above the ground surface depending on the amount of upslope ponding expected.

B. Posts should be spaced 8 to 10 feet apart when a wire mesh support fence may be fastened to the upslope side of the posts using 1-inch heavy duty wire staples, tie wires, or hog rings. Extend the wire mesh support to the bottom of the trench. The filter fabric should then be stapled or wired to the fence, and 8 to 20 inches of the fabric should extend into the trench.

C. A trench should be excavated 4 to 8 inches wide and 4 to 12 inches deep along the upslope side of the line of posts.

D. If standard strength filter fabric is to be used, the optional wire mesh support fence may be fastened to the upslope side of the posts using 1-inch heavy duty wire staples, tie wires, or hog rings. Extend the wire mesh support to the bottom of the trench. The filter fabric should then be stapled or wired to the fence, and 8 to 20 inches of the fabric should extend into the trench.

E. Extra strength filter fabric does not require a wire mesh support fence. Staple or wire the filter fabric directly to the posts and extend 8 to 20 inches of the fabric into the trench.

F. Where joints in the fabric are required, the filter cloth should be spliced together only at a support post, with a minimum 6-inch overlap, and securely sealed.

G. Do not attach filter fabric to trees.

H. Backfill the trench with compacted soil or 0.75-inch minimum diameter gravel placed over the filter fabric.

3.2 SILT FENCE MAINTENANCE

A. Inspect filter fences daily during periods of prolonged rainfall, immediately after each rainfall event, and weekly during periods of no rainfall. Make any required repairs immediately.

B. Sediment must be removed when it reaches one-third to one-half the height of the filter fence. Take care to avoid damaging the fence during cleanout.

C. Filter fences should not be removed until the upslope has been permanently stabilized. Any sediment deposits remaining in place after the filter fence has been removed should be dressed to conform to the existing grade, prepared, and seeded.

3.3. TEMPORARY SEDIMENT TRAP MAINTENANCE

A. Inspect regularly and after every storm. Make any repairs necessary to ensure the measure is in good working order.

B. Frequent removal of sediment is critical to the functioning of this measure. At a minimum, sediment should be removed and the trap restored to its original volume when sediment reaches 1/3 of the original volume. Sediment removed from the trap must be properly disposed

END OF SECTION 312513

SECTION 313316- TRENCH SAFETY SYSTEMS

PART 1 – GENERAL

1.1 DESCRIPTION

This item shall govern the Trench Safety Systems required for the construction of all trench excavation to be utilized in the project, including all additional excavation and backfill necessitated by the safety system. The Trench Safety Systems shall be suitable for construction of pipelines, utilities, etc., that are installed below grade and shall be sufficient to fully protect public or private property, including other existing utilities and structures below, or above grade. Trench Safety Systems include, but are not limited to: sloping of sides of excavation, sheeting, trench boxes or trench shields, sheet piling, cribbing, bracing, shoring, de-watering, or diversion of water to provide adequate drainage.

1.2 The Contractor shall be responsible for the design of Trench Safety Systems and procedures such as the use of sheet piling, shoring or other means of temporary support to protect existing buildings, street, highways, water conveying structures, or any other structures. In the case of existing utilities, the Contractor may elect to remove the utilities under the stipulated condition that the removal and subsequent replacement of these utilities shall meet with the approval of the Engineer, the Owner, the Utility Owner, and all agencies having jurisdiction of the structure or property. In all cases, the Contractor shall be fully responsible for the protection of public, or private property, and for the protection of any person or persons who, as a result of the Contractor's work, may be injured.

1.3 No separate payment shall be made for the work performed under this section.

PART 2 – PRODUCTS

2.1 NOTUSED

PART 3 – EXECUTION

3.1 CONSTRUCTION METHODS

Trench Safety Systems shall be accomplished in accordance with the detailed specifications set out in the provision of Excavations, Trenching, and Shoring, Federal Occupational Safety and Health Administration (OSHA) Standards, 29 CFR, Part 1926, Subpart P, as amended including proposed Rules published in the Federal Register (Vol. 52, No. 72) on Wednesday, April 15, 1987. The sections that are incorporated into these specifications by reference include Sections 1926-650 through 1926-653. Legislation that has been enacted by the Texas Legislature (H.B. No. 662 and H.B. No. 665) with regard to Trench Safety Systems is hereby incorporated, by reference, into these specifications.

3.2 SAFETY PROGRAM

The Contractor shall submit a safety program specifically for the construction of trench excavations together with the trench excavation plans for Trench Safety Systems. The trench safety program shall be in accordance with OSHA standards governing the presence and activities of individuals working in and around trench excavations.

3.3 INSPECTION

A. The Contractor shall provide a qualified person to make daily inspections of the Trench Safety Systems to ensure that the systems meet OSHA requirements.

B. If evidence of possible cave-ins or slides is apparent, all work in the trench shall cease until the necessary precautions have been taken by the Contractor to safeguard personnel entering the trench. It is the sole duty, responsibility, and prerogative of the Contractor, not the Owner or the Owner's designated representative, to determine the specific applicability of the designed Trench Safety Systems to each field condition encountered on the project.

3.4 EMERGENCIES

In any emergency situation, which may threaten or affect the safety or welfare of persons or property, the Contractor shall act at his discretion to prevent possible damage, injury, or loss. Any additional compensation or extension of time claimed for such action shall be considered in view of the cause of the emergency and in accordance with Paragraph 13 of the General Contract Conditions, Protection of work and Property Emergency.

END OF SECTION 313316

SECTION 320523 – CONCRETE SIDEWALKS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary

1.2 DESCRIPTION

This Item shall consist of Portland Cement concrete for sidewalks, constructed on an approved subgrade or foundation material in accordance with these specifications, in conformity with the lines, grades and details shown on the plans.

PART 2 -PRODUCTS

2.1 Concrete: All concrete shall contain a minimum of five sacks of Portland Cement, either Type I, II, or III in conformity to ASTM Designation C-150. Water used for mixing shall be potable and approved for drinking by the Texas State Health Department. After a curing period of 28 days, all concrete shall possess a minimum compressive strength of 3,000 psi for sidewalks and 3500 PSI for drive ways. Cylinder test shall be taken for each day's work or as specified by the Engineer.

2.2 Reinforcing Steel: Steel bar reinforcing, if required, shall be deformed and conform to ASTM Designation A-615, grade 60. Wire fabric reinforcement shall conform to ASTM Designation A-185.

2.3 Expansion Joint Material: All preformed expansion joint material shall be of the "bituminous fiber type" in conformity to ASTM Designation D-1751.

2.4 Joint Sealant: Joint Sealant for use in concrete pavement or aprons shall be a silicone formulation complying with Federal Specification TT-S-00230C, Type 2; or a two-part urethane joint sealant in compliance with Federal Specification SS-S-200D, Type H.

2.5 Curing Compound: See specifications elsewhere in this article.

PART 3 -EXECUTION

3.1 The subgrade shall be excavated and shaped to line, grade and cross section, and, if necessary, hand tamped and sprinkled. If dry the subgrade or foundation material shall be sprinkled lightly immediately before concrete is deposited thereon.

3.2 Forms shall be of wood or metal, free of warp and of a depth equal to the finished work. They shall be securely staked to line and grade, and maintained in a true position during the depositing of concrete.

3.3 The reinforcing steel, if required, shall be placed in position as shown on the plans. Care shall be exercised to keep all steel in its proper locations. All reinforcing steel shall be supported above grade by use of steel or plastic chairs.

3.4 Concrete sidewalks shall be constructed in section of the lengths shown on the plans or specified herein. The different sections shall be separated by a joint as detailed on the plans. Where used, expansion joint material shall be of the thickness shown on the plans, placed vertically and at right angles to the longitudinal axis of the pavement, apron, median or sidewalk. Where sidewalk joins a building, a pre-molded expansion joint and sealant shall be installed the full width of the sidewalk between it and the driveway.

3.5 Concrete shall be mixed and placed in the forms to the depth specified and spaded and tamped until thoroughly compacted and mortar entirely covers the surface. The outer edges and joints shall then be rounded with approved tools.

3.6 Finished surface:

A. The top surface shall be floated with a wooden float to a gritty surface or unless otherwise specified in the Landscaping plans as having a salt finish.

B. Salt finish: Float and trowel concrete leaving a smooth finish and wait until concrete is just beginning to set. Use variable sized salt (NaCl) crystals 1/8 to 1/2 inch in size and press them into the surface with a roller to a depth about half of their diameter. Avoid producing indents larger than 1/4 inch. Salting rate should be 10 pounds per 100 square feet. Distribute salt evenly across all concrete surfaces. After 24 hours, wash salt away with water and brush, or pressure washer. Any water which drains to landscape areas shall be leached through soil profile by slowly applying 1 gallon/square foot affected, and removing any remaining surface salt.

3.7 Sidewalks, which comprise wheel chair ramps, shall be brushed with a stiff broom after being floated to provide a brushed finish on these surfaces.

3.8 Sidewalks shall be marked into separate sections by the use of approved jointing tools. No sawcut joints allowed!

39 When completed, the sidewalks shall be cured by fully covering the finished concrete with a white-pigmented membrane-curing compound meeting the requirements of ASTM Designation C-309, Type II. Application shall be at the rate recommended by the manufacturer.

END OF SECTION 320523

SECTION 321100 - CRUSHED AGGREGATE BASE COURSE

PART 1- GENERAL

1.1 DESCRIPTION

This item shall consist of a base course composed of crushed aggregates constructed on the prepared underlying course in accordance with these specifications and shall conform to the dimensions and typical cross section shown on the TxDOT Specs too stringent for the proposed Project. Consider City Specs.

PART 2- PRODUCTS

2.1 MATERIALS

Crushed stone base course material shall comply with item 247, Type A, Grade 3 flexible base (developed) requirements of the 2014 TXDOT Specifications.

PART 3– EXECUTION

3.1 CONSTRUCTION METHODS

A. Operation at Sources of Supply

All work involved in clearing and stripping of quarries and pits, including the handling of suitable material, shall be performed by the Contractor at his own expense. The base material shall be obtained from approved sources. The material shall be handled in a manner that shall secure a uniform and satisfactory product.

B. Equipment

All equipment necessary for the proper construction of this work shall be on the Project, in first class working condition, and approved by the Engineer before construction is permitted to start.

C. Preparing Underlying Course

1. The underlying course shall be tested and accepted by the Engineer before placing and spreading operations are started. Any ruts or soft, yielding places caused by improper drainage conditions, hauling, or any other cause, shall be corrected and rolled to the required compaction before the base course is placed thereon.

2. To protect the underlying course and to ensure proper drainage, the spreading of the base shall begin along the centerline of the pavement on a crowned section or on the high side of the pavement with a one-way slope.

D. Plant Mix

1. The base material shall be uniformly blended during crushing operations or mixed in an approved plant. The type of plant may be either a central proportioning and mixing plant or a traveling plant. The plant shall blend and mix the materials to meet these specifications and to secure the proper moisture content for compaction.

E. Placing and Spreading

1. Central Plant. The crushed aggregate base material that has been proportioned in a crushing and screening plant, or proportioned and processed in a central mixing plant, shall be placed on the prepared underlying course and compacted in layers of the thickness shown on the plans. The depositing and spreading of the material shall commence where designated and shall progress without breaks. The material shall be deposited and spread in lanes in a uniform layer and without segregation of size to such loose depth that, when compacted, the layer shall have the required thickness. The base aggregate shall be spread by spreader boxes or other approved devices or methods that shall spread the aggregate in the required amount to avoid or minimize the need for rehandling the material and to prevent the rutting of the underlying course. The spreader boxes or other devices shall be equipped with strike-off templates or screeds that can be adjusted or controlled to secure the required thickness of the material. Dumping from vehicles in piles on the underlying course, which will require rehandling, shall not be permitted. Hauling over the uncompacted base course shall not be permitted.

2. Traveling Plant. If a traveling plant is used for mixing, the base material shall be placed on the underlying course in such to provide a base mixture conforming to the specified gradation and moisture content, and in such quantity to develop the thickness of the layer of the base and the density after compaction. The material shall be shaped to a uniform section. The Engineer shall examine the mixture to determine that the mixing is complete and satisfactory and that the proper moisture content is maintained before compaction is started. No spreading shall be done except when authorized. Care shall be taken that no material from the underlying course is mixed with the base material.

3. Method of Placing. The base course shall be constructed in a layer not less than 2-1/2" inches nor more than 4-1/2" inches of compacted thickness. The aggregate, as spread, shall be of uniform graduation with no segregation or pockets of fine or coarse materials. Unless otherwise permitted by the Engineer, the aggregate shall not be spread more than 2,000 square yards or 500 ln. ft. of street in advance of the rolling. Any necessary sprinkling shall be kept within these limits. No material shall be placed in snow or on a soft, muddy, or frozen underlying course.

4. When more than one layer is required, the construction procedure described herein shall apply similarly to each layer. The Engineer shall make tests to determine the maximum density and the proper moisture content of the base material, and this information will be available to the Contractor. The base material shall have a satisfactory moisture content when rolling is started, and any minor variations prior to or during rolling shall be corrected by sprinkling or aeration, if necessary.

5. During the placing and spreading, sufficient caution shall be exercised to prevent the incorporation of subgrade, subbase, or shoulder material in the base course mixture.

6. Finishing and Compacting. After spreading, the crushed aggregate shall be thoroughly compacted by rolling. The rolling shall progress gradually from the sides to the center of the lane under construction, or from one side toward previously placed material by lapping uniformly each preceding rear wheel track by one half the width of such track. Rolling shall continue until the entire area of the course has been rolled by the rear wheels. The rolling shall continue until the stone is thoroughly set, the interstices of the material reduced to a minimum, and until creeping of the stone ahead of the roller is no longer visible. Rolling shall continue until the base material has been compacted to not less than 100% density and supported and prepared on select fill that has been compacted not less than 95% density in accordance with ASTM D 1557 and a moisture content of (+-) 2% of optimum density as per Geotechnical Engineer's recommendations. Density tests will be taken at every 500 sq. yd. or at every 125 linear ft. of street with a minimum of two (2) density tests taken for each street. Blading and rolling shall be done alternately, as required or directed, to obtain smooth, even, and uniformly compacted base.

7. The course shall not be rolled when the underlying course is soft or yielding or when the rolling causes undulation in the base course. When the rolling develops irregularities that exceed 1/2-inch when tested with a 16-foot straightedge, the irregular surface shall be loosened, refilled with the kind of material as that used in constructing the course, and rolled again as required.

8. In areas inaccessible to rollers, the base course material shall be tamped thoroughly with mechanical tampers as approved by engineer.

9 The sprinkling during rolling, if necessary, shall be in the amount and by equipment approved by the Engineer.

F. Surface Test. After the course has been completely compacted, the surface shall be tested for smoothness and accuracy of grade and crown. Surface tests will be taken at every 500 sq. yd. or at every 125 ln. ft. of street with a minimum of two (2) density tests taken for each street. Any portion lacking the required smoothness or failing in accuracy of grade or crown shall be scarified, reshaped, recompacted, and otherwise manipulated as the Engineer may direct until the required smoothness and accuracy are obtained. The finished surface shall not vary more than 1/2-inch from a 16-foot straightedge when applied to the surface parallel with, and at right angles to, the centerline.

G. Thickness. The thickness of the base course shall be determined by depth tests or cores taken at every 500 square yards or at every 125 linear ft. of street with a minimum of two (2) density tests taken for each street. When the base deficiency is more than 1/2- inch, the Contractor shall correct such areas by scarifying, adding satisfactory base mixture, rolling, sprinkling, reshaping, and finishing in accordance with these specifications. The Contractor shall replace, at his expense, the base material where borings have been taken for test purposes.

H. Protection. Work on the base course shall not be accomplished during freezing temperatures or when the subgrade is wet. When the aggregates contain frozen materials or when the underlying course is frozen, the construction shall be stopped.

Hauling equipment may be routed over completed portions of the base course, provided no damage results and provided that such equipment is routed over the full width of the base course to avoid rutting or uneven compaction. However, the Engineer in charge shall have full

and specific authority to stop all hauling over completed base course when, in his opinion, such hauling is causing damage. Any damage resulting to the base course from routing equipment over the base course shall be repaired by the Contractor at his own expense.

I. Maintenance. Following the completing of the base course, the Contractor shall perform all maintenance work necessary to keep the base course in a condition satisfactory for priming. After priming, the surface shall be kept clean and free from foreign material. The base course shall be properly drained at all times. If cleaning is necessary, or if the prime coat becomes disturbed, any work or restitution necessary shall be performed at the expense of the contractor.

3.2 TESTING AND MATERIAL REQUIREMENTS

Testing and Short Title	Material and Short Title
AASHTO T 96 - Abrasion	None
AASHTO T 104 – Soundness	
AASHTO T 11 and T 27 - Gradation	
AASHTO T 89 - Liquid Limit	
AASHTO T 90 - Plastic Limit and Plasticity Index	
AASHTO T 19 - Unit Weight	

END OF SECTION 321100

SECTION 321613 – CONCRETE CURB

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary

1.2 DESCRIPTION

This Item shall consist of Portland Cement combined concrete curb and gutter, or separate concrete gutter or curb, without reinforcing steel, constructed on an approved subgrade or foundation material in accordance with these specifications, in conformity with the lines, grades and details shown on the plans.

PART 2 PRODUCTS

2.1 Concrete: Slump (ATSM C143) requirements for curbs and curb gutter. All concrete shall contain a minimum of five sacks of Portland cement, either Type I, II, or III in conformity to ASTM Designation C-150. Water used for mixing shall be potable and approved for drinking by the Texas State Health Department. After a curing period of 28 days, all concrete shall possess a minimum compressive strength of 3,000 psi. Cylinder test shall be taken for each day's work.

2.2 Expansion Joint Material: All preformed expansion joint material shall be of the "bituminous fiber type" in conformity to ASTM Designation D-1751.

2.3 Curing Compound: See specifications elsewhere in this article.

PART 3 EXECUTION

3.1 The subgrade or foundation shall be excavated and shaped to line, grade and cross section, and, if considered necessary in the opinion of the Engineer, hand tamped and sprinkled. Subgrade and base course under curb and curb & gutter are always recommended to be compacted prior to concrete placement, to 95% density, respectively, in accordance with ATSM D 1557. If dry the subgrade or foundation material shall be sprinkled lightly immediately before concrete is deposited thereon.

3.2 Outside forms shall be of wood or metal, of a section satisfactory to the Engineer, straight, free of warp and of a depth equal to the depth of the curb and gutter. They shall be securely staked to line and grade, and maintained in a true position during the depositing of concrete. Inside forms for the curb shall be of approved material, shall be of such design as to provide the curb required and shall be rigidly attached to the outside forms.

3.3 Concrete for curb and gutter shall be mixed and poured in sections of the length and each section shall be separated by a pre-molded or board joint of cross section specified for the curb and gutter, and of the thickness.

3.4 A. After the concrete has been struck off and after it has become sufficiently set, the exposed surfaces shall be thoroughly worked with a wooden float. The exposed edges shall be rounded by the use of an edging tool to the radius indicated on the plans.

B. Unless specified otherwise on plans, when the concrete in the curb and gutter has become sufficiently set, the inside form shall be carefully removed and the surface shall be plastered with a mortar consisting of one-part Portland Cement and two parts fine aggregate. The mortar shall be applied with a template or "mule" made to conform to curb and gutter dimensions as shown on plans. All exposed surfaces of curb and gutter, or gutter, shall be brushed to a smooth and uniform surface.

3.5 A. The Contractor may elect to install the curb and gutter by use of an extrusion machine. If so, the above three (3) paragraphs shall not apply. The machine shall be of the extrusion type. Immediately prior to placing of the curb, the previously approved subgrade shall be cleaned and minor grading accomplished to insure proper grade in conformity to the plans. The line for top of curb shall be maintained by a guideline set by the Contractor. The cross section of the curb and gutter shall be in conformity to the details shown on the plans.

B. The forming tube of the machine shall be readily adjustable during forward motion of the machine to provide required variable heights of curb in order to conform to the established grade line. The machine shall be equipped with a pointer or gauge attached to it in such a manner that a comparison can be made between the curb and guideline.

3.6 The completed curb and gutter shall be cured by fully covering the finished concrete with a white-pigmented curing compound meeting the requirements of ASTM Designation C-309, Type ll. Application shall be at the rate recommended by the manufacturer.

3.7 The curb and gutter shall be backfilled to the full height of the concrete, tamped and sloped as directed.

END OF SECTION 321613

SECTION 322301 – SITE CONCRETE

PART 1 - GENERAL

1.1 REFERENCE STANDARDS:

A. American Concrete Institute (ACI):

1. Recommended Practice of Evaluation of Compression. Test Results of Field Concrete (ACI 214).
2. Specifications for Structural Concrete for Buildings (ACI 301).
3. Building Code Requirements for Reinforced Concrete (ACI 318).
4. Recommended Practice for Selecting Proportions for Concrete (ACI 613).
5. Selection and Use of Aggregates for Concrete (ACI Comm. 621).
6. ACI Manual of Concrete Inspection (SP-2).
7. Recommended Practice for Measuring, Mixing and Placing Concrete (ACI 614).
8. Recommended Practice for Cold Weather Concrete (ACI 306), (ACI 605)
9. Building Code Requirements for Reinforced Concrete (ACI 318).
10. Recommended Practice for Hot Weather Concrete (ACI 305).
11. Consolidation of Concrete (ACI Comm. 609).
12. Curing Concrete (ACI COMM. 612).
13. Manual of Concrete Inspection (SP-2).

B. American Society for Testing Materials (ASTM):

1. Standard Method for Making and Curing Concrete Compression and Flexure Test Specimens in the Field (ASTM C31).
2. Standard Specifications for Concrete Aggregates (ASTM C33).
3. Standard Method of Test for Compressive Strength of Molded Concrete Cylinders (ASTM C 39).
4. Standard Method of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete (ASTM C 42).
5. Standard Specification for Ready-Mixed Concrete (ASTM C 94).
6. Standard Method of Test for Sieve of Screen Analysis of Fine and Coarse Aggregate (ASTM C 136).
7. Standard Method of Test for Slump of Portland Cement Concrete (ASTM C 143).
8. Standard Specifications for Portland Cement (ASTM C 150).
9. Standard Method of Sampling Fresh Concrete (ASTM C 172).
10. Standard Specifications for Air-Entraining Admixtures for Concrete (ASTM C 260)
11. Standard Specification for Chemical Admixtures for Concrete (ASTM C 494).

C. Portland Cement Association: Design and Control of Concrete Mixtures.

1. Latest Edition of each of above Governing Standards shall apply. Except as modified in this section or the other related sections, ACI 301 shall generally apply to all concrete work in this project.

1.2. SUBMITTALS:

A. The proposed concrete mix design for each separate class of concrete shall be submitted by the Contractor for review by the Engineer.

B. Manufacturer's literature for membrane-forming compounds for curing and shall be submitted for review by the Engineer prior to their use on the project.

1.3 COORDINATION OF WORK:

A. During placing and finishing of concrete (including patching concrete pavement and/or the repair and replacement of spelled areas in existing concrete slabs), coordinate all work and trades to ensure that the requirements of the Contract Documents are complied with.

B. If concrete is supplied by a ready-mix concrete producer, the Contractor shall coordinate and control the mixing and delivery of all off-site produced concrete.

PART 2 - PRODUCTS

2.1 PORTLAND CEMENT:

A. Portland cement shall conform to the requirements for Type I or III cement of ASTM C 150. (Air entrained: 5 percent ± 1 percent air).

2.2 AGGREGATES:

A. Fine aggregate shall consist of natural and/or manufactured sand having hard, strong and durable particles and which conform to the requirements of ASTM C 33.

B. Coarse aggregate shall consist of clean, hard, fine-grained, sound crushed rock or washed gravel which do not contain in excess of five (5) percent by weight of flat, chip-like, thin, elongated, friable or laminated pieces, or more than one (1) percent by weight of shale or chert material. Any piece having a major dimension in excess of two and one-half (2-1/2) times the average thickness shall be considered to be flat or elongated. Coarse aggregate shall conform to the requirements of ASTM C 33.

C. Refer to concrete quality table for maximum sizes of aggregate permitted for each class of concrete.

2.3 WATER:

A. Water shall be clean water from the utility company mains, free from acids, alkalis, oils or organic materials and shall be suitable for drinking purposes.

2.4 ADMIXTURES:

A. Air-entraining admixtures shall conform to ASTM C 260.

B. All other admixtures shall conform to ASTM C 494.

C. Approval of admixtures is required before use in concrete.

D. No calcium chloride shall be used as an admixture under any circumstances in any

concrete in this project.

2.5 EMBEDDED ITEMS

A. All embedded steel plates, shapes, etc. shall conform to the requirements of ASTM A 36 and shall be galvanized. Coat with "Galvaweld" where galvanizing is damaged, at bends, and welds, etc.

2.6 QUALITY OF CONCRETE:

A. The exact proportions of cement aggregate and water for each class of concrete shall be determined by an approved independent testing laboratory. Mix design shall be based on the saturated surface dry (SSD) condition of the aggregate. The Contractor shall pay for all mix designs.

B. Review by the Engineer of mix design submitted does not relieve the Contractor of the sole responsibility for each mix design to produce concrete of the strength specified.

C. The required minimum strength of concrete cores at 28 days, minimum laboratory strength in 28 days, minimum number of sacks of cement per cubic yard of concrete, maximum size of aggregate and required slump of the concrete as delivered at the job site for each of the indicated lasses of concrete construction shall be as shown in the Concrete Quality table that follows:

CONCRETE QUALITY

Class of Concrete Construction	Minimum Core Test @ 28 Days (psi)	Minimum Lab Test @ 28 Days (psi)	Minimum No. of Sacks of Cement per (cu. yd)	Maximum Aggregate Size (inches)	Required Slump (inches)
Curb & Gutter & Sidewalks	3750	3000	5	1	3
Driveways	4200	3500	5.5	1	4

D. Slumps shown in the above Concrete Quality table are at place of final deposit of concrete. Slump tolerance shall be plus or minimum one (1) inch for 3 1/2" or greater and plus or minimum 1/2" for 3" slump or less.

PART 3 - EXECUTION

3.1 STORAGE OF MATERIALS:

A. Protect all materials from damage or contamination by water, dirt, or other substances while stored at either the project site or the production site and during delivery.

B. Store all materials above and clear of the ground surface except for aggregate.

C. The method of delivering the aggregates to the work and storing and handling shall be such that the moisture content of the aggregates as they come to the mixer shall not be subjected to frequent or unnecessary changes. Aggregate stockpiles shall be arranged and used in a manner to avoid excessive segregation or contamination with other materials or with other sizes of like aggregates.

3.2 MIXING OF CONCRETE:

A. Measuring and mixing of concrete shall be in accordance with the recommended practices of ACI 614 and PCA.

B. All concrete shall be thoroughly mixed in approved batch-mixer conforming to the requirements of the Mixer Manufacturer Bureau of the Associated General Contractor of America.

C. All concrete materials shall be batched by weight. Materials for concrete shall be measured within the following percentages of accuracy:

Cement	1 %	Water	1 %
Aggregates	2%	Admixtures	3 %

D. Fine and coarse aggregates shall be separately measured and the water required by the concrete mix designs shall include the water that is contained in the aggregates. The method used for measuring shall be subject to the approval of the Engineer, and shall be such that all mix ingredients can be uniformly and accurately controlled and easily checked. Fine and coarse aggregates shall be measured loose and moist as delivered on the job.

E. Each batch of 2 cubic yards or less shall be mixed for not less than 1 1/2 minutes after all ingredients are in the mixer. Mixing time shall be increased 15 seconds for each additional cubic yard or fraction thereof. Each batch shall be completely discharged before another is mixed.

3.3 TRUCK-LINED CONCRETE:

A. The use of truck-mixed concrete will be permitted if consistent with the general provisions of this section and ASTM C 94.

B. The mixing time length and the number of revolutions of mixing shall conform to ASTM C 94. Concrete shall be rejected if not placed within 1-1/2 hours after water is first added or if 300 revolutions have taken place, whichever comes first.

C. No water shall be added to any truck-mixed concrete after leaving the batching plant.

3.4 DELIVERY TICKETS:

A. Duplicate delivery tickets, one for the Contractor and one for the Engineer shall be furnished with each load of truck-mixed concrete delivered to the project sites.

B. Delivery tickets shall provide the following information:

1. Ticket number
2. Date
3. Name of ready-mix concrete producer
4. Name or number of plant at which concrete is batched
5. Truck number
6. Contractor's name
7. Job name and location
8. Type of cement used (i.e. I, Ill, air-entrained, etc.)
9. Class of concrete together with required strength, cement content, maximum size of aggregate and slump.
10. Time, dispatched from plant, time arrived at job site, time left job site
11. Type, name and amount of admixture, if any
12. Amount of concrete in load in cubic yards
13. Amount of water added at job, if any with signature of person authorizing the added water.

3.5 USE OF ADMIXTURES:

A. Admixtures for the purposes of increasing workability or appearance of the concrete, or for improving any other characteristic, will be permitted, but only with the approval of the Engineer. Any proposed admixture shall conform to the requirements of ASTM C 260 or C 494.

B. The Contractor shall be responsible for notifying the laboratory at least 12 hours before it is necessary to make test cylinders. If the Contractor places concrete without notifying the laboratory, the Engineer will have the concrete tested by means of a core test as specified in ASTM C 42 at the Contractor's expense.

C. Sampling of fresh concrete shall be in accordance with ASTM C 172.

D. Slump tests shall be made every time test cylinders are made in accordance with ASTM C 143 and reported by the testing laboratory. Additional slump tests may be required if any batches or deliveries are in doubt as to quality and as required for good control. The Contractor shall have slump measuring equipment available at the site at all times. Any slump test made by the Contractor shall be made in the presence of the Engineer.

E. Test cylinders will be made of concrete that is actually being placed at the project site and in accordance with ASTM C 31. One test shall consist of three cylinders: one for testing at end of 7 days and two (2) for testing at the end of 28 days. One test shall be made for each 50 cubic yards or fraction thereof in each day's placing and for each separate specified class of concrete.

F. The Contractor shall provide adequate facilities as required by the testing laboratory for safe storage and proper curing of concrete test cylinders on the project site for the first 24 hours as required by ASTM C 31.

G. If, Contractor desires to remove shoring earlier than at 14 days, at least two additional cylinders for the purpose of determining the compressive strength of the concrete slab at the time of removal of the forms shall be made. Such test cylinders shall be properly identified, protected in the same manner that the corresponding concrete is being

protected and left at the job site until required for testing. The Contractor shall pay for all of these tests.

H. Testing of cylinders will be in accordance with ASTM C 39.

3.6 EVALUATION OF CONCRETE TESTS:

A. The concrete cylinder tests shall be evaluated in the following manner. The concrete shall be considered acceptable if the average of the two 28-day compression tests is equal to or greater than the required laboratory minimum 28-day strength specified for each particular class of concrete construction.

B. If any one of the two tests are less than the average of the two tests by more than 10%, that entire test shall be considered erratic and not indicative of the concrete strength. Core samples will be required of this concrete.

C. Should any of the 28 day laboratory tests show an average compressive strength less than that specified for each class of concrete construction, the cement content of the remaining concrete to be placed shall be increased as will be regulated by the Engineer to insure concrete at adequate strength throughout the remainder of the work and no charge shall be made to the Owner for this increased cement content.

D. If any 28 day laboratory tests indicate that concrete of low strength has been placed which cannot safely, in the opinion of the Engineer, sustain the loads for which it has been designed under laws and regulations, the concrete in question shall be tested by taking cores from such portions of the work as the Engineer may direct. At least three representative cores shall be taken and tested as specified in ASTM C 42.

E. If compression tests of the core specimens show that the concrete is inadequate for design loads and stresses, the concrete shall be strengthened, defective members or materials replaced, or load tests of the area required as will be regulated by the Engineer.

F. The taking and testing of core samples, the replacement or strengthening of defective concrete and area load tests shall be entirely at the expense of the Contractor.

3.7 TESTING OF CONCRETE:

A. The Contractor will provide and pay for all materials that are to be tested. The Contractor shall notify the testing laboratory 24 hours prior to the placement of any concrete. The testing laboratory will submit three (3) copies of each report to the City Engineer and two (2) copies of the report to the Contractor. See General Requirements.

B. Concrete for each test shall be tested at the place of deposit for slump and entrained air and these values recorded on the test report.

C. The Contractor shall keep a standard slump cone and bull nosed rod on the job site for any additional slump tests required by the City Engineer where a variation of slumps is visible.

3.8 COMPRESSION AND STRENGTH TESTS:

A. The testing laboratory will take samples and make tests as herein listed for each one hundred (100) cubic yards of fresh concrete placed, of each class strength specified, but not less than one test for each day's pour.

B. Each test shall consist of four (4) standard 6" x 12" cylinders. The four cylinders of each test shall be made in accord with ASTM C-31, and broken in accord with ASTM C-39 at the stages as follows:

1. One cylinder from each test, break in 7 days.
2. Three cylinders from each test, break in 28 days.

C. The average strength of the 28-day cylinders shall be the basis for evaluation of acceptable concrete. This 28 day, three-cylinder average shall be at least 25% greater than the strengths specified on the drawings or herein.

3.9 REINFORCEMENT OR STRENGTH:

A. When the ultimate compressive strength (average) of any test falls below the specified strength for the class of concrete specified, the City Engineer may order additional curing for that portion of the structure where the questionable concrete has been placed.

B. In the event that such additional curing does not give the strengths specified, determined from cores made in accord with ASTM C-42, and if such tests indicate the necessity, the defective parts shall be removed and replaced as directed by the Engineer at the Contractor's expense, including the expense of the tests.

3.10 REVIEW BY THE ENGINEER BEFORE CONCRETE PLACEMENT:

A. Review by the Engineer is required of all foundations, forms, reinforcing steel, pipes, conduits, sleeves, inserts and other work required to be built into the concrete before the concrete is placed. Review by the Engineer does not relieve the Contractor from complying with the requirements of the Contract Drawings and Specifications.

B. The Engineer must be notified at least twenty-four hours prior to the placing of any concrete, and the placement of concrete before such notice is given and/or before review by the Engineer, is a valid reason for rejecting the concrete so placed.

3.11 PLACING CONCRETE:

A. Before any concrete is placed, mixing and conveying equipment shall be well cleaned form work completed, the forms or space to be filled with concrete thoroughly cleaned; forms, if not oiled, shall be wet; all reinforcement secured and cleaned; and expansion joint material, anchors and other embedded items positioned.

B. Placing of concrete shall be in accordance with the recommended practice of ACI 614 and PCA "Design and Control of Concrete Mixtures" and "Patching Concrete Pavement".

C. No concrete shall be placed during rain, sleet or snow. Rain-water shall not be allowed to increase the mixing water or to damage finish surfaces.

D. Excess form oil shall be wiped off and no oil shall be allowed to coat reinforcing steel to the slightest degree. Any oil used shall be of such quality that later surface treatments specified for concrete will not be injured or prevented from application.

E. Concrete shall be handled as rapidly as practicable from the mixer to the place of final deposit by methods which prevent the separation or loss of ingredients. It shall be deposited as nearly as practicable in its final position to avoid re-handling or flowing.

F. All vertical members shall be filled at least two (2) hours ahead of horizontal members in order to allow the concrete in the vertical members to take its initial settlement. Vertical members shall be filled in one continuous operation, using drop chutes of rubber or metal, if necessary. The concrete shall not be allowed to drop freely more than four (4) feet.

G. Place concrete only when the ambient temperature is at least 40° F and rising, and will remain above 40° for a period of at least 12 hours. A calibrated thermometer shall be provided at the project site.

H. Concrete shall be carefully worked around reinforcing and other embedded items, along surfaces and into the corners of forms eliminating all air or stone pockets.

I. Concrete shall be consolidated by the use of vibrators in accordance with ACI 609. Vibration must be by direct action in the concrete and not against forms or reinforcements. Concrete shall be vibrated until the water shows indications of rising, but not until the water has risen. Vibrators shall be used to transport concrete laterally within the forms or footings. Vibrators shall have a minimum frequency of 7000 revolutions per minute. Size of vibrator diameter shall be as required by space available between forms and reinforcing, embedded items, etc. and suitable for the mass thickness of concrete being placed. A spare vibrator shall be kept at the project site during all concrete placement operations.

J. Place concrete for slabs to required thickness and strike off at designed elevations and contours. After screeding, the concrete surface shall be tamped to force coarse aggregate away from the surface.

3.12 PROTECTION AND CURING OF CONCRETE:

A. All concrete placed shall be protected such that the temperature at the surface shall be prevented from going below 55° F for 72 hours after placing and prevented from going below freezing for 3 days thereafter.

B. The Contractor shall submit, for review by the Engineer, the methods proposed for protecting the concrete against low or high temperatures. The Contractor shall adhere to the recommendations for cold or hot weather concreting of ACI 306 and 605, respectively, as to temperature of fresh concrete, heating or cooling of concrete materials, use of accelerators and other admixtures, methods of protection, temperature records, etc.

C. Prevention of loss of moisture from surface of concrete shall be accomplished by keeping surface or forms continuously wet for as long as conditions require. Wet curing shall extend for not less than seven (7) days.

D. Whatever curing method is used, it shall be applied immediately after final troweling, floating, or after forms are removed. The curing method used shall be coordinated with the method of protection.

E. Membrane-forming compounds shall be applied as soon as possible after finishing operations. Apply compound in two (2) coats, the second at right angles to the first.

F. After concrete placement, protect concrete during other construction activities as necessary to prevent damage from equipment and personnel movements and from excessive stresses resulting from construction loads.

G. Sand floated finish shall be as follows: The forms shall be removed before the surface has fully hardened. The surface then shall be wet and rubbed with a wood float by a uniform circular motion, with fine sand being rubbed into the surface until the resulting finish is even and uniform in color and texture. This finish shall be used for all wall exposed concrete surfaces.

H. An as-cast finish shall be used for all unexposed concrete surfaces.

I. When required by the City Engineer, a broom finish shall be provided on top of slab. Broom finish shall consist of a scoured texture as directed by the engineer by drawing a stiff broom across the concrete surface. This operation shall follow immediately after floating. Tolerances shall be within 1/8-inch to promote the intended drainage.

3.13 REPAIR OF SURFACE DEFECTS:

A. After forms are removed, joint marks, fins honeycombed areas, bulges, depressions, etc., on all concrete surfaces shall be removed and/or filled, leaving a smooth, dense and true surface.

B. All tie holes and all repairable defective areas shall be patched immediately using non-staining, non-shrink grout with a minimum compressive strength of 6000 psi. The color of the patching grout shall match that of adjacent concrete.

C. Honeycombed areas and other defective concrete shall be removed down to sound concrete as directed by the Engineer before patching. All honeycombed areas shall be shown to the Engineer.

D. All areas to be patched shall be thoroughly cleaned and dampened before patching is began.

3.14 FINISHING OF FORMED SURFACES:

A. Rough Form Finish: For formed concrete surfaces not exposed-to-view in the finish work or by other construction, unless otherwise indicated. This is the concrete surface having texture imparted by form facing material used, with tie holes and defective areas repaired and patched and fins and other projections exceeding 1/4" in height rubbed down or chipped off.

B. Smooth Form Finish: For formed concrete surfaces exposed-to-view, or that are to be covered with a coating material applied directly to concrete, or a covering material

applied directly to concrete, such as waterproofing, damp proofing, painting or other similar system. This is as-cast concrete surface obtained with selected form facing material, arranged orderly and symmetrically with a minimum of seams. Repair and patch defective areas with fins or other projections completely removed and smoothed.

C. Grout Cleaned Finish: Provide grout cleaned finish to scheduled concrete surfaces, which have received smooth form finish treatment. Combine one-part Portland cement to 1-1/2 parts fine sand by volume, and mix with water to consistency of thick paint. Proprietary additives may be used at Contractor's option. Blend standard Portland cement and white Portland cement, amounts determined by trial patches, so that final color of dry grout will match adjacent surfaces. Thoroughly wet concrete surfaces and apply grout to coat surfaces and fill small holes. Remove excess grout by scraping and rubbing with clean burlap. Keep damp by fog spray for at least 36 hours after rubbing.

D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar uniformed surfaces occurring adjacent to formed surfaces, strike-off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.15 SAWING GREEN CONCRETE:

A. The sawing contractor shall provide sawing equipment adequate in units and power to complete the sawing operation as per plans and specifications. The sawing contractor shall supply, except on very small jobs, at least one stand-by saw in good working condition. An adequate supply of diamond saw blades shall be maintained on job site.

B. Sawing method - the sawing method shall consist of cutting a groove in the pavement with a power-driven concrete saw.

C. Sawed grooves for longitudinal and transverse weakened plane joints shall be cut to a minimum depth of 1/4-thickness of slab and to minimum width of 1/8-inch but in no case shall the width exceed 1/4-inch.

D. The exact time of sawing longitudinal and transverse weakened plane joints shall be the sawing contractor's responsibility. Sawing transverse weakened plane joints shall be completed within 24 hours following paving. Sawing of longitudinal weakened plane joints shall be completed within 48 hours.

E. The sequence of sawing may vary due to climatic conditions. The contractor shall exert all possible effort to prevent volunteer cracking.

F. Transverse contraction and longitudinal contraction joints shall be sawed as shown on the plans. The saw kerf shall be straight and true to the required depth and width. Reference points will be supplied by owner or contracting agency where joints are to be sawed. Joints should be flushed immediately after sawing to remove concrete laitance.

G. All joints shall be sawed true to line, with their faces perpendicular to the surface of the pavement. Joints shall not vary more than 1/4" from the true line. Transverse joints in succeeding lines shall be sawed in line matching abutting joints in first lane.

3.16 REPAIR AND SEALING OF CRACKS:

A. Volunteer cracks are all cracks and portions of cracks that are not coincident with constructed joints.

B. All volunteer cracks that occur during the 10 calendar days following placement of concrete shall be repaired by injecting the entire length of crack with epoxy under pressure. Volunteer cracks not requiring epoxy injection shall be limited to single, continuous, volunteer cracks without branch or connecting cracks that conform to either conditions described in section 1) or 2) below.

1. Begin or end at a longitudinal joint or edge of pavement which are not within 5 feet at any point along length of crack of a transverse joint or another volunteer crack that has not been injected with epoxy.

2. Do not begin or end at a longitudinal joint or edge of pavement and are not: (a) within 5 feet, at any point along length of crack of any transverse joint; (b) within one foot at any point along length of crack of any longitudinal joint-edge of alb or other volunteer crack that has not been injected with epoxy.

C. Epoxy injection shall be completed within 90 days after pavement is placed. Any accumulations of epoxy in saw cuts shall be removed by re-sawing to the specific depth prior to opening pavement to traffic.

D. Equipment used in sawing operations must meet all OSHA standards and specifications. Gas and air equipment may only be used on outside work areas due to noise and fume pollution, unless vented to the outside.

3.17 FULL DEPTH PATCHING:

A. Full depth patching shall be rectangular in shape and conform to the dimensions and typical sections shown on the plans. Patches shall be sawed full depth and replaced on a prepared subgrade to the same thickness as the existing pavement.

B. Provide steel reinforcement similar to that of whole slab replacement as noted on the drawings.

C. Provide load transfer dowels drilled, grouted and coated as specified. Textures patch surfaces similar to that of surrounding pavement.

3.18 REPAIR OF SPALLS AT SLABS AND AT JOINTS:

A. Spalls shall be repaired by shallow saw cutting in a waffle pattern within the damaged area or 6 inches from the joint or edge of spall, whichever is larger. All unsound concrete should be removed, spall cleaned and patched with specified material and finish to match surface texture of adjacent pavement.

3.19 SLAB FINISHES:

A. Non-Slip Broom Finish: Apply non-slip broom finish to driveways, exterior concrete platforms, steps and ramps and elsewhere as indicated. Immediately after trowel finishing, slightly roughen concrete surface by brooming with fiber bristle broom perpendicular to main traffic route.

B. Finished Surface of Slabs and Joints: Faulted joints (longitudinal and transversal) shall be grinded on the high side of the faulted area. A self-propelled diamond bladed grinder shall skim the entire area to provide a uniform appearance and texture at a continuous motion. A vacuum system shall be used for cleanup. Full depth repair and spall repair shall be completed before grinding operation. Joint sealing shall follow thereafter.

B. Sidewalk finishes are to comply with specification 35 05 23 (Conc. Sidewalks) section 3.6.

END OF SECTION 322301

SECTION 323244 – ROCKWALLS AND ROCK RIP RAP

PART I - GENERAL

1.1 SCOPE: This item shall govern the construction of rock rip rap and rockwalls complete with concrete foundations; at locations indicated on the plans.

PART 2 - PRODUCTS

2.1 STONE

A. Stone for shall consist of quarried limestone as nearly uniform in section as is practicable.

B. Field stone or salvaged stone from rockwalls shall be used only where directed by the City Engineer or his/her designated representative.

C. The stone shall be dense, resistant to the action of air and water, clean of old mortar and suitable in all respects for the purpose intended.

D. River stone will not be allowed.

2.2 MORTAR

A. Mortar shall consist by volume of one (1) part Portland cement, three and one half (3½) parts of clean, hard, durable sand and one quarter (1/4) part (Mortar) lime thoroughly mixed with water. Omit using Lime for rock rip rap with mortar.

B. Mortar shall have a consistency such that it can be easily handled and spread by trowel.

C. Mortar shall be Type S, ASTM Specification C270-73. Compressive strength = 1800 p.s.i. (28 days).

2.3 CONCRETE (ROCKWALLS)

A. The foundation shall conform to SECTION 32 23 01**.**

PART 3 - EXECUTION

3.1 FOUNDATION WORK (ROCKWALLS)

A. Prior to placing the concrete foundation, the excavation for the rockwalls shall be made to the proper section, and the bottom of excavation shall be compacted to 95% density per ASTM-D1557.

B. The excavation area for rockwalls shall be moist when the concrete is placed.

C. Reinforcing steel shall be placed continuously as shown on the plans and properly supported throughout the placement of concrete.

D. The surface of the concrete shall not be troweled.

E. The concrete shall be cured a minimum of 48 hours before more than 300 pounds per square foot of stone and mortar is placed on the foundation. Contractor shall embed the first SIX inches of the first layer into the fresh concrete of the footing.

3.2 STONE WORK

A. Stone, as far as practicable, shall be selected as to size and shape in order to secure fairly large, flat-surfaced stone which may be erected with true and even surface faces and a minimum of exposed mortar.

B. All stones shall be thoroughly cleaned, water soaked (24-hour minimum), hand placed and embedded in mortar so that no stones shall touch each other or the concrete foundation but shall be firmly bound together with mortar.

C. The finished surface shall present a neat, clean and workmanlike and true to line of typical sections as shown in the plans.

D. The interior of the rockwall shall be completely filled with spalls and pieces of the specified stone, completely embedded and surrounded by mortar with no voids.

E. The spacing between stone shall be no more than 1 inch.

3.3. ERECTION

A. The erection of the rockwall shall not be more than three feet in height for every 24-hour period to allow time for the lower portions to become sufficiently set. All stones shall be thoroughly wet before being placed in fresh mortar.

B. The last layer of rock prior to break of construction phase shall not have any mortar on top.

C. Fresh mortar must be used for continuation of work following erection break.

END OF SECTION 323244

SECTION 328400 - LANDSCAPE IRRIGATION SYSTEM

PART 1 - GENERAL

A. Work under this section consists of installing a complete underground sprinkler system as shown on the drawings and as specified hereafter. The CONTRACTOR performing this work shall furnish all labor, equipment, materials, and permits necessary for the completion of the system, except those specified to be furnished by others. Unless otherwise specified or indicated on the drawings, or authorized by the CITY ENGINEER OR LANDSCAPE ARCHITECT. The construction of the sprinkler system shall include the furnishing, installing, and testing of all pipe, fittings, valves, heads, controllers, wires, air release and vacuum valves, backflow preventers inlet and discharge piping, automatic drain valves, manual drain valves, valve boxes, and all other components pertinent to the drawings and specifications of this system. The CONTRACTOR shall perform all trenching, excavating, boring, backfilling, compacting, concrete pouring, electrical work, welding, and any other work necessary for the completion of the project.

1.1 APPLICABLE STANDARDS AND REFERENCES

A. Drawings and general provisions of the Contract, including City of El Paso Design and Construction Standards for Park Facilities (January 2013 edition). General Conditions and any Supplemental Special Provisions, apply to this Section.

B. Related Requirements:

1. American Society for Testing and Materials (Latest Editions) (ASTM)

D-1784	Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds.
D-1785	Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80 and 120.
D-1875	Test Method for Density of Adhesives in Fluid Form.
D-2241	Specifications for Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe.
D-2466	Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40.
D-2467	Specification for Socket-Type Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, schedule 80.
D-2564	Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings.
D-2774	Recommended Practices Underground Installation of Thermoplastic Pressure Piping.

D-2855 Recommended Practice for Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings.

D-3139 Specification for Joints for Plastic Pressure Pipe Using Flexible Elastomeric Seals.

1.2 SUMMARY

A. Section Includes:
1. Piping.
2. Encasement for piping.
3. Manual valves.
4. Pressure-reducing valves.
5. Automatic control valves.
6. Automatic drain valves.
7. Transition fittings.
8. Dielectric fittings.
9. Miscellaneous piping specialties.
10. Sprinklers.
11. Quick couplers.
12. Drip irrigation specialties.
13. Controllers.
14. Boxes for automatic control valves.

1.3 DEFINITIONS

A. Lateral Piping: Downstream from control valves to sprinklers, specialties, and drain valves. Piping is under pressure during flow.

B. Mainline Piping: Downstream from point of connection and/or master valve to water distribution piping to, and including, control valves. Piping is under water-distribution-system pressure.

C. Low Voltage: As defined in NFPA 70 for circuits and equipment operating at less than 50 V or for remote-control, signaling power-limited circuits.

D. Sub-grade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before mulch is placed.

1.4 PERFORMANCE REQUIREMENTS

A. Irrigation zone control shall be automatic operation with Maxicom compatible controller and automatic control valves.

B. Location of Sprinklers and Specialties: Design location is approximate. Make minor adjustments necessary to avoid plantings and obstructions such as signs and light standards. Maintain 100 percent irrigation coverage of areas indicated.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.

B. Delegated-Design Submittal: For irrigation systems indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional Landscape Architect responsible for their preparation.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Irrigation Contractor.

B. Controller Timing Schedule: Indicate timing settings for each automatic controller zone.

C. Field quality-control and testing reports.

1.7 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For sprinklers controllers and automatic control valves to include in operation and maintenance manuals.

1.8 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Rotary Sprinklers: Equal to 5% percent of amount installed for each type and size indicated, but no fewer than two (2) units.
   2. Spray Sprinklers: Equal to 5% percent of amount installed for each type and size indicated, but no fewer than two (2) units.
   3. Bubblers: Equal to 5% percent of amount installed for each type indicated, but no fewer than two (2) units.

1.9 QUALITY ASSURANCE

A. Contractor Qualifications: An employer of workers that include a Texas Licensed Irrigator and Texas Licensed Irrigation Installers.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Deliver piping with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe-end damage and to prevent entrance of dirt, debris, and moisture.

B. Store plastic piping protected from direct sunlight and freezing temperatures. Support to prevent sagging and bending.

1.11 PROJECT CONDITIONS

A. Interruption of Existing Water Service: Do not interrupt water service to facilities occupied by OWNER or others unless permitted under the following conditions and then only after arranging to provide temporary water service according to requirements indicated:
   1. Notify the City's Project Manager no fewer than THREE days in advance of proposed interruption of water service.
   2. Do not proceed with interruption of water service without City's Project Manager's written permission.

1.12 RECORD DRAWINGS

A. The CONTRACTOR shall provide and keep up to date a complete set of "as-built" drawings which shall be corrected daily to show all changes in the location of sprinkler heads, controllers, backflow preventers, valves, drains, meters, points of connection, wire splice points, pipe and wire routing and other changes that may have been made from the original drawings and specifications as provided to him. All gate valves, manual drains, wire splices, automatic and manual valve locations, controllers, power supply, and mainline piping shall be shown with actual measurements to reference points so they may be easily located in the field.

B. At the time of final acceptance the CONTRACTOR shall furnish as built drawing in format and LANDSCAPE ARCHITECT to the OWNER the "as-built" record drawing showing the entire completed irrigation system revisions for inclusion in the final Record Drawings. The CONTRACTOR shall also provide and install in each of the controller pedestals on the project a legible reduction, laminated in plastic, layout drawing of the irrigation system that the controller operates.

PART 2 - PRODUCTS

2.1 GENERAL

A. All materials shall be new and without flaws or defects of any type and shall be the best of their class and kind. All materials shall be of the brands and types noted on the plans or as specified herein, or approved as equal.

B. The irrigation system was designed around equipment manufactured by specific companies as a standard. Approved as equal equipment by other manufacturers may be used only with the approval of the CITY'S ENGINEER OR LANDSCAPE ARCHITECT.

C. Quality Assurance

Installer's qualifications:

Licensed Irrigator in good standing through TCEQ with a minimum of five (5) years experience installing irrigation systems of comparable size.

Provide résumé of projects comparable in size for the past five (5) years and current Irrigators License.

D. Submittals

E. Submit manufacturer's product data and installation instructions for each of the system components, materials and equipment for approval.
Submit the following material samples:
1) Piping and fittings. (With all markings)
2) Glue, primer and cleaner.
3) Wire.
4) Wire connectors and sealer.

F. Submit the following equipment samples:
1) Sprinkler heads, one (1) of each type, complete with housing.
2) Valves.
3) Valve boxes, valve box extensions and flat lid covers with vandal proof bolts.
4) Controller.
5) Remote control valve wire.

G. Approved equipment samples will be returned to Contractor and may be used on the project.
1) Construction Site, Delivery, Storage, and Handling
2) Construction Site shall be properly secured with fencing and appropriate signage.

H. Deliver irrigation system components in manufacturers original undamaged and unopened containers with labels intact and legible to the site.

I. Deliver plastic piping in bundles, packaged to provide adequate protection of pipe ends, both: threaded or plain type piping as applicable.

J. Store and handle materials to prevent damage and deterioration.

K. Store materials out of sun to prevent weatherizing and discoloration.

L. Store materials above grade to prevent contamination with soils and corrosion.

M. Provide secure, locked storage for piping, valves, sprinkler heads, and similar components that cannot be immediately replaced, to prevent installation delays.

N. Contractor is responsible to coordinate with all utility agencies to verify underground and above ground utility lines, and existing park infrastructure to include irrigation lines, irrigation control valve wiring, area lights wiring, athletic field lights wiring, etc. Any damaged utilities will be restored at Contractor‟s expense.

O. Protect existing trees, plants, lawns, and other features designated to remain as part of the final landscape work. Refer to most current version Policy and Standards Manual for the Care of Trees and Shrubs in the City of El Paso and the details in the Contract Documents.

P. Promptly repair damage to adjacent facilities caused by irrigation system work operations. Cost of repairs is at Contractor's expense.

Q. Promptly notify Parks and Recreation Director, or designee, and Designer of unexpected sub-surface conditions.

R. Irrigation system layout is diagrammatic. Exact locations of piping, sprinkler heads, valves, and other components shall be established by Contractor in the field at time of installation and coordinated with Parks and Recreation Director, or designees, and Designer prior to start of any work.

S. Space sprinkler components as indicated on plans, or as required to be modified in field after obtaining acceptance of locations by Parks and Recreation Director, or designees, and Designer.

T. Minor adjustments in system layout will be permitted to clear existing fixed obstructions. Final system layout shall be acceptable to Parks and Recreation Director, or designee, and Designer.

U. Cutting and Patching (if required):

(1) Cut through concrete and masonry with core drills. Jackhammers not permitted.

(2) Materials and finishes for patching shall match existing cut surface materials and finish. Exercise special care to provide patching at openings in exterior walls to ensure water tightness.

(3) Method and materials used for cutting and patching shall be acceptable to Parks and Recreation Director, or designee, and Designer.

PART 3 - MATERIALS

3.1 GENERAL

A. Provide only new material, without flaws or defects, of the highest quality of their specified class and kind. No pipe or fittings with sunburn, visible crack, holes, foreign materials, blisters, or wrinkles shall be used on the project.

B. Comply with pipe sizes indicated. No substitution of smaller pipes will be permitted without approval of the Parks and Recreation Director, or designee.

C. Remove damaged and defective pipe from the site immediately.

D. Provide pipe continuously and permanently marked with manufacturers name or trademark, size, schedule, type of pipe, working pressure at 73 degrees F., and National Sanitation Foundation (NSF) approval.

1. Plastic pipe, fittings, and connections:
   a. PVC pipe: ASTM D2241, rigid, un-plasticized PVC
   b. Pressure mains:
      1) PVC Schedule 40 IPS plastic pipe for 4.0 inch or smaller main lines.
      2) PVC Class 200 IPS plastic pipe for main lines larger than 4.0 inch.
   c. Distribution laterals: SDR 21, Class 200
      1) PVC pipe fittings: ASTM D2241 schedule 40 PVC molded fittings suitable for solvent weld, or screwed connections.

d. Saddle fittings and cross fittings are not permitted on new installations.
e. Schedule 80 PVC pipe may be threaded.
f. Use male adapters for plastic to metal connections.
g. Use ASTM D-2466 insert type fittings.

E. Backflow Prevention Device

1). Backflow Prevention Device shall be Reduced Pressure Principle Assembly.

2). Shall meet all TCEQ codes and City of El Paso Plumbing and Irrigation Codes.

3). Enclosure shall be stainless steel or aluminum, insulated, with lockable hasp, hinges for ease of access to test ports mounted on 6 inch concrete pad. Enclosure to be ASSE 1060 Class I certified.

F. Valve boxes shall be heavy duty, structural foam plastic with high stiffness to weight ratio with lockable flat lid and secured by tamper proof bolt, or approved equal. Valve box extensions shall be provided as needed and cover shall match mulch except where reclaimed water is being used and purple covers and valve boxes are required. Size as indicated on plans.

G. Sprinkler Heads:

H. Rotary-type sprinkler heads, , shall be of commercial quality:
(1) 6inch stainless steel riser.
(2) Non-strippable drive mechanism.
(3) Easy arc adjustment, at least 50-360°.
(4) Operating pressure range of 30-90 psi.
(5) Effective radius of 40.0-70.0 feet.
(6) Check valve in head as required.
(7) Automatic arc return.
(8) 1 inch inlet

I. Pop-Up Spray Heads

1). commercial grade

2). 6 inch risers

3). Provide radius at required psi and precipitation rates as indicated and all requirements of the design

J. Irrigation system controllers

1). Maxicom compatible

1.) Controller must be installed in a weather-proof securable metal box that has a hasp, rain hood, door hinge stop and plan pocket holder.

2). Cluster Control Unit (CCU) must be Maxicom compatible

3). Provide Rain Sensor and connect to controller. Set rain sensor to 1/8 inch. Install rain sensor as shown on construction drawings.

K. Quick coupler (QC)

1). 1.0 inch, double lug QC with factory assembled swing joint that has Snap-Lok male brass stabilizer fitting installed in a valve box with flat lid and vandal proof bolt or approved equal and isolation brass ball valve installed in a separate similar valve box.

2). Quick coupler valve and isolation valve shall have a weather proof tag that reads, “non-potable water, not safe for drinking.” In a 14”x19” valve box with purple flat lid.

L. Pipe fittings – all pipe assembly fittings must be Schedule 40 PVC Pipe fittings.

M. Copper Tubing for feed from water meter shall be used on all installations from meter past Backflow Prevention Device or past pump as applicable.
1). Type K

N. Electrical control valve low voltage wire:
1). Electrical control and ground wire: Direct burial Type UF 600 volt AWG control
2). Cable #14 gauge or larger as required by manufacturer based on total distance.
3). Wire color code:
a). Provide control or "hot" wires either black or red in color.
b). Provide common or "ground" wires white in color.
c). Provide a minimum of three (3) spare hot wires in three (3) different colors other than black, red or white.

O. Other

1). Valve box fill material to be used shall be 3/8 inch washed pea gravel in sufficient quantity to provide a minimum depth of 4 inch inside the box and clear equipment and piping underside.

2). Back fill material around all valve boxes will be clean soil free of: stones larger than 1 inch diameter, foreign matter, organic material, and debris and properly compacted to prevent settling.

3). Low voltage wire connectors: Dry-Splice prefilled Socket seal type wire connectors with properly filled waterproof silicone sealer or approved equal.

PART 4 - EXECUTION

A. Commencement of work shall be contingent on review and release of all project submittals. Any work performed without the review and release of project submittals may be subject to rejection.

B. For soil preparation and conditions refer to Section 329200 Turf Grass and Sod

C. Inspection Process

1.) Inspect final grades and obtain approval from Parks and Recreation Director, or designee and Designer prior to installation of irrigation system, site amenities, site flat work, utilities, etc. Do not start any work until all identified unsatisfactory conditions are corrected.

D. Preparation

1). Layout and stake the location of each pipe run and all sprinkler heads and sprinkler valves for approval.

2). Remove existing paving for sleeve installation. Saw cut existing paving to provide uniform straight transition at new to existing paving as applicable.

3). Place sleeves as indicated for installation of control wires where hard surfaces will be traversed. Extend sleeve 24 inches beyond edge of hard surface; keep clean of debris, wrap with 4-mil plastic; and tape with good quality non-cloth heavy duty plastic duct tape.

4). Place sleeves as indicated for installation of main and lateral lines piping – extend 24 inches beyond edge of hard surface; keep clean of debris; wrap with 4-mil plastic, and tape with good quality non-cloth heavy duty plastic duct tape.

E. Installation

1). Excavating and backfilling:

a). All excavation shall be considered unclassified excavation and include all materials encountered.

b). Excavate trenches of sufficient depth and width to permit proper handling and installation of pipe and fittings.

c). Fill to match adjacent grade elevations with clean construction sand.

d). Place markers at all joints or assembly points of main and lateral lines for ease of access during pressure test of system.

F. Plastic pipe:

1). Make plastic to metal joints with plastic threaded male adapters or flanges as applicable.

2). Maintain pipe interiors free of dirt and debris. Close open ends of pipe by acceptable methods when pipe installation is in progress.

3). In preparation for pipe solvent welds, any cut piping must be done with miter box and cut ends must be beveled and burrs removed thoroughly.

4). Make solvent weld joints in accordance with manufacturers recommendations or as specified herewith. Solvent welds are to be consistent with the three step gluing process to include: cleaner, primer and solvent.

G. Sprinklers, Fittings, Valves, and Accessories:

1). Install fittings, valves, sprinkler heads, risers, and accessories in accordance with manufacturers instructions. Adjust sprinkler heads to provide head to head coverage.

2). Install backflow prevention valve, fittings, and accessories as shown on construction drawings and as required to complete the system.

H. Control Wiring:

1). Install electric control cable in separate trenches with minimum 18 inches of cover. Trench for wires will be minimum 5 feet from main line on north and west side of main as applicable. Install wire with slack to allow for thermal expansion and contraction. Tape and bundle at 20 foot intervals.

2). Expansion joints in wire shall be provided at 200-foot intervals by making 5-6 turns of the wire around a piece for 0.5 inch pipe for slack.

3). Provide sufficient slack at site connections at remote control valve boxes to allow raising the valve bonnet or valve splice to the surface without disconnecting the wires when repair is required.

4). Connect each remote control valve to one station of a controller except as otherwise indicated.

5). Connect one dedicated common ground wire for each Controller and related remote control valves operated by Controller.

I. Controllers:

1). Shall be on separate circuits from any other equipment and have two surge arrestors. Surge arrestors shall be enclosed in separate junction boxes: one will be connected to the 120V GFCI outlet and the other shall be connected to the low voltage side of Controller as recommended by manufacturer.

2). Shall be provided with power cord plugs to plug into a GFCI protected 120V supply outlet.

3). Each controller shall have a dedicated common wire.

4). Irrigation controllers shall be installed in a stainless steel pedestal strong box as shown on construction drawings.

5). Irrigation controllers shall be installed in water tight NEMA rated, securable enclosures when set in a pump house.

J. Sleeves:

1). Irrigation remote control valve wires: Provide new sleeves for all locations where hardscape exists. Install new sleeves prior to paving or sidewalk installation at all applicable locations.

2). Irrigation main and lateral lines: Provide sleeves minimum two (2) times the size of piping it will hold. Place sleeves as indicated for installation of main and lateral line piping – extend 24 inches beyond edge of hard surface - wrap ends with 4-mil plastic and tape with good quality plastic tape. Gray, cloth duct tape is not acceptable.

3). Install pipe sleeves under existing concrete or asphalt surface by jacking, boring, or hydraulic driving of the sleeve.

K. Backflow Prevention Device:

1). Support backflow prevention device during dry fitting process.

2). Backflow prevention device needs to be supported at all times by temporary or permanent methods.

3). Copper risers shall not be used at any time to support the backflow prevention device.

4). Backflow prevention device must have adjustable support brackets provided under both cut-off valves and set in place and anchored properly.

5). Backflow support brackets are to have 0.5 inch thick rubber pads under the backflow prevention device.

6). Provide concrete pad of 3,000 psi compressive strength at 28 days, a minimum thickness of six (6) inches.

7). Provide PVC pipe sleeves where copper pipe risers pass through concrete slab.

8). Concrete slab to extend minimum of 4 inches beyond outer face of backflow prevention device enclosure cabinet.

L. Flushing, Testing, and Adjustment:

1). Flushing

a). Flush main lines prior to installation of remote control valves.

b). Flush main lines after irrigation valves are installed and in preparation for main line pressure test.

c). Flush lateral lines with swing joints installed; flushing is performed prior to installation of sprinkler heads and in preparation for pressure test. After pressure test is performed and passed, sprinkler head bodies are installed.

d). Flush lateral lines – after successful pressure test install sprinkler head body and flush lateral lines; ensure that sprinkler head body is higher than adjacent ground to prevent back siphon of water into lateral lines. Once system is flushed satisfactorily re-assemble sprinkler heads.

2). Testing:

a). Pressure test main line – after all main line piping, isolation valves, pump piping, stub-outs, quick coupler isolation valves, all irrigation remote control valves and all related components are installed conduct the pressure test for a period of 24 hours. Test main water line at 50 psi above static pressure or design pressure, based on highest value; with a maximum pressure loss of 1% allowed to pass. Water main must be pressurized hydraulically and not pneumatically.

b). Pressure test lateral lines – for a period of two (2) hours, test lateral lines at static or design pressure, based on highest value, with a maximum loss of 2% allowed to pass. Lateral lines must be pressurized hydraulically.

c). The main line pressure test must be conducted from Monday through Wednesday so that completion of test is conducted on a regularly scheduled working day.

d). Failed Pressure Tests - any failed pressure tests will be re-tested as applicable after all necessary repairs are completed.

e). Test and demonstrate the controller by operating appropriate day, hour, and station selection features as required to automatically start and shut down irrigation cycles to accommodate turf and plant requirements.

3). Adjustments:

a). Set sprinklers perpendicular to grade and level to ground with properly stabilized soils around them.

b). Adjust sprinklers for the proper arc and radius coverage.(Head to head coverage)

c). Adjust nozzles on sprinklers for proper and uniform distribution.

4). Service and Guarantee:

a). Contractor shall guarantee the irrigation system for one year (365 days) from the date of project acceptance against defects in materials and workmanship, the guarantee does not include vandalism.

b). Contractor shall respond to callbacks within 24 hours of notification within the one year warranty period. Contractor will be required to provide a report of repairs performed to correct callback deficiencies.

c). Emergency repairs performed by City of El Paso staff shall not void the warranty.

d). Emergency or other repairs performed by City of El Paso staff due to contractors‟ lack of timely response will be invoiced and charged to Contractor. Checks will be made payable to City of El Paso, care of Parks and Recreation Department.

M. Disposal of Waste Material

1). Stockpile and keep site free of loose and air born debris, perform daily clean up of site and dispose of waste material in an appropriate container.

2). Stockpile, haul from site, and legally dispose of waste materials, including unsuitable excavated materials, rock trash, and debris on a weekly basis.

3). Maintain disposal route clear, clean and free of debris.

N. Acceptance

1). Test and demonstrate to the Parks and Recreation Director, or designee, and Designer the satisfactory operation of the system free of leaks and mechanical or electrical flaws. Provide Water Audit with passing results.

2). Prior to the audit, the contractor shall ensure that all heads are adjusted for head to head coverage and to ensure that sidewalks are not sprayed. The irrigation schedule must be properly programmed in the controller to reflect actual operating conditions.

3). Instruct City of El Paso staff in the operation of the system, including adjustment of sprinklers, controller(s), valves, pump controls, and moisture sensing control(s) and related irrigation equipment.

4). Perform cleaning upon completion of the work. Remove from site all excess materials, soil, debris, and equipment. Repair damage resulting from irrigation system installation.

5). Upon irrigation system acceptance, submit written operating and maintenance instructions.

6). Provide as-built irrigation system record drawings: reproducible drawings, and electronic copy in pdf and autocad form.

6). Legibly mark drawings to record actual construction to include dimensions.

7). Indicate horizontal and vertical locations, referenced to permanent surface improvements.
8). Identify field changes of dimension and detail and changes made by change order.

PART 5 - MEASUREMENT AND PAYMENT

A. Measurement of the landscape irrigation system shall be lump sum or by units of the major components of the system as specified in the Supplemental Technical Specifications and/or the Bid Proposal and shall include the entire irrigation system from the water meter.

B. Payment shall be at the contract price per lump sum in the Bid Proposal, which shall include all material, equipment and labor required to install and make operational the irrigation system. This shall include the top soil and sod used to cover trenches and damage to existing site due to irrigation system revisions.

END OF SECTION 328400

SECTION 32 92 00 - TURF AND GRASS SODDING

PART 1 - GENERAL

1.1 SCOPE:

A. Furnish all labor, materials and equipment necessary for preparation of sod bed, furnishing and installation of sod, fertilizer, soil amendments, and related work specified herein and as indicated on plans or as authorized by the CITY ENGINEER or LANDSCAPE ARCHITECT.

1.2 APPLICABLE STANDARDS AND REFERENCES:

A. Drawings and general provisions of the Contract, including City of El Paso Design and Construction Standards for Park Facilities (January 2013). General Conditions and any Supplemental Special Provisions, apply to this Section.

B. Related Requirements:

1. Section 1002 "Landscape Irrigation" for irrigation of landscaped areas.
2. Section 1003 "Planting" for trees, shrubs, ground covers, and soil amendments.
3. Turf grass Producers International (TPI) Guideline Specifications for Turf Grass Sodding.

1.3 SUMMARY:

C. Section Includes:

1. Sodding.
2. Turf renovation.
3. Grass paving.

1.4 DEFINITIONS:

D. Finish Grade: Elevation of finished surface of sod.

E. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.

F. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

G. Planting Soil: Existing, on-site soil, imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.

I. Sub-grade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before organic amendment is placed.

1.5 QUALIFICATIONS:

J. All work specified herein shall be performed by a licensed landscape contractor experienced with the type and scale of work required, and having equipment and personnel adequate to perform the work as per the specifications.

1. Experience: Five years' experience in turf installation in addition to requirements in General Conditions of Contract.

1.6 PREINSTALLATION MEETINGS:

K. Pre-installation Conference: Conduct conference at Project site or as directed by the CITY ENGINEER or LANDSCAPE ARCHITECT.

1.7 INFORMATIONAL SUBMITTALS:

L. Qualification Data: For CONTRACTOR.

M. Certification of Turfgrass Sod: From sod vendor for each turfgrass monostand or mixture, stating the botanical and common name, percentage of each species and variety, and location of production. Include the year of production and date of cutting.

1. Certification of each mixture for turfgrass sod. Include identification of source and name and telephone number of supplier.

N. Product Certificates: For fertilizers, from manufacturer.

O. Pesticides and Herbicides: Product label and manufacturer's application instructions specific to Project.

P. Organic material - Composted material that is shredded to a fine workable state, well-aged compost.

Q. Fill Dirt/Top Soil – Provide friable suitable top soil, free of weeds, weed seeds, rocks larger than 1/2” and any other extraneous materials.

1.8 CLOSEOUT SUBMITTALS:

R. Maintenance Data: Provide recommended procedures to be established by OWNER for maintenance of turf during the first calendar year. Submit to the CITY ENGINEER OR LANDSCAPE ARCHITECT before expiration of required maintenance period.

1.9 QUALITY ASSURANCE:

S. Installer Qualifications: A qualified CONTRACTOR whose work has resulted in successful

turf establishment.

1. Field Supervision: Require CONTRACTOR to maintain an experienced full-time supervisor on Project site when work is in progress.

1.10 DELIVERY, STORAGE, AND HANDLING:

T. Sod: Harvest, deliver, store, and handle sod according to requirements in "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" sections in TPI's "Guideline Specifications to Turfgrass Sodding." Deliver sod within 24 hours of harvesting and in time for planting promptly. Protect sod from breakage and drying.

U. Bulk Materials:

1. Do not dump or store bulk materials near fuel containers or storage, structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Accompany each delivery of bulk materials with appropriate certificates.

1.11 SODDING WINDOW/FIELD CONDITIONS:

V. Sodding Restrictions: Sodding shall occur during the following period. Coordinate sodding period with maintenance period to provide required maintenance from date of sodding completion.

1. Sodding: April 1st – September 30th.

PART 2 - PRODUCTS

2.1 TURFGRASS SOD:

A. Turfgrass Sod: Certified Number 1 Quality/Premium, including limitations on thatch, weeds, diseases, nematodes, and insects, is complying with "Specifications for Turfgrass Sod Materials" in TPI's "Guideline Specifications to Turfgrass Sodding." Furnish viable sod of uniform density, color, and texture that is strongly rooted and capable of vigorous growth and development when planted.

a) Turfgrass Species: Hybrid Bermuda.
   i) Acceptable cultivars of Hybrid Bermuda grass are:
      (1) Propagated by seed – Sydney, Panama, or Bermuda Triangle; at a rate of (3) pounds of seed per 1000 square feet, and following all other guidelines for seeding listed in Planting Methods.
      (2) Propagated by sod – Celebration, Santa Ana or Tifway (Tif 419); solid sodded, and following all other guidelines for sodding listed in Planting Methods.
         (a) The use of over seeded sod shall be approved by the Parks and Recreation Department Representative, or designee, prior to booking and planting.

b) other water conserving species or sod blends/mixes may be substituted for above if indicated on the drawings or with prior written approval of the CITY REPRESENTATIVE OR LANDSCAPE ARCHITECT. A sample of sod and a written submittal of the seed mix shall be submitted a minimum of 30 days prior to laying of sod. It shall be other grasses, stones, and other harmful or deleterious matter.

B. Sod shall be cut by an approved mechanical sod cutter to a thickness of not more than 1¾" inch, or less than 1½" inch including a grass mat. Handling of sod shall be done in a manner that will prevent tearing, breaking, drying, or any other damage. Sod shall be installed in place on the site not more than 24 hours after cutting.

2.2 FERTILIZER:

C. Starter Fertilizer: Granular complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

1. Composition: 4 lb/1000 sq. ft. (0.45 kg/92.9 sq. m)] with a minimum of 18 percent of actual nitrogen, 24 percent available phosphorous, and 16 percent available potassium, by weight (18-24-16).
2. Composition: Nitrogen, phosphorous, and with trace minerals, contractor to provide fertilizer composition for both starter and slow-release fertilizer in submittals.

2.3 ORGANIC AMENDMENT:

D. Compost Mulch: Well-composted (minimum 1 year), stable, and weed-free organic matter, pH range of 5.5 to 7.5; moisture content 35 to 55 percent by weight; 90% percent passing through one quarter-inch (¼") sieve; soluble salt content not exceeding 1.5 mnhos/cm, not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:

1. Organic Matter Content: 80 percent of dry weight minimum.
2. Feedstock: Agricultural, food, or industrial residuals; bio-solids; yard trimmings; or source-separated or compostable mixed solid waste.

E. Humates or other composted bio-waste materials may be utilized with prior written approval of the CITY ENGINEER OR LANDSCAPE ARCHITECT.

F. Provide depth as per plans and incorporate into the top 3-4 inches of soil, rake smooth.

2.4 PESTICIDES:

G. General: Pesticide, registered and approved by the EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

H. Pre-Emergent Herbicide (Selective and Nonselective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the organic amendment layer.

I. Post-Emergent Herbicide (Selective and Nonselective): Effective for controlling weed growth that has already germinated.

TOP DRESSING MIX

2.5 Sandy Loam Soil Mix for Grass Paving fill: Sound, sharp, washed, natural complying with gradation requirements in ASTM C 33/C 33M. Use 100% sand or blend consisting of ½ sand and ½ planting soil.

PART 3 - EXECUTION

3.1 EXAMINATION:

A. Examine areas to be planted for compliance with requirements and other conditions affecting installation and performance of the Work.

1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
2. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
3. Uniformly moisten excessively dry soil that is not workable or which is dusty.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. If contamination by foreign or deleterious material or liquid is present in soil within a sodding area, remove the soil and contamination as directed by the CITY ENGINEER OR LANDSCAPE ARCHITECT and replace with new planting soil.

3.2 PREPARATION OF SODBED:

A. Protect structures; utilities; sidewalks; pavements; and other facilities, trees, shrubs, and plantings from damage caused by sodding operations.

1. Protect grade stakes set by others until directed to remove them.

B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

1. Reference project NEPA and/or SWPPP requirements if applicable.

C. Prior to start of soil preparation all finish grades shall be established and approved as meeting the requirements of the grading plan. Apply a uniform one-inch layer (3 C.Y./1000 square feet) of organic amendment and 4 lbs. of starter fertilizer per each 1000 square feet to the entire area to be sodded. After application of organic amendment and starter fertilizer all areas to be sodded shall be thoroughly rototilled to a mini mum depth of 6 inches. After rototilling is complete at cross directions, drag to an even grade, then roll for firmness.

D. INSTALLATION: Before laying sod, the finish grade shall be brought to a firm, even surface,

free from stones or lumps, in excess of one-inch diameter, and shaped to provide drainage. The finish grade shall be inspected and approved by the CITY ENGINEER OR LANDSCAPE ARCHITECT prior to laying any sod.

E. Organic Amendment: 1" depth shall be installed as submitted and acceptable to the CITY ENGINEER OR LANDSCAPE ARCHITECT, shall be incorporated into the top 3" of soil prior to installation of sod.

F. Sandy Loam Soil Mix for Grass Paving fill: Sound, sharp, washed, natural sand or crushed stone complying with gradation requirements in ASTM C 33/C 33M for fine aggregate blended with planting soil. Use blend consisting of ½ sand and ½ planting soil.

3.3 SODDING:

A. Do not lay sod if dormant or if ground is frozen or muddy.

B. Lay sod over moistened soil lightly raking the soil ahead of each sod strip. Sod shall be laid perpendicular to or across the slope with staggered joints. Remove and dispose any netting from sod as laid. Pieces shall be fitted together tightly so that no joint is visible, and sod tamped firmly and evenly by hand to insure contact with soil, eliminate air pockets, and form a smooth surface. After all the sodding has been laid it shall be rolled with a hand roller.

1. If previously approved by the CITY ENGINEER OR LANDSCAPE ARCHITECT anchor sod on slopes exceeding 1:6 with minimum 4" inch steel staples spaced as recommended by sod manufacturer but not less than two anchors (top and bottom) per 4 linear feet to prevent slippage.

C. Watering: Water all sodded areas immediately after final rolling with a fine spray to a depth of 4 inches. Irrigate by means of the automatic underground irrigation system all sodded areas as often as necessary to maintain moist soil to a minimum depth of 1½" (inches) below sod and promote healthy grass growth until a thick, even stand of grass has been obtained.

D. Mowing: Mow the lawn when the grass is over 2 inches tall, keeping lawn mower blades minimum 2 inches high for the first cutting. Do not mow when turf is wet.

3.4 TURF RENOVATION:

A. Renovate existing turf where indicated.

B. Renovate turf damaged by Contractor's operations, such as storage of materials or equipment and movement of vehicles.

1. Reestablish turf where settlement or washouts occur or where minor re-grading is required.
2. Install new planting soil as required.

C. Remove dead or diseased sod and/or vegetation from unsatisfactory turf areas; do not bury in soil.

D. Remove topsoil containing foreign materials, such as oil drippings, fuel spills, stones, gravel, and other construction materials resulting from CONTRACTOR's operations, and replace with

new planting soil.

E. Mow, dethatch, core aerate, and rake existing turf.

F. Remove weeds before sodding. Where weeds are extensive, apply selective herbicides as required. Do not use pre-emergence herbicides.

G. Remove waste and foreign materials, including weeds, soil cores, grass, vegetation, and turf, and legally dispose of them off Owner's property.

H. Till stripped, bare, and compacted areas thoroughly to a soil depth of 6 inches (150 mm).

I. Apply soil amendments and initial fertilizer required for establishing new turf and mix thoroughly into top 4 inches (100 mm) of existing soil. Install new planting soil to fill low spots and meet finish grades.

1. Soil Amendment(s): Reference 1005.2.3
2. Initial Fertilizer: Reference 1005.2.2

J. Install sod as required for new turf.

K. Water newly planted areas and keep moist until new turf is established.

3.5 TURF PROTECTION AND MAINTENANCE:

A. General: Protection and Maintenance shall continue for thirty days or until the entire project is accepted. Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, re-grade, and replant bare or eroded areas and re-mulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.

1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
2. Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.

B. Watering: Keep soil uniformly moist to a depth of 1½” inches below sod.

1. Schedule watering to prevent wilting, pudding, and erosion. Avoid walking over muddy or newly planted areas.
2. The CONTRACTOR shall be responsible for the cost of water during the installation and maintenance of sod until final acceptance.

C. Mowing: Sod shall be maintained at a height of 2". The maximum height between cuttings shall not exceed 3".

D. Turf Post fertilization: Apply fertilizer after initial mowing and when grass is dry.

3.6 SATISFACTORY TURF:

A. Turf installations shall meet the following criteria as determined by the CITY ENGINEER OR LANDSCAPE ARCHITECT:

1. Satisfactory Sodded Turf: /Final acceptance shall only occur at the end of maintenance period, after healthy, well-rooted, even-colored, viable turf has been established, free of weeds, open joints, bare areas, and surface irregularities.

B. Use specified materials to reestablish turf that does not comply with requirements, and continue maintenance until turf is satisfactory.

3.7 PESTICIDE APPLICATION:

A. Apply pesticides, herbicides, and other chemical products and biological control agents only with prior written approval of the CITY ENGINEER OR LANDSCAPE ARCHITECT and according to requirements of authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with CITY ENGINEER OR LANDSCAPE ARCHITECT and others in proximity to the Work. Notify CITY ENGINEER OR LANDSCAPE ARCHITECT before any application is performed.

B. Post-Emergent Herbicides (Selective): Apply only as necessary to treat already-germinated weeds and according to manufacturer's written recommendations.

3.8 CLEANUP AND PROTECTION:

A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of them off city property.

C. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.

3.9 INSPECTIONS:

A. The following inspections shall be the minimum required inspections during the course of construction. Additional inspections shall be made any time at the discretion of the CITY ENGINEER OR LANDSCAPE ARCHITECT.

B. It shall be the responsibility of the CONTRACTOR to notify the CITY ENGINEER OR LANDSCAPE ARCHITECT in writing, 48 hours in advance of each required inspection.

C. The sequence of required inspections shall not be changed from the sequence listed below. The CONTRACTOR shall not proceed with work of the next sequence without written approval of the work of the previous sequence. Payment will not be approved for items which have not been inspected and approved in writing.

1. Automatic irrigation system, if required, shall be installed, tested, and approved.
2. Each phase of soil preparation shall be inspected in process.
3. Finish grade shall be inspected.
4. Sod shall be inspected prior to installation.
5. Sod shall be inspected after installation.
6. Sod shall be inspected at end of maintenance period.
7. Final inspection of the project and acceptance.
8. Sod shall be inspected 12 months after completion.

3.10 MEASUREMENT AND PAYMENT:

A. The measurement of grass sodding shall be by the square foot or square yard as indicated in the bid proposal.

3.11 PAYMENT:

A. Payment shall be made at the contract unit price per square foot or square yard for grass sodding complete in place, which shall include all material, equipment and labor required in preparation, final grading, fertilizing, sod placement, watering, and maintenance as specified herein.

END OF SECTION 32900

SECTION 32 93 00 - PLANTING

PART 1 - GENERAL

1.1 SCOPE:

A. Work under this section consists of the planting of trees, shrubs, and groundcovers, including the furnishing of all labor, equipment, and materials and performing all work in connection therewith in accordance with the plans and specifications, or as authorized by the CITY ENGINEER OR LANDSCAPE ARCHITECT.

1.2 APPLICABLE STANDARDS AND REFERENCES:

A. Drawings and general provisions of the Contract, including City of El Paso Policy and Standards Manual for the Care of Trees and Shrubs in the City of El Paso.

B. General Conditions and any Supplemental Special Provisions, apply to this Section.

C. Related Requirements:

1. Section 1001 Site Preparation and Protection for protecting, trimming, pruning, repairing, and replacing existing trees to remain that interfere with, or are affected by execution of the Work.
2. Section 1002 Landscape Irrigation System for supplemental watering system.
3. Section 1005/1006 Turf Grass Sodding/Seeding.

D. The scientific and common names used for the plants called for on the drawings are generally in conformity with the approved names given in the American Standard for Nursery Stock (ANSI 260.1), published by the American Nursery and Landscape Association (latest edition) and Standardized Plant Names, published by the American Joint Committee on Horticultural Nomenclature (latest edition). The names of varieties not included therein are generally in conformity with the names accepted in the nursery trade. Drawings and general provisions of the Contract, including City of El Paso Design and Construction Standards for Park Facilities (January 2013 edition).

1.3 SUMMARY:

A. Section Includes:

1. Planting/Plants
2. Tree Stabilization
3. Root Barriers
4. Tree grates

1.4 DEFINITIONS:

A. Backfill: The earth used to replace or the act of replacing earth in an excavation.

B. Balled and Burlapped Stock: Plants dug with firm, natural balls of earth in which they were

grown, with a ball size not less than diameter and depth recommended by ANSI Z60.1 for type and size of plant required; wrapped with burlap, tied, rigidly supported, and drum laced with twine with the root flare visible at the surface of the ball as recommended by ANSI Z60.1. Balled and Potted Stock: Plants dug with firm, natural balls of earth in which they are grown and placed, unbroken, in a container. Ball size is not less than diameter and depth recommended by ANSI Z60.1 for type and size of plant required. Bare-Root Stock: Plants with a well-branched, fibrous-root system developed by transplanting or root pruning, with soil or growing medium removed, and with not less than the minimum root spread according to ANSI Z60.1 for type and size of plant required.

C. Container-Grown Stock: Healthy, vigorous, well-rooted plants grown in a container, with a well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1 for type and size of plant required.

D. Fabric Bag-Grown Stock: Healthy, vigorous, well-rooted plants established and grown in-ground in a porous fabric bag with well-established root system reaching sides of fabric bag. Fabric bag size is not less than diameter, depth, and volume required by ANSI Z60.1 for type and size of plant.

E. Finish Grade: Elevation of finished surface of planting soil.

F. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant. Some sources classify herbicides separately from pesticides.

G. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

H. Planting Area: Areas to be planted.

I. Planting Soil: Existing, on-site soil, imported soil, or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.

J. Plant; Plants; Plant Material: These terms refer to vegetation in general, including trees, shrubs, vines, ground covers, ornamental grasses, bulbs, corms, tubers, or herbaceous vegetation.

K. Root Flare: Also called "trunk flare." The area at the base of the plant's stem or trunk where the stem or trunk broadens to form roots, the area of transition between the root system and the stem or trunk.

L. Stem Girdling Roots: Roots that encircle the stems (trunks) of trees below the soil surface.

M. Sub-grade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

1.5 COORDINATION:

A. Coordination with Turf Areas (Lawns): Plant trees, shrubs, and other plants after finish grades

are established and before planting turf areas unless otherwise indicated.

1. When planting trees, shrubs, and other plants after planting turf areas, protect turf areas, and promptly repair damage caused by planting operations.

1.6 PREINSTALLATION MEETINGS:

A. Pre-installation Conference: Conduct conference at Project site or as directed by the CITY ENGINEER OR LANDSCAPE ARCHITECT.

1.7 ACTION SUBMITTALS:

A. Product Data: For each type of product.

1. Plant Materials: Include quantities, sizes, quality, and sources for plant materials.
2. Plant Photographs: Include color photographs in digital format of each required species and size of plant material as it will be furnished to Project. Take photographs from an angle depicting true size and condition of the typical plant to be furnished. Include a scale rod or other measuring device in each photograph. For species where more than 20 plants are required, include a minimum of three plants in photograph or three photographs showing the average plant, the best quality plant, and the worst quality plant to be furnished. Identify each photograph with the full scientific name of the plant, plant size, and name of the growing nursery.

B. Samples for Verification: For each of the following:

1. Soil Amendment or Organic Mulch: 1-pint (0.5-L) volume of each organic mulch required; in sealed plastic bags labeled with composition of materials by percentage of weight and source of mulch. Each Sample shall be typical of the lot of material to be furnished; provide an accurate representation of color, texture, and organic makeup.
2. Proprietary Root-Ball-Stabilization Device: One unit.
3. Tree Grates, and Accessories: Manufacturer's standard size delivered to site for review, to verify design and color selected.
4. Root Barrier: Width of panel by 12 inches (300 mm).

1.8 INFORMATIONAL SUBMITTALS:

A. Qualification Data: For Landscape Contractor prior to bid. Include list of similar projects completed by CONTRACTOR demonstrating capabilities and experience. Include project names, addresses, and year completed, and include names and addresses of owners' contact persons.

1. Professional Licensure: CONTRACTOR shall be a currently licensed in the State of Texas to provide services and be in good standing.
2. Experience: Five years' experience in landscape installation in addition to any "Quality Requirements."

B. Product Certificates: For each type of manufactured product, from manufacturer, and complying with the following:

1. Manufacturer's certified analysis of standard products.
2. Analysis of other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.

C. Pesticides and Herbicides: Product label, Product Safety Data, and manufacturer's application instructions specific to Project.

D. Sample Warranty: For special warranty.

1.9 CLOSEOUT SUBMITTALS:

A. Maintenance Data: Recommended procedures to be established by Owner for maintenance of plants during a calendar year. Submit before expiration of required maintenance periods.

1.10 QUALITY ASSURANCE:

A. CONTRACTOR Qualifications: A licensed and qualified Landscape Contractor whose work has resulted in successful landscape installation and establishment of plants on a scale similar to the prorated project.

1. Installer's Field Supervision: CONTRACTOR to maintain an experienced full-time supervisor on Project site when work is in progress.
2. Pesticide Applicator: State licensed, commercial.

B. Provide quality, size, genus, species, and variety of plants, complying with applicable requirements in ANSI Z60.1.

C. Measurements: Measure according to ANSI Z60.1. Do not prune to obtain required sizes.

1. Trees and Shrubs: Measure with branches and trunks or canes in their normal position. Take height measurements from or near the top of the root flare for field-grown stock and container-grown stock. Measure main body of tree or shrub for height and spread; do not measure branches or roots tip to tip. Take caliper measurements 6 inches (150 mm) above the root flare for trees up to 4-inch (100-mm) caliper size, and 12 inches (300 mm) above the root flare for larger sizes.
2. Other Plants: Measure with stems, petioles, and foliage in their normal position.

D. Plant Material Observation: CITY ENGINEER OR LANDSCAPE ARCHITECT may observe plant material either at place of growth wholesale nursery or at CONTRACTORS yard before delivery for compliance with requirements, for genus, species, variety, cultivar, size, and quality. However, at no additional expense to the OWNER, the CONTRACTOR shall be responsible for all travel expenses incurred by the CITY ENGINEER OR LANDSCAPE ARCHITECT for any travel outside the El Paso Metropolitan Area. CITY ENGINEER OR LANDSCAPE ARCHITECT may also observe trees and shrubs further for size and condition of balls and root systems, pests, disease symptoms, injuries, and latent defects and may reject unsatisfactory or defective material at any time during progress of work. The CITY ENGINEER OR LANDSCAPE ARCHITECT shall be the judge of the quality and acceptability of all plant materials. Remove rejected trees or shrubs immediately from Project site.

1.11 DELIVERY, STORAGE, AND HANDLING:

A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws if applicable.

B. Bulk Materials:

1. Do not dump or store bulk materials near fuel containers/storage, structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Accompany each delivery of bulk materials with appropriate certificates.

C. Deliver bare-root stock plants within 24 hours of digging. Immediately after digging up bare-root stock, pack root system in wet straw, hay, or other suitable material to keep root system moist until planting. Transport in covered, temperature-controlled vehicles, and keep plants cool and protected from sun and wind at all times.

D. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of plants during shipping and delivery. Do not drop plants during delivery and handling.

E. Store bulbs, corms, and tubers in a dry place at 60 to 65 deg F (16 to 18 deg C) until planting.

F. Wrap trees and shrubs with burlap fabric over trunks, branches, stems, twigs, and foliage to protect from wind and other damage during digging, handling, and transportation.

G. Deliver plants after preparations for planting have been completed, and install immediately. If planting is delayed more than six hours after delivery, set plants and trees in their appropriate aspect (sun, filtered sun, or shade), protect from weather and mechanical damage, and keep roots moist.

1. Heel-in bare-root stock. Soak roots that are in less than moist condition in water for two hours. Reject plants with dry roots.
2. Set balled stock on ground and cover ball with soil, peat moss, sawdust, or other acceptable material.
3. Do not remove container-grown stock from containers before time of planting.
4. Water root systems of plants stored on-site deeply and thoroughly. Water as often as necessary to maintain root systems in a moist, but not overly wet condition.

1.12 FIELD CONDITIONS:

A. Field Measurements: Verify actual grade elevations, service and utility locations, irrigation system components, and dimensions of plantings and construction contiguous with new plantings by field measurements before proceeding with planting work.

B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions and warranty requirements.

C. Coordinate planting period with maintenance period to provide required maintenance from the dye of Substantial Completion.

1.13 WARRANTY:

A. All plant materials shall be warranted to be in a live, healthy, and normal growing condition following the date of acceptance by the CITY ENGINEER OR LANDSCAPE ARCHITECT through 12 months or one growing season whichever comes first. A growing season shall be defined as May 15 through September 15. Such plant materials that are dead or in an unhealthy, impaired growth condition shall be replaced by the CONTRACTOR within 10 days after the end of the warrantee period.

B. Special Warranty: CONTRACTOR agrees to repair or replace plantings and accessories that fail in materials, workmanship, or growth within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Death and unsatisfactory growth, except for defects resulting from abuse, lack of adequate maintenance, or neglect by the CITY.
b. Structural failures including plantings falling or blowing over.
c. Faulty performance of tree stabilization and tree grates.
d. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

2. Include the following remedial actions as a minimum:

a. Immediately remove dead plants and replace unless required to plant in the succeeding planting season.
b. Replace plants that are more than 25 percent dead or in an unhealthy condition at end of warranty period.
c. Provide extended warranty for period equal to original warranty period, for replaced plant material.

PART 2 - PRODUCTS

2.1 PLANT MATERIAL:

A. General: Furnish nursery-grown plants true to genus, species, variety, cultivar, stem form, shearing, and other features indicated in Plant List, Plant Schedule, or Plant Legend indicated on Drawings. A complete list of plants, including a schedule of quantities, sizes and other requirements is shown on the plans. In the event that discrepancies occur between quantities of plants and the planting plan, the plant quantities indicated on the planting plan shall govern. All plants shall comply with ANSI Z60.1; with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock, densely foliated when in leaf and free of disease, pests, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.

1. Trees with pruned, damaged, crooked, or multiple leaders; tight vertical branches where bark is squeezed between two branches or between branch and trunk ("included bark"); crossing trunks; cut-off limbs more than 3/4 inch (19 mm) in diameter; or with stem girdling roots are unacceptable, unless otherwise specified on plans.
2. Collected Stock: Do not use plants harvested from the wild, from native stands, from an established landscape planting, or not grown in a nursery unless otherwise specified on plans or approved in writing by the CITY ENGINEER OR LANDSCAPE ARCHITECT
3. All plant material shall have a uniform shape around its complete indicated in the schedule of plants circumference. Plant material with irregular branching patterns or with branching patterns more highly developed on one side than on other sides shall not be acceptable.

B. Provide plants of sizes, grades, and ball or container sizes complying with ANSI Z60.1 for types and form of plants required. Plants of a larger size may be used if acceptable to the CITY ENGINEER OR LANDSCAPE ARCHITECT, with a proportionate increase in size of roots or balls. Container grown plant material shall have been established in its delivery container for not less than six months, but for not more than two years. Any root bound material will not be accepted.

C. Balled and burlapped plant material shall have a solid ball of earth of minimum specified size and held in place securely by burlap and a stout twine or rope. Broken or loose balls will be rejected. Furnish trees and shrubs with root balls measured from top of root ball, which begins at root flare according to ANSI Z60.1. Root flare shall be visible before planting.

D. Labeling: Label each plant of each variety, size, and caliper with a securely attached, waterproof tag bearing legible designation of common name and full scientific name, including genus and species. Include nomenclature for hybrid, variety, or cultivar, if applicable for the plant.

E. If formal arrangements or consecutive order of plants is indicated on Drawings, select stock for uniform height and spread, and number the labels to assure symmetry in planting.

F. Annuals and Biennials: Provide healthy, disease-free plants of species and variety shown or listed, with well-established root systems reaching to sides of the container to maintain a firm ball, but not with excessive root growth encircling the container. Provide only plants that are acclimated to outdoor conditions before delivery and that are in bud but not yet in bloom.

G. Plant material substitutions shall not be made without the written approval of the CITY ENGINEER OR LANDSCAPE ARCHITECT. The use of materials differing in kind, quality, or size from that specified will be allowed only after the CITY ENGINEER OR LANDSCAPE ARCHITECT is convinced that all means of obtaining the specified materials have been exhausted. At the time bids are submitted, the CONTRACTOR is assumed to have located the materials necessary to complete the job as specified. All requests for substitutions must be submitted no later than five days prior to the opening of bids. All plants must be procured for the project within seven days of the Notice To Proceed unless otherwise stipulated in writing by the CITY ENGINEER OR LANDSCAPE ARCHITECT.

2.2 FERTILIZERS:

A. Planting Tablets: Tightly compressed chip-type, long-lasting, slow-release, commercial-grade planting fertilizer in tablet form. Tablets shall break down with soil bacteria, converting nutrients into a form that can be absorbed by plant roots.
1. Size tablets based on plant material size per manufacturers specifications.
2. Nutrient Composition: 20 percent nitrogen, 10 percent phosphorous, and 5 percent potassium, by weight plus micronutrients.

2.3 ORGANIC MULCH:

A. Organic Mulch: Free from deleterious materials and suitable as a top dressing of trees and shrubs, consisting of one of the following:
1. Type: Ground or shredded bark and bark chips from coniferous trees.
2. Size Range: 5 inches (125 mm) maximum, 1/2 inch (13 mm) minimum.
3. Color: Natural.

2.4 PLANTING SOIL MIXTURES:

A. Specification for complete planting backfill. Planting soil mixture shall be a premixed, homogeneous soil. It will consist of sand and organic matter and meet performance characteristics outlined below.
1. Sand, 60% by volume of clean masonry sand with a sieve analysis of:

Sieve Size	**% Passing**
3/8”	100%
#4	93-99%
#8	82-88%
#16	73-79%
#30	55-61%
#50	24-30%
#100	6-12%
#200	7-2%

2. Organic Matter, 40% by volume of compost material specified as follows: Organic matter shall be a combination organic carbon sources such as straw, hay, bark, sawdust or wood shavings and nitrogen sources such as manure, blood meal, or chemical fertilizers. Nitrogen sources must be added prior to composting. It is recommended this mixture be aerobically composted at temperatures between 120 F and 160 F for a period of not less than 1 year. Weed seeds are to be destroyed during composting and urea and ammonia form nitrogen ratio shall be as listed below. Finished compost is to be screened to provide less than 2% remaining on a ½” screen. Carbon to Nitrogen Ratio of organic matter shall be less than 50 parts carbon to one-part nitrogen.

B. The complete PLANTING SOIL MIXTURE shall have the following characteristics:

1. Calcium to magnesium ratios shall not exceed 20 parts calcium to one-part magnesium. Potash (Potassium) (K) shall be present at a rate of at least 200 parts per million of exchangeable potassium. Salinity (EGXK) not to exceed 2 AMHOS/CM Nitrate nitrogen (NO3-N) shall be present at a rate of at least 30 parts per million. Phosphorus as measured by the Olson sodium bicarbonate measurement method shall be at greater than 25 parts per million. Ph of the planting soil mixture shall be between 6.5 and 7.5. Organic

matter by weight (by simple combustion) shall be more than 5%. Available moisture capacity in the one third to 15 bar tension shall be greater than 15%. TKN2 or Total Kjeldahl Nitrogen shall be 250 ppm or greater. NH4 shall be 25 ppm or less

2. The CITY ENGINEER OR LANDSCAPE ARCHITECT reserves the right to adjust the above characteristics and waive all irregularities.
3. The PLANTING SOIL MIXTURE shall be tested by the CONTRACTOR at an approved soil testing laboratory. Test results shall be submitted to and approved by the CITY ENGINEER OR LANDSCAPE ARCHITECT prior to delivery of the planting soil mixture. Test Results shall list the as tested qualities of the above characteristics and any recommendations the testing Lab has.

C. The OWNER will also test the final product as delivered or installed to verify the mixture matches the listed characteristics and the submitted soils report. Approved soil testing Laboratories are:

IAS (Inter Ag Services)
2515 East University Drive
Phoenix, AZ 85034 (602) 273-7248

or
ASSAGAI Analytical Labs
4301 Masthead NE
Albuquerque, NM 87109 (505) 217-0333

D. Potential sources for compost and the PREPARED SOIL MIXTURE is:

Western Organics Gro-Well
9000 Bates Rd SW
2nd and Bates Rd SW
Albuquerque, NM 87105 (505) 877-8670

E. Each Delivery shall have a load ticket. The load ticket shall list:

1. Source of Mixture.
2. Approximate volume of load.
3. Date of delivery or loading.
4. Typed name of individual representing the source.
5. Inked original signature of individual representing the source.
6. Area of site product delivered to.
7. Tickets shall be collected and provided to the CITY ENGINEER OR LANDSCAPE ARCHITECT.

2.5 PESTICIDES:

A. General: Pesticide registered and approved by the EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

B. Pre-Emergent Herbicide (Selective and Nonselective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.

C. Post-Emergent Herbicide (Selective and Nonselective): Effective for controlling weed growth that has already germinated.

2.6 TREE-STABILIZATION MATERIALS:

A. Trunk-Stabilization Materials:

1. Upright and Guy Stakes: Rough-sawn, sound, new hardwood or softwood with specified wood pressure-preservative treatment, free of knots, holes, cross grain, and other defects, 2-by-2-inch nominal (38-by-38-mm actual) by length indicated, pointed at one end.
2. Flexible Ties: Wide rubber or elastic bands or straps of length required to reach stakes or turnbuckles or compression springs.
3. Guys and Tie Wires: ASTM A 641/A 641M, Class 1, galvanized-steel wire, two-strand, twisted, 0.106 inch (2.7 mm) in diameter.
4. Tree-Tie Webbing: UV-resistant polypropylene or nylon webbing with brass grommets.
5. Guy Cables: Five-strand, 3/16-inch- (4.8-mm-) diameter, galvanized-steel cable, with zinc-coated turnbuckles or compression springs, a minimum of 3 inches (75 mm) long, with two 3/8-inch (10-mm) galvanized eyebolts.
6. Proprietary Staking-and-Guying Devices: Proprietary stake or anchor and adjustable tie systems to secure each new planting by plant stem; sized as specified on plans and according to manufacturer's written recommendations.

2.7 MISCELLANEOUS PRODUCTS:

A. Root Barrier: Black, molded, modular panels 18 inches (457 mm) to 24 inches (610 mm) high (deep), 85 mils (2.2 mm) thick, and with vertical root deflecting ribs protruding 3/4 inch (19 mm) out from panel surface, manufactured with minimum 50 percent recycled polyethylene plastic with UV inhibitors.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following]:
   a. DeepRoot Green Infrastructure, LLC.
   b. NDS Inc.
   c. Villa Root Barrier.

PART 3 - EXECUTION

3.1 EXAMINATION:

A. Planting operations as specified herein shall begin only when other work including placing of topsoil to finished grade has progressed sufficiently to permit planting and shall be performed only during favorable weather conditions in accordance with accepted practice.

B. Examine areas to receive plants, with CITY ENGINEER OR LANDSCAPE ARCHITECT present, for compliance with requirements and conditions affecting installation and performance of the Work.

C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by CITY ENGINEER OR LANDSCAPE ARCHITECT and replace with new planting soil.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION:

A. Protect structures, utilities, sidewalks, pavements, and other facilities and turf areas and existing plants from damage caused by planting operations.

B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

C. Lay out individual tree and shrub locations and areas for multiple plantings. Stake locations, outline areas, adjust locations when requested, and obtain CITY ENGINEER OR LANDSCAPE ARCHITECT'S acceptance of layout before excavating or planting. Make minor adjustments as required.

D. Lay out plants at locations shown on drawings or as directed by the CITY ENGINEER OR LANDSCAPE ARCHITECT. Stake locations of individual trees and shrubs and outline areas for multiple plantings.

3.3 PLANTING AREA ESTABLISHMENT:

A. General: Prepare planting area for soil placement and mix planting soil according to the Specifications or Drawings.

B. Before planting, obtain CITY ENGINEER OR LANDSCAPE ARCHITECT'S acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

C. Application of Fertilizer: At time of planting if specified on plans or directed by CITY ENGINEER OR LANDSCAPE ARCHITECT, apply fertilizer to planting locations.

3.4 EXCAVATION FOR TREES AND SHRUBS:

A. Planting Pits and Trenches: Excavate circular planting pits.

1. Excavate planting pits with sides sloping inward at a 45-degree angle. Excavations with vertical sides are unacceptable. Trim perimeter of bottom leaving center area of bottom raised approximately 4" to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil to prevent settling. Scarify sides of planting pit smeared or smoothed during excavation.
2. Excavate approximately three times as wide as ball diameter for plant stock.
3. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball.
4. If area under the plant was initially dug too deep, add soil to raise it to the correct level and thoroughly compact the added soil to prevent settling.
5. Maintain angles of repose of adjacent materials to ensure stability. Do not excavate subgrades of adjacent paving, structures, hardscapes, or other new or existing improvements.
6. Maintain supervision of excavations during working hours.
7. Keep excavations covered or otherwise protected when unattended by CONTRACTOR personnel.

B. Backfill Soil: Subsoil and topsoil removed from excavations may be used as backfill soil unless otherwise indicated.

C. Obstructions: Notify CITY ENGINEER OR LANDSCAPE ARCHITECT if unexpected rock, hardpan or obstructions detrimental to trees or shrubs are encountered in excavations. If plant locations cannot be relocated, provide the following:

D. Hardpan Layer: Drill 6-inch- (150-mm-) diameter holes, 24 inches (600 mm) apart, into free-draining strata or to a depth of 10 feet (3 m), whichever is less, and backfill with free-draining material such as sand or gravel.

E. Drainage: Notify CITY ENGINEER OR LANDSCAPE ARCHITECT if subsoil conditions evidence unexpected water seepage or retention in tree or shrub planting pits.

F. Fill excavations with water and allow to percolate away before positioning trees and shrubs.

3.5 TREE, SHRUB, AND VINE PLANTING:

A. Delivery: In any one day, only those plant materials intended to be planted that day shall be delivered to the project site unless otherwise approved by the CITY ENGINEER OR LANDSCAPE ARCHITECT.

B. Root Flare and Roots: At time of planting, verify that root flare is visible at top of root ball according to ANSI Z60.1. If root flare is not visible, remove soil in a level manner from the root ball to where the top-most root emerges from the trunk. After soil removal to expose the root flare, verify that root ball still meets size requirements. Remove stem girdling roots and kinked roots. Remove injured roots by cutting cleanly; do not break.

C. Balled and Burlapped Stock: Set each plant plumb and in center of planting pit or trench with root flare 2 inches (50 mm) above adjacent finish grades.

1. Backfill: Backfill with 10% (by volume) Planting Soil Mixture and 90% parts excavated soil.
2. After placing some backfill around root ball to stabilize plant, carefully cut and remove burlap, rope, and wire baskets from tops of root balls and from sides, but do not remove from under root balls. Remove pallets, if any, before setting. Do not use planting stock if root ball is cracked or broken before or during planting operation.
3. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
4. If specified on plans, place planting tablets equally distributed around each planting pit when pit is approximately one-half filled. Place tablets beside the root ball about 1 inch (25 mm) from root tips; do not place tablets in bottom of the hole.
5. Continue backfilling process. Water again after placing and tamping final layer of soil.

D. Container and Fabric Bag Grown Stock: Set each plant plumb and in center of planting pit or trench with root flare 2 inches (50 mm) above adjacent finish grades.

1. Backfill: Backfill with 10% (by volume) Planting Soil Mixture and 90% parts excavated soil.
2. Carefully remove root ball from container without damaging root ball or plant.
3. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
4. If specified on plans, place planting tablets equally distributed around each planting pit when pit is approximately one-half filled. Place tablets beside the root ball about 1 inch (25 mm) from root tips; do not place tablets in bottom of the hole.
5. Continue backfilling process. Water again after placing and tamping final layer of soil.

E. Bare-Root Stock: Set and support each plant in center of planting pit or trench with root flare 2 inches (50 mm) above adjacent finish grade.

1. Backfill: Backfill with 10% (by volume) Planting Soil Mixture and 90% parts excavated soil.
2. Spread roots without tangling or turning toward surface. Plumb before backfilling, and maintain plumb while working.
3. Carefully work backfill in layers around roots by hand. Bring roots into close contact with the soil.
4. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
5. If specified on plans, place planting tablets equally distributed around each planting pit when pit is approximately one-half filled. Place tablets beside soil-covered roots about 1 inch (25 mm) from root tips; do not place tablets in bottom of the hole or touching the roots.
6. Continue backfilling process. Water again after placing and tamping final layer of soil.

F. Slopes: When planting on slopes, set the plant so the root flare on the uphill side is flush with the surrounding soil on the slope; the edge of the root ball on the downhill side will be above the surrounding soil. Apply enough soil to cover the downhill side of the root ball.

3.6 MECHANIZED TREE-SPADE PLANTING

A. Trees may be planted with an approved mechanized tree spade at the designated locations. Do not use tree spade to move trees larger than the maximum size allowed for a similar field-grown, balled-and-burlapped root-ball diameter according to ANSI Z60.1, or larger than manufacturer's maximum size recommendation for the tree spade being used, whichever is smaller.

B. Use the same tree spade to excavate the planting hole as will be used to extract and transport the tree.

C. When extracting the tree, center the trunk within the tree spade and move tree with a solid ball of earth.

D. Cut exposed roots cleanly during transplanting operations.

E. Where possible, orient the tree in the same direction as in its original location.

3.7 TREE, SHRUB, AND VINE PRUNING

A. Remove only dead, dying, or broken branches. Do not prune for shape.

B. Prune, thin, and shape trees, shrubs, and vines only with approval of and as directed by CITY ENGINEER OR LANDSCAPE ARCHITECT.

C. Prune, thin, and shape trees, shrubs, and vines according to standard professional horticultural and arboricultural practices. Unless otherwise indicated by CITY ENGINEER OR LANDSCAPE ARCHITECT, do not cut tree leaders; remove only injured, dying, or dead branches from trees and shrubs; and prune to retain natural character.

D. Do not apply pruning paint to wounds.

3.8 TREE STABILIZATION

A. Trunk Stabilization by Upright Staking and Tying: Install trunk stabilization as follows unless otherwise indicated:
   1. Upright Staking and Tying: If specified on plans or if directed by the CITY ENGINEER OR LANDSCAPE ARCHITECT stake trees of 2-inch (50- mm) caliper or larger. Stake trees of less than 2-inch (50-mm) caliper only as required to prevent wind tip out. Use a minimum of two stakes of length required to penetrate at least 18 inches (450 mm) below bottom of backfilled excavation and to extend at least 72 inches (1830 mm) above grade. Set vertical stakes and space to avoid penetrating root balls or root masses.
   2. Upright Staking and Tying: Stake trees with two stakes for trees up to 12 feet (3.6 m) high and 2-1/2 inches (63 mm) or less in caliper; three stakes for trees less than 14 feet (4.2 m) high and up to 4 inches (100 mm) in caliper. Space stakes equally around trees.
   3. Support trees with bands of flexible ties at contact points with tree trunk. Allow enough slack to avoid rigid restraint of tree.
   4. Support trees with two strands of tie wire, connected to the brass grommets of tree-tie webbing at contact points with tree trunk. Allow enough slack to avoid rigid restraint of tree.

3.9 ROOT-BARRIER INSTALLATION

A. Install root barrier where indicated on Drawings.

B. Align root barrier vertically and run it linearly along and adjacent to the paving or other hardscape elements to be protected from invasive roots.

C. Install root barrier continuously for a distance of specified on the drawings.

1. Position top of root barrier according to manufacturer's written recommendations.
2. Overlap root barrier a minimum of 12 inches (300 mm) at joints.
3. Do not distort or bend root barrier during construction activities.
4. Do not install root barrier surrounding the root ball of tree.

3.10 PLACING SOIL IN PLANTERS

A. Place a layer of drainage gravel at least 4 inches (100 mm) thick in bottom of planter. Cover bottom with filter fabric and wrap filter fabric 6 inches (150 mm) up on all sides. Duct tape or fasten along the entire top edge of the filter fabric, to secure the filter fabric against the sides during the soil-filling process.

B. Fill planter with planting soil. Place soil in lightly compacted layers to an elevation of 1-1/2 inches (38 mm) below top of planter, allowing natural settlement.

3.11 GROUND COVER AND PLANT PLANTING

A. Set out and space ground cover and plants other than trees, shrubs, and vines as indicated on Drawings in even rows with triangular spacing.

B. Use planting soil mixture for backfill.

C. Dig holes large enough to allow spreading of roots.

D. For rooted cutting plants supplied in flats, plant each in a manner that minimally disturbs the root system but to a depth not less than two nodes.

E. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water.

F. Water thoroughly after planting, taking care not to cover plant crowns with wet soil.

G. Protect plants from hot sun and wind; remove protection if plants show evidence of recovery from transplanting shock.

3.12 ORGANIC MULCHING

A. Mulch backfilled surfaces of planting areas and other areas indicated.

1. Trees and Treelike Shrubs in Turf Areas: Apply organic mulch ring of 4-inch (100 mm) average thickness, with sufficient radius to cover planting pit backfill radius around trunks or stems. Do not place mulch within 3 inches (75mm) of trunks or stems.
2. Organic Mulch in Planting Areas: Apply 4 inch (100mm) average thickness of organic mulch over entire surface of planter or planting area and finish level with adjacent finish grades or top of planter edge. Do not place mulch within 2 inches (50-mm) of trunks or stems.

3.13 TREE GRATE INSTALLATION

A. Tree Grates: Install according to manufacturer's written instructions. Set grate segments flush with adjoining surfaces. Shim from supporting substrate with soil-resistant plastic. Maintain a 3-inch- (75-mm-) minimum growth radius around base of tree; cut or break away portions of casting, if necessary, according to manufacturer's written instructions.

3.14 PLANT MAINTENANCE

A. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings.

B. Fill in, as necessary, soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.

C. Apply treatments as required and approved in writing by the CITY ENGINEER OR LANDSCAPE ARCHITECT, to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use integrated pest management practices when possible to minimize use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.

3.15 PESTICIDE APPLICATION

A. Apply pesticides and other chemical products and biological control agents according to authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with OWNER operations and others in proximity to the Work. Notify OWNER before each application is performed.

B. Pre-Emergent Herbicides (Selective and Nonselective): Apply to tree, shrub, and ground-cover areas according to manufacturer's written recommendations. Do not apply to seeded areas.

C. Post-Emergent Herbicides (Selective and Nonselective): Apply only as necessary to treat already-germinated weeds and according to manufacturer's written recommendations.

3.16 REPAIR AND REPLACEMENT

A. General: Repair or replace existing or new trees and other plants that are damaged by construction operations, in a manner approved by the CITY ENGINEER OR LANDSCAPE ARCHITECT.

1. Submit details of proposed pruning and repairs.
2. Perform repairs of damaged trunks, branches, and roots within 24 hours, if approved.
3. Replace trees and other plants that cannot be repaired and restored to full-growth status, as determined by CITY ENGINEER OR LANDSCAPE ARCHITECT.

B. Remove and replace trees and other plants that are more than 25 twenty five percent dead or in an unhealthy condition or are damaged during construction operations that the CITY ENGINEER OR LANDSCAPE ARCHITECT determines are incapable of restoring to normal growth pattern.

3.17 CLEANING AND PROTECTION

A. During planting, keep adjacent paving and construction clean and work area in an orderly condition. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Remove surplus soil and waste material including excess subsoil, unsuitable soil, trash, and debris and legally dispose of them off OWNERS property.

C. Protect plants from damage due to landscape operations and operations of other contractors and trades. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged plantings.

D. After installation and before Substantial Completion, remove nursery tags, nursery stakes, tie tape, labels, wire, burlap, and other debris from plant material, planting areas, and Project site.

3.18 MAINTENANCE SERVICE

A. Maintenance Service for Trees and Shrubs: Provide maintenance by skilled employees of Landscape CONTRACTOR. Begin maintenance immediately after plants are installed and continue until plantings are acceptably healthy and well established, but for not less than the duration of the maintenance period required for turf establishment. If the maintenance period required shall be 30 days after Substantial Completion or as otherwise required by the Project contract.

B. Maintenance shall include watering, weeding, cultivating, removal of dead material and debris, resetting of trees to upright positions, restoration of earth basins, and such other operations as may be necessary for the health of the planted stock and the general appearance of the landscaped areas. Protection shall include care of the planted stock from damages resulting from trespass, erosion (including watering), weather, vandalism, disease and the like.

C. WATER: The CONTRACTOR shall be responsible for the cost of water during the installation and maintenance of plant material until final acceptance.

3.19 INSPECTIONS

A. The following inspections shall be the minimum required inspections during the course of construction. Additional inspections shall be made at any time at the discretion of the CITY ENGINEER OR LANDSCAPE ARCHITECT.

B. It shall be the responsibility of the CONTRACTOR to notify the CITY ENGINEER OR LANDSCAPE ARCHITECT, in writing, 48 hours in advance of each required inspection.

C. The sequence of required inspections shall not be changed from the sequence listed below. The CONTRACTOR shall not proceed with work of the next sequence without written approval of the work of the previous sequence. Payment will not be approved for items which have not been inspected and approved in writing.

1. Inspect plant material at CONTRACTOR'S yard prior to delivery to job site.
2. Inspect staked locations of material prior to planting.
3. Inspect material at the job site prior to and during planting.
4. Inspect at end of maintenance period.
5. Final inspection of the project and acceptance.
6. Inspect at end of growing season or 12 months, whichever comes first.

3.20 MEASUREMENT AND PAYMENT

A. The measurement shall be made per each size of a particular species of tree shrub and/or ground cover plant. The measurement of tree grates shall be made per each size, and model specified on the drawings provided and installed complete in place. The measurement for root barriers shall be made per linear foot, provided and installed complete in place.

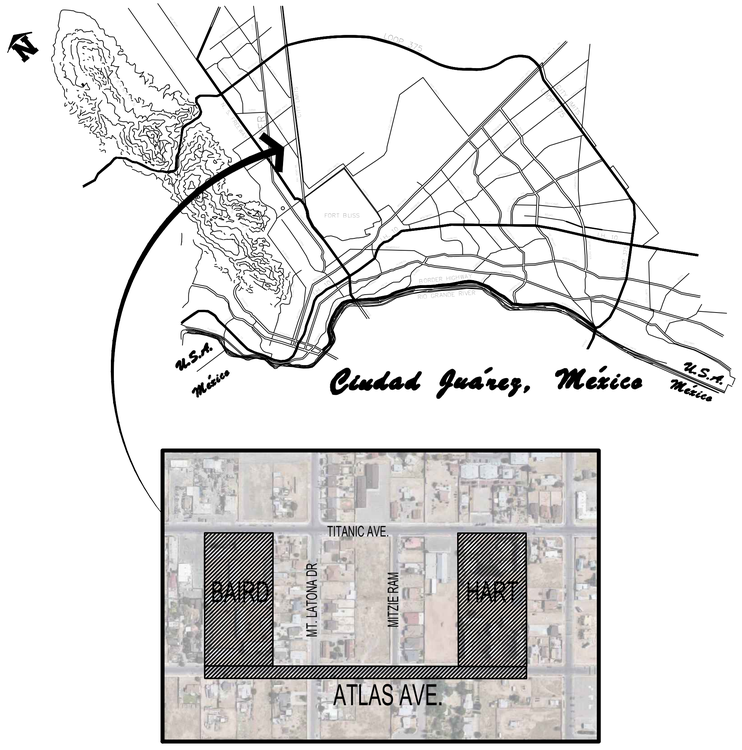
B. PAYMENT:

1. Payment shall be made at the contract unit price for each size of a particular species of plant as specified in the bid proposal or approved by the CITY ENGINEER OR LANDSCAPE ARCHITECT, which shall include all materials, equipment and labor required in furnishing and planting the landscape plants.
2. All other items specified within this section, including but not limited to: pruning, fertilizing, pesticide application, organic mulch, planting soil mixture, watering, tree stabilization, and three watering devices shall be considered incidental to the payment for planting/plants.
3. Payment shall be made at the contract unit price for each size and model of tree grate and per linear foot of root barrier as specified in the bid proposal or approved by the CITY ENGINEER OR LANDSCAPE ARCHITECT, which shall include all materials, equipment, and labor required in furnishing these items.

END OF SECTION

Housing Authority of the City of El Paso

CDBG JUAN HART & LT PALMER BAIRD APARTMENTS IMPROVEMENTS



SHEET LIST TABLE	
Sheet Number	Sheet Title
	COVER AND SHEET INDEX
G-001	ADA STANDARD DETAILS
G-002	NOTES HART & BAIRD
G-003	NOTES HART & BAIRD
C-100	PROJECT OVERALL
C-101	ENLARGED GRADING PLAN ATLAS
C-102	OVERALL GRADING PLAN BAIRD
C-103	ENLARGED GRADING PLAN BAIRD
C-104	OVERALL GRADING PLAN HART
C-105	ENLARGED GRADING PLAN HART
C-300	SECTIONS
C-400	LARGE SCALE TRANSITIONAL SIDEWALKS ATLAS
C-401	LARGE SCALE TRANSITIONAL SIDEWALKS BAIRD
C-402	LARGE SCALE TRANSITIONAL SIDEWALKS HART
C-500	STANDARD DETAILS
C-900	DRIVEWAY ISOMETRIC
LD-100	DEMOLITION OVERALL PLAN
LD-101	DEMOLITION PLAN ATLAS
LD-102	DEMOLITION PLAN BAIRD
LD-103	DEMOLITION PLAN HART
LC-100	CONTRUCTION OVERALL PLAN
LC-101	CONSTRUCTION PLAN ATLAS
LC-102	CONSTRUCTION PLAN BAIRD
LC-103	CONSTRUCTION PLAN HART
LC-401	ENLARGEMENT PLAN BAIRD
LC-402	ENLARGEMENT PLAN HART
LC-501	CONSTRUCTION DETAILS
LC-502	CONSTRUCTION DETAILS
LC-503	CONSTRUCTION DETAILS
LC-504	CONSTRUCTION DETAILS
LP-100	PLANTING OVERALL PLAN
LP-101	PLANTING PLAN ATLAS
LP-102	PLANTING PLAN BAIRD
LP-103	PLANTING PLAN HART
LP-501	PLANTING DETAILS
LI-100	IRRIGATION OVERALL PLAN
LI-101	IRRIGATION PLAN ATLAS
LI-102	IRRIGATION PLAN BAIRD
LI-103	IRRIGATION PLAN HART
LI-501	IRRIGATION DETAILS
LI-502	IRRIGATION DETAILS
E-100	ELECTRIC OVERALL PLAN
E-101	ELECTRIC PLAN HART
E-102	ELECTRIC PLAN BAIRD
SWPPP-101	STORM WATER POLLUTION PREVENTION PLAN ATLAS
SWPPP-102	STORM WATER POLLUTION PREVENTION PLAN BAIRD
SWPPP-103	STORM WATER POLLUTION PREVENTION PLAN HART
SWPPP-104	STORM WATER POLLUTION PREVENTION NOTES ATLAS
SWPPP-105	STORM WATER POLLUTION PREVENTION NOTES BAIRD
SWPPP-106	STORM WATER POLLUTION PREVENTION NOTES HART
SWPPD-500	STORM WATER POLLUTION PREVENTION DETAILS

FINAL DESIGN SUBMITTAL - 100% - FOR REVIEW NOT FOR CONSTRUCTION

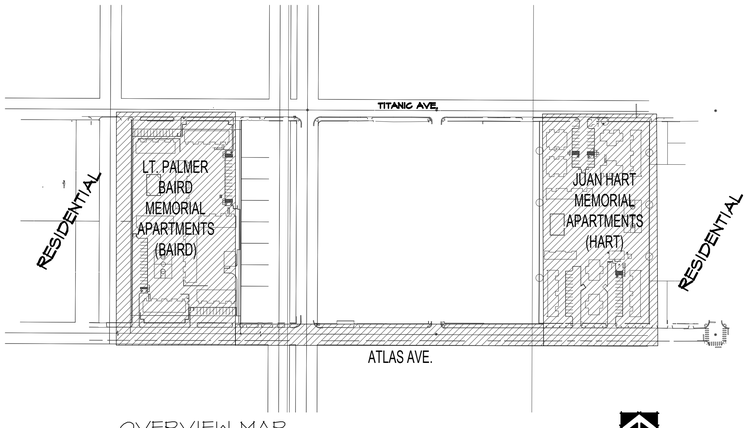
BOARD OF COMMISSIONERS

FRANCISCO ORTEGA	CHAIRPERSON
EILEEN KARLSRUHER	VICE-CHAIRPERSON
YADIRA BELTRAN	RESIDENT COMMISSIONER
ROBBERT ANDERSO	COMMISSIONER
ANNA LOUISE VALDEZ PEREZ	COMMISSIONER
GERALD CICHON	CHIEF EXECUTIVE OFFICER

ATLAS AVE. LEGAL DESCRIPTION:
ATLAS ROW - NORTH PORTION
EL PASO, EL PASO COUNTY, TEXAS

LT. PALMER BAIRD. LEGAL DESCRIPTION:
LOTS 86 TO 89, BLOCK 2, SUNRISE ACRES
EL PASO, EL PASO COUNTY, TEXAS.
CONTAINING 143,345 SQ. FT. (3.2907 ACRES) +/-

JUAN HART. LEGAL DESCRIPTION:
LOTS 72 TO 75, BLOCK 2, SUNRISE ACRES
EL PASO, EL PASO COUNTY, TEXAS.
CONTAINING 175,213 SQ. FT. (34.0223 ACRES) +/-



OVERVIEW MAP
SCALE 1:200

4861 ATLAS AVE (HART). - 4747 ATLAS AVE.(BAIRD)
EL PASO, TEXAS 79904 – PROJECT FUNDED BY CDBG

SITES SOUTHWEST, LLC
LANDSCAPE ARCHITECT

05-22-2019
DATE

COVER, SHEET INDEX AND OVERVIEW MAP

OWNER

HACEP
5300 E PAISANO DRIVE
EL PASO TX, 79905

CONSULTANT:

LANDSCAPE ARCHITECT
SITES SOUTHWEST, LLC
4110 RIO BRAVO, SUITE 217
EL PASO TX, 79902

SITES
SOUTHWEST
PHONE: 915-351-8800
E-MAIL: mail@sites-sw.com
WEB: www.sites-sw.com

SUB-CONSULTANTS:

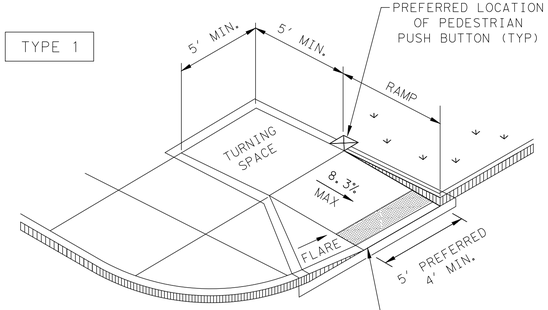
CIVIL ENGINEER
SLI ENGINEERING, INC
6600 WESTWIND
EL PASO TX, 79912

SLI ENERGY SOLUTIONS

ELECTRIC ENGINEER
GONZALO AGUILAR PE
481-B N RESLER
EL PASO TX, 79912

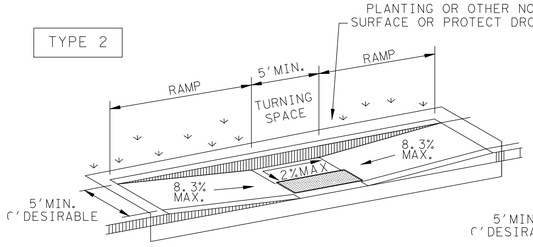
GONZ

TYPE 1

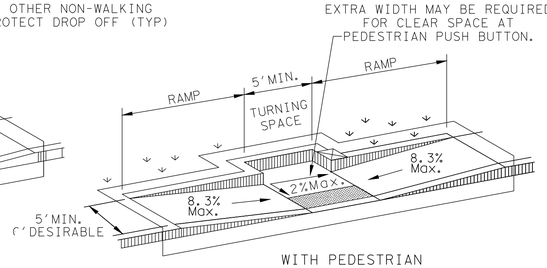


PERPENDICULAR CURB RAMP

TYPE 2



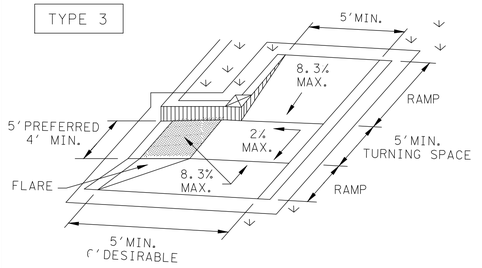
WITHOUT PEDESTRIAN PUSH BUTTON



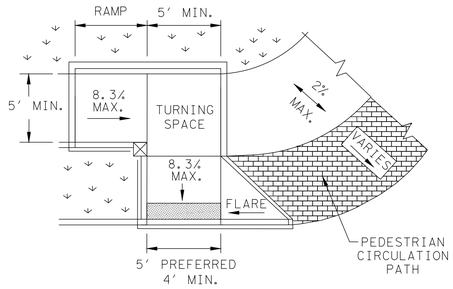
WITH PEDESTRIAN PUSH BUTTON

PARALLEL CURB RAMP

TYPE 3

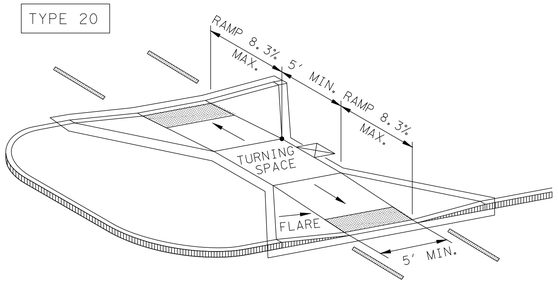


TYPE C



COMBINATION CURB RAMPS

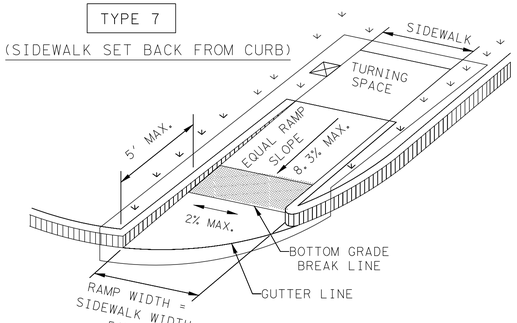
TYPE 20



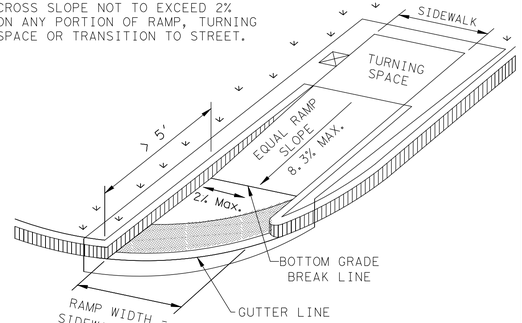
CURB RAMPS AT MEDIAN ISLANDS

TYPE 7

(SIDEWALK SET BACK FROM CURB)

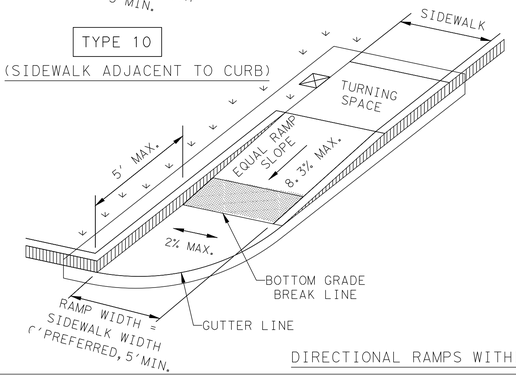


CROSS SLOPE NOT TO EXCEED 2% ON ANY PORTION OF RAMP, TURNING SPACE OR TRANSITION TO STREET.

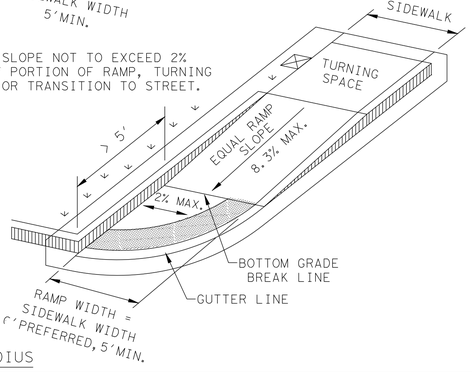


TYPE 10

(SIDEWALK ADJACENT TO CURB)

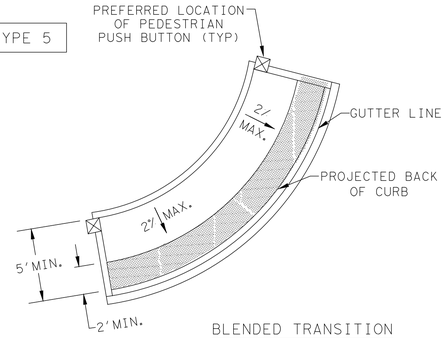


CROSS SLOPE NOT TO EXCEED 2% ON ANY PORTION OF RAMP, TURNING SPACE OR TRANSITION TO STREET.



DIRECTIONAL RAMPS WITHIN RADIUS

TYPE 5

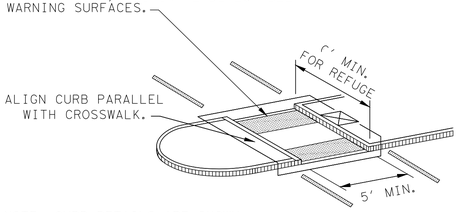


BLENDED TRANSITION

(FLUSH LANDING)

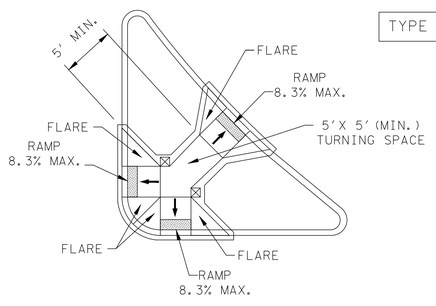
TYPE 21

INSTALL DETECTABLE WARNING SURFACE AT EACH END OF THE CUT-THROUGH RAMP WITH A MINIMUM 2' USUAL SIDEWALK SURFACE BETWEEN. IF MEDIAN IS LESS THAN 6' WIDE, ELIMINATE DETECTABLE WARNING SURFACES.

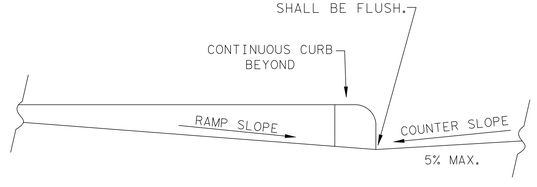


NOTE: CURB DETAILS ARE SHOWN ELSEWHERE IN THE PLANS.

TYPE 22



COMBINATION ISLAND RAMPS



TYPICAL SECTION OF PERPENDICULAR CURB RAMP AT CONNECTION TO ROADWAY

NOTES / LEGEND:

SEE GENERAL NOTES ON SHEET 2 OF 4 FOR MORE INFORMATION.

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.

DETECTABLE WARNING SURFACE

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON IF APPLICABLE.

GUTTER LINE

GRADE BREAK

RAMP LIMITS OF PAYMENT

SITES SOUTHWEST
4110 RIO BRAVO, SUITE 217
EL PASO, TX 79902
PHONE:915-351-8800
E-MAIL:mail@sites-sw.com
WEB:www.sites-sw.com

CONSULTANTS

REGISTERED LANDSCAPE ARCHITECT DEBORAH B. HRADEK 3007 STATE OF TEXAS
05-28-19

PROJECT

CDBG HART & BAIRD IMPROVEMENTS

ADDRESS

4861 ATLAS AVE.
EL PASO, TX 79904 (HART)
4747 ATLAS AVE.
EL PASO, TX 79904 (BAIRD)

Housing Authority of the City of El Paso

FINAL FOR CONSTRUCTION

REVISIONS

MARK	DATE	DESCRIPTION

PROJECT NO:	2019048
CAD DWG FILE:	2019048 - NOTES.DWG
DRAWN BY:	STAFF
CHK'D BY:	D.B.H.
ISSUE DATE:	05/28/2019
COPYRIGHT:	SITES SOUTHWEST,LLC
SHEET TITLE	

STANDARD ADA DETAILS HART & BAIRD

G-001

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GENERAL NOTES

1. THESE PLANS SHOW LANDSCAPE ARCHITECTURE SITE DEVELOPMENT CONSTRUCTION DOCUMENTS. THESE ARE NOT TO BE USED FOR STAKING OR SURVEYING LOT BOUNDARIES.

2. CONTRACTOR SHALL BE FAMILIAR WITH PLANS, DETAILS AND SPECIFICATIONS AS THEY PERTAIN TO THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE HOUSING AUTHORITY OF THE CITY OF EL PASO (HACEP) DESIGNATED REPRESENTATIVE AND LANDSCAPE ARCHITECT IF ANY ITEMS CONTAINED WITHIN THE SCOPE OF WORK DEFINED HEREIN ARE IN CONFLICT WITH THE PROPOSED WORK OF OTHER CONTRACTORS.

3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE LANDSCAPE ARCHITECT AND HACEP IF ANY ITEMS CONTAINED WITHIN THE SCOPE OF WORK DEFINED HEREIN ARE IN CONFLICT WITH THE PROPOSED WORK OF OTHER CONTRACTORS OR WITH CITY OF EL PASO PARKS AND RECREATION DEPARTMENT AND CURRENT PARK DESIGN GUIDELINES AND STANDARDS.

4. CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ALL NECESSARY PERMITS TO PERFORM THE REQUIRED WORK.

5. CHECK AND FIELD VERIFY ALL SITE CONDITIONS, UTILITIES AND SERVICES PRIOR TO EXCAVATION. EXISTING UTILITIES SHOWN ON PLANS ARE BASED ON SURVEY. TO PREVENT DAMAGE, CALL 1-800-DIG-TESS OR CALL SPECIFIC NUMBERS BELOW:

DIGGING NEAR PIPELINES	811
EL PASO ELECTRIC COMPANY	(915) 543-5720
SBC	1-800-DIG-TESS
TEXAS GAS SERVICE	544-6300
EMERGENCY HOTLINE	562-8411/562-2003
PSB (WATER & SEWER)	1-800-DIG-TESS
SPECTRUM (CABLE)	1-800-842-4357
EL PASO NATURAL GAS CO.	1-800-334-8047
TEXAS EXCAVATION SAFETY SYSTEM	1-800-344-8377

6. ALL TREES ALONG PEDESTRIAN WALKWAYS ALONG H/C ACCESSIBLE ROUTES, TO BE PRUNED UP TO CREATE MINIMUM 80" HIGH CANOPIES.

7. IF PROBLEMS ARE DISCOVERED, CONTACT LANDSCAPE ARCHITECT AND HACEP TO DETERMINE A COURSE OF ACTION.

8. CONTRACTOR SHALL PROTECT NEWLY GRADED AREAS FROM TRAFFIC AND EROSION. KEEP AREAS FREE OF TRASH AND DEBRIS. REPAIR AND RE-ESTABLISH GRADES IN SETTLED, ERODED AND RUTTED AREAS AT THE BEGINNING OF EACH PLANTING OR SEEDING SEQUENCE OR AS DIRECTED BY HACEP REPRESENTATIVE.

9. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT AND HACEP REPRESENTATIVE.

10. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES, INCLUDING BUT NOT LIMITED TO STREET SIGNS, LIGHT POLES AND UNDERGROUND LINES WITHIN THE CONSTRUCTION AREA. ANY DAMAGE TO EXISTING UTILITIES CAUSED BY CONSTRUCTION ACTIVITY SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE AND APPROVED BY THE CONSTRUCTION OBSERVER.

11. CONSTRUCTION ACTIVITY SHALL BE LIMITED TO THE PROPERTY AND/OR EXTENT OF PROJECT LIMITS. ANY DAMAGE TO ADJACENT PROPERTIES OR NATIVE AREAS RESULTING FROM THE CONSTRUCTION PROCESS WILL NOT BE ACCEPTED AND SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.

12. THE CONTRACTOR SHALL MAINTAIN ALL CONSTRUCTION BARRICADES AND SIGNING AT ALL TIMES. THE CONTRACTOR SHALL VERIFY THE PROPER LOCATION OF ALL BARRICADING AT THE END AND BEGINNING OF EACH DAY.

13. CONTRACTOR SHALL PROTECT NATIVE AREAS AND TREE ROOT SYSTEMS FROM DAMAGE DUE TO NOXIOUS MATERIALS CAUSED BY RUNOFF OR SPILLAGE WHILE MIXING, PLACING, OR STORING CONSTRUCTION MATERIALS. PROTECT ROOT SYSTEMS FROM FLOODING, ERODING, OR EXCESSIVE WETTING CAUSED BY WATERING OPERATIONS.

14. TREES TO BE PROTECTED SHALL BE STAKED OUT AND EVALUATED WITH LANDSCAPE ARCHITECT AND HACEP REPRESENTATIVE PRIOR TO INSTALLATION OF PROTECTIVE FENCING AND CLEARING AND GRUBBING OR ANY REMOVAL OF EXISTING PLANT MATERIAL.

15. RUNNING SLOPE IN ALL NEWLY CONCRETED AREAS SHALL BE A MAXIMUM RUNNING SLOPE OF 1:20 AND A MAXIMUM 2% CROSS SLOPE, EXCEPT WHEN ADJACENT TO A STREET.ALL PLAZAS AND LANDINGS SHALL HAVE A MAX 2% SLOPE IN ALL DIRECTIONS. ALL AREAS SHALL DRAIN INTO PARK OR CREATED SWALES WHENEVER POSSIBLE OR UNLESS OTHERWISE INDICATED.

16. NEW SIDEWALK IN RIGHT OF WAY (R.O.W.) SHALL MEET HACEP AND CITY OF EL PASO STANDARDS IN EVERY WAY AND FOLLOW RUNNING SLOPE OF EXISTING STREET AND MATCH ANY EXISTING SIDEWALK.

17. ALL BERMS AND SWALES TO BE CONTOURED TO CREATE SMOOTH, GRADUAL TRANSITION BETWEEN PROPOSED LEVELS.

18. ALL PROPOSED LEVELS AND GRADING TO BE APPROVED ON SITE BY LANDSCAPE ARCHITECT PRIOR TO ANY CONSTRUCTION AND PLANTING.

19. LOCATION OF ALL TREES AND BOULDERS TO BE STAKED FOR APPROVAL ON SITE BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION AND PLANTING.

20. ALL PROPOSED TREES TO BE A MINIMUM OF 5 FT FROM THE EDGE OF ALL PAVED PATHS AND SIDEWALKS, EXCEPT IN R.O.W.

21. IF SPILLS, ENVIRONMENTAL CONTAMINATION, OR SUBSURFACE CONTAMINATION IS ENCOUNTERED, STOP WORK AND NOTIFY CITY ENVIRONMENTAL SERVICES AT 621-6700.

22. CONTRACTOR SHALL INSURE ACCESSIBILITY FOR CARS AND PEDESTRIANS AT ALL TIMES AND ALLOW ONE LANE OF TRAFFIC IN EACH DIRECTION OPEN ALONG ATLAS DRIVE.

23. CONTRACTOR SHALL NOT LEAVE UNPROTECTED OPEN TRENCHES IN PUBLIC AREAS. IN ALL CASES, TRENCHES SHALL BE COVERED AS SOON AS POSSIBLE. NO OVER-EXCAVATION OF TRENCHES WILL BE ALLOWED.

24. CONTRACTOR SHALL PROVIDE STRUCTURAL ENGINEER'S DESIGN DRAWINGS AND STAMP, TO BE APPROVED PRIOR TO ON-SET OF CONSTRUCTION FOR FUTSAL COURT POST-TENSIONED CONCRETE

25. GEOTECHNICAL REPORT WILL BE PROVIDED BY CONTRACTOR.

PLANTING NOTES

1. ALL NEW PLANT MATERIAL SHALL BE INSTALLED AS PER DETAILS.

2. PLANT MATERIAL SUBSTITUTIONS SHALL NOT BE MADE WITHOUT THE WRITTEN PERMISSION OF THE LANDSCAPE ARCHITECT. THE SUBSTITUTION OF MATERIALS DIFFERING IN KIND, QUALITY OR SIZE FROM THAT SPECIFIED WILL BE ALLOWED ONLY AFTER THE LANDSCAPE ARCHITECT IS CONVINCED THAT ALL MEANS OF OBTAINING THE SPECIFIED MATERIALS HAVE BEEN EXHAUSTED. CONTRACTOR SHALL PROVIDE WRITTEN ASSURANCE THAT ALL MATERIALS NECESSARY TO COMPLETE THE PROJECT AS SPECIFIED HAVE BEEN LOCATED AND ALL REQUESTS FOR SUBSTITUTIONS MUST BE SUBMITTED NO LATER THAN 2 WEEKS PRIOR TO THE INITIATION OF WORK.

3. PLANT MATERIAL QUALITY, SIZE AND CONDITION SHALL BE IN ACCORDANCE WITH AMERICAN STANDARD FOR NURSERY STOCK CURRENT EDITION, AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.

4. ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY. ALL PLANTS SHALL HAVE NORMAL, WELL DEVELOPED BRANCHES AND VIGOROUS ROOT SYSTEMS. THEY SHALL BE SOUND, HEALTHY, VIGOROUS, FREE FROM DEFECTS, DISFIGURING KNOTS, ABRASIONS OF THE BARK, SUNSCALD INJURIES, PLANT DISEASES, INSECT EGGS, BORES AND ALL OTHER FORMS OF INFECTIONS.

5. UNLESS OTHERWISE STATED ON THE DRAWINGS OR APPROVED BY THE LANDSCAPE ARCHITECT AND HACEP REPRESENTATIVE, ALL PLANTS SHALL BE NURSERY GROWN AND SHALL BE TAGGED WITH NURSERY LABELS INDICATING SPECIES AND VARIETY.

6. BALLED AND BURLAPPED PLANT MATERIAL SHALL HAVE A SOLID BALL OF EARTH OF MINIMUM SPECIFIED SIZE AND HELD IN PLACE SECURELY BY BURLAP AND A STOUT TWINE OR ROPE. BROKEN OR LOOSE BALLS WILL BE REJECTED, ALL BURLAP TWINE, CHIKEN WIRE, WOOD BOXES, ETC SHALL BE REMOVED DURING PLANTING WITHOUT COMPROMISING THE INTEGRITY OF THE ROOTBALL.

7. THE LANDSCAPE ARCHITECT MAY INSPECT ALL PLANT MATERIAL AT THE CONTRACTOR'S YARD OR NURSERY PRIOR TO DELIVERY, DURING PLANTING AND AFTER PLANTING AT THE JOB SITE. AT THE OPTION OF THE OWNER.

8. THE LANDSCAPE ARCHITECT SHALL BE THE JUDGE OF THE QUALITY AND ACCEPTABILITY OF ALL PLANT MATERIALS. ALL REJECTED MATERIAL SHALL BE IMMEDIATELY REMOVED FROM THE SITE AND REPLACED WITH ACCEPTABLE MATERIAL AT NO ADDITIONAL COST TO OWNER.

9. CONTAINER GROWN PLANT MATERIAL SHALL HAVE BEEN ESTABLISHED IN ITS DELIVERY CONTAINER FOR NOT LESS THAN SIX MONTHS, BUT FOR NOT MORE THAN TWO YEARS. ANY ROOTBOUND MATERIAL WILL NOT BE ACCEPTED.

10. UNLESS SPECIFICALLY NOTED ON THE DRAWINGS, ALL TREES SHALL HAVE A SINGLE TRUNK THAT IS STRAIGHT AND FREE OF "DOG-LEGS", "CROOKS", Y-CROTCHES", OR OTHER DISFIGURING SHAPES. THE CENTRAL LEADER OF ALL TREES SHALL NOT HAVE BEEN PRUNED. TREES WITH DOUBLE LEADERS ARE NOT ACCEPTABLE, UNLESS SPECIFIED AS MULTI-TRUNKED.

11. ALL PLANT MATERIAL SHALL HAVE A UNIFORM SHAPE AROUND ITS COMPLETE CIRCUMFERENCE. PLANT MATERIAL WITH IRREGULAR BRANCHING PATTERNS OR WITH BRANCHING PATTERNS MORE HIGHLY DEVELOPED ON ONE SIDE THAN ON OTHER SIDES SHALL NOT BE ACCEPTABLE.

12. TREE LOCATIONS AS SHOWN ARE SCHEMATIC AND MAY VARY BASED ON SIGNAGE & UNDERGROUND UTILIY LOCATIONS, AND OTHER SITE CONSTRAINTS. TREE LOCATIONS SHALL COMPLY WITH ALL JURISDICTIONAL ORDINANCES WHICH APPLY. PLANS ARE DIAGRAMMATIC AND APPROXIMATE DUE TO THE SCALE OF THE DRAWINGS, AND NOT ALL INDIVIDUAL SHRUBS AND/OR GROUND COVERS ARE NECESSARILY SHOWN.

13. TREES SHALL ONLY BE GUYED (BASED ON THE PLANTING SEASON) IF APPROVED BY AND AT THE DIRECTION OF THE LANDSCAPE ARCHITECT AS PER THE APPROPRIATE TREE PLANTING DETAIL AND SHALL BE GUYED AT NO ADDITIONAL COST, REQUESTED GUYING IS INCIDENTAL TO THE COST OF PLANTING THE TREE.

14. PLANTING SOIL BACKFILL SHALL CONSIST OF CLEAN SOILS AND SHALL BE FREE FROM RUBBISH, ROCK, LARGE STONES BRUSH, SOD, FROZEN MATERIAL OR OTHER UNSUITABLE SUBSTANCE THAT IS DETRIMENTAL TO PLANT GROWTH.

15. NO PLANTING AREA WILL BE LEFT UNCOVERED OR NOT TOP-DRESSED. ALL PLANTING AREAS WILL BE MULCHED AS PER LANDSCAPE PLANS, OR A MINIMUM OF 5 FT RADIAL DISTANCE FROM THE BASE OF THE PLANT.

PLANT MAINTENANCE AND WARRANTY

1. MAINTENANCE SHALL BEGIN UPON INSTALLATION AND CONTINUE THROUGH SUBSTANTIAL COMPLETION AND WILL TERMINATE AFTER FINAL ACCEPTANCE.

2. MAINTENANCE OF NEW TREES, SHRUBS, SOD, AND GROUND COVER SHALL INCLUDE WATERING, WEEDING, CULTIVATING, REMOVAL OF DEAD MATERIAL AND DEBRIS, RESETTING OF TREES TO UPRIGHT POSITIONS, RESTORATION OF EARTH BASINS, AND SUCH OTHER OPERATIONS AS MAY BE NECESSARY FOR THE HEALTH OF THE PLANTED STOCK AND THE GENERAL APPEARANCE OF THE LANDSCAPED AREAS. PROTECTION SHALL INCLUDE CARE OF THE PLANTED STOCK FROM DAMAGES RESULTING FROM TRESPASS, EROSION (INCLUDING WATERING), WEATHER, VANDALISM, DISEASE AND THE LIKE.

3. MAINTENANCE OF IRRIGATION SHALL INCLUDE MAINTENANCE AND REPLACEMENT OF PIPE, HEADS, ROTORS, EMITTERS DUE TO MALFUNCTION, DAMAGE, OR VANDALISM.

4. MAINTENANCE OF GROUND MATERIALS SHALL INCLUDE RAKING, LEVELING, SWEEPING FROM SIDEWALKS AND COVERING BALD SPOTS..

5. ALL TREES, SHRUBS, GROUND COVERS, AND IRRIGATION SHALL BE GUARANTEED FOR THE PERIOD OF ONE YEAR, BEGINNING ON THE DATE OF FINAL CONTRACT ACCEPTANCE.

HERBICIDE NOTES

1. HERBICIDE MUST BE APPLIED TO PROJECT SITE AT ON-SET OF CONSTRUCTION AND PRIOR TO DEMOLITION OR PRIOR TO REMOVAL OF EXISTING GRASS OR PRIOR TO PLANTING OF NEW PLANTS WHILE WEEDS OR PLANT MATERIAL TO BE REMOVED IS ACTIVELY GROWING.

2. IF APPLICATION OF A POST-EMERGENT IS SPECIFIED, EXISTING DESIRABLE PLANTS OR NEW PLANTS AND PROPER PROTECTION OF EXISTING PLANTS AND TREE ROOT SYSTEMS MUST BE TAKEN AS DIRECTED BY PRODUCT LITERATURE. HERBICIDE MUST BE APPLIED TO PROJECT SITE AT ON-SET OF CONSTRUCTION. CONTRACTOR TO PROVIDE MSDS INFORMATION FOR PRODUCT(S) IN SUBMITTAL PACKAGE.

3. CONTRACTOR SHALL HAVE A TDA LICENSED APPLICATOR APPLY HERBICIDE.

4. PRE EMERGENT APPLICATION OF SURFLAN OR APPROVED EQUAL. APPLY PRE-EMERGENT TO AREAS OF SITE RECEIVING ROCK, SCREENINGS OR STABILIZED SCREENINGS. AFTER FINAL GRADING, BUT PRIOR TO INSTALLATION OF WEED FABRIC. CONTRACTOR SHALL FOLLOW MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION AND PRE-EMERGENT MUST INCLUDE PREVENTION OF ALL INVASIVE WEEDS AND GRASSES, INCLUDING BERMUDA GRASS. A COMBINATION OF PRE-EMERGENT PRODUCTS MAY BE USED IN ORDER TO ACHIEVE DESIRED RESULTS - PREVENTION OF FUTURE WEEDS AND GRASSES.

IRRIGATION NOTES

1. CONTRACTOR SHALL FIELD VERIFY PRESSURE PRIOR TO INITIATION OF CONSTRUCTION BY INSTALLING A FLOW METER AND A PRESSURE GAUGE ON THE DOWNSTREAM SIDE OF THE WATER METER. THIS INFORMATION SHALL BE PROVIDED TO THE LANDSCAPE ARCHITECT AND HACEP REPRESENTATIVE IN WRITING FOR APPROVAL, PRIOR TO PROCEEDING.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ALL SITE ELEMENTS & NATIVE AREAS TO REMAIN. CONTRACTOR SHALL REPLACE IN KIND, ALL ITEMS DAMAGED DURING THE COURSE OF WORK, AS DETERMINED BY THE LANDSCAPE ARCHITECT AND HACEP REPRESENTATIVE.

3. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES, STRUCTURES AND SERVICES BEFORE COMMENCING WORK. THE LOCATIONS OF UTILITIES, STRUCTURES AND SERVICES SHOWN IN THESE PLANS ARE APPROXIMATE ONLY. ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED IN WRITING TO THE LANDSCAPE ARCHITECT AND HACEP REPRESENTATIVE.

4. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED TO PERFORM THE WORK INDICATED HEREIN BEFORE BEGINNING WORK.

5. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH EL PASO WATER UTILITIES FOR INSTALLATION OR REPLACEMENT OF WATER METER(S) AND SHALL INCUR ALL COSTS ASSOCIATED WITH INSTALLATION. WATER METER SHALL BE IN CONTRACTOR'S NAME AT INSTALLATION AND COST OF WATER CONSUMPTION DURING THE PROJECT'S DURATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR UNTIL FINAL ACCEPTANCE. AFTER ACCEPTANCE , CONTRACTOR SHALL COORDINATE WITH HACEP REPRESENTATIVE TO TRANSFER WATER METER RESPONSIBILITY TO HACEP.

6. THIS DESIGN (LINES & COMPONENTS) IS DIAGRAMMATIC. ALL EQUIPMENT SHOWN IN PAVED AREA IS FOR DESIGN CLARITY ONLY AND CONSTRUCTED ELEMENTS AND OBSTRUCTIONS WHETHER NOTED ON THE PLANS OR NOT SHALL BE AVOIDED TO MINIMIZE SLEEVING. ACTUAL ALIGNMENTS TO BE LOCATED AS PER NOTES OR AS PER APPROVED IN FIELD BY LANDSCAPE ARCHITECT AND HACEP REPRESENTATIVE. ALL IRRIGATION EQUIPMENT IS TO BE INSTALLED WITHIN PLANTING AREAS.

7. DO NOT TRENCH WITHIN 15' OF EXISTING TREE DRIP LINE. ALTERNATIVE LOCATIONS TO BE APPROVED IN FIELD BY LANDSCAPE ARCHITECT.

8. IN THE EVENT OF A CONFLICT BETWEEN SPECIFICATIONS AND IRRIGATION DESIGN, CONTRACTOR SHALL NOTIFY THE LICENSED IRRIGATION DESIGNER IN WRITING. THE CONTRACTOR SHALL NOT PROCEED WITH INSTALLATION OF CONFLICTING IRRIGATION COMPONENTS UNTIL CLARIFICATION IS RECEIVED IN WRITING FROM THE CONSULTANT.

9. MAIN LINE SHALL INCORPORATE 45 DEGREE FITTINGS & SHALL BE HYDROSTATICALLY TESTED FOR 24 HOURS PRIOR TO COVERING CONNECTIONS.

10. ALL PIPE CUTS SHALL BE MITERED TO 90 DEGREES & ALL BURRS SHALL BE REMOVED PRIOR TO GLUING. PIPE THREE INCHES OR LARGER MUST HAVE FILED BEVELED EDGE A MINIMUM OF ONE FOURTH (1/4) THE WIDTH OF PIPE WALL TO ASSURE A PROPER SOLVENT WELD.

11. PIPE SOLVENT WELDING PROCEDURES ON ALL JOINTS SHALL BE SPECIFIED AS FOLLOWS: FIRST USE IPS WELD-ON CLEANER, NEXT USE IPS WELD-ON PURPLE PRIMER P68 OR P70, THEN USE IPS WELD-ON GRAY GLUE #711 HEAVY DUTY. LASTLY, WIPE OFF ALL EXCESS CEMENT AND LET SET AS PER MANUFACTURER'S RECOMMENDATIONS. ONCE WELD IS SET, PIPE SHALL NOT BE MOVED FOR ANY REASON UNTIL SET TIMES HAVE BEEN ACHIEVED, WATER SHALL NOT BE TURNED ON UNTIL ALL CURE TIMES HAVE BEEN ACHIEVED.

12. SLEEVES SHALL BE EXTENDED 24" BEYOND EDGE OF HARD SURFACES, WHERE POSSIBLE, WRAP ENDS WITH FOUR MIL PLASTIC AND TAPE WITH GOOD QUALITY PLASTIC TAPE, GRAY DUCT TAPE IS NOT ACCEPTABLE.

13. IRRIGATION HEADS SHALL BE INSTALLED FOUR INCHES (4") AWAY FROM ADJACENT PERIMETER PAVING OR HARD SURFACES.

14. FIELD WIRING SHALL BE IN A TRENCH MIN. 5' FROM PRESSURE MAIN LINE ON NORTH AND WEST SIDE OF MAIN & EXPANSION LOOPS SHALL BE PROVIDED EVERY 200 FEET, WIRE SHALL NOT BE STRETCHED TIGHT. VALVE WIRE SHALL BE STANDARD COLORS RED (HOT) AND WHITE (COMMON) & LABELED AT CONTROLLER AND IN VALVE BOX. CONNECTIONS AT VALVES MUST BE MADE WITH DRI-SPLICE CONNECTORS. CONNECTORS MUST BE READY FILLED FROM FACTORY WITH SILICONE.

15. CONTRACTOR SHALL MAKE ALL CONTROLLERS FUNCTIONAL AND SET TIME ON CONTROLLERS PER LANDSCAPE ARCHITECT'S RECOMMENDATION. CONTRACTOR TO PROVIDE 8½ X 11 LAMINATED COPY OF IRRIGATION PLAN INSIDE COVER OF CONTROLLER & CLEARLY LABEL CONTROLLER BOX WITH VALVE DESIGNATIONS AND PROVIDE KEY TO OWNERS REPRESENTATIVE AND DISPLAY TO LANDSCAPE ARCHITECT PRIOR TO FINAL ACCEPTANCE.

16. IRRIGATION IN TEXAS IS REGULATED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY, PO BOX 13087 AUSTIN, TX 78711.

17. ALL EXISTING VALVE WIRES SHALL BE INCIDENTAL IRRIGATION COST TO THE CONTRACTOR.

18. CONTRACTOR'S AS BUILT MARK-UPS MUST SHOW LOCATION OF ALL IRRIGATION VALVE WIRING LATERALS, VALVES, MAIN LINES, CONTROLLERS, AND ADDITIONAL IRRIGATION EQUIPMENT. AS-BUILT MARK-UPS SHALL BE AVAILABLE FOR REVIEW WEEKLY ON-SITE & PROVIDED TO LANDSCAPE ARCHITECT UPON FINAL ACCEPTANCE.

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CONSULTANTS

REGISTERED LANDSCAPE ARCHITECT
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STATE OF TEXAS
05-28-19

PROJECT
CDBG HART & BAIRD IMPROVEMENTS

ADDRESS
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EL PASO, TX 79904 (HART)
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Housing Authority of the City of El Paso

FINAL FOR CONSTRUCTION

REVISIONS

MARK	DATE	DESCRIPTION

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NOTES
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PLAYGROUND COMPONENT NOTES

MATERIAL:
ALL MATERIALS SHALL HAVE A DEMONSTRATED RECORD OF DURABILITY IN THE PLAYGROUND OR SIMILAR OUTDOOR SETTING. ALL METALS SHALL BE PAINTED, GALVANIZED, OR OTHERWISE TREATED TO INHIBIT RUST. BLACK STEEL IS NOT ACCEPTABLE.
ALL REQUIRED HARDWARE FOR ASSEMBLY OF THE STRUCTURE SHALL BE INCLUDED. ALL FASTENERS SHALL BE 18-8 GRADE STAINLESS STEEL. (300 SERIES) CAPPED LOCK NUTS WHICH COVER BOLTS ENDS SHALL BE INCLUDED. TAMPER-RESISTANT HARDWARE IS UTILIZED ON PRINCIPLE CLAMPING MECHANISMS. SPECIAL TOOLS SHALL BE PROVIDED FOR ASSEMBLY AND MAINTENANCE. CLAMP CONNECTION DISASSEMBLY AND SLIPPAGE IS ELIMINATED BY USING DRIVE RIVETS. PHYSICAL LOCKING DEVICES ARE USED ON ALL EXPOSED AND ACCESSIBLE CONNECTION POINTS, SUCH AS LOCK NUTS. A NYLON THREAD-LOCKING PATCH IS APPLIED TO CERTAIN HARDWARE. LIQUID THREAD-LOCK IS ALSO USED TO HINDER FASTENER REMOVAL.

CLAMPS
CLAMPS SHALL BE DIE CAST OF HIGH STRENGTH 380 ALUMINUM ALLOY. TENZALLOY (40-E, 315.0) IS NOT ACCEPTABLE AS A LOAD BEARING CLAMP MATERIAL. ULTIMATE TENSILE STRENGTH SHALL BE 47 KSI. DIE CASTING OPERATION SHALL BE QUALITY SAMPLED EVERY HOUR. CLAMPS SHALL BE PROVIDED AS HINGED ASSEMBLIES TO FACILITATE STRUCTURE ASSEMBLY. UNIQUE S-LAP DESIGN ELIMINATES ALL STRING ENTANGLEMENT POINTS AT CONNECTION. SINGLE BOLT FASTENING SYSTEM WITH BUILT-IN THREADS TO ELIMINATE T NUTS AND SIMPLIFY INSTALLATION. CLAMPS ARE TO BE PERMANENTLY FASTENED TO THE SUPPORT POST WITH A DRIVE RIVET TO ELIMINATE DISASSEMBLY AND SLIPPAGE. DOUBLE BANDED DESIGN PROVIDES THE HIGHEST CLAMPING PRESSURE AROUND THE ENTIRE CLAMP. FINISHED WITH A SHOT BLAST AND A BAKED ON POLYESTER POWDER COATING. ASTM SPECIFICATIONS: B-85. (SEE POWDER COAT FINISH)

ROTATIONALLY MOLDED PLASTIC PARTS
SHALL BE ROTATIONALLY MOLDED FROM COLOR-COMPOUNDED, FIRST QUALITY, LINEAR LOW DENSITY, POLYETHYLENE. DRY-BLENDED OR MOLDED-IN RESINS ARE NOT ACCEPTABLE. COLOR-COMPOUNDED POLYETHYLENE ARE 23 TIMES STRONGER THAN DRY BLENDED RESINS PROVIDING BETTER BONDED STRENGTH WITH GREATER SURFACE CONTACT. COMPOUNDED COLOR PROVIDES SUPERIOR COLORFASTNESS, UV RESISTANCE, AND IMPACT RESISTANCE WITH SOLID COLOR MOLECULES. POLYETHYLENE SHALL BE ULTRAVIOLET (UV) STABILIZED TO UV-8 AND HAVE ANTI-STATIC ADDITIVES. CROSS-SECTIONAL DESIGN SHALL BE .25 IN. (6 MM) NOMINAL THICKNESS, DOUBLE WALL CONSTRUCTION. ASTM SPECIFICATIONS: D-1238 (MELT INDEX), D-1505 (MATERIAL DENSITY), D-638 (TENSILE STRENGTH), D-648 (HEAT DISTORTION TEMPERATURE) D-790 (FLEXURAL MODULUS), D-1693 (ENVIRONMENTAL STRESS CRACK RESISTANCE), D-2565 (ULTRAVIOLET). MEETS UL94HB HORIZONTAL BURN TEST. SHALL MEET ARM TEST FOR IMPACT STRENGTH (@ MINUS 40°C) (.25 IN. THICKNESS). SHALL MEET COLOR CHANGE CRITERIA (QUV 500 HOURS PER SAE 1960-84).TUBING
STEEL TUBING TUBING SHALL BE COLD ROLLED, ELECTRIC RESISTANCE WELDED TUBING. TUBING SHALL BE TRIPLE COATED FOR MAXIMUM EXTERIOR PROTECTION. A HOT-DIPPED FLO-COAT®UNIFORM ZINC GALVANIZED COATING, A CHROMATE CONVERSION COATING AND A CLEAR POLYMER COATING. GALVANIZED EXTERIOR COATING WEIGHT SHALL BE WITHIN THE RANGE OF .4 OZ./SQ. FT. AND .6 OZ./SQ. FT. TUBING SHALL HAVE A CORROSION RESISTANT, ZINC-RICH PAINT INTERIOR COATING. ASTM SPECIFICATIONS: A-315, A-500, A-513, B-8. ALUMINUM TUBING (SUPPORT POST AND SLEEVE) SHALL BE EXTRUDED 6061-T6 EXTRUDED SEAMLESS ALUMINUM ALLOY TUBING. ASTM SPECIFICATIONS: A-315, A-500, A-513, B-221, QQ-A-200/8, E-8. ALUMINUM TUBING (ARCH) SHALL BE AN ALL WELDED ASSEMBLY FABRICATED OF 6063-T4 EXTRUDED SEAMLESS ALUMINUM ALLOY TUBING.

SUPERDURABLE POLYESTER POWDER COAT FINISH
POWDER COATING IS ELECTROSTATICALLY APPLIED AT A THICKNESS OF 2 TO 5 MILS (.002 - .005). POWDER COATING PRODUCES A HIGHLY DECORATIVE FINISH HAVING A HARD, SMOOTH SURFACE, WHICH IS RESISTANT TO ABRASION, CORROSION, AND MECHANICAL DAMAGE. ALL GALVANIZED TUBING HAS A FACTORY-APPLIED CLEAR ACRYLIC POLYMER COATING. ALL COMPONENTS SHALL BE FREE OF EXCESS WELD AND WELD SPILLS. AFTER FABRICATION ALL WELD JOINTS ARE TO THOROUGHLY CLEANED USING A CHIPPING HAMMER AND WIRE BRUSH TO REMOVE ALL WELD SLAG FROM WELD JOINT. PRIOR TO FINISHING, COMPONENTS SHALL BE CLEANED WITH A THREE-STAGE ALKALINE BATH AND A ECLPS 2400 SEALER FOR ADHESION AND RUST INHIBITOR DURING THE PREPARATION PROCESS. COMPONENTS ARE THOROUGHLY DRIED BEFORE BEING COATED WITH SUPERDURABLE TGIC POLYESTER POWDER AND ARE CURED AT TEMPERATURES BETWEEN 375° AND 400° F. EPOXY OR HYBRID PAINTS ARE NOT ACCEPTABLE. FINISH QUALITY CONFORMS TO ASTM SPECIFICATIONS: B-117 & D1654 4,000 HOURS AND RATING 6 OR GREATER (SALT SPRAY RESISTANCE TEST), D-2794 RATING MINIMUM 80 INCH-POUNDS (IMPACT RESISTANCE TEST), D-1734 (MANDREL FLEXIBILITY TEST), D-2247 (HUMIDITY RESISTANCE TEST), D-822 (WEATHERABILITY TEST), D-3363 (PENCIL HARDNESS TEST), D-3354-B, METHOD B, RATING 5B "CHECKERED" ADHESION TEST DAILY (CROSSHATCH ADHESION TEST), AND D-2454 (OVERBAKE RESISTANCE TEST) D-522 PASS 1/8" MANDREL (CONICAL MANDREL), D-523 (GLOSS - 60°). D3363 RATING 2H (HARDNESS). 6154, 340 BULB 3000 HOURS, RATING DELTA E OF 2, AND 90 PERCENT GLOSS RETENTION (UV EXPOSURE). STANDARD DURABILITY OF POLYESTER POWDER COATINGS TYPICALLY RETAIN 80% OF THEIR ORIGINAL GLOSS AFTER 1 YEAR, AND 50% OF THEIR ORIGINAL GLOSS AFTER 18 MONTHS OF OUTDOOR EXPOSURE. SUPERDURABLE POLYESTER POWDER COATINGS TYPICALLY RETAIN 90% OF THEIR ORIGINAL GLOSS AFTER 1 YEAR, AND 50% OF THEIR ORIGINAL GLOSS AFTER FIVE YEARS OF OUTDOOR EXPOSURE. EXPECT SUPERDURABLE COLORS TO RETAIN 80% OF THEIR GLOSS AFTER 2 YEARS OF OUTDOOR EXPOSURE. THESE COATINGS ARE ALSO SHADED WITH HIGH GRADE, LIGHT STABLE PIGMENTS AND WILL SHIFT LESS THAN 2DE IN COLOR AFTER 2 YEARS.ECO-ARMOR

COATED FINISH
A COATED APPLICATION SHALL BE FROM 45 TO 55 MILS ON THE WEAR SURFACES OF ALL COATED PARTS AND 30 MILS ON OTHER SURFACES. PRIOR TO COATING, COMPONENTS SHALL BE THOROUGHLY CLEANED IN A HOT PRESSURE WASHER THEN HEATED TO 450 DEGREES. THE HOT PART IS THEN DIPPED INTO A POLYETHYLENE COPOLYMER-BASED THERMOPLASTIC POWDER UNTIL THE COATING REACHES IT TARGET THICKNESS. IT THEN GOES THROUGH A FLOW OVEN TO EVEN THE COATING THICKNESS AND IMPROVE THE FINISH. SINCE NO CURING IS NECESSARY, THE COATING'S PROPERTIES AND PERFORMANCE ARE VERY CONSISTENT AND UNIFORM. ENVIRONMENTALLY SENSITIVE - PVC AND PHTHALATE FREE - COATING IS MADE OF AN ULTRAVIOLET STABILIZED POLYETHYLENE MATERIAL. COATING MEETS CALIFORNIA, STATE OF WASHINGTON AND OTHER STATE AND FEDERAL REQUIREMENTS FOR PHTHALATES AND HEAVY METAL CONTENT. NO DIOXINS PRODUCED IF BURNED. DISCARDED PRODUCT AND WASTE PRODUCTION MATERIAL CAN BE RECYCLED INTO OTHER PRODUCTS (RECYCLING SYMBOL 2). CONTAINS NO VOLATILE ORGANIC COMPOUNDS (VOC'S). TABER ABRASION TESTS (ASTM D4060) SHOW THAT THE PE COATING ABRASION RESISTANCE IS OVER 1.7 TIMES THE ABRASION RESISTANCE OF PVC. WARRANTY IS THE SAME AS PVC COATED PRODUCTS. DURABLE - EXTREME COLD (TO -20 DEGREES F) CYCLE TESTING INDICATES NO CRACKING OR LOSS OF ADHESION TO THE METAL SUBSTRATE. LESS POROUS THAN PVC WHICH MAKES THE SURFACE LESS CONDUCIVE TO GROWTH OF MOLD AND COLLECTION OF GROUND-IN DIRT. EASIER TO CLEAN. SLIP RESISTANT - TEXTURED FINISH FOR ENHANCED TRACTION. 0.74 COEFFICIENT OF FRICTION PER ASTM1679. ADA CONSIDERS A 0.5 COEFFICIENT OF FRICTION OR HIGHER TO BE SLIP RESISTANT. COATING DAMAGE CAN BE REPAIRED EASILY WITH THE AVAILABLE REPAIR KIT. NO CHEMICALS OR SPECIAL CURING REQUIRED. TECHNICAL SPECIFICATIONS: A SKID RESISTANT, TEXTURED, FUNCTIONALIZED POLYETHYLENE COPOLYMER-BASED THERMOPLASTIC POWDER COATING DESIGNED FOR MAXIMUM MECHANICAL PERFORMANCE, IMPACT RESISTANCE AND UV STABILITY WITH THE FOLLOWING PERFORMANCE PROPERTIES: PROPERTY - TESTING METHOD - RESULTS FLEXIBILITY (CONICAL MANDREL) - ASTM D 522 - 1/8", NO CRACKS (GREATER THAN 328) ADHESION - ASTM D 4541 - 800 PSI IMPACT RESISTANCE - ASTM D 2794 - GREATER THAN 320 IN-LBS GLOSS - ASTM D 523 - 12 TABER ABRASION - ASTM D 4060 - 26 (MG LOSS, CS 17 WHEEL) TENSILE STRENGTH - ASTM D 638 - 3482 PSI % ELONGATION - ASTM D 638 - 13% HUMIDITY RESISTANCE - ASTM D 2247 - NO BLISTERING OR LOSS OF GLOSS AFTER 1000 HOURS SALT SPRAY - ASTM B 117 - 2000 HRS, NO SIGNIFICANT CHANGE IN COLOR OR GLOSS QUV - ASTM G 53 - 2000 HRS, NO SIGNIFICANT CHANGE IN COLOR OR GLOSS.INSTALLATION INSTRUCTIONS

EPOXY/POLYESTER PRIMER
EPOXY/POLYESTER PRIMER COATING PRODUCES A FINISH HAVING A "TOOTH" WHICH READILY ACCEPTS THE PROCEEDING COATING OF SUPERDURABLE POLYESTER POWDER. EPOXY/POLYESTER PRIMER IS A POWDER COATING WHICH IS ELECTROSTATICALLY APPLIED AT A THICKNESS OF 2 TO 5 MILS (.002 - .005).THIS PRIMER COATING ADDS AN ADDITIONAL AL LEVEL OF PROTECTION WHICH IS RESISTANT TO ABRASION, CORROSION, AND MECHANICAL DAMAGE. ALL COMPONENTS SHALL BE FREE OF EXCESS WELD AND WELD SPALLS. ALL EDGES TO BE EASED BY TUMBLING OR OTHER MANNER TO ELIMINATE A SHARP EDGE. AFTER FABRICATION ALL WELD JOINTS ARE TO BE THOROUGHLY CLEANED USING A CHIPPING HAMMER AND WIRE BRUSH TO REMOVE ALL WELD SLAG FROM WELD JOINT. PRIOR TO FINISHING, COMPONENTS SHALL BE CLEANED WITH A THREE-STAGE ALKALINE BATH AND AN ECLPS 2400 SEALER FOR ADHESION AND RUST INHIBITOR DURING THE PREPARATION PROCESS. COMPONENTS ARE THOROUGHLY DRIED BEFORE BEING COATED WITH EPOXY/POLYESTER PRIMER POWDER AND ARE SET CURED AT TEMPERATURES BETWEEN 375° AND 400° F THROUGH AN INFRARED OVEN PRIOR TO BEING TOP COATED WITH SUPERDURABLE POLYESTER POWDER FINISH.

PLAYGROUND NOTES - CONTINUED

COATED FINISH (CONTINUED)
PROPERTIES: PROPERTY - TESTING METHOD - RESULTS FLEXIBILITY (CONICAL MANDREL) - ASTM D 522 - 1/8", NO CRACKS (GREATER THAN 328) ADHESION - ASTM D 4541 - 800 PSI IMPACT RESISTANCE - ASTM D 2794 - GREATER THAN 320 IN-LBS GLOSS - ASTM D 523 - 12 TABER ABRASION - ASTM D 4060 - 26 (MG LOSS, CS 17 WHEEL) TENSILE STRENGTH - ASTM D 638 - 3482 PSI % ELONGATION - ASTM D 638 - 13% HUMIDITY RESISTANCE - ASTM D 2247 - NO BLISTERING OR LOSS OF GLOSS AFTER 1000 HOURS SALT SPRAY - ASTM B 117 - 2000 HRS, NO SIGNIFICANT CHANGE IN COLOR OR GLOSS QUV - ASTM G 53 - 2000 HRS, NO SIGNIFICANT CHANGE IN COLOR OR GLOSS.INSTALLATION INSTRUCTIONS

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1. EQUIPMENT AND COMPONENTS MUST BE MADE IN THE USA AND BE IPEMA CERTIFIED.
2. EQUIPMENT MANUFACTURER TO COMPLY WITH ISO 9001.
3. EQUIPMENT MANUFACTURER TO PROVIDE CLEAR INSTALLATION MANUAL AND HARD COPY PROJECT LAYOUT AT THE COMPLETION OF PROJECT.
4. EQUIPMENT AND FALL SURFACING MUST COMPLY WITH CURRENT STANDARDS AND GUIDELINES.
5. EQUIPMENT TO BE CALLED OUT WITH LENGTHS FOR OVERHEAD ACTIVITIES, SPACING BETWEEN RAILS AND REPRESENTATIVE ELEMENTS.
6. EQUIPMENT TO HAVE SAFETY TOP RAIL WITH A MINIMUM OF 72 INCHES AT CLIMBING OR SLIDING ELEMENTS.
7. EQUIPMENT MANUFACTURER SALES REPRESENTATIVE TO BE NPSI CERTIFIED.
8. EQUIPMENT INSTALLATION TO BE INSPECTED AND CERTIFIED FOR PROPER ASSEMBLY BY MANUFACTURER REPRESENTATIVE NPSI CERTIFIED.
9. EQUIPMENT MUST BE SUPERCEDED BY SUBMITTAL PACKETS THAT HAVE THE FOLLOWING INFORMATION FOR REVIEW AND RELEASE BY PROJECT DESIGNER AND HACEP REPRESENTATIVE:
   a. PROJECT SITE PLAN REFLECTING CONSTRUCTION DRAWINGS OR ACTUAL FIELD CONDITIONS.
   b. SITE PLAN WITH CONSTRUCTION POINTS.
   c. SITE PLAN WITH DIMENSIONS FOR ALL USE ZONES AND BETWEEN INDEPENDENT PIECES OF EQUIPMENT.
   d. LOCATION OF CONTAINMENT WALL OR CURB.
   e. LOCATION, LIMITS AND DIMENSIONS OF ACCESSIBLE PATH OF TRAVEL
   f. LOCATION OF ANY SHADE CANOPIES AS APPLICABLE.
   g. EQUIPMENT COLOR SELECTION CHART.
   h. EQUIPMENT INFORMATION INCLUDING INSTALLATION.
10. MANUFACTURER TO PROVIDE A SEALED MAINTENANCE KIT TO INCLUDE: TOOL BOX, SAND PAPER, OWNER'S MANUAL, HARDWARE (20 PIECES EACH MINIMUM) ASSORTED SIZES OF VANDAL PROOF NUTS, BOLTS, WASHERS, FASTENING TOOLS (ONE EACH SIZE - WRENCH AND CHUCK KEYS), 4 CANS OF PRIMER , 2 CANS OF EACH COLOR OF TOUCH-UP PAINT, PLASTIC REPAIR KIT, ANTI-GRAFFITI REMOVER.
11. CONTRACTOR SHALL HAVE EQUIPMENT INSTALLATION TO BE PERFORMED BY CONTRACTOR MEETING THE FOLLOWING REQUIREMENTS (a. AND b. ARE INSTALLATION EXPERIENCE REQUIREMENTS THAT MUST BE MET, c. AND d. ARE OPTIONAL REQUIREMENTS THAT MAY BE SUBSTITUTED FOR EITHER a. OR b.).
   a. MINIMUM 8 YEARS EXPERIENCE INSTALLING SAME EQUIPMENT.
   b. COMPLETE GOOD QUALITY INSTALLATION OF A MINIMUM OF 20 STRUCTURES OF SAME OR SIMILAR SIZE.
   c. TRAINING AND CERTIFICATION BY EQUIPMENT MANUFACTURER.
   d. NPSI CERTIFICATION.
12. EQUIPMENT AND FALL SURFACES AUDITED AND TESTED BY AN INDEPENDENT EQUIPMENT SPECIALIST. CHECK PLAN VIEW FOR DIMENSIONS OF PLAYGROUND IMPROVEMENTS, EQUIPMENT MANUFACTURER, AND FALL SURFACES MANUFACTURER WITH TOLL FREE NUMBERS. ANY ITEMS FOUND DEFICIENT IN AUDIT MUST BE CORRECTED AND A RE-AUDIT OF CORRECTED ITEM TO INSURE THAT ALL DEFICIENT ITEMS ARE ADDRESSED.
13. PLAYGROUND AREA TO BE FENCED AND PROPERLY SECURED THROUGHOUT CONSTRUCTION AND UP TO FINAL ACCEPTANCE OF PROJECT.
14. EQUIPMENT TO HAVE MINIMUM 72" SAFETY USE (FALL) ZONE ASTM1487-11.
15. CONSTRUCTION WORK ON PLAYGROUND AREA WILL NOT COMMENCE UNTIL ALL MATERIALS AND SUPPLIES ARE IN POSSESSION OF CONTRACTOR.
16. CONTRACTOR WILL INSURE THAT WORK PROGRESS WILL BE ONGOING AND JOB SITE WILL NOT BE LEFT ABANDONED FOR ANY TIME PERIOD GREATER THAN 48 HOURS.
17. CONTRACTOR WILL INSURE THAT JOB SITE IS KEPT CLEAN AND CLEAR OF ANY CONSTRUCTION DEBRIS ON A DAILY BASIS.
18. CUSTOM SIGN TO BE FURNISHED BY PLAYGROUND MANUFACTURER WITH INFORMATION ON AGE APPROPRIATE USE, ADULT SUPERVISION RECOMMENDED, MANUFACTURER'S NAME AND 1-800 PHONE NUMBER, HACEP MAINTENANCE PHONE NUMBER OF (915) 844-3743 AND "WARNING" INSTALLATION OVER HARD SURFACE NOTICE. SPECIFIC DESIGN SHALL BE APPROVED BY SUBMITTAL AND VERIFIED WITH HACEP REPRESENTATIVE PRIOR TO PROJECT CONSTRUCTION.
19. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AND INSTALL ALL PLAYGROUND ELEMENTS.
20. ALL PLAYGROUND ELEMENTS MUST BE INSTALLED BY A CERTIFIED PLAYGROUND INSTALLER.
21. CONTRACTOR SHALL BE OBSERVANT AND COMPLY WITH ALL FALL ZONES AND USE ZONES AND CONTACT LANDSCAPE ARCHITECT SHOULD UNFORESEEN ELEMENTS CONFLICT WITH EQUIPMENT'S ZONES, PRIOR TO INSTALLATION. CONTRACTOR SHALL COMPLY WITH CONSTRUCTION STANDARDS AS RELATED TO PLAYGROUND EQUIPMENT INSTALLER / CONTRACTOR.

SITE ELEMENTS NOTES

1. SITE ELEMENTS SHALL INCLUDE BUT ARE NOT LIMITED TO SITE FURNISHINGS, PLAYGROUND SURFACING, PLAYGROUND EQUIPMENT, BENCHES, AND TRASH RECEPTACLES (AS PER PLANS). CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING, SECURING, TRANSPORTING, AND INSTALLING ALL SITE ELEMENTS UNTIL FINAL ACCEPTANCE.
2. CONTRACTOR SHALL BE OBSERVANT OF ALL FALL ZONES AND USE ZONES AND CONTACT LANDSCAPE ARCHITECT SHOULD UNFORESEEN ELEMENTS CONFLICT WITH EQUIPMENT'S ZONES, PRIOR TO INSTALLATION.
3. CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL SITE ELEMENTS AS INDICATED AND MOUNT ALL APPLICABLE SITE AMENITIES WITH MANUFACTURER'S RECOMMENDATIONS CONCRETE FOOTINGS, ALL SITE ELEMENTS MUST BE MADE IN AMERICA UNLESS OTHERWISE AS INDICATED IN PLANS AND DETAILS.
4. CONTRACTOR SHALL PROVIDE ALL SECURE FREIGHT, STORAGE AND PROTECTION OF SITE ELEMENTS UNTIL FINAL ACCEPTANCE.
5. SITE FURNISHINGS ARE TO CARRY A FIVE YEAR MANUFACTURER'S LIMITED WARRANTY AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP.
6. COLOR, FINISH, SHAPE AND TYPE OF SITE FURNISHINGS SHALL BE FROM A SINGLE SOURCE ABLE TO PROVIDE COMPONENTS OF CONSISTENT QUALITY IN APPEARANCE AND PHYSICAL PROPERTIES.
7. COLOR SHALL BE INDICATED BY LANDSCAPE ARCHITECT FROM MANUFACTURER'S FULL RANGE SITE FURNISHING COLOR CHART.
8. SITE FURNISHINGS SHALL BE POWDER COATED AFTER COMPLETE FABRICATION.

SITES SOUTHWEST
4110 RIO BRAVO, SUITE 217
EL PASO, TX 79902
PHONE:915-351-8800
E-MAIL: mail@sites-sw.com
WEB: www.sites-sw.com

CONSULTANTS

REGISTERED LANDSCAPE ARCHITECT
DEBORAH B. HRADEK
3007
STATE OF TEXAS
05-28-19

PROJECT
CDBG HART & BAIRD IMPROVEMENTS

ADDRESS
4861 ATLAS AVE.
EL PASO, TX 79904 (HART)
4747 ATLAS AVE.
EL PASO, TX 79904 (BAIRD)

Housing Authority of the City of El Paso

FINAL FOR CONSTRUCTION

REVISIONS

MARK	DATE	DESCRIPTION

PROJECT NO:	2019048
CAD DWG FILE:	2019048 - NOTES.DWG
DRAWN BY:	STAFF
CHK'D BY:	D.B.H.
ISSUE DATE:	05/28/2019
COPYRIGHT:	SITES SOUTHWEST,LLC
SHEET TITLE	

NOTES
HART & BAIRD

G-003

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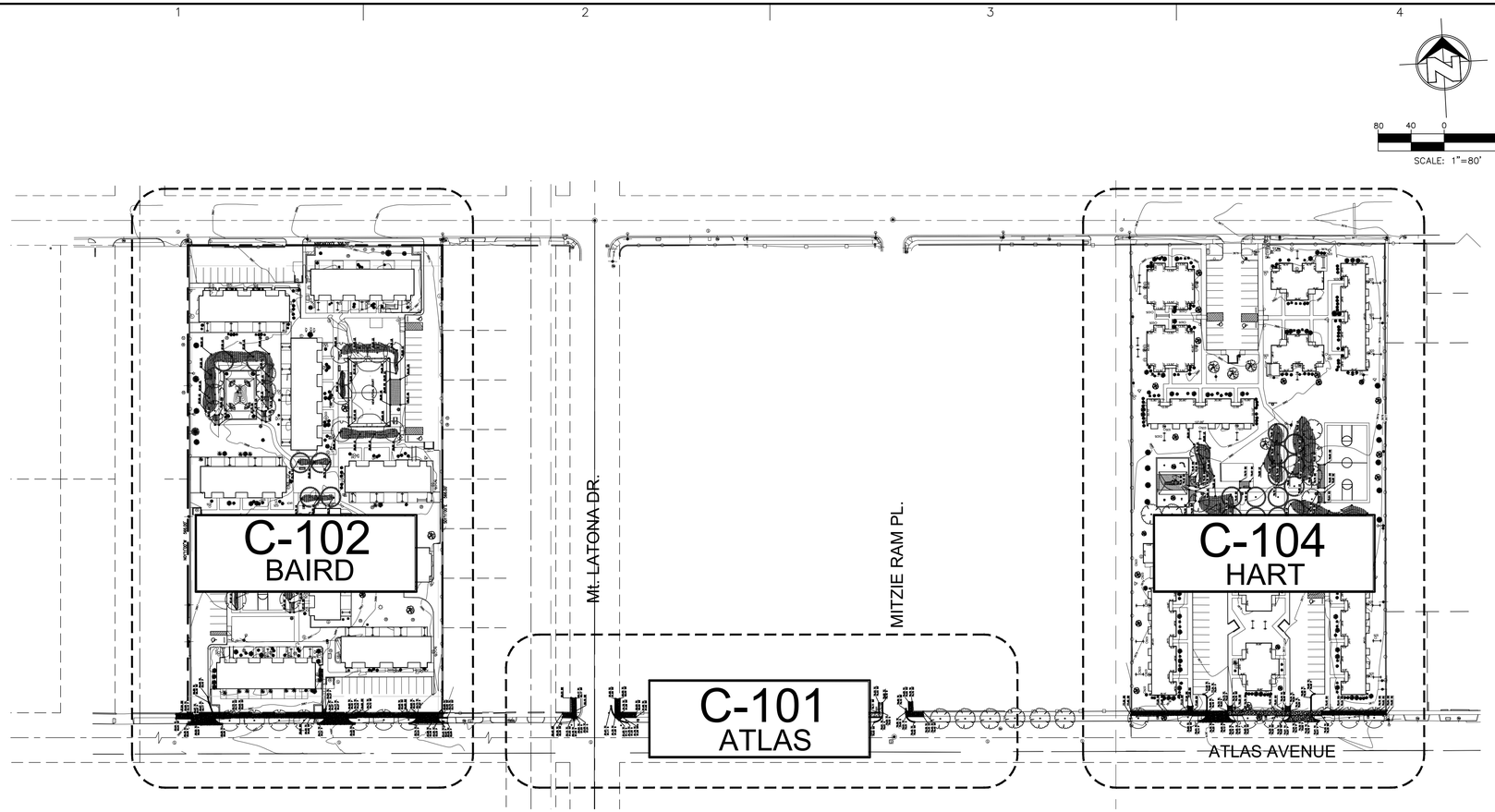


80 40 0 80

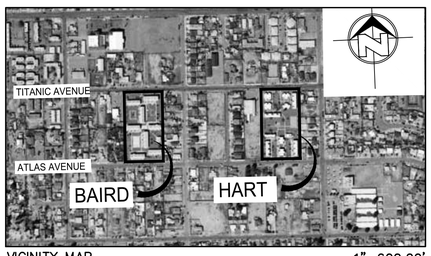
SCALE: 1"=80'

1 C-100 PROJECT OVERALL
SCALE: 1"=80'-0"

LEGEND

32.20FG	NEW FG ELEV. (GROUND)
32.20SW	NEW SIDEWALK ELEV.(CONCRETE)
32.20P	NEW FG ELEV. (PAVEMENT)
32.20G	NEW FG ELEV. (GUTTER)
32.20TC	NEW FG ELEV. (TOP OF CURB)
32.20CS	NEW FG ELEV. (CONCRETE SLAB)
32.20TW	NEW FG ELEV. (TOP OF WALL)
32.20PV	NEW FG ELEV. (TOP OF PAVERS)
32.20LS	NEW FG ELEV. (LANDSCAPE)
3732.2 X	EXISTING GROUND (SPOT ELEV.)
32.00	PROPOSED FG (CONTOUR)
FF=30.39	FINISHED BUILDING FLOOR ELEVATION
3732	EXISTING GROUND (CONTOUR)
	HIGH POINT
L.O.C.	LIMITS OF CONSTRUCTION

GENERAL CIVIL INDEX



VICINITY MAP 1"=600.00'

NOTE:
ALL INFORMATION SHOWN HEREON WITH RESPECT TO UNDERGROUND CONDITIONS WAS DETERMINED BY DATA COLLECTED THROUGH SURVEY CREW OBSERVATION AND OTHER INFORMATION TAKEN FROM EXISTING PLANS AND MAPS OF RECORD. NO UNDERGROUND UTILITIES EXISTING OR ABANDONED WERE EXPOSED OR LOCATED.

UNLESS SPECIFICALLY ACCEPTED BY SLI ENGINEERING, INC. IN WRITING, SLI ENGINEERING, INC. MAKES NO CLAIM, EXPRESSED OR IMPLIED, AS TO THE UNDERGROUND SITE CONDITIONS.

ABBREVIATIONS

TC	=	TOP OF CURB	PL	=	PROPERTY LINE
SW	=	TOP OF WALK	HP	=	HIGH POINT
P	=	TOP OF PAVEMENT	CHF	=	CHAIN-LINK FENCE
EXIST.	=	EXISTING	TR	=	TREE
RW	=	ROCKWALL	P.O.B.	=	POINT OF BEGINING
ELEV.	=	ELEVATION	C.M.	=	CITY MONUMENT
F.F.	=	FINISH FLOOR	TYP.	=	TYPICAL
BLDG.	=	BUILDING	R.O.W.	=	RIGHT OF WAY
DESC.	=	DESCRIPTION	SHT	=	SHEET
PAV.	=	PAVEMENT	RD.	=	ROAD
CS	=	CONCRETE SLAB	ST.	=	STREET
N	=	NORTH	PL	=	PLACE
E	=	EAST	CL	=	CENTER LINE
S	=	SOUTH	EC	=	EDGE OF CONCRETE
W	=	WEST	NG	=	NATURAL GROUND
EP	=	EDGE OF PAVEMENT	DW	=	DRIVEWAY
PP	=	POWER POLE	G	=	GUTTER ELEVATION
F.H.	=	FIRE HYDRANT	I	=	ISLAND
L.P.	=	LIGHT POLE	TS	=	TRAFFIC SIGN
PC	=	PROPERTY CORNER	EB	=	ELECTRIC BOX
HP	=	HIGH POINT	LS	=	LANDSCAPING
L.O.C.	=	LIMITS OF CONSTRUCTION	HC	=	HANDICAPPED
FL	=	TOP OF FLUME/SWALE	FG	=	FINISH GROUND
N.O.I.	=	NOTICE OF INTENT	TOP	=	TOP ELEVATION
TNRCC	=	TEXAS NATURAL RESOURCE CONSERVATION COMMISSION	INV	=	INVERT ELEVATION
			TW	=	TOP OF WALL
SDPCP	=	STORM DRAIN POLLUTION CONTROL PLAN	PV	=	PAVERS
			FC	=	FLAT CURB

18.44.200– ENGINEERING CONTROLS FOR GRADING. CONSTRUCTION ACTIVITY REQUIREMENTS.

THE FOLLOWING OPERATIONAL GUIDELINES MUST BE FOLLOWED DURING THE GRADING OF THE SITE. THEY ARE REQUIRED TO BE INCLUDED AS "GENERAL NOTES" ON THE APPROVED GRADING PLAN.

1. NO ON–SITE PROCESSING OF MATERIAL FOR COMMERCIAL OR RETAIL SALES SHALL BE ALLOWED. ON–SITE PROCESSING OF MATERIALS TO BE USED FOR PREPARATION OR CONSTRUCTION OF IMPROVEMENTS WITHIN THE SITE COVERED BY THE GRADING PERMIT SHALL BE ALLOWED.
2. WORK SHALL BE CONDUCTED IN A MANNER THAT PRESERVES AND DOES NOT OBSTRUCT, IMPEDE OR INTERFERE WITH THE FLOW OF STORMWATER IN NATURAL DRAINAGE WAYS, UNIMPROVED CHANNELS OR WATERCOURSES, OR IMPROVED DITCHES, CHANNELS OR CANALS IN SUCH A MANNER AS TO CAUSE FLOODING WHERE IT WOULD NOT OTHERWISE OCCUR.
3. CONSTRUCTION EQUIPMENT AND FENCING SHALL BE KEPT OUT OF WATERCOURSES EXCEPT WHEN NECESSARY TO PERFORM WORK ON THE APPROVED PLANS. ADEQUATE BY–BASS MEASURES SHALL BE INSTALLED WHERE TEMPORARY DRAINAGE BLOCKAGES WILL OCCUR. WHERE WORK WITHIN A CHANNEL IS DESIGNATED ON APPROVED PLANS, PRECAUTIONS SHALL BE TAKEN TO STABILIZE THE WORK AREA DURING CONSTRUCTION TO MINIMIZE EROSION AS SHOWN ON THE PLANS. THE CHANNEL, INCLUDING BED AND BANKS, SHALL ALWAYS BE RESTORED/RESTABILIZED IMMEDIATELY AFTER WORK IN THE CHANNEL IS COMPLETED;
4. WHERE A DRAINAGE WAY WILL BE CROSSED BY CONSTRUCTION VEHICLES REGULARLY DURING CONSTRUCTION, A TEMPORARY CROSSING SHALL BE CONSTRUCTED AS REQUIRED IN THE APPROVED GRADING PLANS.
5. MATERIAL STOCKPILING SHALL NOT BE ALLOWED WHEN GRADING OPERATIONS ARE IDLE FOR MORE THAN SEVEN CONSECUTIVE CALENDAR DAYS. STOCKPILING SHALL BE LIMITED TO TEN FEET HIGH WHEN GRADING OPERATIONS ARE BEING CONDUCTED.
6. A TRAFFIC CONTROL PERMIT SHALL BE REQUIRED IF THE GRADING OPERATION WILL IMPACT TRAFFIC.
7. ANY USE OF VIBRATORY EQUIPMENT SHALL NOT BE ALLOWED, UNLESS APPROVED IN WRITING BY THE PERMIT OFFICIAL IN ADVANCE OF SUCH USE.
8. THE PERMIT OFFICIAL MUST BE NOTIFIED NO LATER THAN 4:00 PM THE DAY IN ADVANCE OF ANY GRADING WORK. ADDITIONAL ACTIVITY

REQUIREMENTS/RESTRICTIONS MAY BE SPECIFIED BY THE DESIGN ENGINEER OF RECORD.

ATLAS LEGAL DESCRIPTION

ATLAS ROW – NORTH PORTION
EL PASO, EL PASO COUNTY, TEXAS.

BAIRD LEGAL DESCRIPTION

LOTS 86 TO 89, BLOCK 2, SUNRISE ACRES
EL PASO, EL PASO COUNTY, TEXAS.
CONTAINING 143,345 Sq. Ft. (3.2907 Acres) +/–

HART LEGAL DESCRIPTION

LOTS 72 TO 75, BLOCK 2, SUNRISE ACRES
EL PASO, EL PASO COUNTY, TEXAS.
CONTAINING 175,213 Sq. Ft. (4.0223 Acres) +/–

IMPORTANT DRAINAGE NOTE

ALL NEW IMPROVEMENTS WILL BE LOCATED OVER EXISTING DEVELOPED AREAS, NO ADDITIONAL RUNOFF WILL BE EXPECTED.

NOTE:

ALL EXISTING AND PROPOSED SIDEWALKS, BARRIER FREE RAMPS, HANDICAP PARKING, DRIVEWAY CROSSWALKS, DRIVEWAYS AND ACCESSIBLE ROUTES SHALL COMPLY WITH A.D.A., T.A.S. AND CITY OF EL PASO REQUIREMENTS, EXISTING INFRASTRUCTURE NOT COMPLYING SHALL BE REMOVED AND REPLACED TO MEET STANDARDS.

Know what's below. Call before you dig.
Call 811 TWO Working days Before you dig
It's Free, It's Easy, and
IT'S THE LAW!

NOTES FOR GRADING

1. ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE "2014 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS AND BRIDGES," (APPLICABLE ITEMS ONLY).
2. ALL FILL AREAS SHALL BE COMPACTED TO 95% DENSITY, (ASTM D–1557).
3. REFER TO THE CITY OF EL PASO GRADING ORDINANCE CHAPTER 18.44 FOR SITE GRADING SPECIFICATIONS. GRADING PERMIT MUST BE AVAILABLE AT THE JOB SITE UPON COMMENCEMENT OF WORK.
4. POSITIVE DRAINAGE SHALL BE PROVIDED BY THE CONTRACTOR DURING ALL PHASES OF CONSTRUCTION AND GRADING. THE CONTRACTOR SHALL NOT ALLOW DEBRIS OR SEDIMENT TO SPILL ONTO THE PUBLIC STREETS OR ADJOINING PROPERTIES.
5. CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF EXISTING UTILITY LINES (SHOWN OR NOT SHOWN) WITHIN THE SCOPE OF CONSTRUCTION. THE CONTRACTOR MUST NOTIFY THE RESPECTIVE AGENCY PRIOR TO MOVING ON SITE, SO THE EXISTING UTILITY LINES CAN BE LOCATED IN THE FIELD. IF ANY LINES ARE DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL REPLACE THEM AT HIS OWN EXPENSE.
6. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS ON SITE AND SHALL CONTACT THE DESIGN ENGINEER AND REPORT ANY DISCREPANCIES, OMISSIONS, AND ERRORS ON PLANS PRIOR TO COMMENCING OR CONTINUING WORK.

"CAUTION TO CONTRACTOR"

7. LOCATE AND PROTECT FROM DAMAGE ALL UTILITY LINES WITHIN THE CONSTRUCTION AREA.
8. GRADING, SWPPP, AND N.O.I. PERMITS REQUIRED BEFORE MOVING ON SITE.
9. ALL RAMPS SHALL HAVE A MAX. OF 1:12 SLOPE AND ALL SIDEWALKS SHALL HAVE A MAX. OF 2% CROSS SLOPE. ALL ACCESSIBLE PARKING SPACES SHALL HAVE A MAX. OF 2% (LONGITUDINAL OR CROSS SLOPE) ALL ACCESSIBLE ROUTES SHALL HAVE A MAX. OF 5% SLOPE.

PERMIT CLOSEOUT PROCEDURES (18.44.226)

10. AFTER THE PERMITTEE COMPLETES THE GRADING UNDER THE PERMIT. THE PERMIT SHALL BE CLOSED. AS PART OF THE CLOSEOUT PROCEDURE, THE APPLICANT MUST SUBMIT THE FOLLOWING TO THE CITY:
    A. A STATEMENT FROM THE ENGINEER OF RECORD THAT STATES "THE GRADING OPERATION HAS BEEN SUBSTANTIALLY COMPLETED AND GENERALLY CONFORMS TO THE APPROVED SET OF PLANS." THE PERMITTEE SHALL CALL THE PERMIT OFFICAIL TO ESTABLISH THE BEGINNING OF THE WARRANTY PERIOD AND TO NOTIFY THE PERMIT OFFICIAL THAT THE GSP HAS BEEN IMPLEMENTED.
    B. A COPY OF THE NOTICE OF TERMINATION FILED WITH THE STATE OR DATED CONSTRUCTION SITE NOTICE, IF APPLICABLE, IN ACCORDANCE WITH CHAPTER 15.

THE CITY WILL ISSUE A LETTER STATING GENERAL CONFORMANCE TO THE PERMIT HAS BEEN MET AND THAT THE WARRANTY PERIOD REQUIREMENTS WILL BE IN EFFECT.
(ORDINANCE NO. 17516, § 1, 3–29–2011)

WARRANTY (18.44.090)

ANY PERSON ISSUED A PERMIT SHALL AGREE, WARRANT AND MAINTAIN THE AREA DESCRIBED IN THE PERMIT FOR A PERIOD OF TWO YEARS AFTER THE PERMIT IS CLOSED BY THE CITY PURSUANT TO SECTION 18.44.220, OR UNTIL A BUILDING PERMIT IS ISSUED FOR THE PURPOSE OF MAINTAINING A STABLIZED SITE IN ACCORDANCE WITH THE APPROVED GSP, WHICHEVER FIRST OCCURS (THE "WARRANTY" OR "WARRANTY PERIOD"). THE CITY MAY CONDUCT INSPECTIONS OF THE PERMITTED AREA THROUGHOUT THE WARRANTY PERIOD AND REQUIRE MAINTENANCE AND CORRECTION OF THE WORK BY THE PERMIT HOLDER. FAILURE OF THE PERMIT HOLDER TO CORRECT THE WORK SHALL CONSTITUTE A FAILURE TO COMPLY WITH THE PROVISIONS OF THIS CHAPTER.

(ORDINANCE NO. 17516, § 1, 3–29–2011)

EROSION CONTROL:

1. WIND EROSION CONTROL: WATERING DURING AND AFTER COMPLETION OF SITE GRADING, THE PROJECT AREA SHALL BE COMPLETELY WATERED AS NEEDED TO CONTROL WIND EROSION OR AS DIRECTED BY THE CITY ENGINEER.
2. THE CONTRACTOR SHALL CLEAN UP ANY DIRT OR DEBRIS THAT IS SPILLED ON THE EXISTING PUBLIC ROADWAY AS A RESULT OF THIS CONSTRUCTION PROJECT. CLEAN UP IS TO BE DONE ON A REGULAR BASIS OR AS DIRECTED BY THE CITY ENGINEER.
3. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL SLOPES IN GOOD CONDITION AND PROTECTING THEM FROM EROSION UNTIL THE FINAL LANDSCAPING ELEMENTS ARE IN PLACE.

FLOOD ZONE:

ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP COMMUNITY–PANEL NUMBER 480214 0024 B, DATED OCTOBER 15, 1982 THIS PROPERTY LIES IN FLOOD ZONE "C".

ZONE "C", AREAS OF MINIMAL FLOODING (NO SHADING).

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DEMOLITION NOTE

FOR DEMOLITION PLANS AND NOTES SEE ARCHITECTURAL / LANDSCAPE PLANS.

BENCHMARK:

EXISTING CITY MONUMENT LYING AT THE CENTERLINE INTERSECTION OF TITANIC AVE. AND PANDORA ST.
ELEVATION: 3874.01' CITY DATUM

IMPORTANT CONSTRUCTION NOTE

VIBRATORY ROLLERS WILL BE NOT ALLOWED DURING CONSTRUCTION.

SITES SOUTHWEST
4110 RIO BRAVO, SUITE 217
EL PASO, TX 79902
PHONE:915–351–8800
E–MAIL: mail@sites–sw.com
WEB: www.sites–sw.com

CONSULTANTS

SLI ENGINEERING, INC.
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
6600 WESTWIND DRIVE
EL PASO, TEXAS
(915) 584–4457
SLI LICENSE No. F–1902

STATE OF TEXAS
GEORGES S. HALLOUM
92105
LICENSED
PROFESSIONAL ENGINEER

MAY 22, 2019
SLI Project No. 09–19–4314

PROJECT
CDBG HART & BAIRD IMPROVEMENTS

ADDRESS
4861 ATLAS AVE.
EL PASO, TX 79904 (HART)
4747 ATLAS AVE.
EL PASO, TX 79904 (BAIRD)

Housing Authority of the City of El Paso

FINAL FOR CONSTRUCTION

REVISIONS

MARK	DATE	DESCRIPTION

PROJECT NO:	2019048
CAD DWG FILE:	C–100 ABH GRADING.DWG
DRAWN BY:	F.E.
CHK'D BY:	F.E. /G.H.
ISSUE DATE:	05/22/2019
COPYRIGHT:	SLI Engineering, Inc.

SHEET TITLE

PROJECT OVERALL

C-100

SHEET 1 OF 19

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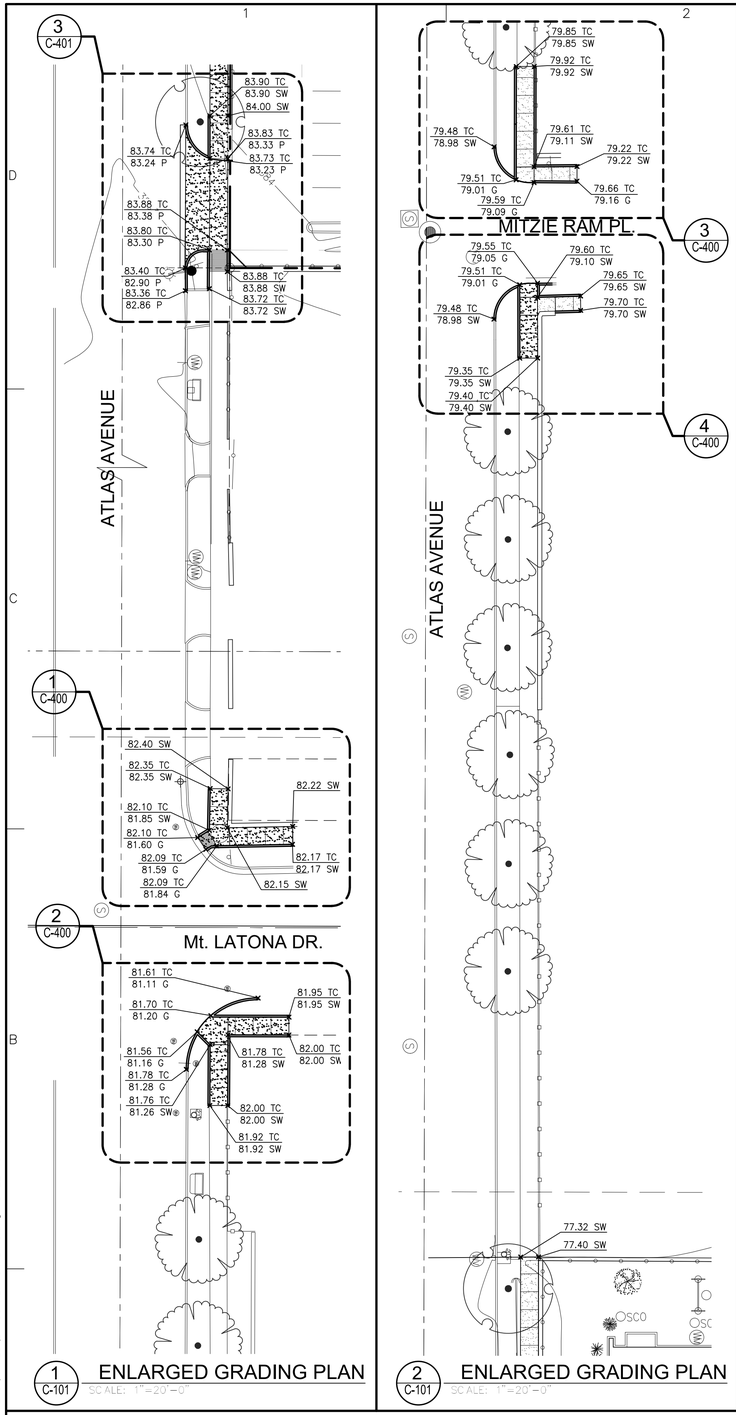
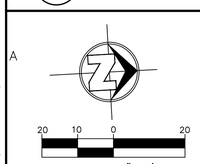




Know what's **below.**
Call before you dig.

Call 811 TWO Working days Before you dig
It's Free, It's Easy, and
IT'S THE LAW!

LEGEND

32.20FG +	NEW FG ELEV. (GROUND)
32.20SW +	NEW SIDEWALK ELEV.(CONCRETE)
32.20P +	NEW FG ELEV. (PAVEMENT)
32.20G +	NEW FG ELEV. (GUTTER)
32.20TC +	NEW FG ELEV. (TOP OF CURB)
32.20CS +	NEW FG ELEV. (CONCRETE SLAB)
32.20TW +	NEW FG ELEV. (TOP OF WALL)
32.20PV +	NEW FG ELEV. (TOP OF PAVERS)
32.20LS +	NEW FG ELEV. (LANDSCAPE)
3732.2 X	EXISTING GROUND (SPOT ELEV.)
3700	PROPOSED FG (CONTOUR)
FF=30.39	FINISHED BUILDING FLOOR ELEVATION
3732	EXISTING GROUND (CONTOUR)
	HIGH POINT
L.O.C.	LIMITS OF CONSTRUCTION

IMPORTANT DRAINAGE NOTE

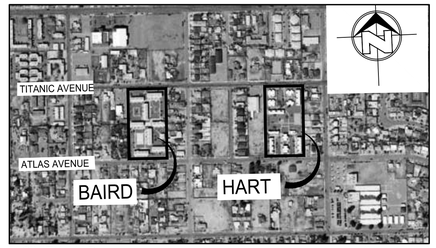
ALL NEW IMPROVEMENTS WILL BE LOCATED OVER EXISTING DEVELOPED AREAS, NO ADDITIONAL RUNOFF WILL BE EXPECTED.

NOTE:
ALL INFORMATION SHOWN HEREON WITH RESPECT TO UNDERGROUND CONDITIONS WAS DETERMINED BY DATA COLLECTED THROUGH SURVEY CREW OBSERVATION AND OTHER INFORMATION TAKEN FROM EXISTING PLANS AND MAPS OF RECORD. NO UNDERGROUND UTILITIES EXISTING OR ABANDONED WERE EXPOSED OR LOCATED.

UNLESS SPECIFICALLY ACCEPTED BY SLI ENGINEERING. INC. IN WRITING, SLI ENGINEERING, INC. MAKES NO CLAIM, EXPRESSED OR IMPLIED, AS TO THE UNDERGROUND SITE CONDITIONS.

NOTE:

ALL EXISTING AND PROPOSED SIDEWALKS, BARRIER FREE RAMPS, HANDICAP PARKING, DRIVEWAY CROSSWALKS, DRIVEWAYS AND ACCESSIBLE ROUTES SHALL COMPLY WITH A.D.A., T.A.S. AND CITY OF EL PASO REQUIREMENTS, EXISTING INFRASTRUCTURE NOT COMPLYING SHALL BE REMOVED AND REPLACED TO MEET STANDARDS.



VICINITY MAP 1"=600.00'

GENERAL CIVIL INDEX

NOTES FOR GRADING

1. ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE "2014 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS AND BRIDGES," (APPLICABLE ITEMS ONLY).
2. ALL FILL AREAS SHALL BE COMPACTED TO 95% DENSITY, (ASTM D-1557).
3. REFER TO THE CITY OF EL PASO GRADING ORDINANCE CHAPTER 18.44 FOR SITE GRADING SPECIFICATIONS. GRADING PERMIT MUST BE AVAILABLE AT THE JOB SITE UPON COMMENCEMENT OF WORK.
4. POSITIVE DRAINAGE SHALL BE PROVIDED BY THE CONTRACTOR DURING ALL PHASES OF CONSTRUCTION AND GRADING. THE CONTRACTOR SHALL NOT ALLOW DEBRIS OR SEDIMENT TO SPILL ONTO THE PUBLIC STREETS OR ADJOINING PROPERTIES.
5. CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF EXISTING UTILITY LINES (SHOWN OR NOT SHOWN) WITHIN THE SCOPE OF CONSTRUCTION. THE CONTRACTOR MUST NOTIFY THE RESPECTIVE AGENCY PRIOR TO MOVING ON SITE, SO THE EXISTING UTILITY LINES CAN BE LOCATED IN THE FIELD. IF ANY LINES ARE DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL REPLACE THEM AT HIS OWN EXPENSE.
6. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS ON SITE AND SHALL CONTACT THE DESIGN ENGINEER AND REPORT ANY DISCREPANCIES, OMISSIONS, AND ERRORS ON PLANS PRIOR TO COMMENCING OR CONTINUING WORK.

"CAUTION TO CONTRACTOR"

7. LOCATE AND PROTECT FROM DAMAGE ALL UTILITY LINES WITHIN THE CONSTRUCTION AREA.
8. GRADING, SWPPP, AND N.O.I. PERMITS REQUIRED BEFORE MOVING ON SITE.
9. ALL RAMPS SHALL HAVE A MAX. OF 1:12 SLOPE AND ALL SIDEWALKS SHALL HAVE A MAX. OF 2% CROSS SLOPE. ALL ACCESSIBLE PARKING SPACES SHALL HAVE A MAX. OF 2% (LONGITUDINAL OR CROSS SLOPE) ALL ACCESSIBLE ROUTES SHALL HAVE A MAX. OF 5% SLOPE.

PERMIT CLOSEOUT PROCEDURES (18.44.226)

10. AFTER THE PERMITTEE COMPLETES THE GRADING UNDER THE PERMIT. THE PERMIT SHALL BE CLOSED. AS PART OF THE CLOSEOUT PROCEDURE, THE APPLICANT MUST SUBMIT THE FOLLOWING TO THE CITY:
    A. A STATEMENT FROM THE ENGINEER OF RECORD THAT STATES "THE GRADING OPERATION HAS BEEN SUBSTANTIALLY COMPLETED AND GENERALLY CONFORMS TO THE APPROVED SET OF PLANS." THE PERMITTEE SHALL CALL THE PERMIT OFFICAIL TO ESTABLISH THE BEGINNING OF THE WARRANTY PERIOD AND TO NOTIFY THE PERMIT OFFICIAL THAT THE GSP HAS BEEN IMPLEMENTED.
    B. A COPY OF THE NOTICE OF TERMINATION FILED WITH THE STATE OR DATED CONSTRUCTION SITE NOTICE, IF APPLICABLE, IN ACCORDANCE WITH CHAPTER 15.

THE CITY WILL ISSUE A LETTER STATING GENERAL CONFORMANCE TO THE PERMIT HAS BEEN MET AND THAT THE WARRANTY PERIOD REQUIREMENTS WILL BE IN EFFECT.
(ORDINANCE NO. 17516, § 1, 3-29-2011)

WARRANTY (18.44.090)

ANY PERSON ISSUED A PERMIT SHALL AGREE, WARRANT AND MAINTAIN THE AREA DESCRIBED IN THE PERMIT FOR A PERIOD OF TWO YEARS AFTER THE PERMIT IS CLOSED BY THE CITY PURSUANT TO SECTION 18.44.220, OR UNTIL A BUILDING PERMIT IS ISSUED FOR THE PURPOSE OF MAINTAINING A STABLIZED SITE IN ACCORDANCE WITH THE APPROVED GSP, WHICHEVER FIRST OCCURS (THE "WARRANTY" OR "WARRANTY PERIOD"). THE CITY MAY CONDUCT INSPECTIONS OF THE PERMITTED AREA THROUGHOUT THE WARRANTY PERIOD AND REQUIRE MAINTENANCE AND CORRECTION OF THE WORK BY THE PERMIT HOLDER. FAILURE OF THE PERMIT HOLDER TO CORRECT THE WORK SHALL CONSTITUTE A FAILURE TO COMPLY WITH THE PROVISIONS OF THIS CHAPTER.

(ORDINANCE NO. 17516, § 1, 3-29-2011)

EROSION CONTROL:

1. WIND EROSION CONTROL: WATERING DURING AND AFTER COMPLETION OF SITE GRADING, THE PROJECT AREA SHALL BE COMPLETELY WATERED AS NEEDED TO CONTROL WIND EROSION OR AS DIRECTED BY THE CITY ENGINEER.
2. THE CONTRACTOR SHALL CLEAN UP ANY DIRT OR DEBRIS THAT IS SPILLED ON THE EXISTING PUBLIC ROADWAY AS A RESULT OF THIS CONSTRUCTION PROJECT. CLEAN UP IS TO BE DONE ON A REGULAR BASIS OR AS DIRECTED BY THE CITY ENGINEER.
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ZONE "C", AREAS OF MINIMAL FLOODING (NO SHADING).

DUE TO INHERENT INACCURACIES OF FEMA OR FLOOD INSURANCE RATE MAPS THIS SURVEYOR DOES NOT CERTIFY TO THE ACCURACY OF LOCATIONS BASED ON SUCH MAPS. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

LEGAL DESCRIPTION

ATLAS ROW - NORTH PORTION
EL PASO, EL PASO COUNTY, TEXAS.

BENCHMARK:

EXISTING CITY MONUMENT LYING AT THE CENTERLINE INTERSECTION OF TITANIC AVE. AND PANDORA ST.
ELEVATION: 3874.01' CITY DATUM

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STATE OF TEXAS
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SHEET TITLE

ENLARGED GRADING PLAN ATLAS

C-101

SHEET 2 OF 19

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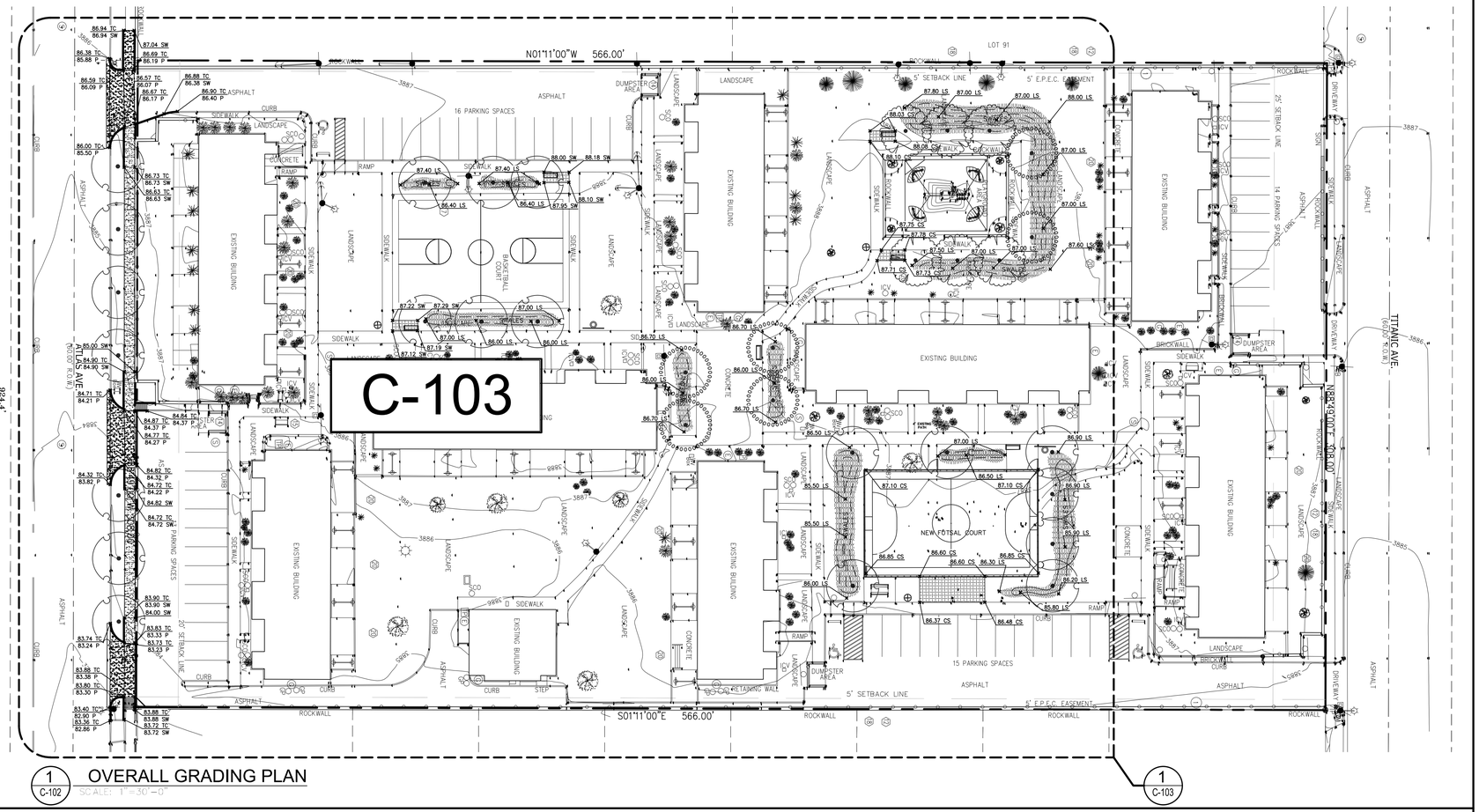

1 C-102 OVERALL GRADING PLAN
SCALE: 1"=30'-0"

1 C-103

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ZONE "C", AREAS OF MINIMAL FLOODING (NO SHADING).

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LEGAL DESCRIPTION

LOTS 86 TO 89, BLOCK 2, SUNRISE ACRES
EL PASO, EL PASO COUNTY, TEXAS.
CONTAINING 143,345 Sq. Ft. (3.2907 Acres) +/-

BENCHMARK:

EXISTING CITY MONUMENT LYING AT
THE CENTERLINE INTERSECTION OF
TITANIC AVE. AND PANDORA ST.
ELEVATION: 3874.01' CITY DATUM

IMPORTANT CONSTRUCTION NOTE

VIBRATORY ROLLERS WILL BE NOT ALLOWED DURING CONSTRUCTION.

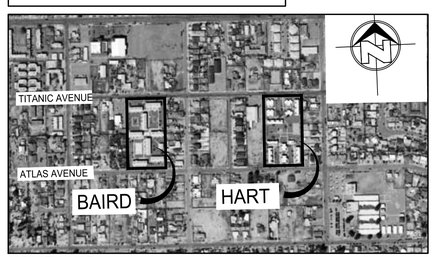
DEMOLITION NOTE

FOR DEMOLITION PLANS AND NOTES SEE ARCHITECTURAL / LANDSCAPE PLANS.

LEGEND

32.20FG	NEW FG ELEV. (GROUND)
32.20SW	NEW SIDEWALK ELEV.(CONCRETE)
32.20P	NEW FG ELEV. (PAVEMENT)
32.20G	NEW FG ELEV. (GUTTER)
32.20TC	NEW FG ELEV. (TOP OF CURB)
32.20CS	NEW FG ELEV. (CONCRETE SLAB)
32.20TW	NEW FG ELEV. (TOP OF WALL)
32.20PV	NEW FG ELEV. (TOP OF PAVERS)
32.20LS	NEW FG ELEV. (LANDSCAPE)
3732.2 X	EXISTING GROUND (SPOT ELEV.)
32.00	PROPOSED FG (CONTOUR)
FF=30.39	FINISHED BUILDING FLOOR ELEVATION
3732	EXISTING GROUND (CONTOUR)
	HIGH POINT
L.O.C.	LIMITS OF CONSTRUCTION

GENERAL CIVIL INDEX



VICINITY MAP 1"=600.00'

18.44.200- ENGINEERING CONTROLS FOR GRADING. CONSTRUCTION ACTIVITY REQUIREMENTS.

THE FOLLOWING OPERATIONAL GUIDELINES MUST BE FOLLOWED DURING THE GRADING OF THE SITE. THEY ARE REQUIRED TO BE INCLUDED AS "GENERAL NOTES" ON THE APPROVED GRADING PLAN.

1. NO ON-SITE PROCESSING OF MATERIAL FOR COMMERCIAL OR RETAIL SALES SHALL BE ALLOWED. ON-SITE PROCESSING OF MATERIALS TO BE USED FOR PREPARATION OR CONSTRUCTION OF IMPROVEMENTS WITHIN THE SITE COVERED BY THE GRADING PERMIT SHALL BE ALLOWED.
2. WORK SHALL BE CONDUCTED IN A MANNER THAT PRESERVES AND DOES NOT OBSTRUCT, IMPEDE OR INTERFERE WITH THE FLOW OF STORMWATER IN NATURAL DRAINAGE WAYS, UNIMPROVED CHANNELS OR WATERCOURSES, OR IMPROVED DITCHES, CHANNELS OR CANALS IN SUCH A MANNER AS TO CAUSE FLOODING WHERE IT WOULD NOT OTHERWISE OCCUR.
3. CONSTRUCTION EQUIPMENT AND FENCING SHALL BE KEPT OUT OF WATERCOURSES EXCEPT WHEN NECESSARY TO PERFORM WORK ON THE APPROVED PLANS. ADEQUATE BY-BASS MEASURES SHALL BE INSTALLED WHERE TEMPORARY DRAINAGE BLOCKAGES WILL OCCUR. WHERE WORK WITHIN A CHANNEL IS DESIGNATED ON APPROVED PLANS, PRECAUTIONS SHALL BE TAKEN TO STABILIZE THE WORK AREA DURING CONSTRUCTION TO MINIMIZE EROSION AS SHOWN ON THE PLANS. THE CHANNEL, INCLUDING BED AND BANKS, SHALL ALWAYS BE RESTORED/RESTABILIZED IMMEDIATELY AFTER WORK IN THE CHANNEL IS COMPLETED;
4. WHERE A DRAINAGE WAY WILL BE CROSSED BY CONSTRUCTION VEHICLES REGULARLY DURING CONSTRUCTION, A TEMPORARY CROSSING SHALL BE CONSTRUCTED AS REQUIRED IN THE APPROVED GRADING PLANS.
5. MATERIAL STOCKPILING SHALL NOT BE ALLOWED WHEN GRADING OPERATIONS ARE IDLE FOR MORE THAN SEVEN CONSECUTIVE CALENDAR DAYS. STOCKPILING SHALL BE LIMITED TO TEN FEET HIGH WHEN GRADING OPERATIONS ARE BEING CONDUCTED.
6. A TRAFFIC CONTROL PERMIT SHALL BE REQUIRED IF THE GRADING OPERATION WILL IMPACT TRAFFIC.
7. ANY USE OF VIBRATORY EQUIPMENT SHALL NOT BE ALLOWED, UNLESS APPROVED IN WRITING BY THE PERMIT OFFICIAL IN ADVANCE OF SUCH USE.
8. THE PERMIT OFFICIAL MUST BE NOTIFIED NO LATER THAN 4:00 PM THE DAY IN ADVANCE OF ANY GRADING WORK. ADDITIONAL ACTIVITY

REQUIREMENTS/RESTRICTIONS MAY BE SPECIFIED BY THE DESIGN ENGINEER OF RECORD.

NOTE:
ALL INFORMATION SHOWN HEREON WITH RESPECT TO UNDERGROUND CONDITIONS WAS DETERMINED BY DATA COLLECTED THROUGH SURVEY CREW OBSERVATION AND OTHER INFORMATION TAKEN FROM EXISTING PLANS AND MAPS OF RECORD. NO UNDERGROUND UTILITIES EXISTING OR ABANDONED WERE EXPOSED OR LOCATED.

UNLESS SPECIFICALLY ACCEPTED BY SLI ENGINEERING. INC. IN WRITING, SLI ENGINEERING, INC. MAKES NO CLAIM, EXPRESSED OR IMPLIED, AS TO THE UNDERGROUND SITE CONDITIONS.

ABBREVIATIONS

TC	=	TOP OF CURB	PL	=	PROPERTY LINE
SW	=	TOP OF WALK	HP	=	HIGH POINT
P	=	TOP OF PAVEMENT	CHF	=	CHAIN-LINK FENCE
EXIST.	=	EXISTING	TR	=	TREE
RW	=	ROCKWALL	P.O.B.	=	POINT OF BEGINING
ELEV.	=	ELEVATION	C.M.	=	CITY MONUMENT
F.F.	=	FINISH FLOOR	TYP.	=	TYPICAL
BLDG.	=	BUILDING	R.O.W.	=	RIGHT OF WAY
DESC.	=	DESCRIPTION	SHT	=	SHEET
PAV.	=	PAVEMENT	RD.	=	ROAD
CS	=	CONCRETE SLAB	ST.	=	STREET
N	=	NORTH	PL	=	PLACE
E	=	EAST	CL	=	CENTER LINE
S	=	SOUTH	EC	=	EDGE OF CONCRETE
W	=	WEST	NG	=	NATURAL GROUND
EP	=	EDGE OF PAVEMENT	DW	=	DRIVEWAY
PP	=	POWER POLE	G	=	GUTTER ELEVATION
F.H.	=	FIRE HYDRANT	I	=	ISLAND
L.P.	=	LIGHT POLE	TS	=	TRAFFIC SIGN
PC	=	PROPERTY CORNER	EB	=	ELECTRIC BOX
HP	=	HIGH POINT	LS	=	LANDSCAPING
L.O.C.	=	LIMITS OF CONSTRUCTION	HC	=	HANDICAPPED
FL	=	TOP OF FLUME/SWALE	FG	=	FINISH GROUND
N.O.I.	=	NOTICE OF INTENT	TOP	=	TOP ELEVATION
TNRCC	=	TEXAS NATURAL RESOURCE CONSERVATION COMMISSION.	INV	=	INVERT ELEVATION
			TW	=	TOP OF WALL
SDPCP	=	STORM DRAIN POLLUTION CONTROL PLAN	PV	=	PAVERS
			FC	=	FLAT CURB

30 15 0 30
SCALE: 1"=30'

IMPORTANT DRAINAGE NOTE

ALL NEW IMPROVEMENTS WILL BE LOCATED OVER EXISTING DEVELOPED AREAS, NO ADDITIONAL RUNOFF WILL BE EXPECTED.

NOTE:

ALL EXISTING AND PROPOSED SIDEWALKS, BARRIER FREE RAMPS, HANDICAP PARKING, DRIVEWAY CROSSWALKS, DRIVEWAYS AND ACCESSIBLE ROUTES SHALL COMPLY WITH A.D.A., T.A.S. AND CITY OF EL PASO REQUIREMENTS, EXISTING INFRASTRUCTURE NOT COMPLYING SHALL BE REMOVED AND REPLACED TO MEET STANDARDS.

811 Know what's below. Call before you dig.
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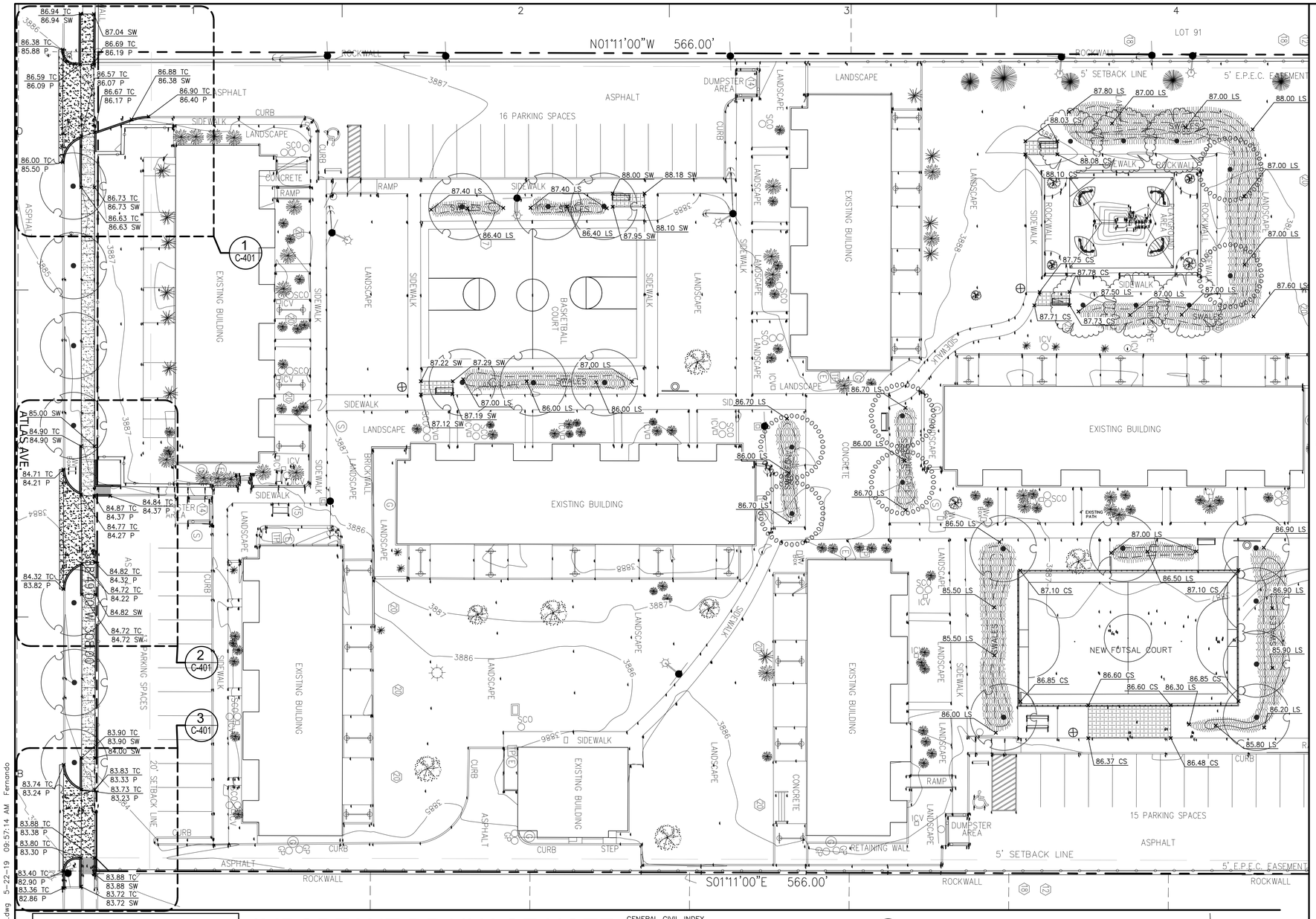
SHEET TITLE

OVERALL GRADING PLAN - BAIRD

C-102

SHEET 3 OF 19

F:\PROJECTS\HACEP 2015\HART-BAIRD-ATLAS\FINALS\C-100 ABH GRADING.dwg 5-22-19 09:55:29 AM Fernando



LEGEND

- 32.20FG — NEW FG ELEV. (GROUND)
- 32.20SW — NEW SIDEWALK ELEV.(CONCRETE)
- 32.20P — NEW FG ELEV. (PAVEMENT)
- 32.20G — NEW FG ELEV. (GUTTER)
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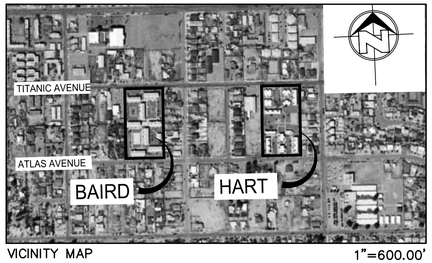
- 3732.2 X — EXISTING GROUND (SPOT ELEV.)
- 32.00 — PROPOSED FG (CONTOUR)
- FF=30.39 — FINISHED BUILDING FLOOR ELEVATION
- 3732 — EXISTING GROUND (CONTOUR)
- HIGH POINT
- L.O.C. — LIMITS OF CONSTRUCTION

IMPORTANT DRAINAGE NOTE

ALL NEW IMPROVEMENTS WILL BE LOCATED OVER EXISTING DEVELOPED AREAS, NO ADDITIONAL RUNOFF WILL BE EXPECTED.



VICINITY MAP 1"=600.00'

GENERAL CIVIL INDEX

1 C-103 ENLARGED GRADING PLAN

SCALE: 1"=20'-0"

NOTE:
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20 10 0 20

SCALE: 1"=20'

Know what's **below.** **Call** before you dig.

Call 811 TWO Working days Before you dig It's Free, It's Easy, and *IT'S THE LAW!*

NOTES FOR GRADING

1. ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE "2014 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS AND BRIDGES," (APPLICABLE ITEMS ONLY).
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3. REFER TO THE CITY OF EL PASO GRADING ORDINANCE CHAPTER 18.44 FOR SITE GRADING SPECIFICATIONS. GRADING PERMIT MUST BE AVAILABLE AT THE JOB SITE UPON COMMENCEMENT OF WORK.
4. POSITIVE DRAINAGE SHALL BE PROVIDED BY THE CONTRACTOR DURING ALL PHASES OF CONSTRUCTION AND GRADING. THE CONTRACTOR SHALL NOT ALLOW DEBRIS OR SEDIMENT TO SPILL ONTO THE PUBLIC STREETS OR ADJOINING PROPERTIES.
5. CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF EXISTING UTILITY LINES (SHOWN OR NOT SHOWN) WITHIN THE SCOPE OF CONSTRUCTION. THE CONTRACTOR MUST NOTIFY THE RESPECTIVE AGENCY PRIOR TO MOVING ON SITE, SO THE EXISTING UTILITY LINES CAN BE LOCATED IN THE FIELD. IF ANY LINES ARE DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL REPLACE THEM AT HIS OWN EXPENSE.
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"CAUTION TO CONTRACTOR"

7. LOCATE AND PROTECT FROM DAMAGE ALL UTILITY LINES WITHIN THE CONSTRUCTION AREA.
8. GRADING, SWPPP, AND N.O.I. PERMITS REQUIRED BEFORE MOVING ON SITE.
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PERMIT CLOSEOUT PROCEDURES (18.44.226)

10. AFTER THE PERMITTEE COMPLETES THE GRADING UNDER THE PERMIT. THE PERMIT SHALL BE CLOSED. AS PART OF THE CLOSEOUT PROCEDURE, THE APPLICANT MUST SUBMIT THE FOLLOWING TO THE CITY:
    A. A STATEMENT FROM THE ENGINEER OF RECORD THAT STATES "THE GRADING OPERATION HAS BEEN SUBSTANTIALLY COMPLETED AND GENERALLY CONFORMS TO THE APPROVED SET OF PLANS." THE PERMITTEE SHALL CALL THE PERMIT OFFICAIL TO ESTABLISH THE BEGINNING OF THE WARRANTY PERIOD AND TO NOTIFY THE PERMIT OFFICIAL THAT THE GSP HAS BEEN IMPLEMENTED.
    B. A COPY OF THE NOTICE OF TERMINATION FILED WITH THE STATE OR DATED CONSTRUCTION SITE NOTICE, IF APPLICABLE, IN ACCORDANCE WITH CHAPTER 15.

THE CITY WILL ISSUE A LETTER STATING GENERAL CONFORMANCE TO THE PERMIT HAS BEEN MET AND THAT THE WARRANTY PERIOD REQUIREMENTS WILL BE IN EFFECT.
(ORDINANCE NO. 17516, § 1, 3-29-2011)

WARRANTY (18.44.090)

ANY PERSON ISSUED A PERMIT SHALL AGREE, WARRANT AND MAINTAIN THE AREA DESCRIBED IN THE PERMIT FOR A PERIOD OF TWO YEARS AFTER THE PERMIT IS CLOSED BY THE CITY PURSUANT TO SECTION 18.44.220, OR UNTIL A BUILDING PERMIT IS ISSUED FOR THE PURPOSE OF MAINTAINING A STABLIZED SITE IN ACCORDANCE WITH THE APPROVED GSP, WHICHEVER FIRST OCCURS (THE "WARRANTY" OR "WARRANTY PERIOD"). THE CITY MAY CONDUCT INSPECTIONS OF THE PERMITTED AREA THROUGHOUT THE WARRANTY PERIOD AND REQUIRE MAINTENANCE AND CORRECTION OF THE WORK BY THE PERMIT HOLDER. FAILURE OF THE PERMIT HOLDER TO CORRECT THE WORK SHALL CONSTITUTE A FAILURE TO COMPLY WITH THE PROVISIONS OF THIS CHAPTER.

(ORDINANCE NO. 17516, § 1, 3-29-2011)

EROSION CONTROL:

1. WIND EROSION CONTROL: WATERING DURING AND AFTER COMPLETION OF SITE GRADING, THE PROJECT AREA SHALL BE COMPLETELY WATERED AS NEEDED TO CONTROL WIND EROSION OR AS DIRECTED BY THE CITY ENGINEER.
2. THE CONTRACTOR SHALL CLEAN UP ANY DIRT OR DEBRIS THAT IS SPILLED ON THE EXISTING PUBLIC ROADWAY AS A RESULT OF THIS CONSTRUCTION PROJECT. CLEAN UP IS TO BE DONE ON A REGULAR BASIS OR AS DIRECTED BY THE CITY ENGINEER.
3. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL SLOPES IN GOOD CONDITION AND PROTECTING THEM FROM EROSION UNTIL THE FINAL LANDSCAPING ELEMENTS ARE IN PLACE.

FLOOD ZONE:

ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP COMMUNITY-PANEL NUMBER 480214 0024 B, DATED OCTOBER 15, 1982 THIS PROPERTY LIES IN FLOOD ZONE "C".

ZONE "C", AREAS OF MINIMAL FLOODING (NO SHADING).

DUE TO INHERENT INACCURACIES OF FEMA OR FLOOD INSURANCE RATE MAPS THIS SURVEYOR DOES NOT CERTIFY TO THE ACCURACY OF LOCATIONS BASED ON SUCH MAPS. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

LEGAL DESCRIPTION

LOTS 86 TO 89, BLOCK 2, SUNRISE ACRES
EL PASO, EL PASO COUNTY, TEXAS.
CONTAINING 143,345 Sq. Ft. (3.2907 Acres) +/-

BENCHMARK:

EXISTING CITY MONUMENT LYING AT THE CENTERLINE INTERSECTION OF TITANIC AVE. AND PANDORA ST.
ELEVATION: 3874.01' CITY DATUM

IMPORTANT CONSTRUCTION NOTE

VIBRATORY ROLLERS WILL BE NOT ALLOWED DURING CONSTRUCTION.

DEMOLITION NOTE

FOR DEMOLITION PLANS AND NOTES SEE ARCHITECTURAL / LANDSCAPE PLANS.

SITES SOUTHWEST
4110 RIO BRAVO, SUITE 217
EL PASO, TX 79902
PHONE:915-351-8800
E-MAIL: mail@sites-sw.com
WEB: www.sites-sw.com

CONSULTANTS

SLI ENGINEERING, INC.
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
6600 WESTWIND DRIVE
EL PASO, TEXAS
(915) 584-4457
SLI LICENSE No. F-1902

STATE OF TEXAS
GEORGES S. HALLOW
92105
LICENSED
PROFESSIONAL ENGINEER

MAY 22, 2019
SLI Project No. 09-19-4314

PROJECT
CDBG HART & BAIRD IMPROVEMENTS

ADDRESS
4861 ATLAS AVE.
EL PASO, TX 79904 (HART)
4747 ATLAS AVE.
EL PASO, TX 79904 (BAIRD)

Housing Authority of the City of El Paso

FINAL FOR CONSTRUCTION

REVISIONS

MARK	DATE	DESCRIPTION

PROJECT NO:	2019048
CAD DWG FILE:	C-100 ABH GRADING.DWG
DRAWN BY:	F.E.
CHK'D BY:	F.E. /G.H.
ISSUE DATE:	05/22/2019
COPYRIGHT:	SLI Engineering, Inc.

SHEET TITLE

ENLARGED GRADING PLAN BAIRD

C-103

SHEET 4 OF 19

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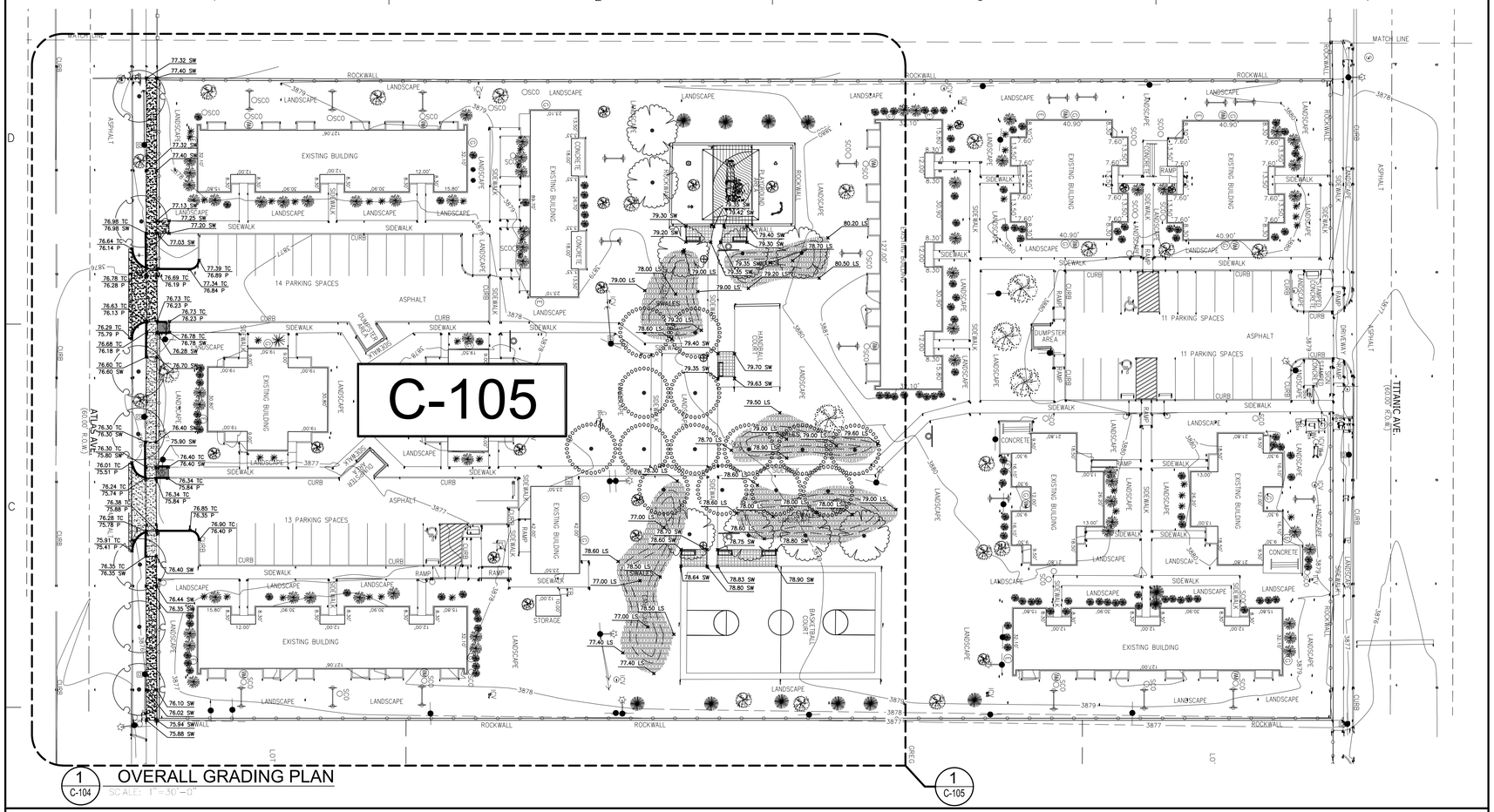

1 C-104 OVERALL GRADING PLAN

1 C-105

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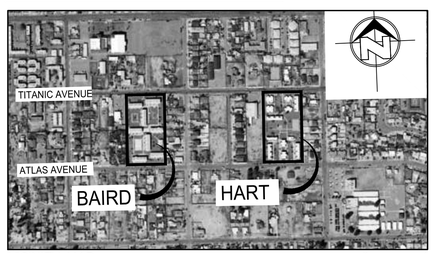
GENERAL CIVIL INDEX



VICINITY MAP 1"=600.00'

18.44.200– ENGINEERING CONTROLS FOR GRADING. CONSTRUCTION ACTIVITY REQUIREMENTS.

THE FOLLOWING OPERATIONAL GUIDELINES MUST BE FOLLOWED DURING THE GRADING OF THE SITE. THEY ARE REQUIRED TO BE INCLUDED AS "GENERAL NOTES" ON THE APPROVED GRADING PLAN.

1. NO ON–SITE PROCESSING OF MATERIAL FOR COMMERCIAL OR RETAIL SALES SHALL BE ALLOWED. ON–SITE PROCESSING OF MATERIALS TO BE USED FOR PREPARATION OR CONSTRUCTION OF IMPROVEMENTS WITHIN THE SITE COVERED BY THE GRADING PERMIT SHALL BE ALLOWED.
2. WORK SHALL BE CONDUCTED IN A MANNER THAT PRESERVES AND DOES NOT OBSTRUCT, IMPEDE OR INTERFERE WITH THE FLOW OF STORMWATER IN NATURAL DRAINAGE WAYS, UNIMPROVED CHANNELS OR WATERCOURSES, OR IMPROVED DITCHES, CHANNELS OR CANALS IN SUCH A MANNER AS TO CAUSE FLOODING WHERE IT WOULD NOT OTHERWISE OCCUR.
3. CONSTRUCTION EQUIPMENT AND FENCING SHALL BE KEPT OUT OF WATERCOURSES EXCEPT WHEN NECESSARY TO PERFORM WORK ON THE APPROVED PLANS. ADEQUATE BY–BASS MEASURES SHALL BE INSTALLED WHERE TEMPORARY DRAINAGE BLOCKAGES WILL OCCUR. WHERE WORK WITHIN A CHANNEL IS DESIGNATED ON APPROVED PLANS, PRECAUTIONS SHALL BE TAKEN TO STABILIZE THE WORK AREA DURING CONSTRUCTION TO MINIMIZE EROSION AS SHOWN ON THE PLANS. THE CHANNEL, INCLUDING BED AND BANKS, SHALL ALWAYS BE RESTORED/RESTABILIZED IMMEDIATELY AFTER WORK IN THE CHANNEL IS COMPLETED;
4. WHERE A DRAINAGE WAY WILL BE CROSSED BY CONSTRUCTION VEHICLES REGULARLY DURING CONSTRUCTION, A TEMPORARY CROSSING SHALL BE CONSTRUCTED AS REQUIRED IN THE APPROVED GRADING PLANS.
5. MATERIAL STOCKPILING SHALL NOT BE ALLOWED WHEN GRADING OPERATIONS ARE IDLE FOR MORE THAN SEVEN CONSECUTIVE CALENDAR DAYS. STOCKPILING SHALL BE LIMITED TO TEN FEET HIGH WHEN GRADING OPERATIONS ARE BEING CONDUCTED.
6. A TRAFFIC CONTROL PERMIT SHALL BE REQUIRED IF THE GRADING OPERATION WILL IMPACT TRAFFIC.
7. ANY USE OF VIBRATORY EQUIPMENT SHALL NOT BE ALLOWED, UNLESS APPROVED IN WRITING BY THE PERMIT OFFICIAL IN ADVANCE OF SUCH USE.
8. THE PERMIT OFFICIAL MUST BE NOTIFIED NO LATER THAN 4:00 PM THE DAY IN ADVANCE OF ANY GRADING WORK. ADDITIONAL ACTIVITY

REQUIREMENTS/RESTRICTIONS MAY BE SPECIFIED BY THE DESIGN ENGINEER OF RECORD.

ABBREVIATIONS

TC	=	TOP OF CURB	PL	=	PROPERTY LINE
SW	=	TOP OF WALK	HP	=	HIGH POINT
P	=	TOP OF PAVEMENT	CHF	=	CHAIN–LINK FENCE
EXIST.	=	EXISTING	TR	=	TREE
RW	=	ROCKWALL	P.O.B.	=	POINT OF BEGINING
ELEV.	=	ELEVATION	C.M.	=	CITY MONUMENT
F.F.	=	FINISH FLOOR	TYP.	=	TYPICAL
BLDG.	=	BUILDING	R.O.W.	=	RIGHT OF WAY
DESC.	=	DESCRIPTION	SHT	=	SHEET
PAV.	=	PAVEMENT	RD.	=	ROAD
CS	=	CONCRETE SLAB	ST.	=	STREET
N	=	NORTH	PL	=	PLACE
E	=	EAST	CL	=	CENTER LINE
S	=	SOUTH	EC	=	EDGE OF CONCRETE
W	=	WEST	NG	=	NATURAL GROUND
EP	=	EDGE OF PAVEMENT	DW	=	DRIVEWAY
PP	=	POWER POLE	G	=	GUTTER ELEVATION
F.H.	=	FIRE HYDRANT	I	=	ISLAND
L.P.	=	LIGHT POLE	TS	=	TRAFFIC SIGN
PC	=	PROPERTY CORNER	EB	=	ELECTRIC BOX
HP	=	HIGH POINT	LS	=	LANDSCAPING
L.O.C.	=	LIMITS OF CONSTRUCTION	HC	=	HANDICAPPED
FL	=	TOP OF FLUME/SWALE	FG	=	FINISH GROUND
N.O.I.	=	NOTICE OF INTENT	TOP	=	TOP ELEVATION
TNRCC	=	TEXAS NATURAL RESOURCE CONSERVATION COMMISSION.	INV	=	INVERT ELEVATION
			TW	=	TOP OF WALL
SDPCP	=	STORM DRAIN POLLUTION CONTROL PLAN	PV	=	PAVERS
			FC	=	FLAT CURB

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30 15 0 30
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ZONE "C", AREAS OF MINIMAL FLOODING (NO SHADING).

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LEGAL DESCRIPTION

LOTS 72 TO 75, BLOCK 2, SUNRISE ACRES
EL PASO, EL PASO COUNTY, TEXAS.
CONTAINING 175,213 Sq. Ft. (4.0223 Acres) +/–

BENCHMARK:

EXISTING CITY MONUMENT LYING AT THE CENTERLINE INTERSECTION OF TITANIC AVE. AND PANDORA ST.
ELEVATION: 3874.01' CITY DATUM

IMPORTANT CONSTRUCTION NOTE

VIBRATORY ROLLERS WILL BE NOT ALLOWED DURING CONSTRUCTION.

DEMOLITION NOTE

FOR DEMOLITION PLANS AND NOTES SEE ARCHITECTURAL / LANDSCAPE PLANS.

SITES SOUTHWEST
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EL PASO, TX 79902
PHONE:915–351–8800
E–MAIL: mail@sites–sw.com
WEB: www.sites–sw.com

CONSULTANTS

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LAND PLANNERS
6600 WESTWIND DRIVE
EL PASO, TEXAS
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SLI LICENSE No. F–1902

STATE OF TEXAS
GEORGES S. HALLOW
92105
LICENSED
PROFESSIONAL ENGINEER

MAY 22, 2019
SLI Project No. 09–19–4314

PROJECT
CDBG HART & BAIRD IMPROVEMENTS

ADDRESS
4861 ATLAS AVE.
EL PASO, TX 79904 (HART)
4747 ATLAS AVE.
EL PASO, TX 79904 (BAIRD)

Housing Authority of the City of El Paso

FINAL FOR CONSTRUCTION

REVISIONS

MARK	DATE	DESCRIPTION

PROJECT NO:	2019048
CAD DWG FILE:	C–100 ABH GRADING.DWG
DRAWN BY:	F.E.
CHK'D BY:	F.E. /G.H.
ISSUE DATE:	05/22/2019
COPYRIGHT:	SLI Engineering, Inc.

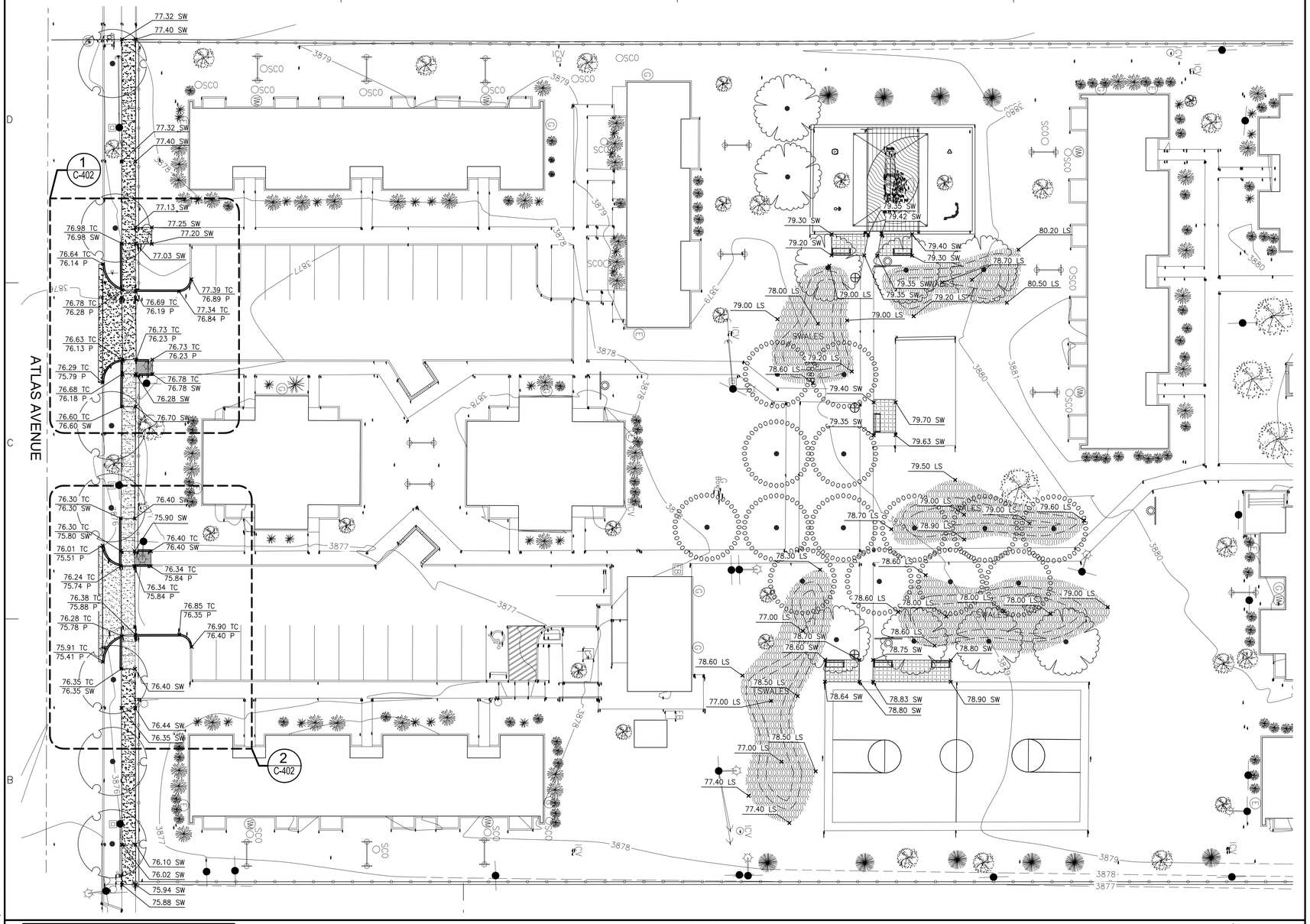
SHEET TITLE

OVERALL GRADING PLAN - HART

C-104

SHEET 5 OF 19

F:\PROJECTS\HACEP 2015\HART–BAIRD–ATLAS\FINALS\C–100 ABH GRADING.dwg 5–22–19 09:58:49 AM Fernando



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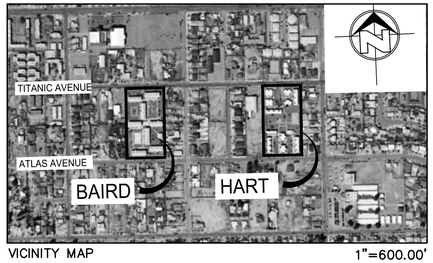

VICINITY MAP 1"=600.00'

GENERAL CIVIL INDEX

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SCALE: 1"=20'-0"

NOTE:
ALL INFORMATION SHOWN HEREON WITH RESPECT TO UNDERGROUND CONDITIONS WAS DETERMINED BY DATA COLLECTED THROUGH SURVEY CREW OBSERVATION AND OTHER INFORMATION TAKEN FROM EXISTING PLANS AND MAPS OF RECORD. NO UNDERGROUND UTILITIES EXISTING OR ABANDONED WERE EXPOSED OR LOCATED.

UNLESS SPECIFICALLY ACCEPTED BY SLI ENGINEERING, INC. IN WRITING, SLI ENGINEERING, INC. MAKES NO CLAIM, EXPRESSED OR IMPLIED, AS TO THE UNDERGROUND SITE CONDITIONS.

NOTE:

ALL EXISTING AND PROPOSED SIDEWALKS, BARRIER FREE RAMPS, HANDICAP PARKING, DRIVEWAY CROSSWALKS, DRIVEWAYS AND ACCESSIBLE ROUTES SHALL COMPLY WITH A.D.A., T.A.S. AND CITY OF EL PASO REQUIREMENTS, EXISTING INFRASTRUCTURE NOT COMPLYING SHALL BE REMOVED AND REPLACED TO MEET STANDARDS.

20 10 0 20

SCALE: 1"=20'

811 Know what's below. Call before you dig.

Call 811 TWO Working days Before you dig It's Free, It's Easy, and IT'S THE LAW!

NOTES FOR GRADING

1. ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE "2014 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS AND BRIDGES," (APPLICABLE ITEMS ONLY).
2. ALL FILL AREAS SHALL BE COMPACTED TO 95% DENSITY, (ASTM D-1557).
3. REFER TO THE CITY OF EL PASO GRADING ORDINANCE CHAPTER 18.44 FOR SITE GRADING SPECIFICATIONS. GRADING PERMIT MUST BE AVAILABLE AT THE JOB SITE UPON COMMENCEMENT OF WORK.
4. POSITIVE DRAINAGE SHALL BE PROVIDED BY THE CONTRACTOR DURING ALL PHASES OF CONSTRUCTION AND GRADING. THE CONTRACTOR SHALL NOT ALLOW DEBRIS OR SEDIMENT TO SPILL ONTO THE PUBLIC STREETS OR ADJOINING PROPERTIES.
5. CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF EXISTING UTILITY LINES (SHOWN OR NOT SHOWN) WITHIN THE SCOPE OF CONSTRUCTION. THE CONTRACTOR MUST NOTIFY THE RESPECTIVE AGENCY PRIOR TO MOVING ON SITE, SO THE EXISTING UTILITY LINES CAN BE LOCATED IN THE FIELD. IF ANY LINES ARE DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL REPLACE THEM AT HIS OWN EXPENSE.
6. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS ON SITE AND SHALL CONTACT THE DESIGN ENGINEER AND REPORT ANY DISCREPANCIES, OMISSIONS, AND ERRORS ON PLANS PRIOR TO COMMENCING OR CONTINUING WORK.

"CAUTION TO CONTRACTOR"

7. LOCATE AND PROTECT FROM DAMAGE ALL UTILITY LINES WITHIN THE CONSTRUCTION AREA.
8. GRADING, SWPPP, AND N.O.I. PERMITS REQUIRED BEFORE MOVING ON SITE.
9. ALL RAMPS SHALL HAVE A MAX. OF 1:12 SLOPE AND ALL SIDEWALKS SHALL HAVE A MAX. OF 2% CROSS SLOPE. ALL ACCESSIBLE PARKING SPACES SHALL HAVE A MAX. OF 2% (LONGITUDINAL OR CROSS SLOPE) ALL ACCESSIBLE ROUTES SHALL HAVE A MAX. OF 5% SLOPE.

PERMIT CLOSEOUT PROCEDURES (18.44.226)

10. AFTER THE PERMITTEE COMPLETES THE GRADING UNDER THE PERMIT. THE PERMIT SHALL BE CLOSED. AS PART OF THE CLOSEOUT PROCEDURE, THE APPLICANT MUST SUBMIT THE FOLLOWING TO THE CITY:
    A. A STATEMENT FROM THE ENGINEER OF RECORD THAT STATES "THE GRADING OPERATION HAS BEEN SUBSTANTIALLY COMPLETED AND GENERALLY CONFORMS TO THE APPROVED SET OF PLANS." THE PERMITTEE SHALL CALL THE PERMIT OFFICAIL TO ESTABLISH THE BEGINNING OF THE WARRANTY PERIOD AND TO NOTIFY THE PERMIT OFFICIAL THAT THE GSP HAS BEEN IMPLEMENTED.
    B. A COPY OF THE NOTICE OF TERMINATION FILED WITH THE STATE OR DATED CONSTRUCTION SITE NOTICE, IF APPLICABLE, IN ACCORDANCE WITH CHAPTER 15.

THE CITY WILL ISSUE A LETTER STATING GENERAL CONFORMANCE TO THE PERMIT HAS BEEN MET AND THAT THE WARRANTY PERIOD REQUIREMENTS WILL BE IN EFFECT.
(ORDINANCE NO. 17516, § 1, 3-29-2011)

WARRANTY (18.44.090)

ANY PERSON ISSUED A PERMIT SHALL AGREE, WARRANT AND MAINTAIN THE AREA DESCRIBED IN THE PERMIT FOR A PERIOD OF TWO YEARS AFTER THE PERMIT IS CLOSED BY THE CITY PURSUANT TO SECTION 18.44.220, OR UNTIL A BUILDING PERMIT IS ISSUED FOR THE PURPOSE OF MAINTAINING A STABLIZED SITE IN ACCORDANCE WITH THE APPROVED GSP, WHICHEVER FIRST OCCURS (THE "WARRANTY" OR "WARRANTY PERIOD"). THE CITY MAY CONDUCT INSPECTIONS OF THE PERMITTED AREA THROUGHOUT THE WARRANTY PERIOD AND REQUIRE MAINTENANCE AND CORRECTION OF THE WORK BY THE PERMIT HOLDER. FAILURE OF THE PERMIT HOLDER TO CORRECT THE WORK SHALL CONSTITUTE A FAILURE TO COMPLY WITH THE PROVISIONS OF THIS CHAPTER.
(ORDINANCE NO. 17516, § 1, 3-29-2011)

EROSION CONTROL:

1. WIND EROSION CONTROL: WATERING DURING AND AFTER COMPLETION OF SITE GRADING, THE PROJECT AREA SHALL BE COMPLETELY WATERED AS NEEDED TO CONTROL WIND EROSION OR AS DIRECTED BY THE CITY ENGINEER.
2. THE CONTRACTOR SHALL CLEAN UP ANY DIRT OR DEBRIS THAT IS SPILLED ON THE EXISTING PUBLIC ROADWAY AS A RESULT OF THIS CONSTRUCTION PROJECT. CLEAN UP IS TO BE DONE ON A REGULAR BASIS OR AS DIRECTED BY THE CITY ENGINEER.
3. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL SLOPES IN GOOD CONDITION AND PROTECTING THEM FROM EROSION UNTIL THE FINAL LANDSCAPING ELEMENTS ARE IN PLACE.

FLOOD ZONE:

ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP COMMUNITY-PANEL NUMBER 480214 0024 B, DATED OCTOBER 15, 1982 THIS PROPERTY LIES IN FLOOD ZONE "C".

ZONE "C", AREAS OF MINIMAL FLOODING (NO SHADING).

DUE TO INHERENT INACCURACIES OF FEMA OR FLOOD INSURANCE RATE MAPS THIS SURVEYOR DOES NOT CERTIFY TO THE ACCURACY OF LOCATIONS BASED ON SUCH MAPS. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

LEGAL DESCRIPTION

LOTS 72 TO 75, BLOCK 2, SUNRISE ACRES
EL PASO, EL PASO COUNTY, TEXAS.
CONTAINING 175,213 Sq. Ft. (4.0223 Acres) +/-

BENCHMARK:

EXISTING CITY MONUMENT LYING AT THE CENTERLINE INTERSECTION OF TITANIC AVE. AND PANDORA ST.
ELEVATION: 3874.01' CITY DATUM

IMPORTANT CONSTRUCTION NOTE

VIBRATORY ROLLERS WILL BE NOT ALLOWED DURING CONSTRUCTION.

DEMOLITION NOTE

FOR DEMOLITION PLANS AND NOTES SEE ARCHITECTURAL / LANDSCAPE PLANS.

SITES SOUTHWEST
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EL PASO, TX 79902
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E-MAIL:mail@sites-sw.com
WEB:www.sites-sw.com

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CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
6600 WESTWIND DRIVE
EL PASO, TEXAS
(915) 584-4457
SLI LICENSE No. F-1902

STATE OF TEXAS
GEORGES S. HALLOUM
92105
LICENSED
PROFESSIONAL ENGINEER

MAY 22, 2019
SLI Project No. 09-19-4314

PROJECT
CDBG HART & BAIRD IMPROVEMENTS

ADDRESS
4861 ATLAS AVE.
EL PASO, TX 79904 (HART)
4747 ATLAS AVE.
EL PASO, TX 79904 (BAIRD)

Housing Authority of the City of El Paso

FINAL FOR CONSTRUCTION

REVISIONS

MARK	DATE	DESCRIPTION

PROJECT NO:	2019048
CAD DWG FILE:	C-100 ABH GRADING.DWG
DRAWN BY:	F.E.
CHK'D BY:	F.E. /G.H.
ISSUE DATE:	05/22/2019
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SHEET TITLE

ENLARGED GRADING PLAN

C-105

SHEET 6 OF 19

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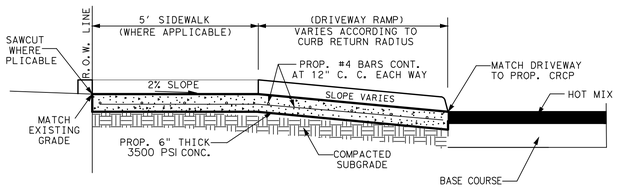
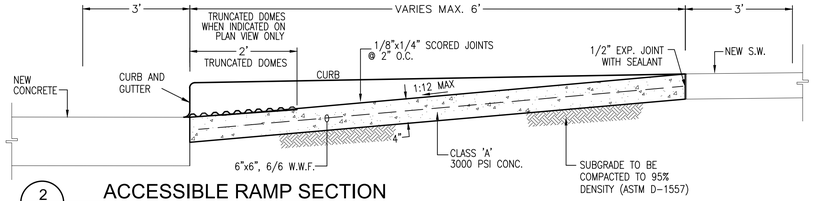


1 C-300 **TYPICAL DRIVEWAY SECTION**
SCALE: NTS

NOTE: CONC. SECTION SUBJECT TO CHANGE PENDING SOILS REPORT.



2 C-300 **ACCESSIBLE RAMP SECTION**
SCALE: N.T.S.

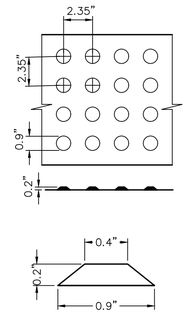
NOTES:

DOME SIZE AND SPACING. TRUNCATED DOMES SHALL HAVE A DIAMETER OF NOMINAL 0.9 INCHES (23 mm) AT THE BOTTOM, A DIAMETER OF 0.4 INCHES (10 mm) AT THE TOP, A HEIGHT OF NOMINAL 0.2 INCHES (5 mm), AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 INCHES (60 mm) MEASURED ALONG ONE SIDE OF A SQUARE ARRANGEMENT.

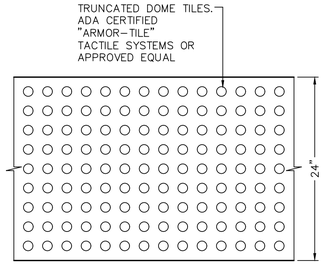
DOME ALIGNMENT. DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES. DETECTABLE WARNING SURFACES SHALL EXTEND 24 INCHES (610 mm) MINIMUM IN THE DIRECTION OF TRAVEL AND THE FULL WIDTH OF THE CURB RAMP, LANDING, OR BLENDED TRANSITION.

IN LIGHT REFLECTANCE BETWEEN THE DETECTABLE WARNING AND AN ADJOINING SURFACE, OR THE DETECTABLE WARNING SHALL BE "RED BRICK" COLOR, UNLESS OTHERWISE DIRECTED BY THE OWNER. THE MATERIAL USED TO PROVIDE VISUAL CONTRAST SHALL BE AN INTEGRAL PART OF THE DETECTABLE WARNING SURFACE. CONTRAST SHALL BE PROVIDED BY PLACING AND MIXING TINT IN THE PLASTIC CONCRETE USED FOR THE DETECTABLE WARNING SURFACE. NO PAINTING OF SURFACE SHALL BE PERMITTED.

CONTRAST. THERE SHALL BE A MINIMUM OF 70 PERCENT CONTRAST



TRUNCATED DOME SIZING



NOTE:

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EL PASO WATER UTILITIES:	1154 HAWKINS, 79961-0511
SEWER SERVICE:	915-594-5330
WATER SERVICE:	915-594-5330
CITY OF EL PASO:	300 N. CAMPBELL, 79901
	915-212-0000
E.P.E. COMPANY	915-543-5711

GENERAL CIVIL INDEX

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MAY 22, 2019
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Housing Authority of the City of El Paso

FINAL FOR CONSTRUCTION

REVISIONS

MARK	DATE	DESCRIPTION

PROJECT NO:	2019048
CAD DWG FILE:	C-300 SECTIONS.DWG
DRAWN BY:	F.E.
CHK'D BY:	F.E. /G.H.
ISSUE DATE:	05/22/2019
COPYRIGHT:	SLI Engineering, Inc.

SHEET TITLE

SECTIONS PLAN

C-300
SHEET OF 19

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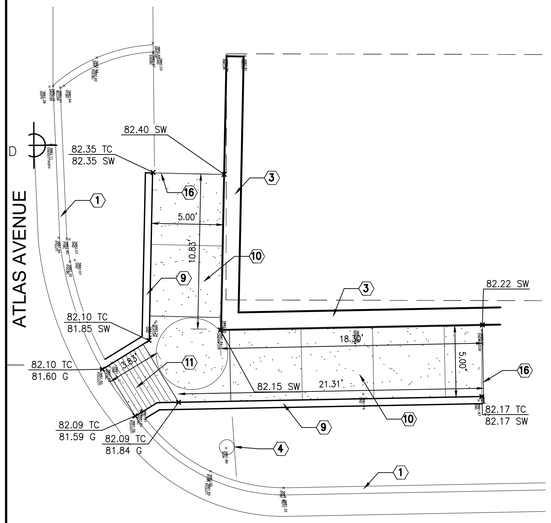
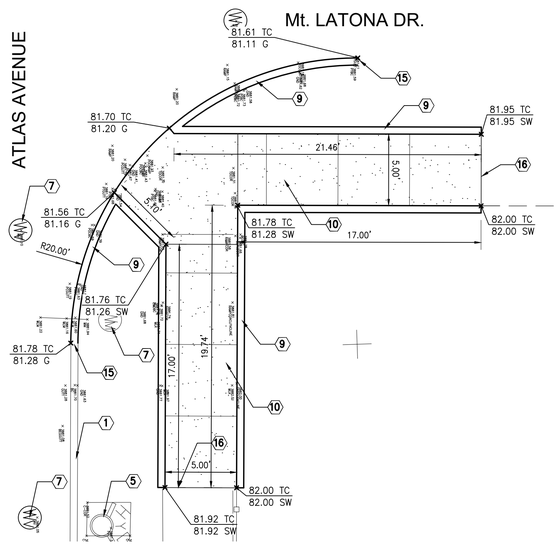


1 C-400 TRANSITION SIDEWALK No. 1 DETAIL

SCALE: 1"=5'-0"



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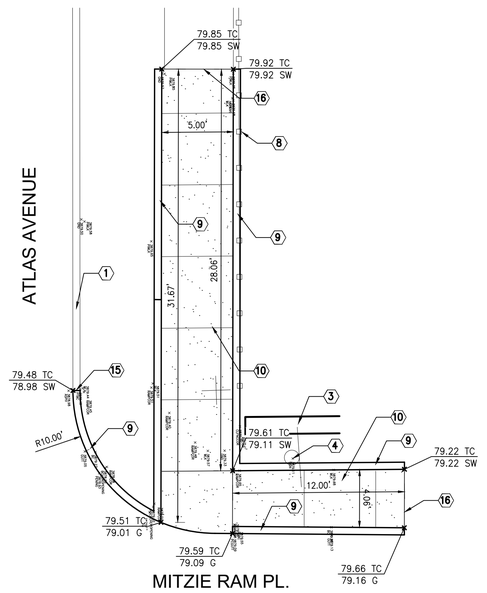
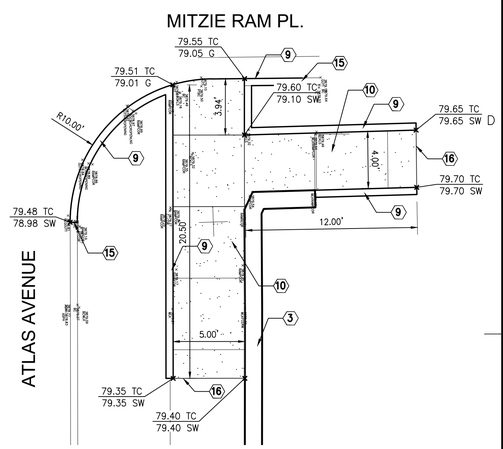


3 C-400 TRANSITION SIDEWALK No. 3 DETAIL

SCALE: 1"=5'-0"



4 C-400 TRANSITION SIDEWALK No. 4 DETAIL

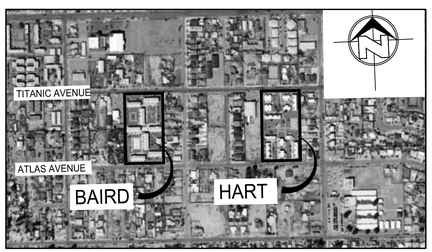
SCALE: 1"=5'-0"

GENERAL KEY NOTES

1. EXISTING CONCRETE CURB TO REMAIN
2. EXISTING SIDEWALK TO REMAIN
3. EXISTING ROCKWALL TO REMAIN
4. EXISTING TRAFFIC SIGN TO REMAIN
5. EXISTING FIRE HYDRANT TO REMAIN
6. EXISTING LIGHT POLE TO REMAIN
7. EXISTING WATER BOX / METER / VALVE TO REMAIN
8. EXISTING FENCE TO REMAIN
9. PROPOSED CONCRETE STD. CURB, SEE DETAILS SHEET C-500
10. PROPOSED CONCRETE TRANSITIONAL SIDEWALK, SEE DETAILS SHEET C-500
11. PROPOSED ADA CURB RAMP, SEE DETAILS SHEET C-300
12. PROPOSED CONCRETE DRIVEWAY, SEE DETAILS SHEET C-900
13. -NOT USED
14. -NOT USED
15. MATCH EXISTING CURB GRADES
16. MATCH EXISTING SIDEWALK GRADES
17. MATCH EXISTING PAVEMENT GRADES

DEMOLITION NOTE

FOR DEMOLITION PLANS AND NOTES SEE ARCHITECTURAL / LANDSCAPE PLANS.



VICINITY MAP 1"=600.00'

NOTE:

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MAY 22, 2019
SLI Project No. 09-19-4314

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Housing Authority of the City of El Paso

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REVISIONS

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DRAWN BY:	F.E.
CHK'D BY:	F.E. /G.H.
ISSUE DATE:	05/22/2019
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SHEET TITLE

LARGE-SCALE TRANSITIONAL SIDEWALKS - ATLAS

C-400

SHEET 8 OF 19

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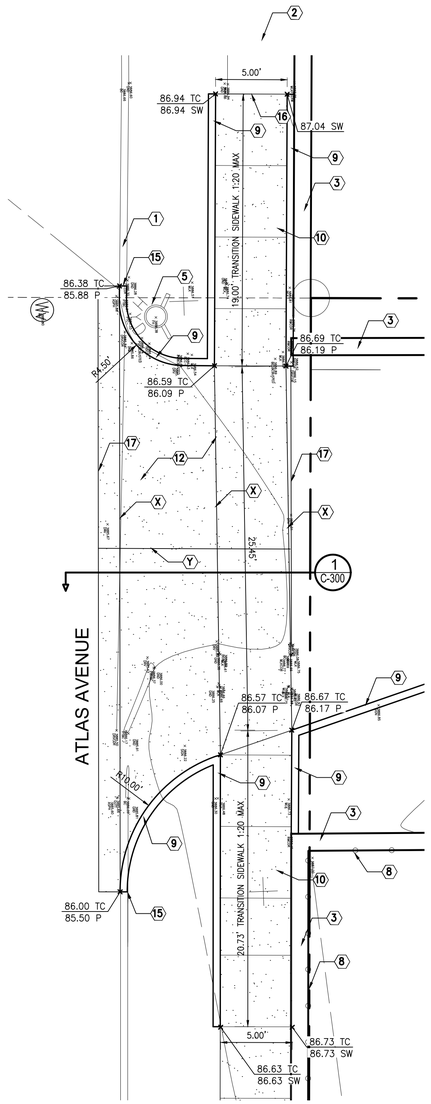

1 C-401 DRIVEWAY No. 1 DETAIL
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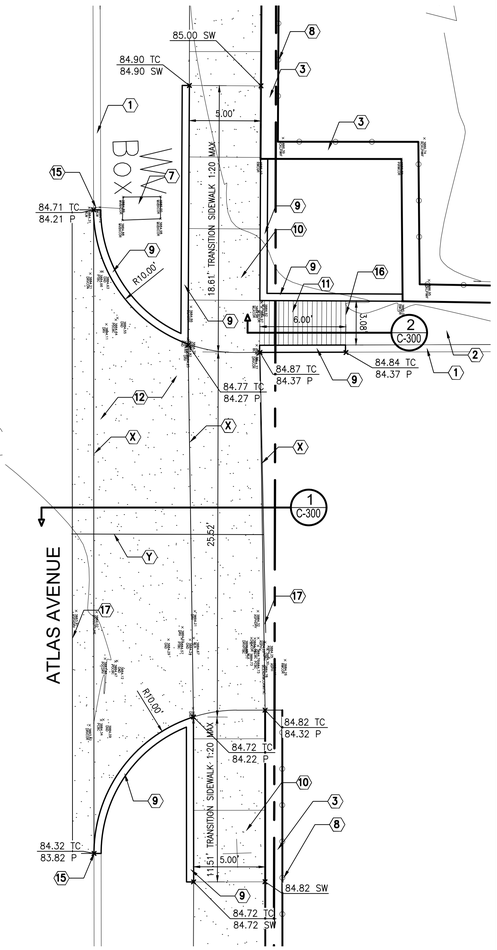

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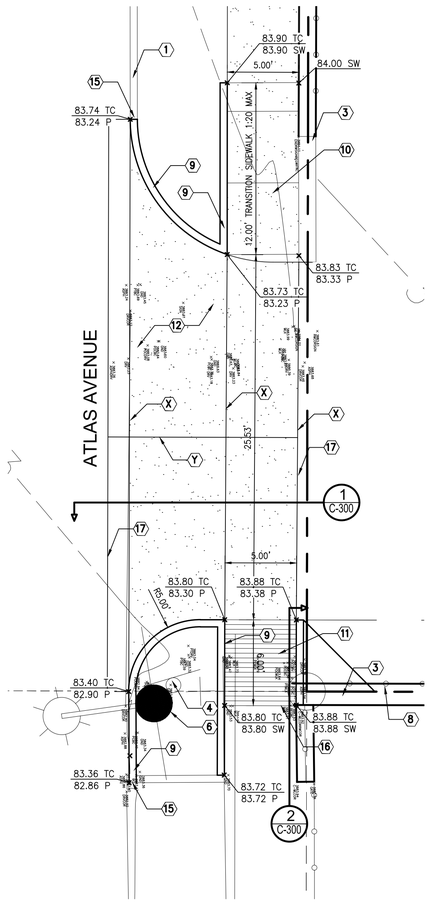

3 C-401 DRIVEWAY No. 3 DETAIL
SCALE: 1"=5'-0"

CONCRETE KEY NOTES

CONTRACTION JOINT (SEE DETAIL SHEET C-500)

EXPANSION JOINT (SEE DETAIL SHEET C-500)

DEMOLITION NOTE

FOR DEMOLITION PLANS AND NOTES SEE ARCHITECTURAL / LANDSCAPE PLANS.

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2. EXISTING SIDEWALK TO REMAIN
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SHEET TITLE

LARGE-SCALE TRANSITIONAL SIDEWALKS / DRIVEWAYS - BAIRD

C-401

SHEET 9 OF 19

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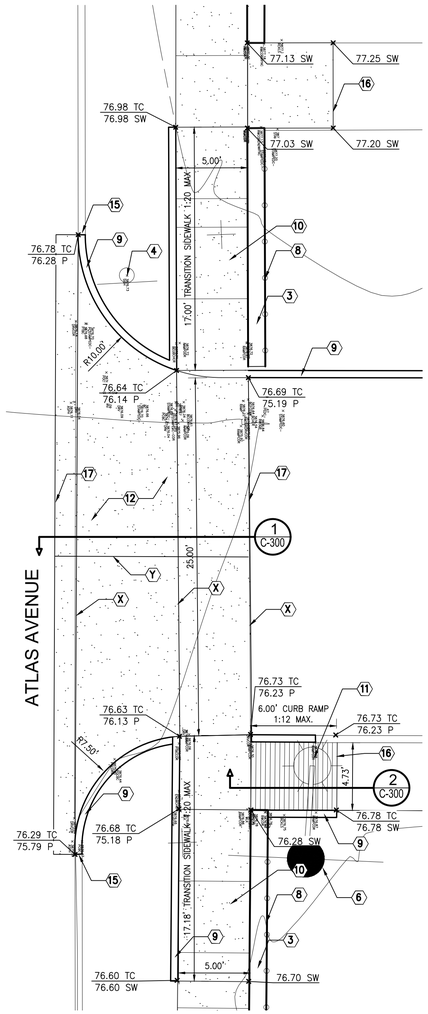

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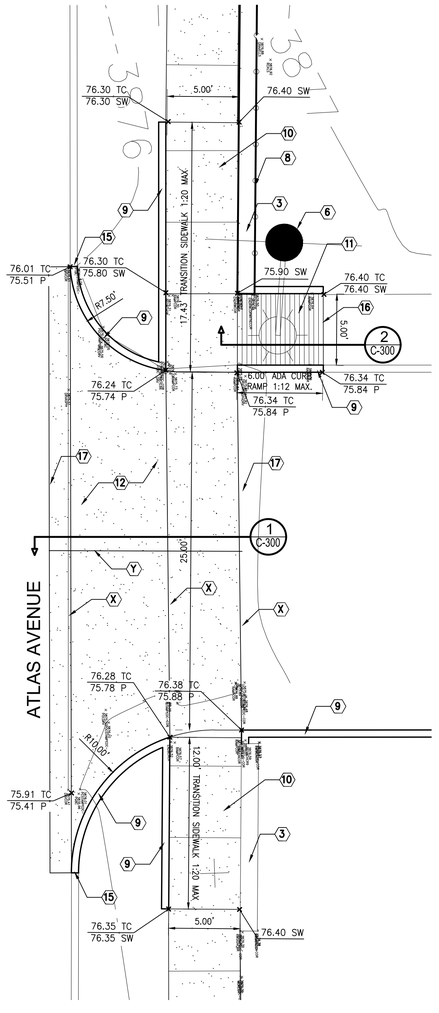

2 C-402 DRIVEWAY No. 2 DETAIL

SCALE: 1"=5'-0"

CONCRETE KEY NOTES

- CONTRACTION JOINT (SEE DETAIL SHEET C-500)
- EXPANSION JOINT (SEE DETAIL SHEET C-500)

GENERAL KEY NOTES

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6. EXISTING LIGHT POLE TO REMAIN
7. EXISTING WATER BOX / METER / VALVE TO REMAIN
8. EXISTING FENCE TO REMAIN
9. PROPOSED CONCRETE STD. CURB, SEE DETAILS SHEET C-500
10. PROPOSED CONCRETE TRANSITIONAL SIDEWALK, SEE DETAILS SHEET C-500
11. PROPOSED ADA CURB RAMP, SEE DETAILS SHEET C-300
12. PROPOSED CONCRETE DRIVEWAY, SEE DETAILS SHEET C-900
13. -NOT USED
14. -NOT USED
15. MATCH EXISTING CURB GRADES
16. MATCH EXISTING SIDEWALK GRADES
17. MATCH EXISTING PAVEMENT GRADES

DEMOLITION NOTE

FOR DEMOLITION PLANS AND NOTES SEE ARCHITECTURAL / LANDSCAPE PLANS.

GENERAL CIVIL INDEX

NOTE:

ALL EXISTING AND PROPOSED SIDEWALKS, BARRIER FREE RAMPS, HANDICAP PARKING, DRIVEWAY CROSSWALKS, DRIVEWAYS AND ACCESSIBLE ROUTES SHALL COMPLY WITH A.D.A., T.A.S. AND CITY OF EL PASO REQUIREMENTS, EXISTING INFRASTRUCTURE NOT COMPLYING SHALL BE REMOVED AND REPLACED TO MEET STANDARDS.

USEFUL NUMBERS

TEXAS GAS SERVICE	915-562-2003
TXDOT:	915-790-4200
STORM WATER UTILITIES:	915-594-5687
EL PASO WATER UTILITIES:	1154 HAWKINS, 79961-0511
SEWER SERVICE:	915-594-5330
WATER SERVICE:	915-594-5330
CITY OF EL PASO:	300 N. CAMPBELL, 79901 915-212-0000
E.P.E. COMPANY	915-543-5711

SITES SOUTHWEST
4110 RIO BRAVO, SUITE 217
EL PASO, TX 79902
PHONE:915-351-8800
E-MAIL: mail@sites-sw.com
WEB: www.sites-sw.com

CONSULTANTS

SLI CIVIL ENGINEERS LAND SURVEYORS LAND PLANNERS
6600 WESTWIND DRIVE EL PASO, TEXAS (915) 584-4457
SLI ENGINEERING, INC.
SLI LICENSE No. F-1902

STATE OF TEXAS GEORGES S. HALLOUM 92105 LICENSED PROFESSIONAL ENGINEER

MAY 22, 2019
SLI Project No. 09-19-4314

PROJECT
CDBG HART & BAIRD IMPROVEMENTS

ADDRESS
4861 ATLAS AVE.
EL PASO, TX 79904 (HART)
4747 ATLAS AVE.
EL PASO, TX 79904 (BAIRD)

Housing Authority of the City of El Paso

FINAL FOR CONSTRUCTION

REVISIONS

MARK	DATE	DESCRIPTION

PROJECT NO:	2019048
CAD DWG FILE:	C-400 ABH LSV.DWG
DRAWN BY:	F.E.
CHK'D BY:	F.E. /G.H.
ISSUE DATE:	05/22/2019
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SHEET TITLE

LARGE-SCALE TRANSITIONAL SIDEWALKS / DRIVEWAYS - HART

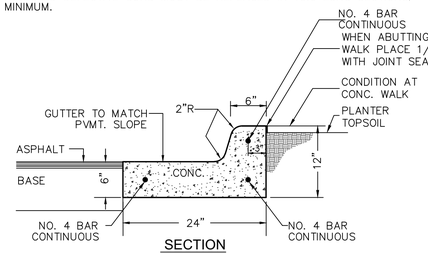
C-402

SHEET 10 OF 19

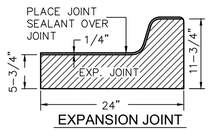
F:\PROJECTS\HACEP 2015\HART-BAIRD-ATLAS\FINALS\C-400 ABH LSV.dwg 5-22-19 09:50:44 AM Fernando

GENERAL NOTES

1. PROVIDE 1/2" PREMOLDED ASPHALT IMPREGNATED EXPANSION JOINT AT ALL CURVE POINTS AND WHERE THE NEW CURB WILL ABUT ANY EXISTING CURB. EXPANSION JOINT IS REQUIRED BETWEEN BACK OF CURB AND ANY STRUCTURE ABUTTING DIRECTLY AGAINST IT AND SHALL BE PLACED IN ACCORDANCE WITH STANDARD SPECIFICATIONS.
2. TRIM EXPANSION JOINT MATERIAL 1/4" LESS THAN THE NEAT CURB AND GUTTER DIMENSION.
3. SUBGRADE UNDER CURB MUST BE FORMED AND COMPACTED. (95% ASTM D-1557)
4. CONCRETE SHALL BE CLASS 'A', AND HAVE A COMPRESSIVE STRENGTH OF 3000 PSI (MIN) AT 28 DAYS.
5. EXPANSION JOINTS FOR CURBS ARE TO BE PROVIDED AT CHANGES OF DIRECTIONS, AT ALL CURB RETURNS, AND WHERE CURB ABUTS OTHER MASONRY STRUCTURES.
6. ONE-INCH MINIMUM SCORED CONSTRUCTION JOINTS ARE TO BE PROVIDED EVERY 10 FEET FOR CURB AND GUTTER, AND EVERY 5 FEET FOR SIDEWALKS.
7. REJECTED DEFECTIVE CURB MUST BE REPLACED IN 10.0 LONG SECTIONS, MINIMUM.

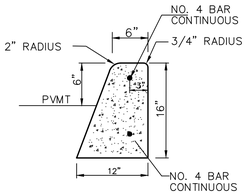


SECTION



EXPANSION JOINT

CURB AND GUTTER DETAILS



STANDARD CURB
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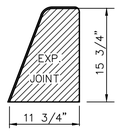
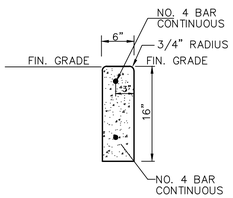
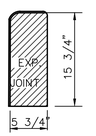


EXPANSION JOINT



FLAT CURB
N.T.S.



EXPANSION JOINT

1 TYP. CURB DETAILS
N.T.S.

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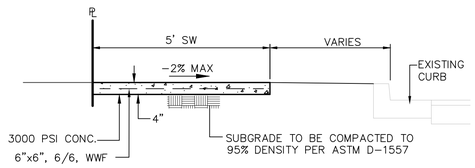
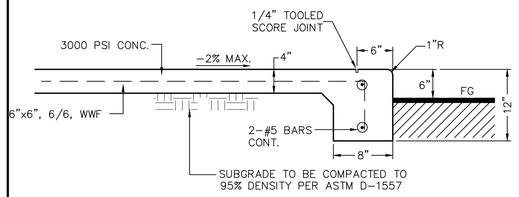
GENERAL NOTES

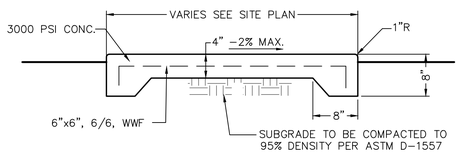
1. PROVIDE 1/2" PRE MOLDED ASPHALT IMPREGNATED EXPANSION JOINT AT ALL CURVE POINTS AND WHERE THE NEW CURB WILL ABUT ANY EXISTING CURB. EXPANSION JOINT IS REQUIRED BETWEEN BACK OF CURB AND ANY STRUCTURE ABUTTING DIRECTLY AGAINST IT AND SHALL BE PLACED IN ACCORDANCE WITH STANDARD SPECIFICATIONS. (WITH SEALANT)
2. TRIM EXPANSION JOINT MATERIAL 1/4" LESS THAN THE NEAT CONC.
3. CONCRETE SHALL BE CLASS 'A', AND HAVE A COMPRESSIVE STRENGTH OF 3000 PSI (MIN) AT 28 DAYS. (UNLESS OTHERWISE INDICATED)
4. 1/4" DEEP SCORED DUMMY JOINTS AT 5' O.C. AND EXP. JOINTS SPACED AT 20' O.C.
5. PLACE EXPANSION JOINT BETWEEN WALK AND ANY STRUCTURE ABUTTING IT.



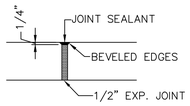
TYPICAL 5' SW SECTION FOR CITY STREETS
N.T.S.



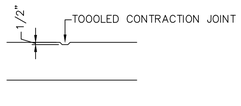
SIDEWALK SECTION ADJACENT TO BLDGS.
NTS



STD. SIDEWALK, PLAYGROUND SIDEWALK
NTS



EXPANSION JOINT DETAIL

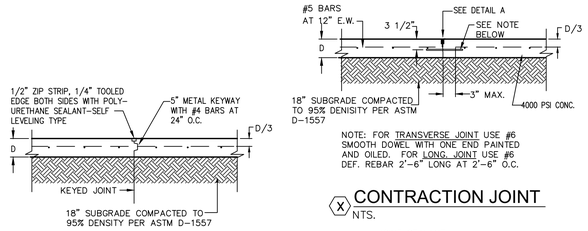


CONTROL JOINT

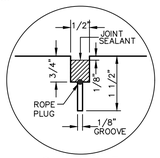
2 TYP. SIDEWALK DETAILS
N.T.S.

NOTE:

ALL EXISTING AND PROPOSED SIDEWALKS, BARRIER FREE RAMPS, HANDICAP PARKING, DRIVEWAY CROSSWALKS, DRIVEWAYS AND ACCESSIBLE ROUTES SHALL COMPLY WITH A.D.A., T.A.S. AND CITY OF EL PASO REQUIREMENTS, EXISTING INFRASTRUCTURE NOT COMPLYING SHALL BE REMOVED AND REPLACED TO MEET STANDARDS.



Z CONSTRUCTION JOINT
NTS.

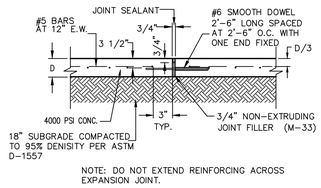


SAWED JOINT

DETAIL- A
NTS.

NOTE: FOR TRANSVERSE JOINT USE #6 SMOOTH DOWEL WITH ONE END PAINTED AND OILED. FOR LONG. JOINT USE #6 DEF. REBAR 2'-6" LONG AT 2'-6" O.C.

X CONTRACTION JOINT
NTS.



NOTE: DO NOT EXTEND REINFORCING ACROSS EXPANSION JOINT.

Y EXPANSION JOINT DETAIL
NTS.

GENERAL CIVIL INDEX

SITES SOUTHWEST
4110 RIO BRAVO, SUITE 217
EL PASO, TX 79902
PHONE:915-351-8800
E-MAIL: mail@sites-sw.com
WEB: www.sites-sw.com

CONSULTANTS

SLI ENGINEERING, INC.
SLI LICENSE No. F-1902
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
6600 WESTWIND DRIVE
EL PASO, TEXAS
(915) 584-4457

STATE OF TEXAS
GEORGES S. HALLOUM
92105
LICENSED PROFESSIONAL ENGINEER

MAY 22, 2019
SLI Project No. 09-19-4314

PROJECT
CDBG HART & BAIRD IMPROVEMENTS

ADDRESS
4861 ATLAS AVE.
EL PASO, TX 79904 (HART)
4747 ATLAS AVE.
EL PASO, TX 79904 (BAIRD)

Housing Authority of the City of El Paso

FINAL FOR CONSTRUCTION

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT NO:	2019048
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DRAWN BY:	F.E.
CHK'D BY:	F.E. /G.H.
ISSUE DATE:	05/22/2019
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SHEET TITLE

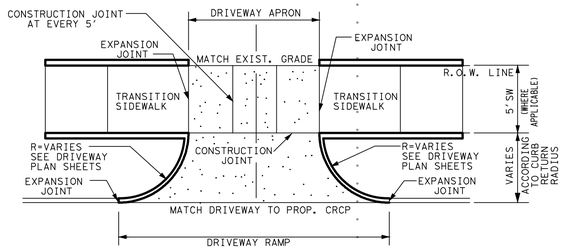
STANDARD DETAILS

C-500

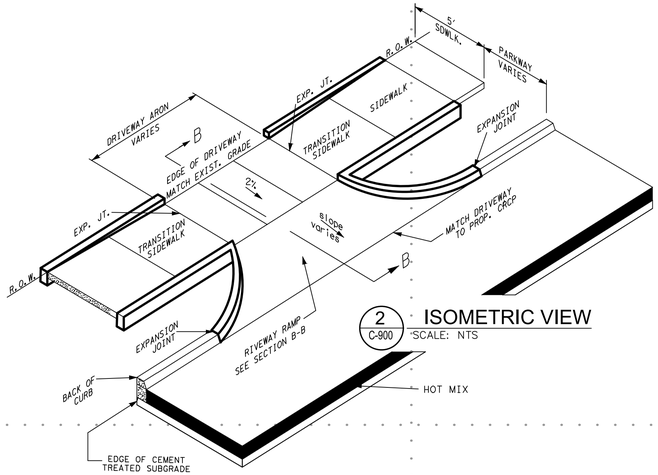
SHEET 11 OF 19

811 Know what's below. Call before you dig.
Call 811 TWO Working days Before you dig It's Free, It's Easy, and IT'S THE LAW!

F:\PROJECTS\HACEP 2015\HART-BAIRD-ATLAS\FINALS\C-500 STD DETAILS.dwg 5-22-19 10:00:26 AM Fernando



1 C-900 **TYPICAL DRIVEWAY DETAIL**
SCALE: NTS



2 C-900 **ISOMETRIC VIEW**
SCALE: NTS

GENERAL CIVIL INDEX

USEFUL NUMBERS

TEXAS GAS SERVICE	915-562-2003
TXDOT:	915-790-4200
STORM WATER UTILITIES:	915-594-5687
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E-MAIL: mail@sites-sw.com
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CONSULTANTS

SLI
CIVIL ENGINEERS
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LAND PLANNERS
6600 WESTWIND DRIVE
EL PASO, TEXAS
(915) 584-4457
SLI ENGINEERING, INC.
SLI LICENSE No. F-1902

STATE OF TEXAS
GEORGES S. HALLOW
92105
LICENSED
PROFESSIONAL ENGINEER

MAY 22, 2019
SLI Project No. 09-19-4314

PROJECT
CDBG HART & BAIRD IMPROVEMENTS

ADDRESS
4861 ATLAS AVE.
EL PASO, TX 79904 (HART)
4747 ATLAS AVE.
EL PASO, TX 79904 (BAIRD)

Housing Authority of the City of El Paso

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REVISIONS

MARK	DATE	DESCRIPTION

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CHK'D BY:	F.E. /G.H.
ISSUE DATE:	05/22/2019
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SHEET TITLE

DRIVEWAY ISOMETRIC

C-900

SHEET 12 OF 19

F:\PROJECTS\HACEP 2015\HART-BAIRD-ATLAS\FINALS\C-900 DRIVEWAYS ISOMETRIC.dwg 5-22-19 10:00:42 AM Fernando

SHEET
LD-102

SHEET
LD-103

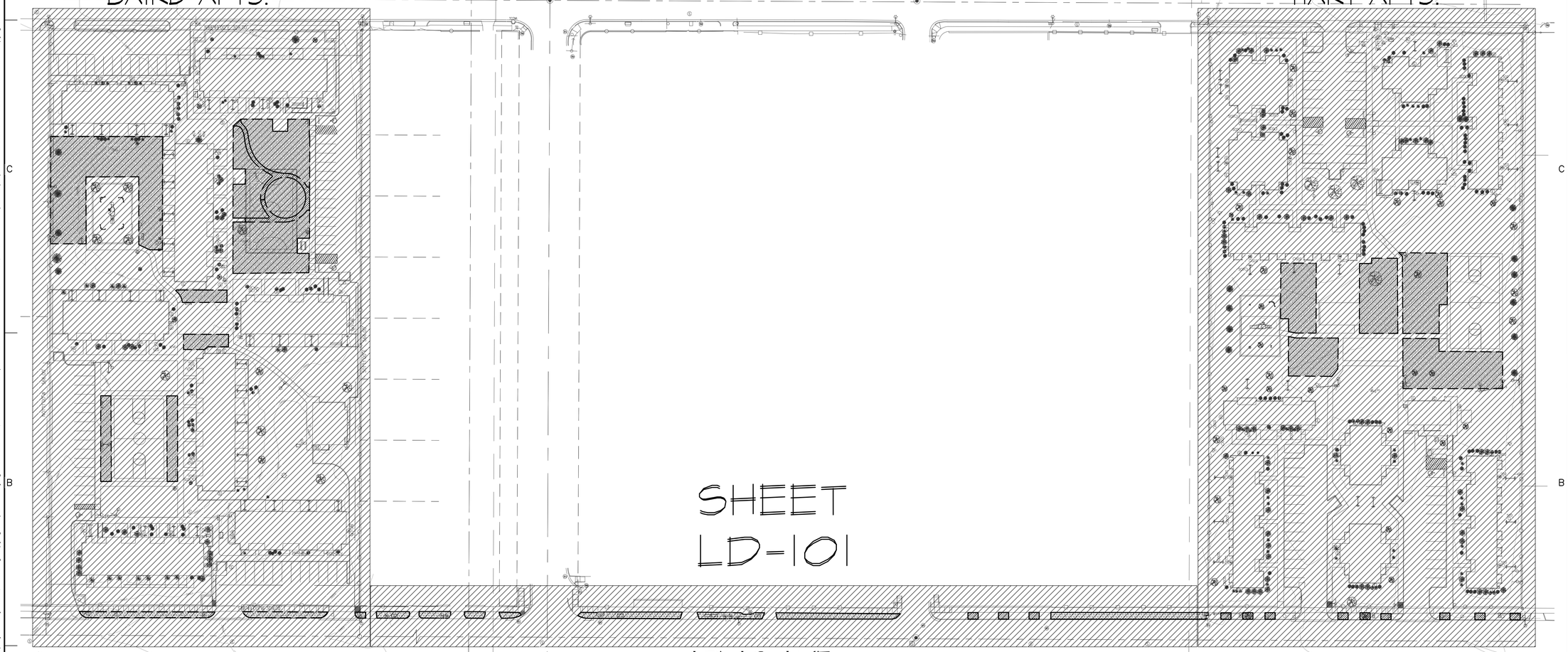
TITANIC AVE.

BAIRD APTS.

HART APTS.

SHEET
LD-101

ATLAS AVE.



A OVERVIEW DEMOLITION PLAN

SCALE 1:50

50 25 0 50

SITES
SOUTHWEST

4110 RIO BRAVO, SUITE 217
EL PASO, TX 79902
PHONE:915-351-8800

E-MAIL: mail@sites-sw.com
WEB: www.sites-sw.com

CONSULTANTS

REGISTERED LANDSCAPE ARCHITECT
DEBORAH B. HRADEK
3007
STATE OF TEXAS

05-28-19

PROJECT

CDBG HART & BAIRD IMPROVEMENTS

ADDRESS

4861 ATLAS AVE.
EL PASO, TX 79904 (HART)

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ISSUE DATE:	05/28/2019
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SHEET TITLE

OVERALL DEMOLITION PLAN

LD-100

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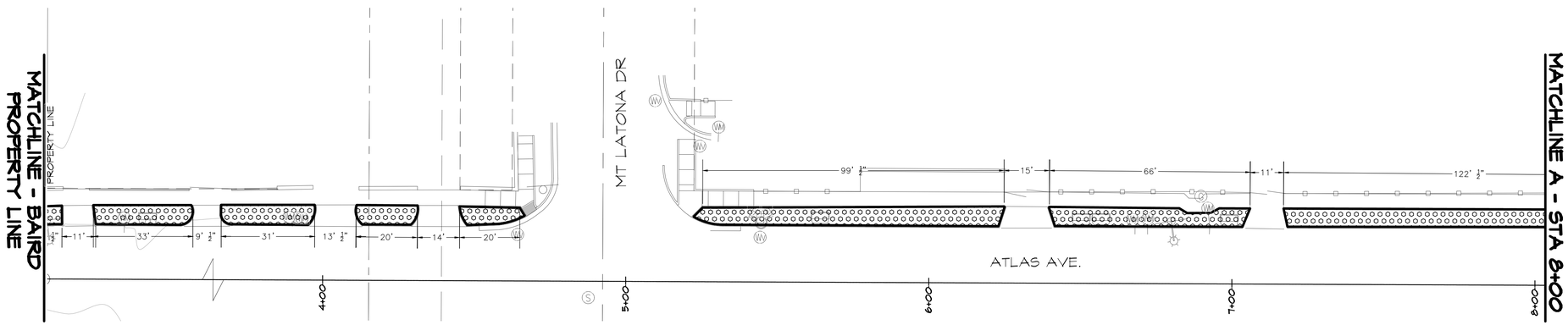

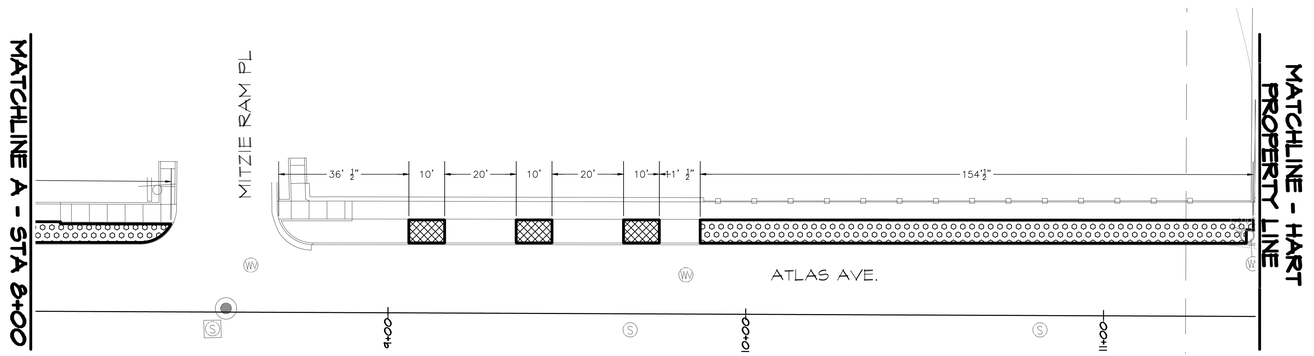

A DEMOLITION PLAN

SCALE 1:20

0 5 10 20

DEMOLITION LEGEND

SYMBOL	DEMOLITION DESCRIPTION
LD-01	EXISTING TREE TO REMAIN. PROTECT FROM DAMAGE. SEE DETAIL D/LP-501
LD-03	EXISTING PICNIC TABLE TO REMAIN, PROTECT FROM DAMAGE
LD-04	EXISTING CONCRETE SIDEWALK TO BE NEATLY SAWCUT, REMOVED, AND PROPERLY DISPOSED OF.
LD-05	EXISTING SIGN TO REMAIN. PROTECT FROM DAMAGE.
LD-06	EXISTING PLAYGROUND STRUCTURE TO REMAIN, PROTECT FROM DAMAGE.
LD-07	EXISTING CONCRETE PLAZA AND/OR SIDEWALK TO REMAIN. PROTECT FROM DAMAGE.
LD-08	EXISTING ROCK WALL AROUND PLAY AREA TO REMAIN. PROTECT FROM DAMAGE.
LD-09	EXISTING LIGHT POLE, SEE ELECTRICAL ENGINEERING SHEETS.
LD-15	EXISTING BASKETBALL COURT TO REMAIN. PROTECT FROM DAMAGE

SYMBOL	SITE FURNISHING DESCRIPTION
S-19	PROVIDE AND INSTALL 5 FT. WIDE WELDED WIRE MESH GATE AND SUPPORTS. GATE INCLUDES FENCE PANELS, POSTS, FOOTINGS, HINGES, LOCKS, AND ALL FENCE COMPONENTS. CONTRACTOR TO PROVIDE UNOBSTRUCTED PATH TO ALLOW GATES TO OPEN AND CLOSE SMOOTHLY AND FASTENING TO ALLOW GATES TO REMAIN OPEN WHEN DESIRED.. SEE DETAIL LC-501/B

SYMBOL	DEMOLITION HATCH DESCRIPTION
	EXISTING AREA THAT REQUIRES GRADING WORK FOR IMPROVEMENTS APPLY POST-EMERGENT TO UNDISTURBED AND ACTIVELY GROWING NEEDS. PRIOR TO DEMOLITION OR GRADING SEE GRADING AND CONSTRUCTION PLANS & HERBICIDE NOTES.
	EXISTING CONCRETE SIDEWALK TO BE REMOVED. REMOVE TO CLOSEST EXPANSION JOINTOR SAW CUT AT CONTROL JOINT. SEE CONSTRUCTION PLANS FOR REFERENCE LC-101-103.
	APPLY POST-EMERGENT HERBICIDE, REMOVE EXISTING MATERIALS AND GRADE AS NECESSARY FOR IMPROVEMENTS. DO NOT REMOVE TREES OR EXISTING UTILITIES, PROTECT FROM DAMAGE. HAND DIG AROUND EXISTING TREES AND PROVIDE TREE PROTECTION PER DETAIL D/LP-501. SEE GRADING AND CONSTRUCTION PLANS FOR NEW IMPROVEMENTS.

LEGEND GENERAL NOTES

ALL EXISTING TREES, SHRUBS AND PLANTS TO REMAIN UNLESS OTHERWISE SPECIFIED.
VERIFY WITH LANDSCAPE ARCHITECT IF SHRUBS OR TREES NEED TO BE REMOVED
PROTECT ALL EXISTING LANDSCAPE AREAS AND ITEMS FROM DAMAGE UNLESS OTHERWISE SPECIFIED.

LEGEND SITE LEGEND

- EXISTING SHRUBS TO REMAIN, PROTECT FROM DAMAGE
- EXISTING TREES TO REMAIN, PROTECT FROM DAMAGE
- EXISTING CLOTHESLINES TO REMAIN, PROTECT FROM DAMAGE
- EXISTING POLES, SEE ELECTRICAL ENGINEERING SHEETS.

SITES SOUTHWEST
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PHONE:915-351-8800
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CONSULTANTS

REGISTERED LANDSCAPE ARCHITECT
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3007
STATE OF TEXAS
05-28-19

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CHK'D BY:	D.B.H.
ISSUE DATE:	05/28/2019
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SHEET TITLE

DEMOLITION PLAN
ATLAS AVE.

LD-101

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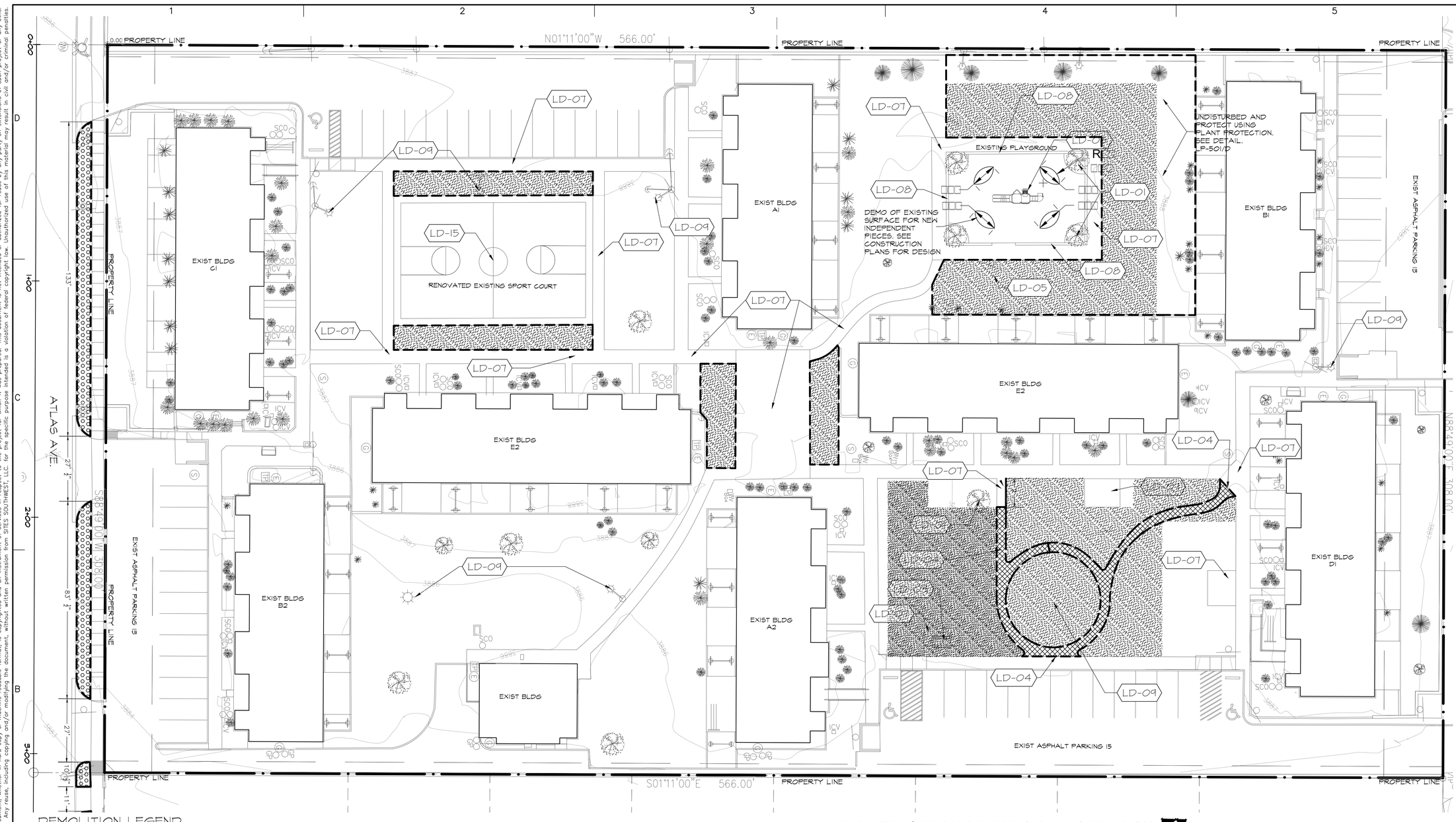

DEMOLITION LEGEND

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LD-06	EXISTING PLAYGROUND STRUCTURE TO REMAIN, PROTECT FROM DAMAGE.
LD-07	EXISTING CONCRETE PLAZA AND/OR SIDEWALK TO REMAIN. PROTECT FROM DAMAGE.
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LD-15	EXISTING BASKETBALL COURT TO REMAIN, PROTECT FROM DAMAGE

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S-19	PROVIDE AND INSTALL 5 FT. WIDE WELDED WIRE MESH GATE AND SUPPORTS. GATE INCLUDES FENCE PANELS, POSTS, FOOTINGS, HINGES, LOCKS, AND ALL FENCE COMPONENTS. CONTRACTOR TO PROVIDE UNOBSTRUCTED PATH TO ALLOW GATES TO OPEN AND CLOSE SMOOTHLY AND FASTENING TO ALLOW GATES TO REMAIN OPEN WHEN DESIRED.. SEE DETAIL LC-501/B

SYMBOL	DEMOLITION HATCH DESCRIPTION
	EXISTING AREA THAT REQUIRES GRADING WORK FOR IMPROVEMENTS APPLY POST-EMERGENT TO UNDISTURBED AND ACTIVELY GROWING WEEDS. PRIOR TO DEMOLITION OR GRADING SEE GRADING AND CONSTRUCTION PLANS & HERBICIDE NOTES.
	EXISTING CONCRETE SIDEWALK TO BE REMOVED. REMOVE TO CLOSEST EXPANSION JOINTOR SAW CUT AT CONTROL JOINT. SEE CONSTRUCTION PLANS FOR REFERENCE LC-101-103.
	APPLY POST-EMERGENT HERBICIDE, REMOVE EXISTING MATERIALS AND GRADE AS NECESSARY FOR IMPROVEMENTS. DO NOT REMOVE TREES OR EXISTING UTILITIES, PROTECT FROM DAMAGE. HAND DIG AROUND EXISTING TREES AND PROVIDE TREE PROTECTION PER DETAIL D/LP-501. SEE GRADING AND CONSTRUCTION PLANS FOR NEW IMPROVEMENTS.

LEGEND GENERAL NOTES

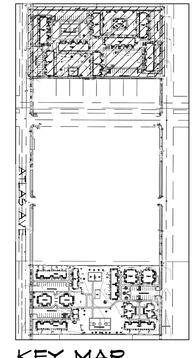
ALL EXISTING TREES, SHRUBS AND PLANTS TO REMAIN UNLESS OTHERWISE SPECIFIED.
VERIFY WITH LANDSCAPE ARCHITECT IF SHRUBS OR TREES NEED TO BE REMOVED
PROTECT ALL EXISTING LANDSCAPE AREAS AND ITEMS FROM DAMAGE UNLESS OTHERWISE SPECIFIED.

(A) EXISTING/DEMOLITION LANDSCAPE PLAN

SCALE 1:20 — 0 5 10 20

LEGEND SITE LEGEND

- EXISTING SHRUBS TO REMAIN. PROTECT FROM DAMAGE
- EXISTING TREES TO REMAIN. PROTECT FROM DAMAGE
- EXISTING CLOTHESLINES TO REMAIN. PROTECT FROM DAMAGE
- EXISTING POLES. SEE ELECTRICAL ENGINEERING SHEETS.



(B) KEY MAP

NOT TO SCALE

SITES SOUTHWEST
4110 RIO BRAVO, SUITE 217
EL PASO, TX 79902
PHONE:915-351-8800
E-MAIL:mail@sites-sw.com
WEB:www.sites-sw.com

CONSULTANTS

REGISTERED LANDSCAPE ARCHITECT
DEBORAH B. HRADEK
3007
STATE OF TEXAS
05-28-19

PROJECT

CDBG HART & BAIRD IMPROVEMENTS

ADDRESS

4861 ATLAS AVE.
EL PASO, TX 79904 (HART)
4747 ATLAS AVE.
EL PASO, TX 79904 (BAIRD)

Housing Authority of the City of El Paso

FINAL FOR CONSTRUCTION

REVISIONS

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CHK'D BY:	D.B.H.
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SHEET TITLE	

DEMOLITION PLAN BAIRD

LD-102

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PROPERTY LINE

EXIST BLDG 1

EXIST BLDG 2

PLAYGROUND

LD-08

LD-06

LD-07

EXIST BLDG 9

EXIST BLDG 10

EXIST BLDG 11

EXIST ASPHALT PARKING 16

EXIST ASPHALT PARKING 26

SLAB

LD-17

EXIST BLDG 4

EXIST BLDG 3

EXIST BLDG 8

EXIST BLDG 6

EXIST ASPHALT PARKING 13

EXIST BLDG

LD-05

LD-15

EXISTING BASKETBALL COURT

EXIST BLDG 5

EXIST BLDG 6

ATLAS AVE.

12+00

13+00

14+00

A EXISTING/DEMOLITION LANDSCAPE PLAN

SCALE 1:20

0 5 10 20

REFERENCE NOTES SCHEDULE

SYMBOL	DEMOLITION DESCRIPTION
LD-05	EXISTING SIGN TO REMAIN. PROTECT FROM DAMAGE.
LD-06	EXISTING PLAYGROUND STRUCTURE TO REMAIN. PROTECT FROM DAMAGE.
LD-07	EXISTING CONCRETE PLAZA AND/OR SIDEWALK TO REMAIN. PROTECT FROM DAMAGE.
LD-08	EXISTING ROCK WALL AROUND PLAY AREA TO REMAIN. PROTECT FROM DAMAGE.
LD-15	EXISTING BASKETBALL COURT TO REMAIN. PROTECT FROM DAMAGE
LD-17	EXISTING HANDBALL COURT TO REMAIN. PROTECT FROM DAMAGE.

SYMBOL	DEMOLITION HATCH DESCRIPTION
	EXISTING AREA THAT REQUIRES GRADING WORK FOR IMPROVEMENTS APPLY POST-EMERGENT TO UNDISTURBED AND ACTIVELY GROWING WEEDS. PRIOR TO DEMOLITION OR GRADING SEE GRADING AND CONSTRUCTION PLANS & HERBICIDE NOTES.
	EXISTING CONCRETE SIDEWALK TO BE REMOVED. REMOVE TO CLOSEST EXPANSION JOINTOR SAW CUT AT CONTROL JOINT. SEE CONSTRUCTION PLANS FOR REFERENCE LC-101-103.
	APPLY POST-EMERGENT HERBICIDE, REMOVE EXISTING MATERIALS AND GRADE AS NECESSARY FOR IMPROVEMENTS. DO NOT REMOVE TREES OR EXISTING UTILITIES, PROTECT FROM DAMAGE. HAND DIG AROUND EXISTING TREES AND PROVIDE TREE PROTECTION PER DETAIL D/LP-501. SEE GRADING AND CONSTRUCTION PLANS FOR NEW IMPROVEMENTS.

LEGEND GENERAL NOTES

ALL EXISTING TREES, SHRUBS AND PLANTS TO REMAIN UNLESS OTHERWISE SPECIFIED.
VERIFY WITH LANDSCAPE ARCHITECT IF SHRUBS OR TREES NEED TO BE REMOVED

PROTECT ALL EXISTING LANDSCAPE AREAS AND ITEMS FROM DAMAGE UNLESS OTHERWISE SPECIFIED.

LEGEND SITE LEGEND

EXISTING SHRUBS TO REMAIN. PROTECT FROM DAMAGE

EXISTING TREES TO REMAIN. PROTECT FROM DAMAGE

EXISTING CLOTHESLINES TO REMAIN. PROTECT FROM DAMAGE

EXISTING POLES. SEE ELECTRICAL ENGINEERING SHEETS.

B KEY MAP

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SHEET TITLE

DEMOLITION PLAN HART

LD-103

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SHEETS
LC-102
LC-401

SHEETS
LC-103
LC-402

TITANIC AVE.

BAIRD APTS.

HART APTS.

SHEET
LC-101

ATLAS AVE.

A OVERVIEW SITE PLAN

SCALE 1:50

50 25 0 50

SITES
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OVERALL CONSTRUCTION PLAN

LC-100

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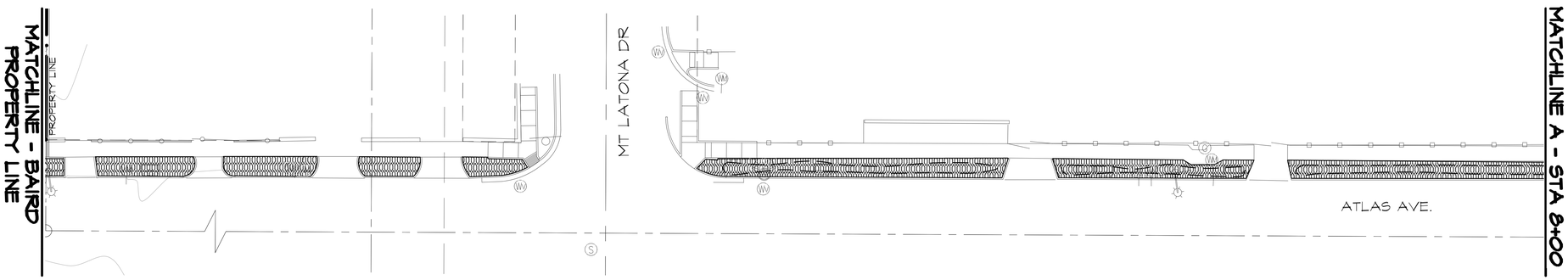

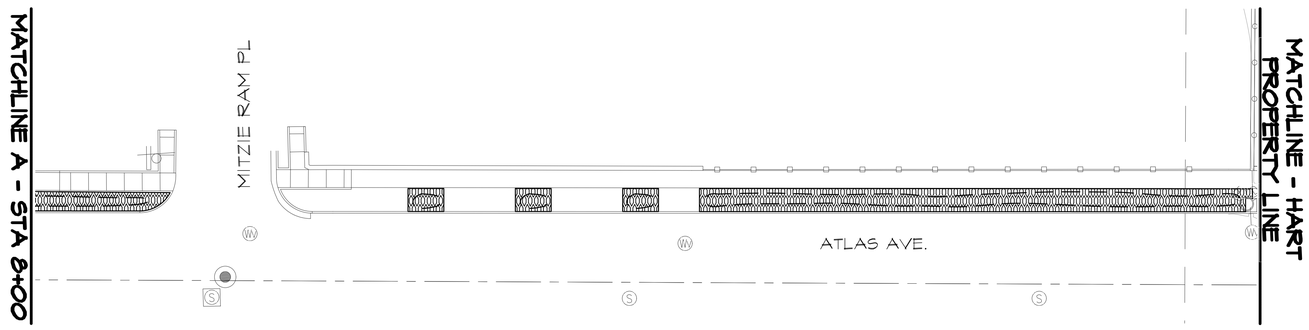

CONSTRUCTION PLAN ATLAS AVE.
SCALE 1:20

0 5 10 20

SITE LEGEND

PROVIDE AND INSTALL 4" DEPTH CONCRETE. BROOM FINISH, . MAX 2% IN ALL DIRECTIONS. PROVIDE 1/2" BITUMINOUS EXPANSION MATERIAL WHERE NEW CONCRETE ABUTS EXISTING CONCRETE. SEE DETAIL LC-501/A

GENERAL NOTES

SWALE FOR WATER HARVESTING GRADUALLY GRADE USING 6" CONTOURS. LANDSCAPE CONTRACTOR TO FINALIZE SWALES AND SMOOTHING OF SIDES, FOR APPROVAL BY LANDSCAPE ARCHITECT.

NEW INSTALLATION OF PLAY EQUIPMENT SHALL BE OUT OF THE EXISTING PLAYGROUND FALL ZONE.

CONTRACTOR SHALL PROVIDE STRUCTURAL ENGINEER'S DESIGN DRAWINGS AND STAMP, TO BE APPROVED PRIOR TO ON-SET OF CONSTRUCTION FOR FUTSAL COURT POST-TENSIONED CONCRETE

GEOTECHNICAL REPORT WILL BE PROVIDED BY CONTRACTOR.

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CONSTRUCTION PLAN ATLAS AVE.

ATLAS
LC-101

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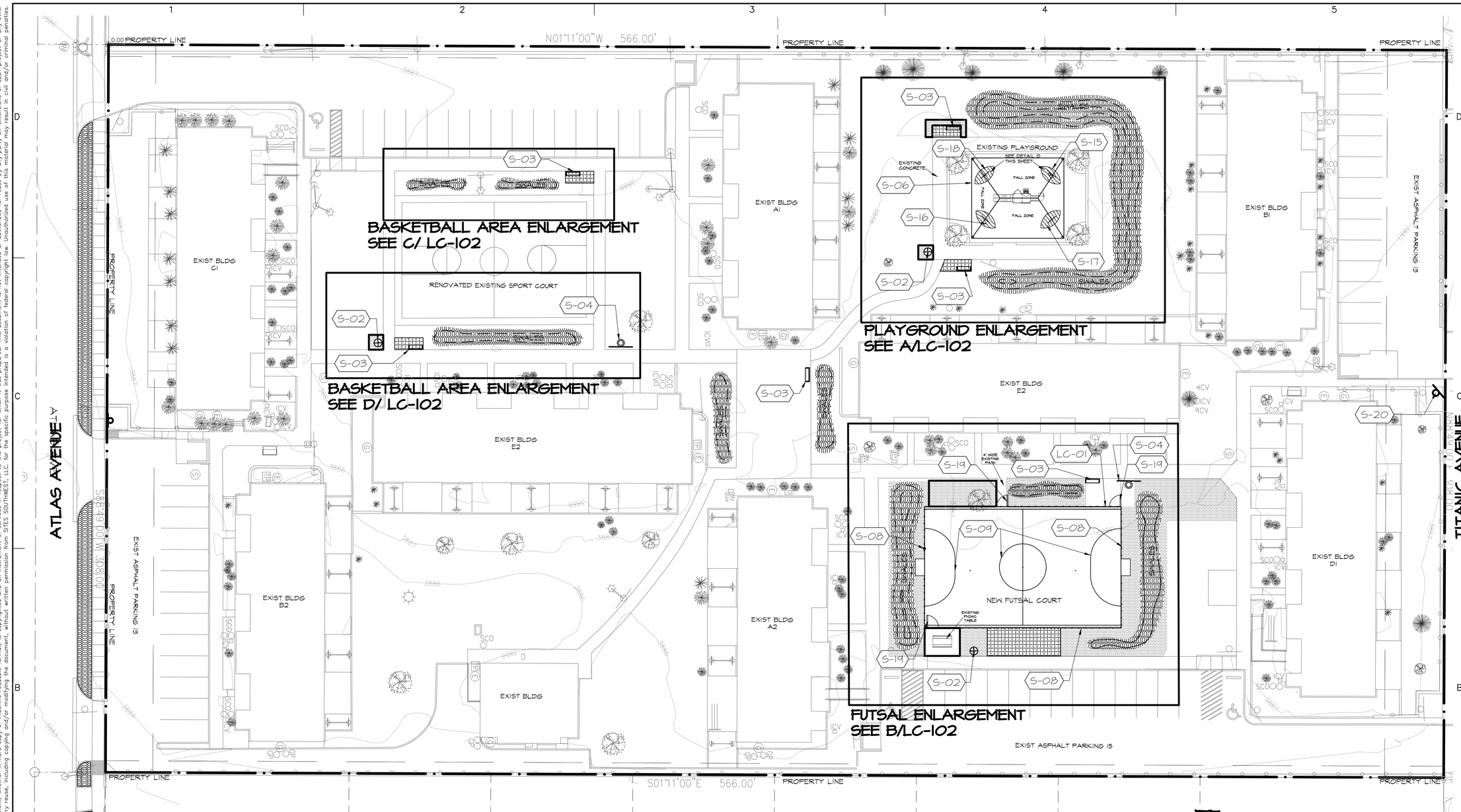


SITE LEGEND

SYMBOL	CONSTRUCTION DESCRIPTION
LC-01	PROVIDE SMOOTH & FLUSH TRANSITION FROM EXISTING CONCRETE PATH TO NEW CONCRETE. AREA SHALL BE MAX 5% RUNING SLOPE UN ALL DIRECTIONS.

SYMBOL	SITE FURNISHING DESCRIPTION
S-02	PROVIDE AND INSTALL NEW TRASH RECEPTACLE, SEE DETAIL LC-502/B
S-03	PROVIDE AND INSTALL NEW BENCH, SEE DETAIL LC-502/A
S-04	PROVIDE AND INSTALL RULES SIGN. SEE DETAIL LC-501/E
S-06	PROVIDE AND INSTALL NEW FABRIC PLAYGROUND CANOPY, SEE DETAIL LC-503/A
S-08	PROVIDE AND INSTALL 8' HIGH WELDED WIRE MESH FENCE AROUND FUTSAL COURT, SEE DETAIL LC-501/B
S-09	PROVIDE AND INSTALL FULL POST-TENSIONED CONCRETE FUTSAL COURT WITH MARKINGS AND GOALS. FUTSAL COURT SHALL BE PAINTED BLUE WITH WHITE MARKINGS. NO AREA OF SLAB SHALL BE LEFT UNPAINTED. SEE DETAIL LC-501/D AND NOTES
S-15	PROVIDE AND INSTALL NEW PLAY PIECE. LANDSCAPE STRUCTURES 'BONGO PANEL' MODEL #168107, SEE DETAIL LC-502/C
S-16	PROVIDE AND INSTALL NEW PLAY PIECE. LANDSCAPE STRUCTURES 'MARBLE PANEL' MODEL #168662, SEE DETAIL LC-502/D
S-17	PROVIDE AND INSTALL NEW PLAY PIECE. LANDSCAPE STRUCTURES 'RAIN SOUND WHEEL PANEL' MODEL #177721, SEE DETAIL LC-502/E
S-18	PROVIDE AND INSTALL NEW PLAY PIECE. LANDSCAPE STRUCTURES 'IMAGINATION TABLE PANEL' MODEL #168105, SEE DETAIL LC-502/F
S-19	PROVIDE AND INSTALL 5 FT. WIDE WELDED WIRE MESH GATE AND SUPPORTS. GATE INCLUDES FENCE PANELS, POSTS, FOOTINGS, HINGES, LOCKS, AND ALL FENCE COMPONENTS. CONTRACTOR TO PROVIDE UNOBSTRUCTED PATH TO ALLOW GATES TO OPEN AND CLOSE SMOOTHLY AND FASTENING TO ALLOW GATES TO REMAIN OPEN WHEN DESIRED.. SEE DETAIL LC-501/B
S-20	PROVIDE AND INSTALL PLAY AREAS OPEN TO PUBLIC SIGN SEE DETAIL LC-501/E

SYMBOL	CONSTRUCTION HATCH DESCRIPTION
	PROVIDE AND INSTALL 4" DEPTH CONCRETE. BROOM FINISH, MAX 2% IN ALL DIRECTIONS. PROVIDE 1/2" BITUMINOUS EXPANSION MATERIAL WHERE NEW CONCRETE ABUTS EXISTING CONCRETE. SEE DETAIL LC-501/A
	PROVIDE AND INSTALL 1" RAINBOW ROCK DESERT TAN OR APPROVED EQUAL. 3" DEPTH WITH WEED BARRIER FABRIC.
	POURED-IN-PLACE OVER CONCRETE SUB BASE. PROVIDE AND INSTALL. COLOR MIX: 50% BRIGHT GREEN 10% DARK GREEN 10% 10% ARMY GREEN 10% YELLOW/GOLD 10% TEAL 10% BEIGE
	COLOR BRIGHT GREEN POURED-IN-PLACE OVER CONCRETE SUB BASE.
	PROVIDE AND INSTALL SCREENINGS, MATCH EXISTING 2" DEPTH WEED BARRIER FABRIC.

A OVERALL SITE PLAN

SCALE 1:20

0 5 10 20

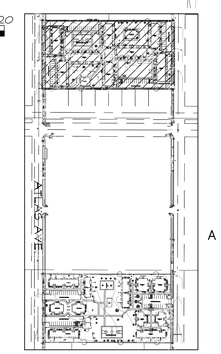
GENERAL NOTES

SWALE FOR WATER HARVESTING GRADUALL GRADE USING 6" CONTOURS. LANDSCAPE CONTRACTOR TO FINALIZE SWALES AND SMOOTHING OF SIDES, FOR APPROVAL BY LANDSCAPE ARCHITECT.

NEW INSTALLATION OF PLAY EQUIPMENT SHALL BE OUT OF THE EXISTING PLAYGROUND FALL ZONE.

CONTRACTOR SHALL PROVIDE STRUCTURAL ENGINEER'S DESIGN DRAWINGS AND STAMP, TO BE APPROVED PRIOR TO ON-SET OF CONSTRUCTION FOR FUTSAL COURT POST-TENSIONED CONCRETE

GEOTECHNICAL REPORT WILL BE PROVIDED BY CONTRACTOR.



B KEY MAP

NOT TO SCALE

SITES
SOUTHWEST
4110 RIO BRAVO, SUITE 217
EL PASO, TX 79902
PHONE:915-351-8800
E-MAIL:mail@sites-sw.com
WEB:www.sites-sw.com

CONSULTANTS

REGISTERED LANDSCAPE ARCHITECT
DEBORAH B. HRADEK
3007
STATE OF TEXAS
05.28.19

PROJECT

CDBG HART & BAIRD IMPROVEMENTS

ADDRESS

4861 ATLAS AVE.
EL PASO, TX 79904 (HART)

4747 ATLAS AVE.
EL PASO, TX 79904 (BAIRD)

Housing Authority of the City of El Paso

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CONSTRUCTION PLAN
BAIRD

LC-102

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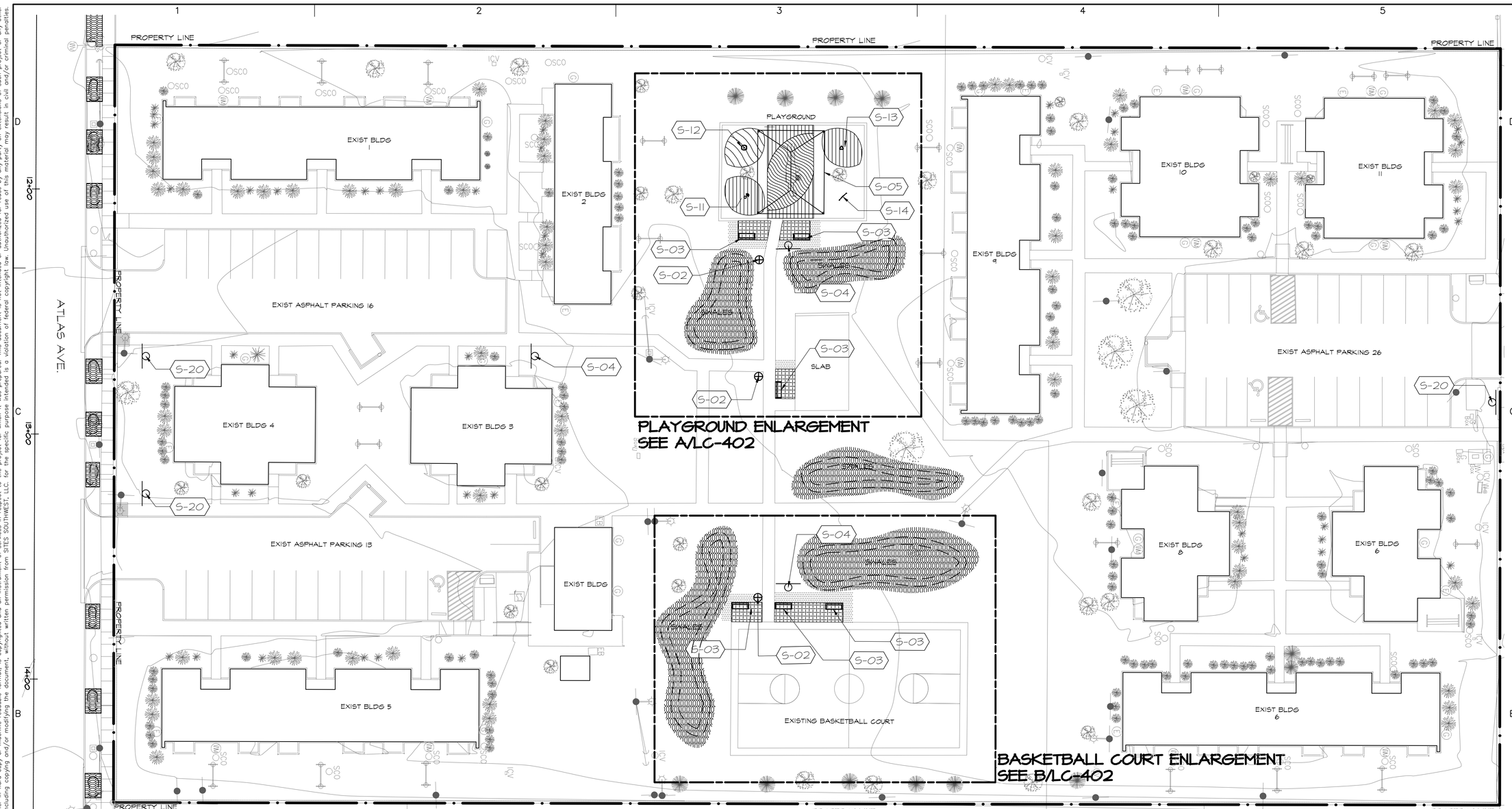


AMENITIES SCHEDULE

SYMBOL	SITE FURNISHING DESCRIPTION
S-02	PROVIDE AND INSTALL NEW TRASH RECEPTACLE, SEE DETAIL LC-502/B
S-03	PROVIDE AND INSTALL NEW BENCH, SEE DETAIL LC-502/A
S-04	PROVIDE AND INSTALL AREA NAME AND RULES NEW SIGN. SEE DETAIL LC-501/E
S-05	PROVIDE AND INSTALL NEW FABRIC PLAYGROUND CANOPY, SEE DETAIL LC-503/B
S-11	PROVIDE AND INSTALL NEW PLAY PIECE. LANDSCAPE STRUCTURES 'BOBBLE RIDER' SINGLE, MODEL #1640110, SEE DETAIL LC-504/D
S-12	PROVIDE AND INSTALL NEW PLAY PIECE. LANDSCAPE STRUCTURES 'CHILL SPINNER' MODEL #247189, SEE DETAIL LC-504/A
S-13	PROVIDE AND INSTALL NEW PLAY PIECE. LANDSCAPE STRUCTURES 'SADDLE SPINNER' MODEL #152179, SEE DETAIL LC-504/C
S-14	PROVIDE AND INSTALL NEW PLAY PIECE. LANDSCAPE STRUCTURES 'COLOR SPLASH PANEL' MODEL #177715, SEE DETAIL LC-504/B
S-20	PROVIDE AND INSTALL PLAY AREAS OPEN TO PUBLIC SIGN SEE DETAIL LC-501/E

SYMBOL	CONSTRUCTION HATCH DESCRIPTION
	PROVIDE AND INSTALL 4" DEPTH CONCRETE. BROOM FINISH, STANDARD GREY COLOR, MAX 2% IN ALL DIRECTIONS. SEE DETAIL LC-501/A
	PROVIDE AND INSTALL 1" RAINBOW ROCK OR APPROVED EQUAL. 3" DEPTH WITH WEED BARRIER FABRIC.
	50% ROYAL BLUE AND 50% LT BLUE/SKY BLUE, EVENLY MIXED POURED-IN-PLACE OVER CONCRETE SUB BASE.
	COLOR BRIGHT GREEN POURED-IN-PLACE OVER CONCRETE SUB BASE.
	PROVIDE AND INSTALL SCREENINGS, MATCH TO EXISTING COLOR 2" DEPTH WITH FABRIC BARRIER UNDERLAYMENT

LEGEND

SWALE FOR WATER HARVESTING GRADUALLY GRADE USING 6" CONTOURS. LANDSCAPE CONTRACTOR TO FINALIZE SWALES AND SMOOTHING OF SIDES, FOR APPROVAL BY LANDSCAPE ARCHITECT.

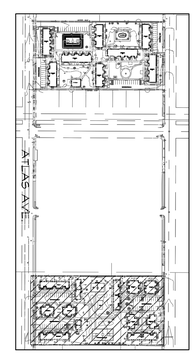
INSTALLATION OF NEW PLAY EQUIPMENT AND INDEPENDENT PLAY PIECES SHALL BE OUTSIDE OF THE EXISTING PLAYGROUND FALL ZONE.

ALL AMENITIES SHALL BE AS INDICATED OR APPROVED EQQUAL.

EXISTING EWF SHALL BE EVENLY DISTRIBUTED THROUGHOUT.

A OVERALL SITE PLAN
SCALE 1:20

0 5 10 20



B KEY MAP
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CONSULTANTS

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DEBORAH B. HRADEK
3007
STATE OF TEXAS
05-28-19

PROJECT
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CONSTRUCTION PLAN HART

LC-103

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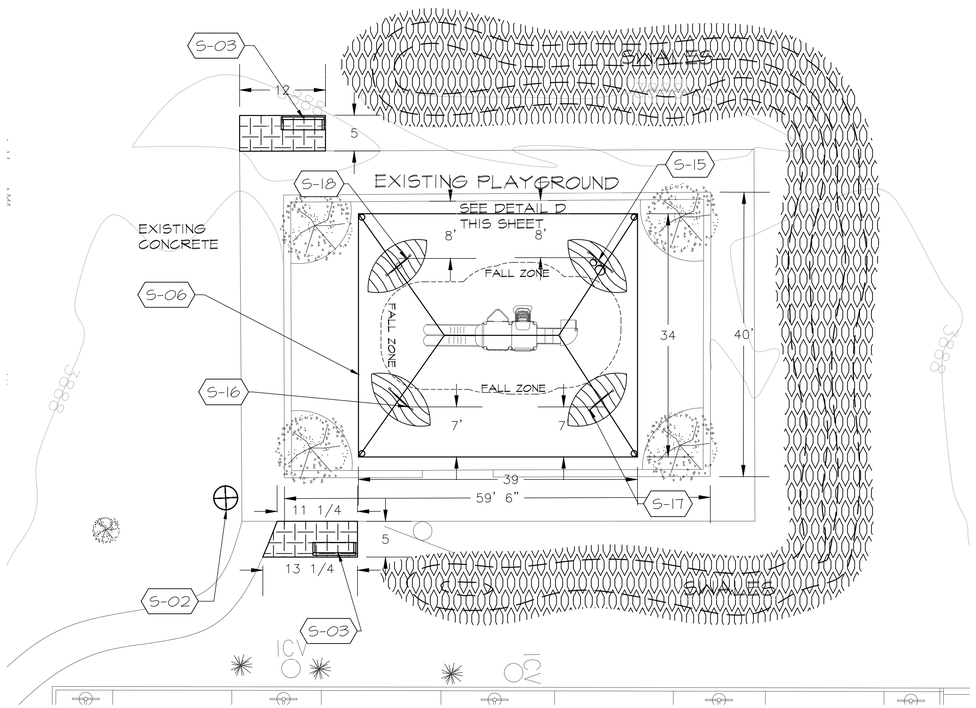
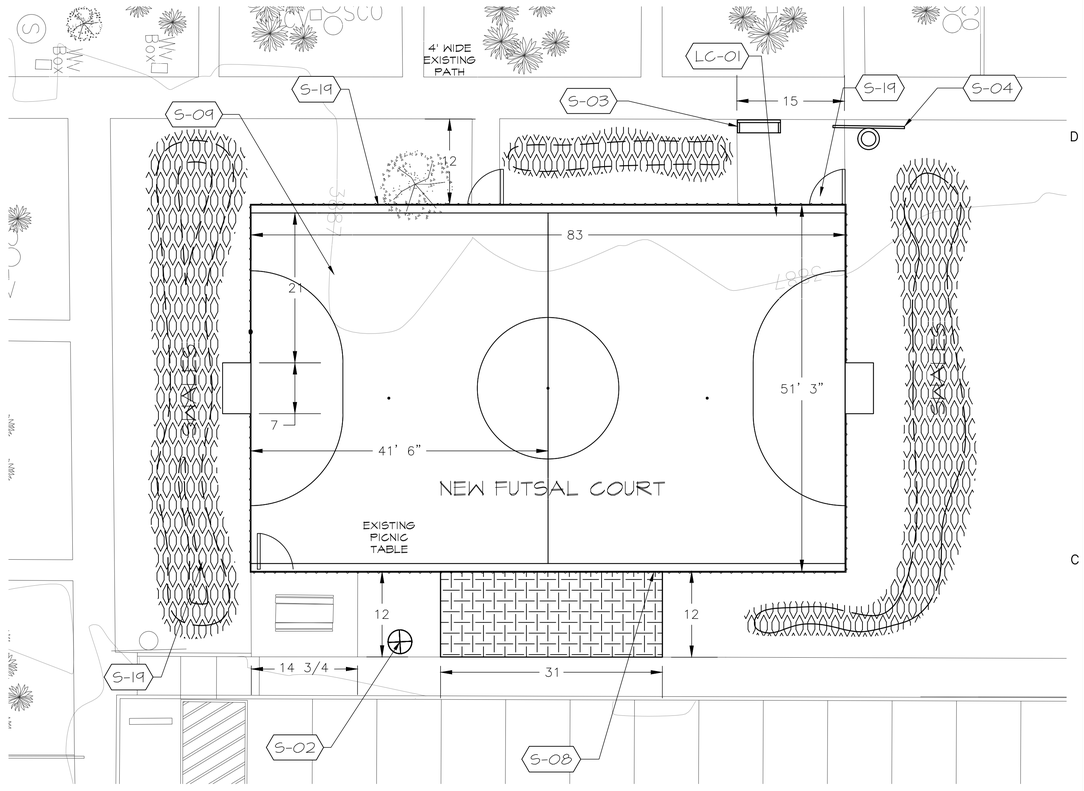
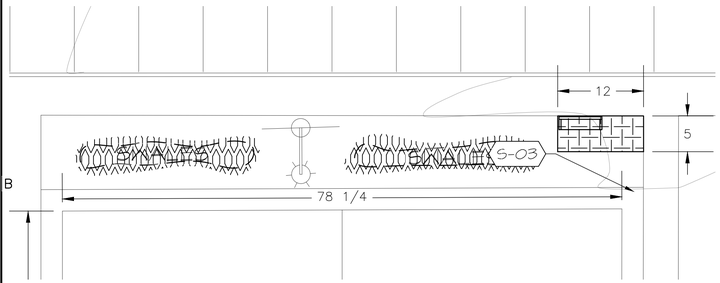


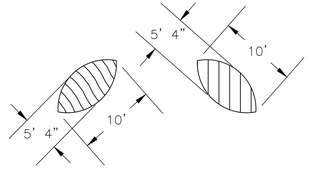
A PLAYGROUND ENLARGEMENT PLAN
SCALE 1:10



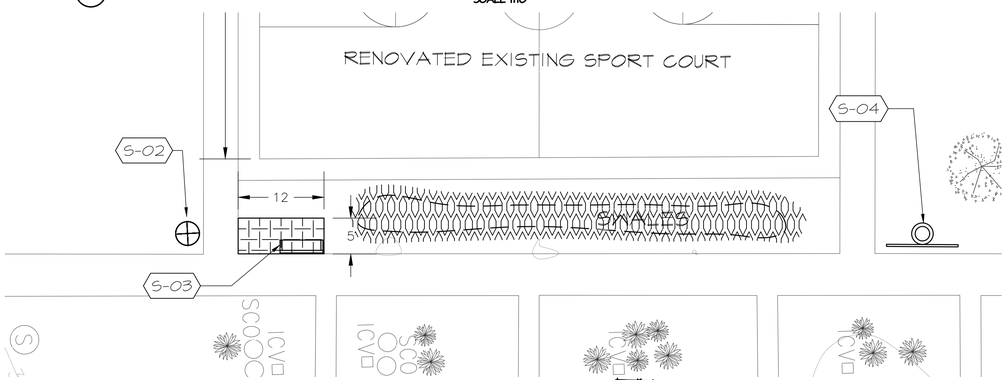
B FUTSAL ENLARGEMENT PLAN
SCALE 1:10



C BASKETBALL AREA ENLARGEMENT
SCALE 1:10



D PLAYGROUND NEW POURED-IN-PLACE DESIGN
SCALE 1:10



E BASKETBALL AREA ENLARGEMENT PLAN
SCALE 1:10

SITE LEGEND

SYMBOL	CONSTRUCTION DESCRIPTION
LC-01	PROVIDE SMOOTH & FLUSH TRANSITION FROM EXISTING CONCRETE PATH TO NEW CONCRETE. AREA SHALL BE MAX 5% RUNING SLOPE UN ALL DIRECTIONS.

SYMBOL	SITE FURNISHING DESCRIPTION
S-02	PROVIDE AND INSTALL NEW TRASH RECEPTACLE, SEE DETAIL LC-502/B
S-03	PROVIDE AND INSTALL NEW BENCH, SEE DETAIL LC-502/A
S-04	PROVIDE AND INSTALL RULES SIGN. SEE DETAIL LC-501/E
S-06	PROVIDE AND INSTALL NEW FABRIC PLAYGROUND CANOPY, SEE DETAIL LC-503/A
S-08	PROVIDE AND INSTALL 8' HIGH WELDED WIRE MESH FENCE AROUND FUTSAL COURT, SEE DETAIL LC-501/B
S-09	PROVIDE AND INSTALL FULL POST-TENSIONED CONCRETE FUTSAL COURT WITH MARKINGS AND GOALS. FUTSAL COURT SHALL BE PAINTED BLUE WITH WHITE MARKINGS. NO AREA OF SLAB SHALL BE LEFT UNPAINTED. SEE DETAIL LC-501/D AND NOTES
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S-17	PROVIDE AND INSTALL NEW PLAY PIECE. LANDSCAPE STRUCTURES 'RAIN SOUND WHEEL PANEL' MODEL #177721, SEE DETAIL LC-502/E
S-18	PROVIDE AND INSTALL NEW PLAY PIECE. LANDSCAPE STRUCTURES 'IMAGINATION TABLE PANEL' MODEL #168105, SEE DETAIL LC-502/F
S-19	PROVIDE AND INSTALL 5 FT. WIDE WELDED WIRE MESH GATE AND SUPPORTS. GATE INCLUDES FENCE PANELS, POSTS, FOOTINGS, HINGES, LOCKS, AND ALL FENCE COMPONENTS. CONTRACTOR TO PROVIDE UNOBSTRUCTED PATH TO ALLOW GATES TO OPEN AND CLOSE SMOOTHLY AND FASTENING TO ALLOW GATES TO REMAIN OPEN WHEN DESIRED.. SEE DETAIL LC-501/B
S-20	PROVIDE AND INSTALL PLAY AREAS OPEN TO PUBLIC SIGN SEE DETAIL LC-501/E

SYMBOL	CONSTRUCTION HATCH DESCRIPTION
	PROVIDE AND INSTALL 4" DEPTH CONCRETE. BROOM FINISH. MAX 2% IN ALL DIRECTIONS. PROVIDE 1/2" BITUMINOUS EXPANSION MATERIAL WHERE NEW CONCRETE ABUTS EXISTING CONCRETE. SEE DETAIL LC-501/A
	PROVIDE AND INSTALL 1" RAINBOW ROCK DESERT TAN OR APPROVED EQUAL. 3" DEPTH WITH WEED BARRIER FABRIC.
	POURED-IN-PLACE OVER CONCRETE SUB BASE. PROVIDE AND INSTALL. COLOR MIX: 50% BRIGHT GREEN 10% DARK GREEN 10% 10% ARMY GREEN 10% YELLOW/GOLD 10% TEAL 10% BEIGE
	PROVIDE AND INSTALL SCREENINGS, MATCH EXISTING COLOR 2" DEPTH WEED BARRIER FABRIC.

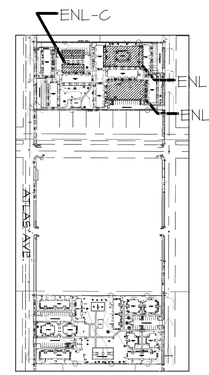
GENERAL NOTES

SWALE FOR WATER HARVESTING GRADUALLY GRADE USING 6" CONTOURS. LANDSCAPE CONTRACTOR TO FINALIZE SWALES AND SMOOTHING OF SIDES, FOR APPROVAL BY LANDSCAPE ARCHITECT.

NEW INSTALLATION OF PLAY EQUIPMENT SHALL BE OUT OF THE EXISTING PLAYGROUND FALL ZONE.

CONTRACTOR SHALL PROVIDE STRUCTURAL ENGINEER'S DESIGN DRAWINGS AND STAMP, TO BE APPROVED PRIOR TO ON-SET OF CONSTRUCTION FOR FUTSAL COURT POST-TENSIONED CONCRETE

GEOTECHNICAL REPORT WILL BE PROVIDED BY CONTRACTOR.



D KEY MAP
NOT TO SCALE

SITES
SOUTHWEST
4110 RIO BRAVO, SUITE 217
EL PASO, TX 79902
PHONE:915-351-8800
E-MAIL:mail@sites-sw.com
WEB:www.sites-sw.com

CONSULTANTS

REGISTERED LANDSCAPE ARCHITECT
DEBORAH B. HRADEK
3007
STATE OF TEXAS
05-28-19

PROJECT
CDBG HART & BAIRD IMPROVEMENTS

ADDRESS
4861 ATLAS AVE.
EL PASO, TX 79904 (HART)
4747 ATLAS AVE.
EL PASO, TX 79904 (BAIRD)

Housing Authority of the City of El Paso

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CHK'D BY:	D.B.H.
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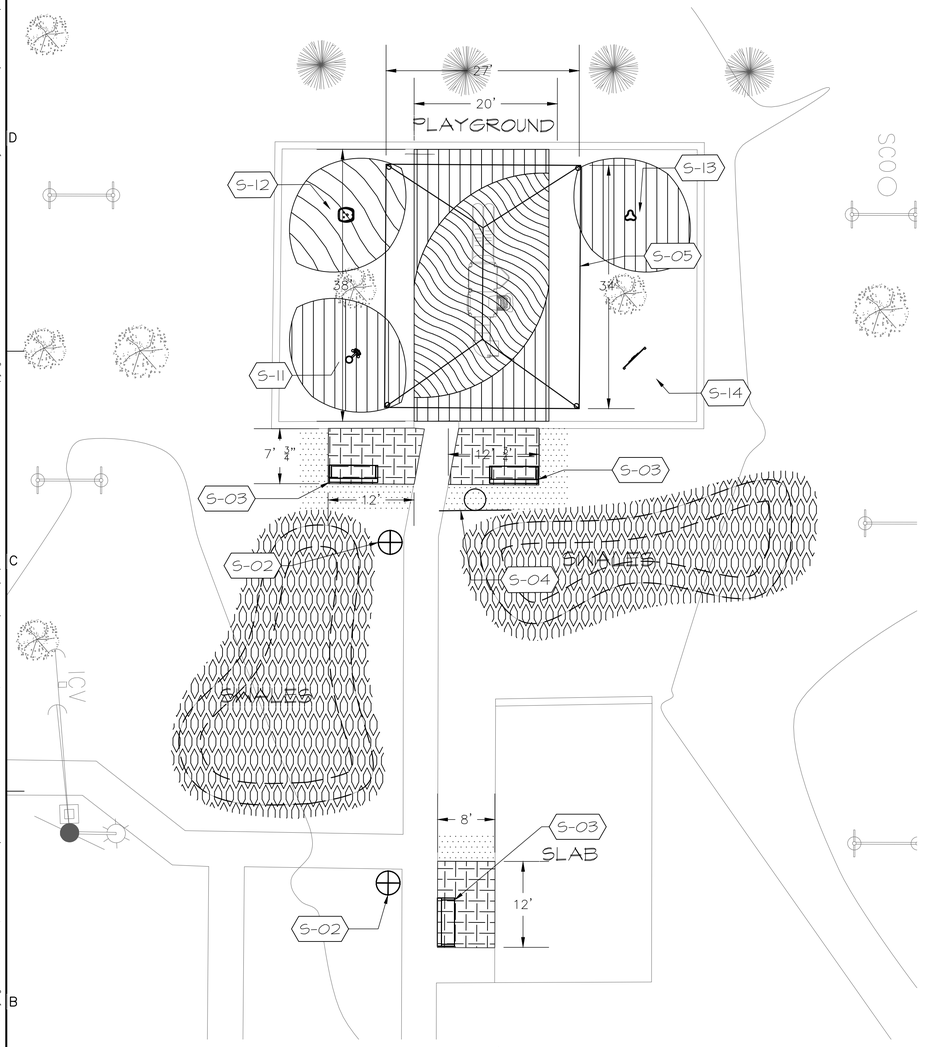
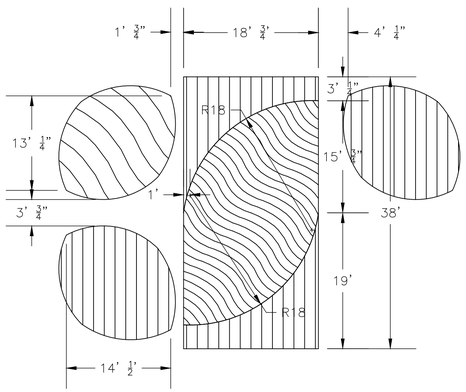
ENLARGEMENT PLAN
BAIRD

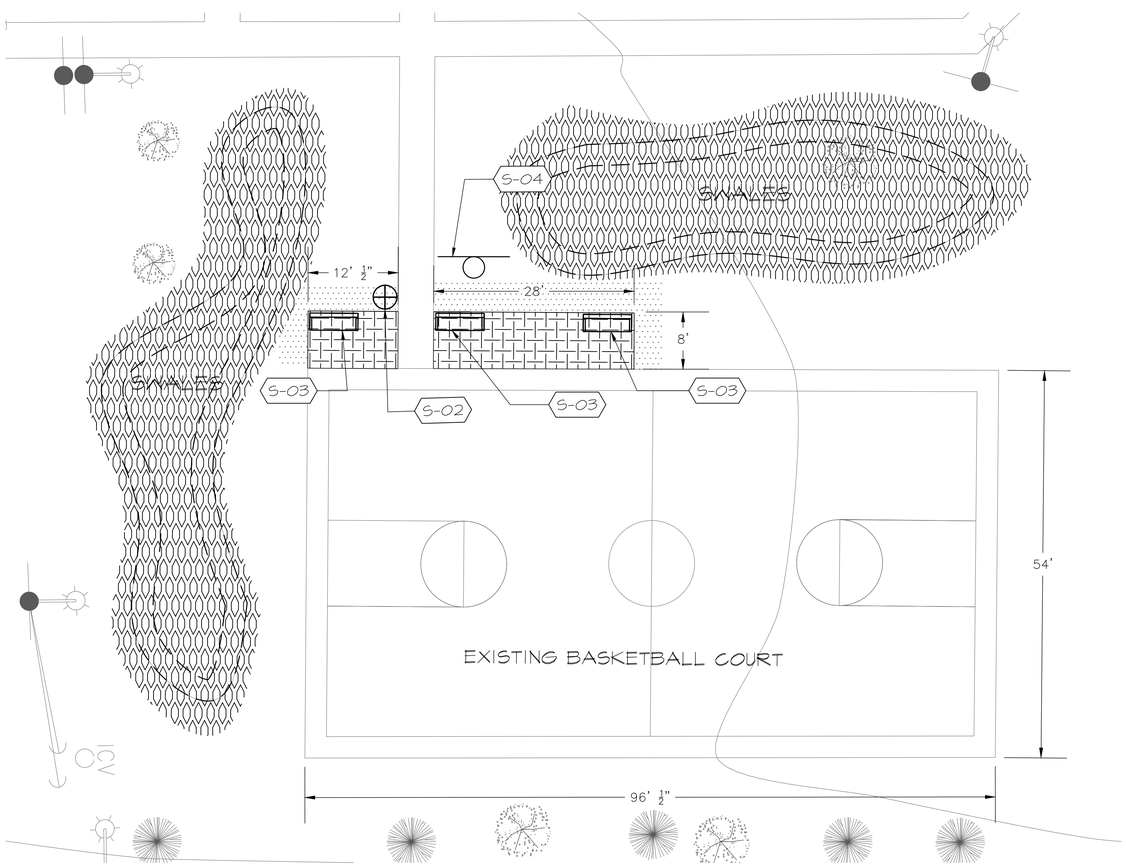
LC-401



A PLAYGROUND ENLARGEMENT PLAN
SCALE 1:10



A PLAYGROUND NEW POURED-IN-PLACE DESIGN
SCALE 1:10



B BASKETBALL ENLARGEMENT PLAN
SCALE 1:10

AMENITIES SCHEDULE

SYMBOL	SITE FURNISHING DESCRIPTION
S-02	PROVIDE AND INSTALL NEW TRASH RECEPTACLE, SEE DETAIL LC-502/B
S-03	PROVIDE AND INSTALL NEW BENCH, SEE DETAIL LC-502/A
S-04	PROVIDE AND INSTALL AREA NAME AND RULES NEW SIGN. SEE DETAIL LC-501/E
S-05	PROVIDE AND INSTALL NEW FABRIC PLAYGROUND CANOPY, SEE DETAIL LC-503/B
S-11	PROVIDE AND INSTALL NEW PLAY PIECE. LANDSCAPE STRUCTURES 'BOBBLE RIDER' SINGLE, MODEL #164070, SEE DETAIL LC-504/D
S-12	PROVIDE AND INSTALL NEW PLAY PIECE. LANDSCAPE STRUCTURES 'CHILL SPINNER' MODEL #247184, SEE DETAIL LC-504/A
S-13	PROVIDE AND INSTALL NEW PLAY PIECE. LANDSCAPE STRUCTURES 'SADDLE SPINNER' MODEL #152174, SEE DETAIL LC-504/C
S-14	PROVIDE AND INSTALL NEW PLAY PIECE. LANDSCAPE STRUCTURES 'COLOR SPLASH PANEL' MODEL #177715, SEE DETAIL LC-504/B
S-20	PROVIDE AND INSTALL PLAY AREAS OPEN TO PUBLIC SIGN SEE DETAIL LC-501/E

SYMBOL	CONSTRUCTION HATCH DESCRIPTION
	PROVIDE AND INSTALL 4" DEPTH CONCRETE. BROOM FINISH, STANDARD GREY COLOR. MAX 2% IN ALL DIRECTIONS. SEE DETAIL LC-501/A
	PROVIDE AND INSTALL 1" RAINBOW ROCK OR APPROVED EQUAL. 3" DEPTH WITH WEED BARRIER FABRIC.
	50% ROYAL BLUE AND 50% LT BLUE/SKY BLUE. EVENLY MIXED POURED-IN-PLACE OVER CONCRETE SUB BASE.
	COLOR BRIGHT GREEN POURED-IN-PLACE OVER CONCRETE SUB BASE.
	PROVIDE AND INSTALL SCREENINGS. MATCH TO EXISTING COLOR 2" DEPTH WITH FABRIC BARRIER UNDERLAYMENT

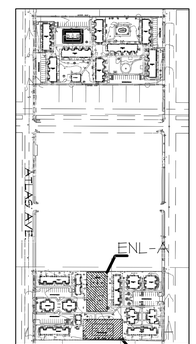
LEGEND

SWALE FOR WATER HARVESTING GRADUALLY GRADE USING 6" CONTOURS. LANDSCAPE CONTRACTOR TO FINALIZE SWALES AND SMOOTHING OF SIDES. FOR APPROVAL BY LANDSCAPE ARCHITECT.

INSTALLATION OF NEW PLAY EQUIPMENT AND INDEPENDENT PLAY PIECES SHALL BE OUTSIDE OF THE EXISTING PLAYGROUND FALL ZONE.

ALL AMENITIES SHALL BE AS INDICATED OR APPROVED EQQUAL.

EXISTING EWF SHALL BE EVENLY DISTRIBUTED THROUGHOUT.



B KEY MAP
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SITES
SOUTHWEST

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CONSULTANTS

REGISTERED LANDSCAPE ARCHITECT
DEBORAH B. HRADEK
3007
STATE OF TEXAS
05.28.19

PROJECT

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ADDRESS

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Housing Authority of the City of El Paso

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ENLARGEMENT PLAN HART

LC-402

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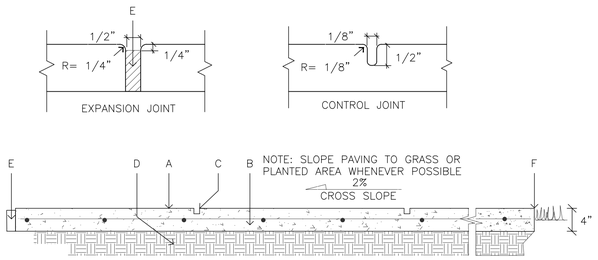
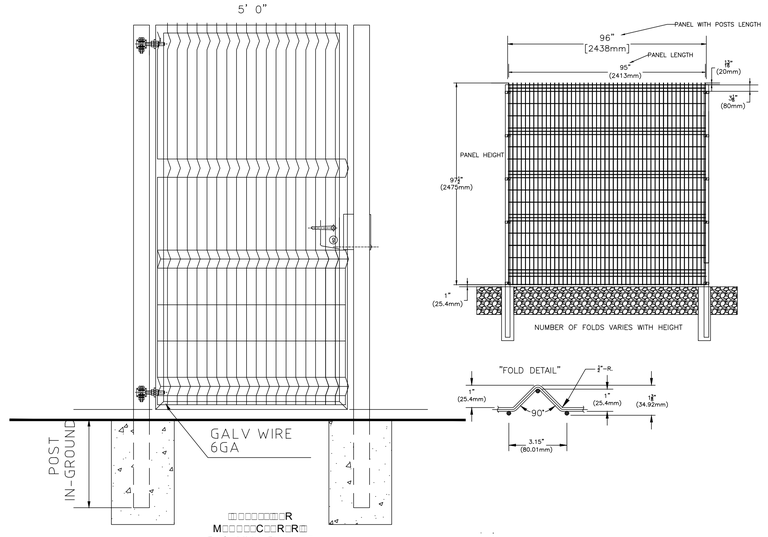


A. 4000 PSI CONCRETE, . TEST SLABS TO BE POURED AND APPROVED PRIOR TO COMMENCING WORK.
B. 6" X 6" X W1.4 X W1.4 WELDED WIRE MESH. WWM SHALL BE INSTALLED AT CENTER OF PAVING
C. CONTROL JOINTS TO BE SPACED 5' O.C. TYPICAL. EXPANSION JOINTS TO BE EVERY THIRD JOINT.
D. COMPACTED SUBGRADE 95% PROCTOR DENSITY.
E. 1/2" PREMOLDED BITUMINOUS EXPANSION JOINT.
F. TOOLED EDGE.

A CONCRETE PAVING 4" DEPTH

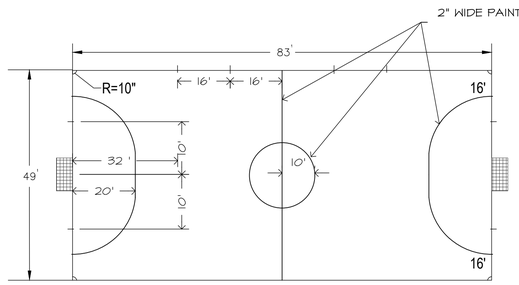
Not to scale



NOTE: VALUES SHOWN ARE NOMINAL AND NOT TO BE USED FOR INSTALLATION PURPOSES. DO NOT SCALE. CHECK, KNOW AND RESPECT LOCAL BUILDING CODES WHERE APPLICABLE. OBTAIN ALL NECESSARY BUILDING PERMITS.

B WELDED WIRE FENCE

NOT TO SCALE

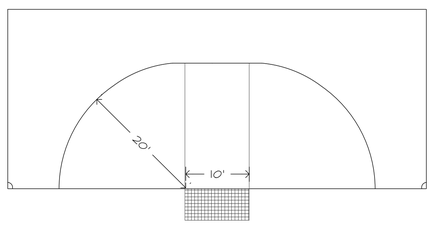


NOTES:
CONTRACTOR SHALL PROVIDE STRUCTURAL ENGINEER'S SIGNED AND SEALED DESIGN DRAWINGS FUTSAL COURT POST-TENSIONED CONCRETE, DRAWINGS TO BE APPROVED PRIOR TO ON-SET OF CONSTRUCTION. STRUCTURAL ENGINEER SHALL BE LICENSED IN TEXAS.

GEOTECHNICAL REPORT WILL BE PROVIDED TO CONTRACTOR FOR USE.

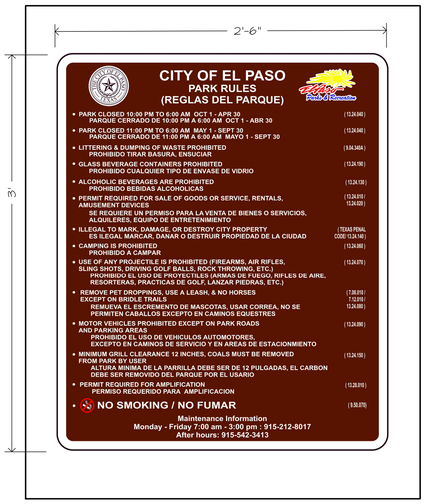
PAINT SHALL BE EXTERIOR GRADE.

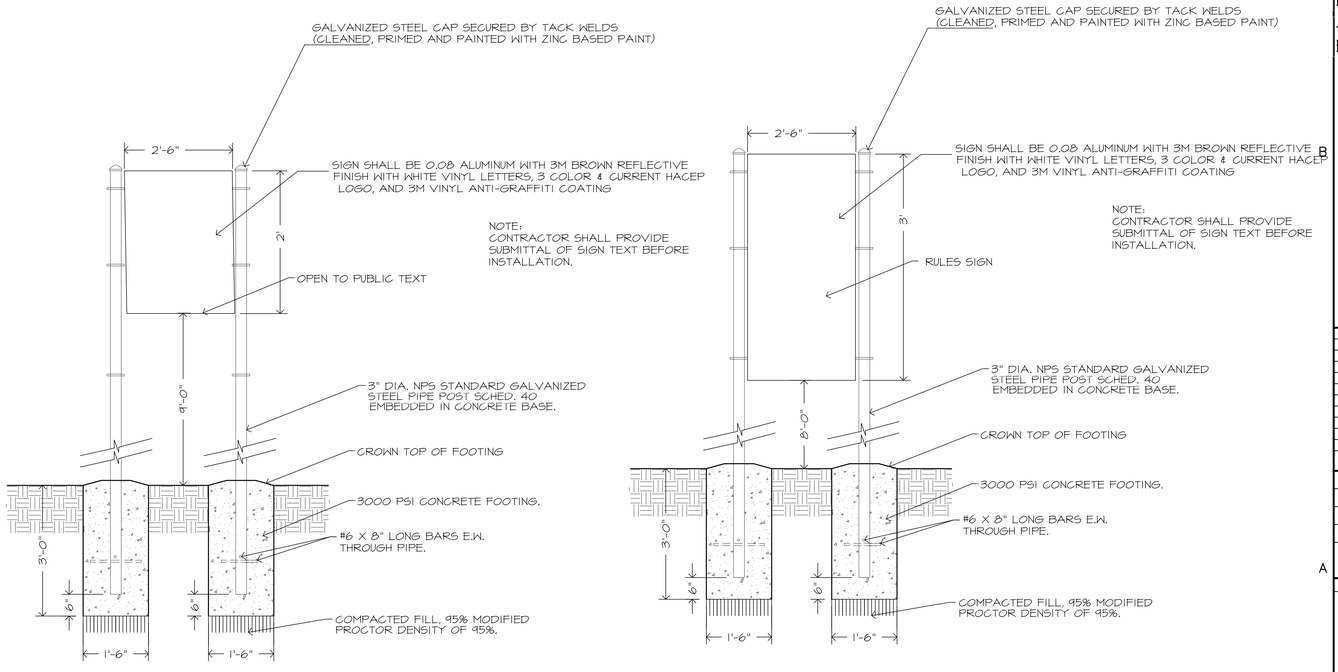
PITCH DIMENSIONS



PENATLY AREA

D FUTSAL COURT STRIPING DETAIL





E OPEN TO PUBLIC & RULES SIGN

SITES
SOUTHWEST
4110 RIO BRAVO, SUITE 217
EL PASO, TX 79902
PHONE:915-351-8800
E-MAIL:mail@sites-sw.com
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CONSULTANTS

REGISTERED LANDSCAPE ARCHITECT
DEBORRAH B. HRADEK
3007
STATE OF TEXAS
05-28-19

PROJECT

CDBG HART & BAIRD IMPROVEMENTS

ADDRESS
4861 ATLAS AVE.
EL PASO, TX 79904 (HART)
4747 ATLAS AVE.
EL PASO, TX 79904 (BAIRD)

Housing Authority of the City of El Paso

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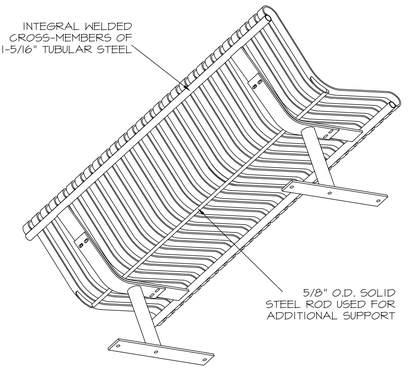
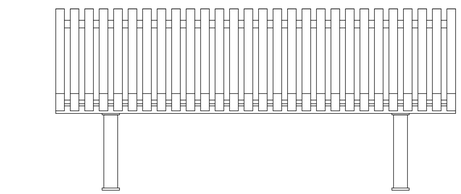
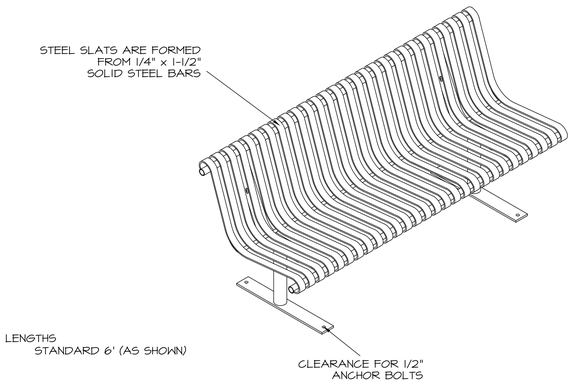
DETAILS
HART & BAIRD

LC-501





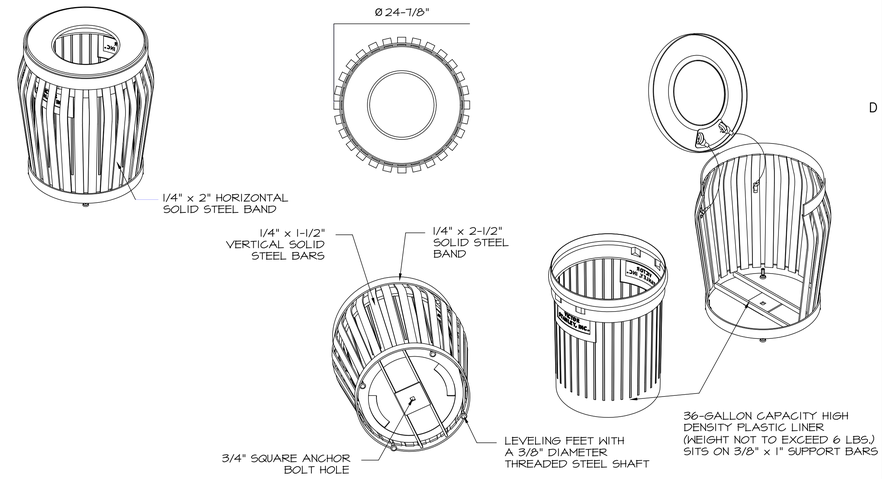


A BENCH

COLORS WILL BE CHOSEN THROUGH SUBMITTAL PROCESS

Not to scale

* ALL DIMENSION ARE IN INCHES *



NOTES
TAPERED FORMED LID
SECURITY
LID SHALL BE SECURED WITH VINYL COATED GALVANIZED STEEL AIRCRAFT CABLE. CABLE IS LOOPED AROUND WELDED IN PLACE ATTACHMENT BRACKETS AND CRIMPED IN PLACE.
TRASH RECEPTACLE TO INCLUDE LID, LINER AND IN GROUND MOUNT.

B TRASH RECEPTACLE

COLORS WILL BE CHOSEN THROUGH SUBMITTAL PROCESS

NOT TO SCALE

SITES SOUTHWEST

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PHONE:915-351-8800

E-MAIL: mail@sites-sw.com
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CONSULTANTS

REGISTERED LANDSCAPE ARCHITECT
DEBORAH B. HRADEK
3007
STATE OF TEXAS

05-28-19

PROJECT

CDBG HART & BAIRD IMPROVEMENTS

ADDRESS
4861 ATLAS AVE.
EL PASO, TX 79904 (HART)
4747 ATLAS AVE.
EL PASO, TX 79904 (BAIRD)

Housing Authority of the City of El Paso

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DETAILS
HART & BAIRD

LC-502

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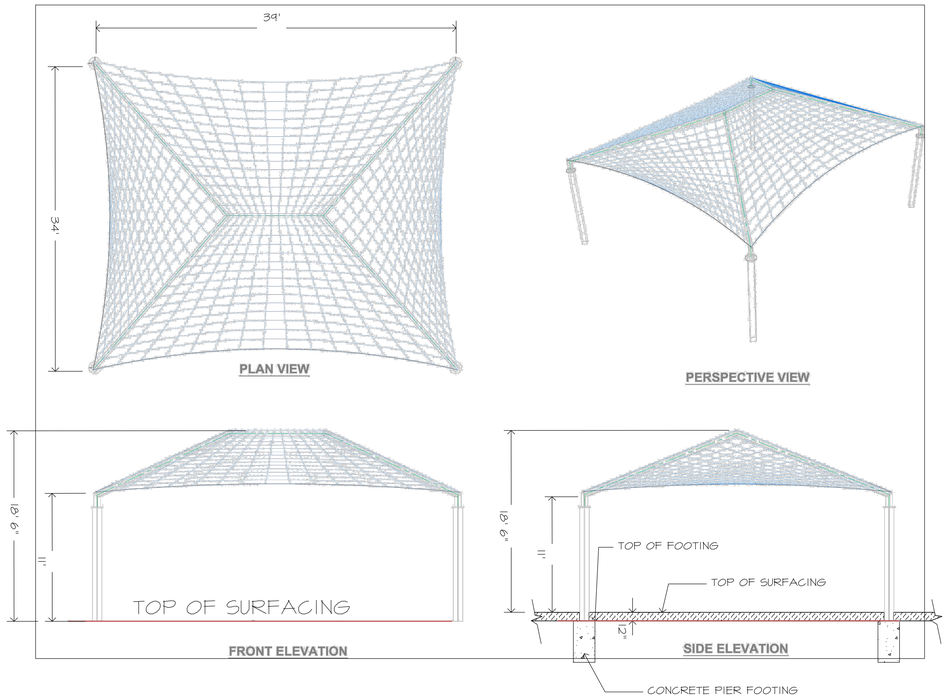


NOTES:

CANOPY DESIGN AND CANOPY COLOR SHALL BE APPROVED BY PROJECT REPRESENTATIVE THROUGH THE SUBMITTAL PROCESS.

CANOPY SHALL BE RATED TO WITHSTAND A MIN. 100 MILE PER HOUR WIND LOAD.

CANOPY SHALL BE IN-GROUND MOUNTED.

INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS.

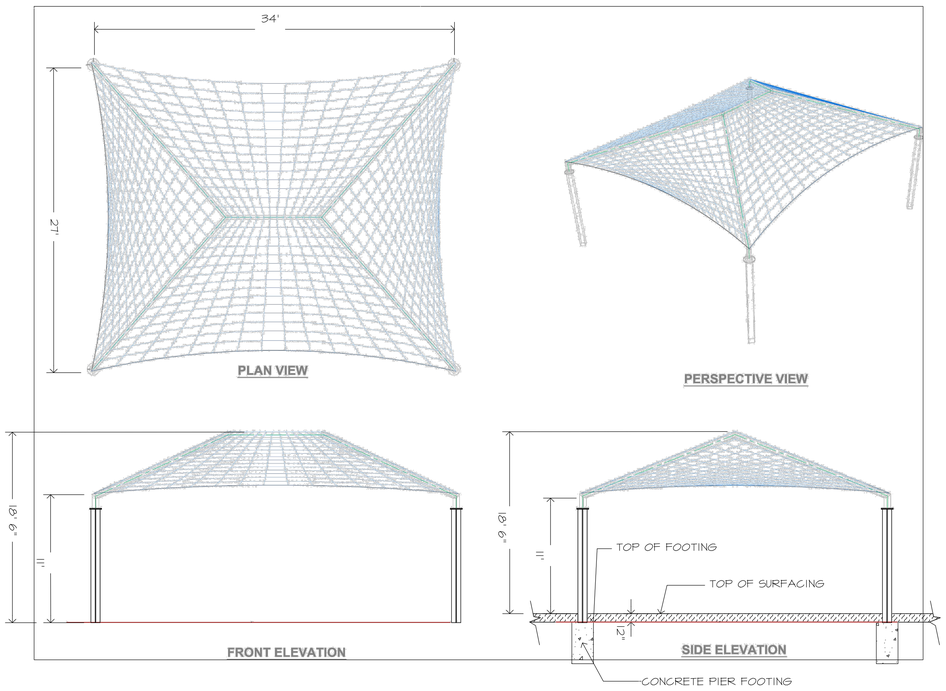
CANOPY FRAME SHALL BE PAINTED WITH HIGH QUALITY OUTDOOR OIL BASED PAINT AND PRIMER, ON SITE. COLORS WILL BE CHOSEN DURING CONSTRUCTION THROUGH THE SUBMITTATL PROCESS. PAINT SHALL BE APPLIED IN 3 COATS.

CANOPY HEIGHT IS CALCULATED FROM TOP OF SURFACING, NOT TOP OF FOOTING

(A) FABRIC PLAYGROUND CANOPY DETAIL FOR BAIRD

Not to scale

CONTRACTOR SHALL PROVIDE DESIGN FOR CANOPY STRUCTURE AND FOOTINGS AND SHALL BE STAMPED AND SIGNED. BY TX. REGISTERED STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.



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CANOPY SHALL BE IN-GROUND MOUNTED.

INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS.

CANOPY FRAME SHALL BE PAINTED WITH HIGH QUALITY OUTDOOR OIL BASED PAINT AND PRIMER, ON SITE. COLORS WILL BE CHOSEN DURING CONSTRUCTION THROUGH THE SUBMITTATL PROCESS. PAINT SHALL BE APPLIED IN 3 COATS.

CANOPY HEIGHT IS CALCULATED FROM TOP OF SURFACING, NOT TOP OF FOOTING

(B) FABRIC PLAYGROUND CANOPY DETAIL FOR HART

Not to scale

CONTRACTOR SHALL PROVIDE DESIGN FOR CANOPY STRUCTURE AND FOOTINGS AND SHALL BE STAMPED AND SIGNED. BY TX. REGISTERED STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.

SITES
SOUTHWEST

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DEBORAH B. HRADEK
3007
STATE OF TEXAS
05·28·19

PROJECT

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DETAILS
HART & BAIRD

LC-503

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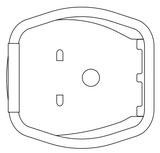
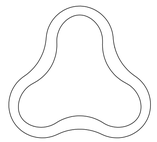
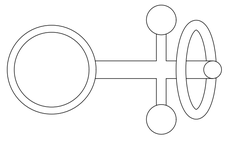


A PLAY PIECE (CHILL SPINNER)
COLORS WILL BE CHOSEN THROUGH SUBMITTAL PROCESS
NOT TO SCALE

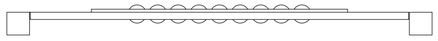
B PLAY PANEL (COLOR SPLASH PANEL)
COLORS WILL BE CHOSEN THROUGH SUBMITTAL PROCESS
NOT TO SCALE



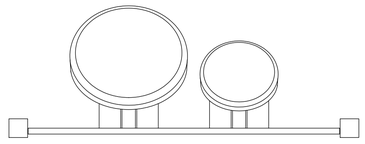
C PLAY PANEL (SADDLE SPINNER)
COLORS WILL BE CHOSEN THROUGH SUBMITTAL PROCESS
NOT TO SCALE



D PLAY PIECE (SINGLE BOBBLE SPRING RIDER)
COLORS WILL BE CHOSEN THROUGH SUBMITTAL PROCESS
NOT TO SCALE

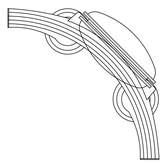


D PLAY PANEL (MARBLE PANEL)
COLORS WILL BE CHOSEN THROUGH SUBMITTAL PROCESS
NOT TO SCALE



C PLAY PANEL (BONGO PANEL)
COLORS WILL BE CHOSEN THROUGH SUBMITTAL PROCESS
NOT TO SCALE

E PLAY PANEL (RAIN SOUND WHEEL)
COLORS WILL BE CHOSEN THROUGH SUBMITTAL PROCESS
NOT TO SCALE



F PLAY PANEL (IMAGINATION TABLE)
COLORS WILL BE CHOSEN THROUGH SUBMITTAL PROCESS
NOT TO SCALE

SITES
SOUTHWEST

4110 RIO BRAVO, SUITE 217
EL PASO, TX 79902
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05-28-19

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HART & BAIRD

LC-504

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SHEET
LP-102

SHEET
LP-103

TITANIC AVE.

BAIRD APTS.

HART APTS.

SHEET
LP-101

ATLAS AVE.

A OVERVIEW PLANTING PLAN

SCALE 1:50

50 25 0 50

SITES
SOUTHWEST

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CONSULTANTS

REGISTERED LANDSCAPE ARCHITECT
DEBORAH B. HRADEK
3007
STATE OF TEXAS
05-28-19

PROJECT

CDBG HART & BAIRD IMPROVEMENTS

ADDRESS

4861 ATLAS AVE.
EL PASO, TX 79904 (HART)

4747 ATLAS AVE.
EL PASO, TX 79904 (BAIRD)

Housing Authority of the City of El Paso

FINAL FOR CONSTRUCTION

REVISIONS

MARK	DATE	DESCRIPTION

PROJECT NO:	2019048
CAD DWG FILE:	2019048 - OVERALL PLAN.DWG
DRAWN BY:	STAFF
CHK'D BY:	D.B.H.
ISSUE DATE:	05/28/2019
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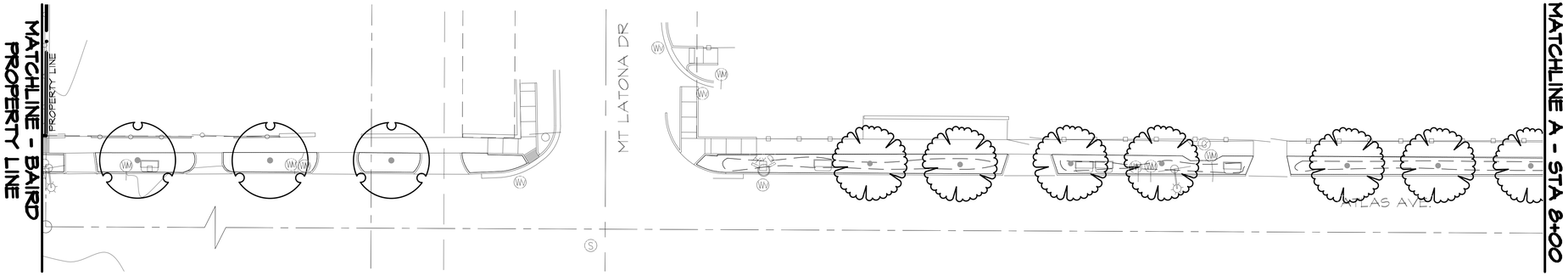
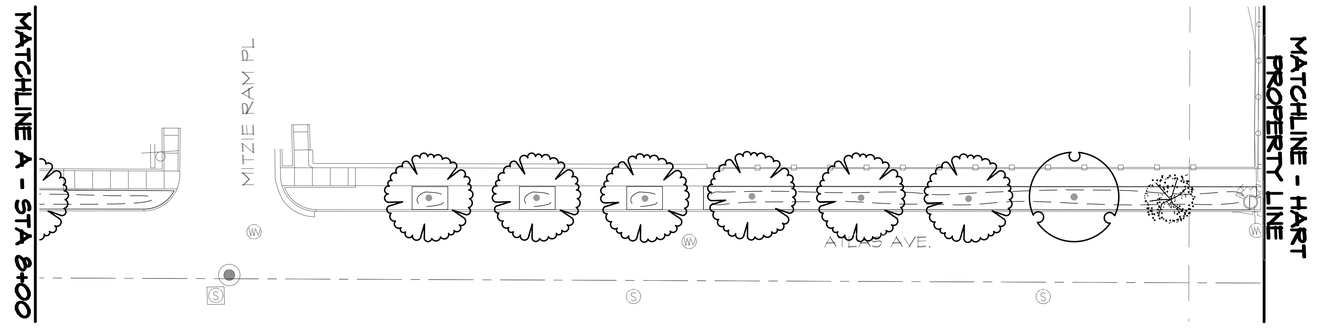
SHEET TITLE

OVERALL
PLANTING PLAN

LP-100





A PLANTING PLAN
SCALE 1:20

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TREES	BOTANICAL / COMMON NAME	HGHT & SPRED.	CAL.	COMMENTS
	PARKINSONIA X 'DESERT MUSEUM' DESERT MUSEUM PALO VERDE	30' X 30'	2"	SINGLE OR MULTI TRUNK
	PISTACIA CHINENSIS CHINESE PISTACHE	30' X 30'	2"	SINGLE TRUNK
	PROSOPIS GLANDULOSA 'THORNLESS AZT' THORNLESS HONEY MESQUITE	30' X 30'	2"	SINGLE TRUNK

SHRUBS	BOTANICAL / COMMON NAME	HGT. & SPR.	SIZE
	DALEA FRUTESCENS SIERRA NEGRA	5' X 5'	5 GAL.
	EREMOPHILA MACULATA 'VALENTINE' VALENTINE BUSH	5' X 3'	5 GAL.
	MUHLENBERG REGAL MIST MUHLY	2' X 3'	5 GAL.
	ROSMARINUS OFFICINALIS UPRIGHT ROSEMARY	3' X 4'	5 GAL.
	SALVIA GREGGII CHERRY SAGE	3' X 3'	5 GAL.
	TECOMA STANS YELLOW BELLS	5' X 5'	5 GAL.
	VIGUIERA STENOLOBA 'SKELETONLEAF GOLDENEYE'	4' X 4'	5 GAL.

SITE LEGEND

EXISTING SHRUBS TO REMAIN. PROTECT FROM DAMAGE

EXISTING TREES TO REMAIN. PROTECT FROM DAMAGE

SWALE FOR WATER HARVESTING. GRADUALLY GRADE USING 6" CONTOURS. LANDSCAPE CONTRACTOR TO FINALIZE SWALES AND SMOOTHING OF SIDES FOR APPROVAL BY LANDSCAPE ARCHITECT.

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PLANTING PLAN
ATLAS AVE.

LP-101

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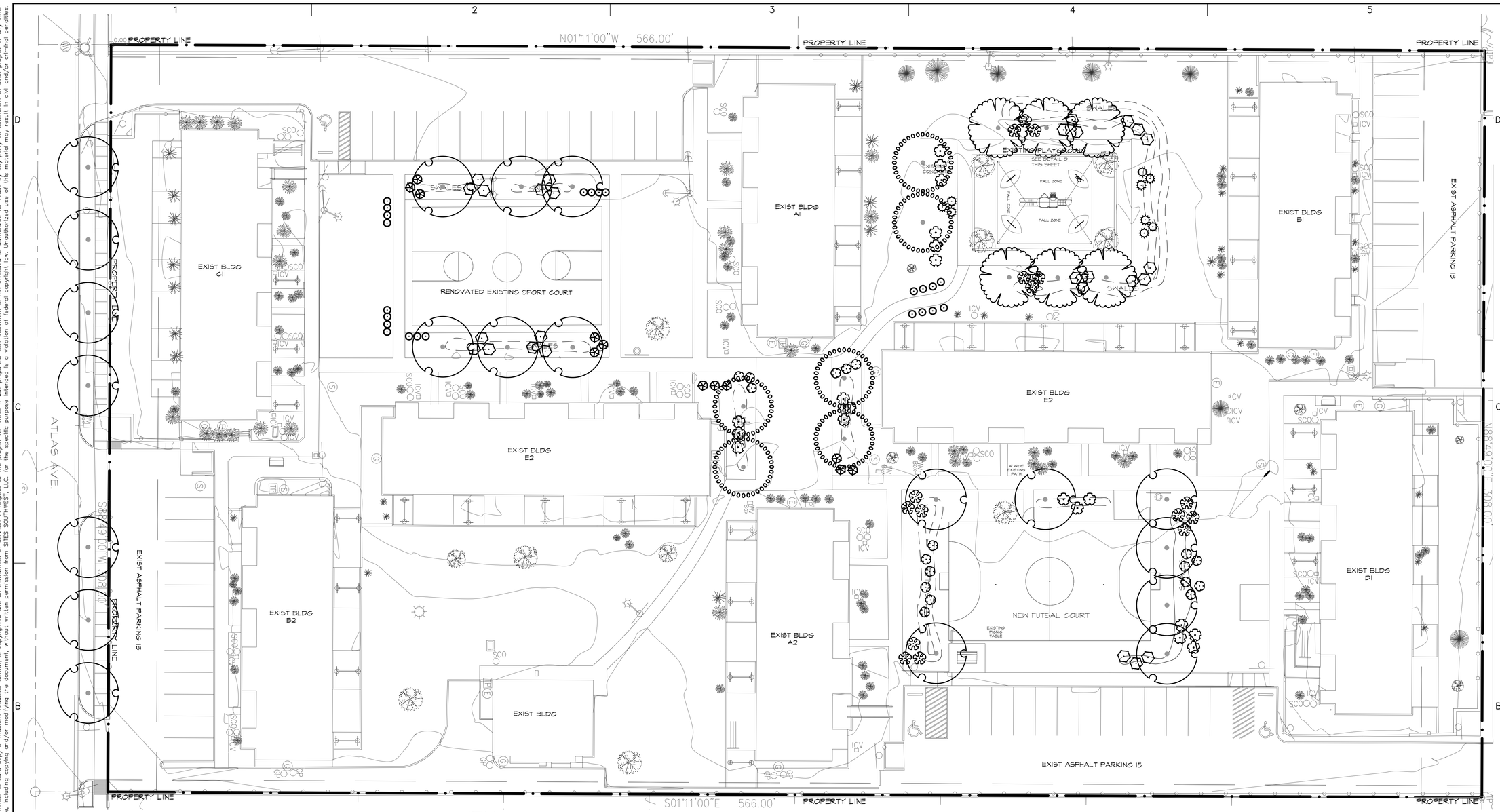

A PLANTING PLAN

SCALE 1:20

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TREES	BOTANICAL / COMMON NAME	HGHT & SPRED.	CAL.	COMMENTS	QTY
	PARKINSONIA X 'DESERT MUSEUM' DESERT MUSEUM PALO VERDE	30' X 30'	2"	SINGLE OR MULTI TRUNK	6
	PISTACIA CHINENSIS CHINESE PISTACHE	30' X 30'	2"	SINGLE TRUNK	31
	PROSOPIS GLANDULOSA 'THORNLESS AZT' THORNLESS HONEY MESQUITE	30' X 30'	2"	SINGLE TRUNK	19

SHRUBS	BOTANICAL / COMMON NAME	HGT. & SPR.	SIZE	QTY
	DALEA FRUTESCENS SIERRA NEGRA	5' X 5'	5 GAL.	19
	EREMOPHILA MACULATA 'VALENTINE' VALENTINE BUSH	5' X 3'	5 GAL.	9
	MUHLENBERG REGAL MIST MUHLY	2' X 3'	5 GAL.	23
	ROSMARINUS OFFICINALIS UPRIGHT ROSEMARY	3' X 4'	5 GAL.	27
	SALVIA GREGGII CHERRY SAGE	3' X 3'	5 GAL.	18
	TECOMA STANS YELLOW BELLS	5' X 5'	5 GAL.	16
	VIGUIERA STENOLOBA 'SKELETONLEAF GOLDENEYE'	4' X 4'	5 GAL.	12

SITE LEGEND

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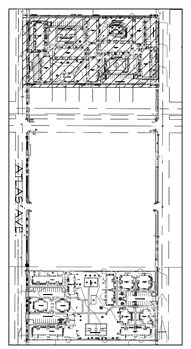

B KEY MAP

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PLANTING PLAN
BAIRD

LP-102

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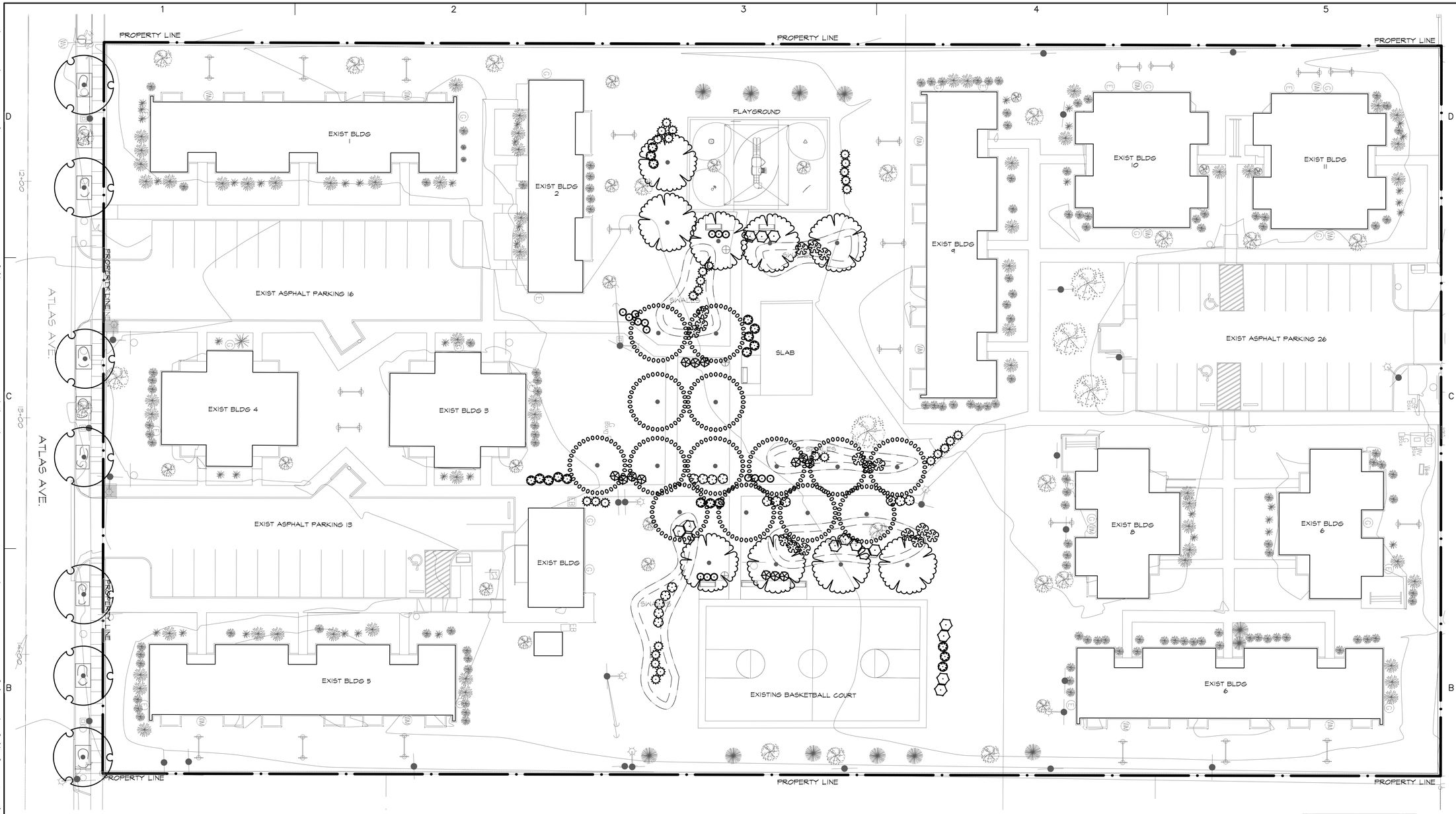


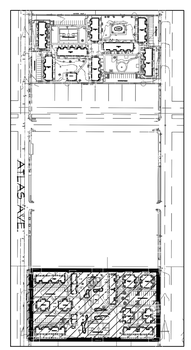
A PLANTING PLAN

SCALE 1:20

TREES	BOTANICAL NAME / COMMON NAME	HGHT & SPRED.	CAL.	COMMENTS	QTY
	PARKINSONIA X 'DESERT MUSEUM' / DESERT MUSEUM PALO VERDE	30' X 30'	2"	MULTI TRUNK MIN. 5' HEIGHT	14
	PISTACIA CHINENSIS / CHINESE PISTACHE	30' X 30'	2"	SINGLE TRUNK	7
	PROSOPIS GLANDULOSA 'THORNLESS AZT' / THORNLESS HONEY MESQUITE	30' X 30'	2"	SINGLE TRUNK	9

SHRUBS	BOTANICAL NAME / COMMON NAME	HGT. & SPR.	SIZE	QTY
	MUHLENBERGIA/ REGAL MIST MUHLY	2' X 2'	5 GAL.	16
	DALEA FRUTESCENS / SIERRA NEGRA	3' X 5'	5 GAL.	19
	EREMOPHILA MACULATA 'VALENTINE' / VALENTINE BUSH	5' X 3'	5 GAL.	30
	VIGUIERA STENOLOBA/ SKELETON GOLDENEYE	4' X 5'	5 GAL.	13
	ROSMARINUS OFFICINALIS / UPRIGHT ROSEMARY	3' X 4'	5 GAL.	15
	SALVIA GREGGII / CHERRY SAGE	3' X 3'	5 GAL.	15
	TECOMA STANS / YELLOW BELLS	5' X 5'	5 GAL.	16

0 5 10 20



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PLANTING PLAN HART

LP-103

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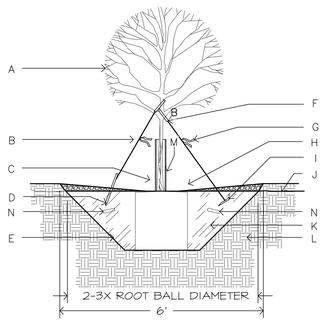
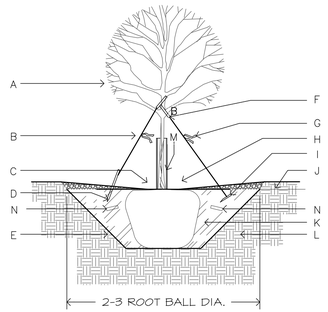


A. TREE
B. GALVANIZED GUY WIRE OR CABLE TWIST WIRE TO TIGHTEN
C. FEATHER MULCH TO FULL DEPTH BETWEEN MULCH AND TREE
D. 750 MM (30") LONG WOODEN STAKE
E. 1:1 SLOPE ON SIDES OF PLANTING HOLE
F. 13MM (0.5") SOFT, PLIABLE PLASTIC HOSE
G. PLASTIC FLAGGING ON EACH WIRE
H. 3" DEPTH, 18" RADIUS OF MULCH
I. OPT. METAL DRIVE ANCHORS, INSTALLED PER MANUFACTURERS DIRECTIONS
J. 36" DIAMETER BARK MULCH, TOP OF FINISH MATERIAL
K. BACKFILL WITH EXISTING NATIVE SOIL
L. UNDISTURBED SOIL
M. TREEGUARD, ARBORGUARD WWW.BENMEDONS.COM, OR APPROVED EQUAL.
N. SLOW RELEASE BALANCED FERTILIZER TABLETS (15 GAL.=4 TABLETS, LARGE TREES=8 TABLETS)

1. KEEP SOIL BELOW ROOT BALL UNDISTURBED TO PREVENT TREE FROM SETTLING.
2. REMOVE ANY EXCESS SOIL FROM TOP OF ROOTBALL TO EXPOSE ROOT FLARE (WHERE TOP MOST ROOT EMERGES FROM THE TRUNK). PLANT WITH ROOT FLARE LEVEL AT FINISH GRADE (OR 1"-2" HIGHER IN SLOWLY DRAINING SOIL).
3. REMOVE CONTAINER AND CUT ANY ROOTS THAT ARE CIRCLING THE CONTAINER.
4. TAMP SOIL FIRMLY AROUND BASE OF ROOTBALL WITH FOOT PRESSURE.
5. AT TIME OF PLANTING, ONLY PRUNE CO-DOMINANT LEADERS (DOES NOT APPLY TO NATIVE OR MULTI-TRUNK SPECIMENS), CROSSOVER LIMBS, AND DEAD OR BROKEN BRANCHES.
6. GUY TREES ONLY IF TREE CANNOT STAND ALONE AND WITH APPROVAL OF THE LANDSCAPE ARCHITECT.
7. DO NOT ALLOW MULCH IN CONTACT WITH TREE TRUNK, FEATHER AWAY FROM TRUNK.
8. WHEN DONE, THOUROUGHLY WATER TO ELIMINATE AIR POCKETS.
9. PROVIDE MIN. 3 GUY/ TREE (TYP.) IN A TRIANGULAR PATTERN, GUYED INTO UNDISTURBED SOIL.
10. GUY WIRES SHOULD NOT BE TIGHTENED TO TIGHTLY. THEY SHOULD ALLOW FOR SOME MOVEMENT IN TREE TRUNK

A TREE PLANTING, CONTAINER

Not to scale



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M. TREEGUARD, ARBORGUARD WWW.BENMEDONS.COM, OR APPROVED EQUAL.
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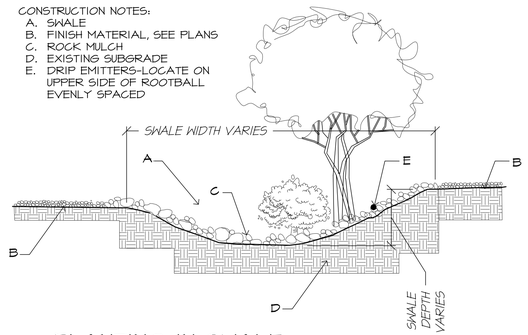
1. KEEP SOIL BELOW ROOT BALL UNDISTURBED TO PREVENT TREE FROM SETTLING.
2. REMOVE ANY EXCESS SOIL FROM TOP OF ROOTBALL TO EXPOSE ROOT FLARE (WHERE TOP MOST ROOT EMERGES FROM THE TRUNK). PLANT WITH ROOT FLARE LEVEL AT FINISH GRADE (OR 1"-2" HIGHER IN SLOWLY DRAINING SOIL).
3. TAMP SOIL FIRMLY AROUND BASE OF ROOTBALL WITH FOOT PRESSURE.
4. PRIOR TO BACKFILLING, REMOVE BURLAP, ROPE, TWINE, AND WIRE FROM TOP HALF OF ROOTBALL AND FROM PLANTING HOLE, CUT ANY ROOTS THAT ARE CIRCLING THE CONTAINER. FOR TREE USING WIRE BASKET, REMOVING IS NOT NECESSARY, HOWEVER, TO PREVENT FUTURE INTERFERENCE WITH ROOTS, CUT OFF AT LEAST THE TOP HALF OF THE BASKET BEFORE BACKFILLING
5. AT TIME OF PLANTING, ONLY PRUNE CO-DOMINANT LEADERS (DOES NOT APPLY TO NATIVE OR MULTI-TRUNK SPECIMENS), CROSSOVER LIMBS, AND DEAD OR BROKEN BRANCHES.
6. GUY TREES ONLY IF TREE CANNOT STAND ALONE AND WITH APPROVAL OF THE LANDSCAPE ARCHITECT.
7. DO NOT ALLOW MULCH IN CONTACT WITH TREE TRUNK, FEATHER AWAY FROM TRUNK.
8. WHEN DONE, THOUROUGHLY WATER TO ELIMINATE AIR POCKETS.
9. PROVIDE MIN. 3 GUY/ TREE (TYP.) IN A TRIANGULAR PATTERN, GUYED INTO UNDISTURBED SOIL.
10. GUY WIRES SHOULD NOT BE TIGHTENED TO TIGHTLY. THEY SHOULD ALLOW FOR SOME MOVEMENT IN TREE TRUNK.

B TREE PLANTING, BALLED & BURLAP

Not to scale

CONSTRUCTION NOTES:
A. SWALE
B. FINISH MATERIAL, SEE PLANS
C. ROCK MULCH
D. EXISTING SUBGRADE
E. DRIP EMITTERS-LOCATE ON UPPER SIDE OF ROOTBALL EVENLY SPACED



C PLANTING IN SWALE

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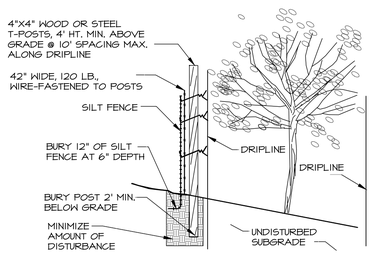

NOTES:

1. USE SILT FENCE FOR PROTECTION OF ALL EXISTING TREES, PALMS, AND SHRUBS INDICATED TO REMAIN WITHIN THE LIMITS OF WORK. INSTALL A MINIMUM OF 6' RADIUS FROM TRUNK OR BASE OF PLANT.

2. SILT FENCE SHALL BE REMOVED AT COMMENCEMENT OF FINAL GRADING AFTER FINAL ACCEPTANCE OF ALL ROUGH GRADING AND/OR IRRIGATION WORK.

TREE PROTECTION NOTES:

1. THE CRITICAL ROOT ZONE OF A TREE IS THE ZONE IN WHICH THE MAJORITY OF A TREE'S ROOTS LAY. NINETY-FIVE PERCENT OF THE ROOTS OF MOST TREES WILL BE FOUND IN THE UPPER 30-36" OF SOIL. OF THOSE, THE MAJORITY OF THE ROOTS THAT SUPPLY THE NUTRIENTS AND WATER TO THE TREE ARE FOUND IN THE UPPERMOST LAYER, JUST BELOW THE SOIL SURFACE. THE TOTAL AMOUNT OF A TREE'S ROOTS ARE GENERALLY PROPORTIONAL TO THE VOLUME OF THE TREES CANOPY. THEREFORE, IF THE ROOTS ONLY PENETRATE A THIN LAYER OF SOIL, THEN THE ROOTS MUST SPREAD FAR FROM THE TREE, BEYOND THE LIMITS OF THE CANOPY. ROOTS ARE VITAL TO THE FUNCTIONING OF ANY TREE. THEY PROVIDE STRUCTURAL SUPPORT AS WELL AS THE MAJOR MECHANISM FOR NUTRIENT AND WATER UPTAKE FOR THE USE BY THE REST OF THE TREE. DESTROYING A SECTION OF A TREE'S ROOTS WILL ULTIMATELY RESULT IN A PROPORTIONAL LOSS OF THE TREE'S CANOPY. THE CRITICAL ROOT ZONE OF A TREE TO BE SAVED SHALL BE THE MINIMUM AREA PROTECTED WITH TREE PROTECTION FENCING.
2. TREE PROTECTION SHALL BE A MEDIUM DUTY SILT FENCE (OR APPROVED EQUAL) MOUNTED ON VERTICAL POSTS DRIVEN 2'-0" INTO THE GROUND AND AT CORNERS AND 10' O.C. MIN. THE PERIMETER OF THIS ZONE SHALL BE PRESERVED AND PROTECTED.
3. A NO COMPACTION ZONE SHALL BE CLEARED AND ESTABLISHED AND TREE PROTECTION FENCING SHALL BE ERECTED AT THE CRITICAL ROOT ZONE OR BEYOND PRIOR TO START OF ANY CLEARING, GRADING OR OTHER CONSTRUCTION ACTIVITY WITH HEAVY EQUIPMENT. TREE PROTECTION SHALL NOT BE REMOVED UNTIL COMPLETION OF ALL CONSTRUCTION ACTIVITY.
4. ALL TREES TO REMAIN SHALL BE MARKED ON ALL FOUR SIDES BY PLACING AND MAINTAINING FLORESCENT COLOR SURVEYORS TAPE TO LOWEST BRANCHES ON ALL FOUR SIDES AT A MINIMUM.
5. FOR QUESTIONS RELATED TO TREE PROTECTION OR FOR FIELD INSPECTION OF TREE PROTECTION, CONTACT PROJECT LANDSCAPE ARCHITECT.

D PROTECTION ZONE NOTES & DETAIL

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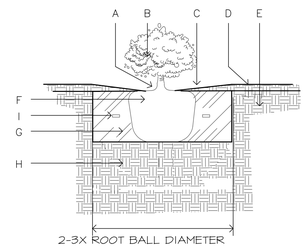

GENERAL NOTES:
1. TREES PLANTED IN ROCKY, CALICHE AND CLAY SOILS TO HAVE PIT EXCAVATED 5 TIMES THE SIZE OF THE ROOTBALL.
2. TREES PLANTED IN ROCKY, CALICHE AND CLAY SOILS TO HAVE ⅛ TO ½ TOP SOIL BLENDED WITH CLAY SOIL AND USED AS BACKFILL.
3. TREES PLANTED IN ROCKY SOIL ARE TO HAVE ALL ROCKY MATERIAL LARGER THAN 1" IN SIZE REMOVED.

A. FEATHER BACK MULCH FROM BASE OF SHRUB.
B. SHRUB OR VINE, AS PER PLAN.
C. MULCH AS PER THE PLANS.
D. FINISH GRADE.
E. SUBGRADE.
F. ROOT BALL (SET CROWN FLUSH WITH FINISHED GRADE.
G. BACKFILL WITH NATIVE SOIL.
H. UNDISTURBED NATIVE SOIL.
I. 7 GRAM SLOW RELEASE BALANCED PLANT FERTILIZER TABLETS (1 GAL= 2, 5 GAL=3, 10-15 GAL= 4)

E SHRUB PLANTING

Not to scale

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DETALS
HART & BAIRD

LP-501

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SHEET
LI-102

SHEET
LI-103

SHEET
LI-101

TITANIC AVE.

BAIRD APTS.

HART APTS.

ATLAS AVE.

A OVERVIEW IRRIGATION PLAN

SCALE 1:50

50 25 0 50

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OVERALL
IRRIGATION PLAN

LI-100

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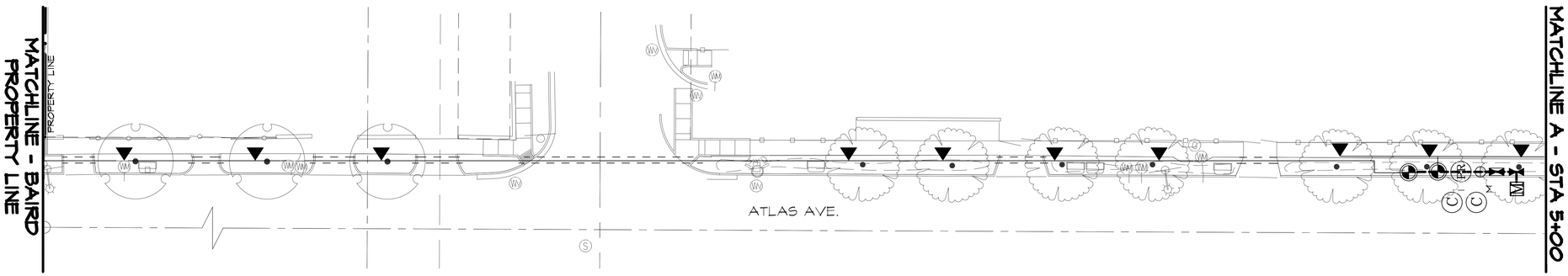

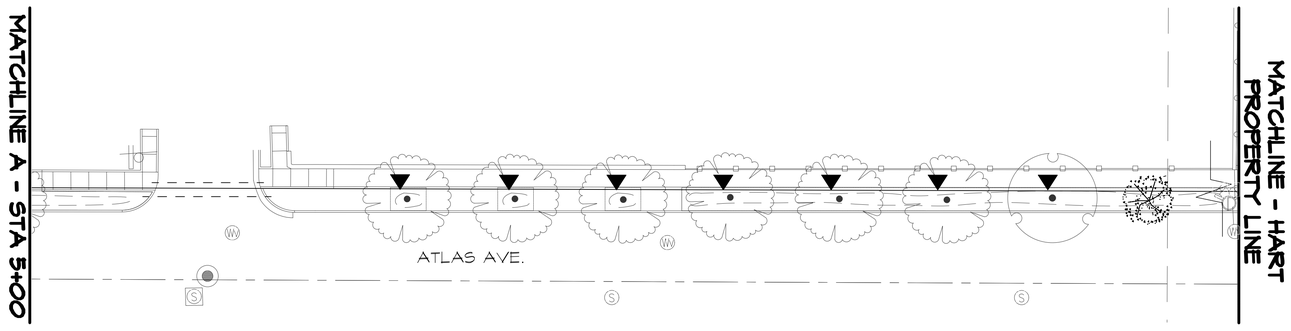

A IRRIGATION PLAN
SCALE 1:20

0 5 10 20

IRRIGATION LEGEND (NEW COMPONENTS)

1. CONTRACTOR TO PROVIDE & INSTALL ALL COMPONENTS AND COMPONENTS SHALL BE AS SPECIFIED OR APPROVED EQUAL, APPROVAL SHALL BE VIA SUBMITTAL; APPROVED SUBMITTALS REQUIRED PRIOR TO INSTALLATION
2. ALL COMPONENTS SHALL BE MADE IN USA

M — PROVIDE NEW 1" WATER METER. CONTRACTOR TO COORDINATE WITH EL PASO WATER TO LOCATE AND INSTALL METER. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH METER INSTALLATION, INCLUDING ALL WATER CONSUMPTION UNTIL PROJECT IS COMPLETE AND HAS BEEN ACCEPTED BY OWNER.

C — PROVIDE NEW RAINBIRD ESP-4ME SS SERIES CONTROLLER AT EACH PROPERTY. CONTRACTOR TO INSTALL A RAINBIRD RAINCHECK RAIN SENSOR SWITCH AS PER MANUFACTURER'S INSTRUCTIONS, CONTRACTOR TO PROVIDE ELECTRICAL POWER TO CONTROLLER, SEE ELECTRICAL ENGINEER'S PLANS. CONTRACTOR TO WIRE NEW VALVES TO NEW CONTROLLERS. WALL MOUNT AND FIELD VERIFY EXACT LOCATION WITH OWNER'S REPRESENTATIVE. SEE DETAIL A/LI-501.

C/M — PROVIDE NEW TBOS II BATTERY OPERATED CONTROLLER, 1, 2, 4 or 6 STATION (AS NEEDED) WITH TBOS FIELD TRANSMITTER. CONTRACTOR TO PROVIDE BATTERIES FOR CONTROLLER. USE MIN. NO. 14 AWG FOR ALL WIRING. "M". CONTROLLER SHALL BE CONNECTED TO THE MASTER VALVE AT THE METER AND SET TO START AT THE ON-SET OF THE FIRST STATION AND RUN UNTIL AFTER THE LAST STATION IS COMPLETE. INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS, SEE DETAIL B/LI-501.

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IRRIGATION LEGEND (EXISTING COMPONENTS)

M — EXISTING WATER METER, LOCATION APPROXIMATE FOR REFERENCE ONLY

B — EXISTING 1.5" BACKFLOW PREVENTION DEVICE IN ENCLOSURE.

C — EXISTING IRRIGATION CONTROLLER

EXISTING QUICK COUPLER IN PURPLE VALVE BOX

EXISTING 2" MAINLINE - SCHEDULE 40 PVC

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PROTECT ALL EXISTING IRRIGATION EMITTER VALVES, LINES, DEVICES AND COMPONENTS FROM DAMAGE.

FIELD LOCATE AND PROTECT EXISTING IRRIGATION VALVE WIRE. NO SPLICING OF VALVE WIRE WILL BE ALLOWED. DAMAGED WIRE WILL NEED TO BE REPLACED IN ITS ENTIRETY, FROM THE CONTROLLER TO THE VALVE.

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CONSULTANTS

REGISTERED LANDSCAPE ARCHITECT
DEBORAH B. HRADEK
3007
STATE OF TEXAS
05-28-19

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ADDRESS

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IRRIGATION PLAN
ATLAS AVE.

LI-101

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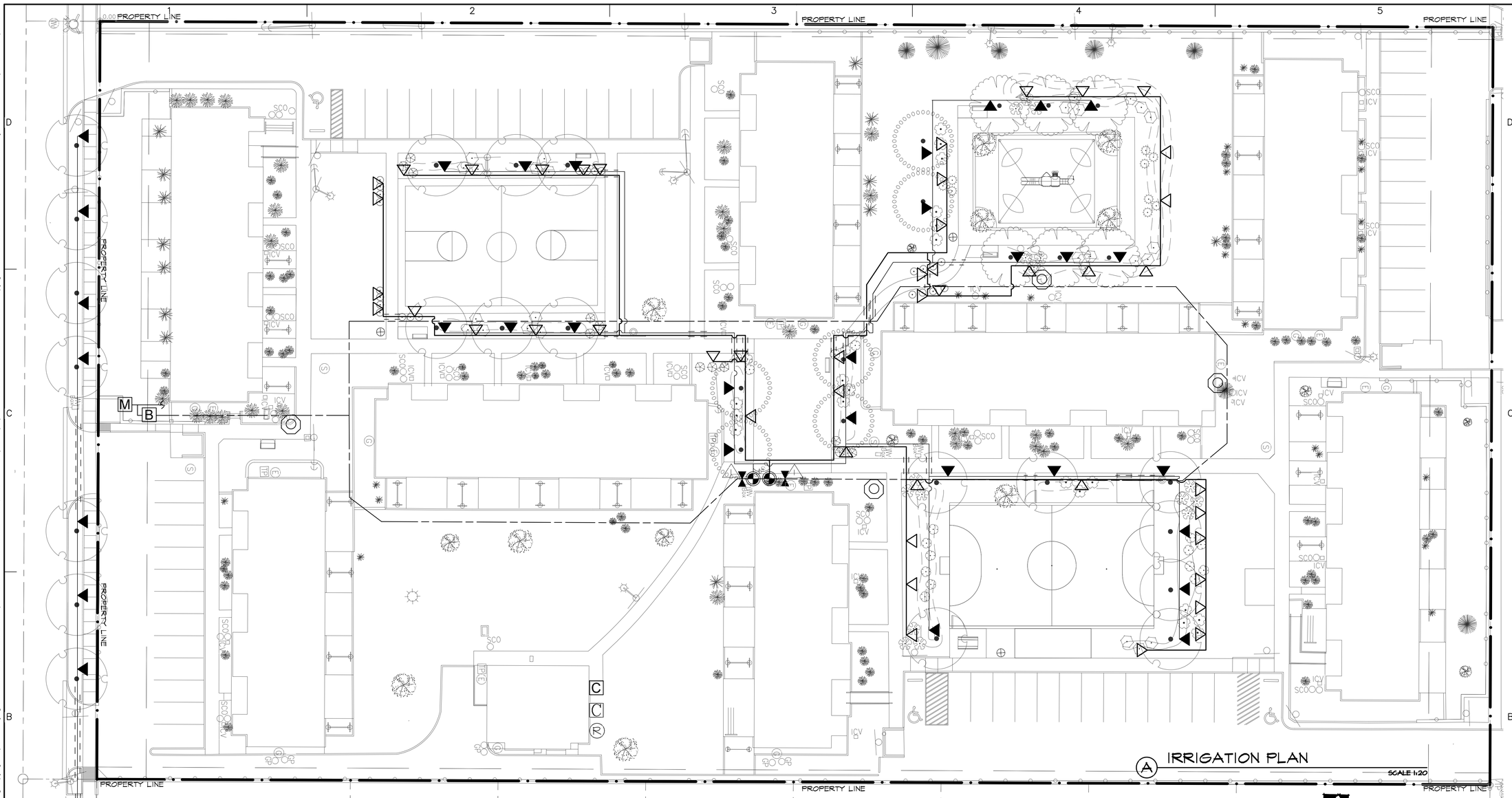

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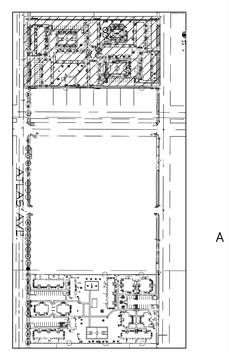

B KEY MAP

NOT TO SCALE

SITES
SOUTHWEST

4110 RIO BRAVO, SUITE 217
EL PASO, TX 79902
PHONE:915-351-8800

E-MAIL:mail@sites-sw.com
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CONSULTANTS

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IRRIGATION PLAN
BAIRD

LI-102

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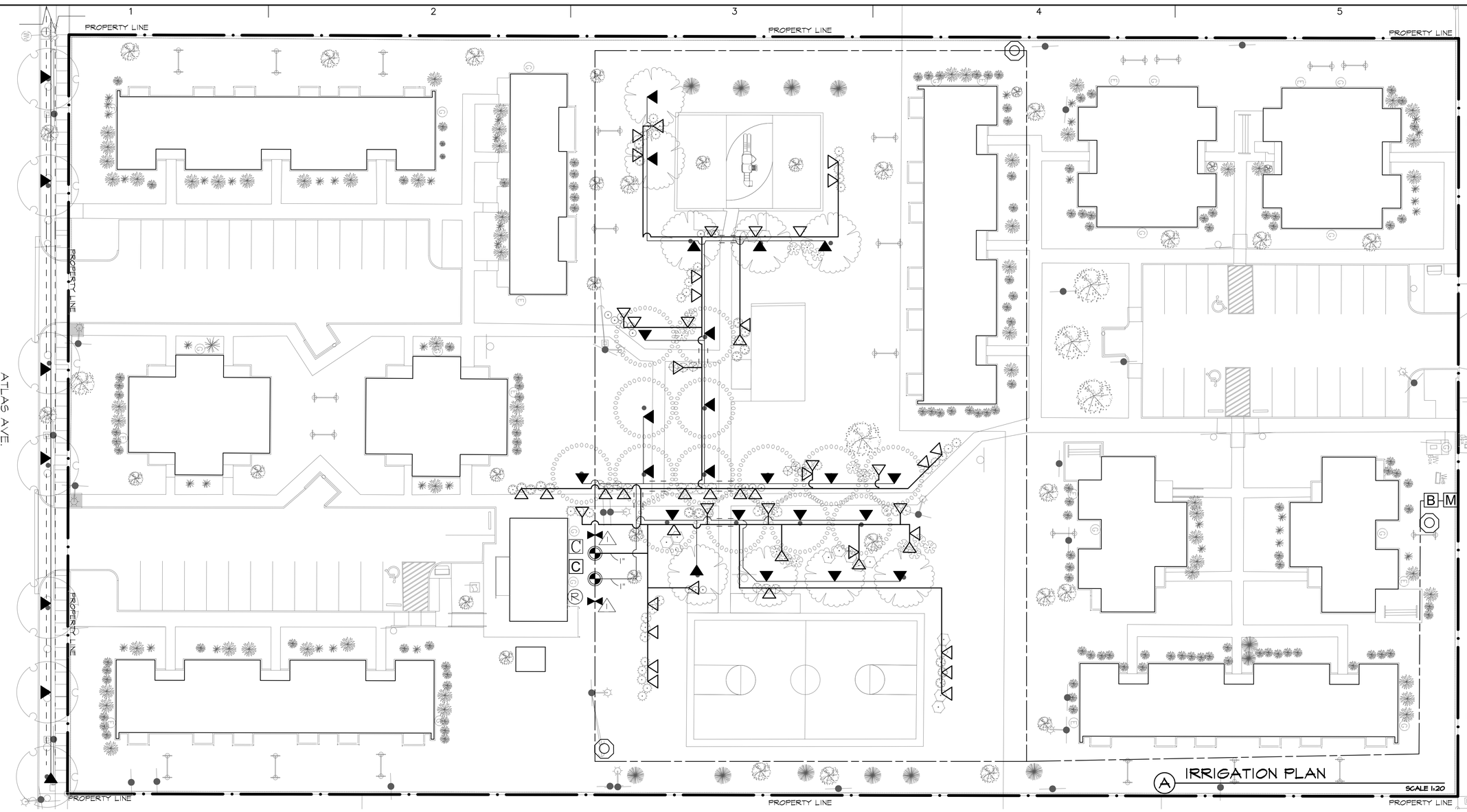

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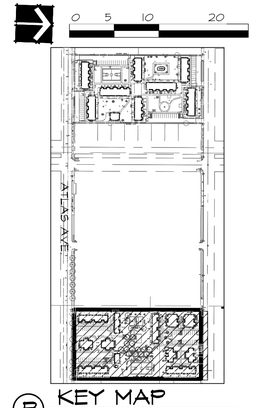

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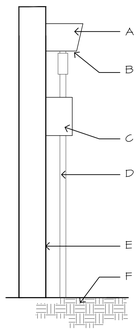
IRRIGATION PLAN HART

LI-103



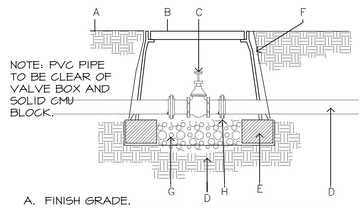
A. WALL MOUNT CONTROLLER. SEE IRRIGATION LEGEND.
B. BOTTOM OF BOX TO BE 5' MIN. ABOVE FINISH GRADE
C. ELECTRICAL SUPPLY WIRE IN PVC CONDUIT. CONNECT TO POWER OUTLET PROVIDED WITHIN THE BUILDING. COVER AND SEAL ALL OPENINGS MADE TO BUILDING WALL.
D. COMMON AND CONTROL WIRES IN PVC CONDUIT SIZE AS PER MANUFACTURER'S RECOMMENDATIONS
E. BUILDING WALL.
F. FINISH SURFACE.

CONTRACTOR SHALL GROUND CABINET WITH #10 GAUGE OR HEAVIER STRANDED COPPER WIRE TO GROUNDING ROD AS PER MANUFACTURER'S RECOMMENDATIONS.

NOTE:
EXACT LOCATION OF CONTROLLER AND POWER OUTLET TO BE DETERMINED ON-SITE WITH OWNER'S REPRESENTATIVE.

(A) WALL MOUNTED CONTROLLER

Not to scale

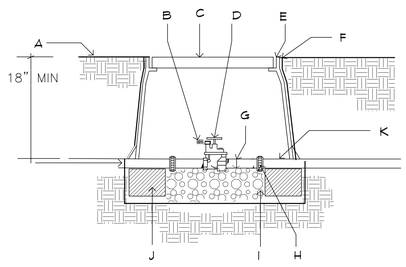


NOTE: PVC PIPE TO BE CLEAR OF VALVE BOX AND SOLID CMU BLOCK.

A. FINISH GRADE.
B. CARSON PRODUCTS INC, 1419-18(ABS) OR HEAVY DUTY COMMERCIAL GRADE EQUIVALENT VALVE BOX WITH BOLT DOWN FLAT LID COVER TO MATCH COLOR OF FINISH MATERIAL AND 8" EXTENSIONS AS NECESSARY.
C. BRASS ISOLATION VALVE- SEE IRRIGATION LEGEND.
D. IRRIGATION MAINLINE.
E. 8"X 8"X16" SOLID CMU SOLID BLOCK @ EACH CORNER.
F. PROVIDE DEWITT PRO 5 WEED CLOTH ALONG SIDES AND BASE OF VALVE BOX INSTALLATION. TAPE TO ALL INLET AND OUTLET PIPE AND VALVE BOX WITH HEAVY DUTY PLASTIC 3M TAPE, NO DUCT TAPE.
G. 4" DEPTH, 3/8" WASHED PEA GRAVEL.
H. BELOW 3" PIPE SIZE AND UNION (3" AND ABOVE).

(B) ISOLATION (BALL) VALVE

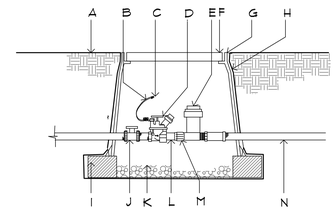
Not to scale



A. FINISH GRADE. (TOP OF FINISH MATERIAL)
B. WIRE EXPANSION COIL. EXTEND WIRE 12" ABOVE VALVE BOX FOR SERVICE.
C. CARSON BOLT DOWN (ABS) BOX COVER, COLOR TO MATCH MULCH.
D. ELECTRIC MASTER VALVE (SEE IRRIGATION LEGEND).
E. CARSON PRODUCTS INC. 1419-18 (ABS) VALVE BOX WITH 8" EXTENSIONS AS NECESSARY, COLOR TO MATCH MULCH.
F. DEWITT PRO 5 WEED CLOTH ALONG SIDES AND BASE OF VALVE BOX INSTALLATION. TAPE TO ALL INLET AND OUTLET PIPE.
G. SCHEDULE 80 PVC NIPPLE.
H. SCH 80 PVC UNION
I. 8" DEPTH, 3/8" DIAMETER PEA GRAVEL.
J. 8" X 8" X 16" SOLID CMU BLOCK.
K. SERVICE LINE.

(C) IRRIGATION MASTER VALVE

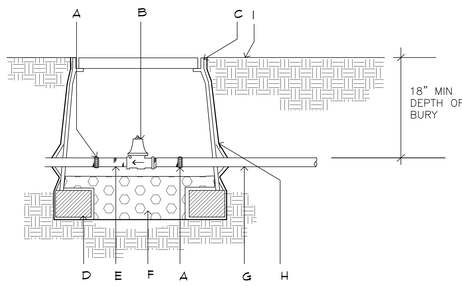
Not to scale



A. FINISH GRADE. (TOP OF FINISH MATERIAL)
B. 24" WIRE LOOP.
C. DRY SPLICE CONNECTOR OR EQUAL.
D. AUTOMATIC VALVE ZONE KIT. SEE IRRIGATION LEGEND.
E. BASKET FILTER STRAINER INCLUDED IN CONTROL ZONE KIT SHALL BE INSTALLED TO PROVIDE ACCESS FOR MAINTENANCE AND REPLACEMENT. SEE IRRIGATION LEGEND.
F. LOCKING VALVE BOX COVER, COLOR TO MATCH MULCH.
G. CARSON PRODUCTS INC 1419-18 (ABS) VALVE BOX WITH EXTENSIONS AS NECESSARY, COLOR TO MATCH MULCH.
H. PROVIDE DEWITT PRO 5 WEED CLOTH ALONG SIDES AND BASE OF VALVE BOX, TAPE TO ALL INLET & OUTLET PIPE.
I. 8" X 8" X 16" CMU SOLID CONCRETE BLOCK.
J. BALL VALVE. SEE IRRIGATION LEGEND.
K. 4" LAYER OF 3/8" PEA GRAVEL.
L. SCH 80 NIPPLE
M. INLINE PRESSURE REGULATOR INCLUDED IN CONTROL ZONE KIT, SEE IRRIGATION LEGEND.
N. LATERAL LINE.

(D) DRIP VALVE/ FILTER ASSEMBLY

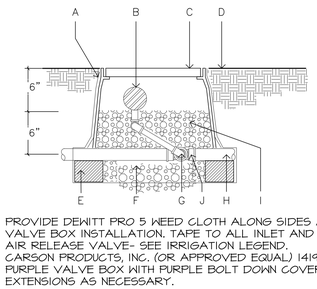
Not to scale



A. SCH 80 PVC UNION.
B. PRESSURE REDUCING VALVE.
C. CARSON PRODUCTS INC. 1419-18 BODY & COVER FOR (ABS) VALVE BOX W/ BOLT DOWN COVER (ABS) AND EXTENSION AS NECESSARY, COLOR TO MATCH MULCH.
D. 8" X 8" X 16" SOLID CMU BLOCK.
E. SCH. 80 PVC NIPPLE.
F. 3/8" DIAMETER PEA GRAVEL.
G. MAINLINE.
H. PROVIDE DEWITT PRO 5 WEED CLOTH ALONG SIDES AND BASE OF VALVE BOX INSTALLATION. TAPE TO ALL INLET AND OUTLET PIPE.
I. TOP OF MULCH.

(E) MAINLINE PRESSURE REDUCING VALVE

Not to scale

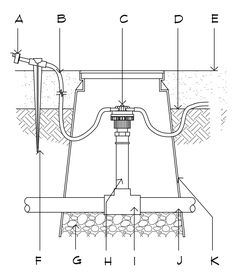


A. PROVIDE DEWITT PRO 5 WEED CLOTH ALONG SIDES AND BASE OF VALVE BOX INSTALLATION. TAPE TO ALL INLET AND OUTLET PIPE.
B. AIR RELEASE VALVE- SEE IRRIGATION LEGEND.
C. CARSON PRODUCTS, INC. (OR APPROVED EQUAL) 1419-18(ABS) PURPLE VALVE BOX WITH PURPLE BOLT DOWN COVER. ADD EXTENSIONS AS NECESSARY.
D. FINISH GRADE.
E. 8" X 8" X 16" SOLID CMU BLOCK AT EACH CORNER.
F. 1 CUBIC FOOT 3/8" PEA GRAVEL.
G. LASCO-PREASSEMBLED SWING JOINT.
H. IRRIGATION MAINLINE / LATERAL MAINLINE.
I. 6" DEPTH OF 3/8" PEA GRAVEL.
J. PVC TEE FITTING.

NOTE: PVC PIPE TO BE CLEAR OF VALVE BOX AND SOLID CMU BLOCK. PEA GRAVEL (3/4") SHALL BE INSTALLED FLUSH WITH BOTTOM OF PIPE AND VALVE.
AIR RELEASE VALVES SHALL BE INSTALLED AT ALL HIGH POINTS IN THE MAINLINE AND DRIP LINE AND AS SHOWN ON THE PLANS.

(F) AIR RELEASE VALVE

Not to scale

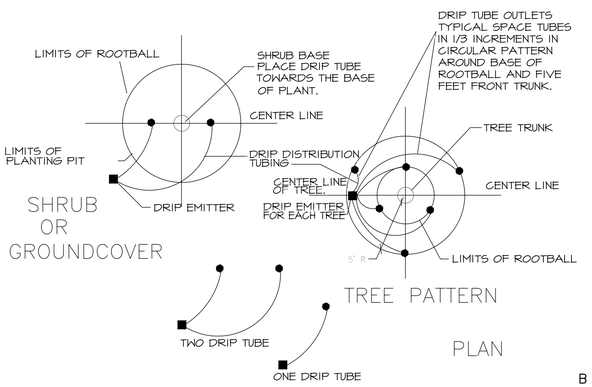


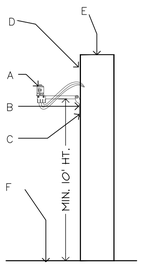
A. SINGLE-OUTLET EMITTER: SEE IRRIGATION LEGEND (BARB ONLY).
B. 1/4-INCH TUBING: POLYETHYLENE DISTRIBUTION TUBING.
C. 6-OUTLET DISTRIBUTION MANIFOLD: RAIN BIRD EMT-6XERI OR APPROVED EQUAL.
D. FINISH GRADE.
E. TOP OF MULCH.
F. 1/4-INCH TUBING STAKE: RAIN BIRD TS-025
G. 3-INCH MIN. DEPTH OF 3/8" PEA GRAVEL.
H. RISER.
I. TEE OR ELL TO PVC OR POLYETHYLENE PIPE SEE PLAN.
J. PVC LATERAL PIPE, SEE PLAN, MIN. 6" DEPTH.
K. CARSON 9" ROUND SUBTERRANEAN EMITTER BOX.

CONSTRUCTION NOTES:
1. ENSURE LETTER "A" ABOVE IS ON TOP AND ON THE UP HILL SIDE OF THE PLANT'S ROOTBALL.
2. LOCATE EMITTERS AROUND TREES AS PER ADJACENT PLAN DIAGRAM.
3. LOCATE EMITTERS FOR 5 GALLON ON OPPOSITE SIDES OF ROOTBALL & ON UP HILL SIDES OF ROOTBALL.

(G) 6-OUTLET EMITTER

Not to scale



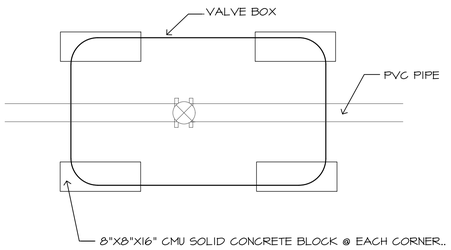


A. RAIN SENSOR.
B. DRILL TWO 3/16" HOLES IN PIPE FOR SENSOR BRACKET.
C. (2) NO. 8-32 MACHINE SCREWS WITH WASHER, LOCK WASHER AND NUT.
D. BUILDING WALL.
E. ROOF SURFACE.
F. FINISH GRADE

NOTE:
SENSOR SHALL BE INSTALLED ABOVE BUILDING ROOF LINE AND SHALL NOT BE COVERED.
VERIFY EXACT LOCATION WITH LANDSCAPE ARCHITECT.

(H) RAIN SENSOR

Not to scale

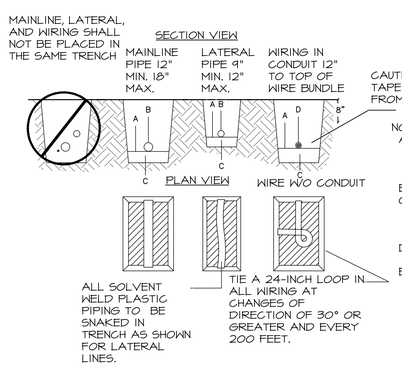


NOTE:
BLOCKS TO SIT ON WEED CLOTH ON UNDISTURBED SOIL. DISTURBED SOILS SHALL BE COMPACTED WITH TAMPER PRIOR TO SETTING WEED CLOTH & BLOCKS.
VALVE BOX AND EXTENSIONS TO SIT ON BLOCKS.
VALVE BOX AND EXTENSIONS TO HAVE A MINIMUM 2" CLEARANCE TO THE TOP OF PVC PIPE.

HOLLOW CMU BLOCK WILL NOT BE ALLOWED

(I) BLOCK PLACEMENT AT VALVE BOX

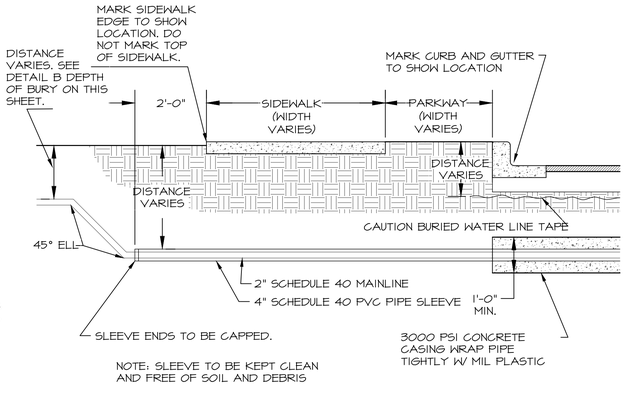
Not to scale



NOTES:
A. BOTTOM OF EXCAVATED TRENCH WHERE NONE ROCKY SOILS ARE EXPOSED (ENCOUNTERED).
B. IRRIGATION SYSTEM PIPING.
C. MINIMUM 4" DEEP BEDDING SANDY SOILS MATERIAL WHERE ROCKY SOILS ARE EXPOSED.
D. IRRIGATION SYSTEM VALVE WIRING.
E. BACKFILL SOILS MATERIAL MAY BE NATIVE SOILS IF IT IS FREE OF CALICHE OR STONES LARGER THAN 1" IN SIZE AND ORGANIC MATTER OR WASTE DEBRIS. SOILS COMPACTION SHALL BE AT 95% PROCTER DENSITY UNDER PAVED OR HARDSCAPE SURFACES.

(J) DEPTH OF BURY

Not to scale



NOTE: SLEEVE TO BE KEPT CLEAN AND FREE OF SOIL AND DEBRIS

(K) PAVEMENT CROSSING SLEEVE DETAIL

Not to scale

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CONSULTANTS

REGISTERED LANDSCAPE ARCHITECT
DEBORAH B. HRADEK
3007
STATE OF TEXAS
05-28-19

PROJECT

CDBG HART & BAIRD IMPROVEMENTS

ADDRESS
4861 ATLAS AVE.
EL PASO, TX 79904 (HART)
4747 ATLAS AVE.
EL PASO, TX 79904 (BAIRD)

Housing Authority of the City of El Paso

FINAL FOR CONSTRUCTION

REVISIONS

MARK	DATE	DESCRIPTION

PROJECT NO:	2019048
CAD DWG FILE:	2019048 – DETAILS.DWG
DRAWN BY:	STAFF
CHK'D BY:	D.B.H.
ISSUE DATE:	05/28/2019
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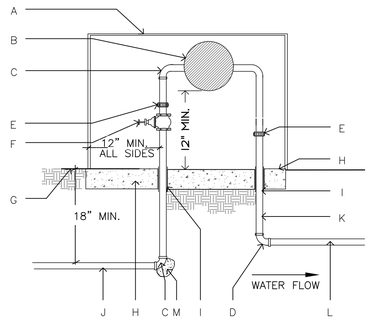
DETAILS
HART & BAIRD

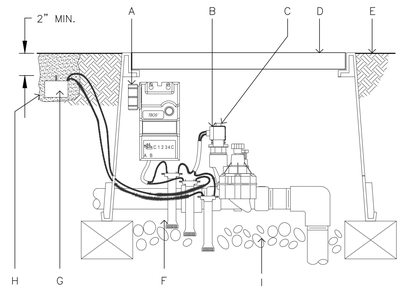
LI-501



A. HOT BOX ENCLOSURE (SEE IRRIGATION LEGEND). INSULATE (R-25 MIN.) FROM FREEZING MUST COMPLY WITH ASSE 1060, SECURE TO CONCRETE TO PREVENT THEFT & ALLOW FOR ACCESS BY OWNER.
B. REDUCED PRESSURE ASSEMBLY BACKFLOW PREVENTER (SEE IRRIGATION LEGEND).
C. TYPE K HARD DRAWN COPPER FITTINGS.
D. PVC SCHE 8 FITTINGS.
E. UNION, 4" ABOVE GRADE, MIN.
F. BRASS BALL VALVE.
G. FINISH GRADE.
H. 4000 PSI CONCRETE PAD, 4" DEPTH, SLOPED 1% TO DRAIN.
I. PIPE SHALL BE SLEEVED THROUGH CONCRETE PAD WITH SCH 40 PVC.
J. SERVICE LINE.
K. TYPE K COPPER PIPING.
L. PVC IRRIGATION MAIN LINE.
M. THRUST BLOCK. SEE DETAIL ON THIS SHEET.

A REDUCED PRESSURE BACKFLOW PREVENTER

Not to scale



A. CONTROL MODULE
B. SOLENOID
C. REMOTE CONTROL VALVE
D. VALVE BOX WITH COVER, COVER & BOX COLOR TO MATCH FINISH MATERIAL
E. FINISH GRADE
F. WATERPROOF CONNECTION: "QUICK CONNECT" DBY (1 OF 3)
G. RAIN SHUT-OFF DEVICE
H. UNIFORM GRADED MEDIUM SAND, 35 TO 60 MESH SIZE
I. 3/8" PEA GRAVEL

GENERAL NOTES:
1. INSTALL AN 8"X8"X16" SOLID CMU BLOCK AT EACH END OF THE VALVE BOX.
2. WASH ROCK SHALL BE INSTALLED FLUSH WITH BOTTOM OF PIPE AND VALVE.

B BATTERY OPERATED CONTROLLER

NOT TO SCALE

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EL PASO, TX 79902
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CONSULTANTS

REGISTERED LANDSCAPE ARCHITECT
DEBORAH B. HRADEK
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STATE OF TEXAS
05.28.19

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Housing Authority of the City of El Paso

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DETALS
HART & BAIRD

LI-502

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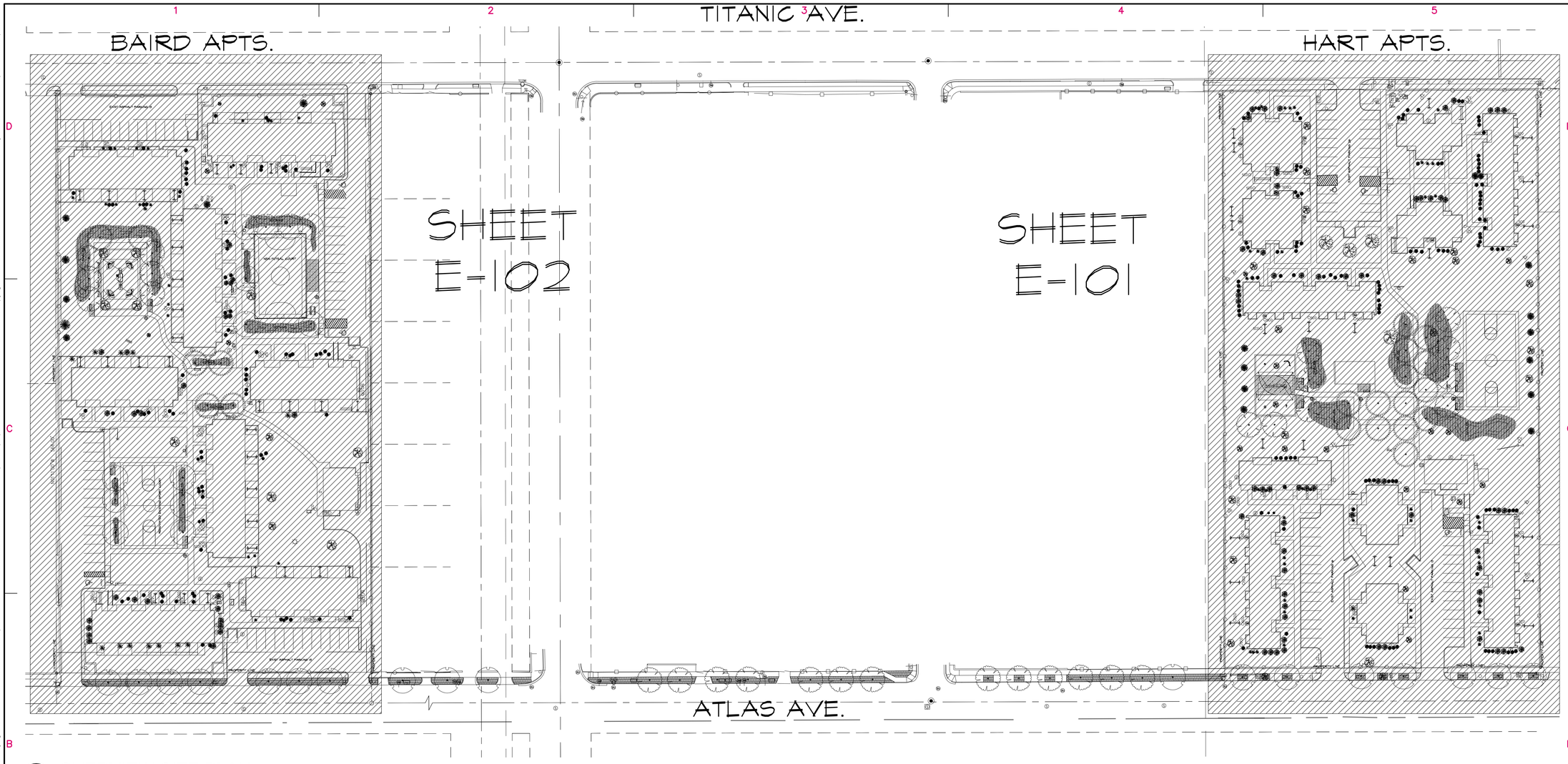

OVERVIEW SITE PLAN

NORTH

0 12.5 25' 50'
GRAPHIC SCALE

SCALE: 1"-50'-0"

SITES
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CONSULTANTS

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STATE OF TEXAS
GONZALO AGUILAR, JR.
37586
REGISTERED
PROFESSIONAL ENGINEER

PROJECT

CDBG HART & BAIRD IMPROVEMENTS

ADDRESS

4861 ATLAS AVE.
EL PASO, TX 79904 (HART)
4747 ATLAS AVE.
EL PASO, TX 79904 (BAIRD)

Housing Authority of the City of El Paso

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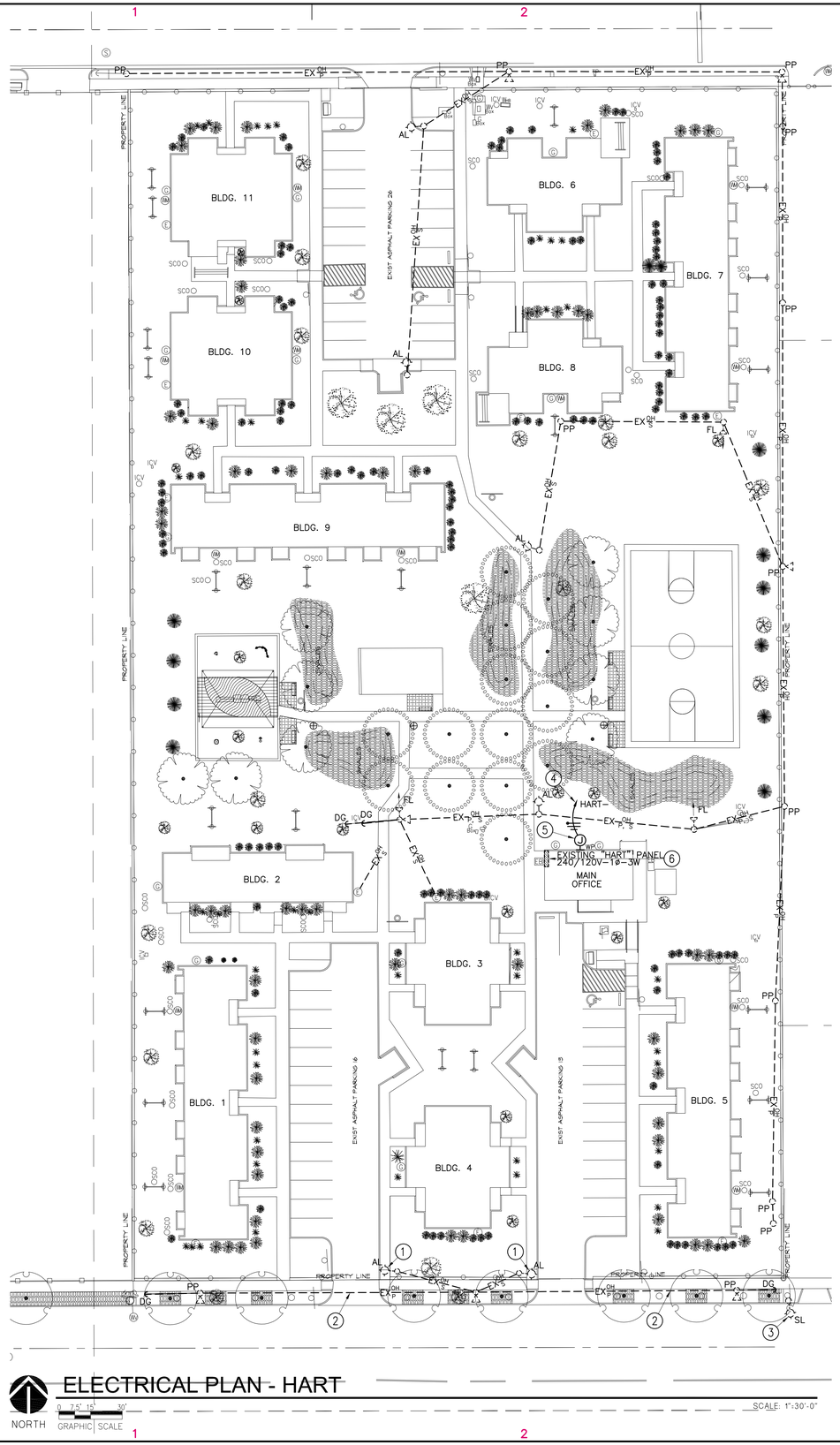
SHEET TITLE

OVERALL PLAN
HART/BAIRD

E-100

XX XX



ELECTRICAL PLAN - HART

SCALE: 1"=30'-0"

GENERAL ELECTRICAL NOTES : APPLICABLE TO ALL HART ELECTRICAL SHEETS

1. CONTRACTOR SHALL CONDUCT MEG-OHM METER TESTS ON ALL CONDUCTORS INSTALLED UNDER THIS CONTRACT, INCLUDING BRANCH CIRCUITS. TESTS SHALL BE CONDUCTED WITH FIXTURE DRIVERS CONNECTED TO THE CIRCUIT CONDUCTORS. MINIMUM ACCEPTABLE READINGS SHALL BE 100 MEG-OHMS AT 1,000 VOLTS D.C. CONDUCTORS THAT DO NOT PASS THE TEST SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER AND RETESTED. PROVIDE WRITTEN RESULTS.
2. PRIOR TO FINAL INSPECTION, THE CONTRACTOR SHALL FURNISH THE FOLLOWING TO THE OWNER AND ELECTRICAL ENGINEER:
   a) MEGGAR TESTS
3. EXISTING UNDERGROUND UTILITIES ARE SHOWN IN ACCORDANCE WITH THE INFORMATION, IF ANY, PROVIDED BY THE RESPECTIVE UTILITY. CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO COMMENCING ANY EXCAVATION.
4. EXCESS MATERIAL DUE TO TRENCHING AND EXCAVATION SHALL BE SPREAD EVENLY TO COMPLEMENT NEW OR EXISTING GRADES.
5. DO NOT CUT EXISTING ASPHALT AND CONRETE WALKWAYS. CONDUITS SHALL BE INSTALLED ACROSS WALKWAYS BY BORING UNDER THE WALKWAYS.
6. CONDUITS SHALL BE ROUTED AROUND EXISTING PLAYGROUND AREAS, BASKETBALL COURTS AND PARKING LOTS. ALL DAMAGED SURFACES SHALL BE RESTORED TO THEIR PRE-CONSTRUCTION STATE.
7. EACH 120 VOLT CIRCUIT UNGROUNDED "HOT" CONDUCTOR SHALL HAVE A DEDICATED NEUTRAL. THE USE OF COMMON NEUTRALS FOR 2 OR MORE "HOT" CONDUCTORS SHALL NOT BE ACCEPTABLE. NEUTRAL CONDUCTORS SHALL BE IDENTIFIED WITH A BLACK, RED OR BLUE TRACER TO MATCH ITS RESPECTIVE "HOT" CONDUCTOR.
8. CONTRACTOR SHALL EXCERCISE CAUTION NOT TO DAMAGE EXISTING UNDERGROUND UTILITIES. "AS-BUILT" DRAWINGS SHALL BE OBTAINED FROM THE OWNER PRIOR TO TRENCHING. ALL DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED BY WORKMEN SKILLED IN THE PARTICULAR TRADE AT NO ADDITIONAL COST TO THE OWNER. ANY REROUTING OF EXISTING UTILITIES NECESSITATED BY THE WORK TO BE PERFORMED UNDER THIS CONTRACT SHALL ALSO BE ACCOMPLISHED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

KEYED NOTES: THIS SHEET ONLY

1. EXISTING AREA LIGHT TO REMAIN.
2. EXISTING OVERHEAD PRIMARY LINE TO REMAIN. (E.P.E.Co.)
3. EXISTING STREET LIGHT TO REMAIN.
4. 2#12, 1#12 GND IN 3/4" C. CONNECT TO NEW 20A-1P IN EXISTING PANEL "HART" PER NOTE 6 BELOW.
5. J-BOX FOR IRRIGATION CONTROLLER. VERIFY EXACT LOCATION IN THE FIELD PRIOR TO ROUGH-IN. MAKE ALL POWER CONNECTIONS FOR PROPER OPERATION.
6. EXISTING PANEL "HART" IS EATON, 225 AMPS, 240/120V-1ø-3W AND HAS 9-20A-1P SPACES. INSTALL NEW 20A-1P BREAKER TO SERVE NEW IRRIGATION CONTROLLER PER NOTE 4 ABOVE. REVISE DIRECTORY TO REFLECT NEW LOAD. (TYPEWRITTEN)

SITES SOUTHWEST

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CONSULTANTS

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STATE OF TEXAS
GONZALO AGUILAR, JR.
37586
REGISTERED PROFESSIONAL ENGINEER

PROJECT

CDBG HART & BAIRD IMPROVEMENTS

ADDRESS

4861 ATLAS AVE.
EL PASO, TX 79904 (HART)

4747 ATLAS AVE.
EL PASO, TX 79904 (BAIRD)

Housing Authority of the City of El Paso

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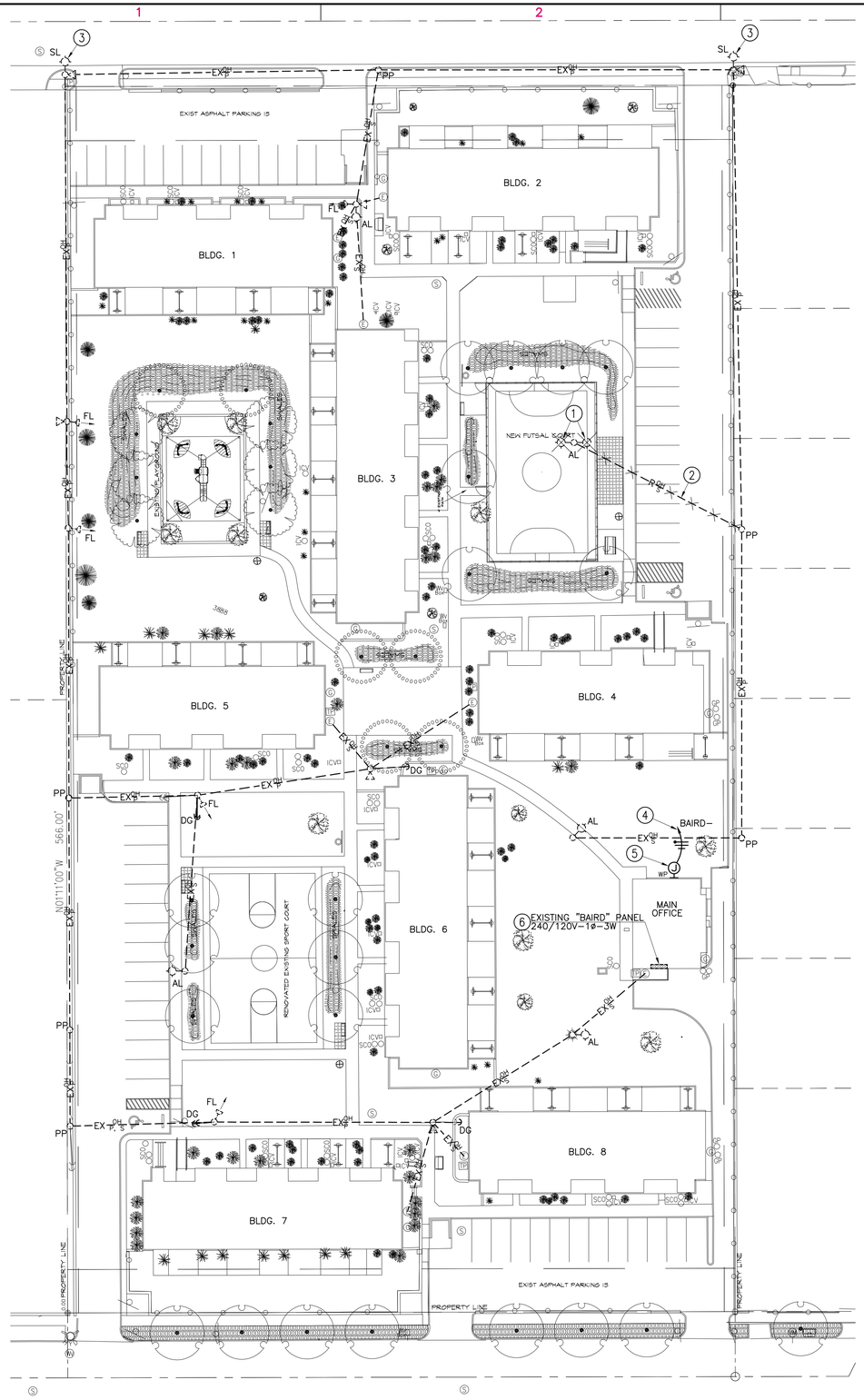
ELECTRICAL PLAN HART

E-101

XX XX



ELECTRICAL PLAN - BAIRD

SCALE: 1"=30'-0"

NORTH GRAPHIC SCALE 0 15' 30' 60'

GENERAL ELECTRICAL NOTES : APPLICABLE TO ALL BAIRD ELECTRICAL SHEETS

1. CONTRACTOR SHALL CONDUCT MEG-OHM METER TESTS ON ALL CONDUCTORS INSTALLED UNDER THIS CONTRACT, INCLUDING BRANCH CIRCUITS. TESTS SHALL BE CONDUCTED WITH FIXTURE DRIVERS CONNECTED TO THE CIRCUIT CONDUCTORS. MINIMUM ACCEPTABLE READINGS SHALL BE 100 MEG-OHMS AT 1,000 VOLTS D.C. CONDUCTORS THAT DO NOT PASS THE TEST SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER AND RETESTED. PROVIDE WRITTEN RESULTS.
2. PRIOR TO FINAL INSPECTION, THE CONTRACTOR SHALL FURNISH THE FOLLOWING TO THE OWNER AND ELECTRICAL ENGINEER:
   a) MEGGAR TESTS
3. EXISTING UNDERGROUND UTILITIES ARE SHOWN IN ACCORDANCE WITH THE INFORMATION, IF ANY, PROVIDED BY THE RESPECTIVE UTILITY. CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO COMMENCING ANY EXCAVATION.
4. EXCESS MATERIAL DUE TO TRENCHING AND EXCAVATION SHALL BE SPREAD EVENLY TO COMPLEMENT NEW OR EXISTING GRADES.
5. DO NOT CUT EXISTING ASPHALT AND CONRETE WALKWAYS. CONDUITS SHALL BE INSTALLED ACROSS WALKWAYS BY BORING UNDER THE WALKWAYS.
6. CONDUITS SHALL BE ROUTED AROUND EXISTING PLAYGROUND AREAS, BASKETBALL COURT AND PARKING LOTS. ALL DAMAGED SURFACES SHALL BE RESTORED TO THEIR PRE-CONSTRUCTION STATE.
7. EACH 120 VOLT CIRCUIT UNGROUNDED "HOT" CONDUCTOR SHALL HAVE A DEDICATED NEUTRAL. THE USE OF COMMON NEUTRALS FOR 2 OR MORE "HOT" CONDUCTORS SHALL NOT BE ACCEPTABLE. NEUTRAL CONDUCTORS SHALL BE IDENTIFIED WITH A BLACK, RED OR BLUE TRACER TO MATCH ITS RESPECTIVE "HOT" CONDUCTOR.
8. CONTRACTOR SHALL EXCERCISE CAUTION NOT TO DAMAGE EXISTING UNDERGROUND UTILITIES. "AS-BUILT" DRAWINGS SHALL BE OBTAINED FROM THE OWNER PRIOR TO TRENCHING. ALL DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED BY WORKMEN SKILLED IN THE PARTICULAR TRADE AT NO ADDITIONAL COST TO THE OWNER. ANY REROUTING OF EXISTING UTILITIES NECESSITATED BY THE WORK TO BE PERFORMED UNDER THIS CONTRACT SHALL ALSO BE ACCOMPLISHED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

KEYED NOTES: THIS SHEET ONLY

1. EXISTING AREA LIGHT TO BE REMOVED BY EL PASO ELECTRIC.
2. EXISTING OVERHEAD SECONDARY LINE TO BE REMOVED BY EL PASO ELECTRIC.
3. EXISTING STREET LIGHT TO REMAIN. (E.P.E.Co.)
4. 2#12, 1#12 GND IN 3/4" C. CONNECT TO NEW 20A-1P IN EXISTING PANEL "BAIRD" PER NOTE 6 BELOW.
5. J-BOX FOR IRRIGATION CONTROLLER. VERIFY EXACT LOCATION IN THE FIELD PRIOR TO ROUGH-IN. MAKE ALL POWER CONNECTIONS FOR PROPER OPERATION.
5. EXISTING PANEL "BAIRD" IS EATON, 225 AMPS, 240/120V-1ø-3W AND HAS 9-20A-1P SPACES. INSTALL NEW 20A-1P BREAKER TO SERVE NEW IRRIGATION CONTROLLER PER NOTE 4 ABOVE. REVISE DIRECTORY TO REFLECT NEW LOAD. (TYPEWRITTEN)

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STATE OF TEXAS
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37586
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PROJECT

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Housing Authority of the City of El Paso

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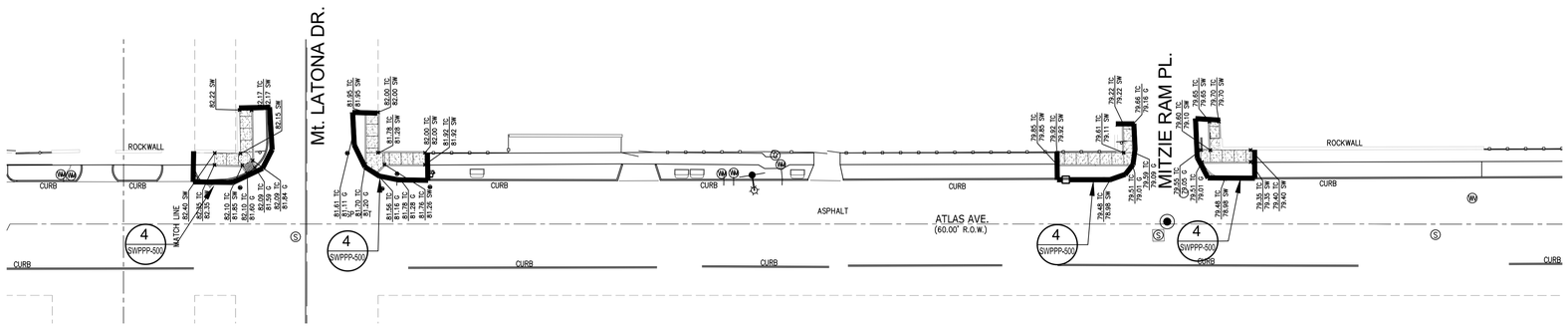
SHEET TITLE

ELECTRICAL PLAN BAIRD

E-102

XX XX



1 SWPPP-101 STORM WATER POLLUTION PREVENTION PLAN
SCALE: 1"=30'-0"

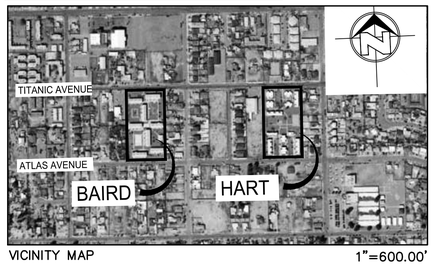
LEGEND

76.20FG	NEW FG ELEV. (GROUND)
76.20SW	NEW SIDEWALK ELEV.(CONCRETE)
76.20P	NEW FG ELEV. (PAVEMENT)
76.20G	NEW FG ELEV. (GUTTER)
76.20TC	NEW FG ELEV. (TOP OF CURB)
76.20CS	NEW FG ELEV. (CONCRETE SLAB)
76.20TW	NEW FG ELEV. (TOP OF WALL)
76.20PV	NEW FG ELEV. (TOP OF PAVERS)
76.20LS	NEW FG ELEV. (LANDSCAPE)
3876.2 X	EXISTING GROUND (SPOT ELEV.)
76.00	PROPOSED FG (CONTOUR)
FF=76.39	FINISHED BUILDING FLOOR ELEVATION
3876	EXISTING GROUND (CONTOUR)
	HIGH POINT
L.O.C.	LIMITS OF CONSTRUCTION

LEGEND

	SILT FENCE
	GRAVEL ENTRANCE
IP	INLET PROTECTION
TRAILER	PORT-O-JONS AND TRAILER
PB	POSTING BOARD
	TRUCK CONC. WASHOUT AREA WITH SIGN

GENERAL CIVIL INDEX



VICINITY MAP 1"=600.00'

KEY NOTE:

1. THE CONTRACTOR SHALL NOT BE ALLOWED TO WASHOUT CONC. ONTO CITY STREETS OR INTO DRAINAGE INFRASTRUCTURE. THE CONTRACTOR SHALL HAVE A DESIGNATED CONC. WASHOUT AREA FOR THE PROJECT. INDICATE WHERE THIS WILL BE LOCATED.

NOTE:
REFER TO SOILS REPORT FOR OVER-EXCAVATION AND STRUCTURAL BACKFILL REQUIREMENTS

BUILDING CONTRACTOR'S NOTE

THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) STUDY FOR THIS PROJECT. THE STUDY MUST MEET ALL FEDERAL, STATE, AND LOCAL AUTHORITY GUIDELINES. THE EROSION CONTROL PLAN AND DETAILS INCLUDED IN THIS DRAWING SET HAVE BEEN INCLUDED AS A GUIDE/SUGGESTION AND MAY BE MODIFIED BY THE OWNER'S REPRESENTATIVE AND/OR THE CITY OF EL PASO ENVIRONMENTAL SPECIALIST, AS REQUIRED, TO PREVENT CONSTRUCTION DEBRIS AND RUN-OFF FROM LEAVING THE SITE AND MEDIAN. ADDITIONAL BMP MEASURES MAY BE REQUIRED, AT NO ADDITIONAL COST TO THE OWNER.

GRADING AND STABILIZATION NOTES

1. FINAL STABILIZATION FOR THIS PROJECT WILL BE CONSTRUCTED WHEN THE COMPLETE SITE IMPROVENTS ARE CONSTRUCTED. (I.E. LANDSCAPING, PAVING ETC.)
2. IN CASE THE CONSTRUCTION OF THE SITE IMPROVEMENTS HAS NOT BEGUN AFTER SIX MONTHS AFTER THE SITE GRADING IS COMPLETED THE STABILIZATION PROCESS OF THE SITE WILL TAKE EFFECT TO INCLUDE GROUND COVER AND WATERING ACCORDING TO CITY ORDINANCE UNTIL A BUILDING PERMIT IS ISSUED.

NOTE:

ALL EXISTING AND PROPOSED SIDEWALKS, BARRIER FREE RAMPS, HANDICAP PARKING, DRIVEWAY CROSSWALKS, DRIVEWAYS AND ACCESSIBLE ROUTES SHALL COMPLY WITH A.D.A., T.A.S. AND CITY OF EL PASO REQUIREMENTS. EXISTING INFRASTRUCTURE NOT COMPLYING SHALL BE REMOVED AND REPLACED TO MEET STANDARDS.

30 15 0 30
SCALE: 1"=30'

Know what's below. Call before you dig.
Call 811 TWO Working days Before you dig
It's Free, It's Easy, and
IT'S THE LAW!

NOTES FOR GRADING

1. ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE "2014 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS AND BRIDGES," (APPLICABLE ITEMS ONLY).
2. ALL FILL AREAS SHALL BE COMPACTED TO 95% DENSITY, (ASTM D-1557).
3. REFER TO THE CITY OF EL PASO GRADING ORDINANCE CHAPTER 18.44 FOR SITE GRADING SPECIFICATIONS. GRADING PERMIT MUST BE AVAILABLE AT THE JOB SITE UPON COMMENCEMENT OF WORK.
4. POSITIVE DRAINAGE SHALL BE PROVIDED BY THE CONTRACTOR DURING ALL PHASES OF CONSTRUCTION AND GRADING. THE CONTRACTOR SHALL NOT ALLOW DEBRIS OR SEDIMENT TO SPILL ONTO THE PUBLIC STREETS OR ADJOINING PROPERTIES.
5. CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF EXISTING UTILITY LINES (SHOWN OR NOT SHOWN) WITHIN THE SCOPE OF CONSTRUCTION. THE CONTRACTOR MUST NOTIFY THE RESPECTIVE AGENCY PRIOR TO MOVING ON SITE, SO THE EXISTING UTILITY LINES CAN BE LOCATED IN THE FIELD. IF ANY LINES ARE DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL REPLACE THEM AT HIS OWN EXPENSE.
6. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS ON SITE AND SHALL CONTACT THE DESIGN ENGINEER AND REPORT ANY DISCREPANCIES, OMISSIONS, AND ERRORS ON PLANS PRIOR TO COMMENCING OR CONTINUING WORK.

"CAUTION TO CONTRACTOR"

7. LOCATE AND PROTECT FROM DAMAGE ALL UTILITY LINES WITHIN THE CONSTRUCTION AREA.
8. GRADING, SWPPP, AND N.O.I. PERMITS REQUIRED BEFORE MOVING ON SITE.
9. ALL RAMPS SHALL HAVE A MAX. OF 1:12 SLOPE AND ALL SIDEWALKS SHALL HAVE A MAX. OF 2% CROSS SLOPE. ALL ACCESSIBLE PARKING SPACES SHALL HAVE A MAX. OF 2% (LONGITUDINAL OR CROSS SLOPE) ALL ACCESSIBLE ROUTES SHALL HAVE A MAX. OF 5% SLOPE.

PERMIT CLOSEOUT PROCEDURES (18.44.226)

10. AFTER THE PERMITTEE COMPLETES THE GRADING UNDER THE PERMIT. THE PERMIT SHALL BE CLOSED. AS PART OF THE CLOSEOUT PROCEDURE, THE APPLICANT MUST SUBMIT THE FOLLOWING TO THE CITY:
    A. A STATEMENT FROM THE ENGINEER OF RECORD THAT STATES "THE GRADING OPERATION HAS BEEN SUBSTANTIALLY COMPLETED AND GENERALLY CONFORMS TO THE APPROVED SET OF PLANS." THE PERMITTEE SHALL CALL THE PERMIT OFFICAIL TO ESTABLISH THE BEGINNING OF THE WARRANTY PERIOD AND TO NOTIFY THE PERMIT OFFICIAL THAT THE GSP HAS BEEN IMPLEMENTED.
    B. A COPY OF THE NOTICE OF TERMINATION FILED WITH THE STATE OR DATED CONSTRUCTION SITE NOTICE, IF APPLICABLE, IN ACCORDANCE WITH CHAPTER 15.

THE CITY WILL ISSUE A LETTER STATING GENERAL CONFORMANCE TO THE PERMIT HAS BEEN MET AND THAT THE WARRANTY PERIOD REQUIREMENTS WILL BE IN EFFECT.
(ORDINANCE NO. 17516, § 1, 3-29-2011)

WARRANTY (18.44.090)

ANY PERSON ISSUED A PERMIT SHALL AGREE, WARRANT AND MAINTAIN THE AREA DESCRIBED IN THE PERMIT FOR A PERIOD OF TWO YEARS AFTER THE PERMIT IS CLOSED BY THE CITY PURSUANT TO SECTION 18.44.220, OR UNTIL A BUILDING PERMIT IS ISSUED FOR THE PURPOSE OF MAINTAINING A STABLIZED SITE IN ACCORDANCE WITH THE APPROVED GSP, WHICHEVER FIRST OCCURS (THE "WARRANTY" OR "WARRANTY PERIOD"). THE CITY MAY CONDUCT INSPECTIONS OF THE PERMITTED AREA THROUGHOUT THE WARRANTY PERIOD AND REQUIRE MAINTENANCE AND CORRECTION OF THE WORK BY THE PERMIT HOLDER. FAILURE OF THE PERMIT HOLDER TO CORRECT THE WORK SHALL CONSTITUTE A FAILURE TO COMPLY WITH THE PROVISIONS OF THIS CHAPTER.
(ORDINANCE NO. 17516, § 1, 3-29-2011)

EROSION CONTROL:

1. WIND EROSION CONTROL: WATERING DURING AND AFTER COMPLETION OF SITE GRADING, THE PROJECT AREA SHALL BE COMPLETELY WATERED AS NEEDED TO CONTROL WIND EROSION OR AS DIRECTED BY THE CITY ENGINEER.
2. THE CONTRACTOR SHALL CLEAN UP ANY DIRT OR DEBRIS THAT IS SPILLED ON THE EXISTING PUBLIC ROADWAY AS A RESULT OF THIS CONSTRUCTION PROJECT. CLEAN UP IS TO BE DONE ON A REGULAR BASIS OR AS DIRECTED BY THE CITY ENGINEER.
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FLOOD ZONE:

ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP COMMUNITY-PANEL NUMBER 480214 0024 B, DATED OCTOBER 15, 1982 THIS PROPERTY LIES IN FLOOD ZONE "C".

ZONE "C", AREAS OF MINIMAL FLOODING (NO SHADING).

DUE TO INHERENT INACCURACIES OF FEMA OR FLOOD INSURANCE RATE MAPS THIS SURVEYOR DOES NOT CERTIFY TO THE ACCURACY OF LOCATIONS BASED ON SUCH MAPS. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

LEGAL DESCRIPTION

ATLAS ROW - NORTH PORTION
EL PASO, EL PASO COUNTY, TEXAS.

BENCHMARK:

EXISTING CITY MONUMENT LYING AT THE CENTERLINE INTERSECTION OF TITANIC AVE. AND PANDORA ST.
ELEVATION: 3874.01' CITY DATUM

IMPORTANT CONSTRUCTION NOTE

VIBRATORY ROLLERS WILL BE NOT ALLOWED DURING CONSTRUCTION.

SITES SOUTHWEST
4110 RIO BRAVO, SUITE 217
EL PASO, TX 79902
PHONE:915-351-8800
E-MAIL: mail@sites-sw.com
WEB: www.sites-sw.com

CONSULTANTS

SLI ENGINEERING, INC.
SLI LICENSE No. F-1902
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
6600 WESTWIND DRIVE
EL PASO, TEXAS
(915) 584-4457

STATE OF TEXAS
GEORGES S. HALLOUM
92105
LICENSED
PROFESSIONAL ENGINEER

MAY 22, 2019
SLI Project No. 09-19-4314

PROJECT
CDBG HART & BAIRD IMPROVEMENTS

ADDRESS
4861 ATLAS AVE.
EL PASO, TX 79904 (HART)
4747 ATLAS AVE.
EL PASO, TX 79904 (BAIRD)

Housing Authority of the City of El Paso

FINAL FOR CONSTRUCTION

REVISIONS

MARK	DATE	DESCRIPTION

PROJECT NO:	2019048
CAD DWG FILE:	SWPPP-101.DWG
DRAWN BY:	F.E.
CHK'D BY:	F.E. /G.H.
ISSUE DATE:	05/22/2019
COPYRIGHT:	SLI Engineering, Inc.

SHEET TITLE

STORM WATER POLLUTION PREVENTION PLAN - ATLAS

SWPPP-101

SHEET 13 OF 19

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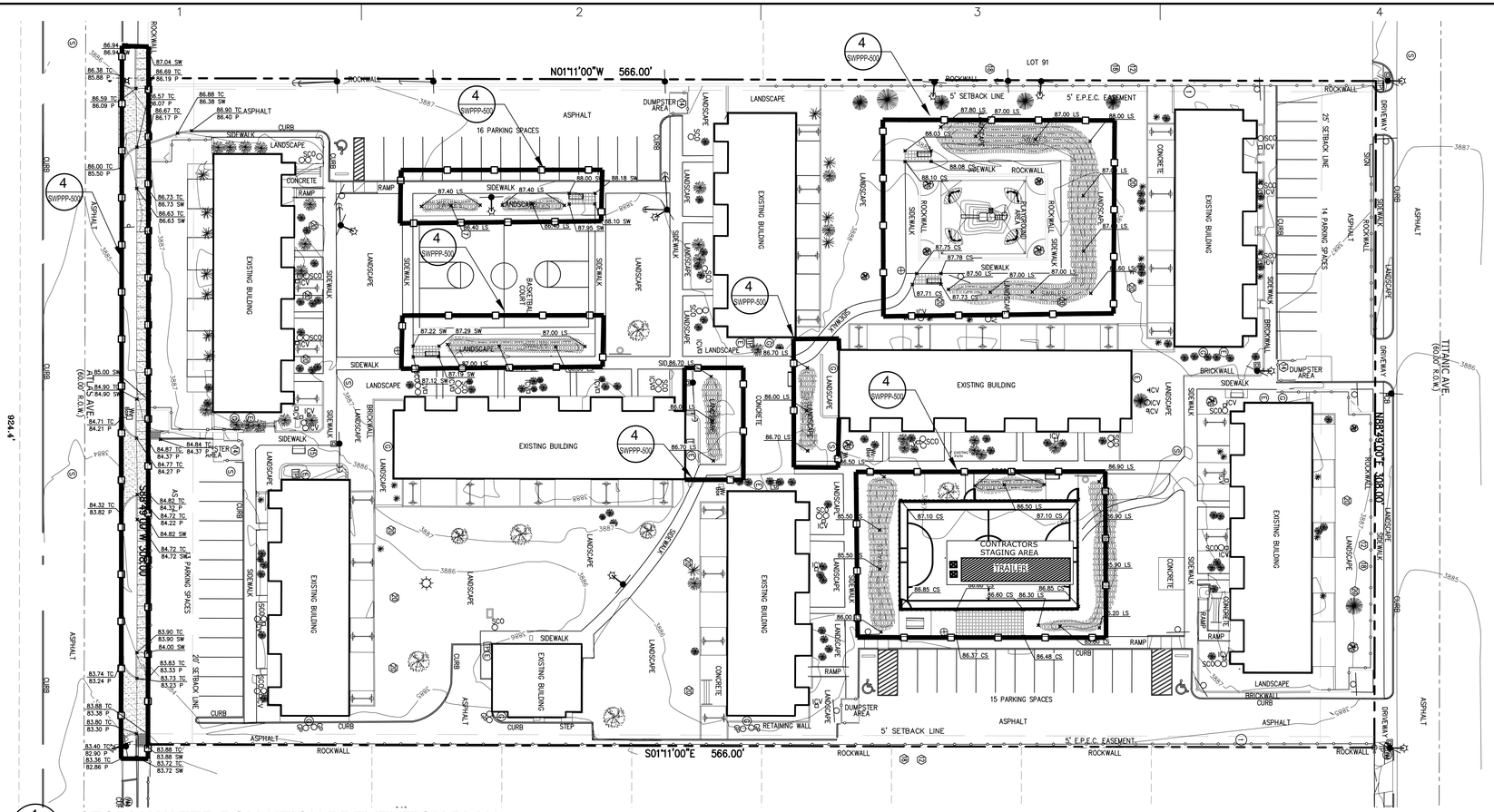

1 SWPPP-102 STORM WATER POLLUTION PREVENTION PLAN

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LEGEND

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76.20SW	NEW SIDEWALK ELEV.(CONCRETE)
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L.O.C.	LIMITS OF CONSTRUCTION

LEGEND

- SILT FENCE
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- IP — INLET PROTECTION
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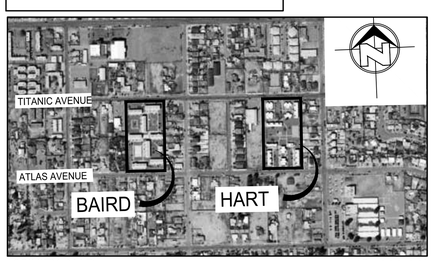
- TRUCK CONC. WASHOUT AREA WITH SIGN



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30 15 0 30

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FLOOD ZONE:

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ZONE "C", AREAS OF MINIMAL FLOODING (NO SHADING).

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LEGAL DESCRIPTION

LOTS 86 TO 89, BLOCK 2, SUNRISE ACRES
EL PASO, EL PASO COUNTY, TEXAS.
CONTAINING 143,345 Sq. Ft. (3.2907 Acres) +/-

BENCHMARK:

EXISTING CITY MONUMENT LYING AT THE CENTERLINE INTERSECTION OF TITANIC AVE. AND PANDORA ST.
ELEVATION: 3874.01' CITY DATUM

IMPORTANT CONSTRUCTION NOTE

VIBRATORY ROLLERS WILL BE NOT ALLOWED DURING CONSTRUCTION.

SITES SOUTHWEST
4110 RIO BRAVO, SUITE 217
EL PASO, TX 79902
PHONE:915-351-8800
E-MAIL: mail@sites-sw.com
WEB: www.sites-sw.com

CONSULTANTS

SLI ENGINEERING, INC.
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
6600 WESTWIND DRIVE
EL PASO, TEXAS
(915) 584-4457
SLI LICENSE No. F-1902

STATE OF TEXAS
GEORGES S. HALLOUM
92105
LICENSED
PROFESSIONAL ENGINEER

MAY 22, 2019
SLI Project No. 09-19-4314

PROJECT
CDBG HART & BAIRD IMPROVEMENTS

ADDRESS
4861 ATLAS AVE.
EL PASO, TX 79904 (HART)
4747 ATLAS AVE.
EL PASO, TX 79904 (BAIRD)

Housing Authority of the City of El Paso

FINAL FOR CONSTRUCTION

REVISIONS

MARK	DATE	DESCRIPTION

PROJECT NO:	2019048
CAD DWG FILE:	SWPPP-101.DWG
DRAWN BY:	F.E.
CHK'D BY:	F.E. /G.H.
ISSUE DATE:	05/22/2019
COPYRIGHT:	SLI Engineering, Inc.

SHEET TITLE

STORM WATER POLLUTION PREVENTION PLAN - BAIRD

SWPPP-102

SHEET 14 OF 19

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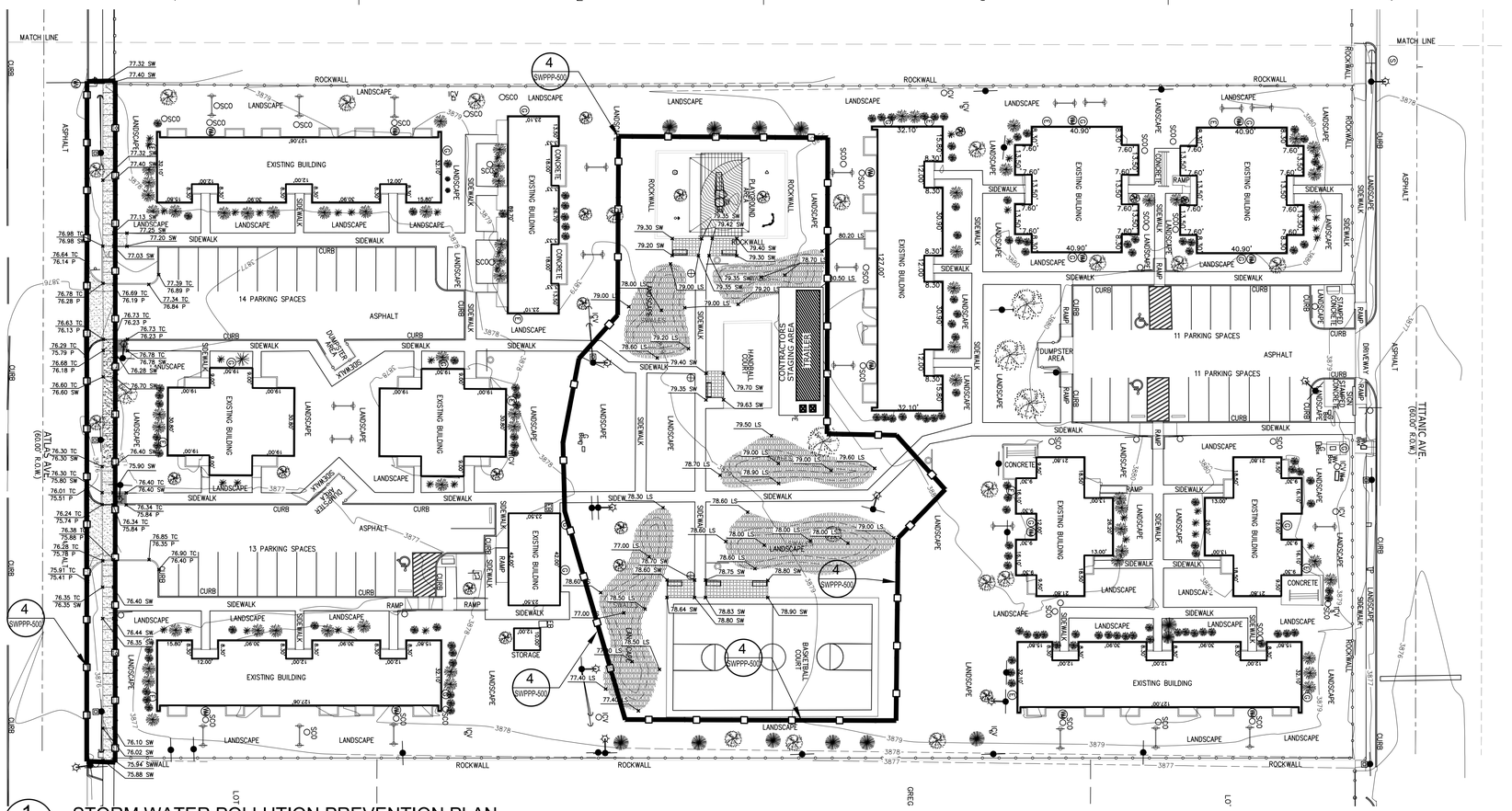

1 SWPPP-102 STORM WATER POLLUTION PREVENTION PLAN
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LEGEND

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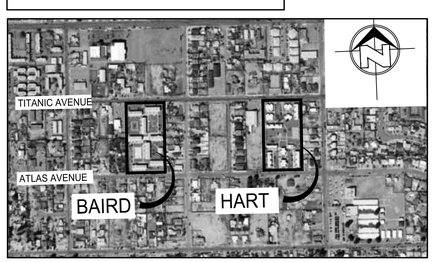

VICINITY MAP 1"=600.00'

GENERAL CIVIL INDEX

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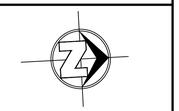

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ALL NEW IMPROVEMENTS WILL BE LOCATED OVER EXISTING DEVELOPED AREAS, NO ADDITIONAL RUNOFF WILL BE EXPECTED.

NOTE:

ALL EXISTING AND PROPOSED SIDEWALKS, BARRIER FREE RAMPS, HANDICAP PARKING, DRIVEWAY CROSSWALKS, DRIVEWAYS AND ACCESSIBLE ROUTES SHALL COMPLY WITH A.D.A., T.A.S. AND CITY OF EL PASO REQUIREMENTS, EXISTING INFRASTRUCTURE NOT COMPLYING SHALL BE REMOVED AND REPLACED TO MEET STANDARDS.

811 Know what's below. Call before you dig.
Call 811 TWO Working days Before you dig
It's Free, It's Easy, and
IT'S THE LAW!

NOTES FOR GRADING

1. ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE "2014 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS AND BRIDGES," (APPLICABLE ITEMS ONLY).
2. ALL FILL AREAS SHALL BE COMPACTED TO 95% DENSITY, (ASTM D-1557).
3. REFER TO THE CITY OF EL PASO GRADING ORDINANCE CHAPTER 18.44 FOR SITE GRADING SPECIFICATIONS. GRADING PERMIT MUST BE AVAILABLE AT THE JOB SITE UPON COMMENCEMENT OF WORK.
4. POSITIVE DRAINAGE SHALL BE PROVIDED BY THE CONTRACTOR DURING ALL PHASES OF CONSTRUCTION AND GRADING. THE CONTRACTOR SHALL NOT ALLOW DEBRIS OR SEDIMENT TO SPILL ONTO THE PUBLIC STREETS OR ADJOINING PROPERTIES.
5. CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF EXISTING UTILITY LINES (SHOWN OR NOT SHOWN) WITHIN THE SCOPE OF CONSTRUCTION. THE CONTRACTOR MUST NOTIFY THE RESPECTIVE AGENCY PRIOR TO MOVING ON SITE, SO THE EXISTING UTILITY LINES CAN BE LOCATED IN THE FIELD. IF ANY LINES ARE DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL REPLACE THEM AT HIS OWN EXPENSE.
6. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS ON SITE AND SHALL CONTACT THE DESIGN ENGINEER AND REPORT ANY DISCREPANCIES, OMISSIONS, AND ERRORS ON PLANS PRIOR TO COMMENCING OR CONTINUING WORK.

"CAUTION TO CONTRACTOR"

7. LOCATE AND PROTECT FROM DAMAGE ALL UTILITY LINES WITHIN THE CONSTRUCTION AREA.
8. GRADING, SWPPP, AND N.O.I. PERMITS REQUIRED BEFORE MOVING ON SITE.
9. ALL RAMPS SHALL HAVE A MAX. OF 1:12 SLOPE AND ALL SIDEWALKS SHALL HAVE A MAX. OF 2% CROSS SLOPE. ALL ACCESSIBLE PARKING SPACES SHALL HAVE A MAX. OF 2% (LONGITUDINAL OR CROSS SLOPE) ALL ACCESSIBLE ROUTES SHALL HAVE A MAX. OF 5% SLOPE.

PERMIT CLOSEOUT PROCEDURES (18.44.226)

10. AFTER THE PERMITTEE COMPLETES THE GRADING UNDER THE PERMIT. THE PERMIT SHALL BE CLOSED. AS PART OF THE CLOSEOUT PROCEDURE, THE APPLICANT MUST SUBMIT THE FOLLOWING TO THE CITY:
    A. A STATEMENT FROM THE ENGINEER OF RECORD THAT STATES "THE GRADING OPERATION HAS BEEN SUBSTANTIALLY COMPLETED AND GENERALLY CONFORMS TO THE APPROVED SET OF PLANS." THE PERMITTEE SHALL CALL THE PERMIT OFFICAIL TO ESTABLISH THE BEGINNING OF THE WARRANTY PERIOD AND TO NOTIFY THE PERMIT OFFICIAL THAT THE GSP HAS BEEN IMPLEMENTED.
    B. A COPY OF THE NOTICE OF TERMINATION FILED WITH THE STATE OR DATED CONSTRUCTION SITE NOTICE, IF APPLICABLE, IN ACCORDANCE WITH CHAPTER 15.

THE CITY WILL ISSUE A LETTER STATING GENERAL CONFORMANCE TO THE PERMIT HAS BEEN MET AND THAT THE WARRANTY PERIOD REQUIREMENTS WILL BE IN EFFECT.
(ORDINANCE NO. 17516, § 1, 3-29-2011)

WARRANTY (18.44.090)

ANY PERSON ISSUED A PERMIT SHALL AGREE, WARRANT AND MAINTAIN THE AREA DESCRIBED IN THE PERMIT FOR A PERIOD OF TWO YEARS AFTER THE PERMIT IS CLOSED BY THE CITY PURSUANT TO SECTION 18.44.220, OR UNTIL A BUILDING PERMIT IS ISSUED FOR THE PURPOSE OF MAINTAINING A STABLIZED SITE IN ACCORDANCE WITH THE APPROVED GSP, WHICHEVER FIRST OCCURS (THE "WARRANTY" OR "WARRANTY PERIOD"). THE CITY MAY CONDUCT INSPECTIONS OF THE PERMITTED AREA THROUGHOUT THE WARRANTY PERIOD AND REQUIRE MAINTENANCE AND CORRECTION OF THE WORK BY THE PERMIT HOLDER. FAILURE OF THE PERMIT HOLDER TO CORRECT THE WORK SHALL CONSTITUTE A FAILURE TO COMPLY WITH THE PROVISIONS OF THIS CHAPTER.
(ORDINANCE NO. 17516, § 1, 3-29-2011)

EROSION CONTROL:

1. WIND EROSION CONTROL: WATERING DURING AND AFTER COMPLETION OF SITE GRADING. THE PROJECT AREA SHALL BE COMPLETELY WATERED AS NEEDED TO CONTROL WIND EROSION OR AS DIRECTED BY THE CITY ENGINEER.
2. THE CONTRACTOR SHALL CLEAN UP ANY DIRT OR DEBRIS THAT IS SPILLED ON THE EXISTING PUBLIC ROADWAY AS A RESULT OF THIS CONSTRUCTION PROJECT. CLEAN UP IS TO BE DONE ON A REGULAR BASIS OR AS DIRECTED BY THE CITY ENGINEER.
3. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL SLOPES IN GOOD CONDITION AND PROTECTING THEM FROM EROSION UNTIL THE FINAL LANDSCAPING ELEMENTS ARE IN PLACE.

FLOOD ZONE:

ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP COMMUNITY-PANEL NUMBER 480214 0024 B, DATED OCTOBER 15, 1982 THIS PROPERTY LIES IN FLOOD ZONE "C".

ZONE "C", AREAS OF MINIMAL FLOODING (NO SHADING).

DUE TO INHERENT INACCURACIES OF FEMA OR FLOOD INSURANCE RATE MAPS THIS SURVEYOR DOES NOT CERTIFY TO THE ACCURACY OF LOCATIONS BASED ON SUCH MAPS. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

LEGAL DESCRIPTION

LOTS 72 TO 75, BLOCK 2, SUNRISE ACRES
EL PASO, EL PASO COUNTY, TEXAS.
CONTAINING 175,213 Sq. Ft. (4.0223 Acres) +/-

BENCHMARK:

EXISTING CITY MONUMENT LYING AT THE CENTERLINE INTERSECTION OF TITANIC AVE. AND PANDORA ST.
ELEVATION: 3874.01' CITY DATUM

IMPORTANT CONSTRUCTION NOTE

VIBRATORY ROLLERS WILL BE NOT ALLOWED DURING CONSTRUCTION.

SITES SOUTHWEST
4110 RIO BRAVO, SUITE 217
EL PASO, TX 79902
PHONE:915-351-8800
E-MAIL: mail@sites-sw.com
WEB: www.sites-sw.com

CONSULTANTS

SLI ENGINEERING, INC.
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
6600 WESTWIND DRIVE
EL PASO, TEXAS
(915) 584-4457
SLI LICENSE No. F-1902

STATE OF TEXAS
GEORGES S. HALLOW
92105
LICENSED
PROFESSIONAL ENGINEER

MAY 22, 2019
SLI Project No. 09-19-4314

PROJECT
CDBG HART & BAIRD IMPROVEMENTS

ADDRESS
4861 ATLAS AVE.
EL PASO, TX 79904 (HART)
4747 ATLAS AVE.
EL PASO, TX 79904 (BAIRD)

Housing Authority of the City of El Paso

FINAL FOR CONSTRUCTION

REVISIONS

MARK	DATE	DESCRIPTION

PROJECT NO:	2019048
CAD DWG FILE:	SWPPP-101.DWG
DRAWN BY:	F.E.
CHK'D BY:	F.E. /G.H.
ISSUE DATE:	05/22/2019
COPYRIGHT:	SLI Engineering, Inc.

SHEET TITLE

STORM WATER POLLUTION PREVENTION PLAN - HART

SWPPP-103

SHEET 15 OF 19

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SWPPP INSPECTION REPORT

PROJECT NAME: _____

CONTRACTOR : _____ DATE OF INSPECTION : _____

INSPECTION CONDUCTED BY: _____ _____
PRINTED NAME SIGNATURE

QUALIFICATIONS OF THE INSPECTOR: _____

REPORT PREPARED BY: (Circle One) CONTRACTOR OWNER

7 DAY INSPECTION 14 DAY INSPECTION AFTER–RAIN EVENT INSPECTION

SITE DESCRIPTION

PROJECT TITLE:	ATLAS AVENUE ROW IMPROVEMENTS
OWNER AND ADDRESS:	CITY OF EL PASO
DESCRIPTION:	ATLAS AVENUE ROW IMPROVEMENTS
SITE AREA:	THE SITE IS APPROXIMATELY XXXX ACRES OF WHICH XXXX AC. WILL BE DISTURBED BY THE CONSTRUCTION ACTIVITIES.

INSPECTION ISSUE	Y	N	N/A	COMMENTS
ARE NPDES PERMITS, FOR ALL PERMITEES POSTED AT THE CONSTRUCTION ENTRANCE ?				
IS CONTACT INFORMATION FOR ALL PERMITS POSTED AT THE CONSTRUCTION ENTRANCE ?				
ARE COPIES OF INSPECTION REPORT INCLUDED WITH THE SWPPP				
IS A COPY OF THE SWPPP CERTIFICATIONS FOR ALL PERMITS INCLUDED WITH SWPPP ?				
IF THE BMP's HAVE BEEN MODIFIED, HAS THE SWPPP BEEN MODIFIED ?				
ARE THERE ANY SIGNS OF DISCHARGE LEAVING THE SITE ?				
ARE ALL BMP's FUNCTIONING AS INTENDED ?				
ANY ADDITIONAL BMS's REQUIRED ?				
ARE STABILIZED ENTRANCES/EXITS PREVENTING STREET CONTAMINATION ?				
ARE ANY BMP's IN NEED OF REPAIR AND/OR MAINTENANCE ?				
ARE ANY HAZARDOUS MATERIALS BEING EXPOSED TO STORM WATER RUNOFF ?				
HAVE THERE BEEN ANY REPORTABLE SPILLS OF HAZARDOUS MATERIALS ?				
HAVE ALL AREAS OF THE SITE NOT COVERED BY IMPERVIOUS MATERIALS ACHIEVED THE REQUIRED COVERAGE ?				
ARE ALL SOIL–DISTURBING ACTIVITIES COMPLETE?				
HAS A NOTICE OF TERMINATION (NOT) BEEN FILED ?				

NOTE: ALL ITEMS OF NON–COMPLIANCE SHALL BE REPAIRED/INSTALLED WITHIN SEVEN (7) CALENDAR DAYS OF INSPECTION. REPAIRS/INSTALLATION SHALL BE COMPLETED IMMEDIATELY, IF STORM CONDITIONS ARE IMMINENT

NOTE INCIDENTS OF NON–COMPLIANCE: _____

"I CERTIFY UNDER PENALTY OF LAW THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ENSURE THAT QUALIFIED PERSONNEL PROPERTY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE, I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISON MENT FOR KNOWING VIOLATIONS."

SIGNATURE: _____ DATE: _____

PRINTED NAME: _____

TITLE: _____

INSPECTIONS

A. GENERAL

1. EACH CONTRACTOR WILL DESIGNATE A QUALIFIED PERSON OR PERSONS TO PERFORM THE FOLLOWING INSPECTIONS:
   a. DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION WILL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS CONTAMINATING THE AREA.

EROSION AND SEDIMENT CONTROL

SOIL STABILIZATION PRACTICES

____ TEMPORARY SEEDING
__X__ PERMANENT PLANTING, SODDING, OR SEEDING
____ MULCHING
____ SOIL RETENTION BLANKET
____ BUFFER ZONES
____ PRESERVATION OF NATURAL RESOURCES
OTHER FINAL LANDSCAPING COVER

STRUCTURAL PRACTICES

__X__ SILT FENCES
____ EARTH BERMS
____ DIVERSION, INTERCEPTOR OR PERIMETER DIKES
____ DIVERSION, INTERCEPTOR OR PERIMETER SWALES
____ DIVERSION DIKES AND SWALE COMBINATIONS
____ CONCRETE FLUMES
__X__ ROCK BEDDING AT CONSTRUCTION EXIT
____ TIMBER MATTING AT CONSTRUCTION EXIT
____ CHANNEL LINERS
____ SEDIMENT TRAPS
____ RETENTION POND
____ STORM INLET SEDIMENT TRAP
____ STONE OUTLET STRUCTURES
__X__ CURBS AND GUTTERS
____ STORM DRAINS
____ VELOCITY CONTROL DEVICES
____ ROCK LINE SWALES
OTHER FINAL LANDSCAPING

NARRATIVE: SEQUENCE OF CONSTRUCTION (STORM WATER MANAGEMENT) ACTIVITIES

1. SUBMIT NOTICE OF INTENT, SECURE SITE AND INSTALL TEMPORARY EROSION AND SEDIMENT CONTROLS (e.g. SILT FENCE AND STABILIZED CONSTRUCTION ENTRANCE, etc.)
2. EXECUTE GRADING.
3. COMPLETE SITE GRADING.
4. EXCAVATION FOR UTILITIES.
5. COMPLETION OF SITE IMPROVEMENTS.
6. WHEN ALL CONSTRUCTION ACTIVITIES RELATED TO THE DEVELOPMENT OF THE SITE ARE COMPLETED, REMOVE TEMPORARY CONTROLS MENTIONED IN NOTE NO.1 ABOVE, AND THEN SUBMIT NOTICE OF TERMINATION FORM.
7. APPROXIMATE SCHEDULE OF MAJOR ACTIVES:
   SITE GRADING = _____, 201__ THROUGH _____, 201__
   TERMINATION OF GRADING TO END OF PROJECT = _____, 201__THROUGH_____, 201

MATERIALS OR SUBSTANCES EXPECTED TO BE PRESENT ON SITE DURING CONSTRUCTION

— CONCRETE	— PETROLEUM BASED PRODUCTS	— FUELS
— DETERGENTS	— CLEANING SOLVANTS	— WATER WASHINGS
— PAINTS (ENAMEL AND LATEX)	— WOOD	— GLUES, ADHESIVES
— METAL STUDS	— ROOFING SHINGLES	— ROOFING SHINGLES
— TAR	— OILS	— CURING COMPOUNDS

(NO ASBESTOS ON SITE)

GENERAL CONTRACTOR CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND THE TERMS AND CONDITIONS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT THAT AUTHORIZES STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY FROM THE CONSTRUCTION SITE IDENTIFIED AS PART OF THIS CERTIFICATION.

SIGNED: _____ COMPANY: _____
NAME: _____ ADDRESS: _____
TITLE: _____ TELEPHONE: _____
DATE: _____

SUB – CONTRACTOR CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT I WILL COORDINATE EITHER THROUGH THE GENERAL CONTRACTOR, OWNER, OR DIRECTLY, WITH THE CONTRACTOR(S) AND/OR SUBCONTRACTOR(S) IDENTIFIED IN THE POLLUTION PREVENTION PLAN, HAVING RESPONSIBILITY FOR IMPLEMENTING STORM WATER CONTROL MEASURES TO MINIMIZE ANY IMPACT MY ACTIONS MAY HAVE ON THE EFFECTIVENESS OF THESE STORM WATER CONTROLS MEASURES.

SIGNED: _____ SIGNED: _____
NAME: _____ NAME: _____
TITLE: _____ TITLE: _____
COMPANY: _____ COMPANY: _____

BEST MANAGEMENT PRACTICES

1. STRUCTURAL MEASURES SHALL BE MAINTAINED THROUGHOUT THE LIFE OF THE PROJECT IN EFFECTIVE OPERATING CONDITION.
2. DOCUMENTATION OF MAINENANCE ACTIVITIES INCLUDING FREQUENCY, LOT DESIGNATION, INSPECTION OF STRUCTURAL CONTROLS, MAT'L STORAGE AREAS VEHICLES INTRANCE AND EXITS: ACTIONS TAKEN AND INSPECTORS NAME.
3. CONSTRUCTION SITE NOTICE WILL BE MAINTAINED ON SITE.
4. COPY OF SWPPP SHALL BE KEPT ON SITE.
5. PERIMETER MUST RETAIN THE SWPS NOI AND INSPECTION LOG FOR A MINIMUM OF 3 YEARS FROM THE TERMINATION AND FINAL STABILIZATION OF PROJECT.

BEST MANAGEMENT PRACTICES CONTROLS

I WASTE MATERIALS:

ALL WASTE MATERIALS, INCLUDING CONSTRUCTION DEBRIS, SHALL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. NO CONSTRUCTION WASTE MATERIAL SHALL BE BURIED ON SITE. THE TRANSIT DUMPSTER SHALL COMPLY WITH ORDINANCE 18.52.010 (ENCLOSURE AND REMOVAL OF WASTE MATERIALS DURING CONSTRUCTION). THE DUMPSTER SHALL BE EMPTIED AS NECESSARY OR AS REQUIRED BY ORDINANCE 9.04 (SOLID WASTE MANAGEMENT) AND THE TRASH SHALL BE HAULED TO A LICENSED LANDFILL.

II HAZARDOUS WASTE:

AT A MINIMUM ANY PRODUCTS IN THE FOLLOWING CATEGORIES SHALL BE CONSIDERED HAZARDOUS: PAINT, ACIDS FOR CLEANING MASONRY SURFACES, CLEANING SOLVENTS, ASPHALT PRODUCTS, CHEMICAL ADDITIVES FOR SPILL STABILIZATION, CURING COMPOUNDS AND ADDITIVES. IN THE EVENT OF A SPILL WHICH MAY BE HAZARDOUS, THE CONTRACTOR SHALL TAKE IMMEDIATE ACTION AND CONTACT THE FIRE DEPT. AND TNRCC.

III SANITARY WASTE:

ALL SANITARY WASTE SHALL BE COLLECTED FROM THE CONSTRUCTION PORTABLE UNITS AS NECESSARY OR AS REQUIRED, CHAPTER 18.08 (BUILDING CODE) BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR. ALL WASTE MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

IV SPILL PREVENTION:

THE FOLLOWING PRACTICES SHALL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURES OF MATERIALS TO STORM WATER RUNOFF.

V GOOD HOUSEKEEPING:

A. STORE ONLY ENOUGH PRODUCTS REQUIRED TO DO THE JOB.
B. NEATLY STORE MATERIALS ON–SITE IN AN ORDERLY MANNER.
C. KEEP PRODUCTS IN THEIR ORIGINAL CONTAINER.
D. DO NOT MIX SUBSTANCES WITH ONE ANOTHER, UNLESS OTHERWISE RECOMMENDED BY THE MANUFACTURER.
E. USE ENTIRE CONTENTS OF A PRODUCT BEFORE DISPOSING THE CONTAINER.
F. FOLLOW MANUFACTURE'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL.

VI HAZARDOUS PRODUCTS:

PRACTICES TO REDUCE RISKS:

A. KEEP PRODUCTS IN THEIR ORIGINAL CONTAINER IF AT ALL POSSIBLE.
B. RETAIN ORIGINAL LABELS, PRODUCT INFORMATION AND MATERIAL SAFETY DATA SHEETS (MSDS).
C. DISPOSE SURPLUS PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S OR LOCAL AND STATE RECOMMENDED METHODS.

VII PETROLEUM PRODUCTS:

ALL ON–SITE VEHICLES SHALL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS SHALL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ON–SITE SHALL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATION.

VIII SPILL CONTROL PRACTICES:

A. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP SHALL BE CLEARLY POSTED AND SITE PERSONNEL SHALL BE MADE AWARE OF THE PROCEDURES.
B. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP SHALL BE KEPT IN THE MATERIAL STORAGE AREA ON–SITE.
C. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
D. SPILL AREA SHALL BE WELL VENTILATED AND APPROPRIATE CLOTHING WILL BE WORN.
E. ANY SPILL SHALL BE REPORTED TO THE APPROPRIATE GOVERNMENTAL AGENCY.
F. MEASURES SHALL BE TAKEN TO PREVENT A SPILL FROM REOCCURRING.

IX MAINTENANCE AND INSPECTION PROCEDURES:

ALL POLLUTION PREVENTION MEASURES SHALL BE INSPECTED AT LEAST ONCE A MONTH OR WITHIN 24–HOURS PRIOR TO ANTICIPATED STORM EVENT AND FOLLOWING A STORM EVENT OF 0.50 INCHES OR MORE. INSPECTION IN FINAL STABILIZED AREAS OR DURING ARID PERIODS WILL BE CONDUCTED MONTHLY. BEST MANAGEMENT PRACTICES AND POLLUTION CONTROL PROCEDURES SHALL BE INSPECTED FOR ADEQUACY. A REPORT SUMMARIZING THE SCOPE OF INSPECTION SHALL BE DONE AND RETAINED ALONG WITH THE SDPCP.

X REMARKS:

DISPOSAL AREAS, STOCKPILES, AND HAUL ROADS SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE AND CONTROL THE AMOUNT OF SEDIMENT THAT MAY ENTER RECEIVING WATERS. DISPOSAL AREAS SHALL NOT BE LOCATED IN ANY WETLAND, WATERBODY OR STREAMBED. CONSTRUCTION STAGING AREAS AND VEHICLE MAINTENANCE AREAS SHALL BE CONSTRUCTED BY THE CONTRACTOR IN A MANNER TO MINIMIZE THE RUNOFF OF POLLUTANTS. ALL WATERWAYS SHALL BE CLEANED AS SOON AS PRACTICABLE OF TEMPORARY EMBANKMENT, TEMPORARY BRIDGES, MATTING, FALSE WORK, PILING DEBRIS OR OTHER OBSTRUCTIONS PLACED DURING CONSTRUCTION OPERATIONS THAT ARE NOT A PART OF THE FINISHED WORK.

SHALL BE OBSERVED DURING CONSTRUCTION:

__X__ HAUL ROADS SHALL BE DAMPENED FOR DUST CONTROL
__X__ LOADED HAUL TRUCKS SHALL BE COVERED WITH TARPAULIN.
__X__ EXCESS DIRT ON ROADS SHALL BE REMOVED IMMEDIATELY.
__X__ STABILIZED CONSTRUCTION ENTRANCE.
____ OTHER: _____

GENERAL CIVIL INDEX

Know what's below. Call before you dig.
Call 811 TWO Working days Before you dig It's Free, It's Easy, and IT'S THE LAW!

NOTE:

ALL EXISTING AND PROPOSED SIDEWALKS, BARRIER FREE RAMPS, HANDICAP PARKING, DRIVEWAY CROSSWALKS, DRIVEWAYS AND ACCESSIBLE ROUTES SHALL COMPLY WITH A.D.A., T.A.S. AND CITY OF EL PASO REQUIREMENTS, EXISTING INFRASTRUCTURE NOT COMPLYING SHALL BE REMOVED AND REPLACED TO MEET STANDARDS.

SITES SOUTHWEST
4110 RIO BRAVO, SUITE 217
EL PASO, TX 79902
PHONE:915–351–8800
E–MAIL: mail@sites–sw.com
WEB: www.sites–sw.com

CONSULTANTS

SLI ENGINEERING, INC.
CIVIL ENGINEERS LAND SURVEYORS LAND PLANNERS
6600 WESTWIND DRIVE EL PASO, TEXAS (915) 584–4457
SLI LICENSE No. F–1902

STATE OF TEXAS GEORGES S. HALLOUM 92105 LICENSED PROFESSIONAL ENGINEER

MAY 22, 2019
SLI Project No. 09–19–4314

PROJECT
CDBG HART & BAIRD IMPROVEMENTS

ADDRESS
4861 ATLAS AVE.
EL PASO, TX 79904 (HART)
4747 ATLAS AVE.
EL PASO, TX 79904 (BAIRD)

Housing Authority of the City of El Paso

FINAL FOR CONSTRUCTION

REVISIONS

MARK	DATE	DESCRIPTION

PROJECT NO:	2019048
CAD DWG FILE:	SWPPP–104.DWG
DRAWN BY:	F.E.
CHK'D BY:	F.E. /G.H.
ISSUE DATE:	05/22/2019
COPYRIGHT:	SLI Engineering, Inc.

SHEET TITLE

STORM WATER POLLUTION PREVENTION NOTES - ATLAS

SWPPN-104

SHEET 16 OF 19

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SWPPP INSPECTION REPORT

PROJECT NAME: _____

CONTRACTOR : _____ DATE OF INSPECTION : _____

INSPECTION CONDUCTED BY: _____ _____
PRINTED NAME SIGNATURE

QUALIFICATIONS OF THE INSPECTOR: _____

REPORT PREPARED BY: (Circle One) CONTRACTOR OWNER

7 DAY INSPECTION 14 DAY INSPECTION AFTER-RAIN EVENT INSPECTION

SITE DESCRIPTION

PROJECT TITLE:	BAIRD APARTMENT COMPLEX
OWNER AND ADDRESS:	HACEP 4747 ATLAS AVE. EL PASO, TEXAS 79904
DESCRIPTION:	BAIRD APARTMENTS COMPLEX IMPROVEMENTS
SITE AREA:	THE SITE IS APPROXIMATELY 3.29 ACRES OF WHICH 1.1216 AC. WILL BE DISTURBED BY THE CONSTRUCTION ACTIVITIES.

INSPECTION ISSUE	Y	N	N/A	COMMENTS
ARE NPDES PERMITS, FOR ALL PERMITEES POSTED AT THE CONSTRUCTION ENTRANCE ?				
IS CONTACT INFORMATION FOR ALL PERMITS POSTED AT THE CONSTRUCTION ENTRANCE ?				
ARE COPIES OF INSPECTION REPORT INCLUDED WITH THE SWPPP				
IS A COPY OF THE SWPPP CERTIFICATIONS FOR ALL PERMITS INCLUDED WITH SWPPP ?				
IF THE BMP's HAVE BEEN MODIFIED, HAS THE SWPPP BEEN MODIFIED ?				
ARE THERE ANY SIGNS OF DISCHARGE LEAVING THE SITE ?				
ARE ALL BMP's FUNCTIONING AS INTENDED ?				
ANY ADDITIONAL BMS's REQUIRED ?				
ARE STABILIZED ENTRANCES/EXITS PREVENTING STREET CONTAMINATION ?				
ARE ANY BMP's IN NEED OF REPAIR AND/OR MAINTENANCE ?				
ARE ANY HAZARDOUS MATERIALS BEING EXPOSED TO STORM WATER RUNOFF ?				
HAVE THERE BEEN ANY REPORTABLE SPILLS OF HAZARDOUS MATERIALS ?				
HAVE ALL AREAS OF THE SITE NOT COVERED BY IMPERVIOUS MATERIALS ACHIEVED THE REQUIRED COVERAGE ?				
ARE ALL SOIL-DISTURBING ACTIVITIES COMPLETE?				
HAS A NOTICE OF TERMINATION (NOT) BEEN FILED ?				

NOTE: ALL ITEMS OF NON-COMPLIANCE SHALL BE REPAIRED/INSTALLED WITHIN SEVEN (7) CALENDAR DAYS OF INSPECTION. REPAIRS/INSTALLATION SHALL BE COMPLETED IMMEDIATELY, IF STORM CONDITIONS ARE IMMINENT

NOTE INCIDENTS OF NON-COMPLIANCE: _____

"I CERTIFY UNDER PENALTY OF LAW THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ENSURE THAT QUALIFIED PERSONNEL PROPERTY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE, I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISON MENT FOR KNOWING VIOLATIONS."

SIGNATURE: _____ DATE: _____

PRINTED NAME: _____

TITLE: _____

INSPECTIONS

A. GENERAL

1. EACH CONTRACTOR WILL DESIGNATE A QUALIFIED PERSON OR PERSONS TO PERFORM THE FOLLOWING INSPECTIONS:
   a. DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION WILL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS CONTAMINATING THE AREA.

EROSION AND SEDIMENT CONTROL

SOIL STABILIZATION PRACTICES

____ TEMPORARY SEEDING
__X__ PERMANENT PLANTING, SODDING, OR SEEDING
____ MULCHING
____ SOIL RETENTION BLANKET
____ BUFFER ZONES
____ PRESERVATION OF NATURAL RESOURCES
OTHER FINAL LANDSCAPING COVER

STRUCTURAL PRACTICES

__X__ SILT FENCES
____ EARTH BERMS
____ DIVERSION, INTERCEPTOR OR PERIMETER DIKES
____ DIVERSION, INTERCEPTOR OR PERIMETER SWALES
____ DIVERSION DIKES AND SWALE COMBINATIONS
____ CONCRETE FLUMES
__X__ ROCK BEDDING AT CONSTRUCTION EXIT
____ TIMBER MATTING AT CONSTRUCTION EXIT
____ CHANNEL LINERS
____ SEDIMENT TRAPS
____ RETENTION POND
____ STORM INLET SEDIMENT TRAP
____ STONE OUTLET STRUCTURES
__X__ CURBS AND GUTTERS
____ STORM DRAINS
____ VELOCITY CONTROL DEVICES
____ ROCK LINE SWALES
OTHER FINAL LANDSCAPING

NARRATIVE: SEQUENCE OF CONSTRUCTION (STORM WATER MANAGEMENT) ACTIVITIES

1. SUBMIT NOTICE OF INTENT, SECURE SITE AND INSTALL TEMPORARY EROSION AND SEDIMENT CONTROLS (e.g. SILT FENCE AND STABILIZED CONSTRUCTION ENTRANCE, etc.)
2. EXECUTE GRADING.
3. COMPLETE SITE GRADING.
4. EXCAVATION FOR UTILITIES.
5. COMPLETION OF SITE IMPROVEMENTS.
6. WHEN ALL CONSTRUCTION ACTIVITIES RELATED TO THE DEVELOPMENT OF THE SITE ARE COMPLETED, REMOVE TEMPORARY CONTROLS MENTIONED IN NOTE NO.1 ABOVE, AND THEN SUBMIT NOTICE OF TERMINATION FORM.
7. APPROXIMATE SCHEDULE OF MAJOR ACTIVES:
   SITE GRADING = _____, 201__ THROUGH _____, 201__
   TERMINATION OF GRADING TO END OF PROJECT = _____ 201__THROUGH_____, 201

MATERIALS OR SUBSTANCES EXPECTED TO BE PRESENT ON SITE DURING CONSTRUCTION

— CONCRETE	— PETROLEUM BASED PRODUCTS	— FUELS
— DETERGENTS	— CLEANING SOLVANTS	— WATER WASHINGS
— PAINTS (ENAMEL AND LATEX)	— WOOD	— GLUES, ADHESIVES
— METAL STUDS	— ROOFING SHINGLES	— ROOFING SHINGLES
— TAR	— OILS	— CURING COMPOUNDS

(NO ASBESTOS ON SITE)

GENERAL CONTRACTOR CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND THE TERMS AND CONDITIONS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT THAT AUTHORIZES STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY FROM THE CONSTRUCTION SITE IDENTIFIED AS PART OF THIS CERTIFICATION.

SIGNED: _____ COMPANY: _____
NAME: _____ ADDRESS: _____
TITLE: _____ TELEPHONE: _____
DATE: _____

SUB – CONTRACTOR CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT I WILL COORDINATE EITHER THROUGH THE GENERAL CONTRACTOR, OWNER, OR DIRECTLY, WITH THE CONTRACTOR(S) AND/OR SUBCONTRACTOR(S) IDENTIFIED IN THE POLLUTION PREVENTION PLAN, HAVING RESPONSIBILITY FOR IMPLEMENTING STORM WATER CONTROL MEASURES TO MINIMIZE ANY IMPACT MY ACTIONS MAY HAVE ON THE EFFECTIVENESS OF THESE STORM WATER CONTROLS MEASURES.

SIGNED: _____ SIGNED: _____
NAME: _____ NAME: _____
TITLE: _____ TITLE: _____
COMPANY: _____ COMPANY: _____

BEST MANAGEMENT PRACTICES

1. STRUCTURAL MEASURES SHALL BE MAINTAINED THROUGHOUT THE LIFE OF THE PROJECT IN EFFECTIVE OPERATING CONDITION.
2. DOCUMENTATION OF MAINENANCE ACTIVITIES INCLUDING FREQUENCY, LOT DESIGNATION, INSPECTION OF STRUCTURAL CONTROLS, MAT'L STORAGE AREAS VEHICLES INTRANCE AND EXITS: ACTIONS TAKEN AND INSPECTORS NAME.
3. CONSTRUCTION SITE NOTICE WILL BE MAINTAINED ON SITE.
4. COPY OF SWPPP SHALL BE KEPT ON SITE.
5. PERIMETER MUST RETAIN THE SWPS NOI AND INSPECTION LOG FOR A MINIMUM OF 3 YEARS FROM THE TERMINATION AND FINAL STABILIZATION OF PROJECT.

BEST MANAGEMENT PRACTICES CONTROLS

I WASTE MATERIALS:

ALL WASTE MATERIALS, INCLUDING CONSTRUCTION DEBRIS, SHALL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. NO CONSTRUCTION WASTE MATERIAL SHALL BE BURIED ON SITE. THE TRANSIT DUMPSTER SHALL COMPLY WITH ORDINANCE 18.52.010 (ENCLOSURE AND REMOVAL OF WASTE MATERIALS DURING CONSTRUCTION). THE DUMPSTER SHALL BE EMPTIED AS NECESSARY OR AS REQUIRED BY ORDINANCE 9.04 (SOLID WASTE MANAGEMENT) AND THE TRASH SHALL BE HAULED TO A LICENSED LANDFILL.

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AT A MINIMUM ANY PRODUCTS IN THE FOLLOWING CATEGORIES SHALL BE CONSIDERED HAZARDOUS: PAINT, ACIDS FOR CLEANING MASONRY SURFACES, CLEANING SOLVENTS, ASPHALT PRODUCTS, CHEMICAL ADDITIVES FOR SPILL STABILIZATION, CURING COMPOUNDS AND ADDITIVES. IN THE EVENT OF A SPILL WHICH MAY BE HAZARDOUS, THE CONTRACTOR SHALL TAKE IMMEDIATE ACTION AND CONTACT THE FIRE DEPT. AND TNRCC.

III SANITARY WASTE:

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IV SPILL PREVENTION:

THE FOLLOWING PRACTICES SHALL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURES OF MATERIALS TO STORM WATER RUNOFF.

V GOOD HOUSEKEEPING:

A. STORE ONLY ENOUGH PRODUCTS REQUIRED TO DO THE JOB.
B. NEATLY STORE MATERIALS ON-SITE IN AN ORDERLY MANNER.
C. KEEP PRODUCTS IN THEIR ORIGINAL CONTAINER.
D. DO NOT MIX SUBSTANCES WITH ONE ANOTHER, UNLESS OTHERWISE RECOMMENDED BY THE MANUFACTURER.
E. USE ENTIRE CONTENTS OF A PRODUCT BEFORE DISPOSING THE CONTAINER.
F. FOLLOW MANUFACTURE'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL.

VI HAZARDOUS PRODUCTS:

PRACTICES TO REDUCE RISKS:

A. KEEP PRODUCTS IN THEIR ORIGINAL CONTAINER IF AT ALL POSSIBLE.
B. RETAIN ORIGINAL LABELS, PRODUCT INFORMATION AND MATERIAL SAFETY DATA SHEETS (MSDS).
C. DISPOSE SURPLUS PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S OR LOCAL AND STATE RECOMMENDED METHODS.

VII PETROLEUM PRODUCTS:

ALL ON-SITE VEHICLES SHALL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS SHALL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ON-SITE SHALL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATION.

VIII SPILL CONTROL PRACTICES:

A. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP SHALL BE CLEARLY POSTED AND SITE PERSONNEL SHALL BE MADE AWARE OF THE PROCEDURES.
B. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP SHALL BE KEPT IN THE MATERIAL STORAGE AREA ON-SITE.
C. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
D. SPILL AREA SHALL BE WELL VENTILATED AND APPROPRIATE CLOTHING WILL BE WORN.
E. ANY SPILL SHALL BE REPORTED TO THE APPROPRIATE GOVERNMENTAL AGENCY.
F. MEASURES SHALL BE TAKEN TO PREVENT A SPILL FROM REOCCURRING.

IX MAINTENANCE AND INSPECTION PROCEDURES:

ALL POLLUTION PREVENTION MEASURES SHALL BE INSPECTED AT LEAST ONCE A MONTH OR WITHIN 24-HOURS PRIOR TO ANTICIPATED STORM EVENT AND FOLLOWING A STORM EVENT OF 0.50 INCHES OR MORE. INSPECTION IN FINAL STABILIZED AREAS OR DURING ARID PERIODS WILL BE CONDUCTED MONTHLY. BEST MANAGEMENT PRACTICES AND POLLUTION CONTROL PROCEDURES SHALL BE INSPECTED FOR ADEQUACY. A REPORT SUMMARIZING THE SCOPE OF INSPECTION SHALL BE DONE AND RETAINED ALONG WITH THE SDPCP.

X REMARKS:

DISPOSAL AREAS, STOCKPILES, AND HAUL ROADS SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE AND CONTROL THE AMOUNT OF SEDIMENT THAT MAY ENTER RECEIVING WATERS. DISPOSAL AREAS SHALL NOT BE LOCATED IN ANY WETLAND, WATERBODY OR STREAMBED. CONSTRUCTION STAGING AREAS AND VEHICLE MAINTENANCE AREAS SHALL BE CONSTRUCTED BY THE CONTRACTOR IN A MANNER TO MINIMIZE THE RUNOFF OF POLLUTANTS. ALL WATERWAYS SHALL BE CLEANED AS SOON AS PRACTICABLE OF TEMPORARY EMBANKMENT, TEMPORARY BRIDGES, MATTING, FALSE WORK, PILING DEBRIS OR OTHER OBSTRUCTIONS PLACED DURING CONSTRUCTION OPERATIONS THAT ARE NOT A PART OF THE FINISHED WORK.

SHALL BE OBSERVED DURING CONSTRUCTION:

__X__ HAUL ROADS SHALL BE DAMPENED FOR DUST CONTROL
__X__ LOADED HAUL TRUCKS SHALL BE COVERED WITH TARPAULIN.
__X__ EXCESS DIRT ON ROADS SHALL BE REMOVED IMMEDIATELY.
__X__ STABILIZED CONSTRUCTION ENTRANCE.
____ OTHER: _____

GENERAL CIVIL INDEX

Know what's below. Call before you dig.
Call 811 TWO Working days Before you dig
It's Free, It's Easy, and
IT'S THE LAW!

NOTE:

ALL EXISTING AND PROPOSED SIDEWALKS, BARRIER FREE RAMPS, HANDICAP PARKING, DRIVEWAY CROSSWALKS, DRIVEWAYS AND ACCESSIBLE ROUTES SHALL COMPLY WITH A.D.A., T.A.S. AND CITY OF EL PASO REQUIREMENTS, EXISTING INFRASTRUCTURE NOT COMPLYING SHALL BE REMOVED AND REPLACED TO MEET STANDARDS.

SITES SOUTHWEST
4110 RIO BRAVO, SUITE 217
EL PASO, TX 79902
PHONE:915-351-8800
E-MAIL: mail@sites-sw.com
WEB: www.sites-sw.com

CONSULTANTS

SLI ENGINEERING, INC.
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
6600 WESTWIND DRIVE
EL PASO, TEXAS
(915) 584-4457
SLI LICENSE No. F-1902

STATE OF TEXAS
GEORGES S. HALLOUM
92105
LICENSED PROFESSIONAL ENGINEER

MAY 22, 2019
SLI Project No. 09-19-4314

PROJECT
CDBG HART & BAIRD IMPROVEMENTS

ADDRESS
4861 ATLAS AVE.
EL PASO, TX 79904 (HART)
4747 ATLAS AVE.
EL PASO, TX 79904 (BAIRD)

Housing Authority of the City of El Paso

FINAL FOR CONSTRUCTION

REVISIONS

MARK	DATE	DESCRIPTION

PROJECT NO:	2019048
CAD DWG FILE:	SWPPP-104.DWG
DRAWN BY:	F.E.
CHK'D BY:	F.E. /G.H.
ISSUE DATE:	05/22/2019
COPYRIGHT:	SLI Engineering, Inc.

SHEET TITLE

STORM WATER POLLUTION PREVENTION NOTES - BAIRD

SWPPN-105

SHEET 17 OF 19

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SWPPP INSPECTION REPORT

PROJECT NAME: _____

CONTRACTOR : _____ DATE OF INSPECTION : _____

INSPECTION CONDUCTED BY: _____ _____
PRINTED NAME SIGNATURE

QUALIFICATIONS OF THE INSPECTOR: _____

REPORT PREPARED BY: (Circle One) CONTRACTOR OWNER

7 DAY INSPECTION 14 DAY INSPECTION AFTER–RAIN EVENT INSPECTION

SITE DESCRIPTION

PROJECT TITLE:	HART APARTMENT COMPLEX
OWNER AND ADDRESS:	HACEP 4861 ATLAS AVE. EL PASO, TEXAS 79904
DESCRIPTION:	HART APARTMENTS COMPLEX IMPROVEMENTS
SITE AREA:	THE SITE IS APPROXIMATELY 4.02 ACRES OF WHICH 0.9216 AC. WILL BE DISTURBED BY THE CONSTRUCTION ACTIVITIES.

INSPECTION ISSUE	Y	N	N/A	COMMENTS
ARE NPDES PERMITS, FOR ALL PERMITEES POSTED AT THE CONSTRUCTION ENTRANCE ?				
IS CONTACT INFORMATION FOR ALL PERMITS POSTED AT THE CONSTRUCTION ENTRANCE ?				
ARE COPIES OF INSPECTION REPORT INCLUDED WITH THE SWPPP				
IS A COPY OF THE SWPPP CERTIFICATIONS FOR ALL PERMITS INCLUDED WITH SWPPP ?				
IF THE BMP's HAVE BEEN MODIFIED, HAS THE SWPPP BEEN MODIFIED ?				
ARE THERE ANY SIGNS OF DISCHARGE LEAVING THE SITE ?				
ARE ALL BMP's FUNCTIONING AS INTENDED ?				
ANY ADDITIONAL BMS's REQUIRED ?				
ARE STABILIZED ENTRANCES/EXITS PREVENTING STREET CONTAMINATION ?				
ARE ANY BMP's IN NEED OF REPAIR AND/OR MAINTENANCE ?				
ARE ANY HAZARDOUS MATERIALS BEING EXPOSED TO STORM WATER RUNOFF ?				
HAVE THERE BEEN ANY REPORTABLE SPILLS OF HAZARDOUS MATERIALS ?				
HAVE ALL AREAS OF THE SITE NOT COVERED BY IMPERVIOUS MATERIALS ACHIEVED THE REQUIRED COVERAGE ?				
ARE ALL SOIL–DISTURBING ACTIVITIES COMPLETE?				
HAS A NOTICE OF TERMINATION (NOT) BEEN FILED ?				

NOTE: ALL ITEMS OF NON–COMPLIANCE SHALL BE REPAIRED/INSTALLED WITHIN SEVEN (7) CALENDAR DAYS OF INSPECTION. REPAIRS/INSTALLATION SHALL BE COMPLETED IMMEDIATELY, IF STORM CONDITIONS ARE IMMINENT

NOTE INCIDENTS OF NON–COMPLIANCE: _____

"I CERTIFY UNDER PENALTY OF LAW THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ENSURE THAT QUALIFIED PERSONNEL PROPERTY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE, I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISON MENT FOR KNOWING VIOLATIONS."

SIGNATURE: _____ DATE: _____

PRINTED NAME: _____

TITLE: _____

INSPECTIONS

A. GENERAL

1. EACH CONTRACTOR WILL DESIGNATE A QUALIFIED PERSON OR PERSONS TO PERFORM THE FOLLOWING INSPECTIONS:
   a. DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION WILL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS CONTAMINATING THE AREA.

EROSION AND SEDIMENT CONTROL

SOIL STABILIZATION PRACTICES

____ TEMPORARY SEEDING
__X__ PERMANENT PLANTING, SODDING, OR SEEDING
____ MULCHING
____ SOIL RETENTION BLANKET
____ BUFFER ZONES
____ PRESERVATION OF NATURAL RESOURCES
OTHER FINAL LANDSCAPING COVER

STRUCTURAL PRACTICES

__X__ SILT FENCES
____ EARTH BERMS
____ DIVERSION, INTERCEPTOR OR PERIMETER DIKES
____ DIVERSION, INTERCEPTOR OR PERIMETER SWALES
____ DIVERSION DIKES AND SWALE COMBINATIONS
____ CONCRETE FLUMES
__X__ ROCK BEDDING AT CONSTRUCTION EXIT
____ TIMBER MATTING AT CONSTRUCTION EXIT
____ CHANNEL LINERS
____ SEDIMENT TRAPS
____ RETENTION POND
____ STORM INLET SEDIMENT TRAP
____ STONE OUTLET STRUCTURES
__X__ CURBS AND GUTTERS
____ STORM DRAINS
____ VELOCITY CONTROL DEVICES
____ ROCK LINE SWALES
OTHER FINAL LANDSCAPING

NARRATIVE: SEQUENCE OF CONSTRUCTION (STORM WATER MANAGEMENT) ACTIVITIES

1. SUBMIT NOTICE OF INTENT, SECURE SITE AND INSTALL TEMPORARY EROSION AND SEDIMENT CONTROLS (e.g. SILT FENCE AND STABILIZED CONSTRUCTION ENTRANCE, etc.)
2. EXECUTE GRADING.
3. COMPLETE SITE GRADING.
4. EXCAVATION FOR UTILITIES.
5. COMPLETION OF SITE IMPROVEMENTS.
6. WHEN ALL CONSTRUCTION ACTIVITIES RELATED TO THE DEVELOPMENT OF THE SITE ARE COMPLETED, REMOVE TEMPORARY CONTROLS MENTIONED IN NOTE NO.1 ABOVE, AND THEN SUBMIT NOTICE OF TERMINATION FORM.
7. APPROXIMATE SCHEDULE OF MAJOR ACTIVES:
   SITE GRADING = _____, 201__ THROUGH _____, 201__
   TERMINATION OF GRADING TO END OF PROJECT = _____, 201__THROUGH_____, 201

MATERIALS OR SUBSTANCES EXPECTED TO BE PRESENT ON SITE DURING CONSTRUCTION

— CONCRETE	— PETROLEUM BASED PRODUCTS	— FUELS
— DETERGENTS	— CLEANING SOLVANTS	— WATER WASHINGS
— PAINTS (ENAMEL AND LATEX)	— WOOD	— GLUES, ADHESIVES
— METAL STUDS	— ROOFING SHINGLES	— ROOFING SHINGLES
— TAR	— OILS	— CURING COMPOUNDS

(NO ASBESTOS ON SITE)

GENERAL CONTRACTOR CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND THE TERMS AND CONDITIONS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT THAT AUTHORIZES STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY FROM THE CONSTRUCTION SITE IDENTIFIED AS PART OF THIS CERTIFICATION.

SIGNED: _____ COMPANY: _____
NAME: _____ ADDRESS: _____
TITLE: _____ TELEPHONE: _____
DATE: _____

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I CERTIFY UNDER PENALTY OF LAW THAT I WILL COORDINATE EITHER THROUGH THE GENERAL CONTRACTOR, OWNER, OR DIRECTLY, WITH THE CONTRACTOR(S) AND/OR SUBCONTRACTOR(S) IDENTIFIED IN THE POLLUTION PREVENTION PLAN, HAVING RESPONSIBILITY FOR IMPLEMENTING STORM WATER CONTROL MEASURES TO MINIMIZE ANY IMPACT MY ACTIONS MAY HAVE ON THE EFFECTIVENESS OF THESE STORM WATER CONTROLS MEASURES.

SIGNED: _____ SIGNED: _____
NAME: _____ NAME: _____
TITLE: _____ TITLE: _____
COMPANY: _____ COMPANY: _____

BEST MANAGEMENT PRACTICES

1. STRUCTURAL MEASURES SHALL BE MAINTAINED THROUGHOUT THE LIFE OF THE PROJECT IN EFFECTIVE OPERATING CONDITION.
2. DOCUMENTATION OF MAINENANCE ACTIVITIES INCLUDING FREQUENCY, LOT DESIGNATION, INSPECTION OF STRUCTURAL CONTROLS, MAT'L STORAGE AREAS VEHICLES INTRANCE AND EXITS: ACTIONS TAKEN AND INSPECTORS NAME.
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A. STORE ONLY ENOUGH PRODUCTS REQUIRED TO DO THE JOB.
B. NEATLY STORE MATERIALS ON–SITE IN AN ORDERLY MANNER.
C. KEEP PRODUCTS IN THEIR ORIGINAL CONTAINER.
D. DO NOT MIX SUBSTANCES WITH ONE ANOTHER, UNLESS OTHERWISE RECOMMENDED BY THE MANUFACTURER.
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SHALL BE OBSERVED DURING CONSTRUCTION:

__X__ HAUL ROADS SHALL BE DAMPENED FOR DUST CONTROL
__X__ LOADED HAUL TRUCKS SHALL BE COVERED WITH TARPAULIN.
__X__ EXCESS DIRT ON ROADS SHALL BE REMOVED IMMEDIATELY.
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____ OTHER: _____

GENERAL CIVIL INDEX

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IT'S THE LAW!

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4110 RIO BRAVO, SUITE 217
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PHONE:915–351–8800
E–MAIL: mail@sites–sw.com
WEB: www.sites–sw.com

CONSULTANTS

SLI ENGINEERING, INC.
CIVIL ENGINEERS LAND SURVEYORS LAND PLANNERS
6600 WESTWIND DRIVE EL PASO, TEXAS (915) 584–4457
SLI LICENSE No. F–1902

STATE OF TEXAS GEORGES S. HALLOUM 92106 LICENSED PROFESSIONAL ENGINEER

MAY 22, 2019
SLI Project No. 09–19–4314

PROJECT
CDBG HART & BAIRD IMPROVEMENTS

ADDRESS
4861 ATLAS AVE.
EL PASO, TX 79904 (HART)
4747 ATLAS AVE.
EL PASO, TX 79904 (BAIRD)

Housing Authority of the City of El Paso

FINAL FOR CONSTRUCTION

REVISIONS

MARK	DATE	DESCRIPTION

PROJECT NO:	2019048
CAD DWG FILE:	SWPPP–104.DWG
DRAWN BY:	F.E.
CHK'D BY:	F.E. /G.H.
ISSUE DATE:	05/22/2019
COPYRIGHT:	SLI Engineering, Inc.

SHEET TITLE

STORM WATER POLLUTION PREVENTION NOTES - HART

SWPPN-106

SHEET 18 OF 19

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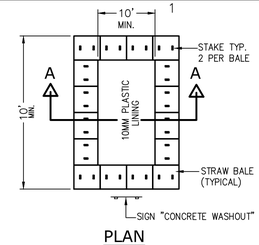
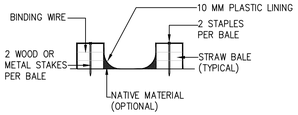


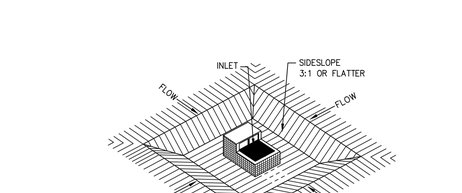
PLAN
NTS

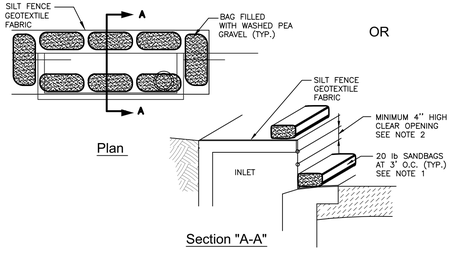


SECTION A-A
NTS

1. The washout area will be constructed before concrete pours occur at the site.
2. Maintenance and Inspection:
   The washout areas will be inspected daily to ensure that all concrete washing is being discharged into the washout area, no leaks or tears are present, and to identify when concrete wastes need to be removed. The washout areas will be cleaned out once the area is filled to 75 percent of the holding capacity. Once the area's holding capacity has been reached, the concrete wastes will be allowed to harden; the concrete will be broken up, removed, and taken to Middletown Landfill for disposal. The plastic sheeting will be replaced if tears occur during removal of concrete wastes from the washout area.
3. Design Specifications
   Temporary concrete washout type Above Grade will be constructed as shown above, with a recommended minimum length and minimum width of 10 feet but with sufficient quantity and volume to contain all liquid and conc. waste generated by washout operations. The washout will be a minimum of 50 feet from storm drain inlets. Plastic lining will be free of holes, tears, or other defects that compromise the impermeability of the material.

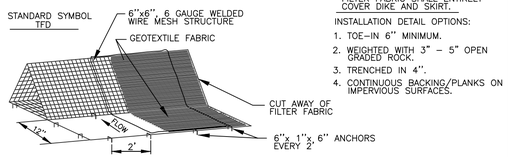
01 Above Grade Conc. Washout
N.T.S.





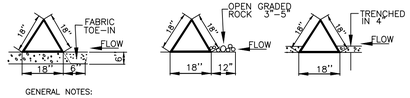
NOTES:
1. WHERE MINIMUM CLEARANCES CAUSE TRAFFIC TO DRIVE IN THE GUTTER, THE CONTRACTOR MAY SUBSTITUTE A 1" x 4" BOARD SECURED WITH CONCRETE NAILS 8" O.C. NAILED INTO THE GUTTER IN LIEU OF SANDBAGS TO HOLD THE FILTER DIKE IN PLACE. UPON REMOVAL, CLEAN ANY DIRT/DEBRIS FROM NAILING LOCATIONS, APPLY CHEMICAL SANDING AGENT AND APPLY NON-SHRINK GROUT FLUSH WITH SURFACE OF GUTTER.
2. A SECTION OF FILTER FABRIC SHALL BE REMOVED AS SHOWN ON THIS DETAIL OR AS DIRECTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR HOG RINGS AT THIS LOCATION.
3. DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2".
4. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY REMOVE THE INLET PROTECTIONS IF THE STORM-WATER BEGINS TO OVERTOP THE CURB.
5. INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

05 Silt Fence Inlet Protection
N.T.S.



NOTE:
FILTER FABRIC SHALL ENTIRELY COVER DIKE AND SKIRT.

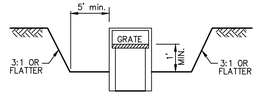
INSTALLATION DETAIL OPTIONS:
1. TOE-IN 6" MINIMUM.
2. WEIGHTED WITH 3" - 5" OPEN GRADED ROCK.
3. TRENCHED IN 4".
4. CONTINUOUS BACKING/PLANKS ON IMPERVIOUS SURFACES.



GENERAL NOTES:
1. TRIANGULAR SEDIMENT FILTER DIKES ARE USED IN AREAS WHERE THERE IS NO CONCENTRATION OF WATER IN A CHANNEL OR OTHER DRAINAGE WAY ABOVE THE BARRIER AND THE CONTRIBUTING DRAINAGE AREA IS LESS THAN ONE ACRE. THIS MEASURE IS EFFECTIVE ON PAVED AREAS WHERE INSTALLATION OF SILT FENCE IS NOT POSSIBLE OR WHERE VEHICLE ACCESS MUST BE MAINTAINED.
2. DIKES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT DIKE.
3. THE FABRIC COVER AND SKIRT SHALL BE A CONTINUOUS WRAPPING OF GEOTEXTILE. THE SKIRT SHALL BE A CONTINUOUS EXTENSION OF THE FABRIC ON THE UPSTREAM FACE.
4. THE SKIRT SHALL BE WEIGHTED WITH A CONTINUOUS LAYER OF 3-5" OPEN GRADED ROCK OR TOED-IN 6" WITH MECHANICALLY COMPACTED MATERIAL. OTHERWISE, THE ENTIRE STRUCTURE SHALL BE TRENCHED IN 4".
5. DIKES AND SKIRT SHALL BE SECURELY ANCHORED IN PLACE USING 6" WIRE STAPLES ON 2' CENTERS ON BOTH EDGES AND SKIRT, OR STAKE USING 3/8 " DIAMETER RE-BAR WITH TEE ENDS.
6. FILTER MATERIAL SHALL BE LAPPED OVER ENDS 6" TO COVER DIKE TO DIKE JOINTS. JOINTS SHALL BE FASTENED WITH GALVANIZED SHOAT RINGS.
7. THE DIKE STRUCTURE SHALL BE MW40-6 GA. 6"X6" WIRE MESH, 18" ON A SIDE.
8. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
9. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6" AND DISPOSED OF IN A MANNER WHICH WILL NOT CAUSE ADDITIONAL SILTATION. AFTER THE DEVELOPMENT SITE IS COMPLETELY STABILIZED, THE DIKES AND ANY
10. REMAINING SILT SHALL BE REMOVED WITH PERMISSION FROM ENGINEER OR OWNER. SILT SHALL BE DISPOSED OF AS INDICATED IN GENERAL NOTE 8 ABOVE.

02 Triangular Sediment Filter Dike
N.T.S.

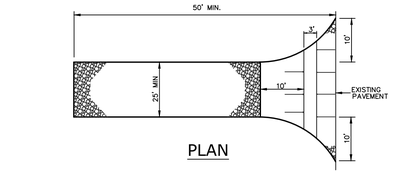
PROFILE



SECTION

1. THE EXCAVATED TRAP SHALL BE SIZED TO PROVIDE A MINIMUM STORAGE CAPACITY CALCULATED AT 500 CUBIC FEET. THE TRAP SHALL BE NO LESS THAN ONE FOOT NOR MORE THAN TWO FEET DEEP MEASURED FROM THE TOP OF THE INLET STRUCTURE.
2. WHERE AN INLET IS LOCATED SO AS TO RECEIVE CONCENTRATED FLOWS, THE BASIN SHALL HAVE A RECTANGULAR SHAPE IN A 3:1 (LENGTH/WIDTH) RATIO, WITH THE LENGTH ORIENTED IN THE DIRECTION OF THE FLOW.
3. SEDIMENT SHALL BE REMOVED AND RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP.

06 Inlet Sediment Trap
N.T.S.



PLAN

PROFILE

LOCATION FOR INSTALLATION IS IDENTIFIED ON THE PROJECT'S EROSION CONTROL PLAN. AN ALTERNATE LOCATION MUST BE APPROVED BY THE PROJECT ENGINEERING.

REMOVE VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA. GRADE CROWN FOUNDATION FOR POSITIVE DRAINAGE.

THE MIN. WIDTH OF THE ENTRANCE/EXIT SHALL BE 20 FT. OR THE FULL WIDTH OF EXIT ROADWAY, WHICHEVER IS GREATER.

THE CONSTRUCTION ENTRANCE SHALL BE AT LEAST 50 FT. LONG. EXTEND BEYOND THE 30 FT MIN., AS NECESSARY, IF THE PAD IS TOO SHORT FOR HEAVY CONSTRUCTION TRAFFIC.

PLACE GEOTEXTILE FABRIC AND GRADE FOUNDATION TO IMPROVE STABILITY.

DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE STONE PAD TO A SEDIMENT TRAP OR BASIN. INSTALL PIPE UNDER PAD AS NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.

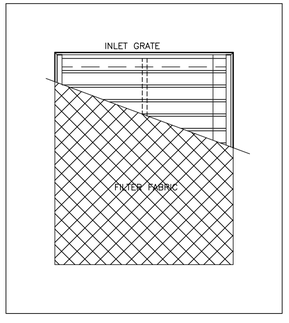
ENTRANCE SHALL BE MAINTAINED IN A CONDITION, WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ON TO PUBLIC RIGHT-OF-WAY SHALL BE REMOVED IMMEDIATELY BY CONTRACTOR

WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVED SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS.

03 Stabilized Construction Entrance/Exit
N.T.S.

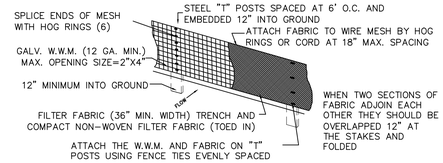


NOTES:
1. USE SILT FENCE DETAIL FOR INSTALLATION OF THE SILT FENCE AROUND THE AREA INLET.
2. THE METAL AREA INLET GRATE SHALL BE LIFTED AND FILTER FABRIC WRAPPED AROUND THE GRATE AND THE GRATE SHALL BE REPLACED.
3. IN VEHICULAR TRAFFIC AREAS THE METAL GRATE SHALL BE LIFTED OUT AND WIRE FENCE MATERIAL SHALL BE PLACED UNDER IT WITH FILTER FABRIC PLACED BETWEEN THE GRATE AND THE WIRE FENCE. THE WIRE FENCE SHALL BE ATTACHED TO THE GRATE.
4. ACCUMULATED SILT FENCE SHALL BE REMOVED WHEN THE FILTER FABRIC OVER THE GRATE COMPLETELY COVERS THE GRATE AREA, AND THE SILT AROUND THE SILT FENCE REACHES A HEIGHT OF 6".
5. AREA INLET PROTECTION SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED.

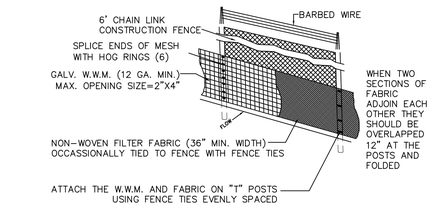
07 Silt Fence Inlet Protection
N.T.S.

GENERAL CIVIL INDEX

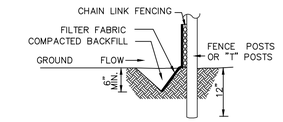
C-100	OVERALL PROJECT
C-101	ENLARGED GRADING PLAN ATLAS
C-102	OVERALL GRADING PLAN BAIRD
C-103	ENLARGED GRADING PLAN BAIRD
C-104	OVERALL GRADING PLAN HART
C-105	ENLARGED GRADING PLAN HART
C-200	NOT USED
C-300	SECTIONS PLAN
C-400	LARGE-SCALE TRANSITIONAL SIDEWALKS ATLAS
C-401	LARGE-SCALE TRANSITIONAL SIDEWALKS / DRIVEWAYS BAIRD
C-402	LARGE-SCALE TRANSITIONAL SIDEWALKS / DRIVEWAYS HART
C-500	STANDARD DETAILS
c-600	NOT USED
C-700	NOT USED
C-800	NOT USED
C-900	DRIVEWAY ISOMETRIC
SWPPP-101	STORM WATER POLLUTION PREVENTION PLAN ATLAS
SWPPP-102	STORM WATER POLLUTION PREVENTION PLAN BAIRD
SWPPP-103	STORM WATER POLLUTION PREVENTION PLAN HART
SWPPN-104	STORM WATER POLLUTION PREVENTION NOTES ATLAS
SWPPN-105	STORM WATER POLLUTION PREVENTION NOTES BAIRD
SWPPN-106	STORM WATER POLLUTION PREVENTION NOTES HART
SWPPD-500	STORM WATER POLLUTION PREVENTION DETAILS



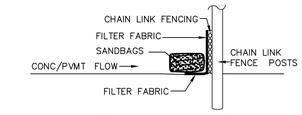
STAND ALONE (OPTIONAL)
N.T.S.



ON CONTRACTOR'S FENCE
N.T.S.



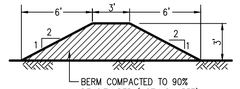
EXTENSION OF FABRIC TRENCH FOR GROUND CONDITIONS
N.T.S.



EXTENSION OF FABRIC FOR PAVED CONDITIONS
N.T.S.

1. SILT FENCE SHALL NOT BE USED WHERE THERE IS A CONCENTRATION OF WATER IN A CHANNEL OR DRAINAGE WAY. IF CONCENTRATED FLOW OCCURS AFTER INSTALLATION, PLACE A ROCK BERM IN THE AREAS OF CONCENTRATED FLOW.
2. SILT FENCE MATERIAL SHALL BE NON WOVEN POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE FABRIC WITH NON-RAVELING EDGES. THE FABRIC SHALL BE NON-BIODEGRADEABLE, INERT TO MOST SOIL CHEMICALS, ULTRAVIOLET RESISTANT, UNAFFECTED BY MOISTURE OR OTHER WEATHER CONDITIONS, AND PERMEABLE TO WATER WHILE RETAINING SEDIMENT. THE FABRIC WIDTH SHALL BE 18" MIN.
3. FENCE POSTS SHALL BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FT. LONG WITH TEE CROSS SECTION, SURFACE PAINTED OR GALVANIZED. POSTS SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POSTS SHALL BE EMBEDDED A MINIMUM OF 1 FT. DEEP AND SPACED NOT MORE THAN 8 FEET ON CENTER OR AS DIRECTED BY THE GOVERNMENT.
4. WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHALL BE GALVANIZED 2"x4" WELDED WIRE, 12 GAUGE MINIMUM.
5. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWN-SLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G., PAVEMENT OR ROCK OUTCROP), WEIGHT FABRIC FLAP WITH 3 IN. OF PEA GRAVEL ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE. THE TRENCH MUST BE A MIN. OF 6 IN. WIDE AND 6 IN. DEEP TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
6. SILT FENCE SHALL BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST. THERE SHALL BE A 3-FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
7. SILT FENCE SHALL BE REMOVED, WITH THE GOVERNMENT'S APPROVAL. WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

04 Tempory Sediment Control Fence
N.T.S.



08 Earthen Berm
N.T.S.

NOTE:
NOT ALL DETAILS SHOWN ON THIS SHEET ARE BEING USED ON THE EROSION/SEDIMENT CONTROL PLAN. ADDITIONAL DETAILS PROVIDED IF NEEDED DURING CONSTRUCTION FOR UNFORSEEN EVENTS.

Know what's below. Call before you dig.
Call 811 TWO Working days Before you dig
It's Free, It's Easy, and
IT'S THE LAW!

SITES SOUTHWEST
4110 RIO BRAVO, SUITE 217
EL PASO, TX 79902
PHONE:915-351-8800
E-MAIL: mail@sites-sw.com
WEB: www.sites-sw.com

CONSULTANTS
SLI ENGINEERING, INC.
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
6600 WESTWIND DRIVE
EL PASO, TEXAS
(915) 584-4457
SLI LICENSE No. F-1902

STATE OF TEXAS
GEORGES S. HALLOUM
92105
LICENSED PROFESSIONAL ENGINEER

MAY 22, 2019
SLI Project No. 09-19-4314

PROJECT
CDBG HART & BAIRD IMPROVEMENTS

ADDRESS
4861 ATLAS AVE.
EL PASO, TX 79904 (HART)
4747 ATLAS AVE.
EL PASO, TX 79904 (BAIRD)

Housing Authority of the City of El Paso

FINAL FOR CONSTRUCTION

REVISIONS

MARK	DATE	DESCRIPTION

PROJECT NO:	2019048
CAD DWG FILE:	SWPPD-500.DWG
DRAWN BY:	F.E.
CHK'D BY:	F.E. /G.H.
ISSUE DATE:	05/22/2019
COPYRIGHT:	SLI Engineering, Inc.

SHEET TITLE
STORM WATER POLLUTION PREVENTION DETAILS

SWPPD-500
SHEET 19 OF 19

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ATTACHMENT B

CONTRACT BETWEEN AFFORDABLE HOUSING ACQUISITION AN AFFILIATE OF THE HOUSING AUTHORITY OF THE CITY OF EL PASO AND

XXXXXXXXXXXX.

INTRODUCTION

This Contract (the "Contract") by and between **Affordable Housing Acquisition an Affiliate of The Housing Authority of the City of El Paso**, a profit state governmental entity (hereinafter "AHA") and **XXXXXXXXX.** (hereinafter "the Contractor") is hereby entered into this XX day of _XXXX__, 2018 (the "Effective Date").

1.0 Definitions

1.1 **Procurement Administration ("AHA PROCUREMENT MANAGER").** AHA Procurement Manager.

1.2 **Request for Proposals ("RFP").** A competitive solicitation process conducted by AHA wherein an award is generally made to the top-rated responsive and responsible bidder.

1.3 **Days**. All references to "days" shall be calendar days; in the case that the last day referenced falls on a Saturday, Sunday or legal holiday, then the period of time shall be automatically extended to include the next work day.

1.4 **Project.** All references to the "Project" shall mean the **xxxxxxxxxxx**.

1.5 **Appendices.** The following documents are included in the Contract as individually noted exhibits and shall be incorporated herein and made a part of this Contract by reference as if fully set forth herein:

1.6 The following, each of which was either issued by AHA as a part of the competitive solicitation and/or which was completed and returned by the Contractor in response to the solicitation (copies are not included under any of the appendices but are included herein by reference and are included within the solicitation file):

1.6.1 Current Insurance Certificate/Endorsement (naming AHA or affiliate as "additional insured");

1.6.2 Supplementary Instructions to Offerors;

1.6.3 Non-Collusive Affidavit – Prime Offeror

1.6.4 Texas Statutory Performance Bond

1.6.5 Payment Bond;

1.6.6 Subcontractor Identification

1.6.7 Contractor's and Subcontractor's Non-Conclusive Affidavits;

1.6.8 Scope of Work included as part of RFP Package **OPS XXXXXXXX**;

1.7 Term of Contract. Services pursuant to this Contract (the "Services") shall begin upon Contractor's receipt of the written Notice to Proceed by AHA. Notwithstanding the continuation of any warranties contained herein, this Contract shall terminate upon Final Completion.

1.8 Services and Payment

1.9 Scope of Services. The Contractor shall furnish all labor, material, equipment and services, and perform and complete all work required for the **XXXXXXXXXXXXX**, El Paso, TX 799XX in accordance with this Agreement and RFP No. **OPS 18-RXXXX** prepared by AHA and any duly executed Addenda to this Agreement. Said labor, materials, equipment and services shall be provided on the dates and times determined by AHA at the above-stated AHA communities and/or facilities. In addition, AHA shall retain the right to implement and/or enforce any item issued as a part of RFP No. OPS 18-R-XXXX.

1.7 Cost/Value of Services

1.7.1 Labor Costs. The Contractor shall not pay wages that are less than the highest wage required by either of the following:

1.7.1.1 The wage determination rates listed in RFP No. **OPS 18-R-XXXX**

1.7.2 Contract Value.

1.7.3 AHA shall pay the Contractor for the performance of the Contract, in current funds, subject to additions and deductions as provided in the Technical Specifications, not-to-exceed ("NTE") the sum of:

$XXXXXXXXX

Contractor exceeds the above-stated NTE amount at its own risk.

1.7.4 Time for Performance. The Contractor hereby agrees to commence work under this Contract upon receipt of a written Notice to Proceed ("NTP"), submitted by AHA. The Contractor shall complete the project within XXXXXXXXX (XXX) calendar days.

1.7.4.1 Commencement of Work. Contractor shall not commence work under this contract until all necessary permits and

approvals, including modification thereof, that are preconditions to commencement of construction of the Project have been issued.

1.7.4.2 Delays/Time Extensions. Time extensions for performance may be granted by AHA Procurement Manager and AHA Chief Executive Officer. Any time extension shall be granted by written modification to this Contract.

1.7.4.3 Final Completion. The Contractor shall notify AHA Procurement Manager, in writing, as to the date when in its opinion the work is substantially complete and ready for inspection. Upon receipt of such notification, AHA shall conduct an inspection of the work within ten (10) days. AHA shall promptly advise the Contractor, in writing, of any remaining final punch list items following such inspection. The Contractor shall notify AHA in writing when all punch list items have been completed and all clean-up has been done. AHA will then conduct a final inspection within ten (10) days of receipt of such notification. Performance shall be considered complete upon the Contractor's receipt from AHA of written acceptance of the work and AHA's receipt from the Contractor of the following:

1.7.4.3.1.1 the total amount due the Contractor and a separately stated amount for each unsettled claim against AHA;

1.7.4.3.1.2 documentation noting that AHA is released of all claims, other than those stated in the Contractor's release;

1.7.4.3.1.3 wages paid to laborers were paid as required herein; and

1.7.4.3.1.4 all guaranties and warranties contained herein are assigned to AHA.

1.7.5 Liquidated Damages. Pursuant to Page 3, section #4 of RFP, the Contractor agrees to pay to AHA, the sum of **$0.0** per day/building as fixed, agreed, liquidated damages for each consecutive calendar day beyond the time for performance provided in this Contract is not terminated until Final Completion is achieved.

1.7.6 Non-Escalation. Unless otherwise specified within the RFP documents, the unit prices reflected in this Contract shall remain firm with no provision for price increases during the term of the Contract.

1.8 Billing Procedure

1.8 To receive payment for Services rendered pursuant to this Contract, the Contractor shall:

1.8.1 Submit all certified payroll reports up to the date of the work being billed.

1.8.2 Progress payments must be approved by AHA Procurement Manager and AHA Chief Executive Office.

1.8.3 Progress payment requests shall be delivered to the attention of:

Affordable Housing Acquisition an Affiliate of
The Housing Authority of the City of El Paso
Attn: Accounts Payable
5300 E. Paisano Drive
El Paso, TX 79905-2931

1.8.4 The AHA will pay each properly completed invoice received on a Net/30 basis. Any invoice received that is not properly completed will not be paid unless and/or until the Contractor complies with the applicable provisions of this contract.

1.8.5 Final payment will be made by AHA upon receipt of the Contractor's all required payroll reports have been received and any wage discrepancies have been resolved by the Contractor.

2.0 Term of Contract. Servicers pursuant to this Contract (the "Services") shall begin upon Contractor's receipt of the written Notice to Proceed by AHA. Notwithstanding the continuation of any warranties contained herein, this Contract shall terminate upon Final Completion.

3.0 Contractor's Obligations. Pursuant to this Contract, the Contractor agrees to provide the specific construction obligations detailed in the Scope of Work issued by AHA included in RFP No. **OPS 18-R-XXXX** and herein.

3.1 The Contractor agrees not to accept or perform any assigned work initiated by a contract amendment or change order without the prior written approval of AHA Procurement Manager and AHA Chief Executive Officer.

3.1.1 Change Order Requests: The Contractor acknowledges, by signature below, that change order requests will not be summarily approved. All

change order requests must be submitted to AHA for approval, prior to undertaking the additional work.

3.1.2 Minimum Rates of Pay. The Contractor shall pay not less than the wages required under the wage determination rates included in RFP No. **OPS 18-R-XXXX** and any amendments thereto.

3.2 Supervision and Oversight. The Contractor shall be solely responsible for providing supervision and oversight to all of the Contractor's personnel and any subcontractors that are assigned to AHA work pursuant to this Contract.

3.3 Qualified Personnel. The Contractor warrants and represents that it will assign only qualified personnel to perform the Services. For the purposes of this Contract, the term "qualified personnel" shall mean those personnel that are experienced and/or trained in the manner generally accepted within the Contractor's Industry.

3.4 Compliance with Federal and State Laws. All work performed by the Contractor, pursuant to this Contract, shall be done in accordance with all applicable federal, state and local laws, regulations, codes and ordinances.

3.5 Licensing. The Contractor shall provide AHA with copies of any required current City, State and/or Federal licenses. Failure to maintain these licenses in a current status during the term(s) of this Contract shall constitute a material breach thereof.

3.6 Permits. Unless otherwise stated in the Contract documents, all local, state or federal permits, environmental permits, and licenses which may be required to provide the Services ensuing from award of this Contract, whether or not known to either AHA or the Contractor at the time of the Contract execution, shall be the sole responsibility of the Contractor including any and all costs therefore.

3.7 Government Standards. It is the responsibility of the Contractor to ensure that all items and services proposed conform to all local, state and federal law concerning safety (e.g., OSHA and NOSHA) and environmental control (e.g., EPA and City of El Paso Health and Safety Code, and any other enacted ordinance, code, law or regulation. The Contractor shall be responsible for all costs incurred for compliance with any such possible ordinance, code, law or regulation. No time extensions shall be granted or financial consideration given to the Contractor for time or monies lost due to violations of any such ordinance, code, law or regulations that may occur.

3.8 Work on AHA Property. If the Contractor's work under the Contract involves operations by the Contractor on AHA premises, the Contractor

shall take all necessary precautions to prevent the occurrence of any injury to persons or property during the progress of such work.

3.9 Subcontractors. Unless otherwise stated within the RFP bid documents, the Contractor may not use any subcontractors to accomplish any portion of the Services required by this Contract without the prior written permission of AHA Procurement Manager.

3.10 Salaries and Expenses Relating to the Contractor's Employees. Unless otherwise stated within the RFP documents, the Contractor shall pay all salaries and expenses of, and all federal Social Security taxes, federal and state unemployment taxes, and any similar taxes relating to its employees used in the performance of the Contract. The Contractor further agrees to comply with all federal, state and local wage and hour laws and all licensing laws applicable to its employees or other personnel furnished under this Contract.

3.11 Communication. If during the period of the Contract, it is necessary that AHA place toll or long distance telephone calls or facsimiles in connection with the Contractor's performance of the Contract (for complaints, adjustments, shortages, failure to deliver, etc.), it is understood that the Contractor may, at the discretion of AHA, bear the charge or expense for all such calls and/or facsimiles.

3.12 Access to Records. Both parties hereby agree that the Contractor will make available to AHA, the Comptroller General of the United States, or any of their duly authorized representatives (including retained auditors), any books, documents, papers, and records of the Contractor which are directly pertinent to this Contract for the purpose of making audit, examination, excerpts and transcriptions.

3.13 Record Retention. The Contractor shall retain all such records pertaining to this Contract for a period of not less than three (3) years after final payment or the completion of any Services provided pursuant to this Contract, whichever occurs later.

3.14 Backorders

3.14.1 The Contractor must notify AHA Procurement Manager within ten (10) days of the following:

3.14.1.1 Any and all backordered materials;

3.14.1.2 Any delay in the Contractor's performance; and

3.14.1.3 The estimated date for delivery or performance.

3.15 Inspections. The Contractor shall permit AHA to conduct periodic inspections of the work. Any deficiencies noted by AHA during inspections shall be disclosed to the Contractor in writing within Five (5) days of discovery, and the Contractor shall remedy such deficiency within Five (5) calendar days of notification of such from AHA or as otherwise agreed to in writing by both parties.

4.0 Insurance Requirements

4.1 The Contractor shall maintain insurance coverage during the effective term(s) of this Contract No. **OPS 18-C-XXXX**.

4.2 The Contractor shall provide AHA with current certificate(s)/endorsement(s) evidencing the insurance coverage referenced above. Failure to maintain the above-referenced insurance coverage, including naming AHA as an additional insured (where appropriate) during the term(s) of this Contract shall constitute a material breach thereof.

4.3 Insurance certificate(s)/endorsement(s) shall be delivered to:

Juan Pulido
Procurement Manager
c/o Affordable Housing Acquisition an Affiliate of
The Housing Authority of the City of El Paso
5300 E. Paisano Drive
El Paso, TX 79905-2931

5.0 Indemnification

5.1 The Contractor shall protect, indemnify and hold AHA or subsidiaries, its officers, employees, and agents harmless from and defend against any and all claims, damages, losses, suits, actions, decrees, judgments, attorney's fees, court costs and other expenses of any kind or character which AHA, its officers, employees, agents, consulting engineers or other retained consultants may suffer, or which may be sought against, recovered from or obtainable against AHA, its officers, employees, and agents, based upon the Contractor's actions or failure to act during the performance of the Contractors duties hereunder, or as a result of any work performed by the Contractor, regardless of when such claims shall arise. The Contractor's duty to indemnify AHA shall apply regardless of whether or not the event which gave rise to such a claim was caused, in part, by AHA.

5.2 Any money due by the Contractor under and by virtue of this Contract which is considered necessary by AHA for such purpose, may be retained by AHA for its protection; or in case no money is due, its surety may be held until all such claims, damages, losses, suits, actions, decrees, judgments, attorney's fees and court costs and other expenses of any kind or character as aforesaid shall have been settled and suitable evidence to that effect furnished to AHA provided, however, that money due the Contractor will not be withheld when the Contractor produces satisfactory evidence that it is adequately protected by applicable public liability and property damage insurance;

5.3 The Contractor shall, at its own expense, defend AHA, its officers, employees, and agents, against any and all claims, suits or actions which may be brought against them, or any of them, as a result of, or by reason of, or arising out of, or on account of, or in consequence of any act or failure to act the consequences of which the Contractor has indemnified AHA, its officers, employees, and agents against. If the Contractor fails to do so, AHA shall have the right, but not the obligation, to defend the same and to charge all direct and incidental costs of such defense to the Contractor including attorney's fees and court costs.

5.4 The Contractor guarantees the payment of all claims for materials, supplies and labor, and all other claims against it or any subcontractor, in connection with the Contract.

5.5 The Contractor shall provide that any authorized contractual arrangement with a subcontractor shall be in conformance with the terms of this Contract including the indemnity provisions of this Section 8.

6.0 Financial Viability and Regulatory Compliance

6.1 The Contractor warrants and represents that its corporate entity is in good standing with all applicable federal, state and local licensing authorities and that it possesses all requisite licenses to perform the Services required by this Contract. The Contractor further warrants and represents that it owes no outstanding federal, state or local taxes or business assessments.

6.2 Contractor agrees to promptly disclose to AHA any IRS liens or insurance or licensure suspension or revocation that may adversely affect its capacity to perform the Services required by this Contract. The failure by the Contractor to disclose such issue to AHA in writing within five (5) days of Contractor's receipt of such notification will constitute a material breach of this Contract.

6.3 Pursuant to Section 231.006, Texas Family Code, Contractor warrants and represents that it is not ineligible to receive the award of or payments under

this Agreement and acknowledges that this Agreement may be terminated and payment may be withheld if this certification is inaccurate.

6.4 Pursuant to Section 2155.004, Texas Government Code, Contractor warrants and represents that the individual or business entity named in this Agreement is not ineligible to receive the award of or payments under this Agreement and acknowledges that this Agreement may be terminated and payment withheld if this certification is inaccurate.

6.5 A corporate or limited liability company Contractor warrants and represents that it is not currently delinquent in the payment of any Franchise Taxes due under Chapter 171 of the Texas Tax Code.

6.6 The Contractor further agrees to promptly disclose to AHA any change of its ownership and/or any declaration of bankruptcy that the Contractor may undergo during the term(s) of this Contract. The failure of the Contractor to disclose any change of its ownership and/or its declaration of bankruptcy within five (5) days of said actions shall constitute a material breach of this Contract.

7.0 Disputes

8.0 Breach. Pursuant to 2 CFR 200.339 as issued by the Office of the Secretary, AHA and the Contractor each agree to comply with the following provisions:

8.1 Termination For Cause and Convenience. AHA may terminate this Contract for cause. AHA may also terminate this Contract for convenience. Any termination notice shall state the following:

8.1.1 whether the Contract is being terminated for convenience or cause;

8.1.2 whether the Contract is terminated in whole or in part;

8.1.3 if terminated for cause, the acts or omissions constituting the material breach, AHA Procurement Manager's determination that failure to perform is not excusable, AHA's right to charge excess costs of re-procurement to the Contractor, and the Contractor's appeal rights;

8.1.4 effective date of termination;

8.1.5 if applicable, the Contractor's right to proceed under the non-terminated portion of the Contract; and

8.1.6 any special instructions.

8.2 Prior to termination, AHA may choose, it its sole discretion, to warn the Contractor, verbally or in writing, of any issue of non-compliant or

unsatisfactory performance. Such warning may include placing the Contractor on probation, thereby giving the Contractor a certain period of time to correct the deficiencies or potentially suffer termination. AHA shall maintain in the Contract file a written record of any such warning detailing all pertinent information. If the Contractor does not agree with such action, the Contractor shall have ten (10) days from receipt of such verbal or written warning to dispute or protest such action in writing; if it does not do so within the 10-day period, it shall have no recourse but to accept AHA's position on the issue. The written protest must detail all pertinent information pertaining to the dispute, including any justification detailing AHA's alleged incorrect action(s).

8.3 After termination, if the Contractor does not agree with AHA's justification for the termination, the Contractor shall have ten (10) days from the date of termination to dispute such action in writing.

8.4 Any protest or dispute submitted by the Contractor under this Section shall thereafter be conducted in accordance with Section 9.1 herein.

8.5 All rights and remedies granted to AHA herein and any other rights and remedies which AHA may have at law and in equity are hereby declared to be cumulative and not exclusive. The fact that AHA may have exercised any remedy without terminating this Contract shall not impair AHA's rights thereafter to terminate or to exercise any other remedy herein granted, or to which AHA may be otherwise entitled.

9.0 Applicable Federal Law. <u>ONLY PROJECTS USING FEDERAL FUNDS APPLIES</u>. Pursuant to 2 CFR 200 as issued by the Office of the Secretary, AHA and the Contractor each agree to comply with the following provisions:

9.1 Executive Order 11246. For all construction contracts awarded in excess of $10,000, both parties hereby agree to comply with "Executive Order 11246 of September 24, 1965, entitled "Equal Employment Opportunity," as amended by Executive Order 11375 of October 13, 1967, and as supplemented in Department of Labor Regulations (41 CFR Chapter 60).

9.2 Copeland "Anti-Kickback" Act. For all construction or repair contracts awarded, both parties hereby agree to comply with the Copeland "Anti-Kickback" Act (18 U.S.C. 874) as supplemented in Department of Labor Regulations (29 CFR 10.27).

9.3 Davis-Bacon Act. <u>ONLY PROJECTS USING FEDERAL FUNDS APPLIES</u>. For all construction contracts awarded in excess of $2,000 when required by Federal Grant Program legislation, both parties hereby agree to

comply with the Davis-Bacon Act (40 U.S.C. 276a to 276a-7) as supplemented in Department of Labor Regulations (29 CFR Part 5).

9.4 **Sections 103 and 107 of the Contract Work Hours and Safety Standards Act.** For all construction contracts awarded in excess of $2,000 and for other contracts, which involve the employment of mechanics or laborers awarded in excess of $2,500, both parties hereby agree to comply with the Sections 103 and 107 of the Contract Work Hours and Safety Act (40 U.S.C. 327-330) as supplemented in Department of Labor Regulations (29 CFR Part 5).

9.5 **Clean Air Act.** For all contracts in excess of $100,000, both parties hereby agree to comply with all applicable standards, orders or requirements issued under Section 306 of the Clean Air Act (42 U.S.C. 1857(h), Section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR 49.3).

9.6 **Energy Policy and Conservation Act.** Both parties hereby agree to comply with all mandatory standards and policies relating to energy efficiency, which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub. L. 94-163, 89 Stat. 871).

9.7 **Additional Federally Required Orders/Directives. ONLY PROJECTS USING FEDERAL FUND APPLIES**. Both parties agree that they will comply with the following laws and directives, where applicable:

9.7.1 Executive Order 11061, **ONLY PROJECTS USING FEDERAL FUNDS APPLIES**.as amended, which directs the Secretary of HUD to take all action which is necessary and appropriate to prevent discrimination by agencies that utilize federal funds.

9.7.2 Public Law 88-352, Title VI of the Civil Rights Act of 1964, which provides that no person in the United States shall, on the basis of race, color, national origin or sex, be excluded from participation in, denied the benefits of, or subjected to discrimination under any program or activity which receives federal financial assistance. AHA hereby extends this requirement to the Contractor and its private contractors. Specific prohibited discriminatory actions and corrective action are described in Chapter 2, Subtitle C, Title V of the Anti-Drug Abuse Act of 1988 (42 U.S.C. 19901 et. seq.).

9.7.3 Public Law 90-284, Title VIII of the Civil Rights Act of 1968, popularly known as the Fair Housing Act, which provides for fair housing throughout the United States and prohibits any person from discriminating in the sale or rental of housing, the financing of housing or the provision of brokerage services, including in any way making unavailable or denying a dwelling to

any person because of race, color, religion, sex or national origin. Pursuant to this statute, AHA requires that the Contractor administer all programs and activities, which are related to housing and community development in such a manner as to affirmatively further fair housing.

9.7.4 The Age Discrimination Act of 1975, which prohibits discrimination on the basis of age.

9.7.5 Anti-Drug Abuse Act of 1988 (42 U.S.C. 11901 et. seq.).

9.7.6 HUD Information Bulletin 909-23 which is the following: **ONLY PROJECTS USING FEDERAL FUNDS APPLIES**.

9.7.6.1 Notice of Assistance Regarding Patent and Copyright Infringement;

9.7.6.2 Clean Air and Water Certification; and

9.7.6.3 Energy Policy and Conservation Act.

9.7.7 That the funds that are provided by AHA and HUD hereunder shall not be used, directly or indirectly, to employ, award a Contract to, or otherwise engage the services of any debarred, suspended or ineligible Contractor.

9.7.8 That none of the personnel who are employed in the administration of the work required by this Contract shall, in any way or to any extent, be engaged in the conduct of political activities in violation of Title V, Chapter IS, of the United States Code.

9.7.9 That neither party has colluded, conspired, connived or agreed, directly or indirectly, with any bidder or person, to put in a sham bid or to refrain from bidding, and has not in any manner, directly or indirectly, sought by agreement or collusion, or communication or conference, with any person, to fix the bid price of affiant or of any other bidder, to fix overhead, profit or cost element of said bid price, or that of any other bidder, or to secure any advantage against either party or any person interested in the proposed Contract; and that all statements in said proposal or bid are true.

9.8 Rights in Data and Patent Rights (Ownership and Proprietary Interest). AHA shall have exclusive ownership of, all proprietary interest in, and the right to full and exclusive possession of all information, materials, and documents discovered or produced by Contractor pursuant to the terms of this Contract, including but not limited to reports, memoranda or letters concerning the research and reporting tasks of this Contract.

10.0 Lobbying Certification. <u>ONLY PROJECTS USING FEDERAL FUNDS APPLIES</u>
By execution of this Contract with AHA the Contractor thereby certifies, to the best of his or her knowledge and belief, that:

10.1 No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal contract, the making of any federal loan, the entering into of any cooperative agreement, or modification of any federal contract, grant, loan, or cooperative agreement.

10.2 If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this federal contract, grant, loan, or cooperative agreement, the Contractor shall complete and submit Standard Form – LLL, Disclosure Form to Report Lobbying, in an accordance with its instructions.

10.3 The Contractor shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

11.0 Miscellaneous Provisions

11.1 Notices, Invoices and Reports. Except as otherwise provided in this Contract, all notices, reports, records or other communications that are required or permitted to be given to the parties under this Contract shall be sufficient in all respects if given in writing and delivered in person, by email, facsimile, by overnight courier or by registered or certified mail, postage prepaid, return receipt requested, to the receiving party at the following address:

If to AHA: Gerald Cichon, Chief Executive Officer
AHA
5300 East Paisano Drive
El Paso, TX 79905-2931
Facsimile: 915-849-3868

If to Contractor: **XXXXXX**

El Paso, TX 799XX
Phone number: XXX-XXX-XXXX

or such other address as such party may have given to the other parties by notice pursuant to this Section. Notice shall be deemed given on (i) the date such notice is personally delivered, (ii) three (3) days after the mailing if sent by certified or registered mail, (iii) one (1) business day after the date of delivery to the overnight courier if sent by overnight courier, or (iv) the next succeeding business day after transmission by facsimile, provided that any fax delivery is followed up with another method of notice listed in this Section within one (1) business day of sending the facsimile.

11.2 Taxes. All persons doing business with AHA are hereby made aware that AHA is non-exempt from paying Texas State Sales and Use Taxes and Federal Excise Taxes.

11.3 Officials, Agents and Employees of AHA Not Personally Liable. It is agreed by and between the parties hereto that in no event shall any official, officer, employee, or agent of AHA in any way be personally liable or responsible for any covenant or agreement herein contained whether expressed or implied, nor for any statement, representation or warranty made herein or in any connection with this Contract.

11.4 Assignment. The Contractor shall not assign or transfer any interest in this Contract.

11.5 Entire Agreement; Amendment. This Contract (including all Appendices attached hereto or other documents included by reference herein) constitutes the entire contract between the parties hereto and may not be modified except by an instrument in writing signed by the party to be charged. This Contract may be amended, supplemented or modified only by a written instrument duly executed by or on behalf of each party hereto.

11.6 Governing Law; Venue. The laws of the State of Texas shall govern the validity, construction and effect of this Contract, unless such laws are superseded by, or in conflict with applicable federal laws and/or federal regulations. Each party irrevocably submits to the exclusive jurisdiction of any federal or state court located in El Paso County, Texas in any action, suit or proceeding arising out of or relating to this Contract, and agrees that any such action, suit or proceeding shall be brought only in such court.

11.7 Attorney's Fees. In the event that litigation is commenced by one party hereto against the other in connection with the enforcement of any provision of this Contract, the prevailing party shall be paid by the losing party all

court costs and other expenses of such litigation, including reasonable attorneys' fees. The amount so allowed as attorneys' fees shall be taxed to the losing party as costs of the suit, unless prohibited by law.

11.8 Severability. If any provision of this Contract or any portion or provision hereof applicable to any particular situation or circumstance is held invalid, the remainder of this Contract or the remainder of such provision (as the case may be), and the application thereof to other situations or circumstances shall not be affected thereby.

11.9 Waiver of Breach. A waiver of either party of any terms or conditions of this Contract in any instance shall not be deemed or construed as a waiver of such term or condition for the future, or of any subsequent breach thereof. All remedies, rights, undertakings, obligations, and agreements contained in this Contract shall be cumulative and none of them shall limit any other remedy, right, obligation or agreement of either party.

11.10 Time of the Essence. Time is of the essence for performance of this Contract.

11.11 Payment and Performance Bonds. If the Contract Value as provided in Section 1.6.4 and 1.6.5, exceeds $100,000, the Contractor shall furnish bonds covering faithful performance of the Contract and payment obligations arising thereunder. Bonds may be obtained through the Contractor's usual source and the cost thereof shall be included in the Contract Value. The amount of each bond shall be equal to one hundred percent (100%) of the Contract Value. In addition:

11.11.1 The bond must be approved and reviewed by AHA Procurement Manager;

11.11.2 The bond must name AHA as obligee;

11.11.3 The Contractor shall deliver the required bonds to AHA before the commencement of any work pursuant to this Contract.

11.12 Limitation of Liability. In no event shall AHA be liable to the Contractor for any indirect, incidental, consequential or exemplary damages.

[SIGNATURES APPEAR ON FOLLOWING PAGE]

12.0 Certifications. The undersigned representatives of each party acknowledge by signature below that they have reviewed the foregoing and understand their respective obligations as defined herein. This Contract may be signed in counterparts.

AFFORDABLE HOUSING ACQUISITION AN AFFILIATE OF THE HOUSING AUTHORITY OF THE CITY OF EL PASO

By: _____ Date: _____

GERALD CICHON
CHIEF EXECUTIVE OFFICER

XXXXXXXXXXXXX

By: _____ Date: _____

AUTHORIZED SIGNER
TITLE

AFFORDABLE HOUSING ACQUISITION AN AFFILIATE OF THE HOUSING AUTHORITY OF THE CITY OF EL PASO APPROVED AS TO FORM ONLY:

By: _____ Date: _____

AHA LEGAL COUNSEL