Fort Bend County, Texas
Invitation for Bid

Construction of African American Memorial Phase One
for Fort Bend County
BID 24-059

SUBMIT BIDS TO:

Fort Bend County
Purchasing Department
Travis Annex
301 Jackson, Suite 201
Richmond, TX 77469

Note: All correspondence must include the term "Purchasing Department" in address to assist in proper delivery

SUBMIT NO LATER THAN:

Tuesday, May 21, 2024
2:00 PM (Central)

LABEL ENVELOPE:

BID 24-059
African American Memorial Phase One

ALL BIDS MUST BE RECEIVED IN AND TIME/DATE STAMPED BY THE PURCHASING OFFICE OF FORT BEND COUNTY ON OR BEFORE THE SPECIFIED TIME/DATE STATED ABOVE.

BIDS RECEIVED AS REQUIRED WILL THEN BE OPENED AND PUBLICLY READ.

BIDS RECEIVED AFTER THE SPECIFIED TIME, WILL BE RETURNED UNOPENED.

Results will not be given by phone.
Results will be provided to bidder in writing after Commissioners Court award.

Requests for information must be in writing and directed to:
Tyler Kendziora
Senior Buyer
Tyler.Kendziora@fortbendcountytx.gov

Vendor Responsibilities:

- Download and complete any addendums. (Addendums will be posted on the Fort Bend County website no Later than 48 hours prior to bid opening)
- Submit response in accordance with requirements stated on the cover of this document.
- DO NOT submit responses via email or fax.

Prepared: 04/24/24
Issued: 04/28/24

COUNTY PURCHASING AGENT
Fort Bend County, Texas

Vendor Information

Jaime Kovar
Purchasing Agent
Office (281) 341-8640

Legal Company Name (top line of W9)			
Business Name (if different from legal name)			
Type of Business	☐ Corporation/LLC ☐ Partnership ☐ Sole Proprietor/Individual ☐ Tax Exempt		Age in Business?
Federal ID # or S.S. #		SAM.gov Unique Entity ID #	
SAM.gov CAGE / NCAGE			
Publicly Traded Business	___ No ___ Yes Ticker Symbol _____		
Remittance Address			
City/State/Zip			
Physical Address			
City/State/Zip			
Phone Number			
E-mail			
Contact Person			
Check all that apply to the company listed above and provide certification number.	DBE-Disadvantaged Business Enterprise ☐ SBE-Small Business Enterprise ☐ HUB-Texas Historically Underutilized Business ☐ WBE-Women's Business Enterprise ☐	**Certification #** _____ **Certification #** _____ **Certification #** _____ **Certification #** _____	Cert Date / Exp Date _____ _____ _____ _____ _____ _____ _____ _____
Company's gross annual receipts	<$500,000 _____	$500,000-$4,999,999 _____	
	$5,000,000-$16,999,999 ___	$17,000,000-$22,399,999 _____	>$22,400,000 _____
NAICs codes (Please enter all that apply)			
Signature of Authorized Representative			
Printed Name			
Title			
Date			

THIS FORM MUST BE SUBMITTED WITH THE SOLICITATION RESPONSE

1.0 GENERAL REQUIREMENTS:

1.1 Read this entire document carefully. Follow all instructions. You are responsible for fulfilling all requirements and specifications. Be sure you understand them.

1.2 General Requirements apply to all advertised bids; however, these may be superseded, whole or in part, by the scope, special requirements, specifications, special specifications or other data contained herein.

1.3 Governing Law: Bidder is advised that these requirements shall be fully governed by the laws of the State of Texas and that Fort Bend County may request and rely on advice, decisions and opinions of the Attorney General of Texas and the County Attorney concerning any portion of these requirements.

1.4 Bid Form Completion: Fill out, sign, and return to the Fort Bend County Purchasing Department one (1) complete bid form. An authorized representative of the bidder must sign the Contract Sheet. The bid document must be in a sealed envelope marked with the appropriate bid number and title. The Contract will be binding only when signed by the County Judge, Fort Bend County and a purchase order authorizing the item(s) desired has been issued. The use of corrective fluid is not acceptable and may result in the disqualification of bid. If an error is made, the bidder must draw a line through error and initial each change.

1.5 Bid Returns: Bidders must return all completed bids to the Fort Bend County Purchasing Department at 301 Jackson, Suite 201 Richmond Texas no later than 2:00 P.M. on the date specified. Late bids will not be accepted. Bids must be submitted in a sealed envelope, addressed as follows: Fort Bend County Purchasing Agent, Travis Annex, 301 Jackson, Suite 201 Richmond, Texas 77469.

1.6 Addenda: No interpretation of the meaning of the drawings, specifications or other bid documents will be made to any bidder orally. All requests for such interpretations must be made in writing addressed to Tyler Kendziora, Senior Buyer, 301, Jackson, Suite 201, Richmond, Texas, 77469, E-mail: Tyler.Kendziora@fortbendcountytx.gov. Any and all interpretations and any supplemental instructions will be in the form of written addenda to the contract documents which will be posted on Fort Bend County's website. Addenda will **ONLY** be issued by the Fort Bend County Purchasing Agent. It is the sole responsibility of each bidder to insure receipt of any and all addenda. All addenda issued will become part of the contract documents. Bidders must sign and include it in the returned bid package. Deadline for submission of questions and/or clarification is no later than **Tuesday, May 14, 2024 at 9:30AM (central)** Requests received after the deadline will not be responded to due to the time constraints of this bid process.

1.7 References: All bidders must submit, **WITH BID**, at least three (3) references

Initials of Bidder: _____

from clients for whom a project similar to that specified herein has been successfully accomplished. References must include, clients' name, contact person and telephone number.

1.8 Bid Bond: All bidders must submit, **WITH BID**, a cashier's check or certified check for at least five percent (5%) of the total bid price, payable to the order of Fort Bend County, or a Bid Bond in the same amount issued by a surety, acceptable to Fort Bend County, authorized to do business in the State of Texas, as a guarantee that the Bidder will do the work described herein at the rates stated herein. Unsuccessful bidder's Cashier's Check or Certified Check will be returned only after a written request to do so have been received in the Office of the Fort Bend County Purchasing Agent.

1.9 Material Safety Data Sheets: Under the "Hazardous Communication Act", commonly known as the "Texas Right to Know Act", a bidder must provide to Fort Bend County and using departments, with each delivery, material safety data sheets, which are, applicable to hazardous substances defined in the Act. Bidders are obligated to maintain a current, updated file in the Fort Bend County Purchasing Department. Failure of the bidder to maintain such a file will be cause to reject any bid applying thereto.

1.10 Pricing: Prices for all goods and/or services shall be firm for the duration of this Contract and shall be stated on the bid sheet. Prices shall be all inclusive. No price changes, additions, or subsequent qualifications will be honored during the course of the Contract. All prices must be written in ink or typewritten. If there are any additional charges of any kind, other than those mentioned above, specified or unspecified, bidder MUST indicate the items required and attendant costs or forfeit the right to payment for such items.

1.11 Term Contracts: If the Contract is intended to cover a specific time period, said time will be given in the specifications under scope.

1.12 Recycled Materials: Fort Bend County encourages the use of products made of recycled materials and shall give preference in purchasing to products made of recycled materials if the products meet applicable specifications as to quantity and quality. Fort Bend County will be the sole judge in determining product preference application.

1.13 Evaluation: Evaluation shall be used as a determinant as to which bid items or services are the most efficient and/or most economical for Fort Bend County. It shall be based on all factors which have a bearing on price and performance of the items in the user environment. All bids are subject to tabulation by the Fort Bend County Purchasing Department and recommendation to Fort Bend County Commissioners Court. Compliance with all bid requirements, delivery and needs of the using department are considerations in evaluating bids. Pricing is NOT the only criteria for making a recommendation. The Fort Bend County Purchasing Department reserves the right to contact any bidder, at any time, to clarify, verify

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or request information with regard to any bid.

1.14 Disqualification of Bidder: Upon signing this bid document, a bidder offering to sell supplies, materials, services, or equipment to Fort Bend County certifies that the bidder has not violated the antitrust laws of this state codified in section 15.01, et seq., Business & Commerce Code, or the federal antitrust laws, and has not communicated directly or indirectly the bid made to any competitor or any other person engaged in such line of business. Any or all bids may be rejected if Fort Bend County believes that collusion exists among the bidders. Bids in which the prices are obviously unbalanced may be rejected. If multiple bids are submitted by a bidder and after the bids are opened, one of the bids is withdrawn, the result will be that all of the bids submitted by that bidder will be withdrawn; however, nothing herein prohibits a vendor from submitting multiple bids for different products or services.

1.15 Awards: Fort Bend County reserves the right to award this Contract on the basis of lowest and best bid in accordance with the laws of the State of Texas, to waive any formality or irregularity, to make awards to more than one bidder, to reject any or all bids. In the event the lowest dollar bidder meeting specifications is not awarded a contract, the bidder may appear before the Commissioners Court and present evidence concerning its responsibility.

1.16 Contract Obligation: Fort Bend County Commissioners Court must award the Contract and the County Judge or other person authorized by the Fort Bend County Commissioners Court must sign the Contract before it becomes binding on Fort Bend County or the bidders. Department heads are not authorized to sign agreements for Fort Bend County. Binding agreements shall remain in effect until all products and/or services covered by this purchase have been satisfactorily delivered and accepted.

2.0 SCOPE:

It is the intent of Fort Bend County to contract with one (1) vendor for all materials, supplies, equipment, tools, services, labor and supervision necessary to complete the construction of African American Memorial Phase One located at 630 Charlie Roberts Ln., Kendleton, Texas 77451, hereinafter referred to as the "Project," as specified herein.

2.1 *Work* means the procurement, delivery and proper construction and/or installation of all materials and facilities and associated appurtenances necessary to fulfill the winning bidder's obligations (hereinafter the "Contractor") under the Contract as awarded for the Project specified herein, including the coordination and administration of all services necessary for Contractor, and/or its agents and/or subcontractors, to fulfill Contractor's obligations under the Contract.

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3.0 PRE-BID CONFERENCE:

A pre-bid conference will be conducted on **Tuesday, May 07, 2024 at 9:00 AM** (CST). The pre-bid conference will be held at the Fort Bend County Purchasing Department located in the Travis Annex at 301 Jackson, Suite 201, Richmond, Texas 77469. All bidders are encouraged to attend.

4.0 LIQUIDATED DAMAGES:

The County and the Contractor recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by the County if the work is not complete on time. Accordingly, instead of requiring any such proof, the County and the Contractor agree that as liquidated damages for delay (but not as a penalty) the Contractor shall pay the County $250.00 for each day that expires after the time specified herein for completion until the Work is complete, unless contract time has been adjusted by extension of time approved by Commissioner's Court.

The Contractor will be placed on one (1) year probation if liquidated damages are accrued. During the probation period, if the Contractor accrues liquidated damages on another project, they will be disqualified from being awarded any County work for two (2) years.

5.0 COMPLETION TIME & PAYMENT:

5.1 Fort Bend County shall pay the Contractor in current funds for the Contractor's performance of the Contract the contract sum, as stated herein, after receipt of notice to proceed and a purchase order issued by the Fort Bend County Purchasing Agent.

5.2 Based upon Applications for payment submitted to the County Auditor, Fort Bend County shall make progress payments on account of the contract sum to the Contractor as provided below and elsewhere in the contract documents.

5.2.1 The period covered by each application for payment shall be one calendar month ending on the last day of the month.

5.2.2 Provided a customary, accurate and complete application for payment is received by the County Auditor not later than the 15th day of a month, Fort Bend County shall make payment of all undisputed amounts to the Contractor not later than the 15th day of the next month. If an application for payment is received by the County Auditor after the application deadline fixed above, payment shall be made by Fort Bend County not later than 30 days after the County Auditor receives the application for payment.

5.2.3 Application for payment shall indicate the percentage of completion of each portion of the Project as of the end of the period covered by the application for payment.

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5.2.4 Subject to the provisions of the contract documents, the amount of each progress payment shall be computed as follows:

5.2.4.1 Take that portion of the contract sum properly allocable to completed Project less retainage of ten percent (10%).

5.2.4.2 Add that portion of the contract sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved by Fort Bend County, suitably stored off the site at a location agreed upon in writing), less retainage of ten percent (10%).

5.2.4.3 Subtract the aggregate of previous payments made by Fort Bend County.

5.2.4.4 The progress payment amount as determined in above shall be further modified under the following circumstances:

Upon substantial completion of the Project, add a sum sufficient to increase the total payments to one hundred percent (100%) of the contract sum, less such amounts as Fort Bend County shall determine should be deducted for incomplete work and unsettled claims.

5.2.4.5 Final payment, constituting the entire unpaid undisputed balance of the contract sum, shall be made by Fort Bend County to the Contractor when Fort Bend County and the Contractor agree that the Contract has been fully performed by the Contractor.

5.3 Before the first application for payment, the Contractor shall submit to the Parks Department a schedule of values allocated to various portions of the work, prepared in such form and supported by such data to substantiate its accuracy as the Parks Department may require. This schedule, unless objected to by the Parks Department shall be used as a basis for reviewing the Contractor's application for payment.

5.4 Contractor must provide with each application for payment a contractor's affidavit certifying bills against the Contractor for labor, material and expendable equipment employed in the performance of Contractor have been paid in full prior to acceptance of final payment from Fort Bend County.

5.5 The Contractor will permit Fort Bend County, or any duly authorized agent of Fort Bend County, to inspect and examine the books and records of the Contractor for the purpose of verifying the amount of work performed under the Contract.

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Fort Bend County's right to inspect survives the termination of the Contract for a period of five years.

6.0 LIMIT OF APPROPRIATION:

Prior to the execution of this Contract, Contractor has been advised by County, and Contractor clearly understands and agrees, such understanding and agreement being of the absolute essence to this Contract, that County shall have available only those funds specifically allocated in this Contract to fully discharge any and all liabilities which may be incurred by County in bringing this Project to an absolute conclusion, resulting in a complete, fully furnished, fully equipped and fully usable facility, and that the total of any and all basic construction costs, costs of providing the required services and materials, all fees and compensation of any sort to the Contractor, and any and all costs for any and all things or purposes coming inuring under or out of this Contract, irrespective of the nature thereof, shall not exceed said specifically allocated sum, notwithstanding any word, statement or thing contained in or inferred from the preceding provision of this Contract which might in any light by any person be interpreted to the contrary.

7.0 RIGHT TO ASSURANCE:

Whenever Fort Bend County in good faith has reason to question the Contractor's intent or ability to perform, Fort Bend County may demand that the Contractor give written assurance of its intent to perform and its plan to properly continue performance, including a reasonably detailed timeline. In the event that a demand is made and no assurance is given within five (5) business days, Fort Bend County may treat this failure as an anticipatory repudiation of the Contract.

8.0 PERFORMANCE & PAYMENT BONDS:

Performance and Payment Bonds: In the event the total accepted bid price exceeds $25,000 the Contractor must provide to the Office of the County Purchasing Agent, a performance bond and a payment bond, each in the amount of 100% of the total contract sum within ten (10) calendar days after receipt of notification of bid award. Such bonds shall be executed by a corporate surety duly authorized and admitted to do business in the State of Texas and licensed in the State of Texas to issue surety bonds with a Best Rating of "A" or better. Fort Bend County reserves the right to accept or reject any surety company proposed by the Contractor. In the event Fort Bend County rejects, the proposed surety company, the Contractor will be afforded five (5) additional days to submit the required bonds issued by a surety company acceptable to Fort Bend County.

9.0 POWER OF ATTORNEY:

An attorney-in-fact who signs a bid bond, performance bond or payment bond must file with each bond a certified and effectively dated copy of his or her power of attorney.

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10.0 INSURANCE:

10.1 All respondents shall submit, with response, a current certificate of insurance indicating coverage in the amounts stated below. In lieu of submitting a certificate of insurance, respondents may submit, with response, a notarized statement from an Insurance company, authorized to conduct business in the State of Texas, and acceptable to Fort Bend County, guaranteeing the issuance of an insurance policy, with the coverage stated below, to the firm named therein, if successful, upon award of this Contract.

10.2 At contract execution, contractor shall furnish County with properly executed certificates of insurance which shall evidence all insurance required and provide that such insurance shall not be canceled, except on 30 days prior written notice to County. Contractor shall provide certified copies of insurance endorsements and/or policies if requested by County. Contractor shall maintain such insurance coverage from the time Services commence until Services are completed and provide replacement certificates, policies and/or endorsements for any such insurance expiring prior to completion of Services. Contractor shall obtain such insurance written on an Occurrence form (or a Claims Made form for Professional Liability insurance) from such companies having Best's rating of A/VII or better, licensed or approved to transact business in the State of Texas, and shall obtain such insurance of the following types and minimum limits:

10.2.1 Workers' Compensation insurance. Substitutes to genuine Workers' Compensation Insurance will not be allowed.

10.2.2 Employers' Liability insurance with limits of not less than $1,000,000 per injury by accident, $1,000,000 per injury by disease, and $1,000,000 per bodily injury by disease.

10.2.3 Commercial general liability insurance with a limit of not less than $1,000,000 each occurrence and $2,000,000 in the annual aggregate. Policy shall cover liability for bodily injury, personal injury, and property damage and products/completed operations arising out of the business operations of the policyholder.

10.2.4 Business Automobile Liability coverage with a combined Bodily Injury/Property Damage limit of not less than $1,000,000 each accident. The policy shall cover liability arising from the operation of licensed vehicles by policyholder.

10.3 County and the members of Commissioners Court shall be named as additional insured to all required coverage except for Workers' Compensation and Professional Liability (if required). All Liability policies including Workers' Compensation written on behalf of contractor, excluding Professional Liability,

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shall contain a waiver of subrogation in favor of County and members of Commissioners Court.

10.4 If required coverage is written on a claims-made basis, contractor warrants that any retroactive date applicable to coverage under the policy precedes the effective date of the contract; and that continuous coverage will be maintained or an extended discovery period will be exercised for a period of two (2) years beginning from the time that work under the agreement is completed.

10.5 Contractor shall not commence any portion of the work under this Contract until it has obtained the insurance required herein and certificates of such insurance have been filed with and approved by Fort Bend County.

10.6 No cancellation of or changes to the certificates, or the policies, may be made without sixty (60) days prior, written notification to Fort Bend County.

10.7 Approval of the insurance by Fort Bend County shall not relieve or decrease the liability of the Contractor.

10.8 Builder's Risk Insurance: Contractor is required to provide proof before a Purchase Order is issued for this project and keep in full force and effect until the Transfer Date, Builders Risk Insurance, subject to policy terms and conditions, of direct physical loss or damage to property, materials, equipment and supplies which are to become an integral part of the Project, whether owned by Contractor, or subcontractors of every tier, and in which one or more of same has an insurable interest, while in transit, while at the Construction Site awaiting construction, during construction, and until the Transfer Date. Such insurance shall be maintained to cover, as nearly as practicable, the insurable value of such property, materials, equipment and supplies at risk, and shall contain a waiver of subrogation in favor of Contractor, Architect, subcontractors of any tier and Owner for loss or damage occurring during the Work and shall name Contractor as the named insured and Owner as additional insureds. All Builder's Risk Insurance proceeds shall be paid directly to the Contractor.

11.0 INDEMNIFICATION:

Respondent shall save harmless County from and against all claims, liability, and expenses, including reasonable attorney's fees, arising from activities of respondent, its agents, servants or employees, performed under this agreement that result from the negligent act, error, or omission of respondent or any of respondent's agents, servants or employees.

11.1 Respondent shall timely report all such matters to Fort Bend County and shall, upon the receipt of any such claim, demand, suit, action, proceeding, lien or judgment, not later than the fifteenth day of each month; provide Fort Bend County with a written report on each such matter, setting forth the status of each matter, the schedule or planned proceedings with respect to each matter and the

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cooperation or assistance, if any, of Fort Bend County required by Respondent in the defense of each matter.

11.2 Respondent's duty to defend, indemnify and hold Fort Bend County harmless shall be absolute. It shall not abate or end by reason of the expiration or termination of any contract unless otherwise agreed by Fort Bend County in writing. The provisions of this section shall survive the termination of the contract and shall remain in full force and effect with respect to all such matters no matter when they arise.

11.3 In the event of any dispute between the parties as to whether a claim, demand, suit, action, proceeding, lien or judgment appears to have been caused by or appears to have arisen out of or in connection with acts or omissions of Respondent, Respondent shall never-the-less fully defend such claim, demand, suit, action, proceeding, lien or judgment until and unless there is a determination by a court of competent jurisdiction that the acts and omissions of Respondent are not at issue in the matter.

11.4 Respondent's indemnification shall cover, and Respondent agrees to indemnify Fort Bend County, in the event Fort Bend County is found to have been negligent for having selected Respondent to perform the work described in this request.

11.5 The provision by Respondent of insurance shall not limit the liability of Respondent under an agreement.

11.6 Respondent shall cause all trade contractors and any other contractor who may have a contract to perform construction or installation work in the area where work will be performed under this request, to agree to indemnify Fort Bend County and to hold it harmless from all claims for bodily injury and property damage that may arise from said Respondent's operations. Such provisions shall be in form satisfactory to Fort Bend County.

11.7 Loss Deduction Clause - Fort Bend County shall be exempt from, and in no way liable for, any sums of money which may represent a deductible in any insurance policy. The payment of deductibles shall be the sole responsibility of Respondent and/or trade contractor providing such insurance.

12.0 PREVAILING WAGES:

This project is subject to the prevailing wage rate requirements of Chapter 2258 of the Government Code. All persons employed by Contractor shall be compensated at not less than the rates shown below. Contractor shall keep detailed records of each of its workers and said records shall be made available to County for inspection at all reasonable times. The Contractor shall pay Fort Bend County sixty dollars ($60.00) for each worker employed by the Contractor for the provision of services described herein for each calendar day or part of the day that the

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worker is paid less than the below stated rates. Contractors may also visit www.wdol.gov/dba.aspx.

General Decision Number: TX20240247 01/05/2024
Superseded General Decision Number: TX20230247

State: Texas
Construction Type: Building

County: Fort Bend County in Texas.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022: Executive Order 14026 generally applies to the contract. The contractor must pay all covered workers at least $17.20 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 2024.

If the contract was awarded on|or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January|30, 2022: Executive Order 13658 generally applies to the contract. The contractor must pay all covered workers at least $12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2024.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.
Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/05/2024

	Rates	Fringes
ASBE0022-009 07/03/2023		

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ASBESTOS WORKER/HEAT & FROST INSULATOR (Duct, Pipe and Mechanical System Insulation)	$ 28.35	16.02
BOIL0074-003 07/01/2023		
BOILERMAKER	$ 37.00	24.64
CARP0551-008 04/01/2021		
CARPENTER (Excludes Acoustical Ceiling Installation, Drywall Hanging, Form Work and Metal Stud Installation)	$ 25.86	9.08
ELEC0716-005 08/29/2023		
ELECTRICIAN (Excludes Low Voltage Wiring and Installation of Alarms)	$ 34.50	10.41
ELEV0031-003 01/01/2023		
ELEVATOR MECHANIC	$ 49.15	37.335+a+b

FOOTNOTES:

A. 6% under 5 years based on regular hourly rate for all hours worked. 8% over 5 years based on regular hourly rate for all hours worked.

B. Holidays: New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day; Friday after Thanksgiving Day; Christmas Day; and Veterans Day.

ENGI0450-002 04/01/2014		
POWER EQUIPMENT OPERATOR		
Cranes	$ 34.85	9.85
IRON0084-002 06/01/2023		
IRONWORKER (ORNAMENTAL AND STRUCTURAL)	$ 27.51	8.13
PLAS0783-001 04/01/2023		
PLASTERER	$ 31.34	10.30
PLUM0068-002 10/01/2023		
PLUMBER	$ 34.86	11.68
PLUM0211-010 10/01/2023		
PIPEFITTER (Including HVAC Pipe Installation)	$ 38.31	12.61

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SHEE0054-003 04/01/2020

SHEET METAL WORKER (Excludes HVAC Duct and Unit Installation)	$ 29.70	13.85

SUTX2014-023 07/21/2014

ACOUSTICAL CEILING MECHANIC	$ 16.41 **	3.98
BRICKLAYER	$ 19.86	0.00
CAULKER	$ 15.36 **	0.00
CEMENT MASON/CONCRETE FINISHER	$ 13.82 **	0.00
DRYWALL FINISHER/TAPER	$ 16.30 **	3.71
DRYWALL HANGER AND METAL STUD INSTALLER	$ 17.45	3.96
ELECTRICIAN (Alarm Installation Only)	$ 17.97	3.37
ELECTRICIAN (Low Voltage Wiring Only)	$ 18.00	1.68
FLOOR LAYER: Carpet	$ 20.00	0.00
FORM WORKER	$ 11.87 **	0.00
GLAZIER	$ 19.12	4.41
INSULATOR – BATT	$ 14.87 **	0.73
IRONWORKER, REINFORCING	$ 12.10 **	0.00
LABORER: Common or General	$ 10.79 **	0.00
LABORER: Mason Tender – Brick	$ 13.37 **	0.00
LABORER: Mason Tender - Cement/Concrete	$ 10.50 **	0.00
LABORER: Pipelayer	$ 12.94 **	0.00
LABORER: Roof Tearoff	$ 11.28 **	0.00
LABORER: Landscape and Irrigation	$ 9.49 **	0.00
LATHER	$ 19.73	0.00
OPERATOR:		

Initials of Bidder: _____

Backhoe/Excavator/Trackhoe	$ 14.10 **	0.00
OPERATOR: Bobcat/Skid Steer/Skid Loader	$ 13.93 **	0.00
OPERATOR: Bulldozer	$ 20.77	0.00
OPERATOR: Drill	$ 16.22 **	0.34
OPERATOR: Forklift	$ 15.64 **	0.00
OPERATOR: Grader/Blade	$ 13.37 **	0.00
OPERATOR: Loader	$ 13.55 **	0.94
OPERATOR: Mechanic	$ 17.52	3.33
OPERATOR: Paver (Asphalt, Aggregate, and Concrete)	$ 16.03 **	0.00
OPERATOR: Roller	$ 16.00 **	0.00
PAINTER (Brush, Roller and Spray), Excludes Drywall Finishing/Taping	$ 16.77 **	4.51
ROOFER	$ 15.40 **	0.00
SHEET METAL WORKER (HVAC Duct Installation Only)	$ 17.81	2.64
SHEET METAL WORKER (HVAC Unit Installation Only)	$ 16.00 **	1.61
SPRINKLER FITTER (Fire Sprinklers)	$ 22.17	9.70
TILE FINISHER	$ 12.00 **	0.00
TILE SETTER	$ 16.17 **	0.00
TRUCK DRIVER: 1/Single Axle Truck	$ 14.95 **	5.23
TRUCK DRIVER: Dump Truck	$ 12.39 **	1.18
TRUCK DRIVER: Flatbed Truck	$ 19.65	8.57
TRUCK DRIVER: Semi-Trailer Truck	$ 12.50 **	0.00
TRUCK DRIVER: Water Truck	$ 12.00 **	4.11
WATERPROOFER	$ 14.39 **	0.00

Initials of Bidder: _____

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

** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 ($17.20) or 13658 ($12.90). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

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 https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

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

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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 National Office because National Office has 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

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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.

13.0 PERMITS:

It shall be the sole responsibility of the successful bidder to obtain all required permits in the name of Fort Bend County.

14.0 CONTRACTOR'S RESPONSIBILITY FOR WORK:

14.1 Preconstruction Work. Contractor shall do (or cause to be done) the following as preconstruction work:

14.1.1 On written demand as requested by Fort Bend County, cause the Contractor's personnel to meet with Fort Bend County and the Engineer to discuss the status of the Project.

14.1.2 On written demand as requested by Fort Bend County, review drawings and specifications with the Engineer to permit the Contractor and the Engineer to determine the compliance of the proposed facility with applicable building codes.

14.2 Construction Work. Contractor shall do (or cause to be done) the following as construction work:

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14.2.1 Perform (or cause to be performed) all preparatory work at the construction site required herein, including (without limitation) soil and concrete testing and demolition of improvements existing at the construction site and all actions necessary for compliance with all laws and regulations as to actions to be taken by owners or contractors before construction begins, including without limitation those in regard to archaeological and environmental requirements.

14.2.2 Construct and install (or cause to be constructed and installed) the Project on the construction site in accordance with this Contract and the drawings and specifications approved by Fort Bend County.

14.2.3 Furnish (or cause to be furnished) all materials, supplies, equipment, tools, labor, supervision, utilities, transportation, and other materials and services necessary to complete the Project described herein.

14.2.4 Materials testing necessary for the Project and required by laws and regulations, construction industry standards as approved by Fort Bend County and this Contract; the frequency of testing shall be approved by Fort Bend County. **It is the contractor's responsibility to engage a material testing laboratory to perform testing on the structural concrete to be used for foundation work in this project. The cost of testing shall be incidental to bid item for drill shaft foundation. Testing of concrete shall comply with current TXDOT criteria. Contractor has to submit the name of the testing laboratory, intended to be used by the contractor for this project, for County's approval.**

14.3 Standards for Review and Approval. Fort Bend County acknowledges that in order to meet the deadlines for the completion of the Project, and in order to accomplish the efficient completion of the Project, the Contractor may submit matters to Fort Bend County in stages for approval or consent. Upon receipt of any matter submitted by the Contractor for review and approval, Fort Bend County shall review the same and shall diligently and promptly (but in any event within 14 calendar days for any such matter, other than a proposed change order, and within 28 calendar days for a proposed change order) give the Contractor notice of Fort Bend County's approval or disapproval, setting forth in detail all reasons for any disapproval. Fort Bend County's right to disapprove any such matter submitted (other than a proposed change order) shall be limited to the elements thereof (a) which do not conform substantially to matters previously approved, (b) which are new elements not previously presented and approved and the Contractor is unable to demonstrate that such new element is reasonably necessary for completion of the Project, or (c) which depict matters that are violations of this Contract or applicable laws and regulations.

14.3.1 If Fort Bend County disapproves of a particular matter or Proposed Change Order, the Contractor shall have the right to resubmit such matter or Proposed Change Order to Fort Bend County, altered to satisfy Fort

Bend County's basis for disapproval. Any resubmission shall be subject to review and approval by Fort Bend County.

14.3.2 Fort Bend County and the Contractor shall attempt in good faith to resolve any disputes concerning the approval of any aspect of the Project expeditiously, so as not to delay the completion of the Project in accordance with this Contract.

14.3.3 Expedited Approvals. Fort Bend County recognizes the importance of expeditious action upon all matters submitted to Fort Bend County for review and approval and of expeditious response to those aspects of the Project requiring approval by governmental authorities having jurisdiction there over. Fort Bend County agrees to exercise its rights of review and approval hereunder with due diligence, reasonableness, and good faith. Fort Bend County shall use its reasonable efforts to expedite any required review of the Project or other matters by any governmental authority.

14.4 Changes.

14.4.1 General. Fort Bend County may make changes to the Project by altering, adding to, or deducting from the Project. All changes in the Project which (a) require an adjustment in the contract sum or an adjustment in the final completion date or (b) involve a material change in the overall scope or function of the Project shall be requested and authorized before commencing such changes by use of written change order notices, Proposed Change Orders and Change Orders, which change order procedure shall be the exclusive means to effect such changes in the Project.

14.4.2 Change Order Procedure. If at any time Fort Bend County desires to make any change in the Project requiring the issuance of a Change Order, Fort Bend County shall so advise the Contractor in writing by delivery to the Contractor of a written notice describing the change. Upon receipt of such notice initiated by Fort Bend County, the Contractor shall within a reasonable period of time advise Fort Bend County of the Contractor's proposal for the adjustments, if any, in the contract sum, the schedule of values, and the final completion date attributable to such change by delivering a written notice thereof (the "Proposed Change Order") to Fort Bend County. Such Proposed Change Order shall contain a description of the proposed change and shall set forth the Contractor's estimate of the increase or decrease, if any, in the contract sum and the change, if any, in the schedule of values and the final completion date attributable to such change. If the Contractor desires to make a change in the Project requiring the issuance of a change order, the Contractor shall deliver to Fort Bend County a Proposed Change Order. Upon execution by Fort Bend County, a Proposed Change Order shall constitute (and be defined herein as) a "Change Order" for purposes of this Contract. The Contractor shall

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forthwith perform the work as changed in accordance with such Change Order. All work performed pursuant to a Change Order shall be performed in accordance with the terms of this Contract. All Proposed Change Orders shall be submitted for approval by Fort Bend County. No action, acquiescence or inaction by Fort Bend County or any representative of Fort Bend County shall be construed to be a waiver of requirements set forth in this Contract in regard to Change Orders or ratification of a violation of such requirements, and all acts in violation of this provision shall be considered void.

14.4.3 Change Order Authorization. Each Change Order shall be signed by Fort Bend County and an authorized representative of the Contractor.

14.4.4 Contract Sum Adjustments. The contract sum and the schedule of values shall be adjusted only as a result of a Change Order requiring such adjustment. Any extra work performed without a proper Change Order shall be considered voluntary and not subject to additional compensation. The Contractor shall not be entitled to an adjustment in the contract sum (or a Change Order permitting such adjustment) or to damages as a result of any delays in the Project caused by the acts or omissions of Fort Bend County, provided that this sentence is not applicable to delays that constitute more than 90 days in any 365-day period or cause the Project to be interrupted for a continuous period of 45 days through no fault of the Contractor.

14.4.5 When Fort Bend County and the Contractor agree upon the adjustments in the contract sum, the schedule of values, and the final completion date attributable to such adjustment, such agreement will be documented by preparation and if approved by the Fort Bend County Commissioners Court, execution of an appropriate Change Order.

14.5 Site Access. Prior to the transfer date, Fort Bend County and the Contractor shall have uninterrupted access to the construction site. Subsequent to the transfer date, Fort Bend County will permit the Contractor, the Engineer, and their representatives and subcontractors to enter upon the Project at times reasonably necessary to complete the punch list items.

14.6 Applicable Laws and Regulations. Contractor shall in its performance of the Project comply with all applicable laws and regulations. Any delays in the prosecution of the Project caused by any changes in the laws and regulations or the application or enforcement of the laws and regulations may entitle the Contractor to an extension of time.

14.7 Familiarity with Project. The Contractor represents and accepts that it has: (a) visited the property(ies), (b) taken such other steps as may be necessary to ascertain the nature and location of the Project and the general and local conditions which affect the Project or the cost thereof, (c) investigated the labor situation as regards to the Project, (d) examined the property(ies), the obstacles

which may be encountered and all other observable conditions having a bearing upon the performance of the Project, the superintendence of the Project, the time of completion and all other relevant matters, and (e) reported to Fort Bend County the results of all of the foregoing. The Contractor represents that it is familiar with all phases of the Project and the matters that may affect the Project or its prosecution under this Contract.

14.8 Standard of Performance. The Contractor shall prosecute (or cause to be prosecuted) the Project in accordance with the best efforts for the construction and development of projects similar to the Project in the State of Texas, using qualified, careful, and efficient contractors and workers and in conformity with the provisions of this Contract. The Contractor shall perform the work in a good and workmanlike manner.

14.9 Warranty of Contractor. The Contractor warrants to Fort Bend County that: (i) the Contractor possesses the skill and knowledge ordinarily possessed by well-informed members of its trade or profession and the Contractor will use its best efforts to ensure that the services provided under this Contract will be performed, delivered, and conducted in accordance with the best professional standards and in accordance with industry standards, and (ii) the Contractor is fully experienced and properly qualified to perform the class of work provided for herein, and that it is properly equipped, organized and financed to perform such work, and (iii) following the date of acceptance of this Contract, the services provided by the Contractor to Fort Bend County will conform to the representations contained in this Contract, including all attachments, schedules and exhibits. All warranties provided by the Contractor in this Contract shall be cumulative, shall be deemed consistent and not in conflict, are intended to be given full force and effect and to be interpreted expansively to give the broadest warranty protection to Fort Bend County.

14.10 Contractor's Personnel. Contractor shall employ only competent, skilled personnel for the Project. Prior to the final completion date, the Contractor shall maintain a superintendent who shall be authorized to act on behalf of the Contractor and with whom Fort Bend County may consult at all reasonable times. The superintendent shall not be transferred from the Project without Fort Bend County's consent (which shall not be unreasonably withheld or delayed); provided, however, the superintendent shall not be assigned solely to the Project and shall be entitled to spend reasonable time working on matters unrelated to the Project so long as such work on other matters does not render the superintendent unavailable to the Project or unavailable to Fort Bend County. However, such obligation to furnish the superintendent and such staff personnel shall not be construed (a) to preclude the promotion within the Contractor's organization of any person assigned to the Project or (b) to give rise to any liability of the Contractor if any person assigned to the Project (including, without limitation, the superintendent) leaves the Contractor's employment. If the superintendent is transferred from the Project, Fort Bend County shall have the right to approve the replacement superintendent

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(which approval will not be unreasonably withheld or delayed). The Contractor, the Architect, and the other subcontractors shall comply with all applicable health, safety, and loss prevention rules of applicable governmental authorities. The Contractor shall, at its own expense, remove from the Project any person who fails to comply with such rules and instructions. The Contractor shall at all times enforce strict discipline and good order among its employees and shall not employ on the Project any unfit person or anyone not skilled in the work assigned to him. Fort Bend County may, upon written notice to the Contractor, require the Contractor to remove an individual immediately from providing services for the following reasons: violation of the terms and conditions of this Contract; violation of Fort Bend County's or the Contractor's work rules and regulations; criminal activity; or violation of state, federal, or municipal statutes. Fort Bend County may, upon thirty (30) days written notice to the Contractor, require the removal of any individual from providing services without cause.

14.11 Inspection. The Project and all parts thereof shall be subject to inspection from time to time by inspectors designated by Fort Bend County. No such inspections shall relieve The Contractor of any of its obligations hereunder. Neither failure to inspect nor failure to discover or reject any of the work as not in accordance with the drawings and specifications or any provision of this Contract shall be construed to imply an acceptance of such work or to relieve the Contractor of any of its obligations hereunder. Fort Bend County agrees that its right of inspection shall be used reasonably and in a timely manner so as not to delay orderly completion of the Project.

14.12 Protection Against Risks. The Contractor shall take all precautions which are necessary and adequate, against conditions created during the progress of the Project which involve a risk of bodily harm to persons or a risk of damage or loss to any property. The Contractor shall regularly inspect all work, materials and equipment to discover and determine any such conditions and shall be responsible for discovery, determination, and correction of any such conditions. The Contractor shall comply with all federal, state, and local occupational hazard and safety standards, codes and regulations applicable in the jurisdiction where the Project is being performed. The Contractor shall include the substance of this clause in its entirety in all subcontracts for any work to be performed at the construction site.

14.13 Equipment. Except as expressly provided herein to the contrary, the Contractor shall furnish (or cause to be furnished) all construction, transportation, installation, tools, and other equipment and facilities required for the performance of the Project within the times specified herein. Such equipment and facilities shall be serviceable and kept fit for the uses intended. Defective items shall be removed from the construction site promptly and at the Contractor's cost. The Contractor shall schedule (or cause to be scheduled) its other operations so as to not interfere with its duty to timely furnish the necessary equipment and facilities

and personnel to operate the same at the times necessary for the orderly completion of the Project.

14.14 Materials. Except as may be specifically provided otherwise in the Contract or approved in advance by Fort Bend County, the Contractor shall provide Fort Bend County with copies of material testing reports and to cause all materials, equipment, and fabricated items incorporated in the Project to be new and of a suitable grade of their respective kinds for their intended use.

14.15 Delay, Disruption or Hindrance Damages. Contractor and the County contemplate that Contractor's performance may be delayed, disrupted or interfered with by unanticipated causes including but not limited to the following:

a) Severe and unavoidable natural disasters such as fires, floods, epidemics and earthquakes;
b) Abnormal weather conditions;
c) Acts or failures to act of the County , third party utility owners or other third – party entities; and
d) Acts of war or terrorism.

Contractor and the County agree and stipulate that an extension of the Contract Time shall be the sole remedy of Contractor for delays in performance of the Work, whether or not such delays are foreseeable, except for delays caused solely by acts of the County that constitute fraud, intentional misrepresentation, gross negligence, intentional arbitrary or capricious acts and/or omissions or intentional interference with Contractor's performance of the Work and then only to the extent such acts continue after Contractor notifies Owner in writing of such conduct. For delays caused by any act(s) other than fraud, intentional misrepresentation, gross negligence, intentional arbitrary or capricious acts and/or omissions or intentional interference with Contractor's performance of the Work Contractor shall not be entitled to any compensation or recovery of any damages including, without limitation, those damages prohibited or limited in Sections 14.15.1 – 14.15.8 below. The County's exercise of any of its rights or remedies under the Contract including, without limitation, ordering changes in the Work or directing suspension, rescheduling, or correction of the Work, in response to any breach or failure by the Contractor to comply with the terms of the Contract Documents or the Contractor's obligations arising therefrom, shall not be construed as intentional interference with Contractor's performance of the Work regardless of the extent or frequency of the County's exercise of such rights or remedies.

Without limiting the foregoing, except as otherwise expressly provided in this Agreement in calculating the amount of any claim recoverable by Contractor, the following limitations on the recovery of damages shall apply:

14.15.1 No indirect or consequential damages will be allowed.

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14.15.2 No recovery shall be based on a comparison of planned expenditures to total actual expenditures, or on estimated losses of labor efficiency, or on a comparison of planned manloading to actual manloading, or any other analysis that is used to show damages indirectly.

14.15.3 Damages, to the extent recoverable, are limited to the additional, actual costs specifically shown to have been directly incurred by the Contractor and solely caused by the proven wrong.

14.15.4 No damages will be allowed for home office overhead or other home office charges.

14.15.5 No exemplary damages or unjust enrichment damages shall be recoverable.

14.15.6 No recovery of attorney's fees shall be recoverable except as expressly permitted under the Agreement.

14.15.7 No profit will be allowed on any damage claim, except as expressly recoverable under the Agreement as Fee on Cost of the Work incurred.

14.15.8 Notwithstanding any other damage limitation herein the County and the Contractor recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by the Contractor if the County is found to have intentionally interfered with Contractor's performance of the Work by fraud, misrepresentation, gross negligence, or intentional arbitrary or capricious acts and/or omissions. Accordingly, instead of requiring any such proof, the County and the Contractor agree that as liquidated damages (in lieu of any other remedy or damages) for delay, disruption or hindrance (but not as a penalty) the County shall pay the Contractor $250.00 for each day that a court of competent jurisdiction finds the County's conduct referenced in Section 14.15 (above) is the sole cause of Contractor's delay in completing the Work.

15.0 TERMINATION:

15.1 Fort Bend County may terminate the Contract for cause if the Contractor:

15.1.1 Persistently or repeatedly refuses or fails to supply enough properly skilled workers or proper materials.

15.1.2 Fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractor.

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15.1.3 Persistently disregards laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction.

15.1.4 Otherwise commits substantial breach of a provision of the Contract Documents.

15.2 When any of the above reasons exists, Fort Bend County may, without prejudice to any other rights or remedies of Fort Bend County and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

15.2.1 Take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor.

15.2.2 Finish the Project by whatever reasonable method Fort Bend County may deem expedient.

15.2.3 When Fort Bend County terminates the Contract for one of the reasons stated in this section, the Contractor shall not be entitled to receive further payment until the Project is finished. Therefore, the Contractor shall be promptly paid for all work actually and satisfactorily completed.

15.3 Termination for Convenience of Fort Bend County

Fort Bend county reserves the right, without breach, to terminate the Contract prior to, or during the performance of the Work, for any reason. Upon such an occurrence, the following shall apply.

15.3.1 The County will notify Contractor in writing of the county’s determination to terminate the contract for convenience and the effective date of the Contract termination. The notice may also contain instructions necessary for the protection, storage or decommissioning of incomplete work or systems, and for safety.

15.3.2 Upon receipt of the notice of termination, Contractor shall immediately proceed with the following obligations, regardless of any dispute in determining or adjusting any amounts due at that point in the Contract:

15.3.2.1 Stop all work.

15.3.2.2 Place no further subcontracts or orders for materials or services.

15.3.2.3 Terminate all subcontracts for convenience.

15.3.2.4 Cancel all materials and equipment orders as applicable.

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15.3.2.5 Take appropriate action that is necessary to protect and preserve all property related to the Contract which is in the possession of Contractor.

15.3.2.6 When the Contract is terminated for Owner's convenience, Contractor may recover from Owner payment for all Work executed. Contractor may not claim lost profits or lost business opportunities.

15.4 Settlement on Termination. When the Contract is terminated by the County under 15.3, at any time prior to one hundred eighty (180) days after the effective date of termination, Contractor shall submit a final termination settlement proposal to the County based upon recoverable costs as provided under the Contract. If Contractor fails to submit the proposal within the time allowed, the County may unilaterally determine the amount due to Contractor because of the termination and pay the determined amount to Contractor.

16.0 COMPLETION, TRANSFER, & ACCEPTANCE:

16.1 Final Completion. Upon the occurrence of the final completion date, the punch list items shall be promptly commenced and thereafter completed within thirty (30) days after final completion.

16.2 Transfer and Acceptance. Upon the occurrence of final completion, care, custody and control of the Project shall pass to Fort Bend County. As referenced herein, the "Transfer Date" shall mean the date on which the care, custody and control of the Project passes to Fort Bend County. Subsequent to the Transfer Date all risk of loss with respect to the Project shall be by Fort Bend County and the Contractor shall be thereafter obligated to cover the Project with their Insurance.

17.0 SUSPENSION BY FORT BEND COUNTY FOR CONVENIENCE:

17.1 Fort Bend County may, without cause, order the Contractor in writing to suspend, delay or interrupt the Project in whole or in part for such period of time as Fort Bend County may determine.

17.2 An adjustment shall be made for increase in the cost of performance, caused by suspension, delay or interruption. No adjustment shall be made to the extent:

17.2.1 That performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible.

17.2.2 That an equitable adjustment is made or denied under another provision of this Contract.

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17.3 Adjustments made in the cost of performance may have a mutually agreed fixed or percentage fee.

18.0 INDEPENDENT CONTRACTOR:

The Contractor shall be an independent contractor and any provisions of this Contract that may appear to give Fort Bend County the right to direct the Contractor as to the details of the manner of doing the Project shall be deemed to mean that the Contractor shall follow the desires of Fort Bend County in the results of the Project only and not in the means whereby the Project is to be accomplished. The Contractor shall be responsible as to the details of completing the Project. Neither the agents, representatives, nor employees of the Contractor, shall be deemed to be the agents, representatives, or employees of Fort Bend County. The Contractor further represents that it accepts a fiduciary role and responsibility with respect to Fort Bend County and will, to its best abilities, act in the best interests of Fort Bend County and the timely completion of the Project. The Contractor agrees and understands that neither it nor any of its agents or employees may act in the name of Fort Bend County except and unless specifically authorized in writing by Fort Bend County to do so. The Contractor shall furnish construction administration and management services and use the Contractor's best efforts to complete the Project in an expeditious and economical manner consistent with the interests of Fort Bend County.

19.0 NOTICE

19.1 All written notices, demands, and other papers or documents to be delivered to Fort Bend County under this Contract shall be delivered to the Parks Department, 301 Jackson, Richmond, Texas 77469, or at such other place or places as Fort Bend County may from time to time designate by written notice delivered to the Contractor. For purposes of notice under this Contract, a copy of any notice or communication hereunder shall also be forwarded to the following address: Fort Bend County, 301 Jackson Street, Richmond, Texas 77469, Attention: County Judge.

19.2 All written notices, demands, and other papers or documents to be delivered to the Contractor under this Contract shall be delivered to the Authorized Representative identified in the Contract documents or such other place or places as the Contractor may designate by written notice delivered to Fort Bend County.

20.0 RECORDS:

20.1 Fort Bend County shall be the absolute and unqualified owner of all drawings, preliminary layouts, record drawings, sketches and other documents prepared pursuant to the Contract by Contractor.

20.2 The Contractor agrees to maintain and preserve for a period of at least five years after the earlier of the expiration of the defects period or termination of this Contract, accurate and complete records relating to the performance of the

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Project. The Contractor agrees to, upon request, provide Fort Bend County with such records.

21.0 SUCCESSORS & ASSIGNS:

21.1 Fort Bend County and the Contractor bind themselves and their successors, executors, administrators and assigns to the other party of this Contract and to the successors, executors, administrators and assigns of such other party, in respect to all covenants of this Contract.

21.2 Neither Fort Bend County nor the Contractor shall assign, sublet or transfer its interest in this Contract without the prior written consent of the other.

21.3 Nothing herein shall be construed as creating any personal liability on the part of any officer or agent of any public and/or governmental body that may be a party hereto.

22.0 PUBLIC CONTACT:

Contact with the news media, citizens of Fort Bend County or governmental agencies shall be the sole responsibility of Fort Bend County. Under no circumstances, whatsoever, shall Contractor release any material or information developed in the performance of its services hereunder without the express written permission of Fort Bend County, except where required to do so by law.

23.0 MODIFICATIONS:

This instrument contains the entire Contract between the parties relating to the rights herein granted and obligations herein assumed. Any oral or written representations or modifications concerning this instrument shall be of no force and effect excepting a subsequent written modification signed by both parties hereto.

24.0 SILENCE OF SPECIFICATIONS:

The apparent silence of specifications as to any detail, or the apparent omission from it of a detailed description concerning any point, shall be regarded as meaning that only the best commercial practice is to prevail and that only material and workmanship of the finest quality are to be used. All interpretations of specifications shall be made on the basis of this statement. The items furnished under this contract shall be new, unused of the latest product in production to commercial trade and shall be of the highest quality as to materials used and workmanship. Manufacturer furnishing these items shall be experienced in design and construction of such items and shall be an established supplier of the item bid.

25.0 SEVERABILITY:

In the event one or more of the provisions contained in these requirements or the specifications shall for any reason be held to be invalid, illegal or unenforceable in any respect, such invalidity,

illegality, or unenforceability shall not affect any other provision hereof and these requirements or the specifications shall be construed as if such invalid, illegal, or unenforceable provision had never been contained herein.

26.0 GOVERNING FORMS:

In the event of any conflict between the terms and provisions of these requirements and the specifications, the specifications shall govern. In the event of any conflict of interpretation of any part of this overall document, Fort Bend County's interpretation shall govern.

27.0 TAX EXEMPT:

Fort Bend County is exempt from state and local sales and use taxes under Section 151.309 of the Texas Tax Code. This Contract is deemed to be a separate contract for Texas tax purposes, and as such, Fort Bend County hereby issues its Texas Exemption for the purchase of any items qualifying for exemption under this Contract. Contractor is to issue its Texas Resale Certificate to vendors and subcontractors for such items qualifying for this exemption, and further, contractor should state these items at cost.

28.0 ENTIRE AGREEMENT:

The Parties agree that this Contract contains all of the terms and conditions of the understanding of the parties relating to the subject matter hereof. All prior negotiations, discussions, correspondence and preliminary understandings between the parties and others relating hereto are superseded by this Contract. By entering into this Contract, the parties do not intend to create any obligations, express or implied, other than those specifically set out in this Contract.

29.0 APPLICABLE LAW & VENUE

This Contract shall be construed under and in accord with the laws of the State of Texas, and all obligations of the parties created hereunder are performable in Fort Bend County, Texas, and that venue for any litigation arising out of or related to this Contract shall lie solely in the court of appropriate jurisdiction located in Fort Bend County, Texas.

30.0 AWARD:

This contract will be awarded to the overall lowest and best bid.

31.0 TEXAS ETHICS COMMISSION FORM 1295:

31.1 Effective January 1, 2016 all contracts executed by Commissioners Court, regardless of the dollar amount, will require completion of Form 1295 "Certificate of Interested Parties", per the new Government Code Statute §2252.908. All vendors submitting a response to a formal Bid, RFP, SOQ or any contracts, contract amendments, renewals or change orders are required to complete the Form 1295 online through the State of Texas Ethics Commission website. Please

visit: https://www.ethics.state.tx.us/filinginfo/1295/

31.2 On-line instructions:

31.2.1 Name of governmental entity is to read: Fort Bend County.

31.2.2 Identification number used by the governmental entity is: B24-059.

31.2.3 Description is the title of the solicitation: African American Memorial Phase One.

31.3 Apparent low bidder(s) will be required to provide the Form 1295 within three (3) calendar days from notification; however, if your company is publicly traded you are not required to complete this form.

32.0 STATE LAW REQUIREMENTS FOR CONTRACTS:

The contents of this section are required by Texas Law and are included by County regardless of content.

32.1 Agreement to Not Boycott Israel Chapter 2271 Texas Government Code: Contractor verifies that if Contractor employs ten (10) or more full-time employees and this Agreement has a value of $100,000 or more, Contractor does not boycott Israel and will not boycott Israel during the term of this Agreement.

32.2 Texas Government Code Section 2251.152 Acknowledgment: By signature on vendor form, Contractor represents pursuant to Section 2252.152 of the Texas Government Code, that Contractor is not listed on the website of the Comptroller of the State of Texas concerning the listing of companies that are identified under Section 806.051, Section 807.051 or Section 2253.153.

33.0 HUMAN TRAFFICKING:

By acceptance of this contract, Contractor acknowledges that Fort Bend County is opposed to human trafficking and that no County funds will be used in support of services or activities that violate human trafficking laws

34.0 INDEMNITY FOR BODILY INJURY OR DEATH CLAIMS

Indemnity for certain bodily injury or death claims. To the fullest extent permitted by law, contractor shall indemnify, defend and hold harmless the county from and against all claims, losses, expenses, costs, demands, suits, causes of action, and damages, including without limitation, attorneys' fees and expenses, for bodily injury or death of any employee of contractor, its agents, or its subcontractors of every tier, even if the bodily injury or death is caused by or alleged to have been caused by the sole or partial negligence, fault or strict liability of any indemnitee.

Initials of Bidder: _____

Indemnity for all other claims. For all claims not addressed in the preceding section or section 11.0 above , including, without limitation, claims for damage to or loss of use of property and claims for bodily injury to or death of any person other than that addressed in the immediately preceding section, to the fullest extent permitted by law, contractor shall indemnify, defend and hold harmless the county from and against all claims, losses, expenses, costs, demands, suits, causes of action, and damages, including without limitation, attorneys' fees and expenses, of any nature whatsoever arising out of or related to this contract or the work to be performed under this contract, but only to the extent of the negligence or other fault of the contractor, its agents, representatives, employees or subcontractors of any tier.

35.0 AGREEMENT TO ARBITRATE UNDER THE FEDERAL ARBITRATION ACT

To the maximum extent allowed by law, any controversy or claim arising out of or relating to this contract, or the breach thereof, shall be settled by arbitration under the Federal Arbitration Act, 9 U.S.C. § 1, et seq. administered by the American Arbitration Association under its Construction Industry Arbitration Rules, and judgment on the award rendered by the arbitrator(s) may be entered in any court having jurisdiction thereof. For cases in which the amount in controversy is less than $250,000, there shall be no discovery other than an expeditious and complete exchange of documents relative to the dispute. For cases in which the amount in controversy is between $250,000 and $1,000,000, there shall be no discovery except for an expeditious and complete exchange of such documentary information and up to three (3) depositions per side (including expert depositions, if any). For cases in which the amount in controversy exceeds $1,000,000, there shall be no discovery except for an expeditious and complete exchange of such documentary information up to five (5) depositions per side (including expert depositions, if any). No formal interrogatories, request for admissions or formal request for production of documents shall be allowed in the arbitration process. The hearing on the merits will be completed no later than ninety (90) days after the initial demand for arbitration is made for disputes involving amounts in controversy of up to $250,000; no later than no later than one hundred twenty (120) days after the initial demand for arbitration is made for disputes involving amounts in controversy of between $250,000 and $1,000,000; and, no later than three hundred sixty five (365) days after the initial demand for arbitration is made for disputes involving amounts in controversy of over $1,000,000.

36.0 ADDITIONAL REQUIRED FORMS:

All vendors submitting are required to complete and return with submission

36.1 Required Proof of Insurance

36.2 Vendor Form

36.3 W9 Form

36.4 Tax Form/Debt/Residence Certification

36.5 Contractor Acknowledgement of Stormwater Management Program

Initials of Bidder: _____

36.6 Excel Pricing Sheet

37.0 EXHIBIT:

Exhibit I: Project Manual

Exhibit II: Plans

Contract Sheet
Bid 24-059

THE STATE OF TEXAS
COUNTY OF FORT BEND

This memorandum of agreement made and entered into on the _____ day of _____, 20_____, by and between Fort Bend County in the State of Texas (hereinafter designated County), acting herein by County Judge KP George, by virtue of an order of Fort Bend County Commissioners Court, and _____ (hereinafter designated Contractor).

(company name)

WITNESSETH:

The Contractor and the County agree that the bid and specifications for the **Construction of African American Memorial Phase One** which are hereto attached and made a part hereof, together with this instrument and the bond (when required) shall constitute the full agreement and contract between parties and for furnishing the items set out and described; the County agrees to pay the prices stipulated in the accepted bid.

It is further agreed that this contract shall not become binding or effective until signed by the parties hereto and a purchase order authorizing the items desired has been issued.

Executed at Richmond, Texas this _____day of _____20_____.

Fort Bend County, Texas

By:_____
County Judge, KP George

By:_____
Signature of Contractor

By:_____
Printed Name and Title

Form **W-9**
(Rev. December 2014)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Give Form to the requester. Do not send to the IRS.

Print or type
See **Specific Instructions** on page 2.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification; check only **one** of the following seven boxes:

☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶ _____

Note. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box in the line above for the tax classification of the single-member owner.

☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.)

Requester's name and address (optional)

6 City, state, and ZIP code

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the instructions for line 1 and the chart on page 4 for guidelines on whose number to enter.

Social security number

			–		–				

or

Employer identification number

		–							

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign Here	**Signature of U.S. person** ▶	**Date** ▶

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. Information about developments affecting Form W-9 (such as legislation enacted after we release it) is at *www.irs.gov/fw9*.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See *What is backup withholding?* on page 2.

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting?* on page 2 for further information.

Note. If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States:

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the Part II instructions on page 3 for details),
3. The IRS tells the requester that you furnished an incorrect TIN,
4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or
5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code* on page 3 and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships* above.

What is FATCA reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code* on page 3 and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of $50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a $500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account, list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9.

a. **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note. ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. **Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. **Partnership, LLC that is not a single-member LLC, C Corporation, or S Corporation.** Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. **Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box in line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box in line 3.

Limited Liability Company (LLC). If the name on line 1 is an LLC treated as a partnership for U.S. federal tax purposes, check the "Limited Liability Company" box and enter "P" in the space provided. If the LLC has filed Form 8832 or 2553 to be taxed as a corporation, check the "Limited Liability Company" box and in the space provided enter "C" for C corporation or "S" for S corporation. If it is a single-member LLC that is a disregarded entity, do not check the "Limited Liability Company" box; instead check the first box in line 3 "Individual/sole proprietor or single-member LLC."

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space in line 4 any code(s) that may apply to you.

Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)

2—The United States or any of its agencies or instrumentalities

3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

4—A foreign government or any of its political subdivisions, agencies, or instrumentalities

5—A corporation

6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession

7—A futures commission merchant registered with the Commodity Futures Trading Commission

8—A real estate investment trust

9—An entity registered at all times during the tax year under the Investment Company Act of 1940

10—A common trust fund operated by a bank under section 584(a)

11—A financial institution

12—A middleman known in the investment community as a nominee or custodian

13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over $600 required to be reported and direct sales over $5,000[1]	Generally, exempt payees 1 through 5[2]
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

[1] See Form 1099-MISC, Miscellaneous Income, and its instructions.

[2] However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B—The United States or any of its agencies or instrumentalities

C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G—A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I—A common trust fund as defined in section 584(a)

J—A bank as defined in section 581

K—A broker

L—A trust exempt from tax under section 664 or described in section 4947(a)(1)

M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

Note. You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-member LLC that is disregarded as an entity separate from its owner (see *Limited Liability Company (LLC)* on this page), enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note. See the chart on page 4 for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at *www.ssa.gov*. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at *www.irs.gov/businesses* and clicking on Employer Identification Number (EIN) under Starting a Business. You can get Forms W-7 and SS-4 from the IRS by visiting IRS.gov or by calling 1-800-TAX-FORM (1-800-829-3676).

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note. Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: *A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.*

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if items 1, 4, or 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code* earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account)	The actual owner of the account or, if combined funds, the first individual on the account[1]
3. Custodian account of a minor (Uniform Gift to Minors Act)	The minor[2]
4. a. The usual revocable savings trust (grantor is also trustee) b. So-called trust account that is not a legal or valid trust under state law	The grantor-trustee[1] The actual owner[1]
5. Sole proprietorship or disregarded entity owned by an individual	The owner[3]
6. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor*
For this type of account:	**Give name and EIN of:**
7. Disregarded entity not owned by an individual	The owner
8. A valid trust, estate, or pension trust	Legal entity[4]
9. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
10. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
11. Partnership or multi-member LLC	The partnership
12. A broker or registered nominee	The broker or nominee
13. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
14. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B))	The trust

[1] List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

[2] Circle the minor's name and furnish the minor's SSN.

[3] You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

[4] List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships* on page 2.

***Note.** Grantor also must provide a Form W-9 to trustee of trust.

Note. If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records from Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Publication 4535, Identity Theft Prevention and Victim Assistance.

Victims of identity theft who are experiencing economic harm or a system problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to *phishing@irs.gov.* You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at: *spam@uce.gov* or contact them at *www.ftc.gov/idtheft* or 1-877-IDTHEFT (1-877-438-4338).

Visit IRS.gov to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.

Job No.: _____

TAX FORM/DEBT/ RESIDENCE CERTIFICATION
(for Advertised Projects)

Taxpayer Identification Number (T.I.N.): _____

Company Name submitting Bid/Proposal: _____

Mailing Address: _____

Are you registered to do business in the State of Texas? Yes No

If you are an individual, list the names and addresses of any partnership of which you are a general partner or any assumed name(s) under which you operate your business

_____

_____

I. **Property:** List all taxable property in Fort Bend County owned by you or above partnerships as well as any d/b/a names. Include real and personal property as well as mineral interest accounts. (Use a second sheet of paper if necessary.)

Fort Bend County Tax Acct. No.*	Property address or location**
_____	_____
_____	_____
_____	_____
_____	_____

** This is the property account identification number assigned by the Fort Bend County Appraisal District.*

*** For real property, specify the property address or legal description. For business personal property, specify the address where the property is located. For example, office equipment will normally be at your office, but inventory may be stored at a warehouse or other location.*

II. **Fort Bend County Debt** - Do you owe any debts to Fort Bend County (taxes on properties listed in I above, tickets, fines, tolls, court judgments, etc.)?

Yes No If yes, attach a separate page explaining the debt.

III. **Residence Certification** - Pursuant to Texas Government Code §2252.001 *et seq.*, as amended, Fort Bend County requests Residence Certification. §2252.001 *et seq.* of the Government Code provides some restrictions on the awarding of governmental contracts; pertinent provisions of §2252.001 are stated below:

(3) "Nonresident bidder" refers to a person who is not a resident.

(4) "Resident bidder" refers to a person whose principal place of business is in this state, including a contractor whose ultimate parent company or majority owner has its principal place of business in this state.

I certify that _____ is a Resident Bidder of Texas as defined in Government Code
[Company Name]
§2252.001.

I certify that _____ is a Nonresident Bidder as defined in Government Code
[Company Name]
§2252.001 and our principal place of business is _____.
[City and State]

Mandatory Form

Contractor Acknowledgement of Storm Water Management Program

I hereby acknowledge that I am aware of the stormwater management program and standard operating procedures developed by Fort Bend County in compliance with the TPDES General Permit No. TXR040000. I agree to comply with all applicable best management practices and standard operating procedures while conducting my services for Fort Bend County. I agree to conduct all services in a manner that does not introduce illicit discharges of pollutants to streets, stormwater inlets, drainage ditches or any portion of the drainage system. The following materials and/or pollutant sources must not be discharged to the drainage system as a result of any services provided:

1. Grass clippings, leaves, mulch, rocks, sand, dirt or other waste materials resulting from landscaping activities, (except those materials resulting from ditch mowing or maintenance activities)
2. Herbicides, pesticides and/or fertilizers, (except those intended for aquatic use)
3. Detergents, fuels, solvents, oils and/or lubricants, other equipment and/or vehicle fluids,
4. Other hazardous materials including paints, thinners, chemicals or related waste materials,
5. Uncontrolled dewatering discharges, equipment and/or vehicle wash waters,
6. Sanitary waste, trash, debris, or other waste products
7. Wastewater from wet saw machinery,
8. Other pollutants that degrade water quality or pose a threat to human health or the environment.

Furthermore, I agree to notify Fort Bend County immediately of any issue caused by or identified by:

_____

(Company/Contractor)

that is believed to be an immediate threat to human health or the environment.

_____ _____

Contractor Signature Date

_____

Printed Name

_____

Title

TECHNICAL SPECIFICATIONS

Division 26 – Electrical and Lighting

265629 Site Lighting - Luminaries Data Appendix

African American Memorial and Park
Fort Bend County, Texas
Site Lighting - Final - 12/01/2023

Description: Low Scale Pathway Bollard

Manufacturer: We-ef
Catalog Reference: 115-9781 (MRY224 LED I) DIMMAMBLE

BURO HAPPOLD

Luminaire Designation

B1

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Type III
Rated Life:
Control Gear Type: NONE
Wattage: 13.5W
Accessories:

Lumen Output: 844 lm
CRI: 80+
Efficacy: 62 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: UNV

Location: Pathways Throughout

Buro Happold Project #P057035

Requirements:

1. Contractor to furnish and install all required mounting hardware and accessories to ensure compatibility with approved construction.

2. Architect to confirm finish.

3. Reference mounting detail within architectural set.

4. Ensure Type III Distribution of fixture is aligned tangent to path.

MRY224 LED I

115-9781

1/3

we-ef



Description
IP66. Class I. IK10. Marine-grade, all aluminum construction. Pole section features anodized aluminum core. 5CE superior corrosion protection including PCS hardware. Silicone CCG® Controlled Compression Gasket. Polycarbonate main lens, UV-stabilized. Integral driver. Advanced thermal management protects LEDs while optimizing lumens output. Luminaire is factory-sealed and does not need to be opened during installation. Suitable for areas prone to flooding. Specify product with 7 Digit product code – Finish Color. Accessories, such as mounting, optical, and electrical, must be specified separately. Example: XXX-XXXX-9004 (Black) + XXX-XXXX (Accessory 1)

Beam Type	[S60] Type III Short
Light Source	LED-11W / 300 mA - 2700 K
CRI	80
Gear Type	electronic gear

Nominal Luminous Flux (lm)

LED Lumens	1323 lm
LEDs	1
Total Lumens	1323 lm
Tj	25 °C

Delivered Lumens Flux (lm)

LED Lumens	843.6 lm
Total Lumens	843.6 lm
Ta	25 °C

Rated Input Power	13.5 W

WE-EF LIGHTING USA LLC
Spec Support Hotline: +1 412 783 0949 | 410-D Keystone Drive | Warrendale PA 15086 U.S.A. | Tel +1 724 742 0030 | info.usa@we-ef.com | www.we-ef.com | 31-08-2023 04:11
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BURO HAPPOLD

Luminaire Designation

B1

Description: Low Scale Pathway Bollard

Manufacturer: We-ef
Catalog Reference: 115-9781 (MRY224 LED I) DIMMAMBLE

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Type III
Rated Life:
Control Gear Type: NONE
Wattage: 13.5W
Accessories:

Lumen Output: 844 lm
CRI: 80+
Efficacy: 62 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: UNV

Location: Pathways Throughout

Buro Happold Project #P057035

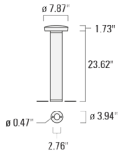
Requirements:

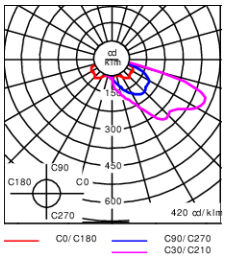
MRY224 LED I

115-9781

we-ef

2/3





Material Specification

Body:	Marine-grade, all-aluminium construction. Pole section features anodised aluminium core
Weight (lbs):	17.6 lbs
Lens:	Polycarbonate, UV-stabilised
Colours:	RAL9004 Black RAL9007 Grey Metallic RAL9016 White RAL8019 Dark Bronze
Gasket:	Silicone CCG® Controlled Compression Gasket
Fasteners:	PCS hardware
Ingress protection:	IP66
Impact protection:	IK10
Corrosion protection:	5CE
Surge protection:	10/10kV
Mounting:	FS Factory-sealed luminaire does not need to be opened during installation
Listings:	ETL, UL-1598, CSA-C22.2#250.0. Suitable for Wet Locations.

Electrical Specification

Power supply:	Integral [ECG] electronic driver 120V-277V. 0-10V dimmable, to be specified with order.
Power factor:	> 0.9
Driver / Ballast:	Integral EC electronic converter

Mounting Accessories

Planted root
Planted root made from hot dipped galvanized steel. Includes mounting hardware.

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Luminaire Designation

B1

Description: Low Scale Pathway Bollard

Manufacturer: We-ef
Catalog Reference: 115-9781 (MRY224 LED I) DIMMAMBLE

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Type III
Rated Life:
Control Gear Type: NONE
Wattage: 13.5W
Accessories:

Lumen Output: 844 lm
CRI: 80+
Efficacy: 62 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: UNV

Location: Pathways Throughout

Buro Happold Project #P057035

Requirements:

MRY224 LED I

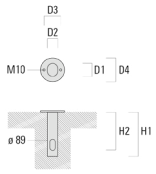
115-9781

we-ef

3/3

Planted root ESZ4

	D1	D2	D3	D4	H1	H2	Weight (lbs)
300-9090	2.17	1.77	2.76	3.94	15.75	13.78	7.72 lbs lbs



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Description: Pathway Lantern

Manufacturer: Aurora Light
Catalog Reference: LMG1-T-279-12-PB-S-[FINISH]

BURO HAPPOLD

Luminaire Designation

B2

Sheet Number 1 of 3

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution:
Rated Life:
Control Gear Type: NONE
Wattage: 7W
Accessories:

Lumen Output: 379lm
CRI: 90+
Efficacy: 63 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: 12VAC

Location: Welcome Plaza

Buro Happold Project #P057035

Requirements:

1. Contractor to furnish and install all required mounting hardware and accessories to ensure compatibility with approved construction.

2. Architect to confirm finish.

3. Locate within softscape. Provide extra wire between fixture and power supply to allow for relocation of fixture during install.

4. First fixture to be placed with architect present on site at night.

5. Reference plan view for location and type mark for transformer.

auroralight

TYPE:
CAT. #: LMG1-T-

LMG1-T MAGLIO

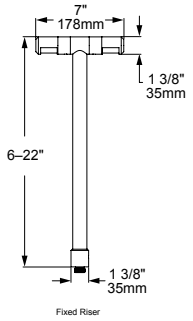


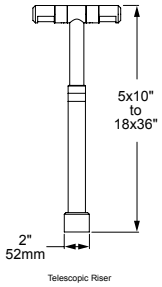
The **LMG1-T** is among the most versatile in our line of high-quality, high-performance path lights. The Maglio features dual rotational glare shields with an independently rotating light engine, allowing you to seamlessly adjust the aperture from 180° to 0°, as well as aim light up or down. Ideal for both path lighting and wall-washing applications.

See LMG1-90 and LMG3 for additional size and wattage options.

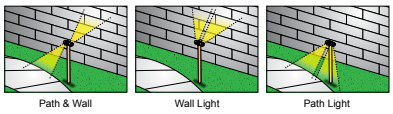
Features include:

- 7 Watts Total (3.5 Watts per Aperture)
- Cree XLAMP® High Intensity (XP-L) LED
- 2700K (80 & 90 CRI) or 3000K (80 CRI)
- Thermally Integrated® and Field Serviceable LED Module
- 12V Integral Driver, Dimmable to <10% typ.
- Compatible w/ 12V AC/DC ELV or MLV Transformers
- Solid Copper and Brass Construction

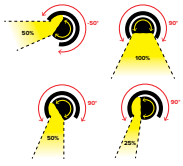




BI-DIRECTIONAL AIMING



INDEPENDENTLY ADJUSTABLE LIGHT SOURCE & SHIELD



12V

COPPER CORE TECHNOLOGY

THERMALLY INTEGRATED

SEE NEXT PAGE FOR ORDERING INFORMATION

MADE IN THE USA

CARLSBAD, CA | PHONE 877 942 1179 | FAX 760 931 2916 | E-MAIL SALES@AURORALIGHT.COM | AURORALIGHT.COM

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Description: Pathway Lantern

Manufacturer: Aurora Light
Catalog Reference: LMG1-T-279-12-PB-S-[FINISH]

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Luminaire Designation

B2

Specifications:

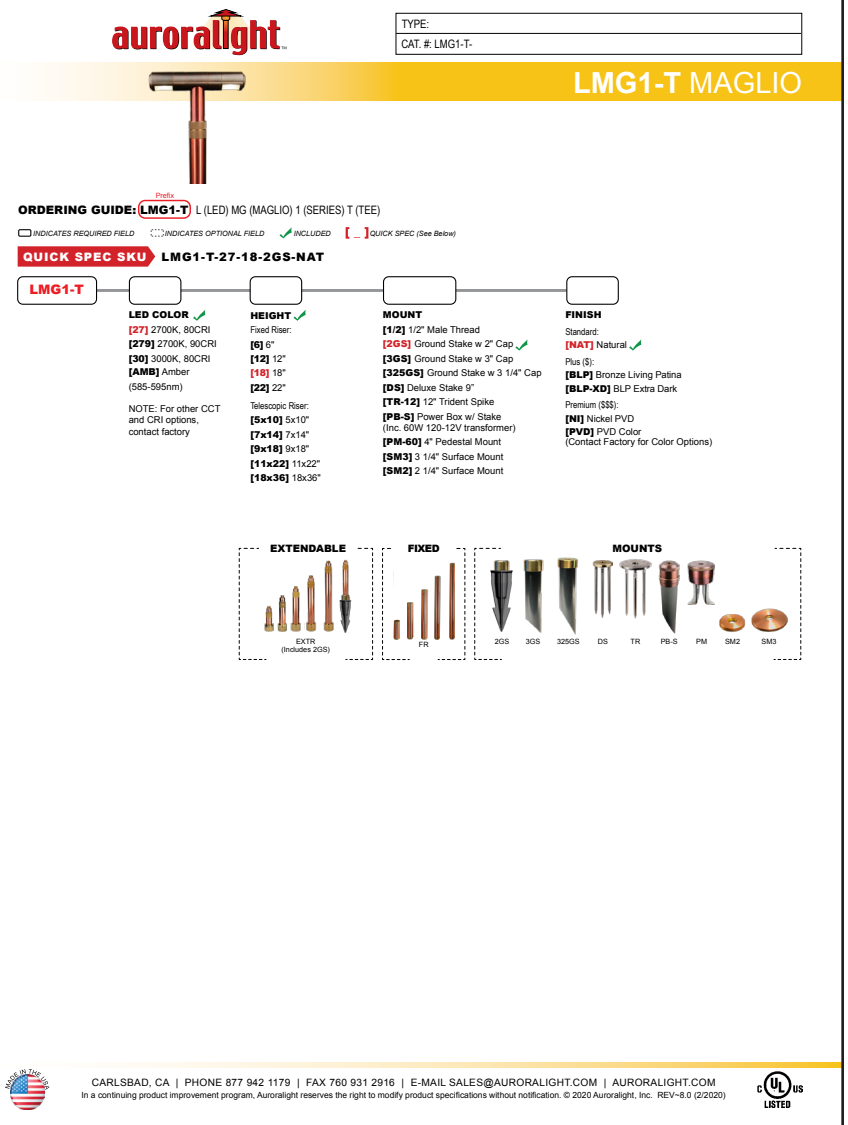
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution:
Rated Life:
Control Gear Type: NONE
Wattage: 7W
Accessories:

Lumen Output: 379lm
CRI: 90+
Efficacy: 63 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: 12VAC

Location: Welcome Plaza

Buro Happold Project #P057035

Requirements:



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Description: Pathway Lantern

Manufacturer: Aurora Light
Catalog Reference: LMG1-T-279-12-PB-S-[FINISH]

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Luminaire Designation

B2

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution:
Rated Life:
Control Gear Type: NONE
Wattage: 7W
Accessories:

Lumen Output: 379lm
CRI: 90+
Efficacy: 63 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: 12VAC

Location: Welcome Plaza

Buro Happold Project #P057035

Requirements:

auroralight

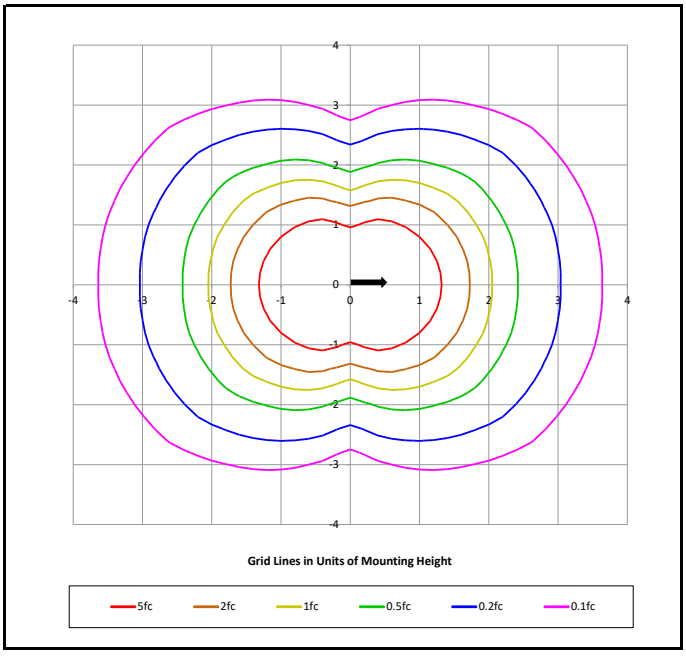
TYPE:
CAT. #: LMG1-T-

LMG1-T MAGLIO

PHOTOMETRIC OVERVIEW

To download more in-depth IES photometric data, visit auroralight.com/product/lmg1-t-maglio/

Mounting Height - 2 Feet



Grid Lines in Units of Mounting Height

5fc 2fc 1fc 0.5fc 0.2fc 0.1fc

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BURO HAPPOLD

Luminaire Designation

B4

Description: Standard Size Bollard

Manufacturer: We-ef
Catalog Reference: 115-9789 (MRY224 LED III) DIMMAMBLE

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Type III
Rated Life:
Control Gear Type: NONE
Wattage: 13.5W
Accessories:

Lumen Output: 844 lm
CRI: 80+
Efficacy: 62 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: UNV

Location: Parking Lot

Buro Happold Project #P057035

Requirements:

1. Contractor to furnish and install all required mounting hardware and accessories to ensure compatibility with approved construction.

2. Architect to confirm finish.

3. Reference mounting detail within architectural set.

4v. Ensure Type III Distribution of fixture is aligned tangent to path.

MRY224 LED III

115-9789

1/3

we-ef



Description
IP66. Class I. IK10. Marine-grade, all aluminum construction. Pole section features anodized aluminum core. 5CE superior corrosion protection including PCS hardware. Silicone CCG® Controlled Compression Gasket. Polycarbonate main lens, UV-stabilized. CAD-optimized optics for superior illumination and glare control. Integral driver. Advanced thermal management protects LEDs while optimizing lumens output. Luminaire is factory-sealed and does not need to be opened during installation. Suitable for areas prone to flooding. Specify product with 7 Digit product code – Finish Color. Accessories, such as mounting, optical, and electrical, must be specified separately. Example: XXX-XXXX-9004 (Black) + XXX-XXXX (Accessory 1)

Beam Type	asymmetric, side-throw beam [S60]
Light Source	LED-11W / 300 mA - 2700 K
CRI	80
Gear Type	electronic gear

Nominal Luminous Flux (lm)

LED Lumens	1323 lm
LEDs	1
Total Lumens	1323 lm
Tj	25 °C

Delivered Lumens Flux (lm)

LED Lumens	843.6 lm
Total Lumens	843.6 lm
Ta	25 °C

Rated Input Power	13.5 W

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Luminaire Designation

B4

Description: Standard Size Bollard

Manufacturer: We-ef
Catalog Reference: 115-9789 (MRY224 LED III) DIMMAMBLE

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Type III
Rated Life:
Control Gear Type: NONE
Wattage: 13.5W
Accessories:

Lumen Output: 844 lm
CRI: 80+
Efficacy: 62 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: UNV

Location: Parking Lot

Buro Happold Project #P057035

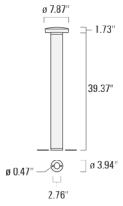
Requirements:

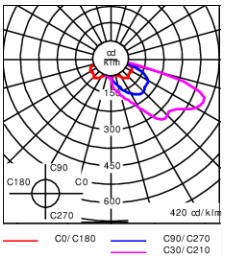
MRY224 LED III

115-9789

2/3

we-ef





Material Specification

Body:	Marine-grade, all-aluminium construction. Pole section features anodised aluminium core
Weight (lbs):	27.28 lbs
Lens:	Polycarbonate, UV-stabilised
Colours:	RAL9004 Black RAL9007 Grey Metallic RAL9016 White
Gasket:	Silicone CCG® Controlled Compression Gasket
Fasteners:	PCS hardware
Ingress protection:	IP66
Impact protection:	IK10
Corrosion protection:	5CE
Surge protection:	10/10kV
Mounting:	FS Factory-sealed luminaire does not need to be opened during installation
Listings:	ETL, UL-1598, CSA-C22.2#250.0. Suitable for Wet Locations.

Electrical Specification

Power supply:	Integral [ECG] electronic driver 120V-277V. 0-10V dimmable, to be specified with order.
Power factor:	> 0.9
Driver / Ballast:	Integral EC electronic converter

Mounting Accessories

Planted root
Planted root made from hot dipped galvanized steel. Includes mounting hardware.

WE-EF LIGHTING USA LLC
Spec Support Hotline: +1 412 783 0949 | 410-D Keystone Drive | Warrendale PA 15086 U.S.A. | Tel +1 724 742 0030 | info.usa@we-ef.com | www.we-ef.com | 03-08-2023 13:20
Technical modifications and errors excepted

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BURO HAPPOLD

Luminaire Designation

B4

Description: Standard Size Bollard

Manufacturer: We-ef
Catalog Reference: 115-9789 (MRY224 LED III) DIMMAMBLE

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Type III
Rated Life:
Control Gear Type: NONE
Wattage: 13.5W
Accessories:

Lumen Output: 844 lm
CRI: 80+
Efficacy: 62 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: UNV

Location: Parking Lot

Buro Happold Project #P057035

Requirements:

MRY224 LED III

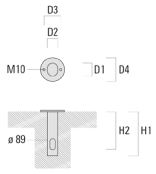
115-9789

we-ef

3/3

Planted root ESZ4

	D1	D2	D3	D4	H1	H2	Weight (lbs)
300-9090	2.17	1.77	2.76	3.94	15.75	13.78	7.72 lbs lbs



WE-EF LIGHTING USA LLC
Spec Support Hotline: +1 412 783 0949 | 410-D Keystone Drive | Warrendale PA 15086 U.S.A. | Tel +1 724 742 0030 | info.usa@we-ef.com | www.we-ef.com | 03-08-2023 13:20
Technical modifications and errors excepted

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BURO HAPPOLD

Luminaire Designation

L1

Description: Linear LED Side Mounted for Gabion Wall

Manufacturer: Bold
Catalog Reference: BOO-S-[LENGTH AS SHOWN ON DRAWINGS]-[FINISH]-L-U-[INTEGRAL CASAMBI]-O-L-9-27-0

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 4 W/ft
Accessories:

Lumen Output: 470 lm/lf
CRI: 80+
Efficacy: 117.5 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Gabion Walls

Buro Happold Project #P057035

Requirements:

1. Contractor to furnish and install all required mounting hardware and accessories to ensure compatibility with approved construction.

2. Contractor to provide dimensioned shop drawings for each unique assembly in context during submittal phase. Shop drawings to include individual fixtures, power supplies, controllers and all accessories.

3. Reference architectural set for mounting detail.

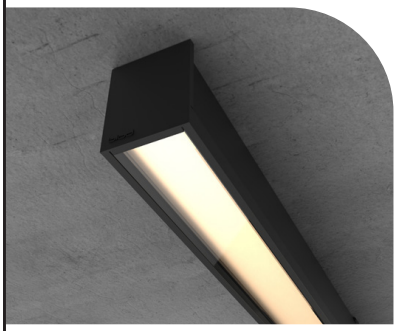
4. Architect to confirm finish.

5. Integral Casambi driver to be provided.

BILLET

OPAL - WET LOCATION

bold lighting



The Billet family of products allows you to achieve uniformity throughout indoor and outdoor spaces while maintaining the same optical performance, light consistency, and overall aesthetics.

The Billet Opal delivers bold vertical and horizontal illumination perfect for ambient lighting and washing. Like all Bold products, the Billet confidently delivers a flawless light distribution and a beautifully finished product.

CONSTRUCTION
Product Type : Linear
Body Material : Extruded Aluminum
Body Finish : Black / Grey / White
Custom RAL
IP Rating : IP67 Inground
IP66 Ceiling Recessed
IK Rating : IK10

LIGHT SOURCE
Direct Light Source : Mid-Power LEDs
Luminous Output : from 470lm/ft. to 1820lm/ft. (Delivered)
Light Source CCT : 2700K / 3000K 3500K / 4000K / Tunable White (2700K-5000K) / Dim-to-Warm (3000K-1800K) / RGBW
Color Rendering Index : Ra80 / Ra90

INSTALLATION
Environment : Wet Location
Mounting : Inground / Ceiling Recessed (Trim & Trimless) / Wall Recessed (Trim & Trimless) / Wall Mounted / Surface Mounted / Pendant

ELECTRICAL
Input Voltage : 120V / UNV 120-277V - 50Hz/60Hz
Load : 4W/ft. to 19W/ft.
Output Type : Constant Current
Driver Type : Integral
Dimming : 0-10V / DALI / ELV / DMX
Lutron Hi-Lume

OPTICS
Optical Distribution : Elliptical (20°x40°)
Asymmetric / Lambertian
Glare Control : UGR<19

Series	Mounting	Nominal Length
BOO	R Recessed with Trim	12 12"
	T Recessed Trimless	18 18"
	S Surface Mounted	24 24"
	P Pendant	30 30"
	I Inground	36 36"
	W Wall Mounted	42 42"
		48 48"
		54 54"
		60 60"
		XX Custom in
		LX Elbow
		For exact lengths refer to dimensions table.

Code example: BOO-P12W-L1B-O-E827-0

Body Finish	Output [1]	Voltage	Dimming	Diffuser	Beam Angle	CRI	Color Temp	Emergency
W White	L 470lm/ft (4W)	1 120V	A No Dimming	O Opal	L Opal	8 +80	27 2700K	0 no
B Black	M 910lm/ft (9W)	U[2] Universal 120V to 277V	B 0-10V to 1%		A Asymmetric	9 +90	30 3000K	9 90 mins
G Grey	H 1490lm/ft (15W)		C 0-10V to Fade-off		E Elliptical		35 3500K	
X Custom RAL	V 1820lm/ft (19W)		D DALI to 1%				40 4000K	
			E ELV Dimming				WD[4] 3000K- 1800K	
			F DMX				TW[5] 2700K - 5000K	
			G[3] LUTRON				CC RGBW	

Notes:
[1] Denotes output at 3000K, unless otherwise noted.
[2] Not applicable for ELV dimming.
[3] Hi-lume 1% EcoSystem Soft-on, Fade-to-Black dimming.
[4] Denotes output specific to Dim-to-Warm at 3000K.
[5] Denotes output specific to Tunable White at full on.

Consult factory for lead-times.
Consult factory for systems using multiple optics and mounting configurations.

Bold Lighting
4710 Ecton Dr. Unit F & G, Marietta, GA 30066, USA
info@boldlighting.us www.boldlighting.us
t: +1-678-903-4061

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BURO HAPPOLD

Luminaire Designation

L1

Description: Linear LED Side Mounted for Gabion Wall

Manufacturer: Bold
Catalog Reference: BOO-S-[LENGTH AS SHOWN ON DRAWINGS]-[FINISH]-L-U-[INTEGRAL CASAMBI]-O-L-9-27-0

Specifications:

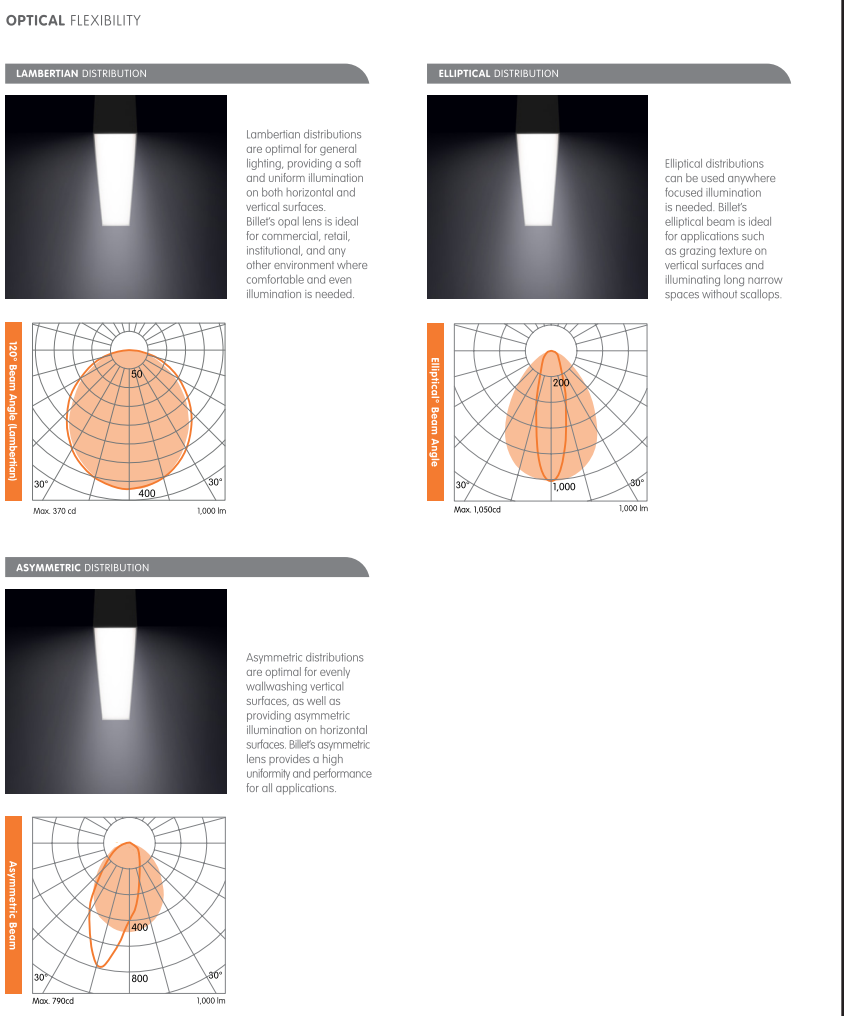
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 4 W/ft
Accessories:

Lumen Output: 470 lm/lf
CRI: 80+
Efficacy: 117.5 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Gabion Walls

Buro Happold Project #P057035

Requirements:



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BURO HAPPOLD

Luminaire Designation

L1

Description: Linear LED Side Mounted for Gabion Wall

Manufacturer: Bold
Catalog Reference: BOO-S-[LENGTH AS SHOWN ON DRAWINGS]-[FINISH]-L-U-[INTEGRAL CASAMBI]-O-L-9-27-0

Specifications:

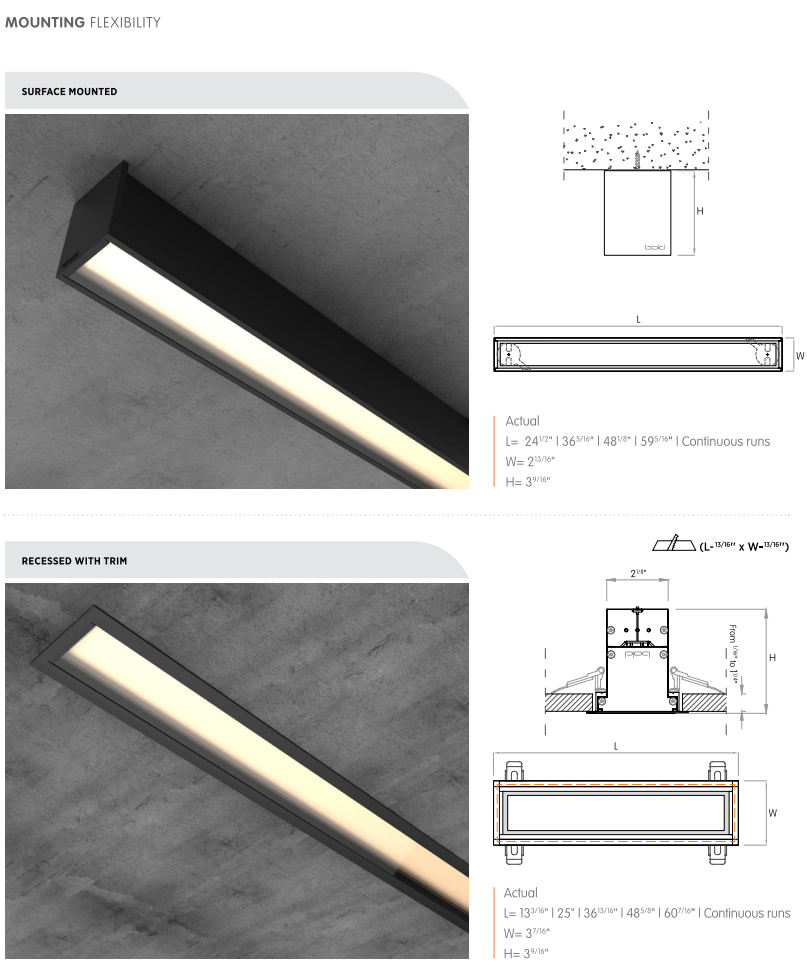
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 4 W/ft
Accessories:

Lumen Output: 470 lm/lf
CRI: 80+
Efficacy: 117.5 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Gabion Walls

Buro Happold Project #P057035

Requirements:



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Luminaire Designation

L1

Description: Linear LED Side Mounted for Gabion Wall

Manufacturer: Bold
Catalog Reference: BOO-S-[LENGTH AS SHOWN ON DRAWINGS]-[FINISH]-L-U-[INTEGRAL CASAMBI]-O-L-9-27-0

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 4 W/ft
Accessories:

Lumen Output: 470 lm/lf
CRI: 80+
Efficacy: 117.5 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

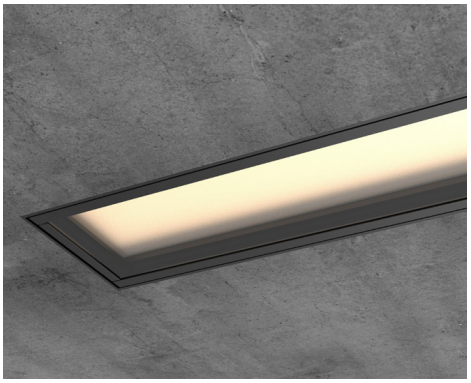
Location: Gabion Walls

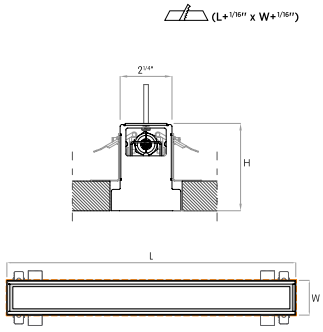
Buro Happold Project #P057035

Requirements:

MOUNTING FLEXIBILITY

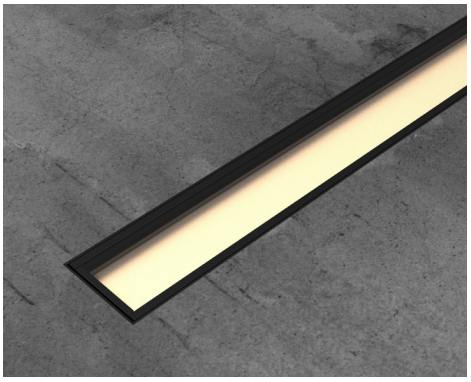
RECESSED TRIMLESS

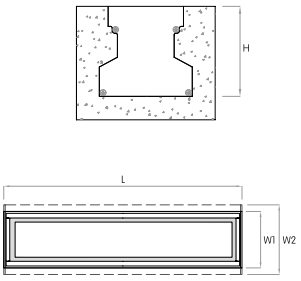




Actual
L= 24 5/8" | 36 3/8" | 48 1/4" | 60" | Continuous runs
W= 2 15/16"
H= 3 11/16"

INGROUND





Actual
L= 12 13/16" | 24 5/8" | 36 7/16" | 48 1/4" | 60" | Continuous runs
W1= 3" | W2= 3 3/4"
H= 3 5/8"

Bold Lighting
4710 Ecton Dr. Unit F & G, Marietta, GA 30066, USA
info@boldlighting.us www.boldlighting.us t: +1-678-903-4061

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BURO HAPPOLD

Luminaire Designation

L1

Description: Linear LED Side Mounted for Gabion Wall

Manufacturer: Bold
Catalog Reference: BOO-S-[LENGTH AS SHOWN ON DRAWINGS]-[FINISH]-L-U-[INTEGRAL CASAMBI]-O-L-9-27-0

Specifications:

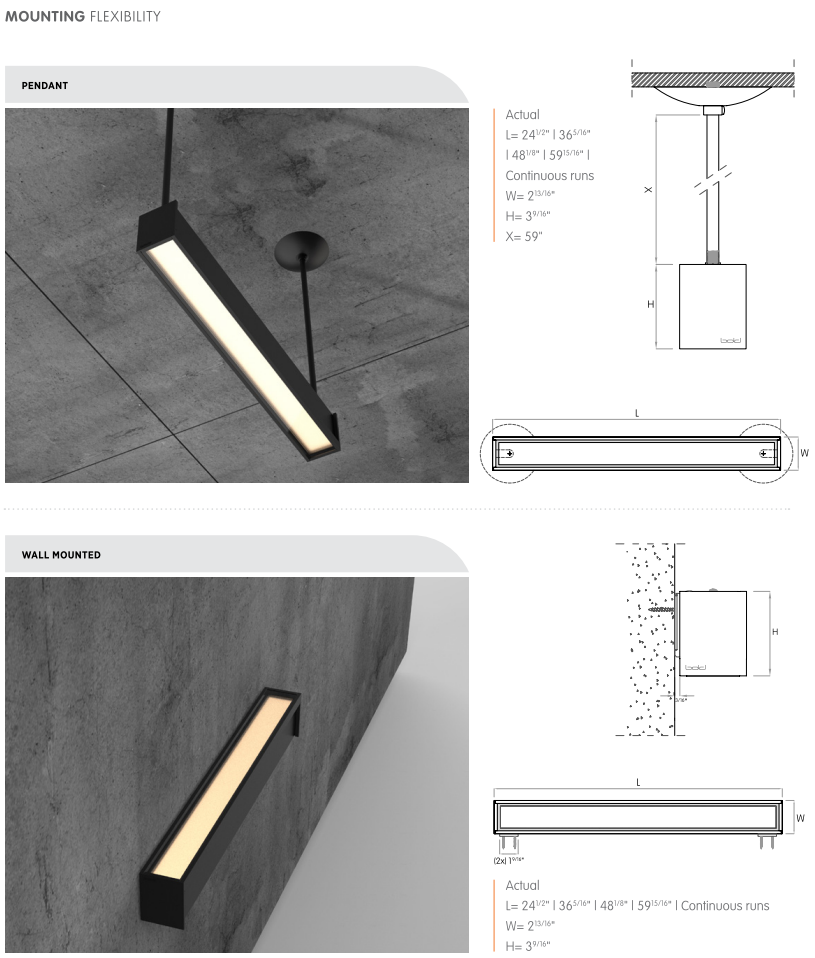
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 4 W/ft
Accessories:

Lumen Output: 470 lm/lf
CRI: 80+
Efficacy: 117.5 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Gabion Walls

Buro Happold Project #P057035

Requirements:



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BURO HAPPOLD

Luminaire Designation

L1

Description: Linear LED Side Mounted for Gabion Wall

Manufacturer: Bold
Catalog Reference: BOO-S-[LENGTH AS SHOWN ON DRAWINGS]-[FINISH]-L-U-[INTEGRAL CASAMBI]-O-L-9-27-0

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 4 W/ft
Accessories:

Lumen Output: 470 lm/lf
CRI: 80+
Efficacy: 117.5 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Gabion Walls

Buro Happold Project #P057035

Requirements:

DELIVERED LUMEN OUTPUT

Output	Watts	CRI +80			CRI +90		
STATIC-WHITE		**2700K**	**3000K**	**4000K**	**2700K**	**3000K**	**4000K**
L	4W	460lm	470lm	490lm	380lm	390lm	410lm
M	9W	1030lm	910lm	1110lm	850lm	760lm	920lm
H	15W	1660lm	1490lm	1790lm	1380lm	1240lm	1500lm
V	19W	2040lm	1820lm		1700lm	1520lm	

DIM-TO-WARM 3000K-1800K					**3000K**		
L	12W				990lm		
V	22W				1820lm		

TUNABLE WHITE 2700K-5000K							
L	12W		1130lm		990lm		
V	22W		2150lm		1820lm		

RGBW					**R**	**G**	**B**	**W**
TOTAL	47.5W				(9W) 143lm	(13.5W) 429lm	(13W) 136.5lm	(12W) 383.5lm

DIMENSIONS TABLE

	Height		Width		12" Actual Length		24" Actual Length		36" Actual Length		48" Actual Length		60" Actual Length	
	mm	**inch**	**mm**	**inch**	**mm**	**inch**	**mm**	**inch**	**mm**	**inch**	**mm**	**inch**	**mm**	**inch**
Surface Mounted	91	3 9/16	72	2 13/16			623	24 1/2	923	36 5/16	1223	48 1/8	1523	59 15/16
Recessed with Trim	91	3 9/16	88	3 7/16	335	13 3/16	635	25	935	36 13/16	1235	48 5/8	1535	60 7/16
Recessed Trimless	93	3 11/16	75	2 15/16			625	24 5/8	925	36 3/8	1225	48 1/4	1525	60
Pendant	91	3 9/16	72	2 13/16			623	24 1/2	923	36 5/16	1223	48 1/8	1523	59 15/16
Inground (with housing)	92	3 5/8	95	3 3/4	325	12 13/16	625	24 5/8	925	36 7/16	1225	48 1/4	1525	60
Wall Mounted	91	3 9/16	72	2 13/16			623	24 1/2	923	36 5/16	1223	48 1/8	1523	59 15/16

Bold Lighting
4710 Ecton Dr. Unit F & G, Marietta, GA 30066, USA
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Description: Linear LED Mounted in Pedestal

BURO HAPPOLD

Luminaire Designation

L2

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Dedication Plaza

Buro Happold Project #P057035

Requirements:

1. Contractor to furnish and install all required mounting hardware and accessories to ensure compatibility with approved construction.

2. Contractor to provide dimensioned shop drawings for each unique assembly in context during submittal phase. Shop drawings to include individual fixtures, power supplies, controllers and all accessories.

3. Architect to confirm finish.

4. Reference plan view for location and type mark for transformer.

5. Contractor to provide necessary mounting clips to ensure strong mount within architectural detail.

KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP





- A flexible encapsulated fixture with side bend capabilities
- KURV has a built-in parabolic curve, which allows the fixture to push out light with its internal reflector
- Perfect for indoor and outdoor locations
- Available in a seamless option, where wires are hidden so they do not obstruct the look of the design
- Utilize clear endcaps for continuous runs with no light loss
- For very high output, a clear finished KURV-SW fixture produces 298 lumens/foot at 3000K

1 PRODUCT	2 MOUNTING	3 RATED	4 CCT	5 WATTAGE	6 LENS	7 WIRE INPUT/ OUTPUT	8 CONNECTOR/ WIRE IN	9 CONNECTOR/ WIRE OUT	10 END CAPS	11 LENGTH (IN)	12 EXACT/ OPTIMAL
KURV-SW											

Sample Part Number: **KURV-SW-PPS-2-DRY-30-5.0-ENC/TL-P1-BW-BW-N/A-48"-E**

1 PRODUCT

KURV-SW
See last page for compatible power supplies.

2 MOUNTING

RLC	Rigid Lock Channel
MC	Magnetic Clip
SGC	Side Graze Channel
PPS-2	PVC Clip
PPS-96	PVC Channel
PPS-FT	PVC Channel Custom Length
PPS-LP-2	PVC Low Profile Clip
PPS-LP-FT	PVC Low Profile Channel Custom Length
PPS-LP-96	PVC Low Profile Channel
WSC	White Snug Clip

White snug clip only for indirect cove use, not intended for hanging fixtures upside down.

PPS mounting clip recommended for seamless applications

3 RATED

DRY	IP20
WET	IP67
SBM	IP68

SBM not recommended to be used in chlorinated water. Available only in S1 or S5 wire exits.

4 CCT

24	2400K
27	2700K
30	3000K
35	3500K
40	4000K

5 WATTAGE

1.5	1.5W-SO
3.0	3.0W-HO
5.0	5.0W-VHO
1.5HE	1.5WHE-SO
3.0HE	3.0WHE-HO
6.0HE	6.0WHE-VHO

SO: Standard Output
HO: High Output
VHO: Very High Output
SBM available only in 1.5, 3.0, & 5.0 (no HE)

6 LENS

ENC/CL	Encapsulated in Clear
ENC/TL	Encapsulated in Translucent

For representation of LED visibility, see Diode Visibility section on following pages

7 WIRE INPUT/OUTPUT

S1	Single 1 (Input only) - End Feed
S2	Single 2 (Input only) - Bottom Feed
S3	Single 3 (Input only) - Left Side Feed
S4	Single 4 (Input only) - Right Side Feed
S5	Single 5 (Input only) - Seamless Feed
S6	Single 6 (Input only) - Seamless Feed

P1	Pass Through 1 (Input/Output) - End Feed
P2	Pass Through 2 (Input/Output) - Bottom Feed
P3	Pass Through 3 (Input/Output) - Left Side Feed
P4	Pass Through 4 (Input/Output) - Right Side Feed
P5	Pass Through 5 (Input/Output) - Seamless Feed
P6	Pass Through 6 (Input/Output) - Seamless Feed

8 CONNECTOR/WIRE IN

BW	Bare Wire (Standard 24")
BRL	Barrel
CON6	Connector 6"
CON24	Connector 24"

Connector/Wire In not needed to specify product. Typical selection is BW.
BW: Standard length is 24", Max length is 120". Request custom length by writing in part number next to BW (example: BW48)

BW	Bare Wire (Standard 24")
BRL	Barrel
CON6	Connector 6"
CON24	Connector 24"

Connector/Wire In not needed to specify product. Typical selection is BW.
BW: Standard length is 24", Max length is 120". Request custom length by writing in part number next to BW (example: BW48)

9 CONNECTOR/WIRE OUT

N/A	Closed End (No feed)

BW	Bare Wire (Standard 24")
BRL	Barrel
CON6	Connector 6"
CON24	Connector 24"

Connector/Wire Out not needed to specify product. Typical selection is N/A or BW.
BW: Standard length is 24", Max length is 120". Request custom length by writing in part number next to BW (example: BW48)

10 END CAPS

Single

CL	Clear
WH	White

Pass Through

N/A	Not Applicable

11 LENGTH (IN)

Fixture length min 12", max 191". Consult factory for lengths under 12".
SW: Available in 1" increments.
SW-HE: Available in 2" increments.

12 EXACT/OPTIMAL

O	Optimal Illumination
E	Exact Specified Length

Exact fixtures are the length specified. Optimal fixtures' length is rounded down with illumination end to end. All fixtures' tolerance is +0 - 1/8". See charts on following pages.

5 year warranty | Field modifications are not covered under Q-Tran warranty | Side Bend | IK10 impact rated | Data subject to change, all data has +/- 5% tolerance | PPS-FT is to be cut at Q-Tran to requested length | Ambient or mounting surface must not be lower than -4°F or higher than: 1.5 - 125°F; 3.0 - 115°F; 5.0 - 108°F | Patent # D863646 S, 10,619,828 B2 | Not field cuttable

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Specification subject to change. Rev-10-16-23

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Description: Linear LED Mounted in Pedestal

BURO HAPPOLD

Luminaire Designation

L2

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Dedication Plaza

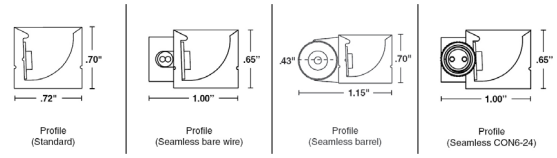
Buro Happold Project #P057035

Requirements:

KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP

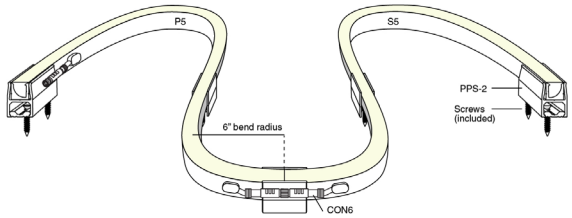
1 PRODUCT - DIMENSIONS



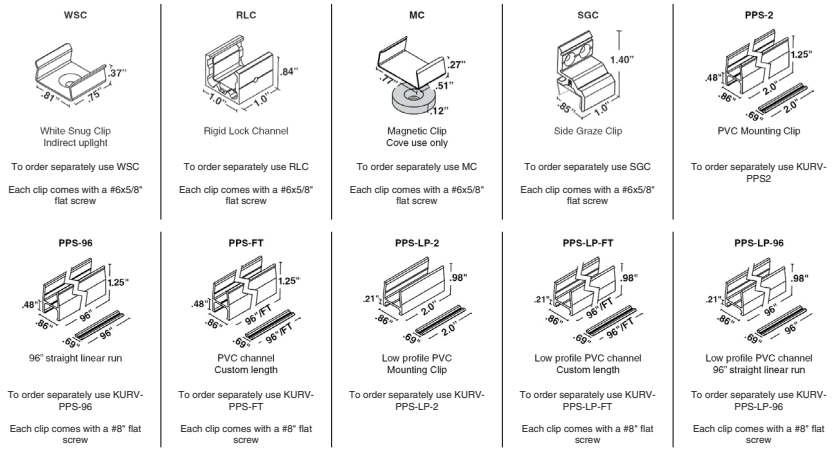
BEND RADIUS



FLEXIBILITY



2 MOUNTING



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BURO HAPPOLD

Luminaire Designation

L2

Description: Linear LED Mounted in Pedestal

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Dedication Plaza

Buro Happold Project #P057035

Requirements:

KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP

4 / 5 DELIVERED LUMENS

[Calculated L70 = 40000 hrs]
Tested with KURV-SW-WSC-DRY

CCT	1.5W/FT				1.5HE W/FT				3.0W/FT				3.0HE W/FT				5.0W/FT				6.0HE W/FT			
	ENC/CL		ENC/TL		ENC/CL		ENC/TL		ENC/CL		ENC/TL		ENC/CL		ENC/TL		ENC/CL		ENC/TL		ENC/CL		ENC/TL	
	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI
2400K	110	94	103	95	133	93	133	92	197	93	182	93	272	93	270	92	274	94	261	94	465	93	460	92
2700K	110	98	103	97	153	95	146	95	208	98	195	98	282	96	264	96	279	99	247	99	493	96	468	96
3000K	118	98	109	98	150	96	163	96	213	98	198	98	311	96	295	96	298	97	277	97	529	97	515	96
3500K	121	96	115	95	159	98	144	98	213	96	203	97	325	98	295	98	305	97	295	97	556	98	486	98
4000K	128	96	121	96	147	97	127	97	229	97	213	97	298	97	258	97	294	97	284	97	518	97	445	97

6 DIODE VISIBILITY

ENC/CL - Clear encapsulation

ENC/TL - Translucent encapsulation

TEMPERATURE RATINGS

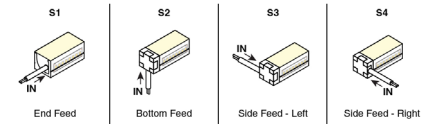
	1.5 W/FT		1.5 HE W/FT		3.0 W/FT		3.0 HE W/FT		5.0 W/FT		6.0 HE W/FT	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Surface Mounted	-4°F	135°F	-4°F	140°F	-4°F	125°F	-4°F	125°F	-4°F	110°F	-4°F	100°F
Storage Temp	-4°F	140°F	-4°F	140°F	-4°F	140°F	-4°F	140°F	-4°F	140°F	-4°F	140°F
Installation Temp	50°F	100°F	50°F	100°F	50°F	100°F	50°F	100°F	50°F	100°F	50°F	100°F

BUG RATING

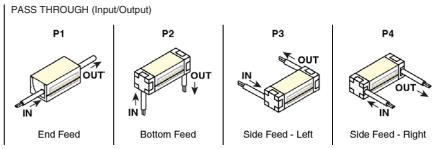
WATTAGE	B	U	G
1.5 (ALL CCTs), 3.0 (ALL CCTs), 5.0 (ALL CCTs)	B0	U1	G0
1.5HE (ALL CCTs), 3.0HE (ALL CCTs), 6.0HE ENC/TL (4000K)	B0	U1	G0
6.0HE ENC/CL (2400K), 6.0HE ENC/TL (2400K, 2700K)	B0	U1	G1
6.0HE ENC/CL (2700K, 3000K, 3500K, 4000K), 6.0HE ENC/TL (3000k, 3500k)	B0	U2	G1

7 WIRE INPUT/OUTPUT

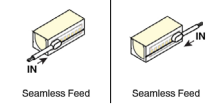
SINGLE (Input only)



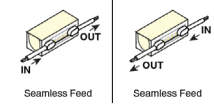
PASS THROUGH (Input/Output)



SEAMLESS SINGLE (Input only)



SEAMLESS PASS THROUGH (Input/Output)



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Description: Linear LED Mounted in Pedestal

BURO HAPPOLD

Luminaire Designation

L2

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Dedication Plaza

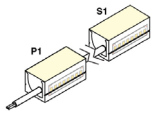
Buro Happold Project #P057035

Requirements:

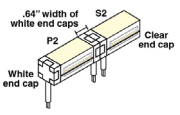
KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP

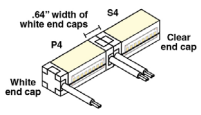
CONFIGURATION OPTIONS



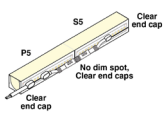
Non-Continuous End Feed



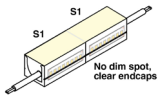
Continuous Bottom Feed



Continuous Side Feed - Right



Seamless Side Feed



Continuous End to End Feed

SEAMLESS

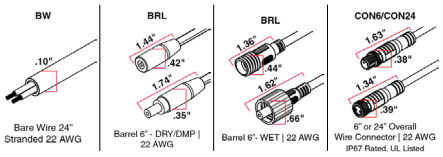
Shown with bare wire, connectors vary



Omnidirectional wireways
S5, S6, P5, P6

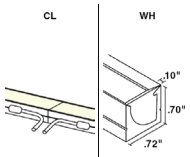
8 / 9 CONNECTOR/WIRE – IN/OUT

Connector/Wire In or Out not needed to specify product. Typical selection is S1 for Wire Input/Output, BW for Connector/Wire In, N/A for Connector/Wire Out, and WH for End Caps



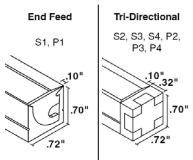
Bare Wire 24" Stranded 22 AWG | Barrel 6" - DRY/DMP | 22 AWG | Barrel 6"- WET | 22 AWG | 6" or 24" Overall Wire Connector | 22 AWG IP67 Rated, UL Listed

10 END CAPS (NO FEED)



Clear endcaps .0" added at end .00" dim spot | White endcaps .0" added at end .10" dim spot

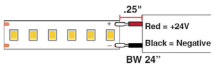
END CAPS (WITH FEED)



White endcaps .0" added at end .10" dim spot | White endcaps .32" added at end .67" dim spot

11 LENGTH - WIRING DETAIL

1.5W, 3.0W, 5.0W | Available in 1" increments 12"-191"



1.5HEW, 3.0HEW, 6.0HEW | Available in 2" increments 12"-191"



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Description: Linear LED Mounted in Pedestal

BURO HAPPOLD

Luminaire Designation

L2

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Dedication Plaza

Buro Happold Project #P057035

Requirements:

KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP

12 EXACT/OPTIMAL FIXTURE LENGTH

SW LENGTHS BY INCH

Exact fixtures are the length specified. Optimal fixtures' length is rounded down with illumination end to end. All fixtures' tolerance is +0 – 1/8". Consult factory for lengths under 12".

EXACT LENGTH

Requested Length	Potential dim spot on either end of fixture
12"	.5"
13"	.5"
14"	.5"
15"	.5"
16"	.5"
17"	.5"
18"	.5"
19"	.5"
20"	.5"
21"	.5"
22"	.5"
23"	.5"
24"	.5"
36"	.5"
48"	.5"
60"	.5"
72"	.5"
84"	.5"
96"	.5"

OPTIMAL LENGTH

Requested Nominal Length	S1 (End Feed)	S2 & S3 & S4 (Bottom Feed / Side Feed - Left / Side Feed - Right)	P1 (End Feed)	P2 & P3 & P4 (Bottom Feed / Side Feed - Left / Side Feed - Right)	S5 & S6 & P5 & P6 (Seamless Feed / Seamless Feed)
12"	11.5"	11.875"	11.75"	11.375"	11.25"
13"	12.5"	12.875"	12.75"	12.375"	12.25"
14"	13.5"	13.875"	13.75"	13.375"	13.25"
15"	14.5"	14.875"	14.75"	14.375"	14.25"
16"	15.5"	15.875"	15.75"	15.375"	15.25"
17"	16.5"	16.875"	16.75"	16.375"	16.25"
18"	17.5"	17.875"	17.75"	17.375"	17.25"
19"	18.5"	18.875"	18.75"	18.375"	18.25"
20"	19.5"	19.875"	19.75"	19.375"	19.25"
21"	20.5"	20.875"	20.75"	20.375"	20.25"
22"	21.5"	21.875"	21.75"	21.375"	21.25"
23"	22.5"	22.875"	22.75"	22.375"	22.25"
24"	23.5"	23.875"	23.75"	23.375"	23.25"
36"	35.5"	35.875"	35.75"	35.375"	35.25"
48"	47.5"	47.875"	47.75"	47.375"	47.25"
60"	59.5"	59.875"	59.75"	59.375"	59.25"
72"	71.5"	71.875"	71.75"	71.375"	71.25"
84"	83.5"	83.875"	83.75"	83.375"	83.25"
96"	95.5"	95.875"	95.75"	95.375"	95.25"

SW-HE LENGTHS BY INCH

Exact fixtures are the length specified. Optimal fixtures' length is rounded down with illumination end to end. All fixtures' tolerance is +0 – 1/8". Consult factory for lengths under 12".

EXACT LENGTH

Requested Length	Potential dim spot on either end of fixture
12"	1"
13"	.5"
14"	1"
15"	.5"
16"	1"
17"	.5"
18"	1"
19"	.5"
20"	1"
21"	.5"
22"	1"
23"	.5"
24"	1"
36"	1"
48"	1"
60"	1"
72"	1"
84"	1"
96"	1"

OPTIMAL LENGTH: highlighted rows are closest to requested nominal length

Requested Nominal Length	S1 (End Feed)	S2 & S3 & S4 (Bottom Feed / Side Feed - Left / Side Feed - Right)	P1 (End Feed)	P2 & P3 & P4 (Bottom Feed / Side Feed - Left / Side Feed - Right)	S5 & S6 & P5 & P6 (Seamless Feed / Seamless Feed)
12"	10.5"	10.875"	10.75"	11.5"	10.25"
13"	12.5"	12.875"	12.75"	11.5"	12.25"
14"	12.5"	12.875"	12.75"	13.5"	12.25"
15"	14.5"	14.875"	14.75"	13.5"	14.25"
16"	14.5"	14.875"	14.75"	15.5"	14.25"
17"	16.5"	16.875"	16.75"	15.5"	16.25"
18"	16.5"	16.875"	16.75"	17.5"	16.25"
19"	18.5"	18.875"	18.75"	17.5"	18.25"
20"	18.5"	18.875"	18.75"	19.5"	18.25"
21"	20.5"	20.875"	20.75"	19.5"	20.25"
22"	20.5"	20.875"	20.75"	21.5"	20.25"
23"	22.5"	22.875"	22.75"	21.5"	22.25"
24"	22.5"	22.875"	22.75"	23.5"	22.25"
36"	34.5"	34.875"	34.75"	35.5"	34.25"
48"	46.5"	46.875"	46.75"	47.5"	46.25"
60"	58.5"	58.875"	58.75"	59.5"	58.25"
72"	70.5"	70.875"	70.75"	71.5"	70.25"
84"	82.5"	82.875"	82.75"	83.5"	82.25"
96"	94.5"	94.875"	94.75"	95.5"	94.25"

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BURO HAPPOLD

Luminaire Designation

L2

Description: Linear LED Mounted in Pedestal

Manufacturer: Q-Tran

Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Dedication Plaza

Buro Happold Project #P057035

Requirements:

KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP

COMPATIBLE POWER SUPPLIES

See power supplies cut sheets for more information. Data subject to change, all data has +/- 5% tolerance.

DIM TO LEVEL	INDOOR		OUTDOOR	
	SW24/1.5-4.0	SW24/5.0, SW-HE, SW-HE+	SW24/1.5-4.0	SW24/5.0, SW-HE, SW-HE+
Dim to Black	Q6M-DC+CAP QTM-DC+CAP iQ-PH iQ-PH+QD1	Q6M-DC+CAP QTM-DC+CAP iQ-PH iQ-PH+QD1	QOM-DC+CAP QOM-PH iQ-PH	QOM-DC+CAP QOM-PH iQ-PH
0.1%	QTM-eLED+0-10V QTM-eLED-AWN QZ-DMX QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP	QTM-eLED+0-10V QTM-eLED-AWN QZ-DMX QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP	Q-SET-QZ-DMX Q-SET-QZ-PH/0-10V Q-SET-eLED+0-10V QOM-eLED+0-10V QZ-DMX QZ-PH/0-10V	Q-SET-QZ-DMX Q-SET-QZ-PH/0-10V Q-SET-eLED+0-10V QOM-eLED+0-10V QZ-DMX QZ-PH/0-10V
1%	QTM-eLED(E) QTM-eLED+DALI-DT6 QTM-eLED+DALI-DT6-AWN	QTM-eLED(E) QTM-eLED+DALI-DT6 QTM-eLED+DALI-DT6-AWN	QOM-eLED+DALI-DT6	QOM-eLED+DALI-DT6
10%	Non-Dim Power Supply with SW App Dongle	Non-Dim Power Supply with SW App Dongle	Q-HEX-mini-DC Q-SET-mLED	

DIMMING PROTOCOL	INDOOR		OUTDOOR	
	SW24/1.5-4.0	SW24/5.0, SW-HE, SW-HE+	SW24/1.5-4.0	SW24/5.0, SW-HE, SW-HE+
Non-Dim	QTM-eLED-ND QZ-ND	QTM-eLED-ND QZ-ND	Q-SET-QZ-ND Q-SET-eLED-ND QOM-eLED-ND QZ-ND iQ-ND-50-65	Q-SET-QZ-ND Q-SET-eLED-ND QOM-eLED-ND QZ-ND iQ-ND-50-65
Phase	Q6M-DC+CAP QTM-DC+CAP QTM-eLED(E) QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP iQ-PH iQ-PH+QD1	Q6M-DC+CAP QTM-DC+CAP QTM-eLED(E) QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP iQ-PH iQ-PH+QD1	Q-HEX-mini-DC Q-SET-QZ-PH/0-10V Q-SET-mLED QOM-DC+CAP QOM-PH QZ-PH/0-10V iQ-PH	Q-SET-QZ-PH/0-10V QOM-DC+CAP QOM-PH QZ-PH/0-10V iQ-PH
0-10V	QTM-eLED+0-10V QTM-eLED-AWN QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP	QTM-eLED+0-10V QTM-eLED-AWN QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP	Q-SET-QZ-PH/0-10V Q-SET-eLED+0-10V QOM-eLED+0-10V QZ-PH/0-10V	Q-SET-QZ-PH/0-10V Q-SET-eLED+0-10V QOM-eLED+0-10V QZ-PH/0-10V
Lutron Athena	QTM-eLED+DALI-DT6-AWN QTM-eLED-AWN	QTM-eLED+DALI-DT6-AWN QTM-eLED-AWN		
ECO System	QTM-eLED(E)	QTM-eLED(E)		
DMX	QZ-DMX	QZ-DMX	Q-SET-QZ-DMX QZ-DMX	Q-SET-QZ-DMX QZ-DMX
DALI-2: DT6	QTM-eLED+DALI-DT6 QTM-eLED+DALI-DT6-AWN	QTM-eLED+DALI-DT6 QTM-eLED+DALI-DT6-AWN	QOM-eLED+DALI-DT6	QOM-eLED+DALI-DT6
SCENE App Dimmed	Non-Dim Power Supply with SW App Dongle	Non-Dim Power Supply with SW App Dongle		

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Description: Linear LED Mounted in Pedestal

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Luminaire Designation

L2

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Dedication Plaza

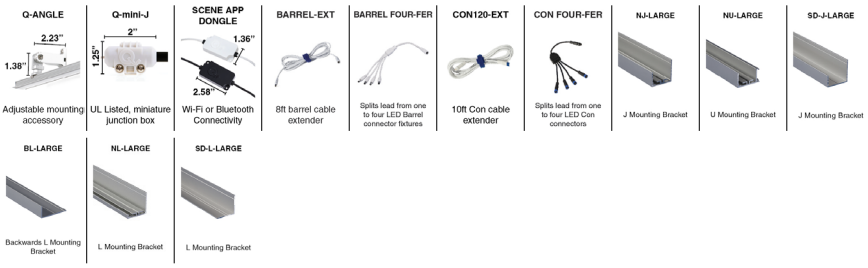
Buro Happold Project #P057035

Requirements:

KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP

COMPATIBLE MOUNTING ACCESSORIES



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Description: Linear LED Mounted in Pedestal

BURO HAPPOLD

Luminaire Designation

L2

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Dedication Plaza

Buro Happold Project #P057035

Requirements:

QZ-PH/0-10V

LED Power Supply - 30W-288W



- Versatile Class 2 LED driver controlled with phase (forward or reverse) or 0-10V dimming down to 0.1%
- Pulse Width Modulation (PWM) output provides smooth flicker-free dimming
- 24VDC constant voltage output
- Available in various wattage options: 30W, 60W, 96W, 192W, and 288W
- Housing is listed for indoor or outdoor use

1 PRODUCT	2 WATTAGE	3 PRIMARY VOLTAGE	4 SECONDARY VOLTAGE	5 CONTROL	6 COLOR
QZ		UNV	24V	PH/010	

Sample Part Number: **QZ-60W-UNV-24V-PH/010-BK**

1 PRODUCT
QZ

2 WATTAGE
30W
60W
96W
192W
288W

3 PRIMARY VOLTAGE
UNV Universal (120-277V)

4 SECONDARY VOLTAGE
24V

5 CONTROL
PH/010 Phase or 0-10V dimming

6 COLOR
WH White (Standard)
BK Black Powder Coat Finish

COMPATIBLE LEDS

STATIC WHITE

SW24/1.5-4.0	✓
SW24/5.0, SW-HE, SW-HE+	✓
SD-SW24/1.0-4.0	✓
SD-SW24/6.0	✓
SW-IA	
SW-XT	✓

OTHER

DW-HE Tunable Applications	
DW-HE Warm Dim Applications	
WD	✓
SC	✓
RGB	
RGBW, RGBW-HE	

SHEETS

Q-SHEETS SW	✓
Q-SHEETS DW Tunable Applications	
Q-SHEETS DW Warm Dim Applications	
Q-SHEETS RGB	
Q-SHEETS RGBW	

MICRO 5

MICRO 5-SW	✓
MICRO 5-DW Tunable Applications	
MICRO 5-DW Warm Dim Applications	
MICRO 5-RGB	

PRODUCT INFORMATION

- Vertical or horizontal surface mount
- Constant voltage output
- PH/010 Dimming:
  - Phase dimming: works with forward phase / leading edge, MLV and Reverse phase / trailing edge, ELV, TRIAC dimmers
  - Dimming range: 0.1% - 100%
  - 0-10V dimming
  - 1-10V dimming
  - 10V PWM
  - Potentiometer
  - Flicker-free dimming
  - PWM (high frequency) output reduces visible flicker
- IP66 Rated
- Follows recommended practices of IEEE standard P1789 to mitigate flicker-includes health risks
- Suitable for dry, damp and wet locations
- Suitable for indoor & outdoor use
- Primary voltage - universal (110-277V)
- Wide operating temperature range: -40˚F to +140˚F
- UL, cUL listed
- Type HL rated
- Compliant to FCC Part 15B
- 5 year warranty

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Luminaire Designation

L2

Description: Linear LED Mounted in Pedestal

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Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Dedication Plaza

Buro Happold Project #P057035

Requirements:

QZ-PH/0-10V

LED Power Supply - 30W-288W

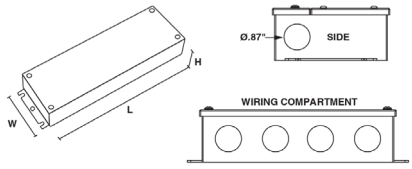
VOLTAGE DROP CHART

Wiring from power supply to light fixture must be two conductor cable

VDC	Load Wattage (W)	Distance from PS for 5% Voltage Drop								
		10 AWG	12 AWG	14 AWG	16 AWG	18 AWG	20 AWG	22 AWG	24 AWG	26 AWG
24	15	913	574	361	227	143	90	55	35	22
	30	456	287	181	114	71	45	28	17	11
	60	228	143	90	57	36	22	14	9	5
	80	171	108	68	43	27	17	10	7	4
	96	143	90	56	35	22	14	9	5	3

1 PRODUCT - DIMENSIONS

Size	Length (in)	Width (in)	Height (in)
30W	6.5	3.75	1.58
60W	7.5	3.75	1.58
96W	8.68	3.75	1.58
192W	10.94	4.33	1.77
288W	11.87	4.33	1.77



2 TECHNICAL INFORMATION

Wattage	Primary Voltage	Secondary Voltage	Secondary Current
30W	110-277V	24VDC	1.25 A
60W	110-277V	24VDC	2.5 A
96W	110-277V	24VDC	1x4 A
192W	110-277V	24VDC	2x4 A
288W	110-277V	24VDC	3x4 A

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Luminaire Designation

L2

Description: Linear LED Mounted in Pedestal

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Dedication Plaza

Buro Happold Project #P057035

Requirements:

QZ-PH/0-10V

LED Power Supply - 30W-288W

SPECIFICATIONS

Input	
Input Voltage (Vrms)	110-277V
Input Current, max (Arms)	3.3A @ 110V
Inrush Current, max* (Apk)	43A@277V
Input Frequency (Hz)	50/60
Input Power (W)	330

Output	
Output Voltage, nom (V)	24
Output Current (A)	288W, 3x4A @ 24V
Output Power (Wmax)	288W

Environmental	Min	Nom	Max
THD (%)	-	-	20
PF (%)	0.94	-	-
Working Temp (°F)	-	-	140
IP Rating	66	-	-

*-200us event

PROTECTIONS

- Short Circuit Protection (SCP)
- Over Loading Protection (OLP)
- Over Temperature Protection (OTP)
- I/P-O/P: 1.88KVAC
- I/P-O/P: 100MΩ / 500VDC / 77°F / 70%RH

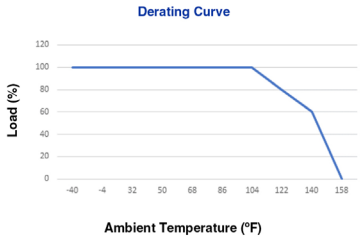
COMPLIANCE

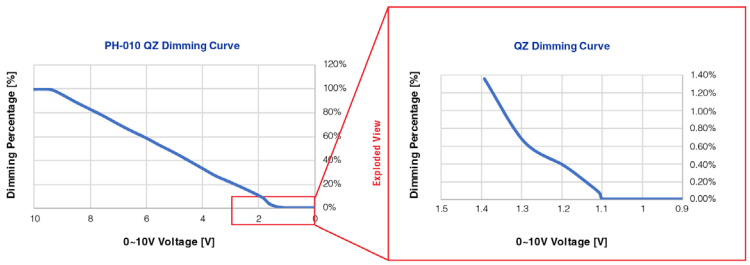
- EMI/RFI
  - FCC 47 CFR Part 15 Subpart B
- Certified
  - UL8750

6 COLOR

Black Powder Coat Finish

White (Standard)





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Description: Linear LED Mounted in Pedestal

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

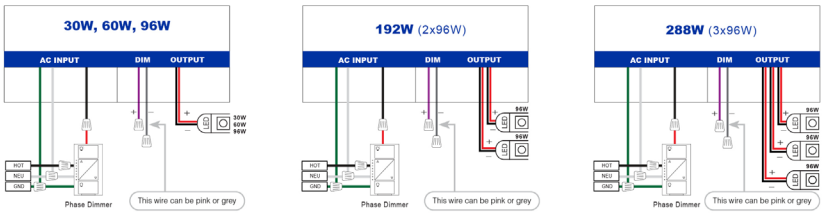
Location: Dedication Plaza

Buro Happold Project #P057035

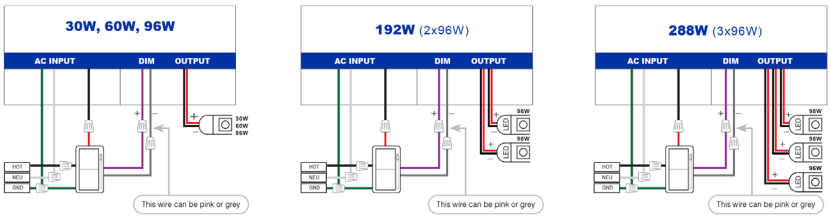
Requirements:

QZ-PH/0-10V
LED Power Supply - 30W-288W

PHASE DIMMING

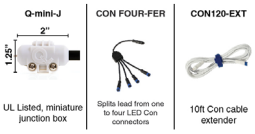


0-10V DIMMING



Wiring from power supply to light fixture must be two conductor cable

COMPATIBLE WIRING ACCESSORIES



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Luminaire Designation

L2

Description: Linear LED Mounted in Pedestal

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

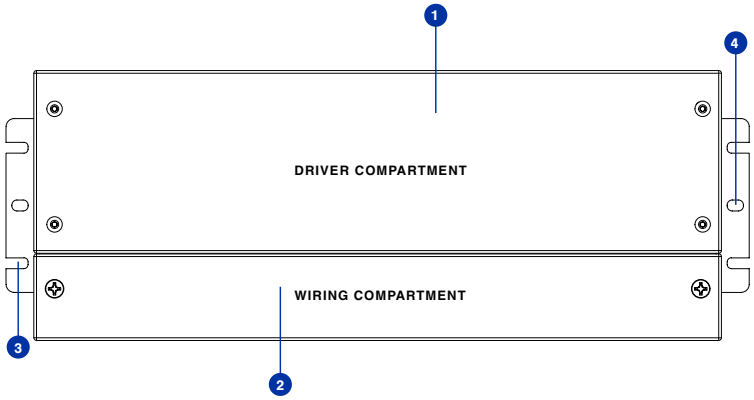
Location: Dedication Plaza

Buro Happold Project #P057035

Requirements:

INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

TOP VIEW



QZ Components

1 Driver Compartment 2 Wiring Compartment 3 Mounting Tab Slots 4 Mounting Tab Holes

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Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
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Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

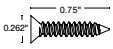
Location: Dedication Plaza

Buro Happold Project #P057035

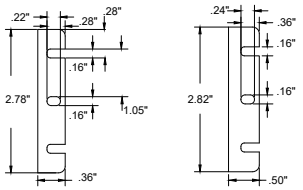
Requirements:

INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

Required Hardware

#6 Flat head screw	

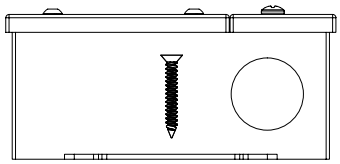
Mounting Foot:



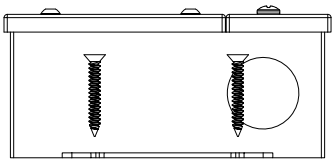
Mounting

1. The QZ can be mounted either vertically or horizontally, utilizing the supplied screws and the mounting tabs on the bottom of the enclosure

CENTER HOLE

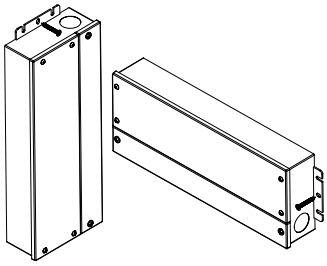


SIDE SLOTS

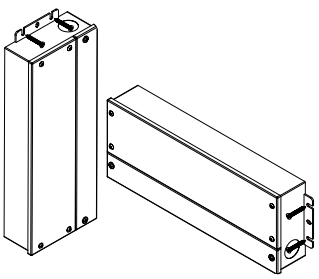


2. The QZ must be mounted into a stud for sufficient support, using either the center holes or the slots of each mounting tab

CENTER HOLE



SIDE SLOTS



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Luminaire Designation

L2

Description: Linear LED Mounted in Pedestal

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Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

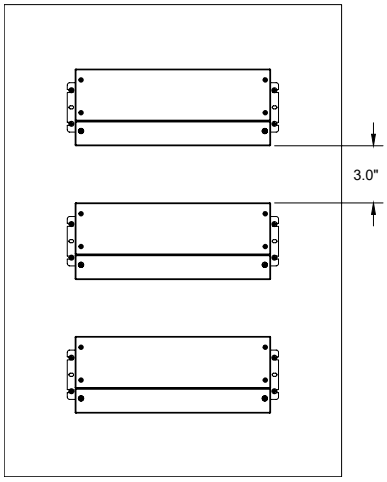
Location: Dedication Plaza

Buro Happold Project #P057035

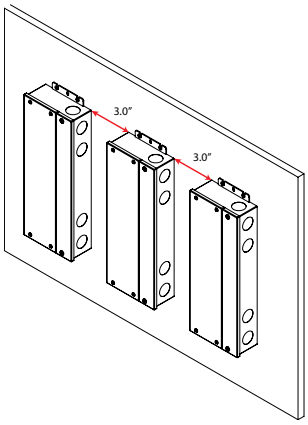
Requirements:

INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

3 When installing multiple QZ power supplies, seperate the enclosures by 3" of space from edge to edge. This prevents the rise of ambient temperature between the power supplies.



Horizontal mount illustrated above



Vertical mount illustrated above

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Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Dedication Plaza

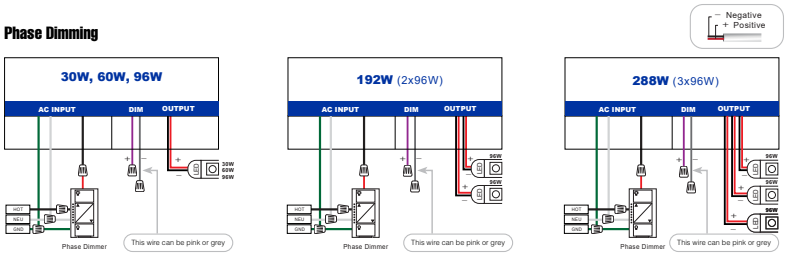
Buro Happold Project #P057035

Requirements:

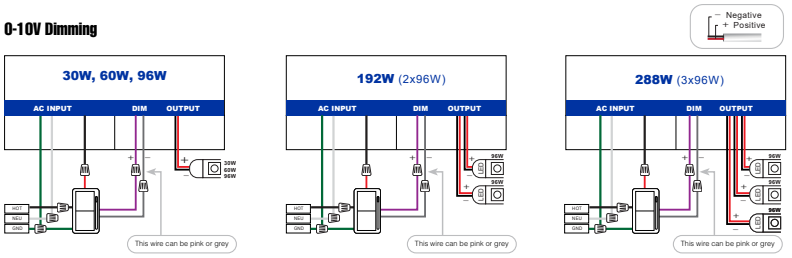
INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

4 Wiring diagram

Phase Dimming



0-10V Dimming



Wiring from power supply to light fixture must be two conductor cable

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BURO HAPPOLD

Luminaire Designation

L2

Description: Linear LED Mounted in Pedestal

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Dedication Plaza

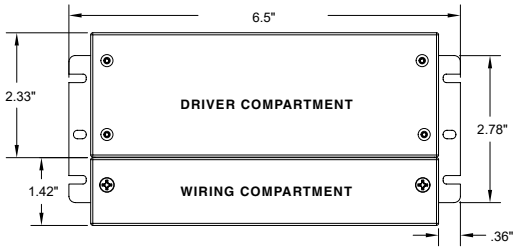
Buro Happold Project #P057035

Requirements:

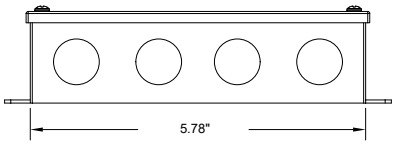
INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

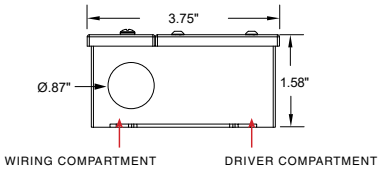
QZ 30W

TOP VIEW



WIRING COMPARTMENT VIEW





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Control Gear Type: 0-10V
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Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Dedication Plaza

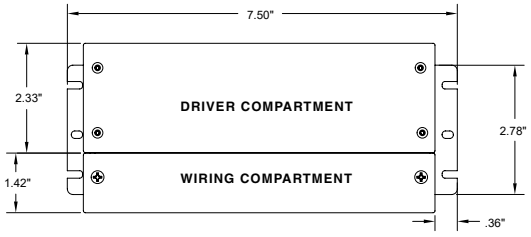
Buro Happold Project #P057035

Requirements:

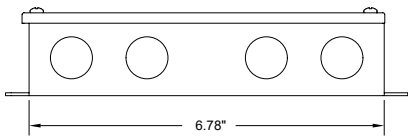
INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

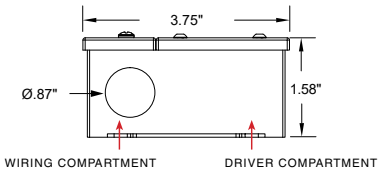
QZ 60W

TOP VIEW



WIRING COMPARTMENT VIEW





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CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Dedication Plaza

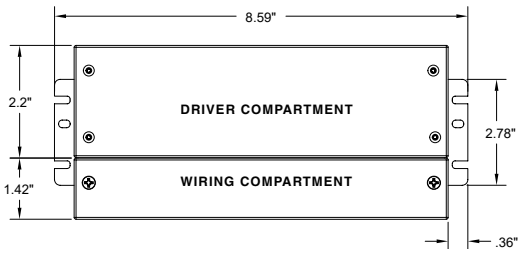
Buro Happold Project #P057035

Requirements:

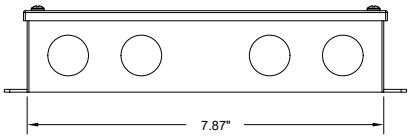
INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

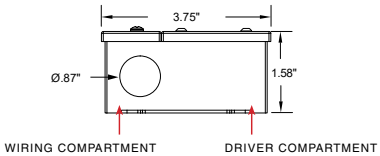
QZ 96W

TOP VIEW



WIRING COMPARTMENT VIEW





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Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Dedication Plaza

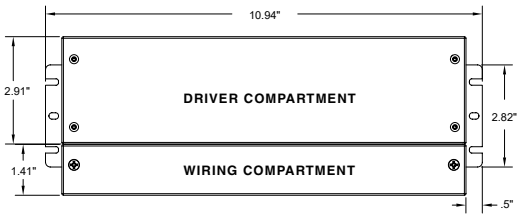
Buro Happold Project #P057035

Requirements:

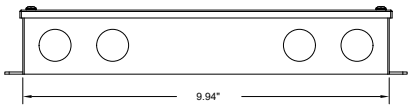
INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

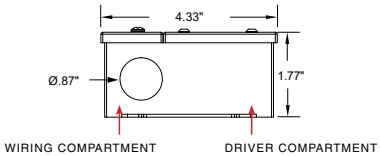
QZ 192W

TOP VIEW



WIRING COMPARTMENT VIEW





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Luminaire Designation

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Description: Linear LED Mounted in Pedestal

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Specifications:

Lamp Type: LED
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Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Dedication Plaza

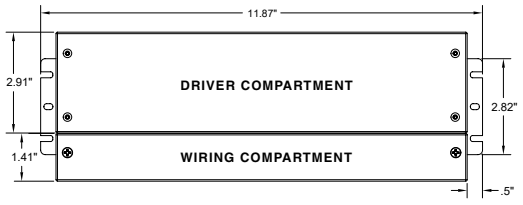
Buro Happold Project #P057035

Requirements:

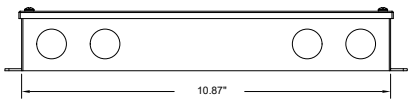
INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

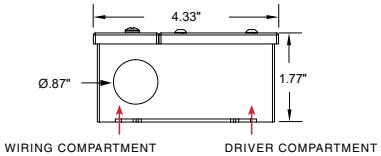
QZ 288W

TOP VIEW



WIRING COMPARTMENT VIEW





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Description: Linear LED Mounted in Pedestal

BURO HAPPOLD

Luminaire Designation

L2

Manufacturer: Q-Tran
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Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Dedication Plaza

Buro Happold Project #P057035

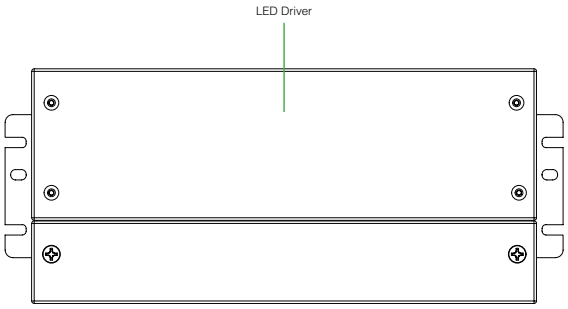
Requirements:

MATERIAL RECYCLING

QZ FAMILY

You may be done with your products, but chances are they still have more to give. Follow these instructions to break down and sort recyclable components. Check with local recycling collection to ensure they accept the materials listed below.

Additionally, Q-Tran offers a Takeback Program. Contact factory for information.



QZ-96W shown



LED Drivers

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BURO HAPPOLD

Luminaire Designation

L3

Description: Linear LED Mounted in Pedestrian Portals

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Signare Throughout

Buro Happold Project #P057035

Requirements:

1. Contractor to furnish and install all required mounting hardware and accessories to ensure compatibility with approved construction.

2. Contractor to provide dimensioned shop drawings for each unique assembly in context during submittal phase. Shop drawings to include individual fixtures, power supplies, controllers and all accessories.

3. Architect to confirm finish.

4. Reference plan view for location and type mark for transformer.

5. Contractor to provide necessary mounting clips to ensure strong mount within architectural detail.

KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP





- A flexible encapsulated fixture with side bend capabilities
- KURV has a built-in parabolic curve, which allows the fixture to push out light with its internal reflector
- Perfect for indoor and outdoor locations
- Available in a seamless option, where wires are hidden so they do not obstruct the look of the design
- Utilize clear endcaps for continuous runs with no light loss
- For very high output, a clear finished KURV-SW fixture produces 298 lumens/foot at 3000K

1 PRODUCT	2 MOUNTING	3 RATED	4 CCT	5 WATTAGE	6 LENS	7 WIRE INPUT/ OUTPUT	8 CONNECTOR/ WIRE IN	9 CONNECTOR/ WIRE OUT	10 END CAPS	11 LENGTH (IN)	12 EXACT/ OPTIMAL
KURV-SW											

Sample Part Number: **KURV-SW-PPS-2-DRY-30-5.0-ENC/TL-P1-BW-BW-N/A-48"-E**

1 PRODUCT

KURV-SW	See last page for compatible power supplies.

2 MOUNTING

RLC	Rigid Lock Channel
MC	Magnetic Clip
SGC	Side Graze Channel
PPS-2	PVC Clip
PPS-96	PVC Channel
PPS-FT	PVC Channel Custom Length
PPS-LP-2	PVC Low Profile Clip
PPS-LP-FT	PVC Low Profile Channel Custom Length
PPS-LP-96	PVC Low Profile Channel
WSC	White Snug Clip

White snug clip only for indirect cove use, not intended for hanging fixtures upside down.

PPS mounting clip recommended for seamless applications

3 RATED

DRY	IP20
WET	IP67
SBM	IP68

SBM not recommended to be used in chlorinated water. Available only in S1 or S5 wire exits.

4 CCT

24	2400K
27	2700K
30	3000K
35	3500K
40	4000K

5 WATTAGE

1.5	1.5W-SO
3.0	3.0W-HO
5.0	5.0W-VHO
1.5HE	1.5WHE-SO
3.0HE	3.0WHE-HO
6.0HE	6.0WHE-VHO

SO: Standard Output
HO: High Output
VHO: Very High Output
SBM available only in 1.5, 3.0, & 5.0 (no HE)

6 LENS

ENC/CL	Encapsulated in Clear
ENC/TL	Encapsulated in Translucent

For representation of LED visibility, see Diode Visibility section on following pages

7 WIRE INPUT/OUTPUT

S1	Single 1 (Input only) - End Feed
S2	Single 2 (Input only) - Bottom Feed
S3	Single 3 (Input only) - Left Side Feed
S4	Single 4 (Input only) - Right Side Feed
S5	Single 5 (Input only) - Seamless Feed
S6	Single 6 (Input only) - Seamless Feed

P1	Pass Through 1 (Input/Output) - End Feed
P2	Pass Through 2 (Input/Output) - Bottom Feed
P3	Pass Through 3 (Input/Output) - Left Side Feed
P4	Pass Through 4 (Input/Output) - Right Side Feed
P5	Pass Through 5 (Input/Output) - Seamless Feed
P6	Pass Through 6 (Input/Output) - Seamless Feed

8 CONNECTOR/WIRE IN

BW	Bare Wire (Standard 24")
BRL	Barrel
CON6	Connector 6"
CON24	Connector 24"

Connector/Wire In not needed to specify product. Typical selection is BW.
BW: Standard length is 24", Max length is 120". Request custom length by writing in part number next to BW (example: BW48)

BW	Bare Wire (Standard 24")
BRL	Barrel
CON6	Connector 6"
CON24	Connector 24"

Connector/Wire In not needed to specify product. Typical selection is BW.
BW: Standard length is 24", Max length is 120". Request custom length by writing in part number next to BW (example: BW48)

9 CONNECTOR/WIRE OUT

N/A	Closed End (No feed)

BW	Bare Wire (Standard 24")
BRL	Barrel
CON6	Connector 6"
CON24	Connector 24"

Connector/Wire Out not needed to specify product. Typical selection is N/A or BW.
BW: Standard length is 24", Max length is 120". Request custom length by writing in part number next to BW (example: BW48)

10 END CAPS

Single

CL	Clear
WH	White

Pass Through

N/A	Not Applicable

11 LENGTH (IN)

Fixture length min 12", max 191". Consult factory for lengths under 12".
SW: Available in 1" increments.
SW-HE: Available in 2" increments.

12 EXACT/OPTIMAL

O	Optimal Illumination
E	Exact Specified Length

Exact fixtures are the length specified. Optimal fixtures' length is rounded down with illumination end to end. All fixtures' tolerance is +0 - 1/8". See charts on following pages.

5 year warranty | Field modifications are not covered under Q-Tran warranty | Side Bend | IK10 impact rated | Data subject to change, all data has +/- 5% tolerance | PPS-FT is to be cut at Q-Tran to requested length | Ambient or mounting surface must not be lower than -4°F or higher than: 1.5 - 125°F; 3.0 - 115°F; 5.0 - 108°F | Patent # D863646 S, 10,619,828 B2 | Not field cuttable

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BURO HAPPOLD

Luminaire Designation

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Accessories:

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CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Signare Throughout

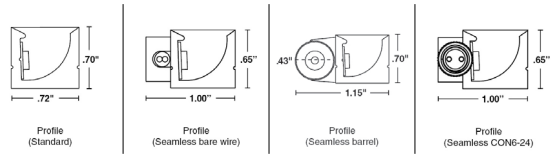
Buro Happold Project #P057035

Requirements:

KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP

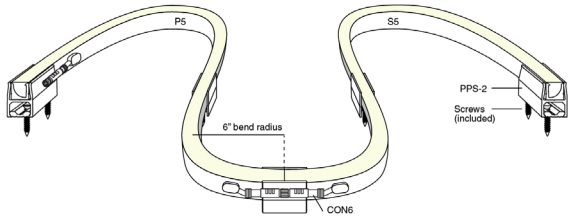
1 PRODUCT - DIMENSIONS



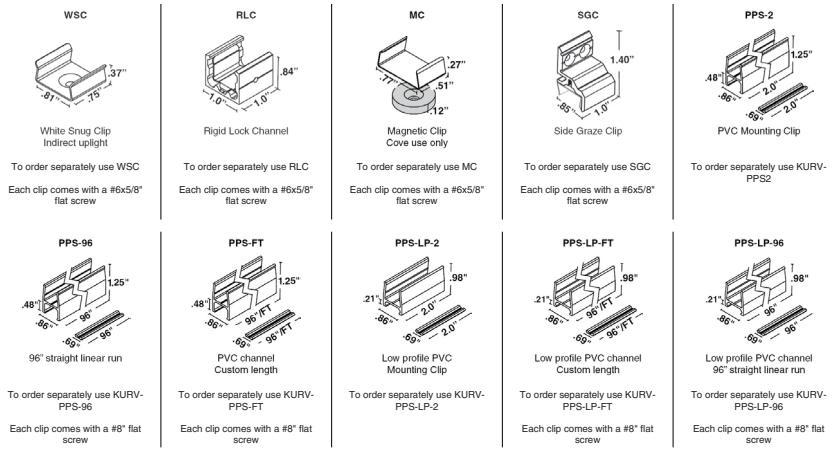
BEND RADIUS



FLEXIBILITY



2 MOUNTING



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IP Rating: IP68
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Dimming Range: 1%-100%
Voltage: 24V

Location: Signare Throughout

Buro Happold Project #P057035

Requirements:

KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP

4 / 5 DELIVERED LUMENS

[Calculated L70 = 40000 hrs]
Tested with KURV-SW-WSC-DRY

CCT	1.5W/FT				1.5HE W/FT				3.0W/FT				3.0HE W/FT				5.0W/FT				6.0HE W/FT			
	ENC/CL		ENC/TL		ENC/CL		ENC/TL		ENC/CL		ENC/TL		ENC/CL		ENC/TL		ENC/CL		ENC/TL		ENC/CL		ENC/TL	
	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI
2400K	110	94	103	95	133	93	133	92	197	93	182	93	272	93	270	92	274	94	261	94	465	93	460	92
2700K	110	98	103	97	153	95	146	95	208	98	195	98	282	96	264	96	279	99	247	99	493	96	468	96
3000K	118	98	109	98	150	96	163	96	213	98	198	98	311	96	295	96	298	97	277	97	529	97	515	96
3500K	121	96	115	95	159	98	144	98	213	96	203	97	325	98	295	98	305	97	295	97	556	98	486	98
4000K	128	96	121	96	147	97	127	97	229	97	213	97	298	97	258	97	294	97	284	97	518	97	445	97

6 DIODE VISIBILITY

ENC/CL - Clear encapsulation

ENC/TL - Translucent encapsulation

TEMPERATURE RATINGS

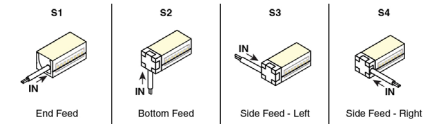
	1.5 W/FT		1.5 HE W/FT		3.0 W/FT		3.0 HE W/FT		5.0 W/FT		6.0 HE W/FT	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Surface Mounted	-4°F	135°F	-4°F	140°F	-4°F	125°F	-4°F	125°F	-4°F	110°F	-4°F	100°F
Storage Temp	-4°F	140°F	-4°F	140°F	-4°F	140°F	-4°F	140°F	-4°F	140°F	-4°F	140°F
Installation Temp	50°F	100°F	50°F	100°F	50°F	100°F	50°F	100°F	50°F	100°F	50°F	100°F

BUG RATING

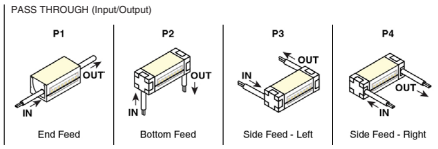
WATTAGE	B	U	G
1.5 (ALL CCTs), 3.0 (ALL CCTs), 5.0 (ALL CCTs)	B0	U1	G0
1.5HE (ALL CCTs), 3.0HE (ALL CCTs), 6.0HE ENC/TL (4000K)	B0	U1	G0
6.0HE ENC/CL (2400K), 6.0HE ENC/TL (2400K, 2700K)	B0	U1	G1
6.0HE ENC/CL (2700K, 3000K, 3500K, 4000K), 6.0HE ENC/TL (3000k, 3500k)	B0	U2	G1

7 WIRE INPUT/OUTPUT

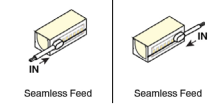
SINGLE (Input only)



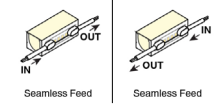
PASS THROUGH (Input/Output)



SEAMLESS SINGLE (Input only)



SEAMLESS PASS THROUGH (Input/Output)



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BURO HAPPOLD

Luminaire Designation

L3

Description: Linear LED Mounted in Pedestrian Portals

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Signare Throughout

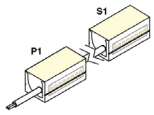
Buro Happold Project #P057035

Requirements:

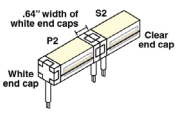
KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP

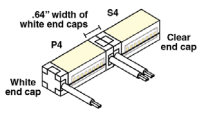
CONFIGURATION OPTIONS



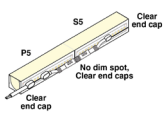
Non-Continuous End Feed



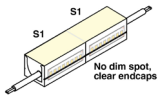
Continuous Bottom Feed



Continuous Side Feed - Right



Seamless Side Feed



Continuous End to End Feed

SEAMLESS

Shown with bare wire, connectors vary



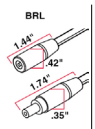
Omnidirectional wireways
S5, S6, P5, P6

8 / 9 CONNECTOR/WIRE – IN/OUT

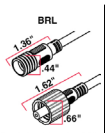
Connector/Wire In or Out not needed to specify product. Typical selection is S1 for Wire Input/Output, BW for Connector/Wire In, N/A for Connector/Wire Out, and WH for End Caps



Bare Wire 24" Stranded 22 AWG



Barrel 6" - DRY/DMP | 22 AWG

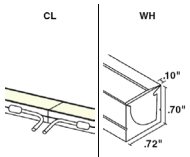


Barrel 6"- WET | 22 AWG



6" or 24" Overall Wire Connector | 22 AWG
IP67 Rated, UL Listed

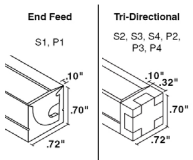
10 END CAPS (NO FEED)



Clear endcaps .0" added at end .00" dim spot

White endcaps .0" added at end .10" dim spot

END CAPS (WITH FEED)

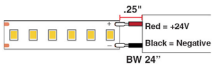


White endcaps .0" added at end .10" dim spot

White endcaps .32" added at end .67" dim spot

11 LENGTH - WIRING DETAIL

1.5W, 3.0W, 5.0W | Available in 1" increments 12"-191"



1.5HEW, 3.0HEW, 6.0HEW | Available in 2" increments 12"-191"



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Description: Linear LED Mounted in Pedestrian Portals

BURO HAPPOLD

Luminaire Designation

L3

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Signare Throughout

Buro Happold Project #P057035

Requirements:

KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP

12 EXACT/OPTIMAL FIXTURE LENGTH

SW LENGTHS BY INCH

Exact fixtures are the length specified. Optimal fixtures' length is rounded down with illumination end to end. All fixtures' tolerance is +0 – 1/8". Consult factory for lengths under 12".

EXACT LENGTH

Requested Length	Potential dim spot on either end of fixture
12"	.5"
13"	.5"
14"	.5"
15"	.5"
16"	.5"
17"	.5"
18"	.5"
19"	.5"
20"	.5"
21"	.5"
22"	.5"
23"	.5"
24"	.5"
36"	.5"
48"	.5"
60"	.5"
72"	.5"
84"	.5"
96"	.5"

OPTIMAL LENGTH

Requested Nominal Length	S1 (End Feed)	S2 & S3 & S4 (Bottom Feed / Side Feed - Left / Side Feed - Right)	P1 (End Feed)	P2 & P3 & P4 (Bottom Feed / Side Feed - Left / Side Feed - Right)	S5 & S6 & P5 & P6 (Seamless Feed / Seamless Feed)
12"	11.5"	11.875"	11.75"	11.375"	11.25"
13"	12.5"	12.875"	12.75"	12.375"	12.25"
14"	13.5"	13.875"	13.75"	13.375"	13.25"
15"	14.5"	14.875"	14.75"	14.375"	14.25"
16"	15.5"	15.875"	15.75"	15.375"	15.25"
17"	16.5"	16.875"	16.75"	16.375"	16.25"
18"	17.5"	17.875"	17.75"	17.375"	17.25"
19"	18.5"	18.875"	18.75"	18.375"	18.25"
20"	19.5"	19.875"	19.75"	19.375"	19.25"
21"	20.5"	20.875"	20.75"	20.375"	20.25"
22"	21.5"	21.875"	21.75"	21.375"	21.25"
23"	22.5"	22.875"	22.75"	22.375"	22.25"
24"	23.5"	23.875"	23.75"	23.375"	23.25"
36"	35.5"	35.875"	35.75"	35.375"	35.25"
48"	47.5"	47.875"	47.75"	47.375"	47.25"
60"	59.5"	59.875"	59.75"	59.375"	59.25"
72"	71.5"	71.875"	71.75"	71.375"	71.25"
84"	83.5"	83.875"	83.75"	83.375"	83.25"
96"	95.5"	95.875"	95.75"	95.375"	95.25"

SW-HE LENGTHS BY INCH

Exact fixtures are the length specified. Optimal fixtures' length is rounded down with illumination end to end. All fixtures' tolerance is +0 – 1/8". Consult factory for lengths under 12".

EXACT LENGTH

Requested Length	Potential dim spot on either end of fixture
12"	1"
13"	.5"
14"	1"
15"	.5"
16"	1"
17"	.5"
18"	1"
19"	.5"
20"	1"
21"	.5"
22"	1"
23"	.5"
24"	1"
36"	1"
48"	1"
60"	1"
72"	1"
84"	1"
96"	1"

OPTIMAL LENGTH: highlighted rows are closest to requested nominal length

Requested Nominal Length	S1 (End Feed)	S2 & S3 & S4 (Bottom Feed / Side Feed - Left / Side Feed - Right)	P1 (End Feed)	P2 & P3 & P4 (Bottom Feed / Side Feed - Left / Side Feed - Right)	S5 & S6 & P5 & P6 (Seamless Feed / Seamless Feed)
12"	10.5"	10.875"	10.75"	11.5"	10.25"
13"	12.5"	12.875"	12.75"	11.5"	12.25"
14"	12.5"	12.875"	12.75"	13.5"	12.25"
15"	14.5"	14.875"	14.75"	13.5"	14.25"
16"	14.5"	14.875"	14.75"	15.5"	14.25"
17"	16.5"	16.875"	16.75"	15.5"	16.25"
18"	16.5"	16.875"	16.75"	17.5"	16.25"
19"	18.5"	18.875"	18.75"	17.5"	18.25"
20"	18.5"	18.875"	18.75"	19.5"	18.25"
21"	20.5"	20.875"	20.75"	19.5"	20.25"
22"	20.5"	20.875"	20.75"	21.5"	20.25"
23"	22.5"	22.875"	22.75"	21.5"	22.25"
24"	22.5"	22.875"	22.75"	23.5"	22.25"
36"	34.5"	34.875"	34.75"	35.5"	34.25"
48"	46.5"	46.875"	46.75"	47.5"	46.25"
60"	58.5"	58.875"	58.75"	59.5"	58.25"
72"	70.5"	70.875"	70.75"	71.5"	70.25"
84"	82.5"	82.875"	82.75"	83.5"	82.25"
96"	94.5"	94.875"	94.75"	95.5"	94.25"

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BURO HAPPOLD

Luminaire Designation

L3

Description: Linear LED Mounted in Pedestrian Portals

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Signare Throughout

Buro Happold Project #P057035

Requirements:

KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP

COMPATIBLE POWER SUPPLIES

See power supplies cut sheets for more information. Data subject to change, all data has +/- 5% tolerance.

DIM TO LEVEL	INDOOR		OUTDOOR	
	SW24/1.5-4.0	SW24/5.0, SW-HE, SW-HE+	SW24/1.5-4.0	SW24/5.0, SW-HE, SW-HE+
Dim to Black	Q6M-DC+CAP QTM-DC+CAP iQ-PH iQ-PH+QD1	Q6M-DC+CAP QTM-DC+CAP iQ-PH iQ-PH+QD1	QOM-DC+CAP QOM-PH iQ-PH	QOM-DC+CAP QOM-PH iQ-PH
0.1%	QTM-eLED+0-10V QTM-eLED-AWN QZ-DMX QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP	QTM-eLED+0-10V QTM-eLED-AWN QZ-DMX QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP	Q-SET-QZ-DMX Q-SET-QZ-PH/0-10V Q-SET-eLED+0-10V QOM-eLED+0-10V QZ-DMX QZ-PH/0-10V	Q-SET-QZ-DMX Q-SET-QZ-PH/0-10V Q-SET-eLED+0-10V QOM-eLED+0-10V QZ-DMX QZ-PH/0-10V
1%	QTM-eLED(E) QTM-eLED+DALI-DT6 QTM-eLED+DALI-DT6-AWN	QTM-eLED(E) QTM-eLED+DALI-DT6 QTM-eLED+DALI-DT6-AWN	QOM-eLED+DALI-DT6	QOM-eLED+DALI-DT6
10%	Non-Dim Power Supply with SW App Dongle	Non-Dim Power Supply with SW App Dongle	Q-HEX-mini-DC Q-SET-mLED	

DIMMING PROTOCOL	INDOOR		OUTDOOR	
	SW24/1.5-4.0	SW24/5.0, SW-HE, SW-HE+	SW24/1.5-4.0	SW24/5.0, SW-HE, SW-HE+
Non-Dim	QTM-eLED-ND QZ-ND	QTM-eLED-ND QZ-ND	Q-SET-QZ-ND Q-SET-eLED-ND QOM-eLED-ND QZ-ND iQ-ND-50-65	Q-SET-QZ-ND Q-SET-eLED-ND QOM-eLED-ND QZ-ND iQ-ND-50-65
Phase	Q6M-DC+CAP QTM-DC+CAP QTM-eLED(E) QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP iQ-PH iQ-PH+QD1	Q6M-DC+CAP QTM-DC+CAP QTM-eLED(E) QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP iQ-PH iQ-PH+QD1	Q-HEX-mini-DC Q-SET-QZ-PH/0-10V Q-SET-mLED QOM-DC+CAP QOM-PH QZ-PH/0-10V iQ-PH	Q-SET-QZ-PH/0-10V QOM-DC+CAP QOM-PH QZ-PH/0-10V iQ-PH
0-10V	QTM-eLED+0-10V QTM-eLED-AWN QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP	QTM-eLED+0-10V QTM-eLED-AWN QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP	Q-SET-QZ-PH/0-10V Q-SET-eLED+0-10V QOM-eLED+0-10V QZ-PH/0-10V	Q-SET-QZ-PH/0-10V Q-SET-eLED+0-10V QOM-eLED+0-10V QZ-PH/0-10V
Lutron Athena	QTM-eLED+DALI-DT6-AWN QTM-eLED-AWN	QTM-eLED+DALI-DT6-AWN QTM-eLED-AWN		
ECO System	QTM-eLED(E)	QTM-eLED(E)		
DMX	QZ-DMX	QZ-DMX	Q-SET-QZ-DMX QZ-DMX	Q-SET-QZ-DMX QZ-DMX
DALI-2: DT6	QTM-eLED+DALI-DT6 QTM-eLED+DALI-DT6-AWN	QTM-eLED+DALI-DT6 QTM-eLED+DALI-DT6-AWN	QOM-eLED+DALI-DT6	QOM-eLED+DALI-DT6
SCENE App Dimmed	Non-Dim Power Supply with SW App Dongle	Non-Dim Power Supply with SW App Dongle		

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Description: Linear LED Mounted in Pedestrian Portals

BURO HAPPOLD

Luminaire Designation

L3

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Signare Throughout

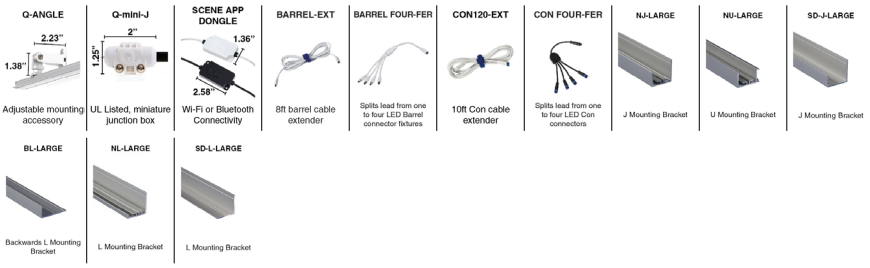
Buro Happold Project #P057035

Requirements:

KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP

COMPATIBLE MOUNTING ACCESSORIES



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BURO HAPPOLD

Luminaire Designation

L3

Description: Linear LED Mounted in Pedestrian Portals

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Signare Throughout

Buro Happold Project #P057035

Requirements:

QZ-PH/0-10V

LED Power Supply - 30W-288W



- Versatile Class 2 LED driver controlled with phase (forward or reverse) or 0-10V dimming down to 0.1%
- Pulse Width Modulation (PWM) output provides smooth flicker-free dimming
- 24VDC constant voltage output
- Available in various wattage options: 30W, 60W, 96W, 192W, and 288W
- Housing is listed for indoor or outdoor use

1 PRODUCT	2 WATTAGE	3 PRIMARY VOLTAGE	4 SECONDARY VOLTAGE	5 CONTROL	6 COLOR
QZ		UNV	24V	PH/010	

Sample Part Number: **QZ-60W-UNV-24V-PH/010-BK**

1 PRODUCT
QZ

2 WATTAGE
30W
60W
96W
192W
288W

3 PRIMARY VOLTAGE
UNV Universal (120-277V)

4 SECONDARY VOLTAGE
24V

5 CONTROL
PH/010 Phase or 0-10V dimming

6 COLOR
WH White (Standard)
BK Black Powder Coat Finish

COMPATIBLE LEDS

STATIC WHITE

SW24/1.5-4.0	✓
SW24/5.0, SW-HE, SW-HE+	✓
SD-SW24/1.0-4.0	✓
SD-SW24/6.0	✓
SW-IA	
SW-XT	✓

OTHER

DW-HE Tunable Applications	
DW-HE Warm Dim Applications	
WD	✓
SC	✓
RGB	
RGBW, RGBW-HE	

SHEETS

Q-SHEETS SW	✓
Q-SHEETS DW Tunable Applications	
Q-SHEETS DW Warm Dim Applications	
Q-SHEETS RGB	
Q-SHEETS RGBW	

MICRO 5

MICRO 5-SW	✓
MICRO 5-DW Tunable Applications	
MICRO 5-DW Warm Dim Applications	
MICRO 5-RGB	

PRODUCT INFORMATION

- Vertical or horizontal surface mount
- Constant voltage output
- PH/010 Dimming:
  - Phase dimming: works with forward phase / leading edge, MLV and Reverse phase / trailing edge, ELV, TRIAC dimmers
  - Dimming range: 0.1% - 100%
  - 0-10V dimming
  - 1-10V dimming
  - 10V PWM
  - Potentiometer
  - Flicker-free dimming
  - PWM (high frequency) output reduces visible flicker
- IP66 Rated
- Follows recommended practices of IEEE standard P1789 to mitigate flicker-includes health risks
- Suitable for dry, damp and wet locations
- Suitable for indoor & outdoor use
- Primary voltage - universal (110-277V)
- Wide operating temperature range: -40˚F to +140˚F
- UL, cUL listed
- Type HL rated
- Compliant to FCC Part 15B
- 5 year warranty

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Buro Happold Project #P057035

Requirements:

QZ-PH/0-10V

LED Power Supply - 30W-288W

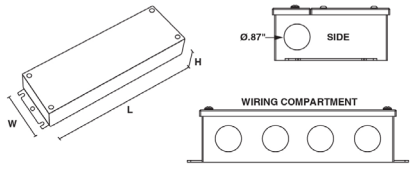
VOLTAGE DROP CHART

Wiring from power supply to light fixture must be two conductor cable

VDC	Load Wattage (W)	Distance from PS for 5% Voltage Drop								
		10 AWG	12 AWG	14 AWG	16 AWG	18 AWG	20 AWG	22 AWG	24 AWG	26 AWG
24	15	913	574	361	227	143	90	55	35	22
	30	456	287	181	114	71	45	28	17	11
	60	228	143	90	57	36	22	14	9	5
	80	171	108	68	43	27	17	10	7	4
	96	143	90	56	35	22	14	9	5	3

1 PRODUCT - DIMENSIONS

Size	Length (in)	Width (in)	Height (in)
30W	6.5	3.75	1.58
60W	7.5	3.75	1.58
96W	8.68	3.75	1.58
192W	10.94	4.33	1.77
288W	11.87	4.33	1.77



2 TECHNICAL INFORMATION

Wattage	Primary Voltage	Secondary Voltage	Secondary Current
30W	110-277V	24VDC	1.25 A
60W	110-277V	24VDC	2.5 A
96W	110-277V	24VDC	1x4 A
192W	110-277V	24VDC	2x4 A
288W	110-277V	24VDC	3x4 A

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Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Signare Throughout

Buro Happold Project #P057035

Requirements:

QZ-PH/0-10V

LED Power Supply - 30W-288W

SPECIFICATIONS

Input	
Input Voltage (Vrms)	110-277V
Input Current, max (Arms)	3.3A @ 110V
Inrush Current, max* (Apk)	43A@277V
Input Frequency (Hz)	50/60
Input Power (W)	330

Output	
Output Voltage, nom (V)	24
Output Current (A)	288W, 3x4A @ 24V
Output Power (Wmax)	288W

Environmental	Min	Nom	Max
THD (%)	-	-	20
PF (%)	0.94	-	-
Working Temp (°F)	-	-	140
IP Rating	66	-	-

*-200us event

PROTECTIONS

- Short Circuit Protection (SCP)
- Over Loading Protection (OLP)
- Over Temperature Protection (OTP)
- I/P-O/P: 1.88KVAC
- I/P-O/P: 100MΩ / 500VDC / 77°F / 70%RH

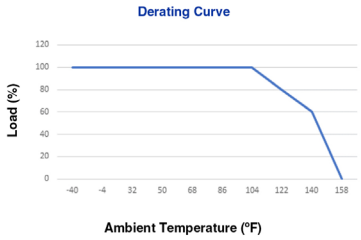
COMPLIANCE

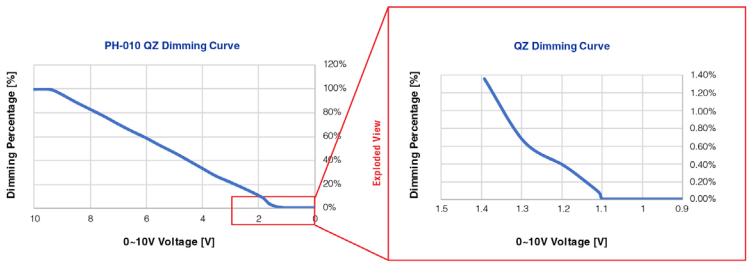
- EMI/RFI
  - FCC 47 CFR Part 15 Subpart B
- Certified
  - UL8750

6 COLOR

Black Powder Coat Finish

White (Standard)





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Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

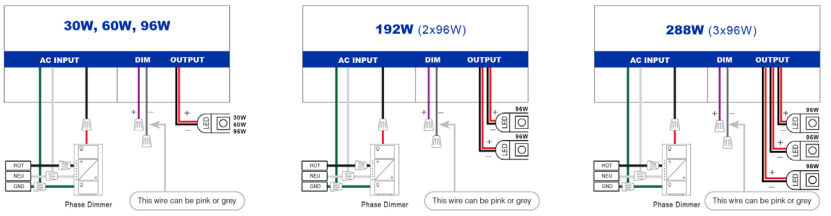
Location: Signare Throughout

Buro Happold Project #P057035

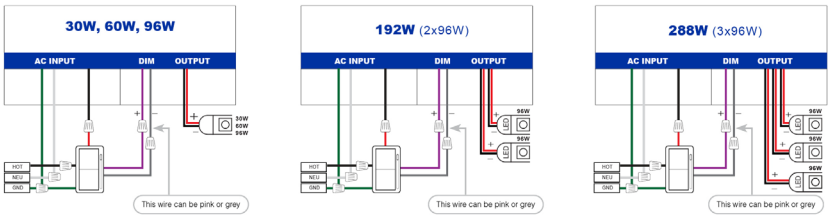
Requirements:

QZ-PH/0-10V
LED Power Supply - 30W-288W

PHASE DIMMING

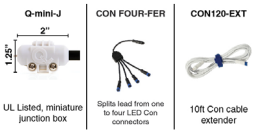


0-10V DIMMING



Wiring from power supply to light fixture must be two conductor cable

COMPATIBLE WIRING ACCESSORIES



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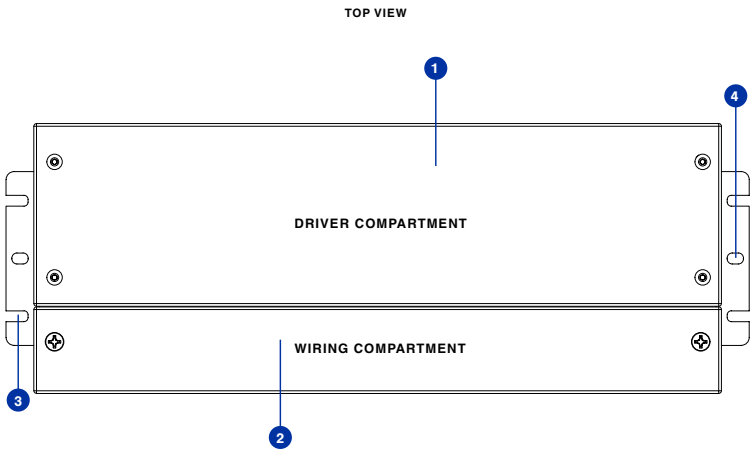
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Signare Throughout

Buro Happold Project #P057035

Requirements:

INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V



QZ Components

1 Driver Compartment 2 Wiring Compartment 3 Mounting Tab Slots 4 Mounting Tab Holes

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Dimming Range: 1%-100%
Voltage: 24V

Location: Signare Throughout

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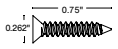
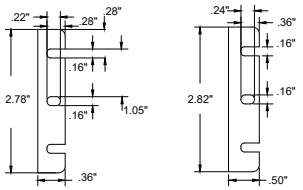
Requirements:

INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

Required Hardware

#6 Flat head screw	

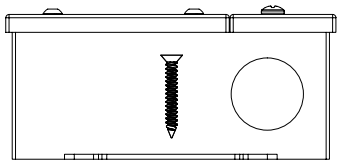
Mounting Foot:



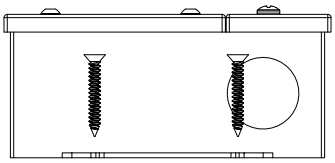
Mounting

1. The QZ can be mounted either vertically or horizontally, utilizing the supplied screws and the mounting tabs on the bottom of the enclosure

CENTER HOLE

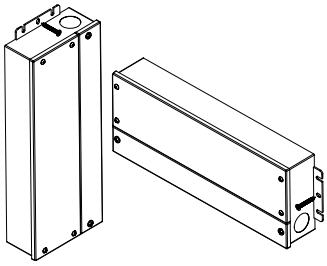


SIDE SLOTS



2. The QZ must be mounted into a stud for sufficient support, using either the center holes or the slots of each mounting tab

CENTER HOLE



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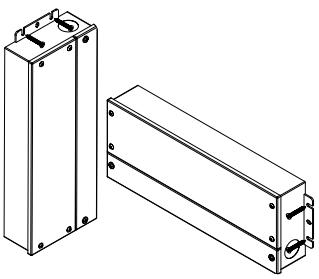

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CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

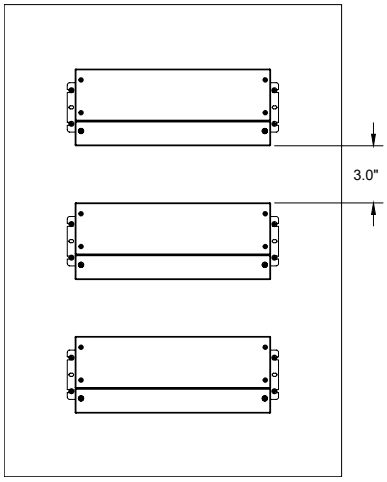
Location: Signare Throughout

Buro Happold Project #P057035

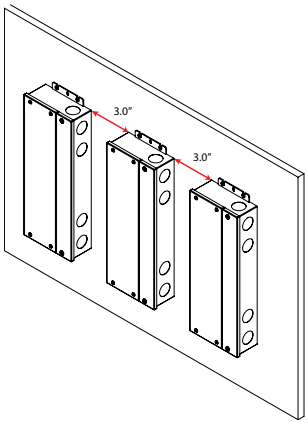
Requirements:

INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

3 When installing multiple QZ power supplies, seperate the enclosures by 3" of space from edge to edge. This prevents the rise of ambient temperature between the power supplies.



Horizontal mount illustrated above



Vertical mount illustrated above

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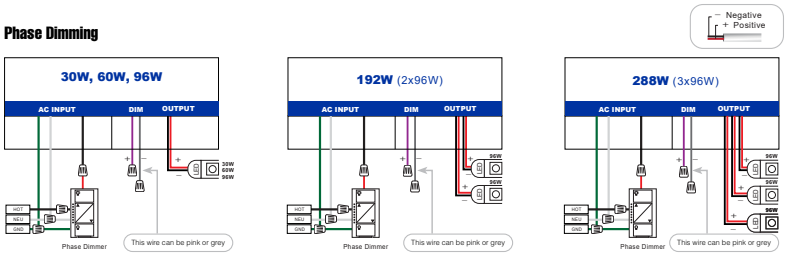
Buro Happold Project #P057035

Requirements:

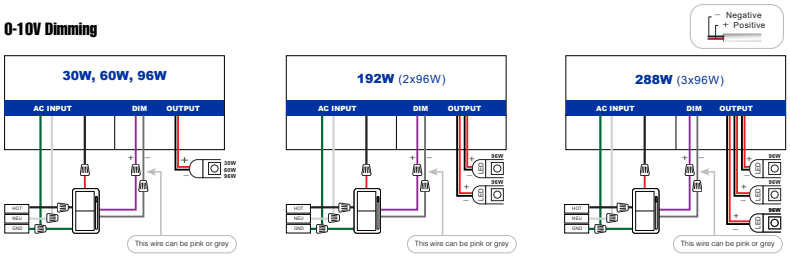
INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

4 Wiring diagram

Phase Dimming



0-10V Dimming



Wiring from power supply to light fixture must be two conductor cable

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Voltage: 24V

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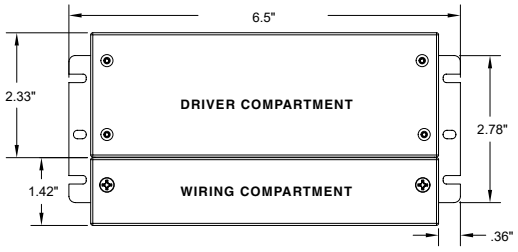
Buro Happold Project #P057035

Requirements:

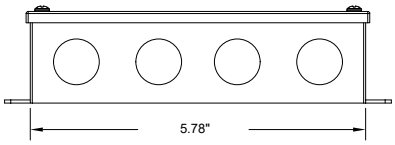
INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

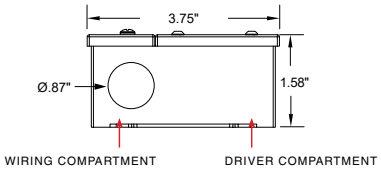
QZ 30W

TOP VIEW



WIRING COMPARTMENT VIEW





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Description: Linear LED Mounted in Pedestrian Portals

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Signare Throughout

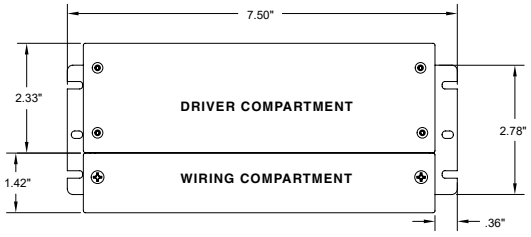
Buro Happold Project #P057035

Requirements:

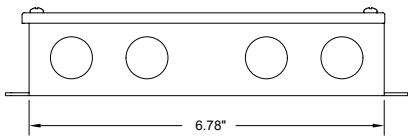
INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

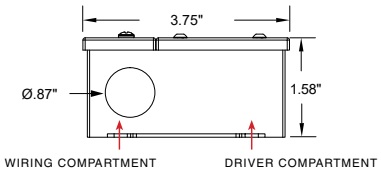
QZ 60W

TOP VIEW



WIRING COMPARTMENT VIEW





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Luminaire Designation

L3

Description: Linear LED Mounted in Pedestrian Portals

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Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Signare Throughout

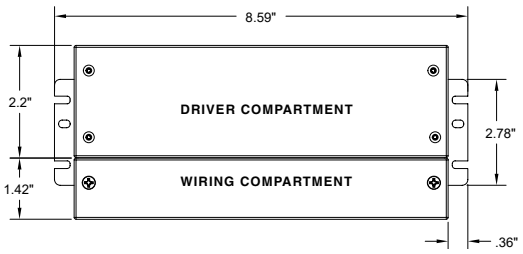
Buro Happold Project #P057035

Requirements:

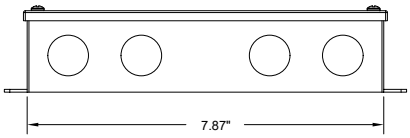
INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

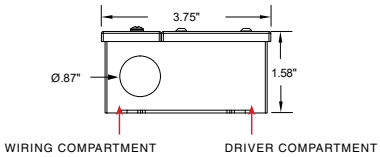
QZ 96W

TOP VIEW



WIRING COMPARTMENT VIEW





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Luminaire Designation

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Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Signare Throughout

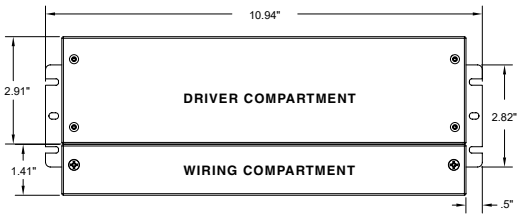
Buro Happold Project #P057035

Requirements:

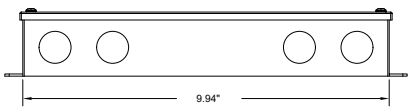
INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

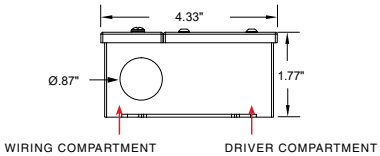
QZ 192W

TOP VIEW



WIRING COMPARTMENT VIEW





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BURO HAPPOLD

Luminaire Designation

L3

Description: Linear LED Mounted in Pedestrian Portals

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Signare Throughout

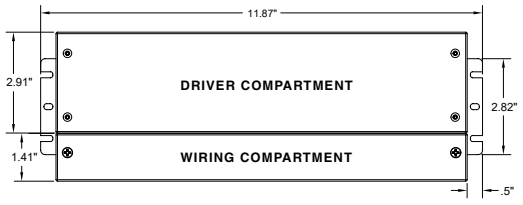
Buro Happold Project #P057035

Requirements:

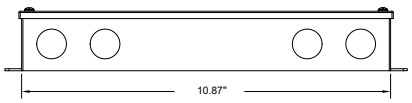
INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

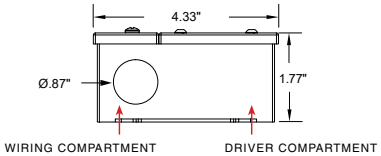
QZ 288W

TOP VIEW



WIRING COMPARTMENT VIEW





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BURO HAPPOLD

Luminaire Designation

L3

Description: Linear LED Mounted in Pedestrian Portals

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Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:

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Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Signare Throughout

Buro Happold Project #P057035

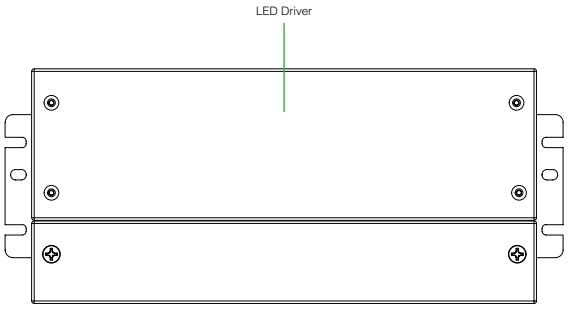
Requirements:

MATERIAL RECYCLING

QZ FAMILY

You may be done with your products, but chances are they still have more to give. Follow these instructions to break down and sort recyclable components. Check with local recycling collection to ensure they accept the materials listed below.

Additionally, Q-Tran offers a Takeback Program. Contact factory for information.



QZ-96W shown



LED Drivers

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Description: Linear In-Grade Uplight

BURO HAPPOLD

Luminaire Designation

L4

Manufacturer: Bold
Catalog Reference: BOW-I-[LENGTH AS SHOWN ON DRAWINGS]-[FINISH]-L-U-[INTEGRAL CASAMBI]-B-W-9-27-0

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution:
Rated Life:
Control Gear Type: 0-10V
Wattage: 4W/ft
Accessories:

Lumen Output: 650 lm/lf
CRI: 90+
Efficacy: 162.5 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: African American Memorial

Buro Happold Project #P057035

Requirements:

1. Contractor to furnish and install all required mounting hardware and accessories to ensure compatibility with approved construction.

2. Contractor to provide dimensioned shop drawings for each unique assembly in context during submittal phase. Shop drawings to include individual fixtures, power supplies, controllers and all accessories.

3. Architect to confirm finish.

4. Reference architectural set for mounting detail.

5. Integral Casambi driver to be provided.

BILLET

WALLGRAZER / WALLWASHER

bold lighting



The Billet family of products allows you to achieve uniformity throughout indoor and outdoor spaces while maintaining the same optical performance, light consistency, and overall aesthetics.

The Billet Wallwasher / Wallgrazer deliver unmatched vertical illumination with virtually zero glare. Like all Bold products, the Billet confidently delivers a flawless light distribution and a beautifully finished product.

CONSTRUCTION
Product Type : Linear
Body Material : Extruded Aluminum
Body Finish : Black / Grey / White
Custom RAL
IP Rating : IP67 Inground
IP66 Ceiling Recessed
IK Rating : IK10

INSTALLATION
Environment : Wet Location
Mounting : Inground / Ceiling Recessed (Trim & Trimless) / Wall Recessed (Trim & Trimless) / Surface Mounted Wall Mounted / Pendant

OPTICS
Optical Distribution : Wallgraze (15°) Wallwash (25°)
Glare Control : UGR<19

LIGHT SOURCE
Direct Light Source : Mid-power LEDs
Luminous Output : from 650lm/ft. to 2480lm/ft. (Delivered)
Light Source CCT : 2700K / 3000K 3500K / 4000K / Tunable White (2700K-5000K) / Dim-to-Warm (3000K-1800K) / RGBW
Color Rendering Index : Ra80 / Ra90

ELECTRICAL
Input Voltage : 120V / UNV 120-277V - 50Hz/60Hz
Load : 4W/ft. to 22W/ft.
Output Type : Constant Current
Driver Type : Integral
Dimming : 0-10V / DALI / ELV / DMX / Lutron Hi-Lume

Series	Mounting	Nominal Length
BOW	R Recessed with Trim	12 12"
	T Recessed Trimless	18 18"
	S Surface Mounted	24 24"
	P Pendant	30 30"
	I Inground	36 36"
	W Wall Mounted	42 42"
		48 48"
		54 54"
		60 60"
		XX Custom in
		LX Elbow
		For exact lengths refer to dimensions table.

Code example: **B O W** - P12W-L1B-W-G827-0

Body Finish	Output [1]	Voltage	Dimming	Baffles	Beam Angle	CRI	Color Temp	Emergency
W White	L 650lm/ft (4W)	1 120V	A No Dimming	W Flat White	G 15° - Grazer	8 +80	27 2700K	0 no
B Black	M 1070lm/ft (9W)	U[2] Universal 120V to 277V	B 0-10V to 1%	B Flat Black	W 25° - Washer	9 +90	30 3000K	9 90 mins
G Grey	H 1700lm/ft (15W)		C 0-10V to Fade-off	N Black Nickel			35 3500K	
X Custom RAL	V 2480lm/ft (22W)		D DALI to 1%	C Specular Chrome			40 4000K	
			E ELV Dimming	G Bright Gold			WD[4] 3000K- 1800K	
			F DMX	E Diffuse Gold			TW[5] 2700K - 5000K	
			G[3] LUTRON	X Custom			CC RGBW	

Notes:
[1] Denotes output at 3000K, unless otherwise noted.
[2] Not applicable for ELV dimming.
[3] Hi-lume 1% EcoSystem Soft-on, Fade-to-Black dimming.
[4] Denotes output specific to Dim-to-Warm at 3000K.
[5] Denotes output specific to Tunable White at full on.

Consult factory for lead-times.
Consult factory for systems using multiple optics and mounting configurations.

Bold Lighting
4710 Ecton Dr. Unit F & G, Marietta, GA 30066, USA
info@boldlighting.us www.boldlighting.us
t: +1-678-903-4061

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Description: Linear In-Grade Uplight

BURO HAPPOLD

Luminaire Designation

L4

Manufacturer: Bold
Catalog Reference: BOW-I-[LENGTH AS SHOWN ON DRAWINGS]-[FINISH]-L-U-[INTEGRAL CASAMBI]-B-W-9-27-0

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution:
Rated Life:
Control Gear Type: 0-10V
Wattage: 4W/ft
Accessories:

Lumen Output: 650 lm/lf
CRI: 90+
Efficacy: 162.5 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

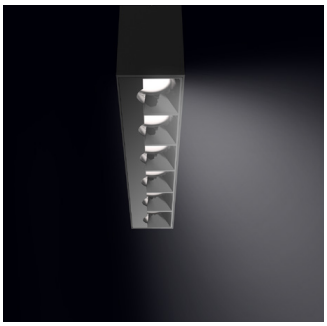
Location: African American Memorial

Buro Happold Project #P057035

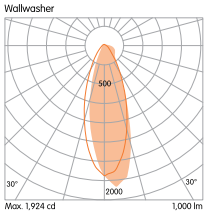
Requirements:

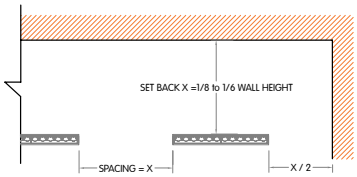
OPTICAL FLEXIBILITY

BAFFLED WALLWASHER

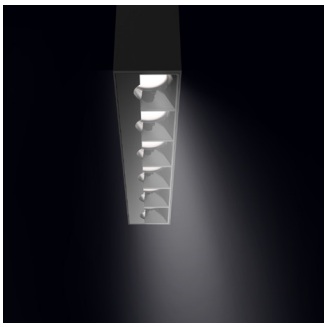


Billet wallwash provides even illumination of vertical surfaces with a flexible setback of 1/8 to 1/6 of the wall height. This optic is ideal for washing large areas where exceptional uniformity is required.

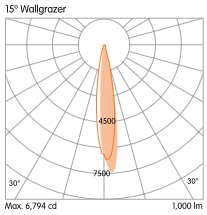


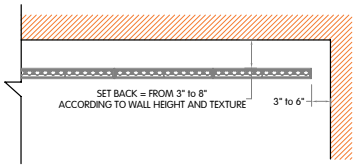


BAFFLED WALLGRAZER



Billet wallgrazer delivers maximum performance for emphasizing textured and rough vertical surfaces. The standard output illuminates walls up to 14'-0" with outstanding transversal and longitudinal glare control.





Bold Lighting
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Description: Linear In-Grade Uplight

BURO HAPPOLD

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L4

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Color Consistency:
Optical Distribution:
Rated Life:
Control Gear Type: 0-10V
Wattage: 4W/ft
Accessories:

Lumen Output: 650 lm/lf
CRI: 90+
Efficacy: 162.5 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

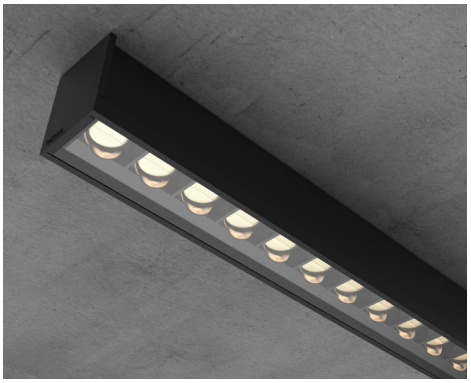
Location: African American Memorial

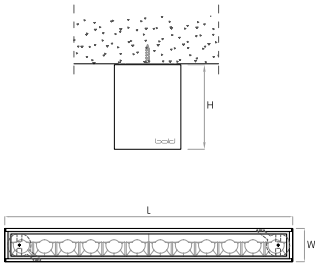
Buro Happold Project #P057035

Requirements:

MOUNTING FLEXIBILITY

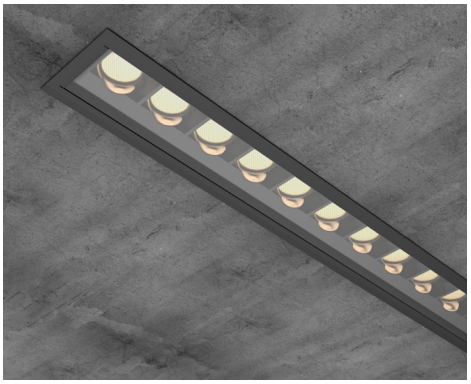
SURFACE MOUNTED

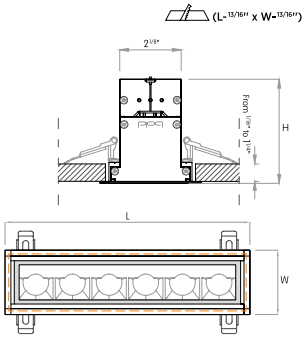




Actual
L= 24 1/2" | 36 5/16" | 48 1/8" | 59 5/16" | Continuous runs
W= 2 13/16"
H= 3 9/16"

RECESSED WITH TRIM





Actual
L= 13 3/16" | 25" | 36 13/16" | 48 5/8" | 60 7/16" | Continuous runs
W= 3 7/16"
H= 3 9/16"

Bold Lighting
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Description: Linear In-Grade Uplight

BURO HAPPOLD

Luminaire Designation

L4

Manufacturer: Bold
Catalog Reference: BOW-I-[LENGTH AS SHOWN ON DRAWINGS]-[FINISH]-L-U-[INTEGRAL CASAMBI]-B-W-9-27-0

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution:
Rated Life:
Control Gear Type: 0-10V
Wattage: 4W/ft
Accessories:

Lumen Output: 650 lm/lf
CRI: 90+
Efficacy: 162.5 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: African American Memorial

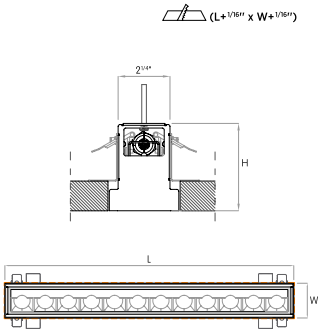
Buro Happold Project #P057035

Requirements:

MOUNTING FLEXIBILITY

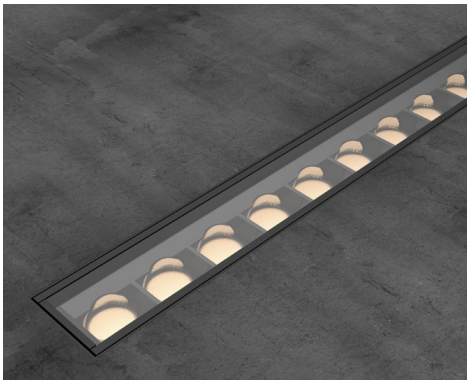
RECESSED TRIMLESS

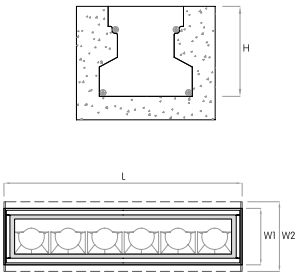




Actual
L= 24 5/8" | 36 3/8" | 48 1/4" | 60" | Continuous runs
W= 2 15/16"
H= 3 11/16"

INGROUND





Actual
L= 12 13/16" | 24 5/8" | 36 7/16" | 48 1/4" | 60" | Continuous runs
W1= 3" | W2= 3 3/4"
H= 3 5/8"

Bold Lighting
4710 Ecton Dr. Unit F & G, Marietta, GA 30066, USA
info@boldlighting.us www.boldlighting.us t: +1-678-903-4061

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Description: Linear In-Grade Uplight

BURO HAPPOLD

Luminaire Designation

L4

Manufacturer: Bold
Catalog Reference: BOW-I-[LENGTH AS SHOWN ON DRAWINGS]-[FINISH]-L-U-[INTEGRAL CASAMBI]-B-W-9-27-0

Specifications:

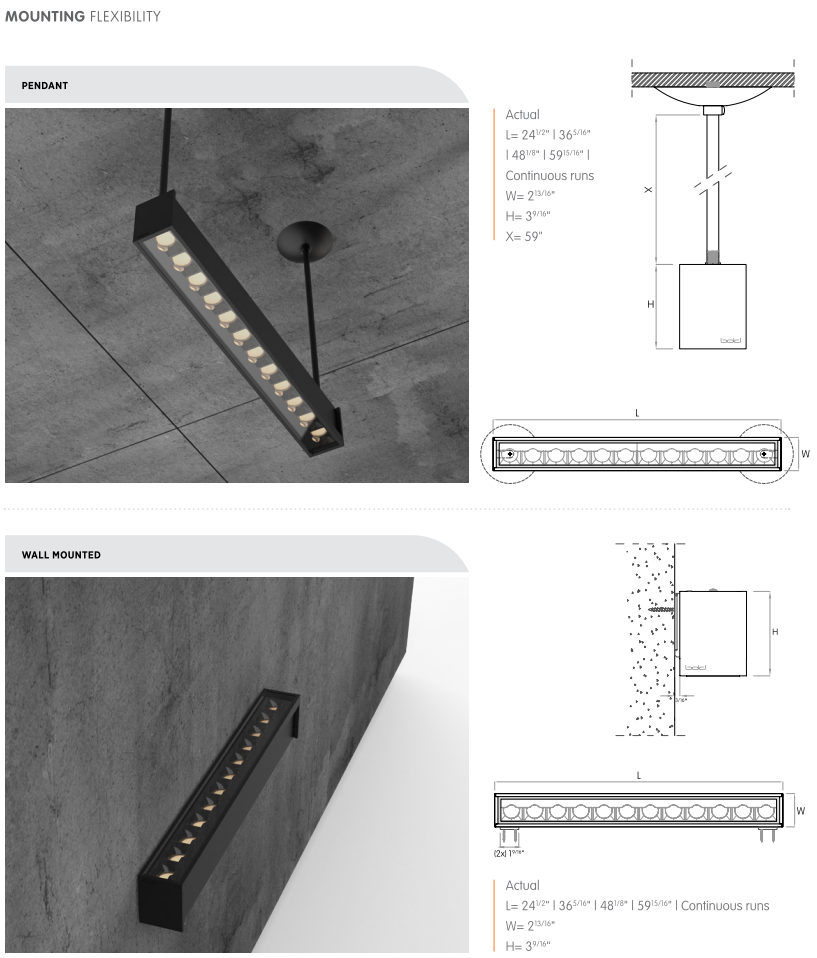
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution:
Rated Life:
Control Gear Type: 0-10V
Wattage: 4W/ft
Accessories:

Lumen Output: 650 lm/lf
CRI: 90+
Efficacy: 162.5 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: African American Memorial

Buro Happold Project #P057035

Requirements:



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BURO HAPPOLD

Luminaire Designation

L4

Description: Linear In-Grade Uplight

Manufacturer: Bold
Catalog Reference: BOW-I-[LENGTH AS SHOWN ON DRAWINGS]-[FINISH]-L-U-[INTEGRAL CASAMBI]-B-W-9-27-0

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution:
Rated Life:
Control Gear Type: 0-10V
Wattage: 4W/ft
Accessories:

Lumen Output: 650 lm/lf
CRI: 90+
Efficacy: 162.5 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: African American Memorial

Buro Happold Project #P057035

Requirements:

DELIVERED LUMEN OUTPUT

Output	Watts	CRI +80			CRI +90		
STATIC-WHITE		**2700K**	**3000K**	**4000K**	**2700K**	**3000K**	**4000K**
L	4W	620lm	650lm	680lm	520lm	540lm	570lm
M	9W	1010lm	1070lm	1110lm	850lm	880lm	930lm
H	15W	1600lm	1700lm	1760lm	1350lm	1400lm	1480lm
V	22W	2380lm	2480lm	2610lm	1970lm	2040lm	2150lm

DIM-TO-WARM 3000K-1800K					**3000K**		
L	9W				930lm		
V	18W				1700lm		

TUNABLE WHITE 2700K-5000K		**2700K**		**5000K**	**2700K**		**5000K**
L	12W	1140lm		1220lm	970lm		1030lm
V	22W	1600lm		1710lm	1350lm		1450lm

RGBW			**R**	**G**	**B**	**W**
TOTAL	47.5W		(9W) 220lm	(13.5W) 660lm	(13W) 210lm	(12W) 590lm

DIMENSIONS TABLE

	Height		Width		12" Actual Length		24" Actual Length		36" Actual Length		48" Actual Length		60" Actual Length	
	mm	**inch**	**mm**	**inch**	**mm**	**inch**	**mm**	**inch**	**mm**	**inch**	**mm**	**inch**	**mm**	**inch**
Surface Mounted	91	3 9/16	72	2 13/16			623	24 1/2	923	36 5/16	1223	48 1/8	1523	59 15/16
Recessed with Trim	91	3 9/16	88	3 7/16	335	13 3/16	635	25	935	36 13/16	1235	48 5/8	1535	60 7/16
Recessed Trimless	93	3 11/16	75	2 15/16			625	24 5/8	925	36 3/8	1225	48 1/4	1525	60
Pendant	91	3 9/16	72	2 13/16			623	24 1/2	923	36 5/16	1223	48 1/8	1523	59 15/16
Inground (with housing)	92	3 5/8	95	3 3/4	325	12 13/16	625	24 5/8	925	36 7/16	1225	48 1/4	1525	60
Wall Mounted	91	3 9/16	72	2 13/16			623	24 1/2	923	36 5/16	1223	48 1/8	1523	59 15/16

Bold Lighting
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BURO HAPPOLD

Luminaire Designation

L5

Description: Linear LED Integrated into Site Furniture or Walls

Manufacturer: Q-Tran

Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Benches Throughout

Buro Happold Project #P057035

Requirements:

1. Contractor to furnish and install all required mounting hardware and accessories to ensure compatibility with approved construction.

2. Contractor to provide dimensioned shop drawings for each unique assembly in context during submittal phase. Shop drawings to include individual fixtures, power supplies, controllers and all accessories.

3. Architect to confirm finish.

4. Reference plan view for location and type mark for transformer.

5. Contractor to provide necessary mounting clips to ensure strong mount within architectural detail.

KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP





- A flexible encapsulated fixture with side bend capabilities
- KURV has a built-in parabolic curve, which allows the fixture to push out light with its internal reflector
- Perfect for indoor and outdoor locations
- Available in a seamless option, where wires are hidden so they do not obstruct the look of the design
- Utilize clear endcaps for continuous runs with no light loss
- For very high output, a clear finished KURV-SW fixture produces 298 lumens/foot at 3000K

1 PRODUCT	2 MOUNTING	3 RATED	4 CCT	5 WATTAGE	6 LENS	7 WIRE INPUT/ OUTPUT	8 CONNECTOR/ WIRE IN	9 CONNECTOR/ WIRE OUT	10 END CAPS	11 LENGTH (IN)	12 EXACT/ OPTIMAL
KURV-SW											

Sample Part Number: **KURV-SW-PPS-2-DRY-30-5.0-ENC/TL-P1-BW-BW-N/A-48"-E**

1 PRODUCT

KURV-SW
See last page for compatible power supplies.

2 MOUNTING

RLC	Rigid Lock Channel
MC	Magnetic Clip
SGC	Side Graze Channel
PPS-2	PVC Clip
PPS-96	PVC Channel
PPS-FT	PVC Channel Custom Length
PPS-LP-2	PVC Low Profile Clip
PPS-LP-FT	PVC Low Profile Channel Custom Length
PPS-LP-96	PVC Low Profile Channel
WSC	White Snug Clip

White snug clip only for indirect cove use, not intended for hanging fixtures upside down.

PPS mounting clip recommended for seamless applications

3 RATED

DRY	IP20
WET	IP67
SBM	IP68

SBM not recommended to be used in chlorinated water. Available only in S1 or S5 wire exits.

4 CCT

24	2400K
27	2700K
30	3000K
35	3500K
40	4000K

5 WATTAGE

1.5	1.5W-SO
3.0	3.0W-HO
5.0	5.0W-VHO
1.5HE	1.5WHE-SO
3.0HE	3.0WHE-HO
6.0HE	6.0WHE-VHO

SO: Standard Output
HO: High Output
VHO: Very High Output
SBM available only in 1.5, 3.0, & 5.0 (no HE)

6 LENS

ENC/CL	Encapsulated in Clear
ENC/TL	Encapsulated in Translucent

For representation of LED visibility, see Diode Visibility section on following pages

7 WIRE INPUT/OUTPUT

S1	Single 1 (Input only) - End Feed
S2	Single 2 (Input only) - Bottom Feed
S3	Single 3 (Input only) - Left Side Feed
S4	Single 4 (Input only) - Right Side Feed
S5	Single 5 (Input only) - Seamless Feed
S6	Single 6 (Input only) - Seamless Feed

P1	Pass Through 1 (Input/Output) - End Feed
P2	Pass Through 2 (Input/Output) - Bottom Feed
P3	Pass Through 3 (Input/Output) - Left Side Feed
P4	Pass Through 4 (Input/Output) - Right Side Feed
P5	Pass Through 5 (Input/Output) - Seamless Feed
P6	Pass Through 6 (Input/Output) - Seamless Feed

8 CONNECTOR/WIRE IN

BW	Bare Wire (Standard 24")
BRL	Barrel
CON6	Connector 6"
CON24	Connector 24"

Connector/Wire In not needed to specify product. Typical selection is BW.
BW: Standard length is 24", Max length is 120". Request custom length by writing in part number next to BW (example: BW48)

BW	Bare Wire (Standard 24")
BRL	Barrel
CON6	Connector 6"
CON24	Connector 24"

Connector/Wire In not needed to specify product. Typical selection is BW.
BW: Standard length is 24", Max length is 120". Request custom length by writing in part number next to BW (example: BW48)

9 CONNECTOR/WIRE OUT

N/A	Closed End (No feed)

BW	Bare Wire (Standard 24")
BRL	Barrel
CON6	Connector 6"
CON24	Connector 24"

Connector/Wire Out not needed to specify product. Typical selection is N/A or BW.
BW: Standard length is 24", Max length is 120". Request custom length by writing in part number next to BW (example: BW48)

10 END CAPS

Single

CL	Clear
WH	White

Pass Through

N/A	Not Applicable

11 LENGTH (IN)

Fixture length min 12", max 191". Consult factory for lengths under 12".
SW: Available in 1" increments.
SW-HE: Available in 2" increments.

12 EXACT/OPTIMAL

O	Optimal Illumination
E	Exact Specified Length

Exact fixtures are the length specified. Optimal fixtures' length is rounded down with illumination end to end. All fixtures' tolerance is +0 - 1/8". See charts on following pages.

5 year warranty | Field modifications are not covered under Q-Tran warranty | Side Bend | IK10 impact rated | Data subject to change, all data has +/- 5% tolerance | PPS-FT is to be cut at Q-Tran to requested length | Ambient or mounting surface must not be lower than -4°F or higher than: 1.5 - 125°F; 3.0 - 115°F; 5.0 - 108°F | Patent # D863646 S, 10,619,828 B2 | Not field cuttable

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BURO HAPPOLD

Luminaire Designation

L5

Description: Linear LED Integrated into Site Furniture or Walls

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Benches Throughout

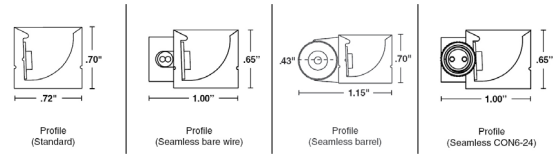
Buro Happold Project #P057035

Requirements:

KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP

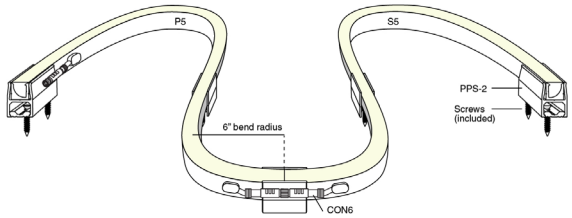
1 PRODUCT - DIMENSIONS



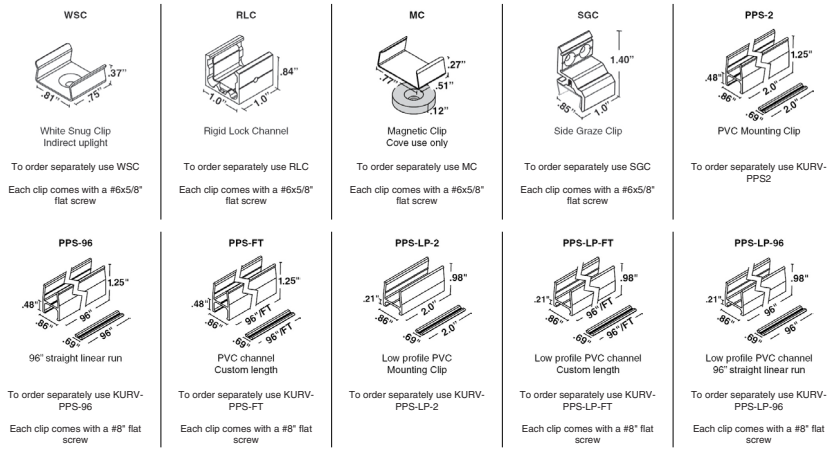
BEND RADIUS



FLEXIBILITY



2 MOUNTING



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Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Benches Throughout

Buro Happold Project #P057035

Requirements:

KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP

4 / 5 DELIVERED LUMENS

[Calculated L70 = 40000 hrs]
Tested with KURV-SW-WSC-DRY

CCT	1.5W/FT				1.5HE W/FT				3.0W/FT				3.0HE W/FT				5.0W/FT				6.0HE W/FT			
	ENC/CL		ENC/TL		ENC/CL		ENC/TL		ENC/CL		ENC/TL		ENC/CL		ENC/TL		ENC/CL		ENC/TL		ENC/CL		ENC/TL	
	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI
2400K	110	94	103	95	133	93	133	92	197	93	182	93	272	93	270	92	274	94	261	94	465	93	460	92
2700K	110	98	103	97	153	95	146	95	208	98	195	98	282	96	264	96	279	99	247	99	493	96	468	96
3000K	118	98	109	98	150	96	163	96	213	98	198	98	311	96	295	96	298	97	277	97	529	97	515	96
3500K	121	96	115	95	159	98	144	98	213	96	203	97	325	98	295	98	305	97	295	97	556	98	486	98
4000K	128	96	121	96	147	97	127	97	229	97	213	97	298	97	258	97	294	97	284	97	518	97	445	97

6 DIODE VISIBILITY

ENC/CL - Clear encapsulation

ENC/TL - Translucent encapsulation

TEMPERATURE RATINGS

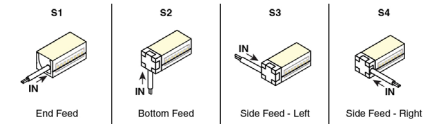
	1.5 W/FT		1.5 HE W/FT		3.0 W/FT		3.0 HE W/FT		5.0 W/FT		6.0 HE W/FT	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Surface Mounted	-4°F	135°F	-4°F	140°F	-4°F	125°F	-4°F	125°F	-4°F	110°F	-4°F	100°F
Storage Temp	-4°F	140°F	-4°F	140°F	-4°F	140°F	-4°F	140°F	-4°F	140°F	-4°F	140°F
Installation Temp	50°F	100°F	50°F	100°F	50°F	100°F	50°F	100°F	50°F	100°F	50°F	100°F

BUG RATING

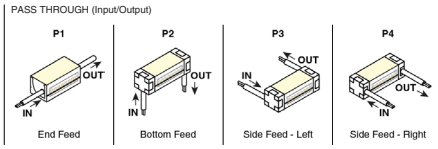
WATTAGE	B	U	G
1.5 (ALL CCTs), 3.0 (ALL CCTs), 5.0 (ALL CCTs)	B0	U1	G0
1.5HE (ALL CCTs), 3.0HE (ALL CCTs), 6.0HE ENC/TL (4000K)	B0	U1	G0
6.0HE ENC/CL (2400K), 6.0HE ENC/TL (2400K, 2700K)	B0	U1	G1
6.0HE ENC/CL (2700K, 3000K, 3500K, 4000K), 6.0HE ENC/TL (3000k, 3500k)	B0	U2	G1

7 WIRE INPUT/OUTPUT

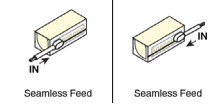
SINGLE (Input only)



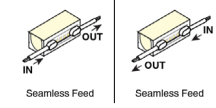
PASS THROUGH (Input/Output)



SEAMLESS SINGLE (Input only)



SEAMLESS PASS THROUGH (Input/Output)



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BURO HAPPOLD

Luminaire Designation

L5

Description: Linear LED Integrated into Site Furniture or Walls

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Benches Throughout

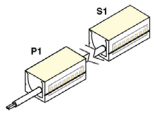
Buro Happold Project #P057035

Requirements:

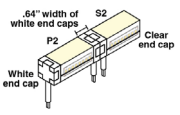
KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP

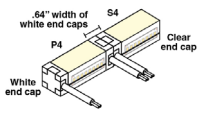
CONFIGURATION OPTIONS



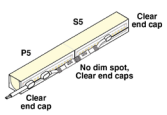
Non-Continuous End Feed



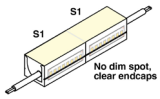
Continuous Bottom Feed



Continuous Side Feed - Right



Seamless Side Feed



Continuous End to End Feed

SEAMLESS

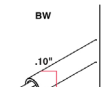
Shown with bare wire, connectors vary



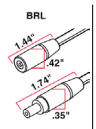
Omnidirectional wireways
S5, S6, P5, P6

8 / 9 CONNECTOR/WIRE – IN/OUT

Connector/Wire In or Out not needed to specify product. Typical selection is S1 for Wire Input/Output, BW for Connector/Wire In, N/A for Connector/Wire Out, and WH for End Caps



Bare Wire 24" Stranded 22 AWG



Barrel 6" - DRY/DMP | 22 AWG

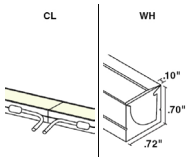


Barrel 6"- WET | 22 AWG



6" or 24" Overall Wire Connector | 22 AWG
IP67 Rated, UL Listed

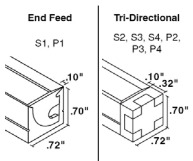
10 END CAPS (NO FEED)



Clear endcaps .0" added at end .00" dim spot

White endcaps .0" added at end .10" dim spot

END CAPS (WITH FEED)

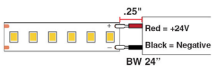


White endcaps .0" added at end .10" dim spot

White endcaps .32" added at end .67" dim spot

11 LENGTH - WIRING DETAIL

1.5W, 3.0W, 5.0W | Available in 1" increments 12"-191"



1.5HEW, 3.0HEW, 6.0HEW | Available in 2" increments 12"-191"



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BURO HAPPOLD

Luminaire Designation

L5

Description: Linear LED Integrated into Site Furniture or Walls

Manufacturer: Q-Tran

Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Benches Throughout

Buro Happold Project #P057035

Requirements:

KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP

12 EXACT/OPTIMAL FIXTURE LENGTH

SW LENGTHS BY INCH

Exact fixtures are the length specified. Optimal fixtures' length is rounded down with illumination end to end. All fixtures' tolerance is +0 – 1/8". Consult factory for lengths under 12".

EXACT LENGTH

Requested Length	Potential dim spot on either end of fixture
12"	.5"
13"	.5"
14"	.5"
15"	.5"
16"	.5"
17"	.5"
18"	.5"
19"	.5"
20"	.5"
21"	.5"
22"	.5"
23"	.5"
24"	.5"
36"	.5"
48"	.5"
60"	.5"
72"	.5"
84"	.5"
96"	.5"

OPTIMAL LENGTH

Requested Nominal Length	S1 (End Feed)	S2 & S3 & S4 (Bottom Feed / Side Feed - Left / Side Feed - Right)	P1 (End Feed)	P2 & P3 & P4 (Bottom Feed / Side Feed - Left / Side Feed - Right)	S5 & S6 & P5 & P6 (Seamless Feed / Seamless Feed)
12"	11.5"	11.875"	11.75"	11.375"	11.25"
13"	12.5"	12.875"	12.75"	12.375"	12.25"
14"	13.5"	13.875"	13.75"	13.375"	13.25"
15"	14.5"	14.875"	14.75"	14.375"	14.25"
16"	15.5"	15.875"	15.75"	15.375"	15.25"
17"	16.5"	16.875"	16.75"	16.375"	16.25"
18"	17.5"	17.875"	17.75"	17.375"	17.25"
19"	18.5"	18.875"	18.75"	18.375"	18.25"
20"	19.5"	19.875"	19.75"	19.375"	19.25"
21"	20.5"	20.875"	20.75"	20.375"	20.25"
22"	21.5"	21.875"	21.75"	21.375"	21.25"
23"	22.5"	22.875"	22.75"	22.375"	22.25"
24"	23.5"	23.875"	23.75"	23.375"	23.25"
36"	35.5"	35.875"	35.75"	35.375"	35.25"
48"	47.5"	47.875"	47.75"	47.375"	47.25"
60"	59.5"	59.875"	59.75"	59.375"	59.25"
72"	71.5"	71.875"	71.75"	71.375"	71.25"
84"	83.5"	83.875"	83.75"	83.375"	83.25"
96"	95.5"	95.875"	95.75"	95.375"	95.25"

SW-HE LENGTHS BY INCH

Exact fixtures are the length specified. Optimal fixtures' length is rounded down with illumination end to end. All fixtures' tolerance is +0 – 1/8". Consult factory for lengths under 12".

EXACT LENGTH

Requested Length	Potential dim spot on either end of fixture
12"	1"
13"	.5"
14"	1"
15"	.5"
16"	1"
17"	.5"
18"	1"
19"	.5"
20"	1"
21"	.5"
22"	1"
23"	.5"
24"	1"
36"	1"
48"	1"
60"	1"
72"	1"
84"	1"
96"	1"

OPTIMAL LENGTH: highlighted rows are closest to requested nominal length

Requested Nominal Length	S1 (End Feed)	S2 & S3 & S4 (Bottom Feed / Side Feed - Left / Side Feed - Right)	P1 (End Feed)	P2 & P3 & P4 (Bottom Feed / Side Feed - Left / Side Feed - Right)	S5 & S6 & P5 & P6 (Seamless Feed / Seamless Feed)
12"	10.5"	10.875"	10.75"	11.5"	10.25"
13"	12.5"	12.875"	12.75"	11.5"	12.25"
14"	12.5"	12.875"	12.75"	13.5"	12.25"
15"	14.5"	14.875"	14.75"	13.5"	14.25"
16"	14.5"	14.875"	14.75"	15.5"	14.25"
17"	16.5"	16.875"	16.75"	15.5"	16.25"
18"	16.5"	16.875"	16.75"	17.5"	16.25"
19"	18.5"	18.875"	18.75"	17.5"	18.25"
20"	18.5"	18.875"	18.75"	19.5"	18.25"
21"	20.5"	20.875"	20.75"	19.5"	20.25"
22"	20.5"	20.875"	20.75"	21.5"	20.25"
23"	22.5"	22.875"	22.75"	21.5"	22.25"
24"	22.5"	22.875"	22.75"	23.5"	22.25"
36"	34.5"	34.875"	34.75"	35.5"	34.25"
48"	46.5"	46.875"	46.75"	47.5"	46.25"
60"	58.5"	58.875"	58.75"	59.5"	58.25"
72"	70.5"	70.875"	70.75"	71.5"	70.25"
84"	82.5"	82.875"	82.75"	83.5"	82.25"
96"	94.5"	94.875"	94.75"	95.5"	94.25"

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BURO HAPPOLD

Luminaire Designation

L5

Description: Linear LED Integrated into Site Furniture or Walls

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Benches Throughout

Buro Happold Project #P057035

Requirements:

KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP

COMPATIBLE POWER SUPPLIES

See power supplies cut sheets for more information. Data subject to change, all data has +/- 5% tolerance.

DIM TO LEVEL	INDOOR		OUTDOOR	
	SW24/1.5-4.0	SW24/5.0, SW-HE, SW-HE+	SW24/1.5-4.0	SW24/5.0, SW-HE, SW-HE+
Dim to Black	Q6M-DC+CAP QTM-DC+CAP iQ-PH iQ-PH+QD1	Q6M-DC+CAP QTM-DC+CAP iQ-PH iQ-PH+QD1	QOM-DC+CAP QOM-PH iQ-PH	QOM-DC+CAP QOM-PH iQ-PH
0.1%	QTM-eLED+0-10V QTM-eLED-AWN QZ-DMX QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP	QTM-eLED+0-10V QTM-eLED-AWN QZ-DMX QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP	Q-SET-QZ-DMX Q-SET-QZ-PH/0-10V Q-SET-eLED+0-10V QOM-eLED+0-10V QZ-DMX QZ-PH/0-10V	Q-SET-QZ-DMX Q-SET-QZ-PH/0-10V Q-SET-eLED+0-10V QOM-eLED+0-10V QZ-DMX QZ-PH/0-10V
1%	QTM-eLED(E) QTM-eLED+DALI-DT6 QTM-eLED+DALI-DT6-AWN	QTM-eLED(E) QTM-eLED+DALI-DT6 QTM-eLED+DALI-DT6-AWN	QOM-eLED+DALI-DT6	QOM-eLED+DALI-DT6
10%	Non-Dim Power Supply with SW App Dongle	Non-Dim Power Supply with SW App Dongle	Q-HEX-mini-DC Q-SET-mLED	

DIMMING PROTOCOL	INDOOR		OUTDOOR	
	SW24/1.5-4.0	SW24/5.0, SW-HE, SW-HE+	SW24/1.5-4.0	SW24/5.0, SW-HE, SW-HE+
Non-Dim	QTM-eLED-ND QZ-ND	QTM-eLED-ND QZ-ND	Q-SET-QZ-ND Q-SET-eLED-ND QOM-eLED-ND QZ-ND iQ-ND-50-65	Q-SET-QZ-ND Q-SET-eLED-ND QOM-eLED-ND QZ-ND iQ-ND-50-65
Phase	Q6M-DC+CAP QTM-DC+CAP QTM-eLED(E) QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP iQ-PH iQ-PH+QD1	Q6M-DC+CAP QTM-DC+CAP QTM-eLED(E) QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP iQ-PH iQ-PH+QD1	Q-HEX-mini-DC Q-SET-QZ-PH/0-10V Q-SET-mLED QOM-DC+CAP QOM-PH QZ-PH/0-10V iQ-PH	Q-SET-QZ-PH/0-10V QOM-DC+CAP QOM-PH QZ-PH/0-10V iQ-PH
0-10V	QTM-eLED+0-10V QTM-eLED-AWN QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP	QTM-eLED+0-10V QTM-eLED-AWN QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP	Q-SET-QZ-PH/0-10V Q-SET-eLED+0-10V QOM-eLED+0-10V QZ-PH/0-10V	Q-SET-QZ-PH/0-10V Q-SET-eLED+0-10V QOM-eLED+0-10V QZ-PH/0-10V
Lutron Athena	QTM-eLED+DALI-DT6-AWN QTM-eLED-AWN	QTM-eLED+DALI-DT6-AWN QTM-eLED-AWN		
ECO System	QTM-eLED(E)	QTM-eLED(E)		
DMX	QZ-DMX	QZ-DMX	Q-SET-QZ-DMX QZ-DMX	Q-SET-QZ-DMX QZ-DMX
DALI-2: DT6	QTM-eLED+DALI-DT6 QTM-eLED+DALI-DT6-AWN	QTM-eLED+DALI-DT6 QTM-eLED+DALI-DT6-AWN	QOM-eLED+DALI-DT6	QOM-eLED+DALI-DT6
SCENE App Dimmed	Non-Dim Power Supply with SW App Dongle	Non-Dim Power Supply with SW App Dongle		

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BURO HAPPOLD

Luminaire Designation

L5

Description: Linear LED Integrated into Site Furniture or Walls

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Benches Throughout

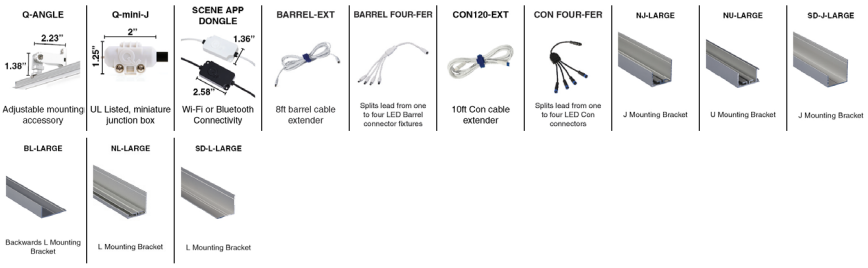
Buro Happold Project #P057035

Requirements:

KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP

COMPATIBLE MOUNTING ACCESSORIES



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BURO HAPPOLD

Luminaire Designation

L5

Description: Linear LED Integrated into Site Furniture or Walls

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Benches Throughout

Buro Happold Project #P057035

Requirements:

QZ-PH/0-10V

LED Power Supply - 30W-288W



- Versatile Class 2 LED driver controlled with phase (forward or reverse) or 0-10V dimming down to 0.1%
- Pulse Width Modulation (PWM) output provides smooth flicker-free dimming
- 24VDC constant voltage output
- Available in various wattage options: 30W, 60W, 96W, 192W, and 288W
- Housing is listed for indoor or outdoor use

1 PRODUCT	2 WATTAGE	3 PRIMARY VOLTAGE	4 SECONDARY VOLTAGE	5 CONTROL	6 COLOR
QZ		UNV	24V	PH/010	

Sample Part Number: **QZ-60W-UNV-24V-PH/010-BK**

1 PRODUCT
QZ

2 WATTAGE
30W
60W
96W
192W
288W

3 PRIMARY VOLTAGE
UNV Universal (120-277V)

4 SECONDARY VOLTAGE
24V

5 CONTROL
PH/010 Phase or 0-10V dimming

6 COLOR
WH White (Standard)
BK Black Powder Coat Finish

COMPATIBLE LEDS

STATIC WHITE

SW24/1.5-4.0	✓
SW24/5.0, SW-HE, SW-HE+	✓
SD-SW24/1.0-4.0	✓
SD-SW24/6.0	✓
SW-IA	
SW-XT	✓

OTHER

DW-HE Tunable Applications	
DW-HE Warm Dim Applications	
WD	✓
SC	✓
RGB	
RGBW, RGBW-HE	

SHEETS

Q-SHEETS SW	✓
Q-SHEETS DW Tunable Applications	
Q-SHEETS DW Warm Dim Applications	
Q-SHEETS RGB	
Q-SHEETS RGBW	

MICRO 5

MICRO 5-SW	✓
MICRO 5-DW Tunable Applications	
MICRO 5-DW Warm Dim Applications	
MICRO 5-RGB	

PRODUCT INFORMATION

- Vertical or horizontal surface mount
- Constant voltage output
- PH/010 Dimming:
  - Phase dimming: works with forward phase / leading edge, MLV and Reverse phase / trailing edge, ELV, TRIAC dimmers
  - Dimming range: 0.1% - 100%
  - 0-10V dimming
  - 1-10V dimming
  - 10V PWM
  - Potentiometer
  - Flicker-free dimming
  - PWM (high frequency) output reduces visible flicker
- IP66 Rated
- Follows recommended practices of IEEE standard P1789 to mitigate flicker-includes health risks
- Suitable for dry, damp and wet locations
- Suitable for indoor & outdoor use
- Primary voltage - universal (110-277V)
- Wide operating temperature range: -40˚F to +140˚F
- UL, cUL listed
- Type HL rated
- Compliant to FCC Part 15B
- 5 year warranty

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Luminaire Designation

L5

Description: Linear LED Integrated into Site Furniture or Walls

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Benches Throughout

Buro Happold Project #P057035

Requirements:

QZ-PH/0-10V

LED Power Supply - 30W-288W

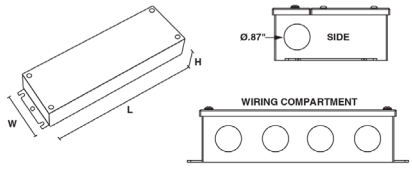
VOLTAGE DROP CHART

Wiring from power supply to light fixture must be two conductor cable

VDC	Load Wattage (W)	Distance from PS for 5% Voltage Drop								
		10 AWG	12 AWG	14 AWG	16 AWG	18 AWG	20 AWG	22 AWG	24 AWG	26 AWG
24	15	913	574	361	227	143	90	55	35	22
	30	456	287	181	114	71	45	28	17	11
	60	228	143	90	57	36	22	14	9	5
	80	171	108	68	43	27	17	10	7	4
	96	143	90	56	35	22	14	9	5	3

1 PRODUCT - DIMENSIONS

Size	Length (in)	Width (in)	Height (in)
30W	6.5	3.75	1.58
60W	7.5	3.75	1.58
96W	8.68	3.75	1.58
192W	10.94	4.33	1.77
288W	11.87	4.33	1.77



2 TECHNICAL INFORMATION

Wattage	Primary Voltage	Secondary Voltage	Secondary Current
30W	110-277V	24VDC	1.25 A
60W	110-277V	24VDC	2.5 A
96W	110-277V	24VDC	1x4 A
192W	110-277V	24VDC	2x4 A
288W	110-277V	24VDC	3x4 A

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Description: Linear LED Integrated into Site Furniture or Walls

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Benches Throughout

Buro Happold Project #P057035

Requirements:

QZ-PH/0-10V
LED Power Supply - 30W-288W

SPECIFICATIONS

Input	
Input Voltage (Vrms)	110-277V
Input Current, max (Arms)	3.3A @ 110V
Inrush Current, max* (Apk)	43A@277V
Input Frequency (Hz)	50/60
Input Power (W)	330

Output	
Output Voltage, nom (V)	24
Output Current (A)	288W, 3x4A @ 24V
Output Power (Wmax)	288W

Environmental	Min	Nom	Max
THD (%)	-	-	20
PF (%)	0.94	-	-
Working Temp (°F)	-	-	140
IP Rating	66	-	-

*-200us event

PROTECTIONS

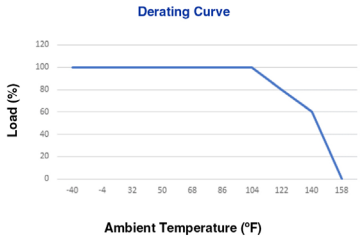
- Short Circuit Protection (SCP)
- Over Loading Protection (OLP)
- Over Temperature Protection (OTP)
- I/P-O/P: 1.88KVAC
- I/P-O/P: 100MΩ / 500VDC / 77°F / 70%RH

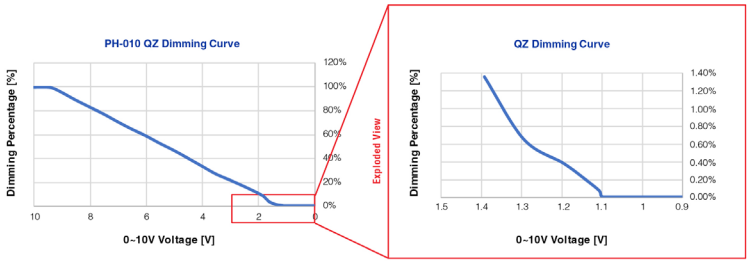
COMPLIANCE

- EMI/RFI
  - FCC 47 CFR Part 15 Subpart B
- Certified
  - UL8750

6 COLOR

Black Powder Coat Finish
White (Standard)





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BURO HAPPOLD

Luminaire Designation

L5

Description: Linear LED Integrated into Site Furniture or Walls

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Benches Throughout

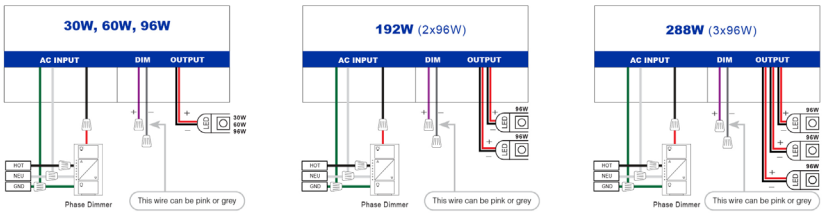
Buro Happold Project #P057035

Requirements:

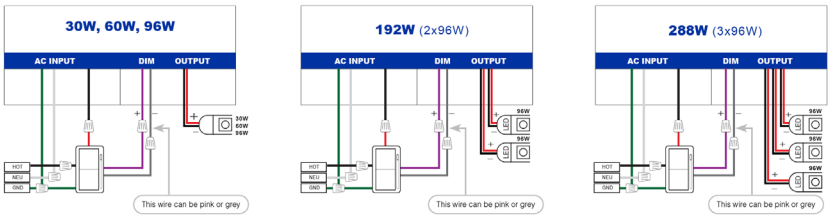
QZ-PH/0-10V

LED Power Supply - 30W-288W

PHASE DIMMING

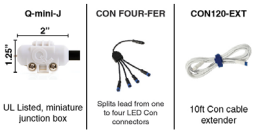


0-10V DIMMING



Wiring from power supply to light fixture must be two conductor cable

COMPATIBLE WIRING ACCESSORIES



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Voltage: 24V

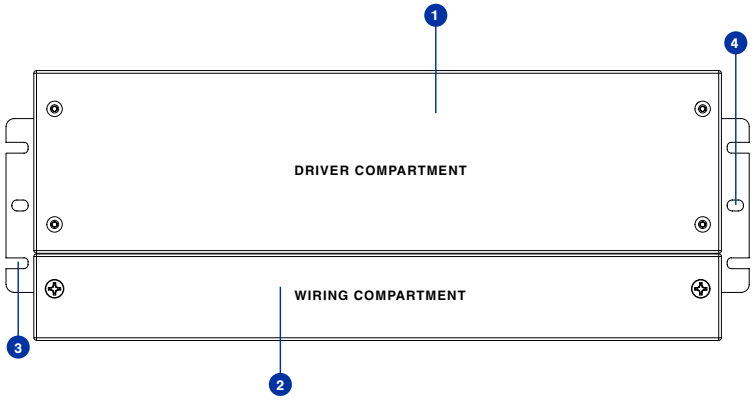
Location: Benches Throughout

Buro Happold Project #P057035

Requirements:

INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

TOP VIEW



QZ Components

1 Driver Compartment 2 Wiring Compartment 3 Mounting Tab Slots 4 Mounting Tab Holes

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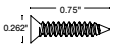
Location: Benches Throughout

Buro Happold Project #P057035

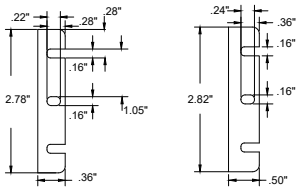
Requirements:

INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

Required Hardware

#6 Flat head screw	

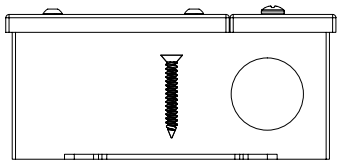
Mounting Foot:



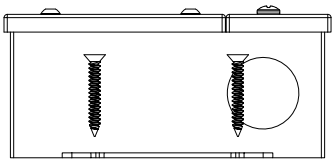
Mounting

1. The QZ can be mounted either vertically or horizontally, utilizing the supplied screws and the mounting tabs on the bottom of the enclosure

CENTER HOLE

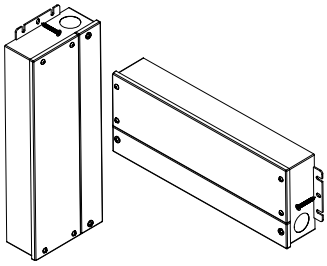


SIDE SLOTS

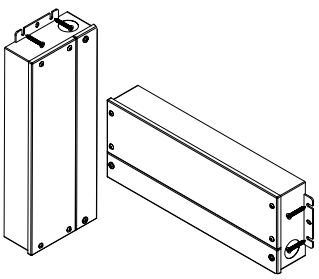


2. The QZ must be mounted into a stud for sufficient support, using either the center holes or the slots of each mounting tab

CENTER HOLE



SIDE SLOTS



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BURO HAPPOLD

Luminaire Designation

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Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

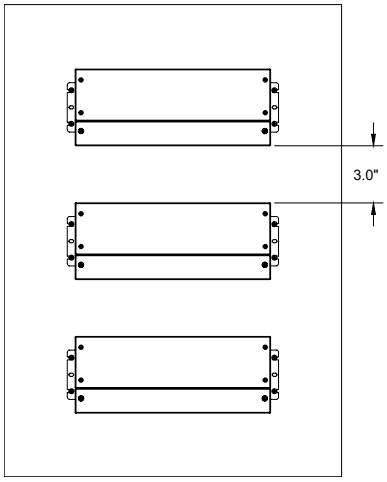
Location: Benches Throughout

Buro Happold Project #P057035

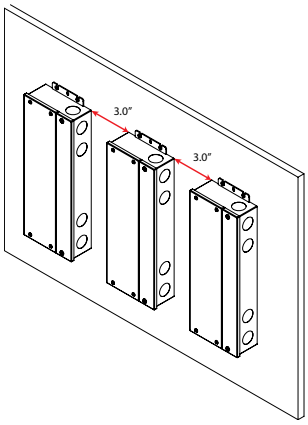
Requirements:

INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

3 When installing multiple QZ power supplies, seperate the enclosures by 3" of space from edge to edge. This prevents the rise of ambient temperature between the power supplies.



Horizontal mount illustrated above



Vertical mount illustrated above

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BURO HAPPOLD

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Accessories:

Lumen Output: 103 lm/lf
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Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Benches Throughout

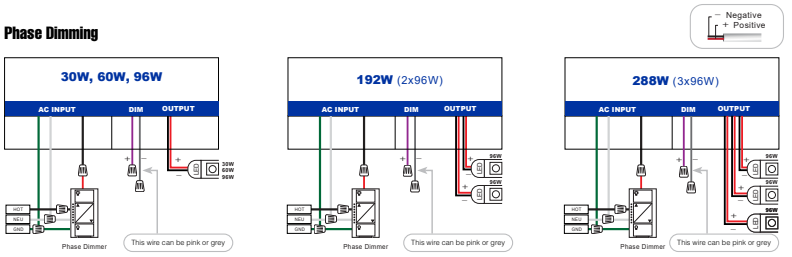
Buro Happold Project #P057035

Requirements:

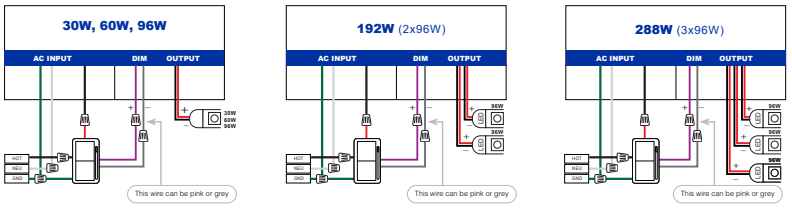
INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

4 Wiring diagram

Phase Dimming



0-10V Dimming



Wiring from power supply to light fixture must be two conductor cable

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Lumen Output: 103 lm/lf
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Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Benches Throughout

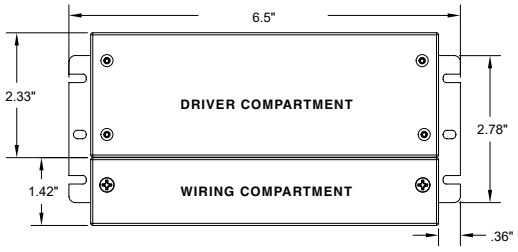
Buro Happold Project #P057035

Requirements:

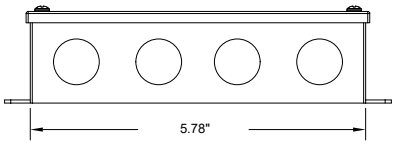
INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

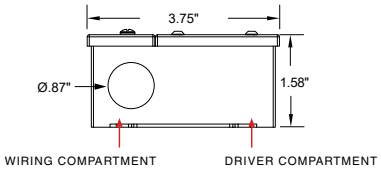
QZ 30W

TOP VIEW



WIRING COMPARTMENT VIEW





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Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Benches Throughout

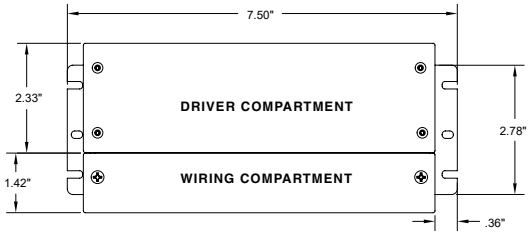
Buro Happold Project #P057035

Requirements:

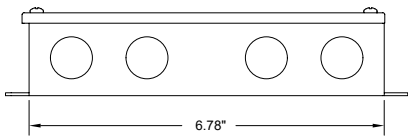
INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

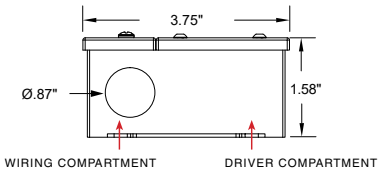
QZ 60W

TOP VIEW



WIRING COMPARTMENT VIEW





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Location: Benches Throughout

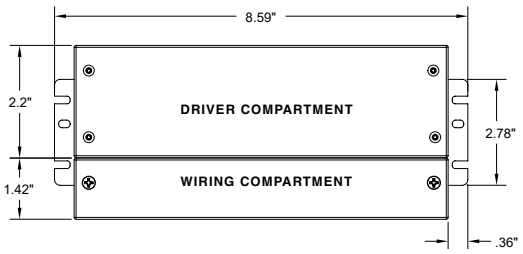
Buro Happold Project #P057035

Requirements:

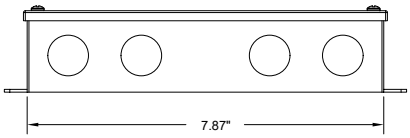
INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

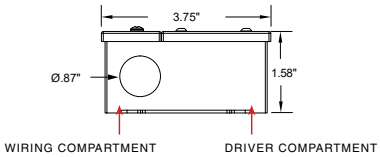
QZ 96W

TOP VIEW



WIRING COMPARTMENT VIEW





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Voltage: 24V

Location: Benches Throughout

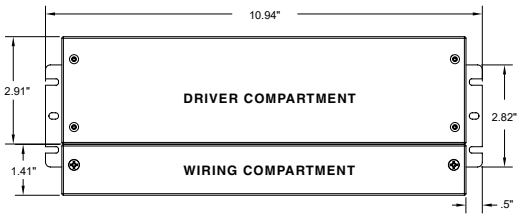
Buro Happold Project #P057035

Requirements:

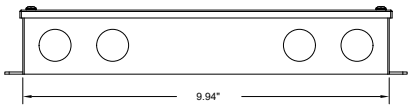
INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

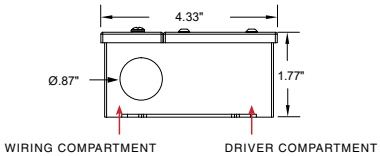
QZ 192W

TOP VIEW



WIRING COMPARTMENT VIEW





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Voltage: 24V

Location: Benches Throughout

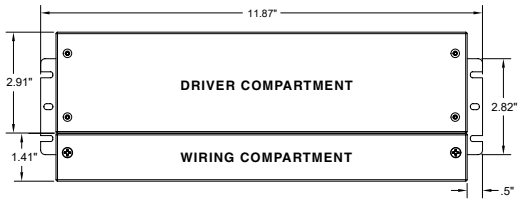
Buro Happold Project #P057035

Requirements:

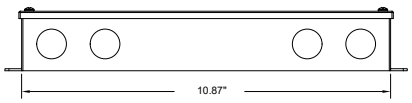
INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

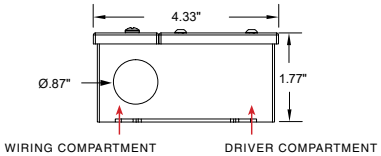
QZ 288W

TOP VIEW



WIRING COMPARTMENT VIEW





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Specification subject to change. Rev-08-09-23

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BURO HAPPOLD

Luminaire Designation

L5

Description: Linear LED Integrated into Site Furniture or Walls

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Benches Throughout

Buro Happold Project #P057035

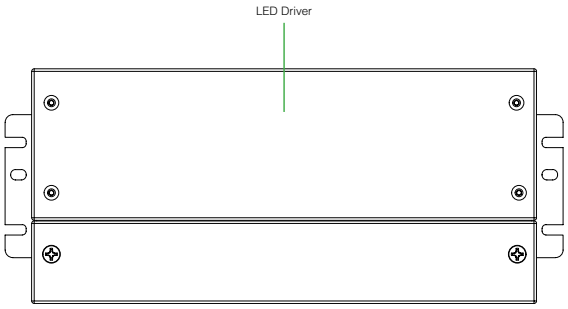
Requirements:

MATERIAL RECYCLING

QZ FAMILY

You may be done with your products, but chances are they still have more to give. Follow these instructions to break down and sort recyclable components. Check with local recycling collection to ensure they accept the materials listed below.

Additionally, Q-Tran offers a Takeback Program. Contact factory for information.



QZ-96W shown



LED Drivers

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BURO HAPPOLD

Luminaire Designation

L6

Description: Linear LED Integrated into Signage

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Bamboo near Lynching Memorial

Buro Happold Project #P057035

Requirements:

1. Contractor to furnish and install all required mounting hardware and accessories to ensure compatibility with approved construction.

2. Contractor to provide dimensioned shop drawings for each unique assembly in context during submittal phase. Shop drawings to include individual fixtures, power supplies, controllers and all accessories.

3. Architect to confirm finish.

4. Reference plan view for location and type mark for transformer.

5. Contractor to provide necessary mounting clips to ensure strong mount within architectural detail.

KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP





- A flexible encapsulated fixture with side bend capabilities
- KURV has a built-in parabolic curve, which allows the fixture to push out light with its internal reflector
- Perfect for indoor and outdoor locations
- Available in a seamless option, where wires are hidden so they do not obstruct the look of the design
- Utilize clear endcaps for continuous runs with no light loss
- For very high output, a clear finished KURV-SW fixture produces 298 lumens/foot at 3000K

1 PRODUCT	2 MOUNTING	3 RATED	4 CCT	5 WATTAGE	6 LENS	7 WIRE INPUT/ OUTPUT	8 CONNECTOR/ WIRE IN	9 CONNECTOR/ WIRE OUT	10 END CAPS	11 LENGTH (IN)	12 EXACT/ OPTIMAL
KURV-SW											

Sample Part Number: **KURV-SW-PPS-2-DRY-30-5.0-ENC/TL-P1-BW-BW-N/A-48"-E**

1 PRODUCT

KURV-SW
See last page for compatible power supplies.

2 MOUNTING

RLC	Rigid Lock Channel
MC	Magnetic Clip
SGC	Side Graze Channel
PPS-2	PVC Clip
PPS-96	PVC Channel
PPS-FT	PVC Channel Custom Length
PPS-LP-2	PVC Low Profile Clip
PPS-LP-FT	PVC Low Profile Channel Custom Length
PPS-LP-96	PVC Low Profile Channel
WSC	White Snug Clip

White snug clip only for indirect cove use, not intended for hanging fixtures upside down.

PPS mounting clip recommended for seamless applications

3 RATED

DRY	IP20
WET	IP67
SBM	IP68

SBM not recommended to be used in chlorinated water. Available only in S1 or S5 wire exits.

4 CCT

24	2400K
27	2700K
30	3000K
35	3500K
40	4000K

5 WATTAGE

1.5	1.5W-SO
3.0	3.0W-HO
5.0	5.0W-VHO
1.5HE	1.5WHE-SO
3.0HE	3.0WHE-HO
6.0HE	6.0WHE-VHO

SO: Standard Output
HO: High Output
VHO: Very High Output
SBM available only in 1.5, 3.0, & 5.0 (no HE)

6 LENS

ENC/CL	Encapsulated in Clear
ENC/TL	Encapsulated in Translucent

For representation of LED visibility, see Diode Visibility section on following pages

7 WIRE INPUT/OUTPUT

S1	Single 1 (Input only) - End Feed
S2	Single 2 (Input only) - Bottom Feed
S3	Single 3 (Input only) - Left Side Feed
S4	Single 4 (Input only) - Right Side Feed
S5	Single 5 (Input only) - Seamless Feed
S6	Single 6 (Input only) - Seamless Feed

P1	Pass Through 1 (Input/Output) - End Feed
P2	Pass Through 2 (Input/Output) - Bottom Feed
P3	Pass Through 3 (Input/Output) - Left Side Feed
P4	Pass Through 4 (Input/Output) - Right Side Feed
P5	Pass Through 5 (Input/Output) - Seamless Feed
P6	Pass Through 6 (Input/Output) - Seamless Feed

8 CONNECTOR/WIRE IN

BW	Bare Wire (Standard 24")
BRL	Barrel
CON6	Connector 6"
CON24	Connector 24"

Connector/Wire In not needed to specify product. Typical selection is BW.
BW: Standard length is 24", Max length is 120". Request custom length by writing in part number next to BW (example: BW48)

BW	Bare Wire (Standard 24")
BRL	Barrel
CON6	Connector 6"
CON24	Connector 24"

Connector/Wire In not needed to specify product. Typical selection is BW.
BW: Standard length is 24", Max length is 120". Request custom length by writing in part number next to BW (example: BW48)

9 CONNECTOR/WIRE OUT

N/A	Closed End (No feed)

BW	Bare Wire (Standard 24")
BRL	Barrel
CON6	Connector 6"
CON24	Connector 24"

Connector/Wire Out not needed to specify product. Typical selection is N/A or BW.
BW: Standard length is 24", Max length is 120". Request custom length by writing in part number next to BW (example: BW48)

10 END CAPS

Single

CL	Clear
WH	White

Pass Through

N/A	Not Applicable

11 LENGTH (IN)

Fixture length min 12", max 191". Consult factory for lengths under 12".
SW: Available in 1" increments.
SW-HE: Available in 2" increments.

12 EXACT/OPTIMAL

O	Optimal Illumination
E	Exact Specified Length

Exact fixtures are the length specified. Optimal fixtures' length is rounded down with illumination end to end. All fixtures' tolerance is +0 - 1/8". See charts on following pages.

5 year warranty | Field modifications are not covered under Q-Tran warranty | Side Bend | IK10 impact rated | Data subject to change, all data has +/- 5% tolerance | PPS-FT is to be cut at Q-Tran to requested length | Ambient or mounting surface must not be lower than -4°F or higher than: 1.5 - 125°F; 3.0 - 115°F; 5.0 - 108°F | Patent # D863646 S, 10,619,828 B2 | Not field cuttable

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BURO HAPPOLD

Luminaire Designation

L6

Description: Linear LED Integrated into Signage

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Bamboo near Lynching Memorial

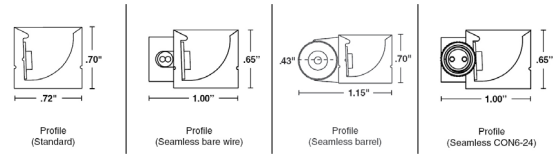
Buro Happold Project #P057035

Requirements:

KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP

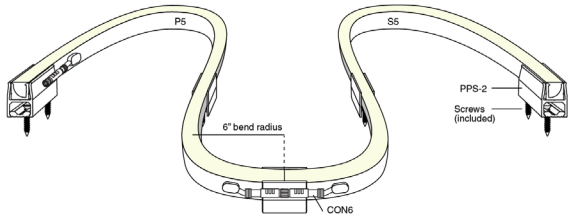
1 PRODUCT - DIMENSIONS



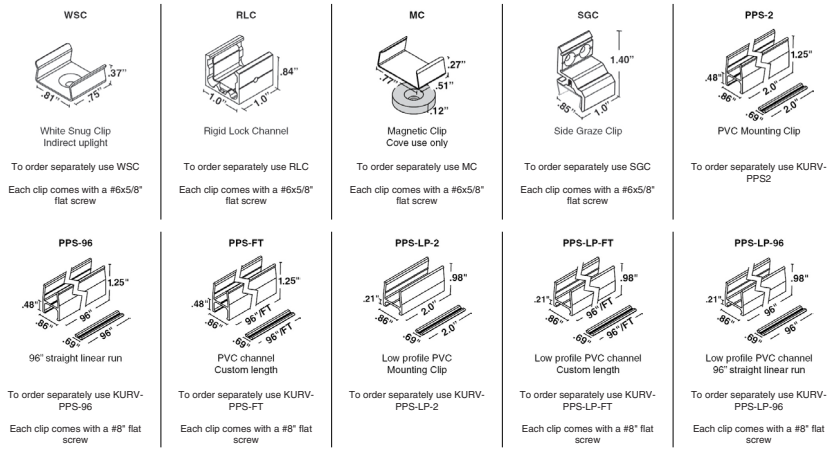
BEND RADIUS



FLEXIBILITY



2 MOUNTING



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UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Bamboo near Lynching Memorial

Buro Happold Project #P057035

Requirements:

KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP

4 / 5 DELIVERED LUMENS

[Calculated L70 = 40000 hrs]
Tested with KURV-SW-WSC-DRY

CCT	1.5W/FT				1.5HE W/FT				3.0W/FT				3.0HE W/FT				5.0W/FT				6.0HE W/FT			
	ENC/CL		ENC/TL		ENC/CL		ENC/TL		ENC/CL		ENC/TL		ENC/CL		ENC/TL		ENC/CL		ENC/TL		ENC/CL		ENC/TL	
	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI	LM	CRI
2400K	110	94	103	95	133	93	133	92	197	93	182	93	272	93	270	92	274	94	261	94	465	93	460	92
2700K	110	98	103	97	153	95	146	95	208	98	195	98	282	96	264	96	279	99	247	99	493	96	468	96
3000K	118	98	109	98	150	96	163	96	213	98	198	98	311	96	295	96	298	97	277	97	529	97	515	96
3500K	121	96	115	95	159	98	144	98	213	96	203	97	325	98	295	98	305	97	295	97	556	98	486	98
4000K	128	96	121	96	147	97	127	97	229	97	213	97	298	97	258	97	294	97	284	97	518	97	445	97

6 DIODE VISIBILITY

ENC/CL - Clear encapsulation

ENC/TL - Translucent encapsulation

TEMPERATURE RATINGS

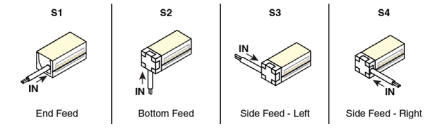
	1.5 W/FT		1.5 HE W/FT		3.0 W/FT		3.0 HE W/FT		5.0 W/FT		6.0 HE W/FT	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Surface Mounted	-4°F	135°F	-4°F	140°F	-4°F	125°F	-4°F	125°F	-4°F	110°F	-4°F	100°F
Storage Temp	-4°F	140°F	-4°F	140°F	-4°F	140°F	-4°F	140°F	-4°F	140°F	-4°F	140°F
Installation Temp	50°F	100°F	50°F	100°F	50°F	100°F	50°F	100°F	50°F	100°F	50°F	100°F

BUG RATING

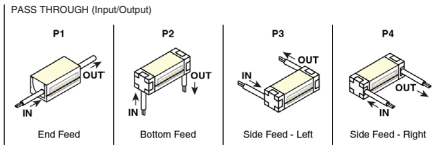
WATTAGE	B	U	G
1.5 (ALL CCTs), 3.0 (ALL CCTs), 5.0 (ALL CCTs)	B0	U1	G0
1.5HE (ALL CCTs), 3.0HE (ALL CCTs), 6.0HE ENC/TL (4000K)	B0	U1	G0
6.0HE ENC/CL (2400K), 6.0HE ENC/TL (2400K, 2700K)	B0	U1	G1
6.0HE ENC/CL (2700K, 3000K, 3500K, 4000K), 6.0HE ENC/TL (3000k, 3500k)	B0	U2	G1

7 WIRE INPUT/OUTPUT

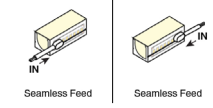
SINGLE (Input only)



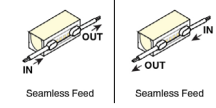
PASS THROUGH (Input/Output)



SEAMLESS SINGLE (Input only)



SEAMLESS PASS THROUGH (Input/Output)



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BURO HAPPOLD

Luminaire Designation

L6

Description: Linear LED Integrated into Signage

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Bamboo near Lynching Memorial

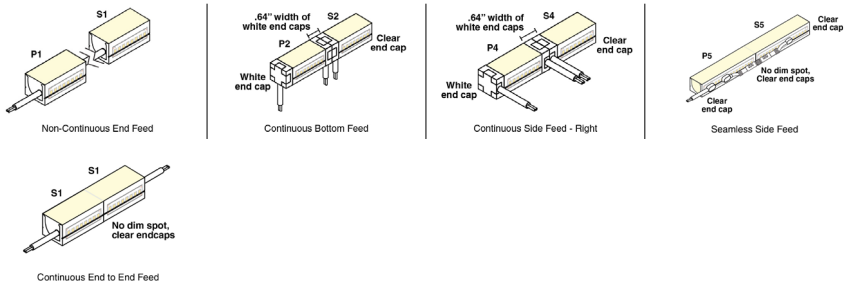
Buro Happold Project #P057035

Requirements:

KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP

CONFIGURATION OPTIONS



SEAMLESS

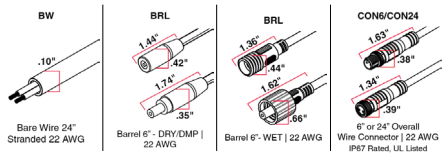
Shown with bare wire, connectors vary



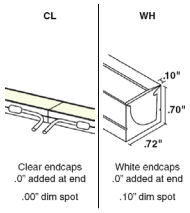
Omnidirectional wireways
S5, S6, P5, P6

8 / 9 CONNECTOR/WIRE – IN/OUT

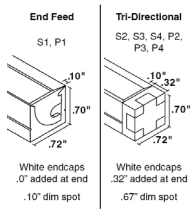
Connector/Wire In or Out not needed to specify product. Typical selection is S1 for Wire Input/Output, BW for Connector/Wire In, N/A for Connector/Wire Out, and WH for End Caps



10 END CAPS (NO FEED)

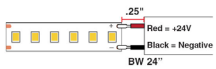


END CAPS (WITH FEED)



11 LENGTH - WIRING DETAIL

1.5W, 3.0W, 5.0W | Available in 1" increments 12"-191"



1.5HEW, 3.0HEW, 6.0HEW | Available in 2" increments 12"-191"



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Luminaire Designation

L6

Description: Linear LED Integrated into Signage

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Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Bamboo near Lynching Memorial

Buro Happold Project #P057035

Requirements:

KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP

12 EXACT/OPTIMAL FIXTURE LENGTH

SW LENGTHS BY INCH

Exact fixtures are the length specified. Optimal fixtures' length is rounded down with illumination end to end. All fixtures' tolerance is +0 – 1/8". Consult factory for lengths under 12".

EXACT LENGTH

Requested Length	Potential dim spot on either end of fixture
12"	.5"
13"	.5"
14"	.5"
15"	.5"
16"	.5"
17"	.5"
18"	.5"
19"	.5"
20"	.5"
21"	.5"
22"	.5"
23"	.5"
24"	.5"
36"	.5"
48"	.5"
60"	.5"
72"	.5"
84"	.5"
96"	.5"

OPTIMAL LENGTH

Requested Nominal Length	S1 (End Feed)	S2 & S3 & S4 (Bottom Feed / Side Feed - Left / Side Feed - Right)	P1 (End Feed)	P2 & P3 & P4 (Bottom Feed / Side Feed - Left / Side Feed - Right)	S5 & S6 & P5 & P6 (Seamless Feed / Seamless Feed)
12"	11.5"	11.875"	11.75"	11.375"	11.25"
13"	12.5"	12.875"	12.75"	12.375"	12.25"
14"	13.5"	13.875"	13.75"	13.375"	13.25"
15"	14.5"	14.875"	14.75"	14.375"	14.25"
16"	15.5"	15.875"	15.75"	15.375"	15.25"
17"	16.5"	16.875"	16.75"	16.375"	16.25"
18"	17.5"	17.875"	17.75"	17.375"	17.25"
19"	18.5"	18.875"	18.75"	18.375"	18.25"
20"	19.5"	19.875"	19.75"	19.375"	19.25"
21"	20.5"	20.875"	20.75"	20.375"	20.25"
22"	21.5"	21.875"	21.75"	21.375"	21.25"
23"	22.5"	22.875"	22.75"	22.375"	22.25"
24"	23.5"	23.875"	23.75"	23.375"	23.25"
36"	35.5"	35.875"	35.75"	35.375"	35.25"
48"	47.5"	47.875"	47.75"	47.375"	47.25"
60"	59.5"	59.875"	59.75"	59.375"	59.25"
72"	71.5"	71.875"	71.75"	71.375"	71.25"
84"	83.5"	83.875"	83.75"	83.375"	83.25"
96"	95.5"	95.875"	95.75"	95.375"	95.25"

SW-HE LENGTHS BY INCH

Exact fixtures are the length specified. Optimal fixtures' length is rounded down with illumination end to end. All fixtures' tolerance is +0 – 1/8". Consult factory for lengths under 12".

EXACT LENGTH

Requested Length	Potential dim spot on either end of fixture
12"	1"
13"	.5"
14"	1"
15"	.5"
16"	1"
17"	.5"
18"	1"
19"	.5"
20"	1"
21"	.5"
22"	1"
23"	.5"
24"	1"
36"	1"
48"	1"
60"	1"
72"	1"
84"	1"
96"	1"

OPTIMAL LENGTH: highlighted rows are closest to requested nominal length

Requested Nominal Length	S1 (End Feed)	S2 & S3 & S4 (Bottom Feed / Side Feed - Left / Side Feed - Right)	P1 (End Feed)	P2 & P3 & P4 (Bottom Feed / Side Feed - Left / Side Feed - Right)	S5 & S6 & P5 & P6 (Seamless Feed / Seamless Feed)
12"	10.5"	10.875"	10.75"	11.5"	10.25"
13"	12.5"	12.875"	12.75"	11.5"	12.25"
14"	12.5"	12.875"	12.75"	13.5"	12.25"
15"	14.5"	14.875"	14.75"	13.5"	14.25"
16"	14.5"	14.875"	14.75"	15.5"	14.25"
17"	16.5"	16.875"	16.75"	15.5"	16.25"
18"	16.5"	16.875"	16.75"	17.5"	16.25"
19"	18.5"	18.875"	18.75"	17.5"	18.25"
20"	18.5"	18.875"	18.75"	19.5"	18.25"
21"	20.5"	20.875"	20.75"	19.5"	20.25"
22"	20.5"	20.875"	20.75"	21.5"	20.25"
23"	22.5"	22.875"	22.75"	21.5"	22.25"
24"	22.5"	22.875"	22.75"	23.5"	22.25"
36"	34.5"	34.875"	34.75"	35.5"	34.25"
48"	46.5"	46.875"	46.75"	47.5"	46.25"
60"	58.5"	58.875"	58.75"	59.5"	58.25"
72"	70.5"	70.875"	70.75"	71.5"	70.25"
84"	82.5"	82.875"	82.75"	83.5"	82.25"
96"	94.5"	94.875"	94.75"	95.5"	94.25"

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BURO HAPPOLD

Luminaire Designation

L6

Description: Linear LED Integrated into Signage

Manufacturer: Q-Tran

Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Bamboo near Lynching Memorial

Buro Happold Project #P057035

Requirements:

KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP

COMPATIBLE POWER SUPPLIES

See power supplies cut sheets for more information. Data subject to change, all data has +/- 5% tolerance.

DIM TO LEVEL	INDOOR		OUTDOOR	
	SW24/1.5-4.0	SW24/5.0, SW-HE, SW-HE+	SW24/1.5-4.0	SW24/5.0, SW-HE, SW-HE+
Dim to Black	Q6M-DC+CAP QTM-DC+CAP iQ-PH iQ-PH+QD1	Q6M-DC+CAP QTM-DC+CAP iQ-PH iQ-PH+QD1	QOM-DC+CAP QOM-PH iQ-PH	QOM-DC+CAP QOM-PH iQ-PH
0.1%	QTM-eLED+0-10V QTM-eLED-AWN QZ-DMX QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP	QTM-eLED+0-10V QTM-eLED-AWN QZ-DMX QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP	Q-SET-QZ-DMX Q-SET-QZ-PH/0-10V Q-SET-eLED+0-10V QOM-eLED+0-10V QZ-DMX QZ-PH/0-10V	Q-SET-QZ-DMX Q-SET-QZ-PH/0-10V Q-SET-eLED+0-10V QOM-eLED+0-10V QZ-DMX QZ-PH/0-10V
1%	QTM-eLED(E) QTM-eLED+DALI-DT6 QTM-eLED+DALI-DT6-AWN	QTM-eLED(E) QTM-eLED+DALI-DT6 QTM-eLED+DALI-DT6-AWN	QOM-eLED+DALI-DT6	QOM-eLED+DALI-DT6
10%	Non-Dim Power Supply with SW App Dongle	Non-Dim Power Supply with SW App Dongle	Q-HEX-mini-DC Q-SET-mLED	

DIMMING PROTOCOL	INDOOR		OUTDOOR	
	SW24/1.5-4.0	SW24/5.0, SW-HE, SW-HE+	SW24/1.5-4.0	SW24/5.0, SW-HE, SW-HE+
Non-Dim	QTM-eLED-ND QZ-ND	QTM-eLED-ND QZ-ND	Q-SET-QZ-ND Q-SET-eLED-ND QOM-eLED-ND QZ-ND iQ-ND-50-65	Q-SET-QZ-ND Q-SET-eLED-ND QOM-eLED-ND QZ-ND iQ-ND-50-65
Phase	Q6M-DC+CAP QTM-DC+CAP QTM-eLED(E) QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP iQ-PH iQ-PH+QD1	Q6M-DC+CAP QTM-DC+CAP QTM-eLED(E) QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP iQ-PH iQ-PH+QD1	Q-HEX-mini-DC Q-SET-QZ-PH/0-10V Q-SET-mLED QOM-DC+CAP QOM-PH QZ-PH/0-10V iQ-PH	Q-SET-QZ-PH/0-10V QOM-DC+CAP QOM-PH QZ-PH/0-10V iQ-PH
0-10V	QTM-eLED+0-10V QTM-eLED-AWN QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP	QTM-eLED+0-10V QTM-eLED-AWN QZ-PH/0-10V QZ-STICK-PH/0-10V QZLP	Q-SET-QZ-PH/0-10V Q-SET-eLED+0-10V QOM-eLED+0-10V QZ-PH/0-10V	Q-SET-QZ-PH/0-10V Q-SET-eLED+0-10V QOM-eLED+0-10V QZ-PH/0-10V
Lutron Athena	QTM-eLED+DALI-DT6-AWN QTM-eLED-AWN	QTM-eLED+DALI-DT6-AWN QTM-eLED-AWN		
ECO System	QTM-eLED(E)	QTM-eLED(E)		
DMX	QZ-DMX	QZ-DMX	Q-SET-QZ-DMX QZ-DMX	Q-SET-QZ-DMX QZ-DMX
DALI-2: DT6	QTM-eLED+DALI-DT6 QTM-eLED+DALI-DT6-AWN	QTM-eLED+DALI-DT6 QTM-eLED+DALI-DT6-AWN	QOM-eLED+DALI-DT6	QOM-eLED+DALI-DT6
SCENE App Dimmed	Non-Dim Power Supply with SW App Dongle	Non-Dim Power Supply with SW App Dongle		

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BURO HAPPOLD

Luminaire Designation

L6

Description: Linear LED Integrated into Signage

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Bamboo near Lynching Memorial

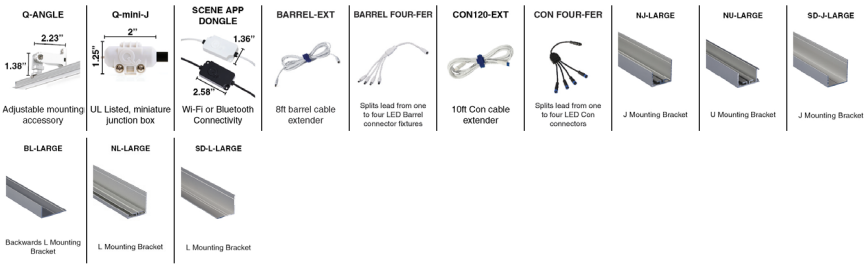
Buro Happold Project #P057035

Requirements:

KURV™ STATIC WHITE

Flexible Fixtures - Q-CAP

COMPATIBLE MOUNTING ACCESSORIES



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Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Bamboo near Lynching Memorial

Buro Happold Project #P057035

Requirements:

QZ-PH/0-10V

LED Power Supply - 30W-288W



- Versatile Class 2 LED driver controlled with phase (forward or reverse) or 0-10V dimming down to 0.1%
- Pulse Width Modulation (PWM) output provides smooth flicker-free dimming
- 24VDC constant voltage output
- Available in various wattage options: 30W, 60W, 96W, 192W, and 288W
- Housing is listed for indoor or outdoor use

1 PRODUCT	2 WATTAGE	3 PRIMARY VOLTAGE	4 SECONDARY VOLTAGE	5 CONTROL	6 COLOR
QZ		UNV	24V	PH/010	

Sample Part Number: **QZ-60W-UNV-24V-PH/010-BK**

1 PRODUCT
QZ

2 WATTAGE
30W
60W
96W
192W
288W

3 PRIMARY VOLTAGE
UNV Universal (120-277V)

4 SECONDARY VOLTAGE
24V

5 CONTROL
PH/010 Phase or 0-10V dimming

6 COLOR
WH White (Standard)
BK Black Powder Coat Finish

COMPATIBLE LEDS

STATIC WHITE

SW24/1.5-4.0	✓
SW24/5.0, SW-HE, SW-HE+	✓
SD-SW24/1.0-4.0	✓
SD-SW24/6.0	✓
SW-IA	
SW-XT	✓

OTHER

DW-HE Tunable Applications	
DW-HE Warm Dim Applications	
WD	✓
SC	✓
RGB	
RGBW, RGBW-HE	

SHEETS

Q-SHEETS SW	✓
Q-SHEETS DW Tunable Applications	
Q-SHEETS DW Warm Dim Applications	
Q-SHEETS RGB	
Q-SHEETS RGBW	

MICRO 5

MICRO 5-SW	✓
MICRO 5-DW Tunable Applications	
MICRO 5-DW Warm Dim Applications	
MICRO 5-RGB	

PRODUCT INFORMATION

- Vertical or horizontal surface mount
- Constant voltage output
- PH/010 Dimming:
  - Phase dimming: works with forward phase / leading edge, MLV and Reverse phase / trailing edge, ELV, TRIAC dimmers
  - Dimming range: 0.1% - 100%
  - 0-10V dimming
  - 1-10V dimming
  - 10V PWM
  - Potentiometer
  - Flicker-free dimming
  - PWM (high frequency) output reduces visible flicker
- IP66 Rated
- Follows recommended practices of IEEE standard P1789 to mitigate flicker-includes health risks
- Suitable for dry, damp and wet locations
- Suitable for indoor & outdoor use
- Primary voltage - universal (110-277V)
- Wide operating temperature range: -40˚F to +140˚F
- UL, cUL listed
- Type HL rated
- Compliant to FCC Part 15B
- 5 year warranty

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Luminaire Designation

L6

Description: Linear LED Integrated into Signage

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Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Bamboo near Lynching Memorial

Buro Happold Project #P057035

Requirements:

QZ-PH/0-10V

LED Power Supply - 30W-288W

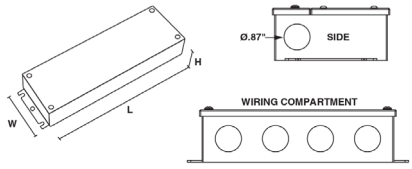
VOLTAGE DROP CHART

Wiring from power supply to light fixture must be two conductor cable

VDC	Load Wattage (W)	Distance from PS for 5% Voltage Drop								
		10 AWG	12 AWG	14 AWG	16 AWG	18 AWG	20 AWG	22 AWG	24 AWG	26 AWG
24	15	913	574	361	227	143	90	55	35	22
	30	456	287	181	114	71	45	28	17	11
	60	228	143	90	57	36	22	14	9	5
	80	171	108	68	43	27	17	10	7	4
	96	143	90	56	35	22	14	9	5	3

1 PRODUCT - DIMENSIONS

Size	Length (in)	Width (in)	Height (in)
30W	6.5	3.75	1.58
60W	7.5	3.75	1.58
96W	8.68	3.75	1.58
192W	10.94	4.33	1.77
288W	11.87	4.33	1.77



2 TECHNICAL INFORMATION

Wattage	Primary Voltage	Secondary Voltage	Secondary Current
30W	110-277V	24VDC	1.25 A
60W	110-277V	24VDC	2.5 A
96W	110-277V	24VDC	1x4 A
192W	110-277V	24VDC	2x4 A
288W	110-277V	24VDC	3x4 A

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BURO HAPPOLD

Luminaire Designation

L6

Description: Linear LED Integrated into Signage

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Bamboo near Lynching Memorial

Buro Happold Project #P057035

Requirements:

QZ-PH/0-10V

LED Power Supply - 30W-288W

SPECIFICATIONS

Input	
Input Voltage (Vrms)	110-277V
Input Current, max (Arms)	3.3A @ 110V
Inrush Current, max* (Apk)	43A@277V
Input Frequency (Hz)	50/60
Input Power (W)	330

Output	
Output Voltage, nom (V)	24
Output Current (A)	288W, 3x4A @ 24V
Output Power (Wmax)	288W

Environmental	Min	Nom	Max
THD (%)	-	-	20
PF (%)	0.94	-	-
Working Temp (°F)	-	-	140
IP Rating	66	-	-

*-200us event

PROTECTIONS

- Short Circuit Protection (SCP)
- Over Loading Protection (OLP)
- Over Temperature Protection (OTP)
- I/P-O/P: 1.88KVAC
- I/P-O/P: 100MΩ / 500VDC / 77°F / 70%RH

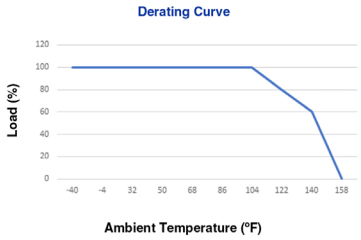
COMPLIANCE

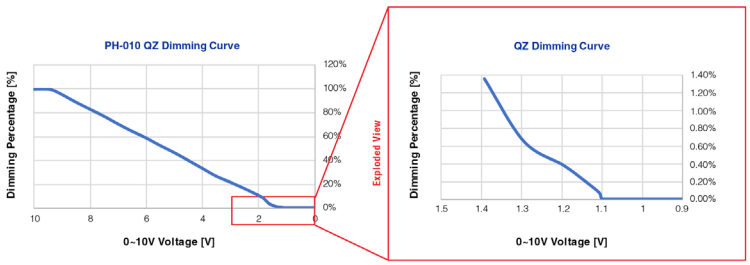
- EMI/RFI
  - FCC 47 CFR Part 15 Subpart B
- Certified
  - UL8750

6 COLOR

Black Powder Coat Finish

White (Standard)





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Description: Linear LED Integrated into Signage

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

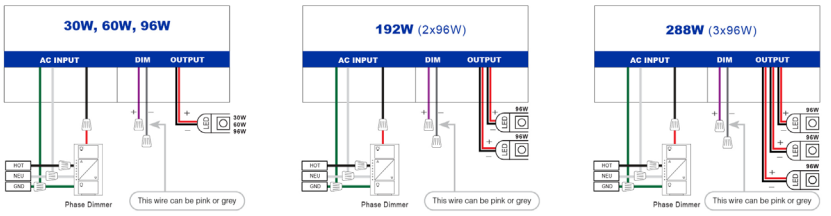
Location: Bamboo near Lynching Memorial

Buro Happold Project #P057035

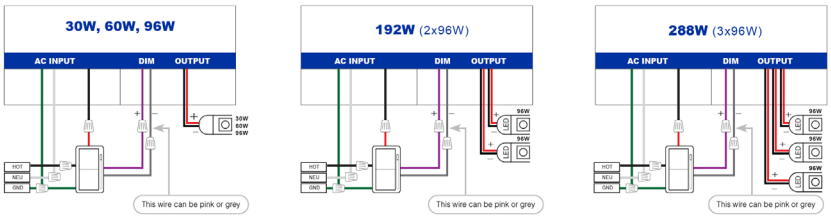
Requirements:

QZ-PH/0-10V
LED Power Supply - 30W-288W

PHASE DIMMING

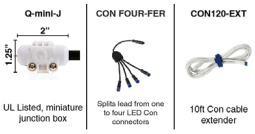


0-10V DIMMING



Wiring from power supply to light fixture must be two conductor cable

COMPATIBLE WIRING ACCESSORIES



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Luminaire Designation

L6

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Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

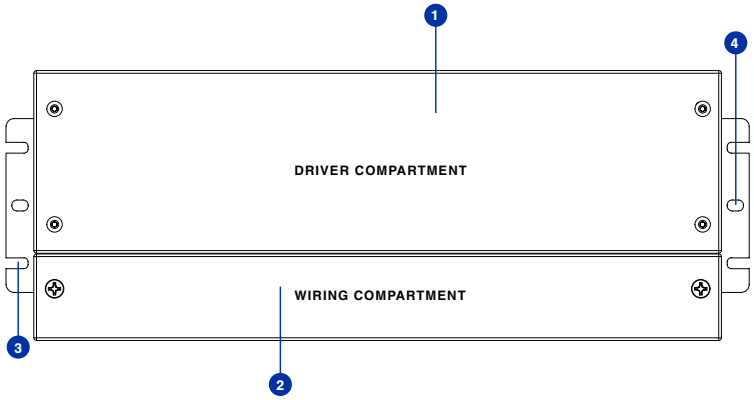
Location: Bamboo near Lynching Memorial

Buro Happold Project #P057035

Requirements:

INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

TOP VIEW



QZ Components

1 Driver Compartment 2 Wiring Compartment 3 Mounting Tab Slots 4 Mounting Tab Holes

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Voltage: 24V

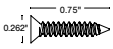
Location: Bamboo near Lynching Memorial

Buro Happold Project #P057035

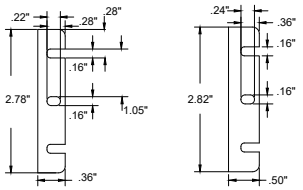
Requirements:

INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

Required Hardware

#6 Flat head screw	

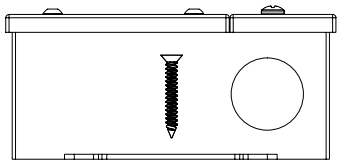
Mounting Foot:



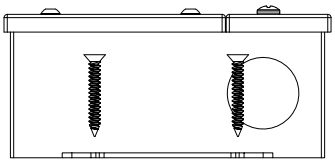
Mounting

1. The QZ can be mounted either vertically or horizontally, utilizing the supplied screws and the mounting tabs on the bottom of the enclosure

CENTER HOLE

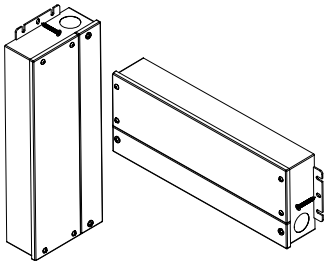


SIDE SLOTS

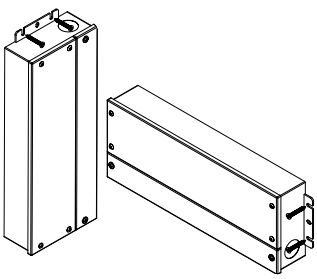


2. The QZ must be mounted into a stud for sufficient support, using either the center holes or the slots of each mounting tab

CENTER HOLE



SIDE SLOTS



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BURO HAPPOLD

Luminaire Designation

L6

Description: Linear LED Integrated into Signage

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

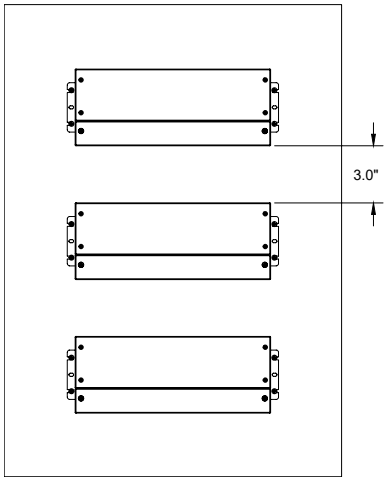
Location: Bamboo near Lynching Memorial

Buro Happold Project #P057035

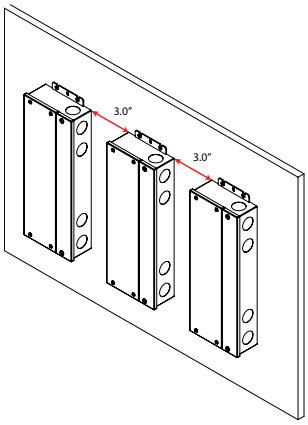
Requirements:

INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

3 When installing multiple QZ power supplies, seperate the enclosures by 3" of space from edge to edge. This prevents the rise of ambient temperature between the power supplies.



Horizontal mount illustrated above



Vertical mount illustrated above

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Specifications:
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Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Bamboo near Lynching Memorial

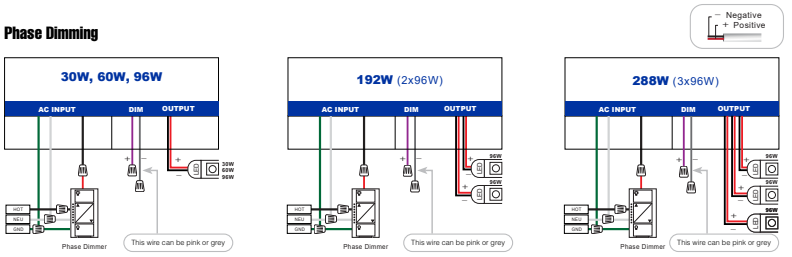
Buro Happold Project #P057035

Requirements:

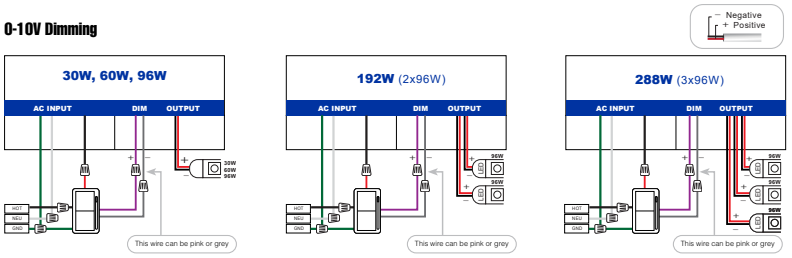
INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

4 Wiring diagram

Phase Dimming



0-10V Dimming



Wiring from power supply to light fixture must be two conductor cable

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Luminaire Designation

L6

Description: Linear LED Integrated into Signage

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Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Bamboo near Lynching Memorial

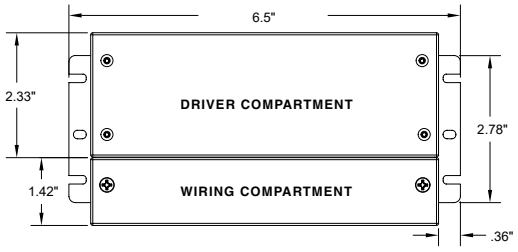
Buro Happold Project #P057035

Requirements:

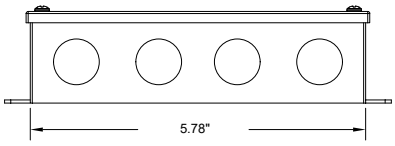
INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

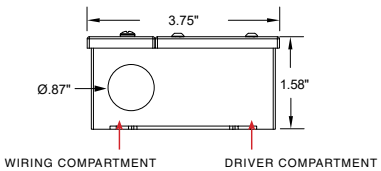
QZ 30W

TOP VIEW



WIRING COMPARTMENT VIEW





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L6

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Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Bamboo near Lynching Memorial

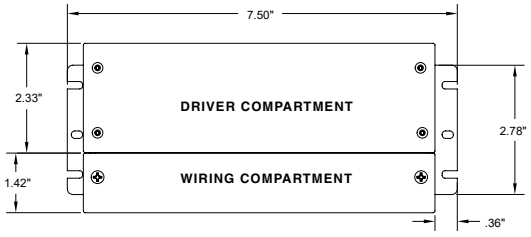
Buro Happold Project #P057035

Requirements:

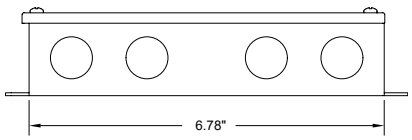
INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

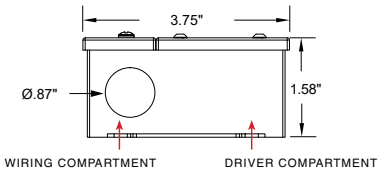
QZ 60W

TOP VIEW



WIRING COMPARTMENT VIEW





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Description: Linear LED Integrated into Signage

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Luminaire Designation

L6

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Bamboo near Lynching Memorial

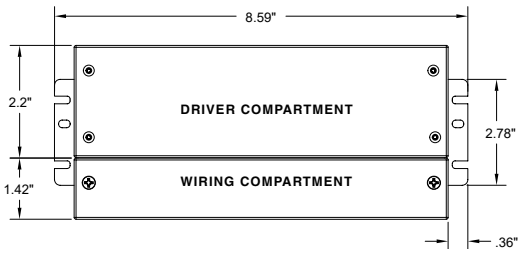
Buro Happold Project #P057035

Requirements:

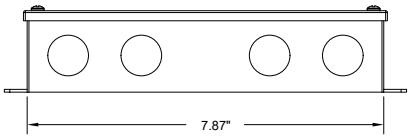
INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

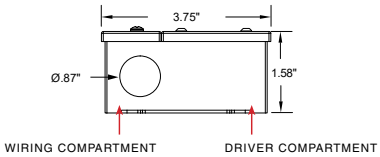
QZ 96W

TOP VIEW



WIRING COMPARTMENT VIEW





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Luminaire Designation

L6

Description: Linear LED Integrated into Signage

Manufacturer: Q-Tran
Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Bamboo near Lynching Memorial

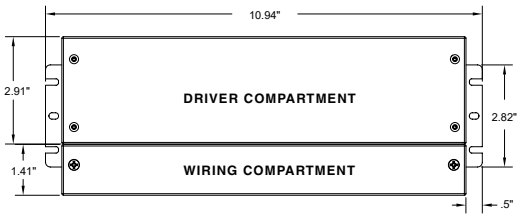
Buro Happold Project #P057035

Requirements:

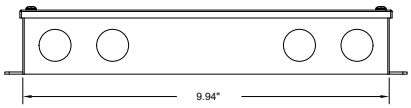
INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

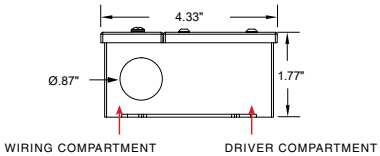
QZ 192W

TOP VIEW



WIRING COMPARTMENT VIEW





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Luminaire Designation

L6

Description: Linear LED Integrated into Signage

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Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Bamboo near Lynching Memorial

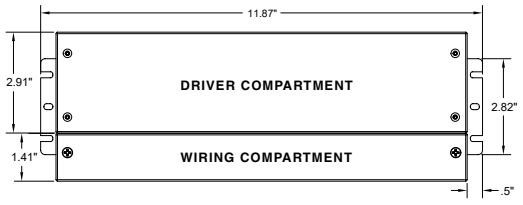
Buro Happold Project #P057035

Requirements:

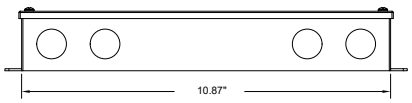
INSTALLATION LED POWER SUPPLY - QZ-PH/0-10V

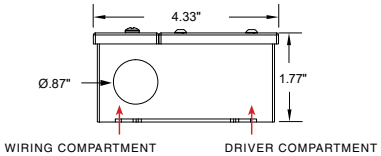
QZ 288W

TOP VIEW



WIRING COMPARTMENT VIEW





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Catalog Reference: KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Lambertian
Rated Life:
Control Gear Type: 0-10V
Wattage: 1.5 W/ft
Accessories:

Lumen Output: 103 lm/lf
CRI: 80+
Efficacy: 68.6 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: 24V

Location: Bamboo near Lynching Memorial

Buro Happold Project #P057035

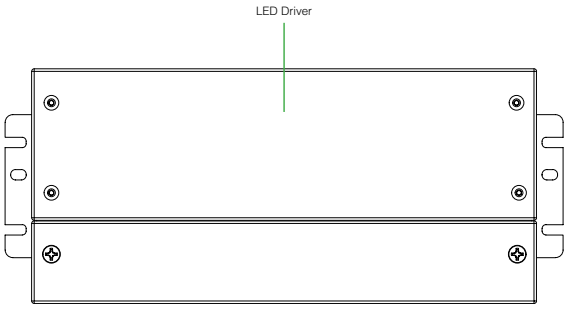
Requirements:

MATERIAL RECYCLING

QZ FAMILY

You may be done with your products, but chances are they still have more to give. Follow these instructions to break down and sort recyclable components. Check with local recycling collection to ensure they accept the materials listed below.

Additionally, Q-Tran offers a Takeback Program. Contact factory for information.



QZ-96W shown

E

LED Drivers

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BURO HAPPOLD

Luminaire Designation

L7

Description: Linear Ingrade LED Wall Washer

Manufacturer: Bold
Catalog Reference: BOW-I-12-[FINISH]-L-1-U-[INTEGRAL CASAMBI]-B-W-9-27-0

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution:
Rated Life:
Control Gear Type: 0-10V
Wattage: 4W/ft
Accessories:

Lumen Output: 650 lm/lf
CRI: 90+
Efficacy: 162.5 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Dedication Plaza

Buro Happold Project #P057035

Requirements:

1. Contractor to furnish and install all required mounting hardware and accessories to ensure compatibility with approved construction.

2. Architect to confirm finish.

3. Reference architectural set for mounting detail.

4. Integral Casambi driver to be provided.

5. Ensure wall wash fixture is aimed at signage.

BILLET

WALLGRAZER / WALLWASHER

bold lighting



The Billet family of products allows you to achieve uniformity throughout indoor and outdoor spaces while maintaining the same optical performance, light consistency, and overall aesthetics.

The Billet Wallwasher / Wallgrazer deliver unmatched vertical illumination with virtually zero glare. Like all Bold products, the Billet confidently delivers a flawless light distribution and a beautifully finished product.

CONSTRUCTION

Product Type : Linear
Body Material : Extruded Aluminum
Body Finish : Black / Grey / White
Custom RAL
IP Rating : IP67 Inground
IP66 Ceiling Recessed
IK Rating : IK10

LIGHT SOURCE

Direct Light Source : Mid-power LEDs
Luminous Output : from 650lm/ft. to 2480lm/ft. (Delivered)
Light Source CCT : 2700K / 3000K 3500K / 4000K / Tunable White (2700K-5000K) / Dim-to-Warm (3000K-1800K) / RGBW
Color Rendering Index : Ra80 / Ra90

INSTALLATION

Environment : Wet Location
Mounting : Inground / Ceiling Recessed (Trim & Trimless) / Wall Recessed (Trim & Trimless) / Surface Mounted Wall Mounted / Pendant

ELECTRICAL

Input Voltage : 120V / UNV 120-277V - 50Hz/60Hz
Load : 4W/ft. to 22W/ft.
Output Type : Constant Current
Driver Type : Integral
Dimming : 0-10V / DALI / ELV / DMX / Lutron Hi-Lume

OPTICS

Optical Distribution : Wallgraze (15°) Wallwash (25°)
Glare Control : UGR<19

Series	Mounting		Nominal Length	
BOW	R	Recessed with Trim	12	12"
	T	Recessed Trimless	18	18"
	S	Surface Mounted	24	24"
	P	Pendant	30	30"
	I	Inground	36	36"
	W	Wall Mounted	42	42"
			48	48"
			54	54"
			60	60"
			XX	Custom in
			LX	Elbow

For exact lengths refer to dimensions table.

Code example: **BOW** - P12W - L1B - W - G827 - 0

Body Finish		Output [1]		Voltage		Dimming		Baffles		Beam Angle		CRI		Color Temp		Emergency	
W	White	L	650lm/ft (4W)	1	120V	A	No Dimming	W	Flat White	G	15° - Grazer	8	+80	27	2700K	0	no
B	Black	M	1070lm/ft (9W)	U[2]	Universal 120V to 277V	B	0-10V to 1%	B	Flat Black	W	25° - Washer	9	+90	30	3000K	9	90 mins
G	Grey	H	1700lm/ft (15W)			C	0-10V to Fade-off	N	Black Nickel					35	3500K		
X	Custom RAL	V	2480lm/ft (22W)			D	DALI to 1%	C	Specular Chrome					40	4000K		
						E	ELV Dimming	G	Bright Gold					WD[4]	3000K- 1800K		
						F	DMX	E	Diffuse Gold					TW[5]	2700K - 5000K		
						G[3]	LUTRON	X	Custom					CC	RGBW		

Notes:
[1] Denotes output at 3000K, unless otherwise noted.
[2] Not applicable for ELV dimming.
[3] Hi-lume 1% EcoSystem Soft-on, Fade-to-Black dimming.
[4] Denotes output specific to Dim-to-Warm at 3000K.
[5] Denotes output specific to Tunable White at full on.

Consult factory for lead-times.
Consult factory for systems using multiple optics and mounting configurations.

Bold Lighting
4710 Ecton Dr. Unit F & G, Marietta, GA 30066, USA
info@boldlighting.us www.boldlighting.us
t: +1-678-903-4061

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Description: Linear Ingrade LED Wall Washer

BURO HAPPOLD

Luminaire Designation

L7

Manufacturer: Bold
Catalog Reference: BOW-I-12-[FINISH]-L-1-U-[INTEGRAL CASAMBI]-B-W-9-27-0

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution:
Rated Life:
Control Gear Type: 0-10V
Wattage: 4W/ft
Accessories:

Lumen Output: 650 lm/lf
CRI: 90+
Efficacy: 162.5 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

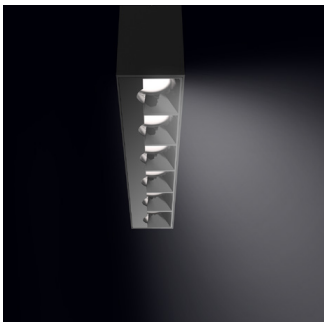
Location: Dedication Plaza

Buro Happold Project #P057035

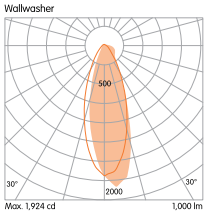
Requirements:

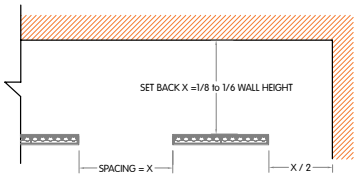
OPTICAL FLEXIBILITY

BAFFLED WALLWASHER

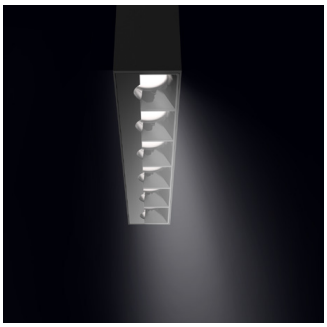


Billet wallwash provides even illumination of vertical surfaces with a flexible setback of 1/8 to 1/6 of the wall height. This optic is ideal for washing large areas where exceptional uniformity is required.

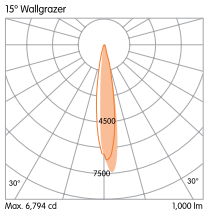


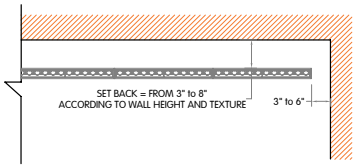


BAFFLED WALLGRAZER



Billet wallgrazer delivers maximum performance for emphasizing textured and rough vertical surfaces. The standard output illuminates walls up to 14'-0" with outstanding transversal and longitudinal glare control.





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BURO HAPPOLD

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L7

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Rated Life:
Control Gear Type: 0-10V
Wattage: 4W/ft
Accessories:

Lumen Output: 650 lm/lf
CRI: 90+
Efficacy: 162.5 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

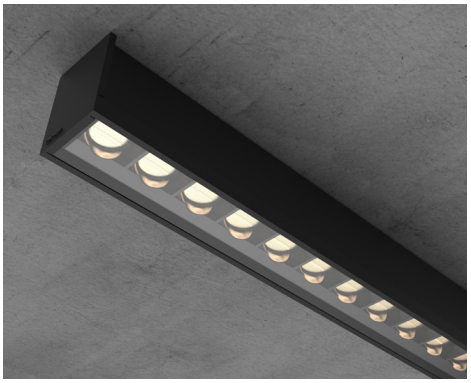
Location: Dedication Plaza

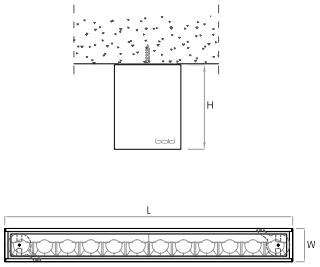
Buro Happold Project #P057035

Requirements:

MOUNTING FLEXIBILITY

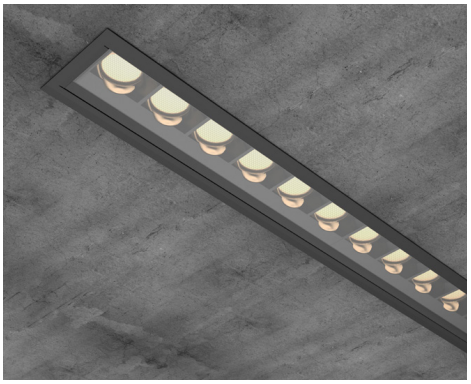
SURFACE MOUNTED

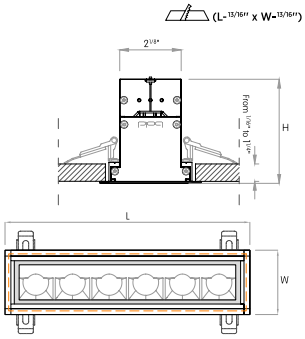




Actual
L= 24 1/2" | 36 5/16" | 48 1/8" | 59 5/16" | Continuous runs
W= 2 13/16"
H= 3 9/16"

RECESSED WITH TRIM





Actual
L= 13 3/16" | 25" | 36 13/16" | 48 5/8" | 60 7/16" | Continuous runs
W= 3 7/16"
H= 3 9/16"

Bold Lighting
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Description: Linear Ingrade LED Wall Washer

BURO HAPPOLD

Luminaire Designation

L7

Manufacturer: Bold
Catalog Reference: BOW-I-12-[FINISH]-L-1-U-[INTEGRAL CASAMBI]-B-W-9-27-0

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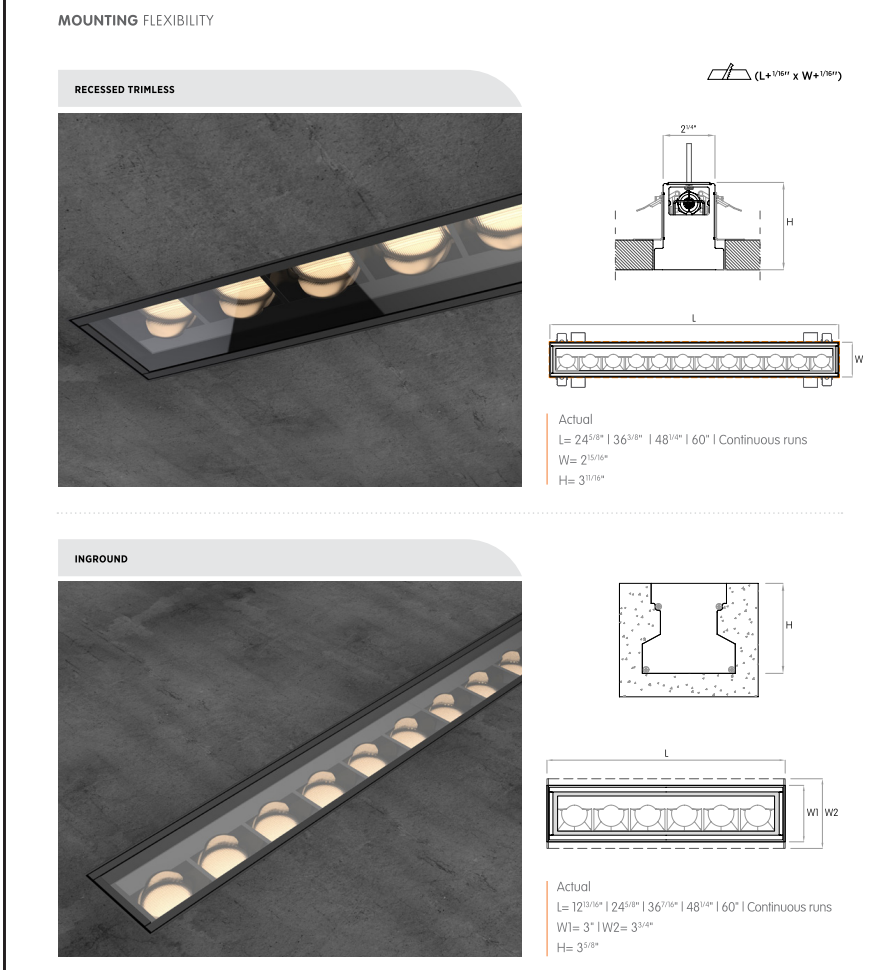
Color Consistency:
Optical Distribution:
Rated Life:
Control Gear Type: 0-10V
Wattage: 4W/ft
Accessories:

Lumen Output: 650 lm/lf
CRI: 90+
Efficacy: 162.5 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Dedication Plaza

Buro Happold Project #P057035

Requirements:



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CRI: 90+
Efficacy: 162.5 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Dedication Plaza

Buro Happold Project #P057035

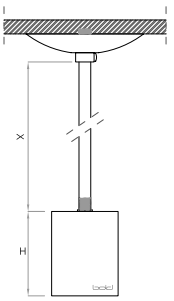
Requirements:

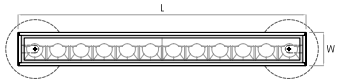
MOUNTING FLEXIBILITY

PENDANT



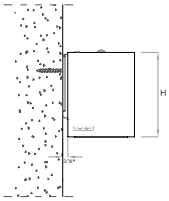
Actual
L= 24 1/2" | 36 5/16" | 48 1/8" | 59 15/16" | Continuous runs
W= 2 13/16"
H= 3 9/16"
X= 59"

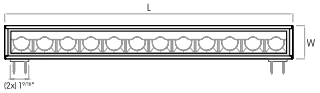




WALL MOUNTED







Actual
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W= 2 13/16"
H= 3 9/16"

Bold Lighting
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BURO HAPPOLD

Luminaire Designation

L7

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Color Temperature: 2700K
Color Consistency:
Optical Distribution:
Rated Life:
Control Gear Type: 0-10V
Wattage: 4W/ft
Accessories:

Lumen Output: 650 lm/lf
CRI: 90+
Efficacy: 162.5 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Dedication Plaza

Buro Happold Project #P057035

Requirements:

DELIVERED LUMEN OUTPUT

Output	Watts	CRI +80			CRI +90		
STATIC-WHITE		**2700K**	**3000K**	**4000K**	**2700K**	**3000K**	**4000K**
L	4W	620lm	650lm	680lm	520lm	540lm	570lm
M	9W	1010lm	1070lm	1110lm	850lm	880lm	930lm
H	15W	1600lm	1700lm	1760lm	1350lm	1400lm	1480lm
V	22W	2380lm	2480lm	2610lm	1970lm	2040lm	2150lm

DIM-TO-WARM 3000K-1800K			**3000K**
L	9W		930lm
V	18W		1700lm

TUNABLE WHITE 2700K-5000K		**2700K**	**5000K**	**2700K**	**5000K**
L	12W	1140lm	1220lm	970lm	1030lm
V	22W	1600lm	1710lm	1350lm	1450lm

RGBW			**R**	**G**	**B**	**W**
TOTAL	47.5W		(9W) 220lm	(13.5W) 660lm	(13W) 210lm	(12W) 590lm

DIMENSIONS TABLE

	Height		Width		12" Actual Length		24" Actual Length		36" Actual Length		48" Actual Length		60" Actual Length	
	mm	**inch**	**mm**	**inch**	**mm**	**inch**	**mm**	**inch**	**mm**	**inch**	**mm**	**inch**	**mm**	**inch**
Surface Mounted	91	3 9/16	72	2 13/16			623	24 1/2	923	36 5/16	1223	48 1/8	1523	59 15/16
Recessed with Trim	91	3 9/16	88	3 7/16	335	13 3/16	635	25	935	36 13/16	1235	48 5/8	1535	60 7/16
Recessed Trimless	93	3 11/16	75	2 15/16			625	24 5/8	925	36 3/8	1225	48 1/4	1525	60
Pendant	91	3 9/16	72	2 13/16			623	24 1/2	923	36 5/16	1223	48 1/8	1523	59 15/16
Inground (with housing)	92	3 5/8	95	3 3/4	325	12 13/16	625	24 5/8	925	36 7/16	1225	48 1/4	1525	60
Wall Mounted	91	3 9/16	72	2 13/16			623	24 1/2	923	36 5/16	1223	48 1/8	1523	59 15/16

Bold Lighting
4710 Ecton Dr. Unit F & G, Marietta, GA 30066, USA
info@boldlighting.us www.boldlighting.us t: +1-678-903-4061

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African American Memorial and Park
Fort Bend County, Texas
Site Lighting - Final - 12/01/2023

Description: Parking Lot Pole

BURO HAPPOLD

Luminaire Designation

P1

Sheet Number 1 of 7

Manufacturer: We-ef
Catalog Reference: (2) 108-2334-[FINISH] + (2) 108-0982-[FINISH] + (2) 430-0038 + (1) 693-1235-CAP-[FINISH]

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Type IV
Rated Life:
Control Gear Type: NONE
Wattage: 54W
Accessories:

Lumen Output: 5376.5lm
CRI: 80+
Efficacy: 98 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: UNV

Location: Parking Lot

Buro Happold Project #P057035

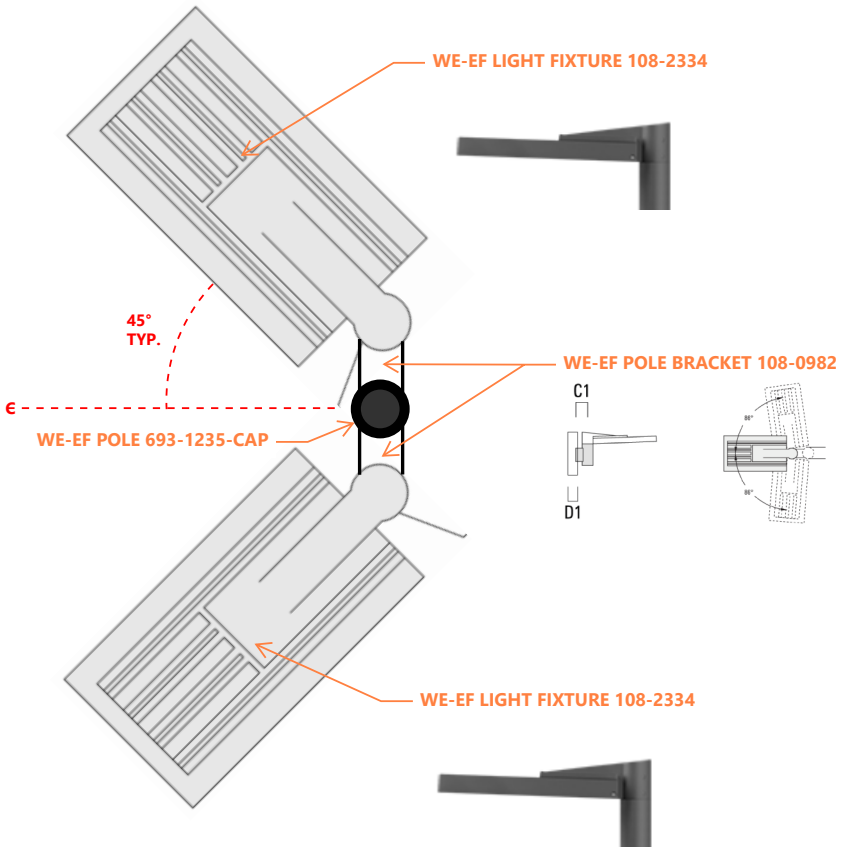
Requirements:

1. Contractor to furnish and install all required mounting hardware and accessories to ensure compatibility with approved construction.

2. Contractor to provide dimensioned shop drawings for each unique assembly in context during submittal phase. Shop drawings to include individual fixtures, power supplies, controllers and all accessories.

3. Architect to confirm finish.

POLE AND LUMINAIRE CONFIGURATION



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Buro Happold
100 Broadway, FL 23
New York, NY 10005 USA

BURO HAPPOLD

Luminaire Designation

P1

Description: Parking Lot Pole

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Efficacy: 98 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: UNV

Location: Parking Lot

Buro Happold Project #P057035

Requirements:

VFL530 LED

108-2334

we-ef

1/4



Description
Pole or wall-mounted LED luminaire with integrated heat sinks. IP66. Class I or Class II. IK08. Marine-grade, die-cast aluminum alloy. 5CE superior corrosion protection including PCS hardware. Silicone CCG® Controlled Compression Gasket. RFC® Reflection Free Contour main lens. CAD-optimized optics for superior illumination and glare control. Integral driver in thermally separated compartment. OLC® One LED Concept. Factory-installed LED circuit board. 0-10V Dimming comes standard with luminaire. Spigot Ø 3"x5" optional available, must be indicated during order placement. Luminaire is factory-sealed and does not need to be opened during installation. Recommended mounting height 10-30 ft, depending on lamp type selected. Specify product with 7 Digit product code – Finish Color. Accessories, such as mounting, optical, and electrical, must be specified separately. Example: XXX-XXXX-9004 (Black) + XXX-XXXX (Accessory 1)

Beam Type	[A60] Type IV Very Short
Light Source	LED-24/48W / 700 mA - 2700 K
CRI	80
Gear Type	electronic gear

Nominal Luminous Flux (lm)

LED Lumens	270 lm
LEDs	24
Total Lumens	6480 lm
Tj	85 °C

Delivered Lumens Flux (lm)

LED Lumens	224 lm
Total Lumens	5376.5 lm
Ta	25 °C

Rated Input Power	54 W

WE-EF LIGHTING USA LLC
Spec Support Hotline: +1 412 783 0949 | 410-D Keystone Drive | Warrendale PA 15086 U.S.A. | Tel +1 724 742 0030 | info.usa@we-ef.com | www.we-ef.com | 31-05-2023 16:12
Technical modifications and errors excepted

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BURO HAPPOLD

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Accessories:

Lumen Output: 5376.5lm
CRI: 80+
Efficacy: 98 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: UNV

Location: Parking Lot

Buro Happold Project #P057035

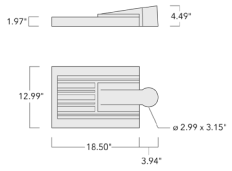
Requirements:

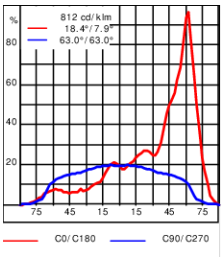
VFL530 LED

108-2334

2/4

we-ef





Material Specification

Body:	Marine-grade die-cast aluminium alloy
Weight (lbs):	14.60
Lens:	PMMA RFC Reflection Contour Lens technology
Colours:	RAL9004 Black RAL9007 Grey Metallic RAL9016 White RAL8019 Dark Bronze
ETL	ETL, UL-1598 equivalent, CSA-C22.2#250.0. Suitable for Wet Locations.
Quick Ship	Quickship features a one week ship time for Steplights and two week ship time for the rest of our Core products. All applicable information must be included for orders to be processed and colours must be in one of our 4 standard finishes. A maximum order quantity of 30 pieces applies.
Gasket:	Silicone rubber gasket
Fasteners:	PCS Polymer Coated Stainless Steel hardware
Ingress protection:	IP66
Impact protection:	IK08
Corrosion protection:	5CE
Surge protection:	In-line bracket 10kV Surge Protector
Mounting:	Maximum spacing for streetlighting applications depends on wattage and light distribution: 5.5 to 9 times the mounting height
Listings:	ETL, UL-1598, CSA-C22.2#250.0. Suitable for Wet Locations.
Windage (EPA):	0.5 ft²

Electrical Specification

Power supply:	Integral [ECG] electronic driver 120V-277V. 0-10V dimmable, to be specified with order.
Power factor:	> 0.9
Driver / Ballast:	Integral EC electronic converter

WE-EF LIGHTING USA LLC
Spec Support Hotline: +1 412 783 0949 | 410-D Keystone Drive | Warrendale PA 15086 U.S.A. | Tel +1 724 742 0030 | info.usa@we-ef.com | www.we-ef.com | 31-05-2023 16:12
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CRI: 80+
Efficacy: 98 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: UNV

Location: Parking Lot

Buro Happold Project #P057035

Requirements:

VFL530 LED

108-2334

we-ef

3/4

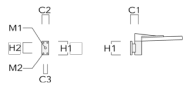
Lifetime
Ta=25°/40° L90B10 > 90000h

Mounting Accessories

Wall and pole brackets RV
Wall and pole mounted brackets. Corrosion resistant all aluminium construction.

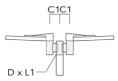
RV0 Wall bracket

	C1	C2	C3	H1	H2	M1	M2	Weight (lbs)
108-0979	4.25"	3.94"	2.36"	7.87"	6.3"	1.5"	0.47"	4.41 lbs lbs



RV2-76 Pole bracket, double

	C1	D x L	L	Weight (lbs)
108-0980	5.79"	2.99" x 3.94"	2.99	10.58 lbs lbs



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Spec Support Hotline: +1 412 783 0949 | 410-D Keystone Drive | Warrendale PA 15086 U.S.A. | Tel +1 724 742 0030 | info.usa@we-ef.com | www.we-ef.com | 31-05-2023 16:12
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Luminaire Designation

P1

Description: Parking Lot Pole

Manufacturer: We-ef
Catalog Reference: (2) 108-2334-[FINISH] + (2) 108-0982-[FINISH] + (2) 430-0038 + (1) 693-1235-CAP-[FINISH]

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Type IV
Rated Life:
Control Gear Type: NONE
Wattage: 54W
Accessories:

Lumen Output: 5376.5lm
CRI: 80+
Efficacy: 98 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: UNV

Location: Parking Lot

Buro Happold Project #P057035

Requirements:

VFL530 LED

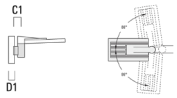
108-2334

we-ef

4/4

RV5 Pole bracket

	C1	D1	Weight (lbs)
108-0982	4.25"	3.0"-9.5"	3.75 lbs lbs



Optical Accessories

Light shield
Light shield LS180 to greatly reduce or eliminate light pollution. PA injection moulded component, black matt. Suitable for asymmetric light distribution [S60], [S65], [S70], [R65], [P65].

LS180
430-0029

LS180-[A60]
430-0038

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BURO HAPPOLD

Luminaire Designation

P1

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Manufacturer: We-ef
Catalog Reference: (2) 108-2334-[FINISH] + (2) 108-0982-[FINISH] + (2) 430-0038 + (1) 693-1235-CAP-[FINISH]

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Color Temperature: 2700K
Color Consistency:
Optical Distribution: Type IV
Rated Life:
Control Gear Type: NONE
Wattage: 54W
Accessories:

Lumen Output: 5376.5lm
CRI: 80+
Efficacy: 98 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: UNV

Location: Parking Lot

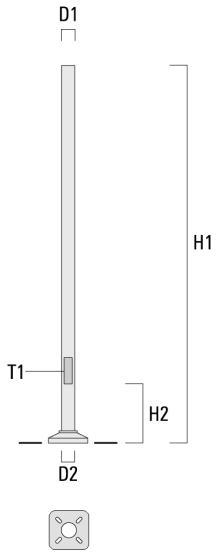
Buro Happold Project #P057035

Requirements:

AML-Z-ANC

we-ef

1/2



Description
Straight round aluminum, anchored. Chromated pre-treatment with superior powdercoat finish in black RAL9004, grey metallic RAL9007, white RAL9016 or dark bronze RAL8019. Service door included, varies by product size.
The shaft is extruded from all new 6063 alloy aluminum tubing and heat treated to produce a T6 temper. Cast from A356 alloy aluminum, the anchor base is heat treated to produce a T6 condition and inserted into the anchor base casting. The two pieces are joined by a continuous circumferential weld at the outside top and inside bottom of the anchor base. The anchor bolts and nuts recess in the base casting, sitting flush, and are covered by four (4) tamper-resistant aluminum nut cover discs. Anchor bolts provided with pole.
Refer to Individual Spec sheets for allowable wind loading (Square Feet) - attached at the bottom.

Specify Product Code
-
Specify Pole Top or Tenon: 3"x3" Tenon (-T3x3), 3"x4" Tenon (-T3x4), 3"x4" Tenon (-T3x5), or Pole Cap (-CAP)
-
Specify Finish Color: Black (-9004), Grey Metallic (-9007), White (-9016), or Dark Bronze (-8019); (consult WE-EF color chart for others)

SAMPLE: 695-1140-T3x5-9004

		D1 ϕ	D2 ϕ	H1	H2	Weight (lbs)
693-1220	AML-Z-008-40-125	4	4	8 ft	23.62 in	19
693-1221	AML-Z-10-40-125	4	4	10 ft	23.62 in	22
693-1222	AML-Z-10-50-125	5	5	10 ft	23.62 in	27
693-1223	AML-Z-12-40-125	4	4	12 ft	23.62 in	26
693-1224	AML-Z-12-50-156	5	5	12 ft	23.62 in	38
693-1225	AML-Z-14-50-156	5	5	14 ft	23.62 in	44
693-1230	AML-Z-16-50-188	5	5	16 ft	23.62 in	58
693-1231	AML-Z-16-60-156	6	6	16 ft	23.62 in	59
693-1232	AML-Z-18-50-188	5	5	18 ft	23.62 in	65
693-1233	AML-Z-18-60-188	6	6	18 ft	23.62 in	78
693-1234	AML-Z-20-60-156	6	6	20 ft	23.62 in	73
693-1235	AML-Z-20-60-188	6	6	20 ft	23.62 in	86
693-0420	AML-Z-08-60-156	6	6	96	23.62	
693-0421	AML-Z-10-60-156	6	6	120	23.62	
693-0424	AML-Z-12-60-156	6	6	144	23.62	

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Luminaire Designation

P1

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Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Type IV
Rated Life:
Control Gear Type: NONE
Wattage: 54W
Accessories:

Lumen Output: 5376.5lm
CRI: 80+
Efficacy: 98 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: UNV

Location: Parking Lot

Buro Happold Project #P057035

Requirements:

AML-Z-ANC

we-ef

2/2

693-0422	AML-Z-14-60-156	6	6	168	23.62	
693-0423	AML-Z-16-60-156	6	6	192	23.62	59
693-0425	AML-Z-18-60-188	6	6	216	23.62	78
693-0426	AML-Z-20-60-188	6	6	240	23.62	86
693-0427	AML-Z-25-60-188	6	6	300	23.62	106

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African American Memorial and Park
Fort Bend County, Texas
Site Lighting - Final - 12/01/2023

Description: Temporary Pole for Juneteenth Plaza

BURO HAPPOLD

Luminaire Designation

P2

Manufacturer: We-ef
Catalog Reference: (2) 145-7180 + (2) SNOOT 145-7233 + (2) 145-9536 + ALUMINUM POLE WITH CAP TO SLIDE INTO GROUND SLEEVE

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Wide
Rated Life:
Control Gear Type: NONE
Wattage: 5W
Accessories:

Lumen Output: 379lm
CRI: 80+
Efficacy: 75 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: UNV

Location: Juneteenth Plaza

Buro Happold Project #P057035

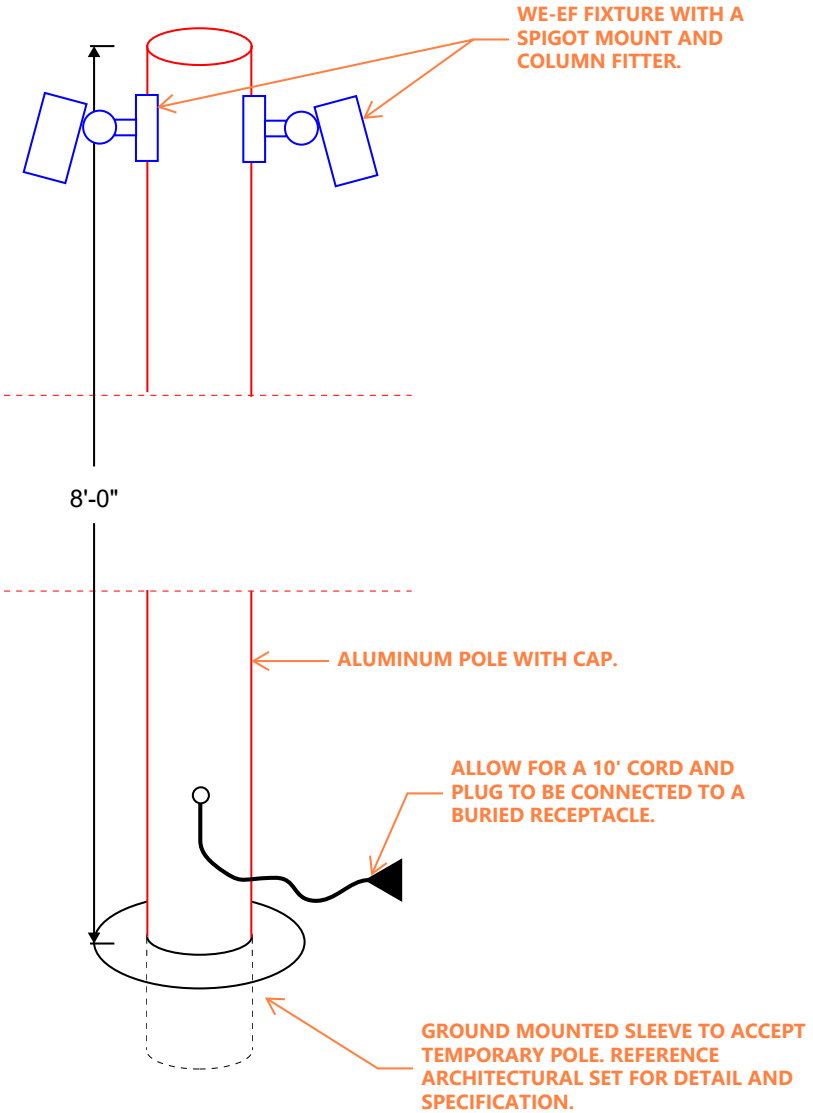
Requirements:

1. Contractor to furnish and install all required mounting hardware and accessories to ensure compatibility with approved construction.

2. Contractor to provide dimensioned shop drawings for each unique assembly in context during submittal phase. Shop drawings to include individual fixtures, power supplies, controllers and all accessories.

3. Architect to confirm finish.

POLE AND LUMINAIRE CONFIGURATION



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Buro Happold
100 Broadway, FL 23
New York, NY 10005 USA

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Luminaire Designation

P2

Description: Temporary Pole for Juneteenth Plaza

Manufacturer: We-ef
Catalog Reference: (2) 145-7180 + (2) SNOOT 145-7233 + (2) 145-9536 + ALUMINUM POLE WITH CAP TO SLIDE INTO GROUND SLEEVE

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Wide
Rated Life:
Control Gear Type: NONE
Wattage: 5W
Accessories:

Lumen Output: 379lm
CRI: 80+
Efficacy: 75 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: UNV

Location: Juneteenth Plaza

Buro Happold Project #P057035

Requirements:

FLC301 Spigot mounted

145-7180

1/10

we-ef



Description
IP66. IK07. Marine-grade, die-cast aluminium alloy. 5CE superior corrosion protection including PCS hardware. Safety glass lens. Silicone CCG® Controlled Compression Gasket. Luminaire is factory-sealed and does not need to be opened during installation. Advanced thermal management protects LEDs while optimising lumens output. CAD-optimised optics for superior illumination and glare control. Including 1.5 m of flexible PVC free cable. Optical accessories are factory-installed. To be specified at time of ordering. 4W / 120V mains voltage version, ON-OFF Class I. Non-dimming. 6W / 24V DC low voltage version, ON-OFF Class III. Non-dimming. Dimmable versions can only be done with a remote driver (120-277V) 347V remote driver on request.

Beam Type	symmetric, wide beam [W]
Light Source	LED-1/4W / 350 mA – 2700 K
CRI	80
Gear Type	electronic gear

Nominal Luminous Flux (lm)

LED Lumens	490 lm
LEDs	1
Total Lumens	490 lm
Tj	85 °C

Delivered Lumens Flux (lm)

LED Lumens	379.1 lm
Total Lumens	379.1 lm
Ta	25 °C

Rated Input Power	5 W

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Luminaire Designation

P2

Description: Temporary Pole for Juneteenth Plaza

Manufacturer: We-ef
Catalog Reference: (2) 145-7180 + (2) SNOOT 145-7233 + (2) 145-9536 + ALUMINUM POLE WITH CAP TO SLIDE INTO GROUND SLEEVE

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Wide
Rated Life:
Control Gear Type: NONE
Wattage: 5W
Accessories:

Lumen Output: 379lm
CRI: 80+
Efficacy: 75 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: UNV

Location: Juneteenth Plaza

Buro Happold Project #P057035

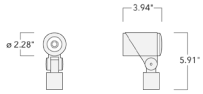
Requirements:

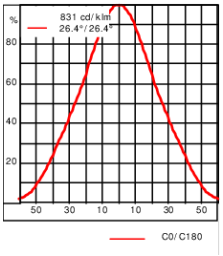
FLC301 Spigot mounted

145-7180

we-ef

2/10





Material Specification

Body:	Marine-grade, die-cast aluminium alloy
Weight (lbs):	0.70
Lens:	Safety glass lens
Colours:	RAL9004 Black RAL9007 Grey Metallic RAL9016 White RAL8019 Dark Bronze
Gasket:	Silicone CCG® Controlled Compression Gasket
Fasteners:	PCS hardware
Ingress protection:	IP66
Impact protection:	IK07
Corrosion protection:	5CE
Mounting:	Slipfitter suitable for mounting accessories
Listings:	Contact WE-EF USA for ETL/UL Certification Status
Windage (EPA):	0.015 m²

Electrical Specification

Power supply:	120V AC/50-60 Hz or 24V DC
Power factor:	>0.9
Driver / Ballast:	Integral EC electronic converter (ON/OFF only)
Cable:	Including 1.5 m of flexible PVC free cable

Lifetime
Ta=25°/40° L90B10 > 90000h

Dimming
0-10V Dimming with Remote Driver only

Mounting Accessories

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Luminaire Designation

P2

Description: Temporary Pole for Juneteenth Plaza

Manufacturer: We-ef
Catalog Reference: (2) 145-7180 + (2) SNOOT 145-7233 + (2) 145-9536 + ALUMINUM POLE WITH CAP TO SLIDE INTO GROUND SLEEVE

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Wide
Rated Life:
Control Gear Type: NONE
Wattage: 5W
Accessories:

Lumen Output: 379lm
CRI: 80+
Efficacy: 75 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: UNV

Location: Juneteenth Plaza

Buro Happold Project #P057035

Requirements:

FLC301 Spigot mounted

145-7180

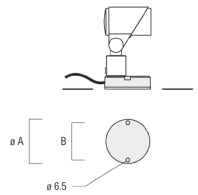
we-ef

3/10

Flat surface and Column fitter
Flate surface and Column fitter

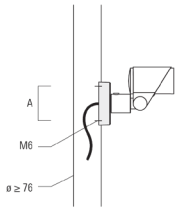
Flat surface fitter FLC300

	A	B	Weight (lbs)
145-9535	100	85	0.20 lbs



Column fitter FLC300

	A	D1	D2	M1	Weight (lbs)
145-9536	70	3.0	2.75	0.23	.44 lbs lbs



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Optical Distribution: Wide
Rated Life:
Control Gear Type: NONE
Wattage: 5W
Accessories:

Lumen Output: 379lm
CRI: 80+
Efficacy: 75 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: UNV

Location: Juneteenth Plaza

Buro Happold Project #P057035

Requirements:

FLC301 Spigot mounted

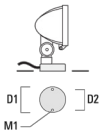
145-7180

we-ef

4/10

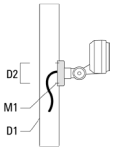
Flat surface fitter FLB100

	D1	D2	M1	Weight (lbs)
145-9535	3.93	3.34	0.25	0.44 lbs



Column fitter FLD100

	D1	D2	M1	Weight (lbs)
145-9536	3.0	2.75	0.23	0.44 lbs lbs



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Color Consistency:
Optical Distribution: Wide
Rated Life:
Control Gear Type: NONE
Wattage: 5W
Accessories:

Lumen Output: 379lm
CRI: 80+
Efficacy: 75 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: UNV

Location: Juneteenth Plaza

Buro Happold Project #P057035

Requirements:

FLC301 Spigot mounted

145-7180

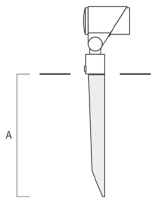
we-ef

5/10

Ground spike EF
Ground spike, Stainless steel.

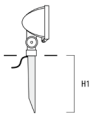
Ground spike EF1 for FLC300

	A	Weight (lbs)
310-9102	270	1.20 lbs



Ground spike EF1

	H1	Weight (lbs)
310-9102	10.62	2.64 lbs



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Luminaire Designation

P2

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Manufacturer: We-ef
Catalog Reference: (2) 145-7180 + (2) SNOOT 145-7233 + (2) 145-9536 + ALUMINUM POLE WITH CAP TO SLIDE INTO GROUND SLEEVE

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Color Consistency:
Optical Distribution: Wide
Rated Life:
Control Gear Type: NONE
Wattage: 5W
Accessories:

Lumen Output: 379lm
CRI: 80+
Efficacy: 75 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: UNV

Location: Juneteenth Plaza

Buro Happold Project #P057035

Requirements:

FLC301 Spigot mounted

145-7180

we-ef

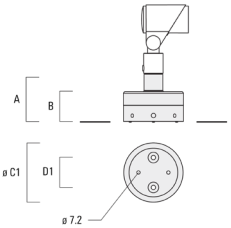
6/10

Junction box JB1

All mounting accessories are made from marine-grade, die-cast aluminium alloy unless otherwise noted. IP55.

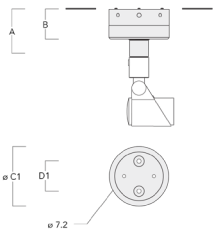
Junction box JB1 with side entry

	A	B	C1	D1	Weight (lbs)
310-9002	107	67	135	67	1.20 lbs



Junction box JB1 with side entry (conduit)

	A	B	C1	D1	Weight (lbs)
310-9022	107	67	135	67	1.20 lbs



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BURO HAPPOLD

Luminaire Designation

P2

Description: Temporary Pole for Juneteenth Plaza

Manufacturer: We-ef
Catalog Reference: (2) 145-7180 + (2) SNOOT 145-7233 + (2) 145-9536 + ALUMINUM POLE WITH CAP TO SLIDE INTO GROUND SLEEVE

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Wide
Rated Life:
Control Gear Type: NONE
Wattage: 5W
Accessories:

Lumen Output: 379lm
CRI: 80+
Efficacy: 75 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: UNV

Location: Juneteenth Plaza

Buro Happold Project #P057035

Requirements:

FLC301 Spigot mounted

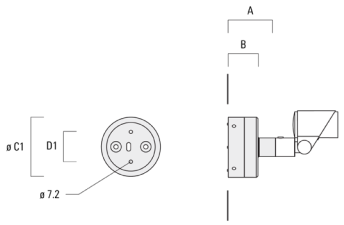
145-7180

we-ef

7/10

Junction box JB1 with wall entry

	A	B	C1	D1	Weight (lbs)
310-9025	107	67	135	67	1.10 lbs



Threaded Nipple
for mounting to non-we-ef Jbox

1/2 inch Threaded Nipple
675-9208

3/4 inch Threaded Nipple
675-9209

Optical Accessories

Glare shield
Glare shield made from corrosion resistant aluminium. Inner surfaces matt black powdercoated. It must be specified at time of ordering.

WE-EF LIGHTING USA LLC
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BURO HAPPOLD

Luminaire Designation

P2

Description: Temporary Pole for Juneteenth Plaza

Manufacturer: We-ef
Catalog Reference: (2) 145-7180 + (2) SNOOT 145-7233 + (2) 145-9536 + ALUMINUM POLE WITH CAP TO SLIDE INTO GROUND SLEEVE

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Wide
Rated Life:
Control Gear Type: NONE
Wattage: 5W
Accessories:

Lumen Output: 379lm
CRI: 80+
Efficacy: 75 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: UNV

Location: Juneteenth Plaza

Buro Happold Project #P057035

Requirements:

FLC301 Spigot mounted

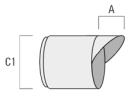
145-7180

we-ef

8/10

Glare shield ES

	A	C1
145-7232	20.5	58



Honeycomb louvre
Honeycomb louvre, matt black Teflon® coated. For luminaires equipped with [E] [EE] [EES] distribution. A maximum of one internal optical accessory. factory installed.

Honeycomb louvre IW

	C1
145-7231	42.5



Linear spread lens
Broadens light distribution in one plane only. Suitable for luminaires with [M], [E], [EE] and [EES] distribution. A maximum of one internal optical accessory.

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BURO HAPPOLD

Luminaire Designation

P2

Description: Temporary Pole for Juneteenth Plaza

Manufacturer: We-ef
Catalog Reference: (2) 145-7180 + (2) SNOOT 145-7233 + (2) 145-9536 + ALUMINUM POLE WITH CAP TO SLIDE INTO GROUND SLEEVE

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Wide
Rated Life:
Control Gear Type: NONE
Wattage: 5W
Accessories:

Lumen Output: 379lm
CRI: 80+
Efficacy: 75 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: UNV

Location: Juneteenth Plaza

Buro Happold Project #P057035

Requirements:

FLC301 Spigot mounted

145-7180

we-ef

9/10

Linear spread lens IO-180

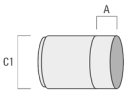
	C1
145-7229	42.5



Snoot
Framing snoot made from corrosion resistant aluminium. Provides all-round glare cut-off as well as effective framing of beam. Inner surfaces matt black powdercoated. It must be specified at time of ordering.

Snoot ET

	A	C1
145-7233	22.5	58



Wallwash lens
Specifically developed for the lighting of architectural surfaces, in combination with WE-EF [M] distribution. Luminaires fitted with the IO-20 wallwash lens are typically positioned at 0.125 x h away from the target surface and spaced up to 1.75 x d apart: h = height of wall/target surface d = 0.125 x h = distance from the wall/target surface s = 1.75 x d = spacing between luminaires The IO-20 LED wallwash lens is factory-installed within the luminaire.

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BURO HAPPOLD

Luminaire Designation

P2

Description: Temporary Pole for Juneteenth Plaza

Manufacturer: We-ef
Catalog Reference: (2) 145-7180 + (2) SNOOT 145-7233 + (2) 145-9536 + ALUMINUM POLE WITH CAP TO SLIDE INTO GROUND SLEEVE

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Wide
Rated Life:
Control Gear Type: NONE
Wattage: 5W
Accessories:

Lumen Output: 379lm
CRI: 80+
Efficacy: 75 lm/W
IP Rating: IP66
UGR:
Dimming Range:
Voltage: UNV

Location: Juneteenth Plaza

Buro Happold Project #P057035

Requirements:

FLC301 Spigot mounted

145-7180

we-ef

10/10

Wallwash lens IO-20

	C1
145-7230	42.5



Control

DALI interface
Low voltage DALI interface (available for 350 mA only)

Low voltage DALI interface

0026

Electronic converter
Low voltage electronic converter, 24VDC

24VDC low voltage version

0025

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Description: Stake Mounted Tree Uplight

BURO HAPPOLD

Luminaire Designation

U1

Manufacturer: Hydrel
Catalog Reference: SAF7-LED-P1-90CRI-27K-MVOLT-15DEG-CWL-KM-[MOUNTING SBA18-12C-CSL10'-[FINISH]-]-NA-NA-NLTAIR2-FGS-[FINISH]

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: 15 deg
Rated Life:
Control Gear Type: NLightAir
Wattage: 43W
Accessories:

Lumen Output: 2761lm
CRI: 90+
Efficacy: 84 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Convict Labor & Leasing

Buro Happold Project #P057035

Requirements:

1. Contractor to furnish and install all required mounting hardware and accessories to ensure compatibility with approved construction.

2. Architect to confirm finish.

3. Fixture to be located as shown in architectural set. Fixture is intended to be fed with flexible outdoor rated cable to allow for movement in field.

4. First fixture to be placed with architect present on site at night.

HYDREL

CATALOG NUMBER

NOTES

TYPE



Specifications

Weight:	15lbs
EPA:	KM: .72 YM: .71

SAF7 LED SPECIALTY ARCHITECTURAL FLOOD

HIGHLIGHTS

- Suitable for a variety of mounting applications including ground, wall, pole, stanchion
- 3G vibration rating per ANSI C136.31
- 0-10V, Reverse phase Dimming
- Taper-Lock technology provides full aiming integrity utilizing both a rugged knuckle and yoke design
- Available in 80CRI and 90CRI
- 5,000lm
- IK10 option available
- Minimalist design that provides clean and intentional lines and transitions
- Slightly convex watershed lens that evades water build up and staining
- Industry leading flow-thru design achieved with separately sealed optical chamber and driver
- NOM Listed
- Available in MVOLT and 347 volt
- nLight Air wireless option available

LED

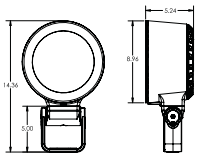
5 YEAR warranty

IP68

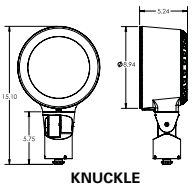
BAA

nLIGHT

DIMENSIONS



YOKE



KNUCKLE

LUMEN PACKAGES

	6DEG	10DEG	15DEG	20DEG	30DEG	40DEG
Delivered Lumens	3,413	3,253	2,995	2,975	2,935	2,888
Watts	43	43	33	33	33	33
LPW	79	76	91	90	89	88
Peak Candela	205,130	81,866	26,659	18,265	7,403	4,302
	50DEG	**70DEG**	**15Vx60H**	**30Vx60H**	**60Vx15H**	**60Vx30H**
Delivered Lumens	2,867	2,779	3,063	2,957	2,866	2,825
Watts	33	33	33	33	33	33
LPW	87	84	93	90	87	86
Peak Candela	3,117	1,897	7,663	4,225	7,945	4,018

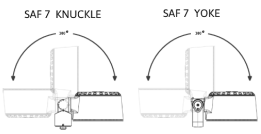
Note: Information based on 4000K @ P1, 80CRI

STANDARD DISTRIBUTION



6DEG 10DEG 20DEG 40DEG 50DEG

AIMING DETAIL



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BURO HAPPOLD

Luminaire Designation

U1

Description: Stake Mounted Tree Uplight

Manufacturer: Hydrel

Catalog Reference: SAF7-LED-P1-90CRI-27K-MVOLT-15DEG-CWL-KM-[MOUNTING SBA18-12C-CSL10'-[FINISH]-]-NA-NA-NLTAIR2-FGS-[FINISH]

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: 15 deg
Rated Life:
Control Gear Type: NLightAir
Wattage: 43W
Accessories:

Lumen Output: 2761lm
CRI: 90+
Efficacy: 84 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Convict Labor & Leasing

Buro Happold Project #P057035

Requirements:

HYDREL

ORDERING INFORMATION

EXAMPLE: SAF7 LED P1 80CRI 27K MVOLT 6DEG CWL KM CJB L1 ZT BL

SAF7

Series*	Source*	Performance Packages*	CRI*	Color Temperature*	Voltage*	Distribution*	Lens*	Mounting*
SAF7 Specialty Architectural Flood	LED	P1 P2 P3 *Note: P3 not available in 6DEG & 10DEG* *Note: 347 volt is not available with P3*	80CRI 90CRI *Note: 90CRI Not available in 50K* *Note: CRI not required with AMBLW*	27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K 5000K AMBLW[1] Amber Limited Wavelength (591nm) *Note: AMBLW not available in 6DEG* *Note: AMBLW only availbale in P1* *Note: 347 volt is not available with AMBLW*	MVOLT 347	6DEG 6° 10DEG 10° 15DEG 15° 20DEG 20° 30DEG 30° 40DEG 40° 50DEG 50° 70DEG 70° 15VX60H 15° x 60° 30VX60H 30° x 60° 60VX15H 60° x 15° 60VX30H 60° x 30° *Note: 347 is not available with 6DEC and 10DEG*	CWL Clear Watershed Lens *Note: CWL lens IK07. For IK10 use external WRG option*	KM Knuckle YM Yoke

Mounting Accessories	Options Internal Accessory	Options	Control Input	External	Finish*
ADPMR Architectural Decorative Pole Mount Round ADPMS Architectural Decorative Pole Mount Square AMPC_/_ Architectural Mid Pole Clamp available to fit on a 4" or 6" pole with 1 or 2 fixtures APAR Round 18" Pole Mount APAS Square 18" Pole Mount AWSC Architectutal Wall Splice Cover CAJB Cylindrical Architectural Junction box CJB Cylindrical Junction Box CPM Cylindrical Pedestal Mount CPMSA Cylindrical Pole Mount Splice Access CSM_ Cylindrical Stancion Mount 12"-48" available in 6" increments CWMA_T Cylindrical Wall Mount Arm Top 12"-48" (available in 6" increments) CWMA_E Cylindrical Wall Mount Arm End 12"-48" (available in 6" increments)	L1 Prismatic Lens L2 Linear Spread Lens L3 Softening Lens IHL Honeycomb Louver *Note: Only one Internal accessory can be choosen* Hardware TPH Tamper proof hardware LASC Safety Cable	CSL_ 10' – 50' of cord available in 5' increments *Note: Cord length required for Yoke Mounting only*	ZT 0-10V dimming to 1% ELV Reverse phase NLTAIR2 nLight Air Wireless Enabled for Dimming *Note: 347 volt is not available with ELV and NLTAIR2* *Note: ZT is not available with 347 with YM*	GS Glare shield FGS Full Glare Shield WRG Wire Rock Guard	BL Black Textured BRS Bronze Smooth BRT Bronze Textured DBL Black Smooth DDB Designer Bronze DNA Natural Aluminum NBS Natural Bronze Smooth VET Verde Textured WH White Textured WHS White Smooth __Z Zinc Undercoat (i.e.BLZ) Note: Zinc Undercoat provides corrosion protection for Marine Environment and Natatorium Construction CF Custom Finish RALTBD RAL Paint Finishes *Note: RALTBD for pricing only, replace with applicable RAL call out when ready to order. See the RALBROCHURE for available options. It is recommended that Hydrel products only use textured paint.*

*Required Fields

Notes:

1 Lumens not reflective of Amber output. See below chart

DIMMING CHART

Voltage	Control Input	Min Dimming Level
MVOLT	ZT	1%
MVOLT	ELV Reserve Phase	1%
MVOLT	NLTAIR2	1%

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Description: Stake Mounted Tree Uplight

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Color Temperature: 2700K
Color Consistency:
Optical Distribution: 15 deg
Rated Life:
Control Gear Type: NLightAir
Wattage: 43W
Accessories:

Lumen Output: 2761lm
CRI: 90+
Efficacy: 84 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Convict Labor & Leasing

Buro Happold Project #P057035

Requirements:

HYDREL

PERFORMANCE DATA

LUMEN OUTPUT — SAF7

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Actual performance may differ as a result of end-user environment and application. Contact factory for performance data on any configurations not shown here.

Performance Package	System Watts	Distribution Type	Field Angle °H	Field Angle °V	Beam Angle °H	Beam Angle °V	27K (2700K, 80CRI) Max CD	27K Lumens	27K LPW	30K (3000K, 80CRI) Max CD	30K Lumens	30K LPW	35K (3500K, 80CRI) Max CD	35K Lumens	35K LPW	40K (4000K, 80CRI) Max CD	40K Lumens	40K LPW	50K (5000K, 80CRI) Max CD	50K Lumens	50K LPW
P1	43W	6DEG	11	11	6	6	181,188	3,015	70	190,441	3,169	74	202,373	3,367	78	205,130	3,413	79	212,580	3,537	82
		10DEG	18	18	9	9	72,311	2,873	67	76,004	3,020	70	80,766	3,209	75	81,866	3,253	76	84,839	3,371	78
	33W	15DEG	32	32	16	16	24,576	2,761	84	25,599	2,876	87	26,353	2,961	90	26,659	2,995	91	28,418	3,193	97
		20DEG	39	39	20	20	16,838	2,743	83	17,539	2,857	87	18,055	2,941	89	18,265	2,975	90	19,470	3,172	96
		30DEG	61	61	33	33	6,825	2,706	82	7,109	2,819	85	7,318	2,902	88	7,403	2,935	89	7,891	3,129	95
		40DEG	78	78	47	47	3,966	2,662	81	4,132	2,773	84	4,253	2,855	87	4,302	2,888	88	4,586	3,078	93
		50DEG	90	90	56	56	2,874	2,643	81	2,993	2,753	83	3,081	2,834	86	3,117	2,867	87	3,323	3,056	93
		70DEG	111	111	77	77	1,749	2,562	78	1,822	2,668	81	1,875	2,747	83	1,897	2,779	84	2,022	2,962	90
		15Vx60H	95	34	66	16	7,065	2,823	86	7,359	2,941	89	7,576	3,028	92	7,663	3,063	93	8,169	3,265	99
		30Vx60H	98	61	66	33	3,895	2,726	83	4,057	2,839	86	4,177	2,923	89	4,225	2,957	90	4,504	3,152	96
		60Vx15H	33	93	16	65	7,324	2,642	80	7,629	2,752	83	7,854	2,833	86	7,945	2,866	87	8,469	3,055	93
		60Vx30H	62	100	34	68	3,704	2,604	79	3,858	2,713	82	3,972	2,792	85	4,018	2,825	86	4,283	3,011	91
P2	57W	6DEG	11	11	6	6	212,519	3,536	58	223,372	3,716	65	237,367	3,949	69	240,600	4,003	70	249,339	4,148	73
		10DEG	18	18	9	9	84,815	3,370	59	89,146	3,542	62	94,731	3,764	66	96,022	3,815	67	99,509	3,954	69
	44W	15DEG	32	32	16	16	30,708	3,450	78	31,986	3,594	82	32,928	3,700	84	33,309	3,742	85	35,508	3,989	91
		20DEG	39	39	20	20	21,039	3,427	78	21,915	3,570	81	22,560	3,675	84	22,821	3,718	84	24,327	3,963	90
		30DEG	61	61	33	33	8,527	3,381	77	8,882	3,522	80	9,144	3,626	82	9,250	3,668	83	9,860	3,910	89
		40DEG	78	78	47	47	4,956	3,326	76	5,162	3,465	79	5,314	3,567	81	5,376	3,608	82	5,731	3,846	87
		50DEG	90	90	56	56	3,591	3,303	75	3,740	3,440	78	3,850	3,541	80	3,895	3,582	81	4,152	3,819	87
		70DEG	111	111	77	77	2,185	3,201	73	2,276	3,334	76	2,343	3,432	78	2,370	3,472	79	2,527	3,701	84
		15Vx60H	95	34	66	16	8,827	3,528	80	9,195	3,675	84	9,466	3,783	86	9,575	3,827	87	10,207	4,079	93
		30Vx60H	98	61	66	33	4,867	3,406	77	5,070	3,548	81	5,219	3,652	83	5,279	3,694	84	5,628	3,938	90
		60Vx15H	33	93	16	65	9,152	3,301	75	9,533	3,439	78	9,814	3,540	80	9,927	3,581	81	10,582	3,817	87
		60Vx30H	62	100	34	68	4,628	3,254	74	4,821	3,389	77	4,963	3,489	79	5,020	3,529	80	5,352	3,762	86
P3	57W	15DEG	32	32	16	16	37,555	4,219	74	39,118	4,395	77	40,271	4,524	79	40,737	4,577	80	43,425	4,879	86
		20DEG	39	39	20	20	25,730	4,191	74	26,801	4,366	77	27,591	4,494	79	27,910	4,546	80	29,752	4,847	85
		30DEG	61	61	33	33	10,429	4,135	73	10,863	4,307	76	11,183	4,434	78	11,312	4,485	79	12,059	4,781	84
		40DEG	78	78	47	47	6,061	4,068	71	6,313	4,237	74	6,499	4,362	77	6,575	4,413	77	7,008	4,704	83
		50DEG	90	90	56	56	4,391	4,039	71	4,574	4,207	74	4,709	4,331	76	4,763	4,381	77	5,078	4,670	82
		70DEG	111	111	77	77	2,672	3,915	69	2,784	4,078	72	2,866	4,198	74	2,899	4,246	74	3,090	4,526	79
		15Vx60H	95	34	66	16	10,796	4,314	76	11,245	4,494	79	11,576	4,626	81	11,710	4,680	82	12,483	4,989	88
		30Vx60H	98	61	66	33	5,952	4,165	73	6,200	4,339	76	6,383	4,466	78	6,456	4,518	79	6,883	4,816	84
		60Vx15H	33	93	16	65	11,192	4,037	71	11,658	4,206	74	12,002	4,329	76	12,141	4,380	77	12,942	4,669	82
		60Vx30H	62	100	34	68	5,660	3,979	70	5,896	4,145	73	6,070	4,267	75	6,140	4,316	76	6,545	4,601	81

Performance Package	System Watts	Distribution Type	Field Angle °H	Field Angle °V	Beam Angle °H	Beam Angle °V	AMBLW Max CD	AMBLW Lumens	AMBLW LPW
P1	26W	10DEG	18	18	9	9	16,857	670	26
		15DEG	32	32	16	16	5,176	582	22
		20DEG	39	39	20	20	3,546	578	22
		30DEG	61	61	33	33	1,437	570	22
		40DEG	78	78	47	47	835	561	22
		50DEG	90	90	56	56	605	557	21
		70DEG	111	111	77	77	368	540	21
		15Vx60H	95	34	66	16	1,488	595	23
		30Vx60H	98	61	66	33	820	574	26
		60Vx15H	33	93	16	65	1,543	557	21
		60Vx30H	62	100	34	68	780	548	21

PROJECTED LED LUMEN MAINTENANCE

Data references the extrapolated performance projections for the Fixture platform in a 25°C ambient, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	20,000	40,000	60,000
Lumen Maintenance Factor	1	0.9447	0.8987	0.8549

Note: Based on P1 Performance Package 6Deg & 10DEG

Operating Hours	0	20,000	40,000	60,000
Lumen Maintenance Factor	1	0.9664	0.948	0.9299

Note: Based on P1 Performance Package 15+Deg

LED LIFE: L70@ >36,000 hours for 6DEG & 10DEG
L70 @ >60,000 hours for 15+Deg

CSA LISTING TEMPERATURE: -30°C through 50°C (P1)
-30°C through 35°C (P2 6DEG & 10DEG)
-30°C through 40°C (P2 15+DEG)
-30°C through 30°C (P3 15+DEG)

PHOTOMETRIC DIAGRAMS

To see complete photometric reports or download .ies files for this product, visit www.hydrel.com

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BURO HAPPOLD

Luminaire Designation

U1

Description: Stake Mounted Tree Uplight

Manufacturer: Hydrel

Catalog Reference: SAF7-LED-P1-90CRI-27K-MVOLT-15DEG-CWL-KM-[MOUNTING SBA18-12C-CSL10'-[FINISH]-]-NA-NA-NLTAIR2-FGS-[FINISH]

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: 15 deg
Rated Life:
Control Gear Type: NLightAir
Wattage: 43W
Accessories:

Lumen Output: 2761lm
CRI: 90+
Efficacy: 84 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Convict Labor & Leasing

Buro Happold Project #P057035

Requirements:

HYDREL

PERFORMANCE DATA

ELECTRICAL LOAD

Light Engines	Drive Current (mA)	System Watts	Input Current (A)			
			120	208	240	277
Static White P1 6Deg & 10Deg	1700	43	0.37	0.22	0.19	0.17
Static White P2 6Deg & 10Deg	2200	57	0.51	0.29	0.25	0.22
Static White P1 15+Deg	700	33	0.28	0.16	0.14	0.13
Static White P2 15+Deg	920	44	0.36	0.21	0.18	0.16
Static White P3 15+Deg	1220	57	0.5	0.28	0.25	0.22
Amber P1 15+Deg	700	26	0.22	0.13	0.11	0.09

LUMEN AMBIENT TEMPERATURE (LAT) MULTIPLIERS

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F)

Ambient		Static White - 6&10Deg Lumen Multiplier	Static White - ≥15Deg Lumen Multiplier	Amber Lumen Multiplier
0°C	32°F	1.06	1.04	1.22
10°C	50°F	1.03	1.02	1.11
20°C	68°F	1.01	1.01	1.04
25°C	77°F	1.00	1.00	1.00
30°C	86°F	0.99	0.99	0.97
40°C	104°F	0.96	0.98	0.91

CRI Scaling Chart	
90CRI	0.9

Optical Scaling Charts*	
Symmetric Distributions (6DEG - 70DEG)	
GS	0.96
FGS	0.95
IHL	0.76
L1	0.95
L2	0.95
L3	0.97
WRG	0.81
*Wider distributions will have a lower scaling factor - see individual IES files for full details	
Asymmetric Distributions (xxVXxxH)	
GS	0.93*
FGS	0.85*
IHL	0.35
L1	0.88
L2	0.86
L3	0.95
WRG	0.71
Note: This table can be used to approximate the lumen values with different accessories. Please see IES files for exact lumen outputs.	

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BURO HAPPOLD

Luminaire Designation

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Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: 15 deg
Rated Life:
Control Gear Type: NLightAir
Wattage: 43W
Accessories:

Lumen Output: 2761lm
CRI: 90+
Efficacy: 84 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

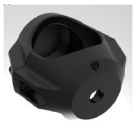
Location: Convict Labor & Leasing

Buro Happold Project #P057035

Requirements:

HYDREL

SAF MOUNTING ACCESSORIES

		Part #
	• ADPMR/ADPMS Architectural Decorative Pole Mount Round or Square • Architectural opulent design for seamless pole integration and fixture aiming • Intended for 4" round and tapered poles or minimum 4" square poles • Mounting location on the top of each arm accepts one lighting fixture • Designed for SAF7 & SAF14 fixtures	Example: ADPMR 78C BL See spec sheet for more options
	• AMPC Architectural Mid Pole Clamp • Clamp pole mount design for quick install and fixture aiming • Intended for 4" or 6" round straight pole • Mount one or two fixtures • Mounting location mid pole • Designed for SAF7 and SAF14 series with safety cable option	Example: AMPC4/1 78C BL See spec sheet for more options
	• APAR/APAS Architectural Pole Arm Round or Square • Intended for 4" round and tapered poles or minimum 4" square poles • Mounting location on the top of each arm accepts one lighting fixture • Designed for SAF7 & SAF14 fixtures	Example: APAS XLSC BRS See spec sheet for more options
	• AWSC Architectural Wall Splice Cover • Designed to be mounted over a recessed wall box or can be surface mounted for direct conduit entrance • Supplied with an integral splice access compartment for easy fixture connections • Designed for SAF7 & SAF14 fixtures	Example: AWSC 78C DNA See spec sheet for more options
	• CAJB Cylindrical Architectural Junction Box • Designed for architectural and landscape applications • Recommended for mounting on a rigid metallic conduit • For direct mounting of the SAF7 & SAF14 series light fixtures	Example: CAJB 34B XLSC DBL See spec sheet for more options
	• CJB Cylindrical Junction Box • Drilled and tapped to ¾" NPT specifications • For larger hole sizes , consult factory • Recommended to seal conduit to maintain dry components • Compatible with SAF7 & SAF14 Flood luminaries	Example: CJB 34S XLSC VET See spec sheet for more options

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BURO HAPPOLD

Luminaire Designation

U1

Description: Stake Mounted Tree Uplight

Manufacturer: Hydrel

Catalog Reference: SAF7-LED-P1-90CRI-27K-MVOLT-15DEG-CWL-KM-[MOUNTING SBA18-12C-CSL10'-[FINISH]-]-NA-NA-NLTAIR2-FGS-[FINISH]

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: 15 deg
Rated Life:
Control Gear Type: NLightAir
Wattage: 43W
Accessories:

Lumen Output: 2761lm
CRI: 90+
Efficacy: 84 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Convict Labor & Leasing

Buro Happold Project #P057035

Requirements:

HYDREL

SAF MOUNTING ACCESSORIES

		Part #
	• CPM Cylindrical Pedestal Mount • Suitable for architectural and landscape applications • Provided with front access cover for easy wiring and installation. • Compatible with SAF7 & SAF14 Flood luminaries	Example: CPM 78C BL See spec sheet for more options
	• CPMSA Cylindrical Pole Mount Splice Access • Designed to mount atop of 4" round poles • Provided with splice compartment • Compatible with SAF7 & SAF14 Flood luminaries	Example: CPMSA 78C DBL See spec sheet for more options
	• CSM Cylindrical Stanchion Mount • Available in heights from 12" to 48" in 6" increments • Provided with front access cover for easy wiring and installation. • Compatible with SAF7 & SAF14 Flood luminaries	Example: CSM12 XLSC BRT See spec sheet for more options
	• CWMA E/CWMA T Cylindrical Wall Mount Arm End or Top • Available in lengths from 12" to 48" in 6" increments • Supplied with splice cover for easy wiring and installation • End mounting only available with SAF7 • Compatible with SAF7 & SAF14 Flood luminaries	Example: CWMA30E 78C BL CWMA12T XLSC BRS See spec sheet for more options

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Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: 15 deg
Rated Life:
Control Gear Type: NLightAir
Wattage: 43W
Accessories:

Lumen Output: 2761lm
CRI: 90+
Efficacy: 84 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Convict Labor & Leasing

Buro Happold Project #P057035

Requirements:

HYDREL

EXTERNAL ACCESSORIES

		Part #
	• WRG -Wire Rock Guard	Example: WRGSAF7 BL
	• FGS- Full Glare Shield	Example: FGSSAF7 DDB
	• GS- Glare Shield	Example: GSSAF7 BL

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Description: Stake Mounted Tree Uplight

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Luminaire Designation

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Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: 15 deg
Rated Life:
Control Gear Type: NLightAir
Wattage: 43W
Accessories:

Lumen Output: 2761lm
CRI: 90+
Efficacy: 84 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Convict Labor & Leasing

Buro Happold Project #P057035

Requirements:

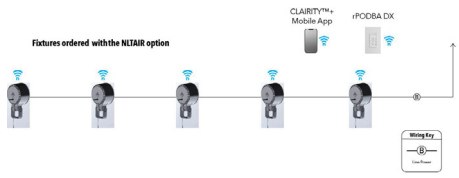
HYDREL

nLight AIR is the ideal solution for retrofit or new construction spaces where adding communication wiring is cost prohibitive. These individually addressable controls offer the ultimate in flexibility during inital setup and for space repurposing.

nLight AIR Control Accessories
Order as separate catalog number. Visit nLight AIR

Wall Switches	Model Number
On/Off single pole	rPODB (color) G2
On/Off two pole	rPODB 2P (color) G2
On/Off & raise/lower single pole	rPODB DX (color) G2
On/Off & raise/lower two pole	rPODB 2P DX (color) G2

Possibilities for nLight® AIR



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Description: Stake Mounted Tree Uplight

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Luminaire Designation

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Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: 15 deg
Rated Life:
Control Gear Type: NLightAir
Wattage: 43W
Accessories:

Lumen Output: 2761lm
CRI: 90+
Efficacy: 84 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Convict Labor & Leasing

Buro Happold Project #P057035

Requirements:

HYDREL

FEATURES & SPECIFICATIONS

MATERIAL: Die cast copper-free aluminum (A360) housing & doors with separate optical and driver compartments to ensure thermal isolation of the electronic drivers and LED's.

LIGHT SOURCE: Proprietary PBCA LED technology with correlated color temperatures (CCT) of 2700K, 3000K, 3500K, 4000K, or 5000K (>80 CRI). All within 3 MacAdam ellipses

VOLTAGE: MVOLT 120V-277V. 50/60Hz and 347 volt

DISTRIBUTION: Available in 6DEG, 10DEG, 15DEG, 20DEG, 30DEG, 40DEG, 50DEG, 70DEG, 15Vx60H, 30Vx60H, 60Vx15H and 60Vx30H

LENS: Molded from heat strengthened borosilicate glass for superior clarity and strength.

MOUNTING: Adjustable knuckle is 1/2" NPT. Yoke mount is a 7/8" thru hole center and (2) 7/16" thru holes 2.2" on center. Aluminum knuckle, yoke, & stainless steel locking hardware with infinite aiming adjustment capabilities and a wide array of mounting accessories. The SAF series can withstand up to a 3G vibration load rating per ANSI/IEEE C136.31. Yoke mount luminaires are provided with 10'-50' at 5ft increments of 18 gauge/6 conductor ST cord for power supply and control. Knuckle mount luminaires are provided with 18" leads (18 gauge for power supply and 22 gauge for control)

GLARE CONTROL: External glare control options include full glare shields and half glare shields

EXTERNAL ACCESSORY: Impact resistant rock guard

ELECTRICAL: MVOLT (120-277) LED class 2 power supply. 26-57 watts, L83 lifetime ≥ 100,000 hours at 25°C. Power factor > 90%, THD < 20%. 6KV surge protection meets a minimum Category C low operation per ANSI/IEEE C62.41.2.

FEATURES Taper lock knuckle and yoke for infinite aiming and an unparalleled locking ability.

FINISH: Exterior parts are protected by a zinc-infused durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climates without cracking or peeling.

BUY AMERICAN ACT: This product is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT regulations.
Please refer to www.acuitybrands.com/buy-america

LISTING: cCSAus, Suitable for outdoor & wet location. IP68 rated

WARRANTY: 5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Consult factory for details.

NOTE: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

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Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: 15 deg
Rated Life:
Control Gear Type: NLightAir
Wattage: 43W
Accessories:

Lumen Output: 2761lm
CRI: 90+
Efficacy: 84 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Convict Labor & Leasing

Buro Happold Project #P057035

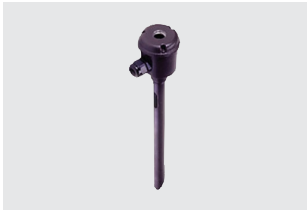
Requirements:

HYDREL

CATALOG NUMBER

NOTES

TYPE



SBA/SBB

Stake Mounted Junction Box

HIGHLIGHTS

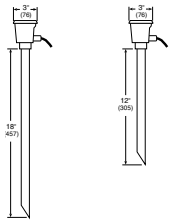
BAA

- Used for a portable convenient placement of accent fixtures
- Available in aluminum or bronze material
- To accommodate 12v or 120v 1/2" knuckle fixture

Specifications

Width:	3"
	76 mm
Height:	12" - 18"
	305 mm - 457 mm

DIMENSIONS



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Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: 15 deg
Rated Life:
Control Gear Type: NLightAir
Wattage: 43W
Accessories:

Lumen Output: 2761lm
CRI: 90+
Efficacy: 84 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Convict Labor & Leasing

Buro Happold Project #P057035

Requirements:

HYDREL

ORDERING INFORMATION

EXAMPLE: SBA12 12C CSL10 BL IEC

Model*	Fixture Mounting Entry*	Cord Set Length*	Finish*	Listing
SBA12 12" aluminum stake mounted J-box	**12C** Accepts 1/2" NPT threaded knuckle	**CSL__** 10' - 50' of cord, available in 5' increments	**BL** Black	**IEC** International Electrotechnical Commission
SBA18 18" aluminum stake mounted J-box	**34C** Accepts 3/4" NPT threaded knuckle	**CSL6P** 6' cord set with plug, (120 Volt only)	**BZ** Bronze	*Note: IEC listed fixtures with have HO7RN-F 3x1.5mm cord*
SBB12 12" bronze stake mounted J-box	**78C** 7/8" thru hole for 1/2" NPT	**CSL15P** 15' cord set with plug, (120 Volt only)	**DDB** Dark Bronze	
SBB18 18" bronze stake mounted J-box		*Note: CSL (10'-50') is only available with 12 volt fixtures. CSL6P and CSL15P are only available with 120 volt fixtures*	**DNA** Natural Alum.	
			GN Green	
			GR Gray	
			SND Sand	
			STG Steel Gray	
			TVG Terra Verde Green	
			WH White	
			_Z Zinc Undercoat (i.e. BLZ)	
			Note: Zinc Undercoat provides corrosion protection for Marine Environment and Natatorium Construction	

*Required Fields

Fixture Mounting	Size	Fixture that uses this mounting
78C	7/8" thru hole for 1/2" NPT	Aspem, Alder, Cedar, Palm, Pine, SAF1(static white only)

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Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: 15 deg
Rated Life:
Control Gear Type: NLightAir
Wattage: 43W
Accessories:

Lumen Output: 2761lm
CRI: 90+
Efficacy: 84 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Convict Labor & Leasing

Buro Happold Project #P057035

Requirements:

HYDREL

SPECIFICATIONS AND FEATURES

MATERIAL: Aluminum or Bronze.

MODELS: SBA12 = 12" in length, aluminum box
SBA18 = 18" in length, aluminum box
SBB12 = 12" in length, bronze box
SBB18 = 18" in length, bronze box

JUNCTION BOX: Cast aluminum or bronze weather tight. 1/2" NPT or 3/4" NPT.

CORD SET LENGTH: Available with 16-3ST cord or HO7RN-F 3x1.5mm cord in a minimum of 10 feet. Cord and plug sets using 18-3ST cord are available in 6' or 15' lengths for 120 Volt only. Cord length must be specified.

FINISH: See ordering guide. Only the aluminum boxes may be painted.

BUY AMERICAN ACT: This product is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT regulations. Please refer to www.acuitybrands.com/resources/buy-american for additional information.

WARRANTY: 1-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Consult factory for details.

NOTE: Actual performance may differ as a result of end-user environment and application. Specifications subject to change without notice.

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Description: Stake Mounted Tree Uplight

BURO HAPPOLD

Luminaire Designation

U2

Sheet Number 1 of 12

Manufacturer: Hydrel
Catalog Reference: SAF7-LED-P1-90CRI-27K-MVOLT-6DEG-CWL-KM-[MOUNTING SBA18-12C-CSL10'-[FINISH]-]-NA-NA-NLTAIR2-FGS-[FINISH]

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: 5 deg
Rated Life:
Control Gear Type: NLightAir
Wattage: 33W
Accessories:

Lumen Output: 3015lm
CRI: 90+
Efficacy: 70 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Convict Labor & Leasing

Buro Happold Project #P057035

Requirements:

1. Contractor to furnish and install all required mounting hardware and accessories to ensure compatibility with approved construction.

2. Architect to confirm finish.

3. Fixture to be located as shown in architectural set. Fixture is intended to be fed with flexible outdoor rated cable to allow for movement in field.

4. First fixture to be placed with architect present on site at night.

HYDREL

CATALOG NUMBER

NOTES

TYPE



Specifications

Weight:	15lbs
EPA:	KM: .72 YM: .71

SAF7 LED SPECIALTY ARCHITECTURAL FLOOD

HIGHLIGHTS

- Suitable for a variety of mounting applications including ground, wall, pole, stanchion
- 3G vibration rating per ANSI C136.31
- 0-10V, Reverse phase Dimming
- Taper-Lock technology provides full aiming integrity utilizing both a rugged knuckle and yoke design
- Available in 80CRI and 90CRI
- 5,000lm
- IK10 option available
- Minimalist design that provides clean and intentional lines and transitions
- Slightly convex watershed lens that evades water build up and staining
- Industry leading flow-thru design achieved with separately sealed optical chamber and driver
- NOM Listed
- Available in MVOLT and 347 volt
- nLight Air wireless option available

LED

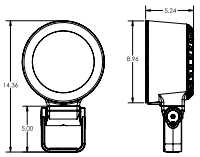
5 YEAR warranty

IP68

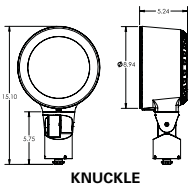
BAA

nLIGHT

DIMENSIONS



YOKE



KNUCKLE

LUMEN PACKAGES

	6DEG	10DEG	15DEG	20DEG	30DEG	40DEG
Delivered Lumens	3,413	3,253	2,995	2,975	2,935	2,888
Watts	43	43	33	33	33	33
LPW	79	76	91	90	89	88
Peak Candela	205,130	81,866	26,659	18,265	7,403	4,302
	50DEG	**70DEG**	**15Vx60H**	**30Vx60H**	**60Vx15H**	**60Vx30H**
Delivered Lumens	2,867	2,779	3,063	2,957	2,866	2,825
Watts	33	33	33	33	33	33
LPW	87	84	93	90	87	86
Peak Candela	3,117	1,897	7,663	4,225	7,945	4,018

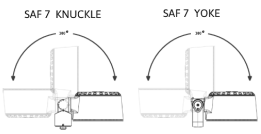
Note: Information based on 4000K @ P1, 80CRI

STANDARD DISTRIBUTION



6DEG 10DEG 20DEG 40DEG 50DEG

AIMING DETAIL



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BURO HAPPOLD

Luminaire Designation

U2

Description: Stake Mounted Tree Uplight

Manufacturer: Hydrel

Catalog Reference: SAF7-LED-P1-90CRI-27K-MVOLT-6DEG-CWL-KM-[MOUNTING SBA18-12C-CSL10'-[FINISH]-]-NA-NA-NLTAIR2-FGS-[FINISH]

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: 5 deg
Rated Life:
Control Gear Type: NLightAir
Wattage: 33W
Accessories:

Lumen Output: 3015lm
CRI: 90+
Efficacy: 70 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Convict Labor & Leasing

Buro Happold Project #P057035

Requirements:

HYDREL

ORDERING INFORMATION

EXAMPLE: SAF7 LED P1 80CRI 27K MVOLT 6DEG CWL KM CJB L1 ZT BL

SAF7

Series*	Source*	Performance Packages*	CRI*	Color Temperature*	Voltage*	Distribution*	Lens*	Mounting*
SAF7 Specialty Architectural Flood	LED	P1 P2 P3 *Note: P3 not available in 6DEG & 10DEG* *Note: 347 volt is not available with P3*	80CRI 90CRI *Note: 90CRI Not available in 50K* *Note: CRI not required with AMBLW*	27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K 5000K AMBLW[1] Amber Limited Wavelength (591nm) *Note: AMBLW not available in 6DEG* *Note: AMBLW only availbale in P1* *Note: 347 volt is not available with AMBLW*	MVOLT 347	6DEG 6° 10DEG 10° 15DEG 15° 20DEG 20° 30DEG 30° 40DEG 40° 50DEG 50° 70DEG 70° 15VX60H 15° x 60° 30VX60H 30° x 60° 60VX15H 60° x 15° 60VX30H 60° x 30° *Note: 347 is not available with 6DEC and 10DEG*	CWL Clear Watershed Lens *Note: CWL lens IK07. For IK10 use external WRG option*	KM Knuckle YM Yoke

Mounting Accessories	Options Internal Accessory	Options	Control Input	External	Finish*
ADPMR Architectural Decorative Pole Mount Round ADPMS Architectural Decorative Pole Mount Square AMPC_/_ Architectural Mid Pole Clamp available to fit on a 4" or 6" pole with 1 or 2 fixtures APAR Round 18" Pole Mount APAS Square 18" Pole Mount AWSC Architectutal Wall Splice Cover CAJB Cylindrical Architectural Junction box CJB Cylindrical Junction Box CPM Cylindrical Pedestal Mount CPMSA Cylindrical Pole Mount Splice Access CSM_ Cylindrical Stancion Mount 12"-48" available in 6" increments CWMA_T Cylindrical Wall Mount Arm Top 12"-48" (available in 6" increments) CWMA_E Cylindrical Wall Mount Arm End 12"-48" (available in 6" increments)	L1 Prismatic Lens L2 Linear Spread Lens L3 Softening Lens IHL Honeycomb Louver *Note: Only one Internal accessory can be choosen* Hardware TPH Tamper proof hardware LASC Safety Cable	CSL_ 10' – 50' of cord available in 5' increments *Note: Cord length required for Yoke Mounting only*	ZT 0-10V dimming to 1% ELV Reverse phase NLTAIR2 nLight Air Wireless Enabled for Dimming *Note: 347 volt is not available with ELV and NLTAIR2* *Note: ZT is not available with 347 with YM*	GS Glare shield FGS Full Glare Shield WRG Wire Rock Guard	BL Black Textured BRS Bronze Smooth BRT Bronze Textured DBL Black Smooth DDB Designer Bronze DNA Natural Aluminum NBS Natural Bronze Smooth VET Verde Textured WH White Textured WHS White Smooth __Z Zinc Undercoat (i.e.BLZ) Note: Zinc Undercoat provides corrosion protection for Marine Environment and Natatorium Construction CF Custom Finish RALTBD RAL Paint Finishes *Note: RALTBD for pricing only, replace with applicable RAL call out when ready to order. See the RALBROCHURE for available options. It is recommended that Hydrel products only use textured paint.*

*Required Fields

Notes:

1 Lumens not reflective of Amber output. See below chart

DIMMING CHART

Voltage	Control Input	Min Dimming Level
MVOLT	ZT	1%
MVOLT	ELV Reserve Phase	1%
MVOLT	NLTAIR2	1%

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Description: Stake Mounted Tree Uplight

BURO HAPPOLD

Luminaire Designation

U2

Manufacturer: Hydrel

Catalog Reference: SAF7-LED-P1-90CRI-27K-MVOLT-6DEG-CWL-KM-[MOUNTING SBA18-12C-CSL10'-[FINISH]-]-NA-NA-NLTAIR2-FGS-[FINISH]

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: 5 deg
Rated Life:
Control Gear Type: NLightAir
Wattage: 33W
Accessories:

Lumen Output: 3015lm
CRI: 90+
Efficacy: 70 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Convict Labor & Leasing

Buro Happold Project #P057035

Requirements:

HYDREL

PERFORMANCE DATA

LUMEN OUTPUT — SAF7

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Actual performance may differ as a result of end-user environment and application. Contact factory for performance data on any configurations not shown here.

Performance Package	System Watts	Distribution Type	Field Angle °H	Field Angle °V	Beam Angle °H	Beam Angle °V	27K (2700K, 80CRI) Max CD	27K Lumens	27K LPW	30K (3000K, 80CRI) Max CD	30K Lumens	30K LPW	35K (3500K, 80CRI) Max CD	35K Lumens	35K LPW	40K (4000K, 80CRI) Max CD	40K Lumens	40K LPW	50K (5000K, 80CRI) Max CD	50K Lumens	50K LPW
P1	43W	6DEG	11	11	6	6	181,188	3,015	70	190,441	3,169	74	202,373	3,367	78	205,130	3,413	79	212,580	3,537	82
		10DEG	18	18	9	9	72,311	2,873	67	76,004	3,020	70	80,766	3,209	75	81,866	3,253	76	84,839	3,371	78
	33W	15DEG	32	32	16	16	24,576	2,761	84	25,599	2,876	87	26,353	2,961	90	26,659	2,995	91	28,418	3,193	97
		20DEG	39	39	20	20	16,838	2,743	83	17,539	2,857	87	18,055	2,941	89	18,265	2,975	90	19,470	3,172	96
		30DEG	61	61	33	33	6,825	2,706	82	7,109	2,819	85	7,318	2,902	88	7,403	2,935	89	7,891	3,129	95
		40DEG	78	78	47	47	3,966	2,662	81	4,132	2,773	84	4,253	2,855	87	4,302	2,888	88	4,586	3,078	93
		50DEG	90	90	56	56	2,874	2,643	81	2,993	2,753	83	3,081	2,834	86	3,117	2,867	87	3,323	3,056	93
		70DEG	111	111	77	77	1,749	2,562	78	1,822	2,668	81	1,875	2,747	83	1,897	2,779	84	2,022	2,962	90
		15Vx60H	95	34	66	16	7,065	2,823	86	7,359	2,941	89	7,576	3,028	92	7,663	3,063	93	8,169	3,265	99
		30Vx60H	98	61	66	33	3,895	2,726	83	4,057	2,839	86	4,177	2,923	89	4,225	2,957	90	4,504	3,152	96
		60Vx15H	33	93	16	65	7,324	2,642	80	7,629	2,752	83	7,854	2,833	86	7,945	2,866	87	8,469	3,055	93
		60Vx30H	62	100	34	68	3,704	2,604	79	3,858	2,713	82	3,972	2,792	85	4,018	2,825	86	4,283	3,011	91
P2	57W	6DEG	11	11	6	6	212,519	3,536	58	223,372	3,716	65	237,367	3,949	69	240,600	4,003	70	249,339	4,148	73
		10DEG	18	18	9	9	84,815	3,370	59	89,146	3,542	62	94,731	3,764	66	96,022	3,815	67	99,509	3,954	69
	44W	15DEG	32	32	16	16	30,708	3,450	78	31,986	3,594	82	32,928	3,700	84	33,309	3,742	85	35,508	3,989	91
		20DEG	39	39	20	20	21,039	3,427	78	21,915	3,570	81	22,560	3,675	84	22,821	3,718	84	24,327	3,963	90
		30DEG	61	61	33	33	8,527	3,381	77	8,882	3,522	80	9,144	3,626	82	9,250	3,668	83	9,860	3,910	89
		40DEG	78	78	47	47	4,956	3,326	76	5,162	3,465	79	5,314	3,567	81	5,376	3,608	82	5,731	3,846	87
		50DEG	90	90	56	56	3,591	3,303	75	3,740	3,440	78	3,850	3,541	80	3,895	3,582	81	4,152	3,819	87
		70DEG	111	111	77	77	2,185	3,201	73	2,276	3,334	76	2,343	3,432	78	2,370	3,472	79	2,527	3,701	84
		15Vx60H	95	34	66	16	8,827	3,528	80	9,195	3,675	84	9,466	3,783	86	9,575	3,827	87	10,207	4,079	93
		30Vx60H	98	61	66	33	4,867	3,406	77	5,070	3,548	81	5,219	3,652	83	5,279	3,694	84	5,628	3,938	90
		60Vx15H	33	93	16	65	9,152	3,301	75	9,533	3,439	78	9,814	3,540	80	9,927	3,581	81	10,582	3,817	87
		60Vx30H	62	100	34	68	4,628	3,254	74	4,821	3,389	77	4,963	3,489	79	5,020	3,529	80	5,352	3,762	86
P3	57W	15DEG	32	32	16	16	37,555	4,219	74	39,118	4,395	77	40,271	4,524	79	40,737	4,577	80	43,425	4,879	86
		20DEG	39	39	20	20	25,730	4,191	74	26,801	4,366	77	27,591	4,494	79	27,910	4,546	80	29,752	4,847	85
		30DEG	61	61	33	33	10,429	4,135	73	10,863	4,307	76	11,183	4,434	78	11,312	4,485	79	12,059	4,781	84
		40DEG	78	78	47	47	6,061	4,068	71	6,313	4,237	74	6,499	4,362	77	6,575	4,413	77	7,008	4,704	83
		50DEG	90	90	56	56	4,391	4,039	71	4,574	4,207	74	4,709	4,331	76	4,763	4,381	77	5,078	4,670	82
		70DEG	111	111	77	77	2,672	3,915	69	2,784	4,078	72	2,866	4,198	74	2,899	4,246	74	3,090	4,526	79
		15Vx60H	95	34	66	16	10,796	4,314	76	11,245	4,494	79	11,576	4,626	81	11,710	4,680	82	12,483	4,989	88
		30Vx60H	98	61	66	33	5,952	4,165	73	6,200	4,339	76	6,383	4,466	78	6,456	4,518	79	6,883	4,816	84
		60Vx15H	33	93	16	65	11,192	4,037	71	11,658	4,206	74	12,002	4,329	76	12,141	4,380	77	12,942	4,669	82
		60Vx30H	62	100	34	68	5,660	3,979	70	5,896	4,145	73	6,070	4,267	75	6,140	4,316	76	6,545	4,601	81

Performance Package	System Watts	Distribution Type	Field Angle °H	Field Angle °V	Beam Angle °H	Beam Angle °V	AMBLW Max CD	AMBLW Lumens	AMBLW LPW
P1	26W	10DEG	18	18	9	9	16,857	670	26
		15DEG	32	32	16	16	5,176	582	22
		20DEG	39	39	20	20	3,546	578	22
		30DEG	61	61	33	33	1,437	570	22
		40DEG	78	78	47	47	835	561	22
		50DEG	90	90	56	56	605	557	21
		70DEG	111	111	77	77	368	540	21
		15Vx60H	95	34	66	16	1,488	595	23
		30Vx60H	98	61	66	33	820	574	26
		60Vx15H	33	93	16	65	1,543	557	21
		60Vx30H	62	100	34	68	780	548	21

PROJECTED LED LUMEN MAINTENANCE

Data references the extrapolated performance projections for the Fixture platform in a 25°C ambient, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	20,000	40,000	60,000
Lumen Maintenance Factor	1	0.9447	0.8987	0.8549

Note: Based on P1 Performance Package 6Deg & 10DEG

Operating Hours	0	20,000	40,000	60,000
Lumen Maintenance Factor	1	0.9664	0.948	0.9299

Note: Based on P1 Performance Package 15+Deg

LED LIFE: L70@ >36,000 hours for 6DEG & 10DEG
L70 @ >60,000 hours for 15+Deg

CSA LISTING TEMPERATURE: -30°C through 50°C (P1)
-30°C through 35°C (P2 6DEG & 10DEG)
-30°C through 40°C (P2 15+DEG)
-30°C through 30°C (P3 15+DEG)

PHOTOMETRIC DIAGRAMS

To see complete photometric reports or download .ies files for this product, visit www.hydrel.com

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BURO HAPPOLD

Luminaire Designation

U2

Description: Stake Mounted Tree Uplight

Manufacturer: Hydrel

Catalog Reference: SAF7-LED-P1-90CRI-27K-MVOLT-6DEG-CWL-KM-[MOUNTING SBA18-12C-CSL10'-[FINISH]-]-NA-NA-NLTAIR2-FGS-[FINISH]

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: 5 deg
Rated Life:
Control Gear Type: NLightAir
Wattage: 33W
Accessories:

Lumen Output: 3015lm
CRI: 90+
Efficacy: 70 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Convict Labor & Leasing

Buro Happold Project #P057035

Requirements:

HYDREL

PERFORMANCE DATA

ELECTRICAL LOAD

Light Engines	Drive Current (mA)	System Watts	Input Current (A)			
			120	208	240	277
Static White P1 6Deg & 10Deg	1700	43	0.37	0.22	0.19	0.17
Static White P2 6Deg & 10Deg	2200	57	0.51	0.29	0.25	0.22
Static White P1 15+Deg	700	33	0.28	0.16	0.14	0.13
Static White P2 15+Deg	920	44	0.36	0.21	0.18	0.16
Static White P3 15+Deg	1220	57	0.5	0.28	0.25	0.22
Amber P1 15+Deg	700	26	0.22	0.13	0.11	0.09

LUMEN AMBIENT TEMPERATURE (LAT) MULTIPLIERS

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F)

Ambient		Static White - 6&10Deg Lumen Multiplier	Static White - ≥15Deg Lumen Multiplier	Amber Lumen Multiplier
0°C	32°F	1.06	1.04	1.22
10°C	50°F	1.03	1.02	1.11
20°C	68°F	1.01	1.01	1.04
25°C	77°F	1.00	1.00	1.00
30°C	86°F	0.99	0.99	0.97
40°C	104°F	0.96	0.98	0.91

CRI Scaling Chart	
90CRI	0.9

Optical Scaling Charts*	
Symmetric Distributions (6DEG - 70DEG)	
GS	0.96
FGS	0.95
IHL	0.76
L1	0.95
L2	0.95
L3	0.97
WRG	0.81
*Wider distributions will have a lower scaling factor - see individual IES files for full details	
Asymmetric Distributions (xxVXxxH)	
GS	0.93*
FGS	0.85*
IHL	0.35
L1	0.88
L2	0.86
L3	0.95
WRG	0.71
Note: This table can be used to approximate the lumen values with different accessories. Please see IES files for exact lumen outputs.	

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BURO HAPPOLD

Luminaire Designation

U2

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Manufacturer: Hydrel
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Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: 5 deg
Rated Life:
Control Gear Type: NLightAir
Wattage: 33W
Accessories:

Lumen Output: 3015lm
CRI: 90+
Efficacy: 70 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

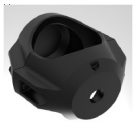
Location: Convict Labor & Leasing

Buro Happold Project #P057035

Requirements:

HYDREL

SAF MOUNTING ACCESSORIES

		Part #
	• ADPMR/ADPMS Architectural Decorative Pole Mount Round or Square • Architectural opulent design for seamless pole integration and fixture aiming • Intended for 4" round and tapered poles or minimum 4" square poles • Mounting location on the top of each arm accepts one lighting fixture • Designed for SAF7 & SAF14 fixtures	Example: ADPMR 78C BL See spec sheet for more options
	• AMPC Architectural Mid Pole Clamp • Clamp pole mount design for quick install and fixture aiming • Intended for 4" or 6" round straight pole • Mount one or two fixtures • Mounting location mid pole • Designed for SAF7 and SAF14 series with safety cable option	Example: AMPC4/1 78C BL See spec sheet for more options
	• APAR/APAS Architectural Pole Arm Round or Square • Intended for 4" round and tapered poles or minimum 4" square poles • Mounting location on the top of each arm accepts one lighting fixture • Designed for SAF7 & SAF14 fixtures	Example: APAS XLSC BRS See spec sheet for more options
	• AWSC Architectural Wall Splice Cover • Designed to be mounted over a recessed wall box or can be surface mounted for direct conduit entrance • Supplied with an integral splice access compartment for easy fixture connections • Designed for SAF7 & SAF14 fixtures	Example: AWSC 78C DNA See spec sheet for more options
	• CAJB Cylindrical Architectural Junction Box • Designed for architectural and landscape applications • Recommended for mounting on a rigid metallic conduit • For direct mounting of the SAF7 & SAF14 series light fixtures	Example: CAJB 34B XLSC DBL See spec sheet for more options
	• CJB Cylindrical Junction Box • Drilled and tapped to ¾" NPT specifications • For larger hole sizes , consult factory • Recommended to seal conduit to maintain dry components • Compatible with SAF7 & SAF14 Flood luminaries	Example: CJB 34S XLSC VET See spec sheet for more options

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Description: Stake Mounted Tree Uplight

BURO HAPPOLD

Luminaire Designation

U2

Manufacturer: Hydrel
Catalog Reference: SAF7-LED-P1-90CRI-27K-MVOLT-6DEG-CWL-KM-[MOUNTING SBA18-12C-CSL10'-[FINISH]-]-NA-NA-NLTAIR2-FGS-[FINISH]

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: 5 deg
Rated Life:
Control Gear Type: NLightAir
Wattage: 33W
Accessories:

Lumen Output: 3015lm
CRI: 90+
Efficacy: 70 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Convict Labor & Leasing

Buro Happold Project #P057035

Requirements:

HYDREL

SAF MOUNTING ACCESSORIES

		Part #
	• CPM Cylindrical Pedestal Mount • Suitable for architectural and landscape applications • Provided with front access cover for easy wiring and installation. • Compatible with SAF7 & SAF14 Flood luminaries	Example: CPM 78C BL See spec sheet for more options
	• CPMSA Cylindrical Pole Mount Splice Access • Designed to mount atop of 4" round poles • Provided with splice compartment • Compatible with SAF7 & SAF14 Flood luminaries	Example: CPMSA 78C DBL See spec sheet for more options
	• CSM Cylindrical Stanchion Mount • Available in heights from 12" to 48" in 6" increments • Provided with front access cover for easy wiring and installation. • Compatible with SAF7 & SAF14 Flood luminaries	Example: CSM12 XLSC BRT See spec sheet for more options
	• CWMA E/CWMA T Cylindrical Wall Mount Arm End or Top • Available in lengths from 12" to 48" in 6" increments • Supplied with splice cover for easy wiring and installation • End mounting only available with SAF7 • Compatible with SAF7 & SAF14 Flood luminaries	Example: CWMA30E 78C BL CWMA12T XLSC BRS See spec sheet for more options

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Description: Stake Mounted Tree Uplight

BURO HAPPOLD

Luminaire Designation

U2

Manufacturer: Hydrel
Catalog Reference: SAF7-LED-P1-90CRI-27K-MVOLT-6DEG-CWL-KM-[MOUNTING SBA18-12C-CSL10'-[FINISH]-]-NA-NA-NLTAIR2-FGS-[FINISH]

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: 5 deg
Rated Life:
Control Gear Type: NLightAir
Wattage: 33W
Accessories:

Lumen Output: 3015lm
CRI: 90+
Efficacy: 70 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Convict Labor & Leasing

Buro Happold Project #P057035

Requirements:

HYDREL

EXTERNAL ACCESSORIES

		Part #
	• WRG -Wire Rock Guard	Example: WRGSAF7 BL
	• FGS- Full Glare Shield	Example: FGSSAF7 DDB
	• GS- Glare Shield	Example: GSSAF7 BL

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Dimming Range: 1%-100%
Voltage: UNV

Location: Convict Labor & Leasing

Buro Happold Project #P057035

Requirements:

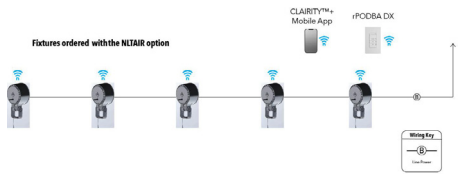
HYDREL

nLight AIR is the ideal solution for retrofit or new construction spaces where adding communication wiring is cost prohibitive. These individually addressable controls offer the ultimate in flexibility during inital setup and for space repurposing.

nLight AIR Control Accessories
Order as separate catalog number. Visit nLight AIR

Wall Switches	Model Number
On/Off single pole	rPODB (color) G2
On/Off two pole	rPODB 2P (color) G2
On/Off & raise/lower single pole	rPODB DX (color) G2
On/Off & raise/lower two pole	rPODB 2P DX (color) G2

Possibilities for nLight® AIR



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IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Convict Labor & Leasing

Buro Happold Project #P057035

Requirements:

HYDREL

FEATURES & SPECIFICATIONS

MATERIAL: Die cast copper-free aluminum (A360) housing & doors with separate optical and driver compartments to ensure thermal isolation of the electronic drivers and LED's.

LIGHT SOURCE: Proprietary PBCA LED technology with correlated color temperatures (CCT) of 2700K, 3000K, 3500K, 4000K, or 5000K (>80 CRI). All within 3 MacAdam ellipses

VOLTAGE: MVOLT 120V-277V. 50/60Hz and 347 volt

DISTRIBUTION: Available in 6DEG, 10DEG, 15DEG, 20DEG, 30DEG, 40DEG, 50DEG, 70DEG, 15Vx60H, 30Vx60H, 60Vx15H and 60Vx30H

LENS: Molded from heat strengthened borosilicate glass for superior clarity and strength.

MOUNTING: Adjustable knuckle is 1/2" NPT. Yoke mount is a 7/8" thru hole center and (2) 7/16" thru holes 2.2" on center. Aluminum knuckle, yoke, & stainless steel locking hardware with infinite aiming adjustment capabilities and a wide array of mounting accessories. The SAF series can withstand up to a 3G vibration load rating per ANSI/IEEE C136.31. Yoke mount luminaires are provided with 10'-50' at 5ft increments of 18 gauge/6 conductor ST cord for power supply and control. Knuckle mount luminaires are provided with 18" leads (18 gauge for power supply and 22 gauge for control)

GLARE CONTROL: External glare control options include full glare shields and half glare shields

EXTERNAL ACCESSORY: Impact resistant rock guard

ELECTRICAL: MVOLT (120-277) LED class 2 power supply. 26-57 watts, L83 lifetime ≥ 100,000 hours at 25°C. Power factor > 90%, THD < 20%. 6KV surge protection meets a minimum Category C low operation per ANSI/IEEE C62.41.2.

FEATURES Taper lock knuckle and yoke for infinite aiming and an unparalleled locking ability.

FINISH: Exterior parts are protected by a zinc-infused durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climates without cracking or peeling.

BUY AMERICAN ACT: This product is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT regulations.
Please refer to www.acuitybrands.com/buy-america

LISTING: cCSAus, Suitable for outdoor & wet location. IP68 rated

WARRANTY: 5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Consult factory for details.

NOTE: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

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Description: Stake Mounted Tree Uplight

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Luminaire Designation

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Specifications:

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Color Temperature: 2700K
Color Consistency:
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Control Gear Type: NLightAir
Wattage: 33W
Accessories:

Lumen Output: 3015lm
CRI: 90+
Efficacy: 70 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Convict Labor & Leasing

Buro Happold Project #P057035

Requirements:

HYDREL

CATALOG NUMBER

NOTES

TYPE



SBA/SBB

Stake Mounted Junction Box

HIGHLIGHTS

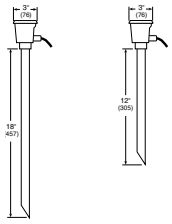
BAA

- Used for a portable convenient placement of accent fixtures
- Available in aluminum or bronze material
- To accommodate 12v or 120v 1/2" knuckle fixture

Specifications

Width:	3"
	76 mm
Height:	12" - 18"
	305 mm - 457 mm

DIMENSIONS



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Buro Happold Project #P057035

Requirements:

HYDREL

ORDERING INFORMATION

EXAMPLE: SBA12 12C CSL10 BL IEC

Model*	Fixture Mounting Entry*	Cord Set Length*	Finish*	Listing
SBA12 12" aluminum stake mounted J-box	**12C** Accepts 1/2" NPT threaded knuckle	**CSL__** 10' - 50' of cord, available in 5' increments	**BL** Black	**IEC** International Electrotechnical Commission
SBA18 18" aluminum stake mounted J-box	**34C** Accepts 3/4" NPT threaded knuckle	**CSL6P** 6' cord set with plug, (120 Volt only)	**BZ** Bronze	*Note: IEC listed fixtures with have HO7RN-F 3x1.5mm cord*
SBB12 12" bronze stake mounted J-box	**78C** 7/8" thru hole for 1/2" NPT	**CSL15P** 15' cord set with plug, (120 Volt only)	**DDB** Dark Bronze	
SBB18 18" bronze stake mounted J-box		*Note: CSL (10'-50') is only available with 12 volt fixtures. CSL6P and CSL15P are only available with 120 volt fixtures*	**DNA** Natural Alum.	
			GN Green	
			GR Gray	
			SND Sand	
			STG Steel Gray	
			TVG Terra Verde Green	
			WH White	
			_Z Zinc Undercoat (i.e. BLZ)	
			Note: Zinc Undercoat provides corrosion protection for Marine Environment and Natatorium Construction	

*Required Fields

Fixture Mounting	Size	Fixture that uses this mounting
78C	7/8" thru hole for 1/2" NPT	Aspem, Alder, Cedar, Palm, Pine, SAF1(static white only)

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Description: Stake Mounted Tree Uplight

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Dimming Range: 1%-100%
Voltage: UNV

Location: Convict Labor & Leasing

Buro Happold Project #P057035

Requirements:

HYDREL

SPECIFICATIONS AND FEATURES

MATERIAL: Aluminum or Bronze.

MODELS: SBA12 = 12" in length, aluminum box
SBA18 = 18" in length, aluminum box
SBB12 = 12" in length, bronze box
SBB18 = 18" in length, bronze box

JUNCTION BOX: Cast aluminum or bronze weather tight. 1/2" NPT or 3/4" NPT.

CORD SET LENGTH: Available with 16-3ST cord or HO7RN-F 3x1.5mm cord in a minimum of 10 feet. Cord and plug sets using 18-3ST cord are available in 6' or 15' lengths for 120 Volt only. Cord length must be specified.

FINISH: See ordering guide. Only the aluminum boxes may be painted.

BUY AMERICAN ACT: This product is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT regulations. Please refer to www.acuitybrands.com/resources/buy-american for additional information.

WARRANTY: 1-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Consult factory for details.

NOTE: Actual performance may differ as a result of end-user environment and application. Specifications subject to change without notice.

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Description: Adjustable LED Ingrade

Manufacturer: We-ef
Catalog Reference: 185-3141

BURO HAPPOLD

Luminaire Designation

U3

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: Narrow
Rated Life:
Control Gear Type: NONE
Wattage: 21W
Accessories:

Lumen Output: 1966lm
CRI: 80+
Efficacy: 93 lm/W
IP Rating: IP69K
UGR:
Dimming Range:
Voltage: UNV

Location: Parking Lot

Buro Happold Project #P057035

Requirements:

1. Contractor to furnish and install all required mounting hardware and accessories to ensure compatibility with approved construction.

2. Architect to confirm finish.

3. Reference architectural set for mounting detail.

ETC130-GB LED

185-3141

1/5

we-ef



Description

IP69K. Class I. IK10+. Stainless steel construction. PCS hardware. Optional with Anti-Slip ceramic Coating ASC to DIN 51130 (Trip Classification 10) available on request. Silicone CCG® Controlled Compression Gasket. Safety glass lens; max load 5.5 tons (11,000 lbs). Luminaire can be driven over at low speed. Cable gland with spiral cable bending protection. Factory-sealed termination chamber complete with cable gland and 3 ft of flexible PVC-free, gel-impregnated anti-wicking cable. CAD-optimized optics for superior illumination and glare control. Integral driver in thermally separated compartment. OLC® One LED Concept. Factory-installed LED circuit board. 0-10V Dimming comes standard with luminaire. Gimbal mounted, 360° rotatable and 30° tiltable. 'No tool' removable gear/lens tray. Suitable for flush installation in concrete or earth. The concrete-pour installation blockout is supplied as standard with luminaire. Specify product with 7 Digit product code – Finish Color. Accessories, such as mounting, optical, and electrical, must be specified separately. Example: XXX-XXXX-9004 (Black) + XXX-XXXX (Accessory 1)

Beam Type	symmetric, very narrow beam [VN]
Light Source	LED-12/18W / 500 mA - 2700 K
CRI	80
Gear Type	electronic gear

Nominal Luminous Flux (lm)

LED Lumens	200 lm
LEDs	12
Total Lumens	2400 lm
Tj	85 °C

Delivered Lumens Flux (lm)

LED Lumens	163.8 lm
Total Lumens	1966 lm
Ta	25 °C

Rated Input Power	21 W

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Location: Parking Lot

Buro Happold Project #P057035

Requirements:

ETC130-GB LED

185-3141

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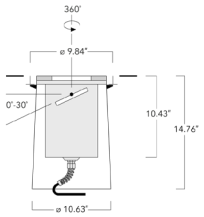

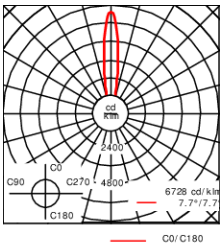

Material Specification

Body:	Luminaire body constructed of deep drawn stainless steel. Outer housing composite material.
Weight (lbs):	18.20
Lens:	5/8" thick clear tempered glass lens. Max. load 5000kg/11,000 lbs.
Colours:	Stainless Steel
IP69K	The Highest Ingress Protection Rating Available!
ETL	ETL, UL-1598 equivalent, CSA-C22.2#250.0. Suitable for Wet Locations.
Quick Ship	Quickship features a one week ship time for Steplights and two week ship time for the rest of our Core products. All applicable information must be included for orders to be processed and colours must be in one of our 4 standard finishes. A maximum order quantity of 30 pieces applies.
Gasket:	Silicone rubber gasket
Fasteners:	PCS polymer coated stainless steel
Ingress protection:	IP69K - HIGHEST PROTECTION RATING AVAILABLE
Impact protection:	IK10+
Corrosion protection:	5CE
Surge protection:	Integral 10kV Surge Protector
Mounting:	Suitable for installation in concrete or earth. Suitable for walk-over and DRIVE-OVER applications. Proper drainage and foundation support must be provided.
Listings:	ETL, UL-1598, CSA-C22.2#250.0. Suitable for Wet Locations.

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BURO HAPPOLD

Luminaire Designation

U3

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Efficacy: 93 lm/W
IP Rating: IP69K
UGR:
Dimming Range:
Voltage: UNV

Location: Parking Lot

Buro Happold Project #P057035

Requirements:

ETC130-GB LED

185-3141

we-ef

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Electrical Specification

Power supply:	Integral [ECG] electronic driver 120V-277V. 0-10V dimmable, to be specified with order.
Power factor:	> 0.9
Driver / Ballast:	Integral [ECG] electronic driver 120V-277V. 0-10V dimmable, to be specified with order.
Termination:	Factory sealed termination chamber
Cable:	3 feet of flexible 18/3 cable

Lifetime
Ta=25°/40° L90B10 > 90000h

Dimming
0-10V available in request. Must be factory fitted.

Optical Accessories

Softening Lens
Softens light distribution in all planes. Reduces light intensity and improves visual comfort. Will slightly widen the native light distribution. Does not fit in combination with [W] lens.

IO-360-ETC130-GB-LED

	C1
185-2866	3.86



Honeycomb louvre
Honeycomb louvre, matt black Teflon® coated. For luminaires equipped with [M] [VN] and [VNS] light distribution.

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Dimming Range:
Voltage: UNV

Location: Parking Lot

Buro Happold Project #P057035

Requirements:

ETC130-GB LED

185-3141

we-ef

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IW-ETC130/330-GB-LED

	C1
185-2870	3.86



Linear spread lens
Broadens light distribution in one plane only. Does not fit in combination with [W] lens.

IO-180 ETC130/330-GB LED

	C1
185-2632	3.94



Electrical Accessories

Sealable junction box
SJB sealable junction box, for inground mains connection. Provided with 3 UL4860 connectors

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Buro Happold Project #P057035

Requirements:

ETC130-GB LED

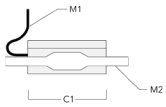
185-3141

we-ef

5/5

Sealable junction box SJB 130

	C1	M1	M2
185-1624	5.75	Ø 0.39	Ø 0.47 - 0.75



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BURO HAPPOLD

Luminaire Designation

U4

Description: Stake Mounted Tree Uplight with Adjustable Spike Mount

Manufacturer: Hydrel
Catalog Reference: SAF7-LED-P1-90CRI-27K-MVOLT-40DEG-CWL-KM-[MOUNTING PM60C-S18-[FINISH]]-NA-NA-NLTAIR2-GS-[FINISH]

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: 40 deg
Rated Life:
Control Gear Type: NLightAir
Wattage: 33W
Accessories:

Lumen Output: 2662lm
CRI: 90+
Efficacy: 81 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Welcome Plaza

Buro Happold Project #P057035

Requirements:

1. Contractor to furnish and install all required mounting hardware and accessories to ensure compatibility with approved construction.

2. Architect to confirm finish.

3. Fixture to be located as shown in architectural set. Fixture is intended to be fed with flexible outdoor rated cable to allow for movement in field.

HYDREL

CATALOG NUMBER

NOTES

TYPE



Specifications

Weight:	15lbs
EPA:	KM: .72 YM: .71

SAF7 LED SPECIALTY ARCHITECTURAL FLOOD

HIGHLIGHTS

- Suitable for a variety of mounting applications including ground, wall, pole, stanchion
- 3G vibration rating per ANSI C136.31
- 0-10V, Reverse phase Dimming
- Taper-Lock technology provides full aiming integrity utilizing both a rugged knuckle and yoke design
- Available in 80CRI and 90CRI
- 5,000lm
- IK10 option available
- Minimalist design that provides clean and intentional lines and transitions
- Slightly convex watershed lens that evades water build up and staining
- Industry leading flow-thru design achieved with separately sealed optical chamber and driver
- NOM Listed
- Available in MVOLT and 347 volt
- nLight Air wireless option available

LED

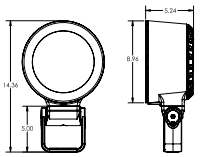
5 YEAR warranty

IP68

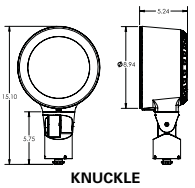
BAA

nLIGHT

DIMENSIONS



YOKE



KNUCKLE

LUMEN PACKAGES

	6DEG	10DEG	15DEG	20DEG	30DEG	40DEG
Delivered Lumens	3,413	3,253	2,995	2,975	2,935	2,888
Watts	43	43	33	33	33	33
LPW	79	76	91	90	89	88
Peak Candela	205,130	81,866	26,659	18,265	7,403	4,302
	50DEG	**70DEG**	**15Vx60H**	**30Vx60H**	**60Vx15H**	**60Vx30H**
Delivered Lumens	2,867	2,779	3,063	2,957	2,866	2,825
Watts	33	33	33	33	33	33
LPW	87	84	93	90	87	86
Peak Candela	3,117	1,897	7,663	4,225	7,945	4,018

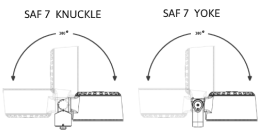
Note: Information based on 4000K @ P1, 80CRI

STANDARD DISTRIBUTION



6DEG 10DEG 20DEG 40DEG 50DEG

AIMING DETAIL



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Description: Stake Mounted Tree Uplight with Adjustable Spike Mount

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Catalog Reference: SAF7-LED-P1-90CRI-27K-MVOLT-40DEG-CWL-KM-[MOUNTING PM60C-S18-[FINISH]]-NA-NA-NLTAIR2-GS-[FINISH]

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Color Consistency:
Optical Distribution: 40 deg
Rated Life:
Control Gear Type: NLightAir
Wattage: 33W
Accessories:

Lumen Output: 2662lm
CRI: 90+
Efficacy: 81 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Welcome Plaza

Buro Happold Project #P057035

Requirements:

HYDREL

ORDERING INFORMATION

EXAMPLE: SAF7 LED P1 80CRI 27K MVOLT 6DEG CWL KM CJB L1 ZT BL

SAF7

Series*	Source*	Performance Packages*	CRI*	Color Temperature*	Voltage*	Distribution*	Lens*	Mounting*
SAF7 Specialty Architectural Flood	LED	P1 P2 P3 *Note: P3 not available in 6DEG & 10DEG* *Note: 347 volt is not available with P3*	80CRI 90CRI *Note: 90CRI Not available in 50K* *Note: CRI not required with AMBLW*	27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K 5000K AMBLW[1] Amber Limited Wavelength (591nm) *Note: AMBLW not available in 6DEG* *Note: AMBLW only availbale in P1* *Note: 347 volt is not available with AMBLW*	MVOLT 347	6DEG 6° 10DEG 10° 15DEG 15° 20DEG 20° 30DEG 30° 40DEG 40° 50DEG 50° 70DEG 70° 15VX60H 15° x 60° 30VX60H 30° x 60° 60VX15H 60° x 15° 60VX30H 60° x 30° *Note: 347 is not available with 6DEC and 10DEG*	CWL Clear Watershed Lens *Note: CWL lens IK07. For IK10 use external WRG option*	KM Knuckle YM Yoke

Mounting Accessories	Options Internal Accessory	Options	Control Input	External	Finish*
ADPMR Architectural Decorative Pole Mount Round ADPMS Architectural Decorative Pole Mount Square AMPC_/_ Architectural Mid Pole Clamp available to fit on a 4" or 6" pole with 1 or 2 fixtures APAR Round 18" Pole Mount APAS Square 18" Pole Mount AWSC Architectutal Wall Splice Cover CAJB Cylindrical Architectural Junction box CJB Cylindrical Junction Box CPM Cylindrical Pedestal Mount CPMSA Cylindrical Pole Mount Splice Access CSM_ Cylindrical Stancion Mount 12"-48" available in 6" increments CWMA_T Cylindrical Wall Mount Arm Top 12"-48" (available in 6" increments) CWMA_E Cylindrical Wall Mount Arm End 12"-48" (available in 6" increments)	L1 Prismatic Lens L2 Linear Spread Lens L3 Softening Lens IHL Honeycomb Louver *Note: Only one Internal accessory can be choosen* Hardware TPH Tamper proof hardware LASC Safety Cable	CSL_ 10' – 50' of cord available in 5' increments *Note: Cord length required for Yoke Mounting only*	ZT 0-10V dimming to 1% ELV Reverse phase NLTAIR2 nLight Air Wireless Enabled for Dimming *Note: 347 volt is not available with ELV and NLTAIR2* *Note: ZT is not available with 347 with YM*	GS Glare shield FGS Full Glare Shield WRG Wire Rock Guard	BL Black Textured BRS Bronze Smooth BRT Bronze Textured DBL Black Smooth DDB Designer Bronze DNA Natural Aluminum NBS Natural Bronze Smooth VET Verde Textured WH White Textured WHS White Smooth __Z Zinc Undercoat (i.e.BLZ) Note: Zinc Undercoat provides corrosion protection for Marine Environment and Natatorium Construction CF Custom Finish RALTBD RAL Paint Finishes *Note: RALTBD for pricing only, replace with applicable RAL call out when ready to order. See the RALBROCHURE for available options. It is recommended that Hydrel products only use textured paint.*

*Required Fields
Notes:
1 Lumens not reflective of Amber output. See below chart

DIMMING CHART

Voltage	Control Input	Min Dimming Level
MVOLT	ZT	1%
MVOLT	ELV Reserve Phase	1%
MVOLT	NLTAIR2	1%

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IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Welcome Plaza

Buro Happold Project #P057035

Requirements:

HYDREL

PERFORMANCE DATA

LUMEN OUTPUT — SAF7

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Actual performance may differ as a result of end-user environment and application. Contact factory for performance data on any configurations not shown here.

Performance Package	System Watts	Distribution Type	Field Angle °H	Field Angle °V	Beam Angle °H	Beam Angle °V	27K (2700K, 80CRI) Max CD	27K Lumens	27K LPW	30K (3000K, 80CRI) Max CD	30K Lumens	30K LPW	35K (3500K, 80CRI) Max CD	35K Lumens	35K LPW	40K (4000K, 80CRI) Max CD	40K Lumens	40K LPW	50K (5000K, 80CRI) Max CD	50K Lumens	50K LPW
P1	43W	6DEG	11	11	6	6	181,188	3,015	70	190,441	3,169	74	202,373	3,367	78	205,130	3,413	79	212,580	3,537	82
		10DEG	18	18	9	9	72,311	2,873	67	76,004	3,020	70	80,766	3,209	75	81,866	3,253	76	84,839	3,371	78
	33W	15DEG	32	32	16	16	24,576	2,761	84	25,599	2,876	87	26,353	2,961	90	26,659	2,995	91	28,418	3,193	97
		20DEG	39	39	20	20	16,838	2,743	83	17,539	2,857	87	18,055	2,941	89	18,265	2,975	90	19,470	3,172	96
		30DEG	61	61	33	33	6,825	2,706	82	7,109	2,819	85	7,318	2,902	88	7,403	2,935	89	7,891	3,129	95
		40DEG	78	78	47	47	3,966	2,662	81	4,132	2,773	84	4,253	2,855	87	4,302	2,888	88	4,586	3,078	93
		50DEG	90	90	56	56	2,874	2,643	81	2,993	2,753	83	3,081	2,834	86	3,117	2,867	87	3,323	3,056	93
		70DEG	111	111	77	77	1,749	2,562	78	1,822	2,668	81	1,875	2,747	83	1,897	2,779	84	2,022	2,962	90
		15Vx60H	95	34	66	16	7,065	2,823	86	7,359	2,941	89	7,576	3,028	92	7,663	3,063	93	8,169	3,265	99
		30Vx60H	98	61	66	33	3,895	2,726	83	4,057	2,839	86	4,177	2,923	89	4,225	2,957	90	4,504	3,152	96
		60Vx15H	33	93	16	65	7,324	2,642	80	7,629	2,752	83	7,854	2,833	86	7,945	2,866	87	8,469	3,055	93
		60Vx30H	62	100	34	68	3,704	2,604	79	3,858	2,713	82	3,972	2,792	85	4,018	2,825	86	4,283	3,011	91
P2	57W	6DEG	11	11	6	6	212,519	3,536	58	223,372	3,716	65	237,367	3,949	69	240,600	4,003	70	249,339	4,148	73
		10DEG	18	18	9	9	84,815	3,370	59	89,146	3,542	62	94,731	3,764	66	96,022	3,815	67	99,509	3,954	69
	44W	15DEG	32	32	16	16	30,708	3,450	78	31,986	3,594	82	32,928	3,700	84	33,309	3,742	85	35,508	3,989	91
		20DEG	39	39	20	20	21,039	3,427	78	21,915	3,570	81	22,560	3,675	84	22,821	3,718	84	24,327	3,963	90
		30DEG	61	61	33	33	8,527	3,381	77	8,882	3,522	80	9,144	3,626	82	9,250	3,668	83	9,860	3,910	89
		40DEG	78	78	47	47	4,956	3,326	76	5,162	3,465	79	5,314	3,567	81	5,376	3,608	82	5,731	3,846	87
		50DEG	90	90	56	56	3,591	3,303	75	3,740	3,440	78	3,850	3,541	80	3,895	3,582	81	4,152	3,819	87
		70DEG	111	111	77	77	2,185	3,201	73	2,276	3,334	76	2,343	3,432	78	2,370	3,472	79	2,527	3,701	84
		15Vx60H	95	34	66	16	8,827	3,528	80	9,195	3,675	84	9,466	3,783	86	9,575	3,827	87	10,207	4,079	93
		30Vx60H	98	61	66	33	4,867	3,406	77	5,070	3,548	81	5,219	3,652	83	5,279	3,694	84	5,628	3,938	90
		60Vx15H	33	93	16	65	9,152	3,301	75	9,533	3,439	78	9,814	3,540	80	9,927	3,581	81	10,582	3,817	87
		60Vx30H	62	100	34	68	4,628	3,254	74	4,821	3,389	77	4,963	3,489	79	5,020	3,529	80	5,352	3,762	86
P3	57W	15DEG	32	32	16	16	37,555	4,219	74	39,118	4,395	77	40,271	4,524	79	40,737	4,577	80	43,425	4,879	86
		20DEG	39	39	20	20	25,730	4,191	74	26,801	4,366	77	27,591	4,494	79	27,910	4,546	80	29,752	4,847	85
		30DEG	61	61	33	33	10,429	4,135	73	10,863	4,307	76	11,183	4,434	78	11,312	4,485	79	12,059	4,781	84
		40DEG	78	78	47	47	6,061	4,068	71	6,313	4,237	74	6,499	4,362	77	6,575	4,413	77	7,008	4,704	83
		50DEG	90	90	56	56	4,391	4,039	71	4,574	4,207	74	4,709	4,331	76	4,763	4,381	77	5,078	4,670	82
		70DEG	111	111	77	77	2,672	3,915	69	2,784	4,078	72	2,866	4,198	74	2,899	4,246	74	3,090	4,526	79
		15Vx60H	95	34	66	16	10,796	4,314	76	11,245	4,494	79	11,576	4,626	81	11,710	4,680	82	12,483	4,989	88
		30Vx60H	98	61	66	33	5,952	4,165	73	6,200	4,339	76	6,383	4,466	78	6,456	4,518	79	6,883	4,816	84
		60Vx15H	33	93	16	65	11,192	4,037	71	11,658	4,206	74	12,002	4,329	76	12,141	4,380	77	12,942	4,669	82
		60Vx30H	62	100	34	68	5,660	3,979	70	5,896	4,145	73	6,070	4,267	75	6,140	4,316	76	6,545	4,601	81

Performance Package	System Watts	Distribution Type	Field Angle °H	Field Angle °V	Beam Angle °H	Beam Angle °V	AMBLW Max CD	AMBLW Lumens	AMBLW LPW
P1	26W	10DEG	18	18	9	9	16,857	670	26
		15DEG	32	32	16	16	5,176	582	22
		20DEG	39	39	20	20	3,546	578	22
		30DEG	61	61	33	33	1,437	570	22
		40DEG	78	78	47	47	835	561	22
		50DEG	90	90	56	56	605	557	21
		70DEG	111	111	77	77	368	540	21
		15Vx60H	95	34	66	16	1,488	595	23
		30Vx60H	98	61	66	33	820	574	26
		60Vx15H	33	93	16	65	1,543	557	21
		60Vx30H	62	100	34	68	780	548	21

PROJECTED LED LUMEN MAINTENANCE

Data references the extrapolated performance projections for the Fixture platform in a 25°C ambient, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	20,000	40,000	60,000
Lumen Maintenance Factor	1	0.9447	0.8987	0.8549

Note: Based on P1 Performance Package 6Deg & 10DEG

Operating Hours	0	20,000	40,000	60,000
Lumen Maintenance Factor	1	0.9664	0.948	0.9299

Note: Based on P1 Performance Package 15+Deg

LED LIFE: L70@ >36,000 hours for 6DEG & 10DEG
L70 @ >60,000 hours for 15+Deg

CSA LISTING TEMPERATURE: -30°C through 50°C (P1)
-30°C through 35°C (P2 6DEG & 10DEG)
-30°C through 40°C (P2 15+DEG)
-30°C through 30°C (P3 15+DEG)

PHOTOMETRIC DIAGRAMS

To see complete photometric reports or download .ies files for this product, visit www.hydrel.com

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IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Welcome Plaza

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Requirements:

HYDREL

PERFORMANCE DATA

ELECTRICAL LOAD

Light Engines	Drive Current (mA)	System Watts	Input Current (A)			
			120	208	240	277
Static White P1 6Deg & 10Deg	1700	43	0.37	0.22	0.19	0.17
Static White P2 6Deg & 10Deg	2200	57	0.51	0.29	0.25	0.22
Static White P1 15+Deg	700	33	0.28	0.16	0.14	0.13
Static White P2 15+Deg	920	44	0.36	0.21	0.18	0.16
Static White P3 15+Deg	1220	57	0.5	0.28	0.25	0.22
Amber P1 15+Deg	700	26	0.22	0.13	0.11	0.09

LUMEN AMBIENT TEMPERATURE (LAT) MULTIPLIERS

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F)

Ambient		Static White - 6&10Deg Lumen Multiplier	Static White - ≥15Deg Lumen Multiplier	Amber Lumen Multiplier
0°C	32°F	1.06	1.04	1.22
10°C	50°F	1.03	1.02	1.11
20°C	68°F	1.01	1.01	1.04
25°C	77°F	1.00	1.00	1.00
30°C	86°F	0.99	0.99	0.97
40°C	104°F	0.96	0.98	0.91

CRI Scaling Chart	
90CRI	0.9

Optical Scaling Charts*	
Symmetric Distributions (6DEG - 70DEG)	
GS	0.96
FGS	0.95
IHL	0.76
L1	0.95
L2	0.95
L3	0.97
WRG	0.81
*Wider distributions will have a lower scaling factor - see individual IES files for full details	
Asymmetric Distributions (xxVXxxH)	
GS	0.93*
FGS	0.85*
IHL	0.35
L1	0.88
L2	0.86
L3	0.95
WRG	0.71
Note: This table can be used to approximate the lumen values with different accessories. Please see IES files for exact lumen outputs.	

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Location: Welcome Plaza

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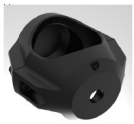
Requirements:

HYDREL

SAF MOUNTING ACCESSORIES

		Part #
	• ADPMR/ADPMS Architectural Decorative Pole Mount Round or Square • Architectural opulent design for seamless pole integration and fixture aiming • Intended for 4" round and tapered poles or minimum 4" square poles • Mounting location on the top of each arm accepts one lighting fixture • Designed for SAF7 & SAF14 fixtures	Example: ADPMR 78C BL See spec sheet for more options
	• AMPC Architectural Mid Pole Clamp • Clamp pole mount design for quick install and fixture aiming • Intended for 4" or 6" round straight pole • Mount one or two fixtures • Mounting location mid pole • Designed for SAF7 and SAF14 series with safety cable option	Example: AMPC4/1 78C BL See spec sheet for more options
	• APAR/APAS Architectural Pole Arm Round or Square • Intended for 4" round and tapered poles or minimum 4" square poles • Mounting location on the top of each arm accepts one lighting fixture • Designed for SAF7 & SAF14 fixtures	Example: APAS XLSC BRS See spec sheet for more options
	• AWSC Architectural Wall Splice Cover • Designed to be mounted over a recessed wall box or can be surface mounted for direct conduit entrance • Supplied with an integral splice access compartment for easy fixture connections • Designed for SAF7 & SAF14 fixtures	Example: AWSC 78C DNA See spec sheet for more options
	• CAJB Cylindrical Architectural Junction Box • Designed for architectural and landscape applications • Recommended for mounting on a rigid metallic conduit • For direct mounting of the SAF7 & SAF14 series light fixtures	Example: CAJB 34B XLSC DBL See spec sheet for more options
	• CJB Cylindrical Junction Box • Drilled and tapped to ¾" NPT specifications • For larger hole sizes , consult factory • Recommended to seal conduit to maintain dry components • Compatible with SAF7 & SAF14 Flood luminaries	Example: CJB 34S XLSC VET See spec sheet for more options

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BURO HAPPOLD

Luminaire Designation

U4

Description: Stake Mounted Tree Uplight with Adjustable Spike Mount

Manufacturer: Hydrel
Catalog Reference: SAF7-LED-P1-90CRI-27K-MVOLT-40DEG-CWL-KM-[MOUNTING PM60C-S18-[FINISH]]-NA-NA-NLTAIR2-GS-[FINISH]

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution: 40 deg
Rated Life:
Control Gear Type: NLightAir
Wattage: 33W
Accessories:

Lumen Output: 2662lm
CRI: 90+
Efficacy: 81 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Welcome Plaza

Buro Happold Project #P057035

Requirements:

HYDREL

SAF MOUNTING ACCESSORIES

		Part #
	• CPM Cylindrical Pedestal Mount • Suitable for architectural and landscape applications • Provided with front access cover for easy wiring and installation. • Compatible with SAF7 & SAF14 Flood luminaries	Example: CPM 78C BL See spec sheet for more options
	• CPMSA Cylindrical Pole Mount Splice Access • Designed to mount atop of 4" round poles • Provided with splice compartment • Compatible with SAF7 & SAF14 Flood luminaries	Example: CPMSA 78C DBL See spec sheet for more options
	• CSM Cylindrical Stanchion Mount • Available in heights from 12" to 48" in 6" increments • Provided with front access cover for easy wiring and installation. • Compatible with SAF7 & SAF14 Flood luminaries	Example: CSM12 XLSC BRT See spec sheet for more options
	• CWMA E/CWMA T Cylindrical Wall Mount Arm End or Top • Available in lengths from 12" to 48" in 6" increments • Supplied with splice cover for easy wiring and installation • End mounting only available with SAF7 • Compatible with SAF7 & SAF14 Flood luminaries	Example: CWMA30E 78C BL CWMA12T XLSC BRS See spec sheet for more options

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Rated Life:
Control Gear Type: NLightAir
Wattage: 33W
Accessories:

Lumen Output: 2662lm
CRI: 90+
Efficacy: 81 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Welcome Plaza

Buro Happold Project #P057035

Requirements:

HYDREL

EXTERNAL ACCESSORIES

		Part #
	• WRG -Wire Rock Guard	Example: WRGSAF7 BL
	• FGS- Full Glare Shield	Example: FGSSAF7 DDB
	• GS- Glare Shield	Example: GSSAF7 BL

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IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Welcome Plaza

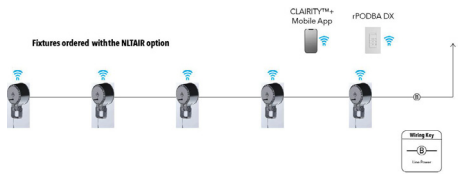
Buro Happold Project #P057035

Requirements:

HYDREL

nLight AIR is the ideal solution for retrofit or new construction spaces where adding communication wiring is cost prohibitive. These individually addressable controls offer the ultimate in flexibility during inital setup and for space repurposing.

Possibilities for nLight® AIR



nLight AIR Control Accessories
Order as separate catalog number. Visit nLight AIR

Wall Switches	Model Number
On/Off single pole	rPODB (color) G2
On/Off two pole	rPODB 2P (color) G2
On/Off & raise/lower single pole	rPODB DX (color) G2
On/Off & raise/lower two pole	rPODB 2P DX (color) G2

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Color Temperature: 2700K
Color Consistency:
Optical Distribution: 40 deg
Rated Life:
Control Gear Type: NLightAir
Wattage: 33W
Accessories:

Lumen Output: 2662lm
CRI: 90+
Efficacy: 81 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Welcome Plaza

Buro Happold Project #P057035

Requirements:

HYDREL

FEATURES & SPECIFICATIONS

MATERIAL: Die cast copper-free aluminum (A360) housing & doors with separate optical and driver compartments to ensure thermal isolation of the electronic drivers and LED's.

LIGHT SOURCE: Proprietary PBCA LED technology with correlated color temperatures (CCT) of 2700K, 3000K, 3500K, 4000K, or 5000K (>80 CRI). All within 3 MacAdam ellipses

VOLTAGE: MVOLT 120V-277V. 50/60Hz and 347 volt

DISTRIBUTION: Available in 6DEG, 10DEG, 15DEG, 20DEG, 30DEG, 40DEG, 50DEG, 70DEG, 15Vx60H, 30Vx60H, 60Vx15H and 60Vx30H

LENS: Molded from heat strengthened borosilicate glass for superior clarity and strength.

MOUNTING: Adjustable knuckle is 1/2" NPT. Yoke mount is a 7/8" thru hole center and (2) 7/16" thru holes 2.2" on center. Aluminum knuckle, yoke, & stainless steel locking hardware with infinite aiming adjustment capabilities and a wide array of mounting accessories. The SAF series can withstand up to a 3G vibration load rating per ANSI/IEEE C136.31. Yoke mount luminaires are provided with 10'-50' at 5ft increments of 18 gauge/6 conductor ST cord for power supply and control. Knuckle mount luminaires are provided with 18" leads (18 gauge for power supply and 22 gauge for control)

GLARE CONTROL: External glare control options include full glare shields and half glare shields

EXTERNAL ACCESSORY: Impact resistant rock guard

ELECTRICAL: MVOLT (120-277) LED class 2 power supply. 26-57 watts, L83 lifetime ≥ 100,000 hours at 25°C. Power factor > 90%, THD < 20%. 6KV surge protection meets a minimum Category C low operation per ANSI/IEEE C62.41.2.

FEATURES Taper lock knuckle and yoke for infinite aiming and an unparalleled locking ability.

FINISH: Exterior parts are protected by a zinc-infused durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climates without cracking or peeling.

BUY AMERICAN ACT: This product is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT regulations.
Please refer to www.acuitybrands.com/buy-america

LISTING: cCSAus, Suitable for outdoor & wet location. IP68 rated

WARRANTY: 5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Consult factory for details.

NOTE: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

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Color Temperature: 2700K
Color Consistency:
Optical Distribution: 40 deg
Rated Life:
Control Gear Type: NLightAir
Wattage: 33W
Accessories:

Lumen Output: 2662lm
CRI: 90+
Efficacy: 81 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Welcome Plaza

Buro Happold Project #P057035

Requirements:

HYDREL

CATALOG NUMBER

NOTES

TYPE



POST MOUNT™ 60

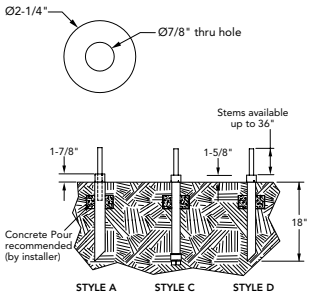
HIGHLIGHTS

BAA

- Ground mounting post mount
- Available in aluminum or brass material
- Stems availalble in lengths from 3" to 36"
- Suitable for fixtures with 1/2" NPT

Specifications
Diameter: 2-1/4"

DIMENSIONS



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Lumen Output: 2662lm
CRI: 90+
Efficacy: 81 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Welcome Plaza

Buro Happold Project #P057035

Requirements:

HYDREL

ORDERING INFORMATION

EXAMPLE: PM60A S18 DNA

Series		Stem Length		Brass[3,5]		Finish		Brass Only	
PM60A[1]	Adjustable - Aluminum	Aluminum[3,4]		S3BR	3" Stem	All Materials		BRZ	Satin Bronze W/ Satin Clear
PMBR60A[1]	Adjustable - Brass	S3	3" Stem	S6BR	6" Stem	BL	Black Textured	NAT	Natural Brass W/ Satin Clear
PM60C[2]	Fixed height with conduit - Aluminum	S6	6" Stem	S12BR	12" Stem	BRS	Bronze Smooth	POL	Polished Brass W/ Gloss Clear
PMBR60C[2]	Fixed height with conduit - Brass	S12	12" Stem	S24BR	24" Stem	BRT	Bronze Textured		
PM60D[1]	Fixed height with open bottom - Aluminum	S18	18" Stem	S30BR	30" Stem	CHS	Chrome Smooth		
PMBR60D[1]	Fixed height with open bottom - Brass	S24	24" Stem	S36BR	36" Stem	DNA	Natural Aluminum		
		S30	30" Stem			NBS	Natural Bronze Smooth		
		S36	36" Stem			VET	Verde Textured		
						WH	White Smooth		
						CF	Custom Finish		

Notes:
1 Style A and D with open bottoms are 12 volt only.
2 Style C with conduits is suitable for 12 volt or 120-277 applications.
3 Stem Length Required on PM60A & PMBR60A - choose from S12 - S36, S3 and S6 not recommended.
4 Aluminum stems compatible with PM60A, PM60C and PM60D.
5 Brass stems compatible with PMBR60A, PMBR60C and PMBR60D.

SPECIFICATIONS AND FEATURES

CONSTRUCTION:
Aluminum: Cap machined from aluminum. Stake below grade cut from UL approved P.V.C. All hardware is stainless steel.

Brass: Cap machined from brass. Stake below grade cut from UL approved P.V.C. All hardware is stainless steel.

STEMS: All stems are Ø1" and threaded 1/2" NPS.

FINISHES:
Aluminum: Available in 12 standard TGIC polyester powder coat finishes. Custom powder coat finishes available (contact factory for more information).

Brass: Available in 3 standard brass finishes. Custom finishes available (contact factory for more information).

FEATURES:
Style A: Adjustable up and down approximately 14° open angle cut bottom (12V only).

Style C: Mount with two 1/2" conduit adapters in endcap. Fixed Stem.

Style D: Mount with open angle cut bottom (12V only). Fixed Stem.

LISTING: UL Listed: Wet Location. Outdoor.

BUY AMERICAN ACT: This product is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT regulations. Please refer to www.acuitybrands.com/resources/buy-american for additional information.

WARRANTY: 1-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/support/customer-support/terms-and-conditions

Consult factory for details.

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BURO HAPPOLD

Luminaire Designation

W1

Description: Wall Recessed Step Light.

Manufacturer: iGuzzini
Catalog Reference: LIGHT UP ORBIT 50-BO-827-WW-REM-13 + X193-02 + 9581-02 + 4549-0350-019-UNV-ED10

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution:
Rated Life:
Control Gear Type: 0-10V
Wattage: 1W
Accessories:

Lumen Output: 38 lm
CRI: 80+
Efficacy: 38 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Juneteenth Plaza

Buro Happold Project #P057035

Requirements:

Contractor to furnish and install all required mounting hardware and accessories to ensure compatibility with approved construction.

1. Architect to confirm finish.

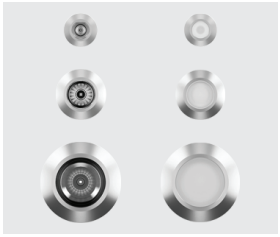
2. Architect to confirm mounting height within wall condition.

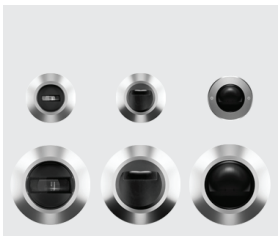
3. Reference architectural set for mounting detail and height.

Light Up Orbit

Stainless steel

Type: SPECIFICATION SHEET
Project :
Page: 1 of 9









Collection of compact exterior luminaires for architectural lighting. Rugged stainless steel construction, with tempered glass lens, these luminaires are designed to perform in extreme conditions. This serie is available in 3 sizes, that can be installed for in-ground, wall or ceiling applications. Complete range of optic distributions for accent lighting, effects lighting and markers.

Luminaire characteristics:	**Power input:** 1W to 5.5W (fixture wattage) **Lumens:** 7lm to 531lm (for 3000K, 80CRI) **Luminaire efficacy:** Up to 99lm/W
Source:	LUXEON LED module (LM-80) 2700K: 80CRI, 3000K: 80CRI, 3500K: 80CRI, 4000K: 80CRI.
Lumen maintenance:	ILUO28: 90% of initial lumens at 100 000 hours (L90) ILUO50: 80% of initial lumens at 98 000 hours (L80) ILUO80: 80% of initial lumens at 98 000 hours (L80)
Optics:	Spot, medium, flood, wide flood with Opti Beam technology. Wall washer, diffuse or light blade.
Material:	Body and frame : AISI 304 stainless steel Diffuser: 6 to 8 mm extra-clear or opal sodium-calcium tempered glass. Optics: PMMA lens or PE film for diffuse optic, clear, black or metalized polycarbonate reflector
Mounting:	Ground, wall or ceiling recessed installation using polypropylene back box or panel mounting springs. Supplied with 6ft (2m) long outdoor rated power cable. 12" of gravel is required below the luminaire to allow proper drainage.
Electrical:	High efficiency LED driver, rated at 50 000 hours. See remote LED driver options on page 3.
Finish:	Stainless steel
Weight:	ILUO28: 0.4lb (0.2kg) ILUO50: 1.2lb (0.5kg) ILUO80: 2.8lb (1.3kg)
Load capacity:	4 409lb (2 000kg)
Glass surface temperature:	104°F (40°C)
Operating temperature:	ILUO28: -13 to 95°F (-25 to 35°C) ILUO50: -13 to 122°F (-25 to 50°C) ILUO80: -4 to 95°F (-20 to 35°C)
Warranty:	5 year limited warranty
Ratings:	ILUO28: IK09, IP66, IP68* ILUO50: IK07, IP66, IP68* ILUO80: IK09, IP66, IP68* * Complete immersion for 10 minutes, not suitable for use in swimming pools or fountains.
Certification:	cULus listed for wet location.

DM - R25 Last update: June 14, 2023

Due to continuous improvements, the information herein may be changed without notice

iGuzzini

9320 Boul. St-Laurent, suite 100, Montréal (Québec) Canada H2N 1N7, P.: 514.523.1339 F.: 514.525.6107 www.iguzzini.com/us

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BURO HAPPOLD

Luminaire Designation

W1

Description: Wall Recessed Step Light.

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Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution:
Rated Life:
Control Gear Type: 0-10V
Wattage: 1W
Accessories:

Lumen Output: 38 lm
CRI: 80+
Efficacy: 38 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Juneteenth Plaza

Buro Happold Project #P057035

Requirements:

Light Up Orbit

Stainless steel

Type: SPECIFICATION SHEET
Project :

ORDERING INFO

-REM-13

PRODUCT CODE

MODEL	OUTPUT	LED	OPTIC	VOLTAGE	FINISH
28 1" (28mm)	**BO** Base output	**827** 2700K, 80CRI	**BL** [1 2] Light blade	**REM** Remote	**13** Stainless steel
50 2" (50mm)	**MO** [1 2] Medium output	**830** 3000K, 80CRI	**SP** [1 2 4] Spot - 28mm (12°) - 50mm (6°) - 80mm (8°)		
80 3" (80mm)	**HO** [1] High output	**835** 3500K, 80CRI	**MD** [3 4] Medium - 28mm (21°) - 50mm (24°)		
		840 4000K, 80CRI	**FL** [2] Flood - 80mm (32°)		
			WF [2 3] Wide flood - 50mm (44°) - 80mm (50°)		
			DI [1 2 4] Diffuse		
			WW [2 3] Wall washer		
			WL [2 3] Wall washer super comfort		

Select remote driver on page 3

1 Available for **50** model.
2 Available for **80** model.
3 Available for **50** model with base output (**BO**).
4 Available for **28** model.

MOUNTING ACCESSORIES
(TO BE ORDERED SEPARATELY)

- ☐ **X190-02 -** Polypropylene recessed back box for in-ground installation for **ILUO28** Ø5½" x 4" (Ø140 x 101mm)
- ☐ **X191-02 -** Polypropylene recessed back box for wall and ceiling installation for **ILUO28** Ø5½" x 4" (Ø140 x 101mm)
- ☐ **X193-02 -** Polypropylene recessed back box for in-ground, wall and ceiling installation for **ILUO50** Ø6¾" x 4" (Ø170 x 110mm)
- ☐ **X195-02 -** Polypropylene recessed back box for in-ground and wall installation for **ILUO80** Ø7½" x 4" (Ø190 x 110mm)
- ☐ **X192 -** Mounting springs for panel installation for **ILUO28** (panel thickness ¼" to ¾" or 1-¾" for floating floor boards)
- ☐ **X194 -** Mounting springs for panel installation for **ILUO50** (panel thickness ¼" to ¾" or 1-¾" for floating floor boards)
- ☐ **X196 -** Mounting springs for panel installation for **ILUO80** (panel thickness ¼" to ¾" or 1-¾" for floating floor boards)
- ☐ **9583 -** Suction cup for fixture removal

WATERPROOF IP68 FIELD CONNECTOR
For 0.25"- 0.375" (5-9.5mm) cable, 2x 16-24 AWG conductors

- ☐ **9015-9016-KIT -** Female and male connector.

WIRING ACCESSORIES
(TO BE ORDERED SEPARATELY)

- ☐ **9581-02 -** Black watertight connectors (x4), rated IP68

DM - R25 Last update: June 14, 2023

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iGuzzini

9320 Boul. St-Laurent, suite 100, Montréal (Québec) Canada H2N 1N7, P.: 514.523.1339 F.: 514.525.6107 www.iguzzini.com/us

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Control Gear Type: 0-10V
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Accessories:

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Efficacy: 38 lm/W
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UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Juneteenth Plaza

Buro Happold Project #P057035

Requirements:

Light Up Orbit

Stainless steel

Type: SPECIFICATION SHEET
Project : Page: 3 of 9

REMOTE LED DRIVER OPTIONS (TO BE ORDERED SEPARATELY)

-REM-13
PRODUCT CODE

Outdoor rated drivers

Driver box model	Min-max units								
	ILUO28	ILUO50				ILUO80			
	BO (1W*) SP, MD, DI	BO (1W*) BL, SP, DI, WW, WL	BO (3.8W*) MD, WF	MO (1.4W*) SP, DI	HO (2W*) SP, DI	BO (2.9W / 3W*) BL, WW, WL	BO (3.8W*) SP, FL, WF, DI	MO (4.2W*) BL, WW, WL	MO (5.5W*) SP, FL, WF, DI
4548-0350-006-120-D10	2-5								
4548-0350-012-120-LTE	3-10								
4549-0350-019-UNV-ED10	1-17	1-17	1-4			1-5	1-4		
4549-0350-019-UNV-SD10	1-17	1-17	1-4			1-5	1-4		
4548-0500-020-UNV-D10				6-12				2-4	2-3
4548-0500-025-120-LTE				6-15				2-5	2-4
4549-0500-027-UNV-ED10				1-17				1-5	1-4
4549-0500-027-UNV-SD10				1-17				1-5	1-4
4549-0700-030-UNV-ED10					1-14				
4549-0700-030-UNV-SD10					1-14				

Indoor rated drivers

Driver box model	Min-max units								
	ILUO28	ILUO50				ILUO80			
	BO (1W*) SP, MD, DI	BO (1W*) BL, SP, DI, WW, WL	BO (3.8W*) MD, WF	MO (1.4W*) SP, DI	HO (2W*) SP, DI	BO (2.9W / 3W*) BL, WW, WL	BO (3.8W*) SP, FL, WF, DI	MO (4.2W*) BL, WW, WL	MO (5.5W*) SP, FL, WF, DI
4444-0350-006-120-D10	2-5								
4444-0350-012-120-LTE	3-10	3-10	1-2			1-3	1-2		
4443-0350-013-UNV-D2**	6-12								
4450-0350-019-UNV-D10	3-16	3-16	1-4			2-5	1-4		
4450-0350-019-UNV-ED10	1-17	1-17	1-4			1-5	1-4		
4450-0350-019-UNV-SD10	1-17	1-17	1-4			1-5	1-4		
4450-0500-027-UNV-ED10				1-17				1-5	1-4
4450-0500-027-UNV-SD10				1-17				1-5	1-4
4450-0700-030-UNV-ED10					1-14				
4450-0700-030-UNV-SD10					1-14				
4450-0700-038-UNV-D10					3-16				

* Wattage requirement for one (1) fixture (remote fixture only).
** OEM digital LED driver allotment letter required to order any LUTRON products. Please contact a LUTRON representative for more information.

DRIVER BOX MODEL DESCRIPTION

DIMENSION

4443
5" x 4" x 3"
(127 x 102 x 76mm)

4444
6" x 4" x 3"
(152 x 102 x 76mm)

4450
8" x 8" x 4"
(203 x 203 x 102mm)

4548
6" x 4.5" x 3"
(152 x 114 x 76mm)

4549
14.5" x 5" x 3.5"
(368 x 127 x 89mm)

CONSTANT CURRENT

0350
350mA

0500
500mA

0700
700mA

WATTAGE

006 to 030
6W to 30W

VOLTAGE

120
120V

UNV
120-277V

DIMMING PROTOCOL

D10
0-10V
Max distance: 9m (30ft)*
(down to 10%)

D2
Lutron Hi Lume® 1% EcoSystem™
(Soft-on, Fade to Black)
Max distance: 9m (30ft)*
(down to 1%)

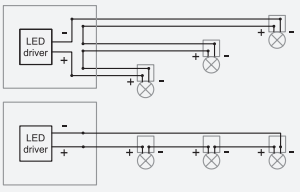
ED10
0-10V ELDOLED ECOdrive
Max distance: 36m (118ft)*
(down to 1%)

SD10
0-10V ELDOLED SOLOdrive
Max distance: 36m (118ft)*
(down to 0.1%)

LTE
Leading edge and trailing edge
(ELV and TRIAC)
Max distance: 100m (330ft)*
(down to 15%)

*Max distance cable calculated for 16AWG cable. Contact customer service for longer remote distance.

WIRING DIAGRAMS
Multiple luminaires must be connected in series
(home run or fixture chain)



DM - R25 Last update: June 14, 2023

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iGuzzini

9320 Boul. St-Laurent, suite 100, Montréal (Québec) Canada H2N 1N7, P.: 514.523.1339 F.: 514.525.6107 www.iguzzini.com/us

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BURO HAPPOLD

Luminaire Designation

W1

Description: Wall Recessed Step Light.

Manufacturer: iGuzzini
Catalog Reference: LIGHT UP ORBIT 50-BO-827-WW-REM-13 + X193-02 + 9581-02 + 4549-0350-019-UNV-ED10

Specifications:

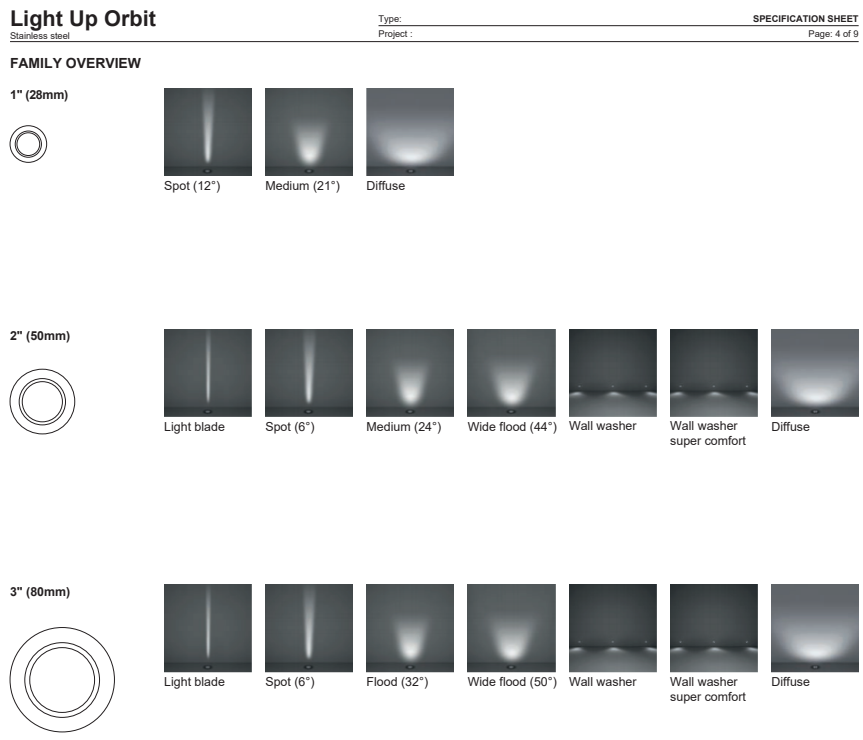
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution:
Rated Life:
Control Gear Type: 0-10V
Wattage: 1W
Accessories:

Lumen Output: 38 lm
CRI: 80+
Efficacy: 38 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Juneteenth Plaza

Buro Happold Project #P057035

Requirements:



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BURO HAPPOLD

Luminaire Designation

W1

Description: Wall Recessed Step Light.

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Catalog Reference: LIGHT UP ORBIT 50-BO-827-WW-REM-13 + X193-02 + 9581-02 + 4549-0350-019-UNV-ED10

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution:
Rated Life:
Control Gear Type: 0-10V
Wattage: 1W
Accessories:

Lumen Output: 38 lm
CRI: 80+
Efficacy: 38 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Juneteenth Plaza

Buro Happold Project #P057035

Requirements:

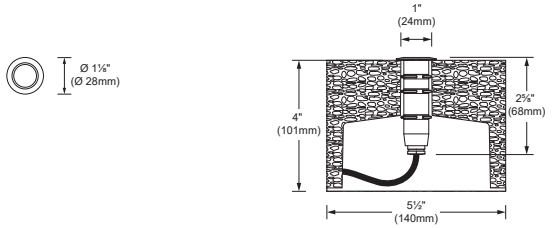
Light Up Orbit

Stainless steel

Type: SPECIFICATION SHEET
Project : Page: 5 of 9

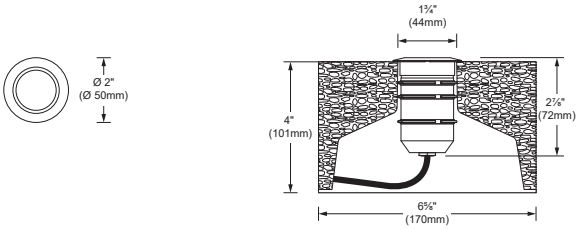
DIMENSIONS

1" (28mm)



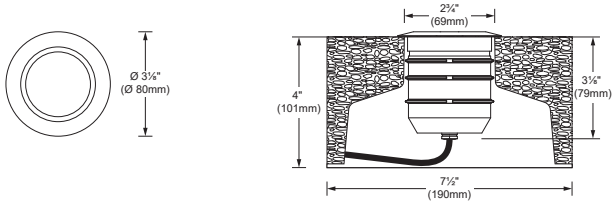
TOP VIEW SECTION VIEW

2" (50mm)



TOP VIEW SECTION VIEW

3" (80mm)



TOP VIEW SECTION VIEW

DM - R25 Last update: June 14, 2023

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BURO HAPPOLD

Luminaire Designation

W1

Description: Wall Recessed Step Light.

Manufacturer: iGuzzini
Catalog Reference: LIGHT UP ORBIT 50-BO-827-WW-REM-13 + X193-02 + 9581-02 + 4549-0350-019-UNV-ED10

Specifications:

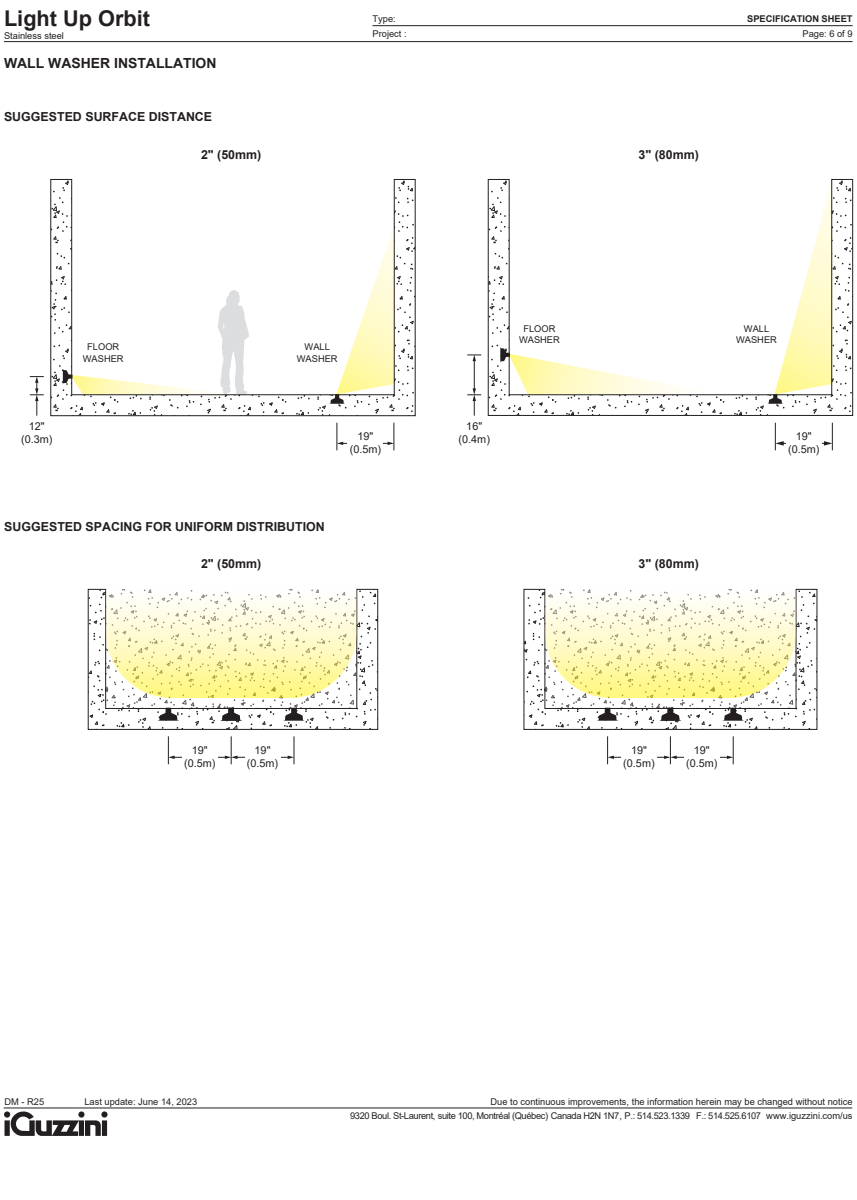
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution:
Rated Life:
Control Gear Type: 0-10V
Wattage: 1W
Accessories:

Lumen Output: 38 lm
CRI: 80+
Efficacy: 38 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Juneteenth Plaza

Buro Happold Project #P057035

Requirements:



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BURO HAPPOLD

Luminaire Designation

W1

Description: Wall Recessed Step Light.

Manufacturer: iGuzzini
Catalog Reference: LIGHT UP ORBIT 50-BO-827-WW-REM-13 + X193-02 + 9581-02 + 4549-0350-019-UNV-ED10

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution:
Rated Life:
Control Gear Type: 0-10V
Wattage: 1W
Accessories:

Lumen Output: 38 lm
CRI: 80+
Efficacy: 38 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Juneteenth Plaza

Buro Happold Project #P057035

Requirements:

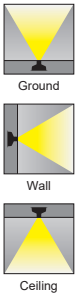
Light Up Orbit

Stainless steel

Type: SPECIFICATION SHEET
Project : Page: 7 of 9

PHOTOMETRIC DATA

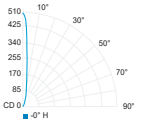
1" (28mm)



CCT (K)	CRI	OUTPUT	LOAD (W)*	OPTIC	LUMENS (lm)	EFFICACY (lm / W)	MAX CANDELA (cd)	MODELS
3000K	80	BO	1W	Spot 12°	48	48	507	ILUO28-BO-830SP
				Medium 21°	56	56	368	ILUO28-BO-830MD
				Diffuse	7	7	3	ILUO28-BO-830DI

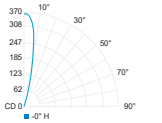
*For products that uses a remote led driver, total system wattage will varies according to the efficacy of the remote led driver selected. For this reason, the load and efficacy values given in the table above refers to the led source only and does not include the led driver consumption.

Spot 12° BO (3000K, 80CRI)



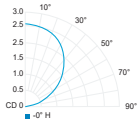
Center beam fc	Beam width ft
12ft 3.52	2.6
10ft 5.07	2.1
8ft 7.92	1.7
6ft 14.1	1.3
4ft 31.7	0.9
2ft 127	0.4

Medium 21° BO (3000K, 80CRI)



Center beam fc	Beam width ft
12ft 2.49	4.4
10ft 3.59	3.6
8ft 5.61	2.9
6ft 9.97	2.2
4ft 22.4	1.5
2ft 89.8	0.7

Diffuse BO (3000K, 80CRI)



Center beam fc	Beam width ft
12ft 0.02	34.0
10ft 0.03	28.3
8ft 0.04	22.7
6ft 0.07	17.0
4ft 0.16	11.3
2ft 0.65	5.7

CCT options	2700K	3000K	3500K	4000K
CRI options	80CRI	80CRI	80CRI	80CRI
Multiplier	**0.97**	**1**	**1.04**	**1.08**

DM - R25 Last update: June 14, 2023

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iGuzzini

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BURO HAPPOLD

Luminaire Designation

W1

Description: Wall Recessed Step Light.

Manufacturer: iGuzzini
Catalog Reference: LIGHT UP ORBIT 50-BO-827-WW-REM-13 + X193-02 + 9581-02 + 4549-0350-019-UNV-ED10

Specifications:

Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution:
Rated Life:
Control Gear Type: 0-10V
Wattage: 1W
Accessories:

Lumen Output: 38 lm
CRI: 80+
Efficacy: 38 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Juneteenth Plaza

Buro Happold Project #P057035

Requirements:

Light Up Orbit

Stainless steel

Type: SPECIFICATION SHEET
Project : Page: 8 of 9

PHOTOMETRIC DATA

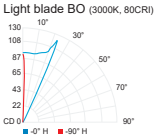
2" (50mm)



CCT (K)	CRI	OUTPUT	LOAD (W)*	OPTIC	LUMENS (lm)	EFFICACY (lm / W)	MAX CANDELA (cd)	MODELS
3000K	80	BO	1W	Light blade	9	9	121	ILUO50-BO-830BL
				Spot 6°	86	86	3 412	ILUO50-BO-830SP
			4W	Medium 24°	352	88	1 675	ILUO50-BO-830MD
				Wide flood 44°	352	88	719	ILUO50-BO-830WF
			1W	Wall washer	43	43	56	ILUO50-BO-830WW
				Wall washer SC (super comfort)	12	12	16	ILUO50-BO-830WL
				Diffuse	14	14	5	ILUO50-BO-830DI
		MO	1.5W	Spot 6°	119	79	4 724	ILUO50-MO-830SP
				Diffuse	20	13	7	ILUO50-MO-830DI
		HO	2W	Spot 6°	159	79	6 299	ILUO50-HO-830SP
				Diffuse	25	12	9	ILUO50-HO-830DI

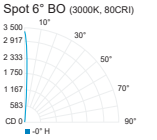
*For products that uses a remote led driver, total system wattage will varies according to the efficacy of the remote led driver selected. For this reason, the load and efficacy values given in the table above refers to the led source only and does not include the led driver consumption.

Light blade BO (3000K, 80CRI)



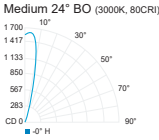
Center beam fc	Beam width ft
0.65	1.0
0.94	0.8
1.47	0.6
2.61	0.5
5.87	0.3
23.5	0.2

Spot 6° BO (3000K, 80CRI)



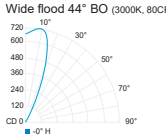
Center beam fc	Beam width ft
23.7	1.2
34.1	1.0
53.3	0.8
94.8	0.6
213	0.4
853	0.2

Medium 24° BO (3000K, 80CRI)



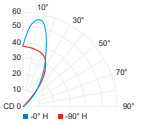
Center beam fc	Beam width ft
11.2	5.2
16.2	4.3
25.3	3.4
44.9	2.6
101	1.7
405	0.9

Wide flood 44° BO (3000K, 80CRI)

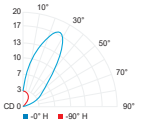


Center beam fc	Beam width ft
4.53	9.6
6.52	8.0
10.2	6.4
18.1	4.8
40.7	3.2
163	1.6

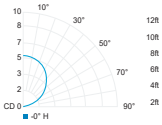
Wall washer BO (3000K, 80CRI)



Wall washer SC BO (3000K, 80CRI)



Diffuse BO (3000K, 80CRI)



Center beam fc	Beam width ft
0.04	32.7
0.05	27.2
0.08	21.8
0.15	16.3
0.33	10.9
1.33	5.4

CCT options	2700K	3000K	3500K	4000K
CRI options	80CRI	80CRI	80CRI	80CRI
Multiplier	**0.97**	**1**	**1.04**	**1.08**

DM - R25 Last update: June 14, 2023

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Description: Wall Recessed Step Light.

BURO HAPPOLD

Luminaire Designation

W1

Sheet Number 9 of 9

Manufacturer: iGuzzini
Catalog Reference: LIGHT UP ORBIT 50-BO-827-WW-REM-13 + X193-02 + 9581-02 + 4549-0350-019-UNV-ED10

Specifications:
Lamp Type: LED
Color Temperature: 2700K
Color Consistency:
Optical Distribution:
Rated Life:
Control Gear Type: 0-10V
Wattage: 1W
Accessories:

Lumen Output: 38 lm
CRI: 80+
Efficacy: 38 lm/W
IP Rating: IP68
UGR:
Dimming Range: 1%-100%
Voltage: UNV

Location: Juneteenth Plaza

Buro Happold Project #P057035

Requirements:

Light Up Orbit

Stainless steel

Type: SPECIFICATION SHEET
Project : Page: 9 of 9

PHOTOMETRIC DATA

3" (80mm)

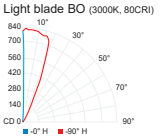

Ground


Wall

CCT (K)	CRI	OUTPUT	LOAD (W)*	OPTIC	LUMENS (lm)	EFFICACY (lm / W)	MAX CANDELA (cd)	MODELS
3000K	80	BO	3W	Light blade	31	10	877	ILUO80-BO-830BL
			4W	Spot 8°	398	99	8 775	ILUO80-BO-830SP
				Flood 32°	329	82	1 144	ILUO80-BO-830FL
				Wide flood 50°	385	96	738	ILUO80-BO-830WF
			3W	Wall washer	148	49	178	ILUO80-BO-830WW
				Wall washer SC (super comfort)	46	15	56	ILUO80-BO-830WL
			4W	Diffuse	47	11	17	ILUO80-BO-830DI
		MO	4.5W	Light blade	41	9	1 170	ILUO80-MO-830LB
			5.5W	Spot 8°	531	96	11 700	ILUO80-MO-830SP
				Flood 32°	440	80	1 534	ILUO80-MO-830FL
				Wide flood 50°	516	93	989	ILUO80-MO-830WF
			4.5W	Wall washer	200	47	241	ILUO80-MO-830WW
				Wall washer SC (super comfort)	62	14	74	ILUO80-MO-830WL
			5.5W	Diffuse	62	11	23	ILUO80-MO-830DI

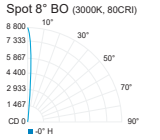
*For products that uses a remote led driver, total system wattage will varies according to the efficacy of the remote led driver selected. For this reason, the load and efficacy values given in the table above refers to the led source only and does not include the led driver consumption.

Light blade BO (3000K, 80CRI)



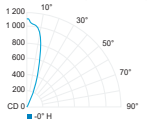
	Center beam fc	Beam width ft
12ft	5.63	10.0
10ft	8.11	8.3
8ft	12.7	6.7
6ft	22.5	5.0
4ft	50.7	3.3
2ft	203	1.7

Spot 8° BO (3000K, 80CRI)



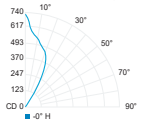
	Center beam fc	Beam width ft
12ft	60.9	1.8
10ft	87.7	1.5
8ft	137	1.2
6ft	244	0.9
4ft	548	0.6
2ft	2 194	0.3

Flood 32° BO (3000K, 80CRI)



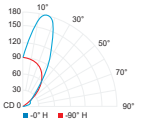
	Center beam fc	Beam width ft
12ft	7.74	6.9
10ft	11.2	5.8
8ft	17.4	4.6
6ft	31.0	3.5
4ft	69.7	2.3
2ft	279	1.2

Wide flood 50° BO (3000K, 80CRI)

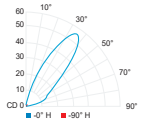


	Center beam fc	Beam width ft
12ft	5.12	11.2
10ft	7.38	9.3
8ft	11.5	7.4
6ft	20.5	5.6
4ft	46.1	3.7
2ft	184	1.9

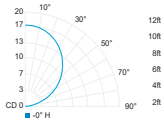
Wall washer BO (3000K, 80CRI)



Wall washer SC BO (3000K, 80CRI)



Diffuse BO (3000K, 80CRI)



	Center beam fc	Beam width ft
12ft	0.12	34.1
10ft	0.17	28.4
8ft	0.27	22.7
6ft	0.47	17.0
4ft	1.07	11.4
2ft	4.26	5.7

CCT options	2700K	3000K	3500K	4000K
CRI options	80CRI	80CRI	80CRI	80CRI
Multiplier	**0.97**	**1**	**1.04**	**1.08**

DM - R25 Last update: June 14, 2023

Due to continuous improvements, the information herein may be changed without notice

iGuzzini

9320 Boul. St-Laurent, suite 100, Montréal (Québec) Canada H2N 1N7, P.: 514.523.1339 F.: 514.525.6107 www.iguzzini.com/us

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BURO HAPPOLD

Luminaire Designation

Q1

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-60W-[VOLTAGE]- 12V + (POWER SUPPLY #2) Q-SET-60W-[VOLTAGE]- 24V

Specifications:
Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 60W, 60W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

1. Locate enclosures as noted on plan.

2. Contractor to comply with manufacturer requirements to ensure completely IP68 rated enclosure, including the purchase of additional manufacturer accessories to meet an IP68 rated enclosure.

Q-VAULT-5
Accessories - Direct Burial



- The industry's only IP68 wet-listed direct burial transformer/power supply center and winner of the 2008 Lightfair Innovation Award for excellence in product design
- Having the opportunity to directly bury your low-voltage transformer/power supply center and hide it in the dirt or even concrete, the designer has the liberty to design a landscape without constraint.
- Made to house up to two 12V/24V Q-SET magnetic or electronic power supplies with up to 900W AC or 600W DC
- Completely watertight and comes with complete installation instructions and an easy-to-use sealing kit to ensure a proper installation.
- Most reliable direct burial power supply enclosure on the market and is pool & spa rated with the Q-SET 1, 2, and 3.
- All wire entry/exits other than conduit entries MUST use Q-CLIK connectors. Failure to use them will void warranty.

1 PRODUCT	2 PLATE COVER OPTIONS	3 RING OPTIONS
Q-VAULT-5		

Sample Part Number: **Q-VAULT-5-BK-ST**

1 PRODUCT

Q-VAULT-5

2 PLATE COVER OPTIONS

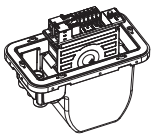
BK	Black (Standard)
SS	Stainless Steel
BZ	Bronze

3 RING OPTIONS

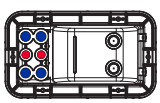
ST	Standard
LR	Lawn Guard Ring
CR	Concrete Pour Ring

PRODUCT INFORMATION

Fits	1	Up to 2
Q-SET-1		•
Q-SET-2	•	
Q-SET-3	•	
Q-SET-eLED		•
Q-SET-mLED		•



Knock Outs (in)	NPT KO's
1/2"	2
3/4"	4



Bottom View

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BURO HAPPOLD

Luminaire Designation

Q1

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-60W-[VOLTAGE]- 12V + (POWER SUPPLY #2) Q-SET-60W-[VOLTAGE]- 24V

Specifications:
Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 60W, 60W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

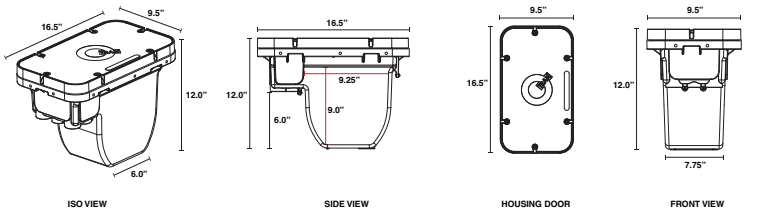
Buro Happold Project #P057035

Requirements:

Q-VAULT-5
Accessories - Direct Burial

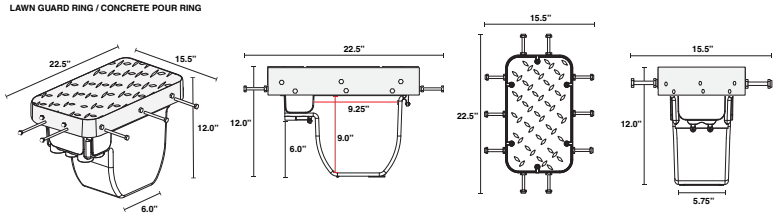
1 PRODUCT - DIMENSIONS

STANDARD



ISO VIEW | SIDE VIEW | HOUSING DOOR | FRONT VIEW

LAWN GUARD RING / CONCRETE POUR RING



ISO VIEW | SIDE VIEW | HOUSING DOOR | FRONT VIEW

2 PLATE COVER OPTIONS

Plate covers cannot be installed to existing door onsite. Plate covers must be factory-mounted to Q-VAULT housing door.



Black (Standard) | Stainless Steel | Bronze

3 RING OPTIONS



Standard | Lawn Guard Ring | Concrete Pour Ring

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BURO HAPPOLD

Luminaire Designation

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Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-60W-[VOLTAGE]- 12V + (POWER SUPPLY #2) Q-SET-60W-[VOLTAGE]- 24V

Specifications:
Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 60W, 60W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

Q-VAULT-5
Accessories - Direct Burial

COMPATIBLE ACCESSORIES

MOUNTING

Product	Sold In	QTY.
Perforated Drain Pipe	1	
Stabilizing Bars	2	

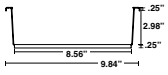

Perforated Drain Pipe


Stabilizing Bars

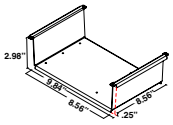
TRAY OPTIONS

Product	Sold In	QTY.
Black (Standard)	1	

NOTE: Not UL Listed



Black (Standard)
Front View



Black (Standard)
ISO View

KITS

Product	QTY.
Q-VAULT Installation Kit	



- 1x Epoxy pack
- 1x Epoxy application syringe
- 1x Wad of watertight putty
- 1x Desiccant pouch
- 1x Silver marker
- 1x Installation instructions
- 1x Drilling guide label
- 1x Hex tool
- 4x Wire ties

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BURO HAPPOLD

Luminaire Designation

Q1

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-60W-[VOLTAGE]- 12V + (POWER SUPPLY #2) Q-SET-60W-[VOLTAGE]- 24V

Specifications:
Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 60W, 60W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

Q-SET-1

AC POWER SUPPLY 60W–300W

BUY AMERICA BUY AMERICAN ACT | MADE IN AMERICA FROM DOMESTIC & FOREIGN PARTS



- UL Listed direct burial power supply
- Designed to be used with the Q-VAULT-5 IP68 direct burial power supply enclosure
- Available in 12VAC or 24VAC options
- Wattage options range from 60W to 300W
- Equipped with one secondary circuit breaker
- Holds three UL listings: Landscape Lighting, Pool & Spa, and Low-Voltage Luminaire Power Supply
- Suitable for both interior and exterior lighting applications
- Provides five secondary taps to compensate for voltage drop
- Allows for connecting loads to one or more secondary taps of the Q-SETs.
- Must be purchased with Q-VAULT-5

1 PRODUCT	2 WATTAGE	3 PRIMARY VOLTAGE	4 SECONDARY VOLTAGE
Q-SET			

Sample Part Number: **Q-SET-60-120(60Hz)-12V**

1 PRODUCT	2 WATTAGE	3 PRIMARY VOLTAGE	4 SECONDARY VOLTAGE
Q-SET	60W 120W 180W 240W 300W 180W, 240W, and 300W listed for Pool & Spa	120 60Hz 220 60Hz 230 50Hz 240 60Hz 277 60Hz	12V 24V

PRODUCT INFORMATION

- For supply connections use wire rated for at least 90˚C
- Suitable for inground installation
- Use dimmers rated for magnetic low voltage load
- Not for installation to conduit extending directly to an underwater pool light forming shell
- Suitable for use with submersible luminaries
- Suitable for indoor & outdoor use
- WARNING: Risk of fire - if installation involves running wiring through a building structure, special wiring methods are needed. Consult a qualified electrician.
- CSA #239924
- Low Voltage Lighting Systems
  - CSA Class 3426-04 and Class 3426-94
  - CSA Standard C22.2 No. 250.0-08 - Luminaires : ANSI/ UL Standard 2108 - Low Voltage Lighting System
- Landscape Lighting Systems
  - CSA Class 3425-15 and Class 3425-95 :
  - CSA Standard C22.2 No. 250.7-07 - Extra-Low-Voltage Landscape Lighting Systems
  - ANSI/ UL Standard 1838 - Low Voltage Landscape Lighting Systems
- Component Hydromassage - 120V primary, 12V secondary
  - CSA Class 3425-96
  - ANSI/ UL Standard 379-Power Units for Fountain, Swimming Pool, and Spa Luminaires

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BURO HAPPOLD

Luminaire Designation

Q1

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-60W-[VOLTAGE]- 12V + (POWER SUPPLY #2) Q-SET-60W-[VOLTAGE]- 24V

Specifications:
Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 60W, 60W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

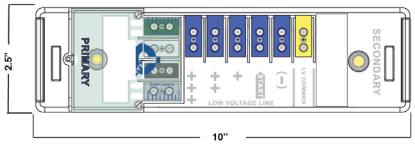
Buro Happold Project #P057035

Requirements:

Q-SET-1

AC POWER SUPPLY 60W–300W

1 PRODUCT - DIMENSIONS



2 TECHNICAL INFORMATION

Volt Rating	Secondary Circuit Breaker Size	Total Circuit Breaker Load	Number of Circuit Breaker	Total Q-SET Load
12V	5 A	60W	1	60W
12V	10 A	120W	1	120W
12V	15 A	180W	1	180W
12V	20 A	240W	1	240W
12V	25 A	300W	1	300W
24V	2.5 A	60W	1	60W
24V	5 A	120W	1	120W
24V	7.5 A	180W	1	180W
24V	10 A	240W	1	240W
24V	12.5 A	300W	1	300W

MULTI-VOLT & TAPS

- Two (2) primary taps, a switch or a dimmed tap to compensate for losses when dimming
- Five (5) secondary taps provide nominal secondary voltages of:
- 12V = 11V, 12V, 13V, 14V, & 15V
- 24V = 22V, 24V, 26V, 28V, & 30V
- Loads may be connected to one or more of the secondary taps of the PSC.
- No derating required for incandescent and halogen loads
- 50% derating require for LED retrofit loads
- The advantage is that loads at varying distances from the PSC can be tapped on different taps to recover voltage drop, allowing you to get the correct voltage at your load and produce between 85%-100% light output. (See Q-TRAN Voltage drop Calculator)
- Primary Circuit Protection: All 120V units come with both a primary and secondary, hydraulic, magnetic circuit breaker.
- All have a primary auto-reset thermal protector, which is built into the transformer. This thermal protector will temporarily disconnect the primary if the transformer overheats due to an overload or saturation from a faulty dimmer.
- Secondary Circuit Protection: 1 secondary breaker

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BURO HAPPOLD

Luminaire Designation

Q1

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-60W-[VOLTAGE]- 12V + (POWER SUPPLY #2) Q-SET-60W-[VOLTAGE]- 24V

Specifications:

Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 60W, 60W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

Q-SET-1

AC POWER SUPPLY 60W–300W

COMPATIBLE DIRECT BURIAL PRODUCTS



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BURO HAPPOLD

Luminaire Designation

Q2

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-60W-[VOLTAGE]- 24V

Specifications:

Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 60W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

1. Locate enclosures as noted on plan.

2. Contractor to comply with manufacturer requirements to ensure completely IP68 rated enclosure, including the purchase of additional manufacturer accessories to meet an IP68 rated enclosure.

Q-VAULT-5

Accessories - Direct Burial



- The industry's only IP68 wet-listed direct burial transformer/power supply center and winner of the 2008 Lightfair Innovation Award for excellence in product design
- Having the opportunity to directly bury your low-voltage transformer/power supply center and hide it in the dirt or even concrete, the designer has the liberty to design a landscape without constraint.
- Made to house up to two 12V/24V Q-SET magnetic or electronic power supplies with up to 900W AC or 600W DC
- Completely watertight and comes with complete installation instructions and an easy-to-use sealing kit to ensure a proper installation.
- Most reliable direct burial power supply enclosure on the market and is pool & spa rated with the Q-SET 1, 2, and 3.
- All wire entry/exits other than conduit entries MUST use Q-CLIK connectors. Failure to use them will void warranty.

1 PRODUCT	2 PLATE COVER OPTIONS	3 RING OPTIONS
Q-VAULT-5		

Sample Part Number: **Q-VAULT-5-BK-ST**

1 PRODUCT

Q-VAULT-5

2 PLATE COVER OPTIONS

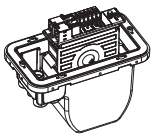
BK	Black (Standard)
SS	Stainless Steel
BZ	Bronze

3 RING OPTIONS

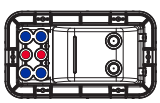
ST	Standard
LR	Lawn Guard Ring
CR	Concrete Pour Ring

PRODUCT INFORMATION

Fits	1	Up to 2
Q-SET-1		•
Q-SET-2	•	
Q-SET-3	•	
Q-SET-eLED		•
Q-SET-mLED		•



Knock Outs (in)	NPT KO's
1/2"	2
3/4"	4



Bottom View

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BURO HAPPOLD

Luminaire Designation

Q2

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-60W-[VOLTAGE]- 24V

Specifications:

Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 60W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

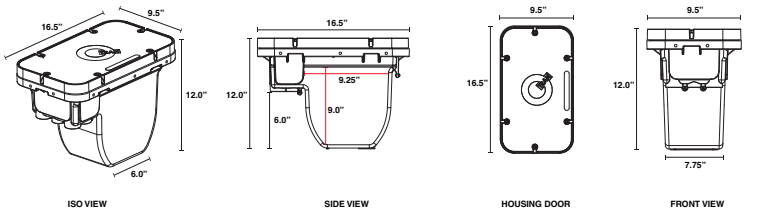
Buro Happold Project #P057035

Requirements:

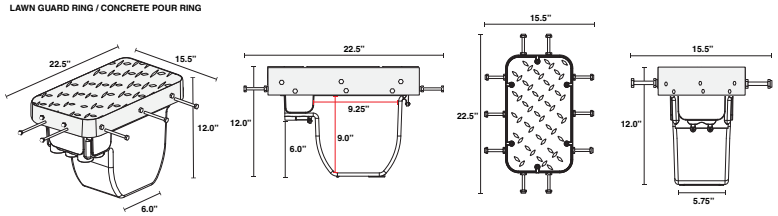
Q-VAULT-5
Accessories - Direct Burial

1 PRODUCT - DIMENSIONS

STANDARD



LAWN GUARD RING / CONCRETE POUR RING



2 PLATE COVER OPTIONS

Plate covers cannot be installed to existing door onsite. Plate covers must be factory-mounted to Q-VAULT housing door.



3 RING OPTIONS



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BURO HAPPOLD

Luminaire Designation

Q2

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-60W-[VOLTAGE]- 24V

Specifications:

Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 60W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

Q-VAULT-5

Accessories - Direct Burial

COMPATIBLE ACCESSORIES

MOUNTING

Product	Sold In	QTY.
Perforated Drain Pipe	1	
Stabilizing Bars	2	



Perforated Drain Pipe

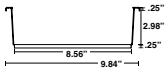


Stabilizing Bars

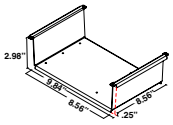
TRAY OPTIONS

Product	Sold In	QTY.
Black (Standard)	1	

NOTE: Not UL Listed



Black (Standard)
Front View



Black (Standard)
ISO View

KITS

Product	QTY.
Q-VAULT Installation Kit	



- 1x Epoxy pack
- 1x Epoxy application syringe
- 1x Wad of watertight putty
- 1x Desiccant pouch
- 1x Silver marker
- 1x Installation instructions
- 1x Drilling guide label
- 1x Hex tool
- 4x Wire ties

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BURO HAPPOLD

Luminaire Designation

Q2

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-60W-[VOLTAGE]- 24V

Specifications:

Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 60W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

Q-SET-1

AC POWER SUPPLY 60W–300W



- UL Listed direct burial power supply
- Designed to be used with the Q-VAULT-5 IP68 direct burial power supply enclosure
- Available in 12VAC or 24VAC options
- Wattage options range from 60W to 300W
- Equipped with one secondary circuit breaker
- Holds three UL listings: Landscape Lighting, Pool & Spa, and Low-Voltage Luminaire Power Supply
- Suitable for both interior and exterior lighting applications
- Provides five secondary taps to compensate for voltage drop
- Allows for connecting loads to one or more secondary taps of the Q-SETs.
- Must be purchased with Q-VAULT-5

1 PRODUCT	2 WATTAGE	3 PRIMARY VOLTAGE	4 SECONDARY VOLTAGE
Q-SET			

Sample Part Number: **Q-SET-60-120(60Hz)-12V**

1 PRODUCT	2 WATTAGE	3 PRIMARY VOLTAGE	4 SECONDARY VOLTAGE
Q-SET	60W 120W 180W 240W 300W 180W, 240W, and 300W listed for Pool & Spa	120 60Hz 220 60Hz 230 50Hz 240 60Hz 277 60Hz	12V 24V

PRODUCT INFORMATION

- For supply connections use wire rated for at least 90˚C
- Suitable for inground installation
- Use dimmers rated for magnetic low voltage load
- Not for installation to conduit extending directly to an underwater pool light forming shell
- Suitable for use with submersible luminaries
- Suitable for indoor & outdoor use
- WARNING: Risk of fire - if installation involves running wiring through a building structure, special wiring methods are needed. Consult a qualified electrician.
- CSA #239924
- Low Voltage Lighting Systems
  - CSA Class 3426-04 and Class 3426-94
  - CSA Standard C22.2 No. 250.0-08 - Luminaires : ANSI/ UL Standard 2108 - Low Voltage Lighting System
- Landscape Lighting Systems
  - CSA Class 3425-15 and Class 3425-95 :
  - CSA Standard C22.2 No. 250.7-07 - Extra-Low-Voltage Landscape Lighting Systems
  - ANSI/ UL Standard 1838 - Low Voltage Landscape Lighting Systems
- Component Hydromassage - 120V primary, 12V secondary
  - CSA Class 3425-96
  - ANSI/ UL Standard 379-Power Units for Fountain, Swimming Pool, and Spa Luminaires

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BURO HAPPOLD

Luminaire Designation

Q2

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-60W-[VOLTAGE]- 24V

Specifications:

Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 60W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

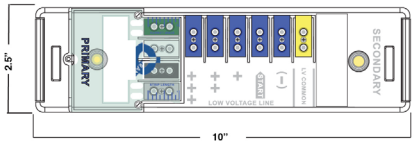
Buro Happold Project #P057035

Requirements:

Q-SET-1

AC POWER SUPPLY 60W–300W

1 PRODUCT - DIMENSIONS



2 TECHNICAL INFORMATION

Volt Rating	Secondary Circuit Breaker Size	Total Circuit Breaker Load	Number of Circuit Breaker	Total Q-SET Load
12V	5 A	60W	1	60W
12V	10 A	120W	1	120W
12V	15 A	180W	1	180W
12V	20 A	240W	1	240W
12V	25 A	300W	1	300W
24V	2.5 A	60W	1	60W
24V	5 A	120W	1	120W
24V	7.5 A	180W	1	180W
24V	10 A	240W	1	240W
24V	12.5 A	300W	1	300W

MULTI-VOLT & TAPS

- Two (2) primary taps, a switch or a dimmed tap to compensate for losses when dimming
- Five (5) secondary taps provide nominal secondary voltages of:
- 12V = 11V, 12V, 13V, 14V, & 15V
- 24V = 22V, 24V, 26V, 28V, & 30V
- Loads may be connected to one or more of the secondary taps of the PSC.
- No derating required for incandescent and halogen loads
- 50% derating require for LED retrofit loads
- The advantage is that loads at varying distances from the PSC can be tapped on different taps to recover voltage drop, allowing you to get the correct voltage at your load and produce between 85%-100% light output. (See Q-TRAN Voltage drop Calculator)
- Primary Circuit Protection: All 120V units come with both a primary and secondary, hydraulic, magnetic circuit breaker.
- All have a primary auto-reset thermal protector, which is built into the transformer. This thermal protector will temporarily disconnect the primary if the transformer overheats due to an overload or saturation from a faulty dimmer.
- Secondary Circuit Protection: 1 secondary breaker

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BURO HAPPOLD

Luminaire Designation

Q2

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-60W-[VOLTAGE]- 24V

Specifications:

Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 60W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

Q-SET-1

AC POWER SUPPLY 60W–300W

COMPATIBLE DIRECT BURIAL PRODUCTS



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BURO HAPPOLD

Luminaire Designation

Q3

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-240W-[VOLTAGE]- 24V

Specifications:

Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 240W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

1. Locate enclosures as noted on plan.

2. Contractor to comply with manufacturer requirements to ensure completely IP68 rated enclosure, including the purchase of additional manufacturer accessories to meet an IP68 rated enclosure.

Q-VAULT-5

Accessories - Direct Burial



- The industry's only IP68 wet-listed direct burial transformer/power supply center and winner of the 2008 Lightfair Innovation Award for excellence in product design
- Having the opportunity to directly bury your low-voltage transformer/power supply center and hide it in the dirt or even concrete, the designer has the liberty to design a landscape without constraint.
- Made to house up to two 12V/24V Q-SET magnetic or electronic power supplies with up to 900W AC or 600W DC
- Completely watertight and comes with complete installation instructions and an easy-to-use sealing kit to ensure a proper installation.
- Most reliable direct burial power supply enclosure on the market and is pool & spa rated with the Q-SET 1, 2, and 3.
- All wire entry/exits other than conduit entries MUST use Q-CLIK connectors. Failure to use them will void warranty.

① PRODUCT	② PLATE COVER OPTIONS	③ RING OPTIONS
Q-VAULT-5		

Sample Part Number: **Q-VAULT-5-BK-ST**

① PRODUCT

Q-VAULT-5

② PLATE COVER OPTIONS

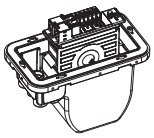
BK	Black (Standard)
SS	Stainless Steel
BZ	Bronze

③ RING OPTIONS

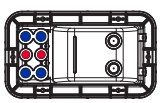
ST	Standard
LR	Lawn Guard Ring
CR	Concrete Pour Ring

PRODUCT INFORMATION

Fits	1	Up to 2
Q-SET-1		•
Q-SET-2	•	
Q-SET-3	•	
Q-SET-eLED		•
Q-SET-mLED		•



Knock Outs (in)	NPT KO's
1/2"	2
3/4"	4



Bottom View

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BURO HAPPOLD

Luminaire Designation

Q3

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-240W-[VOLTAGE]- 24V

Specifications:

Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 240W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

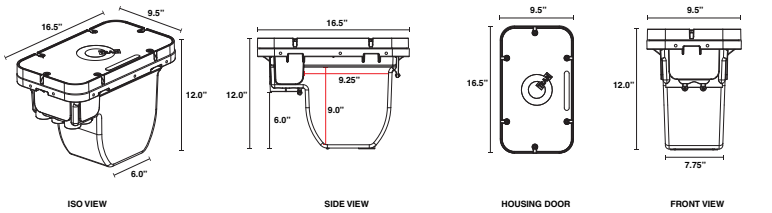
Requirements:

Q-VAULT-5

Accessories - Direct Burial

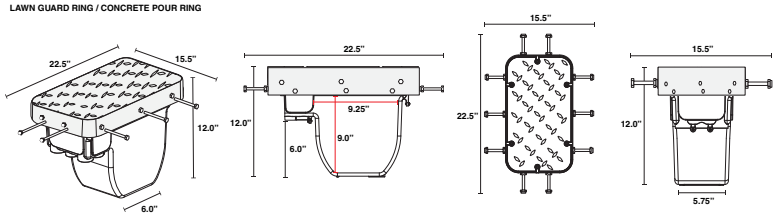
1 PRODUCT - DIMENSIONS

STANDARD



ISO VIEW | SIDE VIEW | HOUSING DOOR | FRONT VIEW

LAWN GUARD RING / CONCRETE POUR RING



ISO VIEW | SIDE VIEW | HOUSING DOOR | FRONT VIEW

2 PLATE COVER OPTIONS

Plate covers cannot be installed to existing door onsite. Plate covers must be factory-mounted to Q-VAULT housing door.



Black (Standard) | Stainless Steel | Bronze

3 RING OPTIONS



Standard | Lawn Guard Ring | Concrete Pour Ring

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BURO HAPPOLD

Luminaire Designation

Q3

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-240W-[VOLTAGE]- 24V

Specifications:

Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 240W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

Q-VAULT-5

Accessories - Direct Burial

COMPATIBLE ACCESSORIES

MOUNTING

Product	Sold In	QTY.
Perforated Drain Pipe	1	
Stabilizing Bars	2	



Perforated Drain Pipe

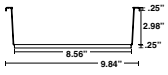


Stabilizing Bars

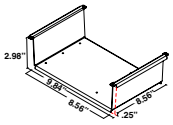
TRAY OPTIONS

Product	Sold In	QTY.
Black (Standard)	1	

NOTE: Not UL Listed



Black (Standard)
Front View



Black (Standard)
ISO View

KITS

Product	QTY.
Q-VAULT Installation Kit	



- 1x Epoxy pack
- 1x Epoxy application syringe
- 1x Wad of watertight putty
- 1x Desiccant pouch
- 1x Silver marker
- 1x Installation instructions
- 1x Drilling guide label
- 1x Hex tool
- 4x Wire ties

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BURO HAPPOLD

Luminaire Designation

Q3

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-240W-[VOLTAGE]- 24V

Specifications:

Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 240W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

Q-SET-1

AC POWER SUPPLY 60W–300W



- UL Listed direct burial power supply
- Designed to be used with the Q-VAULT-5 IP68 direct burial power supply enclosure
- Available in 12VAC or 24VAC options
- Wattage options range from 60W to 300W
- Equipped with one secondary circuit breaker
- Holds three UL listings: Landscape Lighting, Pool & Spa, and Low-Voltage Luminaire Power Supply
- Suitable for both interior and exterior lighting applications
- Provides five secondary taps to compensate for voltage drop
- Allows for connecting loads to one or more secondary taps of the Q-SETs.
- Must be purchased with Q-VAULT-5

1 PRODUCT	2 WATTAGE	3 PRIMARY VOLTAGE	4 SECONDARY VOLTAGE
Q-SET			

Sample Part Number: **Q-SET-60-120(60Hz)-12V**

1 PRODUCT	2 WATTAGE	3 PRIMARY VOLTAGE	4 SECONDARY VOLTAGE
Q-SET	60W 120W 180W 240W 300W 180W, 240W, and 300W listed for Pool & Spa	120 60Hz 220 60Hz 230 50Hz 240 60Hz 277 60Hz	12V 24V

PRODUCT INFORMATION

- For supply connections use wire rated for at least 90˚C
- Suitable for inground installation
- Use dimmers rated for magnetic low voltage load
- Not for installation to conduit extending directly to an underwater pool light forming shell
- Suitable for use with submersible luminaries
- Suitable for indoor & outdoor use
- WARNING: Risk of fire - if installation involves running wiring through a building structure, special wiring methods are needed. Consult a qualified electrician.
- CSA #239924
- Low Voltage Lighting Systems
  - CSA Class 3426-04 and Class 3426-94
  - CSA Standard C22.2 No. 250.0-08 - Luminaires : ANSI/ UL Standard 2108 - Low Voltage Lighting System
- Landscape Lighting Systems
  - CSA Class 3425-15 and Class 3425-95 :
  - CSA Standard C22.2 No. 250.7-07 - Extra-Low-Voltage Landscape Lighting Systems
  - ANSI/ UL Standard 1838 - Low Voltage Landscape Lighting Systems
- Component Hydromassage - 120V primary, 12V secondary
  - CSA Class 3425-96
  - ANSI/ UL Standard 379-Power Units for Fountain, Swimming Pool, and Spa Luminaires

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BURO HAPPOLD

Luminaire Designation

Q3

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-240W-[VOLTAGE]- 24V

Specifications:
Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 240W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

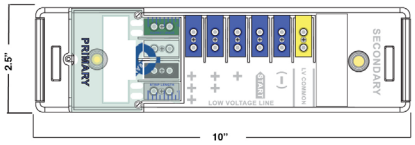
Buro Happold Project #P057035

Requirements:

Q-SET-1

AC POWER SUPPLY 60W–300W

1 PRODUCT - DIMENSIONS



2 TECHNICAL INFORMATION

Volt Rating	Secondary Circuit Breaker Size	Total Circuit Breaker Load	Number of Circuit Breaker	Total Q-SET Load
12V	5 A	60W	1	60W
12V	10 A	120W	1	120W
12V	15 A	180W	1	180W
12V	20 A	240W	1	240W
12V	25 A	300W	1	300W
24V	2.5 A	60W	1	60W
24V	5 A	120W	1	120W
24V	7.5 A	180W	1	180W
24V	10 A	240W	1	240W
24V	12.5 A	300W	1	300W

MULTI-VOLT & TAPS

- Two (2) primary taps, a switch or a dimmed tap to compensate for losses when dimming
- Five (5) secondary taps provide nominal secondary voltages of:
- 12V = 11V, 12V, 13V, 14V, & 15V
- 24V = 22V, 24V, 26V, 28V, & 30V
- Loads may be connected to one or more of the secondary taps of the PSC.
- No derating required for incandescent and halogen loads
- 50% derating require for LED retrofit loads
- The advantage is that loads at varying distances from the PSC can be tapped on different taps to recover voltage drop, allowing you to get the correct voltage at your load and produce between 85%-100% light output. (See Q-TRAN Voltage drop Calculator)
- Primary Circuit Protection: All 120V units come with both a primary and secondary, hydraulic, magnetic circuit breaker.
- All have a primary auto-reset thermal protector, which is built into the transformer. This thermal protector will temporarily disconnect the primary if the transformer overheats due to an overload or saturation from a faulty dimmer.
- Secondary Circuit Protection: 1 secondary breaker

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BURO HAPPOLD

Luminaire Designation

Q3

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-240W-[VOLTAGE]- 24V

Specifications:

Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 240W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

Q-SET-1

AC POWER SUPPLY 60W–300W

COMPATIBLE DIRECT BURIAL PRODUCTS

Q-VAULT	Q-CLIK	Q-WIRE	Q-TWO	QW-STRIPPER
				
IP68 wet listed direct burial enclosure for two Q-SET-1s	Watertight fitting for entryway in and out of Q-Tran housing	Highly efficient, long-lasting wire	Underground low voltage UF splice kit	UF cable outer jacket strip tool

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BURO HAPPOLD

Luminaire Designation

Q4

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-120W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-240W-[VOLTAGE]- 24V

Specifications:
Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 120W, 240W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

1. Locate enclosures as noted on plan.

2. Contractor to comply with manufacturer requirements to ensure completely IP68 rated enclosure, including the purchase of additional manufacturer accessories to meet an IP68 rated enclosure.

Q-VAULT-5
Accessories - Direct Burial



- The industry's only IP68 wet-listed direct burial transformer/power supply center and winner of the 2008 Lightfair Innovation Award for excellence in product design
- Having the opportunity to directly bury your low-voltage transformer/power supply center and hide it in the dirt or even concrete, the designer has the liberty to design a landscape without constraint.
- Made to house up to two 12V/24V Q-SET magnetic or electronic power supplies with up to 900W AC or 600W DC
- Completely watertight and comes with complete installation instructions and an easy-to-use sealing kit to ensure a proper installation.
- Most reliable direct burial power supply enclosure on the market and is pool & spa rated with the Q-SET 1, 2, and 3.
- All wire entry/exits other than conduit entries MUST use Q-CLIK connectors. Failure to use them will void warranty.

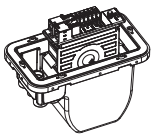
① PRODUCT	② PLATE COVER OPTIONS	③ RING OPTIONS
Q-VAULT-5		

Sample Part Number: **Q-VAULT-5-BK-ST**

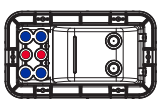
1 PRODUCT	2 PLATE COVER OPTIONS		3 RING OPTIONS	
Q-VAULT-5	**BK**	Black (Standard)	**ST**	Standard
	SS	Stainless Steel	**LR**	Lawn Guard Ring
	BZ	Bronze	**CR**	Concrete Pour Ring

PRODUCT INFORMATION

Fits	1	Up to 2
Q-SET-1		•
Q-SET-2	•	
Q-SET-3	•	
Q-SET-eLED		•
Q-SET-mLED		•



Knock Outs (in)	NPT KO's
1/2"	2
3/4"	4



Bottom View

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BURO HAPPOLD

Luminaire Designation

Q4

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-120W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-240W-[VOLTAGE]- 24V

Specifications:
Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 120W, 240W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

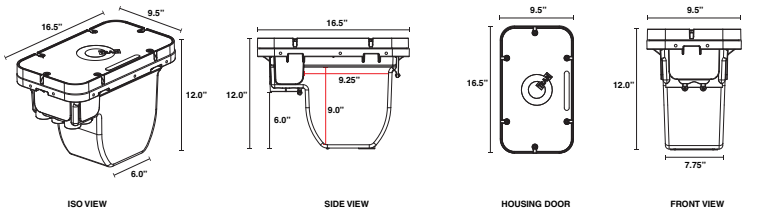
Buro Happold Project #P057035

Requirements:

Q-VAULT-5
Accessories - Direct Burial

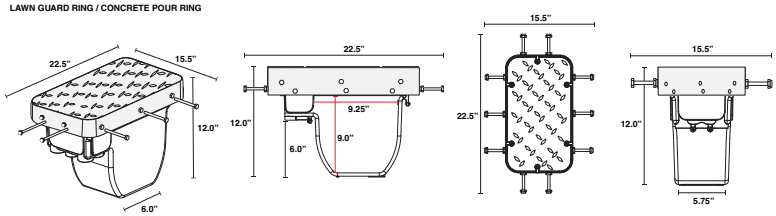
1 PRODUCT - DIMENSIONS

STANDARD



ISO VIEW | SIDE VIEW | HOUSING DOOR | FRONT VIEW

LAWN GUARD RING / CONCRETE POUR RING



ISO VIEW | SIDE VIEW | HOUSING DOOR | FRONT VIEW

2 PLATE COVER OPTIONS

Plate covers cannot be installed to existing door onsite. Plate covers must be factory-mounted to Q-VAULT housing door.



Black (Standard) | Stainless Steel | Bronze

3 RING OPTIONS



Standard | Lawn Guard Ring | Concrete Pour Ring

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BURO HAPPOLD

Luminaire Designation

Q4

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-120W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-240W-[VOLTAGE]- 24V

Specifications:
Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 120W, 240W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

Q-VAULT-5
Accessories - Direct Burial

COMPATIBLE ACCESSORIES

MOUNTING

Product	Sold In	QTY.
Perforated Drain Pipe	1	
Stabilizing Bars	2	

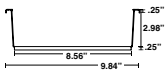

Perforated Drain Pipe


Stabilizing Bars

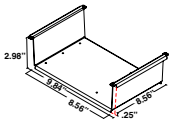
TRAY OPTIONS

Product	Sold In	QTY.
Black (Standard)	1	

NOTE: Not UL Listed



Black (Standard)
Front View



Black (Standard)
ISO View

KITS

Product	QTY.
Q-VAULT Installation Kit	



- 1x Epoxy pack
- 1x Epoxy application syringe
- 1x Wad of watertight putty
- 1x Desiccant pouch
- 1x Silver marker
- 1x Installation instructions
- 1x Drilling guide label
- 1x Hex tool
- 4x Wire ties

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BURO HAPPOLD

Luminaire Designation

Q4

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-120W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-240W-[VOLTAGE]- 24V

Specifications:
Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 120W, 240W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

Q-SET-1

AC POWER SUPPLY 60W–300W



- UL Listed direct burial power supply
- Designed to be used with the Q-VAULT-5 IP68 direct burial power supply enclosure
- Available in 12VAC or 24VAC options
- Wattage options range from 60W to 300W
- Equipped with one secondary circuit breaker
- Holds three UL listings: Landscape Lighting, Pool & Spa, and Low-Voltage Luminaire Power Supply
- Suitable for both interior and exterior lighting applications
- Provides five secondary taps to compensate for voltage drop
- Allows for connecting loads to one or more secondary taps of the Q-SETs.
- Must be purchased with Q-VAULT-5

1 PRODUCT	2 WATTAGE	3 PRIMARY VOLTAGE	4 SECONDARY VOLTAGE
Q-SET			

Sample Part Number: **Q-SET-60-120(60Hz)-12V**

1 PRODUCT	2 WATTAGE	3 PRIMARY VOLTAGE	4 SECONDARY VOLTAGE
Q-SET	60W 120W 180W 240W 300W 180W, 240W, and 300W listed for Pool & Spa	120 60Hz 220 60Hz 230 50Hz 240 60Hz 277 60Hz	12V 24V

PRODUCT INFORMATION

- For supply connections use wire rated for at least 90˚C
- Suitable for inground installation
- Use dimmers rated for magnetic low voltage load
- Not for installation to conduit extending directly to an underwater pool light forming shell
- Suitable for use with submersible luminaries
- Suitable for indoor & outdoor use
- WARNING: Risk of fire - if installation involves running wiring through a building structure, special wiring methods are needed. Consult a qualified electrician.
- CSA #239924
- Low Voltage Lighting Systems
  - CSA Class 3426-04 and Class 3426-94
  - CSA Standard C22.2 No. 250.0-08 - Luminaires : ANSI/ UL Standard 2108 - Low Voltage Lighting System
- Landscape Lighting Systems
  - CSA Class 3425-15 and Class 3425-95 :
  - CSA Standard C22.2 No. 250.7-07 - Extra-Low-Voltage Landscape Lighting Systems
  - ANSI/ UL Standard 1838 - Low Voltage Landscape Lighting Systems
- Component Hydromassage - 120V primary, 12V secondary
  - CSA Class 3425-96
  - ANSI/ UL Standard 379-Power Units for Fountain, Swimming Pool, and Spa Luminaires

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BURO HAPPOLD

Luminaire Designation

Q4

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-120W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-240W-[VOLTAGE]- 24V

Specifications:
Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 120W, 240W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

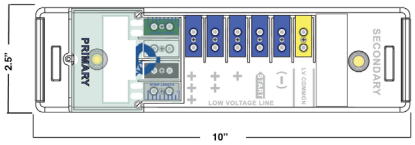
Buro Happold Project #P057035

Requirements:

Q-SET-1

AC POWER SUPPLY 60W–300W

1 PRODUCT - DIMENSIONS



2 TECHNICAL INFORMATION

Volt Rating	Secondary Circuit Breaker Size	Total Circuit Breaker Load	Number of Circuit Breaker	Total Q-SET Load
12V	5 A	60W	1	60W
12V	10 A	120W	1	120W
12V	15 A	180W	1	180W
12V	20 A	240W	1	240W
12V	25 A	300W	1	300W

24V	2.5 A	60W	1	60W
24V	5 A	120W	1	120W
24V	7.5 A	180W	1	180W
24V	10 A	240W	1	240W
24V	12.5 A	300W	1	300W

MULTI-VOLT & TAPS

- Two (2) primary taps, a switch or a dimmed tap to compensate for losses when dimming
- Five (5) secondary taps provide nominal secondary voltages of:
- 12V = 11V, 12V, 13V, 14V, & 15V
- 24V = 22V, 24V, 26V, 28V, & 30V
- Loads may be connected to one or more of the secondary taps of the PSC.
- No derating required for incandescent and halogen loads
- 50% derating require for LED retrofit loads
- The advantage is that loads at varying distances from the PSC can be tapped on different taps to recover voltage drop, allowing you to get the correct voltage at your load and produce between 85%-100% light output. (See Q-TRAN Voltage drop Calculator)
- Primary Circuit Protection: All 120V units come with both a primary and secondary, hydraulic, magnetic circuit breaker.
- All have a primary auto-reset thermal protector, which is built into the transformer. This thermal protector will temporarily disconnect the primary if the transformer overheats due to an overload or saturation from a faulty dimmer.
- Secondary Circuit Protection: 1 secondary breaker

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BURO HAPPOLD

Luminaire Designation

Q4

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-120W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-240W-[VOLTAGE]- 24V

Specifications:

Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 120W, 240W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

Q-SET-1

AC POWER SUPPLY 60W–300W

COMPATIBLE DIRECT BURIAL PRODUCTS

Q-VAULT	Q-CLIK	Q-WIRE	Q-TWO	QW-STRIPPER
				
IP68 wet listed direct burial enclosure for two Q-SET-1s	Watertight fitting for entryway in and out of Q-Tran housing	Highly efficient, long-lasting wire	Underground low voltage UF splice kit	UF cable outer jacket strip tool

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BURO HAPPOLD

Luminaire Designation

Q5

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-300W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-300W-[VOLTAGE]- 24V

Specifications:
Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 300W, 300W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

1. Locate enclosures as noted on plan.

2. Contractor to comply with manufacturer requirements to ensure completely IP68 rated enclosure, including the purchase of additional manufacturer accessories to meet an IP68 rated enclosure.

Q-VAULT-5
Accessories - Direct Burial



- The industry's only IP68 wet-listed direct burial transformer/power supply center and winner of the 2008 Lightfair Innovation Award for excellence in product design
- Having the opportunity to directly bury your low-voltage transformer/power supply center and hide it in the dirt or even concrete, the designer has the liberty to design a landscape without constraint.
- Made to house up to two 12V/24V Q-SET magnetic or electronic power supplies with up to 900W AC or 600W DC
- Completely watertight and comes with complete installation instructions and an easy-to-use sealing kit to ensure a proper installation.
- Most reliable direct burial power supply enclosure on the market and is pool & spa rated with the Q-SET 1, 2, and 3.
- All wire entry/exits other than conduit entries MUST use Q-CLIK connectors. Failure to use them will void warranty.

1 PRODUCT	2 PLATE COVER OPTIONS	3 RING OPTIONS
Q-VAULT-5		

Sample Part Number: **Q-VAULT-5-BK-ST**

1 PRODUCT

Q-VAULT-5

2 PLATE COVER OPTIONS

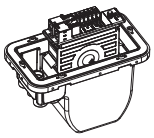
BK	Black (Standard)
SS	Stainless Steel
BZ	Bronze

3 RING OPTIONS

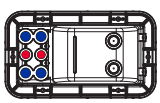
ST	Standard
LR	Lawn Guard Ring
CR	Concrete Pour Ring

PRODUCT INFORMATION

Fits	1	Up to 2
Q-SET-1		•
Q-SET-2	•	
Q-SET-3	•	
Q-SET-eLED		•
Q-SET-mLED		•



Knock Outs (in)	NPT KO's
1/2"	2
3/4"	4



Bottom View

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BURO HAPPOLD

Luminaire Designation

Q5

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-300W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-300W-[VOLTAGE]- 24V

Specifications:
Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 300W, 300W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

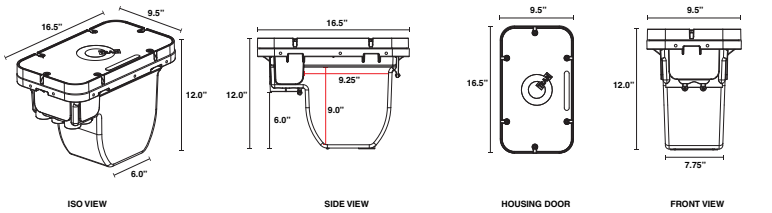
Buro Happold Project #P057035

Requirements:

Q-VAULT-5
Accessories - Direct Burial

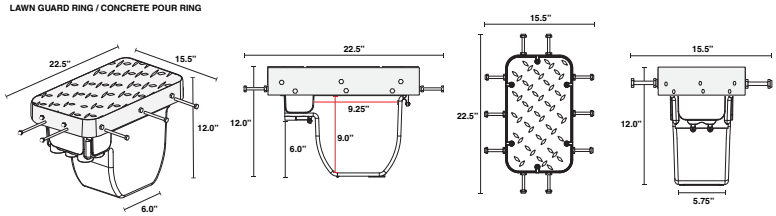
1 PRODUCT - DIMENSIONS

STANDARD



ISO VIEW | SIDE VIEW | HOUSING DOOR | FRONT VIEW

LAWN GUARD RING / CONCRETE POUR RING



ISO VIEW | SIDE VIEW | HOUSING DOOR | FRONT VIEW

2 PLATE COVER OPTIONS

Plate covers cannot be installed to existing door onsite. Plate covers must be factory-mounted to Q-VAULT housing door.



Black (Standard) | Stainless Steel | Bronze

3 RING OPTIONS



Standard | Lawn Guard Ring | Concrete Pour Ring

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BURO HAPPOLD

Luminaire Designation

Q5

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-300W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-300W-[VOLTAGE]- 24V

Specifications:

Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 300W, 300W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

Q-VAULT-5
Accessories - Direct Burial

COMPATIBLE ACCESSORIES

MOUNTING

Product	Sold In	QTY.
Perforated Drain Pipe	1	
Stabilizing Bars	2	



Perforated Drain Pipe

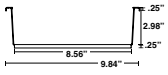


Stabilizing Bars

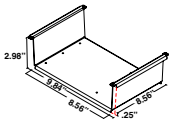
TRAY OPTIONS

Product	Sold In	QTY.
Black (Standard)	1	

NOTE: Not UL Listed



Black (Standard)
Front View



Black (Standard)
ISO View

KITS

Product	QTY.
Q-VAULT Installation Kit	



- 1x Epoxy pack
- 1x Epoxy application syringe
- 1x Wad of watertight putty
- 1x Desiccant pouch
- 1x Silver marker
- 1x Installation instructions
- 1x Drilling guide label
- 1x Hex tool
- 4x Wire ties

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BURO HAPPOLD

Luminaire Designation

Q5

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-300W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-300W-[VOLTAGE]- 24V

Specifications:
Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 300W, 300W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

Q-SET-1

AC POWER SUPPLY 60W–300W



- UL Listed direct burial power supply
- Designed to be used with the Q-VAULT-5 IP68 direct burial power supply enclosure
- Available in 12VAC or 24VAC options
- Wattage options range from 60W to 300W
- Equipped with one secondary circuit breaker
- Holds three UL listings: Landscape Lighting, Pool & Spa, and Low-Voltage Luminaire Power Supply
- Suitable for both interior and exterior lighting applications
- Provides five secondary taps to compensate for voltage drop
- Allows for connecting loads to one or more secondary taps of the Q-SETs.
- Must be purchased with Q-VAULT-5

1 PRODUCT	2 WATTAGE	3 PRIMARY VOLTAGE	4 SECONDARY VOLTAGE
Q-SET			

Sample Part Number: **Q-SET-60-120(60Hz)-12V**

1 PRODUCT	2 WATTAGE	3 PRIMARY VOLTAGE	4 SECONDARY VOLTAGE
Q-SET	60W 120W 180W 240W 300W 180W, 240W, and 300W listed for Pool & Spa	120 60Hz 220 60Hz 230 50Hz 240 60Hz 277 60Hz	12V 24V

PRODUCT INFORMATION

- For supply connections use wire rated for at least 90˚C
- Suitable for inground installation
- Use dimmers rated for magnetic low voltage load
- Not for installation to conduit extending directly to an underwater pool light forming shell
- Suitable for use with submersible luminaries
- Suitable for indoor & outdoor use
- WARNING: Risk of fire - if installation involves running wiring through a building structure, special wiring methods are needed. Consult a qualified electrician.
- CSA #239924
- Low Voltage Lighting Systems
  - CSA Class 3426-04 and Class 3426-94
  - CSA Standard C22.2 No. 250.0-08 - Luminaires : ANSI/ UL Standard 2108 - Low Voltage Lighting System
- Landscape Lighting Systems
  - CSA Class 3425-15 and Class 3425-95 :
  - CSA Standard C22.2 No. 250.7-07 - Extra-Low-Voltage Landscape Lighting Systems
  - ANSI/ UL Standard 1838 - Low Voltage Landscape Lighting Systems
- Component Hydromassage - 120V primary, 12V secondary
  - CSA Class 3425-96
  - ANSI/ UL Standard 379-Power Units for Fountain, Swimming Pool, and Spa Luminaires

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BURO HAPPOLD

Luminaire Designation

Q5

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-300W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-300W-[VOLTAGE]- 24V

Specifications:
Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 300W, 300W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

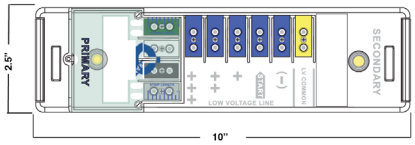
Buro Happold Project #P057035

Requirements:

Q-SET-1

AC POWER SUPPLY 60W–300W

1 PRODUCT - DIMENSIONS



2 TECHNICAL INFORMATION

Volt Rating	Secondary Circuit Breaker Size	Total Circuit Breaker Load	Number of Circuit Breaker	Total Q-SET Load
12V	5 A	60W	1	60W
12V	10 A	120W	1	120W
12V	15 A	180W	1	180W
12V	20 A	240W	1	240W
12V	25 A	300W	1	300W

24V	2.5 A	60W	1	60W
24V	5 A	120W	1	120W
24V	7.5 A	180W	1	180W
24V	10 A	240W	1	240W
24V	12.5 A	300W	1	300W

MULTI-VOLT & TAPS

- Two (2) primary taps, a switch or a dimmed tap to compensate for losses when dimming
- Five (5) secondary taps provide nominal secondary voltages of:
- 12V = 11V, 12V, 13V, 14V, & 15V
- 24V = 22V, 24V, 26V, 28V, & 30V
- Loads may be connected to one or more of the secondary taps of the PSC.
- No derating required for incandescent and halogen loads
- 50% derating require for LED retrofit loads
- The advantage is that loads at varying distances from the PSC can be tapped on different taps to recover voltage drop, allowing you to get the correct voltage at your load and produce between 85%-100% light output. (See Q-TRAN Voltage drop Calculator)
- Primary Circuit Protection: All 120V units come with both a primary and secondary, hydraulic, magnetic circuit breaker.
- All have a primary auto-reset thermal protector, which is built into the transformer. This thermal protector will temporarily disconnect the primary if the transformer overheats due to an overload or saturation from a faulty dimmer.
- Secondary Circuit Protection: 1 secondary breaker

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BURO HAPPOLD

Luminaire Designation

Q5

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-300W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-300W-[VOLTAGE]- 24V

Specifications:

Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 300W, 300W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

Q-SET-1

AC POWER SUPPLY 60W–300W

COMPATIBLE DIRECT BURIAL PRODUCTS

Q-VAULT	Q-CLIK	Q-WIRE	Q-TWO	QW-STRIPPER
				
IP68 wet listed direct burial enclosure for two Q-SET-1s	Watertight fitting for entryway in and out of Q-Tran housing	Highly efficient, long-lasting wire	Underground low voltage UF splice kit	UF cable outer jacket strip tool

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BURO HAPPOLD

Luminaire Designation

Q6

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-120W-[VOLTAGE]- 24V

Specifications:

Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 120W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

1. Locate enclosures as noted on plan.

2. Contractor to comply with manufacturer requirements to ensure completely IP68 rated enclosure, including the purchase of additional manufacturer accessories to meet an IP68 rated enclosure.

Q-VAULT-5

Accessories - Direct Burial



- The industry's only IP68 wet-listed direct burial transformer/power supply center and winner of the 2008 Lightfair Innovation Award for excellence in product design
- Having the opportunity to directly bury your low-voltage transformer/power supply center and hide it in the dirt or even concrete, the designer has the liberty to design a landscape without constraint.
- Made to house up to two 12V/24V Q-SET magnetic or electronic power supplies with up to 900W AC or 600W DC
- Completely watertight and comes with complete installation instructions and an easy-to-use sealing kit to ensure a proper installation.
- Most reliable direct burial power supply enclosure on the market and is pool & spa rated with the Q-SET 1, 2, and 3.
- All wire entry/exits other than conduit entries MUST use Q-CLIK connectors. Failure to use them will void warranty.

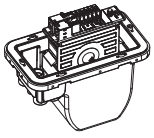
1 PRODUCT	2 PLATE COVER OPTIONS	3 RING OPTIONS
Q-VAULT-5		

Sample Part Number: **Q-VAULT-5-BK-ST**

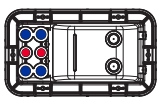
1 PRODUCT	2 PLATE COVER OPTIONS	3 RING OPTIONS
Q-VAULT-5	**BK** Black (Standard) **SS** Stainless Steel **BZ** Bronze	**ST** Standard **LR** Lawn Guard Ring **CR** Concrete Pour Ring

PRODUCT INFORMATION

Fits	1	Up to 2
Q-SET-1		•
Q-SET-2	•	
Q-SET-3	•	
Q-SET-eLED		•
Q-SET-mLED		•



Knock Outs (in)	NPT KO's
1/2"	2
3/4"	4



Bottom View

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BURO HAPPOLD

Luminaire Designation

Q6

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-120W-[VOLTAGE]- 24V

Specifications:

Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 120W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

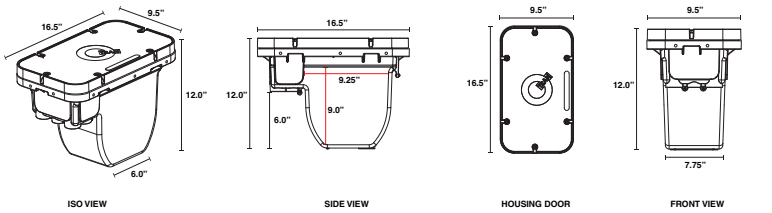
Buro Happold Project #P057035

Requirements:

Q-VAULT-5
Accessories - Direct Burial

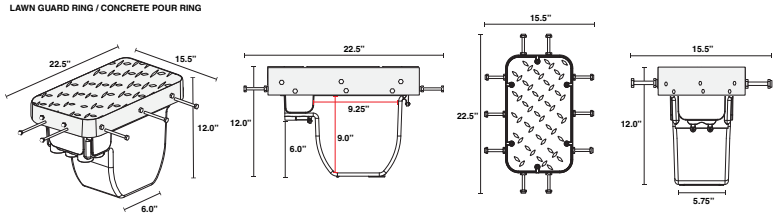
1 PRODUCT - DIMENSIONS

STANDARD



ISO VIEW | SIDE VIEW | HOUSING DOOR | FRONT VIEW

LAWN GUARD RING / CONCRETE POUR RING



ISO VIEW | SIDE VIEW | HOUSING DOOR | FRONT VIEW

2 PLATE COVER OPTIONS

Plate covers cannot be installed to existing door onsite. Plate covers must be factory-mounted to Q-VAULT housing door.



Black (Standard) | Stainless Steel | Bronze

3 RING OPTIONS



Standard | Lawn Guard Ring | Concrete Pour Ring

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BURO HAPPOLD

Luminaire Designation

Q6

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-120W-[VOLTAGE]- 24V

Specifications:

Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 120W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

Q-VAULT-5

Accessories - Direct Burial

COMPATIBLE ACCESSORIES

MOUNTING

Product	Sold In	QTY.
Perforated Drain Pipe	1	
Stabilizing Bars	2	



Perforated Drain Pipe

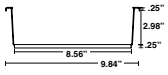


Stabilizing Bars

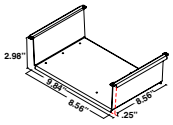
TRAY OPTIONS

Product	Sold In	QTY.
Black (Standard)	1	

NOTE: Not UL Listed



Black (Standard)
Front View



Black (Standard)
ISO View

KITS

Product	QTY.
Q-VAULT Installation Kit	



- 1x Epoxy pack
- 1x Epoxy application syringe
- 1x Wad of watertight putty
- 1x Desiccant pouch
- 1x Silver marker
- 1x Installation instructions
- 1x Drilling guide label
- 1x Hex tool
- 4x Wire ties

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BURO HAPPOLD

Luminaire Designation

Q6

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-120W-[VOLTAGE]- 24V

Specifications:

Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 120W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

Q-SET-1

AC POWER SUPPLY 60W–300W



- UL Listed direct burial power supply
- Designed to be used with the Q-VAULT-5 IP68 direct burial power supply enclosure
- Available in 12VAC or 24VAC options
- Wattage options range from 60W to 300W
- Equipped with one secondary circuit breaker
- Holds three UL listings: Landscape Lighting, Pool & Spa, and Low-Voltage Luminaire Power Supply
- Suitable for both interior and exterior lighting applications
- Provides five secondary taps to compensate for voltage drop
- Allows for connecting loads to one or more secondary taps of the Q-SETs.
- Must be purchased with Q-VAULT-5

1 PRODUCT	2 WATTAGE	3 PRIMARY VOLTAGE	4 SECONDARY VOLTAGE
Q-SET			

Sample Part Number: **Q-SET-60-120(60Hz)-12V**

1 PRODUCT	2 WATTAGE	3 PRIMARY VOLTAGE	4 SECONDARY VOLTAGE
Q-SET	60W 120W 180W 240W 300W 180W, 240W, and 300W listed for Pool & Spa	120 60Hz 220 60Hz 230 50Hz 240 60Hz 277 60Hz	12V 24V

PRODUCT INFORMATION

- For supply connections use wire rated for at least 90˚C
- Suitable for inground installation
- Use dimmers rated for magnetic low voltage load
- Not for installation to conduit extending directly to an underwater pool light forming shell
- Suitable for use with submersible luminaries
- Suitable for indoor & outdoor use
- WARNING: Risk of fire - if installation involves running wiring through a building structure, special wiring methods are needed. Consult a qualified electrician.
- CSA #239924
- Low Voltage Lighting Systems
  - CSA Class 3426-04 and Class 3426-94
  - CSA Standard C22.2 No. 250.0-08 - Luminaires : ANSI/ UL Standard 2108 - Low Voltage Lighting System
- Landscape Lighting Systems
  - CSA Class 3425-15 and Class 3425-95 :
  - CSA Standard C22.2 No. 250.7-07 - Extra-Low-Voltage Landscape Lighting Systems
  - ANSI/ UL Standard 1838 - Low Voltage Landscape Lighting Systems
- Component Hydromassage - 120V primary, 12V secondary
  - CSA Class 3425-96
  - ANSI/ UL Standard 379-Power Units for Fountain, Swimming Pool, and Spa Luminaires

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BURO HAPPOLD

Luminaire Designation

Q6

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-120W-[VOLTAGE]- 24V

Specifications:
Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 120W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

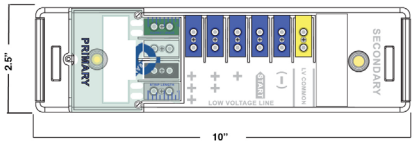
Buro Happold Project #P057035

Requirements:

Q-SET-1

AC POWER SUPPLY 60W–300W

1 PRODUCT - DIMENSIONS



2 TECHNICAL INFORMATION

Volt Rating	Secondary Circuit Breaker Size	Total Circuit Breaker Load	Number of Circuit Breaker	Total Q-SET Load
12V	5 A	60W	1	60W
12V	10 A	120W	1	120W
12V	15 A	180W	1	180W
12V	20 A	240W	1	240W
12V	25 A	300W	1	300W
24V	2.5 A	60W	1	60W
24V	5 A	120W	1	120W
24V	7.5 A	180W	1	180W
24V	10 A	240W	1	240W
24V	12.5 A	300W	1	300W

MULTI-VOLT & TAPS

- Two (2) primary taps, a switch or a dimmed tap to compensate for losses when dimming
- Five (5) secondary taps provide nominal secondary voltages of:
- 12V = 11V, 12V, 13V, 14V, & 15V
- 24V = 22V, 24V, 26V, 28V, & 30V
- Loads may be connected to one or more of the secondary taps of the PSC.
- No derating required for incandescent and halogen loads
- 50% derating require for LED retrofit loads
- The advantage is that loads at varying distances from the PSC can be tapped on different taps to recover voltage drop, allowing you to get the correct voltage at your load and produce between 85%-100% light output. (See Q-TRAN Voltage drop Calculator)
- Primary Circuit Protection: All 120V units come with both a primary and secondary, hydraulic, magnetic circuit breaker.
- All have a primary auto-reset thermal protector, which is built into the transformer. This thermal protector will temporarily disconnect the primary if the transformer overheats due to an overload or saturation from a faulty dimmer.
- Secondary Circuit Protection: 1 secondary breaker

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BURO HAPPOLD

Luminaire Designation

Q6

Sheet Number 6 of 6

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-120W-[VOLTAGE]- 24V

Specifications:

Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 120W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

Q-SET-1

AC POWER SUPPLY 60W–300W

COMPATIBLE DIRECT BURIAL PRODUCTS



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BURO HAPPOLD

Luminaire Designation

Q7

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-60W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-180W-[VOLTAGE]- 12V

Specifications:
Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 60W, 180W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

1. Locate enclosures as noted on plan.

2. Contractor to comply with manufacturer requirements to ensure completely IP68 rated enclosure, including the purchase of additional manufacturer accessories to meet an IP68 rated enclosure.

Q-VAULT-5
Accessories - Direct Burial



- The industry's only IP68 wet-listed direct burial transformer/power supply center and winner of the 2008 Lightfair Innovation Award for excellence in product design
- Having the opportunity to directly bury your low-voltage transformer/power supply center and hide it in the dirt or even concrete, the designer has the liberty to design a landscape without constraint.
- Made to house up to two 12V/24V Q-SET magnetic or electronic power supplies with up to 900W AC or 600W DC
- Completely watertight and comes with complete installation instructions and an easy-to-use sealing kit to ensure a proper installation.
- Most reliable direct burial power supply enclosure on the market and is pool & spa rated with the Q-SET 1, 2, and 3.
- All wire entry/exits other than conduit entries MUST use Q-CLIK connectors. Failure to use them will void warranty.

1 PRODUCT	2 PLATE COVER OPTIONS	3 RING OPTIONS
Q-VAULT-5		

Sample Part Number: **Q-VAULT-5-BK-ST**

1 PRODUCT

Q-VAULT-5

2 PLATE COVER OPTIONS

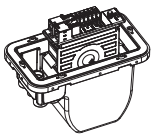
BK	Black (Standard)
SS	Stainless Steel
BZ	Bronze

3 RING OPTIONS

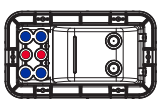
ST	Standard
LR	Lawn Guard Ring
CR	Concrete Pour Ring

PRODUCT INFORMATION

Fits	1	Up to 2
Q-SET-1		•
Q-SET-2	•	
Q-SET-3	•	
Q-SET-eLED		•
Q-SET-mLED		•



Knock Outs (in)	NPT KO's
1/2"	2
3/4"	4



Bottom View

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BURO HAPPOLD

Luminaire Designation

Q7

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-60W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-180W-[VOLTAGE]- 12V

Specifications:
Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 60W, 180W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

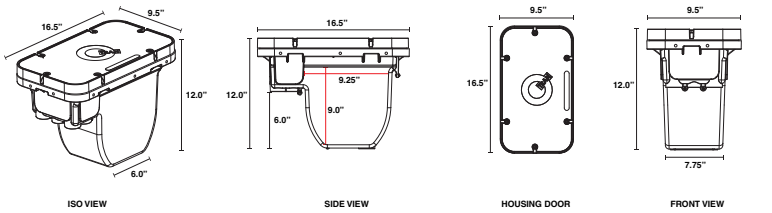
Buro Happold Project #P057035

Requirements:

Q-VAULT-5
Accessories - Direct Burial

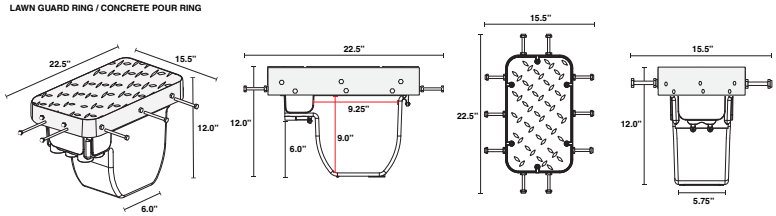
1 PRODUCT - DIMENSIONS

STANDARD



ISO VIEW | SIDE VIEW | HOUSING DOOR | FRONT VIEW

LAWN GUARD RING / CONCRETE POUR RING



ISO VIEW | SIDE VIEW | HOUSING DOOR | FRONT VIEW

2 PLATE COVER OPTIONS

Plate covers cannot be installed to existing door onsite. Plate covers must be factory-mounted to Q-VAULT housing door.



Black (Standard) | Stainless Steel | Bronze

3 RING OPTIONS



Standard | Lawn Guard Ring | Concrete Pour Ring

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BURO HAPPOLD

Luminaire Designation

Q7

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-60W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-180W-[VOLTAGE]- 12V

Specifications:

Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 60W, 180W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

Q-VAULT-5
Accessories - Direct Burial

COMPATIBLE ACCESSORIES

MOUNTING

Product	Sold In	QTY.
Perforated Drain Pipe	1	
Stabilizing Bars	2	



Perforated Drain Pipe

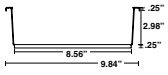


Stabilizing Bars

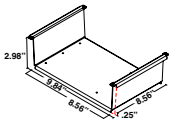
TRAY OPTIONS

Product	Sold In	QTY.
Black (Standard)	1	

NOTE: Not UL Listed



Black (Standard)
Front View



Black (Standard)
ISO View

KITS

Product	QTY.
Q-VAULT Installation Kit	



- 1x Epoxy pack
- 1x Epoxy application syringe
- 1x Wad of watertight putty
- 1x Desiccant pouch
- 1x Silver marker
- 1x Installation instructions
- 1x Drilling guide label
- 1x Hex tool
- 4x Wire ties

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Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-60W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-180W-[VOLTAGE]- 12V

Specifications:
Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 60W, 180W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

Q-SET-1
AC POWER SUPPLY 60W–300W



- UL Listed direct burial power supply
- Designed to be used with the Q-VAULT-5 IP68 direct burial power supply enclosure
- Available in 12VAC or 24VAC options
- Wattage options range from 60W to 300W
- Equipped with one secondary circuit breaker
- Holds three UL listings: Landscape Lighting, Pool & Spa, and Low-Voltage Luminaire Power Supply
- Suitable for both interior and exterior lighting applications
- Provides five secondary taps to compensate for voltage drop
- Allows for connecting loads to one or more secondary taps of the Q-SETs.
- Must be purchased with Q-VAULT-5

1 PRODUCT	2 WATTAGE	3 PRIMARY VOLTAGE	4 SECONDARY VOLTAGE
Q-SET			

Sample Part Number: **Q-SET-60-120(60Hz)-12V**

1 PRODUCT	2 WATTAGE	3 PRIMARY VOLTAGE	4 SECONDARY VOLTAGE
Q-SET	60W 120W 180W 240W 300W 180W, 240W, and 300W listed for Pool & Spa	120 60Hz 220 60Hz 230 50Hz 240 60Hz 277 60Hz	12V 24V

PRODUCT INFORMATION

- For supply connections use wire rated for at least 90˚C
- Suitable for inground installation
- Use dimmers rated for magnetic low voltage load
- Not for installation to conduit extending directly to an underwater pool light forming shell
- Suitable for use with submersible luminaries
- Suitable for indoor & outdoor use
- WARNING: Risk of fire - if installation involves running wiring through a building structure, special wiring methods are needed. Consult a qualified electrician.
- CSA #239924
- Low Voltage Lighting Systems
  - CSA Class 3426-04 and Class 3426-94
  - CSA Standard C22.2 No. 250.0-08 - Luminaires : ANSI/ UL Standard 2108 - Low Voltage Lighting System
- Landscape Lighting Systems
  - CSA Class 3425-15 and Class 3425-95 :
  - CSA Standard C22.2 No. 250.7-07 - Extra-Low-Voltage Landscape Lighting Systems
  - ANSI/ UL Standard 1838 - Low Voltage Landscape Lighting Systems
- Component Hydromassage - 120V primary, 12V secondary
  - CSA Class 3425-96
  - ANSI/ UL Standard 379-Power Units for Fountain, Swimming Pool, and Spa Luminaires

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BURO HAPPOLD

Luminaire Designation

Q7

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-60W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-180W-[VOLTAGE]- 12V

Specifications:
Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 60W, 180W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

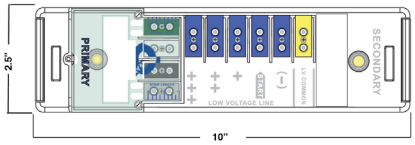
Buro Happold Project #P057035

Requirements:

Q-SET-1

AC POWER SUPPLY 60W–300W

1 PRODUCT - DIMENSIONS



2 TECHNICAL INFORMATION

Volt Rating	Secondary Circuit Breaker Size	Total Circuit Breaker Load	Number of Circuit Breaker	Total Q-SET Load
12V	5 A	60W	1	60W
12V	10 A	120W	1	120W
12V	15 A	180W	1	180W
12V	20 A	240W	1	240W
12V	25 A	300W	1	300W
24V	2.5 A	60W	1	60W
24V	5 A	120W	1	120W
24V	7.5 A	180W	1	180W
24V	10 A	240W	1	240W
24V	12.5 A	300W	1	300W

MULTI-VOLT & TAPS

- Two (2) primary taps, a switch or a dimmed tap to compensate for losses when dimming
- Five (5) secondary taps provide nominal secondary voltages of:
- 12V = 11V, 12V, 13V, 14V, & 15V
- 24V = 22V, 24V, 26V, 28V, & 30V
- Loads may be connected to one or more of the secondary taps of the PSC.
- No derating required for incandescent and halogen loads
- 50% derating require for LED retrofit loads
- The advantage is that loads at varying distances from the PSC can be tapped on different taps to recover voltage drop, allowing you to get the correct voltage at your load and produce between 85%-100% light output. (See Q-TRAN Voltage drop Calculator)
- Primary Circuit Protection: All 120V units come with both a primary and secondary, hydraulic, magnetic circuit breaker.
- All have a primary auto-reset thermal protector, which is built into the transformer. This thermal protector will temporarily disconnect the primary if the transformer overheats due to an overload or saturation from a faulty dimmer.
- Secondary Circuit Protection: 1 secondary breaker

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BURO HAPPOLD

Luminaire Designation

Q7

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-60W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-180W-[VOLTAGE]- 12V

Specifications:

Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 60W, 180W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

Q-SET-1

AC POWER SUPPLY 60W–300W

COMPATIBLE DIRECT BURIAL PRODUCTS

Q-VAULT	Q-CLIK	Q-WIRE	Q-TWO	QW-STRIPPER
				
IP68 wet listed direct burial enclosure for two Q-SET-1s	Watertight fitting for entryway in and out of Q-Tran housing	Highly efficient, long-lasting wire	Underground low voltage UF splice kit	UF cable outer jacket strip tool

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BURO HAPPOLD

Luminaire Designation

Q8

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-120W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-120W-[VOLTAGE]- 12V

Specifications:
Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 120W, 120W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

1. Locate enclosures as noted on plan.

2. Contractor to comply with manufacturer requirements to ensure completely IP68 rated enclosure, including the purchase of additional manufacturer accessories to meet an IP68 rated enclosure.

Q-VAULT-5
Accessories - Direct Burial



- The industry's only IP68 wet-listed direct burial transformer/power supply center and winner of the 2008 Lightfair Innovation Award for excellence in product design
- Having the opportunity to directly bury your low-voltage transformer/power supply center and hide it in the dirt or even concrete, the designer has the liberty to design a landscape without constraint.
- Made to house up to two 12V/24V Q-SET magnetic or electronic power supplies with up to 900W AC or 600W DC
- Completely watertight and comes with complete installation instructions and an easy-to-use sealing kit to ensure a proper installation.
- Most reliable direct burial power supply enclosure on the market and is pool & spa rated with the Q-SET 1, 2, and 3.
- All wire entry/exits other than conduit entries MUST use Q-CLIK connectors. Failure to use them will void warranty.

1 PRODUCT	2 PLATE COVER OPTIONS	3 RING OPTIONS
Q-VAULT-5		

Sample Part Number: **Q-VAULT-5-BK-ST**

1 PRODUCT

Q-VAULT-5

2 PLATE COVER OPTIONS

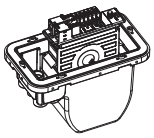
BK	Black (Standard)
SS	Stainless Steel
BZ	Bronze

3 RING OPTIONS

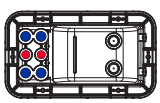
ST	Standard
LR	Lawn Guard Ring
CR	Concrete Pour Ring

PRODUCT INFORMATION

Fits	1	Up to 2
Q-SET-1		•
Q-SET-2	•	
Q-SET-3	•	
Q-SET-eLED		•
Q-SET-mLED		•



Knock Outs (in)	NPT KO's
1/2"	2
3/4"	4



Bottom View

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BURO HAPPOLD

Luminaire Designation

Q8

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-120W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-120W-[VOLTAGE]- 12V

Specifications:
Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 120W, 120W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

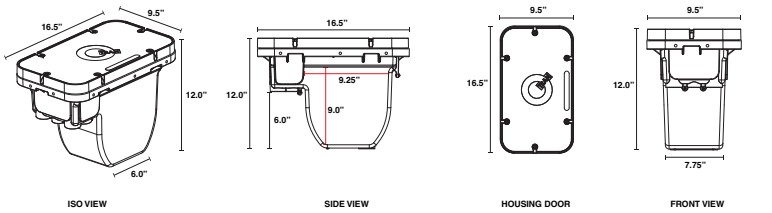
Buro Happold Project #P057035

Requirements:

Q-VAULT-5
Accessories - Direct Burial

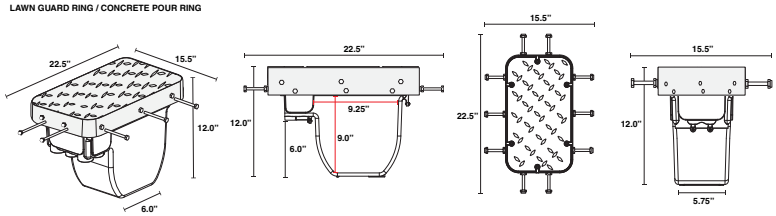
1 PRODUCT - DIMENSIONS

STANDARD



ISO VIEW | SIDE VIEW | HOUSING DOOR | FRONT VIEW

LAWN GUARD RING / CONCRETE POUR RING



ISO VIEW | SIDE VIEW | HOUSING DOOR | FRONT VIEW

2 PLATE COVER OPTIONS

Plate covers cannot be installed to existing door onsite. Plate covers must be factory-mounted to Q-VAULT housing door.



Black (Standard) | Stainless Steel | Bronze

3 RING OPTIONS



Standard | Lawn Guard Ring | Concrete Pour Ring

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Luminaire Designation

Q8

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-120W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-120W-[VOLTAGE]- 12V

Specifications:
Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 120W, 120W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

Q-VAULT-5
Accessories - Direct Burial

COMPATIBLE ACCESSORIES

MOUNTING

Product	Sold In	QTY.
Perforated Drain Pipe	1	
Stabilizing Bars	2	

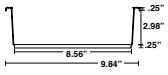

Perforated Drain Pipe


Stabilizing Bars

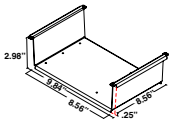
TRAY OPTIONS

Product	Sold In	QTY.
Black (Standard)	1	

NOTE: Not UL Listed



Black (Standard)
Front View



Black (Standard)
ISO View

KITS

Product	QTY.
Q-VAULT Installation Kit	



- 1x Epoxy pack
- 1x Epoxy application syringe
- 1x Wad of watertight putty
- 1x Desiccant pouch
- 1x Silver marker
- 1x Installation instructions
- 1x Drilling guide label
- 1x Hex tool
- 4x Wire ties

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Luminaire Designation

Q8

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-120W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-120W-[VOLTAGE]- 12V

Specifications:
Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 120W, 120W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

Q-SET-1

AC POWER SUPPLY 60W–300W



- UL Listed direct burial power supply
- Designed to be used with the Q-VAULT-5 IP68 direct burial power supply enclosure
- Available in 12VAC or 24VAC options
- Wattage options range from 60W to 300W
- Equipped with one secondary circuit breaker
- Holds three UL listings: Landscape Lighting, Pool & Spa, and Low-Voltage Luminaire Power Supply
- Suitable for both interior and exterior lighting applications
- Provides five secondary taps to compensate for voltage drop
- Allows for connecting loads to one or more secondary taps of the Q-SETs.
- Must be purchased with Q-VAULT-5

1 PRODUCT	2 WATTAGE	3 PRIMARY VOLTAGE	4 SECONDARY VOLTAGE
Q-SET			

Sample Part Number: **Q-SET-60-120(60Hz)-12V**

1 PRODUCT	2 WATTAGE	3 PRIMARY VOLTAGE	4 SECONDARY VOLTAGE
Q-SET	60W 120W 180W 240W 300W 180W, 240W, and 300W listed for Pool & Spa	120 60Hz 220 60Hz 230 50Hz 240 60Hz 277 60Hz	12V 24V

PRODUCT INFORMATION

- For supply connections use wire rated for at least 90˚C
- Suitable for inground installation
- Use dimmers rated for magnetic low voltage load
- Not for installation to conduit extending directly to an underwater pool light forming shell
- Suitable for use with submersible luminaries
- Suitable for indoor & outdoor use
- WARNING: Risk of fire - if installation involves running wiring through a building structure, special wiring methods are needed. Consult a qualified electrician.
- CSA #239924
- Low Voltage Lighting Systems
  - CSA Class 3426-04 and Class 3426-94
  - CSA Standard C22.2 No. 250.0-08 - Luminaires : ANSI/ UL Standard 2108 - Low Voltage Lighting System
- Landscape Lighting Systems
  - CSA Class 3425-15 and Class 3425-95 :
  - CSA Standard C22.2 No. 250.7-07 - Extra-Low-Voltage Landscape Lighting Systems
  - ANSI/ UL Standard 1838 - Low Voltage Landscape Lighting Systems
- Component Hydromassage - 120V primary, 12V secondary
  - CSA Class 3425-96
  - ANSI/ UL Standard 379-Power Units for Fountain, Swimming Pool, and Spa Luminaires

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BURO HAPPOLD

Luminaire Designation

Q8

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-120W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-120W-[VOLTAGE]- 12V

Specifications:
Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 120W, 120W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

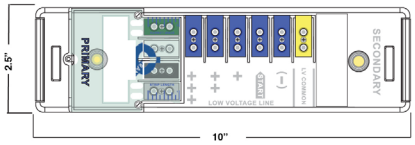
Buro Happold Project #P057035

Requirements:

Q-SET-1

AC POWER SUPPLY 60W–300W

1 PRODUCT - DIMENSIONS



2 TECHNICAL INFORMATION

Volt Rating	Secondary Circuit Breaker Size	Total Circuit Breaker Load	Number of Circuit Breaker	Total Q-SET Load
12V	5 A	60W	1	60W
12V	10 A	120W	1	120W
12V	15 A	180W	1	180W
12V	20 A	240W	1	240W
12V	25 A	300W	1	300W

24V	2.5 A	60W	1	60W
24V	5 A	120W	1	120W
24V	7.5 A	180W	1	180W
24V	10 A	240W	1	240W
24V	12.5 A	300W	1	300W

MULTI-VOLT & TAPS

- Two (2) primary taps, a switch or a dimmed tap to compensate for losses when dimming
- Five (5) secondary taps provide nominal secondary voltages of:
- 12V = 11V, 12V, 13V, 14V, & 15V
- 24V = 22V, 24V, 26V, 28V, & 30V
- Loads may be connected to one or more of the secondary taps of the PSC.
- No derating required for incandescent and halogen loads
- 50% derating require for LED retrofit loads
- The advantage is that loads at varying distances from the PSC can be tapped on different taps to recover voltage drop, allowing you to get the correct voltage at your load and produce between 85%-100% light output. (See Q-TRAN Voltage drop Calculator)
- Primary Circuit Protection: All 120V units come with both a primary and secondary, hydraulic, magnetic circuit breaker.
- All have a primary auto-reset thermal protector, which is built into the transformer. This thermal protector will temporarily disconnect the primary if the transformer overheats due to an overload or saturation from a faulty dimmer.
- Secondary Circuit Protection: 1 secondary breaker

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BURO HAPPOLD

Luminaire Designation

Q8

Description: Direct Burial Transformer Enclosure IP68

Manufacturer: Q-Tran
Catalog Reference: Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-120W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-120W-[VOLTAGE]- 12V

Specifications:

Lamp Type: NA
Color Temperature: NA
Color Consistency:
Optical Distribution: NA
Rated Life:
Control Gear Type: NA
Wattage: 120W, 120W
Accessories:

Lumen Output: NA
CRI: NA
Efficacy: NA
IP Rating: IP68
UGR:
Dimming Range: NA
Voltage:

Location: Throughout

Buro Happold Project #P057035

Requirements:

Q-SET-1

AC POWER SUPPLY 60W–300W

COMPATIBLE DIRECT BURIAL PRODUCTS

Q-VAULT	Q-CLIK	Q-WIRE	Q-TWO	QW-STRIPPER
				
IP68 wet listed direct burial enclosure for two Q-SET-1s	Watertight fitting for entryway in and out of Q-Tran housing	Highly efficient, long-lasting wire	Underground low voltage UF splice kit	UF cable outer jacket strip tool

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NEW CONSTRUCTION OF:

AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

FORT BEND COUNTY, TEXAS

Prepared for:
FORT BEND COUNTY
TDLR# TABS2023020923

Issued Information:
ISSUE FOR BID AND CONSTRUCTION

12 APR 2024



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SCOPE OF WORK & ALTERNATES FOR PRICING

1. **SCOPE OF WORK** - REFERENCE SHEET G001 FOR SCOPE OF WORK LIMITS FOR BID. BIDDERS ARE REQUESTED TO REMIT BIDS FOR PHASE 1 ONLY, AS DEPICTED ON G001. THE AREAS OUTSIDE OF THE SCOPE, PHASE 2, ARE NOT INTENDED FOR THIS BID SOLICITATION.

IN INSTANCES WHERE ADDITIONAL CLARITY IS REQUIRED, OR, WHERE ASSUMPTIONS ARE MADE IN THE BID PROCESS, IT IS INCUMBENT UPON THE BIDDER TO SEEK FURTHER CLARIFICATION BY DILIGENTLY PURSUING REQUESTS FOR INFORMATION (RFI) BEFORE SUBMITTING THEIR BID.

2. REFERENCE SHEET G001 - ALTERNATES BID ITEM NOTES: REF PHASE 1 BID FORM.

CIVIL
1. REFERENCE C-SERIES SHEET FOR EXPANDED SCOPE REQUIREMENTS

2. **PARKING LOT SYSTEM** – PROVIDE DEDUCTIVE ALTERNATE PRICING OPTION FOR CONCRETE PARKING LOT IN ITS ENTIRETY. CONTRACTOR SHALL INCLUDE COST FOR PROPOSE LANDSCAPE INLET AS INDICATED ON C302. REFER TO CIVIL AND LANDSCAPE DRAWINGS FOR ADDITIONAL INFORMATION.

LANDSCAPE
1. **LANDSCAPE WALL – CAST-IN-PLACE (CIP)** – PROVIDE ALTERNATE PRICING OPTION FOR CAST-IN-PLACE CONCRETE WALL SYSTEM WITH INTEGRAL COLOR IN LIEU OF GABION WALL SYSTEM. REFER TO DETAILS ON L1.29 AND SPECIFICATIONS (S100). CONTRACTOR SHALL PROVIDE AN ENGINEERED SOLUTION, SIGNED AND SEALED, FOR CIP WALL.

2. **LANDSCAPE FURNITURE AND DECKING** - A. PROVIDE DEDUCTIVE ALTERNATE PRICING FOR ALL FURNITURE AS SCHEDULED ON SHEET L1.08 EXCEPT FOR FLAGPOLES.
B. PROVIDE ALTERNATE PRICING FOR COMPOSITE WOOD FURNITURE AND DECKING IN LIEU OF SPECIFIED IPE.

3. **LANDSCAPE SCREEN AROUND UTILITIES TERMINOUS** – CONTRACTOR TO PROVIDE AN ALLOWANCE OF $4000 TO PROVIDE LANDSCAPING AROUND TERMINOUS.

4. **SPECIALITY PAVING** - PROVIDE ALTERNATE PRICING FOR PAVER SYSTEM. REFER TO NOTES ON L1.08.

5. **TREE FORESTATION** - PROVIDE DEDUCTIVE ALTERNATE PRICING FOR TREE FORESTATION ZONE A & B ONLY. REFER TO SCHEDULE ON SHEET L2.09

STRUCTURE
1. REFERENCE SHEET G001 FOR AREA OF WORK FOR BID. REFERENCE ALTERNATES FOR CAST-IN-PLACE CONCRETE WALL WITH INTEGRAL COLOR IN LIEU OF GABION WALL REQUIREMENTS.

ARCHITECTURE
1. **MONUMENT - GLASS FIBER REINFORCED CONCRETE (GFRC) –** PROVIDE ALTERNATE PRICING FOR A GFRC SYSTEM IN LIEU OF ARCHITECTURAL PRECAST CONCRETE SYSTEM FOR THE MEMORIAL MONUMENT. MATCH THE PRECAST SYSTEM DESIGN INTENT AS INDICATED. SYSTEM TO MEET ALL APPLICABLE CODES, ENGINEERING DRAWINGS TO BE SIGNED AND SEALED BY A LICENSED ENGINEER IN THE STATE OF TEXAS AND TO MEET ALL DESIGN LOADS. THE SYSTEM SHALL BE DESIGNED AS A COMPLETE SYSTEM INCLUSIVE OF ALL REQUIRED PANEL FRAMING SUPPORT AND STRUCTURAL MEMBERS. THE GFRC SYSTEM SHALL BE SAME IN GEOMETRY AS INDICATED IN DRAWINGS. REFERENCE MASTER SPECIFICATION SECTIONS 03 49 00 GLASS FIBER REINFORCED CONCRETE AND 03 30 00 CAST-IN-PLACE CONCRETE. 03 45 00 ARCHITECTURAL PRECAST CONCRETE, AND 05 12 00 STRUCTURAL STEEL FRAMING. REFERENCE APC-1 NOTES REGARDING SAMPLE SIZE, FINISH AND COLOR. TEXTURE TO BE SIMILAR TO APC-1 AND APC-2 (REFERENCE A102). REFERENCE STRUCTURAL DRAWINGS FOR FOUNDATION DESIGN.

2. **PEDESTRIAN PORTAL –** PROVIDE DEDUCTIVE ALTERNATE OPTION FOR ALL PEDESTRIAN PORTALS. REFERENCE LANDSCAPE DRAWING AND SHEET A810.

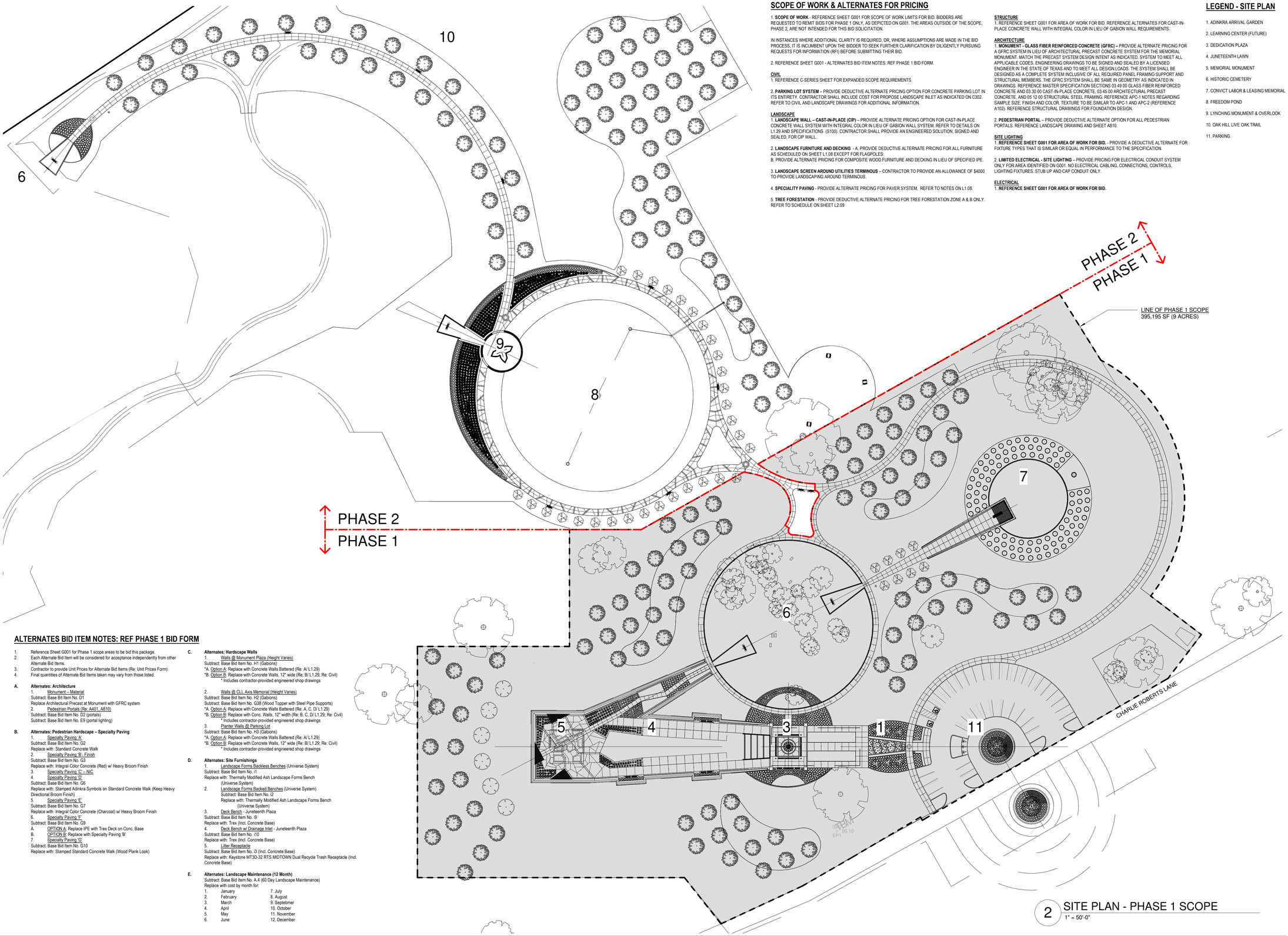
SITE LIGHTING
1. **REFERENCE SHEET G001 FOR AREA OF WORK FOR BID.** - PROVIDE A DEDUCTIVE ALTERNATE FOR FIXTURE TYPES THAT IS SIMILAR OR EQUAL IN PERFORMANCE TO THE SPECIFICATION.

2. **LIMITED ELECTRICAL - SITE LIGHTING** – PROVIDE PRICING FOR ELECTRICAL CONDUIT SYSTEM ONLY FOR AREA IDENTIFIED ON G001. NO ELECTRICAL CABLING, CONNECTIONS, CONTROLS, LIGHTING FIXTURES. STUB UP AND CAP CONDUIT ONLY..

ELECTRICAL
1. **REFERENCE SHEET G001 FOR AREA OF WORK FOR BID.**

LEGEND - SITE PLAN

1. ADINKRA ARRIVAL GARDEN
2. LEARNING CENTER (FUTURE)
3. DEDICATION PLAZA
4. JUNETEENTH LAWN
5. MEMORIAL MONUMENT
6. HISTORIC CEMETERY
7. CONVICT LABOR & LEASING MEMORIAL
8. FREEDOM POND
9. LYNCHING MONUMENT & OVERLOOK
10. OAK HILL LIVE OAK TRAIL
11. PARKING



2 SITE PLAN - PHASE 1 SCOPE
1" = 50'-0"

ALTERNATES BID ITEM NOTES: REF PHASE 1 BID FORM

1. Reference Sheet G001 for Phase 1 scope areas to be bid this package.
2. Each Alternate Bid Item will be considered for acceptance independently from other Alternate Bid Items.
3. Contractor to provide Unit Prices for Alternate Bid Items (Re: Unit Prices Form).
4. Final quantities of Alternate Bid Items taken may vary from those listed.

A. Alternates: Architecture
1. Monument – Material
Subtract: Base Bid Item No. D1
Replace Architectural Precast at Monument with GFRC system
2. Pedestrian Portals (Re: A401, A810)
Subtract: Base Bid Item No. D2 (portals)
Subtract: Base Bid Item No. E9 (portal lighting)

B. Alternates: Pedestrian Hardscape – Specialty Paving
1. Specialty Paving 'A'
Subtract: Base Bid Item No. G2
Replace with: Standard Concrete Walk
2. Specialty Paving 'B' - Finish
Subtract: Base Bid Item No. G3
Replace with: Integral Color Concrete (Red) w/ Heavy Broom Finish
3. Specialty Paving 'C' – NIC
4. Specialty Paving 'D'
Subtract: Base Bid Item No. G6
Replace with: Stamped Adinkra Symbols on Standard Concrete Walk (Keep Heavy Directional Broom Finish)
5. Specialty Paving 'E'
Subtract: Base Bid Item No. G7
Replace with: Integral Color Concrete (Charcoal) w/ Heavy Broom Finish
6. Specialty Paving 'F'
Subtract: Base Bid Item No. G9
A. OPTION A: Replace IPE with Trex Deck on Conc. Base
B. OPTION B: Replace with Specialty Paving 'B'
7. Specialty Paving 'G'
Subtract: Base Bid Item No. G10
Replace with: Stamped Standard Concrete Walk (Wood Plank Look)

C. Alternates: Hardscape Walls
1. Walls @ Monument Plaza (Height Varies)
Subtract: Base Bid Item No. H1 (Gabions)
*A. Option A: Replace with Concrete Walls Battered (Re: A/ L1.29)
*B. Option B: Replace with Concrete Walls, 12" wide (Re: B/ L1.29; Re: Civil)
* Includes contractor-provided engineered shop drawings

2. Walls @ CLL Axis Memorial (Height Varies)
Subtract: Base Bid Item No. H2 (Gabions)
Subtract: Base Bid Item No. G38 (Wood Topper with Steel Pipe Supports)
*A. Option A: Replace with Concrete Walls Battered (Re: A, C, D/ L1.29)
*B. Option B: Replace with Conc. Walls, 12" width (Re: B, C, D/ L1.29; Re: Civil)
* Includes contractor-provided engineered shop drawings
3. Planter Walls @ Parking Lot
Subtract: Base Bid Item No. H3 (Gabions)
*A. Option A: Replace with Concrete Walls Battered (Re: A/ L1.29)
*B. Option B: Replace with Concrete Walls, 12" wide (Re: B/ L1.29; Re: Civil)
* Includes contractor-provided engineered shop drawings

D. Alternates: Site Furnishings
1. Landscape Forms Backless Benches (Universe System)
Subtract: Base Bid Item No. i1
Replace with: Thermally Modified Ash Landscape Forms Bench (Universe System)
2. Landscape Forms Backed Benches (Universe System)
Subtract: Base Bid Item No. i2
Replace with: Thermally Modified Ash Landscape Forms Bench (Universe System)
3. Deck Bench - Juneteenth Plaza
Subtract: Base Bid Item No. i9
Replace with: Trex (Incl. Concrete Base)
4. Deck Bench w/ Drainage Inlet - Juneteenth Plaza
Subtract: Base Bid Item No. i10
Replace with: Trex (Incl. Concrete Base)
5. Litter Receptacle
Subtract: Base Bid Item No. i3 (Incl. Concrete Base)
Replace with: Keystone MT3D-32 RTS MIDTOWN Dual Recycle Trash Receptacle (Incl. Concrete Base)

E. Alternates: Landscape Maintenance (12 Month)
Subtract: Base Bid Item No. A.4 (60 Day Landscape Maintenance)
Replace with cost by month for:
1. January
2. February
3. March
4. April
5. May
6. June
7. July
8. August
9. Septebmer
10. October
11. November
12. December

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THE STATE OF TEXAS · FORT BEND COUNTY ·

Project:
AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK
630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:
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Key Plan



Professional Seals



04-12-2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: GL Reviewed by: DH

Project No: 218226

Sheet Title:
PHASE 1 SCOPE & ALTERNATES

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number
G001

ARCHITECTURAL / INTERIORS ABBREVIATIONS

AB	- ANCHOR BOLT	GL	- GLASS	QT	- QUARRY TILE
AC	- AIR CONDITIONING	GR	- GRADE	QTY	- QUANTITY
ACOUS	- ACOUSTICAL	GRD	- GROUND		
ADD	- ADDITIONAL	GYP BD	- GYPSUM WALLBOARD - HIGH / HEIGHT	(R)	- RELOCATED
ADJ	- ADJUSTABLE			R	- RADIUS OR RISER (PIPING)
AFF	- ABOVE FINISH FLOOR	H	- HIGH/ HEIGHT	RA	- RETURN AIR
AGGR	- AGGREGATE	HB	- HOSE BIBB	RAD	- RADIUS
ALT	- ALTERNATE	HC	- HOLLOW CORE	RB	- RESILIENT BASE
ALUM	- ALUMINUM	HCP	- HANDICAPPED	RCP	- REFLECTED CEILING PLAN
ANCH	- ANCHOR	HDW	- HARDWARE	RD	- ROOF DRAIN
ANNO	- ANODIZED	HDWD	- HARDWOOD	RECOM	- RECOMMENDED
APC	- ARCHITECTURAL PRECAST CONCRETE	HS	- HEAT STRENGTHENED (GLASS)	RECPT	- RECEPTACLE
APPD	- APPROVED	HM	- HOLLOW METAL (STEEL FRAME)	REC	- RECESSED
APPROX	- APPROXIMATE	HNDRL	- HANDRAIL	REF	- REFERENCE
ARCH	- ARCHITECTURAL	HO	- HOLD-OPEN	REFL	- REFLECTED / REFLECTIVE / REFLECT
ACT	- ACOUSTICAL CEILING TILE	HORIZ	- HORIZONTAL	REFR	- REFRIGERATOR
AUTO	- AUTOMATIC	HPT	- HIGH POINT	REG	- REGISTER
AV	- AUDIO VISUAL	HRC	- HOSE REEL CABINET	REINF	- REINFORCED / REINFORCING
		HR	- HOUR	REL	- RELOCATE
BD	- BOARD	HSS	- HOLLOW STRUCTURAL SECTION	REM	- REMOVABLE
BF	- BASE FINISH	HT	- HEIGHT	REQ	- REQUIRE / REQUIRED
BLDG	- BUILDING	HVAC	- HEATING, VENTILATING, AIR CONDITIONING	RESIL	- RESILIENT
BLK	- BLOCK	HW	- HOT WATER	REV	- REVISION / REVISED
BM	- BEAM	HYDR	- HYDRAULIC	RM	- ROOM
BOT	- BOTTOM			RO	- ROUGH OPENING
BRK	- BRICK	ID	- INSIDE DIAMETER / DIMENSION	RTD	- RATED
BSMT	- BASEMENT	IN	- INCH	RTG	- RATING
BT	- BOLT	INCAND	- INCANDESCENT	RWL	- RAIN WATER LEADER
BUR	- BUILT-UP ROOFING	INCL	- INCLUDED / INCLUDING		
		INFO	- INFORMATION	S	- SOUTH
CAB	- CABINET	INSUL	- INSULATION	SA	- SUPPLY AIR
CAT	- CATEGORY	INT	- INTERIOR	SAN	- SANITARY
CBU	- CEMENTITIOUS BACKER UNIT	INTERM	- INTERMEDIATE	SC	- SOLID CORE
CC	- COLUMN COVER	INV	- INVERT	SCHED	- SCHEDULE
CEM	- CEMENT	IRMA	- INVERTED ROOF MEMBRANE ASSEMBLY	SD	- STORM DRAIN / SOAP DISPENSER
CER	- CERAMIC			SECT	- SECTION
CFMF	- COLD FORMED METAL FRAMING	JAN	- JANITOR	SF	- SQUARE FEET/FOOT
CG	- CORNER GUARD	JST	- JOIST	SH	- SPRINKLER HEAD
CHAN	- CHANNEL	JT	- JOINT	SHT	- SHEET
CIP	- CAST-IN-PLACE			SHR	- SHOWER
CJ	- CONTROL JOINT	K	- KIP (1000 LB)	SIM	- SIMILAR
CL	- CENTER LINE	KPL	- KICK PLATE	SM	- SQUARE METER
CLG	- CEILING	KG	- KILOGRAM	SMS	- SHEET METAL SCREW
CLR	- CLEAR	KIT	- KITCHEN	SND	- SANITARY NAPKIN DISPENSER
CMU	- CONCRETE MASONRY UNIT	KO	- KNOCKOUT	SP	- STANDPIPE
CNTR	- COUNTER			SPEC	- SPECIFICATION
CO	- CLEANOUT	L	- LONG OR LITER (METRIC DOCS)	SPR	- SPRINKLER
COL	- COLUMN	LAB	- LABORATORY	SPKR	- SPEAKER
COMPART	COMPARTMENT	LDG	- LANDING	SQ	- SQUARE
CONC	- CONCRETE	LAM	- LAMINATE / LAMINATION	SSE	- STRUCTURE SLAB ELEVATION
COND	- CONDITION	LAV	- LAVATORY	SST	- STAINLESS STEEL
CONN	- CONNECTION	LB	- POUND	SSK	- SERVICE SINK
CONT	- CONTINUOUS	LF	- LINEAR FOOT	STA	- STATION
CONTR	- CONTRACTOR	LKR	- LOCKER	STS	- SELF TAP SHEET METAL SCREW
COORD	- COORDINATE	LIN	- LINOLEUM	STD	- STANDARD
CORR	- CORRIDOR	LLH	- LONG LEG HORIZONTAL	STL	- STEEL
CT	- CERAMIC TILE	LLV	- LONG LEG VERTICAL	STLJST	- STEEL JOIST
CTR	- CENTER	LN	- LINE	STOR	- STORAGE
CW	- COLD WATER	LT	- LIGHT	STRG	- STRINGER
		LPT	- LOW POINT	STRL	- STRUCTURAL
D	- DEEP, DEPTH			STRUC	- STRUCTURAL
DBL	- DOUBLE	M	- METER, METRIC	SUBCAT	- SUBCATEGORY
DEG	- DEGREE	MACH	- MACHINE	SUSP	- SUSPENDED
DEMO	- DEMOLITION	MAINT	- MAINTENANCE	SV	- SANITARY VENT
DEPT	- DEPARTMENT	MAS	- MASONRY	SYMM	- SYMMETRICAL
DET	- DETAIL	MATL	- MATERIAL	SYS	- SYSTEM
DF	- DRINKING FOUNTAIN	MAX	- MAXIMUM		
DIA	- DIAMETER	MB	- MACHINE BOLT	T&G	- TONGUE AND GROOVE
DIFF	- DIFFUSER	MBL	- MARBLE	T	- TREAD / THERMOSTAT
DIM	- DIMENSION	MDF	- MEDIUM DENSITY FIBERBOARD	TB	- TOWEL BAR
DISP	- DISPENSER	MEP	- MECHANICAL, ELECTRICAL, PLUMBING	TC	- TOP OF CURB
DMPF	- DAMP PROOFING	MDO	- MEDIUM DENSITY OVERLAY PLYWOOD	TCONC	- TOP OF CONCRETE
DMT	- DEMOUNTABLE	MECH	- MECHANICAL	TEL	- TELEPHONE OR TELECOM
DN	- DOWN	MEMB	- MEMBRANE	TEMP	- TEMPERATURE
DO	- DOOR OPENING	MET	- METAL	TER	- TERRAZZO
DP	- DIMENSION POINT	MEZZ	- MEZZANINE	TGB	- TOGGLE BOLT
DR	- DOOR	MFR	- MANUFACTURER	THK	- THICKNESS
DRN	- DRAIN	MH	- MANHOLE	THRES	- THRESHOLD
DS	- DOWNSPOUT	MIN	- MINIMUM	THRU	- THROUGH
DW	- DISHWASHER	MISC	- MISCELLANEOUS	TKBD	- TACKBOARD
DWG	- DRAWING	MM	- MILLIMETER	TMPD	- TEMPERED
DWR	- DRAWER	MO	- MASONRY OPENING	TO	- TOP OF (SEE OTHER WORD)
		MS	- MACHINE SCREW	TOS	- TOP OF SLAB, TOP OF STRUCTURE
(E)	- EXISTING	MTD	- MOUNTED	TOSTL	- TOP OF STEEL
E	- EAST	MTG	- MOUNTING	TP	- TOP OF PAVEMENT
EA	- EACH	MTL	- METAL	TPD	- TOILET PAPER DISPENSER
EB	- EXPANSION BOLT	MULL	- MULLION	TRACT	- TRACTION
EIFS	- EXTERIOR INSULATION AND FINISH SYSTEM			TV	- TELEVISION
EJ	- EXPANSION JOINT	N	- NORTH, OR NEWTON	TW	- TOP OF WALL
EL	- ELEVATION	NA	- NOT APPLICABLE	TYP	- TYPICAL
ELEC	- ELECTRICAL	NC	- NOISE CRITERIA		
ELEV	- ELEVATOR	NIC	- NOT IN CONTRACT	UNFIN	- UNFINISHED
EMERG	- EMERGENCY	NO	- NUMBER	UON	- UNLESS OTHERWISE NOTED
ENCL	- ENCLOSURE	NOM	- NOMINAL	UR	- URINAL
EP	- ELECTRICAL PANEL BOARD	NPS	- NOMINAL PIPE SIZE		
EQ	- EQUAL	NTS	- NOT TO SCALE		
EQUIP	- EQUIPMENT			VAC	- VENTILATION AND AIR CONDITIONING
EXH	- EXHAUST	OA	- OUTSIDE AIR	VCT	- VINYL COMPOSITION TILE
EXP	- EXPANSION	OC	- ON CENTER	VERT	- VERTICAL
EXIST	- EXISTING	OCEW	- ON CENTER EACH WAY	VEST	- VESTIBULE
EXT	- EXTERIOR	OD	- OUTSIDE DIAMETER/DIMENSION	VIF	- VERIFY IN FIELD
		OFCI	- OWNER FURNISHED, CONTR INSTALLED	VR	- VAPOR RETARDER
FA	- FIRE ALARM	OFOI	- OWNER FURNISHED, OWNER INSTALLED	VT	- VINYL TILE
FB	- FACE BRICK	OFF	- OFFICE	VWC	- VINYL WALL COVERING
FC	- FACE	OH	- OVER HEAD		
FD	- FLOOR DRAIN	OPH	- OPPOSITE HAND	W/	- WITH
FDC	- FIRE DEPARTMENT CONNECTION	OPNG	- OPENING	W	- WIDE, WIDTH/WEST, WIDEFLANGE
FDN	- FOUNDATION	OPP	- OPPOSITE	WC	- WATER CLOSET
FE	- FIRE EXTINGUISHER	OPPHD	- OPPOSITE HAND	WD	- WOOD
FEC	- FIRE EXTINGUISHER CABINET	ORD	- OVERFLOW ROOF DRAIN	WDS	- WOOD SCREW
FF&E	- FURNITURE, FINISHES & EQUIPMENT	OUTS	- OUTSIDE	WDW	- WINDOW
FFEL	- FINISH FLOOR ELEVATION	OVHD	- OVERHEAD	WF	- WALL FINISH
FF	- FINISH FLOOR			WIO	- WITHOUT
FH	- FLAT HEAD	P	- PAINT	WP	- WATERPROOFING
FHC	- FIRE HOSE CABINET	PAV	- PAVING	WPM	- WATERPROOF MEMBRANE
FIN	- FINISH	PARTN	- PARTITION	WPT	- WORK POINT
FIXT	- FIXTURE	PATD	- PAPER TOWEL DISPENSER	WR	- WATER RESISTANT/REPELLANT
FL	- FLOOR	PBD	- PARTICLEBOARD	WS	- WEATHERSTRIPPING
FLASH	- FLASHING	PC	- PRECAST CONCRETE	WSCT	- WAINSCOT
FLUOR	- FLUORESCENT	PDF	- POWDER DRIVEN FASTENER	WT	- WEIGHT
FO	- FACE OF	PERF	- PERFORATED	WW	- WALL TO WALL
FP	- FIRE PROTECTION	PERIM	- PERIMETER		
FPG	- FIREPROOFING	PERP	- PERPENDICULAR		
FR	- FRAME	PF	- POINT OF FROG		
FT	- FEET	PL	- PLATE		
FRTW	- FIRE RETARDANT TREATED WOOD	PLAM	- PLASTIC LAMINATE		
FTG	- FOOTING	PLAS	- PLASTER		
FURN	- FURNITURE	PLBG	- PLUMBING		
FURR	- FURRING	PLF	- POUNDS PER LINEAR FOOT		
FWC	- FABRIC WALL COVERING	PLYWD	- PLYWOOD		
FWP	- FABRIC WRAPPED PANEL	PNL	- PANEL		
		POL	- POLISHED		
G	- GROUND	PR	- PAIR		
GA	- GAUGE / GAGE	PREFAB	- PREFABRICATED		
GALV	- GALVANIZED	PROJ	- PROJECT		
GB	- GRAB BAR	PSF	- POUNDS PER SQUARE FOOT		
GC	- GENERAL CONTRACT(OR)	PT	- POINT		
GRC	- GLASS FIBER REINFORCED CONCRETE	PTD	- PAINTED		
GRG	- GLASS FIBER REINFORCED GYPSUM	PTN	- PARTITION		
		PTR	- PAPER TOWEL RECEPTACLE		

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GENERAL NOTES

A. GENERAL NOTES:

1. THE CONTRACTOR SHALL PROVIDE COMPLETE PROJECT SYSTEMS AND COMPONENTS AND COMPLY WITH ALL REQUIREMENTS INDICATED ON THE PROJECT DOCUMENTS.
2. WORK WITHIN THE AREA BOUNDARIES INDICATED IN THE PROJECT DOCUMENTS, AND COMPLY WITH ALL APPLICABLE BUILDING CODE, REGULATION, & ORDINANCE REQUIREMENTS. OCCUPANTS ADJACENT TO THE PROJECT AREA BOUNDARIES SHALL CONTINUE UNINTERRUPTED OCCUPANCY DURING CONSTRUCTION OF THE PROJECT
3. VERIFY FIELD CONDITIONS AND COORDINATION WITH THE PROJECT DOCUMENTS PRIOR TO PROCEEDING WITH THE WORK.
4. COORDINATE THE WORK WITH ALL REQUIREMENTS INDICATED IN THE PROJECT DOCUMENTS.
5. PERFORM THE WORK AT THE PROJECT SITE DURING NORMAL BUSINESS HOURS, UNLESS OTHERWISE NOTED.
6. COORDINATE THE WORK WITH EQUIPMENT, FURNISHINGS, AND SYSTEMS PROVIDED BY THE OWNER.

B. DEFINITIONS:

1. "TYPICAL" OR "TYP" INDICATES IDENTICAL COMPLETE SYSTEM SHALL BE PROVIDED FOR EACH OCCURRENCE OF THE CONDITION NOTED.
2. "SIMILAR" INDICATES COMPLETE SYSTEM AND COMPONENTS SHALL BE PROVIDED COMPARABLE TO THE CHARACTERISTICS FOR THE CONDITION NOTED.
3. "AS REQUIRED" INDICATES COMPONENTS REQUIRED TO COMPLETE THE NOTED, SYSTEM AS INDICATED IN THE PROJECT DOCUMENTS, SHALL BE PROVIDED.
4. "ALIGN" INDICATES ACCURATELY PROVIDE FINISH FACES OF MATERIALS IN STRAIGHT, TRUE, AND PLUMB RELATION TO ADJACENT MATERIALS.

C. DIMENSIONS:

1. DIMENSIONS ARE INDICATED TO THE CENTERLINE OF THE STRUCTURAL GRID, FACE OF CONCRETE WALL, NOMINAL FACE OF CMU WALL, FACE OF PARTITION TYPE AS SCHEDULED, UON
2. ALIGNMENT OF PARTITIONS AND FINISHES AS SCHEDULED SHALL BE STRAIGHT, TRUE & PLUMB. THE PRIORITY FOR PROJECT DIMENSIONS SHALL BE IN THE FOLLOWING ORDER:

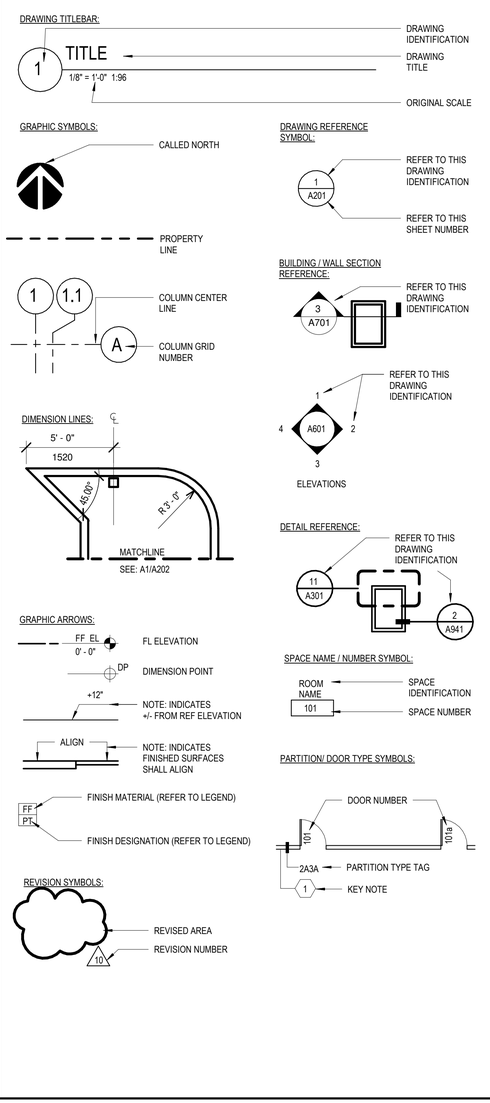
   A . MIN DIMENSION FOR ACCESSIBILITY CLEARANCE & BUILDING CODE REQUIREMENT
   B . LARGE SCALE DETAILS
   C . SMALL SCALE DETAILS
   D . ENLARGED VIEWS
   E . FLOOR PLANS AND ELEVATIONS
3. FLOOR ELEVATIONS ARE INDICATED TO THE FACE OF THE STRUCTURAL SLAB, UNLESS OTHERWISE NOTED.
4. VERTICAL DIMENSIONS ARE INDICATED FROM THE FLOOR ELEVATION TO FACE OF FINISHED MATERIAL AT THE DIMENSION POINT, UNLESS NOTED ABOVE FINISH FLOOR -"AFF".
5. CEILING HEIGHTS ARE INDICATED FROM THE FLOOR ELEVATION TO THE FACE OF SUSPENDED CEILING SYSTEM OR FACE OF FINISH MATERIAL AS SCHEDULED.
6. DIMENSIONS SHOWN ON THE DRAWINGS SHALL INDICATE THE REQUIRED SIZE, CLEARANCE, AND DIMENSIONAL RELATIONSHIP BETWEEN PROJECT SYSTEMS AND COMPONENTS. DIMENSIONS SHALL NOT BE DETERMINED BY SCALING THE DRAWINGS.

D. DRAWING SET ORGANIZATION:

1. EACH DRAWING SET SHEET IS IDENTIFIED BY THE SHEET NUMBER IN THE LOWER RIGHT HAND CORNER OF THE DRAWING TITLE BLOCK. THE SHEET TITLE PROVIDES A GENERAL DESCRIPTION OF THE CONTENTS OF THE SHEET.
   SHEET NUMBER EXAMPLE: A2.0.01G
   "A" INDICATES THE DISCIPLINE THAT CREATED THE DRAWING
   "2" INDICATES THE DRAWING CATEGORY CONTAINED ON THE SHEET
   "0" INDICATES THE SERIES
   "01" INDICATES THE LEVEL/ SEQUENCE #
   "G" INDICATES THE AREA MODIFIER
2. SHEET NUMBERS MAY INCLUDE SUPPLEMENTAL CHARACTERS TO PROVIDE ADDITIONAL INFORMATION, SUCH AS DRAWING CONTENT, PROJECT SECTOR OR PHASE. REFER TO THE DRAWING INDEX FOR A COMPLETE LIST OF SHEETS INCLUDED IN THE DOCUMENT SET.
   EXAMPLE: EL201A
   "EL" INDICATES THE DISCIPLINE THAT CREATED THE DRAWING AND THE DRAWING CONTENT = ELECTRICAL LIGHTING
   "A" INDICATES SECTOR "A" OF PLAN SHEET "201". REFER TO THE PROJECT KEY PLAN OR COMPOSITE PLAN INDICATING THE RELATIONSHIP OF THE SECTORS.
3. DRAWING SET INDEX INDICATES THE COMPLETE LIST OF SHEETS CONTAINED IN THE DRAWING SET, INDEXED BY DISCIPLINE, SHEET NUMBER AND SHEET TITLE, IN SEQUENTIAL ORDER. NOTE THAT ALL SEQUENTIAL SHEET NUMBERS MAY BE NOT USED IN THE DRAWING SET.
4. DISCIPLINE IDENTIFICATION, IN ORDER BOUND IN THE DRAWING SET. REFER TO THE DRAWING SET INDEX FOR DISCIPLINE CONTAINED IN THIS DRAWING SET:

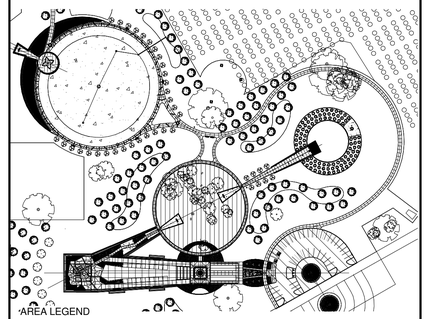
   G GENERAL INFORMATION
   C CIVIL
   L LANDSCAPE
   S STRUCTURAL
   A ARCHITECTURAL

DRAWING ANNOTATIONS



PROJECT AREAS

Name	Area
1. ADINKRA ARRIVAL GARDEN	656 SF
2. LEARNING CENTER (FUTURE)	2889 SF
3. DEDICATION PLAZA	2332 SF
4. JUNETEENTH LAWN	15005 SF
5. MEMORIAL MONUMENT	5094 SF
6. HISTORIC CEMETERY	34089 SF
7. CONVICT LABOR & LEASING MEMORIAL	18303 SF
8. FREEDOM POND	59832 SF
9. LYNCHING MONUMENT & OVERLOOK	2776 SF
11. PARKING	22068 SF
	163043 SF



PROPOSED PARKING

39	GENERAL PARKING
2	ACCESSIBLE PARKING
41	TOTAL

PROJECT LOCATION MAP



DRAWING INDEX

#	TITLE
00 GENERAL	
G000	COVER
G001	PHASE 1 SCOPE & ALTERNATES
G101	DRAWING ABBREVIATIONS, ANNOTATIONS, SYMBOLS & INDEX
G102	SURVEY & CONSTRUCTION NOTES
4	
01 CIVIL	
C100	COVER
C101	EROSION CONTROL PLAN
C201	DRAINAGE AREA MAP AND IMPERVIOUS COVER CALCS
C301	GRADING PLAN
C302	STORM SEWER PLAN AND POND SECTION
C401	STORM CALCS AND HGL PROFILE
C501	FLOOD PLAIN MITIGATION P&P-I
C600	DIMENSION CONTROL PLAN
C601	CONSTRUCTION NOTES & PAVEMENT DETAILS
C602	PAVEMENT DETAILS
C603	RAMP DETAILS
C604	RAMP & MISC. DETAILS
C605	SWPPP & MISC. DETAILS
C606	STORM SEWER DETAILS-I
C607	STORM SEWER DETAILS-II
C608	STORM SEWER AND MISC. DETAILS
16	
02 LANDSCAPE	
L0.00	OVERALL PLAN
L0.01	HARDSCAPE LAYOUT PLAN
L0.02	HARDSCAPE LAYOUT PLAN

#	TITLE
L0.03	HARDSCAPE LAYOUT PLAN
L1.01	HARDSCAPE PLAN
L1.02	HARDSCAPE PLAN
L1.03	HARDSCAPE PLAN
L1.04	HARDSCAPE PLAN
L1.05	HARDSCAPE PLAN
L1.06	HARDSCAPE PLAN
L1.07	HARDSCAPE PLAN
L1.08	SCHEDULES & NOTES
L1.09	JUNETEENTH PLAZA SECTION
L1.10	MEMORIAL MONUMENT PLAZA ENLARGEMENT
L1.11	DEDICATION PLAZA SECTION & ENLARGEMENT
L1.12	CLL AXIS MEMORIAL SECTION & ENLARGEMENT
L1.13	LYNCHING MONUMENT PLAZA SECTION & ENLARGEMENT
L1.14	LYNCHING MONUMENT PLAZA SECTION & ENLARGEMENT
L1.15	LYNCHING MONUMENT PLAZA SECTION & ENLARGEMENT
L1.16	OAK HILL CEMETERY OVERLOOK SECTION & ENLARGEMENT
L1.17	HARDSCAPE DETAILS
L1.18	HARDSCAPE DETAILS
L1.19	HARDSCAPE DETAILS
L1.20	HARDSCAPE DETAILS
L1.21	HARDSCAPE DETAILS
L1.22	HARDSCAPE DETAILS
L1.23	GABION WALLS MEMORIAL MONUMENT PLAZA SITE PLAN
L1.24	GABION WALLS MEMORIAL MONUMENT PLAZA ELEVATIONS
L1.25	GABION WALLS MEMORIAL MONUMENT PLAZA ELEVATIONS
L1.26	GABION WALLS MEMORIAL MONUMENT PLAZA DETAILS & NOTES

#	TITLE
L1.27	GABION WALLS CLL MEMORIAL AXIS
L1.28	GABION WALLS CLL MEMORIAL AXIS
L1.29	ALTERNATES
L2.01	PLANTING PLAN
L2.02	PLANTING PLAN
L2.03	PLANTING PLAN
L2.04	PLANTING PLAN
L2.05	PLANTING PLAN
L2.06	PLANTING PLAN
L2.07	PLANTING PLAN
L2.08	PLANTING DETAILS
L2.09	PLANT SCHEDULE
L2.10	PLANT SPECIFICATIONS
L3.01	IRRIGATION
L3.02	IRRIGATION
L3.03	IRRIGATION
L3.04	IRRIGATION
L3.05	IRRIGATION
L3.06	IRRIGATION
L3.07	IRRIGATION
50	
03 STRUCTURE	
S100	GENERAL STRUCTURAL DATA
S101	GENERAL STRUCTURAL DATA
S102	OVERALL STRUCTURAL SITE PLAN
S103	ENLARGED STRUCTURAL SITE PLAN
S104	ENLARGED STRUCTURAL SITE PLANS
S105	ENLARGED STRUCTURAL SITE PLAN

#	TITLE
S106	ENLARGED STRUCTURAL SITE PLANS
S107	ENLARGED STRUCTURAL PLANS
S210	FOUNDATION DETAILS
S211	FOUNDATION DETAILS
10	
04 ARCHITECTURE	
A101	SITE PLAN - OVERALL EXISTING & PROPOSED
A102	SITE PLAN - ENLARGED PROPOSED
A201	MONUMENT PLAN - ENLARGED PROPOSED
A202	MONUMENT PLANS - LEVELS
A203	MONUMENT PLANS - OVERALL
A301	MONUMENT PERSPECTIVE VIEWS
A401	ENLARGED PLAN & ADINKRA SYMBOL LEGEND
A501	MONUMENT ELEVATIONS & AXONOMETRICS
A502	MEMORIAL MONUMENT ADINKRA SYMBOL DETAILS
A701	MOUNMENT SECTIONS & DETAILS
A800	MONUMENT PILLAR TYPES
A801	MONUMENT PILLAR TYPES - PILLAR 1
A802	MONUMENT PILLAR TYPES - PILLAR 2
A803	MONUMENT PILLAR TYPES - PILLAR 3
A804	MONUMENT PILLAR TYPES - PILLAR 4
A805	MONUMENT PILLAR TYPES - PILLAR 5
A806	MONUMENT PILLAR TYPES - PILLAR 6
A807	MONUMENT PILLAR TYPES - PILLAR 7
A808	MONUMENT PILLAR TYPES - PILLAR 8
A809	MONUMENT PILLAR TYPES - PILLAR 9
A810	PEDESTRIAN PORTAL
21	

#	TITLE
04.1 ARCHITECTURAL LIGHTING	
AL0.00	SITE PLAN - OVERALL LIGHTING
AL0.01	SITE PLAN - LIGHTING
AL0.02	SITE PLAN - LIGHTING
AL0.03	SITE PLAN - LIGHTING
AL0.04	SITE PLAN - LIGHTING
AL0.06	SITE PLAN - LIGHTING
AL0.07	SITE PLAN - LIGHTING
7	
05 ELECTRICAL	
GE0.00	ELECTRICAL SYMBOLS & ABBREVIATIONS
GE0.01	ELECTRICAL SPEIFICATIONS
E0.00	SITE PLAN - OVERALL LIGHTING
E0.01	SITE PLAN - LIGHTING
E0.02	SITE PLAN - LIGHTING
E0.03	SITE PLAN - LIGHTING
E0.04	SITE PLAN - LIGHTING
E0.06	SITE PLAN - LIGHTING
E0.07	SITE PLAN - LIGHTING
E1.00	SITE PLAN - OVERALL LIGHTING
E2.00	ELECTRICAL DETAILS & SCHEDULES
E2.01	ELECTRICAL SCHEDULES
E2.02	ELECTRICAL SCHEDULES
E2.03	ELECTRICAL DETAILS
14	
Grand total: 122	

THE STATE OF TEXAS · FORT BEND COUNTY

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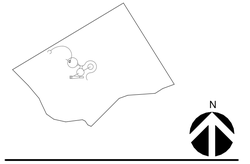
Key Plan



Professional Seals



04-12-2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ALTERNATE PRICING PKG	04-12-2024

Drawn by: AP Reviewed by: DH

Project No: 218226

Sheet Title:

DRAWING ABBREVIATIONS, ANNOTATIONS, SYMBOLS & INDEX

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

G101

CONSTRUCTION NOTES

SCOPE OF WORKS:
1. FURNISH AND INSTALL LABOR, MATERIALS, TOOLS, TEMPORARY INSTALLATIONS, PERMITS, ETC. TO PROVIDE A COMPLETE AND FINISHED INSTALLATION PER THE CONTRACT DOCUMENTS. WHERE SOMETHING IS NOT SPECIFIED THE CONTRACTOR IS TO ASSUME THE MOST STRINGENT INDUSTRY STANDARDS AND CODE REQUIREMENTS.

2. ALL WORK SHALL BE PERFORMED BY QUALIFIED AND SKILLED WORKERS, IN A NEAT AND WORKMANLIKE MANNER, AND IN ACCORDANCE WITH INDUSTRY STANDARDS AND PRACTICES.

3. THE CONTRACTOR SHALL MAINTAIN A CLEAN AND ORGANIZED SITE, INCLUSIVE OF WASTE MANAGEMENT, CLEANING AND CLEARANCE.

4. THE CONTRACTOR IS TO WORK IN ACCORDANCE WITH THE CLIENTS STATED POLICIES AND STANDARDS.

PERMITS AND CODES:
1. ALL PARTS OF THE WORK - INCLUDING MEANS, METHODS, MATERIALS, ASSEMBLIES, ETC. MUST COMPLY WITH THE MINIMUM REQUIREMENTS OF THE GOVERNING REGULATIONS OF ALL STATE, COUNTY, AND LOCAL AUTHORITIES HAVING JURISDICTION OVER THE PROJECT AS WELL AS THOSE GREATER REQUIREMENTS INDICATED BY THE CONTRACT DOCUMENTS. WHERE THERE IS A DISCREPANCY BETWEEN THE GOVERNING CODE AND, THE DRAWINGS, THE MOST RESTRICTIVE CASE SHALL APPLY. IN SUCH CASE, CONFER WITH ARCHITECT PRIOR TO PROCEEDING WITH THE WORK.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITS AND INSPECTIONS RELATING TO THEIR WORK AND SHALL OBTAIN ALL FIELD APPROVALS AS REQUIRED BY RELATED AGENCIES.

COORDINATION:
1. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH OTHER CLIENT APPOINTED ENTITIES IN ORDER TO ACCOMPLISH COMPLETION OF THE WHOLE OF THE PROJECT WORKS IN THE MOST EFFECTIVE AND PROFESSIONAL WAY.

2. GENERAL CONTRACTOR OR CONSTRUCTION MANAGER SHALL COORDINATE BETWEEN VARIOUS TRADES FOR ROUGH-IN REQUIREMENTS

3. THE CONTRACTOR SHALL PROVIDE A COMPLETE SCHEDULE TO THE OWNER, ARCHITECT, ENGINEER AND SUB-CONTRACTORS PRIOR TO THE START OF CONSTRUCTION OPERATIONS.

4. THE CONTRACTOR SHALL SUBMIT DETAILED WORKSHOP DRAWINGS FOR ARCHITECT AND ENGINEER APPROVAL PRIOR TO PLACING ORDER, ASSEMBLY FABRICATION, ERECTION AND / OR INSTALLATION OF THE WORKS
INCLUDING BUT LIMITED TO THE FOLLOWING:
1. ALL STRUCTURAL STEEL
2. ALL PRECAST CONCRETE ELEMENTS
3. ROOFING SYSTEMS
4. COMPOSITE PANELING INCLUDING FIXATION METHOD
5. MEP EQUIPMENT INCLUDING FIXATION

DRAWINGS:
1. UNLESS OTHERWISE INDICATED ALL DIMENSIONS ARE IN FEET AND INCHES.
2. ALL WALL & PARTITION CENTER LINES ARE TO COINCIDE WITH GRID AND SUB GRID LINES UNLESS OTHERWISE NOTED.
3. DRAWINGS SHALL NOT BE SCALED, ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
4. ALL DRAWINGS ARE TO BE READ IN CONJUNCTION FOR PROPER COORDINATION.
5. ANY INCONSISTENCY OR DISCREPANCY IS TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT BEFORE COMMENCEMENT OF THE WORK.
6. CONTRACTOR SHALL MAINTAIN ON AS-BUILT DRAWINGS ANY DEVIATIONS FROM THE DESIGN DRAWINGS. ALL AS-BUILT DRAWINGS ARE TO BE SUBMITTED TO THE OWNER, ARCHITECT AND ENGINEER PRIOR TO CLOSE OUT OF THE PROJECT.
7. CONSTRUCTION JOINTS AT ADEQUATE LOCATION FOR FLOOR SLABS AND WALLS ARE TO BE SUGGESTED BY CONTRACTOR FOR APPROVAL BY ARCHITECT, ENGINEER AND / OR OWNERS REPRESENTATIVE.

GENERAL NOTES:
1. ALL PROJECT CONSULTANT DRAWINGS SHALL BE DEEMED TO BE WORKING DRAWINGS FOR THE PURPOSE OF DETERMINING DESIGN INTENT ONLY. THE CONTRACTOR SHALL PREPARE COMPREHENSIVE CONSTRUCTION DRAWINGS INCLUDING BUT NOT LIMITED TO COORDINATED STRUCTURAL DRAWINGS, SERVICES COORDINATION DRAWINGS, DETAILED SHOP DRAWINGS, SETTING OUT DRAWINGS AND THE LIKE. PROJECT CONSULTANTS' DRAWINGS SHALL NOT BE USED FOR CONSTRUCTION.

2. ALL CONSTRUCTION AND MATERIALS USED SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS OF ALL APPLICABLE CODES, STANDARDS AND REGULATIONS. THE CONTRACTOR SHALL APPLY THE DESIGN INTENT AS ESTABLISHED IN THE CONTRACT DRAWINGS, WORKING DRAWINGS AND DOCUMENTS TO ALL CIRCUMSTANCES AND CONDITIONS TO ENSURE DESIGN CONSISTENCY THROUGHOUT.

3. REFER TO STRUCTURAL, MECHANICAL, PLUMBING, FIRE PROTECTION AND ELECTRICAL DRAWINGS ETC, WHERE APPLICABLE, FOR COORDINATION OF WORK. THE WORK OF ALL DISCIPLINES SHALL BE CAREFULLY COORDINATED WITH THE OVERALL AESTHETIC APPEARANCE OF THE BUILDING. NOTES APPEAR ON VARIOUS SHEETS FOR SYSTEMS AND MATERIALS. DRAWINGS ARE TO BE APPLIED TO OTHER RELATED DRAWINGS AND DETAILS.

4. DETAILS SHOWN ARE INTENDED TO BE INDICATIVE OF THE PROFILES AND TYPE OF DETAILING REQUIRED FOR THE WORK. DETAILS NOT SHOWN ARE SIMILAR IN CHARACTER TO THOSE DETAILED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DESIGN ENGINEERING DETAILS SUITABLE FOR CONSTRUCTION.

5. WHERE SPECIFIC DIMENSIONS, DETAILS, DESIGN INTENT CANNOT BE DETERMINED CONSULT WITH THE ARCHITECT FOR CLARIFICATION AND DIRECTION BEFORE PROCEEDING WITH ANY WORK.

6. DISCREPANCIES EXISTING BETWEEN THE ARCHITECTURAL DRAWINGS AND DRAWINGS OF THE OTHER DISCIPLINES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT FOR CLARIFICATION BEFORE PROCEEDING WITH ANY WORK.

7. UNLESS NOTED OTHERWISE, ALL DIMENSIONS ARE GIVEN IN FEET AND INCHES.

8. DIMENSIONS SHALL GOVERN. DO NOT SCALE DRAWINGS.

9. DIMENSIONS AND COORDINATES SHALL BE VERIFIED ON SITE BEFORE PROCEEDING WITH THE WORK. ANY DISCREPANCIES SHALL BE MADE KNOWN TO THE ARCHITECT FOR DECISION BEFORE PROCEEDING WITH THE WORK.

10. EXTERIOR WALLS ARE DIMENSIONED TO THE EXTERIOR FINISHED FACE OF THE WALL, UNLESS NOTED OTHERWISE.

11. UNLESS NOTED OTHERWISE WHERE AN ARCHITECTURAL FINISH FLOOR IS TO BE PROVIDED THE FLOOR ELEVATIONS ARE TO TOP OF FINISH FLOOR. WHERE GRADIENT FALLS ARE REQUIRED FOR DRAINAGE,THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ARCHITECT FOR APPROVAL PRIOR TO CONSTRUCTION.

12. UNLESS NOTED OTHERWISE ROOF ELEVATIONS ARE TO TOP OF STRUCTURAL SLAB WHERE GRADIENT FALLS ARE REQUIRED FOR DRAINAGE, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ARCHITECT FOR APPROVAL PRIOR TO CONSTRUCTION.

13. UNLESS NOTED OTHERWISE ALL FASTENERS AND FASTENING DEVICES ARE TO BE CONCEALED. ALL SUCH DEVICES SHALL BE PROPERLY WASHERED OR OTHERWISE INSULATED TO PREVENT ELECTROLYTIC ACTION BETWEEN TWO DISSIMILAR METALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR STRUCTURAL ADEQUACY OF ALL SUCH FASTENING / FIXING DEVICES.

14. PIPING, DUCT, CONDUITS ETC, THAT PENETRATE FLOOR SLABS AND WALLS SHALL BE INSTALLED IN A MANNER THAT WILL PRESERVE THE FIRE INTEGRITY AND STRUCTURAL INTEGRITY OF THE ELEMENT AND THE BUILDING.

GENERAL NOTES CONT:
15. DISSIMILAR METALS SHALL BE EFFECTIVELY ISOLATED FROM EACH OTHER TO PREVENT GALVANIC ACTION.

16. ALL PENETRATIONS OF FLASHING SHALL BE SEALED WITH SEALANT.

17. A FINISH INDICATED FOR A WALL SHALL MEAN THE ENTIRE LENGTH OF WALL SHALL BE FINISHED AS INDICATED UNLESS NOTED OTHERWISE.

18. COORDINATION OF ALL WORKS UNDER THIS CONTRACT SHALL BE MAINTAINED TO ENSURE THE QUALITY AND TIMELY COMPLETION OF THE WORK / PROJECT.

19. THE CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING REQUIRED TO COMPLETE THE WORK OR TO MAKE ITS PARTS FIT TOGETHER PROPERLY WITHOUT COMPROMISING THE QUALITY OF THE WORK.

20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATELY BRACING AND PROTECTING ALL WORK DURING CONSTRUCTION AGAINST DAMAGE, BREAKAGE, ACCORDING TO CODES AND STANDARDS OF GOOD PRACTICE.

21. THE CONTRACTOR SHALL PATCH AND REPAIR ALL FLOORS, WALLS, CEILING, ETC... DAMAGED OR EXPOSED DUE TO WORK OR REMOVALS AND FINISH TO MATCH ADJOINING SURFACES.

22. ALL ELECTRICAL INDICATIONS ON ARCHITECTURAL DRAWINGS ARE FOR LOCATION PURPOSES ONLY.

23. THE CONTRACTOR SHALL COORDINATE OPENINGS IN THE FOUNDATION AND EXTERIOR WALLS FOR THE INSTALLATION OF CONDUITS AND BOXES FOR ELECTRICAL EQUIPMENT.

24. WHERE MANUFACTURES' NAMES AND PRODUCT NUMBERS ARE INDICATED ON THE DRAWINGS, IT SHALL BE CONSTRUED TO MEAN THE ESTABLISHING OF QUALITY AND PERFORMANCE STANDARDS OF SUCH ITEMS, ALL OTHER PRODUCTS MUST BE SUBMITTED TO THE ARCHITECT FOR APPROVAL BEFORE THEY SHALL BE DEEMED EQUAL.

25. FIRESTOPPING SHALL BE INSTALLED AT ALL PENETRATIONS OF FIRE-RATED CONSTRUCTION AS PER SPECIFICATION, FIRESTOPPING MATERIALS ARE TO BE APPROPRIATE FOR, AND BE PARTS OF A LISTED AND LABELED ASSEMBLY IN ACCORDANCE WITH THE BUILDING CODE.

26. ALL RAMPS TO HAVE NON-SLIP SURFACE.

27. THE CONTRACTOR SHALL COORDINATE AND INSTALL ALL CLEANOUT AND ACCESS DOORS IN PARTITIONS AND HUNG CEILINGS AS REQUIRED BY THE CONTRACT DOCUMENTS.

28. DIMENSIONS ON PLANS ARE INDICATED FROM SURFACE TO SURFACE BETWEEN WALLS, PARTITIONS AND OTHER ITEMS EXCLUSIVE OF FINISHES, UNLESS NOTED OTHERWISE.

29. PROVIDE DEPRESSED SLABS AND MEMBRANE WATERPROOFING IN WET AREAS WITH MULTIPLE FLOOR DRAINS SUCH AS KITCHENS, SHOWER AREAS,TOILETS, ETC..

30. ADDITIONAL NOTES THAT ARE APPLICABLE TO THIS PROJECT MAY BE FOUND THROUGHOUT THE CONTRACT DRAWINGS.

31. THE CONTRACTOR SHALL ONLY BE ALLOWED TO USE ALTERNATIVE ITEMS, MATERIALS, EQUIPMENTS AND PRODUCTS TO THOSE SPECIFIED IN THE CONTRACT DOCUMENTS IF IT CAN BE PROVEN TO THE SATISFACTION OF THE ARCHITECT THAT THE SPECIFIED OR APPROVED MATERIALS HAVE GONE OUT OF PRODUCTION OR ARE OTHERWISE UNOBTAINABLE AFTER THE AWARD OF THE CONTRACT. THE PROPOSED ALTERNATIVE ITEMS, PRODUCT, EQUIPMENTS, OR MATERIALS SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT. IN THE EVENT THAT THE APPROVED ALTERNATIVE MATERIALS ARE LOWER IN COST, CORRESPONDING COST ADJUSTMENTS SHALL BE MADE IN ACCORDANCE WITH THE CONTRACT CONDITIONS, SHOULD THE ALTERNATIVE MATERIALS APPROVED BE MORE EXPENSIVE, NO COST ADJUSTMENT SHALL BE MADE.

32. THE ARCHITECT'S DECISION AS TO WHETHER THE ALTERNATIVE MATERIALS, PRODUCTS AND EQUIPMENTS, AESTHETIC EFFECT, PERFORMANCE AND WORKMANSHIP ARE EQUAL TO THOSE ORIGINALLY SPECIFIED SHALL BE FINAL. NO CLAIM SHALL ARISE FROM ANY REJECTION, NOR, UNLESS OTHERWISE AGREED, SHALL ADOPTION OF AN ALTERNATE BE GROUND FOR ANY CLAIM FOR VARIATIONS OR EXTENSION OF TIME UNLESS OTHERWISE SPECIFIED IN THE CONTRACT CONDITIONS.

33. THE CONTRACTOR SHALL SUBMIT PRODUCT DATA, TECHNICAL PERFORMANCE INFORMATION, INSTALLATION INSTRUCTIONS, AND PRODUCT SAMPLES TO THE OWNER FOR REVIEW.

34. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF ALL OPERATIONS IN CONNECTION WITH THE CONTRACT AND SHALL TAKE ALL NECESSARY ACTIONS TO ENSURE THE SAFETY OF ALL PERSONS WHO MAY BE IN, ON OR ADJACENT TO THE SITE.

35. THE CONTRACTOR SHALL ENSURE A SAFE ENVIRONMENT ON THE SITE AT ALL TIMES. ALL SAFETY PROVISIONS SHALL BE PROPERLY MAINTAINED AND SHALL NOT BE REMOVED. THE CONTRACTOR SHALL ENSURE THAT NECESSARY AND SUFFICIENT PRECAUTIONS ARE TAKEN BY HIS WORKMEN WHEN SAFETY PROVISIONS ARE USED. THE CONTRACTOR SHALL NOT ALLOW ANY OF THE SAFETY PROVISIONS TO BE USED UNLESS HE HAS SATISFIED HIMSELF THAT THE PROVISIONS ARE SAFE.

36. THE CONTRACTOR SHALL PREPARE DRAWINGS, DETAILING AND CALCULATIONS FOR ALL TEMPORARY STRUCTURE AS REQUIRED, CERTIFIED BY HIS PROFESSIONAL ENGINEER AND SUBMIT FOR APPROVAL AT LEAST ONE WEEK BEFORE THE COMMENCEMENT OF THE WORK UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR AND HIS PROFESSIONAL ENGINEER SHALL ENSURE THE ADEQUACY AND SUFFICIENCY OF THE SAFETY PROVISIONS.

37. THE CONTRACTOR SHALL DISPLAY WARNING SIGNS AT STRATEGIC POINTS AROUND THE PERIPHERY OF THE SITE WHERE TRESPASSING IS LIKELY TO OCCUR, SUCH SIGNS SHALL HAVE THE WORDS " DANGER - KEEP OUT " IN THE OFFICIAL LANGUAGE PAINTED IN RED ON A WHITE BACKGROUND IN GLOSS FINISHING PAINT. WARNING LIGHTS SHALL BE PLACED AT SIMILAR POSITIONS AT NIGHT TO SERVE AS WARNINGS.

38. THE CONTRACTOR SHALL MAINTAIN AND ENSURE A SAFE WORKING ENVIRONMENT BY KEEPING THE SITE NEAT AND TIDY, AND FREE FROM HAZARDS AND DEBRIS, MATERIALS SHALL BE STACKED UP SAFELY, HOUSEKEEPING SHALL BE CARRIED OUT IN SUCH A MANNER AND AT SUCH TIMES SO AS NOT TO CAUSE ANY INCONVENIENCE TO EITHER THE ADJOINING OWNERS, OCCUPIERS OR THE PUBLIC. DEBRIS SHALL BE WETTED TO MINIMIZE THE RISK OF DUST. CONTAINERS FOR DEBRIS AND RUBBISH ARE TO BE PROVIDED AT THE DESIGNATED PLACES.

39. ALL STAINLESS STEEL TO BE GRADE 304 OR 316 FOR EXTERNAL AND INTERNAL.

40. THE CONTRACTOR SHALL PROVIDE COMPLETE PROJECT SYSTEMS AND COMPONENTS AND COMPLY WITH ALL REQUIREMENTS INDICATED ON THE PROJECT DOCUMENTS.

41. WORK WITHIN THE AREA BOUNDARIES INDICATED IN THE PROJECT DOCUMENTS, AND COMPLY WITH ALL APPLICABLE BUILDING CODE, REGULATION, & ORDINANCE REQUIREMENTS. OCCUPANTS ADJACENT TO THE PROJECT AREA BOUNDARIES SHALL CONTINUE UNINTERRUPTED OCCUPANCY DURING CONSTRUCTION OF THE PROJECT

42. VERIFY FIELD CONDITIONS AND COORDINATION WITH THE PROJECT DOCUMENTS PRIOR TO PROCEEDING WITH THE WORK.

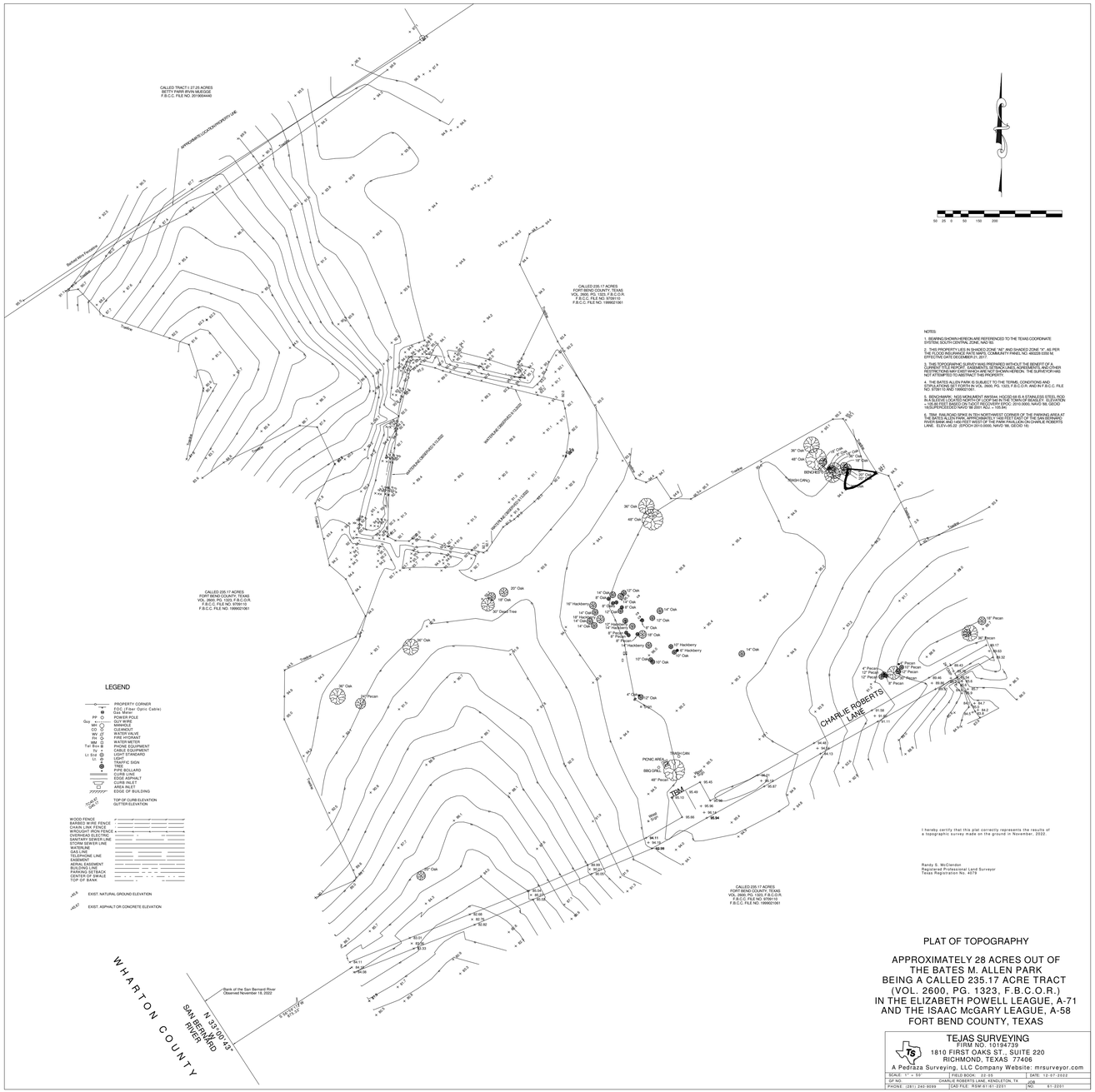
43. COORDINATE THE WORK WITH ALL REQUIREMENTS INDICATED IN THE PROJECT DOCUMENTS.

44. PERFORM THE WORK AT THE PROJECT SITE DURING NORMAL BUSINESS HOURS, UNLESS OTHERWISE NOTED.

45. COORDINATE THE WORK WITH EQUIPMENT, FURNISHINGS, AND SYSTEMS PROVIDED BY THE OWNER.

46. SCOPE OF WORK IS ADJACENT TO HISTORIC CEMETERIES. CONTRACTOR TO ABIDE BY ALL GUIDELINES AS DIRECTED BY THE TEXAS HISTORIC COMMISSION WHEN PERFORMING WORK. CONTRACTOR TO COORDINATE WITH FORT BEND COUNTY, PARKS DIVISION, AS REQUIRED.

47. SCOPE OF WORK IS ADJACENT TO HISTORIC CEMETERIES. CONTRACTOR TO ABIDE BY ALL GUIDELINES AS DIRECTED BY THE TEXAS HISTORIC COMMISSION WHEN PERFORMING WORK. CONTRACTOR TO COORDINATE WITH FORT BEND COUNTY PARKS & RECREATION DEPARTMENT, AS REQUIRED.



1 SITE - SURVEY
1/8" = 1'-0"

THE STATE OF TEXAS · FORT BEND COUNTY ·

Project:
AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK
630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:
FORT BEND COUNTY
1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

HINESAD

Contract No: 218226

Design Team:
HINES ARCHITECTURE + DESIGN
8 Greenway Plaza Suite 1525
Houston, TX 77046 USA
t +1 713 909 0983
www.hinesad.com

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Key Plan

N

Professional Seals

REGISTERED ARCHITECT · GREGORY LINCOLN · 19236 · STATE OF TEXAS

04-12-2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: AP Reviewed by: DH

Project No: 218226

Sheet Title:
SURVEY & CONSTRUCTION NOTES

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number
G102

6/8/2023 9:47:25 AM

CIVIL CONSTRUCTION PLANS FOR PAVING, GRADING, DRAINAGE, AND STORM SEWER TO SERVE THE

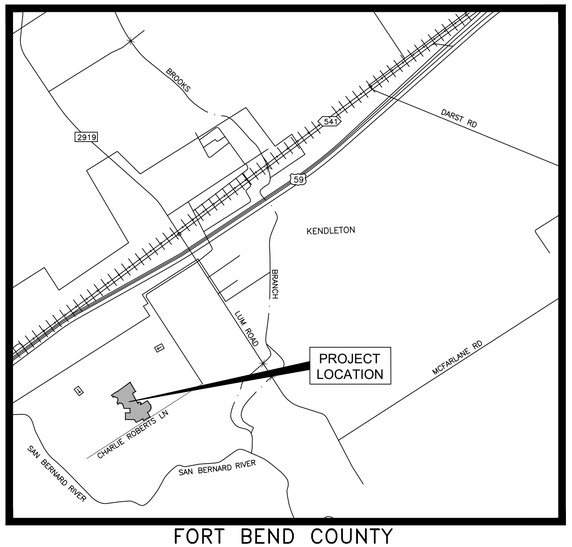
AFRICAN AMERICAN MEMORIAL AT BATES M. ALLEN PARK

CHARLIE ROBERTS LANE

APRIL, 2024

PREPARED FOR
HINES ARCHITECTURE AND DESIGN

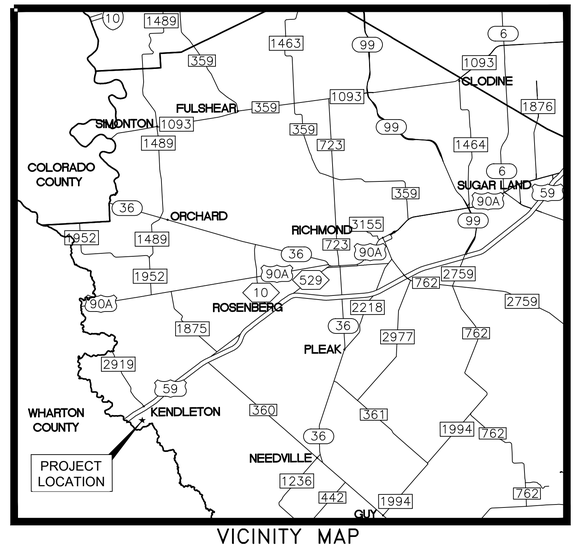
SITE ADDRESS:
630 CHARLIE ROBERTS LANE
EAST BERNARD, TX 77435



FORT BEND COUNTY
KEYMAP NO. 680 G&H
(N.T.S.)

SHEET INDEX

C100	COVER
C101	EROSION CONTROL PLAN
C201	DRAINAGE AREA MAP AND IMPERVIOUS COVER CALCS
C301	GRADING PLAN
C302	STORM SEWER PLAN AND POND SECTION
C401	STORM CALCS AND HGL PROFILE
C501	FLOOD PLAIN MITIGATION P&P-I
C600	DIMENSION CONTROL PLAN
C601	CONSTRUCTION NOTES AND PAVEMENT DETAILS
C602	PAVEMENT DETAILS
C603	RAMP DETAILS
C604	RAMP AND MISCELLANEOUS DETAILS
C605	SWPPP AND MISCELLANEOUS DETAILS
C606	STORM SEWER DETAILS-I
C607	STORM SEWER DETAILS-II
C608	STORM SEWER AND MISCELLANEOUS DETAILS



VICINITY MAP
(N.T.S.)

THE SOURCE OF ALL TOPOGRAPHIC AND EXISTING UTILITY INFORMATION ON THIS SHEET IS FROM:

TEJAS SURVEYING
FIRM NO. 10194739
1810 FIRST OAKS ST., SUITE 220
RICHMOND, TEXAS 77406
A Pedraza Surveying, LLC Company Website: mrsurveyor.com

SCALE: 1" = 50'	FIELD BOOK: 22-05	DATE: 12-07-2022
GF NO.	CHARLIE ROBERTS LANE, KENDLETON, TX	
PHONE: (281) 240-9099	RSM\61\61-2201	JOB NO. 61-2201

SURVEY NOTES:

1. BEARING SHOWN HEREON ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD '83.

2. THIS PROPERTY LIES IN SHADED ZONE "AE" AND SHADED ZONE "X", AS PER THE FLOOD INSURANCE RATE MAPS, COMMUNITY PANEL NO. 480228 0350 M, EFFECTIVE DATE DECEMBER 21, 2017.

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PROPERTY INFORMATION:

BOUNDARY AND TOPOGRAPHIC SURVEY OF APPROXIMATELY 28 ACRES OUT OF THE BATES M. ALLEN PARK, BEING A CALLED 235.17 ACRE TRACT (VOL. 2600, PG 1323, F.B.C.O.R.) IN THE ELIZABETH POWELL LEAGUE, A-71 AND THE ISAAC McGARY LEAGUE, A-58, FORT BEND COUNTY, TEXAS

FEMA INFORMATION
THIS TRACT LIES WITHIN THE 100 YEAR FLOOD PLAIN AND IS IN ZONE "AE" PER F.E.M.A. FLOOD INSURANCE RATE MAP NO. 48157C0350M PANEL NO. 350 OF 575, FORT BEND COUNTY, TEXAS, DATED DECEMBER 21, 2017.

THE CONTRACTOR SHALL NOTIFY FORT BEND COUNTY ENGINEERING AND VOGT ENGINEERING, L.P. 48 HOURS IN ADVANCE OF COMMENCING CONSTRUCTION

PREPARED BY

VOGT ENGINEERING
2204 Timberloch Pl., Suite 280
The Woodlands, Texas 77380
T 936.273.9980 T 281.651.2972
www.vogtengineering.com

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TEXAS BOARD OF PROFESSIONAL ENGINEERS FIRM REGISTRATION F-390

FORT BEND COUNTY ENGINEER

ENGINEER: _____
J. Stacy Slawinski, P.E.

DATE: _____

THESE SIGNATURES ARE VOID IF CONSTRUCTION HAS NOT COMMENCED IN (1) YEAR FROM DATE OF APPROVAL.

APPROVED: _____
Development Staff

DATE: _____

THE STATE OF TEXAS · FORT BEND COUNTY

Project:
AFRICAN AMERICAN MEMORIAL @ BATES M. ALLEN PARK
630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:
FORT BEND COUNTY
1517 EUGENE HEIMANN CIRCLE
Richmond, TX 77469

Contract No: 2022-05

Design Team:

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www.hinesad.com

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Key Plan



Professional Seals

VOGT ENGINEERING
TEXAS BOARD OF PROFESSIONAL ENGINEERS FIRM REGISTRATION F-390
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STATE OF TEXAS
SERGIO VAN DUSEN
97434
LICENSED
PROFESSIONAL ENGINEER

05-26-2023
04/12/2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: KS Reviewed by: SD

Project No: 2022-05

Sheet Title:

COVER

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number
C100

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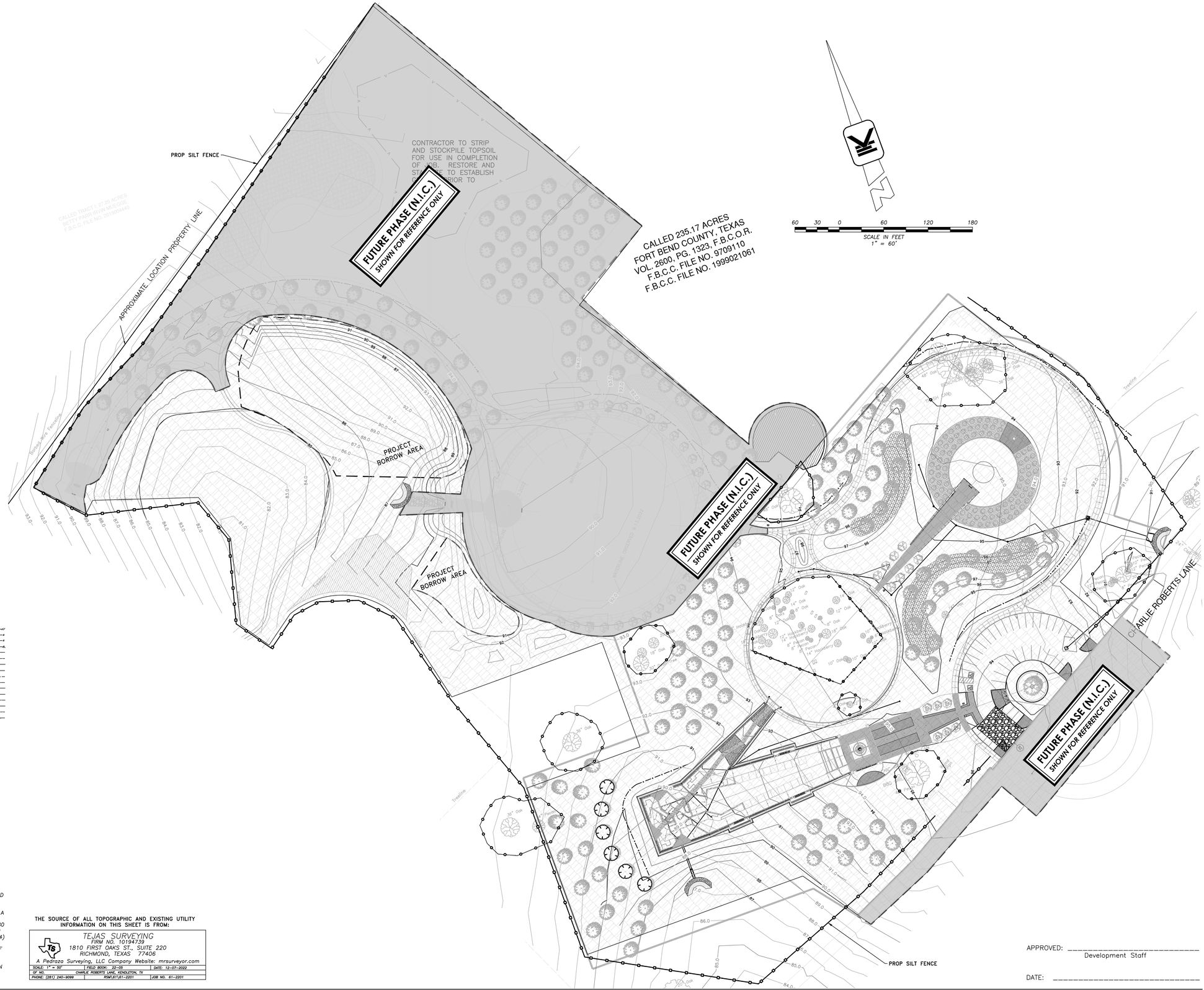

CLEARING & EROSION CONTROL LEGEND:

- AREA OF DISTURBANCE. SEE LANDSCAPE PLANS FOR TREE PROTECTION DETAILS.
- INLET PROTECTION BARRIER OR APPROVED SILT BARRIER EQUIVALENT
- SC STABILIZED CONSTRUCTION ENTRANCE (50' MINIMUM LENGTH OF TRAVEL)
- CONTINUOUS FILTER FABRIC FENCE (PLACE AT PRECISE EDGE OF CLEARED AREAS. SHOWN ON PLANS AS SLIGHTLY OFFSET OF CLEARING LINE FOR CLARITY ONLY.)
- CONTINUOUS REINFORCED FILTER FABRIC FENCE
- TEMP RIVER ROCK FILTER
- TREE PROTECTION FENCE

LEGEND

- PROPERTY CORNER
- FOC (Fiber Optic Cable)
- Gas Meter
- PP POWER POLE
- Guy GUY WIRE
- MH MANHOLE
- CO CLEANOUT
- WV WATER VALVE
- FH FIRE HYDRANT
- WM WATER METER
- Tel Box PHONE EQUIPMENT
- TV CABLE EQUIPMENT
- Lt Std LIGHT STANDARD
- Lt. LIGHT
- TRAFFIC SIGN
- TREE
- PIPE BOLLARD
- CURB LINE
- EDGE ASPHALT
- CURB INLET
- AREA INLET
- EDGE OF BUILDING
- TC45.67 / G45.17 TOP OF CURB ELEVATION / GUTTER ELEVATION

- WOOD FENCE
- BARBED WIRE FENCE
- CHAIN LINK FENCE
- WROUGHT IRON FENCE
- OVERHEAD ELECTRIC
- SANITARY SEWER LINE
- STORM SEWER LINE
- WATERLINE
- GAS LINE
- TELEPHONE LINE
- EASEMENT
- AERIAL EASEMENT
- BUILDING LINE
- PARKING SETBACK
- CENTER OF SWALE
- TOP OF BANK

+45.6 EXIST. NATURAL GROUND ELEVATION

+45.67 EXIST. ASPHALT OR CONCRETE ELEVATION

SURVEY NOTES:

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THE SOURCE OF ALL TOPOGRAPHIC AND EXISTING UTILITY INFORMATION ON THIS SHEET IS FROM:

TEJAS SURVEYING
FIRM NO. 10194739
1810 FIRST OAKS ST., SUITE 220
RICHMOND, TEXAS 77406
A Pedraza Surveying, LLC Company Website: mrsurveyor.com

SCALE: 1" = 50'	FIELD BOOK: 22-05	DATE: 12-07-2022
OF NO.	CHARLIE ROBERTS LANE, KENDLETON, TX	
PHONE: (281) 240-9099	RSW\81\61-2201	JOB NO. 61-2201

APPROVED: _____
Development Staff

DATE: _____

THE STATE OF TEXAS · FORT BEND COUNTY ·

Project:

AFRICAN AMERICAN MEMORIAL @ BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:

FORT BEND COUNTY

1517 EUGENE HEIMANN CIRCLE
Richmond, TX 77469

Contract No: 2022-05

Design Team:

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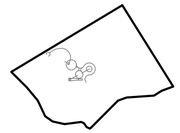
Key Plan



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2203 Timberloch Pl., Suite 124, The Woodlands, Texas 77380
www.vogtengineering.com

STATE OF TEXAS · SERGIO VAN DUSEN · 97434 · LICENSED · PROFESSIONAL ENGINEER

05-26-2023

04/12/2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: KS Reviewed by: SD

Project No: 2022-05

Sheet Title:

EROSION CONTROL PLAN

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

C101

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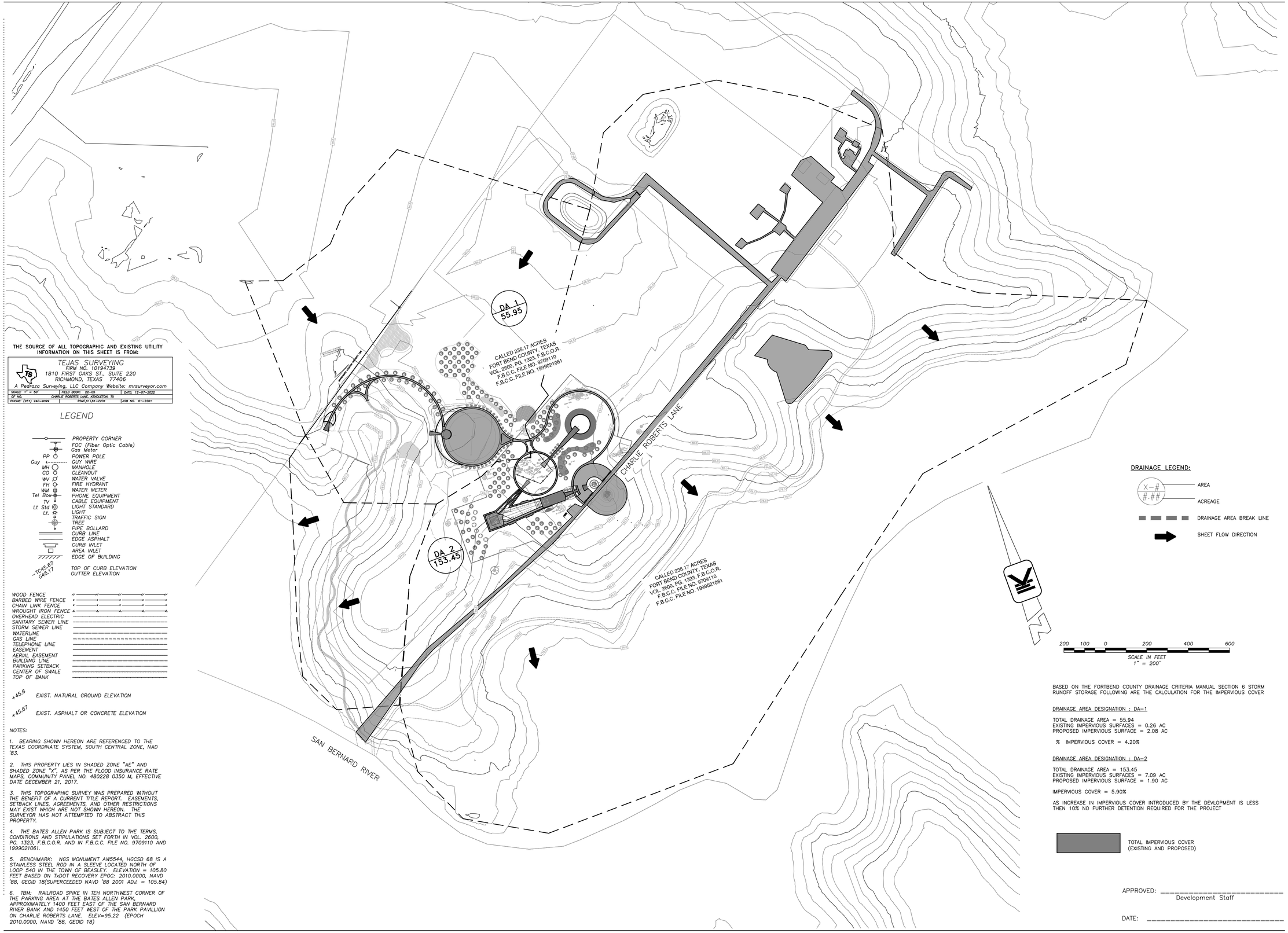

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GF NO.	CHARLIE ROBERTS LANE, KENDLETON, TX	
PHONE: (281) 240-9099	RSM\61\61-2201	JOB NO. 61-2201

LEGEND

- PROPERTY CORNER
- FOC (Fiber Optic Cable)
- Gas Meter
- PP — POWER POLE
- Guy — GUY WIRE
- MH — MANHOLE
- CO — CLEANOUT
- WV — WATER VALVE
- FH — FIRE HYDRANT
- WM — WATER METER
- Tel Box — PHONE EQUIPMENT
- TV — CABLE EQUIPMENT
- Lt Std — LIGHT STANDARD
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- TRAFFIC SIGN
- TREE
- PIPE BOLLARD
- CURB LINE
- EDGE ASPHALT
- CURB INLET
- AREA INLET
- EDGE OF BUILDING
- TOP OF CURB ELEVATION
- GUTTER ELEVATION

- WOOD FENCE
- BARBED WIRE FENCE
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- WROUGHT IRON FENCE
- OVERHEAD ELECTRIC
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- STORM SEWER LINE
- WATERLINE
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- TELEPHONE LINE
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- AERIAL EASEMENT
- BUILDING LINE
- PARKING SETBACK
- CENTER OF SWALE
- TOP OF BANK

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+45.67 EXIST. ASPHALT OR CONCRETE ELEVATION

NOTES:

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DRAINAGE LEGEND:

- X—# / #.## — AREA / ACREAGE
- DRAINAGE AREA BREAK LINE
- SHEET FLOW DIRECTION

200 100 0 200 400 600
SCALE IN FEET
1" = 200'

BASED ON THE FORTBEND COUNTY DRAINAGE CRITERIA MANUAL SECTION 6 STORM RUNOFF STORAGE FOLLOWING ARE THE CALCULATION FOR THE IMPERVIOUS COVER

DRAINAGE AREA DESIGNATION : DA-1

TOTAL DRAINAGE AREA = 55.94
EXISTING IMPERVIOUS SURFACES = 0.26 AC
PROPOSED IMPERVIOUS SURFACE = 2.08 AC

% IMPERVIOUS COVER = 4.20%

DRAINAGE AREA DESIGNATION : DA-2

TOTAL DRAINAGE AREA = 153.45
EXISTING IMPERVIOUS SURFACES = 7.09 AC
PROPOSED IMPERVIOUS SURFACE = 1.90 AC

IMPERVIOUS COVER = 5.90%

AS INCREASE IN IMPERVIOUS COVER INTRODUCED BY THE DEVLOPMENT IS LESS THEN 10% NO FURTHER DETENTION REQUIRED FOR THE PROJECT

TOTAL IMPERVIOUS COVER (EXISTING AND PROPOSED)

APPROVED: _____
Development Staff

DATE: _____

THE STATE OF TEXAS · FORT BEND COUNTY ·

Project:
AFRICAN AMERICAN MEMORIAL @ BATES M. ALLEN PARK
630 CHARLIE ROBERTS LANE
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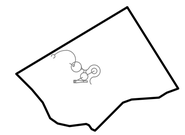
Key Plan



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Drawn by: KS Reviewed by: SD

Project No: 2022-05

Sheet Title:
DRAINAGE AREA MAP AND IMPERVIOUS COVER CALCS

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number
C201

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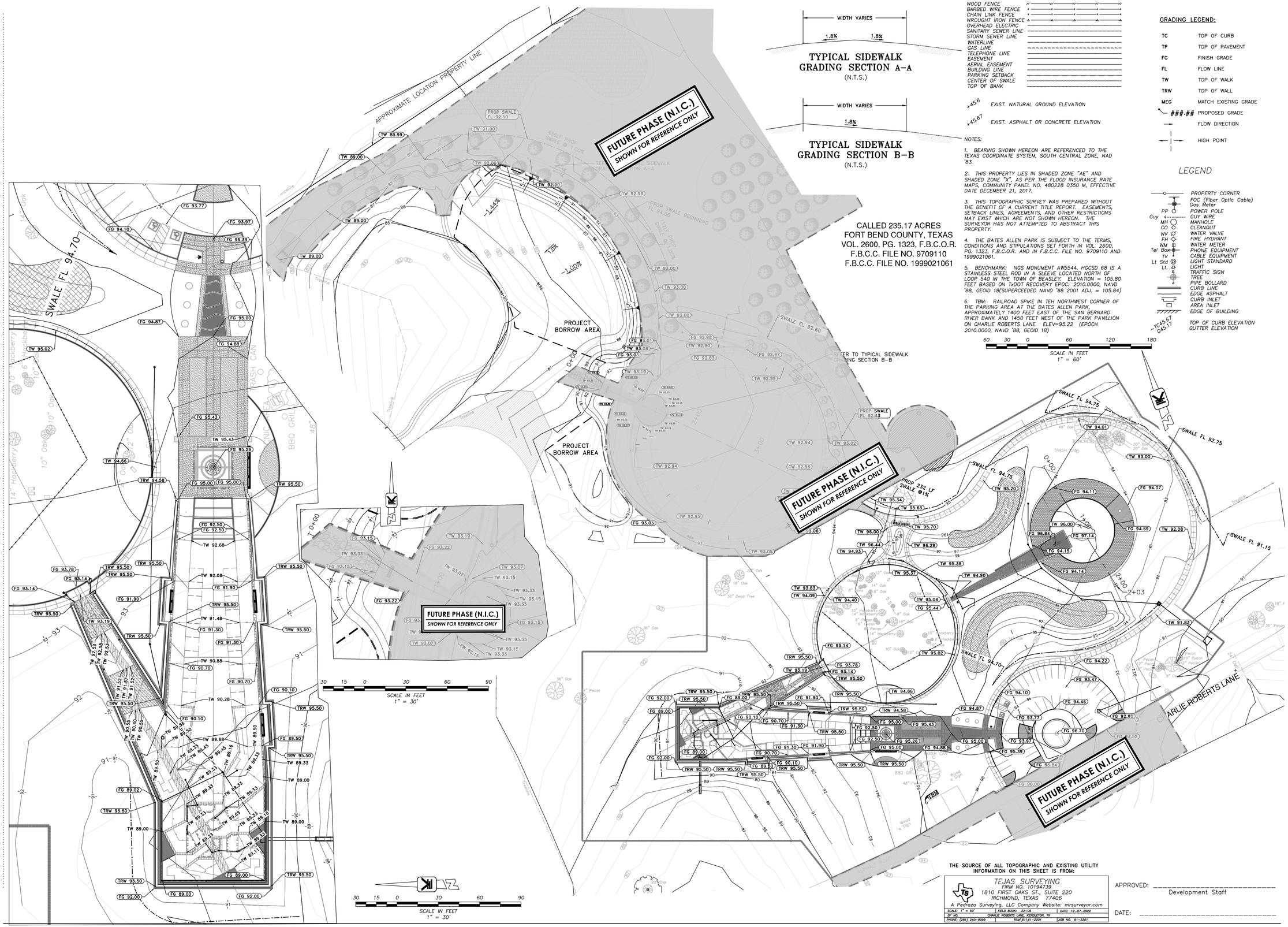

WOOD FENCE
BARBED WIRE FENCE
CHAIN LINK FENCE
WROUGHT IRON FENCE
OVERHEAD ELECTRIC
SANITARY SEWER LINE
STORM SEWER LINE
WATERLINE
GAS LINE
TELEPHONE LINE
EASEMENT
AERIAL EASEMENT
BUILDING LINE
PARKING SETBACK
CENTER OF SWALE
TOP OF BANK

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GRADING LEGEND:

TC	TOP OF CURB
TP	TOP OF PAVEMENT
FG	FINISH GRADE
FL	FLOW LINE
TW	TOP OF WALK
TRW	TOP OF WALL
MEG	MATCH EXISTING GRADE
###.##	PROPOSED GRADE
	FLOW DIRECTION
	HIGH POINT

LEGEND

PROPERTY CORNER
FOC (Fiber Optic Cable)
Gas Meter
PP POWER POLE
Guy GUY WIRE
MH MANHOLE
CO CLEANOUT
WV WATER VALVE
FH FIRE HYDRANT
WM WATER METER
Tel Box PHONE EQUIPMENT
TV CABLE EQUIPMENT
Lt Std LIGHT STANDARD
Lt. LIGHT
TRAFFIC SIGN
TREE
PIPE BOLLARD
CURB LINE
EDGE ASPHALT
CURB INLET
AREA INLET
EDGE OF BUILDING
TC45.67 / G45.17 TOP OF CURB ELEVATION / GUTTER ELEVATION

THE SOURCE OF ALL TOPOGRAPHIC AND EXISTING UTILITY INFORMATION ON THIS SHEET IS FROM:

TEJAS SURVEYING
FIRM NO. 10194739
1810 FIRST OAKS ST., SUITE 220
RICHMOND, TEXAS 77406
A Pedraza Surveying, LLC Company Website: mrsurveyor.com

SCALE: 1" = 50'	FIELD BOOK: 23-05	DATE: 12-07-2022
GF NO.	CHARLIE ROBERTS LANE, KENDLETON, TX	
PHONE: (281) 240-9099	RSW\61\61-2201	JOB NO. 61-2201

APPROVED: _____
Development Staff

DATE: _____

THE STATE OF TEXAS · FORT BEND COUNTY ·

Project:

AFRICAN AMERICAN MEMORIAL @ BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:

FORT BEND COUNTY

1517 EUGENE HEIMANN CIRCLE
Richmond, TX 77469

Contract No: 2022-05

Design Team:

HINES ARCHITECTURE + DESIGN
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Key Plan

Professional Seals

VOGT ENGINEERING
TEXAS BOARD OF PROFESSIONAL ENGINEERS FIRM REGISTRATION F-3395
3355 Timberloch Pl., Suite 124, The Woodlands, Texas 77380
www.vogtengineering.com

STATE OF TEXAS
SERGIO VAN DUSEN
97434
LICENSED
PROFESSIONAL ENGINEER

05-26-2023
04/12/2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: KS Reviewed by: SD

Project No: 2022-05

Sheet Title:

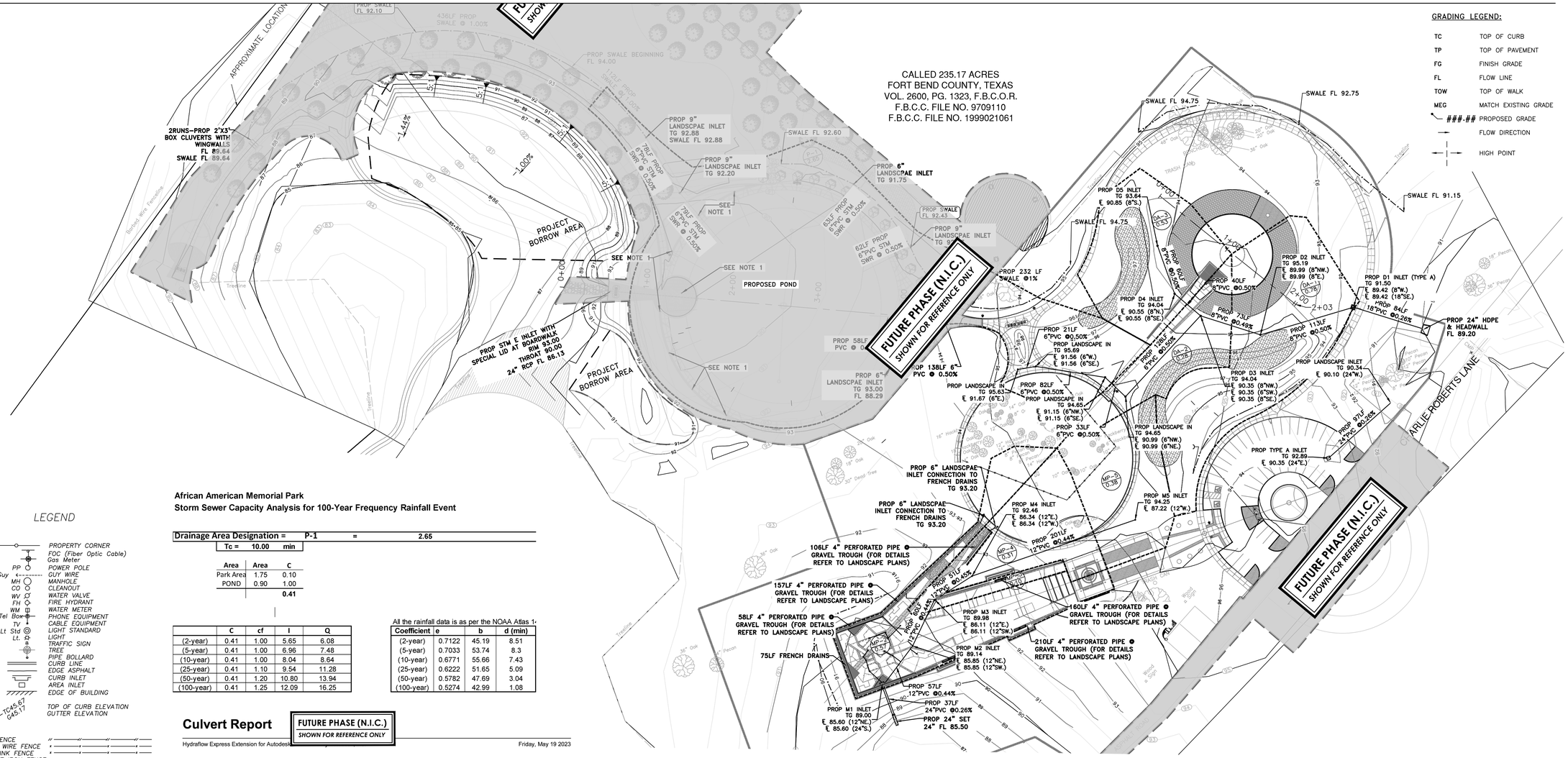
GRADING PLAN

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

C301

C:\Users\Vosho.shah\Desktop\Project\C Working Files\639--004 Bates Allen Park\03 Drafting\Revisions\Revisions\REV 02\C-301--C302 Grading and Storm Swr Plan and Grading Sections.dwg Apr. 12, 24 by
2/24/2023 15:26:10



LEGEND

- PROPERTY CORNER
- FOC (Fiber Optic Cable)
- Gas Meter
- PP — POWER POLE
- Guy — GUY WIRE
- MH — MANHOLE
- CO — CLEANOUT
- WV — WATER VALVE
- FH — FIRE HYDRANT
- WM — WATER METER
- Tel Box — PHONE EQUIPMENT
- TV — CABLE EQUIPMENT
- Lt Std — LIGHT STANDARD
- Lt. — LIGHT
- TRAFFIC SIGN
- TREE
- PIPE BOLLARD
- CURB LINE
- EDGE ASPHALT
- CURB INLET
- AREA INLET
- EDGE OF BUILDING
- TOA5.67 G45.17 — TOP OF CURB ELEVATION / GUTTER ELEVATION
- WOOD FENCE
- BARBED WIRE FENCE
- CHAIN LINK FENCE
- WROUGHT IRON FENCE
- OVERHEAD ELECTRIC
- SANITARY SEWER LINE
- STORM SEWER LINE
- WATERLINE
- GAS LINE
- TELEPHONE LINE
- EASEMENT
- AERIAL EASEMENT
- BUILDING LINE
- PARKING SETBACK
- CENTER OF SWALE
- TOP OF BANK

NOTES:

1. BEARING SHOWN HEREON ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD '83.
2. THIS PROPERTY LIES IN SHADED ZONE "AE" AND SHADED ZONE "X", AS PER THE FLOOD INSURANCE RATE MAPS, COMMUNITY PANEL NO. 480228 0350 M, EFFECTIVE DATE DECEMBER 21, 2017.
3. THIS TOPOGRAPHIC SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A CURRENT TITLE REPORT. EASEMENTS, SETBACK LINES, AGREEMENTS, AND OTHER RESTRICTIONS MAY EXIST WHICH ARE NOT SHOWN HEREON. THE SURVEYOR HAS NOT ATTEMPTED TO ABSTRACT THIS PROPERTY.
4. THE BATES ALLEN PARK IS SUBJECT TO THE TERMS, CONDITIONS AND STIPULATIONS SET FORTH IN VOL. 2600, PG. 1323, F.B.C.O.R. AND IN F.B.C.C. FILE NO. 9709110 AND 1999021061.
5. BENCHMARK: NGS MONUMENT AW5544, HGCSD 68 IS A STAINLESS STEEL ROD IN A SLEEVE LOCATED NORTH OF LOOP 540 IN THE TOWN OF BEASLEY. ELEVATION = 105.80 FEET BASED ON TxDOT RECOVERY EPOC: 2010.0000, NAVD '88, GEOID 18(SUPERCEEDED NAVD '88 2001 ADJ. = 105.84)
6. TBM: RAILROAD SPIKE IN TEH NORTHWEST CORNER OF THE PARKING AREA AT THE BATES ALLEN PARK, APPROXIMATELY 1400 FEET EAST OF THE SAN BERNARD RIVER BANK AND 1450 FEET WEST OF THE PARK PAVILLION ON CHARLIE ROBERTS LANE. ELEV=95.22 (EPOCH 2010.0000, NAVD '88, GEOID 18)

African American Memorial Park
Storm Sewer Capacity Analysis for 100-Year Frequency Rainfall Event

Drainage Area Designation =	P-1	=	2.65
Tc =	10.00	min	

Area	Area	C
Park Area	1.75	0.10
POND	0.90	1.00
		0.41

	C	cf	I	Q
(2-year)	0.41	1.00	5.65	6.08
(5-year)	0.41	1.00	6.96	7.48
(10-year)	0.41	1.00	8.04	8.64
(25-year)	0.41	1.10	9.54	11.28
(50-year)	0.41	1.20	10.80	13.94
(100-year)	0.41	1.25	12.09	16.25

All the rainfall data is as per the NOAA Atlas 14

Coefficient	e	b	d (min)
(2-year)	0.7122	45.19	8.51
(5-year)	0.7033	53.74	8.3
(10-year)	0.6771	55.66	7.43
(25-year)	0.6222	51.65	5.09
(50-year)	0.5782	47.69	3.04
(100-year)	0.5274	42.99	1.08

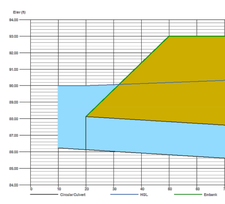
Culvert Report

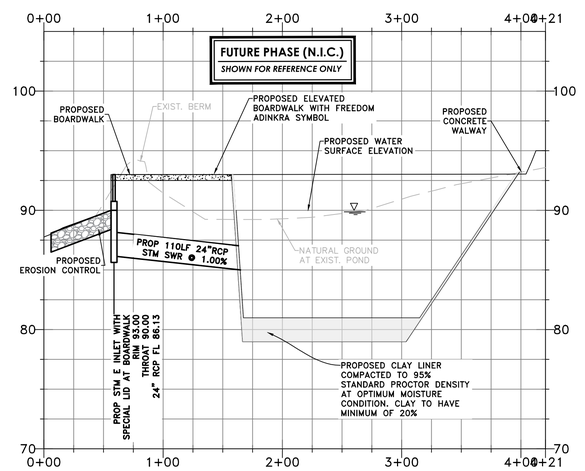
FUTURE PHASE (N.I.C.) SHOWN FOR REFERENCE ONLY

Hydraflow Express Extension for Autodesk — Friday, May 19 2023

Circular Culvert

Invert Elev Dn (ft)	= 86.13	**Calculations**	
Pipe Length (ft)	= 110.00	Qmin (cfs)	= 0.00
Slope (%)	= -1.03	Qmax (cfs)	= 20.00
Invert Elev Up (ft)	= 85.00	Tailwater Elev (ft)	= 90
Rise (in)	= 24.0		
Shape	= Circular	**Highlighted**	
Span (in)	= 24.0	Qtotal (cfs)	= 19.60
No. Barrels	= 1	Qpipe (cfs)	= 19.60
n-Value	= 0.012	Qovertop (cfs)	= 0.00
Culvert Type	= Circular Concrete	Veloc Dn (ft/s)	= 6.24
Culvert Entrance	= Groove end projecting (C)	Veloc Up (ft/s)	= 6.24
Coeff. K,M,c,Y,k	= 0.0045, 2, 0.0317, 0.69, 0.2	HGL Dn (ft)	= 90.00
		HGL Up (ft)	= 90.70
Embankment		Hw Elev (ft)	= 91.43
Top Elevation (ft)	= 93.00	Hw/D (ft)	= 3.22
Top Width (ft)	= 50.00	Flow Regime	= Outlet Control
Crest Width (ft)	= 110.00		





PROPOSED ROAD PAVING PROFILE VIEW
SCALE: 1"=60' (H), 1"=6' (V)

DRAINAGE LEGEND:

- DA-## — AREA / ACREAGE
- DRAINAGE AREA BREAK LINE
- EEO — EXTREME EVENT OVERFLOW
- STORM SEWER SYSTEM
- DRAINAGE AREA NUMBERS
- 0.18 Q100=1.12 — TOTAL RUNOFF IN CFS / FREQUIUENCY / TOTAL AREA IN ACRES
- FLOW — SHEET FLOW DIRECTION

60 30 0 60 120 180
SCALE IN FEET
1" = 60'

NOTE 1: PROP LANDSCAPE INLET WITH 6" GRATE AND 6" PVC PIPE CONNECTING TO THE POND. POND FL 188 (TYP) INLET SPACING 50'

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PHONE: (281) 240-9099	RSW\61\61-2201	JOB NO. 61-2201

APPROVED: _____
Development Staff

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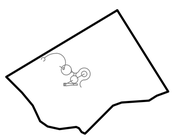
Key Plan



GRADING LEGEND:

TC	TOP OF CURB
TP	TOP OF PAVEMENT
FG	FINISH GRADE
FL	FLOW LINE
TOW	TOP OF WALK
MEG	MATCH EXISTING GRADE
###.##	PROPOSED GRADE
	FLOW DIRECTION
	HIGH POINT

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www.vogtengineering.com

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05-26-2023 — 04/12/2024

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	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: KS Reviewed by: SD

Project No: 2022-05

Sheet Title:

STORM SEWER PLAN

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number
C302

C:\Users\Kosha.shah\Desktop\Project\C Working Files\639-004 Bates Allen Park\03 Drafting\Revisions\Revisions\REV 02\C301-C302 Grading and Storm Swr Plan and Grading Sections.dwg Apr. 12, 24 by
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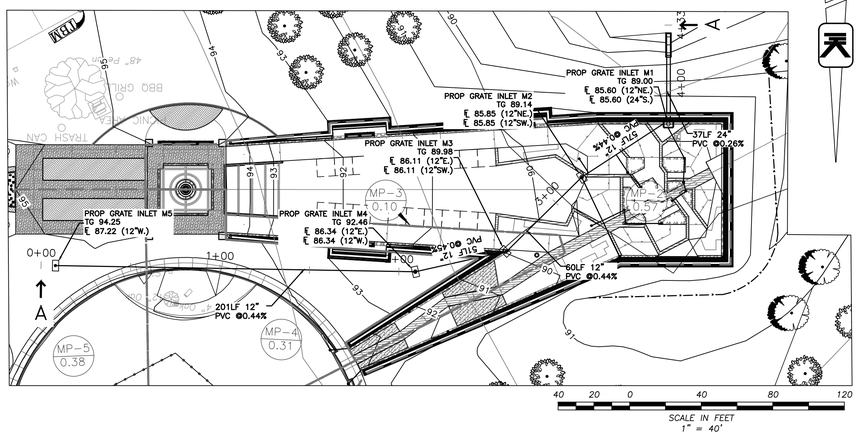
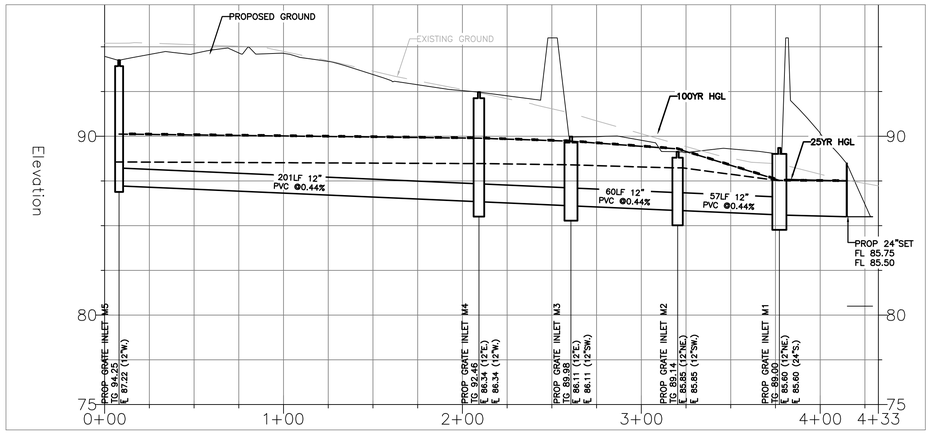
STORM SEWER A–A





STORM SEWER A–A PROFILE
STA 0+00 TO 4+33
SCALE : 1''= 40'(H)
1''=4'(V)

African American Memorial Park
Storm Sewer Capacity Analysis for 25-Year Frequency Rainfall Event

RAINFALL INTESITY PARAMETERS
Fort Bend b= 51.7
County d= 5.09
e= 0.6222
cf= 1.00

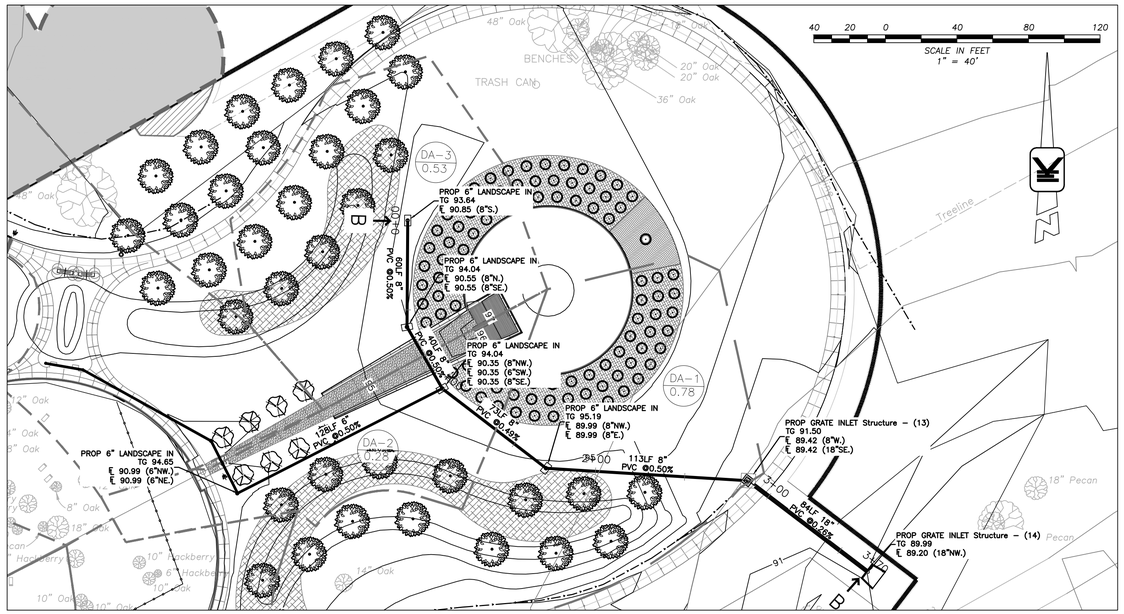
Area Designation	Up-stream Inlet	Down-stream Inlet	Area (acres)	Cummulative Area (acres)	Runoff Coefficient C	Inlet Time of Conc. (min)	Intensity [In/Hr]	Flows [cfs]	Sum of Flows [cfs]	Reach Length (ft)	Pipe Diam [Inch]	Slope [%]	Manning's "n"	Design Velocity [fps]	Design Capacity [cfs]	Flowline Elevation Up-stream [ft]	Flowline Elevation Down-stream [ft]	Actual Velocity [fps]	Change in Head [ft]	$\frac{V^2}{V_{des}^2} \times S\%$ Hydraulic Gradient [%]	Hydraulic Gradeline Up-stream [ft]	Hydraulic Gradeline Down-stream [ft]	Critical Elevation Up-stream [ft]	Critical Elevation Down-stream [ft]	Cover Up-stream (ft)	Cover Down-stream (ft)	Depth of HGL(+D) above RIM/NG D (FT) Up-stream	Depth of HGL(+D) above RIM/NG D (FT) Down-stream
MP5	M5	M4	0.38	0.38	0.25	10.00	9.54	**0.90**	0.90	201	12	0.44%	0.011	3.57	2.80	87.22	86.34	1.14	0.09	0.04%	88.56	**88.47**	94.25	92.46	5.63	4.72	-5.69	-3.99
MP4	M4	M3	0.31	0.694	0.23	11.88	8.87	**0.64**	1.54	51	12	0.44%	0.011	3.57	2.80	86.34	86.11	1.96	0.07	0.13%	88.47	**88.40**	92.46	89.96	4.72	2.45	-3.99	-1.56
MP3	M3	M2	0.10	0.795	0.85	12.36	8.72	**0.75**	2.29	60	12	0.44%	0.011	3.57	2.80	86.11	85.85	2.91	0.18	0.29%	88.40	**88.23**	89.96	89.14	2.45	1.89	-1.56	-0.91
MP2	M2	M1	0.57	1.365	0.50	12.92	8.55	**2.45**	4.73	57	12	0.44%	0.011	3.57	2.80	85.85	85.60	6.02	0.72	1.26%	88.23	**87.51**	89.14	89.00	1.89	2.00	-0.91	-1.49
MP1	M1	SET	0.00	1.365	0.10	13.45	8.40	**0.00**	4.73	37	24	0.26%	0.011	4.35	13.67	85.60	85.50	1.51	0.01	0.03%	87.51	**87.50**	89.00	89.00	1.00	1.10	-1.49	0.00
DA-3	D5	D4	0.53	0.53	0.14	10.00	9.54	**0.71**	0.71	60	8	0.50%	0.011	2.90	1.01	90.85	90.55	2.03	0.15	0.24%	92.19	**92.05**	93.64	94.04	1.72	2.42	-1.45	-1.99
	D4	D3	0.00	0.53	0.10	10.69	9.28	**0.00**	0.71	40	8	0.50%	0.011	2.90	1.01	90.55	90.35	2.03	0.10	0.24%	92.05	**91.95**	94.04	94.04	2.42	2.62	-1.99	-2.09
DA-2	D3	D2	0.29	0.81	0.18	11.15	9.12	**0.46**	1.16	73	8	0.50%	0.011	2.90	1.01	90.35	89.99	3.34	0.48	0.66%	91.95	**91.47**	94.04	94.42	2.62	3.37	-2.09	-2.95
	D2	D1	0.00	0.811	0.10	11.99	8.84	**0.00**	1.16	113	8	0.50%	0.011	2.90	1.01	89.99	89.42	3.34	0.75	0.66%	91.47	**90.72**	94.42	91.50	3.37	1.01	-2.95	-0.78
DA-1	D1	OUT	0.78	1.593	0.10	13.29	8.44	**0.66**	1.82	84	18	0.26%	0.011	3.59	6.35	89.42	89.20	1.03	0.02	0.02%	90.72	**90.70**	91.50		0.18	-91.10	-0.78	0.00

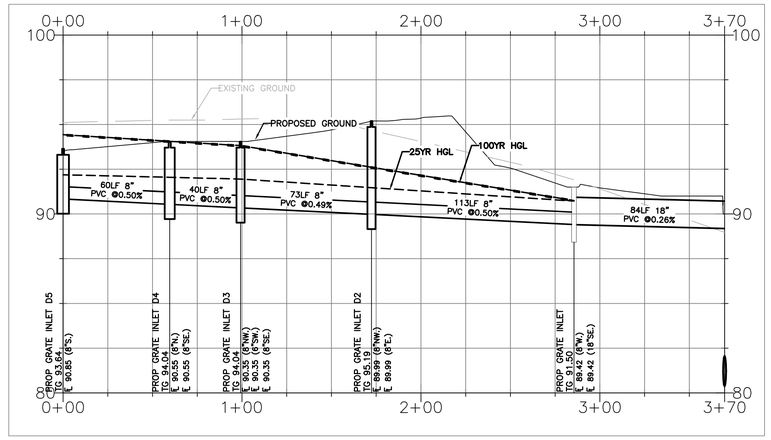
African American Memorial Park
Storm Sewer Capacity Analysis for 100-Year Frequency Rainfall Event

RAINFALL INTESITY PARAMETERS
Fort Bend b= 43.0
County d= 1.08
e= 0.5274
cf= 1.25

Area Designation	Up-stream Inlet	Down-stream Inlet	Area (acres)	Cummulative Area (acres)	Runoff Coefficient C	Inlet Time of Conc. (min)	Intensity [In/Hr]	Flows [cfs]	Sum of Flows [cfs]	Reach Length (ft)	Pipe Diam [Inch]	Slope [%]	Manning's "n"	Design Velocity [fps]	Design Capacity [cfs]	Flowline Elevation Up-stream [ft]	Flowline Elevation Down-stream [ft]	Actual Velocity [fps]	Change in Head [ft]	$\frac{V^2}{V_{des}^2} \times S\%$ Hydraulic Gradient [%]	Hydraulic Gradeline Up-stream [ft]	Hydraulic Gradeline Down-stream [ft]	Critical Elevation Up-stream [ft]	Critical Elevation Down-stream [ft]	Cover Up-stream (ft)	Cover Down-stream (ft)	Depth of HGL(+D) above RIM/NG D (FT) Up-stream	Depth of HGL(+D) above RIM/NG D (FT) Down-stream
MP5	M5	M4	0.38	0.38	0.25	10.00	12.09	**1.42**	1.42	201	12	0.44%	0.011	3.57	2.80	87.22	86.34	1.81	0.23	0.11%	90.12	**89.89**	94.25	92.46	5.63	4.72	-4.13	-2.57
MP4	M4	M3	0.31	0.694	0.23	11.88	11.13	**1.01**	2.43	51	12	0.44%	0.011	3.57	2.80	86.34	86.11	3.09	0.17	0.33%	89.89	**89.72**	92.46	89.96	4.72	2.45	-2.57	-0.24
MP3	M3	M2	0.10	0.795	0.85	12.36	10.92	**1.17**	3.60	60	12	0.44%	0.011	3.57	2.80	86.11	85.85	4.58	0.44	0.73%	89.72	**89.29**	89.96	89.14	2.45	1.89	-0.24	0.15
MP2	M2	M1	0.57	1.365	0.50	12.92	10.69	**3.82**	7.42	57	12	0.44%	0.011	3.57	2.80	85.85	85.60	9.45	1.76	3.09%	89.29	**87.53**	89.14	89.00	1.89	2.00	0.15	-1.47
MP1	M1	SET	0.00	1.365	0.10	13.45	10.48	**0.00**	7.42	37	24	0.26%	0.011	4.35	13.67	85.60	85.50	2.36	0.03	0.08%	87.53	**87.50**	89.00	89.00	1.00	1.10	-1.47	
DA-3	D5	D4	0.53	0.53	0.14	10.00	12.09	**1.12**	1.12	60	8	0.50%	0.011	2.90	1.01	90.85	90.55	3.21	0.37	0.61%	94.43	**94.06**	93.64	94.04	1.72	2.42	0.79	0.02
	D4	D3	0.00	0.53	0.10	10.69	11.71	**0.00**	1.12	40	8	0.50%	0.011	2.90	1.01	90.55	90.35	3.21	0.24	0.61%	94.06	**93.82**	94.04	94.04	2.42	2.62	0.02	-0.22
DA-2	D3	D2	0.29	0.81	0.18	11.15	11.48	**0.72**	1.84	73	8	0.50%	0.011	2.90	1.01	90.35	89.99	5.27	1.20	1.65%	93.82	**92.61**	94.04	94.42	2.62	3.37	-0.22	-1.81
	D2	D1	0.00	0.811	0.10	11.99	11.08	**0.00**	1.84	113	8	0.50%	0.011	2.90	1.01	89.99	89.42	5.27	1.87	1.65%	92.61	**90.75**	94.42	91.50	3.37	1.01	-1.81	-0.75
DA-1	D1	OUT	0.78	1.593	0.10	13.29	10.54	**1.03**	2.87	84	18	0.26%	0.011	3.59	6.35	89.42	89.20	1.62	0.04	0.05%	90.75	**90.70**	91.50		0.18	-91.10	-0.75	

STORM SEWER B–B





STORM SEWER B–B PROFILE
STA 0+00 TO 3+70
SCALE : 1''= 40'(H)
1''=4'(V)

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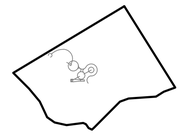

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04/12/2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: KS Reviewed by: SD

Project No: 2022-05

Sheet Title:

STORM CALCS AND HGL PROFILE

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number
C401

C:\Users\Kosha.shah\Desktop\Project\C Working Files\639-004 Bates Allen Park\03 Drafting\Revisions\Revisions\REV 02\C-401 DA MAP, STORM CALCS AND HGL PROFILES-1.dwg Apr. 12, 24 by 2/24/2023 15:26:10



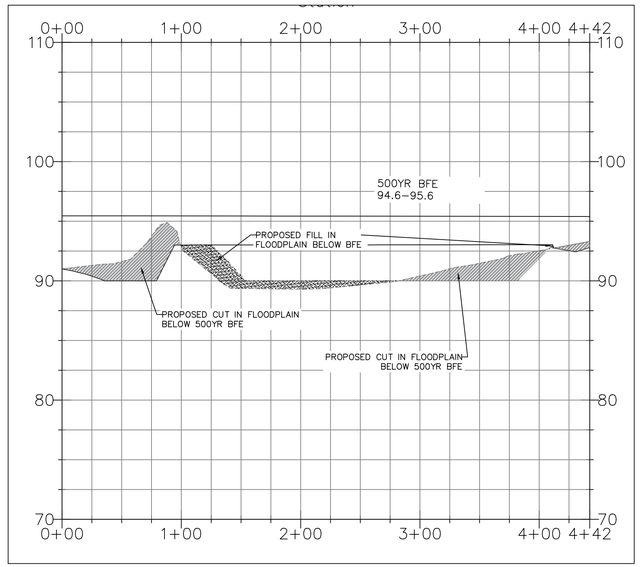
EARTHWORK AND FLOODPLAIN MITIGATION CALCS

Earthwork Balance calcs

Proposed Cut	=	9684.25	cuyd
Proposed Fill	=	6030.59	cuyd
Total (CUT)	=	3653.66	cuyd

Flood Plain Mitigation

Area of site in cut before proposed project = 24887.46
Area of site in cut after proposed project = 26752.12
Proposed project is expected to have more cut than existing condition.
Hence no mitigation in flood plain required



POND SECTION A-A
SCALE 1" = 60' (H)
1" = 6' (V)

APPROVED: _____
Development Staff

DATE: _____

THE STATE OF TEXAS · FORT BEND COUNTY ·

Project:

AFRICAN AMERICAN MEMORIAL @ BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:

FORT BEND COUNTY

1517 EUGENE HEIMANN CIRCLE
Richmond, TX 77469

Contract No: 2022-05

Design Team:

HINES ARCHITECTURE + DESIGN
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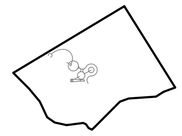
Key Plan



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05-26-2023
04/12/2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: KS Reviewed by: SD

Project No: 2022-05

Sheet Title:

FLOODPLAIN MITIGATION P&P - I

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

C501

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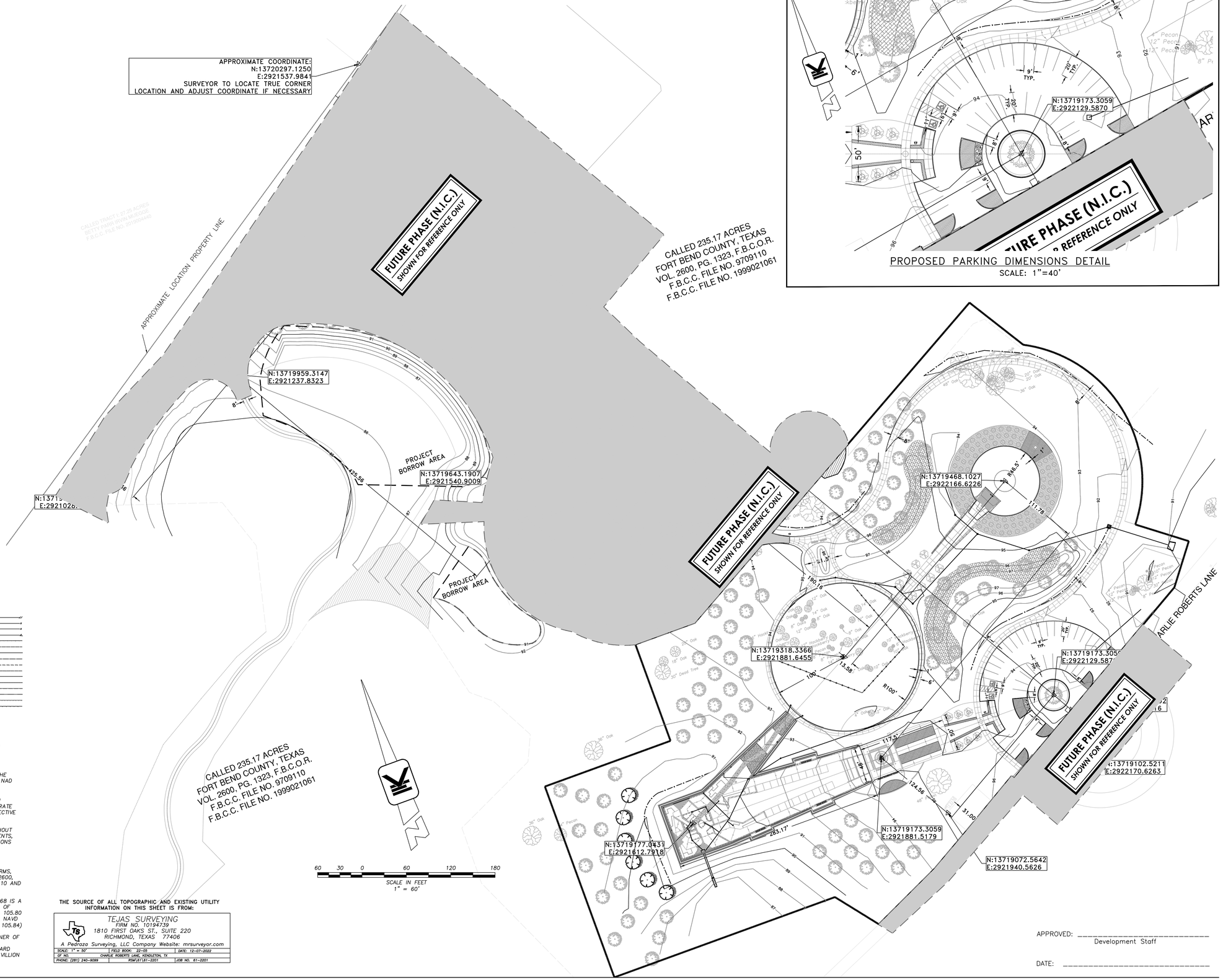

LEGEND

- PROPERTY CORNER
- FOC (Fiber Optic Cable)
- Gas Meter
- PP — POWER POLE
- Guy — GUY WIRE
- MH — MANHOLE
- CO — CLEANOUT
- WV — WATER VALVE
- FH — FIRE HYDRANT
- WM — WATER METER
- Tel Box — PHONE EQUIPMENT
- TV — CABLE EQUIPMENT
- Lt Std — LIGHT STANDARD
- Lt. — LIGHT
- TRAFFIC SIGN
- TREE
- PIPE BOLLARD
- CURB LINE
- EDGE ASPHALT
- CURB INLET
- AREA INLET
- EDGE OF BUILDING
- TC45.67 / G45.17 — TOP OF CURB ELEVATION / GUTTER ELEVATION

- WOOD FENCE
- BARBED WIRE FENCE
- CHAIN LINK FENCE
- WROUGHT IRON FENCE
- OVERHEAD ELECTRIC
- SANITARY SEWER LINE
- STORM SEWER LINE
- WATERLINE
- GAS LINE
- TELEPHONE LINE
- EASEMENT
- AERIAL EASEMENT
- BUILDING LINE
- PARKING SETBACK
- CENTER OF SWALE
- TOP OF BANK

+45.6 — *EXIST. NATURAL GROUND ELEVATION*

+45.67 — *EXIST. ASPHALT OR CONCRETE ELEVATION*

SURVEY NOTES:

1. *BEARING SHOWN HEREON ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD '83.*

2. *THIS PROPERTY LIES IN SHADED ZONE "AE" AND SHADED ZONE "X", AS PER THE FLOOD INSURANCE RATE MAPS, COMMUNITY PANEL NO. 480228 0350 M, EFFECTIVE DATE DECEMBER 21, 2017.*

3. *THIS TOPOGRAPHIC SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A CURRENT TITLE REPORT. EASEMENTS, SETBACK LINES, AGREEMENTS, AND OTHER RESTRICTIONS MAY EXIST WHICH ARE NOT SHOWN HEREON. THE SURVEYOR HAS NOT ATTEMPTED TO ABSTRACT THIS PROPERTY.*

4. *THE BATES ALLEN PARK IS SUBJECT TO THE TERMS, CONDITIONS AND STIPULATIONS SET FORTH IN VOL. 2600, PG. 1323, F.B.C.O.R. AND IN F.B.C.C. FILE NO. 9709110 AND 1999021061.*

5. *BENCHMARK: NGS MONUMENT AW5544, HGCSD 68 IS A STAINLESS STEEL ROD IN A SLEEVE LOCATED NORTH OF LOOP 540 IN THE TOWN OF BEASLEY. ELEVATION = 105.80 FEET BASED ON TxDOT RECOVERY EPOC: 2010.0000, NAVD '88, GEOID 18(SUPERCEEDED NAVD '88 2001 ADJ. = 105.84)*

6. *TBM: RAILROAD SPIKE IN TEH NORTHWEST CORNER OF THE PARKING AREA AT THE BATES ALLEN PARK, APPROXIMATELY 1400 FEET EAST OF THE SAN BERNARD RIVER BANK AND 1450 FEET WEST OF THE PARK PAVILLION ON CHARLIE ROBERTS LANE. ELEV=95.22 (EPOCH 2010.0000, NAVD '88, GEOID 18)*

THE SOURCE OF ALL TOPOGRAPHIC AND EXISTING UTILITY INFORMATION ON THIS SHEET IS FROM:

TEJAS SURVEYING
FIRM NO. 10194739
1810 FIRST OAKS ST., SUITE 220
RICHMOND, TEXAS 77406
A Pedraza Surveying, LLC Company Website: mrsurveyor.com

SCALE: 1" = 50'	FIELD BOOK: 22-05	DATE: 12-07-2022
GF NO.	CHARLIE ROBERTS LANE, KENDLETON, TX	
PHONE: (281) 240-9099	RSM\61\61-2201	JOB NO. 61-2201

THE STATE OF TEXAS · FORT BEND COUNTY ·

Project:

AFRICAN AMERICAN MEMORIAL @ BATES M. ALLEN PARK

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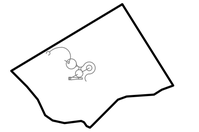
Key Plan



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STATE OF TEXAS — SERGIO VAN DUSEN — 97434 — LICENSED PROFESSIONAL ENGINEER

05-26-2023

04/12/2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: KS Reviewed by: SD

Project No: 2022-05

Sheet Title:

DIMENSION CONTROL PLAN

APPROVED: _____
Development Staff

DATE: _____

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

C600

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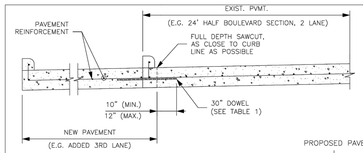
CONSTRUCTION

1. FORT BEND COUNTY MUST BE INVITED TO THE PRE-CONSTRUCTION MEETING.
2. CONTRACTOR SHALL NOTIFY FORT BEND COUNTY ENGINEERING DEPARTMENT 48 HOURS PRIOR TO COMMENCING CONSTRUCTION AND 48 HOUR NOTICE TO ANY CONSTRUCTION ACTIVITY WITHIN THE LIMITS OF THE PAVING AT CONSTRUCTION@FBCTX.GOV.
3. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FROM FORT BEND COUNTY PRIOR TO COMMENCING CONSTRUCTION OF ANY IMPROVEMENTS WITHIN COUNTY ROAD RIGHT OF WAYS.
4. ALL PAVING IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FORT BEND COUNTY "RULES, REGULATIONS AND REQUIREMENTS" RELATING TO THE APPROVAL AND ACCEPTANCE OF IMPROVEMENTS IN SUBDIVISIONS AS CURRENTLY AMENDED.
5. ALL ROAD WIDTHS, CURB RADII AND CURB ALIGNMENT SHOWN INDICATES BACK OF CURB.
6. A CONTINUOUS LONGITUDINAL REINFORCING BAR SHALL BE USED IN THE CURBS.
7. ALL CONCRETE PAVEMENT SHALL BE 5½ SACK CEMENT WITH A MINIMUM COMPRESSIVE STRENGTH OF 3500 PSI AT 28 DAYS. TRANSVERSE EXPANSION JOINTS SHALL BE INSTALLED AT EACH CURB RETURN AND AT A MAXIMUM SPACING OF 60 FEET.
8. ALL WEATHER ACCESS TO ALL EXISTING STREETS AND DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES.
9. 4" X 12" REINFORCED CONCRETE CURB SHALL BE PLACED IN FRONT OF SINGLE FAMILY LOTS ONLY. ALL OTHER AREAS SHALL BE 6" REINFORCED CONCRETE CURB.
10. CURB HEADERS ARE REQUIRED AT CURB CONNECTIONS TO HANDICAP RAMPS, WITH NO CONSTRUCTION JOINT WITHIN 5' OF RAMPS.
11. GUIDELINES ARE SET FORTH IN THE TEXAS "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", AS CURRENTLY AMENDED, SHALL BE OBSERVED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE FLAGMEN, SIGNING, STRIPING AND WARNING DEVICES, ETC., DURING CONSTRUCTION – BOTH DAY AND NIGHT.
12. ALL R1-1 STOP SIGNS SHALL BE A MINIMUM OF 36"X36" WITH DIAMOND GRADE SHEETING PER TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
13. STREET NAME SIGNAGE SHALL BE ON A 9" HIGH SIGN FLAT BLADE W/REFLECTIVE GREEN BACKGROUND. STREET NAMES SHALL BE UPPER AND LOWERCASE LETTERING WITH UPPERCASE LETTERS OF 6" MINIMUM AND LOWERCASE LETTERS OF 4.5" MINIMUM. THE LETTERS SHALL BE REFLECTIVE WHITE. STREET NAME SIGNS SHALL BE MOUNTED ON STOP SIGN POST.
14. A BLUE DOUBLE REFLECTORIZED BUTTON SHALL BE PLACED AT ALL FIRE HYDRANT LOCATIONS. THE BUTTON SHALL BE PLACED 12 INCHES OFF OF THE CENTERLINE OF THE STREET ON THE SAME SIDE AS THE HYDRANT.
15. THE PROJECT AND ALL PARTS THEREOF SHALL BE SUBJECT TO INSPECTION FROM TIME TO TIME BY INSPECTORS DESIGNATED BY FORT BEND COUNTY. NO SUCH INSPECTIONS SHALL RELIEVE THE CONTRACTOR OF ANY OF ITS OBLIGATIONS HEREUNDER. NEITHER FAILURE TO INSPECT NOR FAILURE TO DISCOVER OR REJECT ANY OF THE WORK AS NOT IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS, REQUIREMENTS AND SPECIFICATIONS OF FORT BEND COUNTY OR ANY PROVISION OF THIS PROJECT SHALL BE CONSTRUED TO IMPLY AN ACCEPTANCE OF SUCH WORK OR TO RELIEVE THE CONTRACTOR OF ANY OF ITS OBLIGATIONS HEREUNDER.
16. STABILIZED SUBGRADE: DETERMINE THE THICKNESS OF THE STABILIZED SUBGRADE AFTER CURING AND COMPACTION. IF THE SUBGRADE DEPTH IS GREATER THAN THE PROPOSED THICKNESS BY 20% OR MORE, THE CMT LAB MUST PROVIDE VERIFICATION THE PERCENTAGE OF MATERIAL BEING USED TO STABILIZE THE SUBGRADE MEETS OR EXCEEDS PROJECT REQUIREMENTS. TEST RESULTS REQUIRED.

NOTE: FORT BEND COUNTY NOTES SUPERSEDE ANY CONFLICTING NOTES.



TYPICAL CONCRETE ROADWAY WIDENING DETAIL
SCALE: 1" = 1'-6"

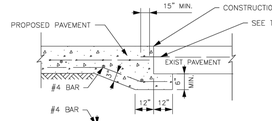
TABLE 1 (CONSTRUCTION JOINT DOWELS)

DOWEL SIZE	PAVEMENT DEPTH
#4 BAR	< 6"
#5 BAR	6" ≤ D < 9"
#6 BAR	≥ 9"

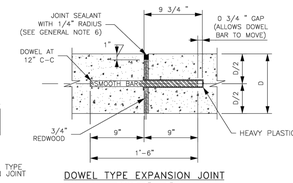
DOWEL SHALL BE DRILLED INTO EXISTING PAVEMENT (MIN. 10", MAX. 12") AND EPOXIED. (SEE ITEM 361.3)

EXPANSION JOINT DOWELS 12" O.C.

PAVEMENT THICKNESS (D)	DOWEL DIA.
6"	3/4"
7"	1"
8"	1"
9" & 10"	1 1/4"

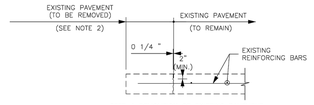


A: UNDERCUT BAR LAYOUT



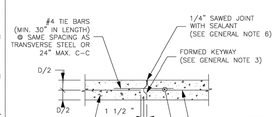
DOWEL TYPE EXPANSION JOINT
SCALE: 1" = 6"

NOTES FOR DOWEL EXPANSION JOINT:
1. EXPANSION JOINT SHALL BE PLACED AT THE END OF EACH CURB RADIUS AND SPACED AT A MAXIMUM DISTANCE OF 60 FEET.
2. CENTER DOWEL HORIZONTALLY ON JOINT.
3. EXPANSION JOINT BARS SHALL BE HELD PARALLEL TO THE FINISHED CONCRETE SURFACE.

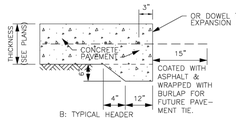


CONCRETE TO CONCRETE STANDARD PAVEMENT TIE-IN
SCALE: 1" = 1'-6"

NOTES FOR STANDARD PAVEMENT TIE-IN:
1. REINFORCING CENTERED IN PROPOSED PAVEMENT, 3" CLEAR AT EDGES.
2. ONLY FULL DEPTH SAWCUTS WILL BE ALLOWED
3. USE FULL DEPTH SAWCUT WITH DRILLED IN DOWELS (AS SHOWN IN THE "TYPICAL CONCRETE ROADWAY WIDENING DETAIL" ON THIS SHEET. THE SAWCUTTING AND DOWELS WILL BE AT CONTRACTOR'S EXPENSE.
4. ALL PAVEMENT CONCRETE SHALL BE 5½ SACK PER CY, 3500, PSI AT 28 DAYS
5. SIZE OF DOWEL BARS SHALL CONFORM TO TABLE 1. DOWELS SHALL BE PLACED 24" CENTER TO CENTER OR MATCH EXISTING, IF CLOSER

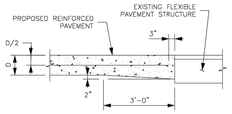


LONGITUDINAL CONSTRUCTION JOINT
SCALE: 1" = 1'-6"



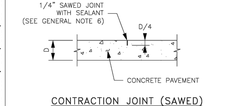
B: TYPICAL HEADER

PAVEMENT HEADER/ UNDERCUT
N.T.S



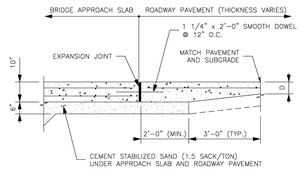
TYPICAL PAVING HEADER
SCALE: 1" = 1'-6"

NOTES FOR PAVING HEADER:
1. ADDITIONAL CONCRETE FOR PAVING HEADER SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAVING BID ITEMS.
2. DISTURBED MATERIAL IN THE FLEXIBLE PAVEMENT WILL BE BACKFILLED WITH ASPHALT CONCRETE PAVEMENT (ACP). THE ACP WILL BE CONSIDERED INCIDENTAL TO VARIOUS PAVING BID ITEMS.



CONTRACTION JOINT (SAWED)
SCALE: 1" = 1'-6"

NOTE FOR CONTRACTION JOINT:
1. 20'-0" MAXIMUM SPACING BETWEEN JOINTS.



TYPICAL SECTION
PAVING TIE-IN TO BRIDGE APPROACH SLAB
SCALE: 1" = 1'-6"

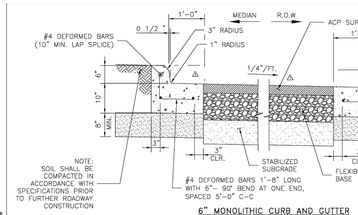
GENERAL NOTES:
1. FOR FURTHER INFORMATION REGARDING THE PLACEMENT OF CONCRETE AND REINFORCING, REFER TO ITEM 360 HARRIS COUNTY SPECIFICATIONS
2. THE CHAIRS USED TO SUPPORT THE BAR MATS SHALL BE OF SUFFICIENT STRUCTURAL QUALITY AND NUMBER TO HOLD THE MAT WITHIN THE PLACEMENT HEIGHT, AND SHALL BE OF A TYPE APPROVED BY THE ENGINEER. SPACING OF BAR SUPPORT CHAIRS SHALL BE 3'-0" MAXIMUM.
3. SAWED CONTRACTION JOINTS SHALL BE USED FOR LONGITUDINAL JOINTS WHEREVER MORE THAN ONE LANE WIDTH IS PLACED IN A SINGLE POUR. KEYED CONSTRUCTION JOINTS SHALL BE USED AT ALL OTHER JOINTS.
4. ALL SAW CUTTING SHOWN ON THIS DETAIL SHALL BE INCIDENTAL TO ITEM 360 "CONCRETE PAVEMENT"
5. D = THICKNESS OF CONCRETE PAVEMENT.
   - FOR DEVELOPMENT PROJECTS SEE REGULATIONS OF FORT BEND COUNTY, TEXAS FOR THE APPROVAL AND ACCEPTANCE OF INFRASTRUCTURE.
6. ALL CONSTRUCTION JOINTS SHALL BE SEALED. JOINT SEALANT SHALL CONFORM TO THE REQUIREMENTS OF ITEM 360
7. NO TRAFFIC ON CONCRETE PAVEMENT UNTIL 7 DAYS CURE TIME AND 3,500 PSI HAS BEEN REACHED.

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	2-1-22	RJS

FORT BEND COUNTY ENGINEERING DEPARTMENT

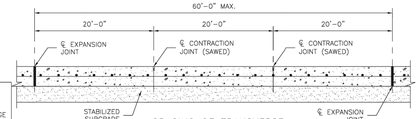
PROJECT TITLE:

DRAWN BY: INIT		FBCED STANDARD
CK'D BY: INIT	SHEET DESCRIPTION: CONCRETE PAVEMENT DETAILS	05
SCALE: AS NOTED	SHEET 1 OF 3	SHEET NO. /
DATE: 2-1-22	APPROVED BY:	

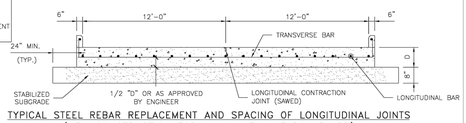


6" MONOLITHIC CURB AND GUTTER
SCALE: 1" = 1'-0"

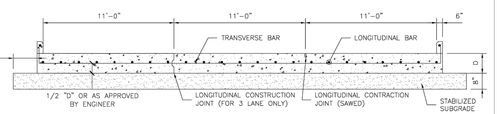
SLAB AND REBAR NOTES:
1. TYPICAL SLAB THICKNESS D=8"
2. TYPICAL REBAR SIZE AND SPACING ARE:
   a. #4 BAR @ 18" C-C LONGITUDINAL
   b. #4 BAR @ 18" C-C TRANSVERSE
3. REBAR SIZE FOR PAVEMENT LESS THAN 8" THICK
   a. #4 BAR @ 24" C-C LONGITUDINAL
   b. #4 BAR @ 24" C-C TRANSVERSE
4. REBAR SHALL NOT BE PLACED WITHIN 3" FROM THE EDGE OF PAVEMENT.
5. TYPICAL STABILIZED SUBGRADE THICKNESS IS 8 INCHES.
6. FOR HEAVY INDUSTRIAL TRAFFIC, SLAB THICKNESS AND REBAR SIZE AND SPACING WILL BE AS PER GEOTECHNICAL RECOMMENDATION.
7. ALL BENT BARS SHALL BE GRADE 40 STEEL, ALL OTHER SHALL BE GRADE 60.
8. MINIMUM LAP SPLICE 16".
9. LAP SPLICES SHOULD BE ON ALTERNATING BARS, ADJACENT LAP SPLICES ARE NOT ACCEPTABLE.



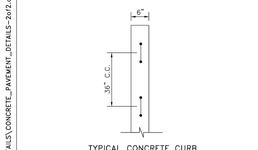
SPACING OF TRANSVERSE EXPANSION AND CONTRACTION JOINTS
HORIZONTAL SCALE: 1" = 6'-0"
VERTICAL SCALE: 1" = 1'-6"



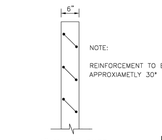
TYPICAL STEEL REBAR REPLACEMENT AND SPACING OF LONGITUDINAL JOINTS
(NEW CONSTRUCTION FOR A 4 LANE HALF BOULEVARD)
HORIZONTAL SCALE: 1" = 3'-0"
VERTICAL SCALE: 1" = 1'-6"



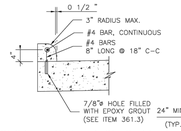
TYPICAL STEEL REBAR REPLACEMENT AND SPACING OF LONGITUDINAL JOINTS
(NEW CONSTRUCTION FOR A 6 LANE HALF BOULEVARD)
HORIZONTAL SCALE: 1" = 3'-0"
VERTICAL SCALE: 1" = 1'-6"



TYPICAL CONCRETE CURB REINFORCEMENT PLAN VIEW

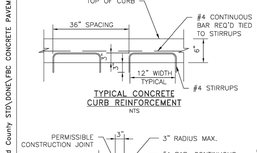


4" X 12" CURB PLAN VIEW

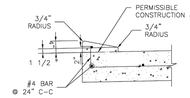


CONCRETE DOWELED ON CURB FOR CONCRETE OR ASPHALT PAVEMENT
SCALE: 1" = 1'-0"

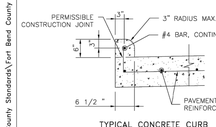
NOTES FOR CURB:
1. AT EACH PAVEMENT CONTRACTION JOINT, PROVIDE A 1/4" THICK PRE-MOLDED EXPANSION JOINT AT THE FULL WIDTH AND HEIGHT OF THE CURB.
2. FOR EACH PAVEMENT EXPANSION JOINT, THE PRE-MOLDED EXPANSION JOINT FILLER MATERIAL SHALL BE THE FULL WIDTH AND HEIGHT OF THE CURB.



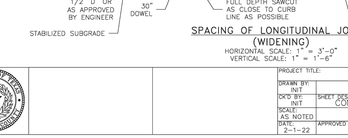
TYPICAL CONCRETE CURB REINFORCEMENT
NTS



4" X 12" CURB (MONOLITHIC OR DOWEL)
SCALE: 1" = 1'-0"



TYPICAL CONCRETE CURB REINFORCING DETAILS
SCALE: 1" = 1'-0"



SPACING OF LONGITUDINAL JOINTS
(WIDENING)
HORIZONTAL SCALE: 1" = 3'-0"
VERTICAL SCALE: 1" = 1'-6"

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	2-1-22	RJS

FORT BEND COUNTY ENGINEERING DEPARTMENT

PROJECT TITLE:

DRAWN BY: INIT		FBCED STANDARD
CK'D BY: INIT	SHEET DESCRIPTION: CONCRETE PAVEMENT DETAILS	06
SCALE: AS NOTED	SHEET 2 OF 3	SHEET NO. /
DATE: 2-1-22	APPROVED BY:	

APPROVED: _____
Development Staff

DATE: _____

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Project:

AFRICAN AMERICAN MEMORIAL @ BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:

FORT BEND COUNTY

1517 EUGENE HEIMANN CIRCLE
Richmond, TX 77469

Contract No: 2022-05

Design Team:

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05-26-2023

04/12/2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: KS Reviewed by: SD

Project No: 2022-05

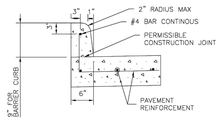
Sheet Title:

CONSTRUCTION NOTES AND PAVEMENT DETAILS

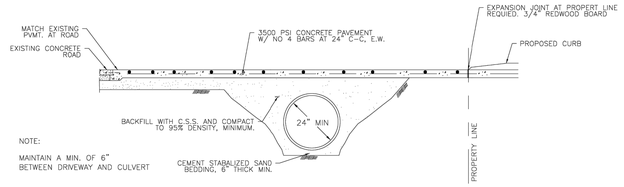
Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

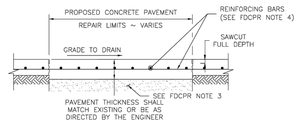
C601



9" BARRIER CURB



CONCRETE APRON DETAIL – DRIVEWAY PROFILE
FOR CULVERT DRAINAGE



FULL DEPTH CONCRETE PAVEMENT REPAIR
HORIZONTAL SCALE: 1" = 3'-0"
VERTICAL SCALE: 1" = 1'-6"

FULL DEPTH CONCRETE PAVEMENT REPAIR (FDCPR) NOTES:

1. ONLY FULL DEPTH SAWCUTS WILL BE ALLOWED
2. EXISTING CONCRETE VERTICAL FACES SHALL BE CLEANED OF ALL DELETERIOUS LOOSE MATERIAL PRIOR TO CONCRETE PLACEMENT.
3. FOR REPAIR/REPLACE AREAS, A 8" DEPTH BASE SHALL BE REMOVED AND REPLACED WITH CEMENT STABILIZED SAND PER ITEM 433 HARRIS COUNTY SPECIFICATIONS.
4. REINFORCEMENT OF 9"-10" THICK CONCRETE PAVEMENT SHALL BE NO. 5 BARS AT 18" SPACING IN EACH DIRECTION. REFER TO TABLE ON CONCRETE PAVEMENT SHEET 2 OF 2
5. REFER TO FBC STREET ACCEPTANCE GUIDELINES

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	2-1-22	RJS
2			
3			
4			
5			

FORT BEND COUNTY
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PROJECT TITLE:

DRAWN BY: INIT		FBCED STANDARD
CK'D BY: INIT	SHEET DESCRIPTION: CONCRETE PAVEMENT DETAILS	07
SCALE: AS NOTED	SHEET 3 OF 3	SHEET NO:
DATE: 2-1-22	APPROVED BY:	/

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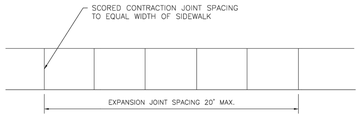
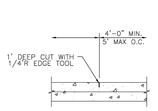
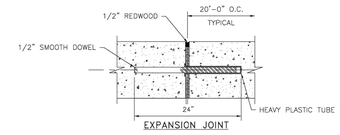


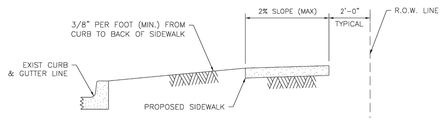
SIDEWALK JOINT DETAILS

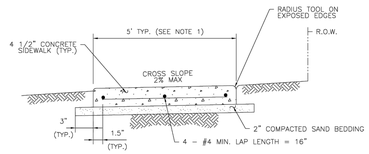


CONTRACTION JOINT SEAL



EXPANSION JOINT





SIDEWALK CROSS SECTION

NOTES:

1. TYPICAL SIDEWALK WIDTH IS 5'. SIDEWALKS OF 4' WIDTH ARE ALLOWED IN FRONT OF SINGLE FAMILY HOMES IF ALL DRIVEWAYS PROVIDE A 5' AREA FOR PASSING. SIDEWALKS OF 4' WITH 5' X 5' PASSING ZONES MUST BE SPECIFICALLY APPROVED BY FORT BEND COUNTY
2. THE MAXIMUM WIDTH BETWEEN EXPANSION JOINTS SHALL NOT EXCEED 20'-0"
3. EXPANSION JOINT IS TO BE 1/2" THICK CLEAR HEART REDWOOD DOWELS
4. SCORED CONTRACTION JOINTS SHALL BE EVERY 5' OR EQUAL TO SIDEWALK WIDTH
5. ALL EARTHEN AREAS ARE TO BE SODDED UNLESS SHOWN OTHERWISE ON DRAWINGS.
6. SIDEWALKS ARE TO BE REINFORCED CONCRETE (3500 PSI) WITH #3 BARS, 18 INCHES C-C.
7. USE RADIUS TOOL ON ALL EXPOSED EDGES.
8. MEMBRANE CURING COMPOUND IS REQUIRED AS DESCRIBED IN ITEM 526 IN THE TXDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION
9. SIDEWALK EXPANSION JOINTS SHALL CONFORM TO STREET EXPANSION JOINT STANDARDS

NOTE:

BANK SAND IS DEFINED AS A WELL-GRADED SAND, FREE OF SILT, CLAY, LOAM, FRIABLE OR SOLUBLE MATERIALS AND ORGANIC MATTER, MEETING THE UNIFIED SOILS CLASSIFICATION SYSTEM GROUP SW CRITERIA W/ A PLASTICITY INDEX OF LESS THAN 10, AND NO MORE THAN 12% OF MATERIAL CAN PASS THE NO. 200 SIEVE.

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	2-1-22	RJS
2			
3			
4			
5			

FORT BEND COUNTY
ENGINEERING DEPARTMENT

PROJECT TITLE:

DRAWN BY: INIT		FBCED STANDARD
CK'D BY: INIT	SHEET DESCRIPTION: SIDEWALK DETAILS	13
SCALE: AS NOTED		SHEET NO:
DATE: 2-1-22	APPROVED BY:	/

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KENDLETON, TEXAS 77451

Prepared For:

FORT BEND COUNTY

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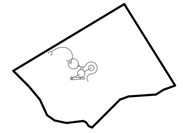

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05-26-2023

04/12/2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: KS Reviewed by: SD

Project No: 2022-05

Sheet Title:

PAVEMENT DETAILS

APPROVED: _____
Development Staff

DATE: _____

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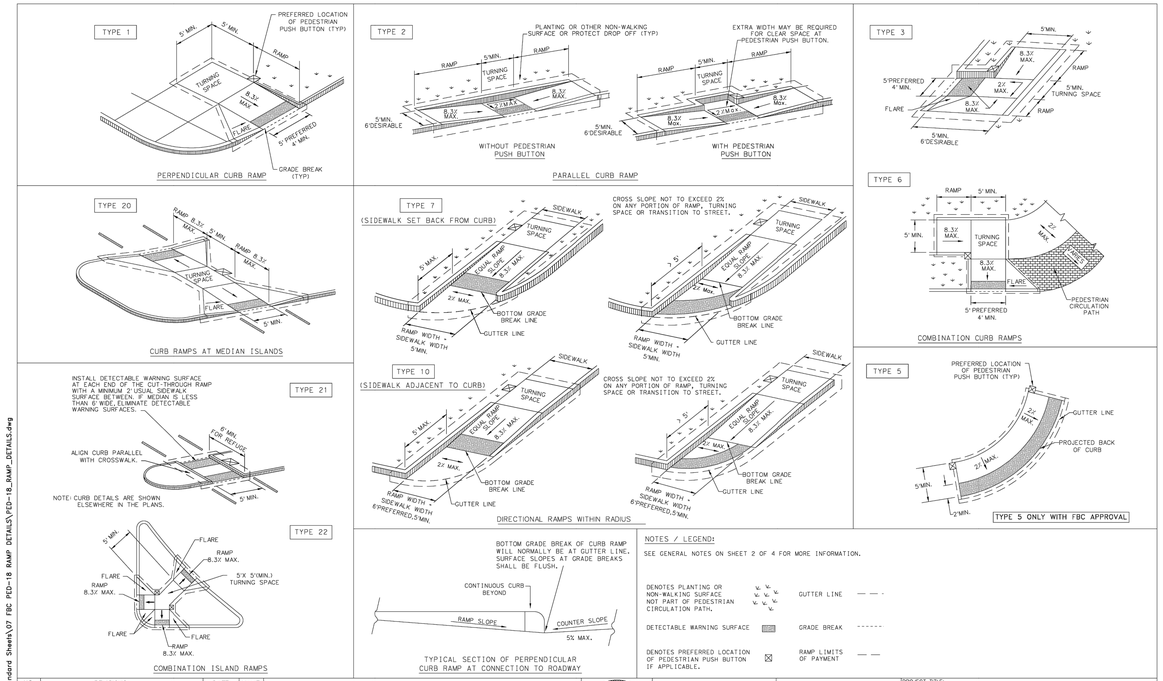
Sheet Number

C602



NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	1-1-22	RJS

FORT BEND COUNTY ENGINEERING DEPARTMENT

PROJECT TITLE:	
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CK'D BY: INIT.	SHEET DESCRIPTION: PED-18 RAMP DETAILS 14
SCALE: 1" = 1'	SHEET 1 OF 4 SHEET NO: /
DATE: 2-1-22	APPROVED BY:

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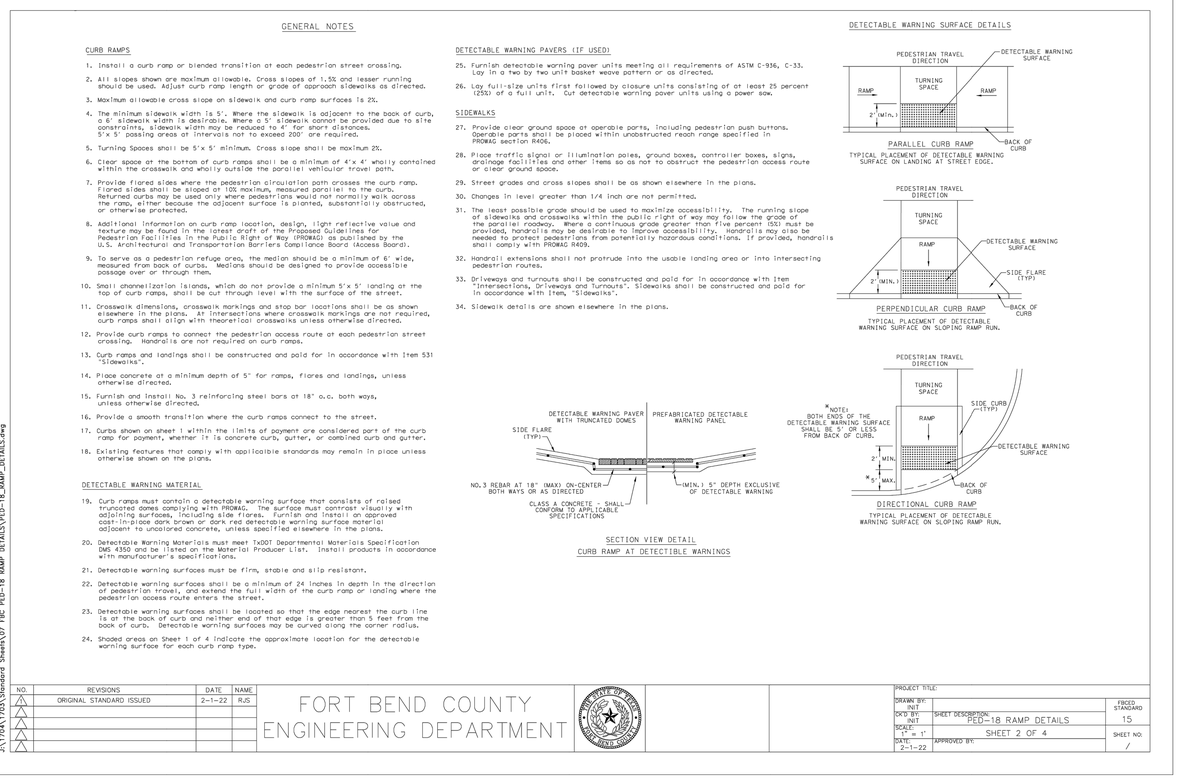

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	2-1-22	RJS

FORT BEND COUNTY ENGINEERING DEPARTMENT

PROJECT TITLE:	
DRAWN BY: INIT.	FBCED STANDARD
CK'D BY: INIT.	SHEET DESCRIPTION: PED-18 RAMP DETAILS 15
SCALE: 1" = 1'	SHEET 2 OF 4 SHEET NO: /
DATE: 2-1-22	APPROVED BY:

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Project:

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KENDLETON, TEXAS 77451

Prepared For:

FORT BEND COUNTY

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No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: KS Reviewed by: SD

Project No: 2022-05

Sheet Title:

RAMP DETAILS

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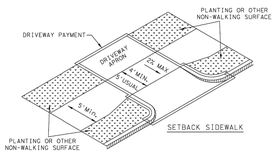
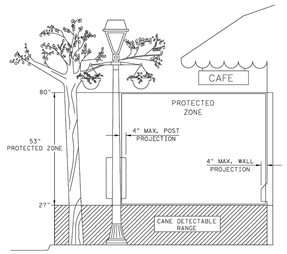
Sheet Number

C603

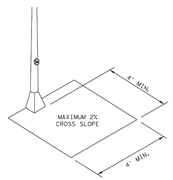


NOTES:
* WHERE DRIVEWAYS CROSS THE PEDESTRIAN ROUTE, SIDES SHALL BE FLARED AT 10% MAX SLOPE.
* * IF CURB HEIGHT IS GREATER THAN 6 INCHES, USE GRADE LESS THAN OR EQUAL TO 5%. HANDRAIL AND DETECTABLE WARNING ARE NOT REQUIRED.

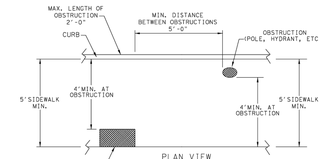


PROTECTED ZONE

NOTE: IN PEDESTRIAN CIRCULATION AREA, MAXIMUM 4" PROJECTION FOR POST OR WALL MOUNTED OBJECTS BETWEEN 27" AND 80" ABOVE THE SURFACE.

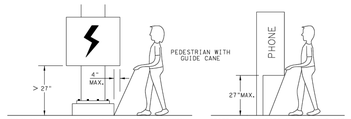


CLEAR SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON



PLACEMENT OF STREET FIXTURES

NOTE: ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' X 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.



WHEN AN OBSTRUCTION OF A HEIGHT GREATER THAN 27" FROM THE SURFACE WOULD CREATE A PROTRUSION OF MORE THAN 4" INTO THE PEDESTRIAN CIRCULATION AREA, CONSTRUCT ADDITIONAL CURB OR FOUNDATION AT THE BOTTOM TO PROVIDE A MAXIMUM 4" OVERHANG.

PROTRUDING OBJECTS OF A HEIGHT ≤27" ARE DETECTABLE BY CANE AND DO NOT REQUIRE ADDITIONAL TREATMENT.

DETECTION BARRIER FOR VERTICAL CLEARANCE < 80"

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	2-1-22	RJS

FORT BEND COUNTY
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PROJECT TITLE:	
DRAWN BY: INIT	FBCED STANDARD
CKD BY: INIT	SHEET DESCRIPTION: PED-18 RAMP DETAILS — 16
SCALE: 1" = 1'	SHEET 3 OF 4
DATE: 2-1-22	APPROVED BY: — SHEET NO: /

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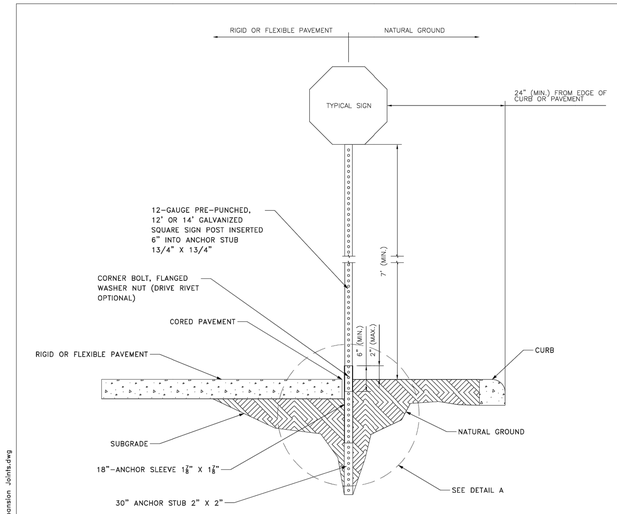

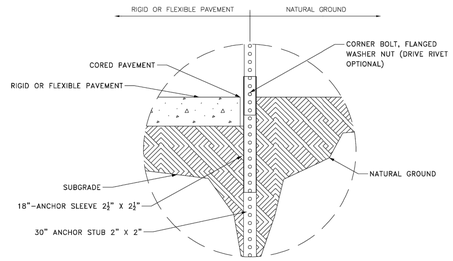

TYPICAL GROUND SIGN INSTALLATION DETAIL A

NOTES:
1. THE CROSS SECTION OF ALL MEMBERS SHALL BE SQUARE TUBE FORMED OF 12 GAUGE AND MANUFACTURED FROM HOT-GALVANIZED STEEL
2. THE TELESCOPE BREAKAWAY SYSTEM OR "SYSTEM" IS DEFINED AS FOLLOW:
   - A MINIMUM 30" ANCHOR STUB;
   - 18" ANCHOR SLEEVE.
3. DRIVE THE SYSTEM TOGETHER MAKING SURE THE HOLES ARE ALIGNED.
4. THE SYSTEM IS TO BE DRIVEN INTO NATURAL GROUND EXPOSED SUBGRADE UNTIL ONLY 1 TO 2 INCHES ARE LEFT EXPOSED.
5 ATTACH THE SIGN TO AN 1 3/4" SQUARE POST AT THE DESIRED HEIGHT, SUCH THAT IT MEETS THE MINIMUM VERTICAL CLEARANCE.
6. SIGNS ARE FASTENED TO THE POST BY USING DRIVE RIVETS OR BOLTS.
7. INSERT THE SIGN POST APPROXIMATELY 6 TO 8 INCHES INTO THE ANCHOR BASE.
8. BOLT THE SIGN POST TO THE ANCHOR ASSEMBLY WITH A CORNER BOLT.
9. WHEN INSTALLING IN RIGID OR FLEXIBLE PAVEMENT, USE A CORING MACHINE TO EXPOSE THE SUBGRADE MATERIAL AND INSTALL THE SYSTEM.

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	2-1-22	RJS

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PROJECT TITLE:	
DRAWN BY: INIT	FBCED STANDARD
CKD BY: INIT	SHEET DESCRIPTION: TYPICAL GROUND SIGN INSTALLATION — 52
SCALE: AS NOTED	
DATE: 2-1-22	APPROVED BY: — SHEET NO: /

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Development Staff

DATE: _____

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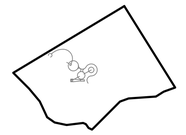
Key Plan



Professional Seals

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STATE OF TEXAS — SERGIO VAN DUSEN — 97434 — LICENSED PROFESSIONAL ENGINEER

05-26-2023

04/12/2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: KS Reviewed by: SD

Project No: 2022-05

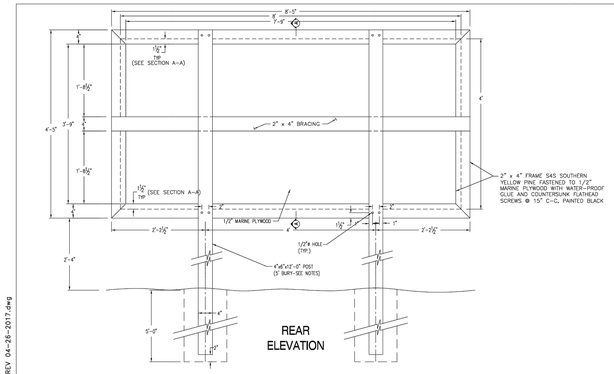
Sheet Title:

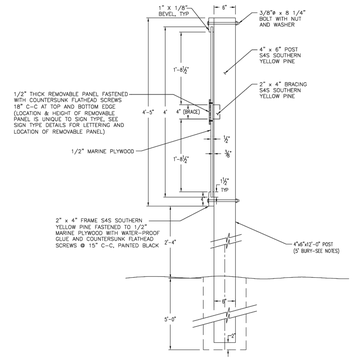
RAMP AND MISCELLANEOUS DETAILS

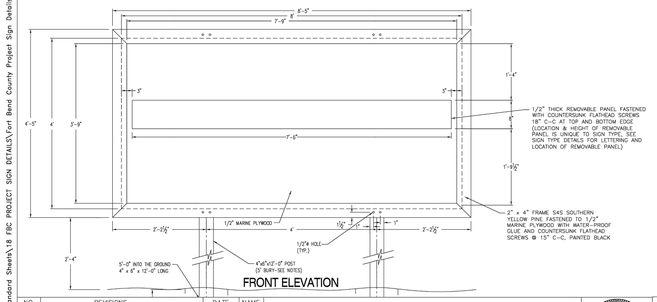
Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

C604







GENERAL NOTES:

1. THE SIGN SHALL HAVE BLACK LETTER WITH WHITE BACKGROUND.
2. ALL LETTERING SHALL BE EITHER NORMAL FONT OR HELVETICA MEDIUM.
3. SIGN SHALL BE MOUNTED ON 4" x 4" POSTS AND LOCATED BY THE ENGINEER.
4. ALL REMOVABLE PANEL SHALL BE 1/2" MARINE PLYWOOD.
5. ALL BOLTS, SCREWS, NAILS, NUTS AND WASHERS SHALL BE GALVANIZED OR CADMIUM PLATED.
6. ALL WOOD POST SHALL BE PRESSURIZED OR PENTACHLOROPHENOL TREATED.
7. ALL WOOD SURFACES SHALL HAVE PRIME COAT AND TWO (2) COATS OF SHERWIN-WILLIAMS ACRA-LUSTRIN ENAMEL OR EQUAL.

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	2-1-22	RJS
2			
3			
4			
5			

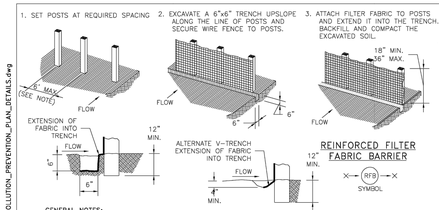
FORT BEND COUNTY
ENGINEERING DEPARTMENT

PROJECT TITLE:

DRAWN BY: INIT		FBCED STANDARD
CK'D BY: INIT	SHEET DESCRIPTION: PROJECT SIGN DETAILS	35
SCALE: NONE	SHEET 1 OF 4	SHEET NO. /
DATE: 2-1-22	APPROVED BY:	

J:\1794\1601\Fort Bend County Standards\Cert Bend County STD\DWG\FBC STORM WATER POLLUTION PREVENTION PLAN DETAILS\STORM_WATER_POLLUTION_PREVENTION_PLAN_DETAILS.dwg

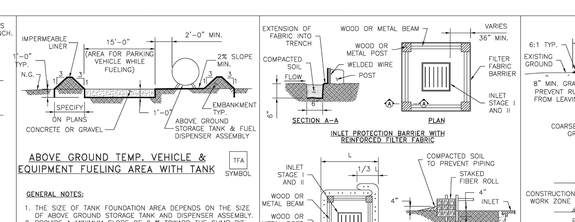
1. SET POSTS AT REQUIRED SPACING
2. EXCAVATE A 6"x6" TRENCH UPSLOPE ALONG THE LINE OF POSTS AND SECURE WIRE FENCE TO POSTS.
3. ATTACH FILTER FABRIC TO POSTS AND EXTEND IT INTO THE TRENCH. BACKFILL AND COMPACT THE EXCAVATED SOIL.



REINFORCED FILTER FABRIC BARRIER (RFB) SYMBOL

GENERAL NOTES:

1. SECURELY FASTEN MESH FENCING TO POSTS WITH STAPLES OR TIE WIRES.
2. SECURELY FASTEN FILTER FABRIC TO MESH FENCING.
3. WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER, OVERLAP 6 INCHES AT A POST, FOLD TOGETHER, AND ATTACH TO A POST.
4. REMOVE SEDIMENT DEPOSITS WHEN SILT REACHES ONE-THIRD OF THE HEIGHT OF THE FENCE IN DEPTH.
5. SILT FENCE MINIMUM 2' BEHIND CURB.



ABOVE GROUND TEMP. VEHICLE & EQUIPMENT FUELING AREA WITH TANK (TFA) SYMBOL

GENERAL NOTES:

1. THE SIZE OF TANK FOUNDATION AREA DEPENDS ON THE SIZE OF ABOVE GROUND STORAGE TANK AND DISPENSER ASSEMBLY.
2. PROVIDE A MINIMUM SLOPE OF 2 % TOWARD THE SUMP PIT.
3. INSTALL IMPERMEABLE LINER AS PER MANUFACTURER'S RECOMMENDATIONS.

INLET PROTECTION BARRIER WITH REINFORCED FILTER FABRIC

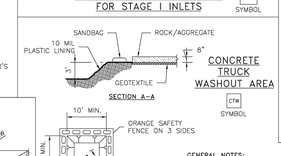


INLET PROTECTION BARRIER WITH FILTER ROLLS

GENERAL NOTES:

1. FIBER ROLLS WILL BE UTILIZED ONLY WHEN SITE CONDITIONS DO NOT PERMIT THE USE OF FILTER FABRIC BARRIER, AND AS APPROVED BY THE ENGINEER.

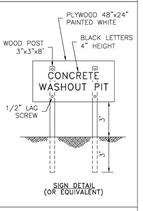
INLET PROTECTION BARRIERS FOR STAGE I INLETS (IPB) SYMBOL

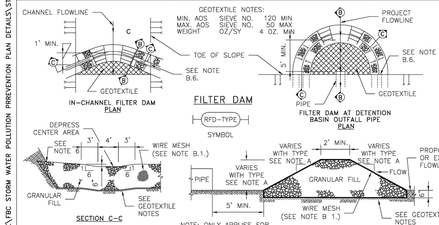


CONCRETE TRUCK WASHOUT AREA (CTW) SYMBOL

GENERAL NOTES:

1. POST A SIGN READING "CONCRETE WASHOUT PIT" NEXT TO THE PIT.
2. VERBALLY INSTRUCT THE CONCRETE TRUCK DRIVERS WHERE THE PIT IS AND TO WASHOUT THEIR TRUCKS IN THE PIT AND NOWHERE ELSE.
3. UPON THE CONCRETE SETTING UP (CURING, DRYING OUT), THE CONCRETE WASTE SHALL BE REMOVED FROM THE PROJECT SITE AND DISPOSED OF PROPERLY BY THE CONTRACTOR AFTER REMOVAL OF THE CONCRETE WASTE, THE WASHOUT PIT SHALL BE FILLED WITH CLEAN FILL MATERIAL AND COMPACTED TO IN-SITU CONDITIONS, OR AS DIRECTED BY THE PROJECT SPECIFICATIONS.
4. CONCRETE WASHOUT PITS SHALL NOT BE LOCATED DIRECTLY ADJACENT TO, NOR AT ANY TIME DRAIN INTO THE STORM SEWER SYSTEM OR ANY OTHER SWALE, DITCH, OR WATERWAY.
5. CONSTRUCT ENTRY ROAD AND BOTTOM OF WASHOUT AREA TO SUPPORT EXPECTED LOADINGS FROM TRUCKS EQUIPMENT.





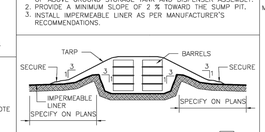
FILTER DAM (RFD-TYPE) SYMBOL

A. TYPES OF FILTER DAMS

1. TYPE 1 (NON-REINFORCED)
   a. HEIGHT - 18-24 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
   b. TOP WIDTH - 2 FEET (MINIMUM)
   c. SLOPES - 2:1 (MAXIMUM).
2. TYPE 2 (REINFORCED).
   a. HEIGHT - 18-36 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
   b. TOP WIDTH - 2 FEET (MINIMUM).
   c. SLOPES - 2:1 (MAXIMUM).
3. TYPE 3 (REINFORCED)
   a. HEIGHT - 36-48 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
   b. TOP WIDTH - 2 FEET (MINIMUM).
   c. SLOPES - 3:1 (MAXIMUM).
4. TYPE 4 (GABION)
   a. HEIGHT - 30 INCHES (MINIMUM). MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
   b. TOP WIDTH - 2 FEET (MINIMUM).
5. TYPE 5. AS SHOWN ON THE PLANS.

B. CONSTRUCT FILTER DAMS ACCORDING TO THE FOLLOWING CRITERIA UNLESS SHOWN OTHERWISE ON THE PLANS.

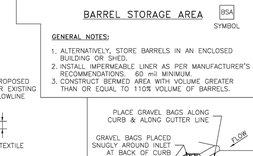
1. TYPE 2 AND 3 FILTER DAMS: SECURE WITH 20 GAUGE GALVANIZED WOVEN WIRE MESH WITH 1 INCH DIAMETER HEXAGONAL OPENINGS.
2. PLACE GRANULAR FILL ON THE WIRE MESH TO HEIGHT AND SLOPES SHOWN ON PLANS OR AS SPECIFIED BY THE ENGINEER.
   a. 3-5 INCHES FOR ROCK FILTER DAM TYPES 1, 2 AND 4.
   b. 4-8 INCHES FOR ROCK FILTER DAM TYPE REFER TO GRANULAR FILL IN SPECIFICATION SECTION No. 02378 RIPRAP AND GRANULAR FILL.
3. FOLD WIRE MESH AT UPSTREAM SIDE OVER GRANULAR FILL AND TIGHTLY SECURED TO ITSELF ON THE DOWNSTREAM SIDE USING WIRE TIES OR HOG RINGS.
4. IN STREAMS: SECURE OR STAKE MESH TO STREAM BED PRIOR TO AGGREGATE PLACEMENT.
5. SEE HCFCD SPECIFICATION SECTION NO. 02364-FILTER DAMS.
6. EMBED ONE FOOT MINIMUM INTO SLOPE AND RAISE ONE FOOT HIGHER THAN CENTER OF DEPRESSED AREA AT SLOPE.



BARREL STORAGE AREA (BSA) SYMBOL

GENERAL NOTES:

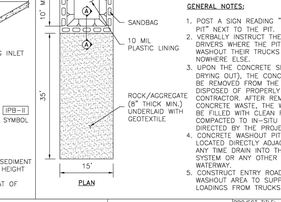
1. ALTERNATIVELY, STORE BARRELS IN AN ENCLOSED BUILDING OR SHED.
2. INSTALL IMPERMEABLE LINER AS PER MANUFACTURER'S RECOMMENDATIONS. 60 mil MINIMUM.
3. CONSTRUCT BERMED AREA WITH VOLUME GREATER THAN OR EQUAL TO 110% VOLUME OF BARRELS.



INLET PROTECTION BARRIERS FOR STAGE II INLETS (IPB-II) SYMBOL

GENERAL NOTES:

1. REMOVE SEDIMENT DEPOSIT WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-THIRD THE HEIGHT OF THE BARRIER.
2. GRAVEL BAGS SHALL NOT BLOCK THROAT OF INLET UNLESS DIRECTED BY ENGINEER.



STABILIZED CONSTRUCTION ACCESS (SC-1) SYMBOL

GENERAL NOTES:

1. MINIMUM LENGTH IS AS SHOWN ON CONSTRUCTION DRAWINGS OR 50 FEET, WHICHEVER IS MORE.
2. CONSTRUCT AND MAINTAIN CONSTRUCTION EXIT WITH CONSTANT WIDTH ACROSS ITS LENGTH, INCLUDING ALL POINTS OF INGRESS OR EGRESS.
3. UNLESS SHOWN ON THE CONSTRUCTION DRAWINGS, STABILIZATION FOR OTHER AREAS WILL HAVE THE SAME AGGREGATE THICKNESS AND WIDTH REQUIREMENTS AS THE STABILIZED CONSTRUCTION EXIT.
4. WHEN SHOWN ON THE CONSTRUCTION DRAWINGS, WIDEN OR LENGTHEN STABILIZED AREA TO ACCOMMODATE A TRUCK WASHING AREA. PROVIDE OUTLET SEDIMENT TRAP FOR THE TRUCK WASHING AREA.
5. PROVIDE PERIODIC TOP DRESSING WITH ADDITIONAL COARSE AGGREGATE TO MAINTAIN THE REQUIRED DEPTH OR WHEN SURFACE BECOMES PACKED WITH MUD.
6. PERIODICALLY TURN AGGREGATE TO EXPOSE A CLEAN DRIVING SURFACE.
7. MINIMUM 14' WIDTH FOR ONE WAY TRAFFIC AND 20' WIDTH FOR TWO WAY TRAFFIC.

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	2-1-22	RJS
2			
3			
4			
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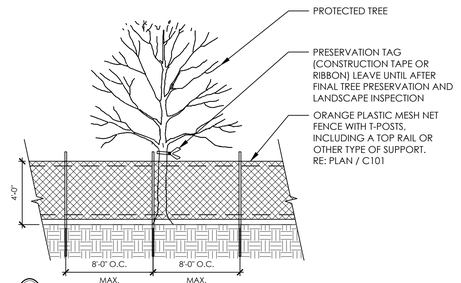
FORT BEND COUNTY
ENGINEERING DEPARTMENT

PROJECT TITLE:

DRAWN BY: INIT		FBCED STANDARD
CK'D BY: INIT	SHEET DESCRIPTION: STORM WATER POLLUTION PREVENTION PLAN DETAILS	54
SCALE: NONE		SHEET NO: /
DATE: 2-1-22	APPROVED BY:	



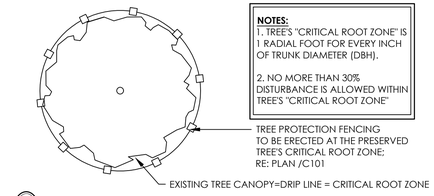
B **TREE PROTECTION FENCING** SECTION NTS

NOTES:

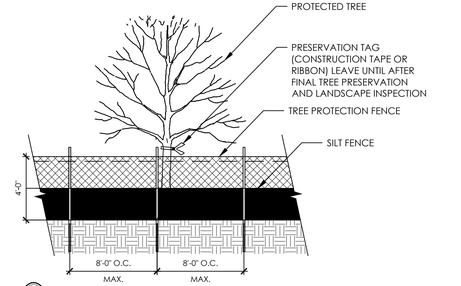
- KEEP TREE PROTECTION FENCING BEYOND ALL MARKED GRAVES
- NO BORING WITHIN THE NEWMAN CHAPEL CEMETERY CIRCLE

NOTES:

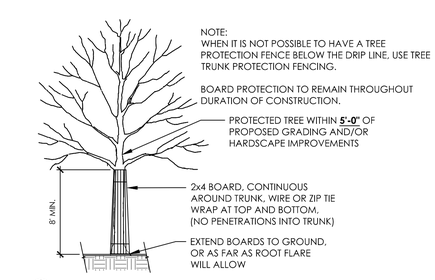
1. TREE'S "CRITICAL ROOT ZONE" IS 1 RADIAL FOOT FOR EVERY INCH OF TRUNK DIAMETER (DBH).
2. NO MORE THAN 30% DISTURBANCE IS ALLOWED WITHIN TREE'S "CRITICAL ROOT ZONE"



A **TREE PROTECTION FENCING** PLAN NTS



D **COMBINATION FENCING** SECTION NTS



C **TREE TRUNK PROTECTION FENCING** SECTION NTS

TREE PROTECTION NOTES

1. CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL TREES TO BE PRESERVED FROM CONSTRUCTION ACTIVITIES.
2. TREE PROTECTION FENCING SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING, OR GRADING) AND SHALL BE MAINTAINED THROUGHOUT ALL PHASES OF THE CONSTRUCTION PROJECT.
3. **EROSION AND SEDIMENTATION CONTROL BARRIERS SHALL BE INSTALLED OR MAINTAINED IN A MANNER WHICH DOES NOT RESULT IN SOIL BUILD-UP WITHIN TREE DRIPLINES.**
4. ALL GRADING/CLEARING AROUND PROTECTED TREES TO REMAIN SHALL BE DONE BY HAND OR WITH SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE. (CONTRACTOR SHALL SUBMIT REQUEST FOR APPROVAL FOR USE OF ANY MOTORIZED EQUIPMENT WITH IN CRITICAL ROOT ZONE PRIOR TO COMMENCEMENT OF WORK) PRIOR TO GRADING, RELOCATE PROTECTIVE FENCING TO 2 FEET BEHIND THE GRADE CHANGE AREA.
5. ANY ROOTS EXPOSED BY CONSTRUCTION ACTIVITY SHALL BE PRUNED FLUSH WITH THE SOIL AND BACKFILLED WITH GOOD QUALITY TOP SOIL WITHIN 24 HOURS. IF EXPOSED ROOT AREAS CANNOT BE BACKFILLED WITHIN 24 HOURS, AN ORGANIC MATERIAL WHICH REDUCES SOIL TEMPERATURE AND MINIMIZES WATER LOSS DUE TO EVAPORATION SHALL BE PLACED TO COVER THE ROOTS UNTIL BACKFILL CAN OCCUR.
6. TREES MOST HEAVILY IMPACTED BY CONSTRUCTION ACTIVITIES WILL BE WATERED DEEPLY ONCE A WEEK DURING PERIODS OF HOT, DRY WEATHER.
7. ANY TRENCHING REQUIRED FOR THE INSTALLATION OF LANDSCAPE IRRIGATION SHALL BE PLACED AS FAR FROM EXISTING TREE TRUNKS AS POSSIBLE. ALL APPROVED TRENCHING WITH IN THE DRIPLINE AND/OR CRITICAL ROOT ZONE SHALL BE PERFORMED BY HAND MINIMIZING THE IMPACT TO LATERAL ROOTS. ****BORING MAY BE REQUIRED****
8. PRUNING TO PROVIDE CLEARANCE FOR STRUCTURES, VEHICULAR TRAFFIC, AND CONSTRUCTION EQUIPMENT SHALL TAKE PLACE BEFORE CONSTRUCTION BEGINS. ALL PRUNING MUST BE DONE ACCORDING TO THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA PRUNING TECHNIQUES).
9. NO CUTTING, FILLING, TRENCHING OR OTHER DISTURBANCE OF THE SOIL IS PERMITTED UNLESS OTHERWISE AUTHORIZED BY THIS ARTICLE AND THE ZONE SHALL BE MAINTAINED AT NATURAL GRADE.
10. NO CONSTRUCTION OR WASTE MATERIALS SHALL BE PLACED OR STORED WITHIN THE ZONE;
11. NO HARMFUL LIQUIDS SHALL BE ALLOWED TO FLOW INTO THE ZONE, INCLUDING WITHOUT LIMITATION, VEHICLE OR EQUIPMENT WASH WATER, PAINT, OIL, SOLVENTS, ASPHALT, CONCRETE, MORTAR OR OTHER MATERIALS;
12. NO VEHICLE OR EQUIPMENT TRAFFIC OR PARKING SHALL BE ALLOWED WITHIN THE ZONE:
13. NO SIGNS, WIRES OR OTHER ATTACHMENTS, OTHER THAN THOSE OF A PROTECTIVE NATURE, SHALL BE ATTACHED TO ANY PROTECTED TREE.

APPROVED: _____
Development Staff

DATE: _____

THE STATE OF TEXAS · FORT BEND COUNTY ·

Project:

AFRICAN AMERICAN MEMORIAL @ BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:

FORT BEND COUNTY

1517 EUGENE HEIMANN CIRCLE
Richmond, TX 77469

Contract No: 2022-05

Design Team:

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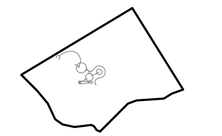
Key Plan



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05-26-2023

04/12/2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: KS Reviewed by: SD

Project No: 2022-05

Sheet Title:

SWPPP AND MISCELLANEOUS DETAILS

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

C605

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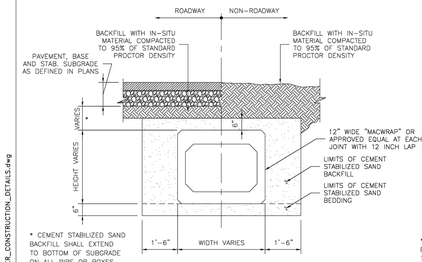
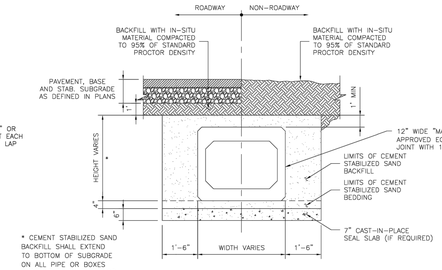
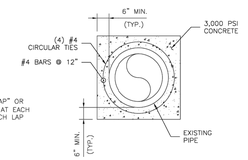


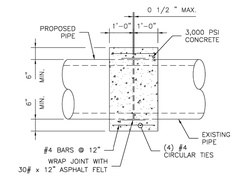
PRECAST REINFORCED CONCRETE BOX



PRECAST REINFORCED CONCRETE BOX WITH SEAL SLAB

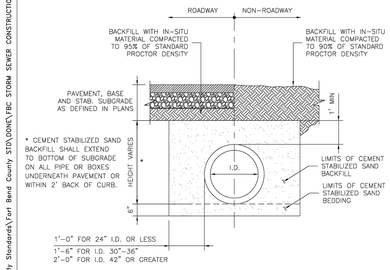


SECTION VIEW

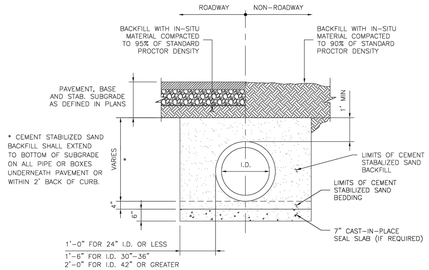


ELEVATION VIEW

TYPICAL CONCRETE COLLAR FOR 36" & SMALLER RCP



REINFORCED CONCRETE PIPE



REINFORCED CONCRETE PIPE WITH SEAL SLAB

GENERAL NOTES:

1. FOR RCP LARGER THAN 36" DIAMETER, CONCRETE COLLARS MUST BE DESIGNED BY THE ENGINEER OF RECORD.
2. ALL TRENCHES IN ROW SHALL BE BACKFILLED WITH 1.5 SACK CEMENT STABILIZED SAND TO WITHIN 1' OF SUBGRADE, COMPACTED TO 95% STANDARD PROCTOR DENSITY

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	2-1-22	RJS

FORT BEND COUNTY
ENGINEERING DEPARTMENT

PROJECT TITLE:

DRAWN BY: INIT		FBCED STANDARD
CK'D BY: INIT	SHEET DESCRIPTION: STORM SEWER CONSTRUCTION	18
SCALE: 1"=1'-6"	DETAILS	SHEET NO.
DATE: 2-1-22	APPROVED BY:	/

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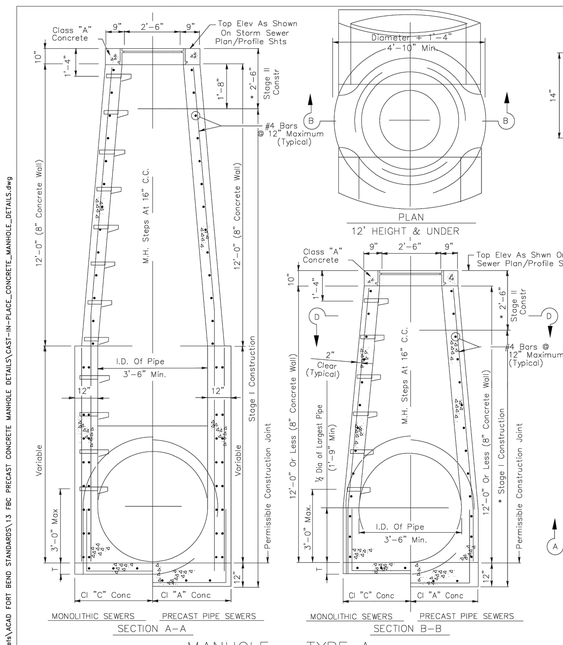
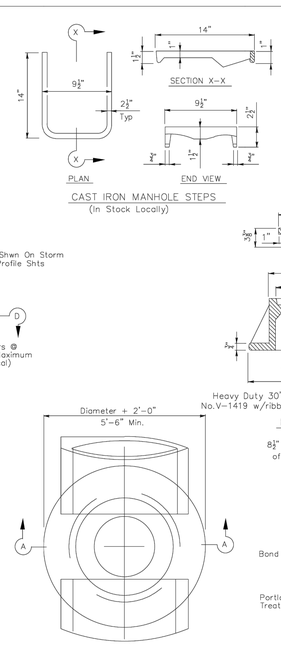


MANHOLE – TYPE A
FOR PIPES 54" AND SMALLER



CAST IRON MANHOLE STEPS
(In Stock Locally)

GENERAL NOTES:

See Standard or Detail Sheet For Excavation And Backfill Diagrams.

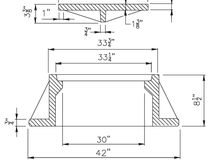
All Manholes In Graded Areas Shall Be Built To Stage I And Finished After All Grading Operations Are Substantially Completed.

* But Not Less Than 6 Inches Above Highest Pipe.

"T" Thickness Of Shell Equals That Of Larger Diameter Pipe.

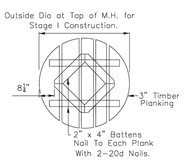
Optional Monolithic Or Precast Designs Permitted. Optional Designs Shall Be Signed & Sealed By A Registered Professional Engineer.

All Castings Shall Meet Requirements Of The Entity, Whether City Limits Or ETJ, The Project Falls Within

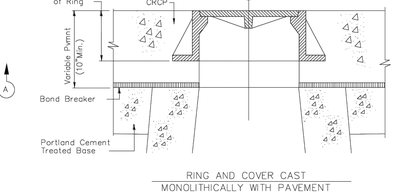


Heavy Duty 30"ID Ring as Required. Vulcan No.V-1419 w/ribbed cover, Neenah No.R1740-BTX

RING AND COVER



TEMPORARY TIMBER COVER



RING AND COVER CAST
MONOLITHICALLY WITH PAVEMENT

d = Diameter
R = Radius

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	2-1-22	RJS

FORT BEND COUNTY
ENGINEERING DEPARTMENT

PROJECT TITLE:

DRAWN BY: INIT		FBCED STANDARD
CK'D BY: INIT	SHEET DESCRIPTION: CAST-IN-PLACE CONCRETE	19
SCALE: AS NOTED	STORM SEWER MANHOLE DETAILS	SHEET NO.
DATE: 2-1-22	APPROVED BY:	/

APPROVED: _____
Development Staff

DATE: _____

THE STATE OF TEXAS
FORT BEND COUNTY

Project:

AFRICAN AMERICAN MEMORIAL @ BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:

FORT BEND COUNTY

1517 EUGENE HEIMANN CIRCLE
Richmond, TX 77469

Contract No: 2022-05

Design Team:

HINES ARCHITECTURE + DESIGN
8 Greenway Plaza Suite 1525
Houston, TX 77046 USA
t +1 713 909 0983
www.hinesad.com

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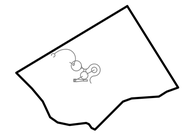
Key Plan



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2603 Augusta Drive, Suite 1414, The Woodlands, Texas 77380
www.vogtengineering.com

STATE OF TEXAS
SERGIO VAN DUSEN
97434
LICENSED
PROFESSIONAL ENGINEER

05-26-2023
04/12/2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: KS Reviewed by: SD

Project No: 2022-05

Sheet Title:

STORM SEWER DETAILS-I

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

C606

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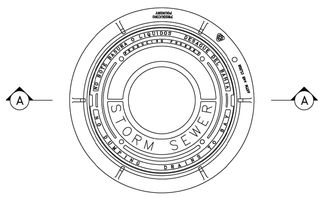
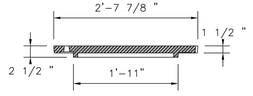
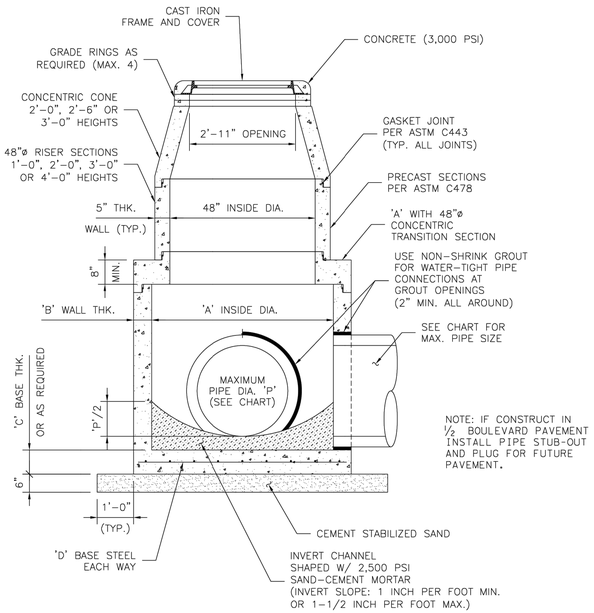


PLAN VIEW
FRAME AND COVER
SCALE: 1" = 1'-0"

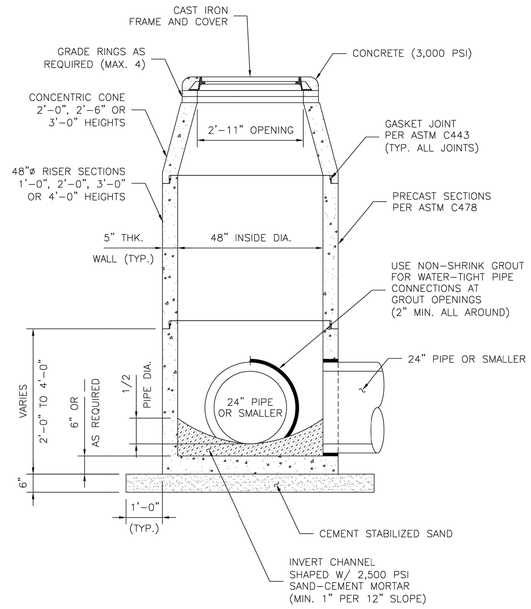
NOTE: IF PROJECT IS WITHIN A CITY ETJ OR CITY LIMITS, USE CITY'S STD MANHOLE COVER



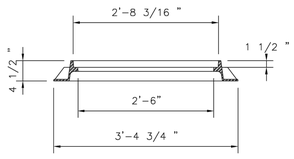
COVER SECTION A-A
SCALE: 1" = 1'-0"



PRECAST CONCENTRIC MANHOLE
FOR PIPE SIZES GREATER THAN 24"
SCALE: 1" = 1'-6"



48"ø PRECAST CONCENTRIC MANHOLE
FOR PIPE SIZES 24" OR SMALLER
SCALE: 1" = 1'-6"



FRAME SECTION A-A
SCALE: 1" = 1'-0"

MAXIMUM PIPE DIA. 'P'	INSIDE DIA. 'A'	WALL THICKNESS 'B'	BASE THICKNESS 'C'	BASE STEEL 'D'
30"	5'-0"	6"	8"	#5 @ 8"
42"	6'-0"	7"	8"	#5 @ 8"
54"	7'-0"	8"	10"	#6 @ 12" (2 LAYERS)
60"	8'-0"	9"	10"	#6 @ 12" (2 LAYERS)

GENERAL NOTES:

1. CONSTRUCTION AND MATERIALS SHALL MEET REQUIREMENTS OF ITEM 471 "PRECAST CONCRETE MANHOLES".
2. CONCRETE FOR MANHOLE: MINIMUM 4,000 PSI IN 28 DAYS
3. HS-20 LOADING; MANHOLE DESIGN SHALL MEET OR EXCEED ASTM C478 REQUIREMENTS.
4. GASKET JOINT: PER ASTM C443
5. FRAME AND COVER SHALL BE EAST JORDAN IRON WORKS MODEL V-1420 OR APPROVED EQUAL.
6. SHOP DRAWINGS WITH MANUFACTURER'S CERTIFICATION SHALL BE SUBMITTED FOR ENGINEER'S APPROVAL.

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	2-1-22	RJS

FORT BEND COUNTY
ENGINEERING DEPARTMENT

PROJECT TITLE:

DRAWN BY: INIT		FBCED STANDARD
CK'D BY: INIT	SHEET DESCRIPTION: PRECAST CONCRETE STORM SEWER	20
SCALE: AS NOTED	MANHOLE DETAILS	SHEET NO:
DATE: 2-1-22	APPROVED BY:	/

APPROVED: _____
Development Staff

DATE: _____

THE STATE OF TEXAS
FORT BEND COUNTY

Project:
AFRICAN AMERICAN MEMORIAL @ BATES M. ALLEN PARK
630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:
FORT BEND COUNTY
1517 EUGENE HEIMANN CIRCLE
Richmond, TX 77469

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Design Team:

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8 Greenway Plaza Suite 1525
Houston, TX 77046 USA
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www.hinesad.com

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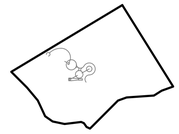
Key Plan



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2300 Timberloch Pl., Suite 124, The Woodlands, Texas 77380
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STATE OF TEXAS
SERGIO VAN DUSEN
97434
LICENSED PROFESSIONAL ENGINEER

05-26-2023
04/12/2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: KS Reviewed by: SD

Project No: 2022-05

Sheet Title:

STORM SEWER DETAILS-II

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

C607

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DRAINAGE

CATCH BASINS



NDS catch basins and grates collect surface water while minimizing the amount of debris entering the system

Available in a range of sizes from 6" round to 24" square, and with various grating and filter options for commercial and residential systems.

NDS Drainage Solutions

NDS offers a complete line of catch basins and grates for residential and commercial stormwater management solutions. NDS catch basins have sump areas that collect debris and prevent clogging of the pipeline, and grates are available in a variety of patterns and colors to blend in with surrounding surfaces. Depending on the size of the round, square, or atrium grates, they may fit directly into a riser of pipe, sewer and drain fitting, or our catch basins.



Small Grates



Spee-D® Basin



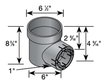
Large Catch Basin



Adapter

Spee-D® Basins

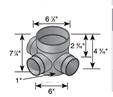
Use our compact 6" round Spee-D Basins with grates to collect runoff water while its sump area collects debris and prevents clogging. Also use Spee-D Basins with 6" Pop-Up Emitters to provide a point of discharge or overflow in a drainage system.



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
101	1 - 3" and 4" Locking Outlet	Black	10	1.60	10ND	6" styrene catch basin with locking outlet. 68 GPM per outlet capacity.
101ATBLKT	Spee-D Basin with 6" Black Atrium Grate	Black Grate	8	n/a	10ND	
101GRKT	Spee-D Basin with 6" Green Round Grate	Green Grate	6	n/a	10ND	
101SQGRKT	Spee-D Basin with 9" x 9" Green Square Grate	Green Grate	8	n/a	10ND	
201	3" and 4" Locking Outlets*	Black	10	1.83	10ND	
	Spee-D Basins and kits fit 3" or 4" Sewer & Drain Pipe, 3" or 4" Corrugated Pipe, 4" Sch. 40 and 3" & 4" Triple Wall Pipe. Use new Spee-D Riser or 6" Sewer and Drain Pipe as a riser for all 6" round catch basins. Use waterproof silicone to make water-tight connections. Locking Outlet snaps on to most 3" and 4" corrugated pipe.					Kits contain 1-outlet Spee-D Basin & Grate as described.



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
101R	Spee-D Basin Riser	Black	12	1.07	10ND	6" Riser for Spee-D Basin. Styrene.
	Use with any Spee-D Basin to add from 2" to 6" to top of basin. Can be cut to size and has guidelines in 1" increments. Compatible with all grates that fit Spee-D Basin.					



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
250	2 - 4" 90° Outlets	Black	12	1.64	10ND	6" styrene catch basin with pipe outlets. 83 GPM per outlet capacity.
300	3 - 4" Outlets	Black	12	1.82	10ND	
350	4 - 4" Outlets	Black	12	2.00	10ND	
	Fit 4" Sewer & Drain pipe and fittings, 4" SCH40 and Corrugated Pipes. Use Spee-D Basin Riser 101R or 6" Sewer & Drain pipe as riser extension.					

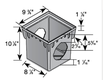
DRAINAGE

CATCH BASINS

9" Catch Basin Series



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
900FF	9" Catch Basin Filter	Blue Frame/ Black Bag	8	0.06	10ND	Polypropylene Frame Fabric is non-woven geotextile 956 PM/SF.
	Compatible with these basins: 900, 900-4 and 916 NDS Catch Basins, Risers and Kits					



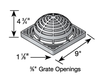
Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
900BLKIT	9" x 9" Catch Basin Kit	Black Grate	4	4.90	10ND	9" x 9" tapered Catch Basin. Polypropylene.
900GRKIT	9" x 9" Catch Basin Kit	Green Grate	4	4.90	10ND	
900KITDISP	9" x 9" Catch Basin Kits in Display Box	Blk/Grn Grates	8	39.2	10ND	Kits include 2-opening Catch Basin, Grate, Screws, 2 Outlets and 1 Plug.
900	9" x 9" Catch Basin 2-opening	Black	4	2.18	10ND	
900-4	9" x 9" Catch Basin 4-opening	Black	4	2.00	10ND	DISP includes 4 kits with black grates and 4 green
	Requires either #1206, #1242, #1243, #1245 or #1266 Universal Outlet to connect pipe to basin. (see page 35)					



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
916	9" x 9" Catch Basin Riser	Black	4	1.75	10ND	6" Riser for 9" x 9 Catch Basin. Styrene.
	Use with 9" x 9" Catch Basin Series. Stacks on top of 9" catch basins to add up to 6" to top of basin. Can be cut to size.					



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
900DSG	9" x 9" Downspout Defender Grate	Black	4	0.8	10ND	9" x 9" Downspout Grate, Structural Foam Polyolefin with UV inhibitors. 146 GPM.
	Receives downspouts from 2" to 4" round or square. Fits all NDS 9" square Catch Basins, Risers and Low-Profile Adapters					
900DSGKIT	9" x 9" Low-Profile Downspout Kit	Black	4	2.25	10ND	Kit includes 9" Downspout Defender Grate, 930 low-profile adapter and 1243 outlet adaptor. 146 GPM.
	Receives downspouts from 2" to 4" round or square. Fits 3" & 4" Corrugated Pipe, 3" & 4" Sewer and Drain Pipe, 4" Sewer and Drain Fittings, 4" Schedule 40 Pipe, and 3" & 4" Triple Wall Pipe.					



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
981	9" x 9" Atrium Grate	Black	6	0.87	10ND	9" Structural Foam Polyolefin Dome Atrium Grate with UV inhibitor. Open surface area 31.50 square inches. 96.36 GPM.
991	9" x 9" Atrium Grate	Black	6	0.87	10ND	
	Use with 9" x 9" Catch Basin Series.					

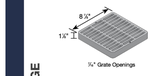


Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
980	9" Square Grate	Black	8	1.50	10ND	9" Square Structural Foam Polyolefin Grate with UV inhibitor. Open surface area 37.49 square inches. 114.69 GPM.
990	9" Square Grate	Green	8	1.50	10ND	
999	9" Square Grate	Gray	8	1.50	10ND	
999S	9" Square Grate	Sand	8	1.50	10ND	
	Use with 9" x 9" Catch Basin Series. NDS #980, 990, 999, 999S: Class A Load Rated. ADA Compliant. NDS #9300: Class B Load Rated. see page 7b. ADA Compliant.					

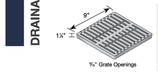
DRAINAGE

CATCH BASINS

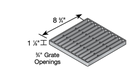
9" Catch Basin Series (continued)



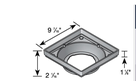
Part No.	Description	Color	Pkg. Qty.	Wt. Ea. lbs.	Product Class	Specifications
930B	9" Square Brass Grate	Brass	1	5.11	15BR	Open surface area 34.00 square inches. 104.01 GPM. Includes SS Screws.
	(see page 7b. ADA Compliant.					



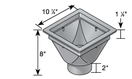
Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
913	9" Square Ductile Iron Grate	Black*	4	7.89	10ND	9" Square Heavy-Duty Ductile Iron Grate. Open surface area 21.70 square inches. 66.38 GPM.
	Use with 9" x 9" Catch Basin Series. *Painted for shipping & display only; grate will form iron-oxide patina (see page 7b					



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
915	9" Square Galvanized Steel Grate	Galvanized Steel	4	3.80	10ND	9" Square Heavy-Duty Galvanized Steel Bar Grate. Open surface area 61.94 square inches. 189.48 GPM.
	Use with 9" x 9" Catch Basin Series. (see page 7b					



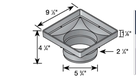
Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
930	9" x 9" Low-Profile Adapter	Black	8	0.75	10ND	9" x 9 Low-Profile Adapter. Styrene.
930GRKT	9" x 9" Low-Profile Adapter with Flat Green Grate and 3" & 4" Universal Locking Outlet	Green Grate	8	n/a	10ND	Kits contain Low-Profile Adapter, 3" & 4" Universal Locking Outlet and Grate as described.
	Adapter alone requires #1242, #1243, #1245, #1266 or #1889 Universal Outlets to connect to 3", 4", 6" or 8" Sewer and Drain or Corrugated Pipes (see page 35). Kits contain #1243 outlet.					



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
931	9" x 9" Deep Housing Spigot Adapter	Black	10	2.40	10ND	9" x 9" Square Deep Housing Spigot Adapter. Styrene.
	Fits 4" Corrugated Pipe. Use #933 to adapt to 4" Sewer and Drain Pipe.					



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
933	Adapter Bushing	Black	20	0.30	10ND	Styrene.
	Bushing adapts #931 to fit 3" and 4" Sewer and Drain Pipes and 3" Corrugated Pipe.					



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
932	9" x 9" Low-Profile Housing Adapter	Black	8	1.13	10ND	NDS #932, 9" x 9" Square Low-Profile Housing Adapter with 6" Outlet. Styrene.
	Fits 6" Spee-D® Basin and 6" Sewer and Drain Pipe & Fittings.					

Project:
AFRICAN AMERICAN MEMORIAL @ BATES M. ALLEN PARK
630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:
FORT BEND COUNTY
1517 EUGENE HEIMANN CIRCLE
Richmond, TX 77469

Contract No: 2022-05

Design Team:
HINES ARCHITECTURE + DESIGN
8 Greenway Plaza Suite 1525
Houston, TX 77046 USA
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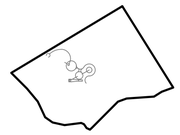
Key Plan



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VOGT ENGINEERING
TEXAS BOARD OF PROFESSIONAL ENGINEERS FIRM REGISTRATION F-3901
2003 Timberloch Pl., Suite 124, The Woodlands, Texas 77380
www.vogtengineering.com

STATE OF TEXAS · SERGIO VAN DUSEN · 97434 · LICENSED PROFESSIONAL ENGINEER

05-26-2023 04/12/2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: KS Reviewed by: SD

Project No: 2022-05

Sheet Title:

STORM SEWER AND MISCELLANEOUS DETAILS

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

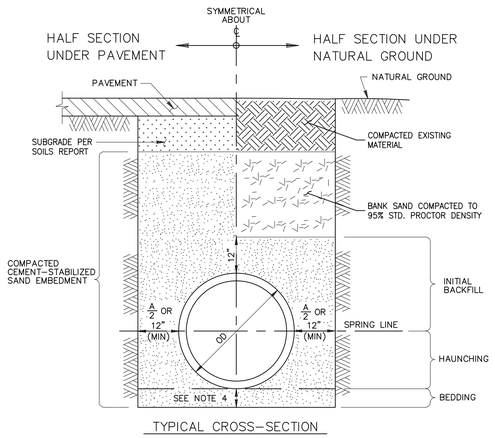
C608

NOTES:

1. THIS DETAIL MAY BE USED ONLY FOR DRY STABLE TRENCH CONDITIONS.
2. MIN TRENCH WIDTH SHALL BE PIPE OD PLUS AN ALLOWANCE "A" FOR THE NOMINAL PIPE SIZE:

NOMINAL PIPE SIZE	"A"
18" TO 30"	24"
OVER 30"	36"

3. MAX TRENCH WIDTH SHALL BE NOT GREATER THAN MIN TRENCH WIDTH PLUS 24 INCHES, UNLESS OTHERWISE NOTED.
4. MIN BEDDING DEPTH SHALL BE THE GREATER OF ? OD OR 6 INCHES.
5. SELECT BACKFILL FOR RIGID PAVEMENT; FLEXIBLE BASE MATERIAL FOR ASPHALT PAVEMENT.

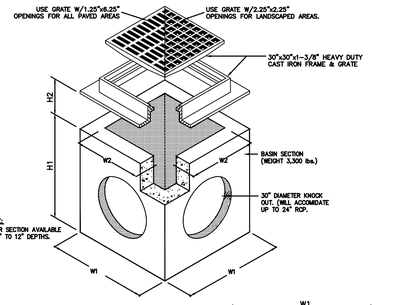


TYPICAL CROSS-SECTION

SANITARY OR STORM SEWER BEDDING AND BACKFILL FOR DRY STABLE TRENCH

NOTIFIY ENGINEER WHEN ENCOUNTERING UNSTABLE CONDITIONS

(N.T.S.)



SPECIFICATIONS

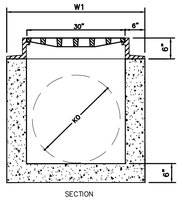
CONCRETE : Class 1 concrete with of design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall. Contractor may pour to required depth. Rated for H-20 Loading.

REINFORCEMENT: Grade 60 reinforced with steel rebar to conform to ASTM A615 on required centers or equal.

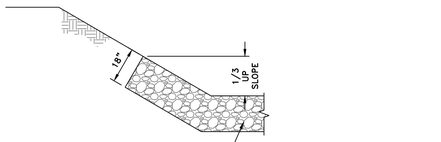
C.I. CASTINGS: Cast iron frames and grates are manufactured of grey cast iron conforming to ASTM A48-76 Class 30.

MODEL #		DIMENSIONS							
CATCH BASIN	JUNCTION BOX[1]	W1	W2	H1	H2	T1	KO	GRATE SIZE	WEIGHT LBS
CB12[1]	JB12	15"	10"	21"	18"	2"	10"	12"x12"x1"	180
CB18	JB18	24"	16"	34"	30"	4"	15"	18"x18"x1"	1,000
CB20	JB20	26"	18"	34"	30"	4"	17"	20"x20"x1"	1,335
CB24	JB24	32"	22"	41"	36"	5"	22"	24"x24"x2"	2,245
CB27	JB27	37"	25"	42"	36"	6"	24"	27"x27"x2"	2,875
CB30	JB30	42"	30"	42"	36"	6"	30"	32"x32"x2"	3,675
CB36	JB36	48"	36"	42"	36"	6"	32"	38"x38"x2"	4,585

1. CB12 CATCHBASIN IS RATED FOR PEDESTRIAN LOADING. ALL OTHERS ARE TRAFFIC DUTY.
2. ALL JUNCTION BOXES ARE STANDARD PEDESTRIAN DUTY OR OPTIONAL TRAFFIC DUTY.

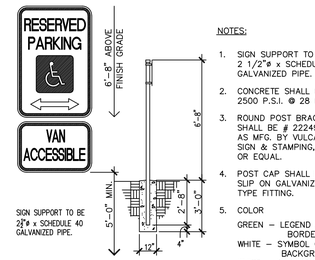


TYPE 'A' GRATE INLET
CUSTOM DET: INLT-A



TYPICAL RIPRAP PROTECTION HALF SECTION

(N.T.S.)



NOTES:

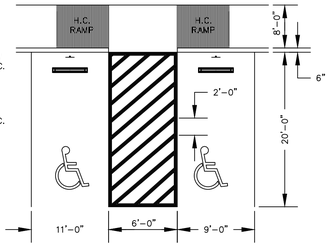
1. SIGN SUPPORT TO BE 2 1/2"ø x SCHEDULE 40 GALVANIZED PIPE.
2. CONCRETE SHALL BE 2500 P.S.I. @ 28 DAYS.
3. ROUND POST BRACKET SHALL BE # 222491-501 AS MFG. BY VULCAN SIGN & STAMPING, INC. OR EQUAL.
4. POST CAP SHALL BE SLIP ON GALVANIZED TYPE FITTING.
5. COLOR
   GREEN - LEGEND AND BORDER
   WHITE - SYMBOL ON BLUE BACKGROUND
   WHITE - BACKGROUND

NOTES:

PAINT 4" WIDE STRIPING w/ YELLOW TRAFFIC PAINT @ H.C. PARKING, TYP.

PAINT HANDICAP LOGO w/ YELLOW TRAFFIC PAINT @ H.C. PARKING, TYPICAL

(A.D.A. SECTION 4.6)

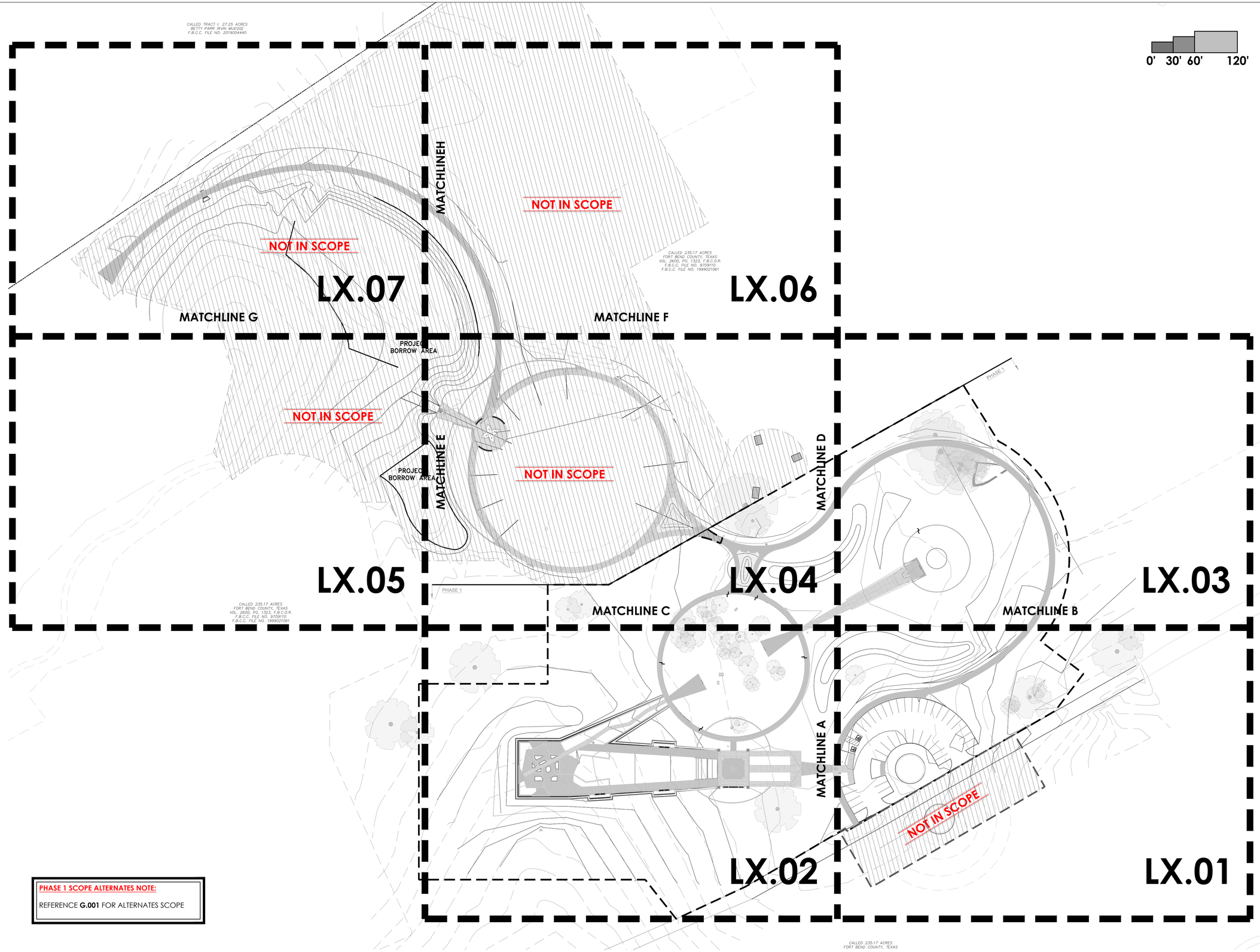


ACCESSIBLE DETAILS
SCALE: NTS

APPROVED: _____
Development Staff

DATE: _____

C:\Users\Kosha.shah\Desktop\Project\C Working Files\639-004 Bates Allen Park\03 Drafting\Revisions\Revisions\REV 02\C701-C708 Details.dwg Apr. 12, 24 by 2/24/2023 15:26:10



PHASE 1 SCOPE ALTERNATES NOTE:

REFERENCE **G.001** FOR ALTERNATES SCOPE

THE STATE OF TEXAS · FORT BEND COUNTY ·

Project:

AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:

FORT BEND COUNTY

1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

HINESAD

Contract No: 218226

Design Team:

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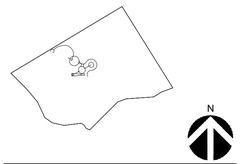
Key Plan



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04.12.2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

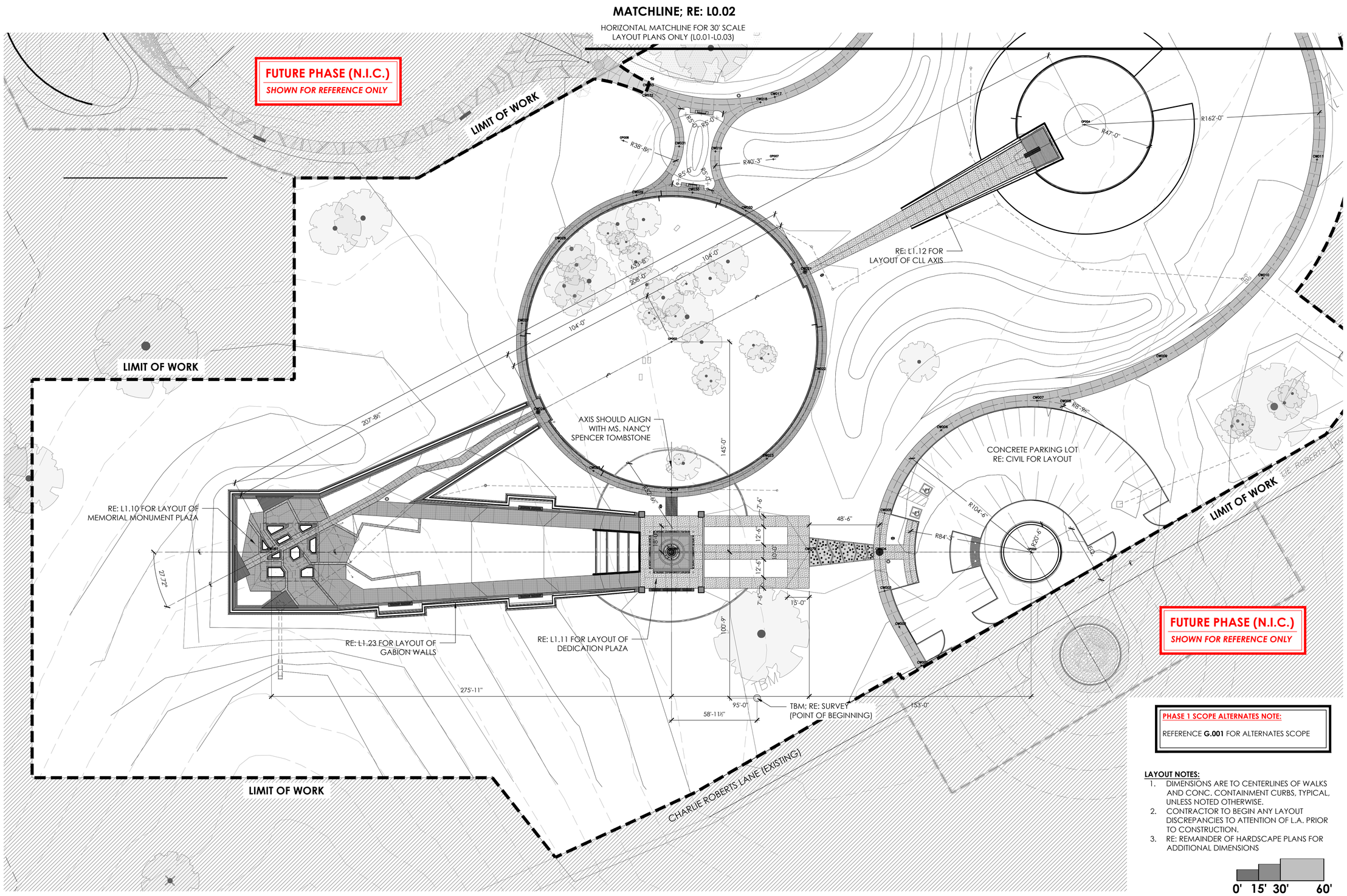
Sheet Title:

OVERALL PLAN

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

L0.00



PHASE 1 SCOPE ALTERNATES NOTE:

REFERENCE **G.001** FOR ALTERNATES SCOPE

LAYOUT NOTES:

1. DIMENSIONS ARE TO CENTERLINES OF WALKS AND CONC. CONTAINMENT CURBS, TYPICAL, UNLESS NOTED OTHERWISE.
2. CONTRACTOR TO BEGIN ANY LAYOUT DISCREPANCIES TO ATTENTION OF L.A. PRIOR TO CONSTRUCTION.
3. RE: REMAINDER OF HARDSCAPE PLANS FOR ADDITIONAL DIMENSIONS

0' 15' 30' 60'

Project:

AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

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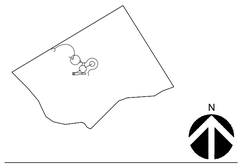

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	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

Sheet Title:

HARDSCAPE LAYOUT PLAN

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Sheet Number

L0.01



THE STATE OF TEXAS · FORT BEND COUNTY

Project:

AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

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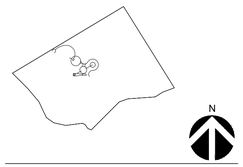

Professional Seals



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Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

Sheet Title:

HARDSCAPE LAYOUT PLAN

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

L0.02

Coordinate Layout Points			
POINT	NORTHING	EASTING	DESCRIPTION
CP001	N 13719102.707962	E 2922170.517885	Center Point
CP002	N 13719173.305825	E 2922129.587058	Center Point
CP003	N 13719318.305825	E 2921881.587058	Center Point
CP004	N 13719468.102637	E 2922166.622602	Center Point
CP005	N 13719590.672456	E 2921654.333031	Center Point
CP006	N 13719643.190580	E 2921540.900910	Center Point
CP007	N 13719444.309757	E 2921951.806932	Center Point
CP008	N 13719457.086889	E 2921848.364493	Center Point
CP009	N 13719604.818507	E 2921916.662873	Center Point
CP010	N 13719607.478312	E 2921618.034737	Center Point
CP011	N 13719928.849536	E 2921325.247059	Center Point
CP012	N 13719925.264841	E 2921175.197744	Center Point
CW001	N 13719094.997835	E 2922053.897528	Centerline of Walk
CW002	N 13719121.662887	E 2922038.739636	Centerline of Walk
CW003	N 13719146.534227	E 2922028.574537	Centerline of Walk
CW004	N 13719173.305852	E 2922025.087021	Centerline of Walk
CW005	N 13719200.118732	E 2922028.580018	Centerline of Walk
CW006	N 13719257.405176	E 2922067.530281	Centerline of Walk
CW007	N 13719277.723886	E 2922133.701544	Centerline of Walk
CW008	N 13719275.255349	E 2922152.529926	Centerline of Walk
CW009	N 13719306.330467	E 2922218.867492	Centerline of Walk
CW010	N 13719362.185889	E 2922289.202700	Centerline of Walk
CW011	N 13719444.058731	E 2922326.828538	Centerline of Walk
CW012	N 13719533.370962	E 2922314.892972	Centerline of Walk
CW013	N 13719602.490300	E 2922257.088069	Centerline of Walk
CW014	N 13719630.035203	E 2922171.296556	Centerline of Walk
CW015	N 13719607.484337	E 2922084.059117	Centerline of Walk
CW016	N 13719541.814080	E 2922022.363908	Centerline of Walk
CW017	N 13719487.217722	E 2921952.888379	Centerline of Walk
CW018	N 13719483.579283	E 2921942.938595	Centerline of Walk
CW019	N 13719449.688713	E 2921911.909432	Centerline of Walk
CW020	N 13719408.790973	E 2921932.855242	Centerline of Walk
CW021	N 13719366.687559	E 2921973.647881	Centerline of Walk
CW022	N 13719297.532419	E 2921983.504840	Centerline of Walk
CW023	N 13719237.751277	E 2921947.383485	Centerline of Walk
CW024	N 13719214.318365	E 2921881.586988	Centerline of Walk
CW025	N 13719229.287779	E 2921827.811604	Centerline of Walk
CW026	N 13719269.924098	E 2921789.526109	Centerline of Walk
CW027	N 13719331.021896	E 2921778.368040	Centerline of Walk
CW028	N 13719387.600957	E 2921804.035860	Centerline of Walk
CW029	N 13719419.448052	E 2921857.374543	Centerline of Walk
CW030	N 13719421.284381	E 2921896.126587	Centerline of Walk
CW031	N 13719453.163967	E 2921886.867346	Centerline of Walk
CW032	N 13719492.134987	E 2921864.780506	Centerline of Walk
CW033	N 13719493.260959	E 2921864.734497	Centerline of Walk
CW034	N 13719518.782850	E 2921828.450575	Centerline of Walk
CW035	N 13719555.465700	E 2921803.505260	Centerline of Walk
CW036	N 13719598.590912	E 2921793.107392	Centerline of Walk
CW037	N 13719638.533848	E 2921784.834086	Centerline of Walk
CW038	N 13719674.354850	E 2921765.322616	Centerline of Walk
CW039	N 13719702.969628	E 2921736.253308	Centerline of Walk
CW040	N 13719721.914228	E 2921700.129199	Centerline of Walk
CW041	N 13719729.556969	E 2921660.060973	Centerline of Walk
CW042	N 13719725.239713	E 2921619.499625	Centerline of Walk
CW043	N 13719709.334208	E 2921581.938149	Centerline of Walk
CW044	N 13719683.210159	E 2921550.610965	Centerline of Walk
CW045	N 13719649.072660	E 2921528.194175	Centerline of Walk
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CW051	N 13719455.556458	E 2921621.705330	Centerline of Walk
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CW053	N 13719460.199303	E 2921702.269188	Centerline of Walk
CW054	N 13719479.725038	E 2921738.066349	Centerline of Walk
CW055	N 13719512.511765	E 2921769.273720	Centerline of Walk
CW056	N 13719553.582556	E 2921788.290898	Centerline of Walk
CW057	N 13719499.753694	E 2921777.670203	Centerline of Walk
CW058	N 13719504.468207	E 2921821.795599	Centerline of Walk
CW059	N 13719688.329214	E 2921542.654113	Centerline of Walk
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CW062	N 13719812.690013	E 2921546.376554	Centerline of Walk
CW063	N 13719852.741654	E 2921534.292646	Centerline of Walk
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CW075	N 13719968.336335	E 2921119.078100	Centerline of Walk
CW076	N 13719946.690938	E 2921086.077655	Centerline of Walk
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CW080	N 13719173.305722	E 2921881.587043	Centerline of Walk
CW081	N 13719173.305769	E 2921605.680407	Centerline of Walk
CW082	N 13719918.519414	E 2921046.430143	Centerline of Walk
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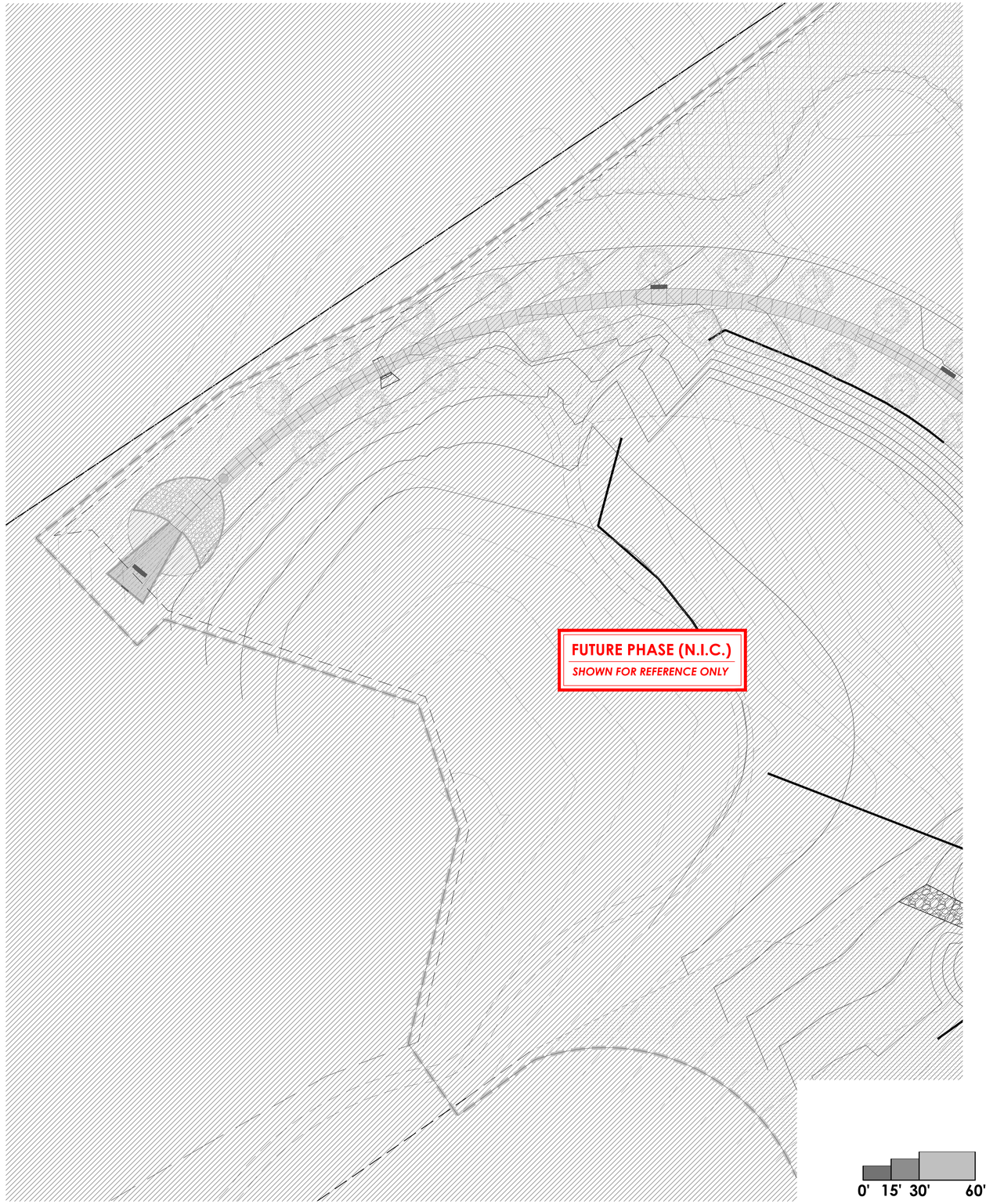

THE STATE OF TEXAS · FORT BEND COUNTY

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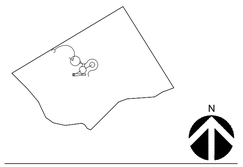

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Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

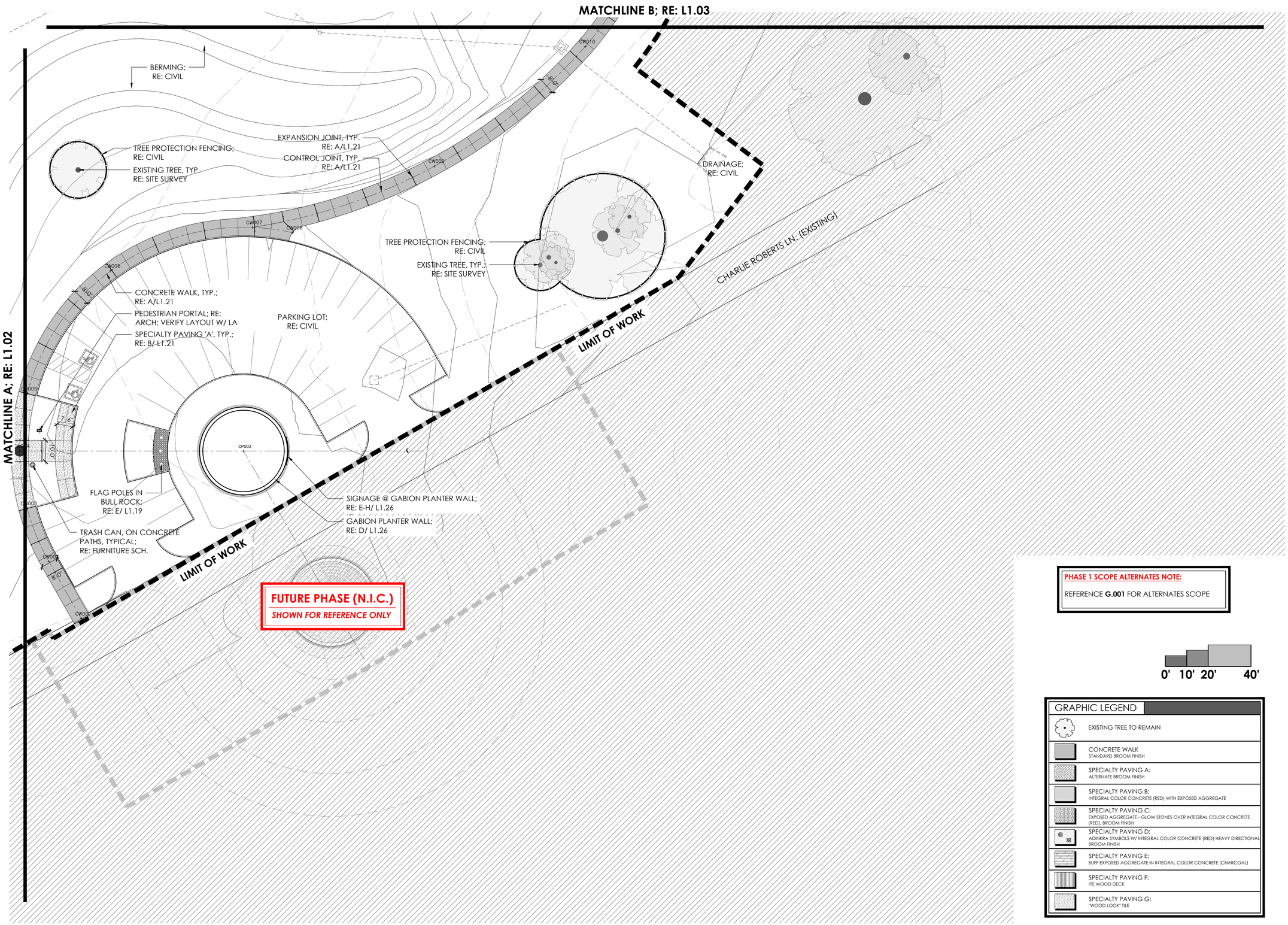
Sheet Title:

HARDSCAPE LAYOUT PLAN

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

L0.03



PHASE 1 SCOPE ALTERNATES NOTE:

REFERENCE **G.001** FOR ALTERNATES SCOPE

0' 10' 20' 40'

GRAPHIC LEGEND

- EXISTING TREE TO REMAIN
- CONCRETE WALK
  STANDARD BROOM FINISH
- SPECIALTY PAVING A:
  ALTERNATE BROOM FINISH
- SPECIALTY PAVING B:
  INTEGRAL COLOR CONCRETE (RED) WITH EXPOSED AGGREGATE
- SPECIALTY PAVING C:
  EXPOSED AGGREGATE - GLOW STONES OVER INTEGRAL COLOR CONCRETE (RED). BROOM FINISH
- SPECIALTY PAVING D:
  ADINKRA SYMBOLS W/ INTEGRAL COLOR CONCRETE (RED) HEAVY DIRECTIONAL BROOM FINISH
- SPECIALTY PAVING E:
  BUFF EXPOSED AGGREGATE IN INTEGRAL COLOR CONCRETE (CHARCOAL)
- SPECIALTY PAVING F:
  IPE WOOD DECK
- SPECIALTY PAVING G:
  "WOOD LOOK" TILE

THE STATE OF TEXAS · FORT BEND COUNTY

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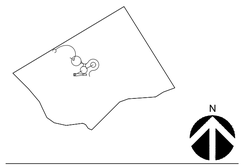

N

Professional Seals



04.12.2024

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Drawn by: LANDology Reviewed by: JMcM

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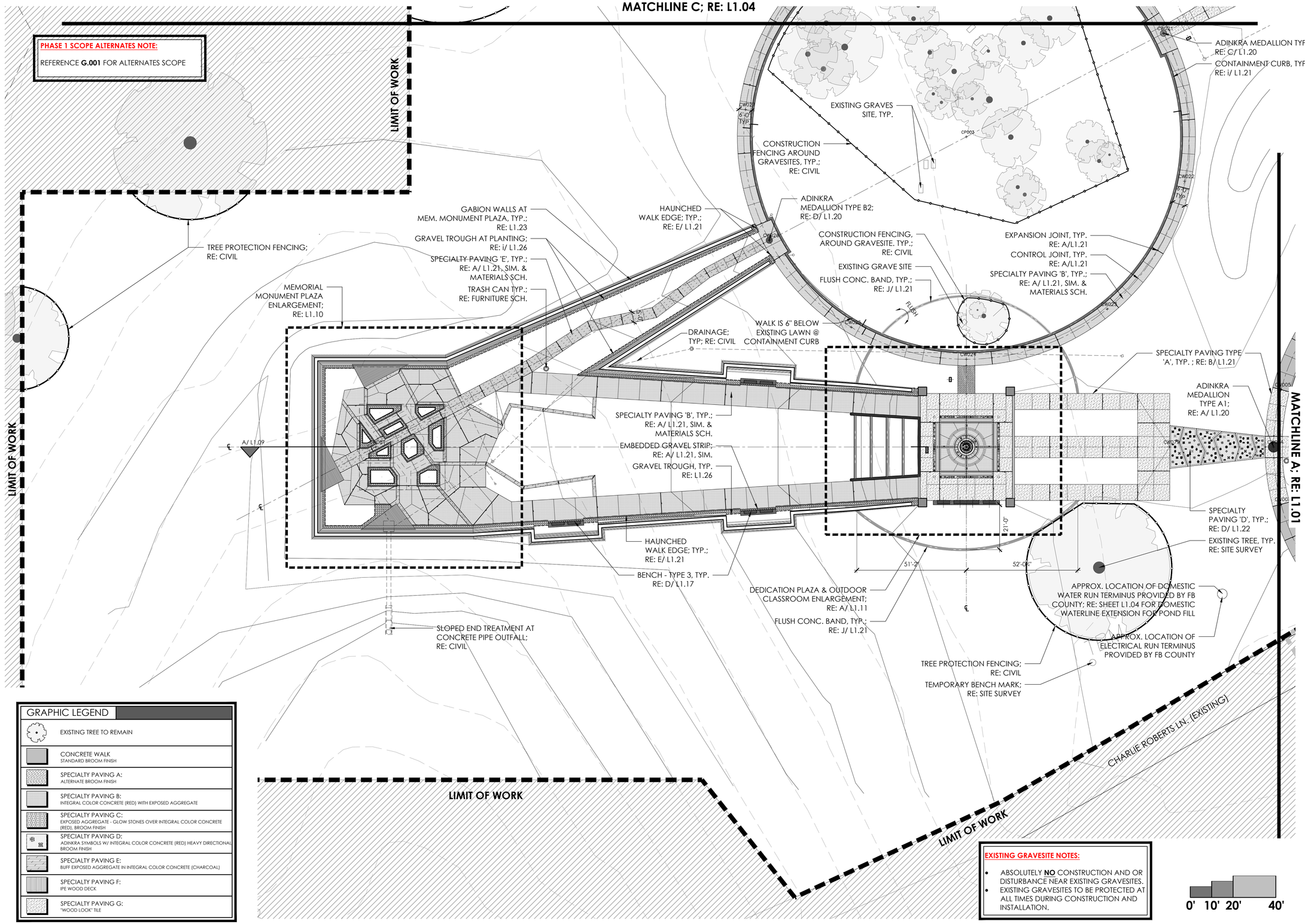
Sheet Title:

HARDSCAPE PLAN

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

L1.01



GRAPHIC LEGEND

- EXISTING TREE TO REMAIN
- CONCRETE WALK — STANDARD BROOM FINISH
- SPECIALTY PAVING A: — ALTERNATE BROOM FINISH
- SPECIALTY PAVING B: — INTEGRAL COLOR CONCRETE (RED) WITH EXPOSED AGGREGATE
- SPECIALTY PAVING C: — EXPOSED AGGREGATE - GLOW STONES OVER INTEGRAL COLOR CONCRETE (RED). BROOM FINISH
- SPECIALTY PAVING D: — ADINKRA SYMBOLS W/ INTEGRAL COLOR CONCRETE (RED) HEAVY DIRECTIONAL BROOM FINISH
- SPECIALTY PAVING E: — BUFF EXPOSED AGGREGATE IN INTEGRAL COLOR CONCRETE (CHARCOAL)
- SPECIALTY PAVING F: — IPE WOOD DECK
- SPECIALTY PAVING G: — "WOOD LOOK" TILE

NOTE: REFERENCE MATERIALS SCHEDULE FOR ALL PAVING SPECIFICATIONS (RE: L1.08)
REFERENCE ALTERNATES SCHEDULE FOR ALTERNATE PAVING SPECIFICATIONS

EXISTING GRAVESITE NOTES:

- ABSOLUTELY **NO** CONSTRUCTION AND OR DISTURBANCE NEAR EXISTING GRAVESITES.
- EXISTING GRAVESITES TO BE PROTECTED AT ALL TIMES DURING CONSTRUCTION AND INSTALLATION.

0' 10' 20' 40'

THE STATE OF TEXAS · FORT BEND COUNTY ·

Project:
AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK
630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:
FORT BEND COUNTY
1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

HINESAD

Contract No: 218226

Design Team:

HINES ARCHITECTURE + DESIGN
8 Greenway Plaza Suite 1525
Houston, TX 77046 USA
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www.hinesad.com

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Key Plan

N

Professional Seals

REGISTERED LANDSCAPE ARCHITECT — JONATHAN JACKSON McMAHAN — 2126 — STATE OF TEXAS
04.12.2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

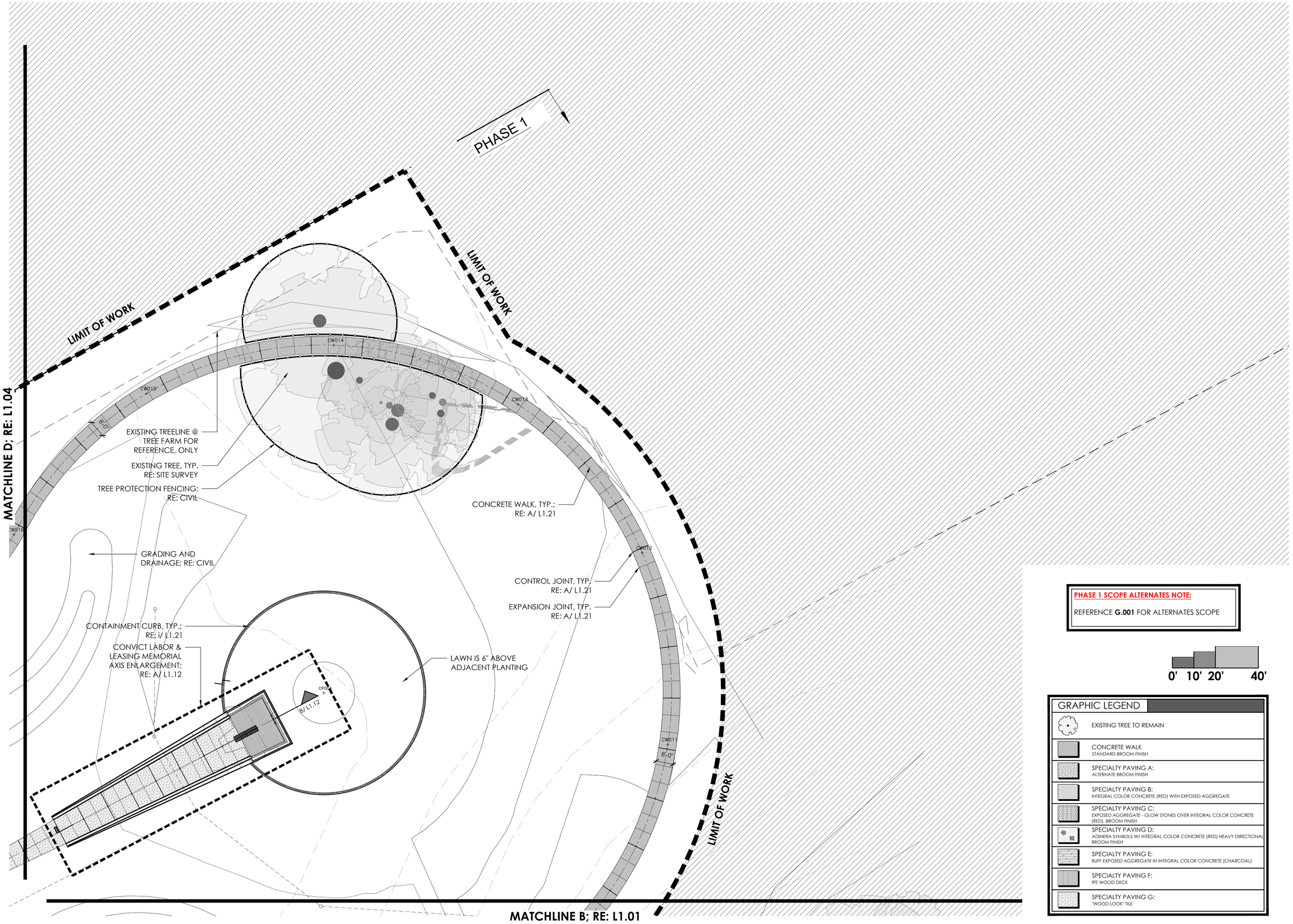
Sheet Title:

HARDSCAPE PLAN

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

L1.02



PHASE 1 SCOPE ALTERNATES NOTE:

REFERENCE **G.001** FOR ALTERNATES SCOPE

0' 10' 20' 40'

GRAPHIC LEGEND

- EXISTING TREE TO REMAIN
- CONCRETE WALK
  STANDARD BROOM FINISH
- SPECIALTY PAVING A:
  ALTERNATE BROOM FINISH
- SPECIALTY PAVING B:
  INTEGRAL COLOR CONCRETE (RED) WITH EXPOSED AGGREGATE
- SPECIALTY PAVING C:
  EXPOSED AGGREGATE - GLOW STONES OVER INTEGRAL COLOR CONCRETE (RED), BROOM FINISH
- SPECIALTY PAVING D:
  ADINKRA SYMBOLS W/ INTEGRAL COLOR CONCRETE (RED) HEAVY DIRECTIONAL BROOM FINISH
- SPECIALTY PAVING E:
  BUFF EXPOSED AGGREGATE IN INTEGRAL COLOR CONCRETE (CHARCOAL)
- SPECIALTY PAVING F:
  IPE WOOD DECK
- SPECIALTY PAVING G:
  "WOOD LOOK" TILE

THE STATE OF TEXAS · FORT BEND COUNTY

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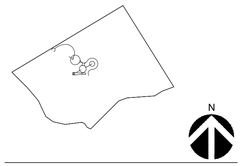

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04.12.2024

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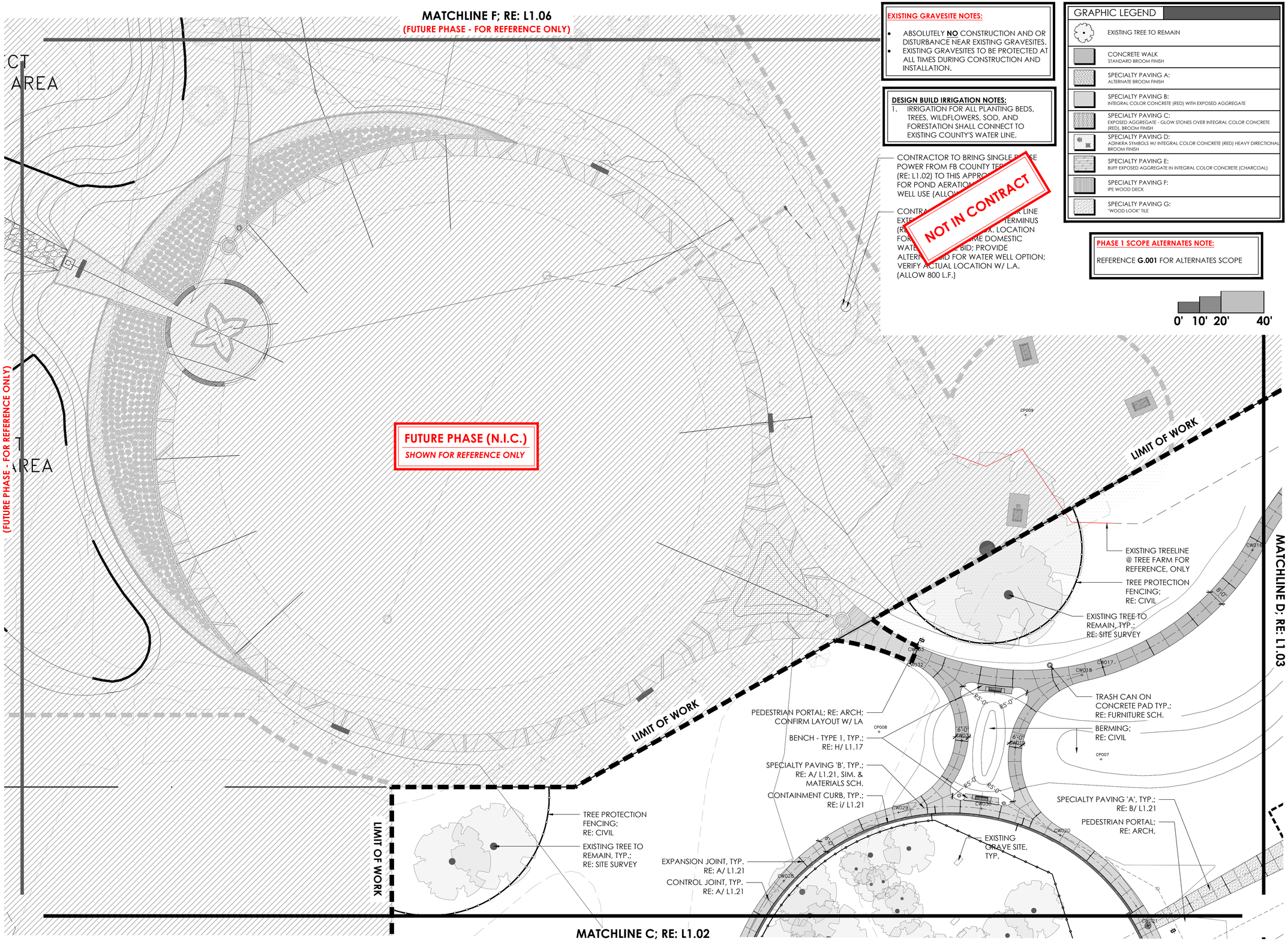
Sheet Title:

HARDSCAPE PLAN

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

L1.03



EXISTING GRAVESITE NOTES:

- ABSOLUTELY **NO** CONSTRUCTION AND OR DISTURBANCE NEAR EXISTING GRAVESITES.
- EXISTING GRAVESITES TO BE PROTECTED AT ALL TIMES DURING CONSTRUCTION AND INSTALLATION.

DESIGN BUILD IRRIGATION NOTES:

1. IRRIGATION FOR ALL PLANTING BEDS, TREES, WILDFLOWERS, SOD, AND FORESTATION SHALL CONNECT TO EXISTING COUNTY'S WATER LINE.

CONTRACTOR TO BRING SINGLE P[illegible]SE POWER FROM FB COUNTY TE[illegible] (RE: L1.02) TO THIS APPRO[illegible] FOR POND AERATION [illegible] WELL USE (ALLOW[illegible]

CONTRA[illegible] LINE EXTE[illegible] TERMINUS (R[illegible]X. LOCATION FOR[illegible]ME DOMESTIC WATE[illegible] BID; PROVIDE ALTERN[illegible]ID FOR WATER WELL OPTION; VERIFY ACTUAL LOCATION W/ L.A. (ALLOW 800 L.F.)

GRAPHIC LEGEND

	EXISTING TREE TO REMAIN
	CONCRETE WALK STANDARD BROOM FINISH
	SPECIALTY PAVING A: ALTERNATE BROOM FINISH
	SPECIALTY PAVING B: INTEGRAL COLOR CONCRETE (RED) WITH EXPOSED AGGREGATE
	SPECIALTY PAVING C: EXPOSED AGGREGATE - GLOW STONES OVER INTEGRAL COLOR CONCRETE (RED), BROOM FINISH
	SPECIALTY PAVING D: ADINKRA SYMBOLS W/ INTEGRAL COLOR CONCRETE (RED) HEAVY DIRECTIONAL BROOM FINISH
	SPECIALTY PAVING E: BUFF EXPOSED AGGREGATE IN INTEGRAL COLOR CONCRETE (CHARCOAL)
	SPECIALTY PAVING F: IPE WOOD DECK
	SPECIALTY PAVING G: "WOOD LOOK" TILE

PHASE 1 SCOPE ALTERNATES NOTE:

REFERENCE **G.001** FOR ALTERNATES SCOPE

0' 10' 20' 40'

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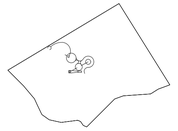

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Project No: 922.001

Sheet Title:

HARDSCAPE PLAN

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Sheet Number

L1.04

MATCHLINE G; RE: L1.07
(FUTURE PHASE - FOR REFERENCE ONLY)

FUTURE PHASE (N.I.C.)
SHOWN FOR REFERENCE ONLY

MATCHLINE E; RE: L1.04
(FUTURE PHASE - FOR REFERENCE ONLY)

PHASE 1

CALLED 235.17 ACRES
FORT BEND COUNTY, TEXAS
VOL. 2600, PG. 1323, F.B.C.O.R.
F.B.C.C. FILE NO. 9709110
F.B.C.C. FILE NO. 1999021061

0' 10' 20' 40'

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Key Plan

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Professional Seals

REGISTERED LANDSCAPE ARCHITECT
JONATHAN JACKSON McMAHAN
2726
STATE OF TEXAS
04.12.2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

Sheet Title:

HARDSCAPE PLAN

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

L1.05

MATCHLINE H; RE: L1.07
(FUTURE PHASE - FOR REFERENCE ONLY)

FUTURE PHASE (N.I.C.)
SHOWN FOR REFERENCE ONLY

CALLED 235.17 ACRES
FORT BEND COUNTY, TEXAS
VOL. 2600, PG. 1323, F.B.C.O.R.
F.B.C.C. FILE NO. 9709110
F.B.C.C. FILE NO. 1999021061

MATCHLINE F; RE: L1.04
(FUTURE PHASE - FOR REFERENCE ONLY)

0' 10' 20' 40'

THE STATE OF TEXAS · FORT BEND COUNTY ·

Project:
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630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:
FORT BEND COUNTY
1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

HINESAD

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Key Plan

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REGISTERED LANDSCAPE ARCHITECT
JONATHAN JAMES MCMANUS
2726
STATE OF TEXAS
04.12.2024

No.	Issue Description	MM-DD-YYYY
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	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

Sheet Title:

HARDSCAPE PLAN

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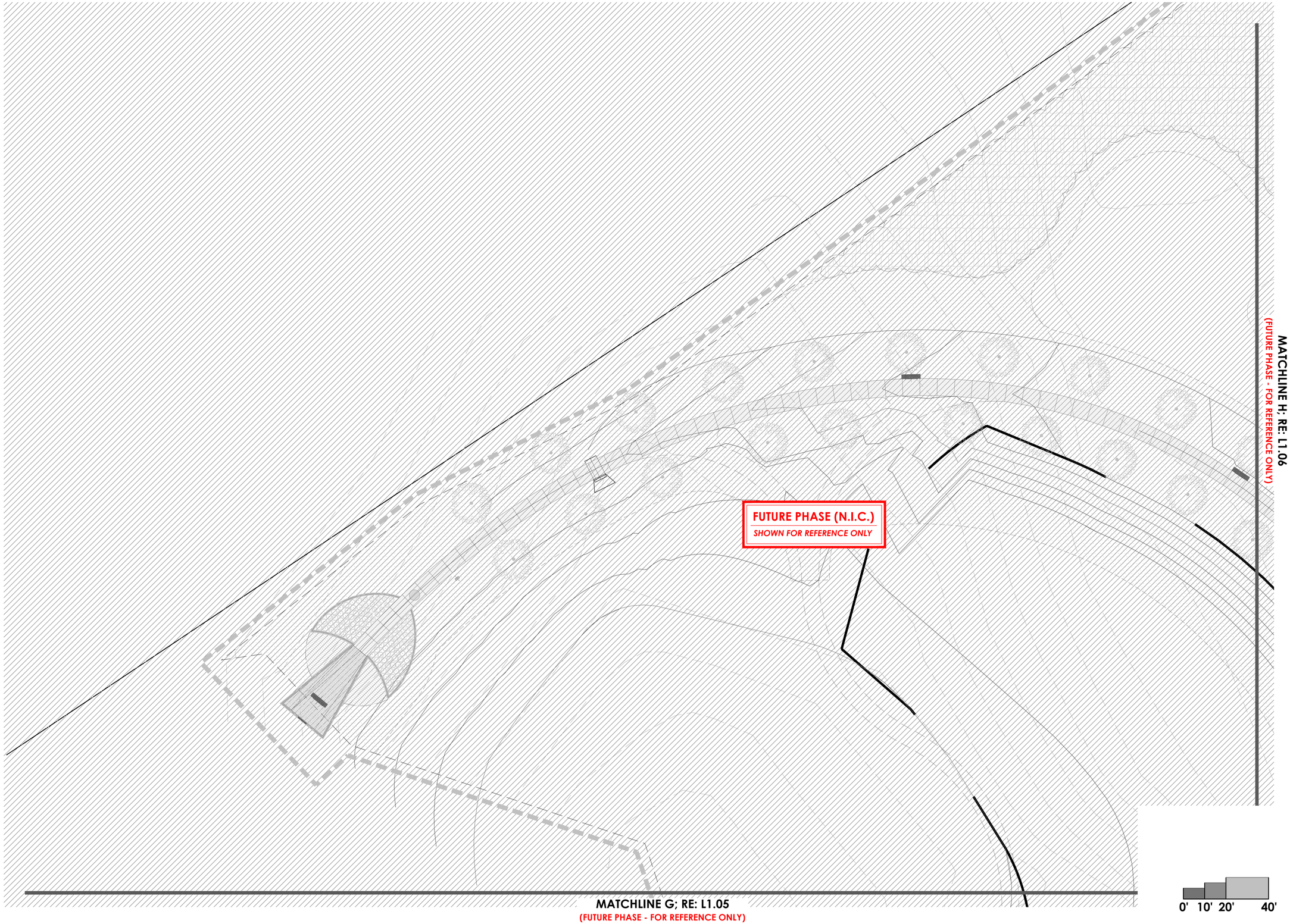
Sheet Number

L1.06



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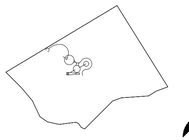

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Professional Seals



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HARDSCAPE PLAN

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Sheet Number

L1.07

PHASE 1 SCOPE ALTERNATES NOTE:

REFERENCE **G.001** FOR ALTERNATES SCOPE

FURNITURE / ENGRAVING SCHEDULE

QTY.	DESCRIPTION	DESIGN #	MANUF. / SUPPLIER	NOTES
10	BACKLESS BENCH UNIVERSE SYSTEM	**BASE BID**: QUOTE #408417 **ALTERNATE BID:** QUOTE #408418	LANDSCAPE FORMS CONTACT: EMMA SIMPSON PH:(269) 276-4592 EmmaS@landscapeforms.com	1. 70" BACKLESS BENCH (**BASE**-IPE WOOD)(**ALTERNATE**-TMA) 2. BENCH SHALL BE SET ON POLISHED CONCRETE BASE 3. RE: SHEET L1.17 FOR CONC. BASE DETAILS.
6	BACKED BENCH UNIVERSE SYSTEM			1. 70" BACKED BENCH (**BASE**-IPE WOOD)(**ALTERNATE**-TMA) 2. BENCH SHALL BE SET ON POLISHED CONCRETE BASE 3. RE: SHEET L1.17 FOR CONC. BASE DETAILS.
3	LITTER RECEPTACLE (BASE BID) DEVS-32E EVERBIT 32 GAL. (ALTERNATE MT3D-32TS MIDTOWN 32 GALLON RECEPTACLE WITH DOOR)	**BASE BID**: QUOTE #048809-02 **ALTERNATE BID**: QUOTE #05089 1-00	KEYSTONE RIDGE DESIGNS, Inc. CONTACT: JUSTIN MASKAL PH:(724) 284-1213 JustinM@keystoneridgedesigns.com	1. CONTRACTOR TO PROVIDE A CONCRETE BASE. 2. OPENING SHALL FACE WALK, TYP.
3	FLAG POLES	MODEL # ECH25IH ITEM # 324142 HURRICANE INTERNAL HALYARD FLAGPOLE FINISH: SATIN	WWW.FLAGPOLEWAREHOUSE.COM 1-800-962-0956	1. CONTRACTOR TO PROVIDE A CONCRETE BASE.

NOTE: CONTRACTOR IS RESPONSIBLE FOR INSTALLING PER MANUFACTURER INSTRUCTIONS ALL OWNER PROVIDED SITE FURNISHING, TYP.

MATERIALS SCHEDULE

KEY	PRODUCT DESCRIPTION	ITEM NAME	DETAILS	PROJECT SUPPLIER	NOTES	ALTERNATE SPEC.
BASE BID						
	CONCRETE WALK	STANDARD CONCRETE WITH MEDIUM BROOM FINISH	STANDARD GREY		REFERENCE PLAN AND DETAILS	N/A
	SPECIALTY PAVING A	STANDARD CONCRETE WITH HEAVY ALTERNATE BROOM FINISH	STANDARD GREY		REFERENCE PLAN AND DETAILS	STANDARD CONCRETE WALK
	SPECIALTY PAVING B	INTEGRAL COLOR CONCRETE RED WITH 3/8" to 5/8" EXPOSED SALADO ROSE GRAVEL (½" DEPTH)	BRICK RED 160 FULL COLOR 100%	HUGH ACHE HUGH@ALAMOSTONE.COM **ALAMO STONE**	REFERENCE PLAN AND DETAILS	INTEGRAL COLOR RED (100%) WITH HEAVY BROOM FINISH
	SPECIALTY PAVING C	TUMBLE MEDIUM BLUE COLORED GLOWSTONES ON INTEGRAL COLOR CONCRETE RED, BROOM FINISH	2 LBS/ 16 SQ. FT.	MICHAEL FORCELI **GLOWSTONESUSA.COM**	REFERENCE PLAN AND DETAILS	12" x 12" VALENTINO GLOW PATH PAVERS (GLOWPATH TECHNOLOGY)
	SPECIALTY PAVING D	12" HT. 12 DIFFERENT ADINKRA SYMBOLS STAMPED ON INTEGRAL RED COLOR CONCRETE. HEAVY DIRECTIONAL BROOM FINISH	BRICK RED 160 FULL COLOR 100%		REFERENCE PLAN AND DETAILS	SYMBOLS STAMPED ON STANDARD CONC. WALK (KEEP HEAVY DIRECTIONAL BROOM FINISH)
	SPECIALTY PAVING E	GRAPHITE INTEGRAL COLOR CONCRETE W/ 3/8"-5/8" ROUNDED LIMESTONE EXPOSED AGGREGATE (½" DEPTH)	GRAPHITE 8084 FULL COLOR 100%		REFERENCE PLAN AND DETAILS	INTEGRAL COLOR CHARCOAL CONCRETE W/ HEAVY BROOM FINISH
	SPECIALTY PAVING F	IPE WOOD DECK WITH CONCRETE BASE BELOW			REFERENCE PLAN AND DETAILS	TREX DECKING OVER CONCRETE BASE
	SPECIALTY PAVING G	XPORH520 LALTRA PIETRA - HARENA HOLZ GRIGIO (PORCELAIN STONEWARE)	UNIT DIMENSION 16" x 48" x 0.8"	HUGH ACHE HUGH@ALAMOSTONE.COM **ALAMO STONE**	REFERENCE PLAN AND DETAILS	STAMPED "WOOD LOOK" ON STANDARD CONC. WALK
	DONOR PAVERS	CITYSTONE ™ 12 x 12 (60 mm) CONCRETE PAVERS	CHARCOAL	David Hasness dhasness@keystonehardscapes.com **KEYSTONE HARDSCAPES**	SYMBOLS ENGRAVING Quote #:**AAMP 01: Adinkra Symbols** NAMES ENGRAVING Quote #:**AAMP 02: Donor Inscriptions** Milton @ 713.987.0376 **Schlitzberger Stone Designs, Inc.** OR EQUAL	N/A
		CITYSTONE ™ 6 x 12 (60 mm) CONCRETE PAVERS				
	GRAVEL TROUGH (BY GABION WALLS & PILLARS) GRAVEL STRIP (BY BAMBOO)	3-4" DIAMETER BULLROCK BLUFF COLOR, DEPTH VARIES; REF. PLANS / DETAILS	BUFF	STEPHANIE JACKSON 9799876017 **APEX STONE**	(BY GABION WALLS & PILLARS) (BY BAMBOO PLANTING)	N/A
	EMBEDDED GRAVEL STRIP	1/2-1" ROUNDED BUFF LIMESTONE GRAVEL EMBEDDED ON STANDARD GRAPHITE COLOR CONCRETE	BUFF	STEPHANIE JACKSON 9799876017 **APEX STONE**	REFERENCE PLAN AND DETAILS	N/A
	BENDER BOARD	1" x 12" BENDERBOARD			FOR USE BETWEEN GRAVEL & PLANTING BEDS AND GRAVEL AGAINST LAWN	N/A
	GABION CAGES GABION FILL MATERIAL	CRUSHED CONC. TUMBLED AND FACE OF DEBRIS	REFERENCE GABION NOTES RE: L1.25		GABION WALLS & CAST IN PLACE CONCRETE PAVING DESIGNATED AS A CUSTOM COLOR SHALL BE SIMILAR TO THE APPROVED APC-1 AS (RE:A101 GENERAL NOTES). FINISH AS SPECIFIED BY LA.	CONCRETE CAST IN PLACE. RE: ALTERNATES L1.29
	DECK BENCHES	IPE WOOD DECK ATOP CONCRETE BENCH	REFERENCE PLAN AND DETAILS		REFERENCE PLAN AND DETAILS	TREX DECKING OVER CONCRETE BASE

GENERAL CONSTRUCTION NOTES:

1. ALL PAVING AND AMENITY LOCATION DIMENSIONS ARE SHOWN TO BACK OF CURB (BOC) OR EDGE OF PAVEMENT.
2. ALL LAYOUT COORDINATES ARE SHOWN TO CENTERLINE OF PAVEMENT, BACK OF CURB OR CENTER OF FOOTING AND/OR AMENITY.
3. CONTRACTOR SHALL NOTIFY THE "UNDERGROUND UTILITY COORDINATING COMMITTEE" (TELEPHONE NO. 713.223.4567) 48 HOURS BEFORE STARTING WORK IN STREET RIGHTS-OF-WAY OR EASEMENTS.
4. ALL EXISTING UNDERGROUND UTILIZES ARE NOT GUARANTEED TO BE COMPLETE OR DEFINITE, BUT WERE OBTAINED FROM THE THE INFORMATION AVAILABLE. CONTRACTOR HAS SOLE RESPONSIBILITY FOR FIELD VERIFICATION OF ALL EXISTING FACILITIES SHOWN ON DRAWINGS. CONTRACTOR SHALL COORDINATE ALL CONFLICTS WITH THE APPROPRIATE GOVERNING AGENCY.
5. THE LOCATION OF THE SOUTHWESTERN BELL TELEPHONE COMPANY, ENTEX AND HOUSTON LIGHTING AND POWER COMPANY UTILITIES ARE SHOWN IN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL REQUEST THE EXACT LOCATION OF THESE FACILITIES BY CALLING THE UTILITY COORDINATING COMMITTEE AT 713.223.4567 OR TOLL FREE 800.245.4545 AT LEAST 48 HOURS BEFORE COMMENCING WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH OCCUR DUE TO HIS FAILURE TO REQUEST THE LOCATION AND PRESERVATION OF THESE UNDERGROUND FACILITIES.
6. TEXAS LAW ARTICLE 1436C, PROHIBITS ALL ACTIVITIES IN WHICH PERSONS OR EQUIPMENT MAY COME WITHIN 6 FEET OF ENERGIZED OVERHEAD POWER LINES, AND FEDERAL REGULATION, TITLE 29, PART 1910.190(1) AND PART 1926.440(A)(15)REQUIRE A MINIMUM CLEARANCE OF 10 FEET FROM THESE FACILITIES. THE ABOVE LAWS CARRY BOTH CRIMINAL AND CIVIL LIABILITIES WITH CONTRACTORS AND OWNERS BEING LEGALLY RESPONSIBLE FOR THE SAFETY OF WORKERS UNDER THESE LAWS. IF YOU OR YOUR COMPANY MUST WORK NEAR OVERHEAD POWER LINES, CALL 713.228.7400 FOR THE LINES TO BE DE-ENERGIZED AND/OR MOVED AT YOUR EXPENSE.
7. CONTRACTOR SHALL PROVIDE A TRENCH SAFETY SYSTEM TO MEET, AS A MINIMUM, THE REQUIREMENTS OF OSHA SAFETY AND HEALTH REGULATION, PART 1925, SUBPART P AS PUBLISHED IN THE FEDERAL REGISTER, VOLUME 54, NO. 209, DATED OCTOBER 31, 1989.
8. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO THE SATISFACTION OF THE OWNING AUTHORITY ALL CONSTRUCTION STORM RUNOFF SHALL COMPLY WITH THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (TCEQ) REQUIREMENTS
9. CONDITION OF THE ROAD AND/OR RIGHT-OF-WAY, UPON COMPLETION OF THE PROJECT SHALL BE AS GOOD AS OR BETTER THAN THE CONDITION PRIOR TO STARTING THE WORK.
10. CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL EXISTING GRADES DAMAGED DURING CONSTRUCTION.
11. CONTRACTOR SHALL GRADE ENTIRE SITE TO FINISH GRADE PRIOR TO SCHEDULING TREE INSTALLATION.
12. CONTRACTOR SHALL REPAIR DAMAGE TO EXISTING TURF AREAS CAUSED BY CONSTRUCTION.
13. CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF EXISTING FACILITIES PRIOR TO THE CONSTRUCTION OF PROPOSED FACILITIES, AT NO ADDITIONAL COST TO THE OWNER.
14. CONTRACTOR WILL TAKE ALL DUE PRECAUTIONS TO PROTECT EXISTING FACILITIES AND VEGETATION TO REMAIN FROM DAMAGE. ANY DAMAGE TO EXISTING FACILITIES AND/OR VEGETATION INCURRED AS A RESULT OF CONSTRUCTION OPERATION WILL BE REPAIRED AND/OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
15. CONTRACTOR SHALL GIVE NOTICE TO ALL AUTHORIZED INSPECTORS, SUPERINTENDENTS, OR PERSON IN CHARGE OF PRIVATE AND PUBLIC UTILITIES OR RAILROADS AFFECTED BY THEIR OPERATIONS PRIOR TO COMMENCEMENT OF WORK.
16. CONTRACTOR SHALL ASSURE HIMSELF THAT ALL CONSTRUCTION PERMITS HAVE BEEN OBTAINED PRIOR TO COMMENCEMENT OF WORK. REQUIRED PERMITS THAT CAN BE ISSUED TO CONTRACTOR WILL BE OBTAINED AT NO COST TO THE OWNER.
17. ALL CONSTRUCTION TO COMPLY WITH ALL APPLICABLE CODES AND ORDINANCES.
18. CONTRACTOR SHALL BE FAMILIAR WITH ACTUAL SITE CONDITIONS BEFORE PROCEEDING WITH WORK.
19. ANY DISCREPANCIES BETWEEN ACTUAL SITE CONDITIONS AND THE CONSTRUCTION DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT IN A TIMELY MANNER TO NOT ADVERSELY AFFECT PROGRESS OF WORK.
20. ALL WALKS SHALL BE 6'-0" or 8'-0" WIDE UNLESS OTHERWISE NOTED.
21. ALL WALKS ARE LAID OUT USING COORDINATES PROVIDED FOR CENTER LINE OF WALK. CONTRACTOR IS RESPONSIBLE FOR OBTAINING SURVEYOR TO LAYOUT.
22. CONTRACTOR SHALL ADJUST ALL VALVE BOXES TO BE FLUSH W/ FINISHED GRADE PRIOR TO SODDING OR HYDRO-MULCHING, TYP.

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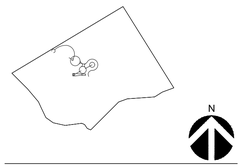

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04.12.2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

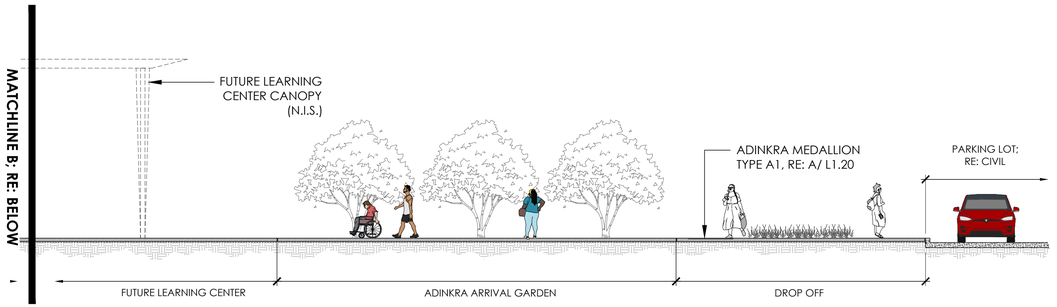
Sheet Title:

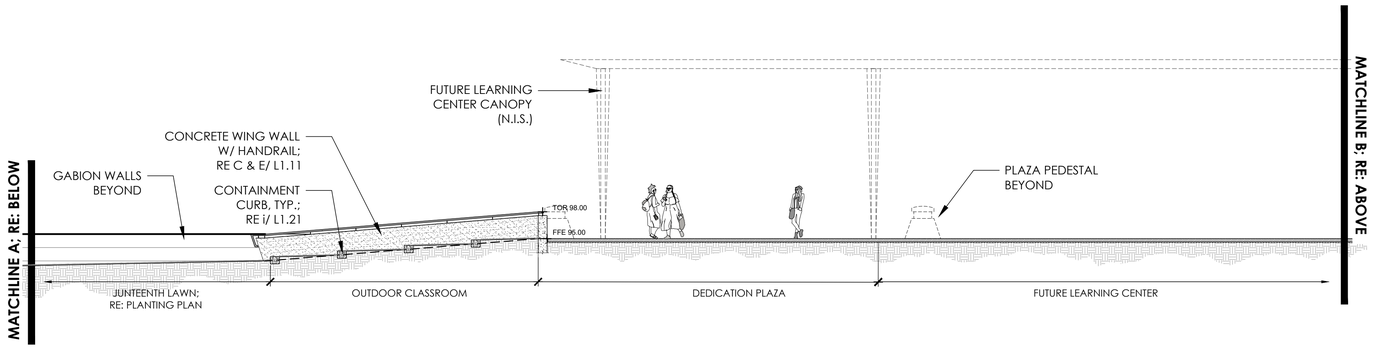
SCHEDULES & NOTES

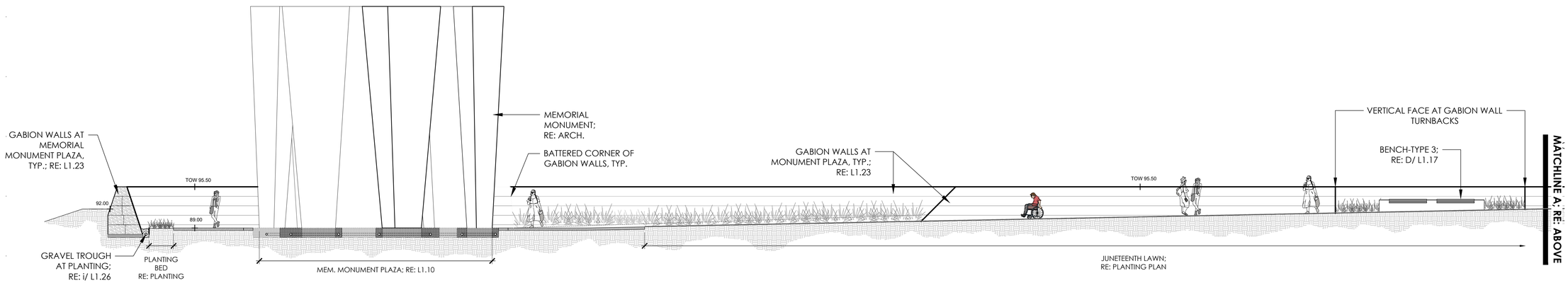
Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

L1.08







A **JUNETEENTH PLAZA**

SECTION

1/8"= 1'-0"

PHASE 1 SCOPE ALTERNATES NOTE:

REFERENCE **G.001** FOR ALTERNATES SCOPE

THE STATE OF TEXAS · FORT BEND COUNTY

Project:

AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:

FORT BEND COUNTY

1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

HINESAD

Contract No: 218226

Design Team:

HINES ARCHITECTURE + DESIGN
8 Greenway Plaza Suite 1525
Houston, TX 77046 USA
t +1 713 909 0983
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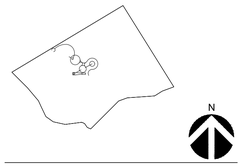
Key Plan



Professional Seals



04.12.2024

No.	Issue Description	MM-DD-YYYY
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	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

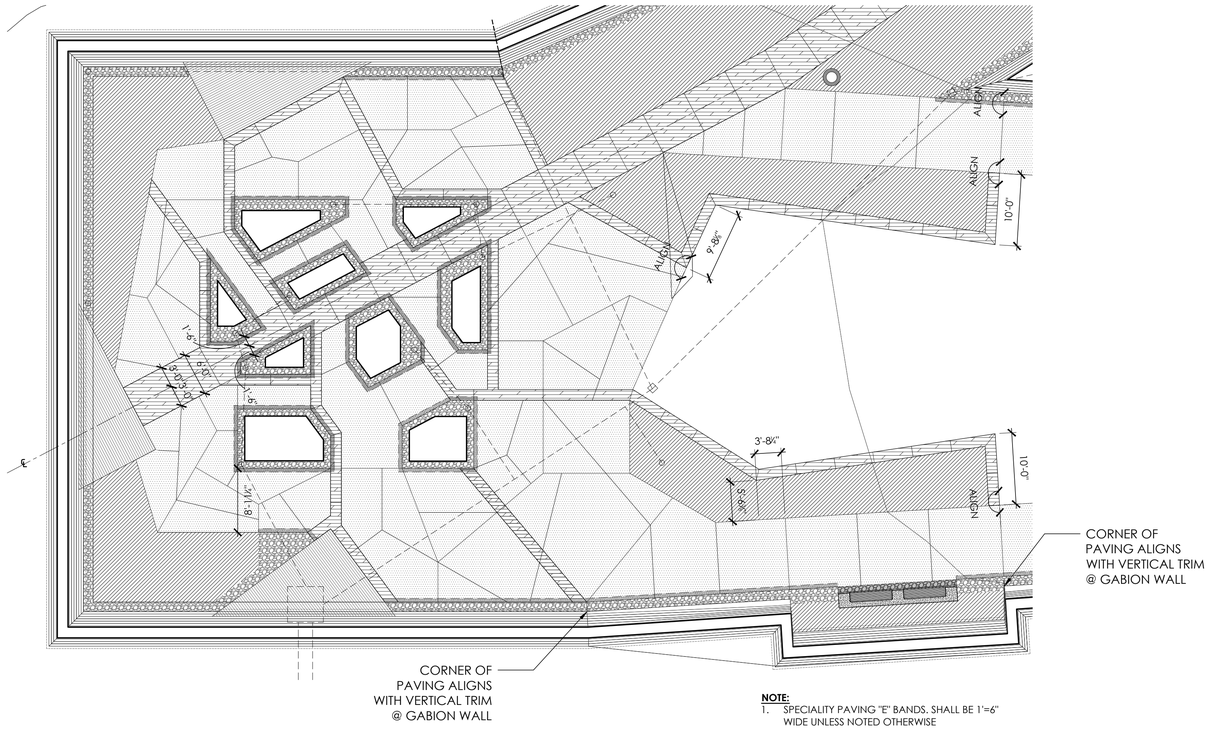
Sheet Title:

JUNETEENTH PLAZA SECTION

Orig. drawing is ARCH D.Do not scale contents of this drawing.

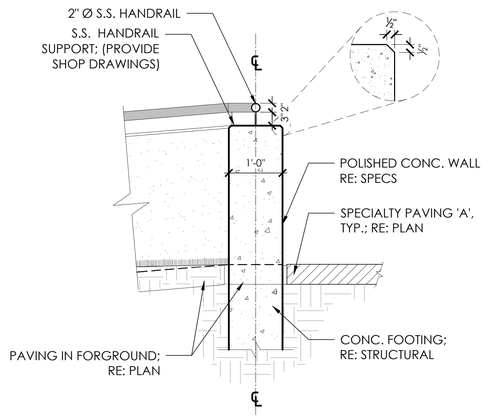
Sheet Number

L1.09

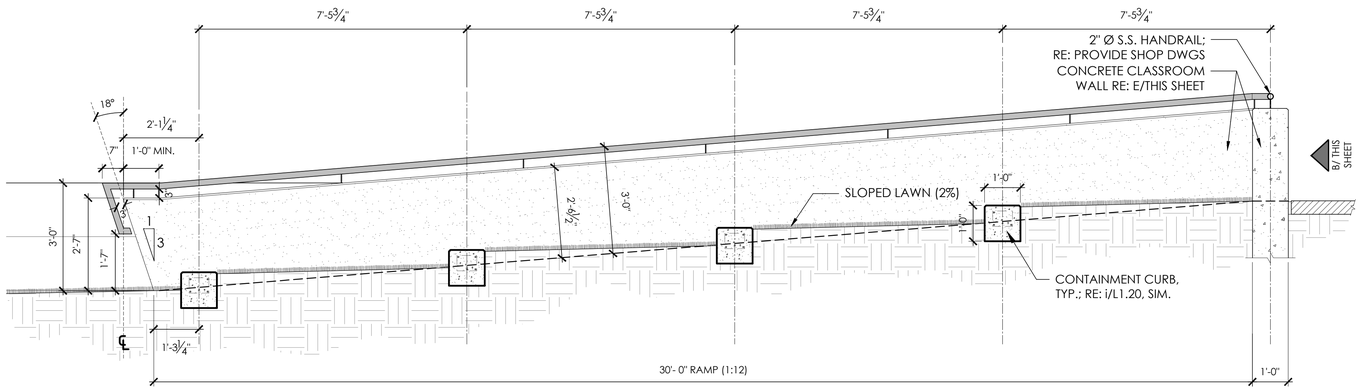

CORNER OF PAVING ALIGNS WITH VERTICAL TRIM @ GABION WALL
CORNER OF PAVING ALIGNS WITH VERTICAL TRIM @ GABION WALL
ALIGN
10'-0"
9'-8"
3'-8"
5'-4"
1'-8"
1'-8"
1'-8

PHASE 1 SCOPE ALTERNATES NOTE:

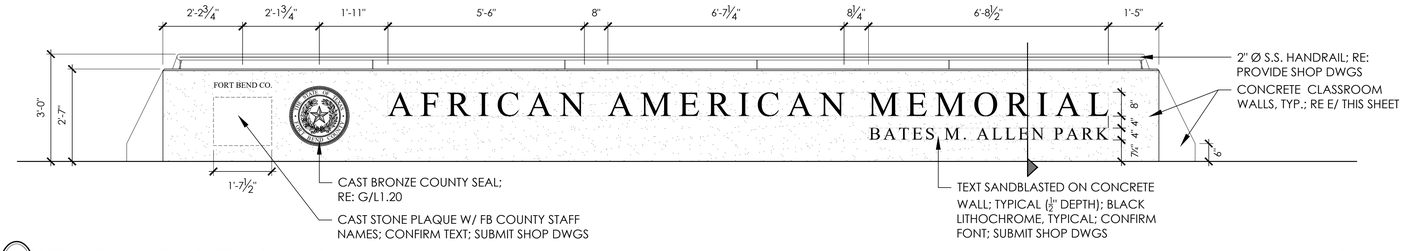
REFERENCE **G.001** FOR ALTERNATES SCOPE



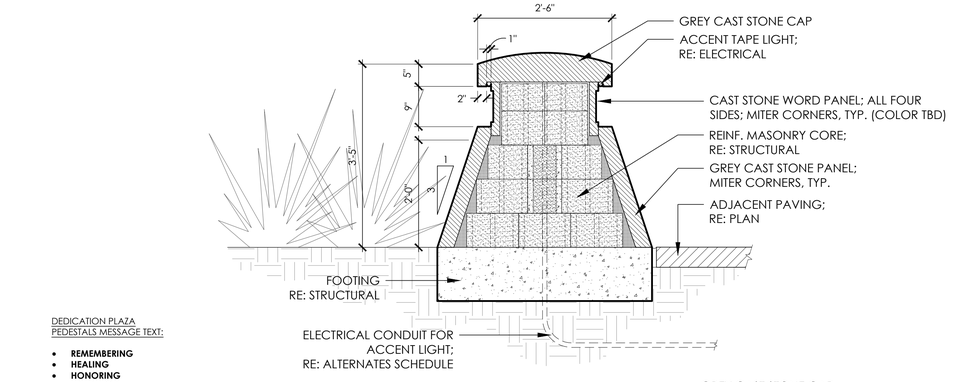
E **CONCRETE CLASSROOM WALL** SECTION
3/4"= 1'-0"



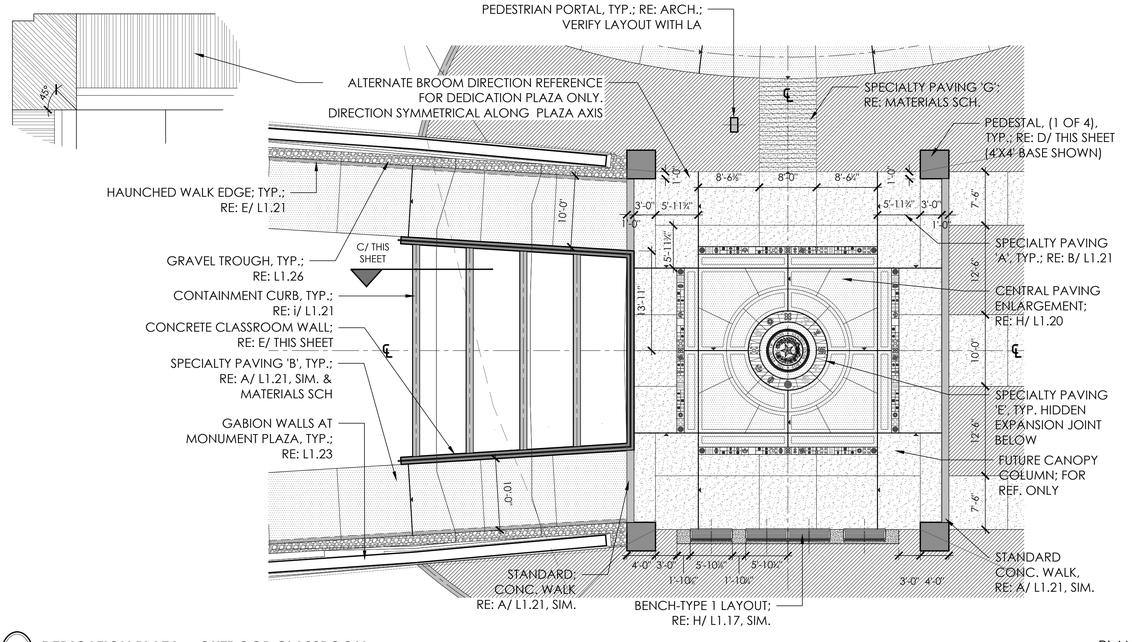
C **OUTDOOR CLASSROOM** SECTION
1/2" = 1'-0"



B **DEDICATION PLAZA & OUTDOOR CLASSROOM WALL** ELEVATION
1/2" = 1'-0"



D **DEDICATION PLAZA PEDESTAL** ELEVATION
3/4" = 1'-0"



A **DEDICATION PLAZA & OUTDOOR CLASSROOM** PLAN
1"= 10'-0"

THE STATE OF TEXAS · FORT BEND COUNTY

Project:

AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:

FORT BEND COUNTY

1517 EUGENE HEIMANN CIRCLE
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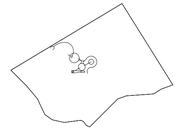

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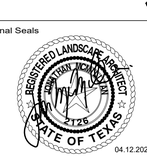

04.12.2024

No.	Issue Description	MM-DD-YYYY
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Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

Sheet Title:

DEDICATION PLAZA SECTION & ENLARGEMENT

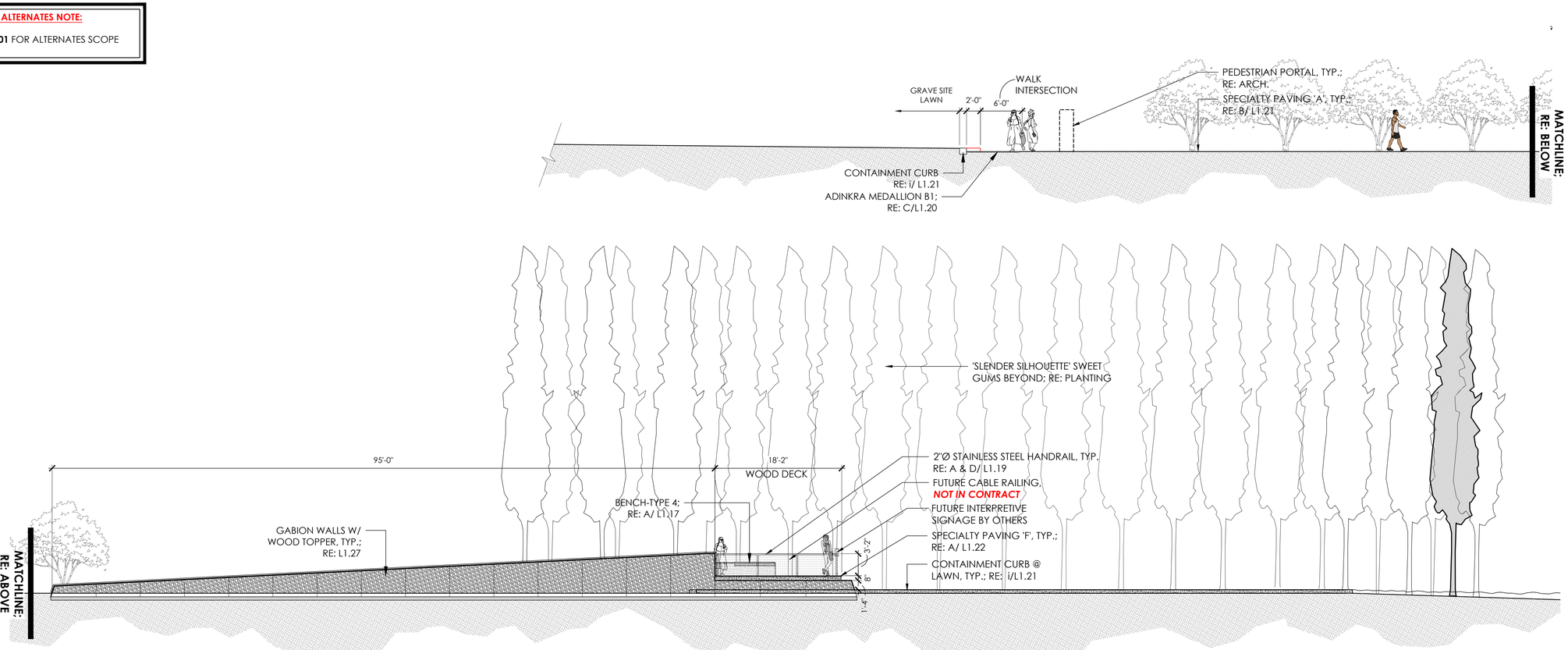
Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

L1.11

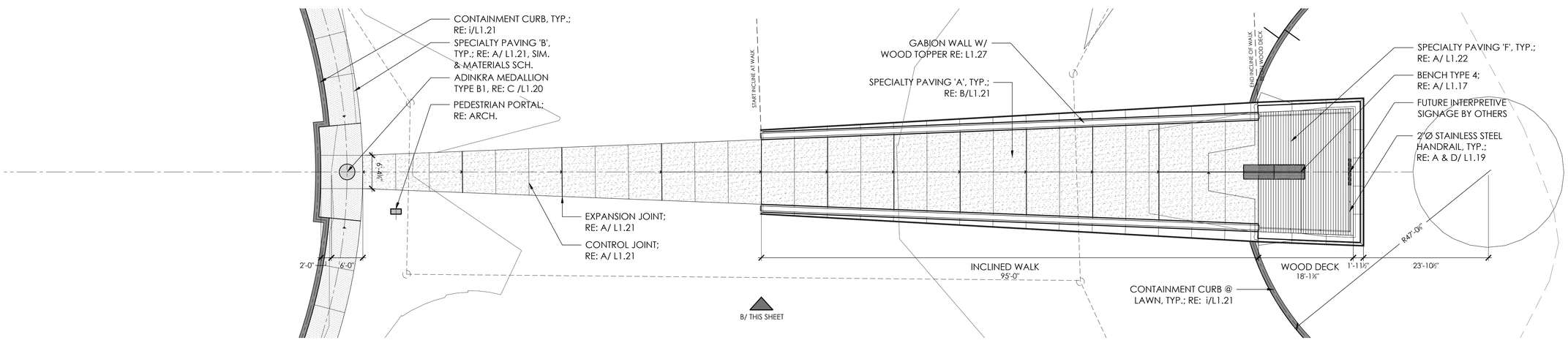
PHASE 1 SCOPE ALTERNATES NOTE:

REFERENCE **G.001** FOR ALTERNATES SCOPE



B **CONVICT LABOR & LEASING AXIS MEMORIAL** — ELEVATION

1/8"= 1'-0"



A **CONVICT LABOR & LEASING AXIS MEMORIAL** — PLAN

1"= 10'-0"

THE STATE OF TEXAS · FORT BEND COUNTY

Project:

AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

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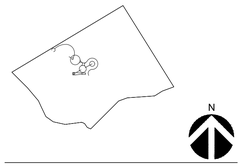

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REGISTERED LANDSCAPE ARCHITECT · JONATHAN MCMILLAN · 2125 · STATE OF TEXAS

04.12.2024

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	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

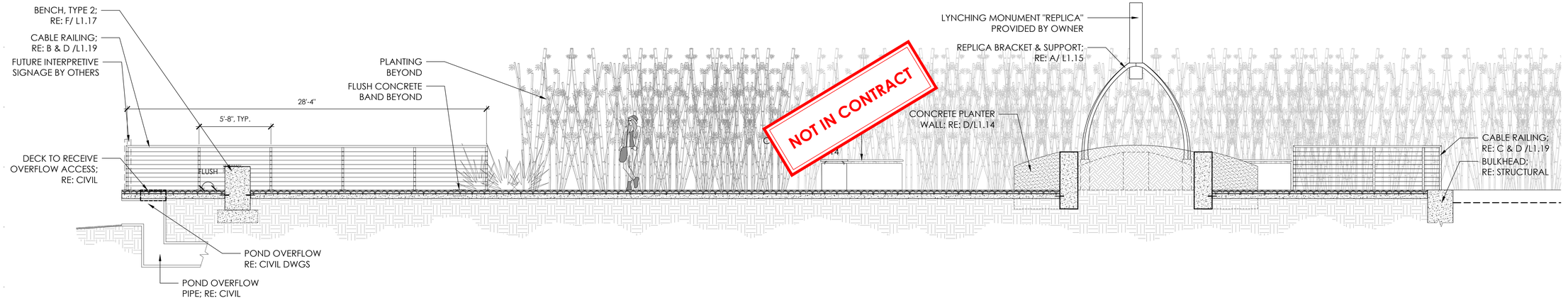
Sheet Title:

CLL AXIS MEMORIAL SECTION & ENLARGEMENT

Orig. drawing is ARCH D.Do not scale contents of this drawing.

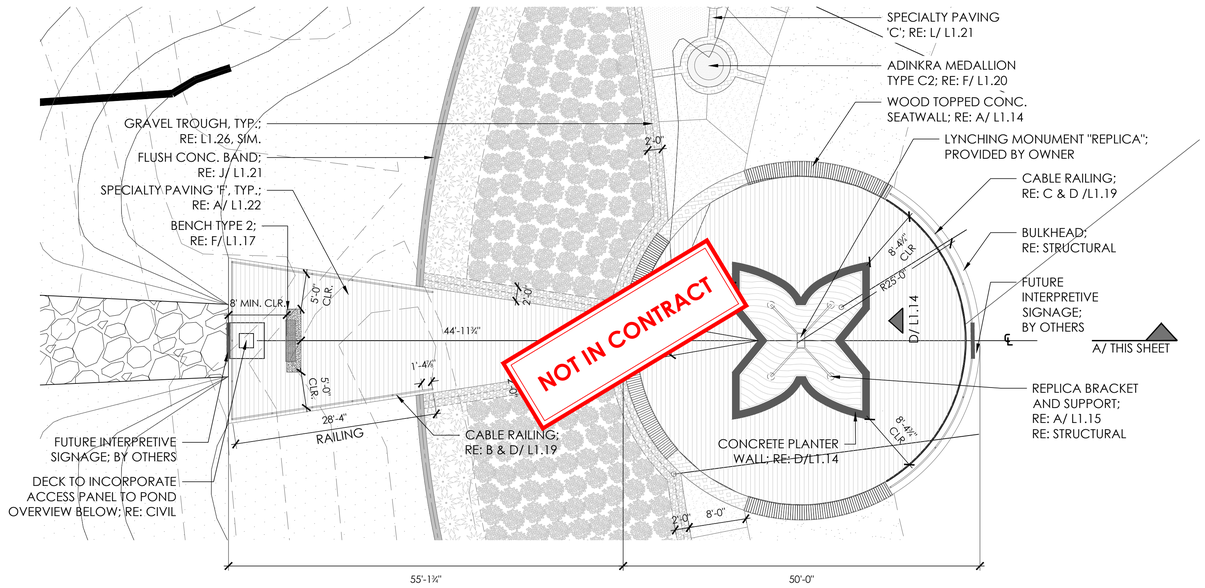
Sheet Number

L1.12



B **LYNCHING MONUMENT PLAZA & OVERLOOK** SECTION

1/4"= 1'-0"



A **LYNCHING MONUMENT PLAZA & OVERLOOK** PLAN

1"= 10'-0"

THE STATE OF TEXAS · FORT BEND COUNTY ·

Project:

AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

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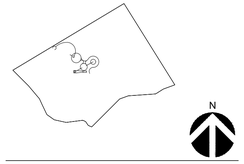

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Project No: 922.001

Sheet Title:

LYNCHING MONUMENT PLAZA SECTION & ENLARGEMENT

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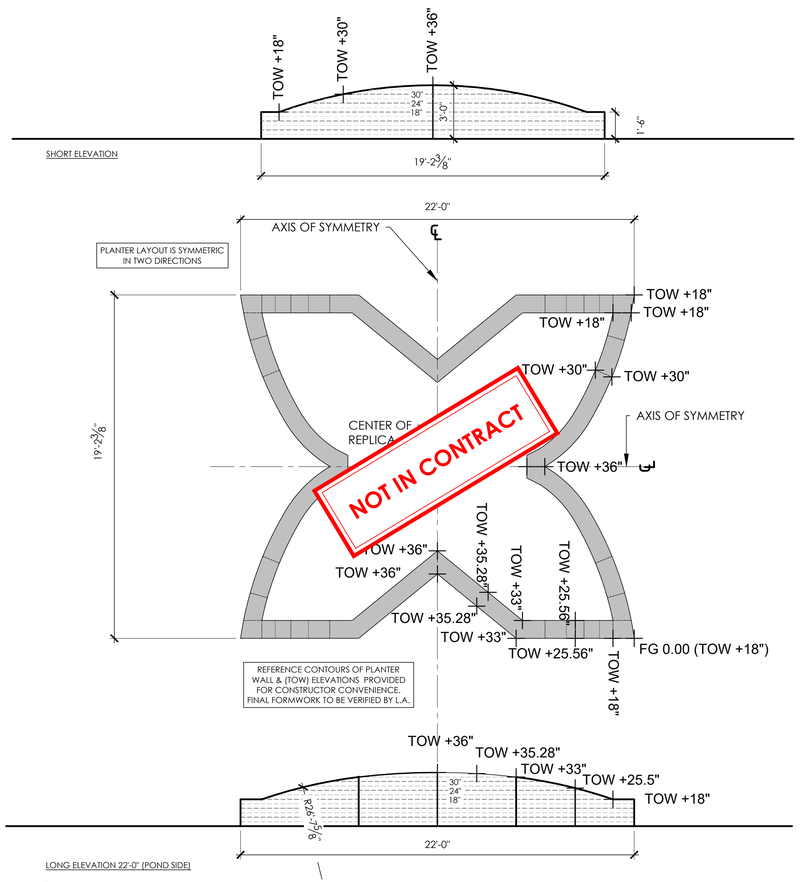
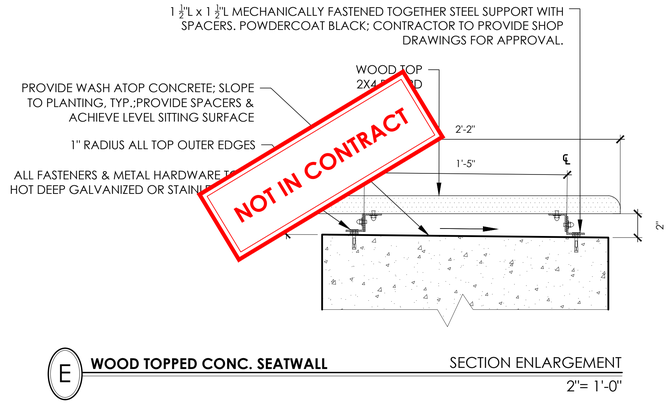
Sheet Number

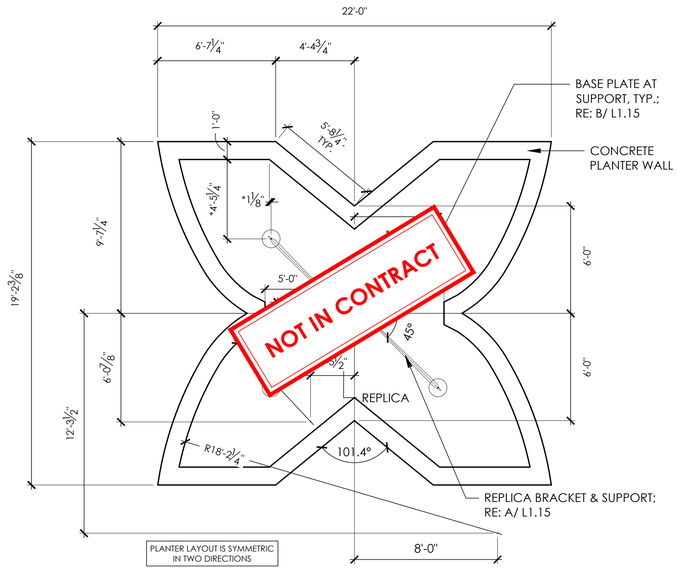
L1.13



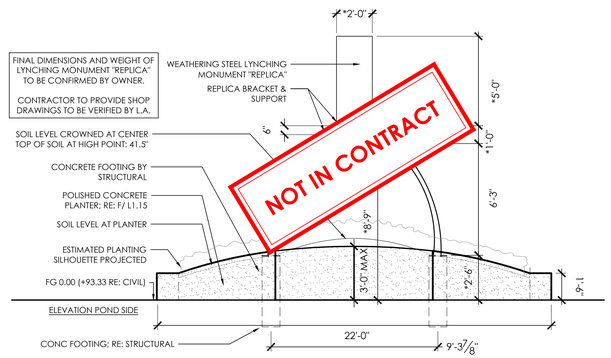
F **REPLICA CONCRETE PLANTER** PLAN / ELEVATIONS
1/4" = 1'-0"

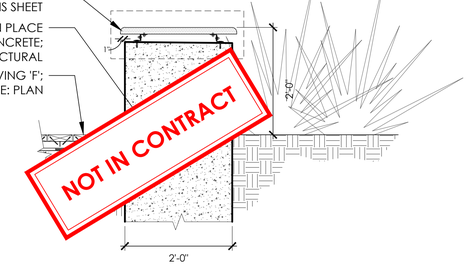


E **WOOD TOPPED CONC. SEATWALL** SECTION ENLARGEMENT
2"= 1'-0"

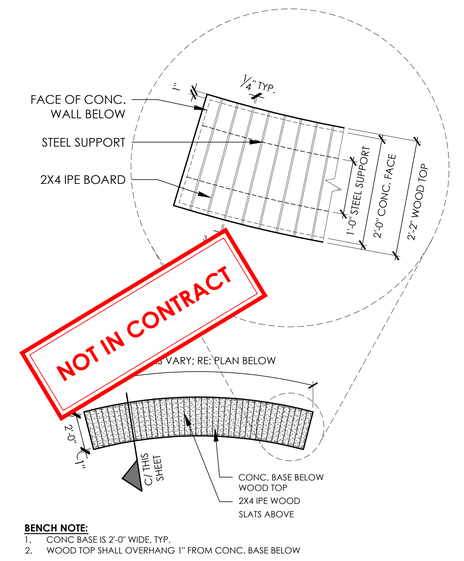


D **REPLICA ELEVATION 22'-0" WIDE (POND SIDE)** PLAN / ELEVATION
1/4" = 1'-0"



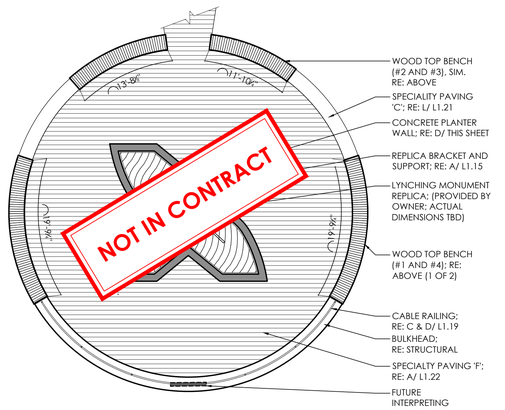


C **WOOD TOPPED CONC. SEATWALL** SECTION
3/4" = 1'-0"



BENCH NOTE:
1. CONC BASE IS 2'-0" WIDE, TYP.
2. WOOD TOP SHALL OVERHANG 1" FROM CONC. BASE BELOW

B **WOOD TOPPED CONC. SEATWALL** PLAN
1/4" = 1'-0"



A **WOOD TOPPED CONC. SEATWALL** PLAN
1"= 10'-0"

THE STATE OF TEXAS · FORT BEND COUNTY

Project:
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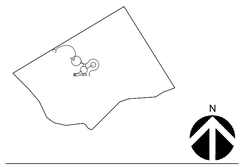

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04.12.2024

No.	Issue Description	MM-DD-YYYY
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Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

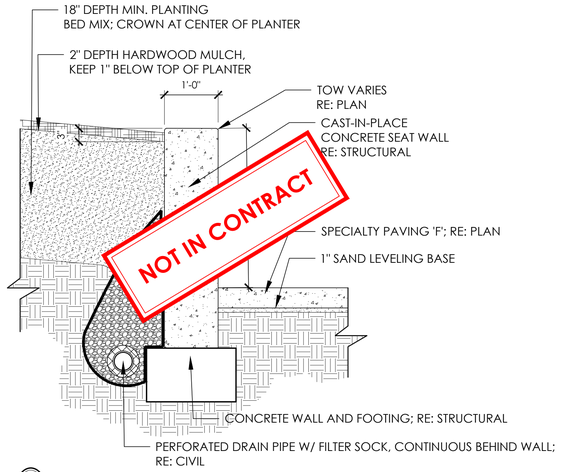
Sheet Title:

LYNCHING MONUMENT PLAZA SECTION & ENLARGEMENT

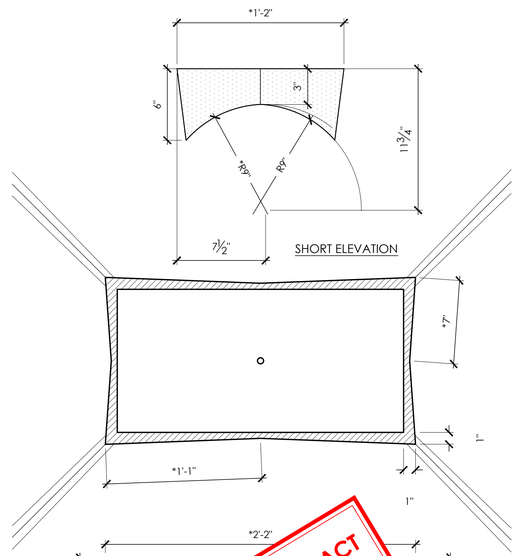
Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

L1.14

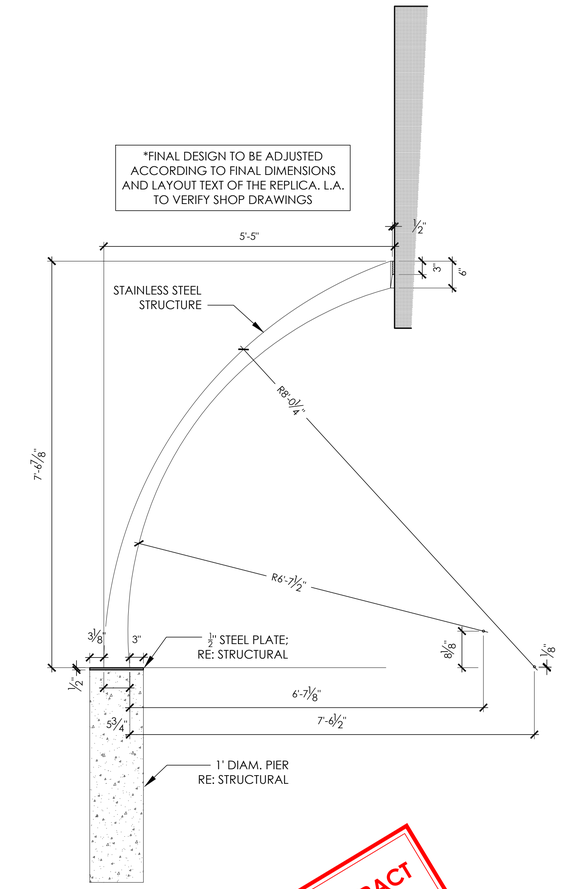


F **CONCRETE PLANTER WALL** PLAN
3/4" = 1'-0"

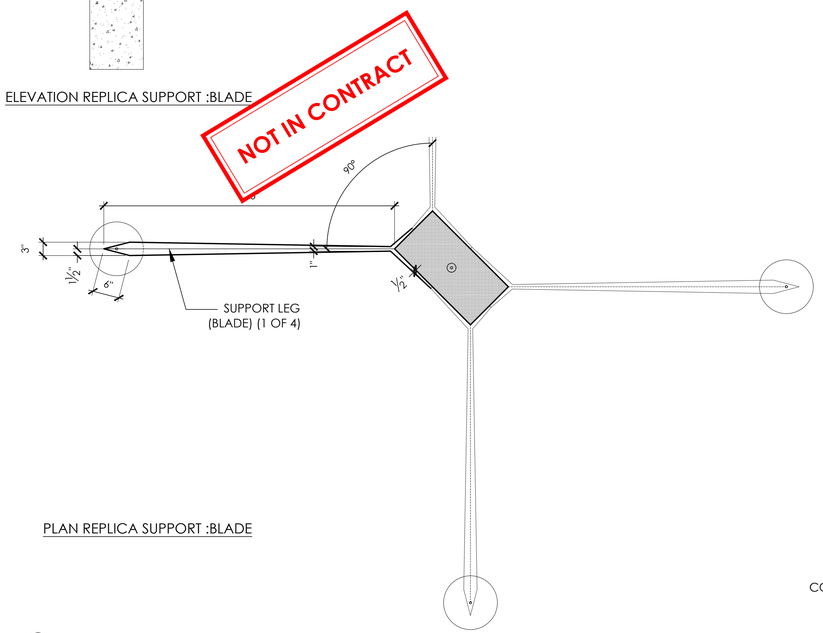


E **REPLICA BRACKET** PLAN
2"=1'-0"

*FINAL DESIGN TO BE ADJUSTED ACCORDING TO FINAL DIMENSIONS AND LAYOUT TEXT OF THE REPLICA. L.A. TO VERIFY SHOP DRAWINGS

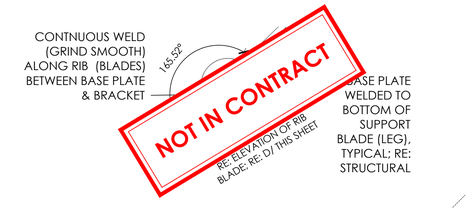


ELEVATION REPLICA SUPPORT :BLADE

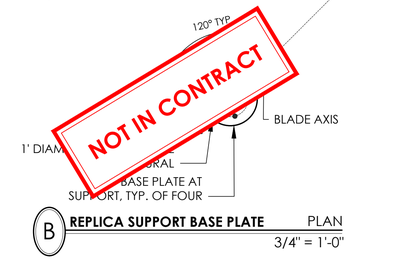


PLAN REPLICA SUPPORT :BLADE

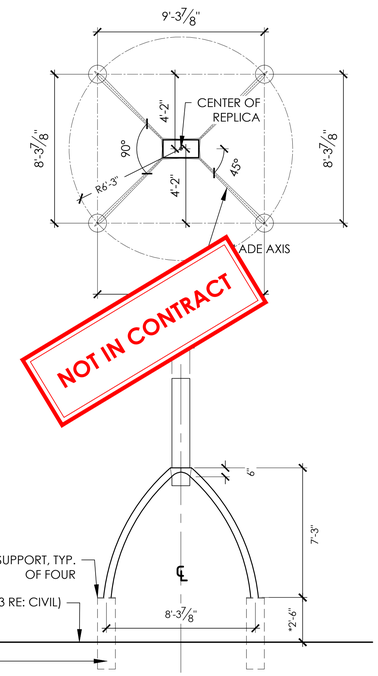
D **REPLICA SUPPORT BLADE** PLAN / ELEVATION
3/4" = 1'-0"



C **REPLICA SUPPORT BLADE BASE** PLAN
3/4" = 1'-0"



B **REPLICA SUPPORT BASE PLATE** PLAN
3/4" = 1'-0"



NARROW SIDE OF REPLICA

A **REPLICA BRACKET AND SUPPORT** ELEVATION
1/4" = 1'-0"

THE STATE OF TEXAS · FORT BEND COUNTY

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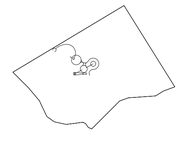

N

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04.12.2024

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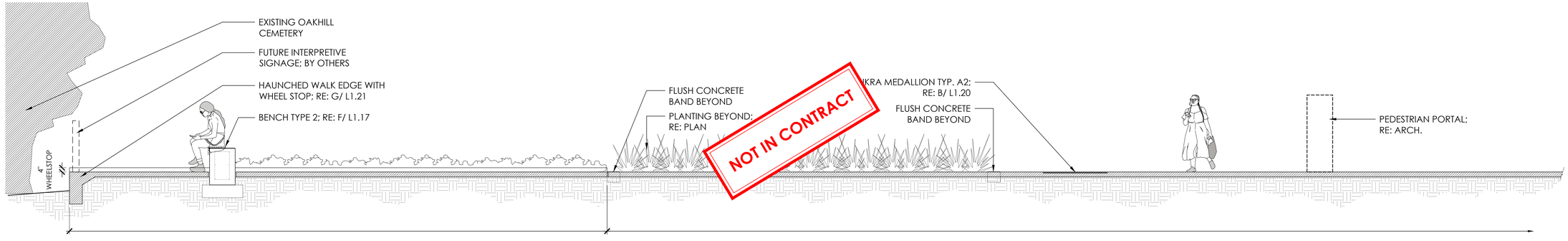
Sheet Title:

LYNCHING MONUMENT PLAZA SECTION & ENLARGEMENT

Orig. drawing is ARCH D.Do not scale contents of this drawing.

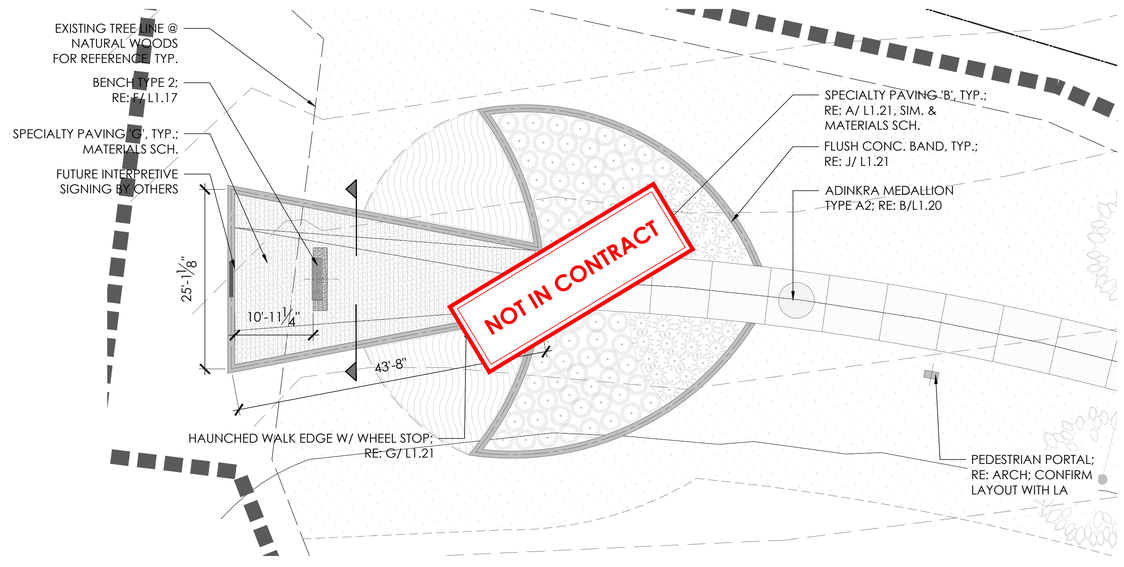
Sheet Number

L1.15



B **OAK HILL CEMETERY OVERLOOK** SECTION

1/8"= 1'-0"



A **OAK HILL CEMETERY OVERLOOK** PLAN

1"= 10'-0"

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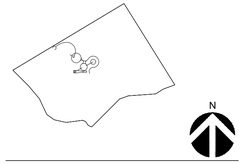
Key Plan



Professional Seals



04.12.2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

Sheet Title:

OAK HILL CEMETERY OVERLOOK SECTION & ENLARGEMENT

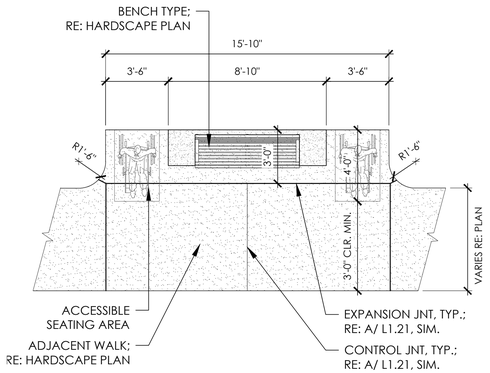
Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

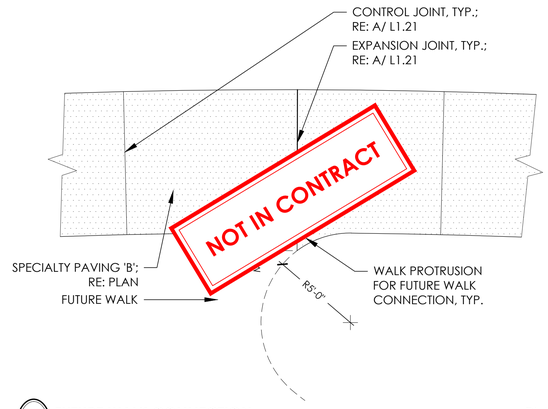
L1.16

PHASE 1 SCOPE ALTERNATES NOTE:

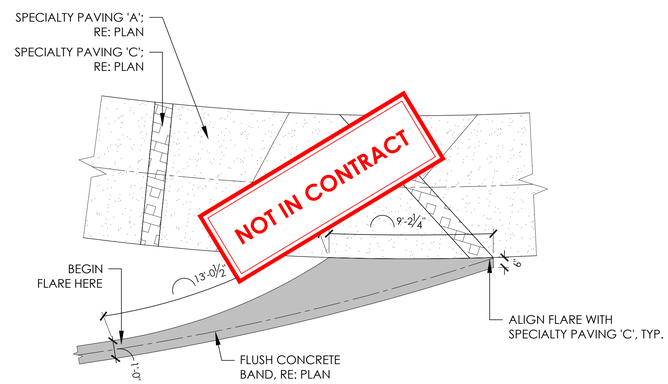
REFERENCE **G.001** FOR ALTERNATES SCOPE



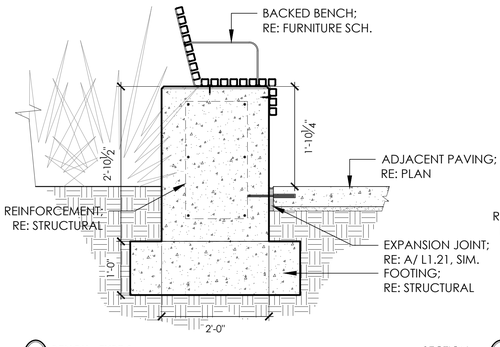
J **ACCESSIBLE BENCH PAD - CONCRETE** PLAN
1/4" = 1'-0"



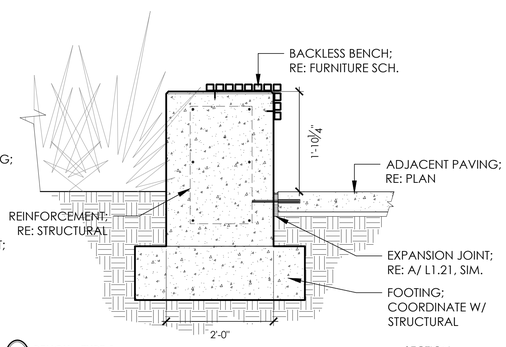
E **FUTURE WALK CONNECTION** PLAN
1/4" = 1'-0"



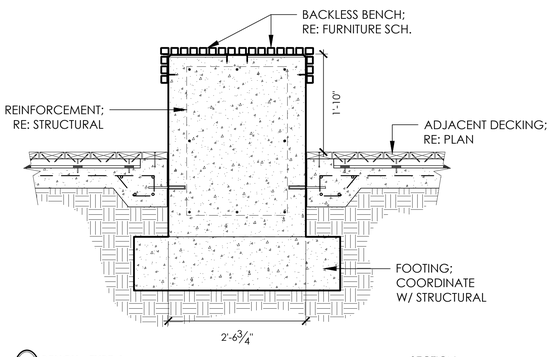
C **FLUSH BAND TIE IN** PLAN
1/4" = 1'-0"



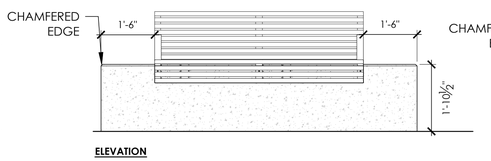
i **BENCH - TYPE 1** SECTION
3/4"=1'-0"

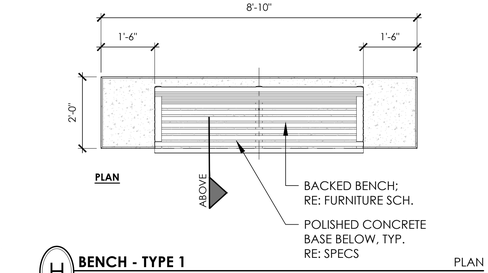


G **BENCH - TYPE 2** SECTION
3/4"=1'-0"

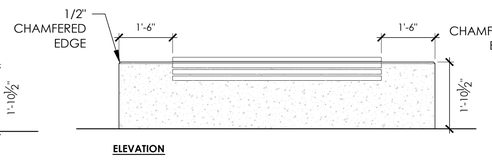


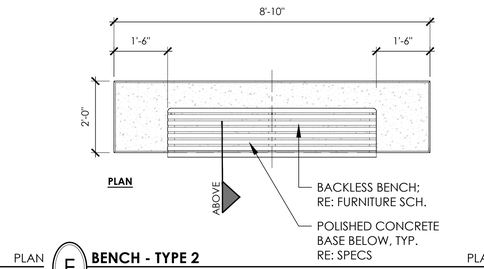
B **BENCH - TYPE 4** SECTION
3/4"=1'-0"



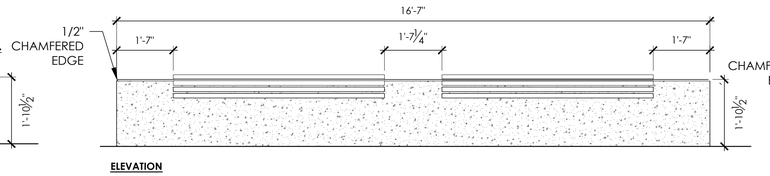


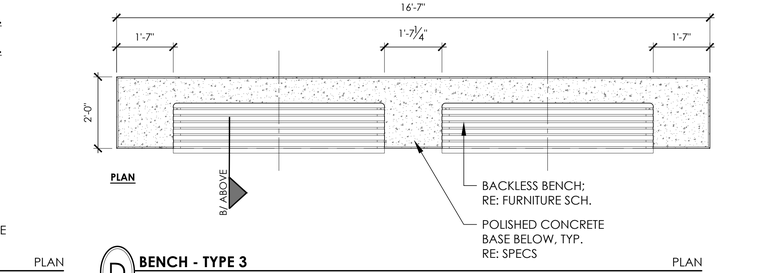
H **BENCH - TYPE 1** PLAN
1/2" = 1'-0"



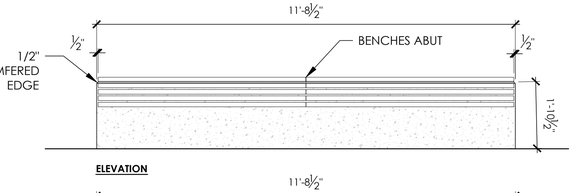


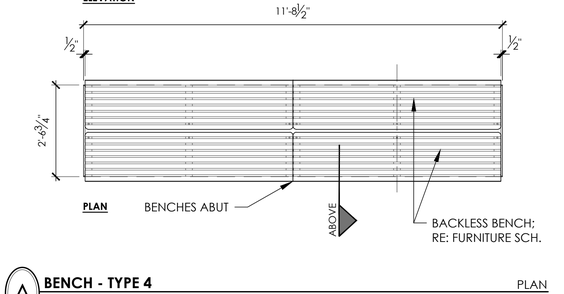
F **BENCH - TYPE 2** PLAN
1/2" = 1'-0"





D **BENCH - TYPE 3** PLAN
1/2" = 1'-0"





A **BENCH - TYPE 4** PLAN
1/2" = 1'-0"

THE STATE OF TEXAS · FORT BEND COUNTY

Project:

AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:

FORT BEND COUNTY

1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

HINESAD

Contract No: 218226

Design Team:

HINES ARCHITECTURE + DESIGN
8 Greenway Plaza Suite 1525
Houston, TX 77046 USA
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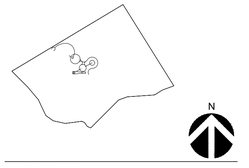
Key Plan



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No.	Issue Description	MM-DD-YYYY
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	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

Sheet Title:

HARDSCAPE DETAILS

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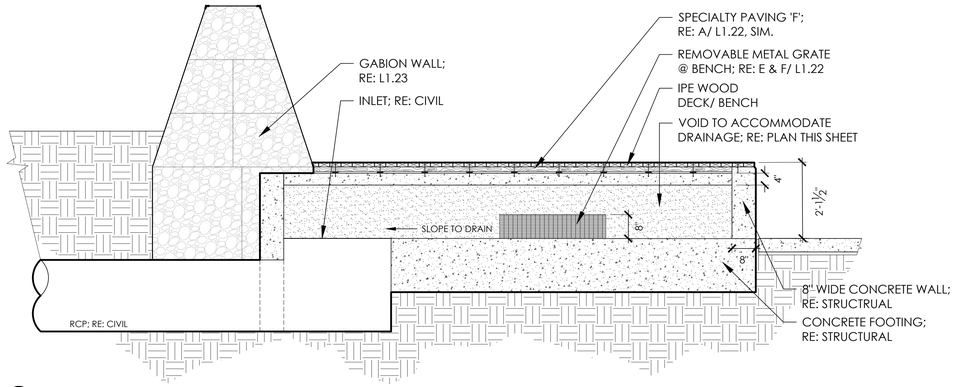
Sheet Number

L1.17

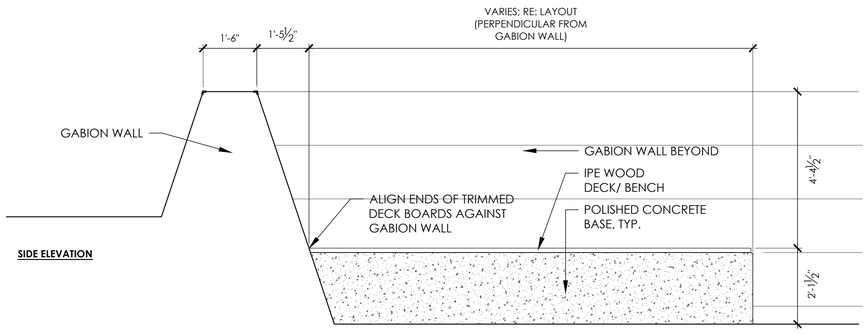
PHASE 1 SCOPE ALTERNATES NOTE:

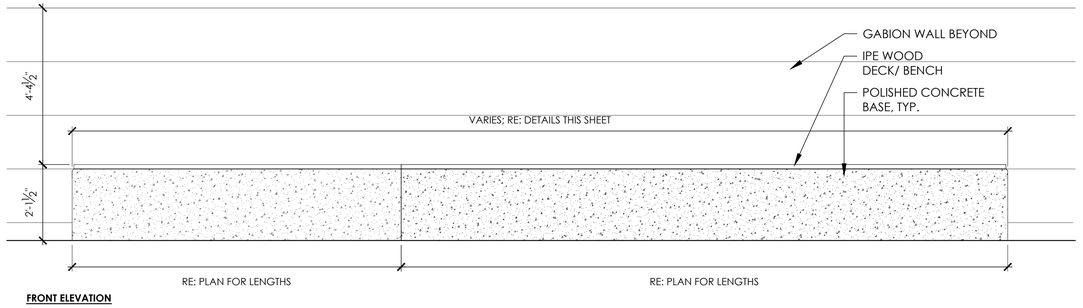
REFERENCE **G.001** FOR ALTERNATES SCOPE



D **DECK BENCH (W/ DRAINAGE INLET)** PLAN

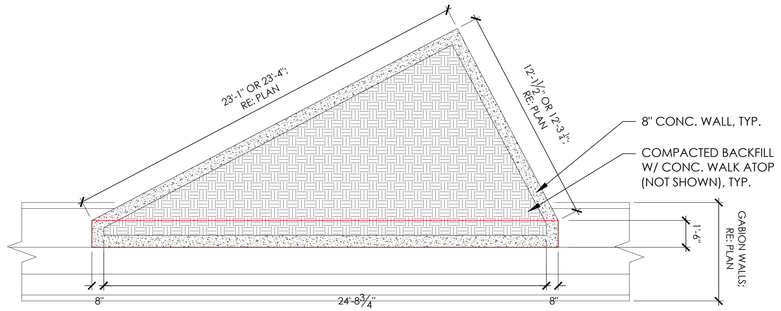
1/2" = 1'-0"

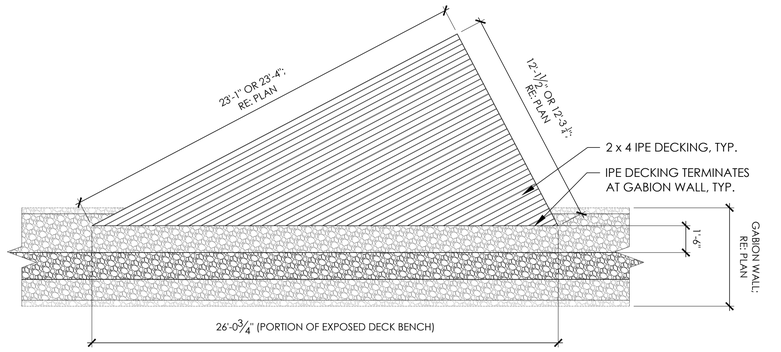




C **DECK BENCH** PLAN

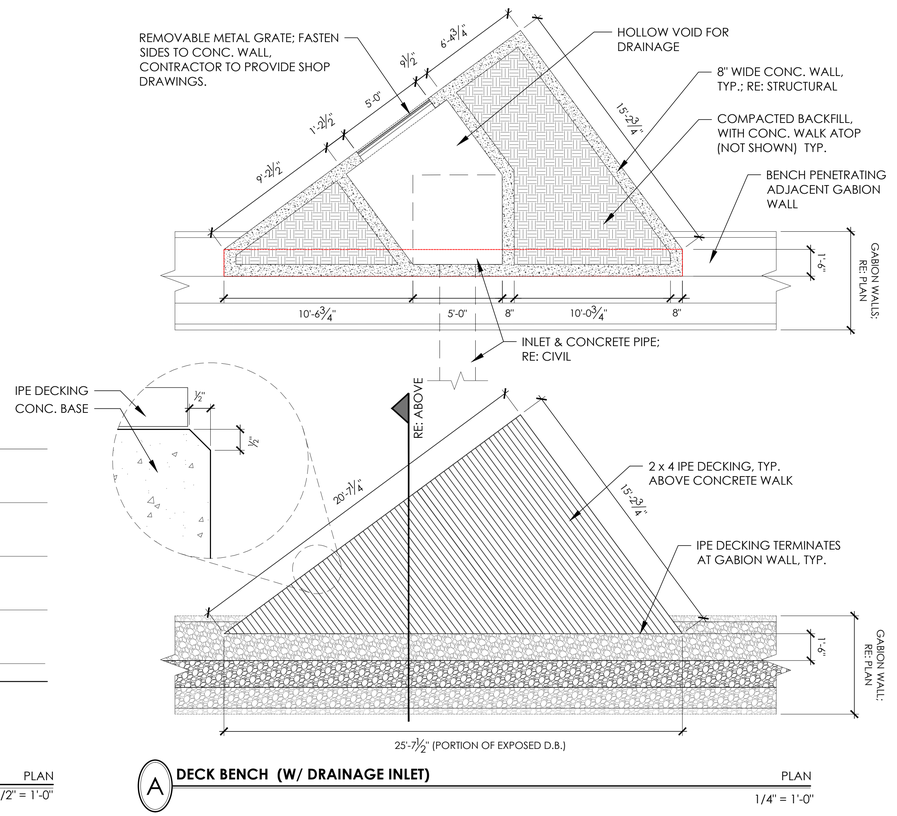
1/2" = 1'-0"





B **DECK BENCH** PLAN

1/4" = 1'-0"



A **DECK BENCH (W/ DRAINAGE INLET)** PLAN

1/4" = 1'-0"

THE STATE OF TEXAS · FORT BEND COUNTY

Project:

AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:

FORT BEND COUNTY

1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

HINESAD

Contract No: 218226

Design Team:

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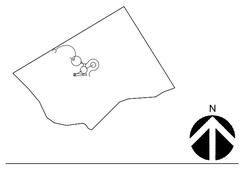
Key Plan



N

Professional Seals



04.12.2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

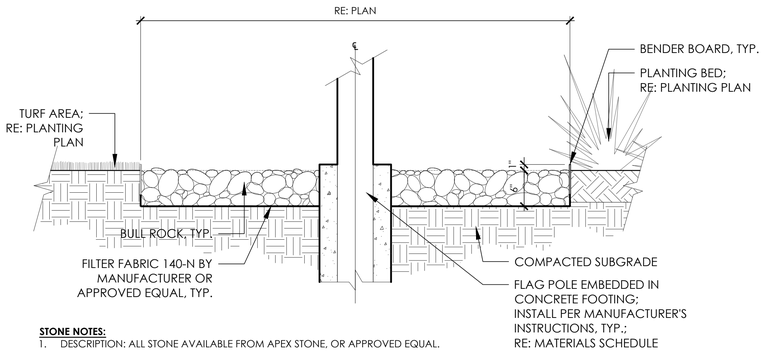
Sheet Title:

HARDSCAPE DETAILS

Orig. drawing is ARCH D.Do not scale contents of this drawing.

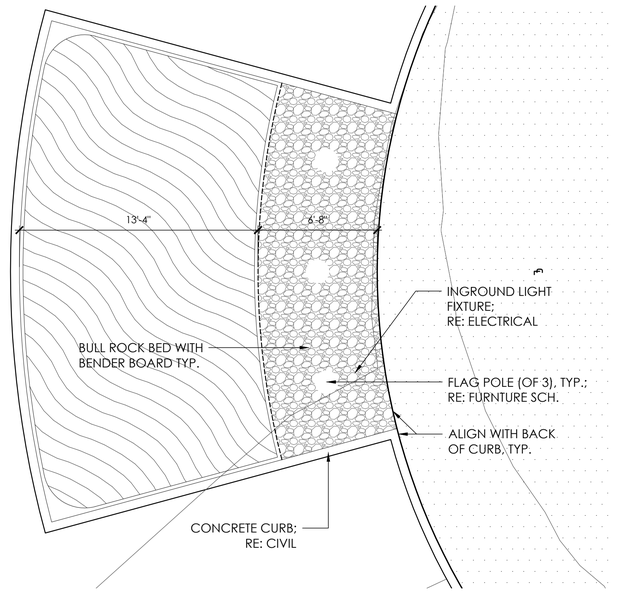
Sheet Number

L1.18

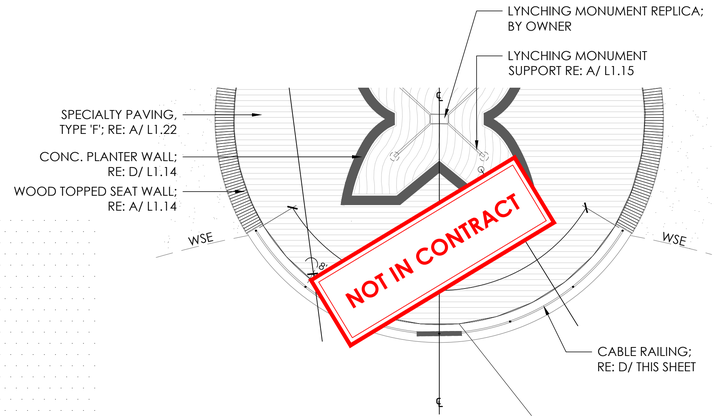


STONE NOTES:
1. DESCRIPTION: ALL STONE AVAILABLE FROM APEX STONE, OR APPROVED EQUAL.

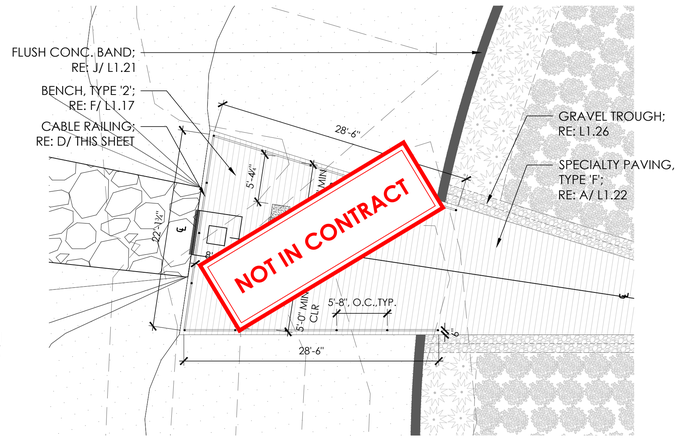
F FLAG POLE WITHIN BULL ROCK BED — SECTION
1" = 1'-0"



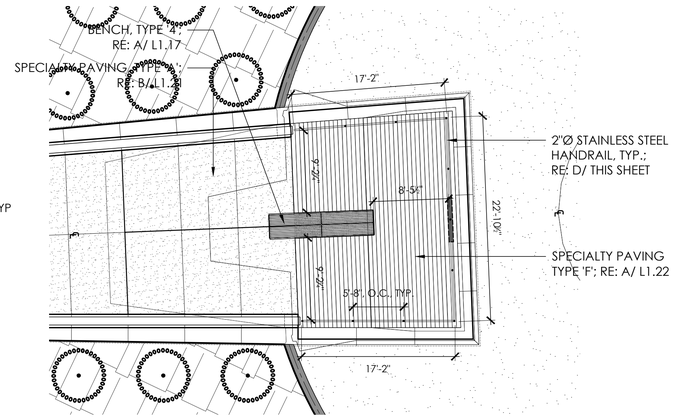
E FLAG POLES WITHIN BULL ROCK BED — PLAN
1/4"=1'-0"



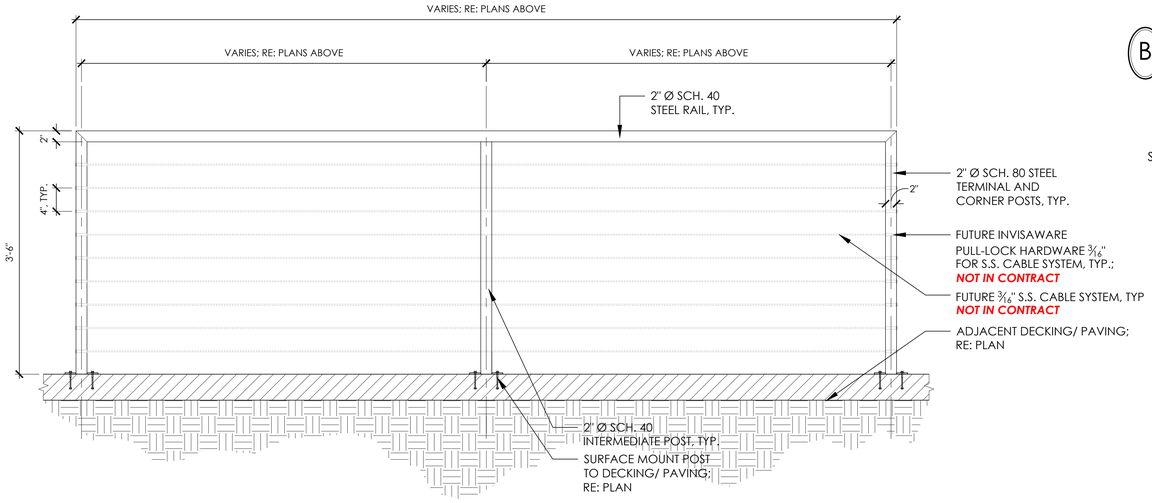
C CABLE RAILING AT LYNCHING MEMORIAL PLAZA — PLAN
1/8"=1'-0"



B CABLE RAILING AT OVERLOOK — PLAN
1/8"=1'-0"



A CABLE RAILING AT CLL MEMORIAL AXIS — PLAN
1/8"=1'-0"



D STAINLESS STEEL HANDRAIL — ELEVATION
1" = 1'-0"

PHASE 1 SCOPE ALTERNATES NOTE:

REFERENCE **G.001** FOR ALTERNATES SCOPE

THE STATE OF TEXAS · FORT BEND COUNTY

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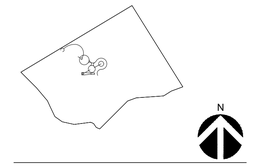

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Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

Sheet Title:

HARDSCAPE DETAILS

Orig. drawing is ARCH D.Do not scale contents of this drawing.

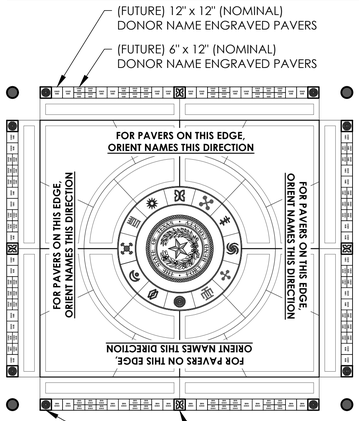
Sheet Number

L1.19

DONOR NAME PAVERS LAYOUT NOTE:

ONCE FORT BEND COUNTY'S AFRICAN AMERICAN MEMORIAL DONOR PROGRAM IS ESTABLISHED, FORT BEND COUNTY WILL REPLACE OVERTIME (UP TO 5 YEARS):
ADINKRA SYMBOLS ENGRAVED PAVERS WITH DONORS NAME ENGRAVED PAVERS.

RE: QUOTE **AAMP-02:DONOR INSCRIPTIONS** FROM SCHLITZBERGER STONE DESIGNS, INC. FOR STORING AND FUTURE ENGRAVING OF THE PAVERS, QUOTE PROVIDED AS A COURTESY ONLY.



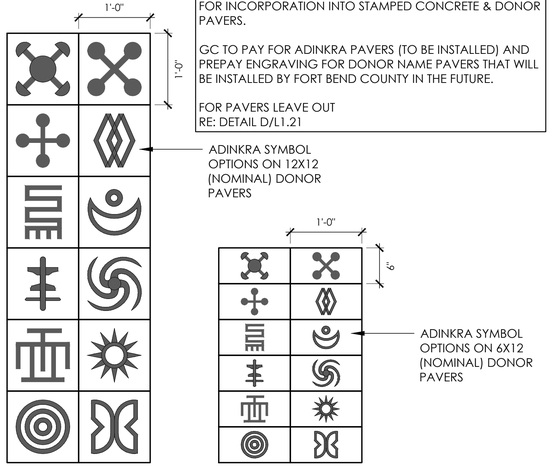
j **FUTURE DONOR NAME PAVERS LAYOUT** PLAN
NTS

NOTES:
PAVER STONE COLOR = CHARCOAL W/ BLACK LITHOCHROME ETCHING

THESE SYMBOLS ARE FOR REFERENCE ONLY. OWNER (FORT BEND COUNTY) IS TO SELECT UP TO 20 DIFFERENT SYMBOLS FOR INCORPORATION INTO STAMPED CONCRETE & DONOR PAVERS.

GC TO PAY FOR ADINKRA PAVERS (TO BE INSTALLED) AND PREPAY ENGRAVING FOR DONOR NAME PAVERS THAT WILL BE INSTALLED BY FORT BEND COUNTY IN THE FUTURE.

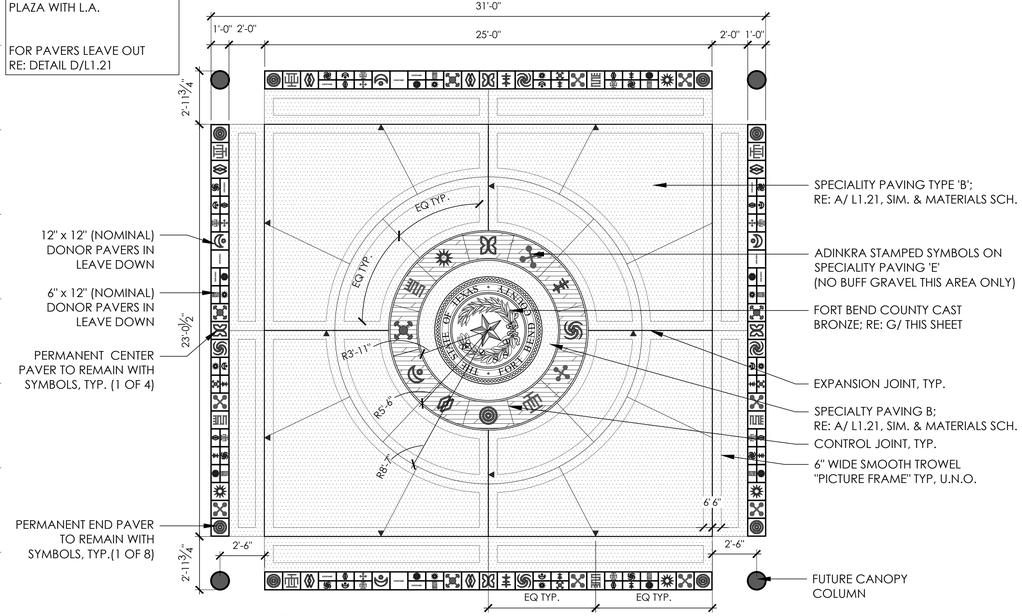
FOR PAVERS LEAVE OUT
RE: DETAIL D/L1.21



i **ADINKRA DONOR PAVERS** SECTION
1" = 1'-0"

NOTES:
CONTRACTOR TO REVIEW LEAVE OUTS AT DEDICATION PLAZA WITH L.A.

FOR PAVERS LEAVE OUT
RE: DETAIL D/L1.21



NOTE:
1. ADINKRA (PLACE HOLDERS)FUTURE DONOR PAVERS TO BE KEPT AT ENGRAVING STORAGE UNTIL DONOR NAME IS ENGRAVED

H **CENTRAL PAVING DEDICATION PLAZA ENLARGEMENT** SECTION
1/4" = 1'-0"

MEDALLION ORIENTATION NOTE:
COUNTY SEAL AND MEDALLIONS ORIENTATION TO BE VERIFIED WITH L.A. PRIOR INSTALLATION.



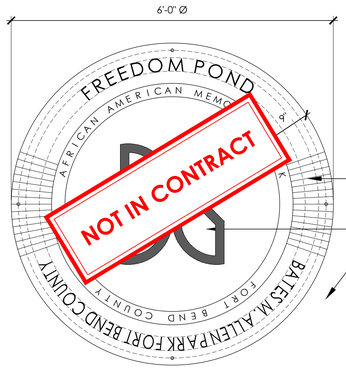
NOTES:
CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR REVIEW/APPROVAL.

MIKE CARPINO @ HOUSTON ART FOUNDRY (713.896.2019)

G **FB COUNTY SEAL** PLAN
3/4" = 1'-0"



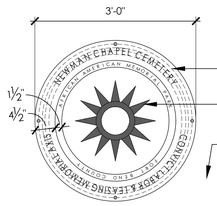
F **MEDALLION TYPE C2** PLAN
3/4" = 1'-0"



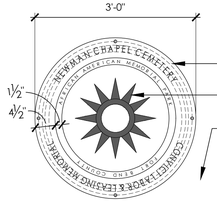
E **MEDALLION TYPE C1** PLAN
3/4" = 1'-0"

PHASE 1 SCOPE ALTERNATES NOTE:

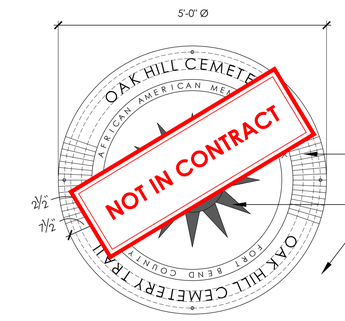
REFERENCE **G.001** FOR ALTERNATES SCOPE



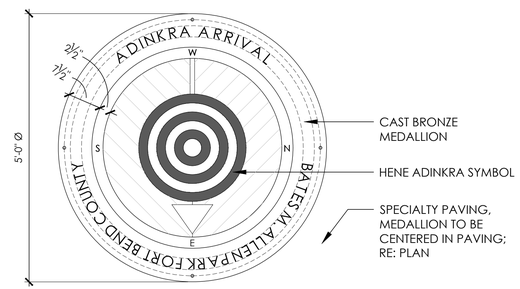
D **MEDALLION TYPE B2** SECTION
3/4" = 1'-0"



C **MEDALLION TYPE B1** PLAN
3/4" = 1'-0"



B **MEDALLION TYPE A2** PLAN
3/4" = 1'-0"



A **MEDALLION TYPE A1** PLAN
3/4" = 1'-0"

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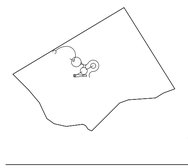

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Drawn by: LANDology Reviewed by: JMcM

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Sheet Title:
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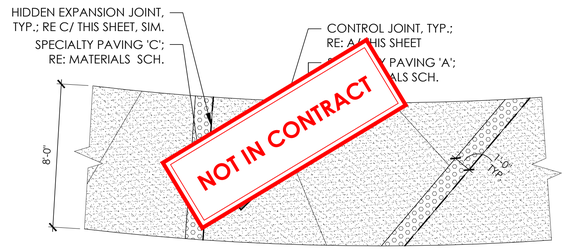
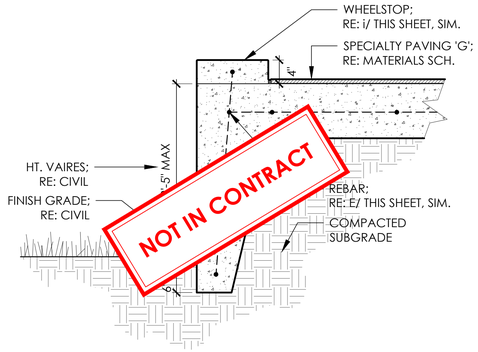
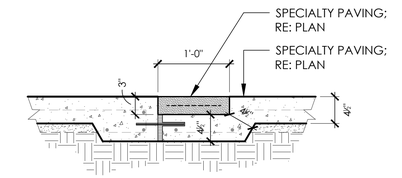
Sheet Number
L1.20



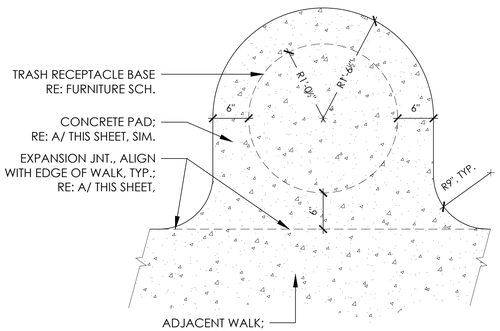
L SPECIALTY PAVING 'C' PLAN
1/4" = 1'-0"



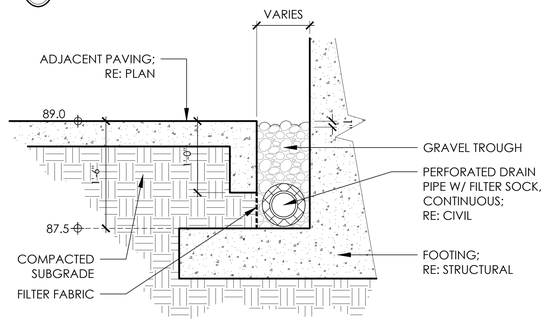
G HAUNCHED WALK EDGE W/ WHEEL STOP SECTION
1" = 1'-0"



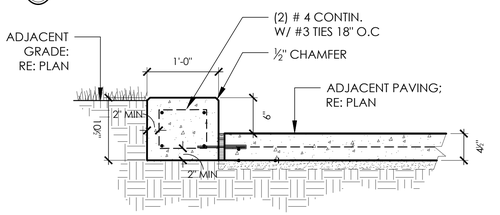
C HIDDEN EXPANSION JOINT SECTION
1" = 1'-0"



K TRASH RECEPTACLE CONC. PAD SECTION
1" = 1'-0"

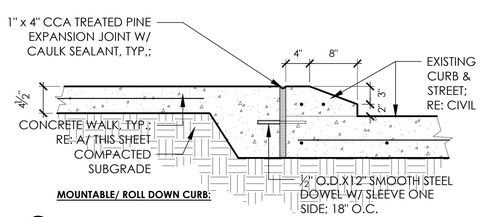


F HAUNCHED WALK EDGE AT MONUMENT SECTION
1" = 1'-0"

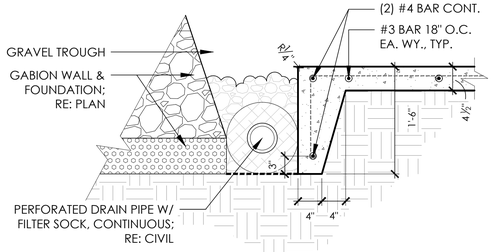


J FLUSH CONCRETE BAND SECTION
1" = 1'-0"

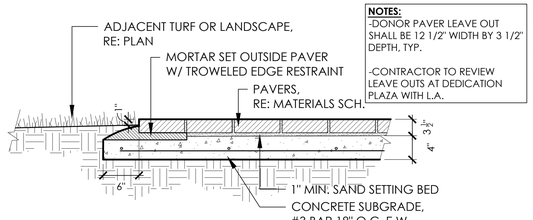
i CONTAINMENT CURB SECTION
1" = 1'-0"



H CONCRETE WALK at BACK OF CURB SECTION
1" = 1'-0"



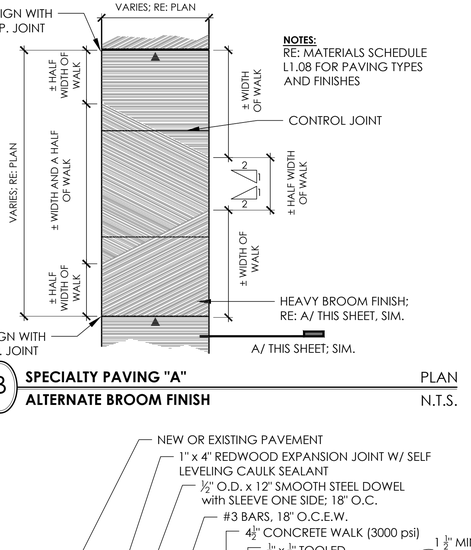
E HAUNCHED WALK EDGE SECTION
1"= 1'-0"



NOTES:
-DONOR PAVER LEAVE OUT SHALL BE 12 1/2" WIDTH BY 3 1/2" DEPTH, TYP.

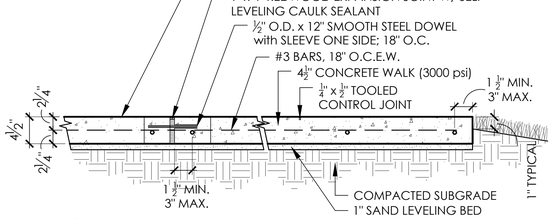
-CONTRACTOR TO REVIEW LEAVE OUTS AT DEDICATION PLAZA WITH L.A.

D PAVERS ON CONCRETE SUBGRADE SECTION
1" = 1'-0"

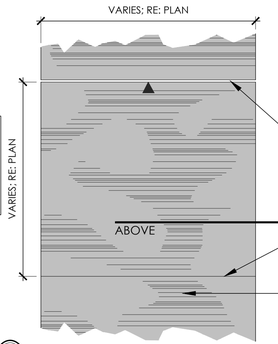


NOTES:
RE: MATERIALS SCHEDULE L1.08 FOR PAVING TYPES AND FINISHES

B SPECIALTY PAVING "A" PLAN
ALTERNATE BROOM FINISH N.T.S.



NOTES:
1. OWNER'S REPRESENTATIVE SHALL be NOTIFIED PRIOR to 1st POUR and be on SITE to APPROVE CONCRETE WORK.
2. ALL CROSS SLOPES on CONCRETE WALKS SHALL be 2% MAX.
3. LONGITUDINAL SLOPES on CONCRETE WALKS SHALL NOT EXCEED 5%.
4. ALL CONCRETE WORK SHALL BE IN COMPLIANCE WITH CURRENT ADA REGULATIONS.
5. CONTRACTOR SHALL INSTALL VAPOR BARRIER BENEATH ALL CONCRETE WITHIN TREE PROTECTION ZONE.
6. CONCRETE PAVEMENT FINISHES AS FOLLOWS:
   - 5'-0" WALK..... MEDIUM DENSITY BROOM FINISH, U.N.O.
   - 6'-0" WALK..... MEDIUM DENSITY BROOM FINISH, U.N.O.
   - 8'-0" WALK..... MEDIUM DENSITY BROOM FINISH, U.N.O.
7. RE: L1.08 MATERIALS SCHEDULE FOR VARIOUS PAVING TYPES & FINISHES



EXPANSION JOINT NOTES:
1. 1" x 4" REDWOOD EXPANSION JOINT W/ SELF LEVELING CAULK SEALANT:
   - 25'-0" O.C. for 5'-0" WALK
   - 24'-0" O.C. for 6'-0" WALK
   - 24'-0" O.C. for 8'-0" WALK

A CONCRETE WALKS and PATHWAYS PLAN/ SECTION
N.T.S.

PHASE 1 SCOPE ALTERNATES NOTE:

REFERENCE **G.001** FOR ALTERNATES SCOPE

THE STATE OF TEXAS · FORT BEND COUNTY ·

Project:
AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK
630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:
FORT BEND COUNTY
1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

HINESAD

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Design Team:

HINES ARCHITECTURE + DESIGN
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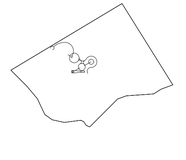

N

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04.12.2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

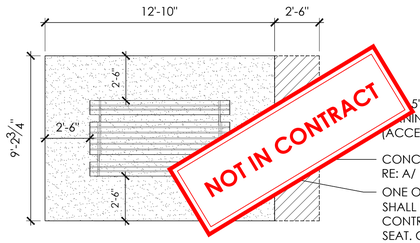
Sheet Title:

HARDSCAPE DETAILS

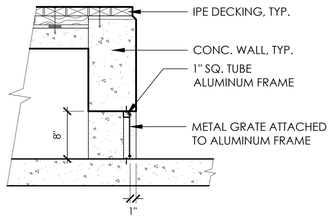
Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

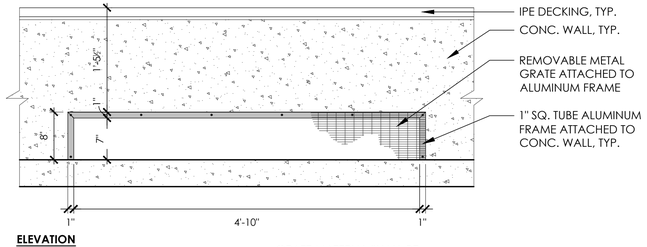
L1.21



G PICNIC TABLE & CONC. PAD — PLAN — 1/4" = 1'-0"



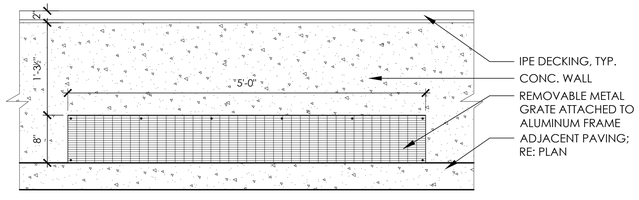
SECTION



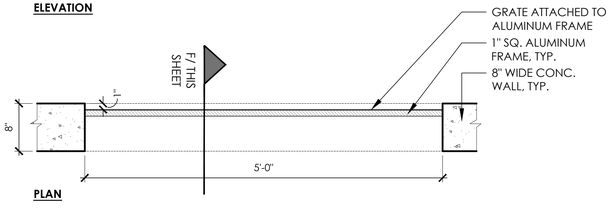
ELEVATION

GRATE MATERIAL SHALL BE:
1. DESIGNER MESH, CHATEAU™ 3115, STAINLESS STEEL, TYPE 316, WOVEN - MODIFIED INTERCRIMP/PLAIN WEAVE, 56% OPEN AREA, BY MCHNICHOLS

F METAL GRATE — SECTION/ ELEVATION — 1"= 1'-0"



ELEVATION

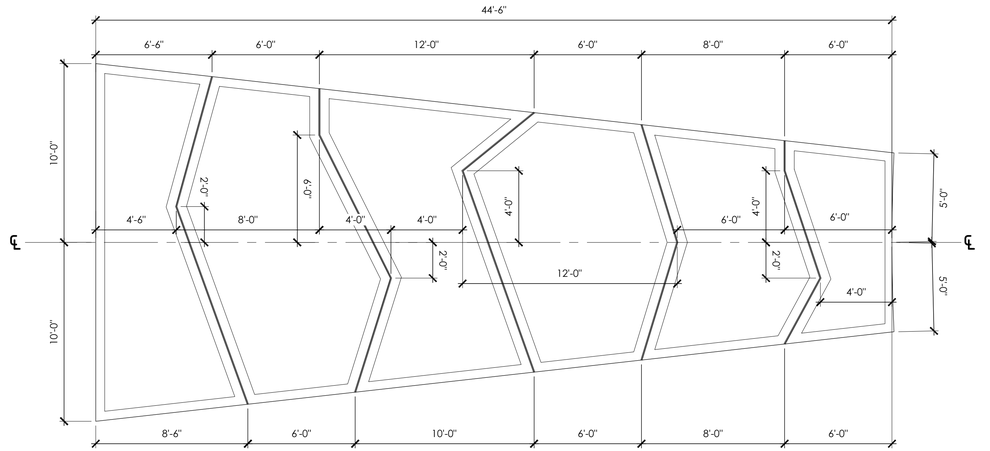


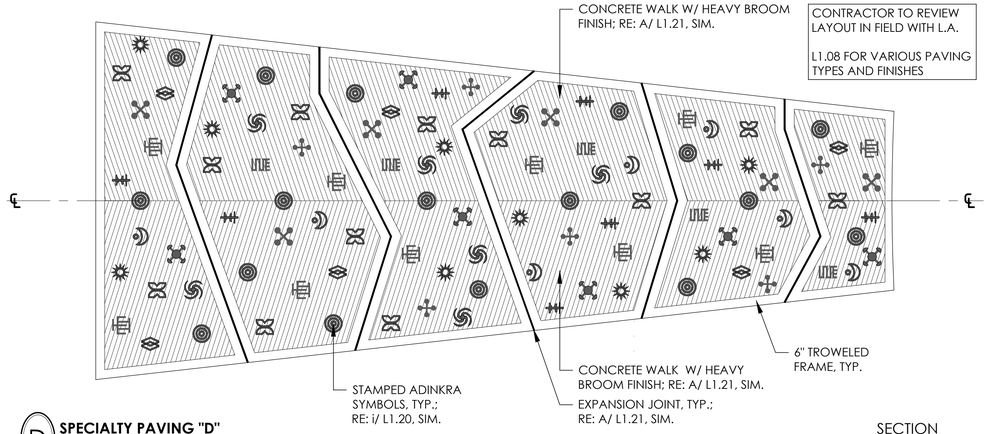
PLAN

E METAL GRATE — ELEVATION/ PLAN — 1"= 1'-0"

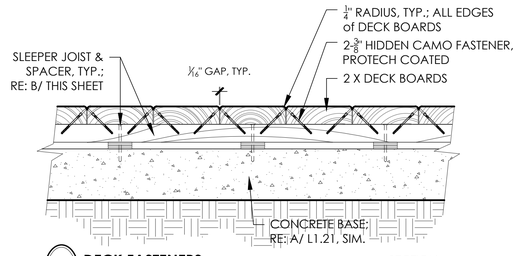
PHASE 1 SCOPE ALTERNATES NOTE:

REFERENCE **G.001** FOR ALTERNATES SCOPE

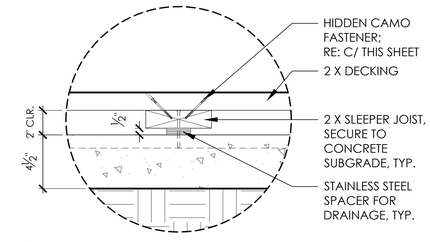




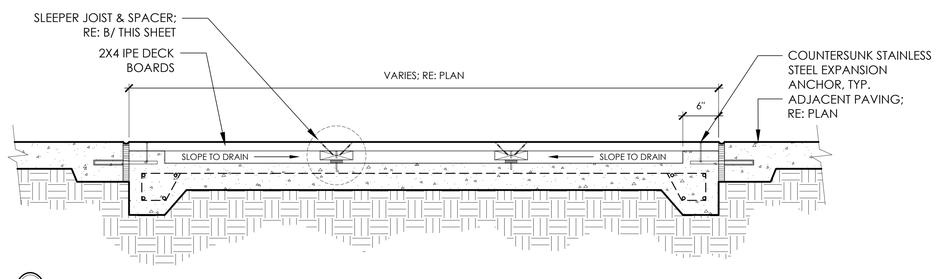
D SPECIALTY PAVING "D" — SECTION — 1/4" = 1'-0"



C DECK FASTENERS — SECTION — 2"=1'-0"



B SLEEPER JOIST & SPACERS — SECTION — 2"=1'-0"



A SPECIALTY PAVING 'F' (IPE DECKING) — SECTION — 1"= 1'-0"

THE STATE OF TEXAS · FORT BEND COUNTY

Project:

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630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:

FORT BEND COUNTY

1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

HINESAD

Contract No: 218226

Design Team:

HINES ARCHITECTURE + DESIGN
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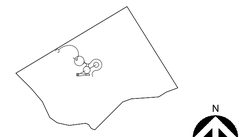

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04.12.2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

Sheet Title:

HARDSCAPE DETAILS

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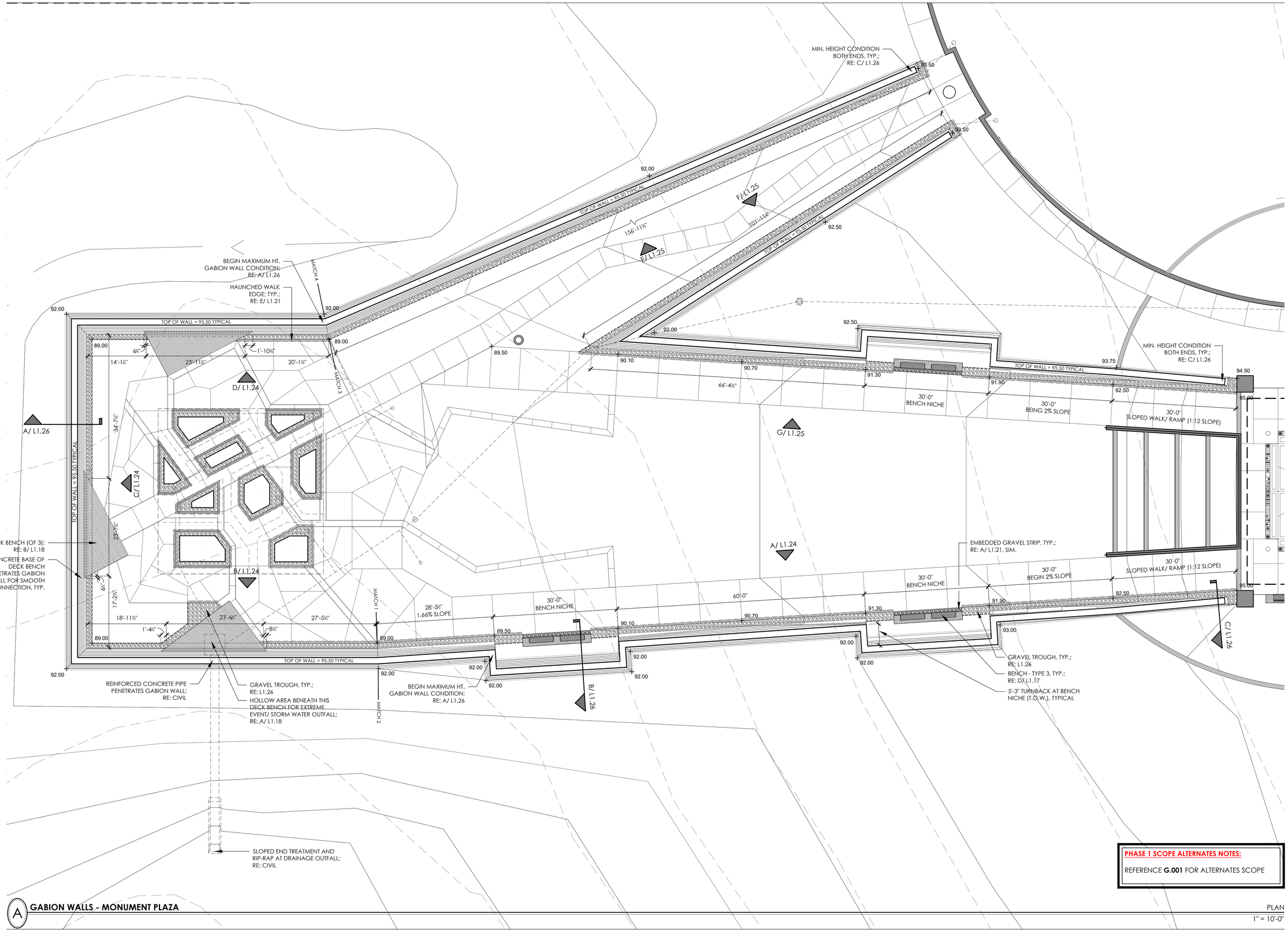
Sheet Number

L1.22



PHASE 1 SCOPE ALTERNATES NOTES:

REFERENCE **G.001** FOR ALTERNATES SCOPE

A **GABION WALLS - MONUMENT PLAZA**

PLAN

1" = 10'-0"

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AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

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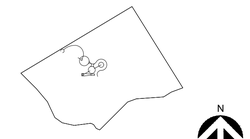

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	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

Sheet Title:

GABION WALLS
MEMORIAL MONUMENT
PLAZA SITE PLAN

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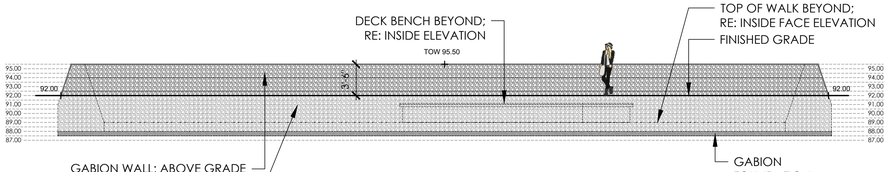
Sheet Number

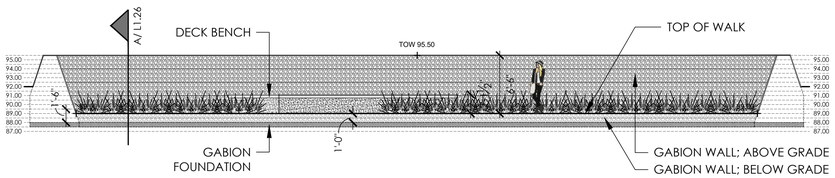
L1.23

PHASE 1 SCOPE ALTERNATES NOTES:

REFERENCE **G.001** FOR ALTERNATES SCOPE



OUTSIDE FACE

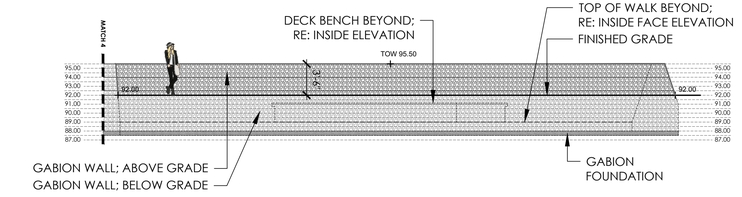


INSIDE FACE

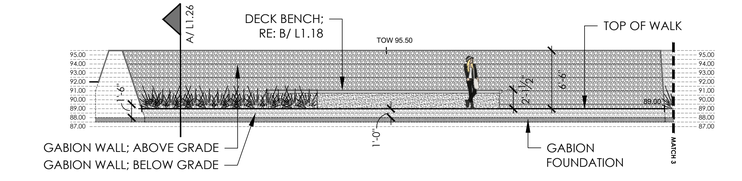
C GABION WALL SEGMENT "C" - MONUMENT PLAZA

INSIDE & OUTSIDE ELEVATIONS

1/8" = 1'-0"



OUTSIDE FACE

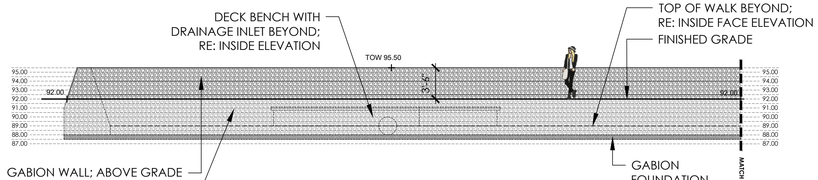


INSIDE FACE

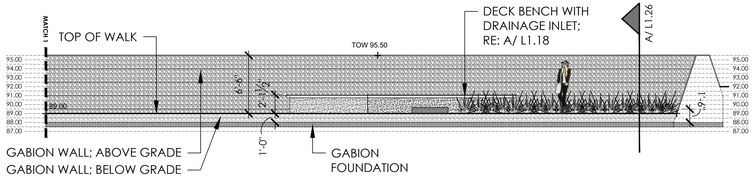
D GABION WALL SEGMENT "D" - MONUMENT PLAZA

INSIDE & OUTSIDE ELEVATIONS

1/8" = 1'-0"



OUTSIDE FACE

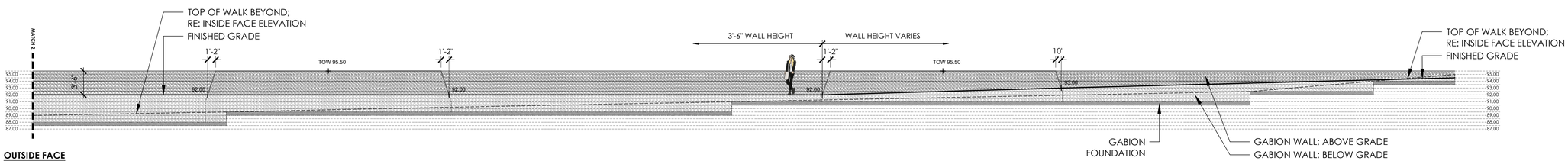


INSIDE FACE

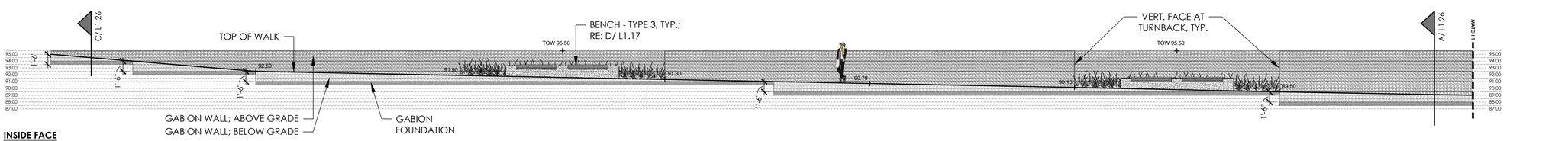
B GABION WALL SEGMENT "B" - MONUMENT PLAZA

INSIDE & OUTSIDE ELEVATIONS

1/8" = 1'-0"



OUTSIDE FACE



INSIDE FACE

A GABION WALL SEGMENT "A" - MONUMENT PLAZA

INSIDE & OUTSIDE ELEVATIONS

1/8" = 1'-0"

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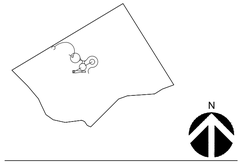
Key Plan



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04.12.2024

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	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

Sheet Title:

GABION WALLS MEMORIAL MONUMENT PLAZA ELEVATIONS

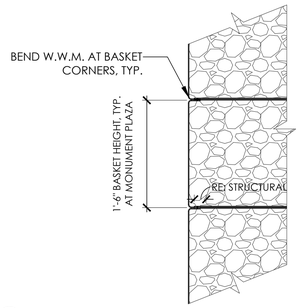
Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

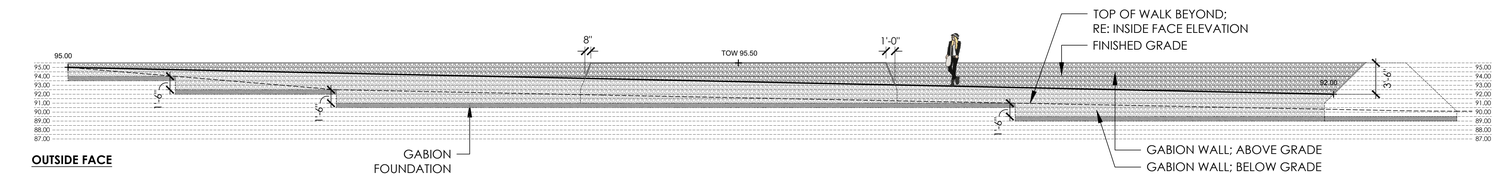
L1.24

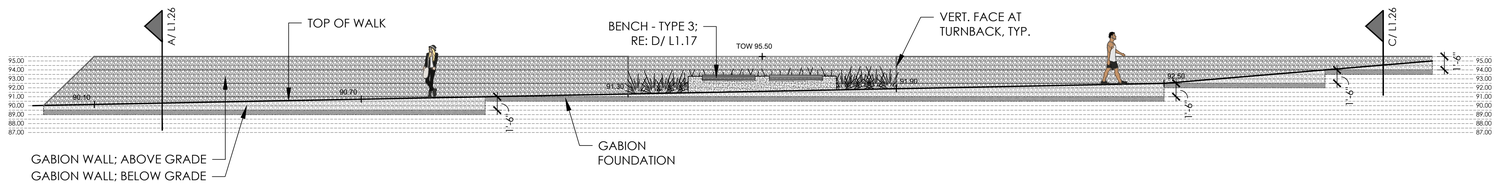
GABION NOTES:

1. PROVIDE SHOP DRAWINGS.
2. CONTRACTOR TO PROVIDE SEALED WALL STRUCTURAL DESIGN BY PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF TEXAS.
3. GABION BASKET:
   A. 9 GAUGE
   B. GALVANIZED STEEL
   C. WELDED WIRE (NOT MESH)
4. PROVIDE 1" X 1" GALVANIZED ANGLE TRIM AT ALL WALL CORNERS.
5. FASTEN BASKETS WITH HOG RINGS (USE PNEUMATIC GUN).
6. 1" X 1" TRIM, TYP.

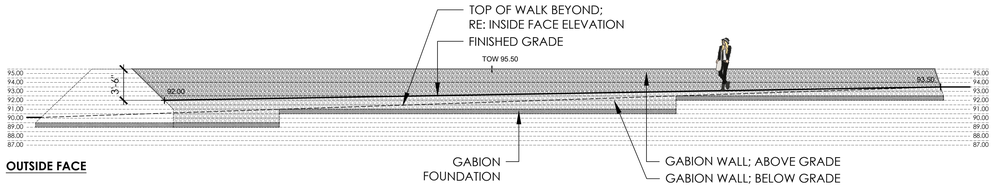


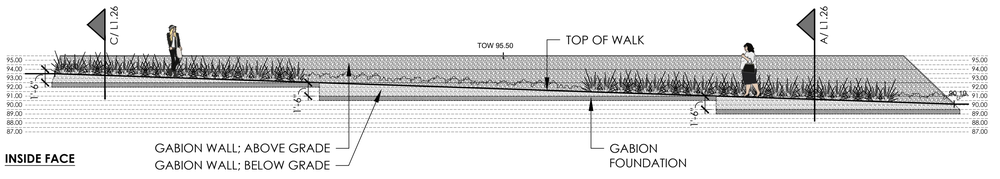
H **GABION BASKET CONNECTION** SECTION 1"= 1'-0"



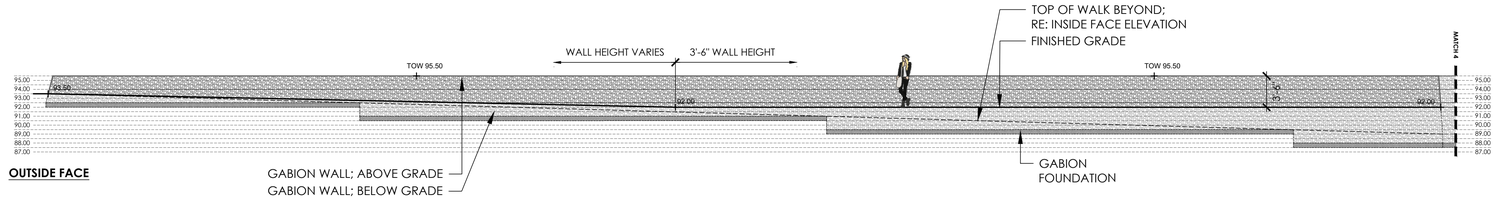


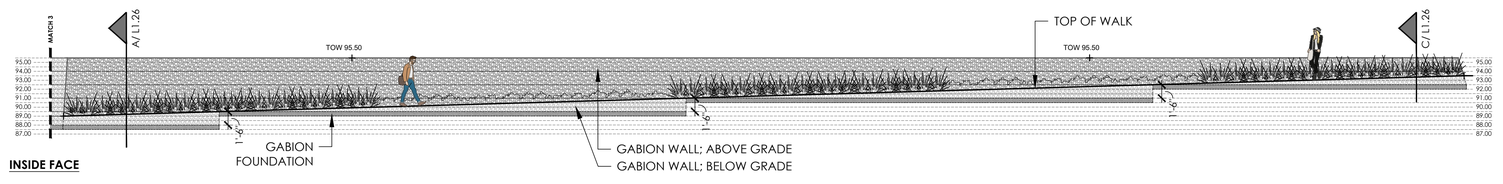
G **GABION WALL SEGMENT "G" - MONUMENT PLAZA** INSIDE & OUTSIDE ELEVATIONS 1/8" = 1'-0"





F **GABION WALL SEGMENT "F" - MONUMENT PLAZA** INSIDE & OUTSIDE ELEVATIONS 1/8" = 1'-0"





E **GABION WALL SEGMENT "E" - MONUMENT PLAZA** INSIDE & OUTSIDE ELEVATIONS 1/8" = 1'-0"

PHASE 1 SCOPE ALTERNATES NOTES:

REFERENCE **G.001** FOR ALTERNATES SCOPE

THE STATE OF TEXAS · FORT BEND COUNTY ·

Project:

AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:

FORT BEND COUNTY

1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

HINESAD

Contract No: 218226

Design Team:

HINES ARCHITECTURE + DESIGN
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Key Plan



Professional Seals



04.12.2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

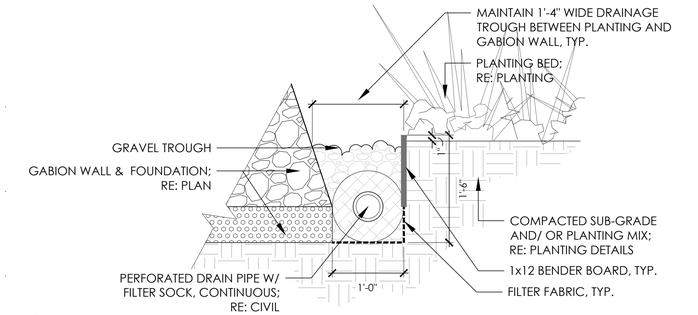
Sheet Title:

GABION WALLS MEMORIAL MONUMENT PLAZA ELEVATIONS

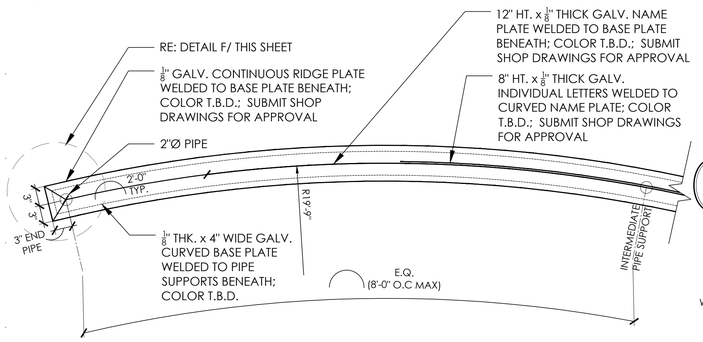
Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

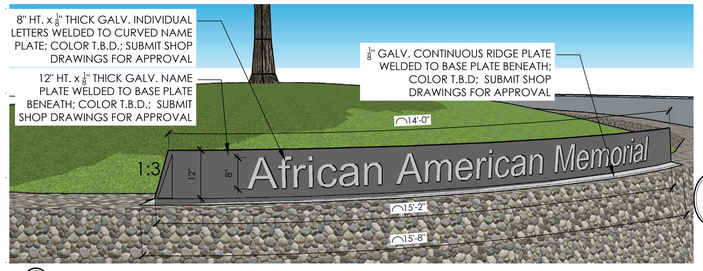
L1.25



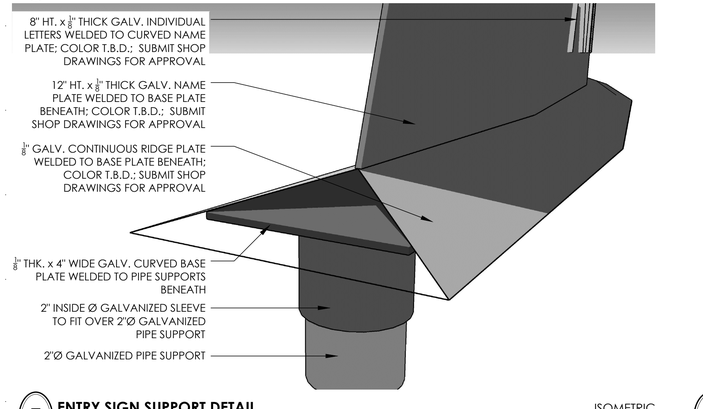
i GRAVEL TROUGH @ PLANTING — SECTION 1"= 1'-0"



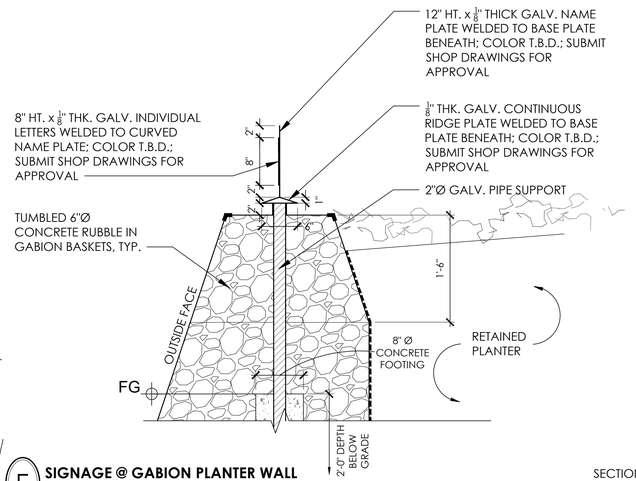
H SIGNAGE @ GABION PLANTER WALL — PLAN 1" = 1'-0"



G SIGNAGE @ GABION PLANTER WALL — ELEVATION N.T.S.

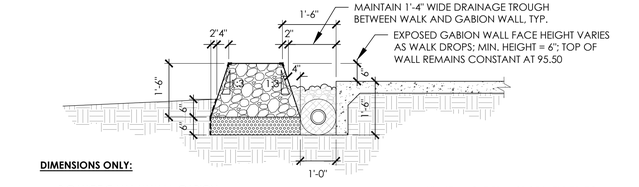


F ENTRY SIGN SUPPORT DETAIL — ISOMETRIC N.T.S.

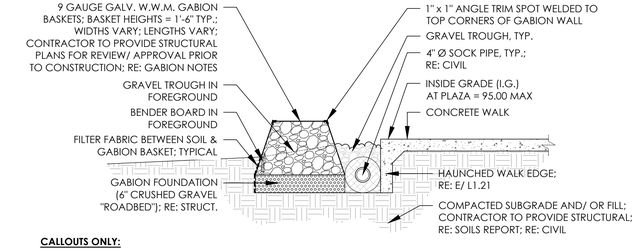


E SIGNAGE @ GABION PLANTER WALL — SECTION 1" = 1'-0"

D GABION PLANTER WALL (CIRCULAR) — SECTION 1/2" = 1'-0"

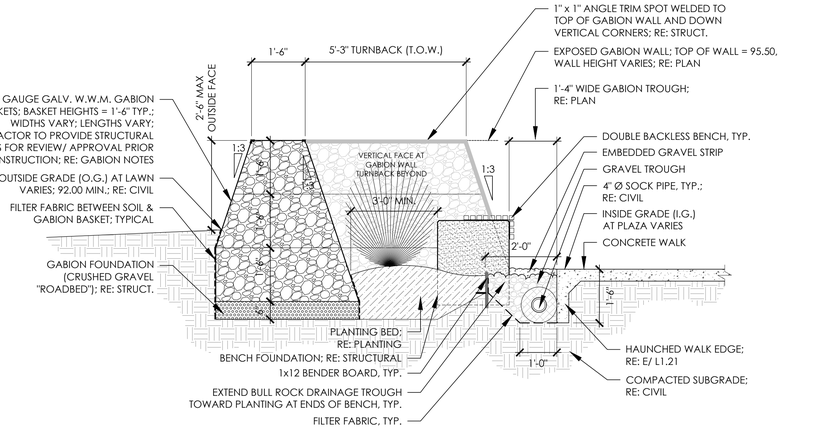


DIMENSIONS ONLY:

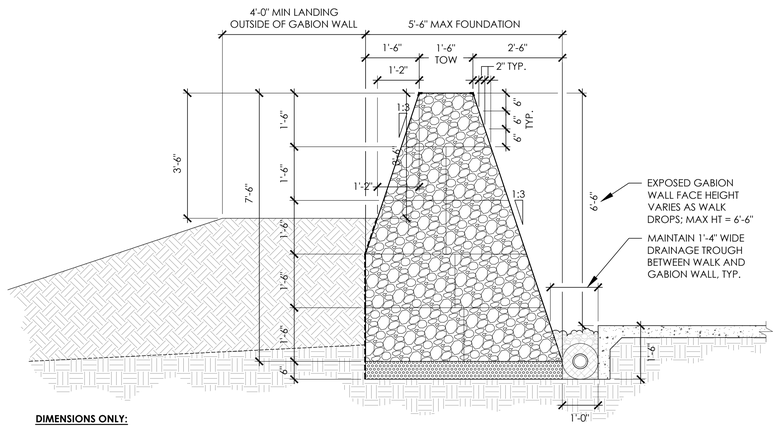


CALLOUTS ONLY:

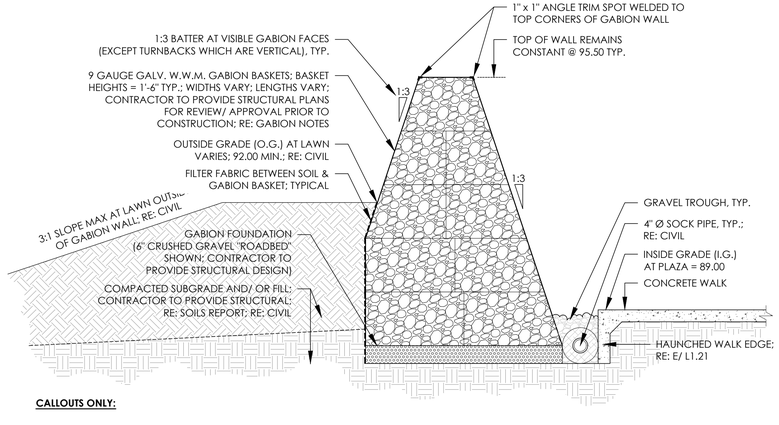
C GABION WALL - MIN. HT. CONDITION at MONUMENT PLAZA (CALLOUTS) — SECTION 1/2" = 1'-0"



B GABION WALL - TURNBACK at BENCH NICHE (MONUMENT PLAZA) — SECTION 1/2" = 1'-0"



DIMENSIONS ONLY:



CALLOUTS ONLY:

A GABION WALL - MAX. HT. CONDITION at MONUMENT PLAZA — SECTION 1/2" = 1'-0"

PHASE 1 SCOPE ALTERNATES NOTES:

REFERENCE **G.001** FOR ALTERNATES SCOPE

THE STATE OF TEXAS · FORT BEND COUNTY ·

Project:

AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:

FORT BEND COUNTY

1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

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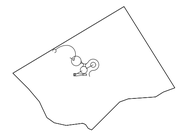

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04.12.2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

Sheet Title:

GABION WALLS
MEMORIAL MONUMENT PLAZA DETAILS & NOTES

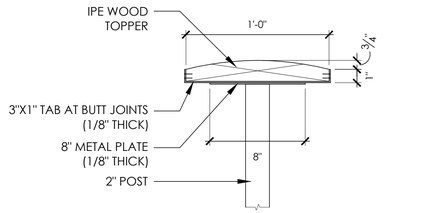
Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

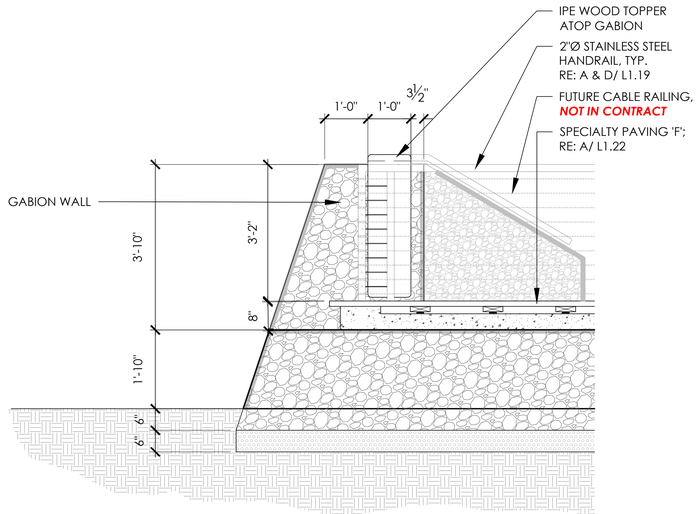
L1.26

PHASE 1 SCOPE ALTERNATES NOTES:

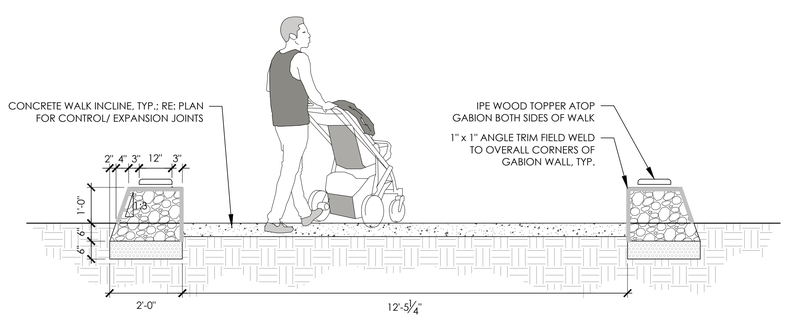
REFERENCE **G.001** FOR ALTERNATES SCOPE



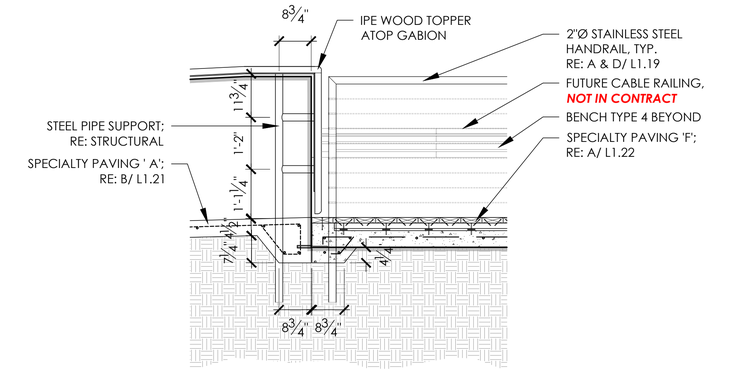
G WOOD TOPPER AT GABION WALL — SECTION
2"= 1'-0"



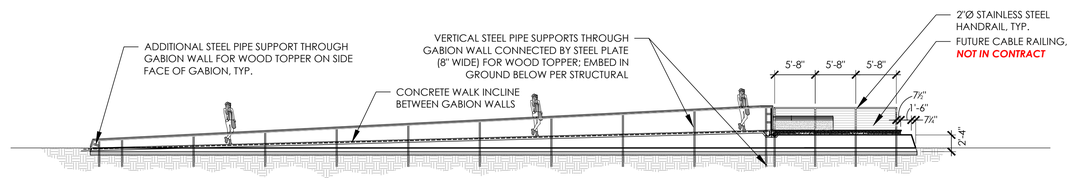
F GABION WALL - MAX. HT. CONDITION at CLL MEMORIAL — SECTION
1/2" = 1'-0"

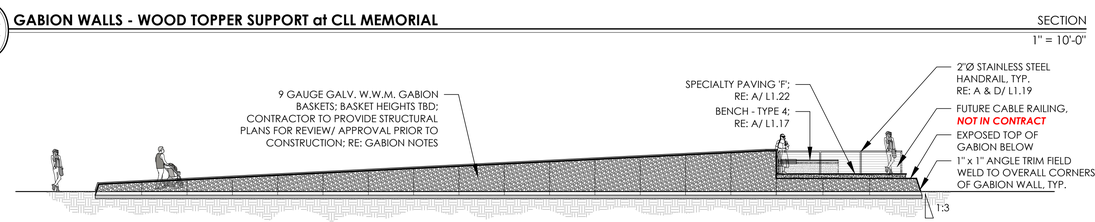


E GABION WALL - MIN. HT. CONDITION at CLL MEMORIAL — SECTION
1/2" = 1'-0"

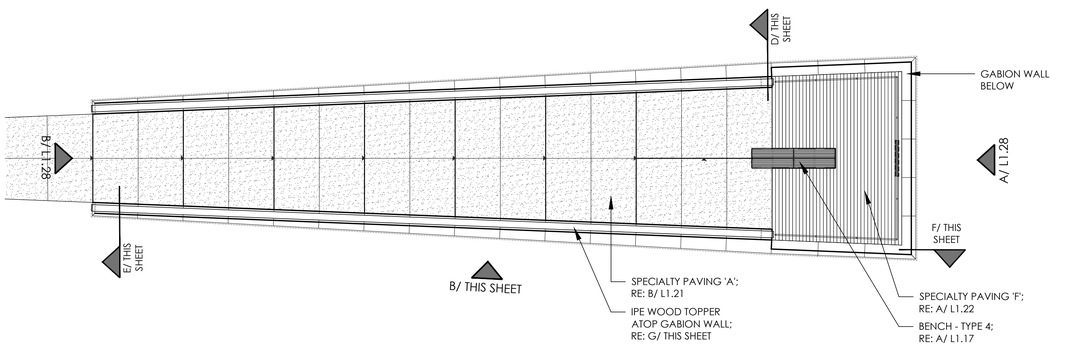


D CLL MEMORIAL SPECIALTY PAVING CONNECTION — SECTION
1" = 1'-0"





C GABION WALLS - WOOD TOPPER SUPPORT at CLL MEMORIAL — SECTION
1" = 10'-0"



B GABION WALLS - CLL MEMORIAL — ELEVATION
1" = 10'-0"

A GABION WALLS - CLL MEMORIAL — PLAN
1" = 10'-0"

THE STATE OF TEXAS · FORT BEND COUNTY

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Prepared For:

FORT BEND COUNTY

1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

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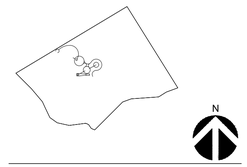

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04.12.2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

Sheet Title:

GABION WALLS
CLL MEMORIAL AXIS

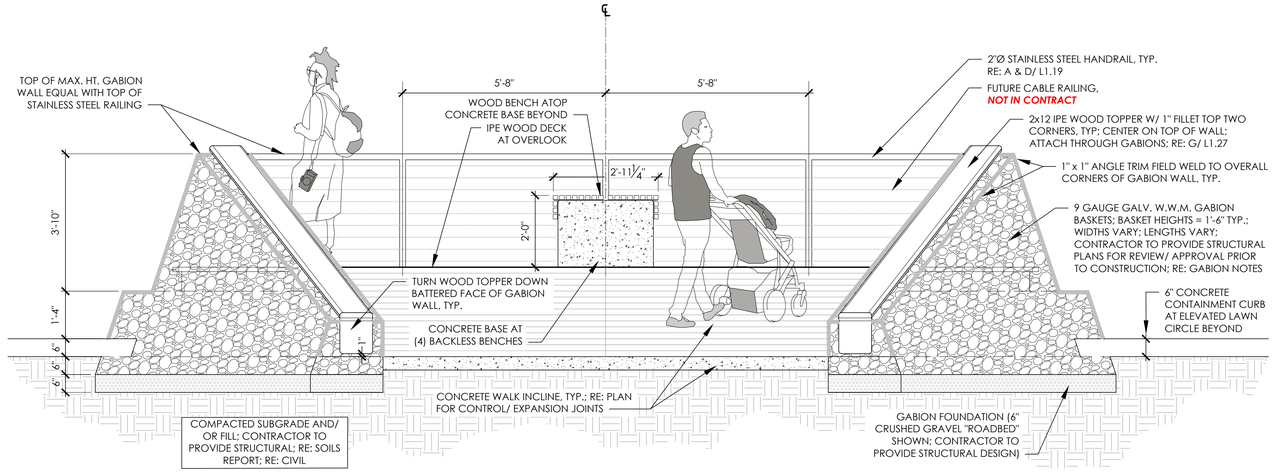
Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

L1.27

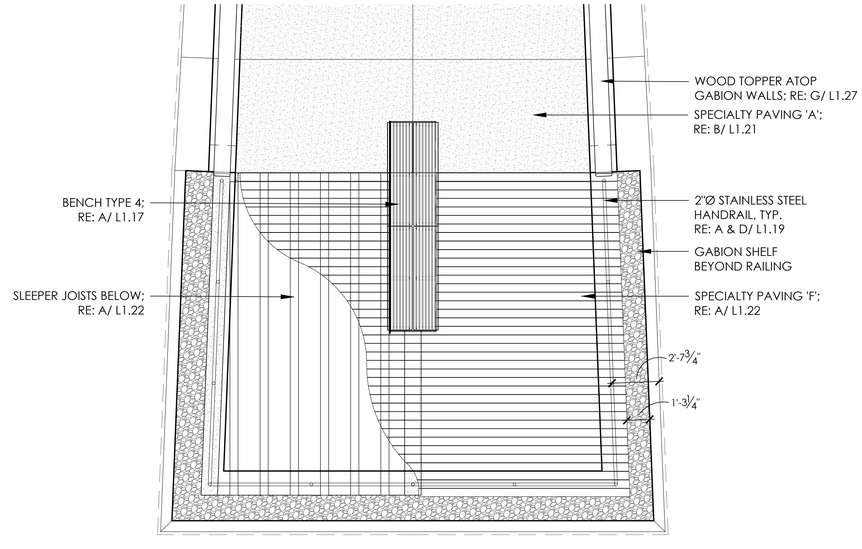
PHASE 1 SCOPE ALTERNATES NOTES:

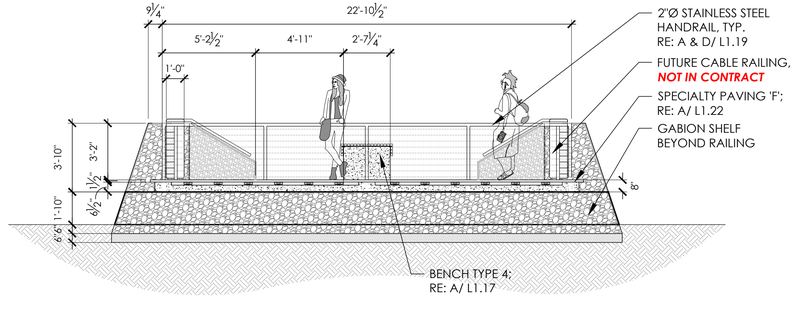
REFERENCE **G.001** FOR ALTERNATES SCOPE



B **GABION WALL - CLL MEMORIAL APPROACH** ELEVATION

1/2" = 1'-0"





A **GABION WALL - CLL MEMORIAL OVERLOOK** PLAN / ELEVATION

1/4" = 1'-0"

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1517 EUGENE HEIMANN CIRCLE
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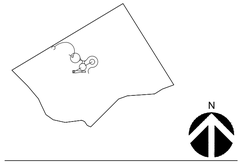

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	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

Sheet Title:

GABION WALLS
CLL MEMORIAL AXIS

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

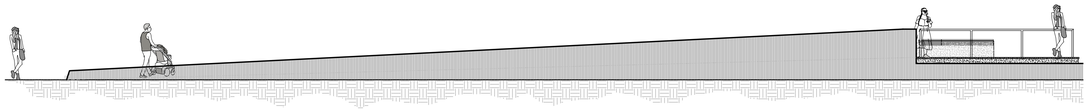
L1.28

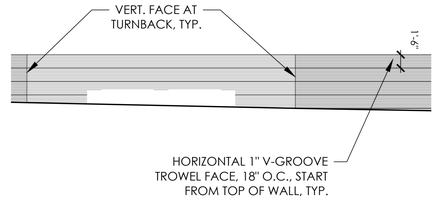
PHASE 1 SCOPE ALTERNATES NOTES:

REFERENCE **G.001** FOR ALTERNATES SCOPE

FORMLINER NOTE:

CONTRACTOR TO SUBMIT SHOP DRAWINGS OF VERTICAL & HORIZONTAL FORMLINER FOR FINAL APPROVAL TO L.A.



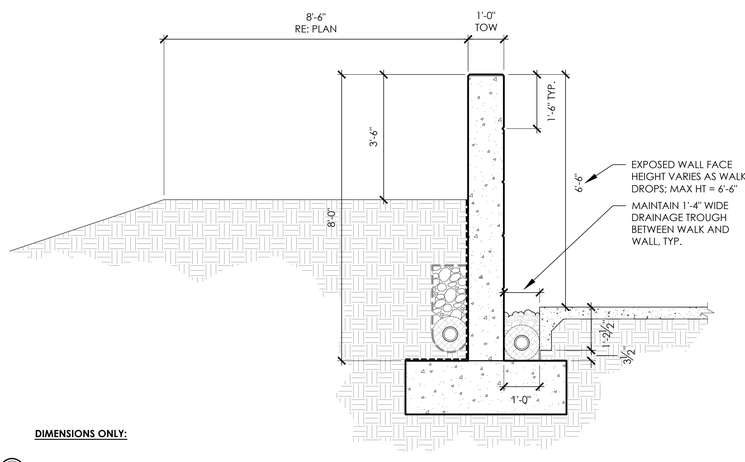


D VERTICAL FORMLINER - CLL AXIS CONCRETE WALL ONLY

SAMPLE ELEVATION
1/8" = 1'-0"

C HORIZONTAL FORMLINER

SAMPLE ELEVATION
1/8" = 1'-0"



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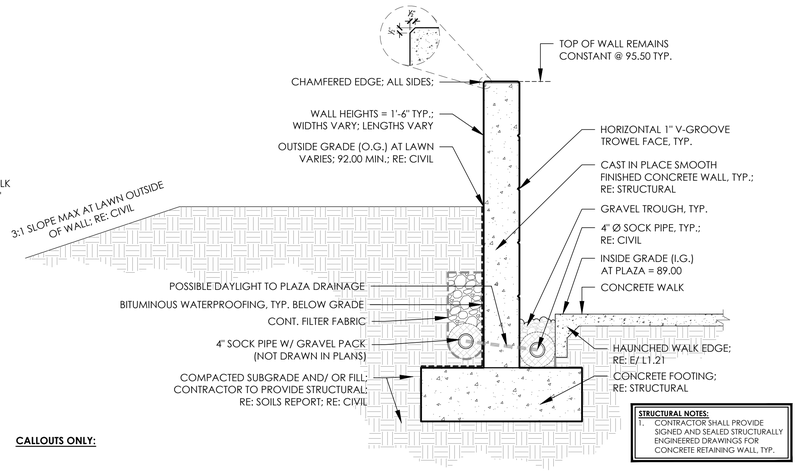
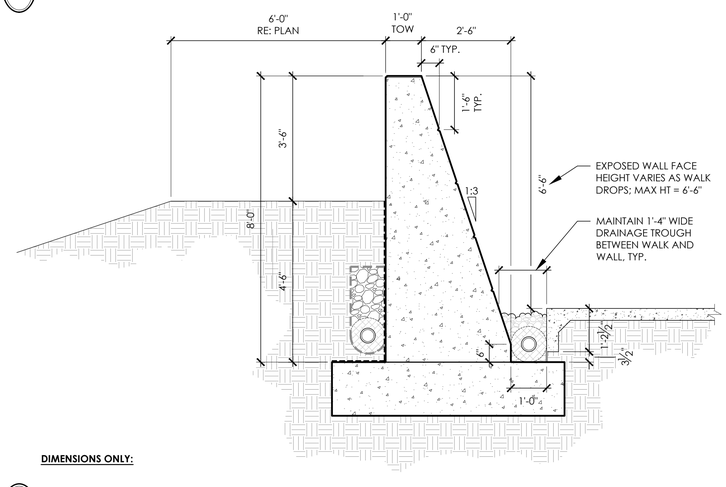


STRUCTURAL NOTES:
1. CONTRACTOR SHALL PROVIDE SIGNED AND SEALED STRUCTURALLY ENGINEERED DRAWINGS FOR CONCRETE RETAINING WALL, TYP.

CALLOUTS ONLY:

B CONCRETE WALL - MAX. HT. CONDITION at MONUMENT PLAZA

SECTION
1/2" = 1'-0"



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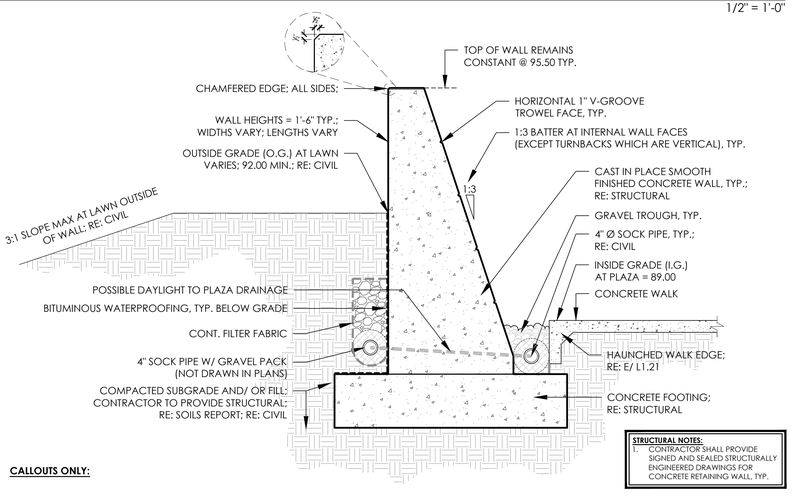

STRUCTURAL NOTES:
1. CONTRACTOR SHALL PROVIDE SIGNED AND SEALED STRUCTURALLY ENGINEERED DRAWINGS FOR CONCRETE RETAINING WALL, TYP.

CALLOUTS ONLY:

A BATTERED CONCRETE WALL - MAX. HT. CONDITION at MONUMENT PLAZA

SECTION
1/2" = 1'-0"

THE STATE OF TEXAS · FORT BEND COUNTY

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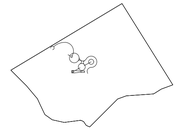

N

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	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

Sheet Title:

ALTERNATES

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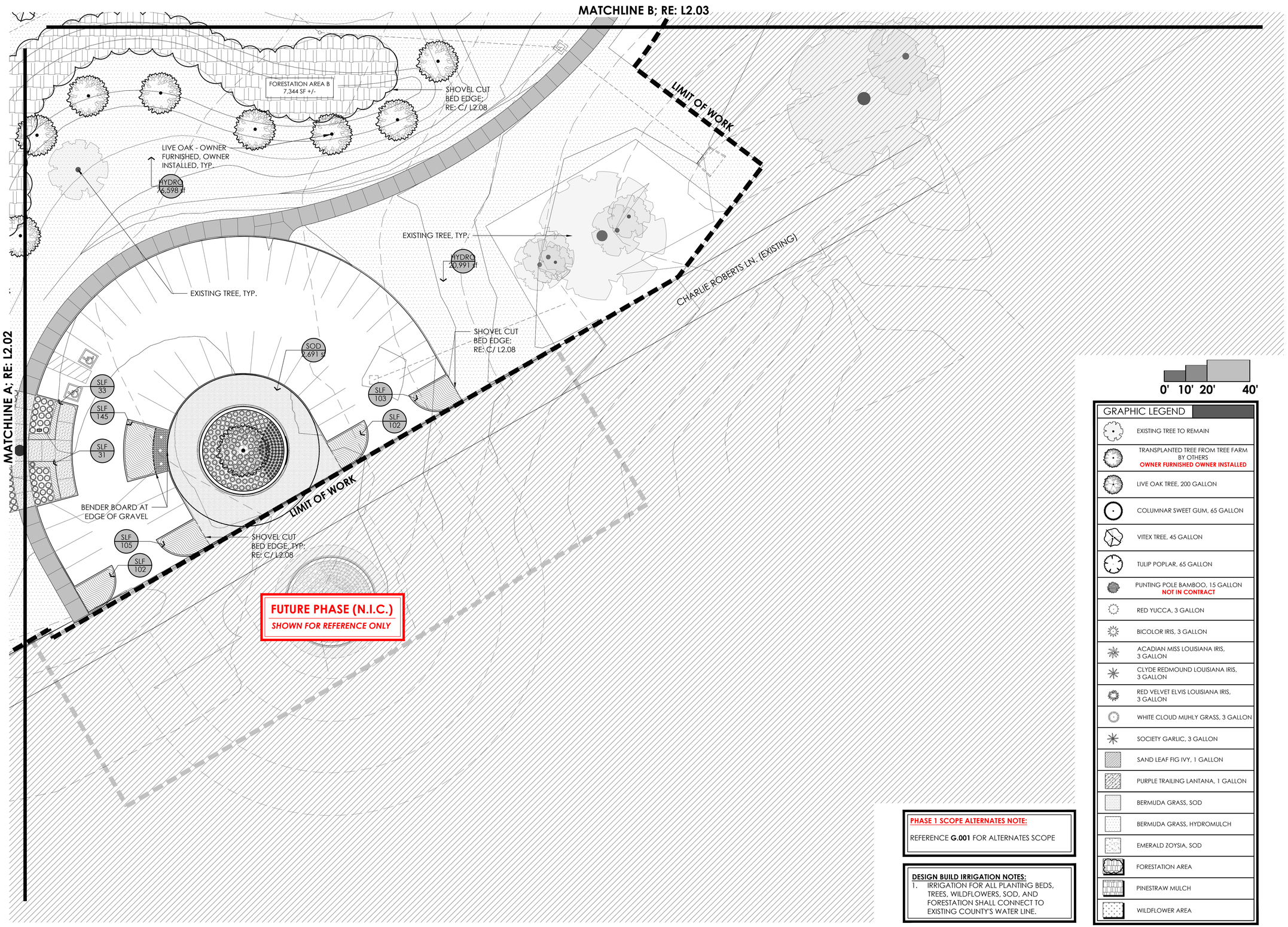
Sheet Number

L1.29



0' 10' 20' 40'

GRAPHIC LEGEND

- EXISTING TREE TO REMAIN
- TRANSPLANTED TREE FROM TREE FARM BY OTHERS **OWNER FURNISHED OWNER INSTALLED**
- LIVE OAK TREE, 200 GALLON
- COLUMNAR SWEET GUM, 65 GALLON
- VITEX TREE, 45 GALLON
- TULIP POPLAR, 65 GALLON
- PUNTING POLE BAMBOO, 15 GALLON **NOT IN CONTRACT**
- RED YUCCA, 3 GALLON
- BICOLOR IRIS, 3 GALLON
- ACADIAN MISS LOUISIANA IRIS, 3 GALLON
- CLYDE REDMOUND LOUISIANA IRIS, 3 GALLON
- RED VELVET ELVIS LOUISIANA IRIS, 3 GALLON
- WHITE CLOUD MUHLY GRASS, 3 GALLON
- SOCIETY GARLIC, 3 GALLON
- SAND LEAF FIG IVY, 1 GALLON
- PURPLE TRAILING LANTANA, 1 GALLON
- BERMUDA GRASS, SOD
- BERMUDA GRASS, HYDROMULCH
- EMERALD ZOYSIA, SOD
- FORESTATION AREA
- PINESTRAW MULCH
- WILDFLOWER AREA

PHASE 1 SCOPE ALTERNATES NOTE:

REFERENCE **G.001** FOR ALTERNATES SCOPE

DESIGN BUILD IRRIGATION NOTES:

1. IRRIGATION FOR ALL PLANTING BEDS, TREES, WILDFLOWERS, SOD, AND FORESTATION SHALL CONNECT TO EXISTING COUNTY'S WATER LINE.

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KENDLETON, TEXAS 77451

Prepared For:

FORT BEND COUNTY

1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

HINESAD

Contract No: 218226

Design Team:

HINES ARCHITECTURE + DESIGN
8 Greenway Plaza Suite 1525
Houston, TX 77046 USA
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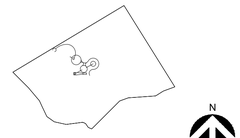
Key Plan



Professional Seals



04.12.2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

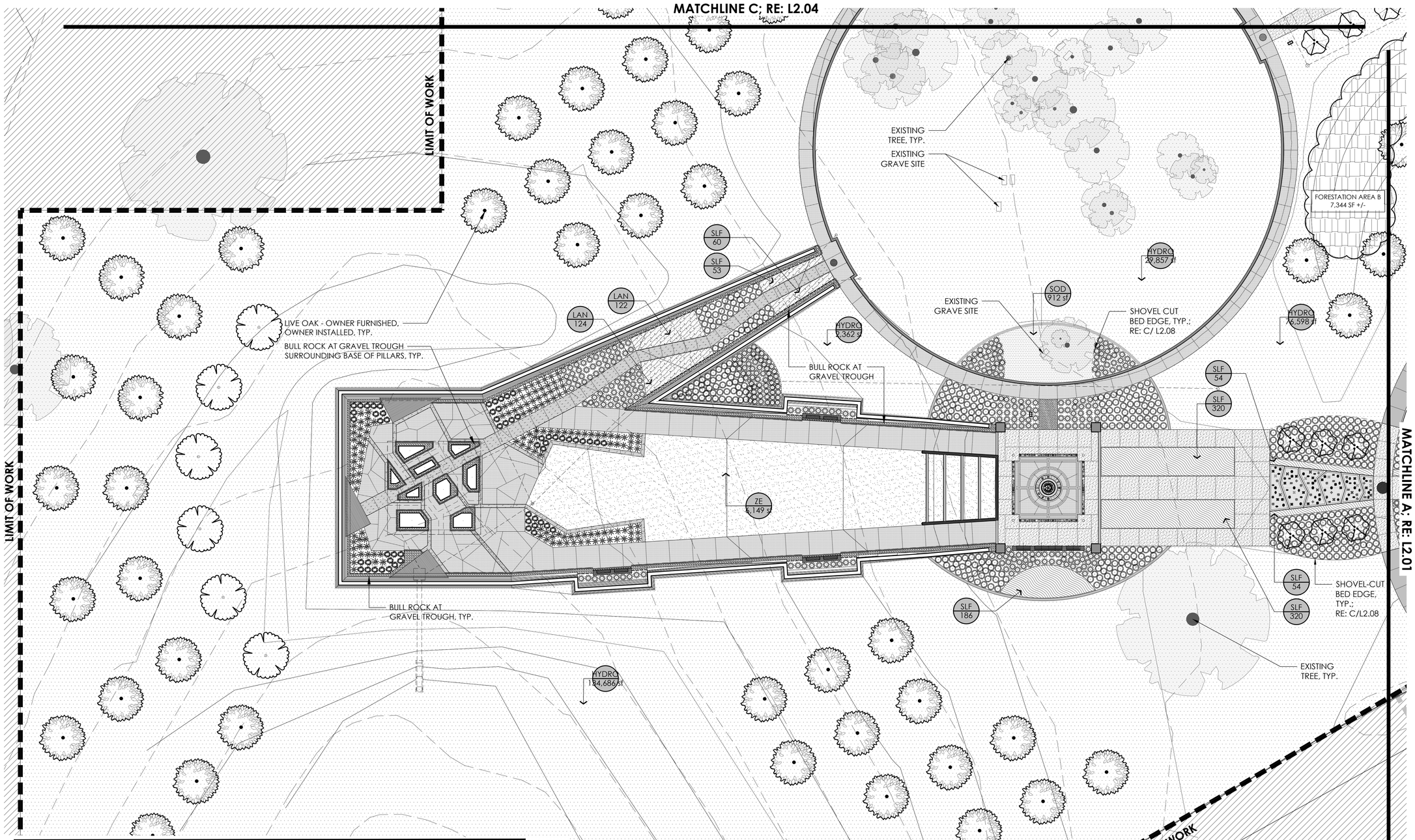
Sheet Title:

PLANTING PLAN

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

L2.01



GRAPHIC LEGEND

EXISTING TREE TO REMAIN	TRANSPLANTED TREE FROM TREE FARM BY OTHERS **OWNER FURNISHED OWNER INSTALLED**	WHITE CLOUD MUHLY GRASS, 3 GALLON	FORESTATION AREA
LIVE OAK TREE, 200 GALLON	RED YUCCA, 3 GALLON	SOCIETY GARLIC, 3 GALLON	PINESTRAW MULCH
COLUMNAR SWEET GUM, 65 GALLON	BICOLOR IRIS, 3 GALLON	WILDFLOWER AREA	
VITEX TREE, 65 GALLON	ACADIAN MISS LOUISIANA IRIS, 3 GALLON	BERMUDA GRASS, SOD	SANDY LEAF FIG IVY, 1 GALLON
TULIP POPLAR, 65 GALLON	CLYDE REDMOND LOUISIANA IRIS, 3 GALLON	BERMUDA GRASS, HYDROMULCH	PURPLE TRAILING LANTANA, 1 GALLON
PUNTING POLE BAMBOO, 15 GALLON **NOT IN CONTRACT**	RED VELVET ELVIS LOUISIANA IRIS, 3 GALLON	EMERALD ZOYSIA, SOD	

PHASE 1 SCOPE ALTERNATES NOTE:

REFERENCE **G.001** FOR ALTERNATES SCOPE

0' 10' 20' 40'

DESIGN BUILD IRRIGATION NOTES:

1. IRRIGATION FOR ALL PLANTING BEDS, TREES, WILDFLOWERS, SOD, AND FORESTATION SHALL CONNECT TO EXISTING COUNTY'S WATER LINE.

EXISTING GRAVESITE NOTES:

- ABSOLUTELY **NO** CONSTRUCTION AND OR DISTURBANCE NEAR EXISTING GRAVESITES.
- EXISTING GRAVESITES TO BE PROTECTED AT ALL TIMES DURING CONSTRUCTION AND INSTALLATION.

THE STATE OF TEXAS FORT BEND COUNTY

Project:

AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
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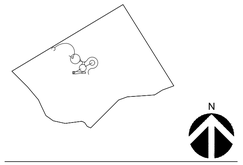

Professional Seals



04.12.2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

Sheet Title:

PLANTING PLAN

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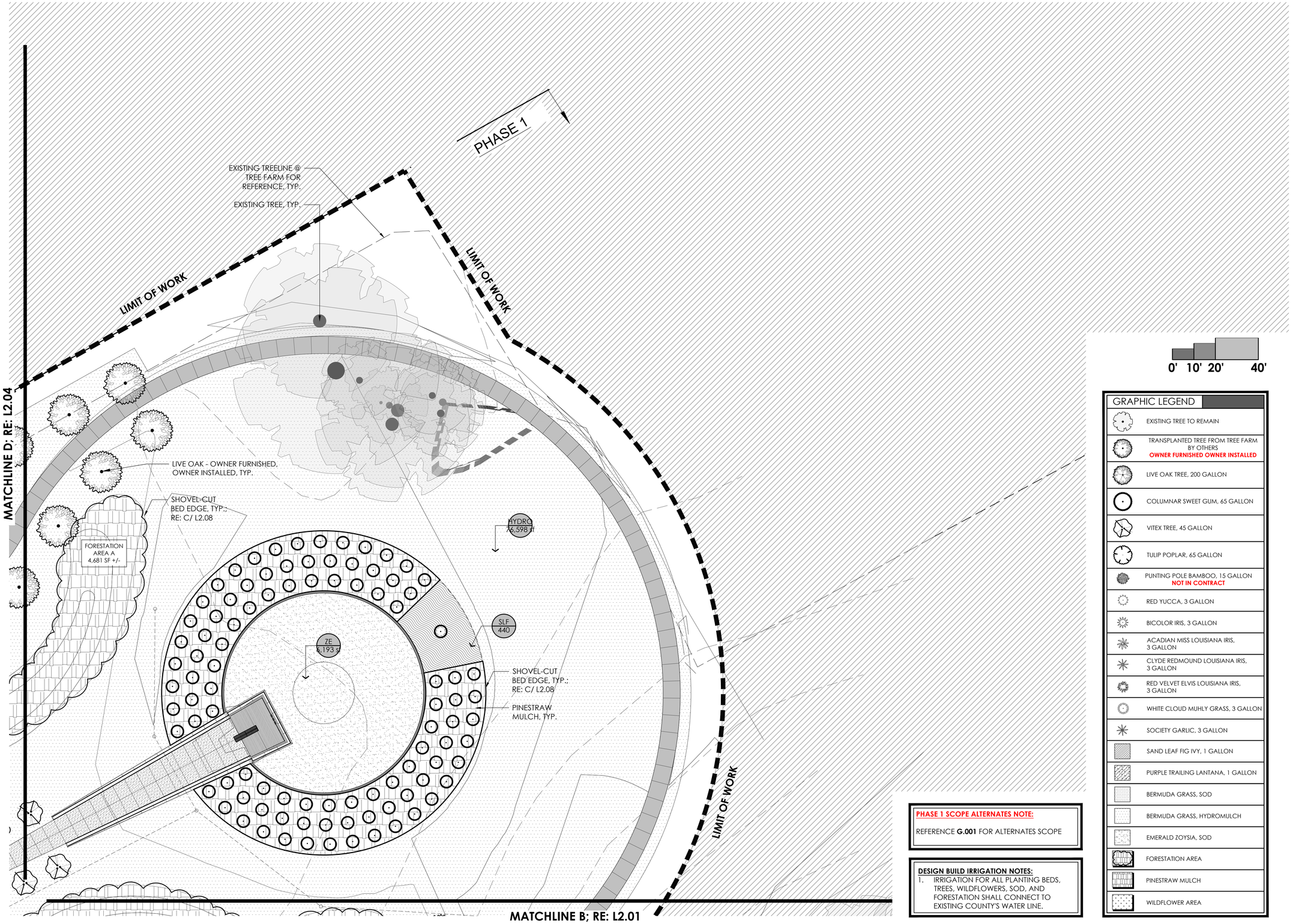
Sheet Number

L2.02



0' 10' 20' 40'

GRAPHIC LEGEND

- EXISTING TREE TO REMAIN
- TRANSPLANTED TREE FROM TREE FARM BY OTHERS **OWNER FURNISHED OWNER INSTALLED**
- LIVE OAK TREE, 200 GALLON
- COLUMNAR SWEET GUM, 65 GALLON
- VITEX TREE, 45 GALLON
- TULIP POPLAR, 65 GALLON
- PUNTING POLE BAMBOO, 15 GALLON **NOT IN CONTRACT**
- RED YUCCA, 3 GALLON
- BICOLOR IRIS, 3 GALLON
- ACADIAN MISS LOUISIANA IRIS, 3 GALLON
- CLYDE REDMOUND LOUISIANA IRIS, 3 GALLON
- RED VELVET ELVIS LOUISIANA IRIS, 3 GALLON
- WHITE CLOUD MUHLY GRASS, 3 GALLON
- SOCIETY GARLIC, 3 GALLON
- SAND LEAF FIG IVY, 1 GALLON
- PURPLE TRAILING LANTANA, 1 GALLON
- BERMUDA GRASS, SOD
- BERMUDA GRASS, HYDROMULCH
- EMERALD ZOYSIA, SOD
- FORESTATION AREA
- PINESTRAW MULCH
- WILDFLOWER AREA

PHASE 1 SCOPE ALTERNATES NOTE:

REFERENCE **G.001** FOR ALTERNATES SCOPE

DESIGN BUILD IRRIGATION NOTES:

1. IRRIGATION FOR ALL PLANTING BEDS, TREES, WILDFLOWERS, SOD, AND FORESTATION SHALL CONNECT TO EXISTING COUNTY'S WATER LINE.

THE STATE OF TEXAS · FORT BEND COUNTY ·

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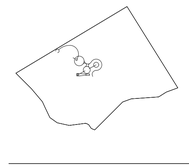

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04.12.2024

No.	Issue Description	MM-DD-YYYY
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Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

Sheet Title:

PLANTING PLAN

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

L2.03

MATCHLINE F; RE: L2.06

(FUTURE PHASE - FOR REFERENCE ONLY)

MATCHLINE E; RE: L2.05

(FUTURE PHASE - FOR REFERENCE ONLY)

FUTURE PHASE (N.I.C.)

SHOWN FOR REFERENCE ONLY

GRAPHIC LEGEND

EXISTING TREE TO REMAIN	TRANSPLANTED TREE FROM TREE FARM BY OTHERS OWNER FURNISHED OWNER INSTALLED	WHITE CLOUD MUHLY GRASS, 3 GALLON	FORESTATION AREA
LIVE OAK TREE, 200 GALLON	RED YUCCA, 3 GALLON	SOCIETY GARLIC, 3 GALLON	PINESTRAW MULCH
COLUMNAR SWEET GUM, 65 GALLON	BICOLOR IRIS, 3 GALLON	WILDFLOWER AREA	
VITEX TREE, 65 GALLON	ACADIAN MISS LOUISIANA IRIS, 3 GALLON	BERMUDA GRASS, SOD	SANDY LEAF FIG IVY, 1 GALLON
TULIP POPLAR, 65 GALLON	CLYDE REDMOND LOUISIANA IRIS, 3 GALLON	BERMUDA GRASS, HYDROMULCH	PURPLE TRAILING LANTANA, 1 GALLON
PUNTING POLE BAMBOO, 15 GALLON NOT IN CONTRACT	RED VELVET ELVIS LOUISIANA IRIS, 3 GALLON	EMERALD ZOYSIA, SOD	

LIMIT OF WORK

LIVE OAK - OWNER FURNISHED, OWNER INSTALLED, TYP.

WILDFLOWER AREA +/- 713 SF, TYP.

EXISTING GRAVE SITE

EXISTING TREE, TYP.

FORESTATION AREA A 4,681 SF +/-

HYDRO 76,598 sf

HYDRO 29,857 sf

LIMIT OF WORK

LIMIT OF WORK

MATCHLINE A; RE: L2.03

MATCHLINE C; RE: L2.02

DESIGN BUILD IRRIGATION NOTES:

1. IRRIGATION FOR ALL PLANTING BEDS, TREES, WILDFLOWERS, SOD, AND FORESTATION SHALL CONNECT TO EXISTING COUNTY'S WATER LINE.

0' 10' 20' 40'

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PHASE 1 SCOPE ALTERNATES NOTE:

REFERENCE **G.001** FOR ALTERNATES SCOPE

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Key Plan

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REGISTERED LANDSCAPE ARCHITECT JONATHAN J. McMAHEN 2125 STATE OF TEXAS

04.12.2024

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Drawn by: LANDology Reviewed by: JMcM

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Sheet Title:

PLANTING PLAN

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Sheet Number

L2.04

MATCHLINE G; RE: L2.07

(FUTURE PHASE - FOR REFERENCE ONLY)

FUTURE PHASE (N.I.C.)

SHOWN FOR REFERENCE ONLY

MATCHLINE E; RE: L2.04

(FUTURE PHASE - FOR REFERENCE ONLY)

PHASE 1

CALLED 235.17 ACRES
FORT BEND COUNTY, TEXAS
VOL. 2600, PG. 1323, F.B.C.O.R.
F.B.C.C. FILE NO. 9709110
F.B.C.C. FILE NO. 1999021061

0' 10' 20' 40'

THE STATE OF TEXAS · FORT BEND COUNTY ·

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REGISTERED LANDSCAPE ARCHITECT · JAMES MICHAEL McMAHAN · 2125 · STATE OF TEXAS

04.12.2024

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Project No: 922.001

Sheet Title:

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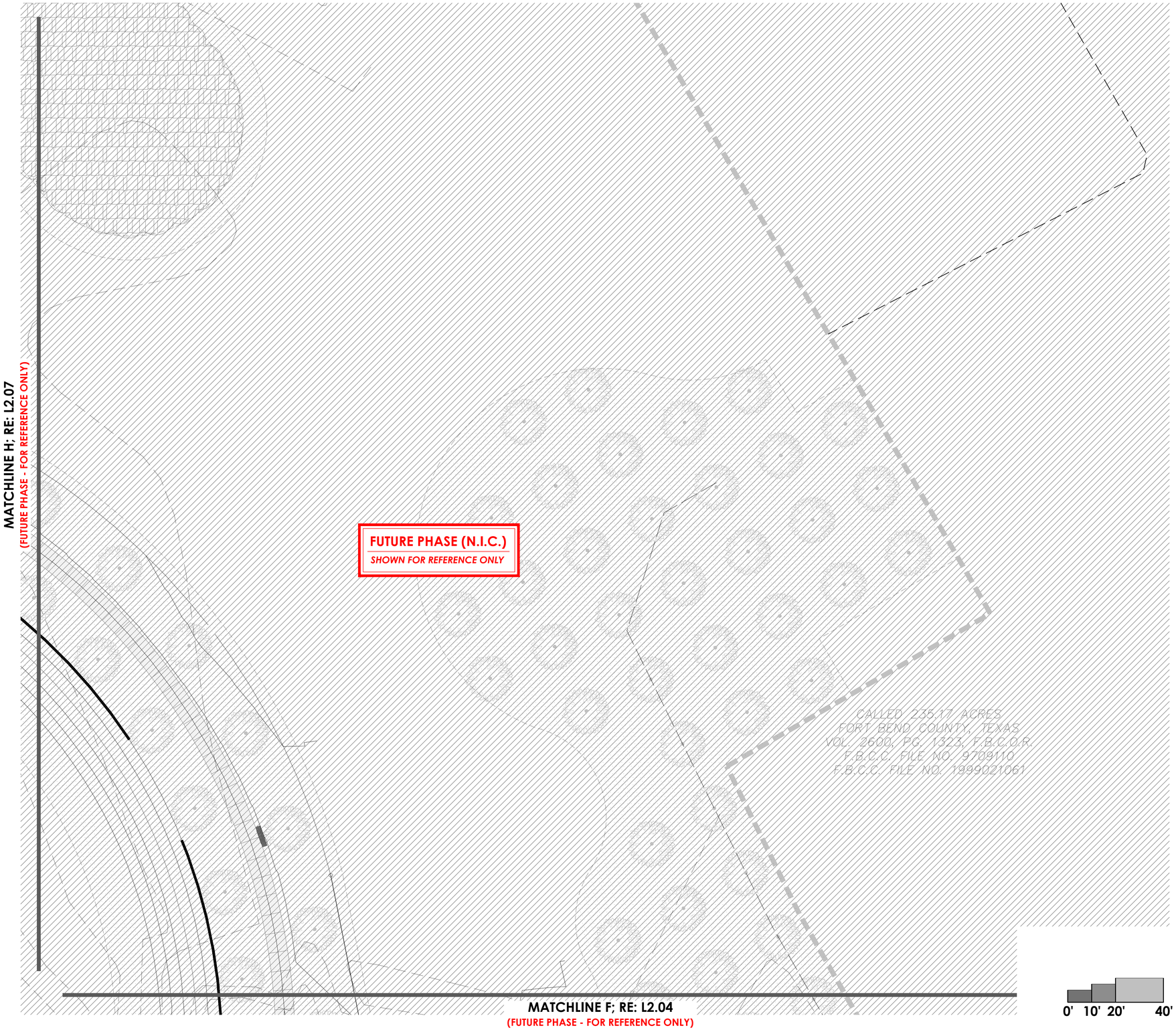
Sheet Number

L2.05



THE STATE OF TEXAS · FORT BEND COUNTY ·

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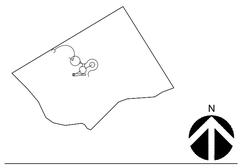

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Project No: 922.001

Sheet Title:

PLANTING PLAN

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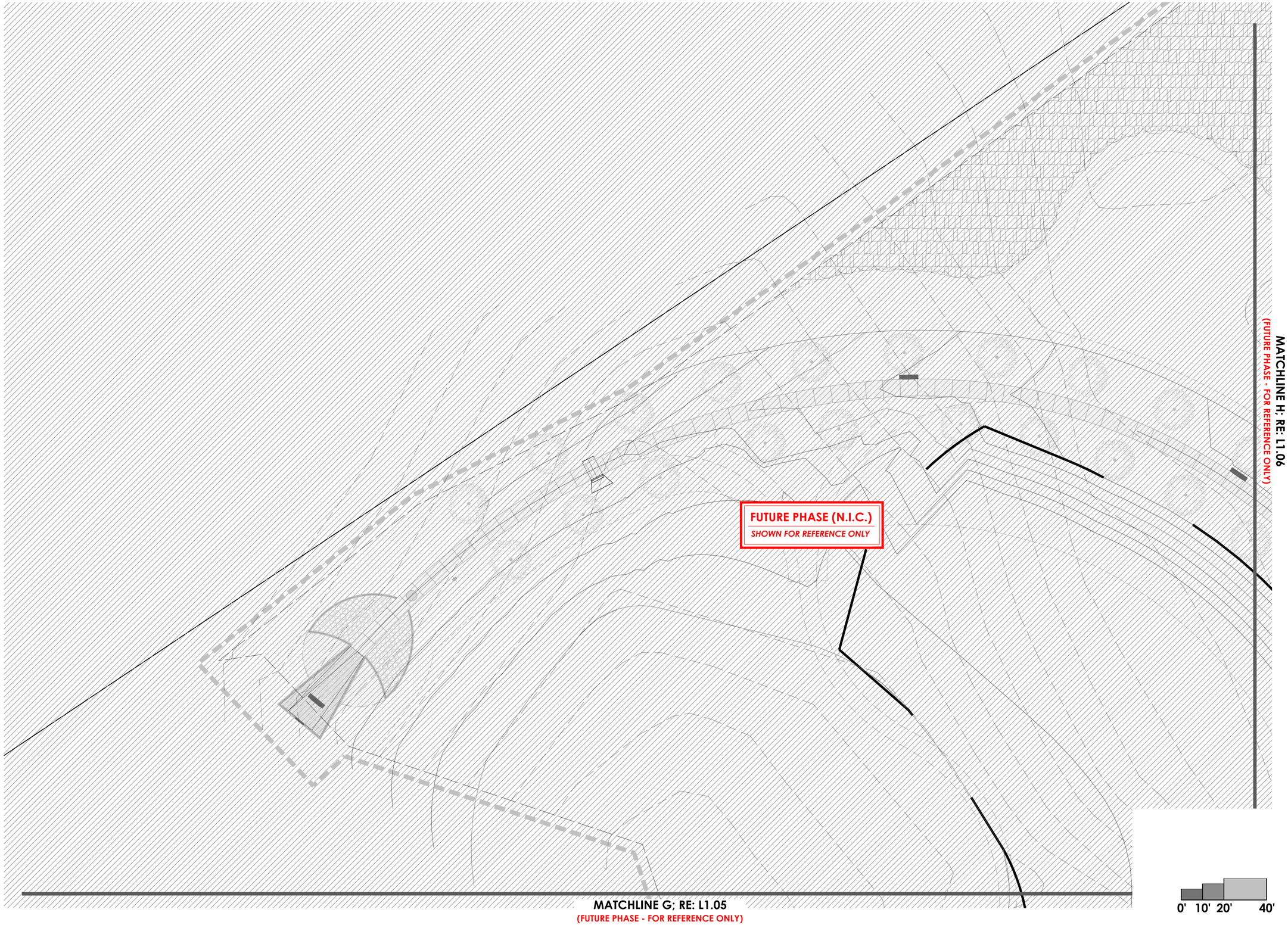
Sheet Number

L2.06



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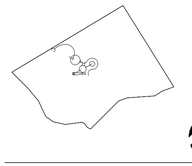

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Sheet Title:

PLANTING PLAN

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Sheet Number

L2.07

FORESTATION NOTES:

1. FORESTATION EDGE ZONE: 3'-0" WIDE STRIP SHALL BE 3" THICK PINE STRAW MULCH BED ONLY. FULL BED PREPARATION TO BE PROVIDED IN THIS ZONE UNLESS CALLED OUT OTHERWISE. PERIMETER OF ALL FORESTATION AREAS SHALL BE A SHOVEL CUT BED EDGE. (NO TREES OR SHRUBS)

2. FORESTATION TRANSITION ZONE:
3'-0" WIDE STRIP SHALL BE 3" THICK PINE STRAW MULCH BED WITH TREES ONLY. FULL BED PREPARATION TO BE PROVIDED IN THIS ZONE UNLESS CALLED OTHERWISE (NO SHRUBS). WHEN ADJACENT TO SIDEWALK, NO TREES SHALL BE PLANTED IN THIS ZONE. ALL TREES MUST BE 6'-0" MINIMUM OFF OF SIDEWALKS.

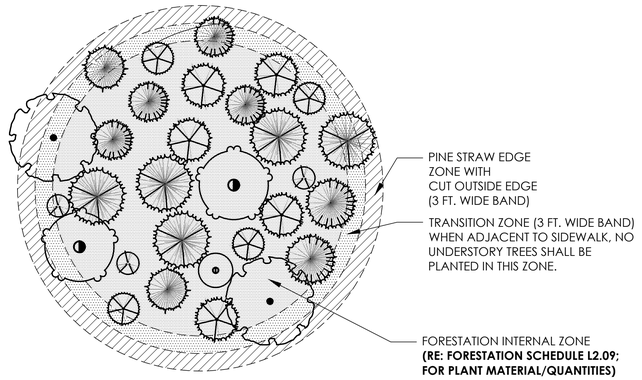
3. FORESTATION INTERNAL ZONE:
INCLUDES 3" THICK PINE STRAW MULCH BED WITH BOTH TREES AND SHRUBS. FULL BED PREPARATION TO BE PROVIDED IN THIS ZONE UNLESS CALLED OUT OTHERWISE.

4. ACTUAL PLANTING SHALL BE IN A RANDOM PATTERN AT 6'-0" O.C. MINIMUM AND 10'-0" MAXIMUM.

5. ALL TREES 15 GALLONS OR LARGER SHALL BE STAKED WITH (QTY: 2) TREE STAKES; SIMILAR TO SINGLE TRUNK TREE PLANTING; RE: G/ THIS SHEET.

PHASE 1 SCOPE ALTERNATES NOTE:

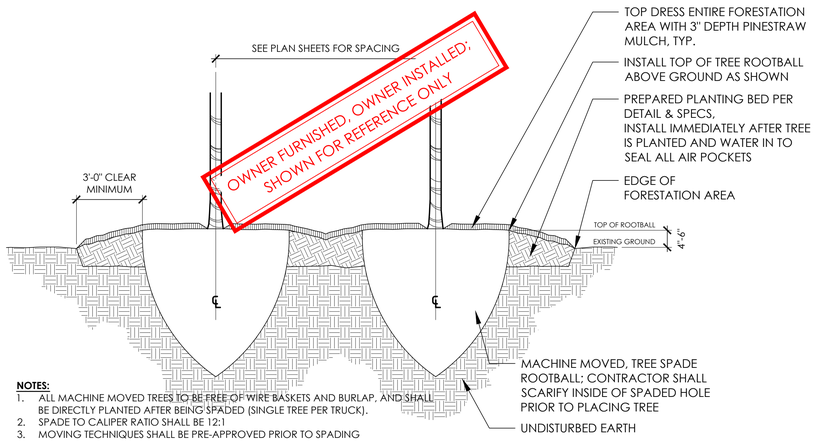
REFERENCE **G.001** FOR ALTERNATES SCOPE



NOTES:

1. CONTRACTOR SHALL STAKE IN THE FIELD FOR APPROVAL BY OWNER/LANDSCAPE ARCHITECT PRIOR TO PLANTING.
2. ANY PLANT INSTALLATION LOCATION NOT APPROVED AND DETERMINED UNSATISFACTORY SHALL BE REMOVED AND REPLANTED IN APPROVED LOCATIONS AT NO COST TO THE OWNER.
3. ALL 15 GAL. MATERIAL AND LARGER SHALL HAVE (2) TREE STAKES PROVIDED.
4. ALL 5 GAL. PINE TREES SHALL HAVE (1) TREE STAKE PROVIDED.
5. ALL 5 GAL. WAX MYRTLES & YAUPON HOLLY'S SHALL BE PLANTED A MIN. OF 7'-0" FROM EDGE OF WALKS.
6. PLANT ARRANGEMENT TO BE RANDOM AND MIMIC NATURAL NATIVE AREA/FOREST.

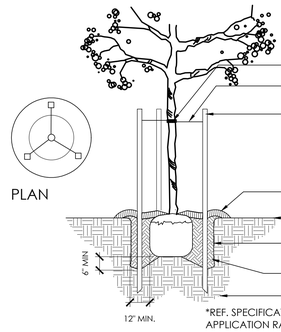
i TYPICAL FORESTATION DENSITY DIAGRAM — PLAN
30 TREES PER 2,500 SQ. FT. — NTS



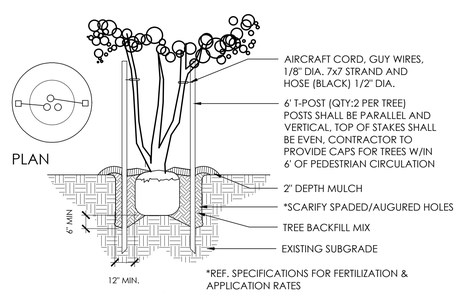
NOTES:

1. ALL MACHINE MOVED TREES TO BE FREE OF WIRE BASKETS AND BURLAP, AND SHALL BE DIRECTLY PLANTED AFTER BEING SPADED (SINGLE TREE PER TRUCK).
2. SPADE TO CALIPER RATIO SHALL BE 12:1
3. MOVING TECHNIQUES SHALL BE PRE-APPROVED PRIOR TO SPADING

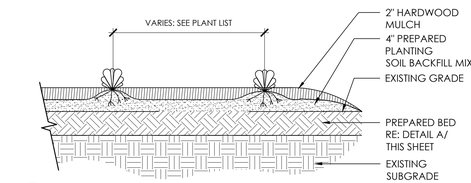
H MACHINE MOVED TREES - FORESTATION PLANTING — SECTION
NTS



G SINGLE TRUNK TREE STAKING — PLAN/SECTION
NTS

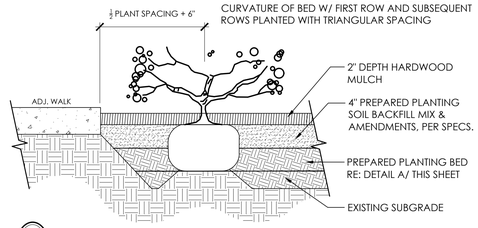


F MULTI-TRUNK TREE STAKING — SECTION
NTS

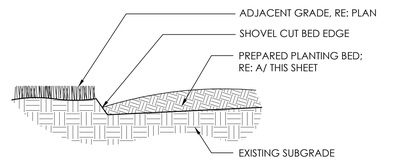


E GROUNDCOVER PLANTING — SECTION
NTS

NOTE:
PLANT SPACING TO FOLLOW THE PERIMETER OR CURVATURE OF BED W/ FIRST ROW AND SUBSEQUENT ROWS PLANTED WITH TRIANGULAR SPACING

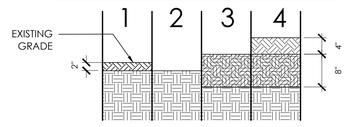


D SHRUB PLANTING — SECTION
NTS



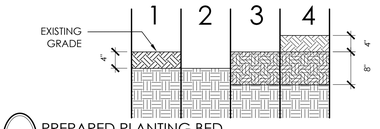
C SHOVEL CUT BED EDGE — SECTION
NTS

STEP 1) EXCAVATE 2" OF EXISTING EARTH
STEP 2) DISCARD EXCAVATED EARTH; RE: CIVIL
STEP 3) ADD 4" OF PLANTING MIX AND TILL 8"
STEP 4) ADD 4" OF PLANTING MIX



B PREPARED FORESTATION BED — SECTION
NTS

STEP 1) EXCAVATE 4" OF EXISTING EARTH
STEP 2) DISCARD EXCAVATED EARTH; RE: CIVIL
STEP 3) ADD 4" OF PLANTING MIX AND TILL 8"
STEP 4) ADD 4" OF PLANTING MIX



A PREPARED PLANTING BED — SECTION
NTS

THE STATE OF TEXAS · FORT BEND COUNTY

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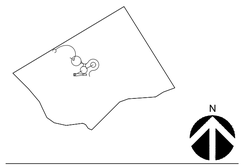

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Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

Sheet Title:

PLANTING DETAILS

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Sheet Number

L2.08

TRANSPLANTED LIVE OAK TREES BY OTHERS NOTE:

GENERAL CONTRACTOR TO CONTACT:

MARK EVANS
TREE TRUCKERS

281.341.7555

FOR COORDINATION OF 76 LIVE OAKS
TRANSPLATED FROM ADJACENT TREE FARM

PHASE 1 SCOPE ALTERNATES NOTE:

REFERENCE **G.001** FOR ALTERNATES SCOPE

PLANT SCHEDULE

SYMBOL	QTY	BOTANICAL / COMMON NAME	CONT.	CAL.	REMARKS
TREES					
	76	(TRANSPLATED BY OTHERS) QUERCUS VIRGINIANA / SOUTHERN LIVE OAK	90" SPADE MACHINE MOVED	6" CAL, MIN	OWNER FURNISHED - OWNER INSTALLED. EXISTING AT ADJACENT TREE FARM.
	95	LIQUIDAMBAR STYRACIFLUA 'FASTIGIATA' / COLUMNAR SWEET GUM	65 GAL	3" CAL. MIN.	12-14" HT. 6-7" SPR. STRAIGHT TRUNK, FULL BRANCHING
	6	LIRIODENDRON TULIPIFERA / TULIP POPLAR	65 GAL	3" CAL. MIN.	12-14" HT. 6-7" SPR. STRAIGHT TRUNK, FULL BRANCHING
	1	QUERCUS VIRGINIANA / SOUTHERN LIVE OAK	200 GAL		15-18` HT, 7-8` SPR, STRAIGHT TRUNK, FULL BRANCHING
	14	VITEX AGNUS-CASTUS / CHASTE TREE	45 GAL		5-6` HT, 4-6` SPR, MULTI TRUNK, FULL BRANCHING

SYMBOL	QTY	BOTANICAL / COMMON NAME	CONT	SPACING	REMARKS
SHRUBS					
	422	DIETES BICOLOR / BICOLOR IRIS	3 GAL	36" o.c.	18" HT, 18" SPR, WELL ROOTED, FULL POT
	66	HESPERALOE PARVIFLORA / RED YUCCA	3 GAL	36" o.c.	18" HT, 18" SPR, WELL ROOTED, FULL POT
	86	IRIS LOUISIANA 'ACADIAN MISS' / ACADIAN MISS LOUISIANA IRIS	3 GAL	36" o.c.	18" HT, 18" SPR, WELL ROOTED, FULL POT
	59	IRIS LOUISIANA 'CLYDE REDMOND' / CLYDE REDMOND LOUISIANA IRIS	3 GAL	36" o.c.	18" HT, 18" SPR, WELL ROOTED, FULL POT
	58	IRIS LOUISIANA 'RED VELVET ELVIS' / RED VELVET ELVIS LOUISIANA IRIS	3 GAL	36" o.c.	18" HT, 18" SPR, WELL ROOTED, FULL POT
	479	MUHLENBERGIA CAPILLARIS 'WHITE CLOUD' / WHITE CLOUD MUHLY GRASS	3 GAL	36" o.c.	18" HT, 18" SPR, WELL ROOTED, FULL POT
	102	TULBAGHIA VIOLACEA / SOCIETY GARLIC	3 GAL	18" o.c.	8" HT, 8" SPR, WELL ROOTED, FULL POT

SYMBOL	QTY	BOTANICAL / COMMON NAME	CONT.	SPACING	REMARKS
GROUND COVERS					
	2,108	FICUS TIKOUA / SANDY LEAF FIG IVY	1 GAL	18" o.c.	8"HT, 12" SPR, WELL ROOTED, FULL POT
	246	LANTANA MONTEVIDENSIS `PURPLE`` / PURPLE TRAILING LANTANA	1 GAL	18" o.c.	8" HT, 12" SPR, WELL ROOTED, FULL POT
SOD/SEED					
	3,603 SF	CYNODON DACTYLON / BERMUDA GRASS	SOD		SOD ALL DISTURBED AREAS
	264,494 SF	CYNODON DACTYLON 'SAHARA' / BERMUDA GRASS	HYDROMULCH		
	13,062 SF	ZOYSIA X 'EMERALD' / EMERALD ZOYSIA	SOD		
	713 SF	BERMUDA WILDFLOWER MIX	SEED		

0.40 LBS.	TEXAS TOUGH BERMUDA	20 LBS./ ACRE	CONTACT EAST TEXAS SEED COMPANY
0.10 LBS.	COREOPSIS LANCEOLATA/ PLAINS COREOPSIS	1 LBS./ ACRE	CONTACT NATIVE AMERICAN SEED COMPANY
0.10 LBS.	GALLARDIA PULCHELLA/ INDIAN BLANKET	5 LBS./ ACRE	CONTACT NATIVE AMERICAN SEED COMPANY
0.10 LBS.	IMPOMPOSIS RUBRA/ STANDING CYPRESS	3 LBS./ ACRE	CONTACT NATIVE AMERICAN SEED COMPANY
0.10 LBS.	MONARDA CITRIDORA/ LEMON MINT	2 LBS./ ACRE	CONTACT NATIVE AMERICAN SEED COMPANY
0.10 LBS.	RATIBIDA HIRTA/ MEXICAN HAT	1 LBS./ ACRE	CONTACT NATIVE AMERICAN SEED COMPANY
0.10 LBS.	RUDBECKIA HIRTA/ BLACKEYED SUSAN	1 LBS./ ACRE	CONTACT NATIVE AMERICAN SEED COMPANY
0.20 LBS.	SCHIZACHYRIUM SCOPARIUM/ LITTLE BLUESTEM' CIMARRON'	8 LBS./ ACRE	CONTACT BAMERT SEED
0.20 LBS.	LADY BIRD'S LEGACY WILDFLOWER MIX	10 LBS./ ACRE	CONTACT NATIVE AMERICAN SEED COMPANY

FORESTATION SCHEDULE

ZONES PHASE 1

TOTAL QTY	CONT. SIZE	SPECIES		A	B
7	30 GAL.	DRUMMOND RED MAPLE	6%	3	4
3	15 GAL.	SAVANNAH HOLLY	3%	1	2
13	7 GAL.	YAUPON HOLLY	11%	5	8
13	7 GAL.	WAX MYRTLE	11%	5	8
11	4" MM	LOBLOLLY PINE	9%	4	7
7	30 GAL.	LOBLOLLY PINE	6%	3	4
13	15 GAL.	LOBLOLLY PINE	11%	5	8
19	5 GAL.	LOBLOLLY PINE	16%	7	12
7	30 GAL.	MEXICAN SYCAMORE	6%	3	4
7	30 GAL.	WATER OAK	6%	3	4
3	5 GAL.	WILLOW OAK	3%	1	2
7	30 GAL.	TEXAS RED OAK	6%	3	4
7	5 GAL.	CEDAR ELM	6%	3	4
		TOTAL TREES		**46**	**71**

THE STATE OF TEXAS · FORT BEND COUNTY

Project:

AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:

FORT BEND COUNTY

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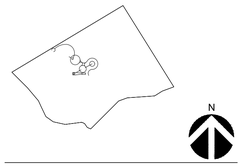
Key Plan



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04.12.2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

Sheet Title:

PLANT SCHEDULE

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

L2.09

SECTION 329300 - PLANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Plants.
   2. Planting soils.
   3. Plant drainage.

1.2 DEFINITIONS

A. Backfill: The earth used to replace or the act of replacing earth in an excavation.
B. Finish Grade: Elevation of finished surface adjacent to planting bed.
C. Prepared Backfill Mix: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
D. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.
E. Pests: Living organisms that occur where they are not desired, or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
F. Topsoil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.
G. 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.
H. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.
I. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

1.3 ACTION SUBMITTALS

A. Product Data shall be submitted for each type of product.
   1. Plant Materials: Include quantities, sizes and source for plant materials.
   2. Plant Photographs: Include color photographs in digital format, including embedded time and date stamp of each required species and size of plant material as it will be furnished to the project. Photographs shall be of actual plant material and not stock photos. Include a scale rod or other measuring device in each photo. Identify each photograph with the full scientific name and variety of plant species.
B. Samples for Verification: For each of the following in a 1-quart bag:
   1. MulcheS
   2. Planting Mix
   3. Gravel

1.4 QUALITY ASSURANCE

A. Installer: Installation of planting work shall be performed by a single firm specializing in landscape and planting work. Contractor shall be licensed by the Texas Association of Nurserymen, shall possess an agricultural certificate, shall be a licensed pest applicator, and shall have not less than 5 years of experience in this type of work.
B. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
   1. Pesticide Applicator: State licensed, commercial.
      Retain first paragraph below for existing topsoil or surface soil to be reused, or for imported or manufactured topsoil.
C. Provide quality, size, genus, species, and variety of plants indicated, complying with applicable requirements in ANSI Z60.1. Provide healthy, vigorous stock, grown in recognized nursery in accordance with good horticultural practice and free of disease, insects, eggs, larvae and defects such as knots, sun-scald, injuries, abrasions or disfigurement.
D. Delivery, Storage and Handling
   1. Compliance: Ship planting materials with Certificates of Inspection as required by governing authorities. Comply with all applicable local, state, and federal requirements regarding materials, methods of work, and disposal of excess and waste materials.
   2. Substitutions: Do not make substitutions unless approved in writing by Owner's Representative. If specified planting material is not obtainable, submit proof of non-availability to Owner's Representative together with proposal for use of equivalent material. Contractor shall submit proposal in a timely manner as to not impact project completion or installation of other work.
   3. Analysis and Standards: All packaged products shall be delivered in original manufacturer's sealed containers. For unpackaged materials, submit analysis by recognized laboratory made in accordance with methods established by the Association of Official Agriculture Chemists, wherever applicable.
   4. Inspection: Notify Owner's Representative at least 2 weeks prior to installation, of location where materials that have been selected for planting may be inspected, either at place of growth or the site prior to planting. Plant material will be inspected for compliance with requirements for genus, species, variety, size and quality. Owner's Representative retains right to further inspect trees for size and conditions of balls and root systems, insects, injuries and latent defects, and to reject unsatisfactory or defective material at any time during progress of work. Contractor shall remove rejected trees immediately from site and replace with specified materials. Plant material not installed in accordance with Contract Documents will be rejected.

1.5 WARRANTY

A. Special Warranty: Installer 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 Owner, or incidents that are beyond Contractor's control.
      b. Structural failures including plantings falling or blowing over.
   2. Warranty Periods from Date of Completion:
      a. Trees, Shrubs, Vines, and Ornamental Grasses: 12 months.
      b. Ground Covers, Biennials, Perennials, and Other Plants: 12 months.
      c. Annuals: 3 months.
   3. Remove and replace trees, shrubs and groundcover found to be dead or in unhealthy condition during warranty period. Replace trees, shrubs and groundcover which are in doubtful condition at end of warranty period. However, if in the opinion of Owner, such doubtful material may survive, Contractor shall extend the warranty period for a full growing season. Owner will determine which items are in doubtful condition.

1.6 MAINTENANCE SERVICE

A. Initial Maintenance Service: Provide maintenance by skilled employees of landscape Installer. Begin maintenance immediately after plants are installed throughout the maintenance period. See Section 3.3 below.
B. Maintenance Period for Trees and Shrubs: until final acceptance by owner.
C. Maintenance Period for Ground Cover and Other Plants: until final acceptance by owner.

1.7 JOB CONDITIONS

A. Work Scheduling: Proceed with and complete planting work in a timely manner, working within seasonal limitations for each kind of planting work required.
B. Planting Time
   1. Correlate planting with specified maintenance periods to provide maintenance from date of Substantial Completion.
   2. Plant frost-tender trees only after danger of frost is past or sufficiently before frost season to allow for establishment before first frost. Do not plant in frozen ground.
   3. Plant trees, shrubs and groundcover after final grades are established and prior to planting of lawns, unless otherwise directed by Owner's Representative in writing. If planting occurs after lawn work, protect lawn areas and promptly repair damage to lawns resulting from planting operations.
C. Utilities: Refer to drawings and coordinate with Utility Contractor for location of utilities. Contractor shall be responsible for damage to existing utilities and structures.
D. Security: The Owner will not assume any responsibility for security of any materials, equipment, etc. during construction of the project until project acceptance.
E. Excavation: When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions beyond the scope of this contract, or obstructions, notify Owner's Representative of such conditions, immediately and before planting.
F. Pollution Control: Control dust caused by planting operations. Dampen surfaces as necessary. Comply with pollution control regulations of governing authorities.

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 Schedule or Plant Legend shown on Drawings and complying with ANSI Z60.1; and 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.

2.2 FERTILIZERS

A. Fertilizer
   1. For Planting areas shall be a commercial all organic, all natural biological fertilizer, which includes humates, rock minerals, bio-inoculants and bio-stimulants. Fertilizer shall be granular, uniform in composition, free flowing, and suitable for application with approved equipment. Fertilizer which has been exposed to high humidity and moisture, has become caked or otherwise damaged making it unsuitable for use, will not be acceptable. Fertilizer shall be Microlife Ultimate (8-4-6) as manufactured by San Jacinto Environmental Supply, 2221 A West 34th Street, Houston, TX 77018, 713-957-0909, or approved equal. Fertilizer shall be mixed into the planting mix at the rate of 5 lbs. per cu. Yd.
      Additional Microlife Ultimate fertilizer shall be evenly dispersed through soil in planting pits at the following rate:

Material	No. of ounces per planting pit
65 gallon	6
30 gallon	3

A. Tree Inoculent: Rhizanova Mycorrhizal Inoculant as supplied by San Jacinto Enviromental Supply, Houston, TX, shall be applied to all trees and plant materials 65 gal. and larger at the rate of one 3 oz. dry pack per caliper inch.
B. Mulch for top dressing: Organic mulch free from deleterious materials and suitable for top dressing of trees, shrubs or plants. Mulch shall be composted, well-rotted, blended double-shredded hardwood mulch, black or dark brown in color. Mulch pieces shall be sized to pass through a 1" screen. No dyes, mushroom compost or other additives shall be used to artificially enhance the appearance of the level of composting. Mulch shall be Native Hardwood Mulch as supplied by Natures Way Resources, 101 Sherbrook Circle, Conroe, TX, or approved equal.
C. Sharp Sand: Sand shall be thoroughly washed, coarse, graded sharp, construction or brick sand, free of clay balls, weeds, and grass. So-called cushion sand, blow sand, or creek silt is not acceptable for substitution where sharp sand is specified.
D. Compost for bed prep/soil backfill mix shall be leaf mold compost as supplied by Nature's Way Resources, Inc., Conroe, Texas or approved equal. Compost shall be an organic compost free from deleterious materials, 100% composted vegetative material and horse manure according to TxDOT special specification 1058 'Compost'. Compost must be made from organic materials approved by the State of Texas as specified in Chapter 332 of the Health & Safety Code as listed in the Texas register. Compost must contain less than 1% by dry weight of inert contaminants such as glass, plastic, rocks, etc. Industrial or hazardous waste can not be used in the production of the compost (i.e. boiler ash, rice hull ash, etc.). Compost shall be free of fillers such as rice hulls or pine bark. Compost shall not exceed the heavy metal limits as specified in the US EPA Part 503 Regulations.
   1. Contractor shall furnish copies of manufacturer's literature, certifications, sources, samples, or laboratory analytical data for the following items: Certificates of inspection required for transportation shall accompany each shipment of materials. Provide certificates to Owner's Representative.
   2. Testing:
      a. Chemical and Physical - All compost components shall be tested by one of the following testing laboratories for conformity to the specifications:
      b. Texas Plant and Soil Lab, 5115 West Monte Cristo, Edinburg, Texas 78539, (956) 383-0739; A&L Plains Agricultural Laboratories, Inc., 302 34th Street, Lubbock, Texas 79404, (806) 763-4278; Soil and Plant Laboratory, Incorporated, Post Office Box 153, Santa Clara, California 95052, (408) 243-0330.
      c. Biological: Soil Food Web. 1128 NE 2nd Street, Suite 120, Corvallis, Oregon 97330, (541) 752-5066.
      d. If herbicide contamination is suspected, then a radish/rye-grass growth trial must be performed. For delivered material, test one grab sample for each fifty (50) cubic yards of bulk material delivered to the site. Testing will be at the expense of Contractor. Deviations greater than plus or minus twenty (20%) percent from control data may be grounds for rejection of mixes tested. Non-conforming materials shall not be used and shall be removed from the site.
   3. Biological, physical and chemical specifications:
      a. Specifications: Stability/Maturity (Carbon Dioxide Evolution Rate) Shall be less than 8 mg CO2-C per g OM (organic matter) per day and greater than 6.0 on the SolvitaTM Compost Maturity Test.
      b. Biological components:
      Bacteria (active) - minimum of 15-25 micrograms per gram of compost; Bacteria (total) - minimum of 150 micrograms per gram of compost; Fungus (active) - minimum of 15-25 micrograms per gram of compost; Fungus (total) - minimum of 150 micrograms per gram of compost; Fungus (hyphal diameter) - should be greater than 1 mm; Protozoa: flagellates - 8,000 or higher per gram of compost; amoebae - 8,000 or higher per gram of compost; ciliates - 50-100 or higher per gram of compost; Root Feeding Nematodes should not be present (beneficial nematodes are a benefit)
   4. PHYSICAL Specifications: Moisture Content - 30-60%, wet weight basis; Moisture Holding Capacity - 75-200% of dry weight; Organic Matter Content - 30-70% (40-50% preferred), dry weight basis; Particle Size: Standard Grade Compost - 100% passing through a 1" rectangular mesh screen or smaller; Fine Grade Compost - 100% passing through a 3/8" rectangular mesh screen or smaller; Bulk Density - 700-1,200 (800-1,000 preferred), pounds per cubic yard; Electrical Conductivity (Soluble Salt Concentration) -10 dS/m (mmhos/cm,) max., (2.0-3.6 or less preferred).
   5. CHEMICAL Specifications; pH 6.0-8.5; Total Salinity-2,000 ppm or lower; Chemical components (H2O extraction): Nitrogen-10 ppm or higher, Phosphorus-100 ppm or higher, Potassium-400 ppm or higher, Calcium-2000 ppm or higher, Magnesium-200 ppm or higher, Zinc-6 ppm or higher, Iron-25 ppm or higher, Manganese - 8 ppm or higher, Copper-1 ppm or higher, Sodium-1000 ppm or less, Sulfur-10 ppm or higher Boron-1 ppm or higher.

2.3 PLANTING SOILS

A. Prepared Planting Soil Backfill Mix: Shall be Landscaper's Mix as supplied by New Earth, 12286 TX-105, Conroe, TX 7730 or approved equal commercially available soil mix containing sharp sand, compost, fertilizer and topsoil.

2.4 MULCHES

A. Mulch for Top Dressing to be Finely Shredded Hardwood; free from deleterious materials and suitable for top dressing of trees, shrubs or plants, unless called out as pinestraw.

2.5 WEED-CONTROL BARRIERS

A. Filter Fabric, Mirafi 140-N by Tencate or approved equal.

2.6 GRAVELS

A. 2"-4" Dia. Bullrock

2.7 PESTICIDES

A. General: Pesticide registered and approved by 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.

2.8 TOPSOILS

A. Provide topsoil which is fertile, friable, natural loam, surface soil, free of subsoil, clay lumps, brush, weeds and other litter, and free of roots, stumps, stones larger than 2 inches in any dimension and other extraneous or toxic matter harmful to plant growth.
B. Obtain topsoil only from naturally, well-drained sites where topsoil occurs in a depth of not less than 4 inches. Topsoil shall not be collected from sites that are infected with growth of, or the reproductive parts of noxious weeds, especially nut grass. Topsoil shall not be stripped, collected or deposited while wet. Topsoil shall not be excessively acid or alkaline or contain toxic substances which may be harmful to plant growth. Topsoil shall be without admixture of subsoil.

2.9 HERBICIDE

A. Pre-emergent herbicide shall be Team Pro as manufactured by Bonus Corp Fertilizer, Houston, TX, or approved equal. Apply pre-emergent over all planting areas prior to spreading mulch at the rate of 7 lbs./1000 sq. feet.
B. If necessary, contact herbicide shall be Roundup by Monsanto, 800 N. Lindbergh, St. Louis, MO 63167, 314-694-1000, or approved equal. Apply Roundup only if necessary and if approved by owner or owner's representative. Do not exceed manufacturer's recommended rate of application.

PART 3 - EXECUTION

3.1 PLANTING

A. Excavation for Trees and Large Shrubs
   1. Excavate pits with vertical sides and with bottom of excavation slightly raised at center to provide proper drainage. Rough up sides of pit.
   2. Make excavations at least half again as wide as the ball diameter and equal to the ball depth, plus 3" allowance for setting of ball on a layer of compacted backfill.
   3. Dispose of subsoil removed from planting excavations. Do not mix with planting soil or use as backfill.
B. Planting Trees and Large Shrubs
   1. Set stock on layer of compacted prepared planting soil backfill mix, plumb and in center of pit at same elevation as adjacent finished planting grades. Distribute additional fertilizer evenly throughout backfill mix in hole at specified rate. Place prepared planting soil backfill mix around base and sides of ball and work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately 2/3 full, water thoroughly before placing remainder of backfill. For trees, apply Tree Inoculant at rate specified according to size of tree. Repeat watering until no more water is absorbed. Dish top of backfill to allow for mulching.
   2. Prune, thin out, and shape shrubs in accordance with standard horticultural practice. Prune shrubs to retain natural character. Remove and replace excessively pruned or misformed stock resulting from improper pruning.
C. Excavation for Shrubs in Beds
   1. Excavate entire planting beds to a depth of 4 inches. Planting beds to have vertical sides.
   2. Dispose of subsoil removed from planting beds excavations. Do not mix with planting soil or use as backfill.
   3. Place 4 inches of prepared planting soil backfill mix including fertilizer and till into existing soil to a dept of 8 inches (4" into existing soil)
   4. place 4 inches of prepared planting soil backfill mix including fertilizer.
D. Planting of Trees and Shrubs in Beds
   1. Set stock on layer planting soil mixture, plumb and at the same elevation as adjacent finished planting grades. Place fertilizer tablets paced in planting bed at specified rate. Place additional backfill mix around base and sides of ball and work each layer to settle backfill and eliminate voids and air pockets. Water entire bed thoroughly, adjusts plant if settling occurs.

3.2 EXCAVATION FOR TREES, SHRUBS AND LARGE SHRUBS

Planting Pits and Trenches: Excavate circular planting pits with sides sloping inward at a 45-degree angle. Excavations with vertical sides are not acceptable. Trim perimeter of bottom leaving center area of bottom raised slightly 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.
Excavate approximately three times as wide as ball diameter.

3.3 PLANT MAINTENANCE

A. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings. Spray or treat as required to keep trees and shrubs free of insects and disease.
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 to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use practices to minimize the use of pesticides and reduce hazards.
D. Apply pesticides and other chemical products and biological control agents in accordance with authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.
E. 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.

THE STATE OF TEXAS · FORT BEND COUNTY ·

Project:

AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:

FORT BEND COUNTY

1517 EUGENE HEIMANN CIRCLE
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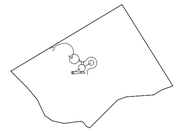
Key Plan



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Professional Seals



04.12.2024

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	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

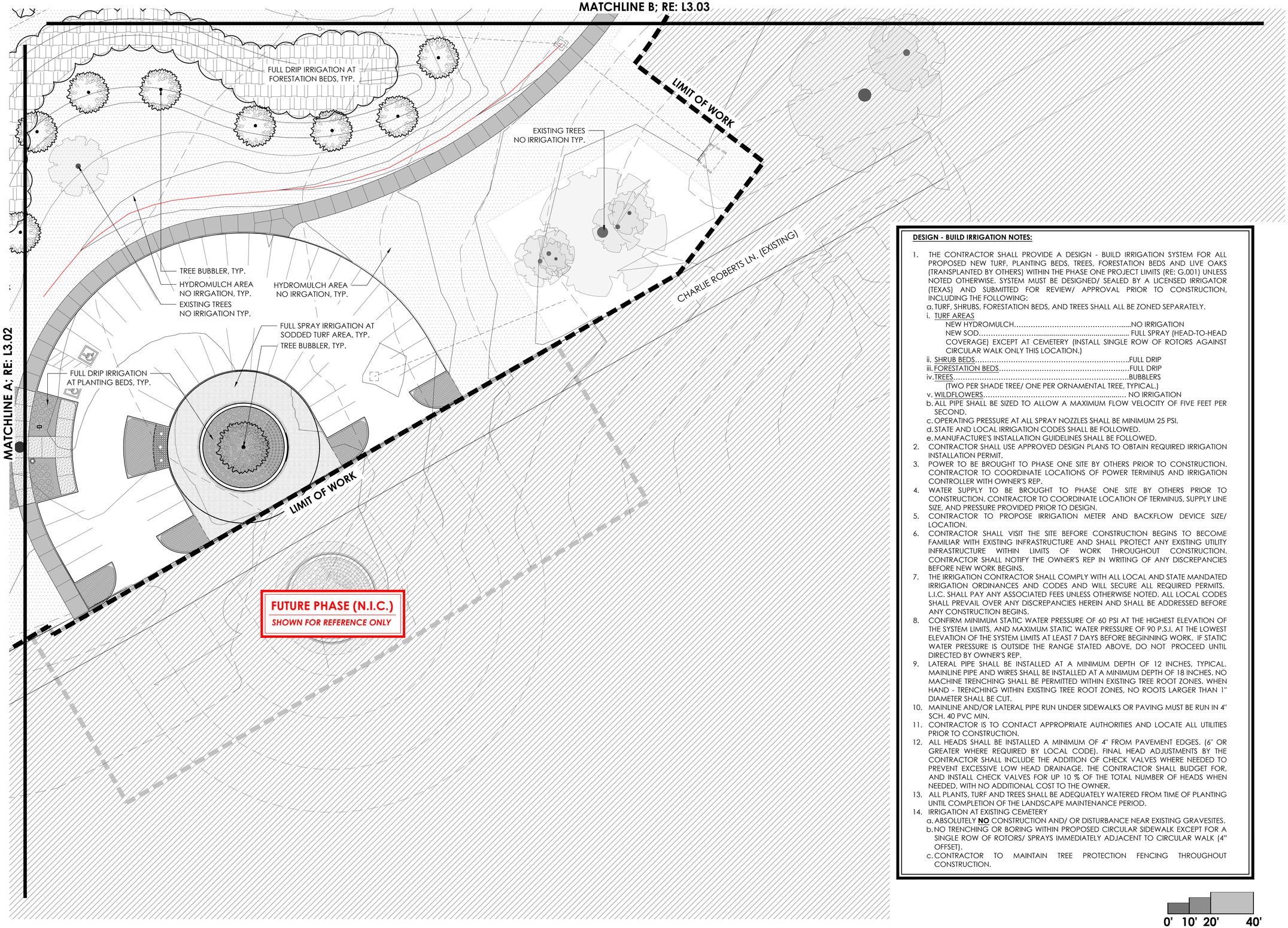
Sheet Title:

PLANT SPECIFICATIONS

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

L2.10



DESIGN - BUILD IRRIGATION NOTES:

1. THE CONTRACTOR SHALL PROVIDE A DESIGN - BUILD IRRIGATION SYSTEM FOR ALL PROPOSED NEW TURF, PLANTING BEDS, TREES, FORESTATION BEDS AND LIVE OAKS (TRANSPLANTED BY OTHERS) WITHIN THE PHASE ONE PROJECT LIMITS (RE: G.001) UNLESS NOTED OTHERWISE. SYSTEM MUST BE DESIGNED/ SEALED BY A LICENSED IRRIGATOR (TEXAS) AND SUBMITTED FOR REVIEW/ APPROVAL PRIOR TO CONSTRUCTION, INCLUDING THE FOLLOWING:
   a. TURF, SHRUBS, FORESTATION BEDS, AND TREES SHALL ALL BE ZONED SEPARATELY.
   i. TURF AREAS
      NEW HYDROMULCH.....NO IRRIGATION
      NEW SOD..... FULL SPRAY (HEAD-TO-HEAD COVERAGE) EXCEPT AT CEMETERY (INSTALL SINGLE ROW OF ROTORS AGAINST CIRCULAR WALK ONLY THIS LOCATION.)
   ii. SHRUB BEDS.....FULL DRIP
   iii. FORESTATION BEDS.....FULL DRIP
   iv. TREES.....BUBBLERS
      (TWO PER SHADE TREE/ ONE PER ORNAMENTAL TREE, TYPICAL.)
   v. WILDFLOWERS..... NO IRRIGATION
   b. ALL PIPE SHALL BE SIZED TO ALLOW A MAXIMUM FLOW VELOCITY OF FIVE FEET PER SECOND.
   c. OPERATING PRESSURE AT ALL SPRAY NOZZLES SHALL BE MINIMUM 25 PSI.
   d. STATE AND LOCAL IRRIGATION CODES SHALL BE FOLLOWED.
   e. MANUFACTURE'S INSTALLATION GUIDELINES SHALL BE FOLLOWED.
2. CONTRACTOR SHALL USE APPROVED DESIGN PLANS TO OBTAIN REQUIRED IRRIGATION INSTALLATION PERMIT.
3. POWER TO BE BROUGHT TO PHASE ONE SITE BY OTHERS PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE LOCATIONS OF POWER TERMINUS AND IRRIGATION CONTROLLER WITH OWNER'S REP.
4. WATER SUPPLY TO BE BROUGHT TO PHASE ONE SITE BY OTHERS PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE LOCATION OF TERMINUS, SUPPLY LINE SIZE, AND PRESSURE PROVIDED PRIOR TO DESIGN.
5. CONTRACTOR TO PROPOSE IRRIGATION METER AND BACKFLOW DEVICE SIZE/ LOCATION.
6. CONTRACTOR SHALL VISIT THE SITE BEFORE CONSTRUCTION BEGINS TO BECOME FAMILIAR WITH EXISTING INFRASTRUCTURE AND SHALL PROTECT ANY EXISTING UTILITY INFRASTRUCTURE WITHIN LIMITS OF WORK THROUGHOUT CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE OWNER'S REP IN WRITING OF ANY DISCREPANCIES BEFORE NEW WORK BEGINS.
7. THE IRRIGATION CONTRACTOR SHALL COMPLY WITH ALL LOCAL AND STATE MANDATED IRRIGATION ORDINANCES AND CODES AND WILL SECURE ALL REQUIRED PERMITS. L.I.C. SHALL PAY ANY ASSOCIATED FEES UNLESS OTHERWISE NOTED. ALL LOCAL CODES SHALL PREVAIL OVER ANY DISCREPANCIES HEREIN AND SHALL BE ADDRESSED BEFORE ANY CONSTRUCTION BEGINS.
8. CONFIRM MINIMUM STATIC WATER PRESSURE OF 60 PSI AT THE HIGHEST ELEVATION OF THE SYSTEM LIMITS, AND MAXIMUM STATIC WATER PRESSURE OF 90 P.S.I. AT THE LOWEST ELEVATION OF THE SYSTEM LIMITS AT LEAST 7 DAYS BEFORE BEGINNING WORK. IF STATIC WATER PRESSURE IS OUTSIDE THE RANGE STATED ABOVE, DO NOT PROCEED UNTIL DIRECTED BY OWNER'S REP.
9. LATERAL PIPE SHALL BE INSTALLED AT A MINIMUM DEPTH OF 12 INCHES, TYPICAL. MAINLINE PIPE AND WIRES SHALL BE INSTALLED AT A MINIMUM DEPTH OF 18 INCHES. NO MACHINE TRENCHING SHALL BE PERMITTED WITHIN EXISTING TREE ROOT ZONES. WHEN HAND - TRENCHING WITHIN EXISTING TREE ROOT ZONES, NO ROOTS LARGER THAN 1" DIAMETER SHALL BE CUT.
10. MAINLINE AND/OR LATERAL PIPE RUN UNDER SIDEWALKS OR PAVING MUST BE RUN IN 4" SCH. 40 PVC MIN.
11. CONTRACTOR IS TO CONTACT APPROPRIATE AUTHORITIES AND LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION.
12. ALL HEADS SHALL BE INSTALLED A MINIMUM OF 4" FROM PAVEMENT EDGES. (6" OR GREATER WHERE REQUIRED BY LOCAL CODE). FINAL HEAD ADJUSTMENTS BY THE CONTRACTOR SHALL INCLUDE THE ADDITION OF CHECK VALVES WHERE NEEDED TO PREVENT EXCESSIVE LOW HEAD DRAINAGE. THE CONTRACTOR SHALL BUDGET FOR, AND INSTALL CHECK VALVES FOR UP 10 % OF THE TOTAL NUMBER OF HEADS WHEN NEEDED, WITH NO ADDITIONAL COST TO THE OWNER.
13. ALL PLANTS, TURF AND TREES SHALL BE ADEQUATELY WATERED FROM TIME OF PLANTING UNTIL COMPLETION OF THE LANDSCAPE MAINTENANCE PERIOD.
14. IRRIGATION AT EXISTING CEMETERY
   a. ABSOLUTELY **NO** CONSTRUCTION AND/ OR DISTURBANCE NEAR EXISTING GRAVESITES.
   b. NO TRENCHING OR BORING WITHIN PROPOSED CIRCULAR SIDEWALK EXCEPT FOR A SINGLE ROW OF ROTORS/ SPRAYS IMMEDIATELY ADJACENT TO CIRCULAR WALK (4" OFFSET).
   c. CONTRACTOR TO MAINTAIN TREE PROTECTION FENCING THROUGHOUT CONSTRUCTION.

0' 10' 20' 40'

THE STATE OF TEXAS · FORT BEND COUNTY ·

Project:

AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:

FORT BEND COUNTY

1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

HINESAD

Contract No: 218226

Design Team:

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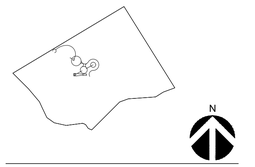

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04.12.2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: LANDology Reviewed by: JMcM

Project No: 922.001

Sheet Title:

IRRIGATION PLAN

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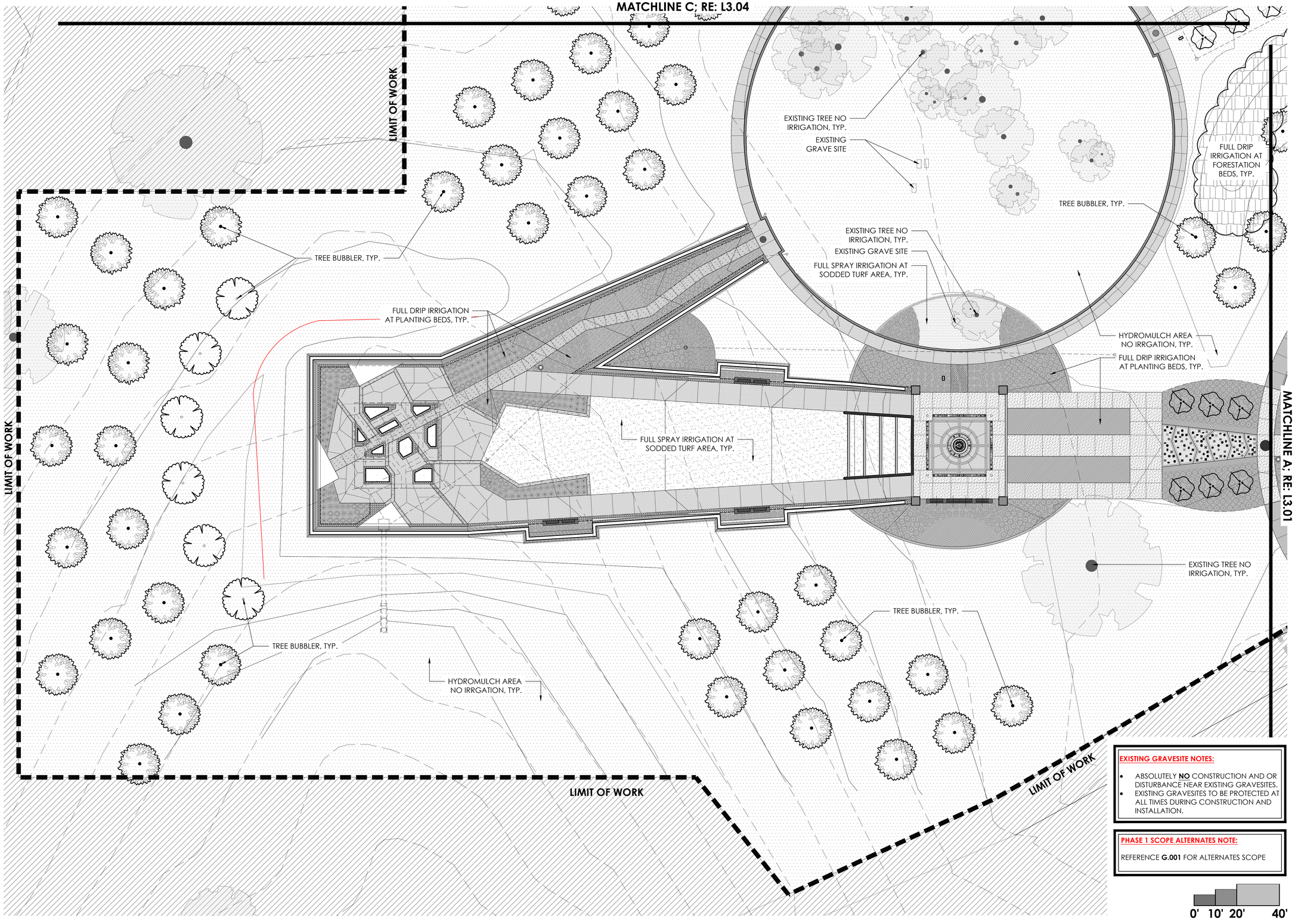
Sheet Number

L3.01



EXISTING GRAVESITE NOTES:

- ABSOLUTELY **NO** CONSTRUCTION AND OR DISTURBANCE NEAR EXISTING GRAVESITES.
- EXISTING GRAVESITES TO BE PROTECTED AT ALL TIMES DURING CONSTRUCTION AND INSTALLATION.

PHASE 1 SCOPE ALTERNATES NOTE:

REFERENCE **G.001** FOR ALTERNATES SCOPE

0' 10' 20' 40'

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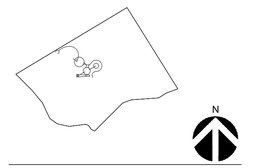

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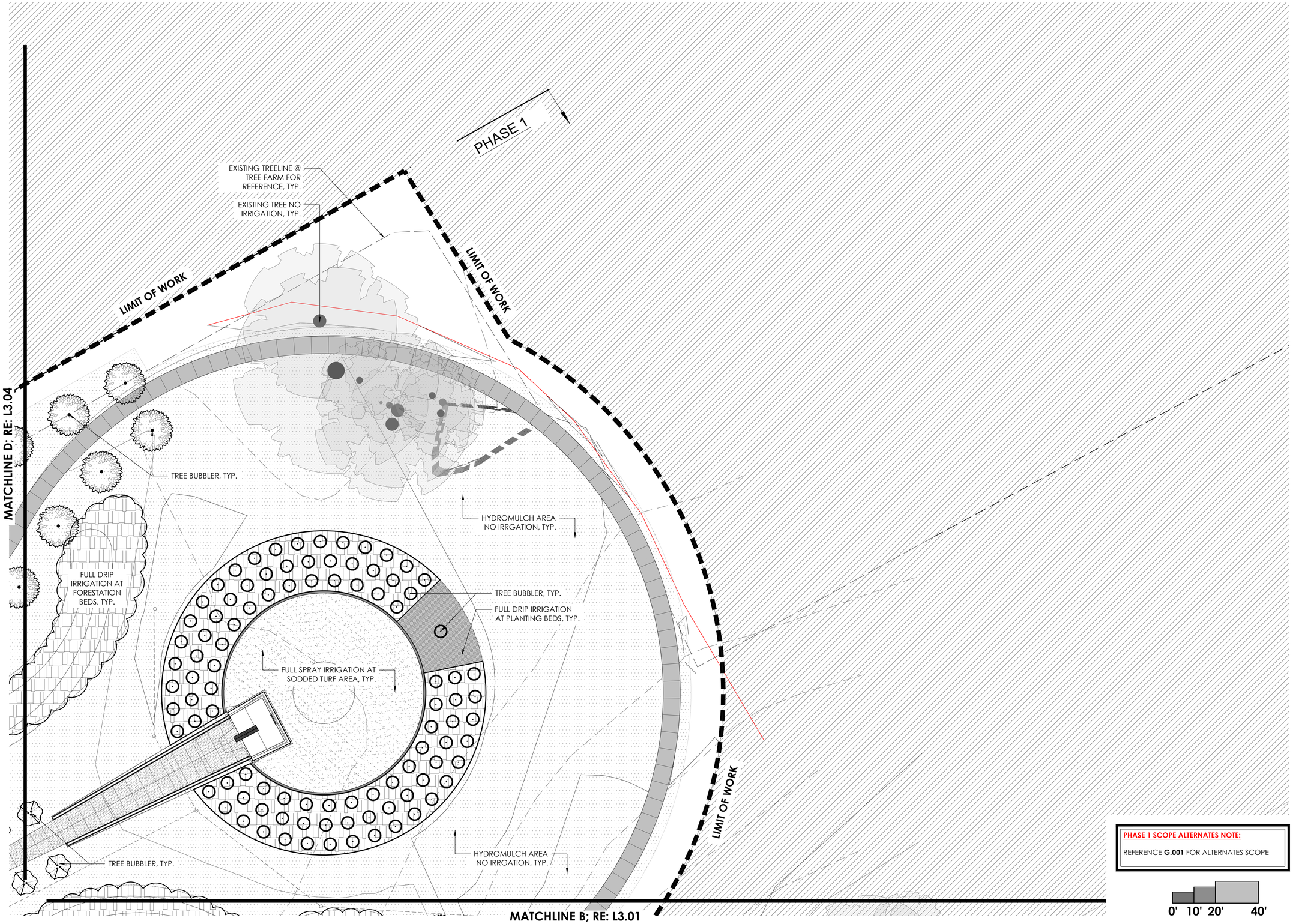
Sheet Number

L3.02



PHASE 1 SCOPE ALTERNATES NOTE:

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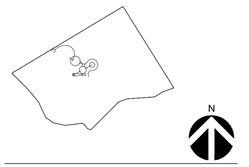

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Sheet Title:

IRRIGATION PLAN

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Sheet Number

L3.03

MATCHLINE F; RE: L3.06
(FUTURE PHASE - FOR REFERENCE ONLY)

MATCHLINE E; RE: L3.05
(FUTURE PHASE - FOR REFERENCE ONLY)

FUTURE PHASE (N.I.C.)
SHOWN FOR REFERENCE ONLY

LIMIT OF WORK

TREE BUBBLER, TYP.

EXISTING TREE NO IRRIGATION, TYP.

FULL DRIP IRRIGATION AT PLANTING BEDS, TYP.

WILDFLOWERS NO IRRIGATION, TYP.

FULL DRIP IRRIGATION AT FORESTATION BEDS, TYP.

TREE BUBBLER, TYP.

EXISTING TREE NO IRRIGATION, TYP.

HYDROMULCH AREA NO IRRGATION, TYP.

EXISTING TREE NO IRRIGATION, TYP.

EXISTING GRAVE SITE

TREE BUBBLER, TYP.

MATCHLINE A; RE: L3.03

MATCHLINE C; RE: L3.02

PHASE 1 SCOPE ALTERNATES NOTE:

REFERENCE **G.001** FOR ALTERNATES SCOPE

EXISTING GRAVESITE NOTES:

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Sheet Title:

IRRIGATION PLAN

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Sheet Number

L3.04

MATCHLINE G; RE: L3.07

(FUTURE PHASE - FOR REFERENCE ONLY)

FUTURE PHASE (N.I.C.)

SHOWN FOR REFERENCE ONLY

MATCHLINE E; RE: L3.04

(FUTURE PHASE - FOR REFERENCE ONLY)

PHASE 1

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FORT BEND COUNTY, TEXAS
VOL. 2600, PG. 1323, F.B.C.O.R.
F.B.C.C. FILE NO. 9709110
F.B.C.C. FILE NO. 1999021061

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04.12.2024

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Sheet Title:

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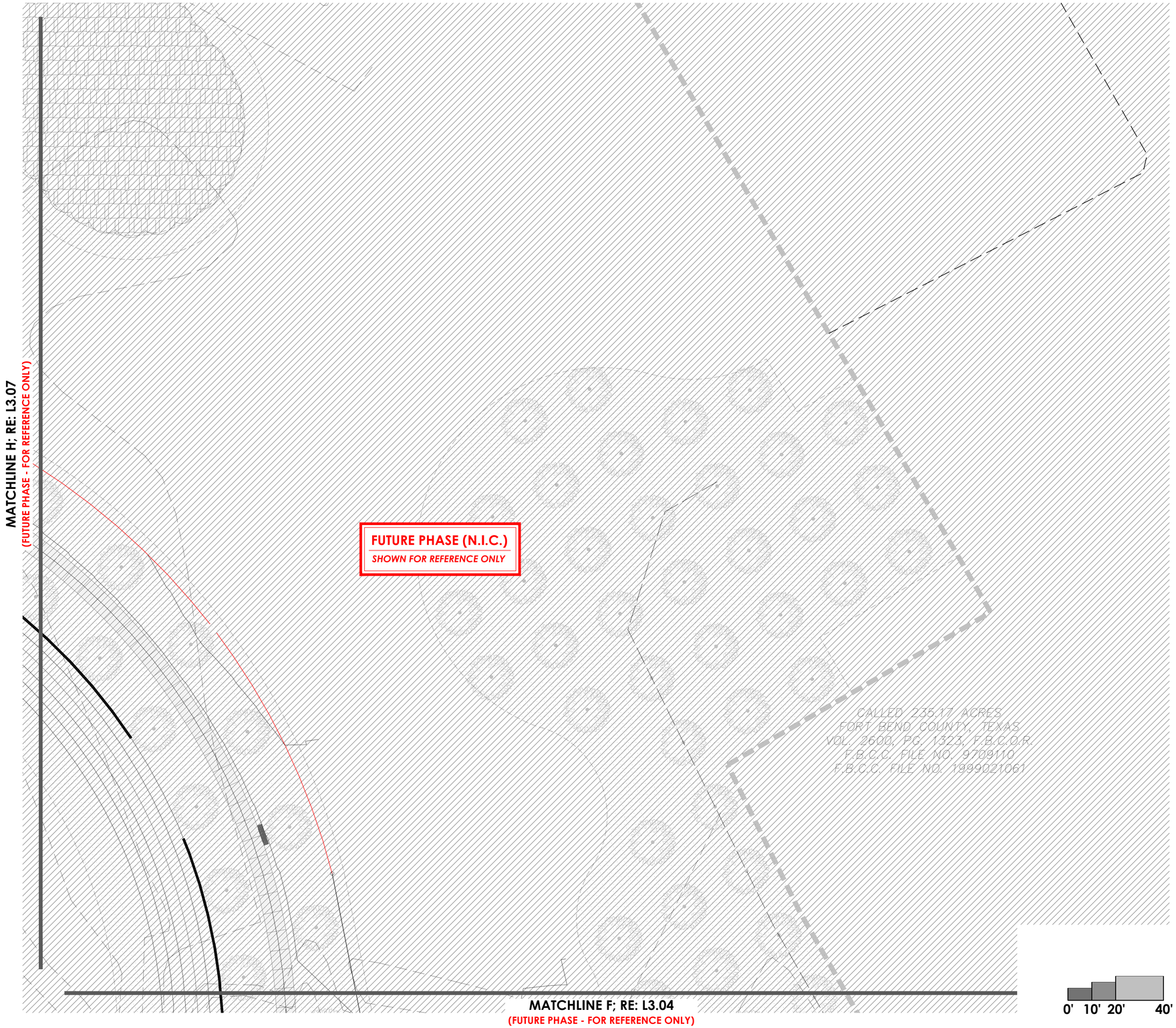
Sheet Number

L3.05



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Sheet Title:

IRRIGATION PLAN

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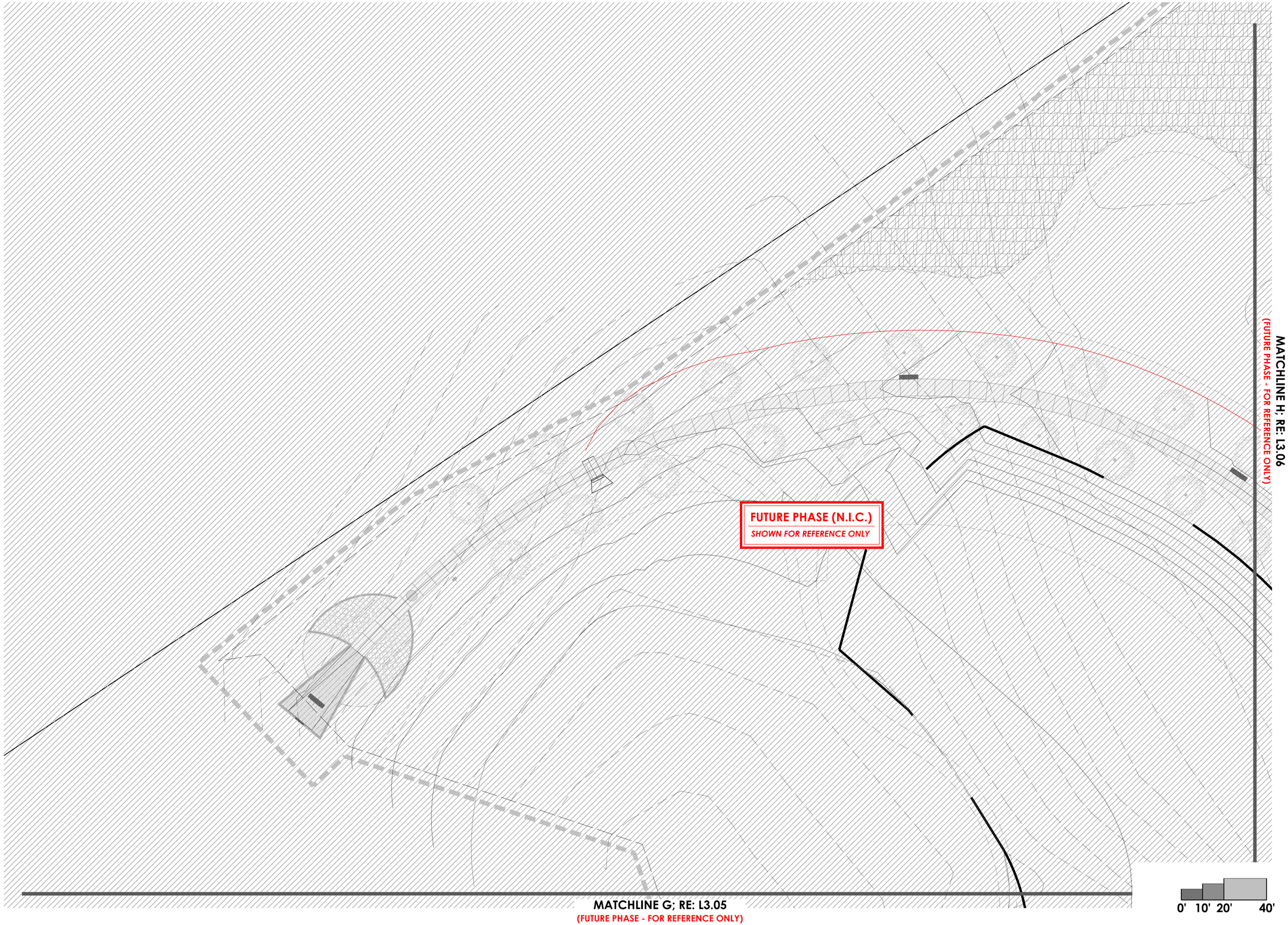
Sheet Number

L3.06



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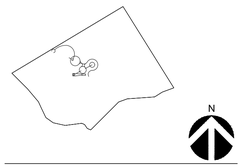

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IRRIGATION PLAN

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Sheet Number

L3.07

AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
EAST BERNARD, TEXAS 77435

GENERAL STRUCTURAL NOTES

GENERAL

1. THE STRUCTURAL DRAWINGS CONTAINED IN THIS SET DEPICT THE STRUCTURE IN THE FINAL IN-SERVICE FULLY-CONSTRUCTED CONFIGURATION.
2. THE NOTES AND SPECIFICATIONS PROVIDED ON THE STRUCTURAL DRAWINGS ARE EXCERPTS FROM THE RELATED PROJECT SPECIFICATIONS. THEY ARE NEITHER COMPLETE NOR DO THEY REPLACE THE CONTRACT SPECIFICATIONS. ALL CONSTRUCTION SHALL COMPLY WITH APPLICABLE BUILDING CODES, REGULATIONS, LOCAL ADDENDUMS OR ORDINANCES, AND SAFETY REGULATIONS.
3. MEANS AND METHODS:
   THE STRUCTURAL DRAWINGS CONTAINED IN THIS SET DO NOT INDICATE NOR DO THEY INTEND TO INDICATE THE MEANS AND METHODS OF CONSTRUCTION UNLESS EXPLICITLY NOTED ON THE DRAWINGS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR MEANS AND METHODS RELATING TO THE SPECIFIC STRUCTURAL ERECTION ITEMS ADDRESSED IN THE LATEST OSHA REGULATIONS.
4. TYPICAL DETAILS AND NOTES ON THE STRUCTURAL DRAWINGS SHALL APPLY UNLESS SPECIFICALLY NOTED OTHERWISE. STRUCTURAL SECTIONS AND/OR DETAILS NOT FULLY SHOWN OR NOTED SHALL BE SIMILAR TO DETAILS SHOWN FOR SIMILAR CONDITIONS.
5. SPECIFIC STRUCTURAL SECTIONS AND DETAILS ARE SHOWN NOT TO SCALE PURPOSELY. DO NOT SCALE SECTIONS OR DETAILS FOR DIMENSIONS UNKNOWN.
6. DISCREPANCIES:
   THE CONTRACTOR SHALL INFORM THE STRUCTURAL ENGINEER OF RECORD, IN WRITING, NOTIFICATION OF ANY DISCREPANCY OR OMISSION NOTED ON THE DRAWINGS OR SPECIFICATIONS. UPON RECEIPT OF THIS NOTIFICATION, THE ENGINEER WILL SEND WRITTEN INSTRUCTIONS TO ALL PARTIES CONCERNED. ANY SUCH DISCREPANCY, OMISSION, OR VARIATION NOT REPORTED TO THE ENGINEER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, TO BE PERFORMED IN A MANNER AS DIRECTED BY THE ENGINEER.
7. SHORING:
   IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO DESIGN AND PROVIDE ADEQUATE SHORING, BRACING, AND FORMWORK, AS REQUIRED FOR THE PROTECTION OF LIFE AND PROPERTY DURING THE CONSTRUCTION OF THIS BUILDING. EXCESS LOAD CAPACITY OF SLAB SHALL NOT EXCEED LOADS EQUIVALENT TO THE DESIGN SUPERIMPOSED LOADS LESS CONSTRUCTION DEAD AND LIVE LOADS. D DESIGN SUPERIMPOSED LOADS INCLUDE LIVE LOAD, PARTITION LOAD, AND ANY OTHER LOAD NOT IN PLACE AT THE TIME OF SHORING. FLOORS ARE NOT DESIGNED TO SUPPORT FORMWORK AND WET CONCRETE WEIGHT OF NEXT LEVEL. CONTRACTOR SHALL DESIGN AND PROVIDE RE-SHORING TO PREVENT OVERSTRESSING THE STRUCTURE.
8. EXCAVATION:
   THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING, AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS AND UTILITIES IN ACCORDANCE WITH THE LOCAL BUILDING DEPARTMENT.
9. OTHER TRADES:
   IT IS NOT THE INTENT THAT THE STRUCTURAL DRAWINGS BE VIEWED AS STAND ALONE DRAWINGS WITH RESPECT TO PROJECT DIMENSIONS OR ANY OTHER COMPONENT OF THE CONSTRUCTION THAT CAN AND MAY BE IDENTIFIED IN OTHER PARTS OF THE CONTRACT DOCUMENTS. IT REQUIRES THE ENTIRE SET OF CONTRACT DOCUMENTS TO PROPERLY CONSTRUCT THE STRUCTURE AS WELL AS OTHER COMPONENTS OF THE BUILDING. ANCHORS REQUIRED FOR ANCHORING MEP EQUIPMENT AND / OR PIPING ARE NOT SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL DETERMINE AND COORDINATE REQUIREMENTS FROM OTHER DISCIPLINES AND SHALL PROVIDE APPROPRIATE ALLOWANCES INTO THE BID. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASSEMBLE AND COORDINATE THE REQUIREMENTS OF ALL COMPONENTS OF THE CONTRACT DOCUMENTS IN ORDER TO PROPERLY IMPLEMENT THE REQUIREMENTS OF THE CONTRACT. SEE ARCHITECTURAL, ELECTRICAL, AND MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF PIPES, VENTS, CHASES, DUCTS AND OTHER OPENINGS AND DETAILS NOT SHOWN ON THESE STRUCTURAL DRAWINGS. ALL DIMENSIONS ARE TO BE CHECKED AND VERIFIED WITH THE ARCHITECTURAL DRAWINGS.
10. BRACING:
    THESE DRAWINGS ILLUSTRATE THE PRIMARY STRUCTURAL FRAME IN ITS COMPLETED FORM. TEMPORARY BRACING, PROPERLY DESIGNED UNDER THE SUPERVISION OF A LICENSED STRUCTURAL ENGINEER, SHALL BE PROVIDED AS REQUIRED TO HOLD ALL COMPONENTS OF THE STRUCTURE IN PLACE UNTIL FINAL SUPPORT IS SECURELY ANCHORED.
11. INSPECTIONS:
    ANY INSPECTIONS, SPECIAL OR OTHERWISE, THAT ARE REQUIRED BY THE BUILDING CODES, LOCAL BUILDING DEPARTMENTS, OR THESE PLANS, SHALL BE DONE BY AN INDEPENDENT INSPECTION COMPANY. JOB SITE VISITS BY THE ENGINEER DO NOT CONSTITUTE, OR SUBSTITUTE, INSPECTIONS UNLESS SPECIFICALLY CONTRACTED FOR.
12. PRINCIPAL OPENINGS:
    ARE SHOWN ON THE DRAWINGS. SEE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATION AND DIMENSIONS OF SLEEVES, CURBS, INSERTS, DEPRESSIONS, RECESSES, SLOPES, BLOCKOUTS AND OTHER OPENINGS NOT SHOWN. THE CONTRACTOR SHALL PROVIDE FOR ALL OPENINGS WHETHER SHOWN ON THE STRUCTURAL DRAWINGS OR NOT. SIZE AND LOCATION OF ALL OPENINGS SHALL BE VERIFIED WITH THE MECHANICAL CONTRACTOR. ANY DEVIATION FROM OPENINGS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR APPROVAL PRIOR TO FABRICATION OR INSTALLATION OF STRUCTURAL MEMBERS.
13. SUBSTITUTIONS & DEVIATIONS:
    PROPOSED SUBSTITUTION OF MATERIALS, PRODUCTS OR DETAILS DEPICTED IN THE CONTRACT DOCUMENTS SHALL BE SUBMITTED ONLY DURING THE BIDDING PERIOD. AFTER BIDS ARE ACCEPTED, NOTICE IN WRITING OF ANY PROPOSED SUBSTITUTIONS OR ANY PROPOSED DEVIATIONS TO THE STRUCTURE AS REQUIRED BY THESE DOCUMENTS SHALL BE SUBMITTED WITH BACKUP DATA IDENTIFYING THE REASON FOR THE PROPOSED SUBSTITUTION OR DEVIATION. FOR PROPOSED SUBSTITUTIONS OF PRODUCTS, THE BACKUP DATA SHALL INCLUDE CURRENT I.C.B.O. REPORT. THE PROPOSED SUBSTITUTIONS SHALL BE CONSIDERED AFTER ACCEPTANCE OF BIDS, ONLY WHEN THEY ARE SUBMITTED WITH DOCUMENTED SAVINGS TO BE DEDUCTED FROM THE PROJECT CONTRACT AMOUNT. MATERIALS OR PRODUCTS THAT DO NOT HAVE AN I.C.B.O. REPORT, WILL NOT BE CONSIDERED FOR SUBSTITUTIONS.
14. SEE ARCHITECTURAL DRAWINGS FOR ELEVATIONS NOT SHOWN AND FOR EXACT LOCATIONS OF ALL SLAB DEPRESSIONS. THE CONTRACTOR SHALL COMPARE THE STRUCTURAL SECTIONS WITH THE ARCHITECTURAL SECTIONS AND REPORT ANY DISCREPANCY TO THE ARCHITECT PRIOR TO FABRICATING OR INSTALLING STRUCTURAL MEMBERS.
15. THE CONTRACTOR SHALL ENSURE THAT CONSTRUCTION MATERIALS WHOSE WEIGHT EXCEEDS THE DESIGN LIVE LOADS INDICATED ON THE STRUCTURAL DRAWINGS ARE NOT STORED ON STRUCTURALLY SUPPORTED FLOOR OR ROOF FRAMING.
16. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE GRADES WITH THE CIVIL ENGINEER'S GRADING PLAN AND THE LANDSCAPE ARCHITECT'S PLAN.
17. THE DRAWINGS IN THE STRUCTURAL DOCUMENTS ARE NOT TO BE SCALED FOR ANY PURPOSE, INCLUDING THE DETERMINATION OF QUANTITIES AND THE FIT UP OF MATERIALS.
18. THESE PLANS MUST BE SUBMITTED FOR REVIEW BY A LICENSED GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION.
19. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL CONTRACT DOCUMENTS AND LATEST ADDENDA AND TO SUBMIT SUCH DOCUMENTS TO ALL SUBCONTRACTORS AND MATERIAL SUPPLIERS PRIOR TO THE SUBMITTAL OF SHOP DRAWINGS, FABRICATION OF ANY STRUCTURAL MEMBERS, AND ERECTION IN THE FIELD.
20. PRECONSTRUCTION MEETINGS:
    THE CONTRACTOR IS RESPONSIBLE FOR ARRANGING PRECONSTRUCTION MEETINGS FOR THE FOUNDATION AND SUPERSTRUCTURE ELEMENTS OF THE PRIMARY FRAME WITH A MINIMUM OF TWO WEEKS OF NOTICE PRIOR TO START OF THE RELEVANT WORK. ATTENDEES SHALL INCLUDE THE CONTRACTORS, APPROPRIATE SUBCONTRACTORS, FABRICATORS, INSPECTORS, ARCHITECT/ENGINEERS. ON THE MEETING AGENDA SHALL BE REVIEW OF WORK SCOPE, PROJECT SCHEDULE OF THE ELEMENT IN QUESTION, CONTACT INFORMATION OF RESPONSIBLE PARTIES, INSPECTION POINTS, REVIEW OF MATERIALS AND ANY SPECIAL DESIGN ISSUES, CLARIFICATIONS, TESTING AND ACCEPTANCE, AND ANY OTHER TOPIC DEEMED APPROPRIATE BY THE CONTRACTOR OR THE ARCHITECT.
21. EXISTING UTILITIES:
    UNLESS SPECIFICALLY SHOWN ON THE STRUCTURAL PLANS, THE LOCATION OF ANY EXISTING SUBGRADE UTILITIES IS UNKNOWN. FOUNDATION CONSTRUCTION MAY HAVE TO BE MODIFIED UPON DISCOVERY OF SUCH ITEMS. NOTIFY ARCHITECT AND ENGINEER OF ANY CONFLICT OF EXISTING UTILITY ITEMS WITH THE CONSTRUCTION OF FOUNDATION ELEMENTS.
22. ALL WELDING SHALL CONFORM TO AWS STANDARDS. THE THICKNESS AND THE LENGTHS OF THE WELDS ARE AS SHOWN, SPECIFIED OR AS REQUIRED.
23. FOOTINGS SHALL BE POURED IMMEDIATELY UPON COMPLETION OF EXCAVATION AND CLEANING OF FOOTING BEARING SURFACE. ALL SPOILS FROM THE DRILLED FOOTING EXCAVATIONS SHALL BE REMOVED FROM THE BUILDING PAD.
24. CRANES, CONCRETE TRUCKS AND ALL OTHER HEAVILY LOADED VEHICLES ARE NOT TO BE DRIVEN ACROSS GRADE BEAMS OR BUILDING SLABS.

SPECIAL INSPECTION

WHERE SPECIAL INSPECTION IS REQUIRED BY THE AUTHORITY HAVING JURISDICTION, IT SHALL BE PERFORMED BY A REGISTERED DEPUTY INSPECTOR, EMPLOYED BY THE OWNER AND APPROVED BY THE GOVERNING JURISDICTION. COPIES OF THE INSPECTION REPORTS SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT AND THE STRUCTURAL ENGINEER OF RECORD. A LICENSED ENGINEER OR ARCHITECT SHALL SIGN EACH REPORT. STRUCTURAL ENGINEER OF RECORD SHALL BE NOTIFIED IMMEDIATELY OF ANY TEST WHICH INDICATES NON COMPLIANCE WITH APPLICABLE CODES OR REQUIREMENTS OF THESE PLANS UNLESS NOTED OTHERWISE. UNLESS NOTED OTHERWISE, PROVIDE SPECIAL INSPECTION IN ACCORDANCE WITH SECTION 1705 OF THE 2018 INTERNATIONAL BUILDING CODE ON THE FOLLOWING:

A. CONCRETE CONSTRUCTION PER SECTION 1705.3.
B. SOILS PER SECTION 1705.6.

FOUNDATIONS:

1. PREPARED GRADE AREA UNDER ALL BUILDING SLABS AND GRADE BEAMS SHALL BE COVERED WITH A 10 MIL PLASTIC WATER VAPOR RETARDER MEETING THE REQUIREMENTS OF ASTM E 1745, CLASS C OR BETTER AND SHALL HAVE A MAXIMUM WATER PERMEANCE OF 0.04 PERMS WHEN TESTED IN ACCORDANCE WITH ASTM E96. THE WATER VAPOR RETARDER SHALL BE INSTALLED AND LAPPED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM E 1643. PENETRATIONS SHALL BE SEALED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS.
2. GRADE BEAM DIMENSIONS AND/OR LOCATIONS MAY NOT BE ALTERED WITHOUT APPROVAL OF THE ENGINEER OF RECORD. SIDES OF GRADE BEAMS SHALL BE FORMED.
3. REFER TO THE SLAB CONSTRUCTION NOTES FOR ALL SLAB-ON-GRADE REQUIREMENTS.
4. REFERENCE THE FOUNDATION PLAN FOR SIZE AND SPACING OF SLAB-ON-GRADE REINFORCEMENT.
5. PROVIDE CORNER BARS AT ALL CORNERS AND INTERSECTIONS UNLESS NOTED OTHERWISE. REFER TO TYPICAL CORNER BAR DETAIL.
6. FOUNDATION WALLS SHALL HAVE TEMPORARY BRACING BEFORE BACKFILL IS PLACED AGAINST THEM. TEMPORARY BRACING SHALL NOT BE REMOVED UNTIL WALL IS PERMANENTLY BRACED BY FLOOR DIAPHRAGMS, UNLESS NOTED OTHERWISE.
7. FOUNDATION PENETRATIONS SHALL BE SUBJECT TO APPROVAL BY THE ARCHITECT/ENGINEER.
8. CONSTRUCTION JOINTS: CAST ALL PILASTERS ON BEAMS AND WALLS MONOLITHICALLY WITH THE BEAM OR WALL. CAST ALL INTERSECTIONS OF THE VARIOUS CONCRETE ELEMENTS (SLABS, JOISTS, BEAMS, WALLS, COLUMNS, AND PILASTERS) MONOLITHICALLY UNLESS POCKETS, BLOCKOUTS, OR KEYWAYS ARE SPECIFICALLY DETAILED IN THE DRAWINGS. IF CONSTRUCTION JOINTS ARE ABSOLUTELY UNAVOIDABLE, THE JOINTS SHALL BE LOCATED AS FOLLOWS: CONSTRUCTION JOINTS IN BEAMS, JOISTS, WALLS AND STRUCTURAL SLABS SHALL BE LOCATED WITH 1'-0" OF CENTER SPAN BETWEEN SUPPORTS. LOCATE HORIZONTAL JOINTS IN WALL AND COLUMNS AT UNDERSIDE OF SUPPORTED ELEMENTS AT THE TOP OF THE WALL OR COLUMN AND AT THE TOP OF FOOTING OR FLOOR SLAB AT THE BOTTOM OF THE WALL OR COLUMN.
9. WATERSTOPS: PROVIDE WATERSTOPS AT ALL SUB GRADE CONSTRUCTION JOINTS IN CONCRETE ELEMENTS WHERE THE EARTH SUB GRADE AT THE JOINT IS ON ONE SIDE OF THE CONCRETE MEMBER ONLY. PROVIDE WATERSTOPS AT OTHER LOCATIONS INDICATED IN THE DOCUMENTS.
10. WHERE VOID CARTON FORMS ARE SHOWN ON THE PLANS AND DETAILS, SUCH FORMS SHALL BE FURNISHED IN A STRENGTH CAPABLE OF SUPPORTING THE WEIGHT OF THE WET CONCRETE AND REINFORCEMENT. AFTER PLACEMENT ON THE SUBGRADE, THE FORMS SHALL BE TAPED AT ALL JOINTS. WHEN NECESSARY IN AREAS WITH LARGE VOID FORM COVERAGE A 1/8" THICK LAYER OF HARDBOARD SHALL BE LAID OVER THE TOP OF THE VOID FORMS PRIOR TO PLACEMENT OF THE REINFORCEMENT. VOID FORMS SHALL BE SECURED TO THE SUBGRADE WITH #3 BAR AT 48 INCHES ON CENTER TO PREVENT MOVEMENT OF THE FORM DURING CONCRETE PLACEMENT. THE WIDTH OF FORMS SHALL BE AS REQUIRED SO A MAXIMUM OF 1-1/2 INCHES OF CONCRETE IS PLACED ON EACH SIDE OF THE FORM.
11. VARIOUS CONDUITS, PIPES AND SLEEVES WHICH ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS MAY BE REQUIRED BY EQUIPMENT SUPPLIERS OR THE ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS. THE CONTRACTOR SHALL COORDINATE AND IMPLEMENT THESE ITEMS INTO THE CONCRETE WORK. ALL CONDUITS, PIPES AND SLEEVES EMBEDDED IN CONCRETE SHALL COMPLY WITH ACI 318, SECTION 6.3.
12. NO VERTICAL CONDUIT, SLEEVE OR PIPE IS PERMITTED TO BE EMBEDDED IN THE CONCRETE BEAM WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENGINEER OR UNLESS SPECIFICALLY DETAILED OTHERWISE.
13. THE BUILDING SITE MAY HAVE SOME BURIED EXISTING FOUNDATIONS AND UTILITIES. IF THESE FOUNDATIONS OR UTILIITES ARE ENCOUNTERED DURING DRILLING OPERATIONS, THE SINGLE DRILLED FOOTING SHALL BE REPLACED WITH TWO SYMETRICALLY PLACED FOOTINGS AND A STRAP BEAM . THE CONTRACTOR SHALL PROVIDE A UNIT COST FOR EACH OCCURENCE. SEAL ANY UTILITY LINES DISCOVERED WITH CONCRETE.
14. PROVIDE A TREMIE TO PLACE CONCRETE IN DRILLED FOOTINGS SO THAT CONCRETE DOES NOT FREE FALL OVER 10'-0".
15. PROVIDE PIER SLEDS TO MAINTAIN 3" MINIMUM CLEAR COVER ON FOOTING SHAFT REINFORCING. PIERS SLEDS SHALL BE STAGGERED ALONG THE VERTICAL REINFORCING. DO NOT PLACE SLEDS AT THE SAME LOCATION.
16. CONDUITS SHALL NOT BE PLACED IN THE CONCRETE SLAB. CONDUITS SHALL BE PLACED IN THE SELECT FILL MATERIAL BENEATH THE VAPOR RETARDER. ALL PENETRATIONS OF THE VAPOR RETARDER SHALL BE SEALED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS.
17. ALL BACKFILL FOR BURIED PIPES AND CONDUIT WITHIN THE BUILDING PAD AND EXTENDING OUT 5'-0" MINIMUM BEYOND THE BUILDING SHALL BE BACKFILLED WITH SELECT FILL BACKFILL. DO NOT USE SAND BACKFILL. A BENTONITE PLUG SHALL BE PROVIDED IN ALL UTILITY TRENCHES AT THE FACE OF THE BUILDING FOUNDATION. SEE FOUNDATION DETAILS FOR PIPE BUILDING ENTRY DETAIL.
18. REFER TO THE GEOTECHNICAL REPORT FOR RISK OF GROUNDWATER PRESENCE AND ITS POTENTIAL IMPACT ON NEW CONSTRUCTION. CONTRACTOR MUST CARRY AN APPROPRIATE ALLOWANCE IN THE BIDS FOR MEASURES SUCH AS SITE DEWATERING AND PIER CASINGS ETC.

FOOTINGS

1. FOOTINGS DESIGNS ARE BASED UPON THE INFORMATION LISTED BELOW. REFER TO TYPICAL FOOTING DETAIL FOR SCHEDULE AND REINFORCING. DISTRIBUTION OF FOOTING TYPES IS SHOWN ON PLANS.

   1.1. ALLOWABLE END BEARING PRESSURE: 2,500 PSF
   1.2. MINIMUM BEARING DEPTH: 4 FT BELOW EXISTING GROUND ELEVATION
   1.3. BEARING STRATUM: INORGANIC CLAY
   1.4. GEOTECHNICAL CONSULTANT: ASSOCIATED TESTING LABORATORIES, INC
   1.5. GEOTECHNICAL REPORT NO.: G22-201
   1.6. GEOTECHNICAL REPORT DATE: JANUARY 25, 2023

2. FOOTINGS CONSTRUCTION AND CONCRETING SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT. ANY ACCUMULATED WATER SHALL BE PUMPED FROM THE EXCAVATION PRIOR TO CONCRETE PLACEMENT AND REINSPECTED.
3. FOOTINGS NOT SPECIFICALLY LOCATED ON THE PLAN SHALL BE LOCATED ON CENTERLINE OF THE COLUMN ABOVE. WHERE NO COLUMN OCCURS, LOCATE FOOTING ON CENTERLINE OF WALL OR BEAM.
4. PROVIDE DOWELS FROM FOOTINGS INTO CONCRETE ABOVE PER THE TYPICAL FOOTING DETAIL.
5. ELEVATION OF TOP OF FOOTING IS NOTED ON DRAWINGS.
6. REFERENCE PLANS AND FOOTING SCHEDULE FOR FOOTING SIZE, REINFORCING, AND DEPTH OF BEARING STRATUM.
7. ALL FOOTINGS SHALL BE INSPECTED BY A REPRESENTATIVE OF A QUALIFIED GEOTECHNICAL LABORATORY IN ORDER TO ENSURE THAT THE BEARING STRATUM IS PROPER IN ACCORDANCE WITH THE RECOMMENDATIONS GIVEN IN THE GEOTECHNICAL REPORT.
8. TEMPLATES SHALL BE UTILIZED TO SET DOWELS AND ANCHOR BOLTS IN FOOTINGS. DETAILS OF THE TEMPLATES SHALL BE PROVIDED IN THE FOOTING SHOP DRAWINGS.

SUBGRADE PREPARATION

1. THE CONTRACTOR MUST READ THE GEOTECHNICAL REPORT AND BE THOROUGHLY FAMILIAR WITH SITE AND SUBGRADE INFORMATION GIVEN THEREIN. ALL SUBGRADE PREPARATION, FILL, FILL PLACEMENT AND FOUNDATION CONSTRUCTION SHALL BE PERFORMED IN STRICT COMPLIANCE WITH THE STRUCTURAL DOCUMENTS AND THE SOILS REPORT, AND SHALL BE OBSERVED, TESTED AND APPROVED BY A QUALIFIED GEOTECHNICAL ENGINEER PRIOR TO PROCEEDING WITH FOUNDATION CONSTRUCTION.
2. ALL ORGANIC AND DELETERIOUS MATERIAL, AS WELL AS ANY EXISTING PAVING, FOUNDATIONS, OR EXISTING FILL SHALL BE REMOVED FROM THE BUILDING PAD AREA PRIOR TO PLACEMENT OF FILL. REMOVE VEGETATIVE ORGANICS AND DITCH BOTTOM MATERIALS, LEAVING AS MUCH INORGANIC SOIL AS POSSIBLE.
3. SUBGRADE SHALL THEN BE SCARIFIED AND MOISTURE CONDITIONED TO A SIX (6) INCH DEPTH AND THEN RECOMPACTED TO BETWEEN [95 AND 100] PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR DENSITY TEST (ASTM D698). THE MOISTURE CONTENT SHALL BE BETWEEN [OPTIMUM AND + 3] PERCENT OF THE OPTIMUM MOISTURE CONTENT. PROVIDE A MINIMUM OF FOUR (4) FIELD DENSITY TESTS ON THE SUBGRADE OR ONE (1) FOR EVERY 2,500 SQUARE FEET WHICHEVER IS GREATER.
4. THE SUBGRADE SHALL BE PROOFROLLED WITH A HEAVY, RUBBER-TIRED VEHICLE (STATIC WEIGHT OF AT LEAST 20 TONS AND WITH TIRE PRESSURES OF AT LEAST 90 PSI). THE CONTRACTOR SHALL MAKE AT LEAST TWO COMPLETE PASSES OVER THE AREA WITH THE SECOND PASS PERPENDICULAR TO THE FIRST PASS. AREAS OF THE SUBGRADE THAT ARE OBSERVED TO BE SOFT OR WEAK SHALL BE OVEREXCAVATED AND REPLACED WITH PROPERLY COMPACTED SELECT FILL..
5. STRIP AND REMOVE ALL SURFACE PAVING, ORGANICS, TOP SOIL, SOFT SOIL, FILL AND FAT CLAYS FROM ALL CONSTRUCTION AREAS TO ALLOW FOR A MINIMUM DEPTH OF 4'-0" BELOW FLOOR SLAB. SELECT FILL SHALL EXTEND 5 FEET BEYOND THE BUILDING PAD FOOTPRINT.
6. SELECT FILL MATERIAL FOR THE BUILDING PAD SHALL BE AN INORGANIC SANDY CLAY WITH A LIQUID LIMIT BETWEEN LESS THAN 40 AND PLASTICITY INDEX BETWEEN 10 AND 20. STRUCTURAL SELECT FILL PAD MATERIAL SHALL BE TESTED FOR ACCEPTABILITY AND A MOISTURE DENSITY CURVE SHALL BE ESTABLISHED.
7. SELECT FILL SHALL BE PLACED IN EIGHT INCH LOOSE LIFTS AND COMPACTED TO BETWEEN [95 AND 100] PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR DENSITY TEST (ASTM D698). THE MOISTURE CONTENT SHALL BE BETWEEN [OPTIMUM AND +3] PERCENT OF THE OPTIMUM MOISTURE CONTENT FOR SELECT FILL. SELECT FILL MATERIAL SHALL EXTEND A MINIMUM OF 5'-0" BEYOND THE BUILDING PERIMETER. PROVIDE A MINIMUM OF FOUR (4) FIELD DENSITY TESTS ON EACH LIFT OF SELECT FILL OR ONE (1) FOR EVERY 2,500 SQUARE FEET WHICHEVER IS GREATER.
8. SELECT FILL MATERIAL SHALL BE TESTED DURING PLACEMENT OF EACH LIFT FOR THE ATTERBERG LIMITS IN ACCORDANCE WITH ASTM D4318-98 METHOD B "STANDARD TEST METHOD FOR LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS" TO VERIFY THAT THE SELECT FILL MATERIAL IS IN ACCORDANCE WITH THE ORIGINALLY APPROVED SELECT FILL MATERIAL. PROVIDE A MINIMUM OF ONE (1) TEST PER LIFT OR ONE (1) FOR EVERY 2,500 SQUARE FEET WHICHEVER IS GREATER WITH A MAXIMUM OF TEN (10) PER LIFT.
9. PROVIDE FIELD MOISTURE TESTS FOR THE FULL DEPTH OF THE PAD 96 HOURS PRIOR TO PLACEMENT OF THE THE WATER VAPOR RETARDER TO ENSURE THAT THE FILL MOISTURE CONTENT HAS BEEN MAINTAINED PRIOR TO CONCRETE PLACEMENT. MOISTURE CONTENTS SHALL BE TAKEN AT 12 INCH VERTICAL INTERVALS WITH A MINIMUM OF TWO TESTS PER BORING AT A RATE OF ONE (1) BORING FOR EVERY 2,500 SQUARE FEET OF PAD WITH A MAXIMUM OF TEN (10).
10. BACK FILL AGAINST THE FOUNDATIONS IN UNIFORM LIFTS TO REQUIRED GRADES AFTER CONCRETE HAS ATTAINED THE 28-DAY DESIGN COMPRESSIVE STRENGTH.
11. CONTRACTOR SHALL MAINTAIN A CLEAN EXCAVATION THAT IS FREE OF WATER 100% OF THE TIME. CONTRACTOR SHALL PROVIDE PUMPS AS REQUIRED TO REMOVE ANY WATER AT ALL TIMES.
12. PLUMBING AND UTILITY TRENCHES WITHIN THE BUILDING PAD SHALL HAVE PIPING BEDDED ON 6" MINIMUM OF CEMENT STABILIZED SAND WITH 4" MINIMUM ALL AROUND. BACKFILL IN UTILITY TRENCHES SHALL CONSIST OF COMPACTED SELECT FILL. PROVIDE A BENTONITE PLUG FOR THE FULL DEPTH AND WIDTH OF THE UTILITY TRENCH TO A MINIMUM OF 1'-0" ABOVE THE BOTTOM OF THE FOUNDATION AT THE EXTERIOR FACE OF BUILDING FOUNDATIONS WHERE UTILITY TRENCHES ENTER THE BUILDING.
13. CARE SHALL BE EXERCISED IN PLACEMENT AND COMPACTION OF FILL IN ALL LEAVE-OUTS. ALL FILL SHALL BE PLACED IN LOOSE LIFTS AND COMPACTED AT ELEVATED MOISTURE CONTENT AS DETAILED IN THE ABOVE REFERENCED GEOTECHNICAL REPORT. ANY REBAR SHALL BE APPROPRIATELY MANIPULATED TO ENSURE PROPER COMPACTION. SLAB-ON-GRADE SHALL BE SUITABLY PLACED AND LAPPED ON 10 MIL THICK CLASS A VAPOR BARRIER AS SHOWN.

CAST-IN-PLACE CONCRETE

1. ALL CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI STANDARD "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" (ACI 318 OF LATEST ADOPTION).
2. CONSTRUCTION JOINTS:
   2.1. PERMITTED ONLY WHERE SHOWN ON PLANS.
   2.2. NO HORIZONTAL CONSTRUCTION JOINTS IN ANY CONCRETE POURS UNLESS SHOWN ON THE DRAWINGS.
   2.3. JOINTS IN BEAMS AND SLABS AND WALLS TO OCCUR WITHIN 2 FEET OF OF MID-SPAN BETWEEN SUPPORTS.
   2.4 JOINTS IN GRADE SUPPORTED SLAB SHOWN ON PLANS.
   2.5. NO JOINT BETWEEN PILASTERS AND BEAM/WALL THAT ARE MEANT TO BE MONOLITHIC.
   2.6. CONSTRUCTION JOINT PLANS TO BE SUBMITTED FOR APPROVAL BY THE ENGINEER.
3. THE ARCHITECT / ENGINEER SHALL APPROVE ALL DEVIATIONS OR ADDITIONAL JOINTS IN WRITING.
4. PROVIDE SLEEVES, MECHANICAL OPENINGS, CONDUITS, PIPES, RECESSES, DEPRESSIONS, CURBS AND ALL EMBEDDED ITEMS AS SHOWN ON THE ARCHITECTURAL AND MECHANICAL DRAWINGS OR AS REQUIRED BY EQUIPMENT MANUFACTURERS. MINIMUM CONCRETE BETWEEN SLEEVES SHALL BE 6". SHOP DRAWINGS SHALL CLEARLY INDICATE THE INSTALLATION OF THESE ITEMS.
5. MAINTAIN SCHEDULED STRUCTURAL DEPTH OF MEMBERS AS A MINIMUM WHILE FOLLOWING SLOPES AND GRADES SHOWN ON PLANS.
6. BESIDES FOLLOWING ARTICLE 6.3 OF ACI 318 FOR EMBEDDED ITEMS FOLLOWING REQUIREMENTS SHALL BE MET:
7. THE MAXIMUM OUTSIDE DIAMETER OF THE CONDUITS AND PIPES SHALL BE 1". NONE PERMITTED IN SLABS THINNER THAN 4 1/2".
8. THE MINIMUM CLEAR DISTANCE BETWEEN CONDUITS AND PIPES SHALL BE 6".
9. AT FORMED SLABS, LOCATE IN MIDDLE THIRD OF SLAB THICKNESS BETWEEN THE TOP AND BOTTOM MAT OF REINFORCING. AT BEAMS, LOCATE INSIDE BEAM STIRRUP. IN JOISTS, LOCATE AT CENTER LINE, AT LEAST 6" FROM BOTTOM.
10. NONE PERMITTED IN SLABS-ON-GRADE WHICH WILL BE PERMANENTLY EXPOSED OR SCHEDULED TO RECEIVE THIN SET TILE. PLACE ALL PIPES AND CONDUITS IN THE FILL BENEATH THE VAPOR RETARDER. RECOMPACT AS SPECIFIED.
11. NONE PERMITTED IN COLUMNS WITHOUT PRIOR APPROVAL
12. ALL CONCRETE THAT WILL BE COLORED OR STAINED MUST BE WET CURED.
13. ALL CONSTRUCTION JOINTS IN BEAMS AND WALLS SHALL BE PROVIDED WITH SHEAR KEYS AS SHOWN IN DETAILS.
14. ALL GRADE BEAMS SHALL BE DOUBLE FORMED. EARTH FORMING OF GRADE BEAMS IS NOT PERMITTED.
15. HOT WEATHER CONCRETING SHALL CONFORM TO ACI305 AND COLD WEATHER CONCRETING SHALL CONFORM TO ACI306.
16. SLEEVES PASSING HORIZONTALLY THROUGH BEAMS:
   16.1. LOCATE AT MIDDLE THIRD OF BEAM SPAN - MINIMUM 6" AWAY FROM AN INTERIOR MEMBER.
   16.2. LOCATE AT MIDDLE THIRD OF BEAM DEPTH.
   16.3. MAXIMUM DIAMETER OF SLEEVE TO BE ONE THIRD OF BEAM DEPTH OR 8" (WHICHEVER IS LESS).
   16.4. SPACING TO BE ATLEAST THREE SLEEVE DIAMETERS OR 6" (WHICHEVER IS GREATER).
   16.5. ADD ONE ADDITIONAL SCHEDULED STIRRUP ON EITHER SIDE OF THE SLEEVE. ADD (2) #5 x 5'-0" TOP AND BOTTOM CENTERED AT SLEEVE.
   16.6. NO SLEEVES LONGITUDINALLY IN BEAMS. PASS SLEEVES ONLY AT RIGHT ANGLES TO BEAMS.
17. BACKFILL AGAINST RETAINING WALLS SHALL NOT COMMENCE UNTIL THE FLOOR DIAPHRAGMS ARE IN PLACE.
18. BEAMS AT DOCKS SHALL REMAIN BRACED FROM EXTERIOR DURING THE BACKFILLING INSIDE THE BUILDING UNTIL THE FLOOR TYING INTO THE BEAM IS IN PLACE.
19. ALL CONSTRUCTION JOINTS BELOW GRADE SHALL CONTAIN A WATER-STOP.
20. RESHORE APPROPRIATE NUMBERS OF LEVELS BELOW A FLOOR BEING CAST, SUCH THAT THE ALLOWABLE LIVE LOADING CAPACITY OF THE LEVELS BELOW IS NOT EXCEEDED.
21. PROVIDE A MINIMUM OF 4 INCHES THICK HOUSE KE

GENERAL STRUCTURAL NOTES (CONTINUED)

PRECAST CONCRETE

1. DESIGN, DETAIL AND MANUFACTURE CONCRETE PER THE APPLICABLE BUILDING CODE, ACI CODE, PRESTRESSED CONCRETE INSTITUTE MANUAL (PCI), AND STANDARD PRACTICES.
2. PRECAST CONTRACTOR SHALL PROVIDE CALCULATIONS AND SHOP DRAWINGS TO BE PREPARED, SIGNED, AND SEALED BY ENGINEER. CALCULATIONS GENERATED BY A COMPUTER PROGRAM SHALL INCLUDE COMPLETE DESCRIPTIONS OF THE METHODOLOGY AND EQUATIONS USED BY THE PROGRAM.
3. SUBMIT FRAMING PLANS WITH IDENTIFICATION MARKS OF UNITS, UNIT DETAILS INCLUDING SIZES, CONNECTION DETAILS AND CAMBERS TO ARCHITECT AND STRUCTURAL ENGINEER OF RECORD FOR REVIEW. PROVIDE LOCATION, DESIGN AND DETAILS OF ANCHORAGE DEVICES THAT ARE TO BE EMBEDDED IN OTHER CONSTRUCTION.
4. PRECAST CONTRACTOR TO FURNISH ALL EMBEDS REQUIRED FOR PRECAST ATTACHMENTS AND PROVIDE TEMPLATES FOR ACCURATE PLACEMENT.
5. THE ARCHITECTURAL AND STRUCTURAL DRAWINGS SHOW THE GENERAL INTENT OF THE PRECAST CONCRETE FRAMING TO BE FULLY DESIGNED BY THE PRECAST CONTRACTOR. SUBMIT ANY PROPOSED CHANGES TO THE ARCHITECT PRIOR TO PROCEEDING WITH DESIGN.
6. ALL PRECAST MEMBERS SHALL BE DESIGNED TO WITHSTAND VERTICAL LOAD (SUPERIMPOSED DEAD LOAD + LIVE LOAD), LATERAL FORCES PLUS AXIAL AND SHEAR TRANSFER FORCES WHERE APPLICABLE, AND STRUCTURAL INTEGRITY REQUIREMENTS.
7. VIBRATION CRITERIA SHALL CONFORM TO THE RECOMMENDATIONS FROM THE PRECAST CONCRETE INSTITUTE (PCI) DESIGN MANUAL LATEST EDITION AND OTHER APPLICABLE CODES.
8. USE MINIMUM 3,500 PSI (24.1 MPa) CONCRETE STRENGTH AT RELEASE AND 5,000 PSI (34.4 MPa) AT 28 DAYS. USE ASTM A-615, GRADE 60 REINFORCEMENT. PRESTRESSING TENDONS SHALL HAVE A MINIMUM TENSILE STRENGTH OF 270,000 PSI (1859.1 MP a) AND SHALL CONFORM TO ASTM A416.
9. ALL CONNECTION ASSEMBLIES FOR EXTERIOR PRECAST SHALL BE HOT DIP GALVANIZED. ALL FIELD WELDS SHALL BE COATED WITH TWO COATS OF COLD GALVANIZING COMPOUND.
10. MINIMUM COVER FOR ALL REINFORCEMENT SHALL BE 3/4" (19 mm) AND SHALL CONFORM WITH THE FIRE RATING REQUIREMENTS AS SHOWN ON THE ARCHITECTURAL DOCUMENTS AND PER THE APPLICABLE BUILDING CODE.
11. CONTRACTOR SHALL NOT USE POWER-DRIVEN ANCHORS OR ANCHORS THAT REQUIRE DRILLING AT PRESTRESSED UNITS. CONTRACTOR TO SUBMIT PROPOSED ANCHOR PROCEDURES FOR PRECAST UNITS TO THE STRUCTURAL ENGINEER OF RECORD AND PRECAST SUPPLIER FOR REVIEW.
12. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS TO OBTAIN THE NECESSARY INFORMATION AND DESIGN REQUIREMENTS FOR THE PRECAST UNITS.

MISCELLANEOUS METALS

1. SUBMITTALS:
   - 1.1. SUBMIT SHOP DRAWING SHOWING FABRICATION OF MISCELLANEOUS METAL COMPONENTS;
   - 1.2. INCLUDE DETAILS OF CUTS, CONNECTIONS, SPLICES, CAMBER, SWEEP, HOLES AND OTHER PERTINENT DATA.
   - 1.3. INDICATE WELDS BY STANDARD AWS SYMBOLS DISTINGUISHING BETWEEN SHOP AND FIELD WELDS.
2. DELIVERY, STORAGE AND HANDLING:
   - 2.1. STORE MATERIALS TO PERMIT EASY ACCESS FOR INSPECTIONS AN IDENTIFICATION. KEEP STEEL MEMBERS OFF GROUND AND SPACED BY USING PALLETS, DUNNAGE OR OTHER SUPPORTS AND SPACES. PROTECT STEEL MEMBERS AND PACKAGED MATERIALS FROM EROSION AND DETERIORATION.
   - 2.2. STORE FASTENERS IN A PROTECTED PLACE. CLEAN ND RELUBRICATE BOLTS AND NUTS THAT BECOME DRY OR RUSTY BEFORE USE.
   - 2.3. DO NOT STORE MATERIALS ON STRUCTURE IN A MANNER THAT MIGHT CAUSE DISTORTION, DAMAGE, OR OVERLOAD TO MEMBERS OR SUPPORTING STRUCTURE. REPAIR OR REPLACE DAMAGED MATERIALS OR STRUCTURES AS DIRECTED.
3. WELDING QUALITY ASSURANCE:
   - 3.1. QUALIFY PROCEDURES AND PERSONNEL ACCORDING TO WAS D1.1, "STRUCTURAL WELDING CODE-STEEL."
4. PRODUCTS:
   - 4.1. PROVIDE MISCELLANEOUS METAL FOR HOLLOW STRUCTURAL SECTIONS CONFORMING TO ASTM A500, GRADE B, UNLESS OTHERWISE NOTED.
   - 4.2. PROVIDE MISCELLANEOUS METAL FOR ALL OTHER SHAPES, PLATES AND BARS CONFORMING TO ASTM A36, UNLESS OTHERWISE NOTED.
   - 4.3. PROVIDE BOLTS CONFORMING TO ASTM A307 UNLESS OTHERWISE NOTED.
   - 4.4. PROVIDE WELDED CONNECTIONS CONFORMING TO AWS D1.1, "STRUCTURAL WELDING CODE-STEEL" UNLESS OTHERWISE NOTED.
5. PRIMER:
   - 5.1. USE FABRICATOR'S STANDARD LEAD-AND CHROMATE-FREE , NON-ASPHALTIC RUST-INHIBITING PRIMER. SHOP PRIME STEEL SURFACES EXCEPT AT SURFACES TO BE FIELD WELDED.
6. ERECTION:
   - 6.1. SET MISCELLANEOUS METALS ACCURATELY IN LOCATIONS AND TO ELEVATIONS INDICATED.
   - 6.2. AFTER INSTALLATION, PROMPTLY CLEAN, PREPARE AND PRIME OR REPRIME FIELD CONNECTIONS, RUST SPOTS AND ABRADED SURFACES OF PRIME-PAINTED MEMBERS WITH THE SAME MATERIAL USED FOR SHOP PRIMING.
7. FIELD QUALITY CONTROL:
   - 7.1. TESTING AGENCY: OWNER WILL ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO INSPECT FIELD WELDS.
   - 7.2. FIELD WELDS WILL BE VISUALLY INSPECTED ACCORDING TO AWS D1.1 IN ADDITION TO VISUAL INSPECTION, FIELD WELDS MAY BE FURTHER TESTED ACCORDING AWS D1.1 AT TESTING AGENCY'S OPTIONS.
8. HANDRAILS AND GUARD RAILS:
   - 8.1. HANDRAIL, GUARDRAIL ASSEMBLIES AND SUPPORTS TO RESIST A LOAD OF 50 PLF APPLIED IN ANY DIRECTION AT THE TOP TO TRANSFER THIS LOAD THROUGH THE SUPPORTS TO THE STRUCTURE.
   - 8.2. DESIGN HANDRAILS AND GUARDRAIL ASSEMBLIES TO RESIST A SINGLE CONCENTRATED LOAD OF 200 POUNDS APPLIED IN ANY DIRECTION AT ANY POINT ALONG THE TOP, AND HAVE ATTACHMENT DEVICES AND SUPPORTING STRUCTURE TO TRANSFER THIS LOADING TO APPROPRIATE STRUCTURAL ELEMENTS OF THE BUILDING. THIS LOAD NEED NOT BE ASSUMED TO ACT CONCURRENTLY WITH THE LOADS SPECIFIED IN THE PRECEDING PARAGRAPH.
   - 8.3. DESIGN INTERMEDIATE RAILS BALUISTSTERS AND PANEL FILLERS TO WITHSTAND A HORIZONTALLY APPLIED NORMAL LOAD OF 50 POUNDS ON AREA EQUAL TO 1 SQUARE FOOT INCLUDING OPENINGS AND SPACE BETWEEN RAILS. REACTIONS DUE TO THIS LOADING ARE NOT REQUIRED TO BE SUPERIMPOSED WITH THOSE OF PARAGRAPHS a. AND b. ABOVE
   - 8.4. WHERE HANDRAILS AND GUARDRAILS ARE DESIGNED IN ACCORDANCE WITH THE PROVISIONS FOR ALLOWABLE STRESS DESIGN (IWORKING STRESS DESIGN) EXCLUSIVELY FOR THE LOADS SPECIFIED ABOVE, THE ALLOWABLE STRESS FOR THE MEMBERS AND THEIR ATTACHMENTS ARE PERMITTED TO BE INCREASED BY ONE-THIRD.
9. GRAB BARS, SHOWER SEATS AND DRESSING ROOM BENCH SEATS:
   - 9.1. DESIGN GRAB BARS, SHOWER SEATS AND DRESSING ROOM BENCH SEAT SYSTEMS TO RESIST A SINGLE CONCENTRATED LOAD OF 250 POUNDS APPLIED IN ANY DIRECTION AT ANY POINT.

STRUCTURAL STEEL FRAMING

1. ALL STRUCTURAL STEEL SHALL MEET THE FOLLOWING MINIMUM YIELD STRENGTHS AND ASTM SPECIFICATIONS:

STRUCTURAL STEEL TYPE	YIELD STRESS (Fy)	TENSILE STRESS (Fu)	ASTM SPECIFICATION
WIDE FLANGE SHAPES	50 KSI	65 KSI	A992
HOLLOW STRUCTURAL SECTIONS	46 KSI	58 KSI	A500, GRADE C
PIPES	35 KSI	60 KSI	A53 TYPE E, GRADE B
ANGLES	36 KSI	58 KSI	A36
CHANNELS	36 KSI	58 KSI	A36
BARS	36 KSI	58 KSI	A36
PLATES	36 KSI	58 KSI	A36
	50 KSI	65 KSI	A572, GRADE 50
BOLTS (HEAVY-HEX)	92 KSI	120 KSI	A325
NUTS (HEAVY-HEX)	92 KSI	120 KSI	A325
WASHERS	36 KSI	58 KSI	F436
ANCHOR RODS	36 KSI	58 KSI	F1554, GRADE 36
	55 KSI	75 KSI	F1554, GRADE 55
	105 KSI	125 KSI	F1554, GRADE 105
SHEAR STUD CONNECTORS	50 KSI	65 KSI	A992
RAISED PATTERN FLOOR PLATE	50 KSI	65 KSI	A992

2. WHERE CAMBER OF STEEL BEAMS IS SPECIFIED ON THE PLANS, CAMBER OF STEEL BEAMS MUST COMPLY WITHIN LIMITS SET BY AISC. SUPPORT CAMBERED STEEL MEMBERS IN A MANNER THAT WILL NOT RESULT IN ANY LOSS OF CAMBER DURING SHIPPING AND HANDLING. THE TESTING LAB SHALL VERIFY THE SPECIFIED BEAM CAMBERS AT THE JOBSITE WITH THE BEAMS LYING FLAT ON THE GROUND (WEBS PARALLEL TO THE GROUND). BEAMS WHOSE CAMBER FALLS OUTSIDE THE TOLERANCE SHALL BE RETURNED TO THE SHOP FOR CORRECTION.
3. BOLTS FOR STEEL BEAM AND COLUMN CONNECTIONS SHALL BE 3/4" DIAMETER ASTM A 325-N HIGH-STRENGTH BOLTS, UNO. MINIMUM SIZE SHALL BE 3/4 INCH DIAMETER UNLESS NOTED OTHERWISE. ALL BOLTED CONNECTIONS ARE BEARING TYPE. BOLTS SHALL BE DIRECT TENSION INDICATING BOLTS CONFORMING TO ASTM F1852 WITH HARDENED WASHERS UNDER THE NUT AND SACRIFICIAL SPLINES. HEX NUTS SHALL CONFORM TO ASTM A563 AND WASHERS SHALL CONFORM TO ASTM F436. ALL BOLTS SHALL BE TIGHTENED SNUG TIGHT, UNO. ALL THE NUTS AND BOLTS (INCLUDING ANCHOR BOLTS) USED IN THE CRAWL SPACE AND BELOW COOLING TOWER SUPPORTS SHALL BE HOT DIP GALVANIZED.
4. ALL WELDING SHALL CONFORM TO THE STANDARDS OF CHAPTER J OF THE MANUAL OF STEEL CONSTRUCTION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, NINTH EDITION ASD, AND THE AMERICAN WELDING SOCIETY ANSI/AWS D1.1 STRUCTURAL WELDING CODE-STEEL. SHORT CIRCUIT TRANSFER FOR THE GAS METAL ARC WELDING PROCESS IS NOT PERMITTED.
5. WELDING SHALL MEET ANSI/AWS D1.1 STRUCTURAL WELDING CODE. ELECTRODES SHALL BE 70 KSI LOW HYDROGEN.
6. STEEL CONNECTION NOTES:
   - 6.1. IF THE CONNECTION DETAILS SHOWN ON THESE PLANS ARE UTILIZED, NO SIGNED AND SEALED CALCULATIONS NEED TO BE SUBMITTED. OTHERWISE, THE DESIGN OF STRUCTURAL STEEL CONNECTIONS IS THE RESPONSIBILITY OF THE CONTRACTOR AND THE STEEL FABRICATOR. THE DESIGN OF THE CONNECTIONS SHALL BE PERFORMED BY A REGISTERED PROFESSIONAL ENGINEER. THE STEEL FABRICATOR SHALL DESIGN THE CONNECTIONS FOR THE REACTIONS SHOWN ON THE PLANS (KIPS SERVICE LOAD). WHERE NO REACTION IS SHOWN, DESIGN THE CONNECTION FOR 15 KIPS.
   - 6.2. CONNECTIONS NOT HANDLED BY DETAILS ON THESE PLANS ARE THE RESPONSIBILITY OF THE CONTRACTOR AND THE STEEL FABRICATOR. THE DESIGN OF THE CONNECTIONS SHALL BE PERFORMED BY A REGISTERED PROFESSIONAL ENGINEER. THE STEEL FABRICATOR SHALL DESIGN THE CONNECTIONS FOR THE LOADS SHOWN ON THE PLANS (KIPS - SERVICE LOAD).
7. PROVIDE DOUBLE NUTS AND DOUBLE WASHERS FOR STEEL COLUMN ANCHOR BOLTS TO ALLOW FOR ADJUSTMENT IN BASE PLATE ELEVATION.
8. ALL GROUT USED UNDER STEEL COLUMN BASE PLATES SHALL BE OF NON-SHRINKABLE TYPE CONFORMING TO ASTM C1090 AND THE CORPS OF ENGINEERS SPECIFICATION CRD-C-621 AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 6000 PSI. 100 PERCENT OF VOID UNDER ALL BASE PLATES IS TO BE GROUTED. ALL BASE PLATES WITH A DIMENSION GREATER THAN 24" SHALL HAVE TWO 1" DIAMETER GROUT HOLES. IF THE SPACE UNDER A COLUMN BASE PLATE IS LESS THAN 1/4", A PRESSURE INJECTION SYSTEM SHALL BE USED.
9. PROVIDE L3x3x1/4 FIELD-FABRICATED FRAME BETWEEN ROOF MEMBERS AT OPENINGS IN ROOF GREATER THAN 10"x10", UNO. REFER TO TYPICAL MISCELLANEOUS ROOF OPENING FRAME DETAIL.
10. ALL STRUCTURAL STEEL, EXCEPT EMBEDDED ITEMS, SHALL BE PAINTED WITH ONE SHOP COAT OF RUST INHIBITIVE PAINT. DO NOT PAINT TOP FLANGE OF COMPOSITE STEEL BEAMS OR SURFACED OF COLUMNS TO WHICH SHEAR STUD CONNECTORS WILL BE WELDED.
11. STRUCTURAL DRAWINGS SHALL NOT BE REPRODUCED IN WHOLE OR IN PART FOR SHOP DRAWING SUBMITTALS, ALSO SEE SD4.
12. UNLESS OTHERWISE NOTED, ALL MOMENT CONNECTIONS SHALL BE MADE WITH FULL PENETRATION WELDS AND SHALL BE DESIGNED TO DEVELOP THE FULL CAPACITY OF THE STRONGEST MEMBER.
13. HEADED ANCHORS SHALL BE MANUFACTURED FROM COLD DRAWN WIRE CONFORMING TO ASTM A108, GR. 50 WITH FLUXED ENDS. STUDS SHALL BE AUTOMATICALLY END WELDED WITH SUITABLE STUD WELDING EQUIPMENT IN ACCORDANCE WITH AWS D1.1. STUDS FOR EMBEDDED PLATES AND OTHER ANCHORS SHALL BE SHOP WELDED. STUDS FOR COMPOSITE BEAMS SHALL BE FIELD WELDED.
14. WHERE STIFFENER PLATES ARE SHOWN IN THE DRAWINGS, THEY ARE REQUIRED AND MUST BE PROVIDED AS SHOWN.
15. TEMPORARY SUPPORTS, BRACES, FALSE WORK, SHORES, CRIBBING OR OTHER SUPPORTS REQUIRED DURING ERECTION TO KEEP STRUCTURAL STEEL SECURE, SUPPORTED, PLUMB, AND IN ALIGNMENT SHALL BE DESIGNED, FURNISHED AND INSTALLED BY THE CONTRACTOR AND STEEL ERECTOR. THESE TEMPORARY SUPPORTS SHALL SECURE THE STRUCTURAL STEEL FRAMING, OR ANY PARTLY ASSEMBLED STEEL FRAMING, AGAINST ALL LATERAL AND VERTICAL LOADS, INCLUDING BUT NOT LIMITED TO THOSE RESULTING FROM WIND, SEISMIC, ERECTION OPERATIONS AND THE WEIGHT OF THE STRUCTURE AND SUPPORTED ELEMENTS. ALL TEMPORARY SUPPORTS SHALL REMAIN IN PLACE DURING CONSTRUCTION UNTIL THE PERMANENT STRUCTURAL STEEL, CONNECTIONS, FLOOR DECKS AND BRACING ELEMENTS SHOWN IN THE DRAWINGS ARE COMPLETE.
16. ALL STRUCTURAL STEEL AND CONNECTIONS EXPOSED TO WEATHER SHALL BE HOT DIP GALVANIZED G-90 COATING. COOLING TOWER GRILLAGE SHALL BE GALVANIZED WITH G-135 COATING. ANY DAMAGE TO THE GALVANIC MATERIAL DURING WELDING SHALL BE TOUCHED UP WITH GALVANIZING REPAIR PAINT: HIGH-ZINC-DUST-CONTENT PAINT FOR REGALVANIZING WELDS AND REPAIR PAINTING GALVANIZED STEEL, WITH DRY FILM CONTAINING NOT LESS THAN 93 PERCENT ZINC DUST BY WEIGHT, AND COMPLYING WITH DOD-P-21035A OR SSPC-PAINT 20.
17. WHERE FILLET WELD SIZE IS NOT SHOWN ON A DETAIL, ITS SIZE SHALL BE ASSUMED TO BE THE PLATE THICKNESS OF THE THINNEST PIECE MINUS 1/16".
18. ALL MISCELLANEOUS WELDS (FIELD OR SHOP) SHALL BE MINIMUM SIZE FILLET ALL AROUND IN ACCORDANCE WITH AISC. WELDING OF CONTINUOUS MEMBERS SHALL BE A MINIMUM OF 2 INCHES OF 3/16 INCH FILLET STITCH WELDS AT 12 INCHES O.C., STAGGERED EACH SIDE, UNLESS OTHERWISE NOTED. COLUMN BASE PLATES, CAP PLATES AND STIFFENER PLATES SHALL BE WELDED ALL AROUND.
19. BEAMS WITH LATERAL BRACING ATTACHED SHALL UTILIZE SLIP CRITICAL BOLTS OR WELDED CONNECTIONS.
20. WELDING:
    ALL WELDING SHALL BE PERFORMED BY WELDERS CERTIFIED FOR THE WELDS TO BE MADE; SEE SPECIFICATIONS FOR WELDING PROCESS TO BE USED. WELDING OF REINFORCING STEEL FOR USE IN STRUCTURAL CONCRETE OR STRUCTURAL MASONRY SHALL BE PERMITTED ONLY WHERE SPECIFICALLY DESIGNATED ON THESE PLANS OR WHERE SPECIFICALLY APPROVED BY THE ENGINEER.
21. ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS): WHERE NOTED ON PLANS OR BY THE ARCHITECT SHALL CONFORM TO AISC 303 SECTION 10.
22. LEDGER ANGLE FOR FASCIA BRICK SUPPORT SHALL BE INSTALLED SUCH THAT THE SWEEP OR CAMBER DOES NOT EXCEED 1/8 INCH DEVIATION FROM STRAIGHT LINE.
23. ALL BRICK SUPPORT ANGLES ARE DESIGNED TO FULLY SUPPORT THE BRICK VENEER WITH SOME NORMAL DEFLECTION AS THE BRICK IS INSTALLED. BRICK SHALL BE INSTALLED WITHOUT SHORING THE SUPPORT ANGLE DURING CONSTRUCTION. SHORING THE BRICK DURING CONSTRUCTION CAN RESULT IN HORIZONTAL BED JOINT CRACKING WHEN THE SHORES ARE REMOVED.
22. PROVIDE ALL NECESSARY HOLES IN MISCELLANEOUS STRUCTURAL STEEL MEMBERS FOR ATTACHMENT OF NON-STRUCTURAL ITEMS (IE: HOLES FOR WINDOW HEAD ANCHORS), SEE ARCHITECTURAL DRAWINGS FOR REQUIREMENTS.
23. SPLICING OF STRUCTURAL STEEL MEMBERS WHERE NOT DETAILED IS PROHIBITED WITHOUT PRIOR APPROVAL OF THE STRUCTURAL ENGINEER.
24. STEEL COLUMNS SHALL BE SPLICED A MINIMUM OF 4'-0" ABOVE THE FINISH FLOOR IN STORIES WHERE SPLICES OCCUR. COLUMNS SHALL BE SPLICED EVERY TWO LEVELS. COLUMNS SHALL HAVE A HOLES FOR 3/4" DIAMETER SAFETY CABLES OR PLATES WITH A HOLE WELDED TO THE COLUMN. PROVIDE AN L3x3x1/4 DECK SUPPORT ANGLE ON ALL SIDES OF THE COLUMN.
25. THE GENERAL CONTRACTOR AND HIS SUBCONTRACTORS SHALL COMPLY TO OSHA 29 CFR 1926 SUBPART R, SAFETY STANDARDS FOR STEEL ERECTION.
26. AS SCOPE AND PERFORMANCE DOCUMENTS, THE DRAWINGS AND SPECIFICATIONS DO NOT INDICATE OR DESCRIBE ALL OF THE WORK REQUIRED FOR THE PERFORMANCE AND COMPLETION OF THIS WORK. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE FABRICATION AND INSTALLATION OF ALL MISCELLANEOUS METAL ITEMS INDICATED, DESCRIBED, OR IMPLIED ON THE STRUCTURAL AND/OR THE ARCHITECTURAL DRAWINGS. MISCELLANEOUS STEEL ITEMS, WITHIN AN ASSEMBLY AND NOT ATTACHED TO THE STRUCTURE, ARE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND HIS SUBCONTRACTORS WHETHER THEY ARE SHOWN OR NOT SHOWN ON THE ARCHITECTURAL OR STRUCTURAL DRAWINGS. SUCH ASSEMBLIES INCLUDE BUT ARE NOT LIMITED TO, EXTERIOR AND INTERIOR WALL ASSEMBLIES, CEILING ASSEMBLIES, PARTITION ASSEMBLIES, SHELF AND CABINET ASSEMBLIES AND ALL OTHER SIMILAR ASSEMBLIES. ANY MISCELLANEOUS METAL ITEMS INDICATED ON THE ARCHITECTURAL DRAWINGS AND NOT SHOWN ON STRUCTURAL DRAWINGS SHALL BE A MINIMUM OF L4x4x1/2", C7x9.8, 3/8" PLATE OR HSS4x4x3/8" UNLESS OTHERWISE APPROVED BY THE STRUCTURAL ENGINEER.

6/7/2023 9:52:36 PM

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Project:

AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:

FORT BEND COUNTY

1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

HINESAD

Contract No: 22-005

Design Team:

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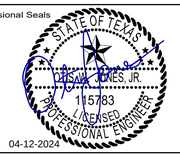


04-12-2024

No.	Issue Description	MM-DD-YYYY
	ISSUED FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: JMS Reviewed by: OWJ

Project No: 22-005

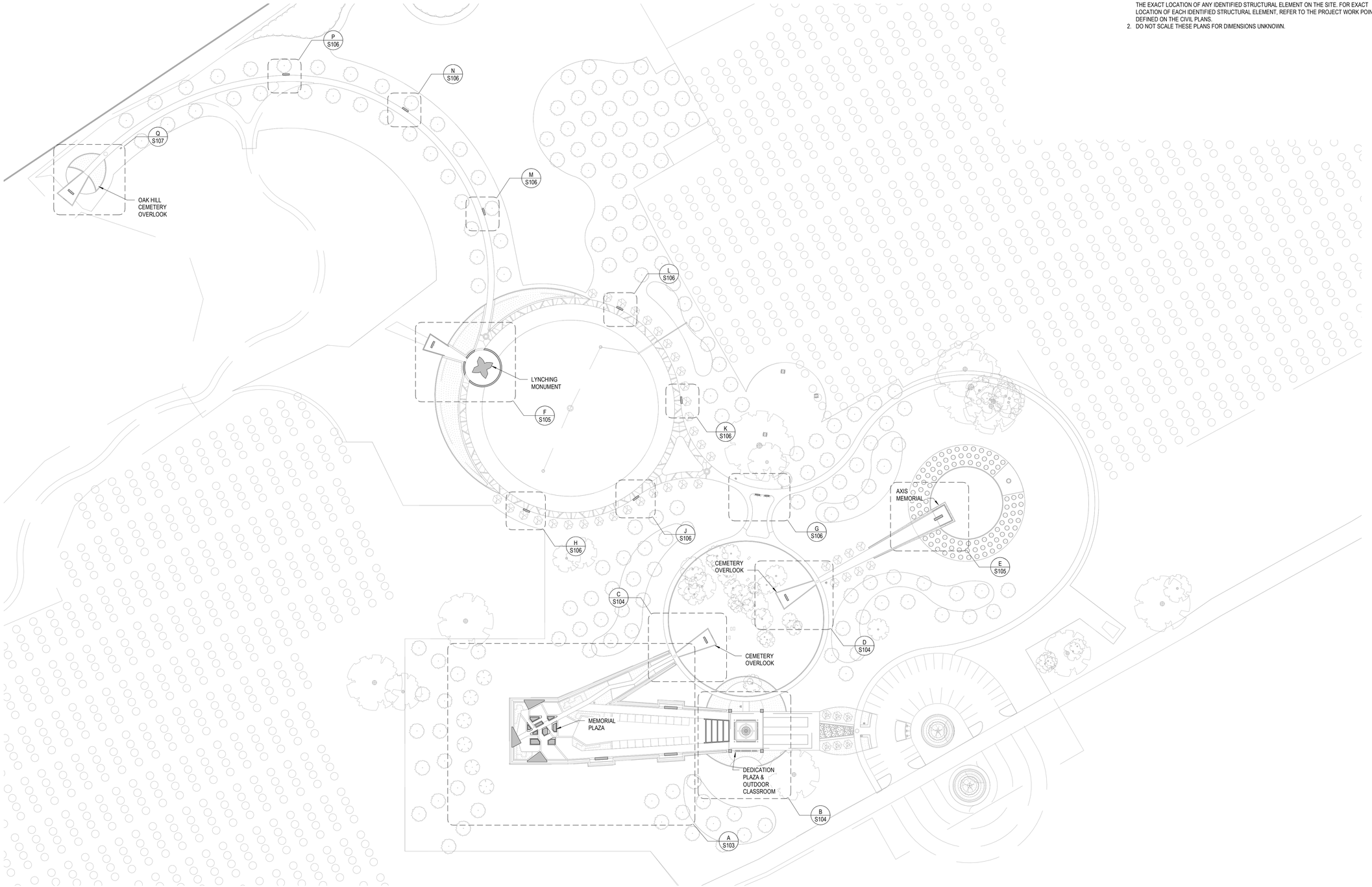
Sheet Title:

GENERAL STRUCTURAL DATA

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

S101



N

OVERALL STRUCTURAL SITE PLAN

SCALE: 1" = 60'-0"

STRUCTURAL SITE NOTES

1. THE OVERALL STRUCTURAL SITE PLAN AND SUBSEQUENT ENLARGED PLANS ARE INTENDED TO BE DIAGRAMMATICAL IN NATURE TO IDENTIFY THE STRUCTURAL ELEMENTS AND THEIR ROUGH LOCATIONS WITHIN SCOPE OF THE PROJECT. THESE PLANS SHOULD NOT BE USED TO DETERMINE THE EXACT LOCATION OF ANY IDENTIFIED STRUCTURAL ELEMENT ON THE SITE. FOR EXACT LOCATION OF EACH IDENTIFIED STRUCTURAL ELEMENT, REFER TO THE PROJECT WORK POINT AS DEFINED ON THE CIVIL PLANS.
2. DO NOT SCALE THESE PLANS FOR DIMENSIONS UNKNOWN.

****VERIFY SCOPE****
REF. SHEET G001

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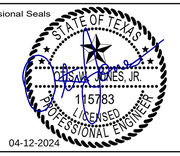

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	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: JMS Reviewed by: OWJ

Project No: 22-005

Sheet Title:

OVERALL STRUCTURAL SITE PLAN

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Sheet Number

S102

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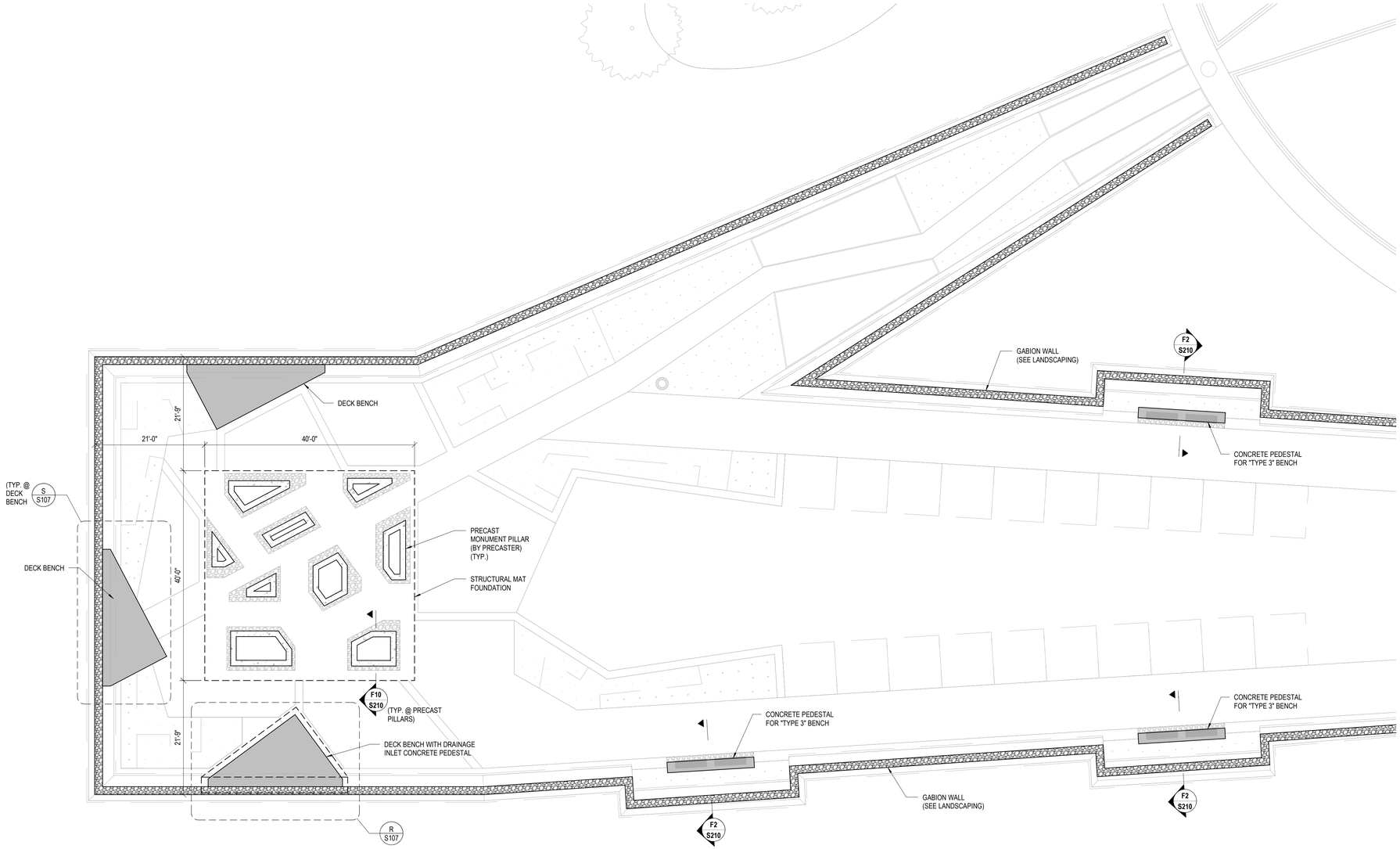

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A
S102

MEMORIAL MONUMENT PLAZA STRUCTURAL SITE PLAN

SCALE: 3/32" = 1'-0"

6/7/2023 9:52:41 PM

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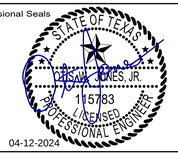

No.	Issue Description	MM-DD-YYYY
	ISSUED FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: JMS Reviewed by: OWJ

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Sheet Title:

ENLARGED STRUCTURAL SITE PLAN

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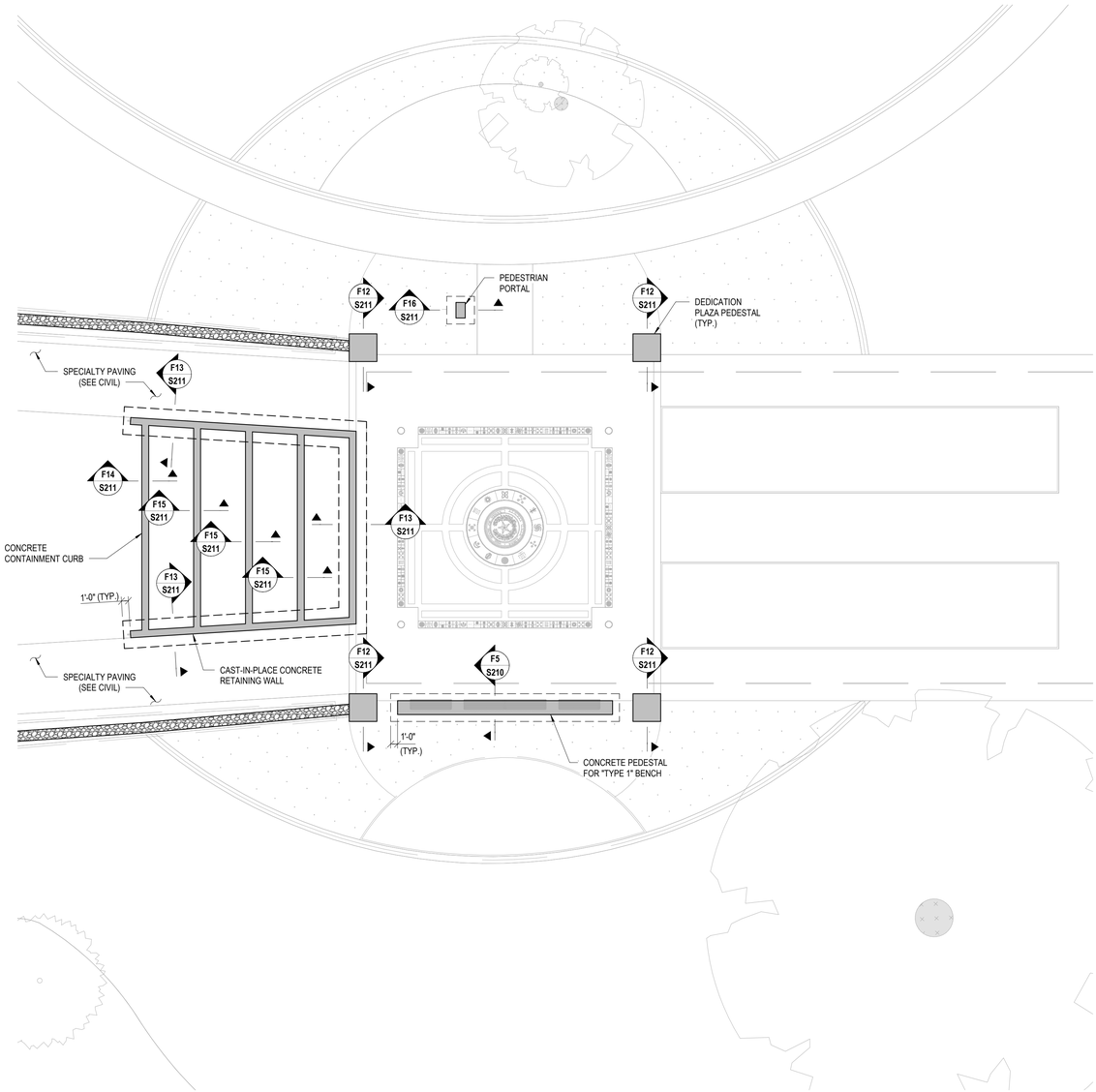
Sheet Number

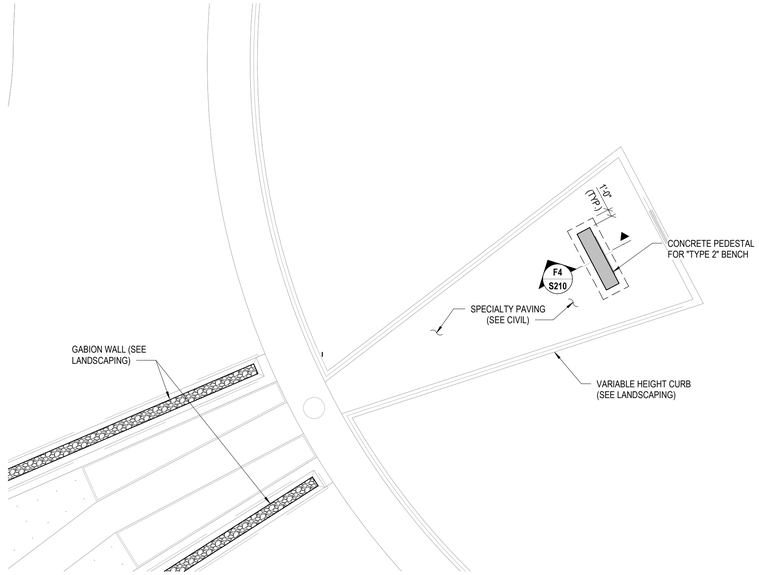
S103



N B S102

DEDICATION PLAZA & OUTDOOR CLASSROOM STRUCTURAL SITE PLAN

SCALE: 1" = 10'-0"



N C S102

CEMETERY OVERLOOK STRUCTURAL PLAN

SCALE: 1" = 10'-0"

****VERIFY SCOPE****
REF. SHEET G001



N D S102

CEMETERY OVERLOOK STRUCTURAL PLAN

SCALE: 1" = 10'-0"

****VERIFY SCOPE****
REF. SHEET G001

6/7/2023 9:52:46 PM

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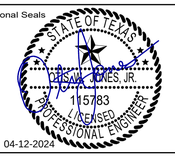

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	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: JMS Reviewed by: OWJ

Project No: 22-005

Sheet Title:

ENLARGED STRUCTURAL SITE PLANS

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Sheet Number

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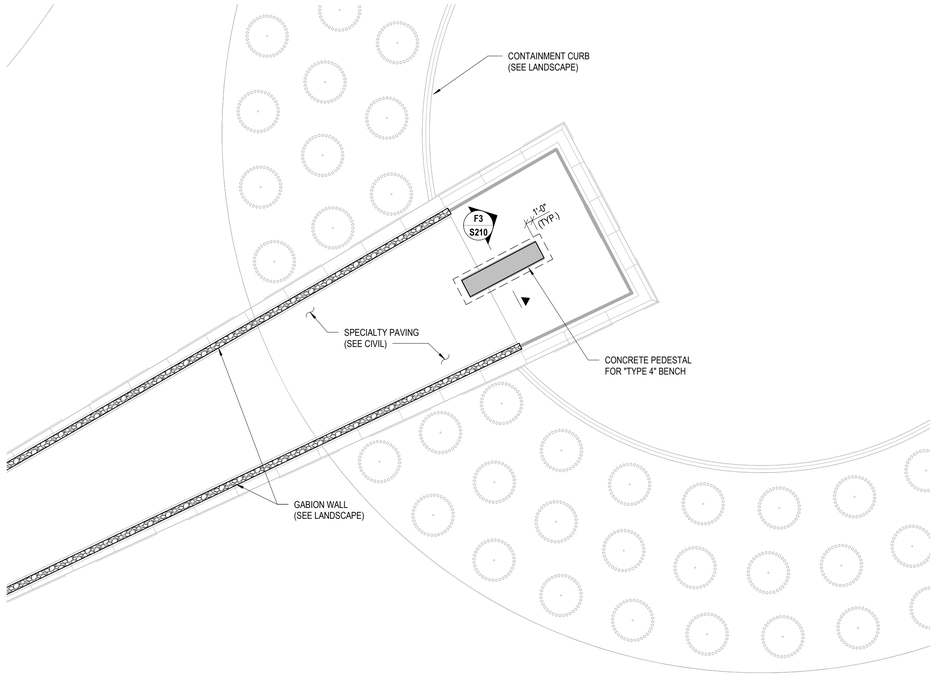
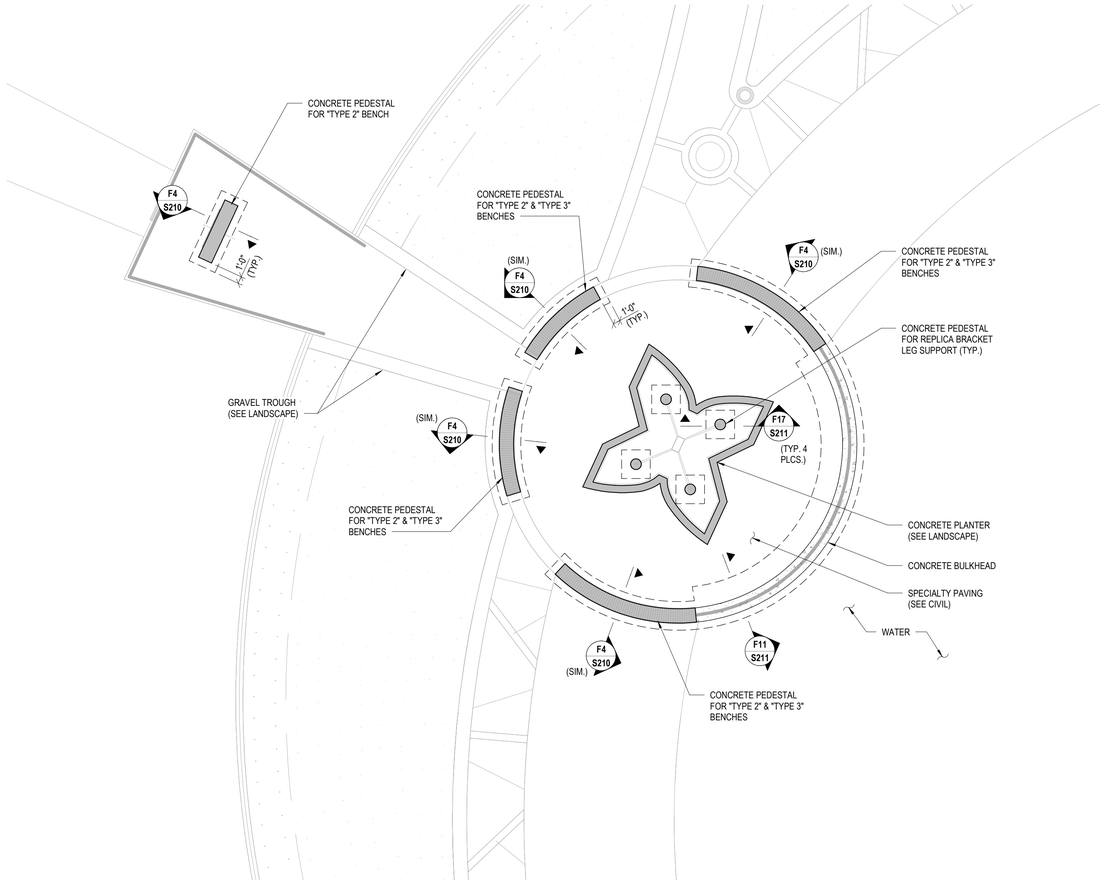


N E S102 AXIS MEMORIAL STRUCTURAL SITE PLAN

SCALE: 1" = 10'-0"



N F S102 LYNCHING MEMORIAL STRUCTURAL SITE PLAN

SCALE: 1" = 10'-0"

****VERIFY SCOPE****
REF. SHEET G001

6/7/2023 9:52:50 PM

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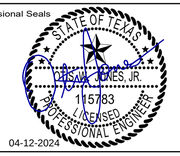

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Project No: 22-005

Sheet Title:

ENLARGED STRUCTURAL SITE PLAN

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Sheet Number

S105

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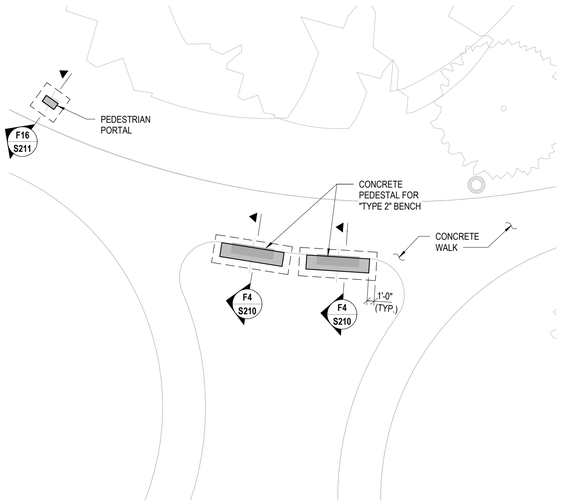
REF. SHEET G001



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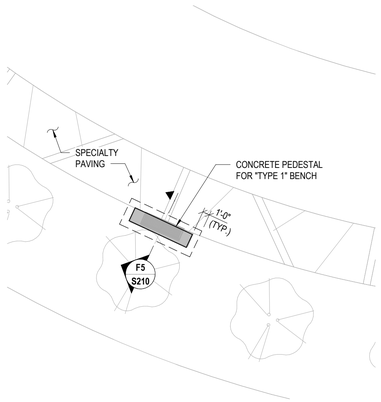

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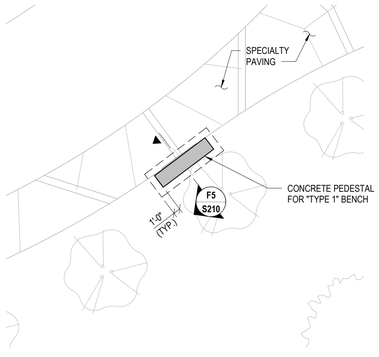

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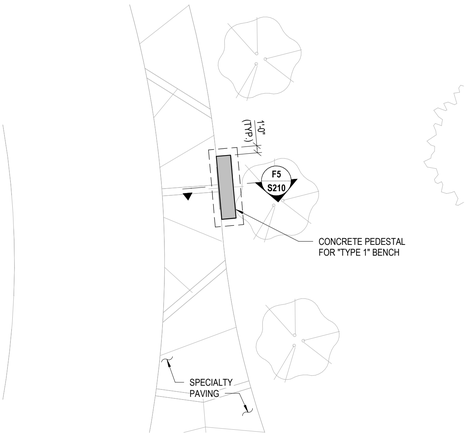

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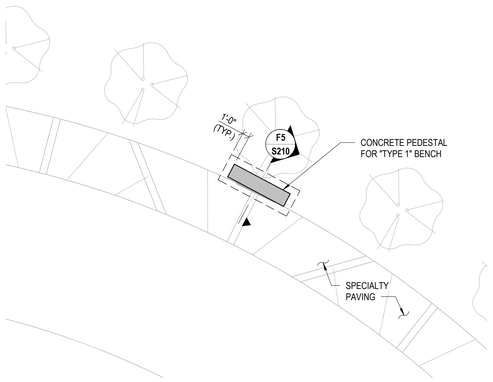

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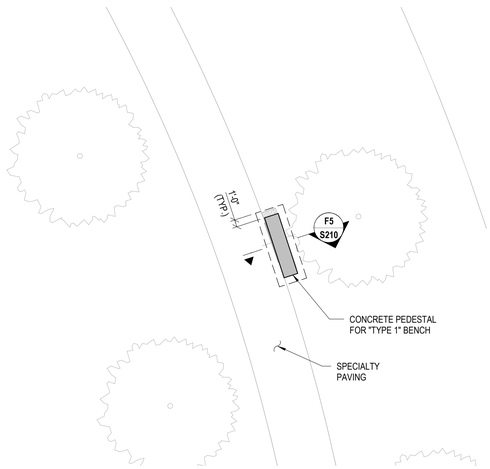

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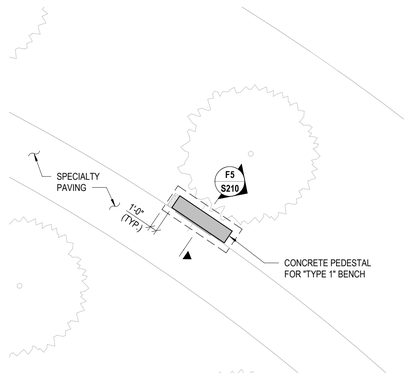

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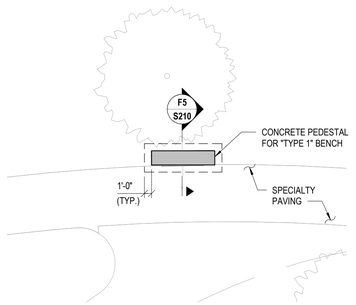
SCALE: 1" = 10'-0"



N P S102 ENLARGED STRUCTURAL SITE PLAN
SCALE: 1" = 10'-0"

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630 CHARLIE ROBERTS LANE
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1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

HINESAD

Contract No: 22-005

Design Team:

HINES ARCHITECTURE + DESIGN
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Houston, TX 77046 USA
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Key Plan



Professional Seals



04-12-2024

No.	Issue Description	MM-DD-YYYY
	ISSUED FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: JMS Reviewed by: OWJ

Project No: 22-005

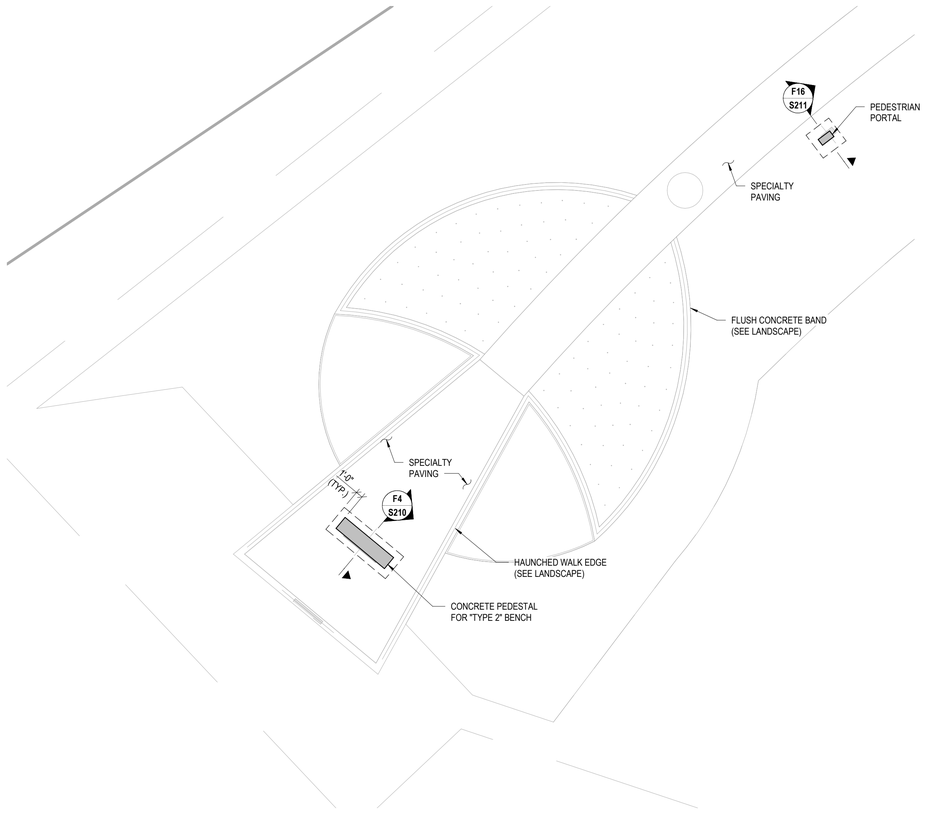
Sheet Title:

ENLARGED STRUCTURAL SITE PLANS

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

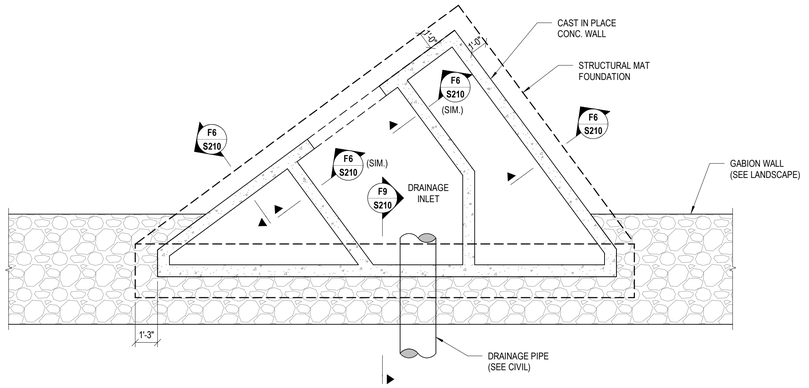
S106



N Q S102 OAK HILL CEMETERY OVERLOOK STRUCTURAL PLAN

SCALE: 1" = 10'-0"

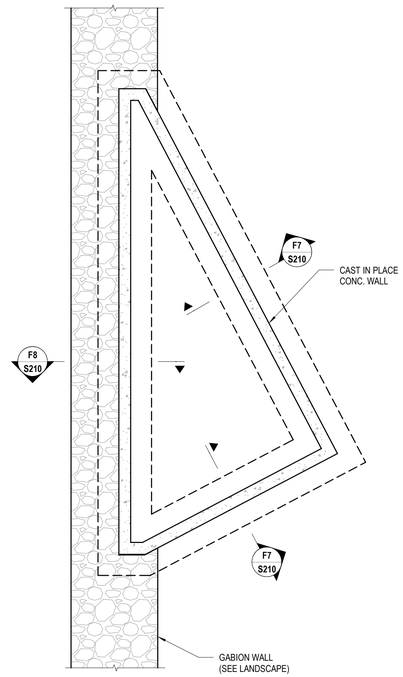
****VERIFY SCOPE****
REF. SHEET G001



N R ENLARGED DECK BENCH WITH INLET PLAN

SCALE: 1/4" = 1'-0"

NOTE:
REF. LANDSCAPE DETAIL A/L1.18 FOR DIMENSIONS



N S ENLARGED DECK BENCH PLAN

SCALE: 1/4" = 1'-0"

NOTE:
REF. LANDSCAPE DETAIL B/L1.18 FOR DIMENSIONS

6/7/2023 9:53:00 PM

THE STATE OF TEXAS · FORT BEND COUNTY

Project:
AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK
630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:
FORT BEND COUNTY
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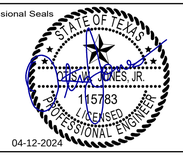

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Sheet Title:

ENLARGED STRUCTURAL PLANS

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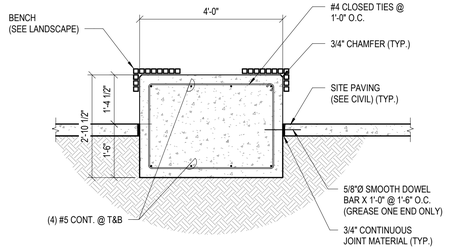
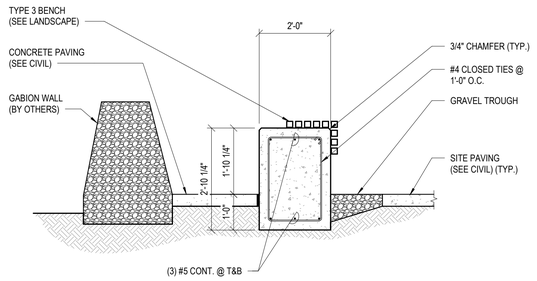
Sheet Number

S107



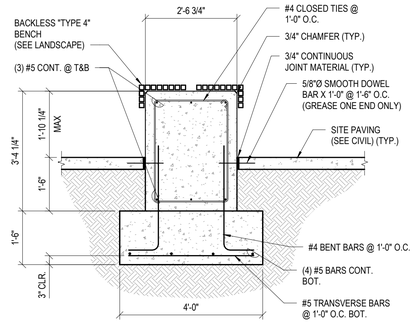
F1 BENCH CONCRETE PEDESTAL SECTION

SCALE: NOT TO SCALE



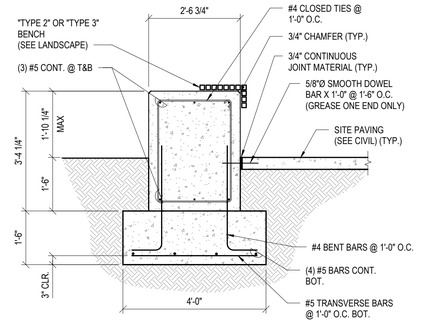
F2 S103 BENCH CONCRETE PEDESTAL SECTION

SCALE: NOT TO SCALE



F3 S105 BENCH CONCRETE PEDESTAL SECTION

SCALE: NOT TO SCALE



F4 S104 THRU S107 BENCH CONCRETE PEDESTAL SECTION

SCALE: NOT TO SCALE

F5 S104, S106 BENCH CONCRETE PEDESTAL SECTION

SCALE: NOT TO SCALE

F6 S107 DECK BENCH CONCRETE WALL SECTION

SCALE: NOT TO SCALE

F7 S107 CONCRETE RETAINING WALL SECTION

SCALE: NOT TO SCALE

F8 S107 DECK BENCH SECTION AT GABION WALL

SCALE: NOT TO SCALE

F9 S107 DECK BENCH SECTION AT DRAINAGE INLET

SCALE: NOT TO SCALE

F10 S103 MONUMENT PILLAR FOUNDATION SECTION

SCALE: NOT TO SCALE

NOTE:

REF. ARCHITECTURAL DETAILS 1/A701 & 5/A701

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Project No: 22-005

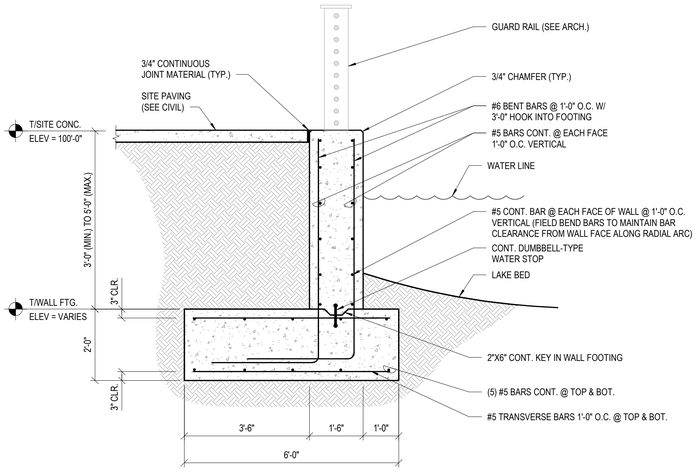
Sheet Title:

FOUNDATION DETAILS

Orig. drawing is ARCH D.Do not scale contents of this drawing.

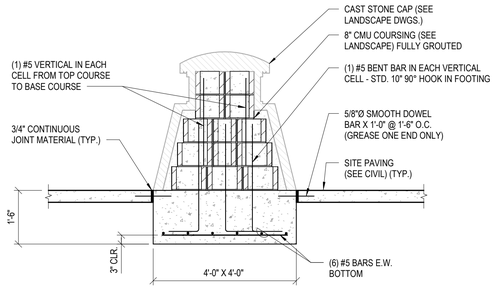
Sheet Number

S210



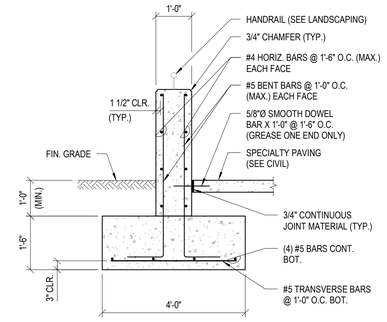
F11 / S105 — RETAINING WALL SECTION

SCALE: NOT TO SCALE



F12 / S104 — DEDICATION PLAZA PEDESTAL SECTION

SCALE: NOT TO SCALE

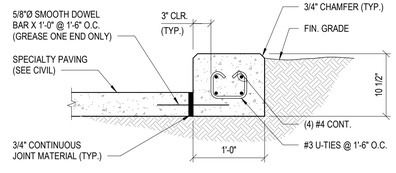


F13 / S104 — CONCRETE RETAINING WALL SECTION

SCALE: NOT TO SCALE

NOTE:

REF. LANDSCAPE DETAIL C / L1.11

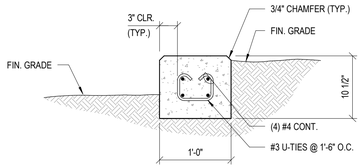


F14 / S104 — CONCRETE CONTAINMENT CURB SECTION

SCALE: NOT TO SCALE

NOTE:

REF. LANDSCAPE DETAIL i / L1.21

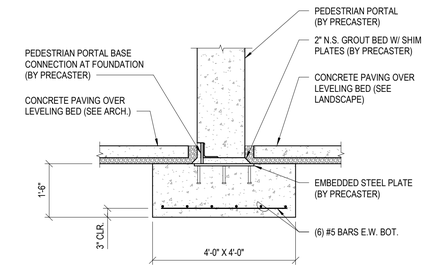


F15 / S104 — CONCRETE CONTAINMENT CURB SECTION

SCALE: NOT TO SCALE

NOTE:

REF. LANDSCAPE DETAIL i / L1.21

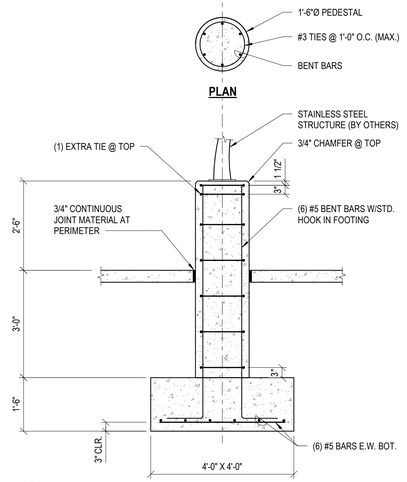


F16 / S104, S106, S107 — PEDESTRIAN PORTAL FOUNDATION SECTION

SCALE: NOT TO SCALE

NOTE:

REF. ARCHITECTURAL DETAILS: 6/A701 & 8/A701



F17 / S105 — REPLICA BRACKET PEDESTAL SECTION

SCALE: NOT TO SCALE

NOTES:

1. REF. LANDSCAPE DETAILS: D/L1.14 & D/L1.15.
2. CONCRETE PLANTER NOT SHOWN FOR CLARITY.

****VERIFY SCOPE****
REF. SHEET G001

****VERIFY SCOPE****
REF. SHEET G001

6/7/2023 9:53:02 PM

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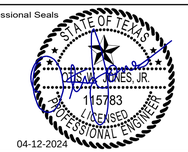

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Sheet Title:

FOUNDATION DETAILS

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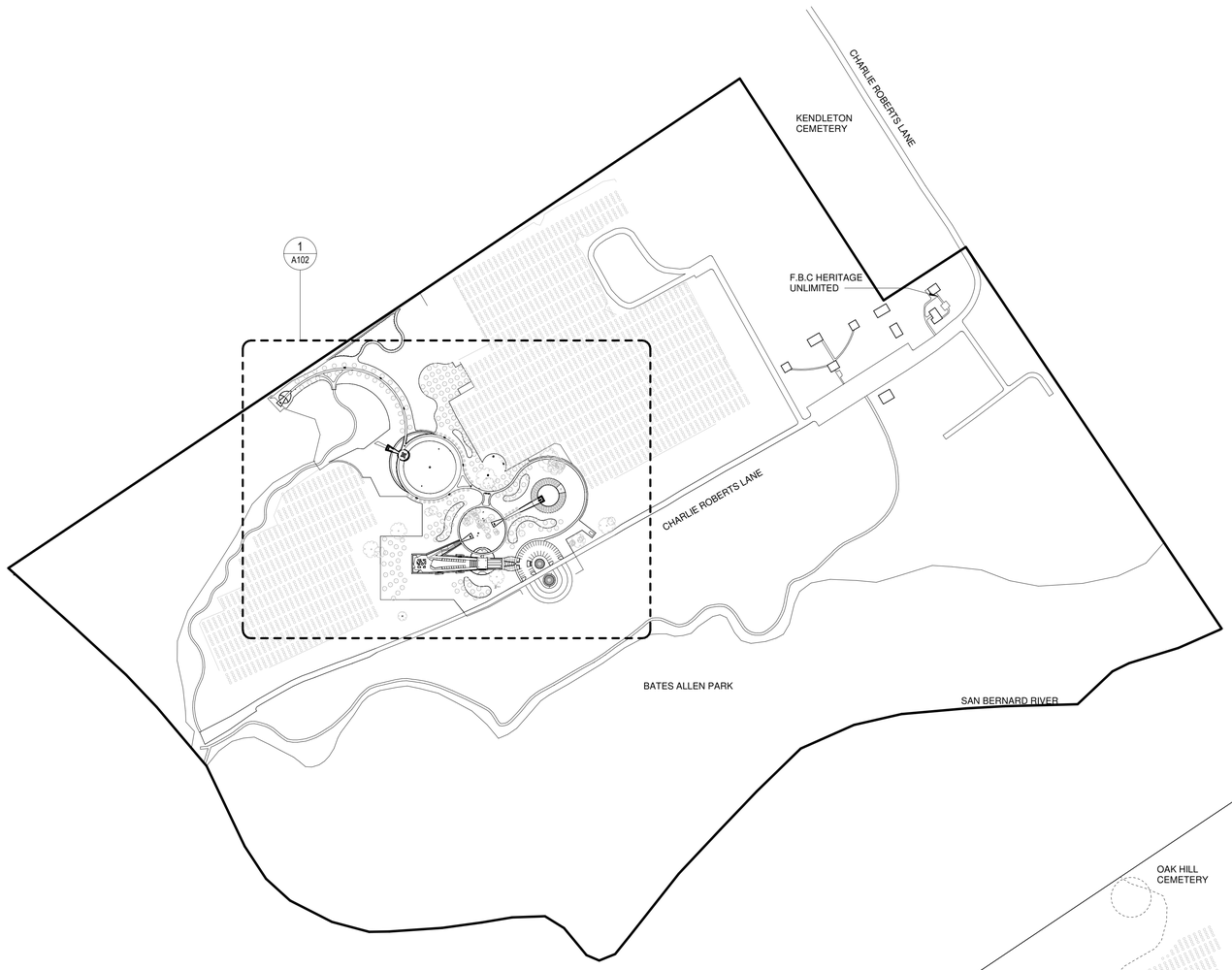
Sheet Number

S211



2 ARCHITECTURAL SITE PLAN - PROPOSED
1" = 300'-0"



1 ARCHITECTURAL SITE PLAN - EXISTING
1" = 300'-0"

GENERAL NOTES

1. REFERENCE GENERAL NOTES IN G000 SERIES
2. REFERENCE PILLAR TYPES IN SHEET A800 SERIES
3. REFERENCE ARCHITECTURAL SPECIFICATIONS IN SHEET A200 SERIES
4. REFERENCE CIVIL SPECIFICATIONS IN C000 SERIES
5. REFERENCE LANDSCAPE SPECIFICATIONS IN L000 SERIES
6. REFERENCE STRUCTURAL SPECIFICATIONS IN S000 SERIES
7. REFERENCE ADINKRA SYMBOL LEGEND IN SHEET A400 SERIES
8. PROVIDE MOCK-UP AS INDICATED IN 6/A401

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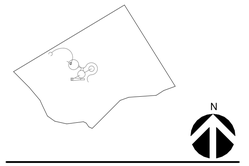

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	ISSUE FOR CONSTRUCTION	05-26-2023
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Drawn by: NS Reviewed by: GL

Project No: 218226

Sheet Title:

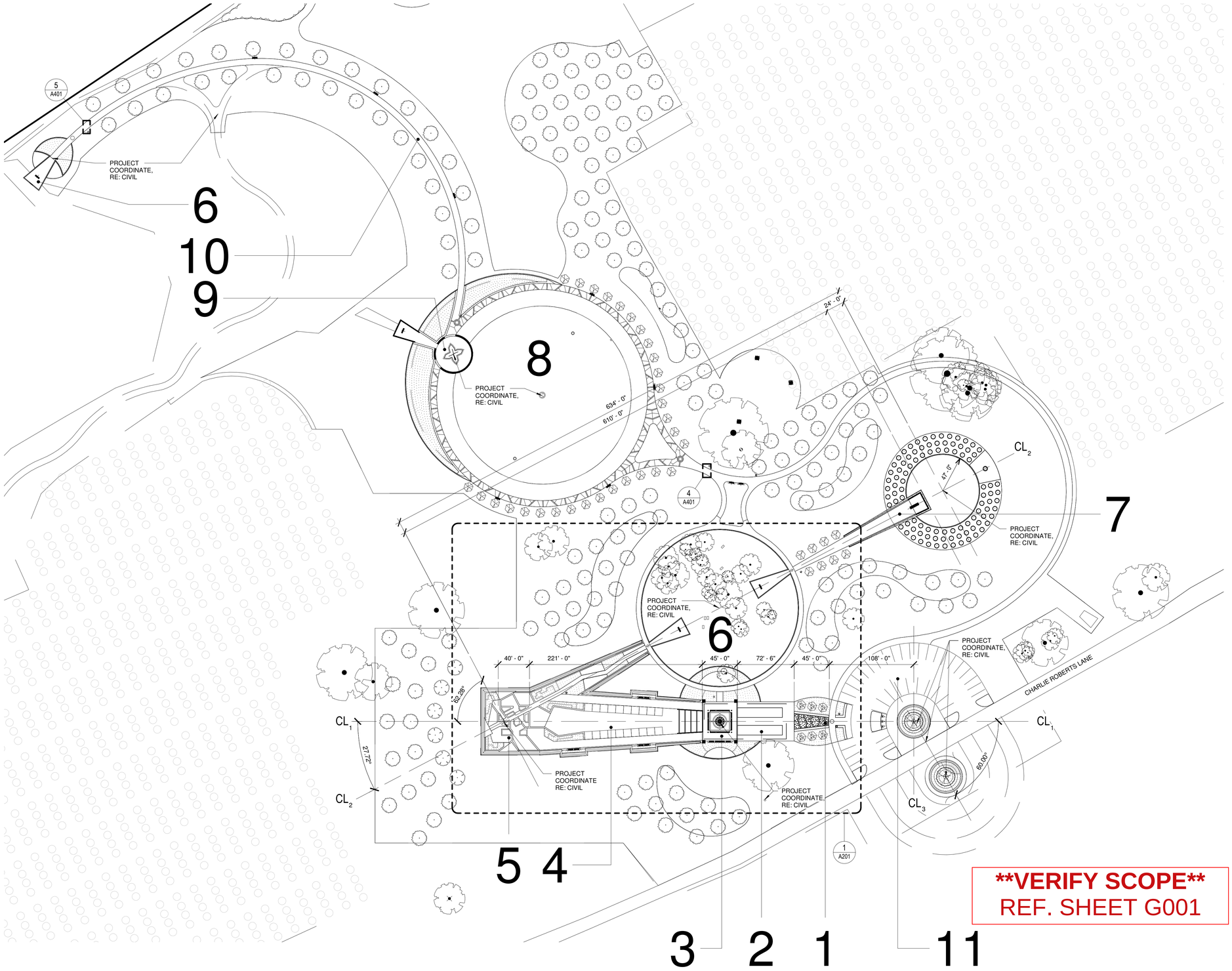
SITE PLAN - OVERALL EXISTING & PROPOSED

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

A101

6/6/2023 12:46:18 PM



1 SITE - SITE AREA PLAN
1" = 60'-0"

6/6/2023 12:46:24 PM

LEGEND - SITE PLAN

1. ADINKRA ARRIVAL GARDEN
2. LEARNING CENTER (FUTURE)
3. DEDICATION PLAZA
4. JUNETEENTH LAWN
5. MEMORIAL MONUMENT
6. HISTORIC CEMETERY
7. CONVICT LABOR & LEASING MEMORIAL
8. FREEDOM POND
9. LYNCHING MONUMENT & OVERLOOK
10. OAK HILL LIVE OAK TRAIL
11. PARKING

GENERAL NOTES - EXTERIOR FINISHES

1. CONTRACTOR TO SUBMIT REQUIRED SAMPLES TO ARCHITECT FOR WRITTEN APPROVAL AS OUTLINED IN CONTRACT DOCUMENTS

2. ALL EXTERIOR ENCLOSURE SYSTEMS ARE TO COMPLY WITH STATUTORY REQUIREMENTS FOR CONSTRUCTION.

3. APC-1: COLOR AND FINISH SIMILAR TO PRECAST CONCRETE INSTITUTE (PCI) 361, 363D, AND 364D. CONTRACTOR TO PROVIDE 12"X12" SAMPLES OF THE COLORS INDICATED, WITH THE FOUR ASSOCIATED TEXTURES/EXPOSURES FOR REVIEW AND APPROVAL BY ARCHITECT. THE FINISHES SHALL INCLUDE FORM FINISH, LIGHT ACID ETCHED, LIGHT AND MEDIUM EXPOSED SANDBLASTED.

4. APC-2: COLOR SAME AS APPROVED PC-1. FORM FINISH ONLY

SAMPLE COLORS & FINISHES

	PCI 361	PCI 363D	PCI 364D	
FORM FINISH (APC-2)	A	B	C	APC-2
ACID FINISH LIGHT EXPOSURE	D	E (Spec Per PCI Code)	F (Spec Per PCI Code)	APC-1
SAND BLASTED FINISH LIGHT EXPOSURE	G	H	I	
SAND BLASTED FINISH MEDIUM EXPOSURE	J (Spec Per PCI Code)	K	L	

B. DEFINITIONS:
1. "TYPICAL" OR "TYP" INDICATES IDENTICAL COMPLETE SYSTEM SHALL BE PROVIDED FOR EACH OCCURRENCE OF THE CONDITION NOTED.

2. "SIMILAR" INDICATES COMPLETE SYSTEM AND COMPONENTS SHALL BE PROVIDED COMPARABLE TO THE CHARACTERISTICS FOR THE CONDITION NOTED.

3. "AS REQUIRED" INDICATES COMPONENTS REQUIRED TO COMPLETE THE NOTED, SYSTEM AS INDICATED IN THE PROJECT DOCUMENTS, SHALL BE PROVIDED.

4. "ALIGN" INDICATES ACCURATELY PROVIDE FINISH FACES OF MATERIALS IN STRAIGHT, TRUE, AND PLUMB RELATION TO ADJACENT MATERIALS.

C. DIMENSIONS:

1. DIMENSIONS ARE INDICATED TO THE CENTERLINE OF THE STRUCTURAL GRID, FACE OF CONCRETE WALL, NOMINAL FACE OF CMU WALL, FACE OF PARTITION TYPE AS SCHEDULED, UNLESS OTHERWISE NOTED (UON)

2. ALIGNMENT OF PARTITIONS AND FINISHES AS SCHEDULED SHALL BE STRAIGHT, TRUE & PLUMB.

3. FLOOR ELEVATIONS ARE INDICATED TO THE FACE OF THE STRUCTURAL SLAB, UNLESS OTHERWISE NOTED.

4. VERTICAL DIMENSIONS ARE INDICATED FROM THE FLOOR ELEVATION TO FACE OF FINISHED MATERIAL AT THE DIMENSION POINT, UNLESS NOTED ABOVE FINISH FLOOR "AFF".

5. DIMENSIONS SHOWN ON THE DRAWINGS SHALL INDICATE THE REQUIRED SIZE, CLEARANCE, AND DIMENSIONAL RELATIONSHIP BETWEEN PROJECT SYSTEMS AND COMPONENTS. DIMENSIONS SHALL NOT BE DETERMINED BY SCALING THE DRAWINGS.

D. SURFACE FINISHES AND DETAILS:

1. PRECAST CONCRETE: PRECAST CONCRETE MAY HAVE STANDARD OR BASIC SURFACE FINISHES, WHICH ARE OFTEN INTENDED TO BE COVERED BY ADDITIONAL MATERIALS LIKE PAINT OR CLADDING. THE FOCUS IS PRIMARILY ON THE FUNCTIONAL ASPECTS RATHER THAN THE APPEARANCE.

2. ARCHITECTURAL PRECAST CONCRETE: ARCHITECTURAL PRECAST CONCRETE PAYS SPECIAL ATTENTION TO SURFACE FINISHES AND DETAILS SINCE THEY ARE VISIBLE AND CONTRIBUTE TO THE OVERALL AESTHETIC OF THE STRUCTURE. IT CAN INCLUDE VARIOUS TREATMENTS LIKE EXPOSED AGGREGATE, ACID ETCHING, SANDBLASTING, PIGMENTATION, OR INTRICATE MOLDS TO CREATE VISUALLY APPEALING TEXTURES, PATTERNS, AND COLOR VARIATIONS.

E. DESIGN AND CUSTOMIZATION

1. PRECAST CONCRETE: PRECAST CONCRETE ELEMENTS ARE OFTEN DESIGNED FOR FUNCTIONAL PURPOSES, FOCUSING PRIMARILY ON STRUCTURAL REQUIREMENTS AND STANDARDIZATION. THE DESIGN MAY BE SIMPLER AND MORE UTILITARIAN, PRIORITIZING EFFICIENCY AND LOAD-BEARING CAPACITY.

2. ARCHITECTURAL PRECAST CONCRETE: ARCHITECTURAL PRECAST CONCRETE PLACES A SIGNIFICANT EMPHASIS ON DESIGN FLEXIBILITY AND CUSTOMIZATION. THESE ELEMENTS ARE TAILORED TO MEET SPECIFIC ARCHITECTURAL REQUIREMENTS, INCLUDING COMPLEX SHAPES, DECORATIVE PATTERNS, SURFACE TEXTURES, AND FINISHES. ARCHITECTURAL PRECAST ALLOWS FOR GREATER CREATIVITY AND CAN BE USED TO ACHIEVE UNIQUE AND VISUALLY STRIKING DESIGNS.

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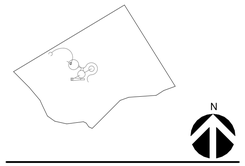

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Sheet Title:
SITE PLAN - ENLARGED PROPOSED

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number
A102

MONUMENT INFORMATION

APPLICABLE CODES:
2012 IBC, LIFE SAFETY CODE, 2020 NATIONAL ELECTRIC CODE, 2012 UPC

NEW CONSTRUCTION - NON SPRINKLERED

OCCUPANCY USE GROUP:
Section 303
Group A-5: Assembly Outdoor Activities

Table 10.4
Assembly - Exhibit Gallery/ Museum
Occupancy Load Factor - 30 NET

OCCUPANCY LOAD:
MONUMENT 5325 SF/30 = 178 OCCUPANTS

EXIT REQUIREMENTS:
Section 1030.2 10' MIN WIDTH = 20' PROVIDED

Section 1030.6.3 TRAVEL DISTANCE = 400' MAX
Exception 2

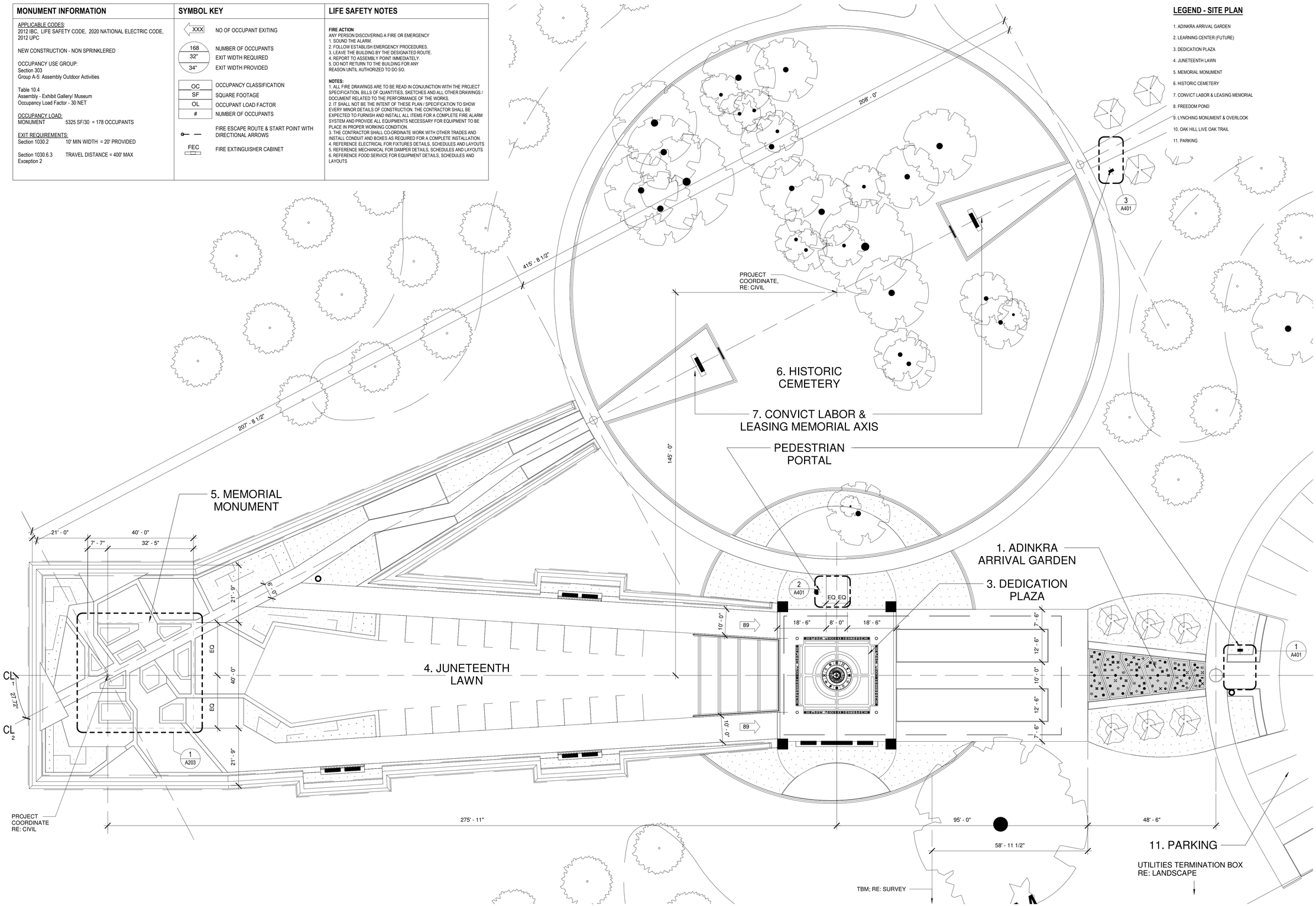
SYMBOL KEY

XXX	NO OF OCCUPANT EXITING
168 / 32" / 34"	NUMBER OF OCCUPANTS / EXIT WIDTH REQUIRED / EXIT WIDTH PROVIDED
OC	OCCUPANCY CLASSIFICATION
SF	SQUARE FOOTAGE
OL	OCCUPANT LOAD FACTOR
#	NUMBER OF OCCUPANTS
	FIRE ESCAPE ROUTE & START POINT WITH DIRECTIONAL ARROWS
FEC	FIRE EXTINGUISHER CABINET

LIFE SAFETY NOTES

FIRE ACTION
ANY PERSON DISCOVERING A FIRE OR EMERGENCY
1. SOUND THE ALARM.
2. FOLLOW ESTABLISH EMERGENCY PROCEDURES.
3. LEAVE THE BUILDING BY THE DESIGNATED ROUTE.
4. REPORT TO ASSEMBLY POINT IMMEDIATELY.
5. DO NOT RETURN TO THE BUILDING FOR ANY REASON UNTIL AUTHORIZED TO DO SO.

NOTES:
1. ALL FIRE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATION, BILLS OF QUANTITIES, SKETCHES AND ALL OTHER DRAWINGS / DOCUMENT RELATED TO THE PERFORMANCE OF THE WORKS.
2. IT SHALL NOT BE THE INTENT OF THESE PLAN / SPECIFICATION TO SHOW EVERY MINOR DETAILS OF CONSTRUCTION. THE CONTRACTOR SHALL BE EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE FIRE ALARM SYSTEM AND PROVIDE ALL EQUIPMENTS NECESSARY FOR EQUIPMENT TO BE PLACE IN PROPER WORKING CONDITION.
3. THE CONTRACTOR SHALL CO-ORDINATE WORK WITH OTHER TRADES AND INSTALL CONDUIT AND BOXES AS REQUIRED FOR A COMPLETE INSTALLATION.
4. REFERENCE ELECTRICAL FOR FIXTURES DETAILS, SCHEDULES AND LAYOUTS
5. REFERENCE MECHANICAL FOR DAMPER DETAILS, SCHEDULES AND LAYOUTS
6. REFERENCE FOOD SERVICE FOR EQUIPMENT DETAILS, SCHEDULES AND LAYOUTS



LEGEND - SITE PLAN

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9. LYNCHING MONUMENT & OVERLOOK
10. OAK HILL LIVE OAK TRAIL
11. PARKING

1 SITE PLAN - MONUMENT
1/16" = 1'-0"

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FORT BEND COUNTY
1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

HINESAD

Contract No: 218226

Design Team:

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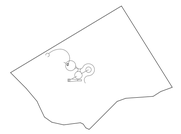
Key Plan



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04-12-2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: NS Reviewed by: GL

Project No: 218226

Sheet Title:
MONUMENT PLAN - ENLARGED PROPOSED

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Sheet Number
A201

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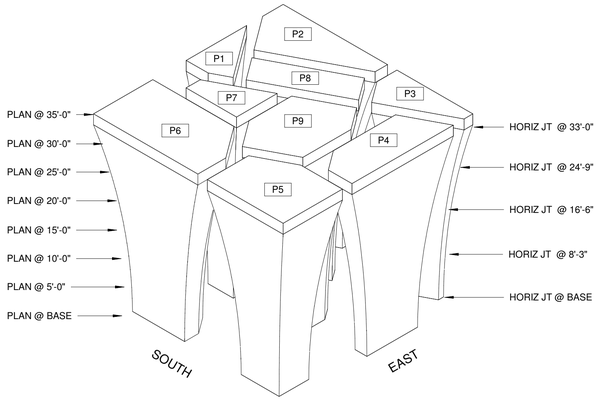
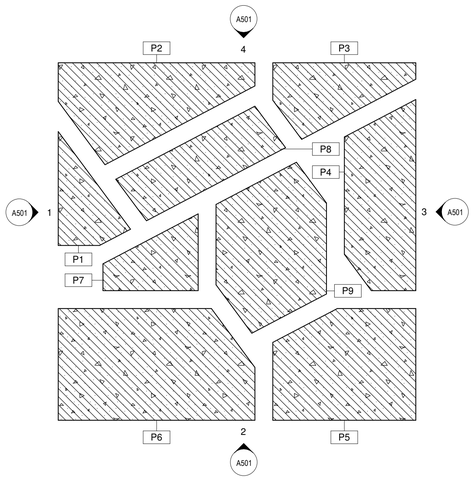
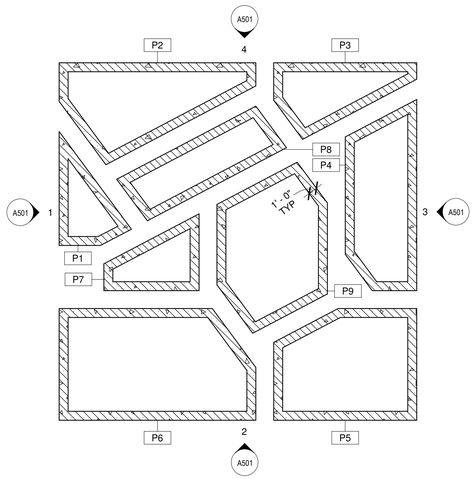


GENERAL NOTES

1. REFERENCE GENERAL NOTES IN G000 SERIES
2. REFERENCE PILLAR TYPES IN SHEET A800 SERIES
3. REFERENCE ARCHITECTURAL SPECIFICATIONS IN SHEET A200 SERIES
4. REFERENCE CIVIL SPECIFICATIONS IN C000 SERIES
5. REFERENCE LANDSCAPE SPECIFICATIONS IN L000 SERIES
6. REFERENCE STRUCTURAL SPECIFICATIONS IN S000 SERIES
7. REFERENCE ADINKRA SYMBOL LEGEND IN SHEET A400 SERIES
8. PROVIDE MOCK-UP AS INDICATED IN 6/A401



8 MONUMENT PLAN @ TOP OF MOMUMENT
1/8" = 1'-0"



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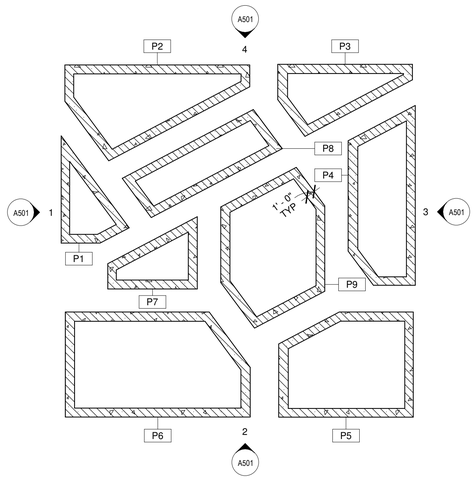
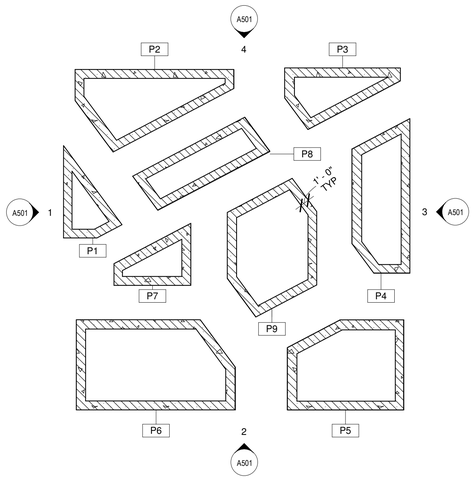
1/8" = 1'-0"



6 MONUMENT PLAN @ 25'-0"
1/8" = 1'-0"



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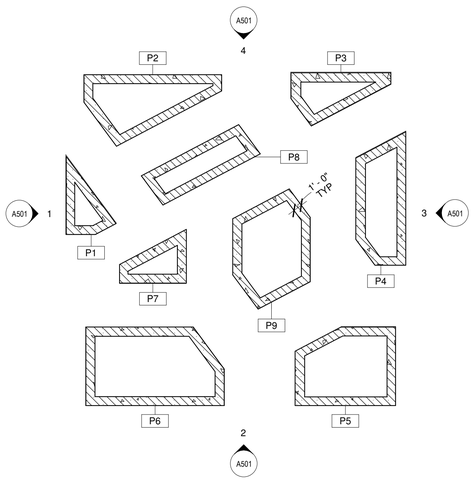

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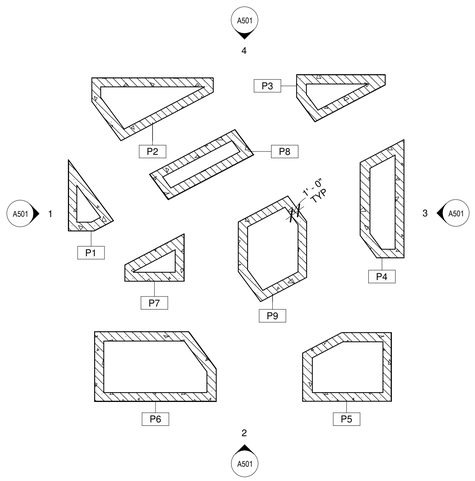
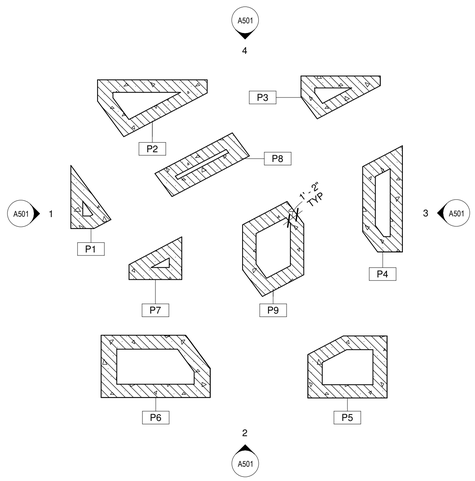


3 MONUMENT PLAN @ 10'-0"
1/8" = 1'-0"



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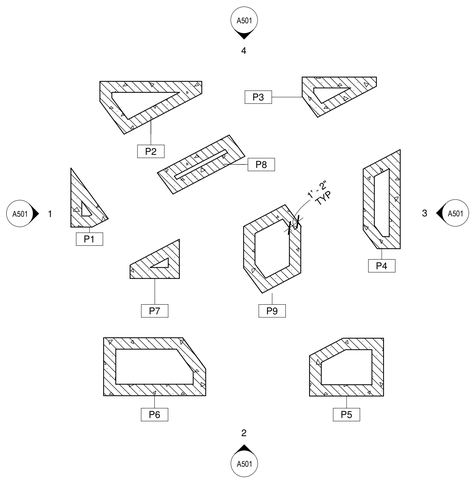
1/8" = 1'-0"



1 MONUMENT PLAN @ 0'-0"
1/8" = 1'-0"

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THE STATE OF TEXAS · FORT BEND COUNTY

Project:

AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:

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Key Plan



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MONUMENT PLANS - LEVELS

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Sheet Number

A202

SPECIFICATION SECTION 03 45 00 - PRECAST ARCHITECTURAL CONCRETE

PART 1 GENERAL
1.01 SECTION INCLUDES
A. ARCHITECTURAL PRECAST CONCRETE WALL PANELS.
1.02 RELATED REQUIREMENTS
A. SECTION 03 30 00 - CAST-IN-PLACE CONCRETE: ADMIXTURES.
B. SECTION 03 41 00 - PRECAST STRUCTURAL CONCRETE.
C. SECTION 03 48 00 - PRECAST CONCRETE SPECIALTIES.
D. SECTION 07 21 00 - THERMAL INSULATION: INTEGRAL INSULATION.
E. SECTION 07 62 00 - SHEET METAL FLASHING AND TRIM: REGLETS RECESSED IN UNITS.
F. SECTION 07 92 00 - JOINT SEALANTS: SEALING PERIMETER AND INTERMEDIATE JOINTS.
1.03 REFERENCE STANDARDS
A. ACI 301 - SPECIFICATIONS FOR STRUCTURAL CONCRETE; 2016.
B. ACI 318 - BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY; 2014 (ERRATA 2018).
C. ASTM A36/A36M - STANDARD SPECIFICATION FOR CARBON STRUCTURAL STEEL; 2014.
D. ASTM A153/A153M - STANDARD SPECIFICATION FOR ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE; 2016A.
E. ASTM A307 - STANDARD SPECIFICATION FOR CARBON STEEL BOLTS, STUDS, AND THREADED ROD 60 000 PSI TENSILE STRENGTH; 2014, WITH EDITORIAL REVISION (2017).
F. ASTM A563 - STANDARD SPECIFICATION FOR CARBON AND ALLOY STEEL NUTS; 2015.
G. ASTM A563M - STANDARD SPECIFICATION FOR CARBON AND ALLOY STEEL NUTS (METRIC); 2007 (REAPPROVED 2013).
H. ASTM A615/A615M - STANDARD SPECIFICATION FOR DEFORMED AND PLAIN CARBON-STEEL BARS FOR CONCRETE REINFORCEMENT; 2018.
I. ASTM A780/A780M - STANDARD PRACTICE FOR REPAIR OF DAMAGED AND UNCOATED AREAS OF HOT-DIP GALVANIZED COATINGS; 2009 (REAPPROVED 2015).
J. ASTM A1064/A1064M - STANDARD SPECIFICATION FOR CARBON-STEEL WIRE AND WELDED WIRE REINFORCEMENT, PLAIN AND DEFORMED, FOR CONCRETE; 2018A.
K. ASTM C1602/C1602M - STANDARD SPECIFICATION FOR MIXING WATER USED IN THE PRODUCTION OF HYDRAULIC CEMENT CONCRETE; 2012.
L. ASTM C33/C33M - STANDARD SPECIFICATION FOR CONCRETE AGGREGATES; 2018.
M. ASTM C150/C150M - STANDARD SPECIFICATION FOR PORTLAND CEMENT; 2018.
N. ASTM C618 - STANDARD SPECIFICATION FOR COAL FLY ASH AND RAW OR CALCINED NATURAL POZZOLAN FOR USE IN CONCRETE; 2019.
O. ASTM C979/C979M - STANDARD SPECIFICATION FOR PIGMENTS FOR INTEGRALLY COLORED CONCRETE; 2016.
P. ASTM C989/C989M - STANDARD SPECIFICATION FOR SLAG CEMENT FOR USE IN CONCRETE AND MORTARS; 2018A.
Q. ASTM C1240 - STANDARD SPECIFICATION FOR SILICA FUME USED IN CEMENTITIOUS MIXTURES; 2015.
R. ASTM D3963/D3963M - STANDARD SPECIFICATION FOR FABRICATION AND JOBSITE HANDLING OF EPOXY-COATED STEEL REINFORCING BARS; 2015.
S. AWS D1.1/D1.1M - STRUCTURAL WELDING CODE - STEEL; 2015, WITH ERRATA (2016).
T. AWS D1.4/D1.4M - STRUCTURAL WELDING CODE - REINFORCING STEEL; 2018.
U. IAS AC157 - ACCREDITATION CRITERIA FOR FABRICATOR INSPECTION PROGRAMS FOR REINFORCED AND PRECAST/PRESTRESSED CONCRETE; 2017.
V. PCI MNL-117 - MANUAL FOR QUALITY CONTROL FOR PLANTS AND PRODUCTION OF ARCHITECTURAL PRECAST CONCRETE PRODUCTS; 2013.
W. PCI MNL-120 - PCI DESIGN HANDBOOK - PRECAST AND PRESTRESSED CONCRETE; 2017.
X. PCI MNL-122 - ARCHITECTURAL PRECAST CONCRETE; 2007.
Y. PCI MNL-123 - DESIGN AND TYPICAL DETAILS OF CONNECTIONS FOR PRECAST AND PRESTRESSED CONCRETE; 1988.
Z. PCI MNL-135 - TOLERANCE MANUAL FOR PRECAST AND PRESTRESSED CONCRETE CONSTRUCTION; 2000.
1.04 ADMINISTRATIVE REQUIREMENTS
A. PREINSTALLATION MEETING: CONVENE ONE WEEK PRIOR TO COMMENCING WORK OF THIS SECTION.
1.05 SUBMITTALS
A. SEE SECTION 01 30 00 - ADMINISTRATIVE REQUIREMENTS, FOR SUBMITTAL PROCEDURES.
B. PRODUCT DATA: MANUFACTURER'S INFORMATION ON ACCESSORY PRODUCTS, INCLUDING PIGMENTS, ADMIXTURES, INSERTS, PLATES, ETC.
C. SHOP DRAWINGS: INDICATE LAYOUT, UNIT LOCATIONS, CONFIGURATION, UNIT IDENTIFICATION MARKS, REINFORCEMENT, CONNECTION DETAILS, SUPPORT ITEMS, LOCATION OF LIFTING DEVICES, DIMENSIONS, OPENINGS, AND RELATIONSHIP TO ADJACENT MATERIALS. PROVIDE ERECTION DRAWINGS.
1. INDICATE JOINTS, REVEALS, DRIPS, CHAMFERS, AND EXTENT AND LOCATION OF EACH SURFACE FINISH.
2. INCLUDE DETAILS OF MIX DESIGNS.
D. SAMPLES: SUBMIT SAMPLES, 12 BY 12 INCH IN SIZE, ILLUSTRATING SURFACE FINISH, COLOR AND TEXTURE. REFER TO ARCHITECTURAL DRAWINGS FOR TYPES AND QUANTITIES.
E. FABRICATOR'S QUALIFICATION STATEMENT: PROVIDE DOCUMENTATION SHOWING PRECAST CONCRETE FABRICATOR IS ACCREDITED UNDER IAS AC157.
F. INSTALLER QUALIFICATIONS.
G. MAINTENANCE DATA: INDICATE SURFACE CLEANING INSTRUCTIONS.
1.06 QUALITY ASSURANCE
A. MANUFACTURER QUALIFICATIONS: COMPANY SPECIALIZING IN MANUFACTURING ARCHITECTURAL PRECAST CONCRETE WITH AT LEAST 10 YEARS OF DOCUMENTED EXPERIENCE. SAID COMPANY SHALL DESIGN PRECAST UNITS UNDER THE DIRECT SUPERVISION OF A PROFESSIONAL STRUCTURAL ENGINEER WHO IS EXPERIENCED IN THE DESIGN OF PRECAST CONCRETE AND LICENSED IN THE REGION IN WHICH THE PROJECT IS LOCATED.
MANUFACTURE SHALL BE NPCA CERTIFIED.
QUALIFIED MANUFACTURERS LISTED AS FOLLOWS:
1. LOCKE PRECAST COMPANY
2. GATE PRECAST COMPANY
B. ARCHITECTURAL MOCK-UP PER DETAIL 6/A401, WITH APROVED COLOR & FINISH, TO BE INSPECTED AND APPROVED BY ARCHITECT OR ARCHITECT'S REPRESENTATIVE AT THE PRODUCTION/FABRICATION FACILITY PRIOR TO SHIPPING TO SITE AND/OR INSTALLATION.
C. WELDER QUALIFICATIONS: QUALIFIED WITHIN PREVIOUS 12 MONTHS IN ACCORDANCE WITH AWS D1.1/D1.1M AND AWS D1.4/D1.4M.
1.07 DELIVERY, STORAGE, AND HANDLING
A. HANDLING: LIFT AND SUPPORT PRECAST UNITS ONLY FROM SUPPORT POINTS.
B. BLOCKING AND LATERAL SUPPORT DURING TRANSPORT AND STORAGE: USE MATERIALS THAT ARE CLEAN, NON-STAINING, AND NON-HARMFUL TO EXPOSED SURFACES. PROVIDE TEMPORARY LATERAL SUPPORT TO PREVENT BOWING AND WARPING.
C. PROTECT UNITS TO PREVENT STAINING, CHIPPING, OR SPALLING OF CONCRETE.
D. DELIVER UNITS IN SUCH QUANTITIES AND AT SUCH TIMES TO LIMIT UNLOADING UNITS TEMPORARILY ON THE GROUND.
E. STORE UNITS WITH ADEQUATE DUNNAGE AND BRACING AND PROTECT UNITS TO PREVENT CONTACT WITH SOIL, TO PREVENT STAINING, AND TO PREVENT CRACKING, DISTORTION, WARPING OR OTHER PHYSICAL DAMAGE.
PART 2 PRODUCTS (ACCEPTABLE MANUFACTURE: LOCKE SOLUTIONS. ASHER.KAZMANN@LOCKESOLUTIONS.COM)
2.01 PRECAST UNITS, GENERAL
A. PRECAST ARCHITECTURAL CONCRETE UNITS: COMPLY WITH PCI MNL-120, PCI MNL-122, PCI MNL-123, PCI MNL-135, AND ACI 318.
1. CONCRETE FACE MIX: MINIMUM 34 MPA (5000 PSI), 28 DAY STRENGTH, AIR ENTRAINED TO 5 TO 7 PERCENT; COMPLY WITH ACI 301.
2. DESIGN LOADS: STATIC LOADS, ANTICIPATED DYNAMIC LOADING, INCLUDING POSITIVE AND NEGATIVE WIND LOADS, THERMAL MOVEMENT LOADS, AND ERECTION FORCES AS DEFINED BY APPLICABLE CODE.
3. CALCULATE STRUCTURAL PROPERTIES OF UNITS IN ACCORDANCE WITH ACI 318.
4. OTHER CEMENTITIOUS MATERIALS: REPLACE AS MUCH PORTLAND CEMENT AS POSSIBLE WITH FLY ASH, GROUND GRANULATED BLAST FURNACE SLAG, SILICA FUME, OR RICE HULL ASH AS IS CONSISTENT WITH STRENGTH AND APPEARANCE REQUIREMENTS.
5. ACCOMMODATE CONSTRUCTION TOLERANCES, DEFLECTION OF BUILDING STRUCTURAL MEMBERS, AND CLEARANCES OF INTENDED OPENINGS.
6. PROVIDE CONNECTIONS THAT ACCOMMODATE BUILDING MOVEMENT AND THERMAL MOVEMENT AND ADJUST TO MISALIGNMENT OF STRUCTURE WITHOUT UNIT DISTORTION OR DAMAGE.
B. FINISH REQUIREMENTS:
1. REFER TO DRAWINGS FOR LEVEL OF FINISH AS INDICATED IN THE PCI COLOR AND TEXTURE SELECTION GUIDE.
2. ENSURE EXPOSED-TO-VIEW FINISH SURFACES OF PRECAST UNITS ARE UNIFORM IN COLOR AND APPEARANCE.
3. REMOVE CEMENT MORTAR FROM AREAS AFFECTED BY AGGREGATE RETARDER IN ACCORDANCE WITH RETARDER MANUFACTURER'S INSTRUCTIONS.
4. TEXTURED FINISH. REMOVE EXCESS CONCRETE FROM JOINTS AND FACES OF UNITS CAST WITH FORM LINER OR OTHER TEXTURE. PROTECT ADJACENT SURFACES.
2.02 REINFORCEMENT
A. REINFORCING STEEL: ASTM A615/A615M, GRADE 420 MPA (60 (60,000 PSI)).
1. DEFORMED BILLET-STEEL BARS.
2. UNFINISHED.
B. STEEL WELDED WIRE REINFORCEMENT (WWR); PLAIN TYPE, ASTM A1064/A1064M.
1. FORM: FLAT SHEETS.
2.03 CONCRETE MATERIALS
A. CEMENT: ASTM C150/C150M, TYPE I - NORMAL PORTLAND TYPE.
B. OTHER CEMENTITIOUS MATERIALS:
1. FLY ASH OR NATURAL POZZOLANS: COMPLY WITH ASTM C618.
2. GROUND GRANULATED BLAST FURNACE SLAG: ASTM C989/C989M.
3. SILICA FUME: COMPLY WITH ASTM C1240.
C. FINE AND COARSE STRUCTURAL AGGREGATES: ASTM C33/C33M.
D. COLOR ADDITIVES: PURE, CONCENTRATED MINERAL PIGMENTS SPECIFICALLY INTENDED FOR MIXING INTO CONCRETE AND COMPLYING WITH ASTM C979/C979M.
1. CONCENTRATION: BASE DOSAGE RATES ON WEIGHT OF PORTLAND CEMENT, FLY ASH, SILICA FUME, AND OTHER CEMENTITIOUS MATERIALS BUT NOT AGGREGATE OR SAND.
2. COLOR(S): TO MATCH ARCHITECT'S SAMPLE(S) WHEN INCORPORATED INTO SPECIFIED MIX DESIGN(S).
E. WATER: ASTM C1602/C1602M; CLEAN, POTABLE, AND NOT DETRIMENTAL TO CONCRETE.
2.04 SUPPORT DEVICES
A. CONNECTING AND SUPPORT DEVICES; ANCHORS AND INSERTS: ASTM A36/A36M STEEL; HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A153/A153M.
1. CLEAN SURFACES OF RUST, SCALE, GREASE, AND FOREIGN MATTER.
B. BOLTS, NUTS, AND WASHERS: ASTM A307 HEAVY HEX BOLTS, TYPE A, HOT-DIP GALVANIZED, WITH MATCHING ASTM A563 (ASTM A563M) NUTS AND MATCHING WASHERS.
C. PRIMER; ZINC RICH TYPE.
2.05 FABRICATION
A. FABRICATE IN COMPLIANCE WITH PCI MNL-117 AND PCI MNL-135.
B. FABRICATE AND HANDLE EPOXY-COATED REINFORCING BARS IN ACCORDANCE WITH ASTM D3963/D3963M.
C. MAINTAIN PLANT RECORDS AND QUALITY CONTROL PROGRAM DURING PRODUCTION OF PRECAST UNITS. MAKE RECORDS AVAILABLE UPON REQUEST.
D. USE RIGID MOLDS, CONSTRUCTED TO MAINTAIN PRECAST UNIT UNIFORM IN SHAPE, SIZE, AND FINISH.
E. USE FORM LINERS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
F. MAINTAIN CONSISTENT QUALITY DURING MANUFACTURE.
G. FABRICATE CONNECTING DEVICES, PLATES, ANGLES, ITEMS FIT TO STEEL FRAMING MEMBERS, INSERTS, BOLTS, AND ACCESSORIES. FABRICATE TO PERMIT INITIAL PLACEMENT AND FINAL ATTACHMENT.
H. EMBED REINFORCING STEEL, ANCHORS, INSERTS PLATES, ANGLES, AND OTHER CAST-IN ITEMS.
I. LOCATE HOISTING DEVICES TO PERMIT REMOVAL AFTER ERECTION.
J. CURE UNITS TO DEVELOP CONCRETE QUALITY, AND TO MINIMIZE APPEARANCE BLEMISHES SUCH AS NON-UNIFORMITY, STAINING, OR SURFACE CRACKING.
K. MINOR PATCHING IN PLANT IS ACCEPTABLE, PROVIDING STRUCTURAL ADEQUACY AND APPEARANCE OF UNITS IS NOT IMPAIRED.
L. REMOVE PROTECTIVE COATING FROM THIN BRICK USING METHOD RECOMMENDED BY MANUFACTURER. DO NOT DAMAGE BRICK OR CONCRETE MATERIAL IN JOINTS.
M. DEFECTIVE UNITS: DISCARD AND REPLACE PRECAST UNITS THAT DO NOT COMPLY WITH ACCEPTABILITY REQUIREMENTS IN PCI MNL-117, INCLUDING CONCRETE STRENGTH, MANUFACTURING TOLERANCES, AND COLOR AND TEXTURE RANGE. ARCHITECT RESERVES THE RIGHT TO REJECT PRECAST UNITS THAT DO NOT MATCH APPROVED SAMPLES, SAMPLE PANELS, AND MOCKUPS. REPLACE UNACCEPTABLE UNITS WITH PRECAST CONCRETE UNITS THAT COMPLY WITH REQUIREMENTS.
2.06 FABRICATION TOLERANCES
A. COMPLY WITH PCI MNL-117 AND PCI MNL-135, EXCEPT AS SPECIFICALLY AMENDED BELOW.
1. MAXIMUM VARIATION FROM NOMINAL FACE DIMENSIONS: PLUS OR MINUS 2.4 MM (3/32 IN).
2. MAXIMUM VARIATION FROM SQUARE OR DESIGNATED SKEW: PLUS OR MINUS 1 MM PER M (1/8 INCH IN 10 FEET).
3. MAXIMUM VARIATION FROM THICKNESS: PLUS OR MINUS 3 MM (1/8 IN).
2.07 ACCESSORIES
2.08 SOURCE QUALITY CONTROL
A. PROVIDE TESTING AND ANALYSIS OF CONCRETE MIX.
B. TAKE WATER ABSORPTION TEST IN ACCORDANCE WITH PCI MNL-117.
PART 3 EXECUTION
3.01 EXAMINATION
A. VERIFY THAT BUILDING STRUCTURE, ANCHORS, DEVICES, AND OPENINGS ARE READY TO RECEIVE WORK OF THIS SECTION.
B. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
C. DO NOT INSTALL UNITS UNTIL SUPPORTING CAST-IN-PLACE BUILDING STRUCTURAL FRAMING HAS ATTAINED MINIMUM ALLOWABLE DESIGN COMPRESSIVE STRENGTH OR SUPPORTING STEEL OR OTHER STRUCTURE IS COMPLETE.
3.02 PREPARATION
A. PROVIDE FOR ERECTION PROCEDURES AND INDUCED LOADS DURING ERECTION. MAINTAIN TEMPORARY BRACING IN PLACE UNTIL FINAL SUPPORT IS PROVIDED.
3.03 ERECTION
A. ERECT UNITS WITHOUT DAMAGE TO SHAPE OR FINISH. REPLACE OR REPAIR DAMAGED PANELS.
B. ERECT UNITS LEVEL AND PLUMB WITHIN ALLOWABLE TOLERANCES.
C. ALIGN AND MAINTAIN UNIFORM HORIZONTAL AND VERTICAL JOINTS AS ERECTION PROGRESSES.
D. WHEN UNITS REQUIRE ADJUSTMENT BEYOND DESIGN OR TOLERANCE CRITERIA, DISCONTINUE AFFECTED WORK; ADVISE ARCHITECT.
E. WELD UNITS IN PLACE. PERFORM WELDING IN ACCORDANCE WITH AWS D1.1/D1.1M.
F. PROVIDE NON-COMBUSTIBLE SHIELDS DURING WELDING OPERATIONS.
G. TOUCH-UP FIELD WELDS AND SCRATCHED OR DAMAGED PRIMED PAINTED SURFACES.
H. SET VERTICAL JOINTS DRY, WITHOUT GROUT, ATTAINING JOINT DIMENSION WITH LEAD OR PLASTIC SPACERS. PACK GROUT TO BASE OF UNIT.
3.04 TOLERANCES
A. ERECT MEMBERS LEVEL AND PLUMB WITHIN ALLOWABLE TOLERANCES. COMPLY WITH PCI MNL-135.
3.05 CLEANING
A. CLEAN WELD MARKS, OTHER MARKS, DEBRIS AND DIRT FROM EXPOSED SURFACES OF PANELS.
B. CLEAN MORTAR, PLASTER, FIREPROOFING, WELD SLAG, AND OTHER DELETERIOUS MATERIAL FROM CONCRETE SURFACES AND ADJACENT MATERIALS IMMEDIATELY.
C. DO NOT USE CLEANING MATERIALS OR PROCESSES THAT COULD CHANGE APPEARANCE OF EXPOSED CONCRETE FINISHES OR DAMAGE ADJACENT MATERIALS.
3.06 FIELD QUALITY CONTROL
A. SEE SECTION 01 40 00 - QUALITY REQUIREMENTS, FOR INDEPENDENT TESTING AND INSPECTION REQUIREMENTS. INSPECTION WILL MONITOR QUALITY OF INSTALLATION.
B. WINDSTORM INSPECTIONS: OWNER WILL ENGAGE A QUALIFIED SPECIAL INSPECTOR TO PERFORM THE FOLLOWING SPECIAL INSPECTIONS; PROVIDE ACCESS AND COORDINATE AS REQUIRED TO ACCOMMODATE TIMELY PERFORMANCE:
1. EXTERIOR WALL PANELS AND ANCHORAGE.
3.07 DAMAGED PANELS
A. REPAIR OR REPLACE CRACKED AND DAMAGED PANELS.
B. REPAIR DAMAGED UNITS TO MEET THE ACCESSIBILITY REQUIREMENTS OF PCI MNL-117.
C. REPAIR SHALL BE ACCEPTABLE IF, IN JUDGMENT OF ARCHITECT, STRUCTURAL ADEQUACY AND VISUAL APPEARANCE ARE NOT IMPAIRED.
D. MIX PATCHING MATERIALS AND REPAIR UNITS SO CURED PATCHES BLEND WITH COLOR, TEXTURE, AND UNIFORMITY OF ADJACENT EXPOSED SURFACES AND SHOW NO APPARENT LINE OF DEMARCATION BETWEEN ORIGINAL AND REPAIRED WORK, WHEN VIEWED IN TYPICAL DAYLIGHT ILLUMINATION FROM A DISTANCE OF 6 M (20 FEET).
E. REPAIR DAMAGED GALVANIZED COATINGS WITH GALVANIZED REPAIR PAINT ACCORDING TO ASTM A780/A780M.
END OF SECTION

GENERAL NOTES

1. REFERENCE GENERAL NOTES IN G000 SERIES
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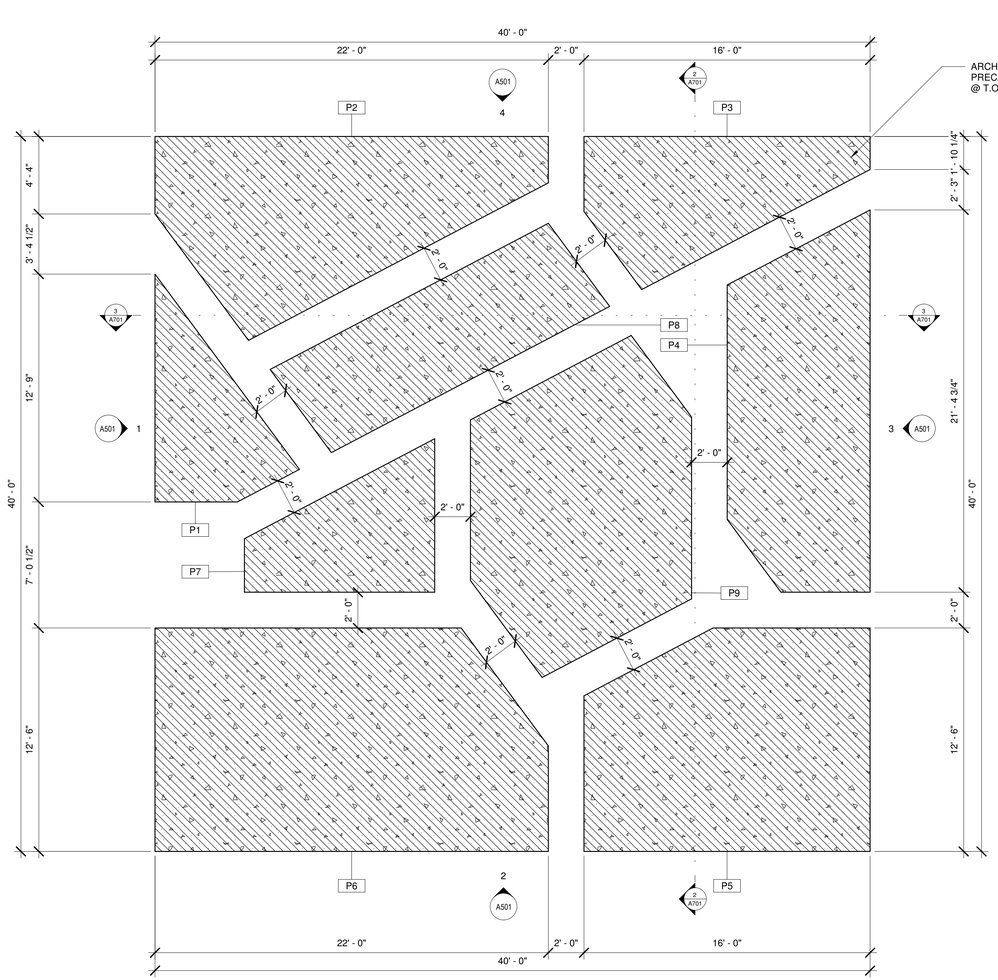
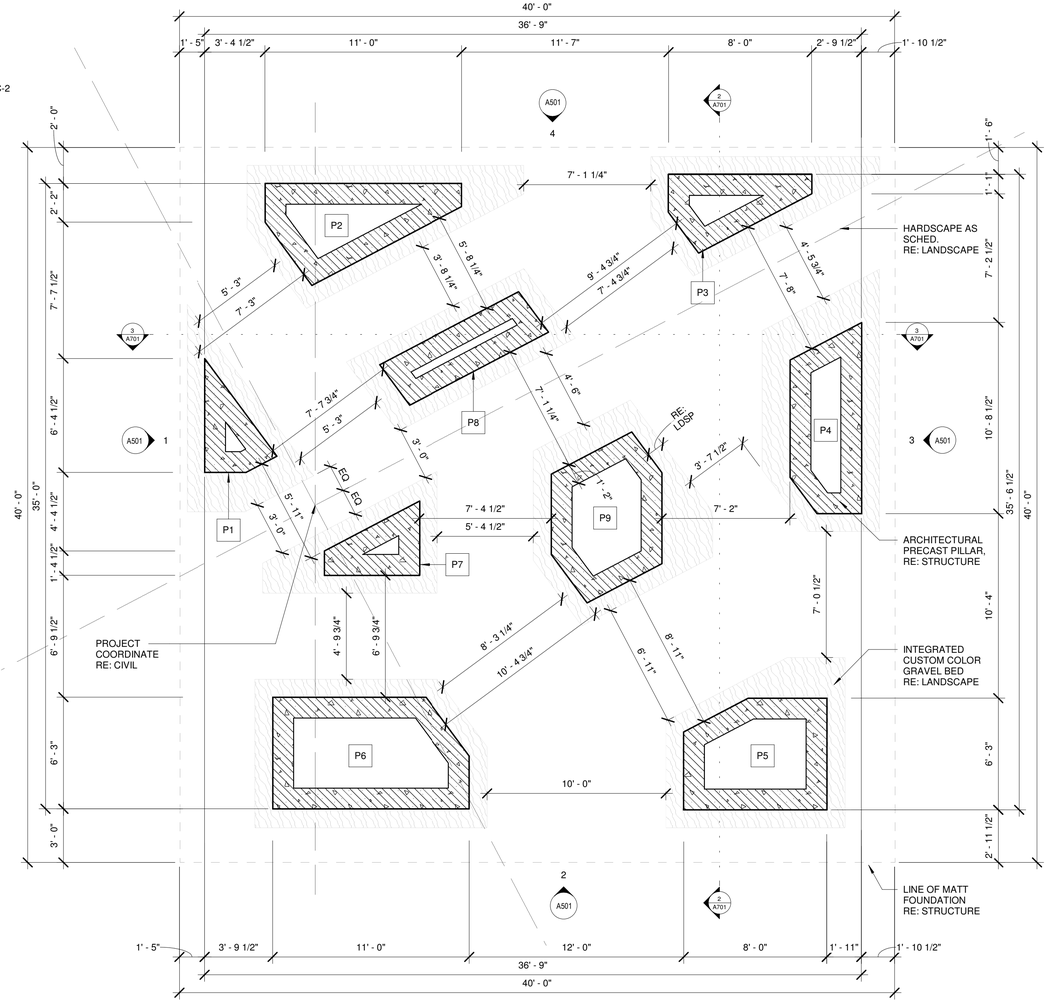


2 MONUMENT - TOP
1/4" = 1'-0"



1 MONUMENT BASE
1/4" = 1'-0"

6/6/2023 12:46:42 PM

Project:
AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK
630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:
FORT BEND COUNTY
1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

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Contract No: 218226
Design Team:
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	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: NS Reviewed by: GL

Project No: 218226

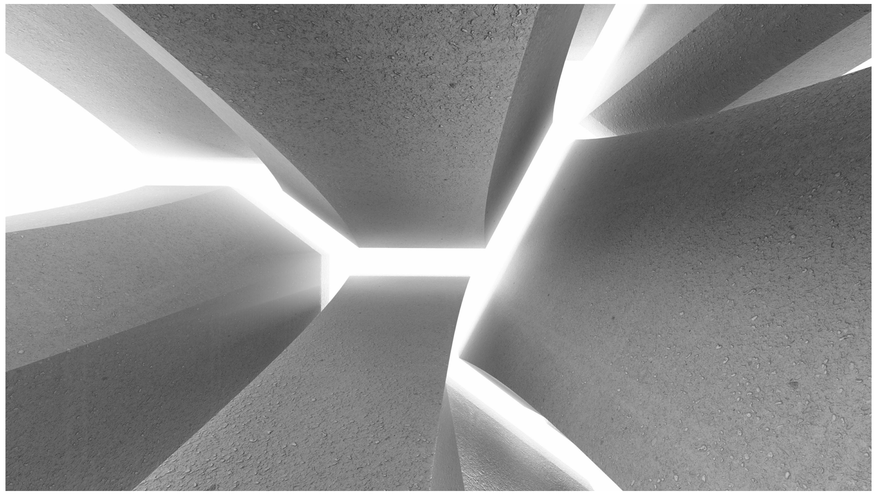
Sheet Title:
MONUMENT PLANS - OVERALL

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number
A203









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KENDLETON, TEXAS 77451

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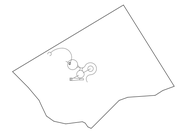

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No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: AP Reviewed by: GL

Project No: 218226

Sheet Title:

MONUMENT PERSPECTIVE VIEWS

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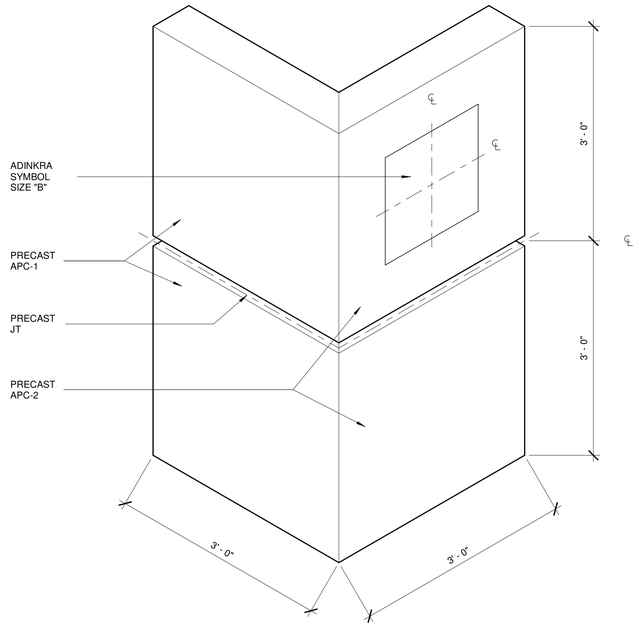
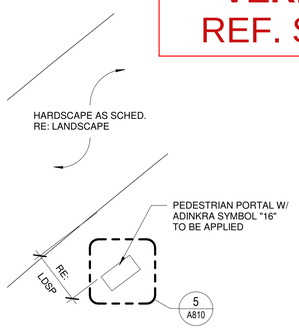
Sheet Number

A301

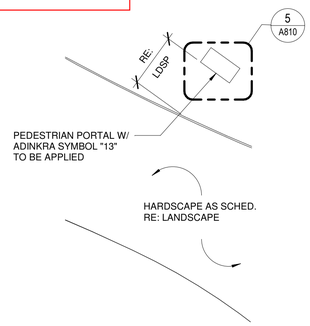


6 DETAIL - MOCK-UP
1" = 1'-0"

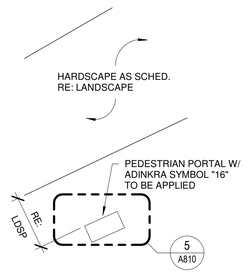
****VERIFY SCOPE****
REF. SHEET G001



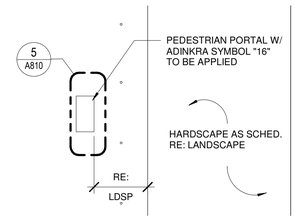
5 PED. PORTAL - HISTORIC CEMETERY
1/4" = 1'-0"



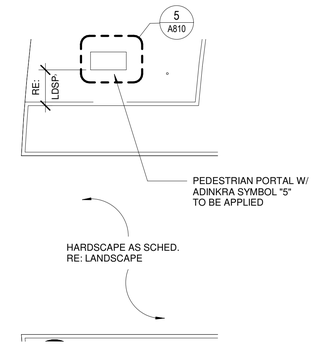
4 PED. PORTAL - FREEDOM POND
1/4" = 1'-0"



3 PED. PORTAL - CLL AXIS
1/4" = 1'-0"



2 PED. PORTAL - DEDICATION PLAZA
1/4" = 1'-0"



1 PED. PORTAL - ARRIVAL GARDEN
1/4" = 1'-0"

1.



Akoma Ntoaso
It is a symbol of agreement, togetherness and unity or a charter
https://www.adinkrasymbols.org/symbols/akoma-ntoaso/

2.



Nyame Nwu Na Mawu
It is a symbol expressing the immortality of the human soul, expressing faith in God to preserve one's soul.
https://www.adinkrasymbols.org/symbols/nyame-nwu-na-mawu/

3.



Tabono
It is a symbol of unity of purpose, strength, confidence and hard work to reach a destination or goal.
https://ayeeko.africa/blogs/blog/adinkra-symbols-and-meaning#:~:text=Adinkra%20sym-

4.



Dwennimmen
Symbol of humility together with Strength.
https://www.adinkrasymbols.org/symbols/dwennimmen/

5.



Adinkrahene
It is a symbol for authority, leadership, and charisma.
https://www.adinkrasymbols.org/symbols/adinkrahene/

6.



Sankofa
A symbol of the wisdom of learning from the past to build for the future.
https://www.adinkrasymbols.org/symbols/sankofa/

7.



Aya
A symbol of endurance, independence, defiance against difficulties, hardiness, perseverance, and resourcefulness.
https://www.adinkrasymbols.org/symbols/aya/symbols/sankofa/

8.



Okodee
A symbol of strength, bravery, power
https://www.symbols.com/symbol/okodee-mmowere/

9.



Biribi Wo Soro
A symbol of hope and inspiration.
https://www.adinkrasymbols.org/symbols/nyame-biribi-wo-soro/

10.



Nkonsonkonson
A symbol of unity, community
https://www.adinkrasymbols.org/symbols/nkonsonkonson/

11.



Nyame Dua
God's tree (sacred stump). A symbol of God's presence and protection
https://www.adinkrasymbols.org/symbols/nyame-dua/

12.



Wawa Aba
A symbol of hardiness, toughness, and perseverance
https://www.adinkrasymbols.org/symbols/wawa-aba/

13.



Fawohodie
Symbol of Independence, Freedom, Emancipation.
https://csdt.org/culture/adinkra/resources/AdinkraSymbolsList.pdf

14.



Woforo Dua Pa A
independence, freedom, emancipation
https://www.adinkrasymbols.org/symbols/woforo-dua-pa-a/

15.



Ananse Ntentan
A symbol of wisdom, craftiness, creativity, and the complexities of life.
https://www.adinkrasymbols.org/symbols/ananse-ntentan/

16.



Nsoromma
A symbol of faith and the belief in patronage and dependency on a supreme being
https://www.adinkrasymbols.org/symbols/nsoromma/

17.



Mako
A symbol of inequality and uneven development; from the proverb "All peppers on the same plant don't ripen at the same time"
https://www.adinkrasymbols.org/symbols/mako/

18.



Bi Nka Bi
It is a symbol of justice, fairplay, freedom, peace, forgiveness, unity, harmony, and the avoidance of conflict or strife.
https://www.adinkrasymbols.org/symbols/bi-nka-bi/

19.



Mpatapo
It is a symbol of pacification, forgiveness, and reconciliation.
https://www.adinkrasymbols.org/symbols/mpatapo/

GENERAL NOTES - ADINKRA SYMBOLS

1. REFERENCE FLOOR PLANS IN THE PLAN IN A200 SERIES
2. ADINKRA SYMBOLS SHOWN IN A-SERIES SHEETS (ARCHITECTURE) SUPERCEDE THOSE SHOWN WIN OTHER SHEETS/ DISCPLINES.
3. FINAL ADINKRA SYMBOL SELECTION TO BE APPROVED OWNER
4. FINAL SELECTION OF ADINKRA SYMBOLS, SHEET A401, BY OWNER.

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Drawn by: NS Reviewed by: GL

Project No: 218226

Sheet Title:
ENLARGED PLAN & ADINKRA SYMBOL LEGEND

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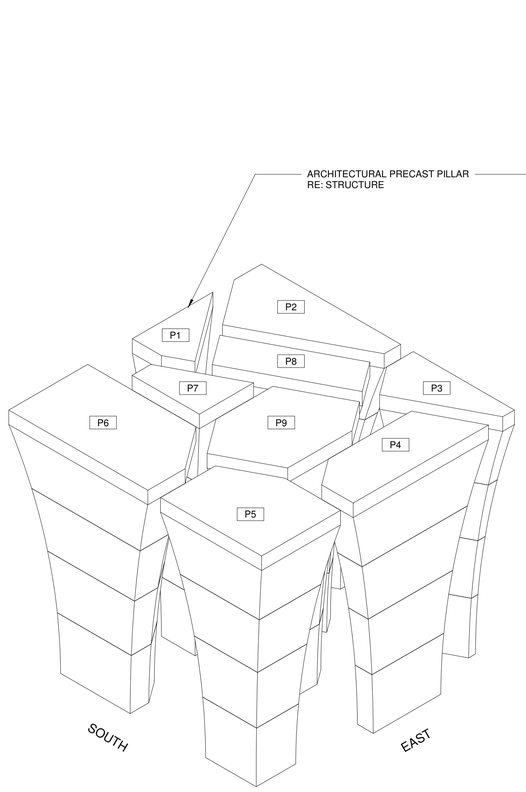
Sheet Number
A401

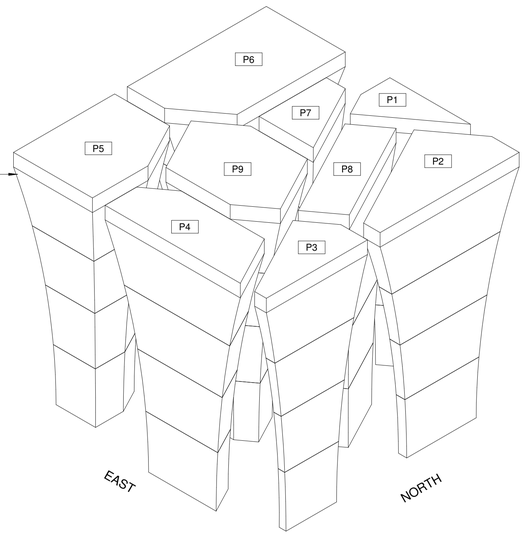
6/6/2023 12:47:00 PM

GENERAL NOTES - APC PILLARS

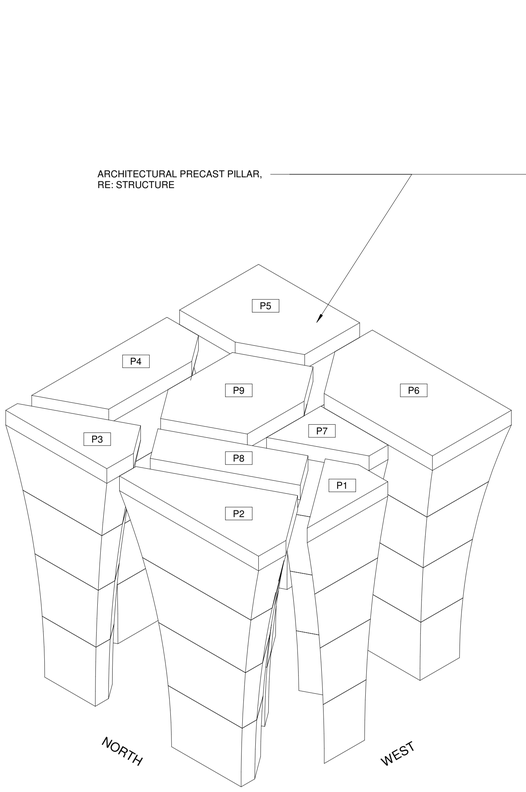
1. REFERENCE PLANS AND SPECIFICATIONS IN SHEET A200 SERIES
2. REFERENCE ELEVATIONS AND AXONOMETRICS IN SHEET A500 SERIES
3. REFERENCE ADINKRA SYMBOL LEGEND IN SHEET A400 SERIES
4. PROVIDE MOCK-UP AS INDICATED IN 6/A401



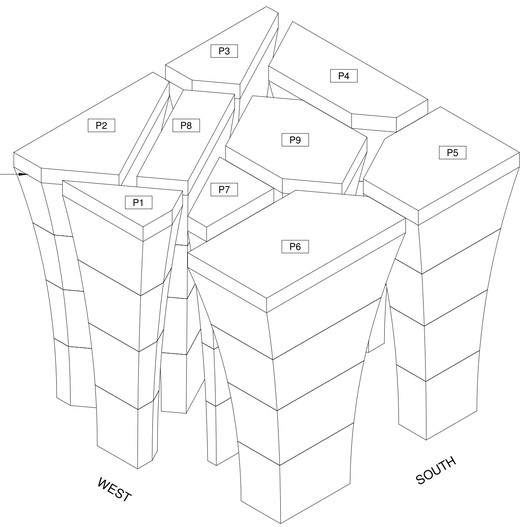
8 MONUMENT - AXONOMETRIC (SE)



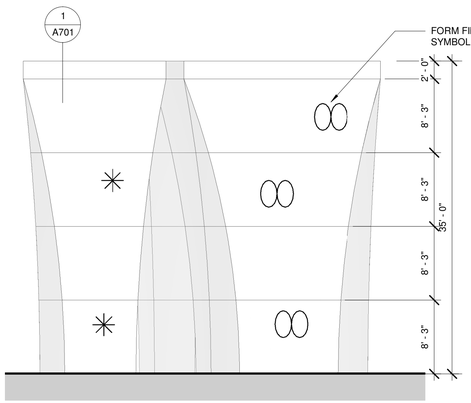
7 MONUMENT - AXONOMETRIC (NE)



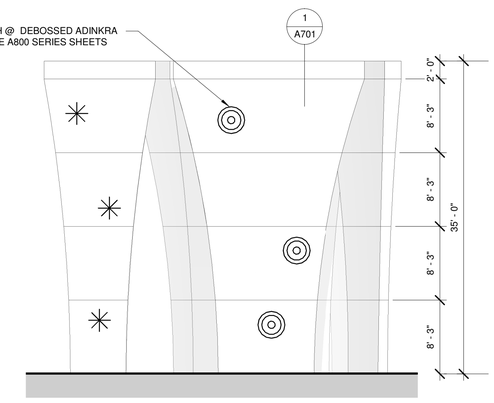
6 MONUMENT - AXONOMETRIC (NW)



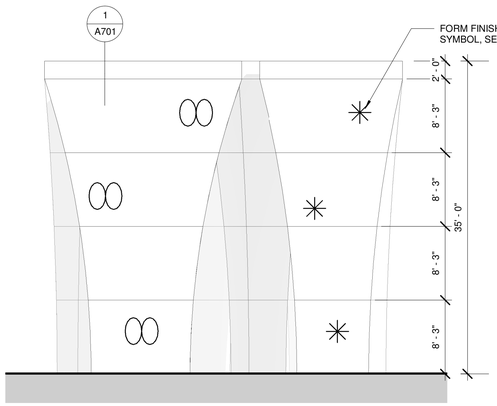
5 MONUMENT - AXONOMETRIC (SW)



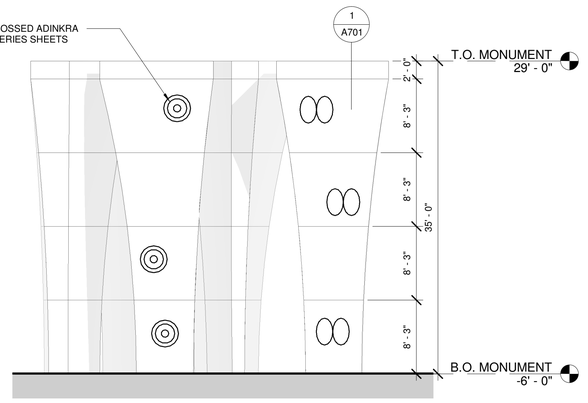
4 MONUMENT ELEVATION - NORTH
1/8" = 1'-0"



3 MONUMENT ELEVATION - EAST
1/8" = 1'-0"



2 MONUMENT ELEVATION - SOUTH
1/8" = 1'-0"



1 MONUMENT ELEVATION - WEST
1/8" = 1'-0"

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Drawn by: NS Reviewed by: GL

Project No: 218226

Sheet Title:

MONUMENT ELEVATIONS & AXONOMETRICS

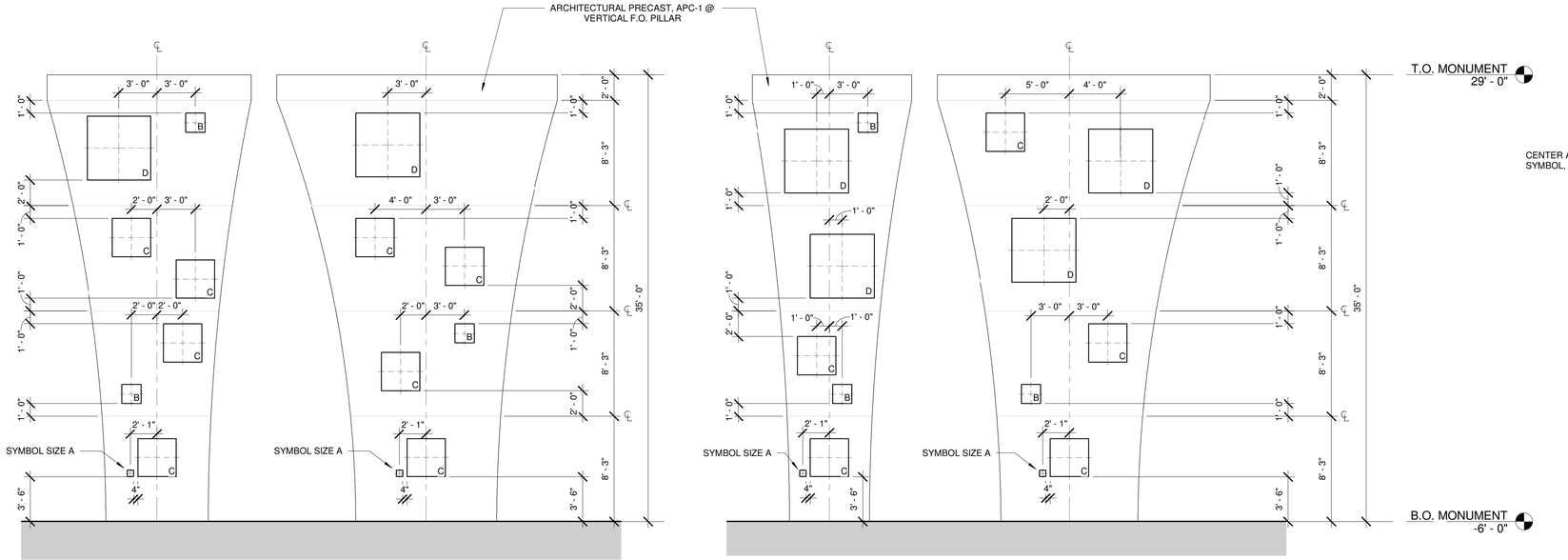
Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

A501

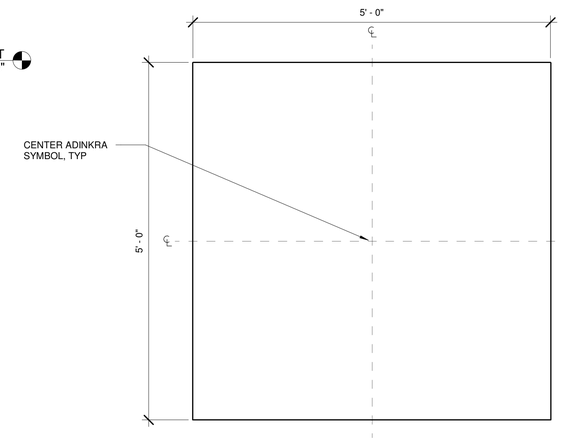
GENERAL NOTES - ADINKRA SYMBOLS

1. REFERENCE FLOOR PLANS IN THE PLAN IN A200 SERIES
2. ADINKRA SYMBOLS SHOWN IN A-SERIES SHEETS (ARCHITECTURE) SUPERCEDE THOSE SHOWN WIN OTHER SHEETS/ DISCPLINES.
3. FINAL ADINKRA SYMBOL SELECTION TO BE APPROVED OWNER
4. FINAL SELECTION OF ADINKRA SYMBOLS, SHEET A401, BY OWNER.



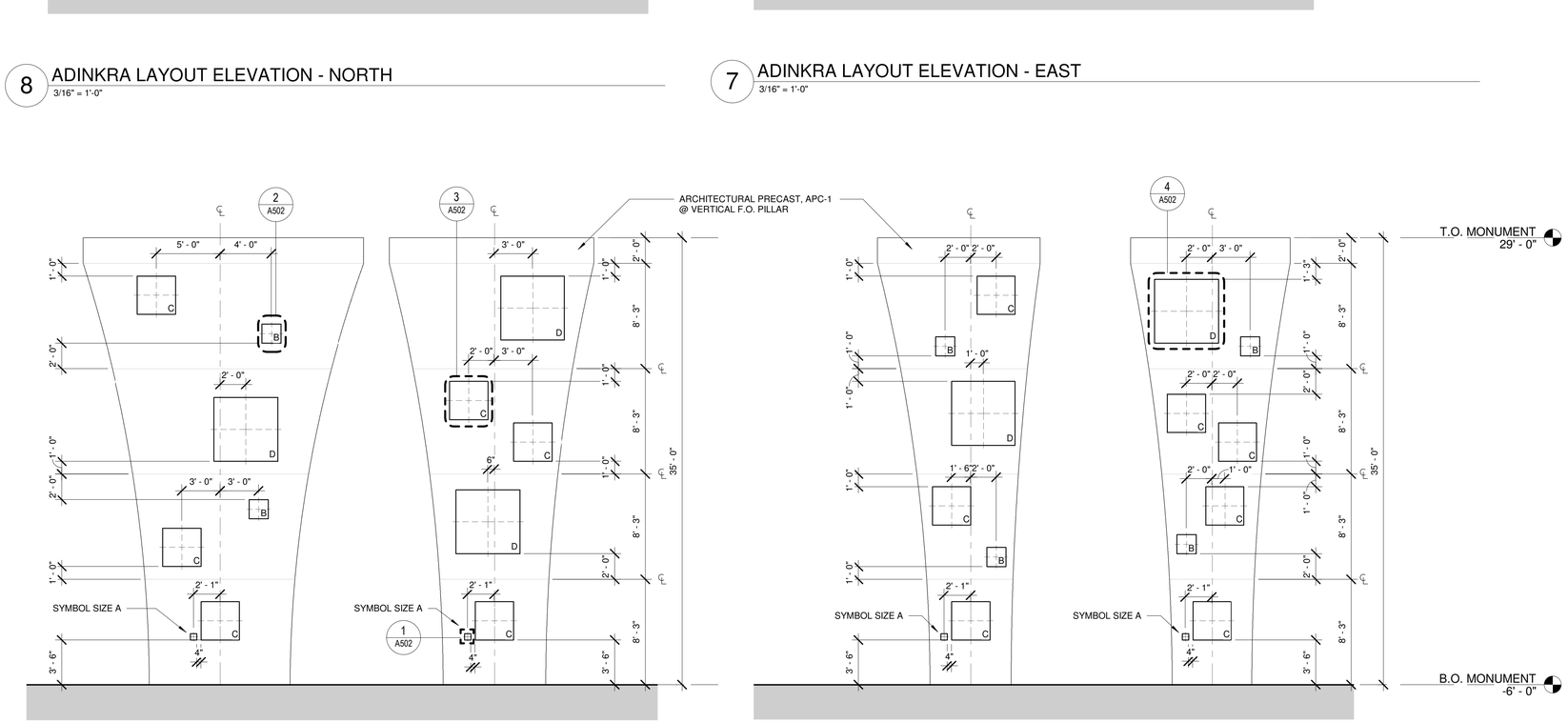
8 ADINKRA LAYOUT ELEVATION - NORTH

3/16" = 1'-0"



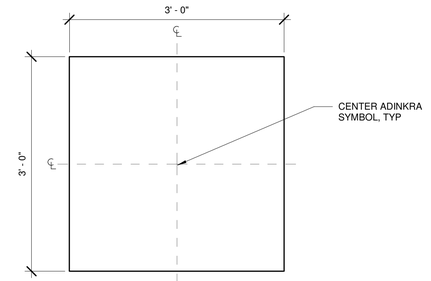
4 DETAIL - ADINKRA SYMBOL SIZE D

1" = 1'-0"



7 ADINKRA LAYOUT ELEVATION - EAST

3/16" = 1'-0"

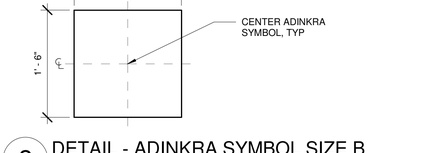


3 DETAIL - ADINKRA SYMBOL SIZE C

1" = 1'-0"

6 ADINKRA LAYOUT ELEVATION - SOUTH

3/16" = 1'-0"



2 DETAIL - ADINKRA SYMBOL SIZE B

1" = 1'-0"

5 ADINKRA LAYOUT ELEVATION - WEST

3/16" = 1'-0"



1 DETAIL - ADINKRA SYMBOL SIZE A

1" = 1'-0"

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Project No: 218226

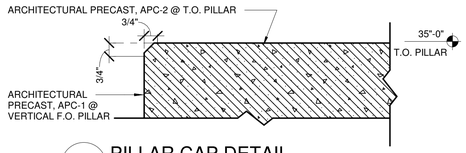
Sheet Title:

MEMORIAL MONUMENT ADINKRA SYMBOL DETAILS

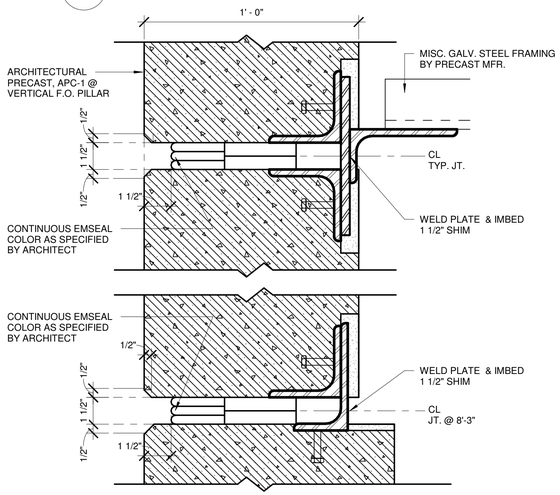
Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

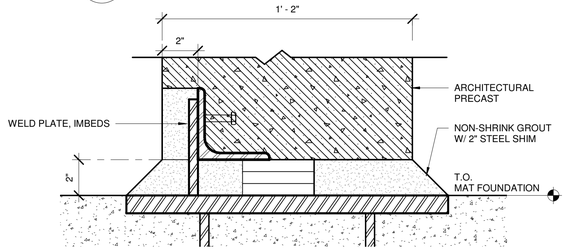
A502



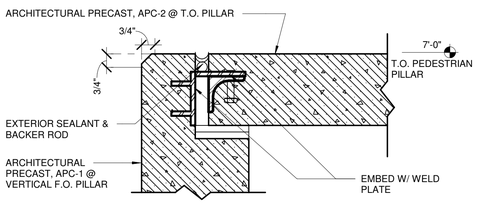
11 PILLAR CAP DETAIL
3" = 1'-0"



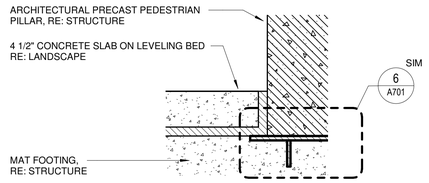
9 PILLAR HORIZ. JOINT DETAIL
3" = 1'-0"



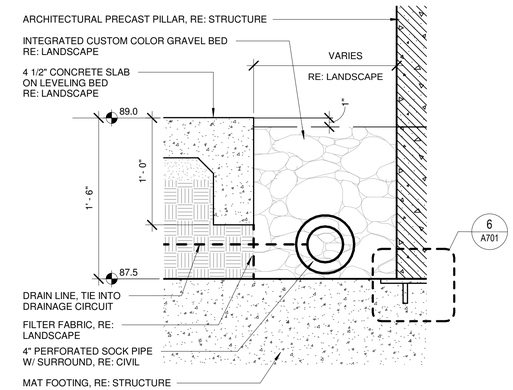
6 PILLAR BASE DETAIL
3" = 1'-0"



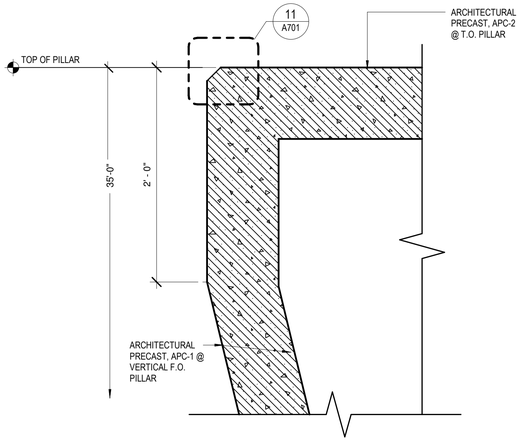
10 PEDESTRIAN PORTAL - CAP DETAIL
3" = 1'-0"



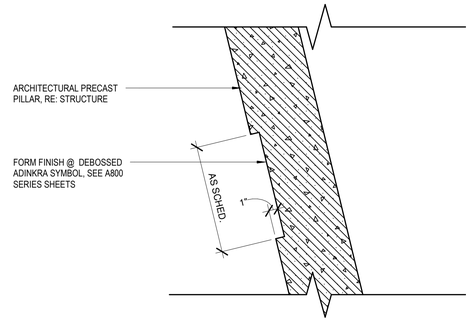
8 PEDESTRIAN PORTAL - BASE DETAIL
1 1/2" = 1'-0"



5 MONUMENT SECTION DETAIL - BASE OF PILLAR
1 1/2" = 1'-0"



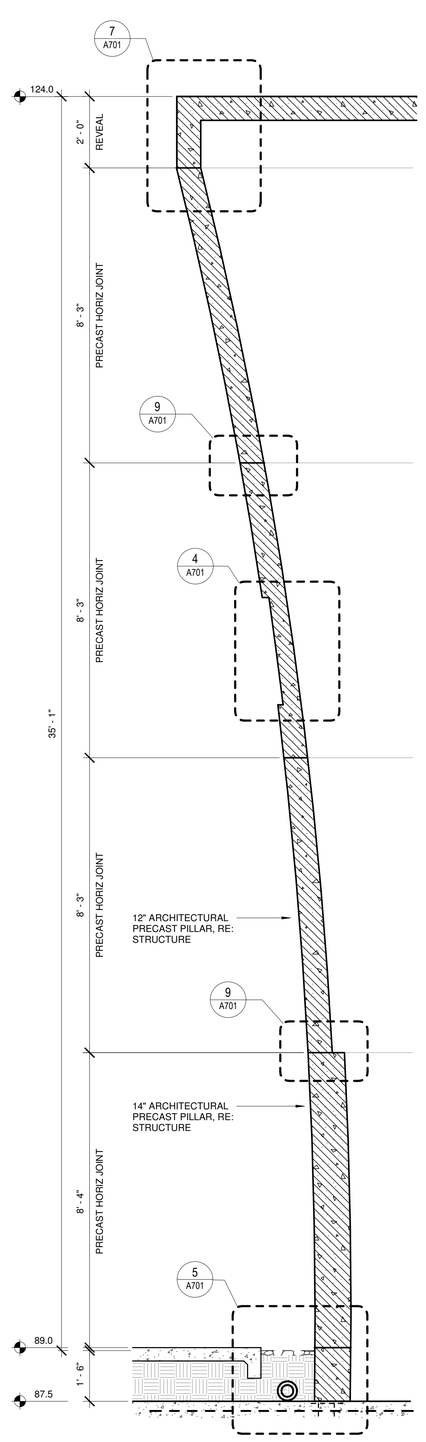
7 MONUMENT SECTION DETAIL - TOP OF PILLAR
1 1/2" = 1'-0"



4 MONUMENT SECTION DETAIL - DEBOSS
1 1/2" = 1'-0"

3 MONUMENT SECTION - EAST/ WEST
1/8" = 1'-0"

2 MONUMENT SECTION - NORTH/ SOUTH
1/8" = 1'-0"



1 MONUMENT SECTION - PILLAR SECTION
1/2" = 1'-0"

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04-12-2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: NS Reviewed by: GL

Project No: 218226

Sheet Title:

MOUNMENT SECTIONS & DETAILS

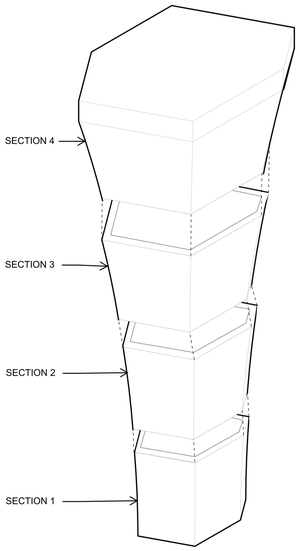
Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

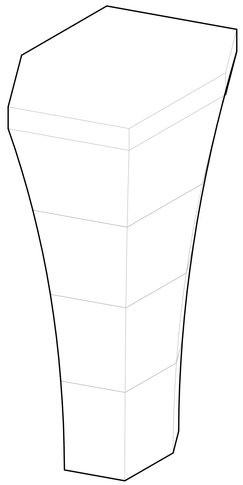
A701

GENERAL NOTES - APC PILLARS

1. REFERENCE PLANS AND SPECIFICATIONS IN SHEET A200 SERIES
2. REFERENCE ELEVATIONS AND AXONOMETRICS IN SHEET A500 SERIES
3. REFERENCE ADINKRA SYMBOL LEGEND IN SHEET A400 SERIES
4. PROVIDE MOCK-UP AS INDICATED IN 6/A401

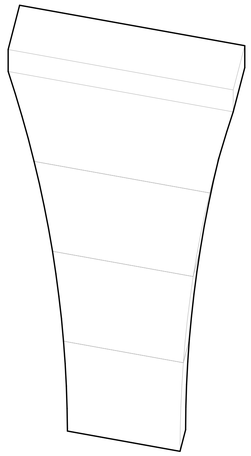


10 AXON - PRECAST ASSEMBLY
1/2" = 1'-0"



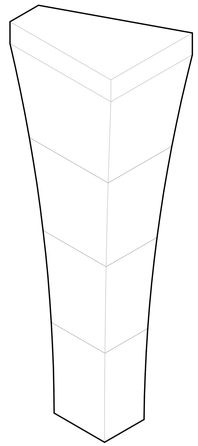
SEE A809

9 MONUMENT - PILLAR 09



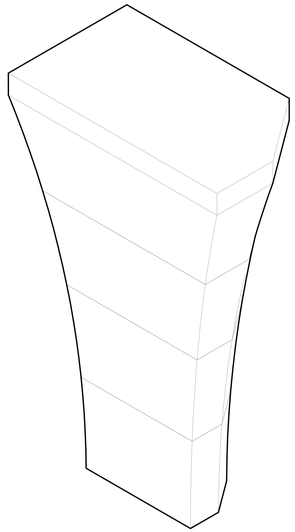
SEE A808

8 MONUMENT - PILLAR 08



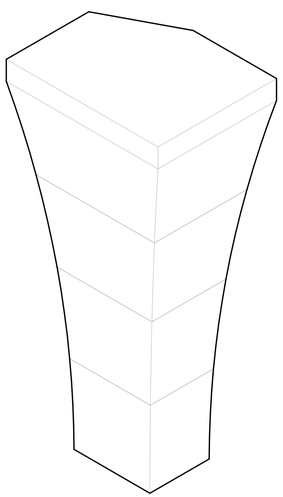
SEE A807

7 MONUMENT - PILLAR 07



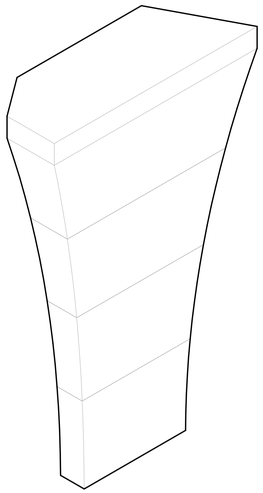
SEE A806

6 MONUMENT - PILLAR 06



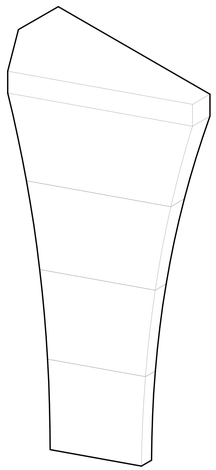
SEE A805

5 MONUMENT - PILLAR 05



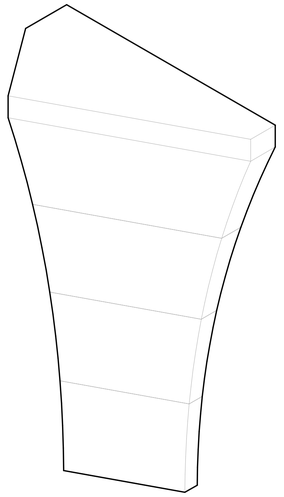
SEE A804

4 MONUMENT - PILLAR 04



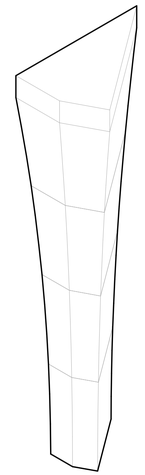
SEE A803

3 MONUMENT - PILLAR 03



SEE A802

2 MONUMENT - PILLAR 02



SEE A801

1 MONUMENT - PILLAR 01

6/6/2023 12:47:53 PM

THE STATE OF TEXAS · FORT BEND COUNTY

Project:

AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:

FORT BEND COUNTY

1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

HINESAD

Contract No: 218226

Design Team:

HINES ARCHITECTURE + DESIGN
8 Greenway Plaza Suite 1525
Houston, TX 77046 USA
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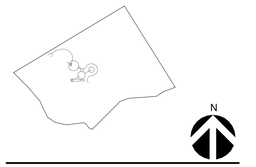
Key Plan



Professional Seals



04-12-2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: AP Reviewed by: GL

Project No: 218226

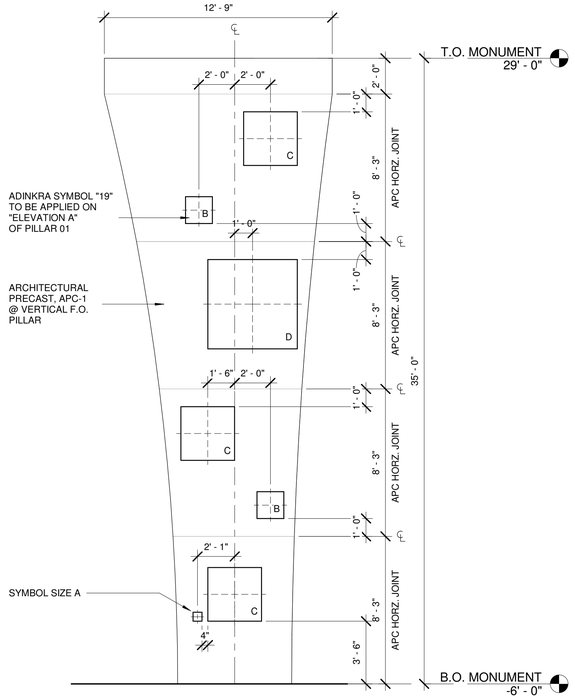
Sheet Title:

MONUMENT PILLAR TYPES

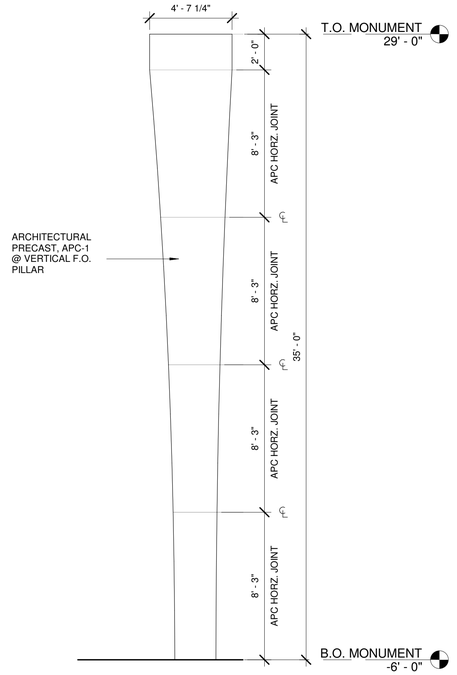
Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

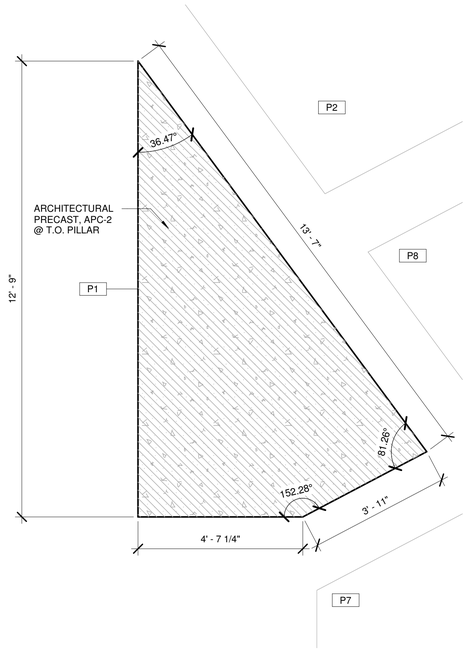
A800



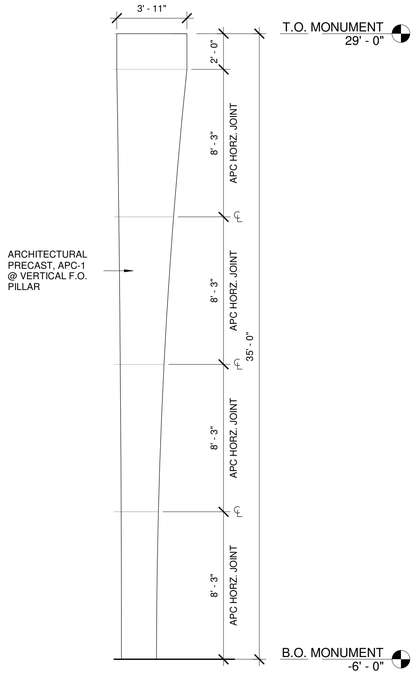
7 PILLAR 01 - ELEVATION A
1/4" = 1'-0"



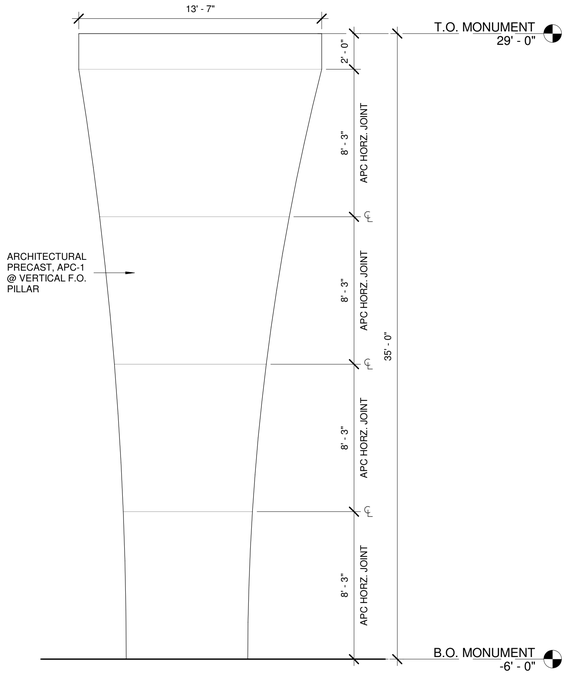
6 PILLAR 01 - ELEVATION B
1/4" = 1'-0"



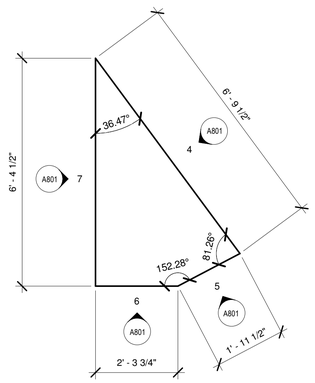
3 PILLAR 01 - TOP OF PILLAR
1/2" = 1'-0"



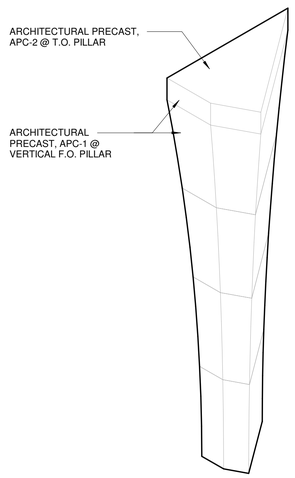
5 PILLAR 01 - ELEVATION C
1/4" = 1'-0"



4 PILLAR 01 - ELEVATION D
1/4" = 1'-0"



2 PILLAR 01 - BASE
1/2" = 1'-0"



1 MONUMENT - PILLAR 01

GENERAL NOTES - APC PILLARS

1. REFERENCE PLANS AND SPECIFICATIONS IN SHEET A200 SERIES
2. REFERENCE ELEVATIONS AND AXONOMETRICS IN SHEET A500 SERIES
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HINESAD

Contract No: 218226

Design Team:

HINES ARCHITECTURE + DESIGN
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Key Plan



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04-12-2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: AP Reviewed by: GL

Project No: 218226

Sheet Title:

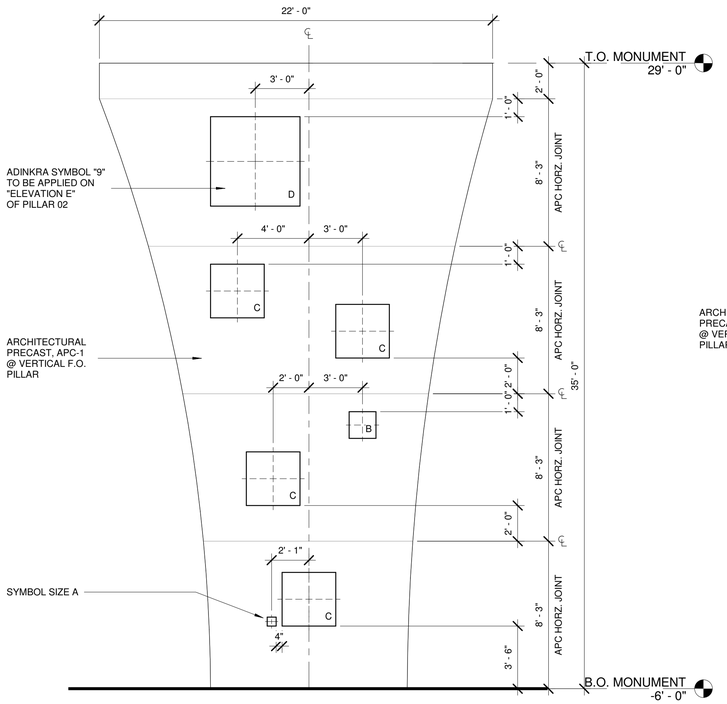
MONUMENT PILLAR TYPES - PILLAR 1

Orig. drawing is ARCH D.Do not scale contents of this drawing.

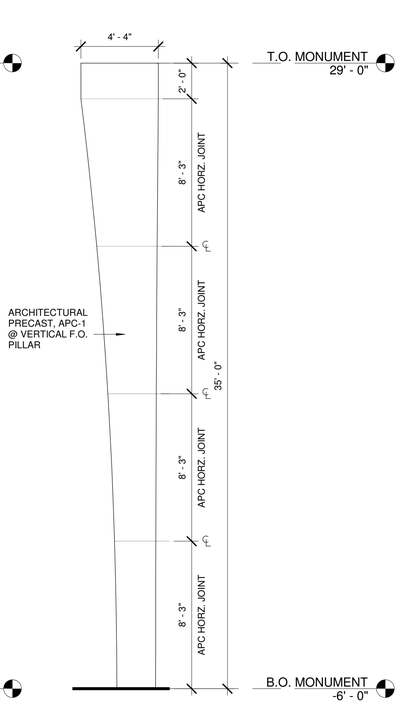
Sheet Number

A801

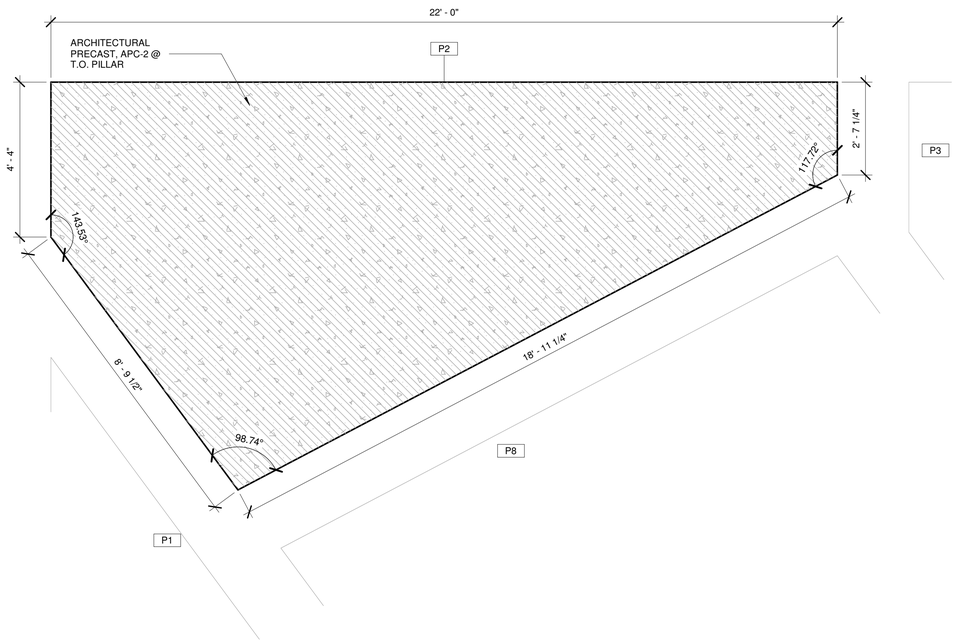
6/6/2023 12:47:59 PM



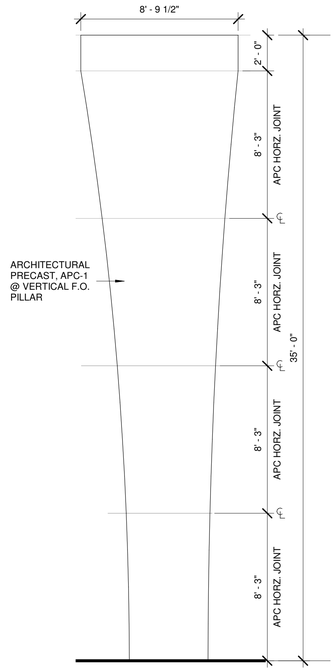
8 PILLAR 02 - ELEVATION E
1/4" = 1'-0"



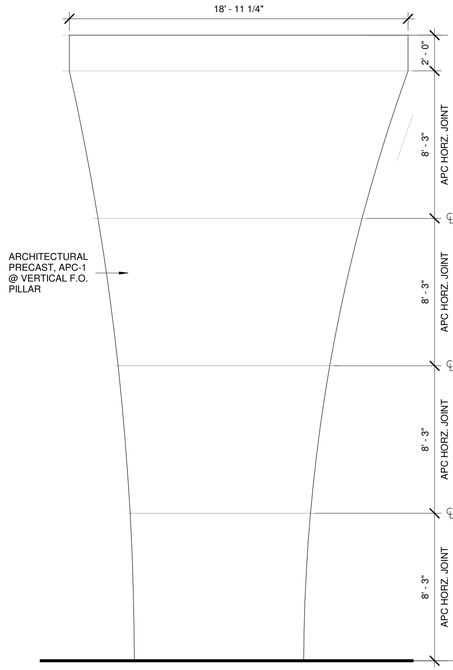
7 PILLAR 02 - ELEVATION D
1/4" = 1'-0"



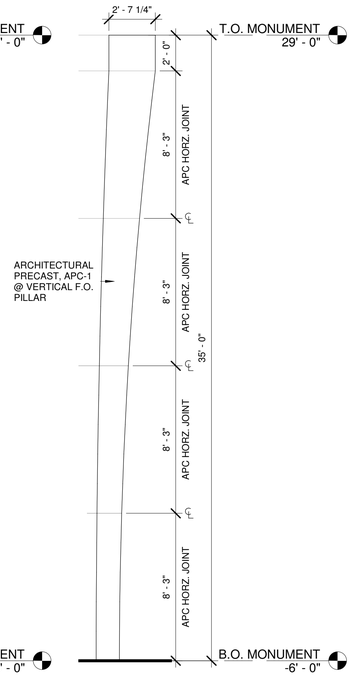
3 PILLAR 02 - TOP OF PILLAR
1/2" = 1'-0"



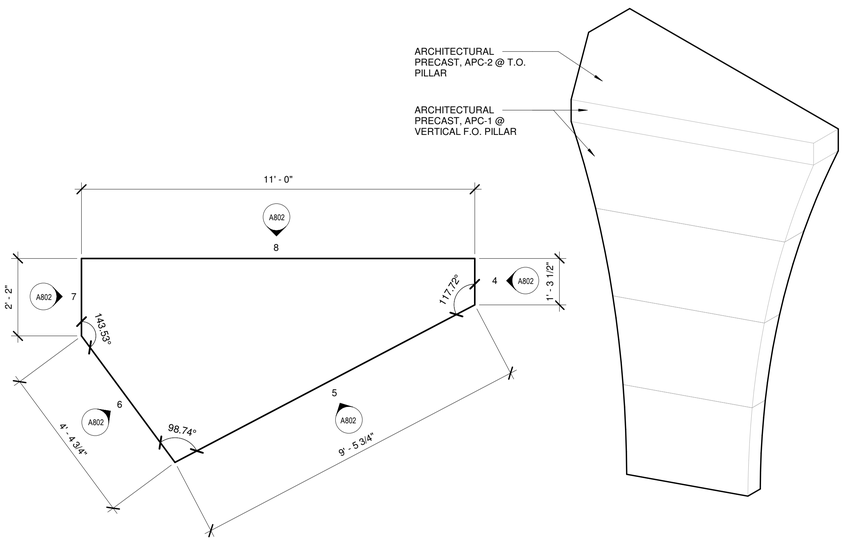
6 PILLAR 02 - ELEVATION C
1/4" = 1'-0"



5 PILLAR 02 - ELEVATION B
1/4" = 1'-0"



4 PILLAR 02 - ELEVATION A
1/4" = 1'-0"



2 PILLAR 02 - BASE
1/2" = 1'-0"

1 MONUMENT - PILLAR 02

GENERAL NOTES - APC PILLARS

1. REFERENCE PLANS AND SPECIFICATIONS IN SHEET A200 SERIES
2. REFERENCE ELEVATIONS AND AXONOMETRICS IN SHEET A500 SERIES
3. REFERENCE ADINKRA SYMBOL LEGEND IN SHEET A400 SERIES
4. PROVIDE MOCK-UP AS INDICATED IN 6/A401

THE STATE OF TEXAS · FORT BEND COUNTY ·

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630 CHARLIE ROBERTS LANE
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Prepared For:

FORT BEND COUNTY

1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

HINESAD

Contract No: 218226

Design Team:

HINES ARCHITECTURE + DESIGN
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Houston, TX 77046 USA
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No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
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Drawn by: AP Reviewed by: GL

Project No: 218226

Sheet Title:

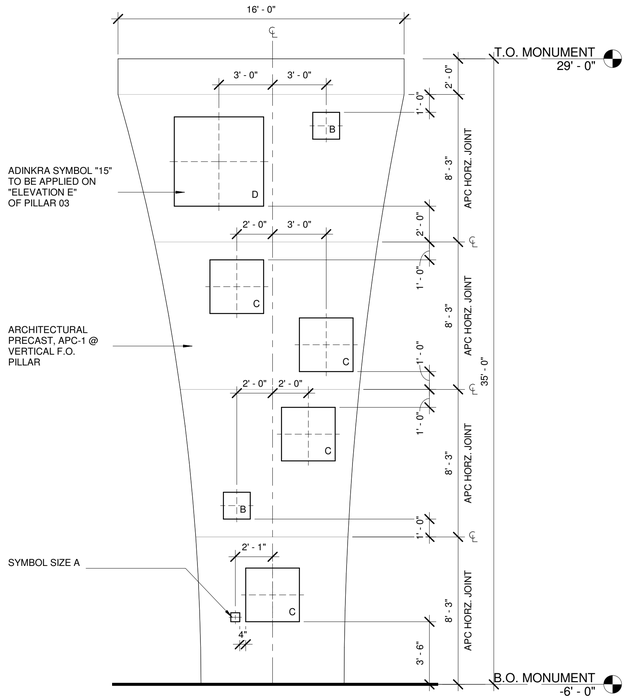
MONUMENT PILLAR TYPES - PILLAR 2

Orig. drawing is ARCH D.Do not scale contents of this drawing.

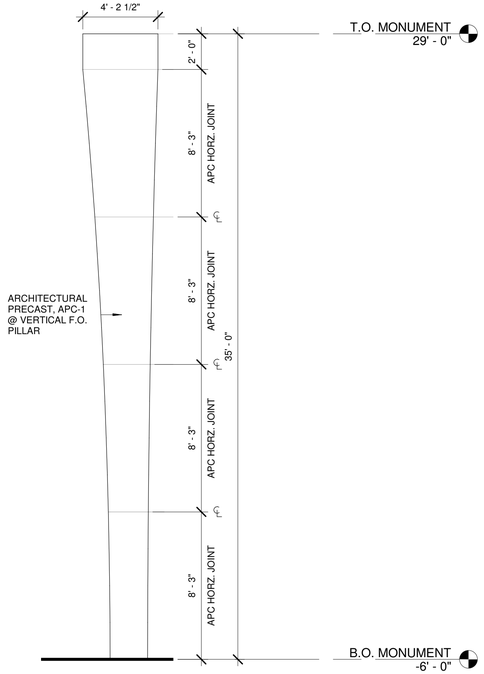
Sheet Number

A802

6/6/2023 12:48:11 PM



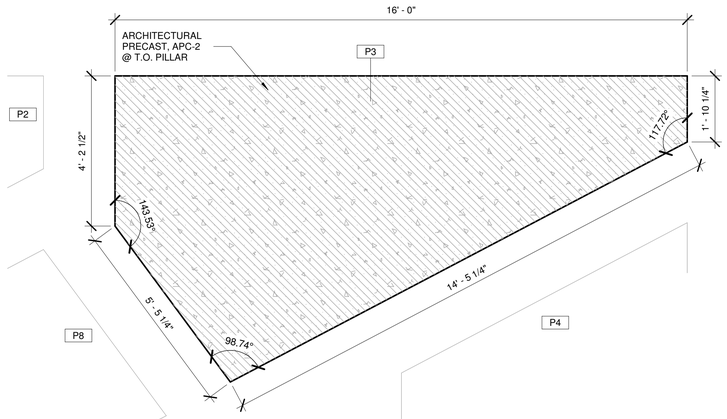
8 PILLAR 03 - ELEVATION E
1/4" = 1'-0"



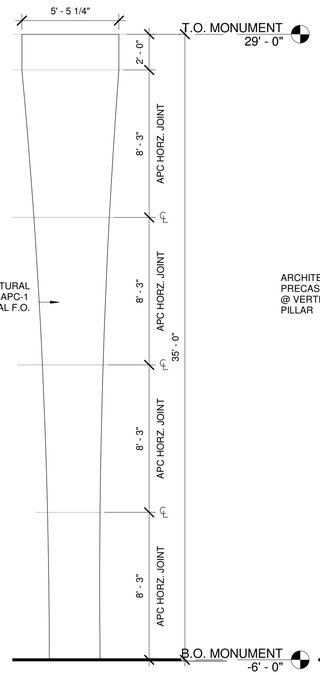
7 PILLAR 03 - ELEVATION D
1/4" = 1'-0"

GENERAL NOTES - APC PILLARS

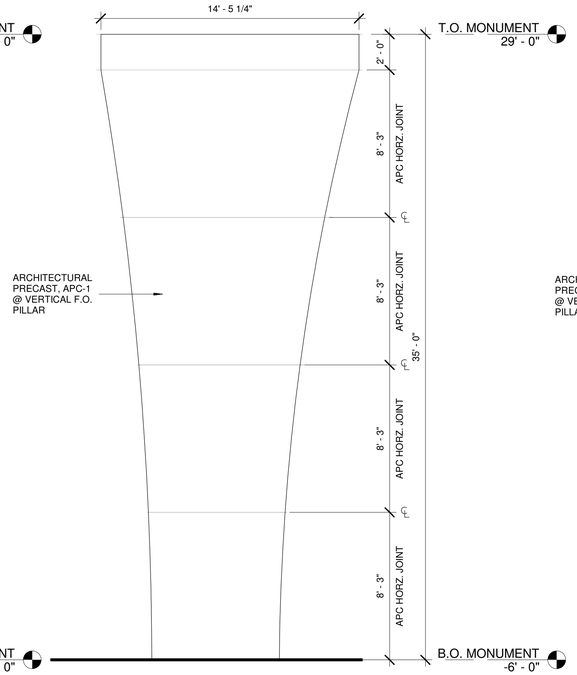
1. REFERENCE PLANS AND SPECIFICATIONS IN SHEET A200 SERIES
2. REFERENCE ELEVATIONS AND AXONOMETRICS IN SHEET A500 SERIES
3. REFERENCE ADINKRA SYMBOL LEGEND IN SHEET A400 SERIES
4. PROVIDE MOCK-UP AS INDICATED IN 6/A401



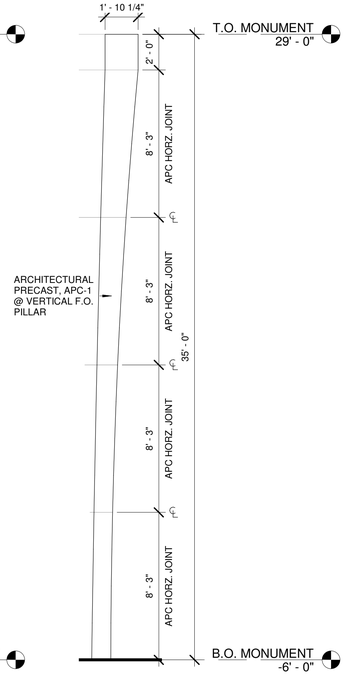
3 PILLAR 03 - TOP OF PILLAR
1/2" = 1'-0"



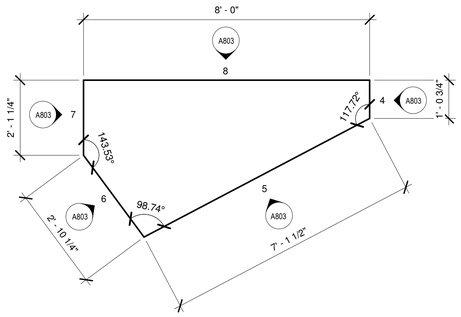
6 PILLAR 03 - ELEVATION C
1/4" = 1'-0"



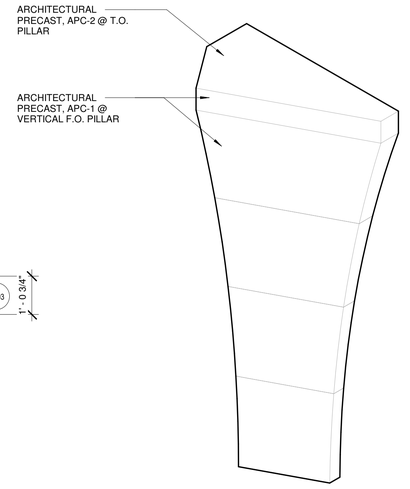
5 PILLAR 03 - ELEVATION B
1/4" = 1'-0"



4 PILLAR 03 - ELEVATION A
1/4" = 1'-0"



2 PILLAR 03 - BASE
1/2" = 1'-0"



1 MONUMENT - PILLAR 03

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Project:
AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK
630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:
FORT BEND COUNTY
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Design Team:

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Key Plan



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Drawn by: AP Reviewed by: GL

Project No: 218226

Sheet Title:

MONUMENT PILLAR TYPES - PILLAR 3

Orig. drawing is ARCH D.Do not scale contents of this drawing.

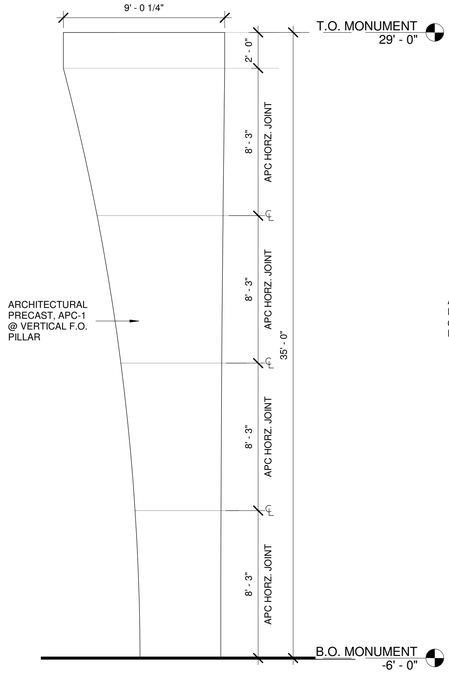
Sheet Number

A803

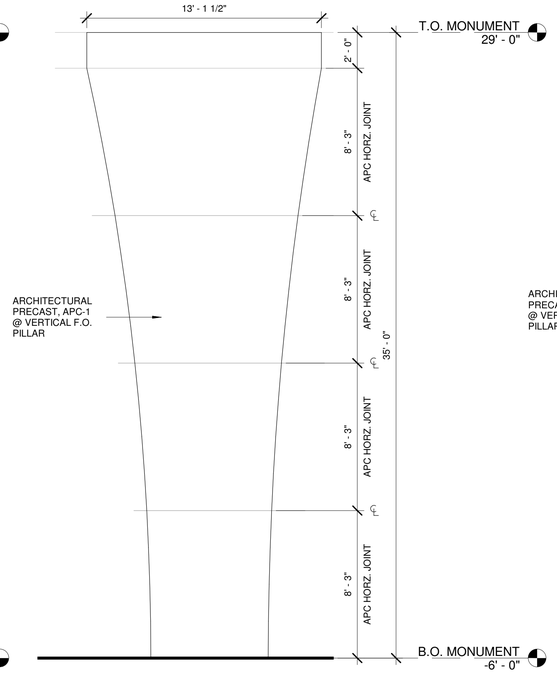
6/6/2023 12:48:20 PM

GENERAL NOTES - APC PILLARS

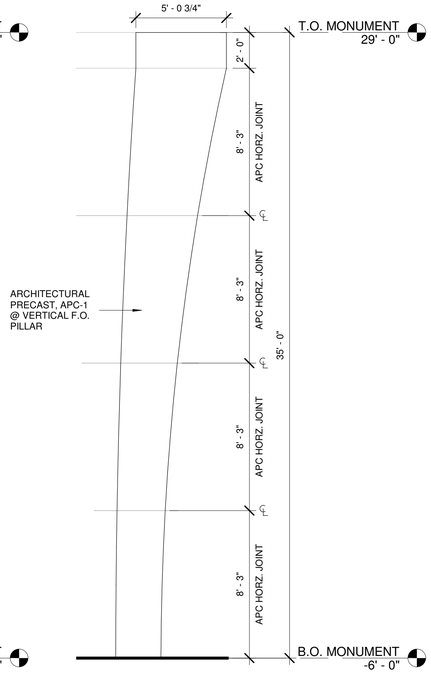
1. REFERENCE PLANS AND SPECIFICATIONS IN SHEET A200 SERIES
2. REFERENCE ELEVATIONS AND AXONOMETRICS IN SHEET A500 SERIES
3. REFERENCE ADINKRA SYMBOL LEGEND IN SHEET A400 SERIES
4. PROVIDE MOCK-UP AS INDICATED IN 6/A401



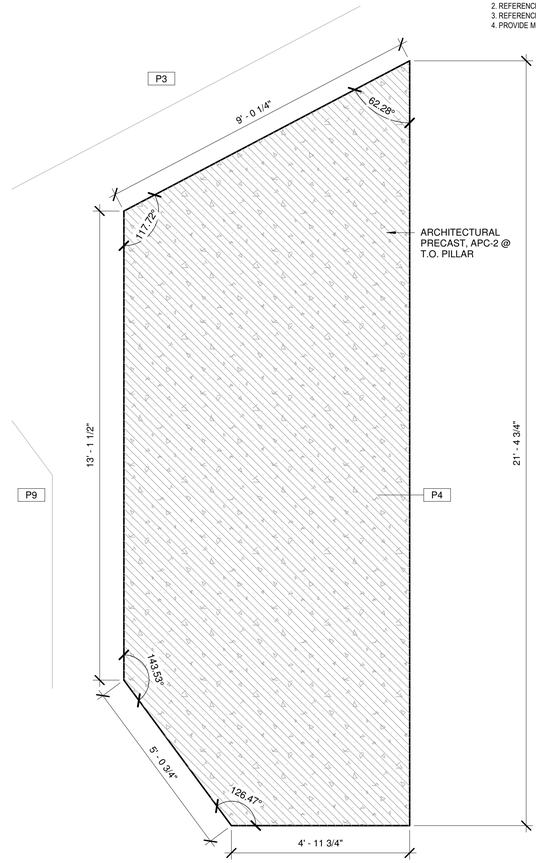
8 PILLAR 04 - ELEVATION D
1/4" = 1'-0"



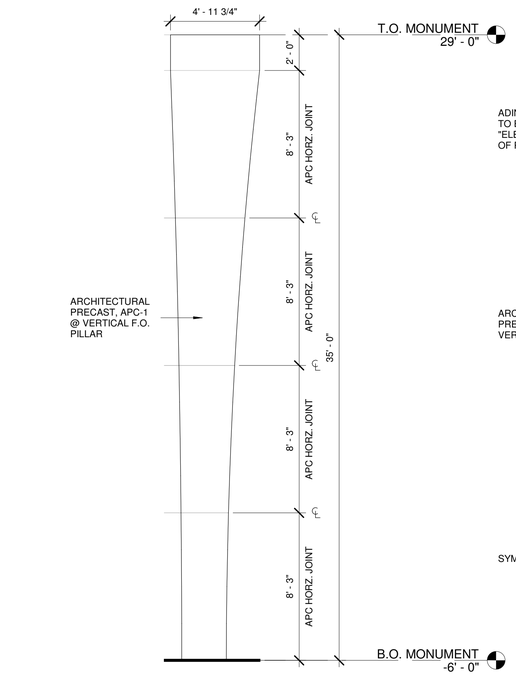
7 PILLAR 04 - ELEVATION E
1/4" = 1'-0"



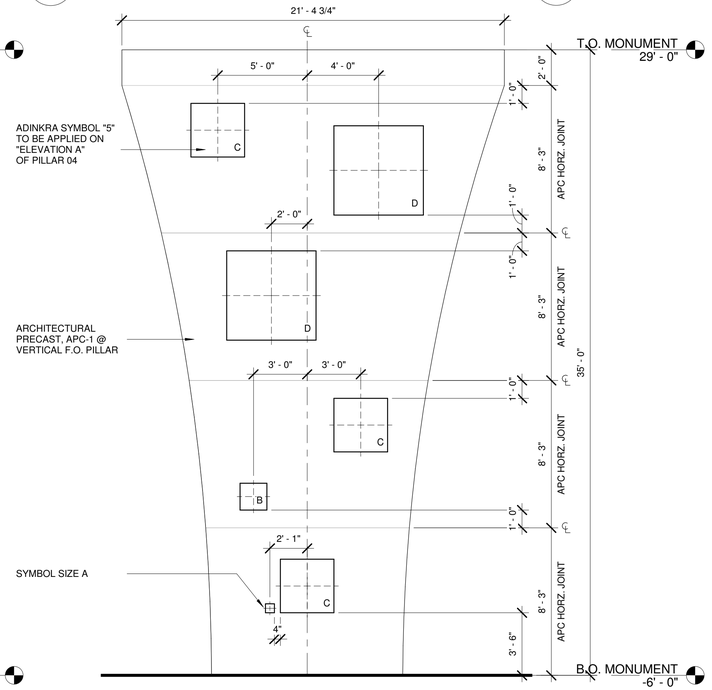
6 PILLAR 04 - ELEVATION C
1/4" = 1'-0"



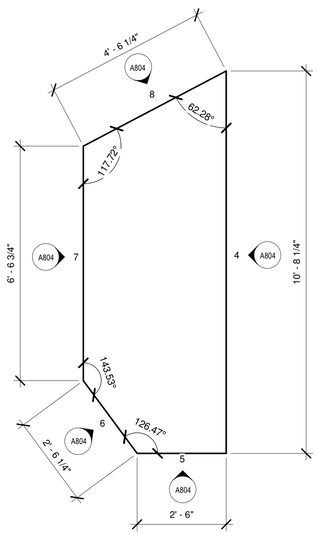
3 PILLAR 04 - TOP OF PILLAR
1/2" = 1'-0"



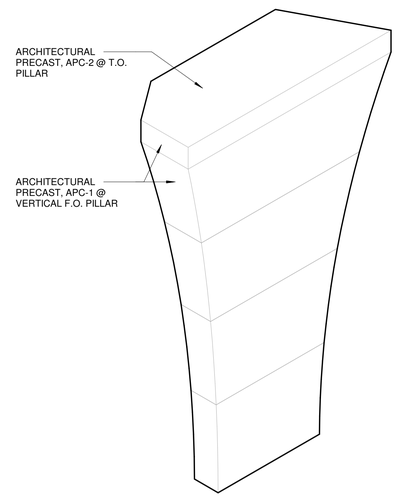
5 PILLAR 04 - ELEVATION B
1/4" = 1'-0"



4 PILLAR 04 - ELEVATION A
1/4" = 1'-0"



2 PILLAR 04 - BASE
1/2" = 1'-0"



1 MONUMENT - PILLAR 04

6/6/2023 12:48:31 PM

THE STATE OF TEXAS · FORT BEND COUNTY ·

Project:

AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:

FORT BEND COUNTY

1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

HINESAD

Contract No: 218226

Design Team:

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04-12-2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: AP Reviewed by: GL

Project No: 218226

Sheet Title:

MONUMENT PILLAR TYPES - PILLAR 4

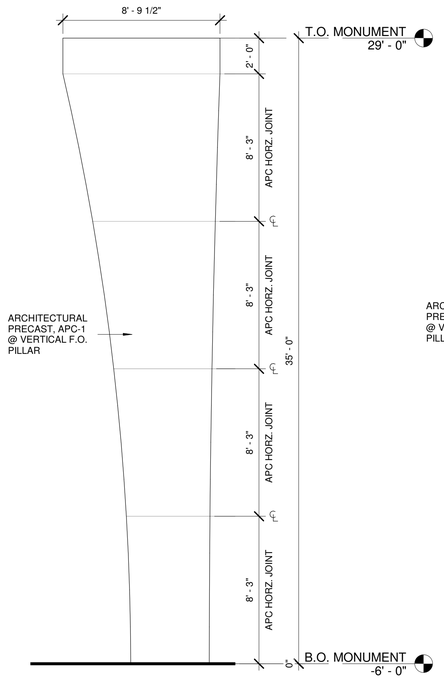
Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

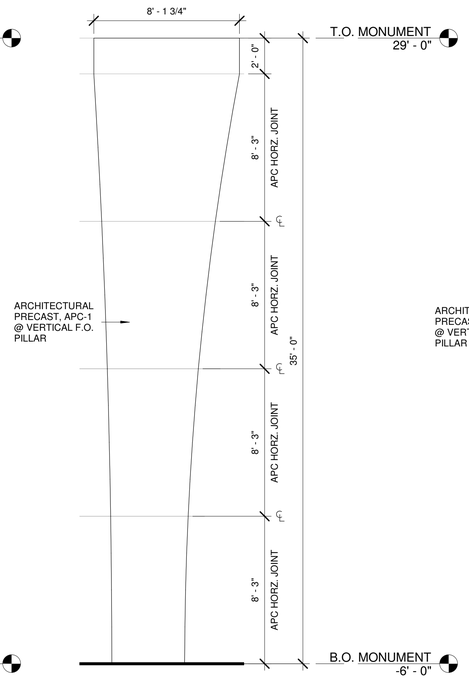
A804

GENERAL NOTES - APC PILLARS

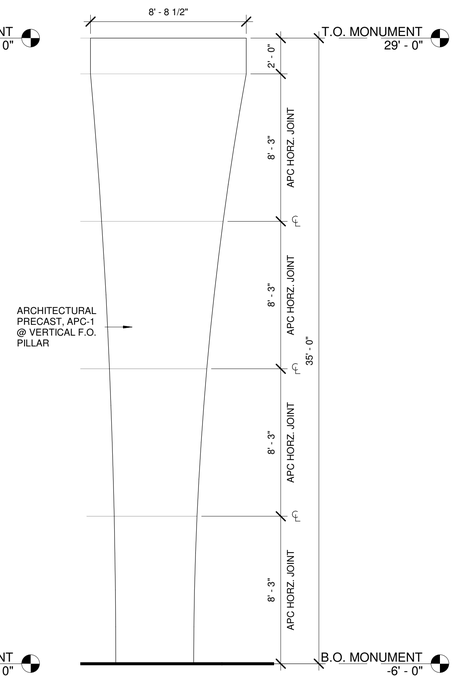
1. REFERENCE PLANS AND SPECIFICATIONS IN SHEET A200 SERIES
2. REFERENCE ELEVATIONS AND AXONOMETRICS IN SHEET A600 SERIES
3. REFERENCE ADINKRA SYMBOL LEGEND IN SHEET A400 SERIES
4. PROVIDE MOCK-UP AS INDICATED IN 6/A401



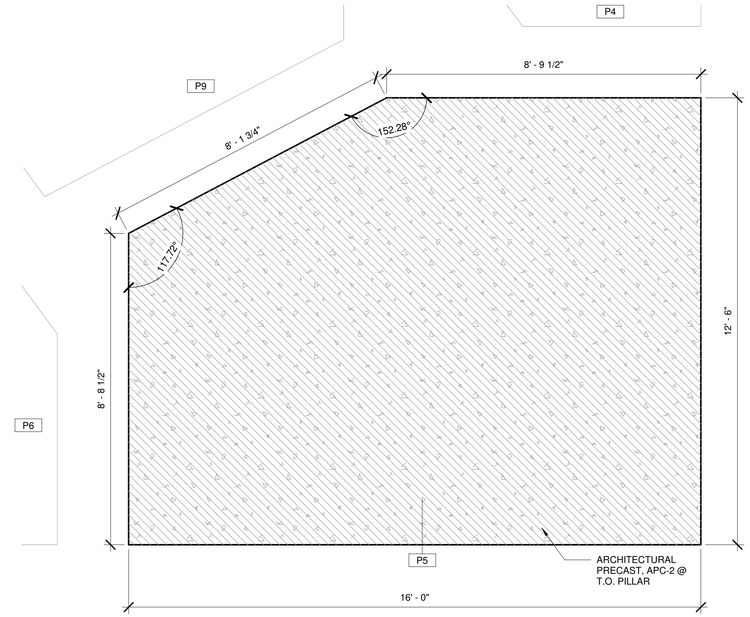
8 PILLAR 05 - ELEVATION E
1/4" = 1'-0"



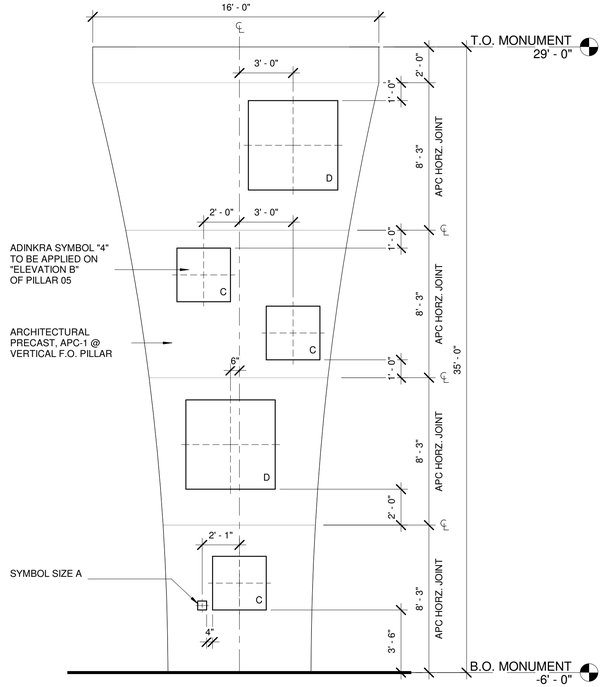
7 PILLAR 05 - ELEVATION D
1/4" = 1'-0"



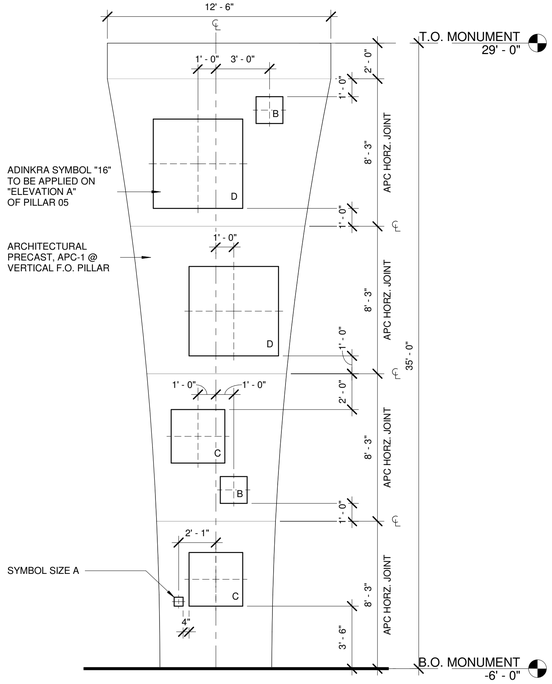
6 PILLAR 05 - ELEVATION C
1/4" = 1'-0"



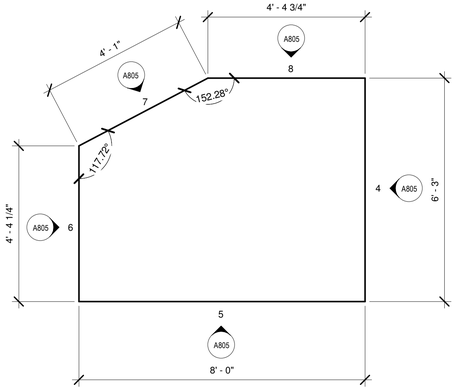
3 PILLAR 05 - TOP OF PILLAR
1/2" = 1'-0"



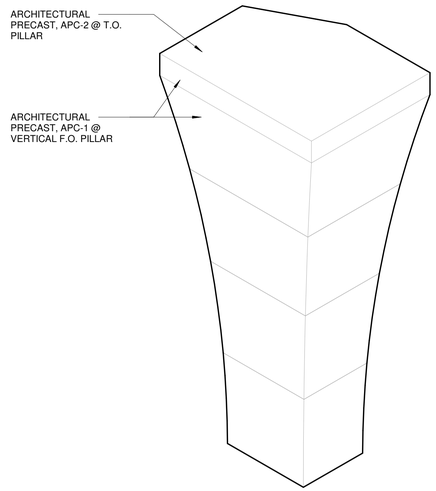
5 PILLAR 05 - ELEVATION B
1/4" = 1'-0"



4 PILLAR 05 - ELEVATION A
1/4" = 1'-0"



2 PILLAR 05 - BASE
1/2" = 1'-0"



1 MONUMENT - PILLAR 05

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Drawn by: AP Reviewed by: GL

Project No: 218226

Sheet Title:

MONUMENT PILLAR TYPES - PILLAR 5

Orig. drawing is ARCH D.Do not scale contents of this drawing.

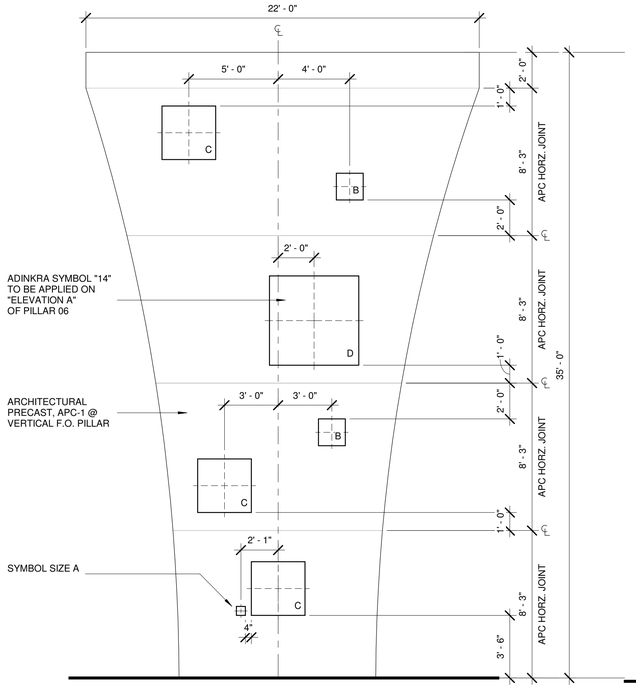
Sheet Number

A805

6/6/2023 12:48:43 PM

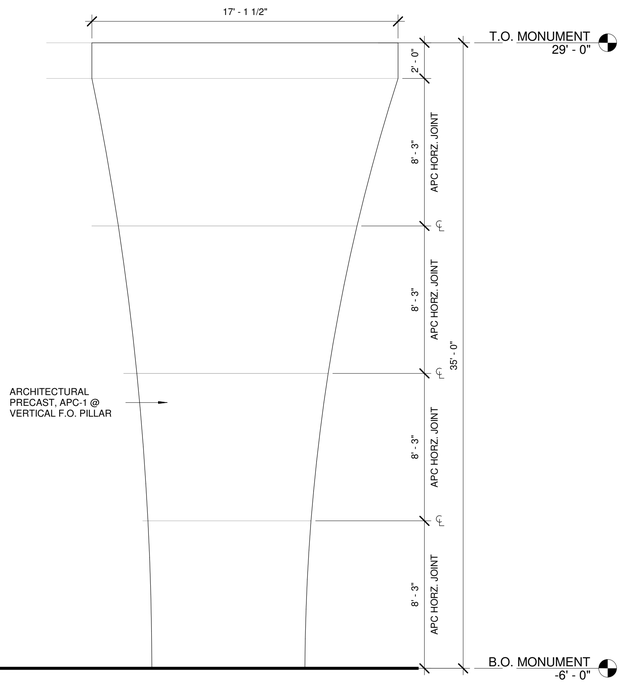
GENERAL NOTES - APC PILLARS

1. REFERENCE PLANS AND SPECIFICATIONS IN SHEET A200 SERIES
2. REFERENCE ELEVATIONS AND AXONOMETRICS IN SHEET A500 SERIES
3. REFERENCE ADINKRA SYMBOL LEGEND IN SHEET A400 SERIES
4. PROVIDE MOCK-UP AS INDICATED IN 6/A401



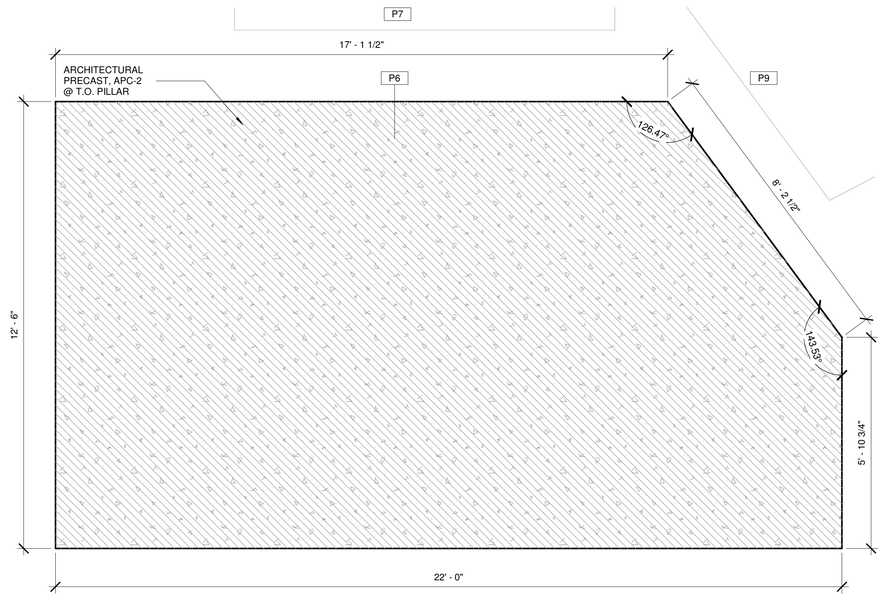
4 PILLAR 06 - ELEVATION A

1/4" = 1'-0"



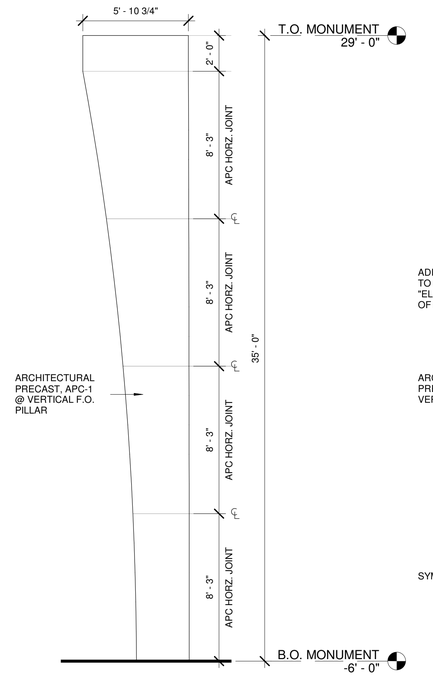
6 PILLAR 06 - ELEVATION C

1/4" = 1'-0"



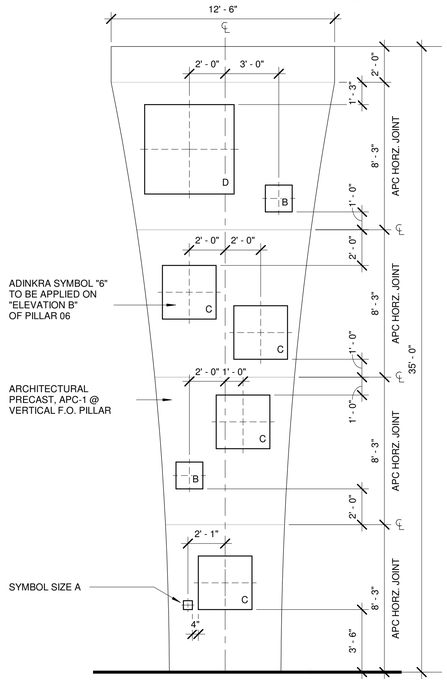
3 PILLAR 06 - TOP OF PILLAR

1/2" = 1'-0"



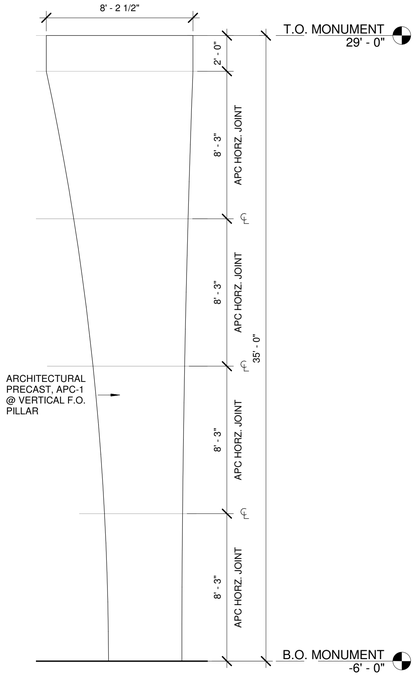
8 PILLAR 06 - ELEVATION E

1/4" = 1'-0"



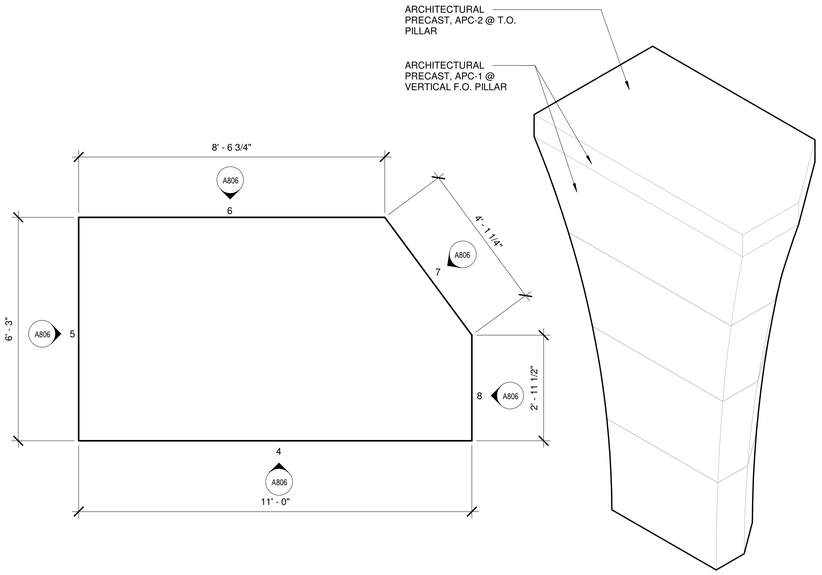
5 PILLAR 06 - ELEVATION B

1/4" = 1'-0"



7 PILLAR 06 - ELEVATION D

1/4" = 1'-0"



2 PILLAR 06 - BASE

1/2" = 1'-0"

1 MONUMENT - PILLAR 06

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Drawn by: AP Reviewed by: GL

Project No: 218226

Sheet Title:

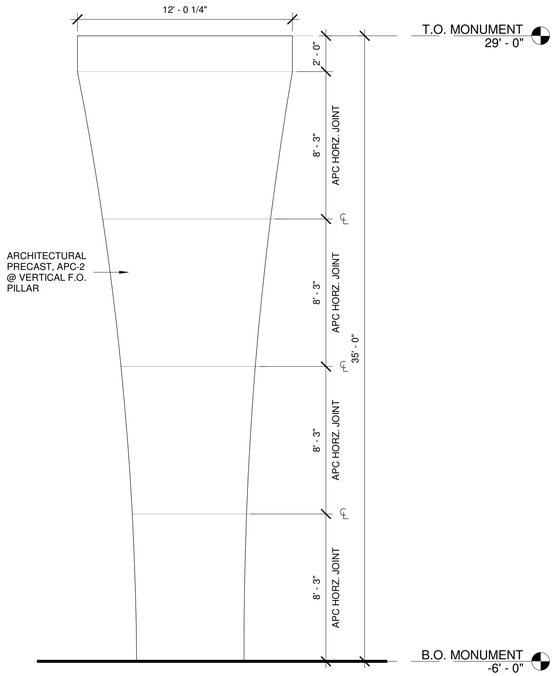
MONUMENT PILLAR TYPES - PILLAR 6

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

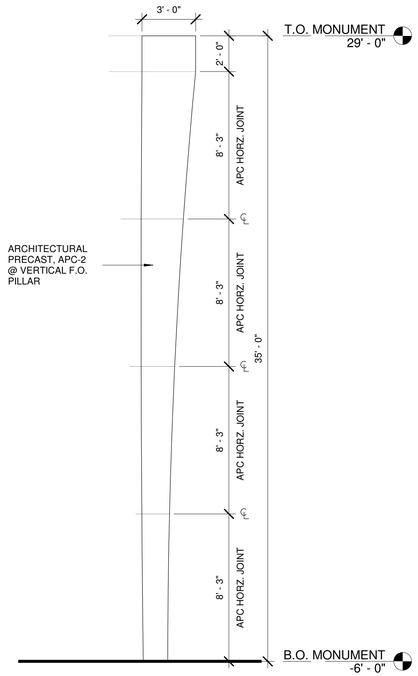
A806

6/6/2023 12:48:53 PM



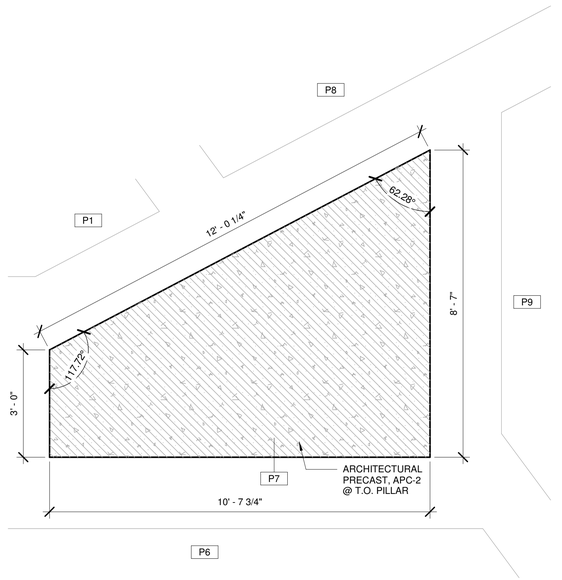
7 PILLAR 07 - ELEVATION D

1/4" = 1'-0"



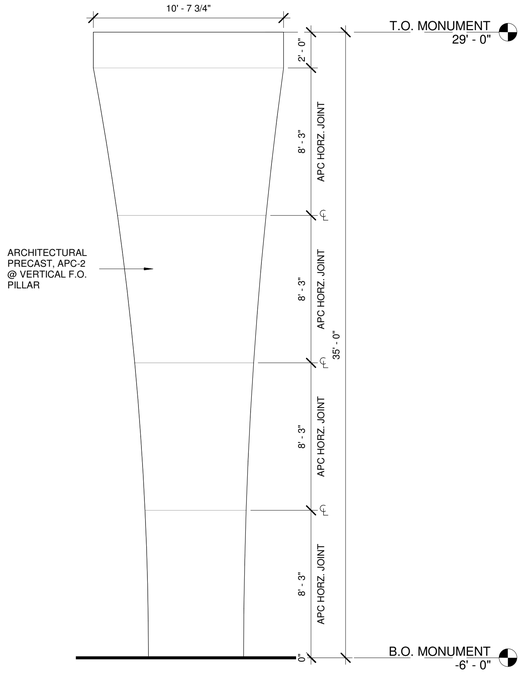
6 PILLAR 07 - ELEVATION C

1/4" = 1'-0"



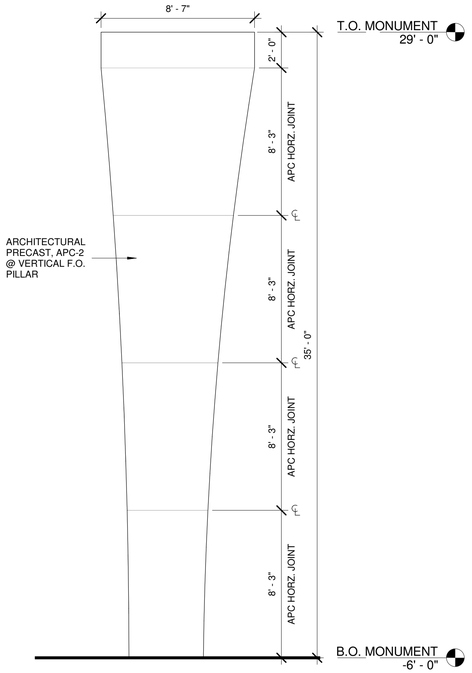
3 PILLAR 07 - TOP OF PILLAR

1/2" = 1'-0"



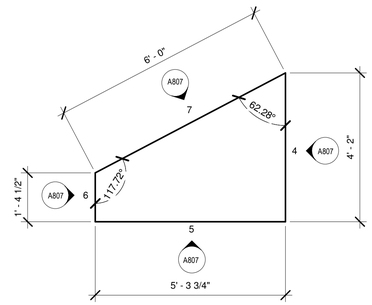
5 PILLAR 07 - ELEVATION B

1/4" = 1'-0"



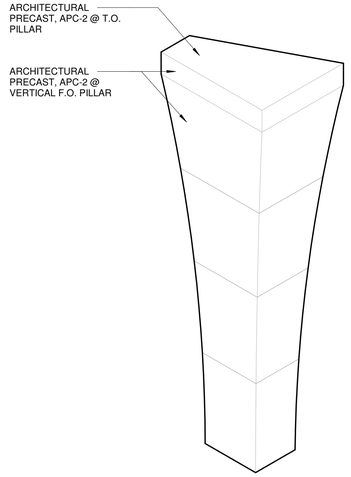
4 PILLAR 07 - ELEVATION A

1/4" = 1'-0"



2 PILLAR 07 - BASE

1/2" = 1'-0"



1 MONUMENT - PILLAR 07

GENERAL NOTES - APC PILLARS

1. REFERENCE PLANS AND SPECIFICATIONS IN SHEET A200 SERIES
2. REFERENCE ELEVATIONS AND AXONOMETRICS IN SHEET A500 SERIES
3. REFERENCE ADINKRA SYMBOL LEGEND IN SHEET A400 SERIES
4. PROVIDE MOCK-UP AS INDICATED IN 6/A401

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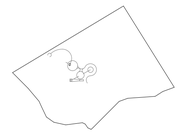

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04-12-2024

No.	Issue Description	MM-DD-YYYY
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Drawn by: AP Reviewed by: GL

Project No: 218226

Sheet Title:

MONUMENT PILLAR TYPES - PILLAR 7

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Sheet Number

A807

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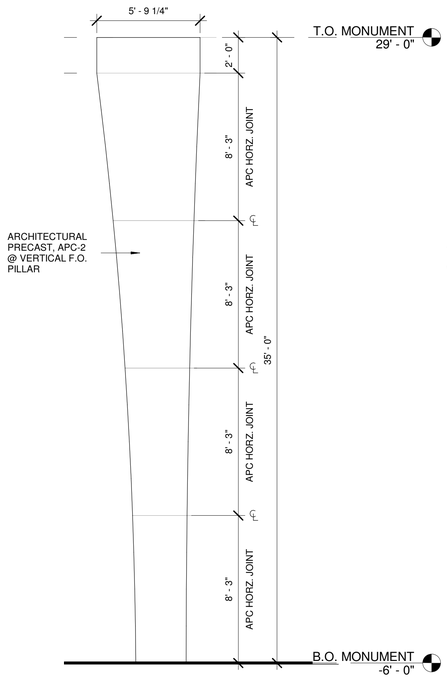
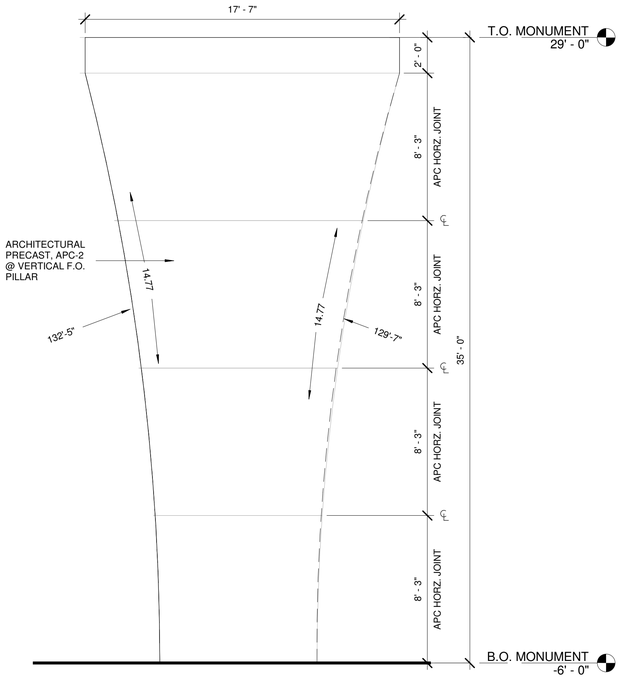


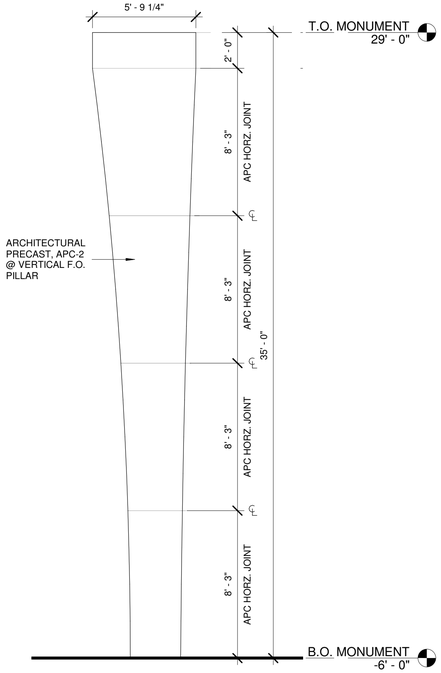
7 PILLAR 08 - ELEVATION D

1/4" = 1'-0"



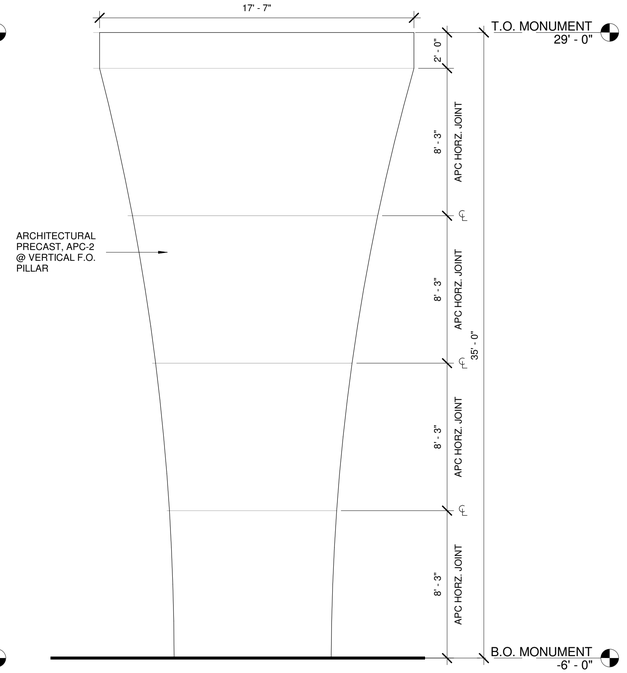
6 PILLAR 08 - ELEVATION C

1/4" = 1'-0"



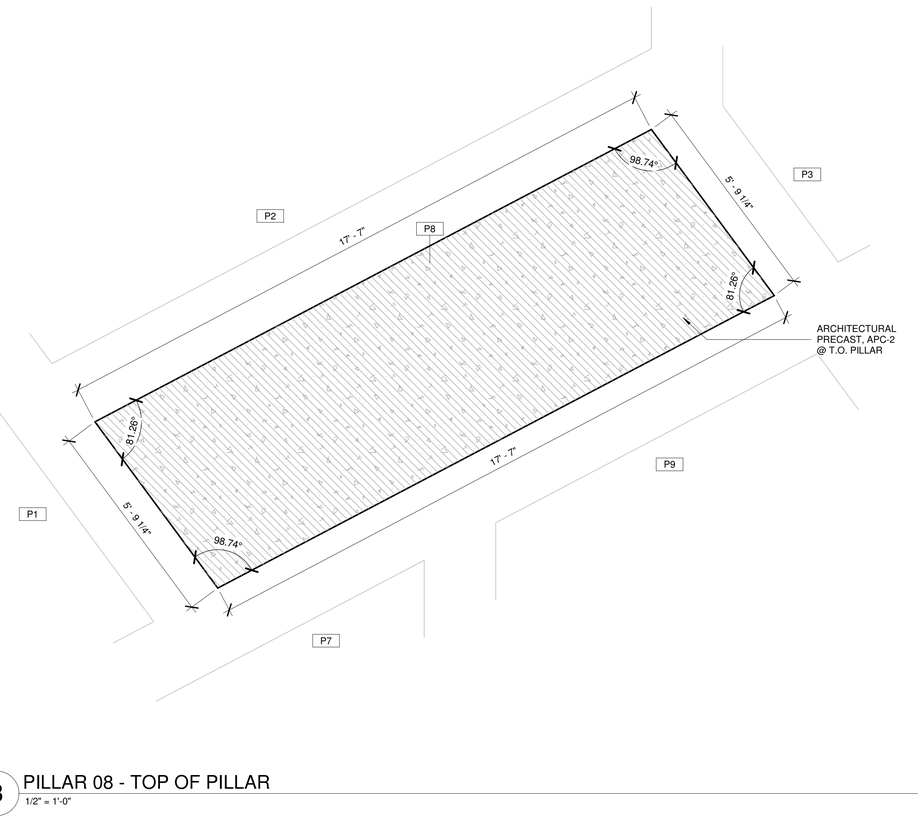
5 PILLAR 08 - ELEVATION B

1/4" = 1'-0"



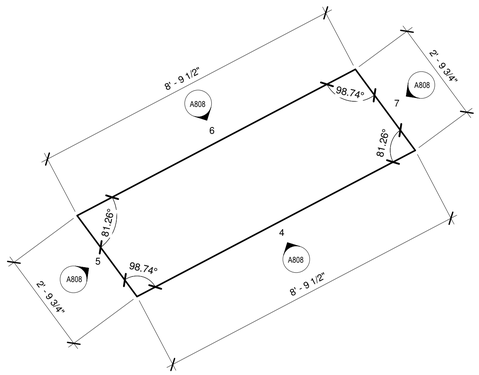
4 PILLAR 08 - ELEVATION A

1/4" = 1'-0"



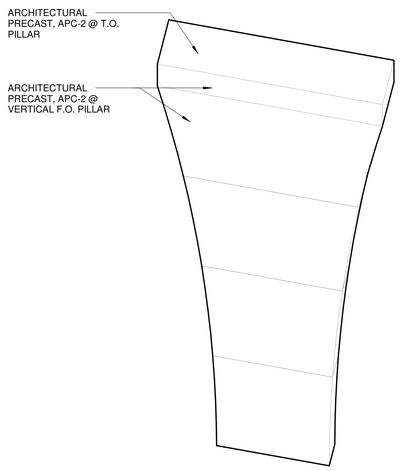
3 PILLAR 08 - TOP OF PILLAR

1/2" = 1'-0"



2 PILLAR 08 - BASE

1/2" = 1'-0"



1 MONUMENT - PILLAR 08

GENERAL NOTES - APC PILLARS

1. REFERENCE PLANS AND SPECIFICATIONS IN SHEET A200 SERIES
2. REFERENCE ELEVATIONS AND AXONOMETRICS IN SHEET A500 SERIES
3. REFERENCE ADINKRA SYMBOL LEGEND IN SHEET A400 SERIES
4. PROVIDE MOCK-UP AS INDICATED IN 6/A401

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Drawn by: AP Reviewed by: GL

Project No: 218226

Sheet Title:

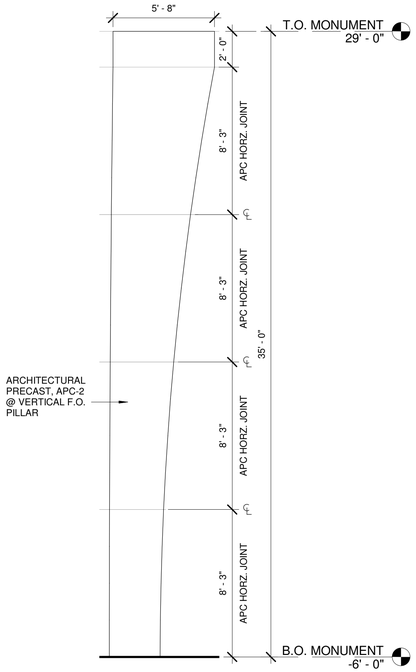
MONUMENT PILLAR TYPES - PILLAR 8

Orig. drawing is ARCH D.Do not scale contents of this drawing.

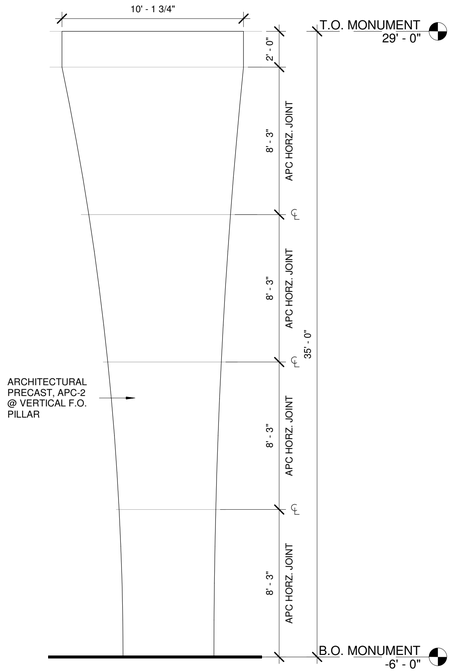
Sheet Number

A808

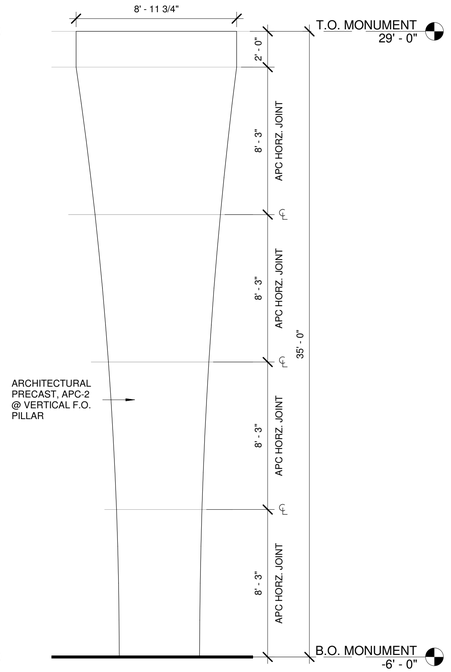
6/6/2023 12:49:13 PM



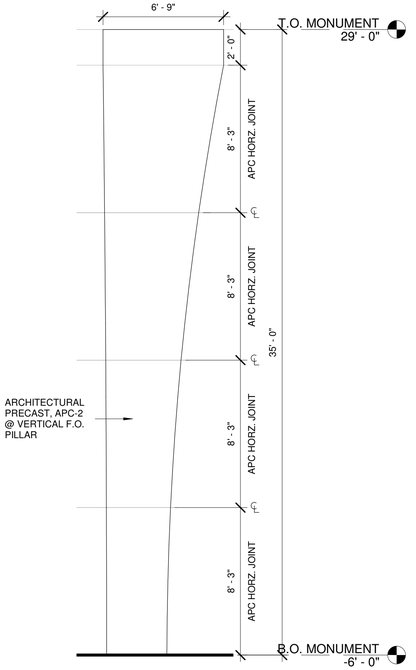
9 PILLAR 09 - ELEVATION F
1/4" = 1'-0"



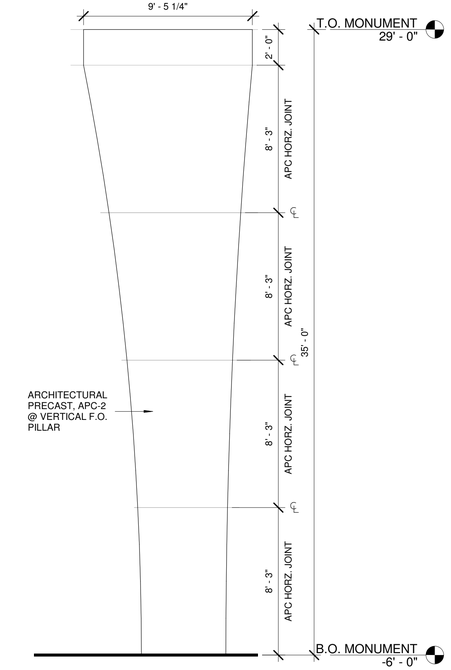
8 PILLAR 09 - ELEVATION E
1/4" = 1'-0"



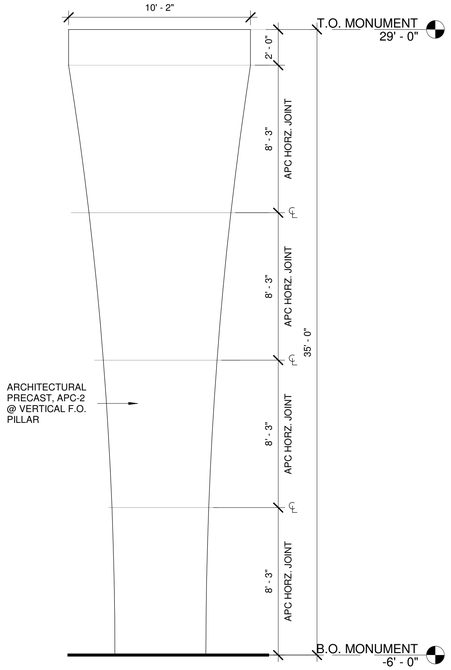
7 PILLAR 09 - ELEVATION D
1/4" = 1'-0"



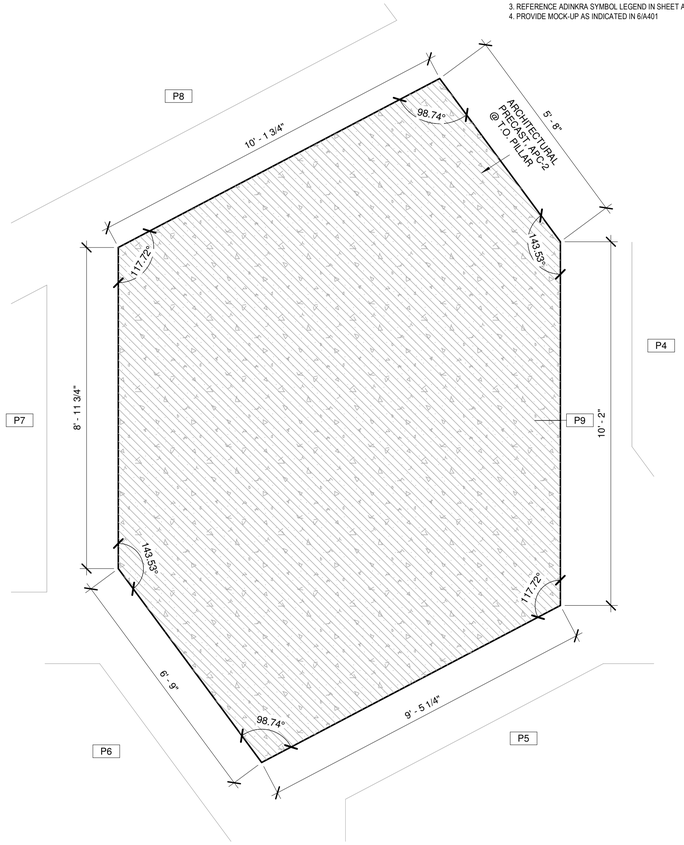
6 PILLAR 09 - ELEVATION C
1/4" = 1'-0"



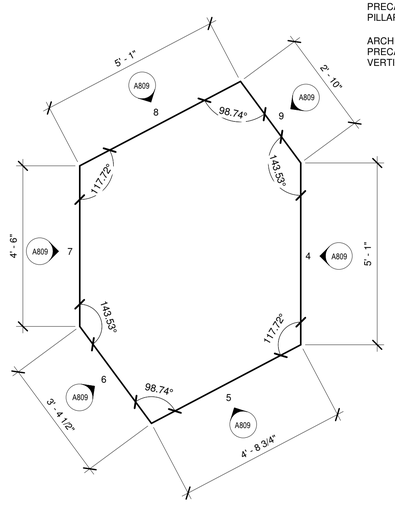
5 PILLAR 09 - ELEVATION B
1/4" = 1'-0"



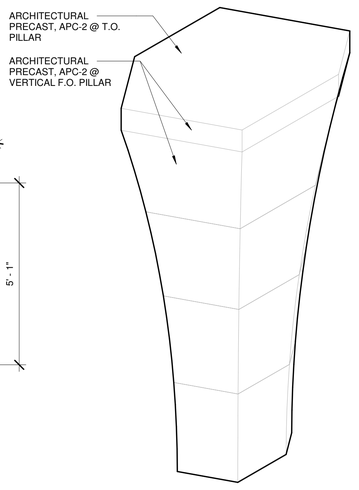
4 PILLAR 09 - ELEVATION A
1/4" = 1'-0"



3 PILLAR 09- TOP OF PILLAR
1/2" = 1'-0"



2 PILLAR 09 - BASE
1/2" = 1'-0"



1 MONUMENT - PILLAR 09

GENERAL NOTES - APC PILLARS

1. REFERENCE PLANS AND SPECIFICATIONS IN SHEET A200 SERIES
2. REFERENCE ELEVATIONS AND AXONOMETRICS IN SHEET A500 SERIES
3. REFERENCE ADINKRA SYMBOL LEGEND IN SHEET A400 SERIES
4. PROVIDE MOCK-UP AS INDICATED IN 6/A401

THE STATE OF TEXAS · FORT BEND COUNTY ·

Project:

AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:

FORT BEND COUNTY

1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

HINESAD

Contract No: 218226

Design Team:

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No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: AP Reviewed by: GL

Project No: 218226

Sheet Title:

MONUMENT PILLAR TYPES - PILLAR 9

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

A809

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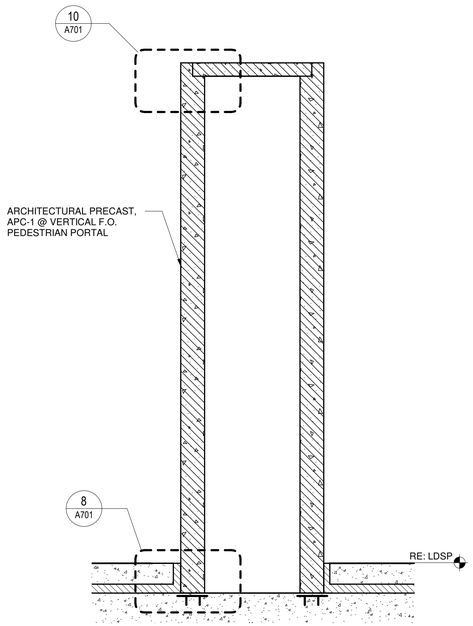
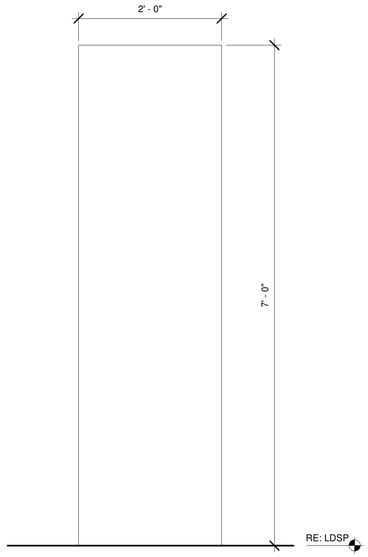
GENERAL NOTES - APC PILLARS

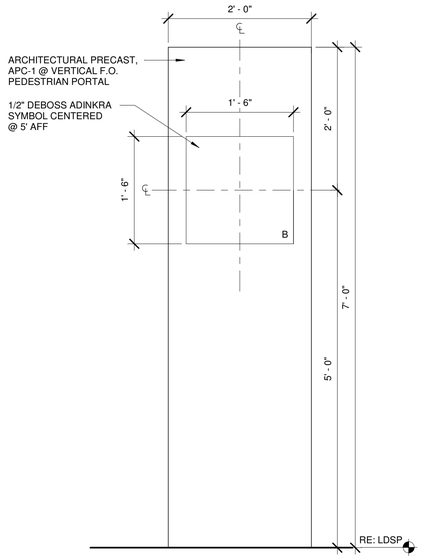
1. REFERENCE PLANS AND SPECIFICATIONS IN SHEET A200 SERIES
2. REFERENCE ELEVATIONS AND AXONOMETRICS IN SHEET A500 SERIES
3. REFERENCE ADINKRA SYMBOL LEGEND IN SHEET A400 SERIES
4. PROVIDE MOCK-UP AS INDICATED IN 6/A401



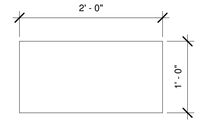
9 PEDESTRIAN PORTAL - SECTION B
1" = 1'-0"



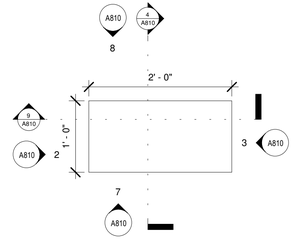
8 PEDESTRIAN PORTAL - BACK
1" = 1'-0"



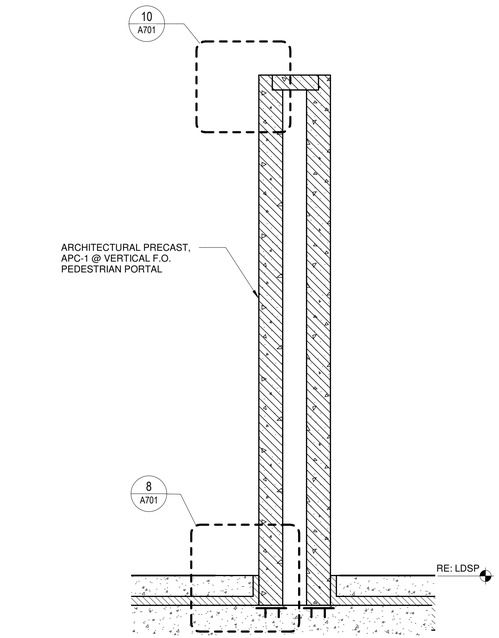
7 PEDESTRIAN PORTAL - FRONT
1" = 1'-0"



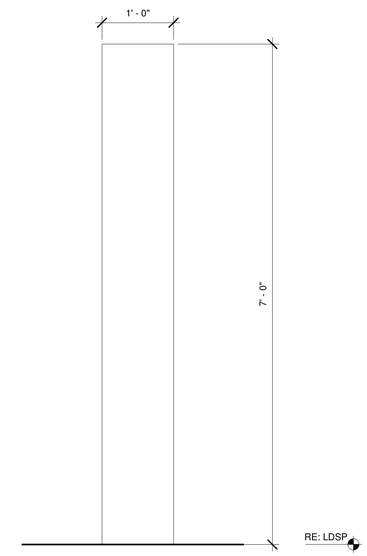
6 PEDESTRIAN PORTAL ROOF
1" = 1'-0"



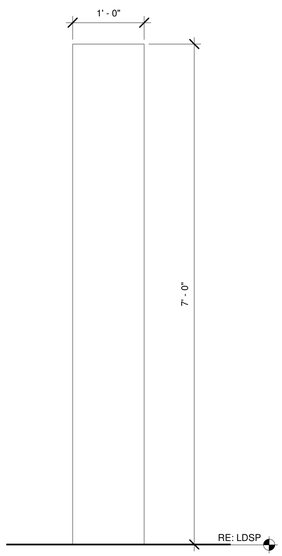
5 PEDESTRIAN PORTAL BASE
1" = 1'-0"



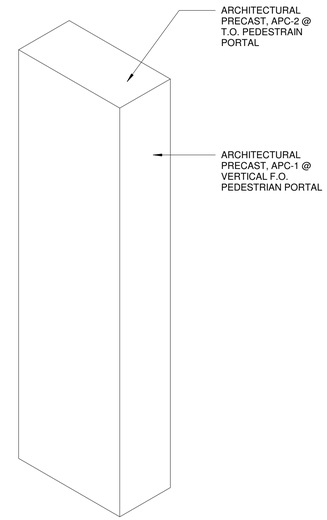
4 PEDESTRIAN PORTAL - SECTION A
1" = 1'-0"



3 PEDESTRIAN PORTAL - SIDE
1" = 1'-0"



2 PEDESTRIAN PORTAL - SIDE OPP.
1" = 1'-0"



1 PEDESTRIAN PORTAL

6/6/2023 12:49:29 PM

THE STATE OF TEXAS · FORT BEND COUNTY

Project:

AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
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Prepared For:

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04-12-2024

No.	Issue Description	MM-DD-YYYY
	ISSUE FOR CONSTRUCTION	05-26-2023
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: AP Reviewed by: GL

Project No: 218226

Sheet Title:

PEDESTRIAN PORTAL

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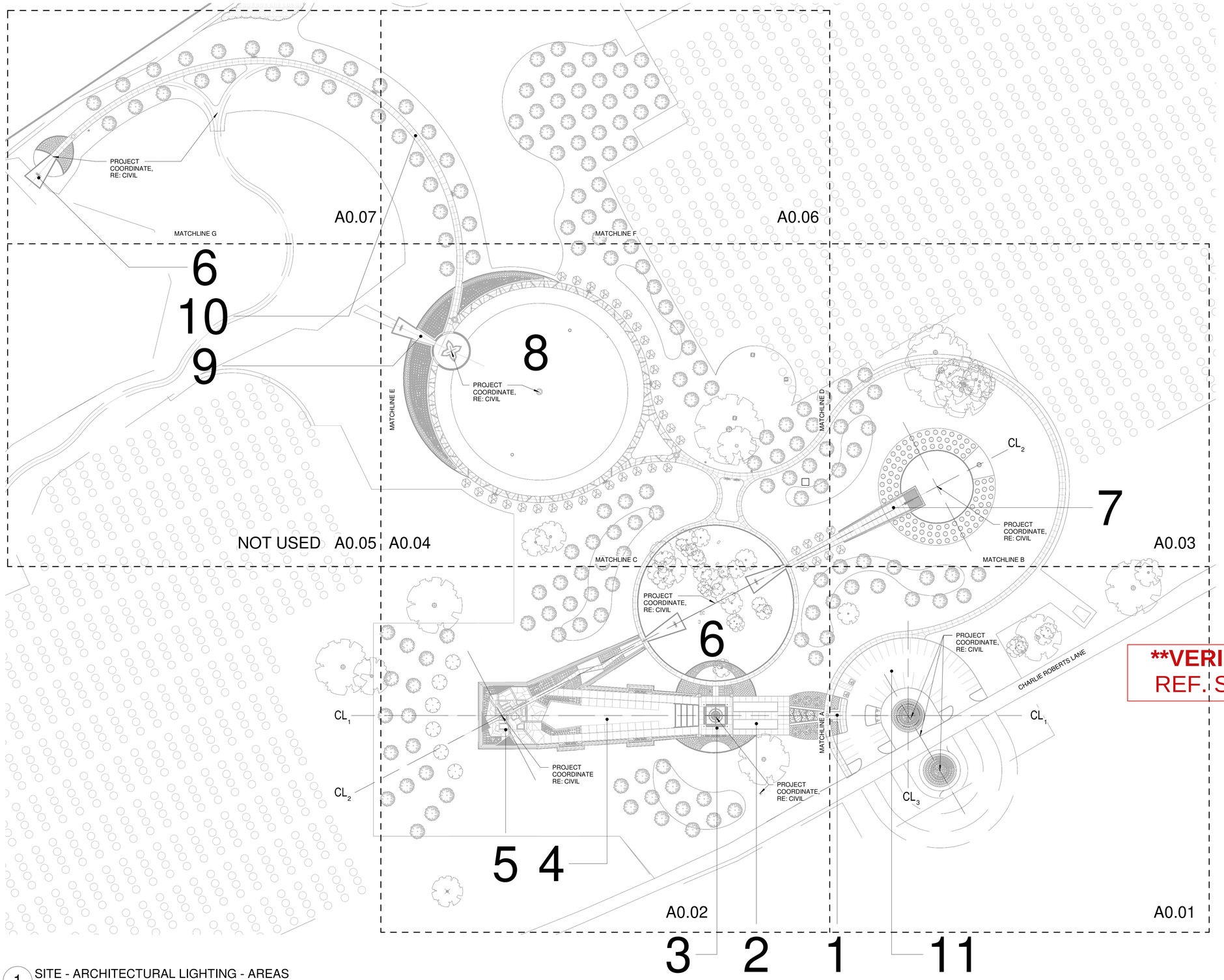
Sheet Number

A810



1 SITE - ARCHITECTURAL LIGHTING - AREAS
1" = 60'-0"

1/12/2024 1:42:16 PM

LEGEND - SITE PLAN

1. ADINKRA ARRIVAL GARDEN
2. LEARNING CENTER (FUTURE)
3. DEDICATION PLAZA
4. JUNETEENTH LAWN
5. MEMORIAL MONUMENT
6. HISTORIC CEMETERY
7. CONVICT LABOR & LEASING MEMORIAL
8. FREEDOM POND
9. LYNCHING MONUMENT & OVERLOOK
10. OAK HILL LIVE OAK TRAIL
11. PARKING

SCHEDULE - SITE LIGHTING

REF. LUMINAIRE SCHEDULE SHEET E2.01

B1	LOW SCALE PATHWAY BOLLARD
B2	PATHWAY LANTERN
B3	PLANTING BED GLOWING BOLLARD
B4	STANDARD SIZE BOLLARD
B5	LOW SCALE PATHWAY BOLLARD
L1	LINEAR LED SIDE MOUNTED FOR GABION WALL
L2	LINEAR LED MOUNTED IN PEDESTAL
L3	LINEAR LED MOUNTED IN PEDESTRIAN PORTAL
L4	LINEAR IN-GRADE UPLIGHT
L5	LINEAR LED INTEGRATED IN SITE FURNITURE OR WALLS
L6	LINEAR LED INTEGRATED IN SIGNAGE
L7	LINEAR INGRADE LED WALL WASHER
P1	PARKING LOT POLE
P2	TEMPORARY POLE FOR JUNETEENTH PLAZA
U1	STAKE MOUNTED TREE UPLIGHT
U2	STAKE MOUNTED TREE UPLIGHT
U3	ADJUSTABLE LED INGRADE
U4	STAKE MOUNTED TREE UPLIGHT W/ ADJ. SPIKE MOUNT
U5	STAKE MOUNTED UPLIGHT
U6	POINT SOURCE FLOODLIGHTS WITHIN BAMBOO GARDEN
W1	WALL RECESSED STEP LIGHT

GENERAL NOTES - SITE LIGHTING

1. CONTRACTOR TO COORDINATE ALL DETAILS W/ LANDSCAPE DRAWINGS ISSUED ON 2023-05-26, CONSTRUCTION DOCUMENTS.

2. CONTRACTOR TO SUBMIT REQUIRED SAMPLES TO ARCHITECT FOR WRITTEN APPROVAL AS OUTLINED IN CONTRACT DOCUMENTS.

3. REFERENCE SPECIFICATIONS FOR LIGHTING TYPES.

4. REFERENCE A0.00 - SITE PLAN OVERALL LIGHTING FOR LIGHTING LAYOUTS & AREA MATCHLINES.

5. FIXTURES TO BE CENTERED & ALIGN WITH HARDSCAPING, JOINTS, CENTERLINE, UON.

6. PROVIDE MATTE MATERIAL SELECTIONS FOR ALL LIT SIGNAGE SURFACES.

7. LOCATE POWER SUPPLY TO COMPLY W/ IP68 RATED ENCLOSURES.

8. ELECTRICAL PANEL LOCATIONS TO BE LOCATED 24" ABOVE FLOOD PLAIN ELEVATION.

9. LIGHTING PACKAGE IS TO BE COORDINATED WITH THE CONCRETE PACKAGE FOR RECESSED ELECTRICAL FIXTURES.

****VERIFY SCOPE****
REF. SHEET G001

THE STATE OF TEXAS · FORT BEND COUNTY ·

Project:
AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK
630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:
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1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

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04-12-2024

No.	Issue Description	MM-DD-YYYY
	ADDENDUM 1 - SITE LIGHTING PKG	01-10-2024
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: AP Reviewed by: NS

Project No: 218226

Sheet Title:
SITE PLAN - OVERALL LIGHTING

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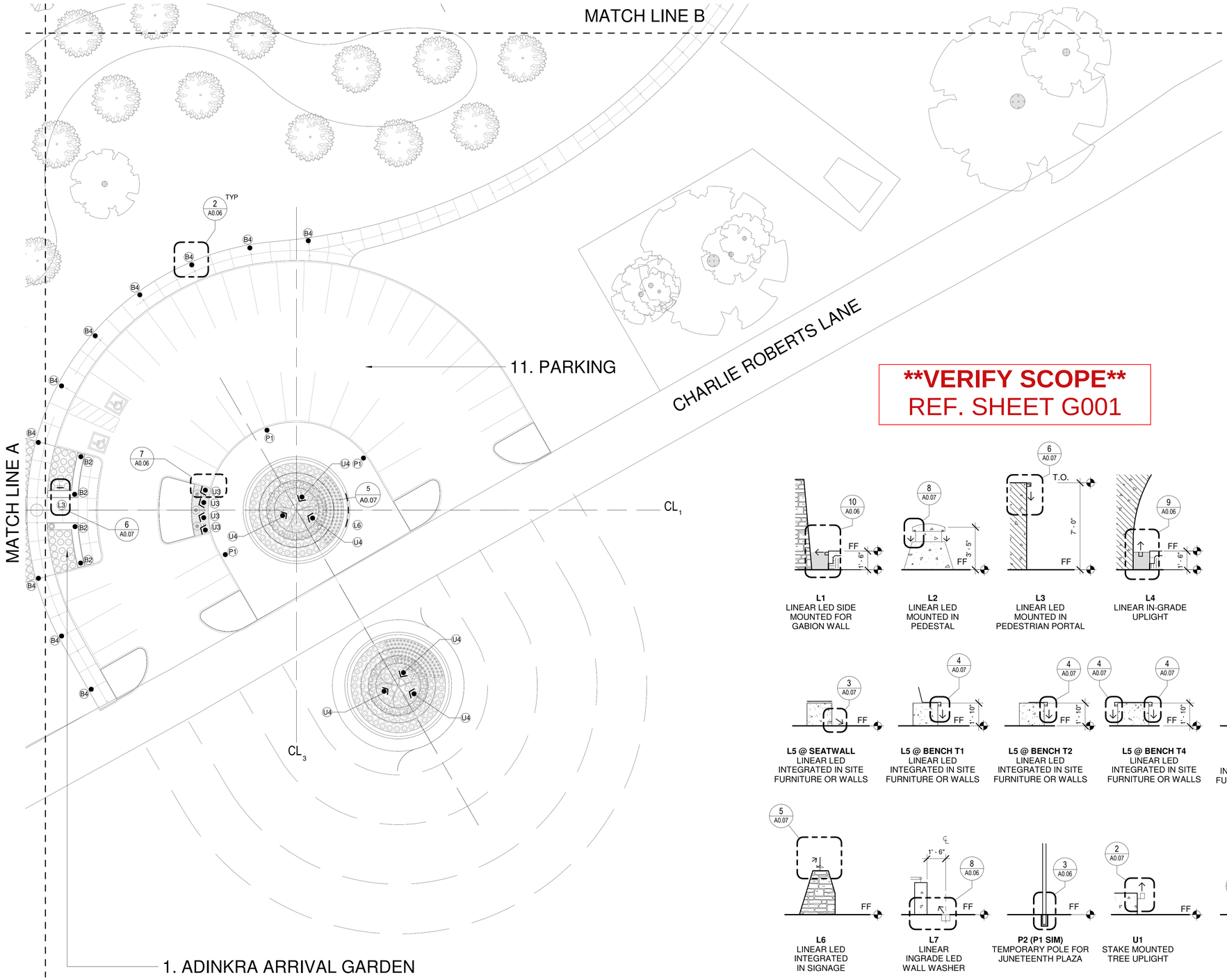
Sheet Number
AL0.00



****VERIFY SCOPE****
REF. SHEET G001

LEGEND - SITE PLAN

1. ADINKRA ARRIVAL GARDEN
2. LEARNING CENTER (FUTURE)
3. DEDICATION PLAZA
4. JUNETEENTH LAWN
5. MEMORIAL MONUMENT
6. HISTORIC CEMETERY
7. CONVICT LABOR & LEASING MEMORIAL
8. FREEDOM POND
9. LYNCHING MONUMENT & OVERLOOK
10. OAK HILL LIVE OAK TRAIL
11. PARKING

SCHEDULE - SITE LIGHTING

REF. LUMINAIRE SCHEDULE SHEET E2.01

B1	LOW SCALE PATHWAY BOLLARD
B2	PATHWAY LANTERN
B3	PLANTING BED GLOWING BOLLARD
B4	STANDARD SIZE BOLLARD
B5	LOW SCALE PATHWAY BOLLARD
L1	LINEAR LED SIDE MOUNTED FOR GABION WALL
L2	LINEAR LED MOUNTED IN PEDESTAL
L3	LINEAR LED MOUNTED IN PEDESTRIAN PORTAL
L4	LINEAR IN-GRADE UPLIGHT
L5	LINEAR LED INTEGRATED IN SITE FURNITURE OR WALLS
L6	LINEAR LED INTEGRATED IN SIGNAGE
L7	LINEAR INGRADE LED WALL WASHER
P1	PARKING LOT POLE
P2	TEMPORARY POLE FOR JUNETEENTH PLAZA
U1	STAKE MOUNTED TREE UPLIGHT
U2	STAKE MOUNTED TREE UPLIGHT
U3	ADJUSTABLE LED INGRADE
U4	STAKE MOUNTED TREE UPLIGHT W/ ADJ. SPIKE MOUNT
U5	STAKE MOUNTED UPLIGHT
U6	POINT SOURCE FLOODLIGHTS WITHIN BAMBOO GARDEN
W1	WALL RECESSED STEP LIGHT

GENERAL NOTES - SITE LIGHTING

1. CONTRACTOR TO COORDINATE ALL DETAILS W/ LANDSCAPE DRAWINGS ISSUED ON 2023-05-26, CONSTRUCTION DOCUMENTS.
2. CONTRACTOR TO SUBMIT REQUIRED SAMPLES TO ARCHITECT FOR WRITTEN APPROVAL AS OUTLINED IN CONTRACT DOCUMENTS.
3. REFERENCE SPECIFICATIONS FOR LIGHTING TYPES.
4. REFERENCE A0.00 - SITE PLAN OVERALL LIGHTING FOR LIGHTING LAYOUTS & AREA MATCHLINES.
5. FIXTURES TO BE CENTERED & ALIGN WITH HARDSCAPING, JOINTS, CENTERLINE, UON.
6. PROVIDE MATTE MATERIAL SELECTIONS FOR ALL LIT SIGNAGE SURFACES.
7. LOCATE POWER SUPPLY TO COMPLY W/ IP66 RATED ENCLOSURES.
8. ELECTRICAL PANEL LOCATIONS TO BE LOCATED 24" ABOVE FLOOD PLAIN ELEVATION.
9. LIGHTING PACKAGE IS TO BE COORDINATED WITH THE CONCRETE PACKAGE FOR RECESSED ELECTRICAL FIXTURES.

1 SITE - ARCHITECTURAL LIGHTING
1" = 20'-0"

2 FIXTURE DIAGRAM
1/4" = 1'-0"

1/12/2024 1:42:26 PM

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Project:
AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK
630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:
FORT BEND COUNTY
1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

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Contract No: 218226

Design Team:

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No.	Issue Description	MM-DD-YYYY
	ADDENDUM 1 - SITE LIGHTING PKG	01-10-2024
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: AP Reviewed by: NS

Project No: 218226

Sheet Title:
SITE PLAN - LIGHTING

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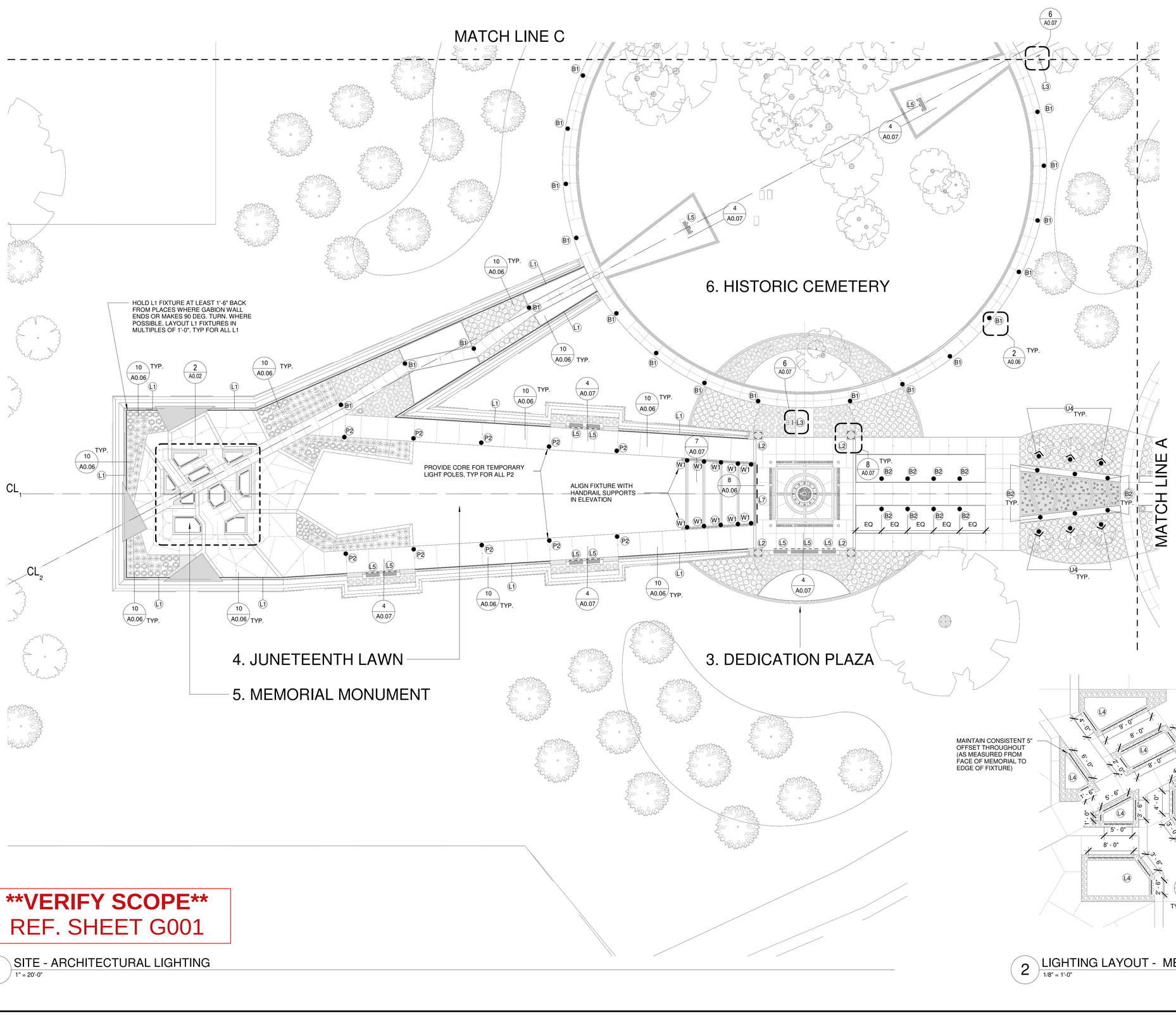
Sheet Number
AL0.01



****VERIFY SCOPE****
REF. SHEET G001

1 SITE - ARCHITECTURAL LIGHTING
1" = 20'-0"

2 LIGHTING LAYOUT - MEMORIAL MONUMENT
1/8" = 1'-0"

LEGEND - SITE PLAN

1. ADINKRA ARRIVAL GARDEN
2. LEARNING CENTER (FUTURE)
3. DEDICATION PLAZA
4. JUNETEENTH LAWN
5. MEMORIAL MONUMENT
6. HISTORIC CEMETERY
7. CONVICT LABOR & LEASING MEMORIAL
8. FREEDOM POND
9. LYNCHING MONUMENT & OVERLOOK
10. OAK HILL LIVE OAK TRAIL
11. PARKING

SCHEDULE - SITE LIGHTING

REF. LUMINAIRE SCHEDULE SHEET E2.01

B1	LOW SCALE PATHWAY BOLLARD
B2	PATHWAY LANTERN
B3	PLANTING BED GLOWING BOLLARD
B4	STANDARD SIZE BOLLARD
B5	LOW SCALE PATHWAY BOLLARD
L1	LINEAR LED SIDE MOUNTED FOR GABION WALL
L2	LINEAR LED MOUNTED IN PEDESTAL
L3	LINEAR LED MOUNTED IN PEDESTRIAN PORTAL
L4	LINEAR IN-GRADE UPLIGHT
L5	LINEAR LED INTEGRATED IN SITE FURNITURE OR WALLS
L6	LINEAR LED INTEGRATED IN SIGNAGE
L7	LINEAR INGRADE LED WALL WASHER
P1	PARKING LOT POLE
P2	TEMPORARY POLE FOR JUNETEENTH PLAZA
U1	STAKE MOUNTED TREE UPLIGHT
U2	STAKE MOUNTED TREE UPLIGHT
U3	ADJUSTABLE LED INGRADE
U4	STAKE MOUNTED TREE UPLIGHT W/ ADJ. SPIKE MOUNT
U5	STAKE MOUNTED UPLIGHT
U6	POINT SOURCE FLOODLIGHTS WITHIN BAMBOO GARDEN
W1	WALL RECESSED STEP LIGHT

GENERAL NOTES - SITE LIGHTING

1. CONTRACTOR TO COORDINATE ALL DETAILS W/ LANDSCAPE DRAWINGS ISSUED ON 2023-05-26, CONSTRUCTION DOCUMENTS.
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4. REFERENCE A0.00 - SITE PLAN OVERALL LIGHTING FOR LIGHTING LAYOUTS & AREA MATCHLINES.
5. FIXTURES TO BE CENTERED & ALIGN WITH HARDSCAPING, JOINTS, CENTERLINE, UON.
6. PROVIDE MATTE MATERIAL SELECTIONS FOR ALL LIT SIGNAGE SURFACES.
7. LOCATE POWER SUPPLY TO COMPLY W/ IP68 RATED ENCLOSURES.
8. ELECTRICAL PANEL LOCATIONS TO BE LOCATED 24" ABOVE FLOOD PLAIN ELEVATION.
9. LIGHTING PACKAGE IS TO BE COORDINATED WITH THE CONCRETE PACKAGE FOR RECESSED ELECTRICAL FIXTURES.

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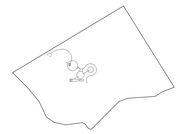

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04-12-2024

No.	Issue Description	MM-DD-YYYY
	ADDENDUM 1 - SITE LIGHTING PKG	01-10-2024
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: AP Reviewed by: NS

Project No: 218226

Sheet Title:
SITE PLAN - LIGHTING

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Sheet Number
AL0.02

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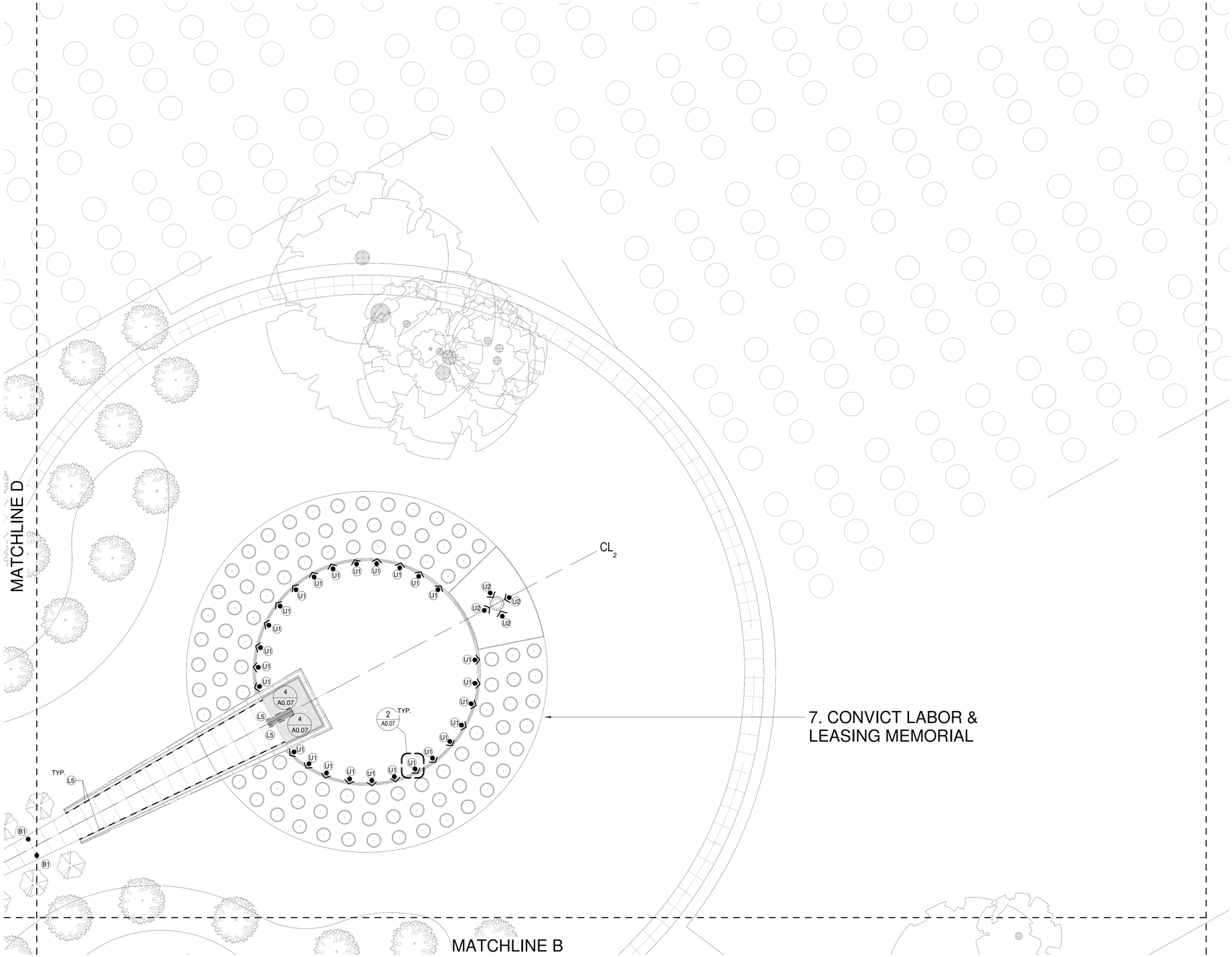

1 SITE - ARCHITECTURAL LIGHTING - 03
1" = 20'-0"

LEGEND - SITE PLAN

1. ADINKRA ARRIVAL GARDEN
2. LEARNING CENTER (FUTURE)
3. DEDICATION PLAZA
4. JUNETEENTH LAWN
5. MEMORIAL MONUMENT
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8. FREEDOM POND
9. LYNCHING MONUMENT & OVERLOOK
10. OAK HILL LIVE OAK TRAIL
11. PARKING

SCHEDULE - SITE LIGHTING

REF. LUMINAIRE SCHEDULE SHEET E2.01

B1	LOW SCALE PATHWAY BOLLARD
B2	PATHWAY LANTERN
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L6	LINEAR LED INTEGRATED IN SIGNAGE
L7	LINEAR INGRADE LED WALL WASHER
P1	PARKING LOT POLE
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U2	STAKE MOUNTED TREE UPLIGHT
U3	ADJUSTABLE LED INGRADE
U4	STAKE MOUNTED TREE UPLIGHT W/ ADJ. SPIKE MOUNT
U5	STAKE MOUNTED UPLIGHT
U6	POINT SOURCE FLOODLIGHTS WITHIN BAMBOO GARDEN
W1	WALL RECESSED STEP LIGHT

GENERAL NOTES - SITE LIGHTING

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04-12-2024

No.	Issue Description	MM-DD-YYYY
	ADDENDUM 1 - SITE LIGHTING PKG	01-10-2024
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: AP Reviewed by: NS

Project No: 218226

Sheet Title:

SITE PLAN - LIGHTING

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Sheet Number

AL0.03

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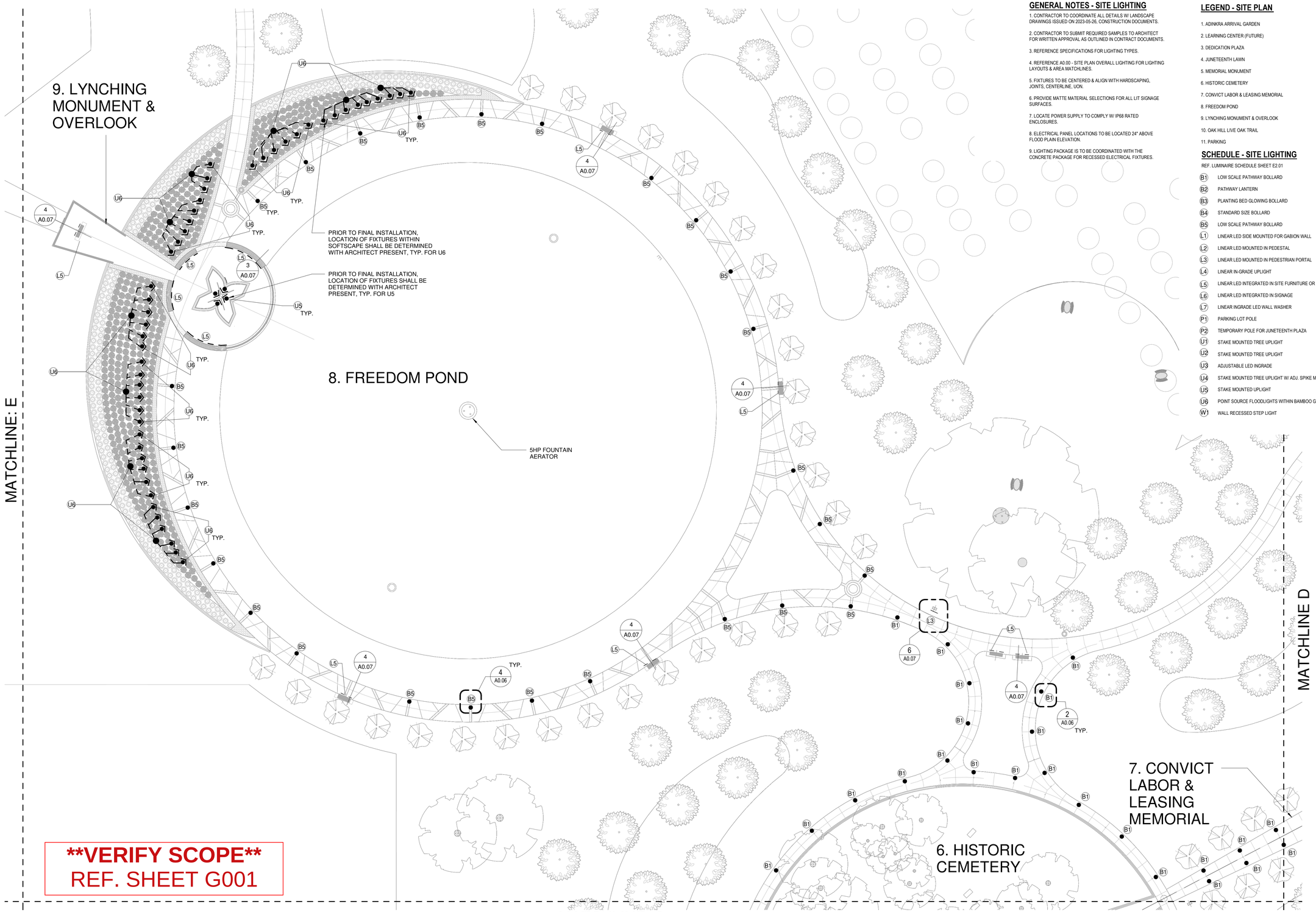

GENERAL NOTES - SITE LIGHTING

1. CONTRACTOR TO COORDINATE ALL DETAILS W/ LANDSCAPE DRAWINGS ISSUED ON 2023-05-26, CONSTRUCTION DOCUMENTS.

2. CONTRACTOR TO SUBMIT REQUIRED SAMPLES TO ARCHITECT FOR WRITTEN APPROVAL AS OUTLINED IN CONTRACT DOCUMENTS.

3. REFERENCE SPECIFICATIONS FOR LIGHTING TYPES.

4. REFERENCE A0.00 - SITE PLAN OVERALL LIGHTING FOR LIGHTING LAYOUTS & AREA MATCHLINES.

5. FIXTURES TO BE CENTERED & ALIGN WITH HARDSCAPING, JOINTS, CENTERLINE, UON.

6. PROVIDE MATTE MATERIAL SELECTIONS FOR ALL LIT SIGNAGE SURFACES.

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8. ELECTRICAL PANEL LOCATIONS TO BE LOCATED 24" ABOVE FLOOD PLAIN ELEVATION.

9. LIGHTING PACKAGE IS TO BE COORDINATED WITH THE CONCRETE PACKAGE FOR RECESSED ELECTRICAL FIXTURES.

LEGEND - SITE PLAN

1. ADINKRA ARRIVAL GARDEN
2. LEARNING CENTER (FUTURE)
3. DEDICATION PLAZA
4. JUNETEENTH LAWN
5. MEMORIAL MONUMENT
6. HISTORIC CEMETERY
7. CONVICT LABOR & LEASING MEMORIAL
8. FREEDOM POND
9. LYNCHING MONUMENT & OVERLOOK
10. OAK HILL LIVE OAK TRAIL
11. PARKING

SCHEDULE - SITE LIGHTING

REF. LUMINAIRE SCHEDULE SHEET E2.01

B1	LOW SCALE PATHWAY BOLLARD
B2	PATHWAY LANTERN
B3	PLANTING BED GLOWING BOLLARD
B4	STANDARD SIZE BOLLARD
B5	LOW SCALE PATHWAY BOLLARD
L1	LINEAR LED SIDE MOUNTED FOR GABION WALL
L2	LINEAR LED MOUNTED IN PEDESTAL
L3	LINEAR LED MOUNTED IN PEDESTRIAN PORTAL
L4	LINEAR IN-GRADE UPLIGHT
L5	LINEAR LED INTEGRATED IN SITE FURNITURE OR WALLS
L6	LINEAR LED INTEGRATED IN SIGNAGE
L7	LINEAR INGRADE LED WALL WASHER
P1	PARKING LOT POLE
P2	TEMPORARY POLE FOR JUNETEENTH PLAZA
U1	STAKE MOUNTED TREE UPLIGHT
U2	STAKE MOUNTED TREE UPLIGHT
U3	ADJUSTABLE LED INGRADE
U4	STAKE MOUNTED TREE UPLIGHT W/ ADJ. SPIKE MOUNT
U5	STAKE MOUNTED UPLIGHT
U6	POINT SOURCE FLOODLIGHTS WITHIN BAMBOO GARDEN
W1	WALL RECESSED STEP LIGHT

****VERIFY SCOPE****
REF. SHEET G001

1 SITE - ARCHITECTURAL LIGHTING - 04
1" = 20'-0"

1/12/2024 1:43:55 PM

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Project:
AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK
630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:
FORT BEND COUNTY
1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

HINESAD

Contract No: 218226

Design Team:

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Key Plan



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04-12-2024

No.	Issue Description	MM-DD-YYYY
	ADDENDUM 1 - SITE LIGHTING PKG	01-10-2024
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: AP Reviewed by: NS

Project No: 218226

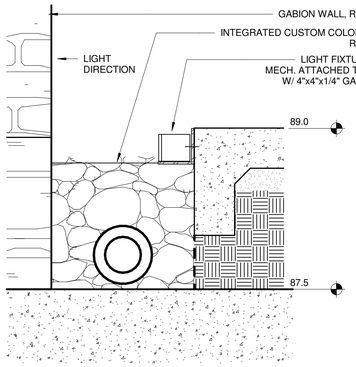
Sheet Title:

SITE PLAN - LIGHTING

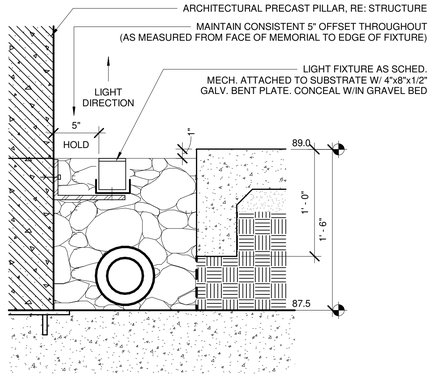
Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

AL0.04



10 FIXTURE DETAIL - L1 GABION WALL
1 1/2" = 1'-0"



9 FIXTURE DETAIL - L4 MONUMENT PILLAR
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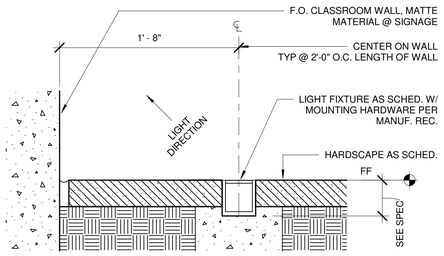
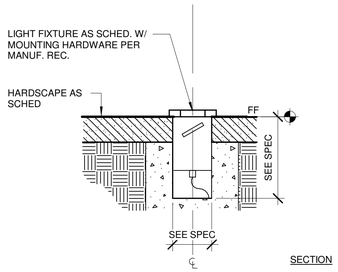


8 FIXTURE DETAIL - L7 CLASSROOM WALL
1 1/2" = 1'-0"



7 FIXTURE DETAIL - U3 @ FLAGS
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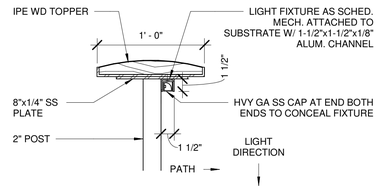
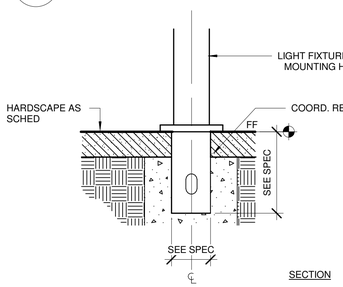
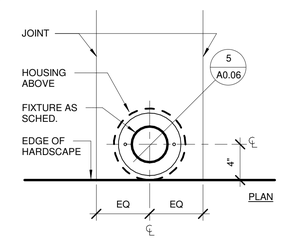


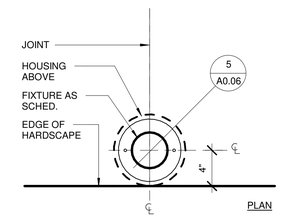
6 FIXTURE DETAIL - L5 RAILING
1 1/2" = 1'-0"



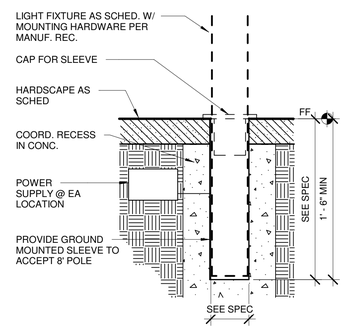
5 FIXTURE DETAIL - BOLLARD
1 1/2" = 1'-0"

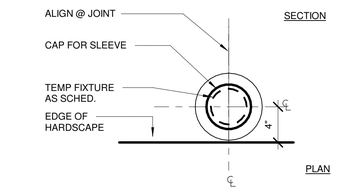


4 FIXTURE DETAIL - BOLLARD
1 1/2" = 1'-0"

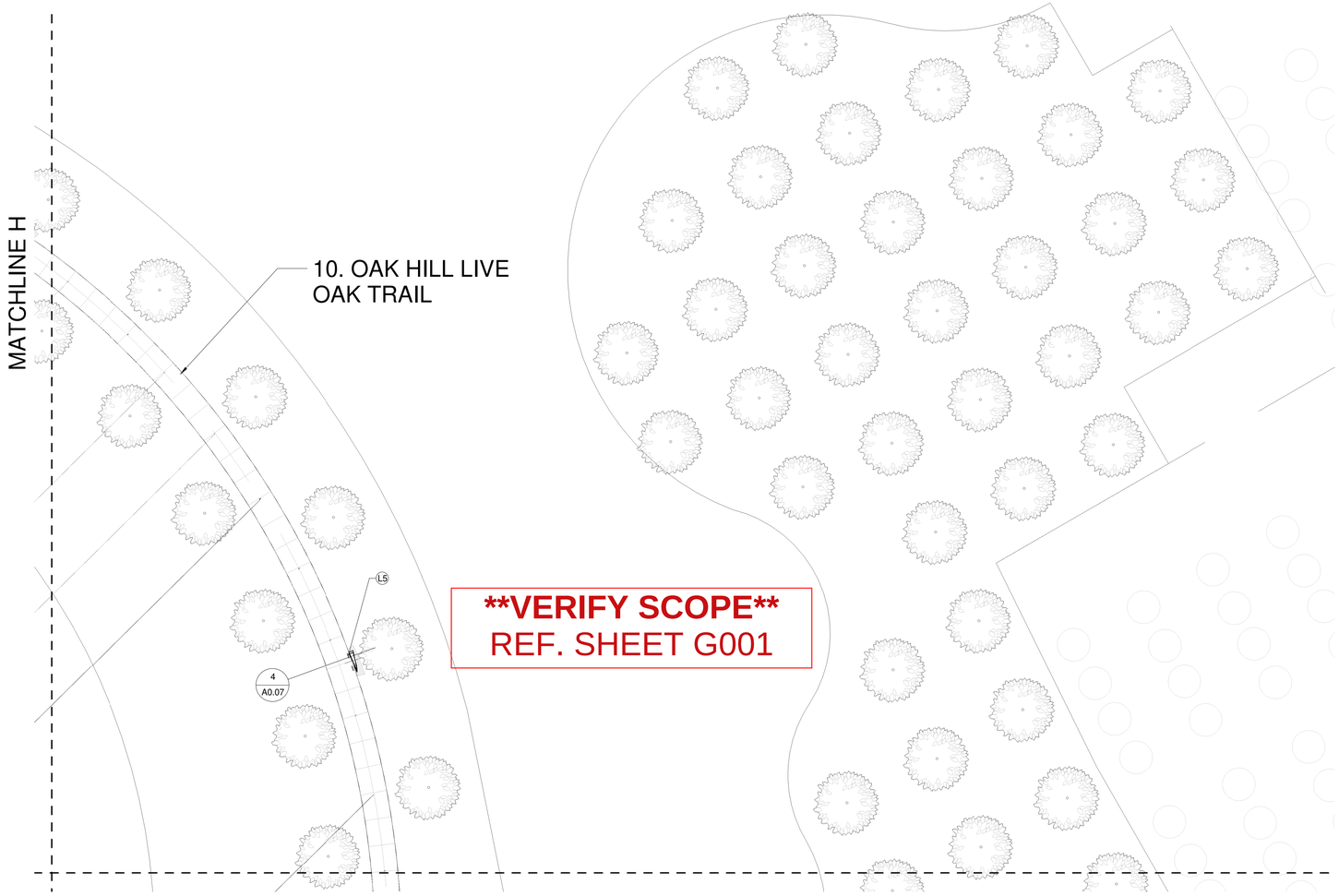


2 FIXTURE DETAIL - BOLLARD
1 1/2" = 1'-0"





3 FIXTURE DETAIL - P2 POLE
1 1/2" = 1'-0"



1 SITE - ARCHITECTURAL LIGHTING - 06
1" = 20'-0"

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Key Plan



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04-12-2024

No.	Issue Description	MM-DD-YYYY
	ADDENDUM 1 - SITE LIGHTING PKG	01-10-2024
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: AP Reviewed by: NS

Project No: 218226

Sheet Title:
SITE PLAN - LIGHTING

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Sheet Number
AL0.06

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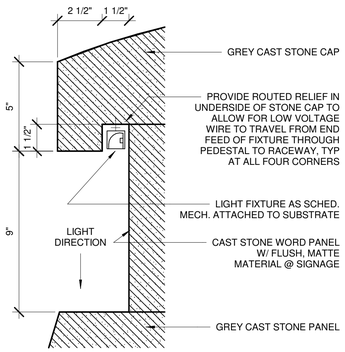
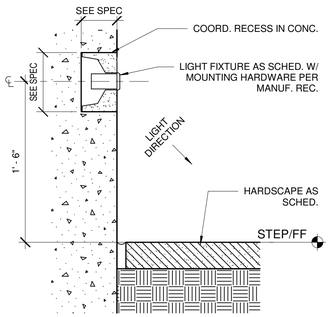
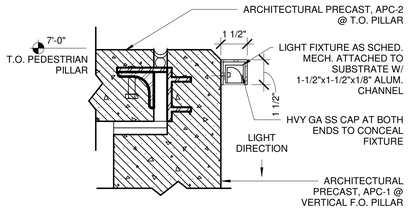


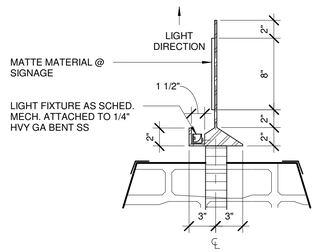
8 FIXTURE DETAIL - L2 PEDESTAL
3" = 1'-0"



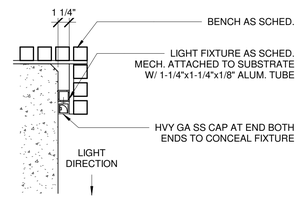
7 FIXTURE DETAIL - W1 STEP/ WALL
1 1/2" = 1'-0"



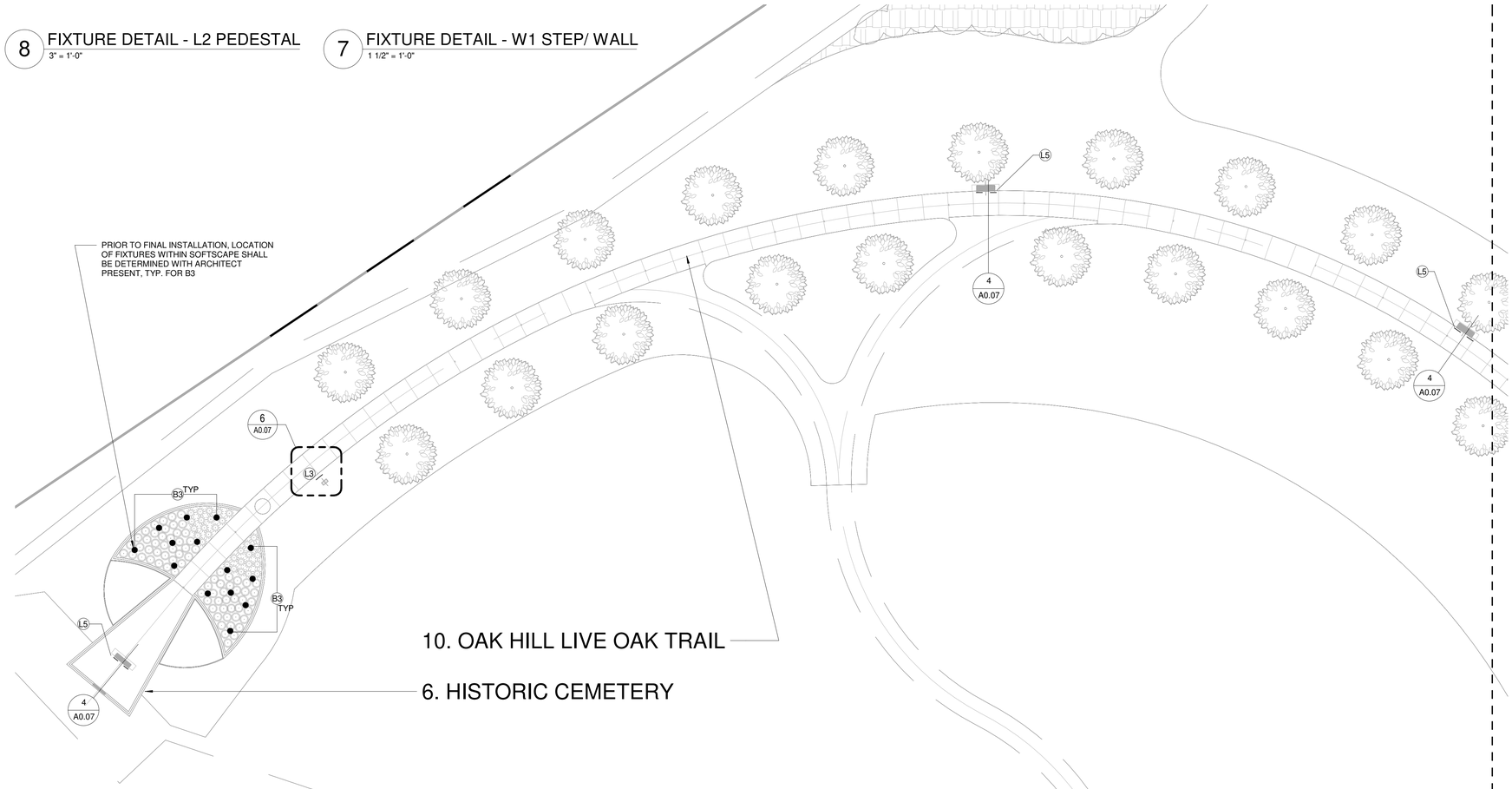
6 FIXTURE DETAIL - L3 PED. PORTAL
3" = 1'-0"



5 FIXTURE DETAIL - L6 SIGNAGE
1 1/2" = 1'-0"



4 FIXTURE DETAIL - L5 BENCH
1 1/2" = 1'-0"



VERIFY SCOPE
REF. SHEET G001

1 SITE - ARCHITECTURAL LIGHTING - 07
1" = 20'-0"

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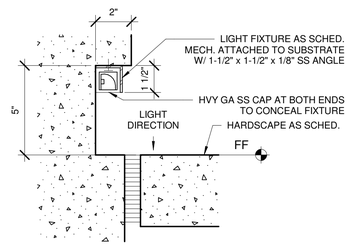
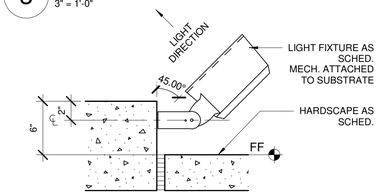


3 FIXTURE DETAIL - L5 SEATWALL
3" = 1'-0"



2 FIXTURE DETAIL - U1 CURB @ CLL
1 1/2" = 1'-0"

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Key Plan



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No.	Issue Description	MM-DD-YYYY
	ADDENDUM 1 - SITE LIGHTING PKG	01-10-2024
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: AP Reviewed by: NS

Project No: 218226

Sheet Title:
SITE PLAN - LIGHTING

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number
AL0.07

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ELECTRICAL SYMBOLS AND ABBREVIATIONS

NOTE: NOT ALL SYMBOLS AND ABBREVIATIONS INDICATED HERE ARE NECESSARILY USED IN THE DRAWINGS AND MAY NOT APPLY TO THIS PROJECT. ADDITIONAL SYMBOLS MAY BE INDICATED WITHIN THE DRAWINGS.

ELECTRICAL ABBREVIATIONS

A	AMPERE
AC	ABOVE COUNTER
AF	AMP FRAME
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPS INTERRUPTING CAPACITY
AL	ALUMINUM
AS	AMP SWITCH
AT	AMP TRIP
ARCH	ARCHITECT
ATS	AUTOMATIC TRANSFER SWITCH
A/V	AUDIO VISUAL
B	PEDESTAL MOUNTED ON BENCH TOP
BF	BELOW FLOOR
BFG	BELOW FINISHED GRADE
BLDG	BUILDING
C	CONDUIT
CAT	CATALOG
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLG	CEILING MOUNTED
CR	CORROSION RESISTANT
CPT	CONTROL POWER TRANSFORMER
CT	CURRENT TRANSFORMER
CU	COPPER
CL	CENTERLINE
D	DEDICATED DEVICE
DC	DIRECT CURRENT
DISC	DISCONNECT
DWG	DRAWING
EC	ELECTRICAL CONTRACTOR
EM	EMERGENCY
EMT	ELECTRIC METALLIC TUBING
EWC	ELECTRIC WATER COOLER
EX	EXISTING
FLA	FULL LOAD AMPS
GC	GENERAL CONTRACTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFPE	GROUND FAULT PROTECTION EQUIPMENT
GND	GROUND
GRC	GALVANIZED RIGID CONDUIT
HH	HANDHOLE
HOA	HAND/OFF/AUTOMATIC
HP	HORSEPOWER
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
Hz	HERTZ (cycle) PER SECOND
IG	ISOLATED GROUND
JB	JUNCTION BOX
KVA	KILOVOLT AMPERE
KVAR	KILOVOLT AMPERE REACTIVE
KW	KILOWATT LS LIMIT SWITCH
LTG	LIGHTING
LV	LOW VOLTAGE
MCA	MINIMUM CIRCUIT AMPS
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCCB	MOLDED CASE CIRCUIT BREAKER
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MTG	MOUNTING
MTS	MANUAL TRANSFER SWITCH
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	OVER CURRENT
OL	OVERLOAD
P	POLE
PB	PULL BOX
PH	PHASE
PNL	PANELBOARD
PR	PAIR
PRI	PRIMARY
PVC	POLYVINYL CHLORIDE CONDUIT
R	RELAY
REC	RECESSED
SC	SHORT CIRCUIT
SN	SOLID NEUTRAL
SP	SPARE
SPD	SURGE PROTECTIVE DEVICE
SS	STAINLESS STEEL
SSRV	SOLID STATE REDUCED VOLTAGE
ST	SHUNT TRIP
STP	SHIELDED TWISTED PAIR
SUSP	SUSPENDED
SW	SWITCH
SWBD	SWITCHBOARD
TC	TELEPHONE CABINET
TCI	TELECOMMUNICATIONS CABLING INSTALLER
TEL/DATA	TELEPHONE/DATA
TEL	TELEPHONE
TR	TAMPER RESISTANT
TTB	TELEPHONE TERMINAL BOARD
TYP	TYPICAL
UG	UNDERGROUND
UTP	UNSHIELDED TWISTED PAIR
UNO	UNLESS NOTED OTHERWISE
V	VOLT
VFD	VARIABLE FREQUENCY DRIVE
W	WATT
WG	WIRE GUARD
WP	WEATHERPROOF
XFMR	TRANSFORMER
XP	EXPLOSION PROOF
Y	WYE

LIGHTING AND CONTROLS

LIGHTING FIXTURES

- SURFACE MOUNTED
- SURFACE MOUNTED DOWNLIGHT
- SURFACE MOUNTED WALL WASHER
- RECESS MOUNTED
- RECESS MOUNTED DOWNLIGHT
- RECESS MOUNTED WALL WASHER
- VOLUMETRIC RECESS MOUNTED
- STRIP
- SCONCE
- EXTERIOR SCONCE
- LOW BAY
- HIGH BAY
- LINEAR WALL MOUNT
- BOLLARD
- POLE MOUNTED (UP TO FOUR HEADS)
- SUSPENDED, PENDENT, OR CABLE HUNG
- CEILING MOUNTED EXIT SIGN
- WALL MOUNTED EXIT SIGN
- CEILING MOUNTED EMERGENCY LIGHTING UNIT
- WALL MOUNTED EMERGENCY LIGHTING UNIT

SHADING INDICATES EMERGENCY LIGHT
XX = TYPE REFERENCE FIXTURE SCHEDULE
x = SWITCH LEG

LIGHTING CONTROLS

- $x WALL MOUNTED SWITCH
  SUBSCRIPTS:
  2 = DOUBLE POLE
  3 = 3-WAY
  4 = 4-WAY
  D = DIMMER
  K = KEY-OPERATED
  P = PILOT LIGHT
  T = THERMAL OVERLOAD
  V = VACANCY SENSOR
  LV = LOW VOLTAGE
  O = OCCUPANCY SENSOR
- DAYLIGHT/OCCUPANCY SENSOR
- EXTENDED RANGE SENSOR
- STANDARD RANGE SENSOR
- LINE VOLTAGE OCCUPANCY SENSOR
- OCCUPANCY SENSOR
- PE PHOTOCELL

TELECOMMUNICATIONS

- WALL MOUNTED DATA
- WALL MOUNTED TELEPHONE
- WALL MOUNTED TELEPHONE/DATA
- CEILING MOUNTED DATA
- CEILING MOUNTED TELEPHONE
- CEILING MOUNTED TELEPHONE/DATA
- TV RECESSED TV BOX

2015 COMMERCIAL ENERGY COMPLIANCE COMMISSIONING REQUIREMENTS:

CONTRACTOR SHALL HIRE A THIRD PARTY CERTIFIED COMMISSIONING AGENT TO PERFORM THE COMMISSIONING AND PROVIDE THE PRELIMINARY REPORT OF COMMISSIONING TO THE LOCAL CITY.

A. THE CERTIFICATIONS ACCEPTABLE INCLUDE:
- CBCP - CERTIFIED BUILDING COMMISSIONING PROFESSIONAL- ASSOCIATION OF ENERGY ENGINEERS
- CCP - CERTIFIED COMMISSIONING PROFESSIONAL - BUILDING COMMISSIONING ASSOCIATION
- CPMP - CERTIFIED PROCESS MANAGEMENT PROFESSIONAL - ASHRAE
- CXA - CERTIFIED COMMISSIONING AUTHORITY - AABC COMMISSIONING GROUP
- BSC - BUILDING SYSTEM COMMISSIONING CERTIFICATION - NATIONAL ENVIRONMENTAL BALANCING BUREAU

B. FUNCTIONAL TESTING FOR AUTOMATIC LIGHTING CONTROLS IS REQUIRED PER C408.3. THE CONSTRUCTION DOCUMENTS MUST SPECIFY THAT THE BUILDING OWNER WILL BE GIVEN, WITHIN 90 DAYS FROM THE DATE OF RECEIPT OF CERTIFICATE OF OCCUPANCY, WRITTEN CERTIFICATION THAT THE LIGHTING CONTROLS MEET DOCUMENTED PERFORMANCE CRITERIA.

C. OCCUPANCY SENSORS: FOR PROJECTS WHERE FEWER THAN EIGHT OCCUPANCY SENSORS ARE INSTALLED, EACH MUST BE TESTED. IF MORE THAN SEVEN ARE INSTALLED, AT LEAST 10% (AND AT LEAST ONE) WILL BE TESTED FOR EACH UNIQUE COMBINATION OF SENSOR TYPE AND SPACE GEOMETRY. IF 30% OR MORE FAIL THE ACCEPTANCE CRITERIA, ALL REMAINING IDENTICAL COMBINATIONS MUST BE TESTED.
VERIFY:-
- PROPER LOCATION AND AIMING.
- CORRECTION OPERATION WHERE THE SENSORS INCLUDE STATUS INDICATORS.
- THE LIGHTS TURN ON TO THE PERMITTED LEVEL WHEN THE SPACE BECOMES OCCUPIED (IF AUTO-ON)
- THE LIGHTS TURN ON ONLY WHEN MANUALLY ACTIVATED (IF MANUAL-ON).
- FALSE-ON TRIGGERING DOES NOT OCCUR BY MOVEMENT IN ADJACENT AREAS OR FROM HVAC OPERATION.

D. TIME-SWITCH CONTROLS VERIFY:
- THE TIME-SWITCH CONTROL IS PROGRAMMED WITH ACCURATE WEEKDAY, WEEKEND AND HOLIDAY SCHEDULES.
- THE TIME SWITCH INCLUDES THE CORRECT TIME AND DATE.
- ANY BATTERY BACKUP IS INSTALLED AND ENERGIZED.
- THE OVERRIDE IS SET TO NO LONGER THAN TWO HOURS.
- SIMULATING AN OCCUPIED CONDITION, THAT ALL LIGHTS CAN BE TURNED ON/OFF BY THEIR LOCAL THE MANUAL OVERRIDE ALLOWS ONLY LOCAL LIGHTING TO TURN ON AND REMAIN ON UNTIL THE NEXT TIME SWEEP OCCURS WITHIN TWO HOURS.

ADDITIONAL TESTING MAY BE REQUIRED BY THE AHJ. THE OWNER MUST BE GIVEN DOCUMENTATION INDICATING THE PROGRAMMING (INCLUDING WEEKDAY, WEEKEND AND HOLIDAY SCHEDULES) AND ALL OTHER SETTINGS.

POWER AND COMMUNICATIONS

RECEPTACLES

DUPLEX
- STANDARD
- AC ABOVE COUNTER
- EMERGENCY
- WP GFI
- WP WEATHERPROOF GFI
- AC GFI AC
- RECESSED
- TAMPER RESISTANT

SIMPLEX
- STANDARD
- AC ABOVE COUNTER
- EMERGENCY
- GFI
- WP GFI WEATHERPROOF
- AC GFI ABOVE COUNTER
- RECESSED
- TAMPER RESISTANT

QUADRUPLEX
- STANDARD
- AC ABOVE COUNTER
- EMERGENCY RECEPTACLE
- GFI
- WP WEATHERPROOF GFI
- AC GFI ABOVE COUNTER
- RECESSED
- TAMPER RESISTANT

MISCELLANIOUS
- SPECIAL
- ISOLATED GROUND
- HALF SWITCHED
- USB
- HOSPITAL GRADE
- TR HOSPITAL GRADE
- DUPLEX CEILING
- QUADRUPLEX CEILING
- DUPLEX FLOOR
- QUADRUPLEX FLOOR
- PEDESTAL RECEPTACLE
- C CLOCK RECEPTACLE

COMBINATION FLOOR BOX DUPLEX
- TELEPHONE/DATA
- DATA
- TELEPHONE

COMBINATION FLOOR BOX QUADRUPLEX
- TELEPHONE/DATA
- DATA
- TELEPHONE

OTHER
- J JUNCTION BOX
- J WALL MOUNTED JUNCTION BOX
- T THERMOSTAT
- POKE THROUGH
- DAMPER CONNECTION
- M MOTOR CONNECTION
- M S T MOTOR RATED SWITCH
- CONDUIT UP
- CONDUIT DOWN
- CONDUIT STUBOUT
- SEAL OFF
- POWER POLE

SENSORS AND SWITCHES
- FS FLOW
- HOA HAND OFF AUTO SELECTION
- LS FLOAT OR LEVEL
- ZS LIMIT OR POSITION
- PS PRESSURE
- SV SOLENOID VALVE
- TS TEMPERATURE

EQUIPMENT

- T TRANSFORMER
- PANEL
- M METER
- G GENERATOR
- CIRCUIT BREAKER
- ST SHUNT TRIP CIRCUIT BREAKER
- HH PRIMARY DISTRIBUTION
- HH SECONDARY DISTRIBUTION
- HH COMMUNICATIONS
- PB PULLBOX
- MGB MAIN GROUNDING BRIDGE
- GROUNDING BRIDGE
- F DISCONNECT SWITCH FUSED
- N DISCONNECT SWITCH NONFUSED
- MOTOR STARTER
- MOTOR STARTER INTEGRAL DISCONNECT
- MS MULTI-SPEED MOTOR STARTER
- SSRV SSRV MOTOR STARTER
- VF VARIABLE FREQUENCY DRIVE STARTER
- MOTOR CONTROL CENTER
- F STARTER FUSED DISCONNECT
- N STARTER NONFUSED DISCONNECT
- X MECHANICAL EQUIPMENT

GENERAL NOTES

1. THE ELECTRICAL CONTRACTOR SHALL REPLACE AND/OR REPAIR TO THE SATISFACTION OF THE ARCHITECT AND ENGINEER, ANY ITEMS THAT ARE DAMAGED OR REMOVED BY THE ELECTRICAL CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
2. THESE DRAWINGS ARE DIAGRAMMATIC. DO NOT SCALE OFF OF THE ELECTRICAL DRAWINGS. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT DIMENSIONS.
3. REFER TO THE ARCHITECTURAL PLANS, ELEVATIONS, AND DIAGRAMS FOR LOCATIONS OF FLOOR AND WALL ELECTRICAL DEVICES. ELECTRICAL DEVICES SHALL BE MOUNTED LONG AXIS VERTICAL AT THE FOLLOWING HEIGHTS AFF TO CENTER OF DEVICE: SWITCHES +48", RECEPTACLES +18", VOICE/DATA JACKS +18", UNLESS NOTED OTHERWISE WITHIN THE DRAWINGS.
4. ON NEW FLOOR PLANS: ALL ITEMS SHOWN IN LIGHT LINE WEIGHT ARE EXISTING TO REMAIN, UNLESS NOTED OTHERWISE. ALL ITEMS SHOWN IN HEAVY LINE WEIGHT ARE NEW OR RELOCATED AS NOTED.
5. ALL 120V BRANCH CIRCUITS SHALL BE 3-WIRE (PHASE, NEUTRAL, GROUND). PHASE, NEUTRAL, AND GROUND CONDUCTORS SHALL BE NO. 12 AWG UNLESS NOTED OTHERWISE. ALL BRANCH CIRCUITS AND FEEDERS SHALL HAVE EQUIPMENT GROUNDING CONDUCTORS INSTALLED IN THE RACEWAY. USE OF THE CONDUIT BODY AS A GROUNDING METHOD IS PROHIBITED.
6. ALL MOUNTING OF ELECTRICAL DEVICES (LUMINAIRES, TRANSFORMERS, PANELS, OUTLETS, CONDUIT RUNS, ETC.) SHALL COMPLY WITH STATE AND LOCAL SEISMIC REQUIREMENTS. ALL LUMINAIRES SHALL BE SUPPORTED INDEPENDENTLY OF THE CEILING SUPPORT HANGERS IN COMPLIANCE WITH IBC AND NEC REQUIREMENTS.
7. ADA COMPLIANCE: ELECTRICAL DEVICES PROJECTING FROM THE WALLS WITH THEIR LEADING EDGES BETWEEN 27" AND 80" AFF SHALL PROTRUDE NO MORE THAN 4" INTO WALKWAYS OR CORRIDORS.
8. BACK TO BACK MOUNTING OF RECEPTACLES OR COMMUNICATION OUTLETS IS NOT PERMITTED. THE MINIMUM SEPARATION BETWEEN DEVICES SHALL BE 6" O.C. IN COMMON WALLS AND 24" O.C. IN SOUND-RATED WALLS.
9. GFCI DEVICES SHALL BE PROVIDED AS NOTED AND SHALL COMPLY WITH NEC AND LOCAL REQUIREMENTS. NO FEED-THRU GFCI PROTECTION SHALL BE PERMITTED FOR DOWNSTREAM DEVICES. GFCI DUPLEX RECEPTACLES SHALL BE UL 943 2006 "LOCK-OUT" ACTION OR "NOTIFICATION" COMPLIANT.
10. ALL RECEPTACLES IN BREAK ROOMS SHALL BE GFCI PROTECTED. PROVIDE REMOTE BLANK FACE GFCI DEVICE IN AN ACCESSIBLE LOCATION AS REQUIRED FOR INACCESSIBLE RECEPTACLES. VERIFY REMOTE BLANK FACE GFCI DEVICE LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
11. ALL ELECTRICAL CABINETS, PANELS, DISCONNECTS, TRANSFORMERS, CONTROLS, RECEPTACLES, J-BOXES, ETC., SHALL BE MARKED, TAGGED AND IDENTIFIED. PROVIDE ADHESIVE FILM LABEL, MACHINE PRINTED, IN BLACK, BY THERMAL TRANSFER OR EQUIVALENT PROCESS, WITH MINIMUM LETTER HEIGHT OF 3/8". THE LABEL SHALL IDENTIFY THE ORIGINATING PANEL AND CIRCUIT NUMBER IN THE FOLLOWING FORMAT: PANEL-CKT. NOTE FEEDER SOURCE WHERE APPLICABLE. REFERENCE SPECIFICATIONS FOR ADDITIONAL LABELING REQUIREMENTS. WHERE THE PROJECT SPECIFICATIONS INDICATE MORE STRINGENT LABELING REQUIREMENTS, THOSE REQUIREMENTS SHALL TAKE PRECEDENCE.
12. THE CONTRACTOR SHALL PROVIDE TYPED, UPDATED PANEL DIRECTORIES FOR ALL PANELS AFFECTED BY THIS SCOPE OF WORK.
13. UPON COMPLETION OF THE PROJECT, ALL CHANGES SHALL BE DOCUMENTED, AND REDLINED. AS-BUILT DRAWINGS SHALL BE TURNED OVER TO THE OWNER BY THE CONTRACTOR.
14. TRANSFORMERS INDICATED TO BE SUSPENDED FROM THE STRUCTURE SHALL BE SUPPORTED BY A UNISTRUT FRAME THAT IS ATTACHED TO THE STRUCTURE.
15. 4" CONCRETE HOUSEKEEPING PADS SHALL BE FURNISHED FOR ALL FLOOR MOUNTED ELECTRICAL EQUIPMENT.
16. COORDINATE THE LOCATIONS AND CONTROLS OF ALL APPLICABLE FIRE/SMOKE DAMPERS WITH THE MECHANICAL CONTRACTOR, PRIOR TO CONSTRUCTION.
17. PROVIDE (1) 3/4"C WITH BUSHING AND PULL STRING FROM EACH TELEPHONE, DATA, COMMUNICATION, AND THERMOSTAT OUTLET TO ABOVE THE ACCESSIBLE CEILING, UNLESS NOTED OTHERWISE.
18. COORDINATE THE INSTALLATION OF COMMUNICATIONS CABLING, ROUTING, MOUNTING BOXES, AND TERMINATIONS WITH THE OWNER OR IT MANAGER, PRIOR TO CONSTRUCTION.
19. ALL LOW VOLTAGE AND SYSTEMS CABLING LOCATED ABOVE THE ACCESSIBLE CEILING SHALL BE PROPERLY RATED FOR THE APPLICATION. WITHOUT EXCEPTION, ALL CABLING SHALL BE HUNG FROM BRIDLE-TYPE RINGS OR PLACED IN CABLE TRAYS BY THE ELECTRICAL CONTRACTOR. IN EXPOSED CEILING AREAS, ALL CABLING SHALL BE RUN IN CONDUIT TO THE NEAREST ACCESSIBLE CEILING LOCATION.
20. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING A BID TO VERIFY EXISTING CONDITIONS. BY SUBMITTING A BID THE CONTRACTOR ACKNOWLEDGES THAT HE HAS VISITED THE SITE AND THE BID IS ADEQUATE TO PERFORM ALL OF THE WORK NECESSARY TO MAKE THE SYSTEMS COMPLETE AND OPERATIONAL. IF THE CONDITIONS AT THE SITE ARE NOT SUCH THAT THE WORK CAN BE INSTALLED AS SHOWN, CONTRACTOR'S BID SHALL INCLUDE COST TO COVER NECESSARY ADJUSTMENTS AND ADDITIONS, BASED UPON SITE CONDITIONS, TO MAKE THE SYSTEMS COMPLETE AND OPERATIONAL. CONTRACTOR SHALL CONTACT ARCHITECT/ENGINEER WITH ANY FIELD DISCREPANCIES.
21. ON DEMOLITION PLANS: ALL ITEMS SHOWN IN LIGHT LINE WEIGHT ARE EXISTING TO REMAIN, UNLESS NOTED OTHERWISE. ALL ITEMS SHOWN IN HEAVY LINE WEIGHT SHALL BE REMOVED, UNLESS NOTED OTHERWISE.
22. IN REMODEL AREAS WHERE OCCUPANCY SENSING DEVICES ARE SPECIFIED AND ARE REPLACING EXISTING MANUAL SNAP SWITCH CONTROL OF THE LIGHTING, PROVIDE A NEUTRAL CONDUCTOR FROM THE LIGHTING CIRCUIT BEING CONTROLLED TO THE OCCUPANCY SENSING DEVICE (OR SWITCH/POWER PACK, WHERE LOW VOLTAGE SENSORS ARE SPECIFIED). FOR BIDDING PURPOSES, ASSUME THAT THE EXISTING SNAP SWITCHES ARE WIRED WITHOUT A NEUTRAL CONDUCTOR, AND A NEW NEUTRAL CONDUCTOR WILL BE REQUIRED.
23. THE NEW WIRING REQUIRED IN REMODELED AREAS SHALL BE FISHED THROUGH EXISTING WALLS OR CONCEALED IN NEW WALLS OR ABOVE CEILINGS. SURFACE MOUNTED CONDUIT SHALL NOT BE USED IN ANY FINISHED AREAS. CONTRACTOR SHALL NOT ROUTE ANY CONDUIT WITHIN STRUCTURAL OR TOPPING SLABS OF FLOORS UNLESS NOTED TO DO SO.
24. ITEMS THAT ARE SHOWN TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY INCLUDING ALL ASSOCIATED CONDUIT, WIRE, AND HANGERS BACK TO THE POINT OF ORIGIN OR THE NEAREST EXISTING ITEM THAT IS REMAINING, UNLESS NOTED OTHERWISE. WHERE EXISTING DEVICES, SWITCHES, MOTOR CONNECTIONS, ETC. ARE TO BE REMOVED FROM WALLS WHICH ARE REMAINING, WALLS SHALL BE PATCHED TO MATCH ORIGINAL FINISH AFTER CONDUCTORS HAVE BEEN REMOVED. BLANK COVERPLATES OVER EXISTING BOXES ARE NOT ACCEPTABLE. IF EXISTING CONDUITS ARE ROUTED IN CONCRETE FLOOR SLABS, WALLS OR CEILINGS, THEY SHALL BE CUT BACK TO WITHIN CONCRETE AND FILLED WITH GROUT TO ACHIEVE A SMOOTH AND EVEN FINISH FLUSH WITH CONCRETE SURFACE AFTER CONDUCTORS HAVE BEEN REMOVED.
25. MAINTAIN CIRCUIT CONTINUITY FOR EXISTING ITEMS THAT ARE REMAINING OR BEING RELOCATED.

DVO PROJECT – 23-01697

THE STATE OF TEXAS · FORT BEND COUNTY ·

Project:

AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

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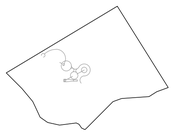
Key Plan



Professional Seals



04/12/2024

No.	Issue Description	MM-DD-YYYY
	ADDENDUM 1 - SITE LIGHTING PKG	01-10-2024
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: CL Reviewed by: JF

Project No: 218226

Sheet Title:

ELECTRICAL SYMBOLS & ABBREVIATIONS

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

GE0.00

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DIVISION 16 - ELECTRICAL SPECIFICATIONS

Section 16050 - Common Work Results for Electrical

1. Provide all labor, materials, equipment and incidentals for completion of all electrical systems described herein. All electrical equipment and material shall be installed in accordance with requirements, governing authorities, and in a neat and workman like manner by skilled and competent electricians in conformance with the standard practices of the electrical industry. All electrical systems shall be complete and operational to the benefit of the owner.
   A. Good workmanship and appearance are considered equal to proper operation.
   B. The contractor shall provide all foreseeable electrical equipment and accessories necessary, whether specifically stated or not, to make the required electrical systems complete and operational.
2. The electrical contractor shall comply with the requirements of the general conditions, supplemental general conditions of the project specifications, any base building specifications and building criteria, and all contract specifications and documents.
3. Definitions and standards:
   A. "Provide" means contractor is responsible for the furnishing and installation of.
   B. "Exposed" means where it can be seen after the building is completed such as in equipment rooms, unfinished areas, accessible tunnels, etc. where conduit/equipment is accessible.
   C. "Concealed" means where it cannot be seen after the building is completed such as in spaces as chases, trenches, above ceilings, in walls and buried where conduit/wire is inaccessible when building is completed.
   D. Standards for materials: all materials shall be new except as otherwise stated, and shall conform with the current applicable industry standards, NEMA standards and Underwriters Laboratories standards.
4. Coordinate and order the progress of electrical work to conform to the owner's schedule and the progress of the work of the other trades.
5. Apply for and pay for all permits, fees, licenses and inspections for this division of work.
6. Provide temporary lighting and power as required.
7. Visit the project site before submitting a bid as no extras will be allowed for lack of knowledge of obvious existing conditions.
8. Drawings are diagrammatic in nature. Take all dimensions from architectural drawings, certified equipment drawings and from the structure itself before fabricating any work.
9. Comply with the latest federal, state and local codes requirements, and ordinances, with the National Electrical Code of the National Fire Protection Association, and with requirements of the power and telephone companies furnishing services to the project. The following is a brief list of applicable codes:
   A. NFPA No. 70 - National Electrical Code, latest edition
   B. NFPA No. 72 - Fire Alarm, latest edition
   C. NFPA No. 101 - Life Safety Code, latest edition
   D. IBC & UBC, latest edition
   E. Local building codes, latest edition
10. All equipment and materials shall be new unless noted otherwise and acceptable for installation only if labeled or listed as defined in NFPA 70, Article 100, by UL or by a recognized testing laboratory where standards have been established and acceptable to the authority having jurisdiction. Labeled or Listed equipment shall be installed in accordance with any instructions or labeling provided with the equipment.
11. Provide all core drilling, channeling, cutting, patching, sleeves, etc. as required for installation of electrical equipment. Seal holes, providing fireproof sealant where necessary, and refinish all repair work to original condition where damaged by electrical work.
    A. Coordinate core drill locations with structural prior to starting work.
    B. Coordinate underground site utilities with appropriate utility company prior to starting work.
12. Make provisions for safe delivery and secure storage of all materials.
13. Warranties: Provide a written warranty to the owner covering the entire electrical work excluding incandescent and fluorescent lamps, to be free from defective materials, equipment and workmanship for a period of one year after date of acceptance. All equipment or materials that fail during the warranty period shall be replaced or repaired by the electrical contractor in a timely fashion at no cost to the owner.
14. Manufacturers: Subject to compliance with requirements, provide products by the manufacturer(s) specified on the drawings or provide products from manufacturers with similar construction and performance characteristics.
15. Product Alterations and Substitutions: Should the contractor wish to have products considered other than those specified, contractor must submit those items as required in Division 1. Contractor will be required to submit the total savings (anticipated savings) to the owner.
16. Shop Drawings: Submit shop drawings as required in Division 1 for all materials and equipment. Provide manufacturer's standard catalog pages and data sheets including detailed information on product construction, physical dimensions, ratings, listings, power consumption, finishes, mounting requirements, service conditions, and installed accessories; include model number nomenclature clearly marked with all proposed features. Provide separate product data information for each product indicated using Engineer's naming convention. If the shop drawings deviate from the contract documents, advise the engineer of the deviations via written format, accompanying the shop drawings. Include the reason for the deviation(s). Coordinate all required changes with the other trades affected. If the changes are occasioned by the contractor, the contractor shall pay any costs involved.
    Shop drawings shall include but are not limited to the following:
    A. Product data for lighting.
    B. Product data for lighting control devices.
    C. Product data for panelboards.
    D. Product data, calculations and drawings for fire alarm system.
17. Project Record Drawings: At completion of work, deliver completed project record documents to architect/engineer. Project record documents shall be in CAD and shall include any special systems (fire alarm, etc.) and "project record" shop drawings.
18. Operation and Maintenance Manuals: Submit number as required by Division 1, typed and hard bound to architect for approval prior to scheduling any system demonstration for the owner and fifteen (15) days prior to final observation. Books shall be arranged in sequence to match the specification sections.

16051 - Seismic

1. All seismic requirements and design shall be through delegated design. Contractor shall be required to provide all necessary equipment seismic calculations, anchors, supports, etc. as required by A.H.J. for compliance with seismic requirements.

Section 16060 - Grounding and Bonding

1. Conduit systems, supports, cabinets, equipment, transformers, fixtures, the grounded circuit conductor, etc. shall be properly grounded in accordance with the current issue of the National Electrical Code. Provide all bonding jumpers and wire, grounding bushings, clamps, etc. as r required for complete grounding.
   A. Connections shall be either bolted-pressure-type, compression type or exothermic-welded type.
2. Provide a separate equipment grounding conductor in all feeder and branch circuits and all flexible and nonmetallic raceways.
3. Grounding Conductor Material: Copper.

Section 16070 - Hangers and Supports

1. Provide hangers and supports for equipment, raceways and cables, including weight of wire in raceways. All systems cabling shall be supported by bridal rings or similar means.
2. Use hot-dipped galvanized material or nonmetallic, U-channel systems for all damp and outdoor locations.
3. Steel material shall be used for dry locations.

Section 16075 - Electrical Identification

1. Provide labeling for raceways, cables and devices.
2. Color Coding of Phase Conductors:
   A. Conductors No. 8 AWG and smaller shall be factory color coded. Wire No. 6 AWG and larger may be color coded by field painting or color taping a 6-inch length of exposed end.
   B. Wiring for control systems shall be color-coded in accordance with the wiring diagrams furnished with the equipment.

	277/480 volts	120/208 volts
Phase a:	brown	black
Phase b:	orange	red
Phase c:	yellow	blue
Neutral:	gray	white
Ground	green	green
Travelers:	purple	pink

Section 16080 - Electrical Testing

1. Provide testing of all electrical systems and components as required by all applicable building codes and ordinances, UL, NEMA, ANSI, ICEA, NECA, etc., and as recommended by the electrical equipment manufacturers.

Section 16105 - Demolition for Remodeling

1. Field check all existing conditions prior to bidding and include an allowance for the removal and relocation of existing conduits, wires, devices, fixtures, or other equipment as indicated or as required to coordinate and adapt new and existing electrical systems to all other work required on this project. No extras will be allowed for alterations of a foreseeable nature required to achieve the end result as indicated on the drawings.
2. Where the reuse of existing conduits, outlets, junction boxes, etc., is permissible, make certain that the wiring for them is continuous from outlet to outlet and that all splices and insulations are in good condition. Provide modifications to assure that circuits, or system shall not pass through outlets or junction boxes which may be rendered inaccessible by changes to be made to the project. Existing conduits, wire, devices, etc., which shall be removed shall become the property of the owner unless otherwise noted.
3. Connect new work to existing in a manner that will assure proper raceway grounding throughout in conformance with the National Electrical Code.
4. Remodel Work, Cutting and Patching: Electrical contractor shall perform all cutting, channeling, chasing, drilling, etc., as required to install or remove electrical equipment in areas of remodeling. This work shall be performed so as to minimize damage to portions of wall finishes, surfaces, plastering, or the structures which are to be reused, resurfaced, plastered, or painted under other divisions of these specifications.
5. Carefully coordinate with the required remodeling work, cutting and patching etc., performed by other trades. Remove or relocate existing electrical conduits, wires, devices, fixtures and other equipment as necessary.
6. All outages on portions of existing electrical systems shall be minimized and shall be at a time and of a duration as accepted by the owner.

Section 16120 - Conductors and Cables 600-V and Less

1. Minimum size No. 12 AWG except for control or signal circuits, which may be No. 14 AWG or smaller. Increase conductor size as necessary to limit branch circuit voltage drop to 3 percent and service/feeder voltage drop to 2 percent.
2. All wiring shall be as follows:
   A. Branch circuits concealed in ceilings, walls, and partitions, and concealed in concrete or below slabs-on-grade: Type THHN-THWN, single conductors in raceway.
   B. Fire alarm circuits: Type THHN-THWN, in raceway or power-limited, fire-protective, signaling circuit cable, Type NPLFP or PLFP.
   C. Class 1 control circuits: Type THHN-THWN, in raceway.
   D. Class 2 control circuits: Type THHN-THWN, in raceway or power-limited cable, concealed in building finishes.
3. All conductors shall be copper; solid conductor for No.12 AWG and smaller, stranded for No. 10 AWG and larger.
4. Splices for No. 6 AWG and smaller shall be made with twist-on wire connectors.
5. Splices for No. 4 AWG and larger shall be made with solderless or compression type CU/ALR lugs.
6. Wiring for control systems shall be installed in conjunction with mechanical and miscellaneous equipment.
7. Install conductor at each outlet, with at least 6 inches of slack to allow for connection to device.
8. Testing: Perform the following field quality-control testing:
   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. Insulation Test: Measure the insulation of feeder conductors. Measurements shall be taken between conductors, and conductors and ground. Resistance shall be 1,000,000 Ohms or more when tested at 500 Volts by megger without circuit loads.

Section 16130 - Raceways

1. All conductors shall be enclosed by conduit sized in accordance with Chapter 9, Table 4 of the National Electrical Code. Minimum size 1/2 inch. All conduits shall be concealed in finished areas.
2. Galvanized Rigid Metal Conduit (RMC) and Intermediate Metal Conduit (IMC) shall be utilized for above and below grade applications in accordance with Articles 344 and 342 of the National Electrical Code. All couplings shall be threaded.
3. Electrical Metallic Tubing (EMT) shall be utilized for all dry, above grade or above floor feeders and branch circuit homerun applications in accordance with Article 358 of the National Electrical Code. Couplings shall be steel set screw type.
4. Metal-Clad Cable (MC) with separate ground conductor shall be permitted for all concealed, above grade or above floor branch circuit applications excluding homeruns in accordance with Article 330 of the National Electrical Code. Connectors shall be listed for application of service indicated.
5. Flexible Metal Conduit (FMC) shall be utilized for all connections to vibrating equipment such as motors (minimum of 2'-0", maximum of 6'-0"), connections to lay-in type light fixtures or in remodel areas specifically noted for "fishing" in existing walls or non-accessible ceilings.
6. Surface metallic raceways shall be limited to only areas specifically noted and of size and type specified on the drawings.
7. All exposed conduits shall be installed parallel with or perpendicular to building lines.
8. Provide expansion type fittings for all conduits that cross expansion joints.
9. Conduits and/or circuits that penetrate fire-rated construction shall be sealed fire and smoke tight at the penetration in a manner that maintains the fire-resistance rating.

Section 16137 - Boxes, Enclosures and Cabinets

1. Outlet boxes:
   A. Four inch square or octagonal, zinc-coated sheet steel type.
   B. Outlet boxes shall be located so that transmission of sound through common walls will not occur.
   C. Enclosures exposed to weather or damp locations shall be weatherproof type.
2. Provide covers set to be flush with finished walls.
3. Pull Boxes and Junction Boxes: Junction boxes and pull boxes shall be provided as required. Size of boxes shall be in accordance with the current National Electrical Code requirements.
   A. Enclosures shall be NEMA type suitable for the surrounding area and conditions.
4. Floor Boxes: Floor boxes shall be cast metal, fully adjustable, or as specified on the drawings.

Section 16140 - Wiring Devices

1. Receptacles shall be 20 Amp Hubbell HBL5352 series specification grade, or acceptable. GFCI and exterior receptacles shall be Hubbell GF5352 series, or acceptable and if required provide weatherproof in-use metal type cover, or acceptable. Provide device color as directed by the architect, or to match base building standards, whichever is applicable.
2. Quiet operating type switches shall be 120/277-V, 20 Amp Hubbell 1221 series, or acceptable.
3. Provide special purpose outlets as required for equipment provided by others.
4. Device plates shall be high abuse nylon, color as directed by the architect, or to match base building standards, whichever is applicable.
5. Mount devices in accordance with the following schedule except where otherwise noted on the drawings or in areas with counters, baseboard heaters or in areas of block or brick construction:

Convenience receptacles:	long axis vertical at 1'-6" AFF to center *
Light switches:	latch side of door at 4'-0" AFF to center
Telephone outlets:	long axis vertical at 1'-6" AFF to center *

* Except in areas with counters, baseboard heaters, or in areas of block or brick construction.

Section 16145 - Lighting Control Devices

1. Occupancy Sensors: As specified on the drawings.
2. Multiple Contactors and Relays: Electrically operated and mechanically held, complying with UL 508 and NEMA ICS 2, with current rating for switching as required and control coil voltage to match control power source.
3. Testing: Set and operate devices to demonstrate their functions and capabilities in a methodical sequence that cues and reproduces actual operating functions.

Section 16180 - Equipment Wiring Systems

1. Provide branch circuits to equipment provided by others and to mechanical equipment and make all connections. Temperature control equipment wiring and connections shall be provided by the mechanical contractor.
2. Provide safety switches and/or thermal overload switches as required.
3. Heater units in all motor starters shall be sized for approximately one hundred fifteen percent (115%) of full load motor current. Check and coordinate all thermal protective devices with the equipment they protect.
4. Provide for each motor, one-half (1/2) horsepower and below, a horsepower rated disconnect switch and thermal overload protection unless internally provided with the motor. Thermal overload switches for single phase motors shall be Allen-Bradley Bulletin 600 or acceptable.
5. Carefully coordinate all electrical work with all other applicable divisions.

Section 16442 - Panelboards

1. Provide dead-front, circuit breaker type panels, size, voltage, amperage and number of branches as indicated on the drawings. Breakers shall be thermal magnetic type (bolted) employing quick-make and quick-break mechanism for manual operation as well as automatic operation. Automatic tripping shall be indicated by the breaker handle assuming a distinctive position from the manual "on" and "off" multi-pole breakers shall have a common trip. Tie handles will not be permitted.
2. All spaces shall be fully bussed.
3. Panelboards shall have a grounding bus for the equipment grounding system.
4. Circuit breakers shall have a minimum interrupting capacity as follows, unless otherwise noted:

120/208 Volts:	10,000 amperes
277/480 Volts:	14,000 amperes

5. Panelboards shall be a minimum twenty inches (20") wide.
6. All bussing shall be tin-plated, high strength, electrical grade aluminum alloy and extend entire length of the panelboard.
7. Distribution panelboards shall be provided with a hinged lockable door.
8. Lighting and appliance panelboards shall be provided with front cover screwed to the box.
9. Each panelboard shall be provided with a typed directory card installed in a transparent protective cover on inside of door panel.
10. Enclosure: NEMA type suitable for the surrounding area and conditions.
11. Install floor-mounted panelboards on 4 inch high concrete base extending a minimum of 2 inches beyond enclosure.
12. Testing: Test insulation resistance for each panelboard bus, component, connecting supply, feeder, and control circuit. test continuity of each circuit. after installing panelboards and after electrical circuitry has been energized, demonstrate product capability and compliance with requirements. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
13. Upon completion of installation, inspect interior and exterior of panelboards. Remove paint splatters and other spots, dirt and debris. Vacuum dirt and debris; do not use compressed air to assist cleaning. Touch up scratched and marred finishes to match original finish.
14. Panelboards shall be as manufactured by Eaton Corp.; Cutler Hammer, General Electric Co., Siemens Energy and Automation, Inc., or Square D Co.

Section 16460 - Transformers (Low Voltage)

1. Transformers rated 15kVA and larger
   A. Comply with 10 CFR 431 (DOE 2016) efficiency levels.
   B. Marked as compliant with DOE 2016 efficiency levels by an NRTL.
2. Cores: Electrical grade, non-aging silicon steel with high permeability and low hysteresis losses.
   A. One leg per phase.
   B. Core volume shall allow efficient transformer operation at 10 percent above the nominal tap voltage.
   C. Grounded to enclosure.
3. Coils: Continuous windings without splices except for taps.
   A. Coil material: Aluminum or Copper.
   B. Internal coil connections: Brazed or pressure type.
   C. Terminal connections: welded or bolted.
4. Encapsulation: Transformers smaller than 30kVA shall have core and coils completely resin encapsulated.
5. Enclosure: Ventilated.
   A. NEMA 250, Type 2: Core and coil shall be encapsulated within resin compound to seal out moisture and air.
   B. KVA Ratings: Based on convection cooling only and not relying on auxiliary fans.
   C. Wiring Compartment: Sized for conduit entry and wiring installation.
   D. Finish: Comply with NEMA 250, gray weather-resistant enamel.
6. Insulation Class, Smaller Than 30kVA: 180 deg C, UL-component-recognized insulation system with a maximum of 115 deg C rise above 40 deg C ambient temperature.
7. Insulation Class, 30kVA and Larger: 220 deg C, UL-component-recognized insulation system with a maximum of 115 deg C rise above 40 deg C ambient temperature.
8. Grounding: Provide ground-bar kit or a ground bar installed on the inside of the transformer enclosure.
9. Electrostatic Shielding: Each winding shall have an independent, single, full-width copper electrostatic shield arranged to minimize interwinding capacitance.
   A. Arrange coil leads and terminal strips to minimize capacitive coupling between input and output terminals.
   B. Include special terminal for grounding the shield.
10. Transformers shall be as manufactured by Eaton Corp.; Cutler Hammer, General Electric Co., Siemens Energy and Automation, Inc., or Square D Co.

Section 16511 - Interior Lighting

1. Manufacturers: Subject to compliance with requirements, provide products by the manufacturers specified on the drawings or provide products from manufacturers with similar construction and photometric characteristics.
2. Fluorescent ballasts shall be electronic programmed rapid start type with less than 10 percent of total harmonic distortion, with input power factor above 97 percent, and provided with internal protection in case operating temperatures exceed a safe level of operation. Fluorescent ballasts shall be as manufactured by Advance, Universal, General Electric or Osram/Sylvania.
3. Exit lights shall conform to local code requirements.
4. Interior emergency fluorescent power supply units shall be self-contained, modular, battery-inverter unit, factory mounted within luminaire body, and shall comply with UL 924.
5. Lamps shall be as manufactured by Osram/Sylvania, Phillips, or General Electric.
6. Color temperature for fluorescent lamps shall be as specified in the drawings.
7. Set luminaires level, plumb, and square with ceiling and walls, and secure according to manufacturer's written instructions and approved submittal materials. Install lamps in each luminaire. Do not support luminaries to the work of other trades unless otherwise specified or noted. All luminaires shall be independently supported from structure. Provide all necessary additional supports and hangers to securely fasten and support all luminaires to structure.
8. Inspect each installed luminaire for damage. Replace damaged luminaires and components. Verify normal operation of each luminaire after installation. Interrupt the electrical supply to verify proper operation of the emergency lighting. If luminaires are malfunctioning, then repair or replace components and retest until luminaire operates properly.
9. Clean luminaires internally and externally after installation per manufacturer's Recommendations.
10. Replace any failed lamps in existing fixtures with matching lamp type and CCT.

Section 16620 - Standby Power Generator Systems

1. Performance Requirements
   A. Seismic Performance: Engine generator housing, tank, engine generator, batteries, battery racks, silencers, sound attenuating equipment, accessories, and components shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
   B. Comply with B11.19.
   C. Comply with NFPA 37, NFPA 70, NFPA 99, and NFPA 110.
   D. Comply with UL 2200.
   E. Engine Exhaust Emissions: Comply with EPA requirements and applicable state and local government requirements based upon intended usage Tier.
   F. Noise Emission: Comply with applicable state and local government requirements for maximum noise level at adjacent property boundaries.
   G. Environmental Conditions: Engine generator system shall be rated to withstand the normal environmental conditions for the location in which it will be installed without mechanical or electrical damage or degradation of performance capability. This includes, but is not limited to ambient temperature, relative humidity, and altitude.

Section 16714 - Communication Raceway Systems

1. Provide empty conduit systems with No. 14 AWG pull wire and back boxes. Back boxes shall be 4 inch square galvanized pressed steel with single gang plaster ring. Provide 3/4 inch conduit with pull wire from each back box to 6 inches above nearest accessible ceiling.
2. All equipment, wiring/cable, devices and coverplates shall be provided and installed by the owner.

Section 16721 - Fire Alarm System, Non-coded Addressable

1. Fire alarm device layouts and if applicable one-line diagram are for information only to indicate possible system configuration. The information shown is intended to be used as a guide by the contractor to complete their design and does not include all the necessary items for installation. The contractor shall be responsible for the design and installation of the fire alarm system in compliance with these specifications, NFPA 72, and local codes. The contractor shall prepare fire alarm system drawings sealed by a fire protection engineer for submittal to the authority having jurisdiction and to be used for construction as part of their scope of work.
   A. Relocate existing fire alarm devices and provide new devices as shown.
   B. Provide all necessary conduit and wiring to extend existing base building fire alarm system as necessary.
2. The fire alarm system installation shall comply with NFPA 72, all other code requirements and local authority requirements.
3. Manual pull stations: double-action with station reset to match existing. An integral addressable module shall be provided to communicate with the FACP and if applicable a remote annunciator.
   A. Install such that handle is 48 inches above finished floor.
4. Smoke detectors: photoelectric type with integral led light to match existing .
5. Duct smoke detectors: photoelectric type with air sampling tubes extending the full length of the duct to match existing. Detectors shall be provided with an interface to the air handling unit control for shut down of the unit when smoke is detected.
6. Combination devices: factory-integrated audible and visual devices in a single-mounting assembly to match existing.
   A. Horns to match existing. Horns shall produce the ANSI temporal pattern at a sound-pressure level of 85 db, measured 10 feet from the horn per UL 464. Temporal pattern shall be synchronized.
   B. Visual alarm devices to match existing shall be listed under UL 1971 with clear polycarbonate lens. The word "fire" shall be engraved in minimum 1 inch high letters on faceplate. Strobes shall comply with NFPA 72 requirements for flash frequency and shall be synchronized. Provide candela level as required to suite the space in which it is installed.
   C. Visual devices shall be mounted not less than 80 inches above the finished floor or 6 inches below ceiling, whichever is lower.
7. LED indicating lights with integral test switch shall be provided for detectors that may not be readily visible. Light shall be connected to turn on steady when the associated device is in an alarm or trouble mode. Device shall mount in a single gang stainless steel plate. A red, laminated, phenolic-resin identification plate at the indicating light shall identify, in engraved white letters, device initiating the signal and room where the device is located.
8. The fire alarm control panel (FACP) and annunciator panel (FAAP): existing to remain.
   A. Upgrade and reprogram existing FACP software to reflect remodel conditions as required through a subcontractor to a factory authorized installer.
   B. Revise FAAP configuration and information to reflect remodel changes.
9. Emergency power supply system existing to remain.
   A. Provide new battery calculations as part of the shop drawing submittal as required by the authority having jurisdiction.
10. Provide control and/or monitor modules for devices such as fire/smoke dampers, etc. as required. Addressable modules shall be located within 3'-0" of the monitored switch or circuit.
11. Digital alarm communicator transmitter existing to remain.
12. Functional description of system.
   A. Control of system: by the FACP.
   B. System supervision: automatically detect and report open circuits, shorts, and grounds of wiring for initiating devices, signaling line, and notification appliance circuits.
   C. Transmission to remote alarm receiving station.
   D. Performance of initiating device circuits: NFPA 72, Style B circuits. Circuits shall be installed in conduit.
   E. Performance of notification appliance circuits: NFPA 72, Style Y. Circuits shall be installed in conduit.
   F. Performance of device monitoring signaling line circuits: NFPA 72, Style 4. circuits shall be installed in conduits.
13. Basic alarm performance requirements: unless otherwise indicated, operation of a manual station, automatic alarm operation of a heat detector, operation of a sprinkler flow device, or verified automatic alarm operation of a smoke detector shall initiate the following:
   A. Notification appliance operation.
   B. Identification at the FACP of the device address originating the alarm.
   C. Provide mechanical unit shut down and control of dampers, etc. as required.
   D. Provide control of door hold-opens or other doors as required.
   E. Released doors locked by security system.
14. Testing: test the system according to procedures outline in NFPA 72.
15. Provide certificate of operation at completion of testing and after any malfunctions have been corrected.

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DVO PROJECT – 23-01697

Project:
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Prepared For:
FORT BEND COUNTY
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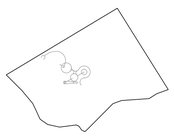
Key Plan



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04/12/2024

No.	Issue Description	MM-DD-YYYY
	ADDENDUM 1 - SITE LIGHTING PKG	01-10-2024
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: CL Reviewed by: JF

Project No: 218226

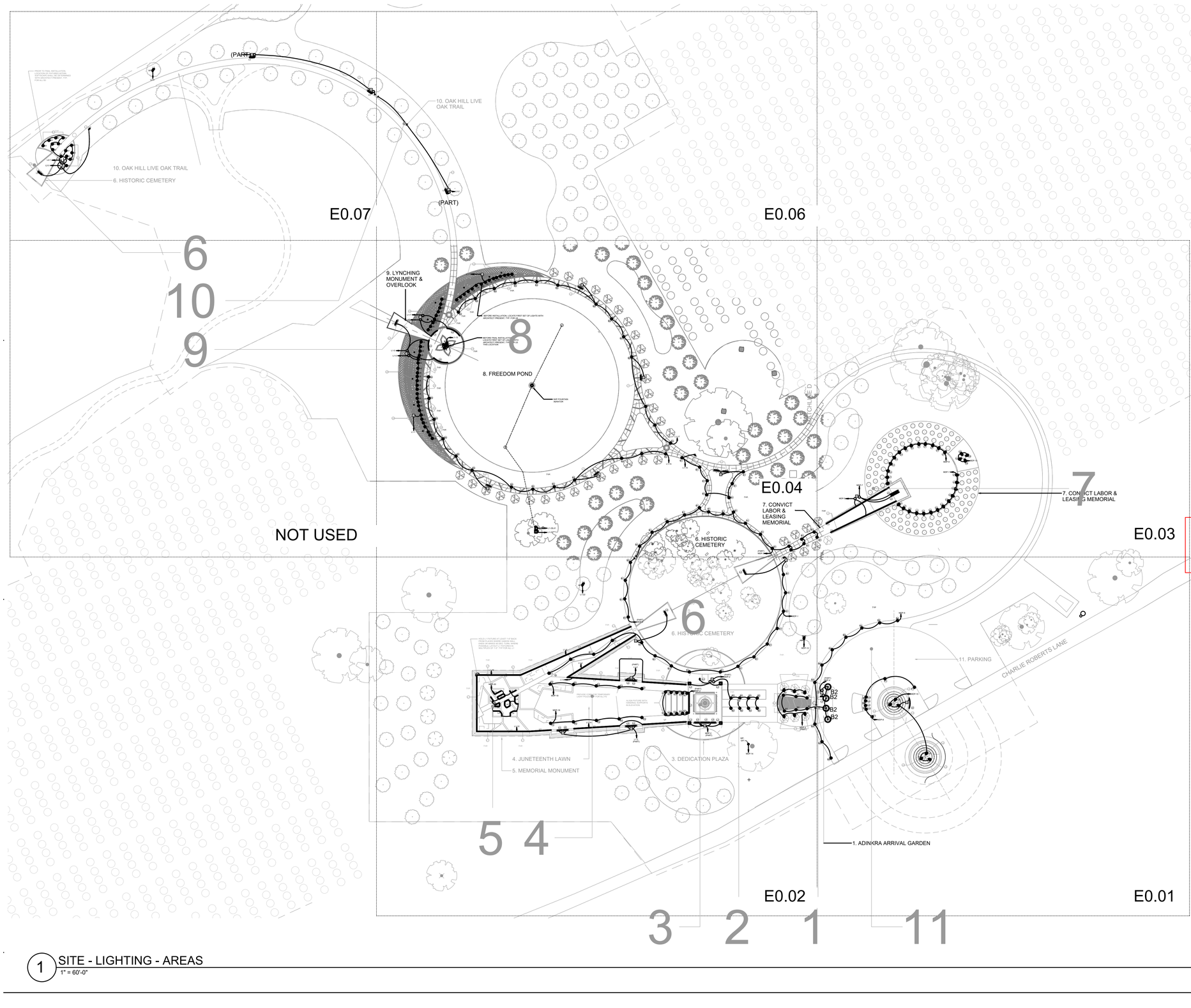
Sheet Title:

ELECTRICAL SPECIFICATIONS

Orig. drawing is ARCH D.Do not scale contents of this drawing.

Sheet Number

GE0.01



1 SITE - LIGHTING - AREAS
1" = 60'-0"

GENERAL ELECTRICAL SITE NOTES:

A. COORDINATE ALL WORK WITH OTHER TRADES.
B. COORDINATE INSTALLATION REQUIREMENTS, EXACT LOCATIONS AND CONDUIT TRADE SIZING AND ROUTING WITH UTILITIES PRIOR TO BEGINNING ANY WORK.
C. WIRE ALL EMERGENCY EXTERIOR EGRESS FIXTURES THROUGH BUILDING LIGHTING CONTROLS.
D. LUMINAIRES SHALL BE FURNISHED AND INSTALLED WITH LAMPS, BALLAST(S), AND MOUNTING HARDWARE. ELECTRICAL CONTRACTOR SHALL SUBMIT FIXTURE CUT SHEETS TO CLIENT AND ARCHITECT FOR THEIR FINAL APPROVAL PRIOR TO ORDERING OF THE LUMINAIRES.
E. ELECTRICAL CONTRACTOR SHALL COORDINATE LIGHTING FIXTURE QUANTITIES, MOUNTING REQUIREMENTS, FINISHES, FIXTURE AVAILABILITY AND LEAD TIME FOR DELIVERY TO SITE.
F. FLUORESCENT AND LED LUMINAIRES THAT CONTAIN BALLAST(S) AND/OR LED DRIVERS THAT CAN BE SERVICED IN PLACE SHALL HAVE A DISCONNECTING MEANS PER NEC ARTICLE 410.130(G) REQUIREMENTS. DISCONNECTING MEANS IS NOT REQUIRED FOR EMERGENCY ILLUMINATION REQUIRED IN 700.16.
G. CONTRACTOR SHALL COORDINATE EXACT DEVICE AND EQUIPMENT LOCATIONS WITH CLIENT /ARCHITECT, EQUIPMENT SUBCONTRACTOR OR UTILITY CONSULTANT PRIOR TO BEGINNING ANY WORK.
H. RECEPTACLE OUTLETS AND SWITCHES SHALL BE LABELED WITH DESIGNATED PANEL AND CIRCUIT NUMBER ON THE COVER PLATE.
I. ALL 125-VOLT, SINGLE PHASE, 15- AND 20-AMPERE RECEPTACLES INSTALLED IN RESTROOMS, KITCHEN/FOOD PREP AREAS, OUTDOOR, WITHIN SIX FEET OF THE OUTSIDE EDGE OF A SINK, OR IN GARAGES, SERVICE BAYS, AND SIMILAR AREAS WHERE ELECTRICAL HAND TOOLS OR PORTABLE LIGHTING EQUIPMENT ARE TO BE USED SHALL HAVE GROUND-FAULT CIRCUIT-INTERRUPTER (GFCI) PROTECTION FOR PERSONNEL PER NATIONAL ELECTRICAL CODE (NEC) ARTICLE 210.8. GFCI DEVICE SHALL BE INSTALLED IN A READILY ACCESSIBLE LOCATION.
J. ELECTRICAL CONTRACTOR SHALL MAINTAIN DEDICATED ELECTRICAL SPACE IN FRONT AND ABOVE ALL ELECTRICAL EQUIPMENT REQUIRING SERVICING WHILE ENERGIZED. THIS INCLUDES CONTROL PANELS AND ELECTRICAL DISCONNECTS FOR HVAC EQUIPMENT ON LOCATED ON ROOFTOPS AND ABOVE OR BELOW CEILING. PENETRATIONS SUCH AS ROOF JACKS FOR ELECTRICAL POWER, LOW VOLTAGE CONTROL POWER, REFRIGERANT LINES, VENT PIPES, ETC., AND INCLUDING GAS LINES, DUCTWORK, ROOF DRAINS, SCREENING WALLS AND OTHER EQUIPMENT OF ANY TYPE, ARE NOT TO INTRUDE INTO DEDICATED ELECTRICAL SPACE. MINIMUM SPACE IN FRONT OF ELECTRIC EQUIPMENT SHALL BE THE WIDTH OF THE EQUIPMENT OR 30 INCHES, WHICHEVER IS GREATER, 36 INCHES OUT FROM ENCLOSURE FRONT AT THE HEIGHT OF 6.5 FEET.
K. ELECTRICAL UTILITY SERVICE SECONDARY CONDUCTORS SHALL BE BURIED AT A MINIMUM DEPTH OF 4'. COORDINATE ADDITIONAL INSTALLATION REQUIREMENTS AND ROUTING WITH ELECTRICAL UTILITY PRIOR TO BEGINNING ANY WORK.
L. FOR PAD MOUNTED TRANSFORMERS ELECTRICAL CONTRACTOR SHALL PROVIDE (2) 6" CONDUITS, OR ELECTRICAL UTILITY STANDARD SIZING,BURIED AT A MINIMUM DEPTH OF 4' AND ENCASED IN RED DYED CONCRETE COORDINATE ADDITIONAL INSTALLATION REQUIREMENTS AND ROUTING WITH ELECTRICAL UTILITY PRIOR TO BEGINNING ANY WORK.
M. PVC CONDUITS INSTALLED UNDERGROUND SHALL BE BURIED IN ACCORDANCE WITH NEC ARTICLES 352.10(G), 300.5 AND TABLE 300.5 REQUIREMENTS FOR PARKING LOTS. MINIMUM DEPTH OF 24" TO THE TOP OF THE CONDUIT.
N. IF RACEWAYS ARE INSTALLED EXPOSED TO DIRECT SUNLIGHT ON OR ABOVE ROOFTOPS CORRECTIONS NEED TO BE PROVIDED FOR CONDUCTOR SIZES BASED ON AMBIENT TEMPERATURE CORRECTION FACTORS. TEMPERATURE CORRECTION FACTORS SHOWN IN NEC TABLE 310.15(B)(3)(C) SHALL BE ADDED TO THE OUTDOOR TEMPERATURE TO DETERMINE THE APPLICABLE AMBIENT TEMPERATURE FOR APPLICATION OF THE CORRECTION FACTORS IN TABLE 310.15(B)(2)(A) OR TABLE 310.15(B)(2)(B).

****VERIFY SCOPE****
REF. SHEET G001

DVO PROJECT – 23-01697

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Project:
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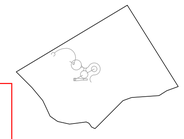
Key Plan



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04/12/2024

No.	Issue Description	MM-DD-YYYY
	ADDENDUM 1 - SITE LIGHTING PKG	01-10-2024
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: CL Reviewed by: JF

Project No: 218226

Sheet Title:
SITE PLAN - OVERALL LIGHTING

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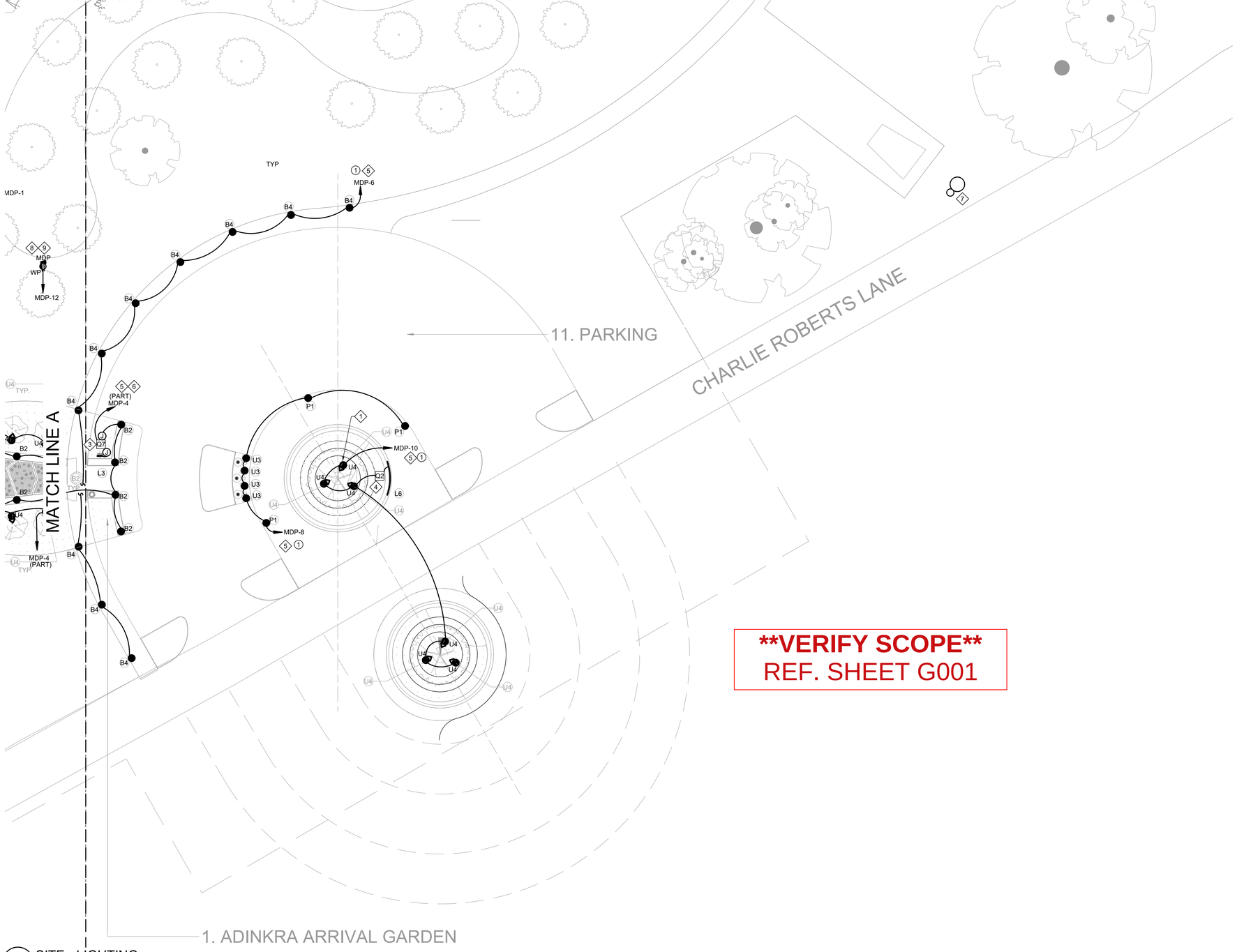
E0.00



1 SITE - LIGHTING
1" = 20'-0"

****VERIFY SCOPE****
REF. SHEET G001

KEYED NOTES:

1. FIXTURES IS PROVIDED WITH 5' WHIP. FIXTURE WHIP SHALL RUN TO INGROUND JUNCTION BOX TO ALLOW FOR ON SITE MOVEMENT OF STAKE MOUNTED FIXTURE. TYP FOR ALL U4.
2. FIXTURES PROVIDED WITH INTEGRAL TRANSFORMER WITHIN STAKE MOUNT.
3. DIRECT BURIAL ENCLOSURE:
   POWER SUPPLY #1: FEEDS L3.
   POWER SUPPLY #2: FEEDS B2. (THIS SHEET AND SHEET E0.02).
4. DIRECT BURIAL ENCLOSURE:
   POWER SUPPLY #1: FEEDS L6.
5. EXTERIOR LIGHTS TO BE CONTROLLED VIA PHOTOCELL AND ASTRONOMICAL TIME CLOCK. CONTRACTOR TO COORDINATE FINAL CONTROLS DETAILS WITH OWNER AND ARCHITECT.
6. REFER TO SHEET E0.02 FOR CIRCUIT CONTINUATION.
7. PROPOSED LOCATION OF POLE MOUNTED TRANSFORMER. CONTRACTOR TO COORDINATE EXACT LOCATION OF TRANSFORMER WITH UTILITY COMPANY.
8. ELECTRICAL PANELS TO BE MOUNTED AT LEAST 24" ABOVE FLOOD PLAIN.
9. REFER TO SHEET E2.03 DETAIL 1 FOR PANEL "MDP" SUPPORT. COORDINATE FINAL DETAILS WITH ARCHITECT AND OWNER PRIOR TO CONSTRUCTION.

WIRE SIZES:

1. MINIMUM WIRE SIZE OF #12 AWG CU FOR THIS CIRCUIT.
2. MINIMUM WIRE SIZE OF #10 AWG CU FOR THIS CIRCUIT.
3. MINIMUM WIRE SIZE OF #8 AWG CU FOR THIS CIRCUIT.
4. MINIMUM WIRE SIZE OF #6 AWG CU FOR THIS CIRCUIT.

GENERAL SHEET NOTES:

1. CONTRACTOR TO COORDINATE WITH LIGHTING FIXTURES SUPPLIER FOR ENCLOSURE RATING REQUIREMENTS AND CONDUITS CIRCUITING REQUIREMENTS FOR ALL POWER SUPPLIES AND LIGHT FIXTURES PRIOR TO CONSTRUCTION.
2. LOW VOLTAGE CONTRACTOR TO COORDINATE WITH LIGHTING SUPPLIER FOR WIRING REQUIREMENTS OF LIGHT FIXTURES TYPES REQUIRING LOW VOLTAGE.

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Key Plan

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JASON W. DAWSON
108125
LICENSED PROFESSIONAL ENGINEER
04/12/2024

No.	Issue Description	MM-DD-YYYY
	ADDENDUM 1 - SITE LIGHTING PKG	01-10-2024
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: CL Reviewed by: JF

Project No: 218226

Sheet Title:
SITE PLAN - LIGHTING

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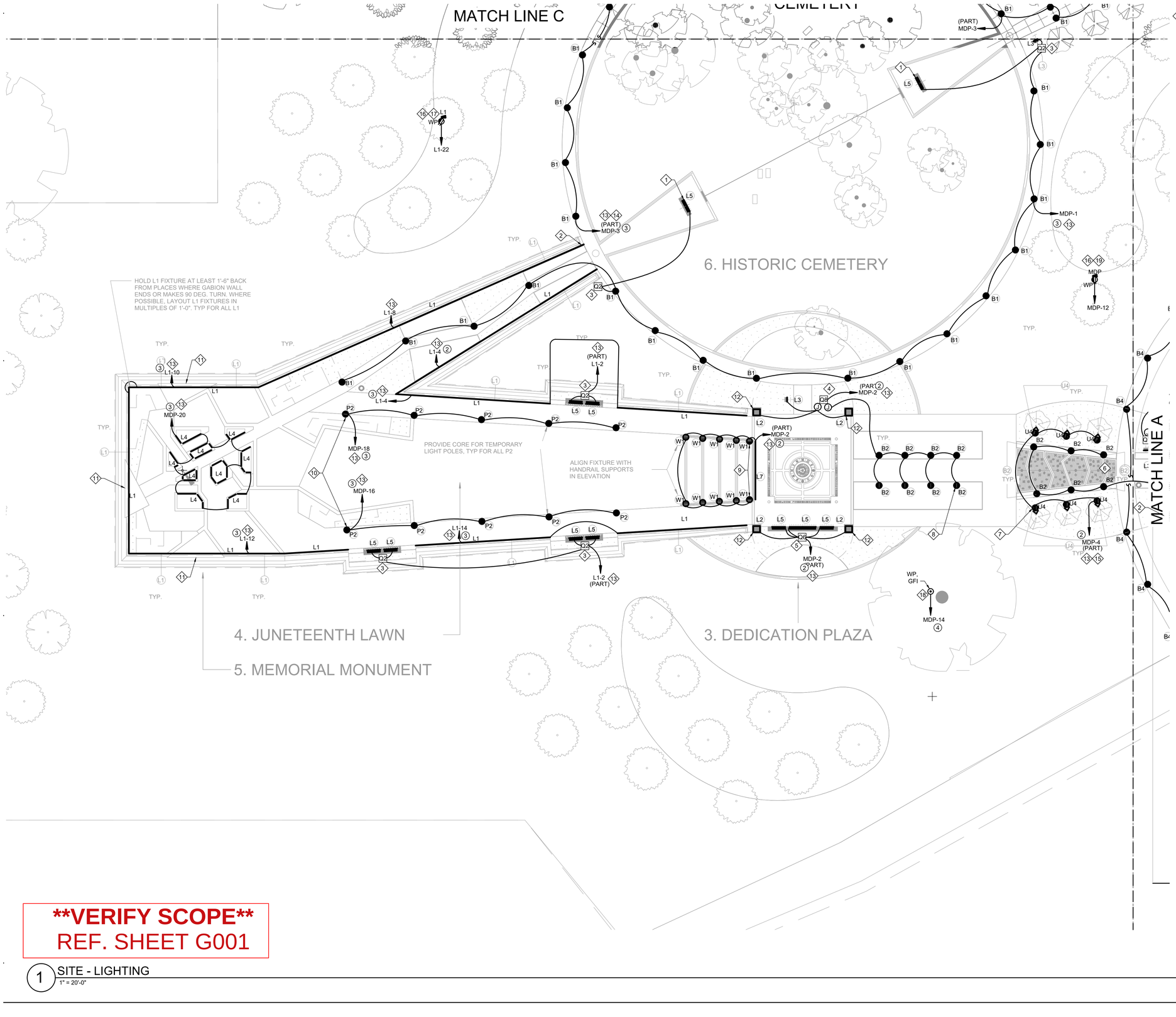

KEYED NOTES:

1. PROVIDE A SINGLE 30W POWER SUPPLY TO POWER L5 FIXTURE. LOCATE POWER SUPPLY IN IP68 RATED ENCLOSURE.
2. HOLD L1 FIXTURE AT LEAST 1'6" BACK FROM PLACES WHERE GABION WALL ENDS OR MAKES 90 DEG. TURN. WHERE POSSIBLE, LAYOUT L1 FIXTURES IN MULTIPLES OF 1'-0". TYP FOR ALL L1.
3. DIRECT BURIAL ENCLOSURE:
   POWER SUPPLY #1: FEEDS L5.
4. DIRECT BURIAL ENCLOSURE:
   POWER SUPPLY #1: FEEDS L2+L3
   POWER SUPPLY #2: FEEDS B2.
5. DIRECT BURIAL ENCLOSURE:
   POWER SUPPLY #1: FEEDS L2 + L5.
6. SEE SHEET E0.01 FOR POWER SUPPLY FEEDING B2 FIXTURES HERE.
7. FIXTURES IS PROVIDED WITH 5' WHIP. FIXTURE WHIP SHALL RUN TO INGROUND JUNCTION BOX TO ALLOW FOR ON SITE MOVEMENT OF STAKE MOUNTED FIXTURE. TYP FOR ALL U4.
8. PROVIDE SLACK IN FIXTURE FEED WIRE TO ALLOW FOR ADJUSTMENTS IN FIELD. TYP FOR ALL B2.
9. ALIGN W1 FIXTURE WITH HANDRAIL SUPPORTS IN ELEVATION. PROVIDE (1) REMOTE POWER SUPPLY FOR EVERY (5) W1 FIXTURES. LOCATE POWER SUPPLY IN IP68 RATED ENCLOSURE.
10. PROVIDE CONTROLLED RECEPTACLE ADJACENT TO EACH "P2" LOCATION FOR TEMP POLE TO BE POWERED FROM PANEL "L1".
11. CONTRACTOR TO COORDINATE WITH HINES ARCHITECT AND DESIGN FOR DETAIL HERE.
12. PROVIDE ROUTED RELIEF IN UNDERSIDE OF STONE CAP TO ALLOW FOR LOW VOLTAGE WIRE TO TRAVEL FROM END FEED OF FIXTURE THROUGH PEDESTAL TO RACEWAY. TYP. AT ALL FOUR CORNERS, EACH FIXTURE WILL BE FED WITH HOME RUN TO POWER SUPPLY LOCATION.
13. EXTERIOR LIGHTS TO BE CONTROLLED VIA PHOTOCELL AND ASTRONOMICAL TIME CLOCK. CONTRACTOR TO COORDINATE FINAL CONTROLS DETAILS WITH OWNER AND ARCHITECT.
14. REFER TO SHEET E0.04 FOR CIRCUIT CONTINUATION.
15. REFER TO SHEET E0.01 FOR CIRCUIT CONTINUATION.
16. ELECTRICAL PANELS TO BE MOUNTED AT LEAST 24" ABOVE FLOOD PLAIN.
17. REFER TO SHEET E2.03 DETAIL 2 FOR PANEL "L1" SUPPORT. COORDINATE FINAL DETAILS WITH ARCHITECT AND OWNER PRIOR TO CONSTRUCTION.
18. GENERAL RECEPTACLE FOR GRILL/PICNIC AREA.
19. REFER TO SHEET E2.03 DETAIL 1 FOR PANEL "MDP" SUPPORT. COORDINATE FINAL DETAILS WITH ARCHITECT AND OWNER PRIOR TO CONSTRUCTION.

WIRE SIZES:

1. MINIMUM WIRE SIZE OF #12 AWG CU FOR THIS CIRCUIT.
2. MINIMUM WIRE SIZE OF #10 AWG CU FOR THIS CIRCUIT.
3. MINIMUM WIRE SIZE OF #8 AWG CU FOR THIS CIRCUIT.
4. MINIMUM WIRE SIZE OF #6 AWG CU FOR THIS CIRCUIT.

GENERAL SHEET NOTES:

1. CONTRACTOR TO COORDINATE WITH LIGHTING FIXTURES SUPPLIER FOR ENCLOSURE RATING REQUIREMENTS AND CONDUITS CIRCUITING REQUIREMENTS FOR ALL POWER SUPPLIES AND LIGHT FIXTURES PRIOR TO CONSTRUCTION.
2. LOW VOLTAGE CONTRACTOR TO COORDINATE WITH LIGHTING SUPPLIER FOR WIRING REQUIREMENTS OF LIGHT FIXTURES TYPES REQUIRING LOW VOLTAGE.

****VERIFY SCOPE****
REF. SHEET G001

1 SITE - LIGHTING
1" = 20'-0"

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FORT BEND COUNTY
1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

HINESAD

Contract No: 218226

Design Team:

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Key Plan

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JASON W. DAWSON 108125 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
04/12/2024

No.	Issue Description	MM-DD-YYYY
	ADDENDUM 1 - SITE LIGHTING PKG.	01-10-2024
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: CL Reviewed by: JF

Project No: 218226

Sheet Title:
SITE PLAN - LIGHTING

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Sheet Number
E0.02

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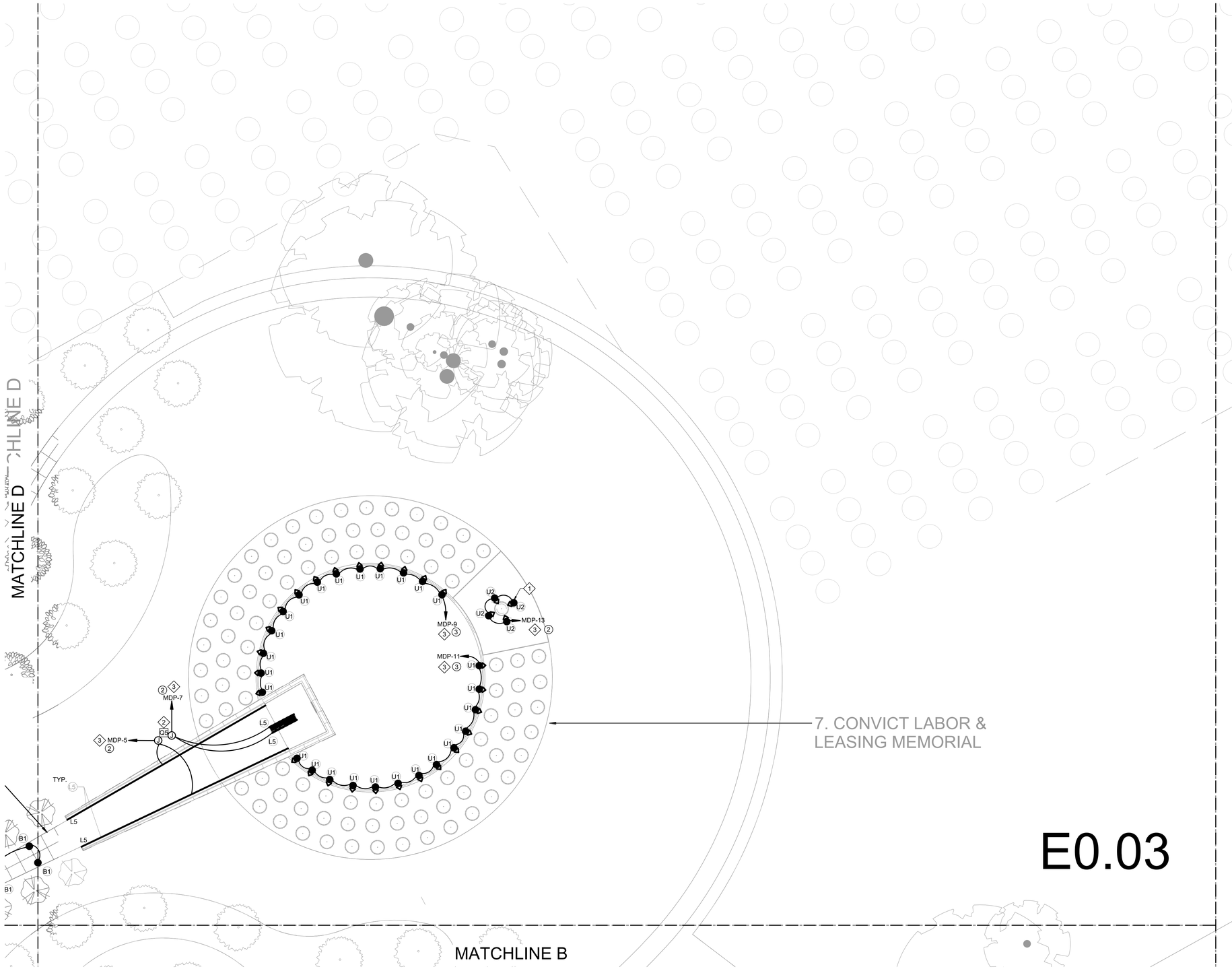

E0.03

1 SITE - LIGHTING
1" = 20'-0"

KEYED NOTES:

1. FIXTURES IS PROVIDED WITH 5' WHIP. FIXTURE WHIP SHALL RUN TO INGROUND JUNCTION BOX TO ALLOW FOR ON SITE MOVEMENT OF STAKE MOUNTED FIXTURE. TYP FOR ALL U1 AND U2.
2. DIRECT BURIAL ENCLOSURE:
   POWER SUPPLY #1: FEEDS L5 (HANDRAIL CONDITION)
   POWER SUPPLY #2: FEEDS L5 (HANDRAIL + BENCH CONDITION).
3. EXTERIOR LIGHTS TO BE CONTROLLED VIA PHOTOCELL AND ASTRONOMICAL TIME CLOCK. CONTRACTOR TO COORDINATE FINAL CONTROLS DETAILS WITH OWNER AND ARCHITECT.

(#) WIRE SIZES:

1. MINIMUM WIRE SIZE OF #12 AWG CU FOR THIS CIRCUIT.
2. MINIMUM WIRE SIZE OF #10 AWG CU FOR THIS CIRCUIT.
3. MINIMUM WIRE SIZE OF #8 AWG CU FOR THIS CIRCUIT.
4. MINIMUM WIRE SIZE OF #6 AWG CU FOR THIS CIRCUIT.

GENERAL SHEET NOTES:

1. CONTRACTOR TO COORDINATE WITH LIGHTING FIXTURES SUPPLIER FOR ENCLOSURE RATING REQUIREMENTS AND CONDUITS CIRCUITING REQUIREMENTS FOR ALL POWER SUPPLIES AND LIGHT FIXTURES PRIOR TO CONSTRUCTION.
2. LOW VOLTAGE CONTRACTOR TO COORDINATE WITH LIGHTING SUPPLIER FOR WIRING REQUIREMENTS OF LIGHT FIXTURES TYPES REQUIRING LOW VOLTAGE.

THE STATE OF TEXAS · FORT BEND COUNTY ·

DVO PROJECT – 23-01697

Project:

AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

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Prepared For:

FORT BEND COUNTY

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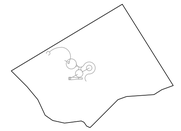

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	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

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Sheet Title:

SITE PLAN - LIGHTING

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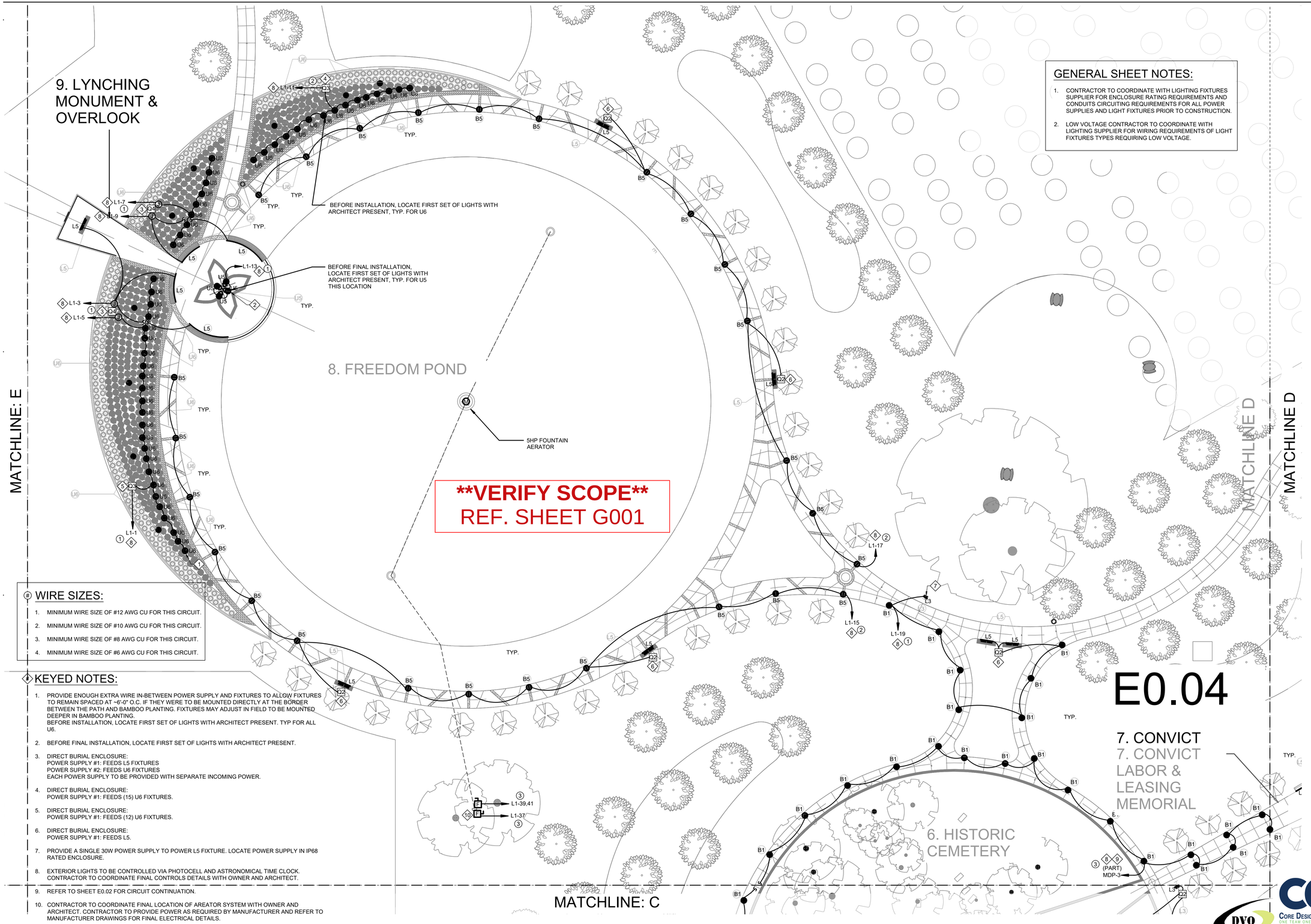

GENERAL SHEET NOTES:

1. CONTRACTOR TO COORDINATE WITH LIGHTING FIXTURES SUPPLIER FOR ENCLOSURE RATING REQUIREMENTS AND CONDUITS CIRCUITING REQUIREMENTS FOR ALL POWER SUPPLIES AND LIGHT FIXTURES PRIOR TO CONSTRUCTION.
2. LOW VOLTAGE CONTRACTOR TO COORDINATE WITH LIGHTING SUPPLIER FOR WIRING REQUIREMENTS OF LIGHT FIXTURES TYPES REQUIRING LOW VOLTAGE.

WIRE SIZES:

1. MINIMUM WIRE SIZE OF #12 AWG CU FOR THIS CIRCUIT.
2. MINIMUM WIRE SIZE OF #10 AWG CU FOR THIS CIRCUIT.
3. MINIMUM WIRE SIZE OF #8 AWG CU FOR THIS CIRCUIT.
4. MINIMUM WIRE SIZE OF #6 AWG CU FOR THIS CIRCUIT.

KEYED NOTES:

1. PROVIDE ENOUGH EXTRA WIRE IN-BETWEEN POWER SUPPLY AND FIXTURES TO ALLOW FIXTURES TO REMAIN SPACED AT ~6'-0" O.C. IF THEY WERE TO BE MOUNTED DIRECTLY AT THE BORDER BETWEEN THE PATH AND BAMBOO PLANTING. FIXTURES MAY ADJUST IN FIELD TO BE MOUNTED DEEPER IN BAMBOO PLANTING.
   BEFORE INSTALLATION, LOCATE FIRST SET OF LIGHTS WITH ARCHITECT PRESENT. TYP FOR ALL U6.
2. BEFORE FINAL INSTALLATION, LOCATE FIRST SET OF LIGHTS WITH ARCHITECT PRESENT.
3. DIRECT BURIAL ENCLOSURE:
   POWER SUPPLY #1: FEEDS L5 FIXTURES
   POWER SUPPLY #2: FEEDS U6 FIXTURES
   EACH POWER SUPPLY TO BE PROVIDED WITH SEPARATE INCOMING POWER.
4. DIRECT BURIAL ENCLOSURE:
   POWER SUPPLY #1: FEEDS (15) U6 FIXTURES.
5. DIRECT BURIAL ENCLOSURE:
   POWER SUPPLY #1: FEEDS (12) U6 FIXTURES.
6. DIRECT BURIAL ENCLOSURE:
   POWER SUPPLY #1: FEEDS L5.
7. PROVIDE A SINGLE 30W POWER SUPPLY TO POWER L5 FIXTURE. LOCATE POWER SUPPLY IN IP68 RATED ENCLOSURE.
8. EXTERIOR LIGHTS TO BE CONTROLLED VIA PHOTOCELL AND ASTRONOMICAL TIME CLOCK. CONTRACTOR TO COORDINATE FINAL CONTROLS DETAILS WITH OWNER AND ARCHITECT.
9. REFER TO SHEET E0.02 FOR CIRCUIT CONTINUATION.
10. CONTRACTOR TO COORDINATE FINAL LOCATION OF AREATOR SYSTEM WITH OWNER AND ARCHITECT. CONTRACTOR TO PROVIDE POWER AS REQUIRED BY MANUFACTURER AND REFER TO MANUFACTURER DRAWINGS FOR FINAL ELECTRICAL DETAILS.

1 SITE - LIGHTING
1" = 20'-0"

DVO PROJECT – 23-01697

THE STATE OF TEXAS · FORT BEND COUNTY ·

Project:
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KENDLETON, TEXAS 77451

Prepared For:
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1517 EUGENE HEIMANN CIRCLE
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Key Plan



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No.	Issue Description	MM-DD-YYYY
	ADDENDUM 1 - SITE LIGHTING PKG	01-10-2024
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: CL Reviewed by: JF

Project No: 218226

Sheet Title:
SITE PLAN - LIGHTING

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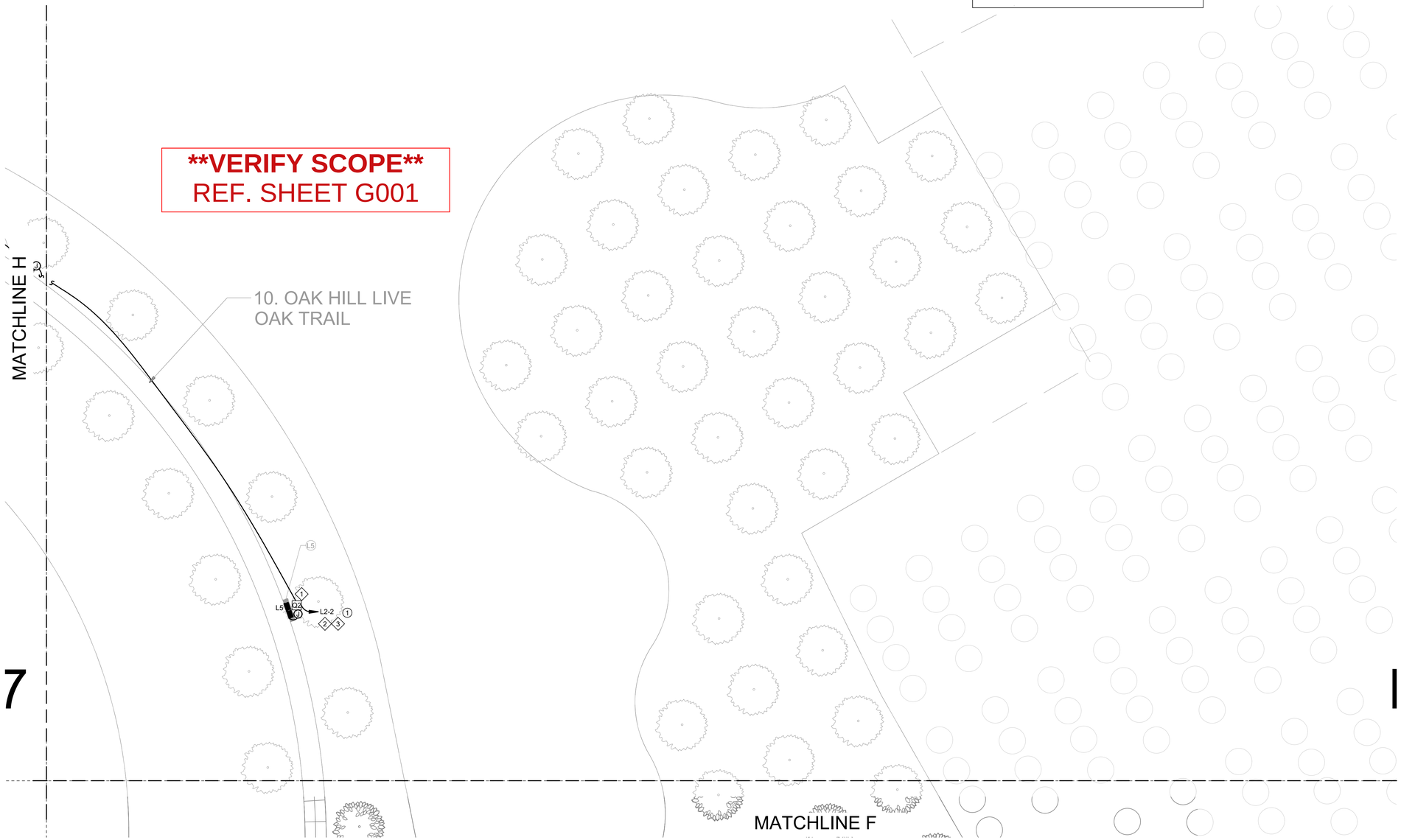
****VERIFY SCOPE****
REF. SHEET G001



1 SITE - LIGHTING
1" = 20'-0"

WIRE SIZES:

1. MINIMUM WIRE SIZE OF #12 AWG CU FOR THIS CIRCUIT.
2. MINIMUM WIRE SIZE OF #10 AWG CU FOR THIS CIRCUIT.
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GENERAL SHEET NOTES:

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2. LOW VOLTAGE CONTRACTOR TO COORDINATE WITH LIGHTING SUPPLIER FOR WIRING REQUIREMENTS OF LIGHT FIXTURES TYPES REQUIRING LOW VOLTAGE.

KEYED NOTES:

1. DIRECT BURIAL ENCLOSURE:
   POWER SUPPLY #1: FEEDS L5.
2. SEE SHEET E0.07 FOR CIRCUIT CONTINUATION.
3. EXTERIOR LIGHTS TO BE CONTROLLED VIA PHOTOCELL AND ASTRONOMICAL TIME CLOCK. CONTRACTOR TO COORDINATE FINAL CONTROLS DETAILS WITH OWNER AND ARCHITECT.

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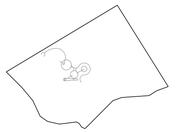

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04/12/2024

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	ADDENDUM 1 - SITE LIGHTING PKG.	01-10-2024
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: CL Reviewed by: JF

Project No: 218226

Sheet Title:
SITE PLAN - LIGHTING

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Sheet Number
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****VERIFY SCOPE****
REF. SHEET G001

PRIOR TO FINAL INSTALLATION, LOCATION OF FIXTURES WITHIN SOFTSCAPE SHALL BE DETERMINED WITH ARCHITECT PRESENT, TYP. FOR ALL B3

ⓗ WIRE SIZES:

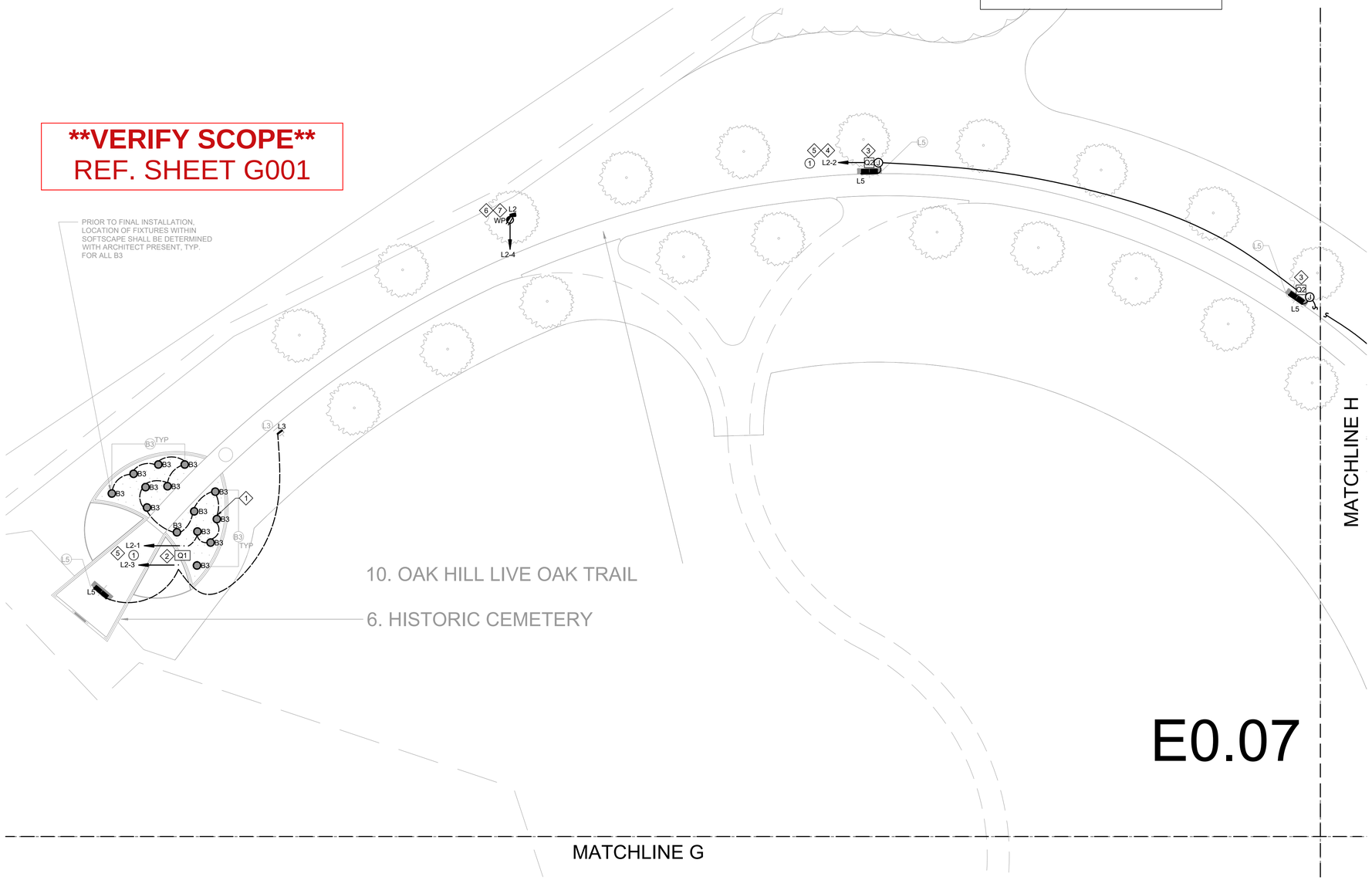
1. MINIMUM WIRE SIZE OF #12 AWG CU FOR THIS CIRCUIT.
2. MINIMUM WIRE SIZE OF #10 AWG CU FOR THIS CIRCUIT.
3. MINIMUM WIRE SIZE OF #8 AWG CU FOR THIS CIRCUIT.
4. MINIMUM WIRE SIZE OF #6 AWG CU FOR THIS CIRCUIT.

GENERAL SHEET NOTES:

1. CONTRACTOR TO COORDINATE WITH LIGHTING FIXTURES SUPPLIER FOR ENCLOSURE RATING REQUIREMENTS AND CONDUITS CIRCUITING REQUIREMENTS FOR ALL POWER SUPPLIES AND LIGHT FIXTURES PRIOR TO CONSTRUCTION.
2. LOW VOLTAGE CONTRACTOR TO COORDINATE WITH LIGHTING SUPPLIER FOR WIRING REQUIREMENTS OF LIGHT FIXTURES TYPES REQUIRING LOW VOLTAGE.

ⓚ KEYED NOTES:

1. PRIOR TO FINAL INSTALLATION, LOCATION OF FIXTURES WITHIN SOFTSCAPE SHALL BE DETERMINED WITH ARCHITECT PRESENT ON SITE, TYP. FOR ALL B3.
2. DIRECT BURIAL ENCLOSURE:
   POWER SUPPLY #1: FEEDS B3 FIXTURES
   POWER SUPPLY #2: FEEDS L3 + L5
   EACH POWER SUPPLY TO BE PROVIDED WITH SEPARATE INCOMING POWER.
3. DIRECT BURIAL ENCLOSURE:
   POWER SUPPLY #1: FEEDS L5.
4. SEE SHEET E0.06 FOR CIRCUIT CONTINUATION.
5. EXTERIOR LIGHTS TO BE CONTROLLED VIA PHOTOCELL AND ASTRONOMICAL TIME CLOCK. CONTRACTOR TO COORDINATE FINAL CONTROLS DETAILS WITH OWNER AND ARCHITECT.
6. ELECTRICAL PANELS TO BE MOUNTED AT LEAST 24" ABOVE FLOOD PLAIN.
7. REFER TO SHEET E2.03 DETAIL 3 FOR PANEL "L2" SUPPORT. COORDINATE FINAL DETAILS WITH ARCHITECT AND OWNER PRIOR TO CONSTRUCTION.



E0.07

1 SITE - LIGHTING
1" = 20'-0"

DVO PROJECT – 23-01697

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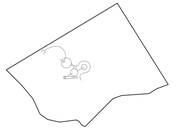

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04/12/2024

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Drawn by: CL Reviewed by: JF

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Sheet Title:
SITE PLAN - LIGHTING

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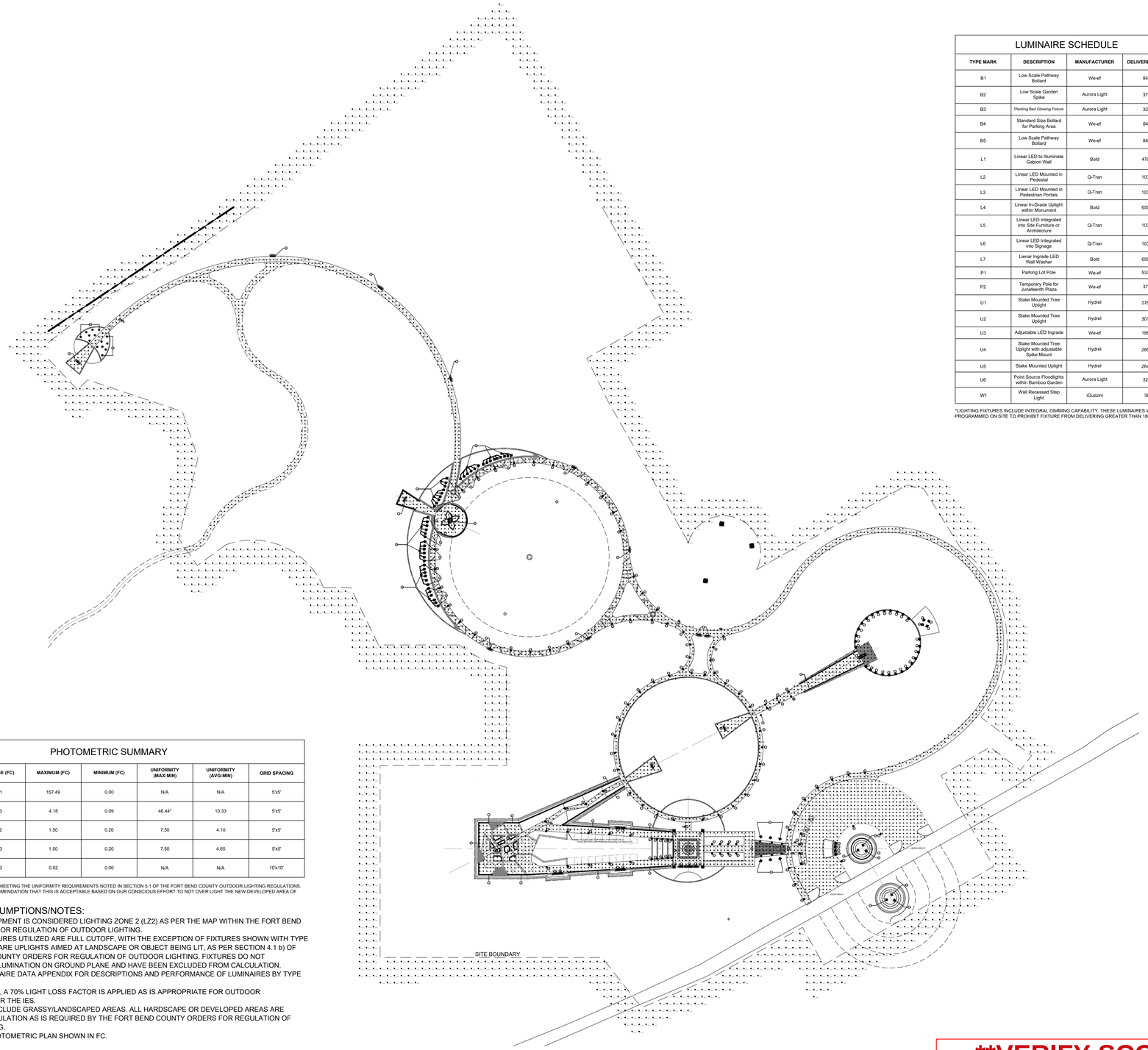

LUMINAIRE SCHEDULE			
TYPE MARK	**DESCRIPTION**	**MANUFACTURER**	**DELIVERED LUMENS**
B1	Low Scale Pathway Bollard	We-ef	844 Lm
B2	Low Scale Garden Spike	Aurora Light	379 Lm
B3	Planting Bed Glowing Fixture	Aurora Light	325 Lm
B4	Standard Size Bollard for Parking Area	We-ef	844 Lm
B5	Low Scale Pathway Bollard	We-ef	844 Lm
L1	Linear LED to Illuminate Gabion Wall	Bold	470 lm/ft
L2	Linear LED Mounted in Pedestal	Q-Tran	103 lm/ft
L3	Linear LED Mounted in Pedestrian Portals	Q-Tran	103 lm/ft
L4	Linear In-Grade Uplight within Monument	Bold	650 lm/ft
L5	Linear LED integrated into Site Furniture or Architecture	Q-Tran	103 lm/ft
L6	Linear LED Integrated into Signage	Q-Tran	103 lm/ft
L7	Lienar Ingrade LED Wall Washer	Bold	650 lm/ft
P1	Parking Lot Pole	We-ef	5377 Lm
P2	Temporary Pole for Juneteenth Plaza	We-ef	379 Lm
U1	Stake Mounted Tree Uplight	Hydrel	2761 lm*
U2	Stake Mounted Tree Uplight	Hydrel	3015 lm*
U3	Adjustable LED Ingrade	We-ef	1966 Lm
U4	Stake Mounted Tree Uplight with adjustable Spike Mount	Hydrel	2662 lm*
U5	Stake Mounted Uplight	Hydrel	2642 lm*
U6	Point Source Floodlights within Bamboo Garden	Aurora Light	325 Lm
W1	Wall Recessed Step Light	iGuzzini	38 Lm

*LIGHTING FIXTURES INCLUDE INTEGRAL DIMMING CAPABILITY. THESE LUMINAIRES WILL BE PROGRAMMED ON SITE TO PROHIBIT FIXTURE FROM DELIVERING GREATER THAN 1800 LM.

PHOTOMETRIC SUMMARY						
CALCULATION AREA	**AVERAGE (FC)**	**MAXIMUM (FC)**	**MINIMUM (FC)**	**UNIFORMITY (MAX:MIN)**	**UNIFORMITY (AVG:MIN)**	**GRID SPACING**
HARDSCAPE AREA	1.11	157.49	0.00	N/A	N/A	5'x5'
PARKING LOT	0.93	4.18	0.09	46.44*	10.33	5'x5'
ENTRY DRIVE 1	0.82	1.50	0.20	7.50	4.10	5'x5'
ENTRY DRIVE 2	0.93	1.50	0.20	7.50	4.65	5'x5'
20FT BEYOND SITE BOUNDARY	0.00	0.02	0.00	N/A	N/A	10'x10'

*WE RECOGNIZE THE DESIGN IS NOT MEETING THE UNIFORMITY REQUIREMENTS NOTED IN SECTION 5.1 OF THE FORT BEND COUNTY OUTDOOR LIGHTING REGULATIONS. IT IS OUR PROFESSIONAL RECOMMENDATION THAT THIS IS ACCEPTABLE BASED ON OUR CONSCIOUS EFFORT TO NOT OVER LIGHT THE NEW DEVELOPED AREA OF THIS PARK.

CALCULATION ASSUMPTIONS/NOTES:

- THIS NEW DEVELOPMENT IS CONSIDERED LIGHTING ZONE 2 (LZ2) AS PER THE MAP WITHIN THE FORT BEND COUNTY ORDERS FOR REGULATION OF OUTDOOR LIGHTING.
- ALL LIGHTING FIXTURES UTILIZED ARE FULL CUTOFF, WITH THE EXCEPTION OF FIXTURES SHOWN WITH TYPE MARK "LW", WHICH ARE UPLIGHTS AIMED AT LANDSCAPE OR OBJECT BEING LIT, AS PER SECTION 4.1 b) OF THE FORT BEND COUNTY ORDERS FOR REGULATION OF OUTDOOR LIGHTING. FIXTURES DO NOT CONTRIBUTE TO ILLUMINATION ON GROUND PLANE AND HAVE BEEN EXCLUDED FROM CALCULATION.
- REFERENCE LUMINAIRE DATA APPENDIX FOR DESCRIPTIONS AND PERFORMANCE OF LUMINAIRES BY TYPE MARK.
- PER SECTION 6.9 d), A 70% LIGHT LOSS FACTOR IS APPLIED AS IS APPROPRIATE FOR OUTDOOR ENVIRONMENTS PER THE IES.
- CALCULATIONS EXCLUDE GRASSY/LANDSCAPED AREAS. ALL HARDSCAPE OR DEVELOPED AREAS ARE INCLUDED IN CALCULATION AS IS REQUIRED BY THE FORT BEND COUNTY ORDERS FOR REGULATION OF OUTDOOR LIGHTING.
- ALL VALUES IN PHOTOMETRIC PLAN SHOWN IN FC.

****VERIFY SCOPE****
REF. SHEET G001

1 SITE - LIGHTING - PHOTOMETRIC PLAN
NTS

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Sheet Title:

SITE PLAN - OVERALL LIGHTING

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FEEDER SCHEDULE

TAG	WIRE AND CONDUIT SIZE - 1Ø, 3W
50.3	(3 - #3/0 & 1 - #6 CU GND) THWN, 2"C PVC SCH 40
150.3	(3 - #500 KCMIL AL & 1 - #4 AL GND) THWN, 3"C PVC SCH 40
400.3	2[(3 - #600 KCMIL AL & 1 - #1/0 AL GND) XHHW, 3-1/2"C PVC SCH 40]
400.3N	2[(3 - #600 KCMIL AL) XHHW, 3-1/2"C PVC SCH 40]

NOTE:
1. ALL EXTERIOR CABLES SHALL BE XHHW. EXTERIOR SURFACE MOUNTED CONDUIT SHALL BE RGS AND BURIED CONDUIT PVC SCHEDULE 40.
2. ALL CONDUCTORS TO BE COPPER UNLESS OTHERWISE NOTED. FOR AMPACITIES GREATER THAN 100A ALUMINUM CONDUCTORS MAY BE SUBSTITUTED FOR COPPER CONDUCTORS. ELECTRICAL CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR RE-SIZING CONDUCTORS AND CONDUIT PER APPLICABLE NATIONAL ELECTRIC CODE ARTICLES.

ONE LINE GENERAL NOTES

A. A PERMANENTLY AFFIXED LABEL SHALL BE APPLIED WITH THE AVAILABLE FAULT CURRENT AT THE TIME OF THE CALCULATION. THE LABEL SHALL BE 2" X 3" IN SIZE AND SHALL BE BLUE LETTERING ON A CONTRASTING BACKGROUND. THIS LABEL SHALL ALSO INCLUDE THE DATE OF CALCULATION PER DRAWINGS.
B. AVAILABLE UTILITY AIC NOT AVAILABLE AT TIME OF THIS SUBMITTAL, STARTING UTILITY AIC ASSUMES WORST CASE IMPEDANCE OF 1.4% ON 100KVA OVERHEAD MOUNTED XFMR OF 24,510 AIC.
C. SHORT CIRCUIT RATING CALCULATED USING POINT TO POINT METHOD
D. CONDUIT TO BUILDINGS SHALL BE DIRECT BURIED 48" BELOW GRADE WITH WARNING TAPE. USE SCH 40 PVC BELOW GRADE AND RIGID GALVANIZED STEEL CONDUIT ABOVE GRADE, UNLESS NOTED OTHERWISE.
E. ALL OUTDOOR ELECTRICAL EQUIPMENT TO BE MOUNTED IN GALVANIZED, WEATHERPROOF, NEMA 3R ENCLOSURES.
F. SQUARE TAGS REFER TO FAULT CURRENT VALUES LOCATED ON THIS PAGE.
G. CIRCULAR TAGS REFER TO ONE-LINE GROUNDING NOTES.
H. TRANSFORMER SHALL HAVE CLASS 155 OR HIGHER INSULATION AND COMPLETELY ENCLOSED EXCEPT FOR VENTILATING OPENINGS

ONE-LINE KEYED GROUNDING NOTES

# KEYED NOTE	GROUNDING CONNECTION NOTES
1	2 AWG CU COMMON GROUNDING ELECTRODE CONDUCTOR, SIZED PER TABLE 250.66, SHALL BE PROVIDED PER ARTICLE 250.58 REQUIREMENTS TO CONNECT SERVICE EQUIPMENT ENCLOSURES TO GROUNDING BUSBAR. THE GROUNDING ELECTRODE CONDUCTOR SHALL BE CONNECTED TO THE GROUNDED SERVICE CONDUCTOR IN ACCESSIBLE ENCLOSURE ON THE SUPPLY SIDE OF THE SERVICE DISCONNECT MEANS.
2	2 AWG CU MAIN BONDING JUMPER, FOR CONNECTION BETWEEN THE GROUNDED CIRCUIT CONDUCTOR AND THE EQUIPMENT GROUNDING CONDUCTOR AT THE SERVICE, AND SUPPLY SIDE EQUIPMENT BONDING JUMPER, SIZED PER TABLE 250.102(C)(1).
3	2 AWG CU GROUNDING ELECTRODE CONDUCTOR, SIZED PER TABLE 250.66, TO METAL UNDERGROUND WATER PIPE. PIPE SHALL BE IN DIRECT CONTACT WITH THE EARTH FOR 10 FEET OR MORE AND ELECTRICALLY CONTINUOUS PER ARTICLE 250.52(A)(1) REQUIREMENTS. GROUNDING ELECTRODE CONDUCTOR SHALL BE CONNECTED WITHIN FIVE FEET FROM THE POINT OF PIPE ENTRANCE TO THE BUILDING PER ARTICLE 250.68(C).
4	MINIMUM 4 AWG CU GROUNDING ELECTRODE CONDUCTOR TO CONCRETE-ENCASED ELECTRODE PER ARTICLE 250.52(A)(3) REQUIREMENTS.
5	2 AWG CU GROUNDING ELECTRODE CONDUCTOR, SIZED PER TABLE 250.66, TO METAL FRAME OF THE BUILDING PER ARTICLE 250.52(A)(2) REQUIREMENTS.
6	MINIMUM 6 AWG CU GROUNDING ELECTRODE CONDUCTOR TO ROD ELECTRODE PER ARTICLE 250.52(A)(5) REQUIREMENTS. ROD SHALL NOT BE SMALLER THAN 3/4" DIAMETER AND NOT SHORTER THAN EIGHT FEET.

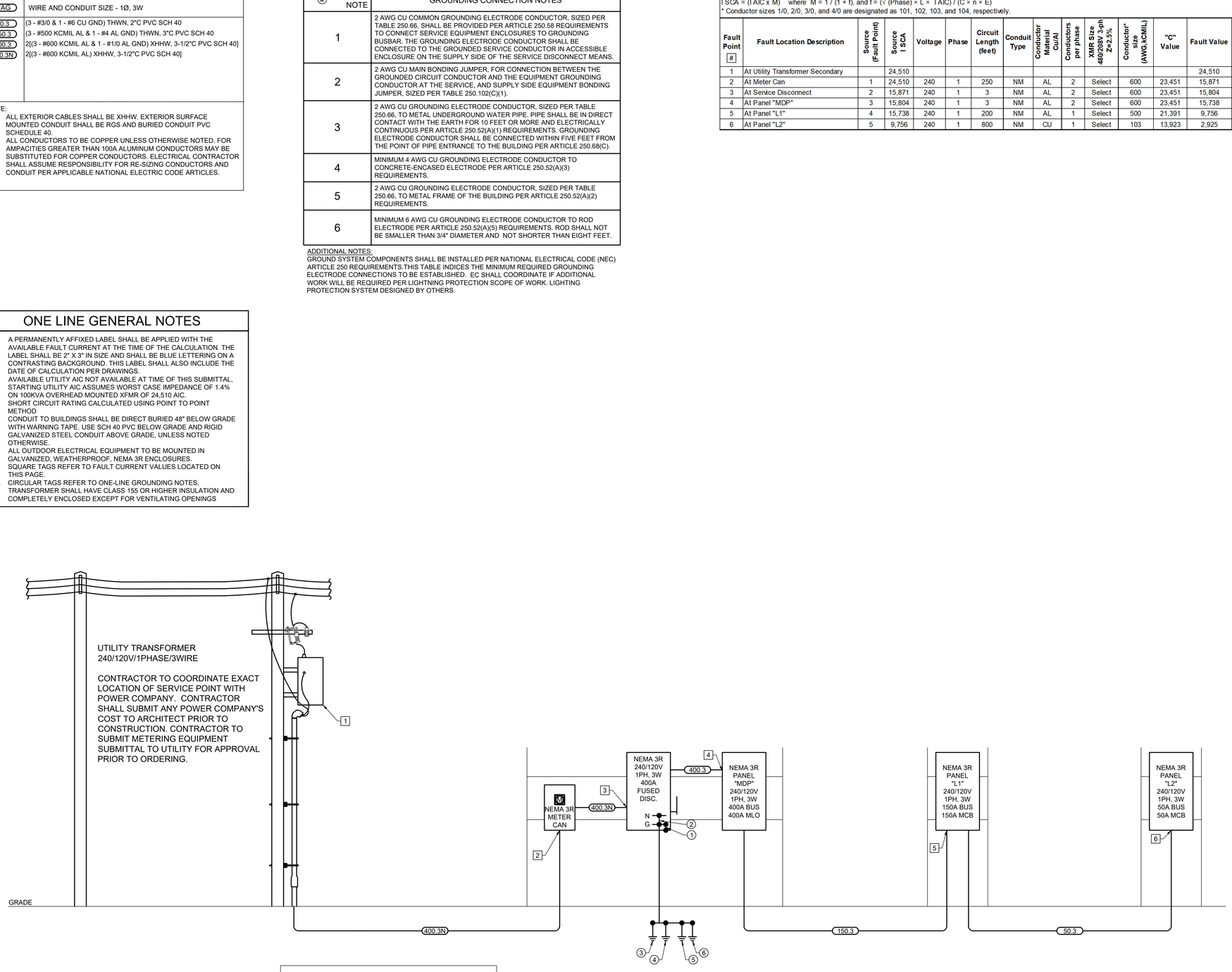
ADDITIONAL NOTES:
GROUND SYSTEM COMPONENTS SHALL BE INSTALLED PER NATIONAL ELECTRICAL CODE (NEC) ARTICLE 250 REQUIREMENTS.THIS TABLE INDICES THE MINIMUM REQUIRED GROUNDING ELECTRODE CONNECTIONS TO BE ESTABLISHED. EC SHALL COORDINATE IF ADDITIONAL WORK WILL BE REQUIRED PER LIGHTNING PROTECTION SCOPE OF WORK. LIGHTING PROTECTION SYSTEM DESIGNED BY OTHERS.

Fault Current Calculations

240/120V - 1 phase

Utility Transformer Secondary Bus Fault Current Value, A: IS.C. = If.l. × 100 / %Ztransformer
Maximum Available Fault Current (IAIC)
I SCA = (I AIC x M) where M = 1 / (1 + f), and f = (√ (Phase) × L × I AIC) / (C × n × E)
* Conductor sizes 1/0, 2/0, 3/0, and 4/0 are designated as 101, 102, 103, and 104, respectively.

Fault Point #	Fault Location Description	Source (Fault Point)	Source I SCA	Voltage	Phase	Circuit Length (feet)	Conduit Type	Conductor Material Cu/Al	Conductors per phase	XMR Size 480/208V 3-ph Z=2.5%	Conductor* size (AWG,KCMIL)	"C" Value	Fault Value	Fault Point
1	At Utility Transformer Secondary		24,510										24,510	1
2	At Meter Can	1	24,510	240	1	250	NM	AL	2	Select	600	23,451	15,871	2
3	At Service Disconnect	2	15,871	240	1	3	NM	AL	2	Select	600	23,451	15,804	3
4	At Panel "MDP"	3	15,804	240	1	3	NM	AL	2	Select	600	23,451	15,738	4
5	At Panel "L1"	4	15,738	240	1	200	NM	AL	1	Select	500	21,391	9,756	5
6	At Panel "L2"	5	9,756	240	1	800	NM	CU	1	Select	103	13,923	2,925	6



NOTE: CONTRACTOR SHALL VERIFY ALL BREAKER, CONNECTION REQUIREMENTS, RECEPTACLE TYPE AND WIRE SIZES WITH MANUFACTURER REQUIREMENTS.

01 ELECTRICAL ONE-LINE DIAGRAM
SCALE: NONE

DVO PROJECT – 23-01697

Project:
AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK
630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:
FORT BEND COUNTY
1517 EUGENE HEIMANN CIRCLE
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Contract No: 218226

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Key Plan



Professional Seals



04/12/2024

No.	Issue Description	MM-DD-YYYY
	ADDENDUM 1 - SITE LIGHTING PKG.	01-10-2024
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: CL Reviewed by: JF

Project No: 218226

Sheet Title:
ELECTRICAL DETAILS AND SCHEDULES

DVO urban-gro
CORE DESIGN IMPACT
ONE TEAM ONE DIRECTION
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STE 1150
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REGISTRATION NO. F-24186

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Sheet Number
E2.00

LUMINAIRE SCHEDULE

MARK	MANUFACTURER	MODEL	VOLTAGE	LAMPS	DIMMING	INPUT WATTAGE	MOUNTING	DESCRIPTION
B1	We-ef	115-9781 (MRY224 LED I) DIMMAMBLE	120	LED 2700K	-	13.5	GROUND	LOW SCALE PATHWAY BOLLARD.
B2	AURORA LIGHT	LMG1-T-279-12-PB-S-[FINISH]	12V	LED 2700K	-	7	GROUND	PATHWAY LANTERN.
B3	AURORA LIGHT	H2O11-[LED-6W-WF-27]-20'-CS-DS-NAT	12V	LED 2700K	-	6	GROUND	PLANTING BED GLOWING BOLLARD.
B4	We-ef	115-9789 (MRY224 LED III) DIMMAMBLE	120	LED 2700K	-	13.5	GROUND	STANDARD SIZE BOLLARD.
B5	We-ef	115-9751 (MRY224 LED I) DIMMAMBLE	120	LED 2700K	-	13.5	GROUND	LOW SCALE PATHWAY BOLLARD.
L1	BOLD	BOO-S-[LENGTH AS SHOWN ON DRAWINGS]-[FINISH]-L-U-[INTEGRAL CASAMBI]-O-L-9-27-0	120	LED 2700K	0-10V	4 W/FT	-	LINEAR LED SIDE MOUNTED FOR GABION WALL.
L2	Q-TRAN	KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH	24V	LED 2700K	0-10V	1.5 W/FT	-	LINEAR LED MOUNTED IN PEDESTAL.
L3	Q-TRAN	KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH	24V	LED 2700K	0-10V	1.5 W/FT	-	LINEAR LED MOUNTED IN PEDESTRIAN PORTALS.
L4	BOLD	BOW-I-[LENGTH AS SHOWN ON DRAWINGS]-[FINISH]-L-U-[INTEGRAL CASAMBI]-B-W-9-27-0	120	LED 2700K	0-10V	4 W/FT	-	LINEAR IN-GRADE UPLIGHT.
L5	Q-TRAN	KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH	24V	LED 2700K	0-10V	1.5 W/FT	-	LINEAR LED INTEGRATED INTO SITE FURNITURE OR WALLS.
L6	Q-TRAN	KURV-SW-RLC-IP68-2700K-1.5-ENC TL-S1-BW[LENGTH]-NA-CL-[LENGTH]-E + QZ-[WATTAGE]-UNV-24V-PH/010-WH	24V	LED 2700K	0-10V	1.5 W/FT	-	LINEAR LED INTEGRATED INTO SIGNAGE.
L7	BOLD	BOW-I-12-[FINISH]-L-1-U-[INTEGRAL CASAMBI]-B-W-9-27-0	120	LED 2700K	0-10V	4W/FT	-	LINEAR IN-GRADE LED WALL WASHER.
P1	We-ef	(2) 108-2334-[FINISH] + (2) 108-0982-[FINISH] + (2) 430-0038 + (1) 693-1235-CAP-[FINISH]	120	LED 2700K	-	54	POLE	PARKING LOT POLE.
P2	We-ef	(2) 145-7180 + (2) SNOOT 145-7233 + (2) 145-9536 + ALUMINUM POLE WITH CAP TO SLIDE INTO GROUND SLEEVE	120	LED 2700K	-	5	POLE	TEMPORARY POLE FOR JUNETEENTH PLAZA.
U1	HYDREL	SAF7-LED-P1-90CRI-27K-MVOLT-15DEG-CWL-KM-[MOUNTING SBA18-12C-CSL10'-[FINISH]-]-NA-NA-NLTAIR2-FGS-[FINISH]	120	LED 2700K	NLIGHTAIR	43	-	STAKE MOUNTED TREE UPLIGHT.
U2	HYDREL	SAF7-LED-P1-90CRI-27K-MVOLT-6DEG-CWL-KM-[MOUNTING SBA18-12C-CSL10'-[FINISH]-]-NA-NA-NLTAIR2-FGS-[FINISH]	120	LED 2700K	NLIGHTAIR	33	-	STAKE MOUNTED TREE UPLIGHT.
U3	We-ef	185-3141	120	LED 2700K	-	21	-	ADJUSTABLE LED IN-GRADE.
U4	HYDREL	SAF7-LED-P1-90CRI-27K-MVOLT-40DEG-CWL-KM-[MOUNTING PM60C-S18-[FINISH]]-NA-NA-NLTAIR2-GS-[FINISH]	120	LED 2700K	NLIGHTAIR	33	-	STAKE MOUNTED TREE UPLIGHT WITH ADJUSTABLE SPIKE MOUNT.
U5	HYDREL	SAF7-LED-P1-90CRI-27K-MVOLT-60VX15H-CWL-KM-[MOUNTING SBA18-12C-CSL10'-[FINISH]-]-NA-NA-NLTAIR2-FGS-[FINISH]	120	LED 2700K	NLIGHTAIR	33	-	STAKE MOUNTED TREE UPLIGHT.
U6	AURORA LIGHT	H2O11-[LED-6W-WF-27]-20'-CS-DS-NAT	12V	LED 2700K	-	6	-	POINT SOURCE FLOODLIGHTS WITHIN BAMBOO GARDEN.
W1	iGUZZINI	LIGHT UP ORBIT 50-BO-827-WW-REM-13 + X193-02 + 9581-02 + 4549-0350-019-UNV-ED10	120	LED 2700K	0-10V	1	-	WALL RECESSED STEP LIGHT.
Q1	Q-TRAN	Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-120W-[VOLTAGE]- 12V + (POWER SUPPLY #2) Q-SET-60W-[VOLTAGE]-24V	120	-	-	120 60	-	DIRECT BURIAL TRANSFORMER ENCLOSURE IP68.
Q2	Q-TRAN	Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-60W-[VOLTAGE]- 24V	120	-	-	60	-	DIRECT BURIAL TRANSFORMER ENCLOSURE IP68.
Q3	Q-TRAN	Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-240W-[VOLTAGE]- 24V	120	-	-	240	-	DIRECT BURIAL TRANSFORMER ENCLOSURE IP68.
Q4	Q-TRAN	Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-120W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-240W-[VOLTAGE]-24V	120	-	-	120 240	-	DIRECT BURIAL TRANSFORMER ENCLOSURE IP68.
Q5	Q-TRAN	Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-300W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-300W-[VOLTAGE]-24V	120	-	-	300 300	-	DIRECT BURIAL TRANSFORMER ENCLOSURE IP68.
Q6	Q-TRAN	Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-120W-[VOLTAGE]- 24V	120	-	-	120	-	DIRECT BURIAL TRANSFORMER ENCLOSURE IP68.
Q7	Q-TRAN	Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-60W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-180W-[VOLTAGE]-12V	120	-	-	60 180	-	DIRECT BURIAL TRANSFORMER ENCLOSURE IP68.
Q8	Q-TRAN	Q-VAULT-BK-ST + (POWER SUPPLY #1) Q-SET-120W-[VOLTAGE]-24V + (POWER SUPPLY #2) Q-SET-120W-[VOLTAGE]-12V	120	-	-	120 120	-	DIRECT BURIAL TRANSFORMER ENCLOSURE IP68.

NOTES
1. CONFIRM FIXTURE OPTIONS AND MOUNTING HEIGHTS WITH OWNER'S REPRESENTATIVE, ARCHITECT AND ARCHITECTURAL DRAWINGS.
2. OPTIONS TO BE COORDINATED WITH ARCHITECT AND OWNER'S REPRESENTATIVE PRIOR TO ORDERING.

DVO PROJECT – 23-01697

THE STATE OF TEXAS · FORT BEND COUNTY ·

Project:
AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK
630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:
FORT BEND COUNTY
1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

HINESAD

Contract No: 218226

Design Team:

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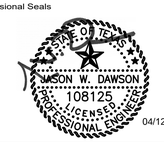
Key Plan



Professional Seals



04/12/2024

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	ADDENDUM 1 - SITE LIGHTING PKG	01-10-2024
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: CL Reviewed by: JF

Project No: 218226

Sheet Title:

ELECTRICAL SCHEDULES

DVO urban-gro
CORE DESIGN IMPACT
ONE TEAM ONE DIRECTION
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HOUSTON, TX 77024
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WWW.DVOENG.COM
REGISTRATION NO. F-24186

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Sheet Number

E2.01

ELECTRICAL LOAD ANALYSIS

ELECTRICAL LOAD ANALYSIS — **NEW**

AFRICAN AMERICAN MEMORIAL AT BATES M. ALLEN PARK — 630 CHARLIE ROBERTS LANE

DVO URBAN-GRO — EAST BERNARD, TEXAS, 77435

SUBMITTAL DATE 12/22/2023

USE	SQFT	VOLTAGE	PHASE
Park		240 / 120V	1 3W

NEW LOAD	DESIGN INFO	LOAD	NOTES AND CODE REFERENCES
LIGHTING			
INTERIOR LIGHTING	1.0 W/SF	0.0 KVA	220.12 EX#2 2015 IECC
T220.12 LOAD	0.0 KVA		
ACTUAL +25% CONT	0.0 KVA		
EXTERIOR LIGHTING	8.2 KVA	8.2 KVA	(CONNECTED LOAD)
+25% CONTINUOUS		2.0 KVA	
HVAC			220.60
ELECTRIC HEAT		0.0 KVA	220.51
COOLING			(NONCOINCIDENT LOAD) 220.60
RECEPTACLES	2.0 KVA		(CONNECTED LOAD)
< 10KVA AT 100%	2.0 KVA		220.14(I), OFFICE: 220.14(K)(1)OR(2)
REMAINDER AT 50%		2.0 KVA	220.14(I) (ACTUAL DEMAND)
OFFICE (220.14(K)(2))	0.0 KVA		(1 WSF OFFICE/BANK ONLY)220.14(K)(2)
		2.0 KVA	(RECEPTACLE DEMAND LOAD)
MOTORS			430.24
MTRS, PUMPS AND FANS		1.2 KVA	(ACTUAL LOAD)
LARGEST MOTOR +25%		8.4 KVA	
MISCELLANEOUS			
APPLIANCES		0.0 KVA	
EQUIPMENT		0.0 KVA	
KITCHEN (DF) 1.00	0.0 KVA	0.0 KVA	220.56
OTHER		0.0 KVA	
TOTAL		21.8 KVA	

REQUIRED CAPACITY	91 AMP
SERVICE CAPACITY	400 AMP
SPARE CAPACITY	309 AMP

PANEL MDP SCHEDULE

MDP — VOLTAGE: 120/240V/1P/3W — ENCLOSURE: NEMA 3R

COPPER GROUND BUS — SHORT CIRCUIT: 22k A/C

SOLID COPPER, 100% NEUTRAL BUS — BUS 400 AMPS — MOUNTING: SURFACE

BOLT ON BREAKERS — MLO 400 AMPS — FEED-THRU LUGS: NO

	VOLT AMPS	SERVING	WIRE SIZE	BRKR	CCT	A	C	CCT	BRKR	WIRE SIZE	SERVING	VOLT AMPS	
L	237	LIGHTING - HISTORIC CEM - B1, L3, L5		15/1	1	494		2	15/1		LIGHTING - L2, L3, L5, L7, B2, W1	257	L
L	284	LIGHTING - HISTORIC CEM - B1		15/1	3		555	4	15/1		LIGHTING - U4, B2, L3	271	L
L	285	LIGHTING - HANDRAIL L5		15/1	5	420		6	15/1		LIGHTING - B4	135	L
L	36	LIGHTING - BENCH L5		15/1	7		282	8	15/1		LIGHTING - P1, U3	246	L
L	559	LIGHTING - U1		15/1	9	787		10	15/1		LIGHTING - U4, L6	228	L
L	559	LIGHTING - U1		15/1	11		739	12	20/1		RECEPT - CONVENIENCE	180	R
L	132	LIGHTING - U2		15/1	13	1632		14	20/1		RECEPT - GRILL AREA	1500	R
		SPARE		15/1	15			16	20/1		SPARE		
		SPARE		15/1	17			18	20/1		SPARE		
		SPARE		15/1	19			20	20/1		SPARE		
		SPARE		15/1	21			22	20/1		SPARE		
		SPARE		15/1	23			24	20/1		SPARE		
					25			26					
					27			28					
					29			30					
					31			32					
					33			34					
					35		7031	36	150/2		PANEL L1	7031	S
					37	6150		38	|		|	6150	S
					39			40					
					41			42					

PHASE CONNECTED LOAD (VA) 9483 8606

PHASE DEMAND LOAD (VA) 12433 10508

		CONNECTED	D.F.	DEMAND
A	APPLIANCES	0.0	1.00	0.0
E	EQUIPMENT	0.0	1.00	0.0
H	HEATING	0.0	1.00	0.0
K	KITCHEN	0.0	1.00	0.0
L	LIGHTING	8.2	1.25	10.2
M	MOTORS	1.2	1.00	1.2
	LARGEST MOTOR	6.7	1.25	8.4
O	OTHER	0.0	1.00	0.0
R	RECEPTACLES (FIRST 10 KW)	2.0	1.00	2.0
	RECEPTACLES (REMAINDER)	0.0	0.50	0.0
S	SUBFEED PANEL	13.5	1.00	13.5
T	TRANSFORMER	0.0	1.00	0.0

TOTAL CONNECTED LOAD:	18.1 KVA
	75.4 AMPS
DESIGN LOAD:	76.8 KVA
	320.0 AMPS
NEC DEMAND LOAD:	21.8 KVA
	90.9 AMPS
SPARE CAPACITY:	55.0 KVA
	229.1 AMPS
PHASE BALANCE A TO C:	90.8%
PHASE BALANCE C TO A:	90.8%

NOTES:

1. BRANCH CIRCUIT VOLTAGE DROP NOT TO EXCEED 3% AT FARTHEST OUTLET. TOTAL VOLTAGE DROP INCLUDING FEEDERS AND BRANCH CIRCUITS NOT TO EXCEED 5%.
2. CONTRACTOR SHALL VERIFY BREAKER AND WIRE SIZE WITH OWNER AND MANFUCATURER REQUIREMENTS. FIELD VERIFY EQUIPMENT LOADS.
3. ALL CONDUCTORS SHALL BE COPPER.

CB NOTES: "N" - New , "E"- Existing, "R" - Revised Load "GFI": GFCI Breaker, "D" - Demolish "L": Lockable

PANEL L1 SCHEDULE

L1 — VOLTAGE: 120/240V/1P/3W — ENCLOSURE: NEMA 3R

COPPER GROUND BUS — SHORT CIRCUIT: 22k A/C

SOLID COPPER, 100% NEUTRAL BUS — BUS 150 AMPS — MOUNTING: SURFACE

BOLT ON BREAKERS — MCB 150 AMPS — FEED-THRU LUGS: NO

	VOLT AMPS	SERVING	WIRE SIZE	BRKR	CCT	A	C	CCT	BRKR	WIRE SIZE	SERVING	VOLT AMPS	
L	72	LIGHTING - U6		15/1	1	126		2	15/1		LIGHTING - BENCHES L5	54	L
L	84	LIGHTING - U5		15/1	3		592	4	15/1		LIGHTING - L1	508	L
L	72	LIGHTING - U6		15/1	5	496		6	15/1		LIGHTING - L1	424	L
L	54	LIGHTING - U6		15/1	7		690	8	15/1		LIGHTING - L1	636	L
L	75	LIGHTING - L5		15/1	9	603		10	15/1		LIGHTING - L1	528	L
L	90	LIGHTING - U6		15/1	11		486	12	15/1		LIGHTING - L1	396	L
L	132	LIGHTING - U5		15/1	13	604		14	15/1		LIGHTING - L1	472	L
L	194	LIGHTING - B5 AND L5		15/1	15		294	16	15/1		LIGHTING - P2 RECEPT	100	L
L	194	LIGHTING - B5 AND L5		15/1	17	294		18	15/1		LIGHTING - P2 RECEPT	100	L
L	116	LIGHTING - B5 AND L5		15/1	19		618	20	15/1		LIGHTING - L4	502	L
		SPARE		15/1	21	180		22	20/1		RECEPT - CONVENIENCE	180	R
		SPARE		15/1	23			24	20/1		SPARE		
		SPARE		15/1	25			26	20/1		SPARE		
		SPARE		15/1	27			28	20/1		SPARE		
					29			30	20/1		SPARE		
					31			32					
					33			34					
					35			36					
M	1176	LAKE BED AERATOR		20/1	37	1176		38					
M	3360	DISPLAY AERATOR		40/2	39		3471	40	50/2		PANEL L2	111	S
M	3360	|		|	41	3552		42	|		|	192	S

PHASE CONNECTED LOAD (VA) 7031 6150

PHASE DEMAND LOAD (VA) 8642 8584

		CONNECTED	D.F.	DEMAND
A	APPLIANCES	0.0	1.00	0.0
E	EQUIPMENT	0.0	1.00	0.0
H	HEATING	0.0	1.00	0.0
K	KITCHEN	0.0	1.00	0.0
L	LIGHTING	4.9	1.25	6.2
M	MOTORS	1.2	1.00	1.2
	LARGEST MOTOR	6.7	1.25	8.4
O	OTHER	0.0	1.00	0.0
R	RECEPTACLES (FIRST 10 KW)	0.4	1.00	0.4
	RECEPTACLES (REMAINDER)	0.0	0.50	0.0
S	SUBFEED PANEL	0.3	1.00	0.3
T	TRANSFORMER	0.0	1.00	0.0

TOTAL CONNECTED LOAD:	13.2 KVA
	54.9 AMPS
DESIGN LOAD:	28.8 KVA
	120.0 AMPS
NEC DEMAND LOAD:	16.1 KVA
	67.0 AMPS
SPARE CAPACITY:	12.7 KVA
	53.0 AMPS
PHASE BALANCE A TO C:	87.5%
PHASE BALANCE C TO A:	87.5%

NOTES:

1. BRANCH CIRCUIT VOLTAGE DROP NOT TO EXCEED 3% AT FARTHEST OUTLET. TOTAL VOLTAGE DROP INCLUDING FEEDERS AND BRANCH CIRCUITS NOT TO EXCEED 5%.
2. CONTRACTOR SHALL VERIFY BREAKER AND WIRE SIZE WITH OWNER AND MANFUCATURER REQUIREMENTS. FIELD VERIFY EQUIPMENT LOADS.
3. ALL CONDUCTORS SHALL BE COPPER.

CB NOTES: "N" - New , "E"- Existing, "R" - Revised Load "GFI": GFCI Breaker, "D" - Demolish "L": Lockable

PANEL L2 SCHEDULE

L2 — VOLTAGE: 120/240V/1P/3W — ENCLOSURE: NEMA 3R

COPPER GROUND BUS — SHORT CIRCUIT: 10k A/C

SOLID COPPER, 100% NEUTRAL BUS — BUS 50 AMPS — MOUNTING: SURFACE

BOLT ON BREAKERS — MCB 50 AMPS — FEED-THRU LUGS: NO

	VOLT AMPS	SERVING	WIRE SIZE	BRKR	CCT	A	C	CCT	BRKR	WIRE SIZE	SERVING	VOLT AMPS	
L	84	LIGHTS - B3		15/1	1	111		2	15/1		LIGHTS - L5 BENCH	27	L
L	12	LIGHTS - L3 AND L5		15/1	3		192	4	20/1		RECEPT - CONVENIENCE	180	R
		SPARE		15/1	5			6	20/1		SPARE		
		SPARE		15/1	7			8	20/1		SPARE		
					9			10					
					11			12					

PHASE CONNECTED LOAD (VA) 111 192

PHASE DEMAND LOAD (VA) 139 195

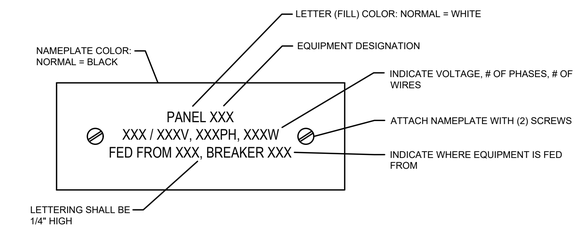
		CONNECTED	D.F.	DEMAND
A	APPLIANCES	0.0	1.00	0.0
E	EQUIPMENT	0.0	1.00	0.0
H	HEATING	0.0	1.00	0.0
K	KITCHEN	0.0	1.00	0.0
L	LIGHTING	0.1	1.25	0.2
M	MOTORS	0.0	1.00	0.0
	LARGEST MOTOR	0.0	1.25	0.0
O	OTHER	0.0	1.00	0.0
R	RECEPTACLES (FIRST 10 KW)	0.2	1.00	0.2
	RECEPTACLES (REMAINDER)	0.0	0.50	0.0
S	SUBFEED PANEL	0.0	1.00	0.0
T	TRANSFORMER	0.0	1.00	0.0

TOTAL CONNECTED LOAD:	0.3 KVA
	1.3 AMPS
DESIGN LOAD:	9.6 KVA
	40.0 AMPS
NEC DEMAND LOAD:	0.3 KVA
	1.4 AMPS
SPARE CAPACITY:	9.3 KVA
	38.6 AMPS
PHASE BALANCE A TO C:	57.8%
PHASE BALANCE C TO A:	57.8%

NOTES:

1. BRANCH CIRCUIT VOLTAGE DROP NOT TO EXCEED 3% AT FARTHEST OUTLET. TOTAL VOLTAGE DROP INCLUDING FEEDERS AND BRANCH CIRCUITS NOT TO EXCEED 5%.
2. CONTRACTOR SHALL VERIFY BREAKER AND WIRE SIZE WITH OWNER AND MANFUCATURER REQUIREMENTS. FIELD VERIFY EQUIPMENT LOADS.
3. ALL CONDUCTORS SHALL BE COPPER.

CB NOTES: "N" - New , "E"- Existing, "R" - Revised Load "GFI": GFCI Breaker, "D" - Demolish "L": Lockable



01 PANEL NAME PLATE DETAIL

SCALE: NTS

DVO — URBAN-GRO

CD — CORE DESIGN IMPACT, ONE TEAM ONE DIRECTION
825 TOWN AND COUNTRY LANE
STE 1150
HOUSTON, TX 77024
P.(281) 293-7500
WWW.DVOENG.COM
REGISTRATION NO. F-24186

DVO PROJECT – 23–01697

THE STATE OF TEXAS · FORT BEND COUNTY ·

Project:

AFRICAN AMERICAN MEMORIAL at BATES M. ALLEN PARK

630 CHARLIE ROBERTS LANE
KENDLETON, TEXAS 77451

Prepared For:

FORT BEND COUNTY

1517 EUGENE HEIMANN CIRCLE
RICHMOND, TEXAS 77469

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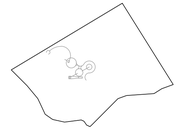
Key Plan



Professional Seals



04/12/2024

No.	Issue Description	MM-DD-YYYY
	ADDENDUM 1 - SITE LIGHTING PKG	01-10-2024
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: CL Reviewed by: JF

Project No: 218226

Sheet Title:

ELECTRICAL SCHEDULES

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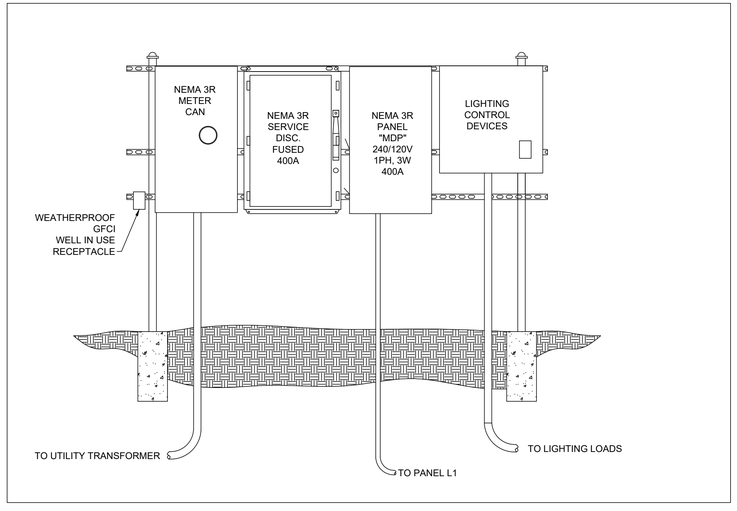
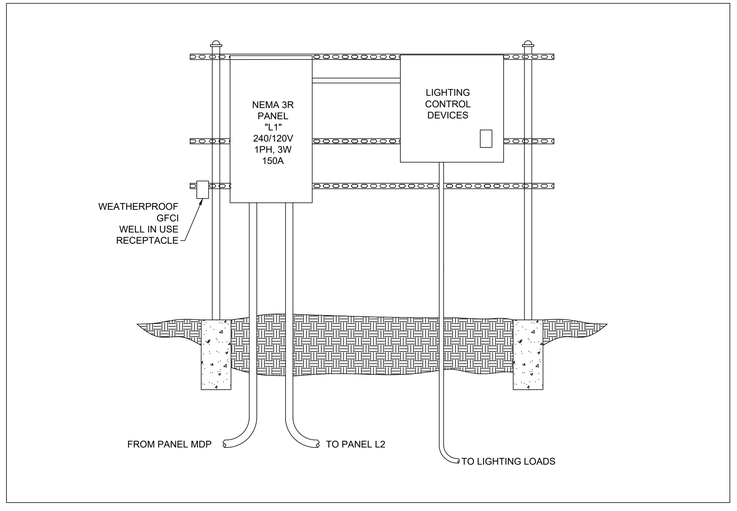
Sheet Number

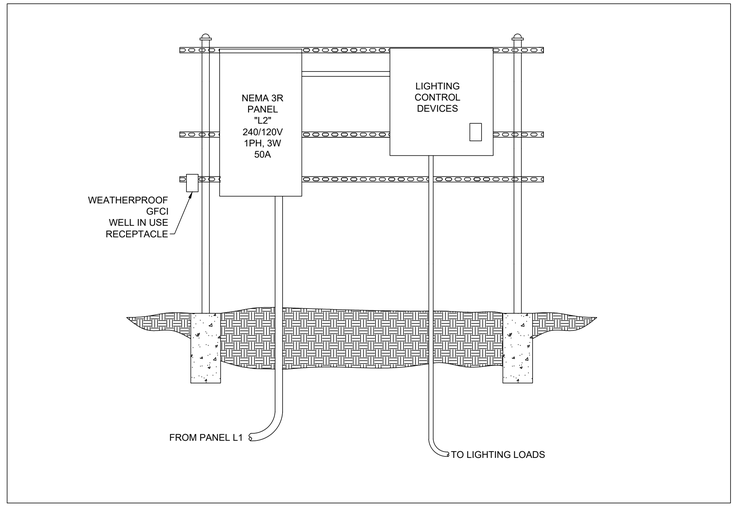
E2.02



01 PANEL MDP SUPPORT DETAIL
SCALE: NTS



02 PANEL L1 SUPPORT DETAIL
SCALE: NTS



03 PANEL L2 SUPPORT DETAIL
SCALE: NTS

DVO PROJECT – 23-01697

Project:
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Key Plan



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04/12/2024

No.	Issue Description	MM-DD-YYYY
	ADDENDUM 1 - SITE LIGHTING PKG	01-10-2024
	ISSUE FOR BID AND CONSTRUCTION	04-12-2024

Drawn by: CL Reviewed by: JF

Project No: 218226

Sheet Title:
ELECTRICAL DETAILS

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E2.03