STATE OF TEXAS §
§
COUNTY OF FORT BEND §

AGREEMENT FOR GENERAL CONTRACTOR SERVICES
FOR THE CONSTRUCTION OF THE WESTPARK PARK & RIDE

(SpawGlass Civil Construction, Inc. - RFP 23-057)

This Agreement ("Agreement") is made and entered into by and between Fort Bend County, Texas ("County"), a political subdivision of the state of Texas, and SpawGlass Civil Construction, Inc. ("Contractor"), a Texas corporation. County and Contractor may be referred to individually as a "Party" or collectively as the "Parties."

WHEREAS, Contractor is a general contracting and construction management firm; and

WHEREAS, County desires for Contractor to provide general contracting services for the construction of the Westpark Park & Ride located in Richmond, Fort Bend County, Texas pursuant to RFP 23-057; and

WHEREAS, Contractor represents that it is qualified and desires to perform such services for County; and

WHEREAS, this Agreement is an agreement for a public works project and is subject to the applicable laws under the Chapters 2252 – 2258, and 2269 of the Texas Government Code and Chapter 406 of the Texas Labor Code, and the mandatory contract provisions provided under 2 C.F.R § 200.

NOW, THEREFORE, in consideration of the mutual covenants and agreements contained herein, the Parties do mutually agree as follows:

1. **Purpose.** The purpose of this Agreement is to outline the obligations related to the general contracting and construction services provided by Contractor for the construction of the Westpark Park & Ride on approximately 10 acres of property located at 19820 FM 1093, Richmond, Texas 77407 with space for a future maintenance facility (the "Project").

2. **Recitals.** The recitals set forth above are incorporated herein by reference and made a part of this Agreement.

3. **Incorporated Documents.** The Exhibits listed below are a part of this Agreement and are incorporated by reference as if fully reproduced herein and constitute promised performances by Contractor in accordance with the terms of this Agreement. References to the terms "Agreement" in this Agreement shall include references to all exhibits attached hereto.

(a) Contractors' November 10, 2023 Revised Bid Pricing Sheet (the "Contractor's Proposal") attached hereto as "Exhibit A."

(b) RFP 23-057 attached hereto as "Exhibit B."

(c) Contractor's "Understanding of Scope of Work" and "Proposed Schedule" as provided in Contractor's July 18, 2023 Response to RFP 23-057 attached hereto as "Exhibit C."

(d) "Addendum 1" dated July 20, 2023 attached hereto as "Exhibit D."

(e) Prevailing Wage Rates attached hereto as "Exhibit E."

(f) (FTA) Federal Terms and Conditions (the "FTA Contract Provisions"), attached hereto as "Exhibit F."

4. **Scope of Work.**

(a) Contractor shall provide General Contracting and constructions services for the Project in accordance with the terms, provisions, and design and construction plans as provided in Exhibits A through D attached hereto (the "Scope of Work").

(b) Contractor shall have the overall responsibility for the Project and shall provide complete construction services and furnish all personnel, materials, equipment, tools, labor, supervision, utilities, transportation, and other materials or equipment necessary or reasonably inferable to complete the Project or any phase of the Project, in accordance with the County's requirements and terms of this Agreement.

(c) Any revisions made to the Scope of Work for the Project, including any requests for additional work to be performed, shall not proceed without the express written consent of County. Such revisions or additional work shall be provided in a written amendment to this Agreement and executed by both Parties before commencement.

5. **Time for Performance; Substantial and Final Completion.**

(a) Time for performance of the Scope of Services for the Project shall begin with Contractor's receipt of Notice to Proceed from County (the "Commencement Date").

(b) Substantial Completion for the Project shall be achieved on or before two hundred ninety eight (298) calendar days from the Commencement Date, or within such time as may be extended in writing by County. "Substantial Completion" includes all phases of construction up to and including the final site work as provided in Contractor's Proposed Schedule attached hereto as Exhibit C.

(c) Final Completion of the Project shall be achieved within thirty (30) calendar days from the date Substantial Completion is achieved, or within such time as may be extended in writing by County. Final Completion shall include the completion of the final clean and all Closeout items included on Contractor's Proposed Schedule attached hereto as Exhibit C. County, in its sole discretion and satisfaction, shall determine if the Project has achieved Final Completion. Upon written request by County, Contractor shall promptly correct any work County reasonably deems defective at Contractor's sole cost and expense, unless County specifically agrees in writing to accept such work.

(d) Final Acceptance of the Project shall occur upon County's determination that Final Completion has been achieved and all documents and affidavits required for Contractor's Application for Final Payment have been reviewed and approved by County.

6. **Liquidated Damages.** Contractor understands and agrees that the timeframes set forth in Section 5 of this Agreement are an essential element of this Agreement. For each consecutive calendar day that the Project has not achieved Substantial Completion within the time frame provided in this Agreement, County may deduct the amount of five hundred dollars ($500.00) per calendar day from any money due or that becomes due to Contractor, not as a penalty but as liquidated damages representing the Parties' estimate of the damages that County will incur for late Substantial Completion. The Parties agree that such sum is a reasonable and proper measure of damages that County will sustain.

7. **Compensation and Payment Terms.**

(a) Contractor's fees for the Services shall be calculated at the rate(s) set forth in Contractor's Proposal attached hereto as Exhibit A. The Maximum Compensation to Contractor for the Services performed under this Agreement is Seven Million Four Hundred Eighteen Thousand Seven Hundred Eighteen and 22/100 Dollars ($7,418,718.22). In no event shall the amount paid by County to Contractor under

this Agreement exceed said Maximum Compensation without an approved change order.

(b) Contractor understands and agrees that the Maximum Compensation stated is an all-inclusive amount and no additional fee, cost or reimbursed expense shall be added whatsoever to the fees stated in Contractor's Proposal.

(c) All performance of the Scope of Services by Contractor, including any changes in the Scope of Services and revision of work satisfactorily performed, will be performed only when approved in advance and authorized by County.

(d) Contractor shall submit all "Applications for Payment" for installments of the Maximum Compensation for approval and processing to County staff designated by the Fort Bend County Public Transportation Director, one (1) electronic (pdf) or one (1) original on a monthly basis showing the amounts due for services performed on or before the tenth (10^{th}) day of each calendar month during the progress of the Project. Each Application for Payment shall be in a form acceptable to the County and shall reflect any amount representing the proportionate part of the Services performed during the previous month. As support of each Application for Payment, Contractor shall submit the following in a form acceptable to the County Auditor:

(1) A statement in the form of the current Application and Certificate for Payment, as published by the American Institute of Architects ("Application for Payment") executed by Contractor certifying the following:

a. The proportionate part of the Services described in such Application for Payment has been performed;

b. Contractor's amount included in the Application for Payment attributable to the Services provided is due and owing;

c. There are no known mechanics' or materialmen's liens outstanding as of the date of the Application for Payment or if such liens are known, such have been adequately bonded;

d. All due and payable bills with respect to the Project have been paid to date or are included in the amount requested in the current Application for Payment, and

e. Except for such bills not paid but so included, there is no known basis for the filing of any mechanics' or materialmen's liens on the Services.

(2) A partial lien waiver and release in a form acceptable to the County Auditor effective through the date of Contractor's preceding Application for Payment, executed by Contractor with a statement certifying those matters set forth in Sections 7(d)(1)a through 7(d)(1)e above certifying that waivers from all subcontractors and materialmen have been obtained in such form so as to constitute an effective waiver of liens under the laws of the State of Texas.

(3) An affidavit executed by Contractor that payrolls, bills for materials and equipment, and other indebtedness connected with the Project for which County or Contractor might be responsible or encumbered (less amounts withheld by Contractor) have been paid or otherwise satisfied, including unconditional waivers and releases upon final payment from all trade contractors, suppliers, material men, or other third parties that provided labor, services, equipment or material to the Project, satisfying the requirements for such releases set forth in Section 53.085 of the Texas Property Code Section.

(4) Within thirty (30) days after receipt of each uncontested Application for Payment together with the supporting materials required under this Agreement, County shall advance to Contractor the uncontested amount requested in such uncontested Application for Payment, except five percent (5%) of the amount requested (hereinafter "Retainage") in each Application for Payment by County. The Retainage withheld shall be released upon Final Acceptance of the Project and verification of satisfactory work performed, unless grounds exist for withholding payment on account of other defaults by Contractor, including any work or Services provided by its sub-contractors.

(5) Payment, constituting the entire unpaid balance of the Maximum Compensation, less fifty percent (50%) of the Retainage then held by County and such amount as the Facilities Management & Planning Director determines is reasonably necessary for all incomplete Services (including, without limitation, punchlist items) and for all unsettled claims, as provided in this Agreement, shall be advanced by County to Contractor upon the date of Substantial Completion.

(6) At any time following Final Completion of the Project, Contractor shall submit an Application for Final Payment, including all sums held as Retainage, to County for review and approval. Contractor's Application for Final Payment shall also include final copies of all close out documents, including maintenance and operating instructions, guarantees and warranties, certificates (including a Final Certificate of Occupancy), and all

other items required by this Agreement. Contractor shall further include in such Application a Consent of Surety to Final Payment, a Lien Waiver or Affidavit to the effect that it and all its subcontractors and suppliers of labor and materials have been paid in full. Said Lien Waiver or Affidavit must be in a form and substance sufficient as a matter of law to dissolve all liens or claims of liens for materials supplied or labor or service performed in connection with the Project.

(7) Upon approval of Contractor's Final Application, County shall pay all outstanding and withheld portions of the Maximum Compensation to Contractor upon the later to occur of (i) thirty (30) days after Final Acceptance of the Project by County or, (ii) the date the Contractor causes all mechanics' and materialmen's liens filed against the Project to be removed. Contractor understands and agrees that County is entitled to rely on such Affidavit(s) submitted by Contractor hereunder and may not submit a claim on behalf of a subcontractor or vendor if that claim has not been noted as an exception in such Affidavit(s).

(8) Notwithstanding the foregoing, County may deduct from the Final Payment all sums for Liquidated Damages as provided in Section 6 of this Agreement.

(e) Upon Final Payment of the entire balance of the Maximum Compensation and all other amounts withheld by County pursuant to the terms of this Agreement, Contractor shall execute and deliver to County a release discharging County from all liabilities, obligations and claims to pay the Maximum Compensation to this Agreement.

8. **Limit of Appropriation.** Contractor understands and agrees that the Maximum Compensation for the performance of the Services within the Scope of Work described in Section 4 above is Seven Million Four Hundred Eighteen Thousand Seven Hundred Eighteen and 22/100 Dollars ($7,418,718.22). In no event shall the amount paid by County under this Agreement exceed the Maximum Compensation without a County approved change order. Contractor clearly understands and agrees, such understanding and agreement being of the absolute essence of this Agreement, that County shall have available the total maximum sum of Seven Million Four Hundred Eighteen Thousand Seven Hundred Eighteen and 22/100 Dollars ($7,418,718.22) specifically allocated to fully discharge any and all liabilities County may incur under this Agreement. Contractor does further understand and agree, said understanding and agreement also being of the absolute essence of this Agreement, that the total Maximum Compensation that Contractor may become entitled to and the total maximum sum that County may become liable to pay to Contractor under this Agreement shall not under any conditions, circumstances, or interpretations thereof exceed Seven Million Four Hundred Eighteen Thousand Seven Hundred Eighteen and 22/100 Dollars ($7,418,718.22).

9. **Non-appropriation.** Contractor understands and agrees that in the event no funds or insufficient funds are appropriated by the County under this Agreement, County shall immediately notify Contractor in writing of such occurrence and the Agreement shall thereafter terminate and be null and void on the last day of the fiscal period for which appropriations were received or made without penalty, liability or expense to the County. In no event shall said termination of this Agreement or County's failure to appropriate said funds be deemed a breach or default of this Agreement or create a debt by County in any amount(s) in excess of those previously funded.

10. **Taxes.** County is a body corporate and politic under the laws of the state of Texas and as such, is exempt from sales and use taxes. County shall furnish evidence of its tax-exempt status upon written request by Contractor.

11. **Bonds**. Pursuant to Section 4253.021 of the Texas Government Code, Contractor shall provide a Performance Bond and Payment Bond to County. The Performance Bond shall be in an amount equaling one hundred percent (100%) of the total cost of the Project under this Agreement. The Payment bond shall also be in an amount equaling one hundred percent (100%) of the total cost of the Project under this Agreement. All bonds obtained under this Agreement shall be executed by a corporate surety company duly authorized and admitted to do business in the State of Texas and licensed to issue such a bond in the State of Texas.

12. **Insurance.**

    (a) Prior to commencement of any work for the Project, 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 the Project commences until Final Acceptance of the Project by County and shall 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 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:

        (1) Workers Compensation in accordance with the laws of the State of Texas. Substitutes to genuine Workers' Compensation Insurance will not be allowed.

(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.

(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.

(4) Business Automobile Liability coverage applying to owned, non-owned and hired automobiles with limits not less than $1,000,000 each occurrence combined single limit for Bodily Injury and Property Damage combined.

(b) 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 written on behalf of Contractor shall contain a waiver of subrogation in favor of County and the members of Commissioners Court.

(c) 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 Agreement and that continuous coverage will be maintained or an extended discovery period will be exercised for a period of 2 years beginning from the time the work under this Agreement is completed.

(d) Contractor shall not commence any portion of the work under this Agreement until it has obtained the insurance required herein and certificates of such insurance have been filed with and approved by County.

(e) No cancellation of or changes to the certificates, or the policies, may be made without thirty (30) days prior, written notification to County.

(f) Approval of the insurance by County shall not relieve or decrease the liability of the Contractor.

(g) <u>Worker's Compensation Insurance Coverage:</u> In the event Contractor employs any individual to perform any portion of work for the Project, Contractor shall certify in writing to County that Contractor provides Worker's Compensation Insurance coverage for each employee of Contractor employed on the Project pursuant to Section 406.096 of the Texas Labor Code. Contractor shall also ensure that each subcontractor on the Project shall provide such certification relating to coverage of the subcontractor's employees to Contractor, who shall provide the subcontractor's written certification to County.

(h) Builders Risk Insurance (all risks): At all times until Final Acceptance of the Project by County, Contractor shall procure and maintain in full force and effect a policy of Builder's Risk Insurance specified as follows:

(1) The policy shall provide coverage for "all risks" in amount equal to one hundred percent (100%) of the total cost of the Project.

(2) The policy shall provide coverage for "all risks" of direct physical loss or damage to all property, materials, equipment, and supplies for the Project, or any portions thereof, whether owned by Contractor or subcontractors of every tier, in which one or more of same has an insurable interest.

(3) The Policy shall cover the insurable value of all property, materials, equipment, and supplies at risk and shall contain a waiver of subrogation in favor of Contractor, subcontractors of any tier, and County for any loss or damage sustained during the term of this Agreement.

(4) Coverage shall include transit and storage in an amount sufficient to protect the property, materials, equipment, and supplies being transported or stored for the Project.

(5) The policy shall be issued in the name of Contractor and shall name County as an additional insured.

(6) All Builder's Risk Insurance proceeds shall be paid directly to Contractor.

(i) Loss Deduction Clause: 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 any insurance deductibles shall be the sole responsibility of Contractor and/or subcontractor providing such insurance.

13. **Indemnity.**

THE PROVISIONS OF THIS SECTION SHALL SURVIVE THE TERMINATION OF THIS AGREEMENT HOWEVER CAUSED, AND NO PAYMENT, PARTIAL PAYMENT, OR ISSUANCE OF EITHER A CERTIFICATE OF SUBSTANTIAL COMPLETION OR FINAL ACCEPTANCE, IN WHOLE OR IN PART, SHALL WAIVE OR RELEASE ANY OF THE PROVISIONS OF THIS SECTION.

CONTRACTOR SHALL INDEMNIFY, DEFEND, AND HOLD HARMLESS THE COUNTY, ITS OFFICERS, DIRECTORS, AGENTS, EMPLOYEES, SUCCESSORS, AND ASSIGNS (COLLECTIVELY, "INDEMNIFIED PARTIES") FROM AND AGAINST ANY AND ALL CLAIMS,

LOSSES, DAMAGES, CAUSES OF ACTION, SUITS, LIABILITY, AND COSTS, INCLUDING COURT COSTS AND REASONABLE ATTORNEY FEES, CAUSED BY OR RESULTING FROM THE ACTIVITIES OF CONTRACTOR, ITS AGENTS, EMPLOYEES, SUBCONTRACTORS, CONSULTANT UNDER CONTRACT, OR ANOTHER ENTITY OVER WHICH CONTRACTOR EXERCISES CONTROL, PERFORMED UNDER THIS AGREEMENT AND WHICH RESULT FROM ANY NEGLIGENT ACT, ERROR, OR OMISSION; INTENTIONAL TORT; INTELLECTUAL PROPERTY INFRINGEMENT; OR FAILURE TO PAY A SUBCONTRACTOR OR SUPPLIER; COMMITTED BY CONTRACTOR OR BY ANY PERSON EMPLOYED BY CONTRACTOR, OR CONTRACTOR'S AGENT, SUBCONTRACTOR, CONSULTANT UNDER CONTRACT, OR ANOTHER ENTITY OVER WHICH CONTRACTOR EXERCISES CONTROL.

CONTRACTOR SHALL FURTHER INDEMNIFY, DEFEND, AND HOLD HARMLESS THE INDEMNIFIED PARTIES FROM AND AGAINST ANY AND ALL, LOSSES, DAMAGES, CAUSES OF ACTION, SUITS, LIABILITY, COSTS, INCLUDING COURT COSTS AND REASONABLE ATTORNEY FEES, AND CLAIMS OF ANY KIND, INCLUDING PERSONAL INJURY AND PROPERTY DAMAGE, WHICH THE INDEMNIFIED PARTIES MAY SUFFER DIRECTLY AS A RESULT OF CONTRACTOR'S PERFORMANCE OR NON-PERFORMANCE OF THE AGREEMENT.

CONTRACTOR SHALL FURTHER INDEMNIFY, DEFEND, AND HOLD HARMLESS COUNTY IF COUNTY IS FOUND TO HAVE BEEN NEGLIGENT FOR HAVING SELECTED CONTRACTOR TO PERFORM THE WORK FOR THE PROJECT UNDER THIS AGREEMENT.

CONTRACTOR SHALL FURTHER CAUSE ALL TRADE CONTRACTORS OR ANY OTHER CONTRACTOR OR SUBCONTRACTOR WHO MAY HAVE A CONTRACT TO PERFORM CONSTRUCTION AND/OR INSTALLATION WORK FOR THE PROJECT UNDER THIS AGREEMENT TO AGREE TO INDEMNIFY COUNTY AND TO HOLD IT HARMLESS FROM ALL CLAIMS FOR PERSONAL INJURY AND PROPERTY DAMAGE THAT MAY ARISE FROM SUCH CONTRACTORS' OR SUBCONTRACTORS' ACTIVITIES FOR THE PROJECT.

CONTRACTOR SHALL FURTHER PROCURE AND MAINTAIN LIABILITY INSURANCE WITH COVERAGE FOR THE PROJECT AS PROVIDED IN SECTION 12 OF THIS AGREEMENT AND SHALL FURNISH A CERTIFICATE OF INSURANCE FOR THE SAME SHOWING FORT BEND COUNTY, TEXAS AND MEMBERS OF COMMISSIONERS COURT AS AN ADDITIONAL INSURED. ADDITIONALLY, SUCH PROCUREMENT AND MAINTENANCE OF INSURANCE BY CONTRACTOR SHALL NOT LIMIT THE LIABILITY OF CONTRACTOR UNDER THIS AGREEMENT.

14. **Duty to Report and Defend.** Contractor shall timely report to County all such matters arising under Section 13 of this Agreement. Upon the receipt of any claim, demand, suit, action proceeding, lien, or judgment, and no later than the fifteenth day of each month, Contractor shall provide County with a written report on each matter, setting forth the

status of each matter, the schedule or planned proceedings with respect to each matter, and the cooperation or assistance, if any, of County required by Contractor in the defense of each matter. 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 the acts or omissions of Contractor, Contractor shall, nevertheless, 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 said acts and/or omissions of Contractor are not at issue in the matter.

15. **Iron or Steel Products.** Pursuant to Section 4252.202 of the Texas Government Code, any iron or steel products produced through a manufacturing process and used for the Project must be produced in the United States unless County determines that such iron or steel products produced in the United States are not produced in sufficient quantities, reasonably available, or of satisfactory quality, or will increase the total cost of the Project by more than 20%, or is inconsistent with the public interest.

16. **Prevailing Wages.** Pursuant to Chapter 2258 of the Texas Government Code, all workers employed by Contractor or its subcontractors for the Project shall be compensated at not less than the rates provided in Exhibit E. Contractor shall keep records showing: (1) the name and occupation of worker employed for the Project, and (2) actual per diem wages paid to each worker employed for the Project. Contractor shall require all subcontractors to keep the same records. Such records by Contractor and subcontractors shall be made available for inspection upon request by County subject to reasonable hours. Contractor shall further pay County sixty ($60.00) for each worker employed by Contractor for the Project for each calendar day, or any portion of the day, that such worker is paid less than the prevailing wages provided on Exhibit E.

17. **Public Information Act.** Contractor expressly acknowledges and agrees that County is a public entity and as such, is subject to the provisions of the Texas Public Information Act under Chapter 552 of the Texas Government Code. In no event shall County be liable to Contractor for release of information pursuant to Chapter 552 of the Texas Government Code or any other provision of law. Except to the extent required by law or as directed by the Texas Attorney General, County agrees to maintain the confidentiality of information provided by Contractor expressly marked as proprietary or confidential. County shall not be liable to Contractor for any disclosure of any proprietary or confidential information if such information is disclosed under Texas law or at the direction of the Texas Attorney General. Contractor further acknowledges and agrees that the terms and conditions of this Agreement are not proprietary or confidential information.

18. **Compliance with Laws.** Contractor shall comply with all federal, state, and local laws, statutes, ordinances, rules, regulations, and the decrees of any courts or administrative bodies or tribunals in any matter affecting the performance of this Agreement, including, without limitation, Worker's Compensation laws, minimum and maximum salary and

wage statutes and regulations, licensing laws and regulations. Contractor in providing all services hereunder, further agrees to abide by the provisions of any applicable Federal or State Data Privacy Act. Contractor shall be responsible for and acquire all permits for the Project required by law.

19. **Federal Award.** Contractor acknowledges and understands that this Agreement is funded with federal funds from the Federal Transit Administration (FTA). As a condition of receiving funds under this Agreement, Contractor represents that it is and shall remain in compliance with all federal and or state terms as provided in this Agreement and the terms of the FTA Contract Provisions attached hereto as Exhibit F.

20. **Subcontractors.**

(a) All construction contract(s) entered into between Contractor and its contractors and/or subcontractors must include the FTA Contract Provisions attached hereto as Exhibit F. Such construction contract(s) must also include a provision requiring each contractor and subcontractor to include the FTA Contract Provisions in their contracts for the Project as provided in this Agreement. In the event Contractor constructs the Project in multiple contracts, the FTA Contract Provisions must apply to each construction contract.

(b) County shall have approval rights over the use and/or removal of all subcontractors and/or vendor(s) used by Contractor. Contractor shall ensure that all subcontractor conform to all County policies.

(c) Any disputes between Contractor and subcontractors, including any payment dispute, shall be promptly remedied by Contractor. Any failure of Contractor to promptly remedy or to make prompt payment to any subcontractor may result in a withholding of funds from Contractor by County for any payments owed to a subcontractor.

21. **Independent Contractor.** In the performance of work or services hereunder, Contractor shall be deemed an independent Contractor, and any of its agents, employees, officers, or volunteers performing work required hereunder shall be deemed solely as employees of Contractor. Contractor and its agents, employees, officers, or volunteers shall not, by performing work pursuant to this Agreement, be deemed to be employees, agents, or servants of County and shall not be entitled to any of the privileges or benefits of County employment.

22. **Use of Customer Name.** Contractor may use County's name without County's prior written consent only in Contractor's customer lists. Any other use of County's name by Contractor must have the prior written consent of County.

23. **County/County Data**. Nothing in this Agreement shall be construed to waive the requirements of Section 405.009 of the Texas Local Government Code.

24. **Personnel.** Contractor represents that it presently has, or is able to obtain adequate qualified personnel in its employment for the timely performance of the Services required under this Agreement and that Contractor shall furnish and maintain, at its own expense, adequate and sufficient personnel, in the opinion of County, to perform the Services when and as required and without delays.

All employees of Contractor shall have such knowledge and experience as will enable them to perform the duties assigned to them. Any employee of Contractor or agent of Contractor who, in County's opinion, is incompetent or by his conduct become detrimental to providing work or services for the Project pursuant to this Agreement, shall, upon request of County, immediately be removed from association with the Project.

When performing any work or services on–site at County's facilities, Contractor shall comply with, and will require that all Contractor's Personnel comply with, all applicable rules, regulations and known policies of County that are communicated to Contractor in writing, including security procedures concerning systems and data and remote access thereto, building security procedures, including the restriction of access by County to certain areas of its premises or systems for security reasons, and general health and safety practices and procedures.

25. **Confidential and Proprietary Information.** Contractor acknowledges that it and its employees or agents may, in the course of performing their responsibilities under this Agreement, be exposed to or acquire information that is confidential to County. Any and all information of any form obtained by Contractor or its employees or agents from County in the performance of this Agreement shall be deemed to be confidential information of County ("Confidential Information"). Any reports or other documents or items (including software) that result from the use of the Confidential Information by Contractor shall be treated with respect to confidentiality in the same manner as the Confidential Information. Confidential Information shall be deemed not to include information that (a) is or becomes (other than by disclosure by Contractor) publicly known or is contained in a publicly available document; (b) is rightfully in Contractor's possession without the obligation of nondisclosure prior to the time of its disclosure under this Agreement; or (c) is independently developed by employees or agents of Contractor who can be shown to have had no access to the Confidential Information.

Contractor agrees to hold Confidential Information in strict confidence, using at least the same degree of care that Contractor uses in maintaining the confidentiality of its own confidential information, and not to copy, reproduce, sell, assign, license, market, transfer or otherwise dispose of, give, or disclose Confidential Information to third parties or use Confidential Information for any purposes whatsoever other than the provision of

Services to County hereunder, and to advise each of its employees and agents of their obligations to keep Confidential Information confidential. Contractor shall use its best efforts to assist County in identifying and preventing any unauthorized use or disclosure of any Confidential Information. Without limitation of the foregoing, Contractor shall advise County immediately in the event Contractor learns or has reason to believe that any person who has had access to Confidential Information has violated or intends to violate the terms of this Agreement and Contractor will at its expense cooperate with County in seeking injunctive or other equitable relief in the name of County or Contractor against any such person. Contractor agrees that, except as directed by County, Contractor will not at any time during or after the term of this Agreement disclose, directly or indirectly, any Confidential Information to any person, and that upon termination of this Agreement or at County's request, Contractor will promptly turn over to County all documents, papers, and other matter in Contractor's possession which embody Confidential Information.

Contractor acknowledges that a breach of this Section, including disclosure of any Confidential Information, or disclosure of other information that, at law or in equity, ought to remain confidential, will give rise to irreparable injury to County that is inadequately compensable in damages. Accordingly, County may seek and obtain injunctive relief against the breach or threatened breach of the foregoing undertakings, in addition to any other legal remedies that may be available. Contractor acknowledges and agrees that the covenants contained herein are necessary for the protection of the legitimate business interest of County and are reasonable in scope and content.

Contractor in providing all services hereunder agrees to abide by the provisions of any applicable Federal or State Data Privacy Act.

26. **Ownership and Reuse of Documents.** All documents, data, reports, research, graphic presentation materials, etc., developed by Contractor as a part of its work under this Agreement, shall become the property of County upon completion or termination of this Agreement. Contractor shall promptly furnish all such data and material to County on written request.

27. **Inspection of Books and Records.** Contractor shall permit County, or any duly authorized agent of County, to inspect and examine the books and records of Contractor for the purpose of verifying the amount of work performed under the Scope of Services and for verifying compliance with the terms of this Agreement. County's right to inspect such books and records shall survive the termination of this Agreement for a period of five (5) years. **CONTRACTOR SHALL NOT DESTROY OR DISCARD ANY DATA, BOOKS, RECORDS, OR DOCUMENTS REASONABLY RELATED TO THIS AGREEMENT OR THE PROJECT, UNLESS THE TIME PERIOD FOR MAINTAINING THE SAME HAS EXPIRED.**

28. **Termination.**

(a) Without Cause. County, in its sole discretion, and without prejudice to any other remedy to which it may be entitled to at law or in equity, may terminate this Agreement, in whole or in part, without cause, upon thirty (30) days prior written notice to Contractor.

(b) With Cause. County, in its sole discretion, and without prejudice to any other remedy to which it may be entitled to at law or in equity, may terminate this Agreement, in whole or in part, with cause, for the following reasons:

(1) Contractor becomes debarred, suspended, or otherwise excluded from or ineligible for participation in Federal programs or activities.

(2) If Contractor fails to perform any portion of the Scope of Services under Section 4 above within the timeframe(s) provided under this Agreement.

(3) Contractor fails to perform any obligation under this Agreement or as required by law, ordinance, or regulation and such failure creates an imminent threat to the public health and/or safety.

(4) If Contractor materially breaches any of the covenants or terms and conditions set forth in this Agreement or fails to perform any of the other provisions of this Agreement or so fails to make progress as to endanger performance of this Agreement in accordance with its terms, and in any of these circumstances does not cure such breach or failure to County's reasonable satisfaction within a period of ten (10) calendar days after receipt of notice from County specifying such breach or failure.

(5) Contractor fails to comply with County's documentation and reporting requirements, program objectives, terms and requirements of this Agreement, or applicable federal, state, or local laws and regulations.

(6) Non-performance and suspension of the Agreement that exceeds ten (10) calendar days due to a Force Majeure Event.

(7) If, after termination, it is determined for any reason whatsoever that Contractor was not in default, or that the default was excusable, the rights and obligations of the Parties shall be the same as if the termination had been issued for the convenience of the County in accordance with this Agreement.

(c) Upon termination of this Agreement, Contractor shall cease all work and activity for the Project by the date specified by County and shall not incur any new obligations or perform any additional services for the Project beyond the specified date. County shall compensate Contractor in accordance with Section 7, above,

for such work provided by Contractor under this Agreement prior to its termination and which has not been previously presented for payment by Contractor to County.

(d) If County terminates this Agreement as provided in this Section, no fees of any type, other than fees due and payable at the Termination Date, shall thereafter be paid to Contractor.

29. **Force Majeure.** Notwithstanding anything to the contrary contained herein, neither Party shall liable to the other for any delay or inability to carry out its obligations under this Agreement if such delay or inability is the result of a Force Majeure Event. Within a reasonable time after the occurrence of such event but no later than ten (10) calendar days, the Party whose obligations are affected (the "Affected Party") thereby shall notify the other in writing stating the nature of the event and the anticipated duration. The Affected Party's obligations under this Agreement shall be suspended during the continuance of any delay or inability caused by the event, but for no longer period. The Affected Party shall further endeavor to remove or overcome such delay or inability as soon as is reasonably possible.

For purposes of this Agreement, a Force Majeure Event includes, but is not limited to: strikes or other labor disputes, severe weather disruptions, natural disasters, fire or other acts of God; riots, war, or other emergencies; failure of any governmental agency to act in a timely manner; the discovery of any hazardous substance or differing and unforeseeable site conditions; and any other inabilities of any Party, similar to those enumerated, which are not within the control of the Party claiming such inability, which such Party could not have avoided by the reasonable exercise of due diligence and care.

30. **Assignment.** Contractor may not assign this Agreement to another party without the prior written consent of County.

31. **Successors and Assigns Bound.** County and Contractor each bind themselves and their successors and assigns to the other Party and to the successors and assigns of such other Party, with respect to all covenants of this Agreement.

32. **Publicity.** Contact with citizens of Fort Bend County, media outlets, or other governmental agencies shall be the sole responsibility of County. Under no circumstances, whatsoever, shall Contractor release any material or information developed or received during the performance of Services hereunder unless Contractor obtains the express written approval of County or is required to do so by law.

33. **Notice.** Any and all notices required or permitted under this Agreement shall be in writing and shall be mailed by certified mail, return receipt requested, or personally delivered to the following addresses:

If to County: Fort Bend County Public Transportation
Attn: Director
301 Jackson St.
Richmond, Texas 77469

And

Fort Bend County, Texas
Attention: County Judge
401 Jackson Street, 1st Floor
Richmond, Texas 77469

If to Contractor: SpawGlass Civil Construction, Inc.
Attn: Beth Farner
13800 West Road
Houston, Texas 77041

Within ten (10) calendar days of the Effective Date of this Agreement, Contractor shall designate in writing a representative to be County's primary contact during the term of this Agreement and such representative shall be available as required for the benefit of the Project and County.

34. **Performance Representation**.

(a) Contractor represents to County that Contractor has the skill and knowledge ordinarily possess by well-informed members of its trade or profession practicing in the greater Houston metropolitan area and Contractor will apply that skill and knowledge with care and diligence to ensure that the work provided hereunder will be performed and delivered in accordance with the highest professional standards.

(b) Contractor warrants to County that materials and equipment provided for the Project will be of good quality and new unless otherwise required or permitted by in writing by County. Contractor further warrants that the construction for the Project will be free from material faults and defects and, will materially conform to all requirements and specifications contained in the attached Exhibits A, B, C and D and the terms of this Agreement.

35. **Entire Agreement and Modification.** This Agreement constitutes the entire Agreement between the Parties and supersedes all previous agreements, written or oral, pertaining to the subject matter of this Agreement. Unless specifically provided in this Agreement, any change to the terms of this Agreement, Scope of Work for the Project, or any attached Exhibits shall be in writing and signed by each Party**. IT IS ACKNOWLEDGED BY CONTRACTOR THAT NO OFFICER, AGENT EMPLOYEE, OR REPRESENTATIVE OF COUNTY**

HAS ANY AUTHORITY TO CHANGE THE TERMS OF THIS AGREEMENT OR ANY ATTACHED EXHIBITS THERETO UNLESS EXPRESSLY AUTHORIZED BY THE FORT BEND COUNTY COMMISSIONERS COURT.

36. **Understanding Fair Construction.** By execution of this Agreement, the Parties acknowledge that they have read and understood each provision, term, and obligation contained herein. This Agreement, although drawn by one party, shall be construed fairly and reasonably and not more strictly against the drafting Party than the non-drafting Party.

37. **Severability.** In case any one or more of the provisions contained in this Agreement 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 this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.

38. **No Waiver of Immunity.** Neither the execution of this Agreement nor any other conduct of either party relating to this Agreement shall be considered a waiver or surrender by County of its governmental powers or immunity under the Texas Constitution or the laws of the state of Texas.

39. **Applicable Law and Venue.** This Agreement shall be construed according to the laws of the state of Texas. Venue for any claim arising out of or relating to the subject matter of this Agreement shall lie in a court of competent jurisdiction of Fort Bend County, Texas.

40. **Effective Date.** The Effective Date of this Agreement shall be the date this Agreement is signed by the last Party hereto.

41. **Certain State Law Requirements for Contracts** The contents of this Section are required by Texas law and are included by County regardless of content For purposes of Sections 2252.152, 2271.002, and 2274.002, Texas Government Code, as amended, Contractor hereby verifies that Contractor and any parent company, wholly owned subsidiary, majority-owned subsidiary, and affiliate:

    (a) Unless affirmatively declared by the United States government to be excluded from its federal sanctions regime relating to Sudan or Iran or any federal sanctions regime relating to a foreign terrorist organization, is not identified on a list prepared and maintained by the Texas Comptroller of Public Accounts under Section 806.051, 807.051, or 2252.153 of the Texas Government Code.

    (b) If employing ten (10) or more full-time employees and this Agreement has a value of $100,000.00 or more, Contractor does not boycott Israel and is authorized to agree in such contracts not to boycott Israel during the term of such contracts.

"Boycott Israel" has the meaning provided in § 808.001 of the Texas Government Code.

(c) If employing ten (10) or more full-time employees and this Agreement has a value of $100,000.00 or more, Contractor does not boycott energy companies and is authorized to agree in such contracts not to boycott energy companies during the term of such contracts. "Boycott energy company" has the meaning provided in § 809.001 of the Texas Government Code.

(d) If employing ten (10) or more full-time employees and this Agreement has a value of $100,000.00 or more, Contractor does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association and is authorized to agree in such contracts not to discriminate against a firearm entity or firearm trade association during the term of such contracts. "Discriminate against a firearm entity or firearm trade association" has the meaning provided in § 2274.001(3) of the Texas Government Code. "Firearm entity" and "firearm trade association" have the meanings provided in § 2274.001(6) and (7) of the Texas Government Code.

42. **Human Trafficking.** BY ACCEPTANCE OF THIS AGREEMENT, 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.

43. **Captions.** The section captions used in this Agreement are for convenience of reference only and do not affect the interpretation or construction of the Agreement.

44. **Electronic and Digital Signatures.** The Parties to this Agreement agree that any electronic and/or digital signatures of the Parties included in this Agreement are intended to authenticate this writing and shall have the same force and effect as the use of manual signatures.

45. **Certification.** By his or her signature below, each signatory individual certifies that he or she is the properly authorized person or officer of the applicable Party hereto and has the requisite authority necessary to execute this Agreement on behalf of such Party, and each Party hereby certifies to the other that it has obtained the appropriate approvals or authorizations from its governing body as required by law.

{Execution Page Follows}

IN WITNESS WHEREOF, and intending to be legally bound, County and Contractor hereto have executed this Agreement to be effective on the date signed by the last Party hereto.

FORT BEND COUNTY, TEXAS

_____
KP George, County Judge

_____
Date

ATTEST:

_____
Laura Richard, County Clerk

SPAWGLASS CIVIL CONSTRUCTION, INC.

_____
Authorized Agent – Signature

Weston Voss
Authorized Agent- Printed Name

President
Title

12/13/2023
Date

APPROVED:

_____
Perri D'Armond, Director
Fort Bend County Public Transportation

AUDITOR'S CERTIFICATE

I hereby certify that funds in the amount of **$**_____ are available to pay the obligation of Fort Bend County, Texas within the foregoing Agreement.

_____
Robert Ed Sturdivant, County Auditor

i:\agreements\2024 agreements\public transportation\spawglass (24-pt-100275)\public works contract (fta) - spawglass.docx - JLF

EXHIBIT A

(Contractor's Proposal Follows Behind)

SpawGlass

11/10/2023

Attention: Brandi Pittman

Re: RFP 23-057 Construction of Westpark Park & Ride Facility for Fort Bend County Public Transportation

Ms. Pittman,

SpawGlass has been working with Fort Bend County to identify any potential types of value engineering or scope adjustments from the original construction documents to help reduce project costs due to budget concerns. SpawGlass has presented options, with the most significant to eliminate the proposed water well and connect the project waterline to the neighboring MUD waterline. Below you will find an explanation of the adjustments made to the original pricing bid sheet:

1. Line Item 113, "Security Camera", quantity has been increased from 14 to the correct amount of 24 as depicted in the drawings. Both Line Items 215 regarding Security at the water well have been deleted. Line Item 114 cost slightly increased by $4,735.39 due to an increase of (10) additional security cameras on Line 113. This resulted in a credit of $68,393.21.
2. Line Item 151, "Outdoor Weather Proof Voip Phone Emergency Call Box", is now calculating correctly into the bid total. The cost associated with Line Item 151 is $13,748.35.
3. All Line Items cost associated with the Water Well System have been deleted.
4. SpawGlass has included the associated cost of installing approximately 700 LF of C900 12" waterline from the neighboring MUD Cinco Ranch 8 to the West up to the Park and Ride Facility. This includes all labor, equipment, and materials necessary to install the 12" water line, along with the necessary components such as Tee's, Gate Valves, Water Meter with Box, TS&V, and Fire Hydrant Assembly. This also includes the cost of the necessary boring that will need to be performed under the existing driveways. This resulted in a total cost of $397,905.89.
5. SpawGlass has included an additional Line Item considered for a "Water Line Owner Contingency". This is to cover any additional costs associated with the water line such as Permit Fees, Impact Fees, Inspections, Testing, Design, Engineering, or any other incidental items. The cost included for the Water Line Owner Contingency is a total of $100,000.

Please see attached revised bid pricing sheet for a new total of $7,418,718.22, resulting in a savings to Fort Bend County of $545,362.49.

Please let me know if you have any questions. Thank you.

Respectfully

Justin Cox
Project Manager

FORT BEND COUNTY - WESTPARK PARK AND RIDE PRELIMINARY CONSTRUCTION BID FORM

	SPEC CODE	DESCIPTION	UNITS	UNIT PRICE	QUANTITY	SPAWGLASS
SITE WORK						
1	TXDOT 100	PREPARING ROW	AC	$ 30,000.00	11.0	$ 330,000.00
2	TXDOT 104	REMOVING CONC (PAV)(INCLUDE SAWCUT AND REMOVE CURB)	SY	$ 68.49	152	$ 10,410.48
3	TXDOT 110	EXCAVATION (ROADWAY)(SITE)	CY	$ 22.00	2320	$ 51,040.00
4	TXDOT 132	EMBANKMENT (FINAL)(ORD COMP)(TY C)	CY	$ 10.47	12565	$ 131,555.55
5	TXDOT 162	BLOCK SODDING	SY	$ 5.16	10143	$ 52,337.88
6	TXDOT 164	DRILL SEEDING (TEMP)(WARM OR COOL)	AC	$ 1,374.83	6.0	$ 8,248.98
7	TXDOT 166	FERTILIZER	AC	$ 229.14	6	$ 1,374.84
8	TXDOT 168	VEGETATIVE WATERING	MG	$ 17.18	720	$ 12,369.60
9	TXDOT 7140	TRAFFIC CONTROL	MO	$ 551.20	12	$ 6,614.40
		SUBTOTAL				**$ 603,951.73**

PAVEMENT MARKING & SIGNS						$ -
10	TXDOT 644	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	$ 602.65	18	$ 10,847.70
11	TXDOT 644	IN SM RD SN SUP&AM (INST SIGN ONLY)	EA	$ 171.48	3	$ 514.44
12	TXDOT 666	REFL PAV MRK TY I (W)4"(SLD)(100MIL)	LF	$ 0.83	5626	$ 4,669.58
13	TXDOT 666	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF	$ 1.96	473	$ 927.08
14	TXDOT 666	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	$ 10.42	50	$ 521.00
15	TXDOT 666	REF PAV MRK TY I (W)(MED NOSE)(100MIL)	LF	$ 11.03	82	$ 904.46
16	TXDOT 666	REFL PAV MRK TY I (Y)4"(SLD)(100MIL)	LF	$ 1.54	334	$ 514.36
17	TXDOT 666	RE PM TY I (ACC PRK)(BLU)(SYMBOL ONLY)	EA	$ 318.47	9	$ 2,866.23
18	TXDOT 668	PREFAB PAV MRK TY C (W) (ARROW)	EA	$ 360.12	6	$ 2,160.72
19	TXDOT 668	PREFAB PAV MRK TY C (W) (WORD)	EA	$ 482.61	2	$ 965.22
20	TXDOT 672	REFL PAV MRKR TY II-A-A	EA	$ 8.58	8	$ 68.64
21	TXDOT 672	REFL PAV MRKR TY II-C-R	EA	$ 8.57	17	$ 145.69
		SUBTOTAL				**$ 25,105.12**

CONCRETE ROADWAY,PARKING						
22	TXDOT 260	LIME (HYDRATED LIME (DRY))	TON	$ 300.00	310	$ 93,000.00
23	TXDOT 260	LIME TRT (SUBGRADE)(6")	SY	$ 7.00	15100	$ 105,700.00
24	TXDOT 360	CURB (TYPE II)	LF	$ 5.72	3739	$ 21,387.08
24	TXDOT 359	PLATFORM)	SY	$ 57.29	500	$ 28,645.00
25	TXDOT 360	CONC PAV (JOINT REINF) (6") (PARKING)	SY	$ 56.50	9783	$ 552,739.50
26	TXDOT 360	CONC PAV (JOINT REINF) (9") (BUS ROAD)	SY	$ 85.93	3549	$ 304,936.93
27	TXDOT 360	CONC PAV (JOINT REINF) (10")(FRTG RD)	SY	$ 150.85	1048	$ 158,057.28
28	TXDOT 531	CONC SIDEWALKS (5")	SY	$ 63.01	347	$ 21,864.47
29	02761A	STAMPED CONCRETE PVMT	SY	$ 108.84	87	$ 9,469.08
30	TXDOT 531	CURB RAMPS (TY 10)	EA	$ 2,291.40	6	$ 13,748.40
31	TXDOT 531	CURB RAMPS (TY 1)	EA	$ 2,291.39	1	$ 2,291.39
32	TXDOT 550	ORNAMENTAL FENCE (INSTALL) (6')	LF	$ 87.47	1376	$ 120,358.72
33	TXDOT 550	CHAIN LINK FENCE (INSTALL) (6')	LF	$ 35.86	1016	$ 36,433.76
34	323100	GATE (SPECIAL) CANTILEVER SLIDING GATE (22.5')(ORNAMENTAL)(MOTOR)(INSTALLED)	EA	$ 25,148.02	2	$ 50,296.04
35	323100	GATE (SPECIAL) CANTILEVER SLIDING GATE (25')(CHAIN LINK)(MOTOR)(INSTALLED)	EA	$ 22,272.32	2	$ 44,544.64
36	323100	GATE (SPECIAL) CANTILEVER SLIDING GATE (20')(CHAIN LINK)(INSTALLED)	EA	$ 20,908.95	1	$ 20,908.95
37	TXDOT 5008	WHEEL STOPS	EA	$ 107.79	9	$ 970.11
		SUBTOTAL				**$ 1,585,351.34**

FORT BEND COUNTY - WESTPARK PARK AND RIDE PRELIMINARY CONSTRUCTION BID FORM

	SPEC CODE	DESCIPTION	UNITS	UNIT PRICE	QUANTITY	SPAWGLASS
DRAINAGE (INCLUDE DETENTION POND)						
38	HCFCD 02315	EXCAVATING AND BACKFILLING (DET POND)	CY	$ 18.01	16728	$ 301,271.28
39	TXDOT 110	EXCAVATION (CHANNEL)(PIPE)	CY	$ 27.06	578	$ 15,640.68
40	TXDOT 400	CEM STABIL BKFL	CY	$ 51.55	430	$ 22,166.50
41	TXDOT 402	TRENCH EXCAVATION PROTECTION	LF	$ 1.38	1250	$ 1,725.00
42	TXDOT 432	RIPRAP (CONC) (5IN)	CY	$ 521.02	108	$ 56,270.16
43	TXDOT 432	RIPRAP (STONE) (18IN)	CY	$ 144.86	123	$ 17,817.78
43	TXDOT 464	PIPE (PVC) (SCH 40) (8 IN)	LF	$ 68.86	99	$ 6,817.14
44	TXDOT 464	RC PIPE (CL III)(18 IN)	LF	$ 107.44	186	$ 19,983.84
45	TXDOT 464	RC PIPE (CL III)(24 IN)	LF	$ 126.02	1427	$ 179,830.54
46	TXDOT 464	RC PIPE (CL III)(30 IN)	LF	$ 167.09	239	$ 39,934.51
47	TXDOT 465	INLET (COMPL)(BACKSLOPE)	EA	$ 7,997.71	3	$ 23,993.13
48	TXDOT 465	INLET (COMPL)(CURB)(TY C)	EA	$ 7,471.31	5	$ 37,356.55
49	TXDOT 465	INLET (COMPL)(GRATE)(TY A)	EA	$ 5,184.25	9	$ 46,658.25
50	TXDOT 479	ADJUST INLET (CAP)	EA	$ 2,849.45	3	$ 8,548.35
		SUBTOTAL				**$ 778,013.71**
LANDSCAPING						
51	329300	CEDAR ELM-65 GAL.	EA	$ 783.07	26	$ 20,359.82
52	329300	LIVE OAK-65 GAL.	EA	$ 783.07	24	$ 18,793.68
53	329300	INDIAN HAWTHORNE-3 GAL.	EA	$ 22.25	588	$ 13,083.00
54	329300	LINDHEIMER'S MUHLY -3GAL.	EA	$ 22.25	292	$ 6,497.00
55	329300	RUSSELLIA-3GAL.	EA	$ 22.25	381	$ 8,477.25
56	329300	WATER OAK - 65 GAL	EA	$ 783.07	4	$ 3,132.28
57	329300	DRUMMOND RED MAPLE - 45 GAL	EA	$ 624.77	8	$ 4,998.16
58	329300	CEDAR ELM - 15 GAL	EA	$ 185.94	4	$ 743.76
59	329300	WILLOW OAK - 15 GAL	EA	$ 185.94	3	$ 557.82
60	329300	WATER OAK - 15 GAL	EA	$ 185.94	12	$ 2,231.28
61	329300	SHUMARD OAK - 5 GAL	EA	$ 22.25	10	$ 222.50
62	329300	CEDAR ELM - 5 GAL	EA	$ 22.25	8	$ 178.00
63	329300	WILLOW OAK - 5 GAL	EA	$ 22.25	8	$ 178.00
64	329300	DAHOON HOLLY - 5 GAL	EA	$ 22.25	8	$ 178.00
65	329202	FINE GRADE AND SOLID SOD	SF	$ 0.68	2,280	$ 1,550.40
66	329201	FINE GRADE AND HYDROMULCH	SF	$ 0.11	141,000	$ 15,510.00
67	328400	IRRIGATION SYSTEM	SF	$ 2.27	46,300	$ 105,101.00
68		60 DAY LANDSCAPE MAINTENANCE	LS	$ 13,748.35	1	$ 13,748.35
		SUBTOTAL				**$ 215,540.30**
ILLUMINATION						
69	CL1-A-60LU-4K-4-FINISH-BC	SL4-BC-60	EA	$1,370.25	30	$ 41,107.50
70	CL1-A-30LU-4K-4-FINISH-BC	SL4-BC-30	EA	$1,370.25	10	$ 13,702.50
71	CL1-A-30LU-4K-5M-FINISH-BC	SL4-BC-30	EA	$1,370.26	2	$ 2,740.52
72	101-5011-20 D1	20' POLE - SINGLE FIXTURE HEAD	EA	$2,405.96	12	$ 28,871.52
73	101-5011-20 D2	20' POLE - DOUBLE FIXTURE HEAD	EA	$2,405.96	15	$ 36,089.40
74	TXDOT 416	DRILL SHAFT (RDWY ILL POLE) (24 IN)	LF	$91.66	265	$ 24,289.90
75	TXDOT 618	CONDT (PVC) (SCH 80) (2")	LF	$15.63	8115	$ 126,837.45
76	TXDOT 620	ELEC CONDR (NO.8) INSULATED	LF	$8.00	5410	$ 43,280.00
77	TXDOT 620	ELEC CONDR (NO.8) BARE	LF	$7.05	2705	$ 19,070.25
78	TXDOT 624	GROUND BOX TY D (162922)W/APRON	EA	$3,666.23	2	$ 7,332.46
		SUBTOTAL				**$ 343,321.50**
WATER AND SANITARY SEWER						
79	COH 02082	5' DIAMETER SANITARY SEWER MANHOLE	EA	$ 5,047.34	3	$ 15,142.02
80	COH 02260	SAN SERVICE CONNECTION WITH STACK	EA	$ 1,672.23	1	$ 1,672.23
81	COH 02260	TRENCH SAFETY FOR WATER LINES	LF	$ 1.31	600	$ 786.00

	SPEC CODE	DESCIPTION	UNITS	UNIT PRICE	QUANTITY	SPAWGLASS
82	COH 02260	TRENCH SAFETY FOR SANITARY SEWER LINES	LF	$ 1.31	700	$ 917.00
83	COH 02511	8" PVC WATER PIPE	LF	$ 55.69	600	$ 33,414.00
84	COH 02511	8'' WATER LINE W/ 12'' STEEL CASING	LF	$ 161.55	110	$ 17,770.50
85	COH 02516	6" PLUG & CLAMP	EA	$ 325.45	1	$ 325.45
86	COH 02516	12" PLUG & CLAMP	EA	$ 810.23	1	$ 810.23
87	COH 02520	FIRE HYDRANT ASSEMBLY	EA	$ 6,539.49	1	$ 6,539.49
88	COH 02521	6" GATE VALVE & BOX	EA	$ 1,616.45	2	$ 3,232.90
89	COH 02521	8" GATE VALVE & BOX	EA	$ 2,306.12	2	$ 4,612.24
90	COH 02521	12" GATE VALVE & BOX	EA	$ 4,144.65	2	$ 8,289.30
91	COH 02526	8" WATER METER	EA	$ 47,815.82	1	$ 47,815.82
92	COH 02531	8" PVC SANITARY SEWER	LF	$ 56.31	700	$ 39,417.00
		SUBTOTAL				**$ 180,744.18**

ARCHITECTURAL						
93		OVER EXCAVATE / BACKFILL	CY	$ 48.03	393	$ 18,875.79
94		CONCRETE SLAB & GRADE BEAM	CY	$ 626.93	117	$ 73,350.81
95		AREA PAVING -FLAT WORK	CY	$ 735.54	49	$ 36,041.46
96		FOUNDATION 18/36 BELLED PIERS	LF	$ 140.81	240	$ 33,794.40
97	04 81 00	MASONRY BRICK VENEER	SF	$ 53.67	2822	$ 151,456.74
98	04 81 00	6" REINFORCED CMJ	SF	$ 36.81	305	$ 11,227.05
99	04 81 00	8" REINFORCED CMJ	SF	$ 24.93	850	$ 21,190.50
100	04 72 00	CAST STONE CAP	SF	$ 77.57	288	$ 22,340.16
101	07 55 29	ROOFING SYSTEM - PRE-ENGINEERSED	SF	$ 162.40	300	$ 48,720.00
102	10 50 30	BUS LOADING CANOPY SYSTEM	LS	$ 300,000.00	1	$ 300,000.00
103		WATERPROOFING/MISC. CAULKING/SEALANTS	SF	$ 32.62	800	$ 26,096.00
104	08 11 13	EXTERIOR DOOR/FRAME/HARDWARE-HM SINGLE	EA	$ 4,396.36	3	$ 13,189.08
105	10 28 13	FINISHES MIRRORS-FRAMED AT RESTROOMS	EA	$ 343.72	2	$ 687.44
106	09 90 00	FINISHES PAINTING-EPOXY PAINT	SF	$ 3.44	800	$ 2,752.00
107		POLISHED & SEALED CONCRETE	SF	$ 2.58	400	$ 1,032.00
108		SPECIALTIES-SIGNAGE-GRAPHICS ALLOWENCE	EA	$ 1,145.69	8	$ 9,165.52
109	10 28 13	SPECIALTIES-TOILET PAPER DISPENSER	EA	$ 171.86	2	$ 343.72
110	10 28 13	SPECIALTIES- GRAB BARS	EA	$ 114.58	4	$ 458.32
111	10 28 13	SOAP DISPENSER	EA	$ 57.29	2	$ 114.58
112	10 28 13	PAPER TOWEL DISPENSER/RECEPTACLE	EA	$ 572.85	2	$ 1,145.70
113	28 23 00	SECURITY CAMERA	EA	$ 5,155.63	24	$ 123,735.12
114	28 23 00	ALLOW FOR SITE COMMUNICATION AND SECURITY ROUGH-IN	EA	$ 64,309.26	1	$ 64,309.26
115		SECURITY CAMERA SERVER	EA	$ 13,611.88	1	$ 13,611.88
116		CARD READER ACCESS SYSTEM FOR IT ROOM & GATE	EA	$ 63,013.25	1	$ 63,013.25
117		LED MOUNUMENT SIGN & FOUNDATION	EA	$ 90,871.97	1	$ 90,871.97
117A		CAST STONE LOGO	EA	$ 2,864.25	2	$ 5,728.50
		SUBTOTAL				**$ 1,133,251.25**

MEP						
118	22 10 00	DOMESTIC WATER PIPE	LF	$ 45.83	200	$ 9,166.00
119	22 07 19	DOMESTIC WATER PIPE-INSTALLATION	LF	$ 45.83	25	$ 1,145.75
120	26 05 19	HEAT TRACE	LF	$ 34.37	200	$ 6,874.00
121	22 11 19	HOSE BIBS	EA	$ 2,291.40	4	$ 9,165.60
122	22 30 00	PLUMBING EQUIPMENT-INSTAHOT	EA	$ 3,666.23	2	$ 7,332.46
123	22 10 00	SANITARY WASTE AND VENT PIPING 4"	LF	$ 43.54	100	$ 4,354.00
124	22 40 00	PLUMBING FIXTURES	LS	$ 52,472.85	1	$ 52,472.85
125	22 11 19	FLOOR DRAINS	EA	$ 3,437.09	2	$ 6,874.18
126	23	THERMOSTAT	EA	$ 2,062.26	1	$ 2,062.26
127	23	MITSHUBISHI SPLIT-UNITS, ASSOCIATED PIPING	EA	$ 11,341.24	1	$ 11,341.24
128	23 34 00	TOILET EXHAUST FANS	LS	$ 1,603.98	2	$ 3,207.96
129	23 37 13	LOUVERS FOR EXHAUST FANS	EA	$ 916.56	2	$ 1,833.12
130	26 51 00 13	CANOPY LIGHT FIXTURES- TYPE A	EA	$ 2,507.93	28	$ 70,222.04
131	26 51 00 13	CANOPY LIGHT FIXTURES- TYPE FAE	EA	$ 2,507.93	4	$ 10,031.72

FORT BEND COUNTY - WESTPARK PARK AND RIDE PRELIMINARY CONSTRUCTION BID FORM

	SPEC CODE	DESCIPTION	UNITS	UNIT PRICE	QUANTITY	SPAWGLASS
132	26 51 00 13	RESTROOM BUILDING LIGHTS - FBE, BE	EA	$ 2,507.93	3	$ 7,523.79
133	26 51 00 13	WATER PLANT LIGHTS - W	EA	$ 2,507.93	0	$ -
133	26 27 26	LIGHTING CONTROL SYSTEMS	SF	$ 6.59	3120	$ 20,560.80
134	26 05 19	DEVICES & DISTRIBUTION- POWER OUTLETS	EA	$ 341.42	4	$ 1,365.68
135	26 24 13 & 26 24 16	PANELS AND TRANSFORMER	LS	$ 11,451.23	1	$ 11,451.23
136	26 05 19	FEEDERS AND MOTOR FEEDERS	SF	$ 12.07	3120	$ 37,658.40
137	26 28 16	DISCONNECT FOR MECHANICAL EQUIPMENT	EA	$ 630.14	2	$ 1,260.28
138	26 29 26	MISCELLANEOUS-GROUNDING/LIGHTING PROTECTION	SF	$ 14.56	3120	$ 45,427.20
139	12 93 00	SITE FURNISHINGS- BENCHES	EA	$ 3,082.65	3	$ 9,247.95
140	12 93 00	SITE FURNISHINGS-TRASH RECEPTACLES	EA	$ 2,866.72	4	$ 11,466.88
141	12 93 00	BIKE RACK	LS	$ 2,095.35	1	$ 2,095.35
142	22 10 00	SANITARY SYSTEM-4"	LF	$ 286.43	20	$ 5,728.60
143	22 10 00	SANITARY SYSTEM-CO-6"PVC	EA	$ 2,291.39	1	$ 2,291.39
		SUBTOTAL				**$ 352,160.73**

IT EQUIPMENT						
144		CATALYST 9300 48-PORT POE+, NETWORK ADVANTAGE & 5 YR TERM LICENSES	EA	$ 13,490.57	1	$ 13,490.57
145		SNTC-8X5XNBD CATALYST 9300 48-PORT POE+, NETWORK ADVANTAGE	EA	$ 5,155.63	1	$ 5,155.63
146		CATALYST 9300 4 X 1GE NETWORK MODULE	EA	$ 1,162.88	1	$ 1,162.88
147		715W AC 80+ PLATINUM CONFIG 1 SECONDARY POWER SUPPLY	EA	$ 933.75	1	$ 933.75
148		APC SMART-UPS X 1500VA RACK/TOWER LCD 120V WITH SMARTCONNECT	EA	$ 2,004.97	1	$ 2,004.97
149		UPS NETWORK MANAGEMENT CARD 3 WITH POWERCHUTE NETWORK SHUTDOWN	EA	$ 515.56	1	$ 515.56
150		42U FLOOR SERVER RACK	EA	$ 2,062.26	2	$ 4,124.52
151		OUTDOOR WEATHER PROOF VOIP PHONE EMERGENCY CALL BOX	EA	$ 13,748.35	1	$ 13,748.35
		SUBTOTAL				**$ 41,136.23**

POWER SERVICE						
152	26	SERVICE POLE AND TRANFORMER	LS	$ 17,400.00	1	$ 17,400.00
		SUBTOTAL				**$ 17,400.00**

SW3P						
153	TXDOT 506	SANDBAGS FOR EROSION CONTROL	EA	$ 90.51	42	$ 3,801.42
154	TXDOT 506	TEMP SEDMT CONT FENCE (INSTALL)	LF	$ 1.78	2187	$ 3,892.86
155	TXDOT 506	TEMP SEDMT CONT FENCE (REMOVE)	LF	$ 0.28	2187	$ 612.36
156	TXDOT 506	CONSTRUCTION EXITS (INSTALL) (TY 4)	SY	$ 49.75	140	$ 6,965.00
157	TXDOT 506	CONSTRUCTION EXITS (REMOVE)	SY	$ 5.72	140	$ 800.80
		SUBTOTAL				**$ 16,072.44**

WATER WELL & SEPTIC SYSTEM (PWS & OSSF)						
158		PVC CONDUIT & COPPER WIRING	LF	$ 18.43	4,250	$ 78,327.50
159		PVC COATED RIGID GALVANIZED STEEL CONDUIT	LF	$ 93.92	50	$ 4,696.00
160		RIGID GALVANIZED STEEL CONDUIT	LF	$ 54.30	30	$ 1,629.00
161		RED CONCRETE-ENCASED, STEEL-REINFORCED SERVICE LATERAL DUCTBANK	LF	$ 61.33	450	$ 27,598.50
162		POWER POLE W/ (3) 100KVA 480V/277/3PH, 4-WIRE POLE-MOUNTED TRANSFORMERS	EA	$ 23,956.91	1	$ 23,956.91
163		SERVICE METER, P/TS, AND C/T CABINET	EA	$ 8,167.13	1	$ 8,167.13
164		8-POLE, INTERMATIC #ET 9000 SERIES ASTRONOMICAL TIME CLOCK & PHOTOCELL	EA	$ 2,286.80	1	$ 2,286.80
165		480V/277/3PH, 4-WIRE, 400A MCB/400A BUS, NEMA 1, 42-CIRCUIT DISTRIBUTION PANELBOARD	EA	$ 4,573.59	1	$ 4,573.59

	SPEC CODE	DESCIPTION	UNITS	UNIT PRICE	QUANTITY	SPAWGLASS
166		208V/120/3PH, 4-WIRE, 60A MCB/100A BUS, NEMA 1, 24-CIRCUIT PANELBOARD	EA	$ 3,157.96	1	$ 3,157.96
167		480V/277/3PH, 4-WIRE, 225A MCB/225A BUS, NEMA 3R, 24-CIRCUIT PANELBOARD	EA	$ 3,811.33	1	$ 3,811.33
168		240V/120/3PH, 4-WIRE, 150A MCB/225A BUS, NEMA 3R, 24-CIRCUIT PANELBOARD	EA	$ 3,375.75	1	$ 3,375.75
169		480V/3PH TO 208V/120/3PH, 15KVA, NEMA 1, TRANSFORMER	EA	$ 5,662.54	0	$ -
170		480V/3PH TO 240V/120/3PH, 45KVA, NEMA 3R, TRANSFORMER	EA	$ 7,078.18	1	$ 7,078.18
171		480V/277/3PH,150/250KA SURGE PROTECTION DEVICE	EA	$ 2,722.38	1	$ 2,722.38
172		208V/120/3PH,100/200KA SURGE PROTECTION DEVICE	EA	$ 2,722.38	1	$ 2,722.38
173		DEVICE	EA	$ 2,722.38	1	$ 2,722.38
173		240V/120/3PH,100/200KA SURGE PROTECTION DEVICE	EA	$ 2,722.38	1	$ 2,722.38
174		GFCI RECEPTACLE WITH LOCK-ABLE WEATHERPROOF COVER FOR CONVENIENCE POWER	EA	$ 272.24	1	$ 272.24
175		400A/3P/400AF/NE3R HEAVY-DUTY DISCONNECT SWITCH	EA	$ 1,960.11	1	$ 1,960.11
176		100A/3P/NF/NE3R HEAVY-DUTY DISCONNECT SWITCH	EA	$ 980.06	0	$ -
177		100A/2P/NF/NE3R HEAVY-DUTY DISCONNECT SWITCH	EA	$ 980.06	0	$ -
178		WEATHERPROOF JUNCTION BOXES	EA	$ 81.67	10	$ 816.70
179		GALVANIZED STEEL UNISTRUT RACK W/ CONCRETE ENCASED, STEEL-REINFORCED BASE	EA	$ 1,960.11	1	$ 1,960.11
180		EXTERIOR IN-GROUND CONCRETE PULL BOXES	EA	$ 7,078.18	1	$ 7,078.18
181		4" SCH 40 PVC SANITARY SEWER	LF	$ 32.67	60	$ 1,960.20
182		1338 GAL. PRETREATMENT TANK	EA	$ 2,722.38	1	$ 2,722.38
183		1383 GAL. HOLDING / DOSING TANK	EA	$ 2,722.38	1	$ 2,722.38
184		DUPLEX 1/3RD HP DOSING PUMPS & CONTROLS	EA	$ 1,633.43	1	$ 1,633.43
185		AEROBIC TREATMENT UNITS	EA	$ 4,355.80	1	$ 4,355.80
186		1383 GALLON EFFLUENT HOLDING/PUMP TANK	EA	$ 2,722.38	1	$ 2,722.38
187		1/2 HP EFFLUENT PUMPS & CONTROLS	EA	$ 3,811.33	1	$ 3,811.33
188		LIQUID CHLORINATOR	EA	$ 3,811.33	1	$ 3,811.33
189		2 INCH SCH 40 PVC (PURPLE) EFFLUENT SUPPLY LINES	LF	$ 32.67	450	$ 14,701.50
190		1.5 INCH SCH 40 PVC (PURPLE) EFFLUENT SUPPLY LINES	LF	$ 21.78	183	$ 3,985.74
191		1 INCH SCH 40 PVC (PURPLE) EFFLUENT SUPPLY LINES	LF	$ 21.78	60	$ 1,306.80
192		4 INCH SCH 40 PVC CASING	LF	$ 32.67	80	$ 2,613.60
193		32FT RADIUS SPRAY NOZZLES	EA	$ 435.58	5	$ 2,177.90
194		6-FOOT CHAIN LINK FENCING WITH 3-STRAND BARBED WIRE + SWING GATE	LF	$ 209.41	0	$ -
195		3-INCH WELL DISCHARGE PIPING AND ACCESSORIES TO HPT AND GST	LS	$ 89,892.88	0	$ -
196		4-INCH GV AT GST SUCTION, BOOSTER DISCHARGE, AND HPT DISCHARGE	LS	$ 1,415.64	0	$ -
197		4-INCH GST AND HPT PIPING TIE IN TO DISTRIBUTION	LS	$ 21,234.54	0	$ -
198		4-INCH C900 PVC WATER LINE	LF	$ 317.54	0	$ -
199		4-INCH GV & BOX	LS	$ 2,123.46	0	$ -
200		1 1/2-INCH CL-200 PVC WATER LINE	LF	$ 141.71	0	$ -
201		REINFORCED CONCRETE EQUIPMENT SLAB	CY	$ 2,005.85	0	$ -
202		HYDROPNEUMATIC TANK SADDLE SUPPORTS	CY	$ 15,408.66	0	$ -

FORT BEND COUNTY - WESTPARK PARK AND RIDE PRELIMINARY CONSTRUCTION BID FORM

	SPEC CODE	DESCIPTION	UNITS	UNIT PRICE	QUANTITY	SPAWGLASS
203		6" WATER WELL, SUBMERSIBLE 20 HP PUMP	EA	$ 262,600.45	0	$ -
204		10,152 GALLON FIBERGLASS GROUND STORAGE TANK WITH ACCESSORIES	EA	$ 76,320.20	0	$ -
205		DUPLEX 7.5 HP TEFC MOTOR SKID MOUNTED BOOSTER PUMPS WITH DISCHARGE HEADER & CONTROL PANEL	LS	$ 111,842.86	0	$ -
206		2,535 GALLON ASME CODE HYDROPNEUMATIC TANK AND ACCESSORIES	LS	$ 60,118.79	0	$ -
207		CHEMICAL EQUIPMENT ENCLOSURE (SUNCAST)	LS	$ 21,942.36	0	$ -
208		CHLORINATION EQUIPMENT AND BULK STORAGE CONTAINER	LS	$ 10,263.36	0	$ -
209		CORROSION EQUIPMENT WITH BULK STORAGE CONTAINER AND SECONDARY CONTAINMENT	LS	$ 10,263.36	0	$ -
210		PAINTING/COATINGS	LS	$ 36,098.72	0	$ -
211		ELECTRICAL SERVICE RACK AND TIE IN	LS	$ 5,600.48	0	$ -
212		WELL CONTROL PANEL AND TIE IN	LS	$ 5,671.26	0	$ -
213		WELL AND BOOSTER MERCOIDS, CONDUIT AND TIE IN	LS	$ 2,494.79	0	$ -
214		ELECTRICAL CONDUIT, WIRING & SWITCHES	LS	$ 66,538.15	0	$ -
215		SECURITY CAMERAS	EA	$ 4,900.28	0	$ -
215		SECURITY CAMERA & ACCESSORIES	LS	$ 7,078.18	0	$ -
216		RAW WELL TESTING	LS	$ 10,889.51	1	$ 10,889.51
		SUBTOTAL				**$ 251,049.79**
SG1		12" Waterline	LS	$ 397,905.89	1	$ 397,905.89
SG2		Owner Waterline Contingency: Design, Engineering, Permits, Inspection, Testing, Impact Fees or Other Incidental Items	LS	$ 100,000.00	1	$ 100,000.00
		SUBTOTAL				**$ 497,905.89**

		WESTPARK P&R, WATER WELL & SEPTIC SYSTEM SUBTOTAL				$ 6,041,004.21
		MATERIAL TESTING (2%)				$ 120,820.08
		MOBILIZATION				$ 652,793.50
		CONTINGENCY (10%)				$ 604,100.42
		TOTAL				**$ 7,418,718.22**

EXHIBIT B

(RFP 23-057 Follows Behind)

***Addendum 1, 6/20/23**
Fort Bend County, Texas
Request for Proposals

Construction of Westpark Park & Ride Facility for Fort Bend County Public Transportation
RFP 23-057

SUBMIT PROPOSALS TO:	***SUBMIT NO LATER THAN:**
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**	***~~June 20~~ July 18, 2023** **2:00 PM (CST)** **LABEL ENVELOPE:** **RFP 23-057** **Westpark Park & Ride Construction**

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

PROPOSALS RECEIVED AS REQUIRED WILL THEN BE OPENED AND NAMES PUBLICLY READ.

PROPOSALS 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:
Cheryl Krejci
Assistant County Purchasing Agent
Cheryl.Krejci@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 RFP opening).
- Submit response in accordance with requirements stated on the cover of this document.
- Do NOT submit responses via email or fax.

Prepared: 04/06/23
Issued: 05/28/23

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)			
Federal ID # or S.S. #		DUNS #	
Type of Business	___ Corporation/LLC ___ Partnership ___ Sole Proprietor/Individual ___ Tax Exempt Organization		Age in Business?
Publicly Traded Business	___ No ___ Yes Ticker Symbol _____		
Remittance Address			
City/State/Zip			
Physical Address			
City/State/Zip			
Phone/Fax Number	Phone: _____ Fax: _____		
Contact Person			
E-mail			
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 _____ _____ _____ _____
Company's gross annual receipts	<$500,000 _____	$500,000-$4,999,999 _____	Exp Date _____ _____ _____ _____
	$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 BACKGROUND:

1.1 In June 2005, Fort Bend County (FBC) formed the Fort Bend County Public Transportation Department to provide public transportation services in the urbanized and non-urbanized areas of Fort Bend County, Texas. Its mission is to provide residents with safe and efficient public transportation services while maintaining service quality and customer satisfaction.

1.2 Demand Response and Commuter/Fixed Route Services are offered to the general public as shared-ride services. All residents and visitors of Fort Bend County are eligible for services. Services are operated Monday through Friday, excluding FBC Holidays, between the hours of 4:30 AM and 8:30 PM. For more detailed information, please visit www.FBCTransit.org.

1.3 Fort Bend County Public Transportation (Fort Bend Transit) is a recipient of federal and state funding including, but not limited to, Section 5307, Section 5310, Section 5311, Section 5339, and Congestion Mitigation and Air Quality Improvement funds.

2.0 SCOPE OF WORK:

Fort Bend County intends to contract with one (1) vendor for all materials, supplies, equipment, tools, services, labor, and supervision necessary to complete the construction of the Westpark Park & Ride at 19820 FM 1093 Road Richmond, Texas 77407. The Park & Ride will be constructed on ten (10) acres of property with space for a future maintenance facility. The Westpark Park & Ride is a public transportation facility for residents and visitors accessing the county's commuter bus services.

The Park & Ride will include the following:

- A 3,849 square feet canopy for shelter.
- An 84-square feet male & female restroom.
- A 62 square feet utility room.
- A full color LED single-faced electronic display sign
- Two hundred & sixty-two (262) parking spaces, with nine (9) being handicapped.
- A 271,064 square feet detention pond
- Water well
- Septic tank

For more information, please see Exhibit 1 for technical specifications and Exhibit 2 for plan sets.

3.0 GUIDELINES:

By virtue of submitting a proposal, interested parties are acknowledging:

3.1 The County reserves the right to reject any or all proposals if it determines that select proposals are not responsive to the RFP. The County reserves the right to reconsider any proposal submitted at any phase of the procurement. It also reserves the right to meet with select Respondents at any time to gather additional information. Furthermore, the County reserves the right to delete or add scope up until the final contract signing. County reserve the right to cancel the solicitation, without penalty, at County's discretion and reserve the right to evaluate based on competitive range.

3.2 All Respondents submitting proposals agree that their pricing is valid for a minimum of ninety (90) days after proposal submission to the County. Furthermore, the County is by statute exempt from the State Sales Tax and Federal Excise Tax; therefore, proposal prices shall not include taxes.

3.3 This Proposal does not commit the County to award nor does it constitute an offer of employment or a contract for services. Costs incurred in the submission of this proposal, or in making necessary studies or designs for the preparation thereof, are the sole responsibility of the Respondents. Further, no reimbursable cost may be incurred in the anticipation of award. Proposals containing elaborate artwork, expensive paper and binding and expensive visual or other presentations are neither necessary nor desired.

3.4 In an effort to maintain fairness in the process, all inquiries concerning this procurement are to be directed only to the County's Purchasing Agent in writing. Attempts to contact any members of the County's Commissioners' Court or any other County employee to influence the procurement decision may lead to immediate elimination from further consideration.

3.5 When responding to this Proposal, follow all instructions carefully. Submit proposal contents according to the outline specified and submit all hard copy and electronic documents according to the instructions. Failure to follow these instructions may be considered a non-responsive proposal and may result in immediate elimination from further consideration.

*4.0 PROPOSAL CONTACT:

This Proposal is being issued by the County Purchasing Agent on behalf of Fort Bend County, Texas. Thus, responses should be directed to the County Purchasing Agent, as outlined below. **Respondents are specifically directed NOT to contact any County personnel for meetings, conferences or technical discussions that are related to this Proposal other than specified herein. Unauthorized contact of any County personnel will likely be cause for rejection of the Respondent's proposal. All communications regarding the Proposal shall be directed to the County's Proposal Contact.** Communication with the Proposal Contact is permitted via email, facsimile, or written correspondence.

PROPOSAL CONTACT:

Cheryl Krejci
Assistant County Purchasing Agent
Fort Bend County Travis Annex
301 Jackson, Suite 201
Richmond, Texas 77469
Cheryl.Krejci@fortbendcountytx.gov

*5.0 SUBMISSION REQUIREMENTS:

5.1 Submission requirements: one (1) original proposal, eight (8) paper copies, and one (1) electronic response on flash drive are required by RFP opening time of 2:00 PM on Tuesday, ~~June 20~~ July 18, 2023. Flash drive must contain only one (1) file in PDF format and must match written response identically. Failure to provide proper flash drive is cause for disqualification. Proposal shall be submitted to the address shown below. Proposal shall be signed, in ink, by a person having the authority to bind the firm in a contract.

Fort Bend County	Proposal Number: R23-057
Purchasing Department	Due Date: Tuesday, ~~June 20~~ July 18, 2023
301 Jackson, Suite 201	Time: 2:00 PM (CST)
Richmond, Texas 77469	For: Westpark Park & Ride Construction

5.2 Respondents may submit their proposal any time prior to the Opening Date and time. The Respondent's name and address as well as a distinct reference to the Proposal number above shall be marked clearly on the submission. All proposals are time-stamped upon receipt and are securely kept, and unopened, until the Opening Date. No responsibility will attach to the County, or any official or employee thereof, for the pre-opening of, post-opening of, or the failure to open a proposal not properly addressed and identified. No oral, telegraphic, telephonic, or facsimile proposals will be considered.

5.3 Proposals may be modified or withdrawn prior to the established opening date by delivering written notice to the proposal contact. Any alteration made prior to opening date and time shall be initialed by the signer of the proposal, guaranteeing authenticity.

5.4 Proposals time-stamped after the due date and time will not be considered and will be returned to the Respondent unopened. Regardless of the method used for delivery, respondents shall be wholly responsible for the timely delivery of submitted proposals.

5.5 The Respondent's name and address shall be clearly marked on all copies of the proposal.

6.0 INCURRED COSTS:

Those submitting proposals do so entirely at their expense. There is no expressed or implied obligation by the County to reimburse any individual or firm for any costs incurred in preparing or submitting proposals, for providing additional information when requested by the County or for participating in any selection interviews, including discovery (pre-contract negotiations) and contract negotiations.

7.0 ACCEPTANCE:

7.1 Submission of any proposal indicates a Respondent's acceptance of the conditions contained in this Proposal unless clearly and specifically noted otherwise in their proposal.

7.2 Furthermore, the County is not bound to accept a proposal on the basis of lowest price, and further, the County has the sole discretion and reserves the right to cancel this Proposal, to reject any and all proposals, to waive any and all informalities and or irregularities, or to re-advertise with either the identical or revised specifications, if it is deemed to be in the County's best interests. The County reserves the right to accept or reject any or all of the items in the proposal, and to award the contract in whole or in part and/or negotiate any or all items with individual Respondents if it is deemed in the County's best interest.

7.3 Although Fort Bend County desires to negotiate toward a contract with a selected Respondent, the Commissioners' Court may award the contract on the basis of the initial proposals received, without discussions. Therefore, each initial proposal should contain the Respondent's best terms.

8.0 INTERPRETATIONS, DISCREPANCIES, AND OMISSIONS:

8.1 It is incumbent upon each potential Respondent to carefully examine these specifications, terms, and conditions. Should any potential Respondent find discrepancies, omissions or ambiguities in this Proposal, the Respondent shall at once request in writing an interpretation from the County's Proposal Contact. Any inquiries, suggestions, or requests concerning interpretation, clarification or additional information shall be made in writing via e-mail only to the County's Proposal Contact, as specified in Section 4.0. Deadline for submission of questions and/or clarification is no later than **Friday, June 9, 2023 at 9:00 AM (CST).** Requests received after the deadline will not be responded to due to the time constraints of this Proposal process.

8.2 The issuance of a written addendum is the only official method by which interpretation, clarification or additional information will be given by the County. Only questions answered by formal written addenda will be binding. Oral and other interpretations or clarification will be without legal effect. If it becomes necessary to revise or amend any part of this Proposal, notice will be given by the County

Purchasing Agent to all prospective Respondents who were sent a Proposal. The Respondent in their proposal shall acknowledge receipts of amendments. Each Respondent shall ensure that they have received all addenda and amendments to this Proposal before submitting their proposals.

9.0 TENTATIVE SCHEDULE:

Release of RFP:	May 28, 2023
Pre-RFP Conference:	June 6, 2023
Deadline for Questions:	June 9, 2023
Submission Due Date:	~~June 20~~ July 18, 2023
Evaluation of Submissions:	Week of ~~June 26~~ July 24, 2023
Commissioners Court Permission to Negotiate:	~~July 11~~ August 8, 2023
Negotiations:	~~July 12~~ Beginning August 9, 2023
Final Contract Approval Commissioners Court:	~~August 8~~ September 26, 2023

10.0 PRE-RFP CONFERENCE:

A pre-RFP conference will be conducted on **Tuesday, June 6, 2023 at 9:00AM** (CST). The pre-RFP conference will be held at the Fort Bend County Purchasing Department, Travis Annex, 301 Jackson, Suite 201, Richmond, TX. All respondents are encouraged to attend.

11.0 RETENTION OF RESPONDENT'S MATERIAL:

The County reserves the right to retain all proposals regardless of which response is selected. All proposals and accompanying documents become the property of the County.

12.0 CERTIFICATE OF INDEPENDENT PRICE DETERMINATION:

By submission of a proposal, each Respondent certifies, that in connection with this procurement:

12.1 The prices in this proposal have been arrived at independently, without consultation, communication, or agreement with any other Respondent; with any competitor; or with any County employee(s) or consultant(s) for the purpose of restricting competition on any matter relating to this Proposal.

12.2 Unless otherwise required by law, the prices which have been quoted in this proposal have not been knowingly disclosed by the Respondent and will not knowingly be disclosed by the Respondent prior to award directly or indirectly to any other Respondent or to any competitor; and;

12.3 No attempt has been made or will be made by the Respondent to induce any other person or firm to submit or not to submit a proposal for the purpose of restricting competition.

13.0 ASSIGNMENT:

The Respondent may not sell, assign, transfer or convey the contract resulting from this Proposal, in whole or in part, without the prior written approval from Fort Bend County Commissioners' Court.

14.0 CONFIDENTIAL MATTERS:

14.1 All data and information gathered by the Respondent and its agents, including this Proposal and all reports, recommendations, specifications, and data shall be treated by the Respondent and it's agents as confidential. The Respondent and it's agents shall not disclose or communicate the aforesaid matters to a third party or use them in advertising, publicity, propaganda, and/or in another job or jobs, unless written consent is obtained from the County.

14.2 Proposals will only be publicly received and acknowledged only so as to avoid disclosure of the contents to competing Respondents and kept secret during negotiation. However, all proposals shall be open for public inspection after the contract is awarded. Trade secrets and any material that is considered to be confidential information contained in the proposal and identified by Respondent as such will be treated as confidential to the extent allowable in the Open Records Act.

15.0 LIMITS OF SUBCONTRACTORS:

15.1 The County has approval rights over the use and/or removal of all subcontractors and/or vendor(s). Subcontractors shall conform to all County policies.

15.2 Any dispute between the Respondent and subcontractors, including any payment dispute, will be promptly remedied by the Respondent. Failure to promptly remedy or to make prompt payment to subcontractor may result in the withholding of funds from the Respondent by the County for any payments owed to the subcontractor.

16.0 JURISDICTION, VENUE, CHOICE OF LAW:

This Proposal and any contract resulting there from shall be governed by and construed according to the laws of the State of Texas. Should any portion of any contract be in conflict with the laws of the State of Texas, the State laws shall invalidate only that portion. The remaining portion of the contract(s) shall remain in effect. Any lawsuit shall be governed by Texas law and Fort Bend County, Texas shall be the venue for any action or proceeding that may be brought or arise out of, in connection with or by reason of this Proposal process and resulting Agreements.

17.0 INDEPENDENT CONTRACTOR:

The Respondent is an independent contractor and no employee or agent of the Respondent shall be deemed for any reason to be an employee or agent of the County.

18.0 AMERICANS WITH DISABILITIES ACT (ADA)

Proposals shall comply with all federal, state, county, and local laws concerning this type of products/service/equipment/project and the fulfillment of all ADA requirements.

19.0 DRUG-FREE WORKPLACE:

All Respondents shall provide any and all notices as may be required under the Drug-Free Workplace Act of 1988, 28 CFR Part 67, Subpart F, to their employees and all sub-contractors to insure that the County maintains a drug-free workplace.

20.0 PERFORMANCE AND PAYMENT BOND:

The Respondent shall post with Fort Bend County, not later than ten (10) days of the County's award of a contract, a performance and payment bond in the amount of one hundred percent (100%) of the total lump sum price in such form as is satisfactory by County. This bond shall be executed by a corporate surety company duly authorized and admitted to do business in the State of Texas and licensed to issue such a bond in the State of Texas. The Respondent shall notify its corporate surety of any contract changes.

21.0 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.

22.0 TEXAS ETHICS COMMISSION FORM 1295:

22.1 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 Statue §2252.908. All firms submitting a response to a formal Bid, RFP, RFQ 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/File/

22.2 On-line instructions:

22.2.1 Name of governmental entity is to read Fort Bend County.

22.2.2 Identification number use: RFP 23-057

22.2.3 Description is: Westpark Park & Ride Construction

22.3 Highest evaluated vendor 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.

23.0 INSURANCE:

23.1 All respondents shall submit, with RFP, a current certificate of insurance indicating coverage in the amounts stated below. In lieu of submitting a certificate of insurance, respondents may submit, with RFP, 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.

23.2 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:

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

23.2.2 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.

23.2.3 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.

23.2.4 Business Automobile Liability including Garage Liability/Garage Keepers Liability coverage applying to owned, non-owned and hired automobiles with limits not less than $1,000,000 each occurrence combined single limit for Bodily Injury and Property Damage combined.

24.2.5 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.

23.3 County and the members of Commissioners Court shall be named as additional insured to all required coverage except for Workers' Compensation and Professional Liability (Medical Malpractice) Insurance. All Liability policies including Workers' Compensation written on behalf of contractor, shall contain a waiver of subrogation in favor of County and members of Commissioners Court.

23.4 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.

24.0 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.

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

24.2 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.

24.3 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.

24.4 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.

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

24.6 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 arise may from said Respondent's operations. Such provisions shall be in form satisfactory to Fort Bend County.

24.7 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.

25.0 PREVAILING WAGES:

This project is subject to the prevailing wage rate requirements of Chapter 2258 of the Government Code. 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 worker is paid less than the below stated rates. Contractors may also visit www.wdol.gov/dba.aspx.

General Decision Number: TX20230247 05/05/2023
Superseded General Decision Number: TX20220247

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)(2)-(60).

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 $16.20 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 2023.

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 $12.15 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 2023.

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	01/06/2023
1	01/13/2023
2	05/05/2023

ASBE0022-009 06/01/2022

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR (Duct, Pipe and Mechanical System Insulation)	$ 26.88	15.41
BOIL0074-003 01/01/2021 BOILERMAKER	$ 29.47	24.10
CARP0551-008 04/01/2021 CARPENTER (Excludes Acoustical Ceiling Installation,Drywall Hanging, Form Work and Metal Stud Installation)	$ 25.86	9.08
ELEC0716-005 08/30/2021 ELECTRICIAN (Excludes Low Voltage Wiring and Installation of Alarms)	$ 33.20	10.37

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 06/01/2022		
IRONWORKER (ORNAMENTAL AND STRUCTURAL)	$ 26.76	7.88
PLAS0783-001 04/01/2021		
PLASTERER	$ 26.04	9.02
PLUM0068-002 10/01/2022		
PLUMBER	$ 37.83	11.71
PLUM0211-010 10/01/2022		
PIPEFITTER (Including HVAC Pipe Installation)	$ 38.03	12.66
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: 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

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 ($16.20) or 13658 ($12.15). Please see the Note at the top of the wage determination for more information.

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) (ii)).

The body of each wage determination lists the classification and wage rates that have been found

to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour 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

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.

26.0 FEDERAL TERMS AND CONDITIONS:

Contractor understands and acknowledges that this Agreement may be totally or partially funded with federal and or state funds. As a condition of receiving these funds, Contractor represents that it is and will remain in compliance with all federal terms as stated below. These terms flow down to all third party contractors and their subcontracts at every tier, unless a particular award term or condition specifically indicates otherwise. The Contractor shall require that these clauses shall be included in each covered transaction at any tier, unless a particular award term or condition specifically indicates otherwise.

26.1 Access for Individuals with Disabilities (ADA Access)

The Contractor agrees to comply with 49 U.S.C. § 5301(d), which states the Federal policy that elderly individuals and individuals with disabilities have the same right as other individuals to use public transportation services and facilities, and that special efforts shall be made in planning and designing those services and facilities to implement transportation accessibility rights for elderly individuals and individuals with disabilities. The Contractor also agrees to comply with all applicable provisions of section 504 of the Rehabilitation Act of 1973, as amended, with 29 U.S.C. § 794, which prohibits discrimination on the basis of disability; with the Americans with Disabilities Act of 1990 (ADA), as amended, 42 U.S.C. §§ 12101 et seq., which requires that accessible facilities and services be made available to individuals with disabilities; and with the Architectural Barriers Act of 1968, as amended, 42 U.S.C. §§ 4151 et seq., which requires that buildings and public accommodations be accessible to individuals with disabilities, and any subsequent amendments to these laws. In addition, the Contractor agrees to comply with applicable implementing Federal regulations and directives and any subsequent amendments thereto, as follows:

(1) U.S. DOT regulations, “Transportation Services for Individuals with Disabilities (ADA), 49 C.F.R. Part 37;
(2) U.S. DOT regulations, "Nondiscrimination on the Basis of Handicap in programs and Activities Receiving or Benefiting from Federal Financial Assistance, 49 C.F.R. Part 27;
(3) Joint U.S. Architectural and Transportation Barriers Compliance board (U.S. ATBCB)/U.S. DOT regulations, “Americans With Disabilities (ADA) Accessibility Specifications for Transportation Vehicles," 36 C.F.R. Part 1192 and 49 C.F.R. Part 38;
(4) U.S. DOJ regulations, "Nondiscrimination on the Basis of Disability in State and Local Government Services," 28 C.F.R. Part 35;
(5) U.S. DOJ regulations, "Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities," 28 C.F.R. Part 36;
(6) U.S. General Services Administration (U.S. GSA) regulations, "Accommodations for the Physically Handicapped," 41 C.F.R. Subpart 101-19;
(7) U.S. EEOC, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 C.F.R. Part 1630;

(8) U.S. Federal Communications Commission regulations, "Telecommunications Relay Services and Related Customer Premises Equipment for the Hearing and Speech Disabled," 47 C.F.R. Part 64, Subpart F; and
(9) U.S. ATBCB regulations, "Electronic and Information Technology Accessibility Standards," 36 C.F.R. Part 1194; FTA regulations, "Transportation for Elderly and Handicapped Persons", 49 C.F.R. Part 609; and
(10) U.S. DOT regulations, "Transportation for Individuals with Disabilities: Passenger Vessels," 49 C.F.R. Part 39;
(11) FTA Circular 4710.1, "Americans with Disabilities Act: Guidance"; and
(12) Federal civil rights and nondiscrimination directives implementing the foregoing regulations, except to the extent the Federal Government determines otherwise in writing.

26.2 Access to Records and Reports

The Contractor agrees to provide County, the FTA Administrator, the Comptroller General of the United States or any of their authorized representatives access to any books, documents, papers and records of the Contractor which are directly pertinent to the Agreement for the purposes of making audits, examinations, excerpts and transcriptions. Contractor also agrees, pursuant to 49 C.F.R. 633.17 to provide the FTA Administrator or his authorized representatives including any PMO Contractor access to Contractor's records and construction sites pertaining to a major capital project, defined at 49 U.S.C. 5302(a)1, which is receiving federal financial assistance through the programs described at 49 U.S.C. 5307, 5309 or 5311. The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

The Contractor agrees to comply and will require all subcontractors of any tier to comply with the record retention requirements in accordance with 2 C.F.R. 200.333. The Contractor agrees to retain, and will require its subcontractors of all tiers to retain, complete and readily accessible records related in whole or in part to the contract, including, but not limited to, all books, records, accounts, statistics, leases, subcontracts, arrangements other third party arrangements of any type, reports, and supporting materials related to those records required under the Agreement for a period of not less than three years after the date of termination or expiration of the Agreement, except in the event of litigation or settlement of claims arising from the performance of the Agreement, in which case Contractor agrees to maintain same until County, the FTA Administrator, the Comptroller General, or any of their duly authorized representatives, have disposed of all such litigation, appeals, claims or exceptions related thereto.

26.3 Bonding

The following clause only applies to construction contracts or subcontracts of

$100,000 or more.

As provided in federal regulations and modified by FTA guidance for construction related contracts, Contractor, for each Project or related activities implementing the Agreement that involve construction, will provide bid guarantee bonds, contract performance bonds, and payment bonds.

26.4 Breaches and Disputes

The following clause only applies to contracts or subcontracts of $50,000 or more.

The parties shall attempt in good faith to resolve promptly any dispute arising out of or relating to the Agreement by negotiation between the parties. Disputes arising in the performance of this Agreement that are not resolved by agreement of the parties shall be decided in writing by the authorized representative of the County. This decision shall be final and conclusive unless within ten [10] days from the date of receipt of its copy, the Contractor mails or otherwise furnishes a written appeal to the County. In connection with any such appeal, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its position. The decision of the County shall be binding upon the Contractor and the Contractor shall abide by the decision.

Performance During Dispute - Unless otherwise directed by County, Contractor shall continue performance under the Agreement while matters in dispute are being resolved.

The requirement to seek mediation may be a condition required before filing an action at law or in equity, unless to do so would prevent either party from seeking relief in a court of law or equity under any applicable statute of limitations.

Claims for Damages - Should either party to the Agreement suffer injury or damage to person or property because of any act or omission of the party or of any of his employees, agents or others for whose acts he is legally liable, a claim for damages therefor shall be made in writing to such other party within a reasonable time after the first observance of such injury of damage.

Rights and Remedies - The duties and obligations imposed by the Agreement and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by the County or Contractor shall constitute a waiver of any right or duty afforded any of them under the Agreement, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

Contractor shall place this clause in all subcontracts for more than the small purchase threshold currently set at $50,000 by the County, to address

administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.

26.5 Buy America

The following contract clause only applies to contracts or subcontracts of $150,000 or more involving rolling stock, construction, materials and supplies.

The Contractor agrees to comply with 49 U.S.C. 5323(j) and 49 C.F.R. Part 661, which provide that Federal funds may not be obligated unless steel, iron, and manufactured products used in FTA-funded projects are produced in the United States, unless a waiver has been granted by FTA or the product is subject to a general waiver. General waivers are listed in 49 C.F.R. 661.7, and include final assembly in the United States for 15 passenger vans and 15 passenger wagons produced by Chrysler Corporation, and microcomputer equipment and software. Separate requirements for rolling stock are set out at 49 U.S.C. 5323(j)(2)(C) and 49 C.F.R. 661.11.

Rolling stock must be assembled in the United States and have a 60 percent domestic content, subject to the Amendment below.

The FAST Act, effective October 1, 2015 amended the Buy America waiver for rolling stock to provide for a phased increase in the domestic content requirement for rolling stock to more than 65 percent for FY2018 and FY2019 and to more than 70 percent in FY2020 and beyond. The new provisions apply based on the date of delivery of the rolling stock. Domestic content requirement over the phase of the contract period shall be the provision applicable to the year of delivery of rolling stock procured under this contract.

Unlike rolling stock, manufactured goods must be 100-percent produced in the U.S. A manufactured good is considered produced in the United States if: (1) All of the manufacturing processes for the product take place in the United States; and (2) All of the components of the product are of U.S. origin. A component is considered of U.S. origin if it is manufactured in the United States, regardless of the origin of its subcomponents. 49 CFR 661.5(d). FTA has issued a number of Buy America guidance letters discussing manufactured goods.

A bidder or offeror must submit to the FTA recipient the appropriate Buy America certification with all bids or offers on FTA-funded contracts, except those subject to a general waiver. Bids or offers that are not accompanied by a completed Buy America certification must be rejected as nonresponsive. This requirement does not apply to lower tier subcontractors.

In addition to FTA's Buy America requirements that require the steel, iron, and manufactured goods used in an FTA-funded project are produced in the Unites States (49 U.S.C. 5223(j)(1)), the Build America, Buy America Act (BABA)

(Public Law 117-58, div. G70914(a)) now requires that construction materials used in infrastructure projects are also produced in the United States. Refer to terms and conditions in FTAs Master Agreement Section 15. The BABA requirement applies to this grant, in addition to the Buy America requirements, except to the extent a waiver of either requirements may apply.

26.6 Cargo Preference-Use of United States-Flag Vessels

The following contract clause only applies to contracts or subcontracts that involve transit by ocean for rolling stock, construction projects or materials and supplies.

The Contractor agrees: (a) to use privately owned US -Flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material or commodities pursuant to the Agreement to the extent such vessels are available at fair and reasonable rates for US-Flag commercial vessels; and (b) to furnish within 20 working days following the date of loading for shipments originating within the US or within 30 working days following the date of loading for shipments originating outside the US, a legible copy of a rated, "on-board" commercial ocean bill-of-lading in English for each shipment of cargo to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590 and to the FTA recipient (through the contractor in the case of a subcontractor's bill-of-lading).

26.7 Civil Rights Requirements

Nondiscrimination in Federal Public Transportation Programs - In accordance with Title VI of the Civil Rights Act, as amended, 42 U.S.C. § 2000d, section 303 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 6102, section 202 of the Americans with Disabilities Act of 1990, 42 U.S.C. § 12132, and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, religion, national origin, sex, sexual orientation, gender identity, age, status as a parent or disability. In addition, the Contractor agrees to comply with applicable Federal implementing regulations and other implementing requirements FTA may issue.

Equal Employment Opportunity - The following equal employment opportunity requirements apply to the Agreement:

Race, Color, Creed, National Origin, Sex In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. § 2000e, and Federal transit laws at 49 U.S.C. §5332, the Contractor agrees to comply with all applicable equal employment opportunity requirements of U.S. Department of Labor (U.S. DOL) regulations, “Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor,” 41 C.F.R. Parts 60 et seq., (which implement Executive Order No. 11246, “Equal Employment Opportunity,” as amended by Executive Order No. 11375, “Amending Executive Order 11246 Relating to Equal

Employment Opportunity," 42 U.S.C. § 2000e note), and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect construction activities undertaken in the course of the Project. The Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, creed, national origin, disability, age, sexual orientation, gender identity, or status as a parent. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

Age - In accordance with section 4 of the Age Discrimination in Employment Act of 1967, as amended, 29 U.S.C. §§ 623 and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees to refrain from discrimination against present and prospective employees for reason of age. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

Disabilities - In accordance with section 102 of the Americans with Disabilities Act, as amended, 42 U.S.C. § 12112, the Contractor agrees that it will comply with the requirements of U.S. Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 C.F.R. Part 1630, pertaining to employment of persons with disabilities. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

The Contractor also agrees to include these requirements in each subcontract financed in whole or in part with Federal assistance provided by FTA, modified only if necessary to identify the affected parties.

26.8 Clean Air

The Contractor agrees to include the following clause in each contract or subcontract exceeding $150,000 financed in whole or in part with Federal assistance provided by FTA.

The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §§ 7401 et seq . The Contractor agrees to report each violation to the County and understands and agrees that the County will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office. The Contractor agrees it will not use any violating facilities. It will report the use of facilities placed on or likely to be placed on the U.S. EPA "List of Violating Facilities". It will report violations of use of prohibited facilities to FTA.

26.9 Clean Water

The Contractor agrees to include the following clause in each contract or subcontract exceeding $150,000 financed in whole or in part with Federal assistance provided by FTA.

The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. The Contractor agrees to report each violation to the County and understands and agrees that the County will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office. The Contractor agrees it will not use any violating facilities. It will report the use of facilities placed on or likely to be placed on the U.S. EPA "List of Violating Facilities". It will report violations of use of prohibited facilities to FTA.

26.10 Contract Work Hours and Safety Standards Act (Construction Contracts)

The Contractor agrees to include the following clause in each contract or subcontract exceeding $100,000 financed in whole or in part with Federal assistance provided by FTA.

The Contractor shall comply with the Contract Work Hours and Safety Standards Act (40 U.S.C. §§ 3701-3708), as supplemented by the DOL regulations at 29 C.F.R. part 5. Where applicable, all contracts awarded by the non-Federal entity in excess of $100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. §§ 3702 and 3704, as supplemented by Department of Labor regulations (29 C.F.R. part 5).

(1) Overtime requirements - No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages - In the event of any violation of the clause set forth in paragraph (1) of this section the Contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of $10 or the maximum allowed by law for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this

section.

(3) Withholding for unpaid wages and liquidated damages – County shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

(4) Subcontracts - The Contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.

(5) Payrolls and basic records - Payrolls and related basic records shall be maintained by the Contractor during the course of the work and preserved for three years thereafter for all laborers and mechanics working at the worksite (or under the United States Housing Act of 1937 or the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address and social security number of each worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 C.F.R. 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records showing that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and records of the costs anticipated or actual costs incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of registration of apprenticeship programs, certification of trainee programs, registration of the apprentices and trainees, and ratios & wage rates prescribed in applicable programs.

(6) The requirements of 40 U.S.C. § 3704 are applicable to construction work

and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence. A federally assisted construction contract must exceed $150,000 before these construction safety requirements apply to that contract.

26.11 Disadvantaged Business Enterprise (DBE)

The Agreement is subject to the requirements of Title 49, Code of Federal Regulations, Part 26, Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs including 49 C.F.R. Part 26, Section 1101(b) of the FAST Act (23 U.S.C. § 101 note). The national goal for participation of Disadvantaged Business Enterprises (DBE) is 10%. A separate contract goal has not been established for this procurement. Contractor will facilitate, participation by small business concerns owned and controlled by socially and economically disadvantaged individuals, also referred to as "Disadvantaged Business Enterprises" (DBEs).

The Contractor, and each Third Party Subcontractor must not discriminate on the basis of race, color, national origin, or sex in the award and performance of any FTA or U.S. DOT-assisted subagreement, third party contract, and third party subcontract, as applicable, and the administration of its DBE program or the requirements of 49 C.F.R. part 26.

The Contractor and each Third Party Subcontractor must take all necessary and reasonable steps under 49 C.F.R. part 26 to ensure nondiscrimination in the award and administration of U.S.FTA-assisted sub agreements, third party contracts, and third party subcontracts, as applicable.

Failure by the Subrecipient and any of its Third Party Contractors or Third Party Subcontractors to carry out the requirements of this subparagraph 12.e(4)(b) is a material breach of this subagreement, third party contract, or third party subcontract, as applicable which may result in the termination of the Agreement or such other remedy as County deems appropriate, which may include, but is not limited to: (1) withholding monthly progress payments; (2) assessing sanctions; (3) liquidated damages; and/or (4) disqualifying the Contractor from future bidding as non-responsible. Each subcontract the Contractor signs with a subcontractor must include the assurance in this paragraph (see 49 C.F.R. 26.13(b)).

The successful bidder/offeror will be required to report its DBE participation obtained through race-neutral means throughout the period of performance.

The Contractor is required to pay its subcontractors performing work related to the Agreement for satisfactory performance of that work no later than 30 days after the Contractor's receipt of payment for that work from County. In addition, the

Contractor is required to return any retainage payments to those subcontractors within 30 days after the subcontractor's work related to the Agreement is satisfactorily completed.

The Contractor must promptly notify County whenever a DBE subcontractor performing work related to the Agreement is terminated or fails to complete its work, and must make good faith efforts to engage another DBE subcontractor to perform at least the same amount of work. The Contractor may not terminate any DBE subcontractor and perform that work through its own forces or those of an affiliate without the prior written consent of County.

26.12 Distracted Driving

The Contractor agrees to adopt and enforce workplace safety policies to decrease crashes caused by distracted drivers, including policies to ban text messaging while using an electronic device supplied by an employer, and driving a vehicle the driver owns or rents, a vehicle Contractor owns, leases, or rents, or a privately-owned vehicle when on official business in connection with the Award, or when performing any work for or behalf of the County.

26.13 Domestic Preferences for Procurements

As appropriate and to the extent consistent with law, Contractor shall to the greatest extent practicable, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subawards including all contracts and purchase orders for work or products procured with federal funds. For purposes of this clause, (1) "Produced in the United States" means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States. (2) "Manufactured products" means items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

26.14 Drug and Alcohol Testing

The Contractor agrees to include the following clause in each contract or subcontract that may involve transit operations.

Contractor certifies that it is compliant with FTA's regulation for the Prevention of Alcohol Misuse and Prohibited Drug Use in Transit Operations, 49 CFR Part 655. Contractor shall establish and maintain a comprehensive anti-drug use and alcohol abuse program that meets or exceeds all Federal regulation as contained in 49 CFR Part 665, 49 CFR Part 29, and the requirements of the Fort Bend County drug and alcohol program. The program shall include provisions for pre-employment, post-

accident, random, reasonable suspicion and other drug and alcohol testing for all safety sensitive employees and subcontractors performing work or service under this agreement. Contractor will be required to furnish records for all employees providing service under this agreement.

26.15 Duty to Report False Claims

If the County has credible evidence that Contractor or other person has submitted a false claim under the False Claims Act, 31 U.S.C. § 3729 et seq., or has committed a criminal or civil violation of law pertaining to such matters as fraud, conflict of interest, bribery, gratuity, or similar misconduct involving federal assistance, the County must promptly notify the U.S. FTA Inspector General, in addition to the FTA Chief Counsel or Regional Counsel for the Region in which the County is located.

26.16 Energy Conservation

The Contractor agrees to comply with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act. The State of Texas does not have an energy conservation plan.

26.17 Environmental Justice

The Contractor agrees to, and assures that it will, promote environmental justice by following: (1) Executive Order No. 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," February 11, 1994, 42 U.S.C. § 4321 note, as well as facilitating compliance with that Executive Order, (2) U.S. DOT Order 5610.2, "Department of Transportation Actions To Address Environmental Justice in Minority Populations and Low-Income Populations," 62 Fed. Reg. 18377, April 15, 1997, and (3) the most recent edition of FTA Circular 4703.1, "Environmental Justice Policy Guidance for Federal Transit Administration Recipients," August 15, 2012, to the extent consistent with applicable federal laws, regulations, requirements, and guidance.

26.18 Environmental Protections

The Contractor agrees to, and assures that it will, comply with all applicable environmental and resource use laws, regulations, and requirements, and follow applicable guidance, now in effect or that may become effective in the future, including state and local laws, ordinances, regulations, and requirements and follow applicable guidance.

26.19 Federal Tax Liability

Contractor certifies that they do not have any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been

exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability; and was not convicted of the felony criminal violation under any Federal law within the preceding 24 months.

26.20 Fly America

The Contractor agrees to include the following clause in each contract or subcontract that involves foreign air transportation or travel.

The Contractor agrees to comply with 49 U.S.C. 40118 (the "Fly America" Act) in accordance with the General Services Administration's regulations at 41 C.F.R. Part 301-10, which provide that recipients and sub-recipients of Federal funds and their contractors are required to use U.S. Flag air carriers for U.S Government-financed international air travel and transportation of their personal effects or property, to the extent such service is available, unless travel by foreign air carrier is a matter of necessity, as defined by the Fly America Act. The Contractor shall submit, if a foreign air carrier was used, an appropriate certification or memorandum adequately explaining why service by a U.S. flag air carrier was not available or why it was necessary to use a foreign air carrier and shall, in any event, provide a certificate of compliance with the Fly America requirements. The Contractor agrees to include the requirements of this section in all subcontracts that may involve international air transportation.

26.21 FTA Interest

This clause does not flow down to subcontractors.

Contractor understands and agrees that FTA has a vested interest in the settlement of any violation of federal law, regulation, or disagreement involving federal funds used towards this Agreement, including, but not limited to, a default, breach, major dispute, or litigation, and FTA reserves the right to concur in any settlement or compromise."

26.22 Government-wide Debarment and Suspension

The Contractor agrees to include this clause in each contract or subcontract that is at or exceeds $25,000.

The Contractor shall comply and facilitate compliance with U.S. FTA regulations, Nonprocurement Suspension and Debarment," 2 C.F.R. part 1200, which adopts and supplements the U.S. Office of Management and Budget (U.S. OMB) "Guidelines to Agencies on Governmentwide Debarment and Suspension (Nonprocurement)," 2 C.F.R. part 180. These provisions apply to each contract at any tier of $25,000 or more, and to each contract at any tier for a federally required audit (irrespective of the contract amount), and to each contract at any tier that must be approved by an FTA official irrespective of the contract amount. As such, the

Contractor shall verify that its principals, affiliates, and subcontractors are eligible to participate in this federally funded contract and are not presently declared by any Federal department or agency to be:

(1) Debarred from participation in any federally assisted Award;
(2) Suspended from participation in any federally assisted Award;
(3) Proposed for debarment from participation in any federally assisted Award;
(4) Declared ineligible to participate in any federally assisted Award;
(5) Voluntarily excluded from participation in any federally assisted Award; or
(6) Disqualified from participation in ay federally assisted Award.

By signing and submitting its bid or proposal, the bidder or proposer certifies as follows:

"The Certification in this clause is a material representation of fact relied upon by the County. If it is later determined by the County that the bidder or proposer knowingly rendered an erroneous certification, in addition to remedies available to County, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment. The bidder or proposer agrees to comply with the requirements of 2 C.F.R. part 180, subpart C, as supplemented by 2 C.F.R. part 1200, while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions."

26.23 Incorporation of FTA Terms

The provisions in this Section include, in part, certain Standard Terms and Conditions required by FTA, whether or not expressly set forth in the preceding contract provisions. All contractual provisions required by FTA, as set forth in FTA Circular 4220.1E, are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in the Agreement. The Contractor shall not perform any act, fail to perform any act, or refuse to comply with any County requests which would cause County to be in violation of the FTA terms and conditions.

26.24 Lobbying

The Contractor agrees to include the following clause in each contract or subcontract for $100,000 or more.

Contractors who apply or bid for an award of $100,000 or more shall file the certification required by 49 C.F.R. Part 20, "New Restrictions on Lobbying." Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence

an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose the name of any registrant under the Lobbying Disclosure Act of 1995 who has made lobbying contacts on its behalf with non-Federal funds with respect to that Federal contract, grant or award covered by 31 U.S.C. 1352. Such disclosures are forwarded from tier to tier up to the County.

26.25 No Government Obligation to Third Parties

County and Contractor acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the contract, absent the express written consent by the Federal Government, the Federal Government is not a party to the Agreement and shall not be subject to any obligations or liabilities to County, the Contractor, or any other party (whether or not a party to that contract) pertaining to any matter resulting from the contract. The Contractor agrees to include this clause in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

26.26 Notice to Third Party Participants

Federal requirements that apply to the County or the Award, the accompanying Award Agreement or any Amendments thereto may change due to changes in federal law, regulation, other requirements, or guidance, or changes in the Recipient's Award Agreement including any information incorporated by reference and made part of that Award Agreement will apply to the Contractor and any other Third-Party Agreements.

26.27 Notification to FTA

Contractor understands that if a current or prospective legal matter that may affect the Federal Government emerges, the County must promptly notify the FTA Chief Counsel, or FTA Regional Counsel for the Region in which the County is located. (1) The types of legal matters that require notification include, but are not limited to, a major dispute, breach, default, litigation, or naming the Federal Government as a party to litigation or a legal disagreement in any forum for any reason. (2) Matters that may affect the Federal Government include, but are not limited to, the Federal Government's interests in the federal funds used towards this Agreement, or the Federal Government's administration or enforcement of federal laws, regulations, and requirements.

26.28 Prevailing Wage (Davis-Bacon) and Copeland Anti-Kickback Acts

For all prime construction, alteration or repair contracts in excess of $2,000 funded with awards from FTA, the Contractor shall comply with the Davis-Bacon Act, as

amended (40 U.S.C. §§ 3141 – 3148) as supplemented by Department of Labor regulations (29 C.F.R. part 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction"). Under 49 U.S.C. §5333(a), prevailing wage protections apply to laborers and mechanics employed in FTA assisted construction, alteration, or repair projects. In accordance with the statute, contractors shall pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, Contractor agrees to pay wages not less than once a week. Contractor also agrees to comply with the Copeland "Anti-Kickback" Act (40 U.S.C. § 3145), as supplemented by Department of Labor regulations (29 C.F.R. part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). Contractor is prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. County shall report all suspected or reported violations to the FTA. The Contractor also agrees to include these requirements in each subcontract or third-party contract at any tier.

26.29 Program Fraud and False or Fraudulent Statements and Related Acts

The Contractor acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. § 3801 et seq. and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 C.F.R. Part 31, apply to its actions pertaining to this Project. Upon execution of the contract, the Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to the Agreement or the FTA assisted project for which the Agreement work is being performed. In addition to other penalties that may be applicable, the Contractor further acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on the Contractor to the extent the Federal Government deems appropriate.

The Contractor also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under a contract connected with a project that is financed in whole or in part with Federal assistance originally awarded by FTA under the authority of 49 U.S.C. § 5307, the Government reserves the right to impose the penalties of 18 U.S.C. § 1001 and 49 U.S.C. § 5307(n)(1) on the Contractor, to the extent the Federal Government deems appropriate. The Contractor agrees to include the above two clauses in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clauses shall not be modified, except to identify the subcontractor who will be subject to the provisions.

26.30 Prohibited Telecommunications and Video Surveillance Services and Equipment

Contractor understands and acknowledges that under 2 CFR 200.216, the County is prohibited from using federal funds to procure, obtain, extend or renew a contract to procure or obtain covered telecommunications equipment or services, including telecom equipment produced by Huawei Technologies Company or ZTE Corp. (or subsidiaries or affiliates of such entities). Contractor, therefore, certifies that they are in compliance with the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (FY 2019 NDAA), Pub. L. No. 115-232 (2018), and that in the performance of this agreement, it will not provide equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. As described in Public Law 115-232, section 889, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities). (i) For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities). (ii) Telecommunications or video surveillance services provided by such entities or using such equipment. (iii) Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

26.31 Prompt Payment

Under this contract, the prime contractor agrees to pay each subcontractor for satisfactory performance of its contract within 30 days from the receipt of each payment the prime contractor receives from the County. The prime contractor further agrees to full payment of retainage to each subcontractor within 30 days after the subcontractor's work is satisfactorily completed. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the County. This clause applies to both DBE and non-DBE subcontracts.

26.32 Resource Recovery

This Contractor agrees to include the following clause in all contracts and subcontracts for procurements of $10,000 or more.

The Contractor agrees to comply with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The

requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 C.F.R. part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds $10,000 or the value of the quantity acquired during the preceding fiscal year exceeded $10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

26.33 Safe Operation of Motor Vehicles (Seat Belt)

Contractor shall encourage their employees and other personnel that operate company-owned vehicles, company rented-vehicles, or personally operated vehicles to adopt on-the-job seat belt policies and programs.

The Contractor agrees to adopt and enforce workplace safety policies to decrease crashes caused by distracted drivers, including policies to ban text messaging while using an electronic device supplied by an employer, and driving a vehicle the driver owns or rents, a vehicle Contractor owns, leases, or rents, or a privately-owned vehicle when performing any work for this Agreement.

26.34 Seismic Safety

This Contractor agrees to include the following clause in all contracts and subcontracts for construction contracts for new buildings or additions to existing building.

The Contractor agrees to comply with the Earthquake Hazards Reduction Act of 1977, as amended, 42 U.S.C. § 7701 et seq., and U.S. DOT regulations, "Seismic Safety," 49 C.F.R. part 41, specifically, 49 C.F.R. § 41.117, and agrees that any new building or addition to an existing building will be designed and constructed in accordance with the standards for Seismic Safety required in Department of Transportation Seismic Safety Regulations 49 C.F.R. Part 41 and will certify to compliance to the extent required by the regulation. The Contractor also agrees to ensure that all work performed under the Agreement including work performed by a subcontractor is in compliance with the standards required by the Seismic Safety Regulations and the certification of compliance issued on the project.

26.35 Sensitive Security Information

Each third party contractor must protect, and take measures to ensure that its subcontractors at each tier protect, "sensitive security information" made available during the administration of a third party contract or subcontract to ensure compliance with 49 U.S.C. Section 40119(b) and implementing FTA regulations, "Protection of Sensitive Security Information," 49 CFR Part 15, and with 49 U.S.C. Section 114(r) and implementing Department of Homeland Security regulations,

"Protection of Sensitive Security Information," 49 CFR Part 1520.

26.36 Termination

Contractor understands that all contracts in excess of $10,000, including subcontracts, must address termination for cause and for convenience by the Contractor including the manner by which it will be effected and the basis for settlement.

26.37 Veterans Preference

The Contractor shall give a hiring preference, to the extent practicable, to veterans (as defined in 5 USC Section 2108) who have the requisite skills and abilities to perform the construction work required under the contract. This subsection shall not be understood, construed or enforced in any manner that would require an employer to give preference to any veteran over any equally qualified applicant who is a member of any racial or ethnic minority, female, an individual with a disability, or former employee.

26.38 Change Orders

Verbal change orders to the Agreement are not permitted. No changes in the scope, specifications, character, or complexity of work shall be made by the Contractor without first receiving written approval by the Fort Bend County Public Transportation Director or their designee properly defining and limiting any such change. Contractor shall be liable for all costs resulting from and/or for satisfactorily correcting any specification change not properly ordered by written modification to the Contract and signed by the County.

Within 14 calendar days after Contractor's receipt of the written change order request for modification of the Contract, Contractor shall submit to County a detailed price schedule proposal for the work to be performed. This proposal shall be accepted or modified by negotiation between Contractor and the County. At the time both parties shall execute a detailed Contract modification in writing. Disagreements that cannot be resolved within negotiations shall be resolved in accordance with the contract disputes clause.

It is distinctly understood and agreed that no claim for payment for work done or materials furnished by the Contractor outside of these parameters shall be paid by County. Any such services or materials furnished by Contractor without such written order shall be at the risk, cost and expense of the Contractor, and no claim for compensation for any such services or materials shall be made.

All such changes, which are mutually agreed upon by and between all parties, shall be incorporated in written amendments to the Contract. All such amendments shall state any increase or decrease in the amount of the compensation due to County for

the change in the scope.

26.39 Force Majeure

Neither party shall be liable or responsible to the other party, nor be deemed to have defaulted under or breached this Agreement, for any failure or delay in fulfilling or performing any term of this Agreement when and to the extent such failure or delay is caused by or results from acts beyond the impacted party's ("Impacted Party") control, including, but not limited to, the following force majeure events ("Force Majeure Events"): (a) acts of God; (b) a natural disaster (fires, explosions, earthquakes, hurricane, flooding, storms, explosions, infestations), epidemic, or pandemic; (c) war, invasion, hostilities (whether war is declared or not), terrorist threats or acts, riot or other civil unrest; (d) government order or law; (e) actions, embargoes or blockades in effect on or after the date of this Agreement; (f) action by any governmental authority; (g) national or regional emergency; (h) strikes, labor stoppages or slowdowns or other industrial disturbances; and (i) shortage of adequate power or transportation facilities. The Impacted Party shall give notice in writing within three (3) business days of the Force Majeure Event to the other party disclosing the estimated length of the delay and the cause of the delay. The Impacted Party shall use diligent efforts to end the failure or delay and ensure the effects of such Force Majeure Event are minimized. The Impacted Party shall resume the performance of its obligations as soon as reasonably practicable after the removal of the cause. In the event that the Impacted Party's failure or delay remains uncured for a period of ten (10) days following Notice given by it, the other party may thereafter terminate this Agreement upon notice.

27.0 EVALUATION CRITERIA:

In order to facilitate the analysis of responses to this Proposal, Respondents are required to prepare their proposals in accordance with the instructions outlined in this part. Proposals should be prepared as simply as possible and provide a straightforward, concise description of the Respondent's capabilities to satisfy the requirements of the Proposal. Emphasis should be concentrated on accuracy, completeness, and clarity of content. All parts, pages, figures, and tables should be numbered and clearly labeled.

27.1 Respondents are required to follow the outline below (utilizing tabs) when preparing their proposals:

Tab Title
Title Page
Letter of Transmittal
Table of Contents
Executive Summary

Tab 1 Cost

Tab 2 Understanding the Scope of Work
Tab 3 Financial Ability to Perform
Tab 4 Firm's Experience
Tab 5 Staff Experience
Tab 6 Proposed Schedule
Tab 7 Overall Completeness of Proposal

27.2 Any exceptions to the Proposal requirements shall be identified in the applicable section.

27.3 Proposals are to be single-sided using 12 point or greater font size. Submission pages are to be numbered and bound in a 3-ring binder with the proposing respondent's name clearly indicated on the cover including the solicitation number.

27.4 Executive Summary - Provide a brief narrative highlighting the respondent's proposal. This section is not to include cost quotations. The executive summary is to include and identify the primary contacts for the respondent.

27.5 Respondents will be evaluated in the first phase of the RFP process utilizing the factors, as weighted below:

Tab 1 Cost (weight factor = 30%)

- See Exhibit 3 Bid Form

Tab 2 Understanding of Scope of Work (weight factor = 15%)

- Respondent shall demonstrate their ability to meet the required qualifications listed in this document.
- Respondent shall describe in detail, their understanding of this specific project and the federal requirements as they apply to this construction project.
- Describe the approach your firm will take to accomplish the collaboration, scheduling, and coordination required for this type of project.
- Describe the approach your firm will take to keep FBC informed on the status of the project and ensure the quality of work.
- The proposal must be well written and organized

Tab 3 Financial Ability to Perform (weight factor = 10%)

- Provide a general description of the respondent's financial condition and identify any conditions (bankruptcy, pending litigation, planned

office closures, impending mergers, etc.) that may affect the respondent's ability to perform services under this contract.

- Provide audited financial statements for the three (3) most recent calendar/fiscal years, including the audit respondent's certification and management letter with a response.

- Complete the responses to the following questions:

  - Has your Company ever failed to complete any work awarded to it in the last ten (10) years? If yes, what caused the failure?

  - Are there any judgments, claims, arbitration proceedings, or suits pending or outstanding against your Company or its officers in the last ten (10) years?

  - Has your Company filed any lawsuits or requested arbitration with regard to construction contracts within the last five (5) years? If yes, please provide details.

  - Does your company have the ability to obtain payment and performance bonds required for this project prior to contract execution?
  - Is your company able to make payments to sub-contractors within thirty (30) days of receiving the invoice?

- In the event an audited financial statement is not available, an independently "reviewed" financial statement for the three (3) most recent calendar/fiscal years will be acceptable if a certified accountant conducts the review.

Tab 4 Firm's Experience (weight factor = 15%)

- Firm Experience with FTA/FHWA Funded Projects of Similar Size and Complexity is preferred: Such experience shall be in the form of construction services. List a minimum of three (3) similar projects completed within the last ten (10) years; provide the name and location of each project, a detailed description of the project, completion date, final cost, the client, and a contact person and phone number. If a firm has no FTA/FHWA project experience, provide a brief narrative of how your firm will address federal requirements. List a minimum of three (3) similar projects completed within the last ten (10) years; provide the name and location of each project, a detailed description of the project,

completion date, final cost, the client, and a contact person and phone number.

Tab 5 Staff Experience/Qualification (weight factor = 10%)

- Staff Experience with Projects of Similar Size and Complexity: Such experience must be in the form of providing project management and construction services. Provide organizational Chart and provide resumes for project superintendent and project manager who will be assigned to this project; resumes to include a minimum of three (3) similar projects completed within the last ten (10) years, provide the client's name and location of each project, and a contact person and phone number and completion date.

Tab 6 Proposed Schedule (weight factor = 15%)

- Provide project schedule with milestones and estimated time frame for each stages of the construction.

Tab 7 Required forms (weight factor = 5%)

- Vendor Information Form
- Certificate of Insurance
- Completed W9 form
- Completed Tax/Debt/Residence form
- Contractor Acknowledgment of Stormwater Management Program
- Complete all required forms, including Certification and Federal forms listed in Section 36.
- Contractor Payment Report (If applicable, submit with every invoice)
- Request for Change/Approved Equals form

28.0 EVALUATION PROCESS

28.1 After the proposals are received, the evaluation team shall evaluate each proposal that was submitted on time, and the evaluation shall be based on the criteria listed in the proposal. The evaluation committee will then meet to discuss the strong and weak points of each proposal to assure that it has been evaluated fairly, impartially and comprehensively. Following this initial evaluation, the evaluation team may recommend contract award without further discussion with Respondents, or the

firms submitting the top rated proposals may be asked to make an oral presentation to the evaluation team for the purpose of further clarification and evaluation of the proposals.

28.2 If oral presentations are scheduled, the representatives of the firm who will be directly assigned to the account must be present. During the interview portion of the meeting, the evaluation team shall advise the Respondent of deficiencies in the proposal and shall allow the Respondent to satisfy the requirements, questions, or concerns by submitting a final offer. The Respondent may decide not to modify their proposal and may inform Fort Bend County that the offer is firm and final.

28.3 The evaluation team shall not disclose any information included in a firm's proposal to another firm during the RFP process and shall not disclose any information for the purpose of bringing one firm's proposal up to that of a competitor's proposal.

28.4 After final offers are received, the evaluation team shall re-evaluate each of the final offers, including those deemed final at the interview. The final offers shall be evaluated on the same criteria used in the first evaluation.

28.5 Fort Bend County reserves the right to reject any and all proposals received for any reason that would be to the benefit of Fort Bend County.

28.6 All proposals submitted are to be valid for a period of ninety (90) days.

28.7 All proposals submitted must comply with all ARPA, FEMA, federal and state rules and regulations.

28.8 Any material included in vendor's proposal that is to be considered confidential in nature must be marked as such and will be treated as confidential by Fort Bend County to the extent allowable in the Government Code, Chapter 552., Public Information Act.

29.0 AWARD:

The County will select the respondent whose proposal is the highest evaluated and responsible for the County. Contractual commitments are contingent upon the availability of funds, as evidenced by the issuance of a purchase order. All contracts are subject to the approval of the County's legal counsel and Commissioners' Court, prior to execution. Once awarded, the contract will be the final expression of the agreement between the parties and may not be altered, changed, or amended except by mutual agreement, in writing.

Firms shall not contact any members or employees of Fort Bend County regarding this RFP, evaluation, or selection process from the time the RFP is issued until the time a notification of intent to award is announced, except if such contact is in writing, with a copy of any written communication being forwarded to the Office of the Purchasing Agent. Contact discovered in any such manner, other than in writing and copied to the Office of the Purchasing Agent, would

be considered as grounds for elimination.

30.0 RETAINAGE:

Within thirty (30) days after receipt of each uncontested Application for Payment together with the supporting materials required, County shall advance to Contractor the uncontested amount requested in such uncontested Application for Payment, except *five* percent (5%) of the amount requested (hereinafter "Retainage") in each Application for Payment by County. The Retainage withheld shall be released upon final completion of the entire Project and verification of satisfactory work performed, unless grounds exist for withholding payment on account of other defaults by Contractor, including services provided by its sub-contractors.

31.0 LIQUIDATED DAMAGES:

If the Services are not substantially completed within the time for performance or within such additional time as may be extended by County, County will deduct from the final payment as liquidated damages and not as a penalty the sum of five hundred ($500.00) per calendar day that the Services are not substantially complete. Such sum is agreed upon as a reasonable and proper measure of the damages County will sustain.

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 FORCE MAJEURE:

Force Majeure: Force Majeure means a delay encountered by a party in the performance of its obligations under this Agreement, which is caused by an event beyond the reasonable control of

that party. Without limiting the generality of the foregoing, "Force Majeure" shall include but not be restricted to the following types of events: acts of God or public enemy; acts of governmental or regulatory authorities; fires, floods, epidemics or serious accidents; unusually severe weather conditions; strikes, lockouts, or other labor disputes; and defaults by subcontractors. In the event of a Force Majeure, the affected party shall not be deemed to have violated its obligations under this Agreement, and the time for performance of any obligations of that party shall be extended by a period of time necessary to overcome the effects of the Force Majeure, provided that the foregoing shall not prevent this Agreement from terminating in accordance with the termination provisions. If any event constituting a Force Majeure occurs, the affected party shall notify the other parties in writing, within twenty-four (24) hours, and disclose the estimated length of delay, and cause of the delay.

35.0 PERMITS:

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

36.0 PROTEST PROCEDURES:

To acquire Fort Bend County's protest procedures, please contact the buyer noted in the Solicitation or you may acquire Fort Bend County's protest procedures in Section 11 of the guidelines for FTA-funded procurements document from the following link.:

https://www.fortbendcountytx.gov/government/departments/purchasing-agent/fta-funded-procurements

37.0 WRITTEN STANDARDS OF CONDUCT:

You may acquire Fort Bend County's standards of conduct in Section 2 of the guidelines for FTA Funded procurement document from the following link:

https://fortbendcountytx.gov/sites/default/files/document-central/document-central/purchasing-documents/fta-funded-procurements/FTAFundedProdurementsManua.pdf

38.0 REQUIRED FORMS:

All respondents submitting are required to complete the attached/included and return with submission:

38.1 Vendor Information Form

38.2 W9

38.3 Tax Form/Debt/Residence Certification

38.4 Contractor Acknowledgement of Stormwater Management Program

38.5 Proof of Required Insurance

38.6 Attachment A: Certification Form

38.7 Attachment B: Certification of Restrictions on Lobbying

38.8 Attachment C: Disclosure of Lobbying Activities

38.9 Attachment D: Certification Regarding Government-Wide Debarment and Suspension

38.10 Attachment E: PTN 130

38.11 Attachment F: Buy America Certification

38.12 Attachment G: Intent to Perform as DBE Contractor

38.13 Attachment H: Subcontractor Participation

38.14 Attachment I: Disclosure of Interests Certification

38.15 Attachment J: Cert & Statement of Qualifications

38.16 Attachment K: State of TX Child Support Business Ownership Form

38.17 Attachment L: WH347 Certification Form (Certified Payroll)

39.0 REQUIRED FORMS AFTER CONTRACT EXECUTION:

39.1 Attachment M: Contractor Payment Report (if applicable)

40.0 EXHIBITS:

40.1 Exhibit 1: Specifications

40.2 Exhibit 2: Plan Set

40.3 Exhibit 3: Pricing Form (required)

41.0 NAIC CODES:

The following NAICS codes are set for this project; however, they are not all inclusive. Fort Bend County utilizes the following website: http://www.dot.state.tx.us/apps-cg/tucp/default.htm

236220	Commercial and Institutional Building Construction
238990	All Other Specialty Trade Contractors

237110	Water and Sewer Line and Related Structures Construction
238110	Poured Concrete Foundation and Structure Contractors
238120	Structural Steel and Precast Concrete Contractors
238130	Framing Contractors
238150	Glass and Glazing Contractors
238190	Other Foundation, Structure, and Building Exterior Contractors
238210	Electrical Contractors and Other Wiring Installation Contractors
238220	Plumbing, Heating, and Air-Conditioning Contractors
238290	Other Building Equipment Contractors
238310	Drywall and Insulation Contractors
238320	Painting and Wall Covering Contractors
238330	Flooring Contractors
238340	Tile and Terrazzo Contractors
238350	Finish Carpentry Contractors
238390	Other Building Finishing Contractors
238910	Site Preparation Contractors
238390	Office furniture, modular system, installation
561730	Landscaping services (except planning)

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

ATTACHMENT A

CERTIFICATION FORM

In submitting this proposal, the undersigned certifies on behalf of its firm and any proposed subcontractors as follows:

(1) **Bid Validity Certification:** If this offer is accepted within one hundred twenty (120) calendar days from the due date, to furnish any or all services upon which prices are offered at the designated point within the time specified;

(2) **Non-Collusion Certification:** Has made this proposal independently, without consultation, communication, or agreement for the purpose of restricting competition as to any matter relating to this proposal with any other FIRM or with any other competitor,

(3) **Affirmative Action/DBE:** Is in compliance with the Common Grant Rules affirmative action and and Department of Transportation's Disadvantaged Business Enterprise requirements.

(4) **Non-Conflict Certification:** Represents and warrants that no employee, official, or member of the Regional Transportation Authority's Board of Directors is or will be pecuniarily benefited directly or indirectly in this Contract,

(5) **Non-Inducement Certification:** The undersigned hereby certifies that neither it nor any of its employees, representatives, or agents have offered or given gratuities (in the form of entertainment, gifts, or otherwise) to any director, officer, or employee of the Regional Transportation Authority with the view toward securing favorable treatment in the awarding, amending, or the making of any determination with respect to the performance of this Contract.

(6) **Debarment and Suspension:** The undersigned is neither debarred nor suspended from Federal programs under U. S. Department of Transportation regulations, "Nonprocurement Suspension and Debarment," 2 CFR Parts 180 and 1200, or under the FAR at 48 CFR Chapter 1, Part 9.4.

(7) **Integrity and Ethics:** Has a satisfactory record of integrity and business ethics, in compliance with 49 U.S.C. Section 5325(j)(2)(A)

(8) **Public Policy:** Is in compliance with the public policies of the Federal Government, as required by 49 U.S.C. Section 5325(j)(2)(B)

(9) **Administrative and Technical Capacity:** Has the necessary organization, experience, accounting, and operational controls, and technical skills, or the ability to obtain them, in compliance with 49 U.S.C. Section 5325(j)(2)(D)

(10) **Licensing and Taxes:** Is in compliance with applicable licensing and tax laws and regulations

(11) **Financial Resources:** Has, or can obtain, sufficient financial resources to perform the contract, as required by 49 U. S. C. Section 5325 (j)(2)(D)

(12) **Production Capability:** Has, or can obtain, the necessary production, construction, and technical equipment and facilities.

(13) **Timeliness:** Is able to comply with the required delivery or performance schedule, taking into consideration all existing commercial and governmental business commitments.

(14) **Performance Record:** Is able to provide a satisfactory current and past performance record.

_____	_____
Signature	Printed Name/Title
_____	_____
Firm Name	Date

ATTACHMENT B

CERTIFICATION
OF
RESTRICTIONS ON LOBBYING
(Required for contracts over $100,000.)

I, _____, _____, hereby certify on behalf of
(Name) (Title)
the _____, that:
(Company Name)

(1) No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress, regarding the award of Federal assistance, or the extension, continuation, renewal, amendment, or modification of any Federal assistance agreement, contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any application for Federal assistance, federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL: "Disclosure of Form to Report Lobbying," including information required by the instructions accompanying the form, which form may be amended to omit such information as authorized by 49 CFR Part 20.110.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

The undersigned understands that this certification is a material representation of fact upon which reliance is placed and that submission of this certification is a prerequisite for providing Federal assistance for a transaction covered by 49 CFR Part 20.110. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

Executed this _____ day of _____, 20__.

Signed: _____

Printed Name: _____

Company Name: _____

ATTACHMENT C

Approved by OMB
0348-0046

Disclosure of Lobbying Activities

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352
(See following page for public burden disclosure)

1. Type of Federal Action: a. contract ____ b. grant c. cooperative agreement d. loan e. loan guarantee f. loan insurance	**2. Status of Federal Action:** a. bid/offer/application _____ b. initial award c. post-award	**3. Report Type:** a. initial filing _____ b. material change **For material change only:** Year _____ quarter _____ Date of last report_____
4. Name and Address of Reporting Entity: ____ Prime _____ Subawardee Tier_____, if Known: **Congressional District,** *if known*:	**5. If Reporting Entity in No. 4 is Subawardee,** Enter Name and Address of Prime: **Congressional District,** *if known*:	
6. Federal Department/Agency:	**7. Federal Program Name/Description:** CFDA Number, *if applicable*: _____	
8. Federal Action Number, *if known:*	**9. Award Amount**, *if known:* **$**	
10. a. Name and Address of Lobbying Registrant *(if individual, last name, first name, MI):*	**b. Individuals Performing Services** *(including address if different from No. 10a)* *(last name, first name, MI):*	
11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.	**Signature: _____** **Print Name: _____** **Title: _____** **Telephone No.: _____ Date: _____**	
Federal Use Only	**Authorized for Local Reproduction** **Standard Form - LLL (Rev. 7-97)**	

ATTACHMENT C

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

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

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

2. Identify the status of the covered Federal action.

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

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

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

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

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

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

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

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

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

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

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

CERTIFICATION REGARDING GOVERNMENT-WIDE DEBARMENT AND SUSPENSION

This contract is a covered transaction for purposes of 49 CFR Part 29. As such, the Bidder/Offeror is required to verify that none of the contractor, its principals, as defined at 49 CFR 29.995, or affiliates, as defined at 49 CFR 29.905, are excluded or disqualified as defined at 49 CFR 29.940 and 29.945.

The Bidder/Offeror is required to comply with 49 CFR 29, Subpart C and must include the requirement to comply with 49 CFR 29, Subpart C in any lower tier covered transaction it enters into.

By signing and submitting its bid or proposal, the bidder or proposer certifies as follows:

The certification in this clause is a material representation of fact relied upon by Fort Bend County. If it is later determined that the bidder or proposer knowingly rendered an erroneous certification, in addition to remedies available to Fort Bend County, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment. The bidder or proposer agrees to comply with the requirements of 49 CFR 29, Subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

DATE _____

SIGNATURE _____

COMPANY _____

NAME _____

TITLE _____

Consolidated Certification Form

This form is to assist subrecipients with managing the federal and state clauses related to the procurement they're interested in completing. This document complies with all pertinent federal and state regulations for each procurement type.

To begin, select the procurement's funding source. If TxDOT is the pass-through entity (Direct Recipient), both Federal and State must be checked.

☒ Federal and State ☐ State Only

Federal Clauses – Procurement Types Summary:

All FTA-Assisted Third-Party Contracts and Subcontracts

1. No Federal Government Obligations to Third Parties
2. Access to Third Party Contract Records
3. Changes to Federal Requirements
4. Civil Rights (EEO, Title VI & ADA)
5. Incorporation of FTA Terms
6. Energy Conservation
7. Veterans Preference
8. False or Fraudulent Statements or Claims
9. Disadvantaged Business Enterprises (DBE)
10. Fly America
11. ADA Access
12. Special Notification Requirements for States

Award Exceeding $10,000

13. Terminating the Contract

Award Exceeding $25,000

14. Debarment and Suspension

☐ **Award Exceeding $50,000**

15. Contracting with the Enemy

☐ **Award Exceeding $100,000**

16. Resolution of Disputes, Breaches, or Other Litigation
17. Lobbying Restrictions

☒ **Award Exceeding $150,000**

18. Environmental Protection (Clean Air and Water Pollution Control)

All FTA-ASSISTED THIRD-PARTY CONTRACTS AND SUBCONTRACTS

1. No Federal Government Commitment or Liability to Third Parties

Except as the Federal Government expressly consents in writing, the Recipient agrees that:

A. The Federal Government does not and shall not have any commitment or liability related to the Underlying Agreement, to any Third-Party Participant at any tier, or to any other person or entity that is not a party (FTA or the Recipient) to the Underlying Agreement; and

B. Notwithstanding that the Federal Government may have concurred in or approved any Solicitation or Third-Party Agreement at any tier that may affect the Underlying Agreement, the Federal Government does not and shall not have any commitment or liability to any Third-Party Participant or other entity or person that is not a party (FTA or the Recipient) to the Underlying Agreement.

2. Access to Third-Party Contract Records

The Recipient agrees to require, and assures that each of its Subrecipients will require, its Third-Party Contractors at each tier to provide:

A. The U.S. Secretary of Transportation and the Comptroller General of the United States, the state, or their duly authorized representatives, access to all Third-Party Contract records (at any tier) as required under 49 U.S.C. § 5325(g); and

B. Sufficient access to all Third-Party Contract records (at any tier) as needed for compliance with applicable federal laws, regulations, and requirements or to assure.

3. Changes to Federal Requirements

The Recipient agrees to include notice in each Third-Party Agreement that:

A. Federal requirements that apply to the Recipient or the Award, the accompanying Underlying Agreement, and any Amendments thereto may change due to changes in federal law, regulation, other requirements, or guidance, or changes in the Recipient's Underlying Agreement including any information incorporated by reference and made part of that Underlying Agreement; and

B. Applicable changes to those federal requirements will apply to each Third-Party Agreement and parties thereto at any tier.

4. Civil Rights

The following Federal Civil Rights laws and regulations apply to all contracts.

A. Federal Equal Employment Opportunity (EEO) Requirements. These include, but are not limited to: a. Nondiscrimination in Federal Public Transportation Programs. 49 U.S.C. § 5332, covering projects, programs, and activities financed under 49 U.S.C. Chapter 53, prohibits discrimination on the basis of race, color, religion, national origin, sex (including sexual orientation and gender identity), disability, or age, and prohibits discrimination in employment or business opportunity. b. Prohibition against Employment Discrimination. Title VII of the Civil Rights Act of 1964, as amended, 42 U.S.C. § 2000e, and Executive Order No. 11246, "Equal Employment Opportunity," September 24, 1965, as amended, prohibit discrimination in employment on the basis of race, color, religion, sex, or national origin.

B. Nondiscrimination on the Basis of Sex. Title IX of the Education Amendments of 1972, as amended, 20 U.S.C. § 1681 et seq. and implementing Federal regulations, "Nondiscrimination on the Basis of Sex in Education Programs or Activities Receiving Federal Financial Assistance," 49 C.F.R. part 25 prohibit discrimination on the basis of sex.

C. Nondiscrimination on the Basis of Age. The "Age Discrimination Act of 1975," as amended, 42 U.S.C. § 6101 et seq., and Department of Health and Human Services implementing regulations, "Nondiscrimination on the Basis of Age in Programs or Activities Receiving Federal Financial Assistance," 45 C.F.R. part 90, prohibit discrimination by participants in federally assisted programs against individuals on the basis of age. The Age Discrimination in Employment Act (ADEA), 29 U.S.C. § 621 et seq., and Equal Employment Opportunity Commission (EEOC) implementing regulations, "Age Discrimination in Employment Act," 29 C.F.R. part 1625, also prohibit employment discrimination against individuals age 40 and over on the basis of age.

D. Federal Protections for Individuals with Disabilities. The Americans with Disabilities Act of 1990, as amended (ADA), 42 U.S.C. § 12101 et seq., prohibits discrimination against qualified individuals with disabilities in programs, activities, and services, and imposes specific requirements on public and private entities. Third party contractors must comply with their responsibilities under Titles I, II, III, IV, and V of the ADA in employment, public services, public accommodations, telecommunications, and other provisions, many of which are subject to regulations issued by other Federal agencies.

E. Equal Opportunity: The Agency is an Equal Opportunity Employer. As such, the Agency agrees to comply with all applicable Federal civil rights laws and implementing regulations. Apart from inconsistent requirements imposed by Federal laws or regulations, the Agency agrees to comply with the requirements of 49 U.S.C. § 5323(h) (3) by not using any Federal assistance awarded by FTA to support procurements using exclusionary or discriminatory specifications. Under this Contract, the Contractor shall at all times comply with the following requirements and shall include these requirements in each subcontract entered into as part thereof.

I. Nondiscrimination. In accordance with Federal transit law at 49 U.S.C. § 5332, the Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, religion, national origin, sex, disability, or age. In addition, the Contractor agrees to comply with applicable Federal implementing regulations and other implementing requirements FTA may issue.

II. Race, Color, Religion, National Origin, Sex. In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. § 2000e et seq., and Federal transit laws at 49 U.S.C. § 5332, the Contractor agrees to comply with all applicable equal employment opportunity requirements of U.S. Department of Labor (U.S. DOL) regulations, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor," 41 C.F.R. chapter 60, and Executive Order No. 11246, "Equal Employment Opportunity in Federal Employment," September 24, 1965, 42 U.S.C. § 2000e note, as amended by any later Executive Order that amends or supersedes it, referenced in 42 U.S.C. § 2000e note. The Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, national origin, or sex (including sexual orientation and gender identity). Such action shall include, but not be limited to, the following: employment, promotion, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

III. Age. In accordance with the Age Discrimination in Employment Act, 29 U.S.C. §§ 621-634, U.S. Equal Employment Opportunity Commission (U.S. EEOC) regulations, “Age Discrimination in Employment Act,” 29 C.F.R. part 1625, the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 6101 et seq., U.S. Health and Human Services regulations, “Nondiscrimination on the Basis of Age in Programs or Activities Receiving Federal Financial Assistance,” 45 C.F.R. part 90, and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees to refrain from discrimination against present and prospective employees for reason of age. In addition, the Contractor agrees to comply with any Implementing requirements FTA may issue.

IV. Disabilities. In accordance with section 504 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. § 794, the Americans with Disabilities Act of 1990, as amended, 42 U.S.C. § 12101 et seq., the Architectural Barriers Act of 1968, as amended, 42 U.S.C. § 4151 et seq., and Federal transit law at 49 U.S.C. §5332, the Contractor agrees that it will not discriminate against individuals on the basis of disability. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

V. Promoting Free Speech and Religious Liberty. The Contractor shall ensure that Federal funding is expended in full accordance with the U.S. Constitution, Federal Law, and statutory and public policy requirements: including, but not limited to, those protecting free speech, religious liberty, public welfare, the environment, and prohibiting discrimination.

5. Incorporation of Federal Transit Administration (FTA) Terms

The provisions within include, in part, certain Standard Terms and Conditions required by DOT, whether or not expressly set forth in the preceding contract provisions. All contractual provisions required by DOT, as set forth in the current FTA Circular 4220 are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Contract. The Contractor shall not perform any act, fail to perform any act, or refuse to comply with any request which would cause a violation of the FTA terms and conditions.

6. Energy Conservation

The Recipient agrees to, and assures that its Subrecipients will, comply with the mandatory energy standards and policies of its state energy conservation plans under the Energy Policy and Conservation Act, as amended, 42 U.S.C. § 6321 et seq., and perform

an energy assessment for any building constructed, reconstructed, or modified with federal assistance required under FTA regulations, "Requirements for Energy Assessments," 49 C.F.R. part 622, subpart C.

7. Veterans Preference

As provided in 49 U.S.C. § 5325(k), to the extent practicable, the Recipient agrees and assures that each of its Subrecipients:

A. Will give a hiring preference to veterans, as defined in 5 U.S.C. § 2108, who have the skills and abilities required to perform construction work required under a Third-Party Contract in connection with a Capital Project supported with federal assistance appropriated or made available for 49 U.S.C. chapter 53; and

B. Will not require an employer to give a preference to any veteran over any equally qualified applicant who is a member of any racial or ethnic minority, female, an individual with a disability, or a former employee.

8. False or Fraudulent Statements or Claims

A. Civil Fraud. The Recipient acknowledges and agrees that:

I. Federal laws, regulations, and requirements apply to itself and its Underlying Agreement, including the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. § 3801 et seq., and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 C.F.R. part 31.

II. By executing the Underlying Agreement, the Recipient certifies and affirms to the Federal Government the truthfulness and accuracy of any claim, statement, submission, certification, assurance, affirmation, or representation that the Recipient provides to the Federal Government.

III. The Federal Government may impose the penalties of the Program Fraud Civil Remedies Act of 1986, as amended, and other applicable penalties if the Recipient presents, submits, or makes available any false, fictitious, or fraudulent information.

B. Criminal Fraud. The Recipient acknowledges that 49 U.S.C. § 5323(l)(1) authorizes the Federal Government to impose the penalties under 18 U.S.C. § 1001 if the Recipient provides a false, fictitious, or fraudulent claim, statement, submission, certification, assurance, or representation in connection with a federal public transportation program under 49 U.S.C. chapter 53 or any other applicable federal law.

9. Disadvantaged Business Enterprises

The recipient must include assurances that third party contractors will comply with the DBE program requirements of 49 C.F.R. part 26, when applicable. The following contract clause is required in all DOT-assisted prime and subcontracts:

The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 C.F.R. part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

A. Withholding monthly progress payments;

B. Assessing sanctions;

C. Liquidated damages; and/or

D. Disqualifying the contractor from future bidding as non-responsible. 49 C.F.R. §26.13(b).

Further, recipients must establish a contract clause to require prime contractors to pay subcontractors for satisfactory performance of their contracts no later than 30 days from receipt of each payment the recipient makes to the prime contractor. 49 C.F.R. § 26.29(a). Finally, for contracts with defined DBE contract goals, each FTA recipient must include in each prime contract a provision stating that the contractor shall utilize the specific DBEs listed unless the contractor obtains the recipient's written

consent; and that, unless the recipient's consent is provided, the contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the listed DBE. 49 C.F.R. § 26.53(f) (1).

10. Fly America

The recipient agrees to comply with the air transportation requirements of Section 5 of the International Air Transportation Fair Competitive Practices Act of 1974, as amended, 49 U.S.C. § 40118, and U.S. General Services Administration (U.S. GSA) regulations, "Use of United States Flag Air Carriers," 41 C.F.R. §§ 301-10.131 – 301-10.143.

11. ADA Access

The Recipient agrees to comply with the following federal prohibitions against discrimination based on disability:

A. Federal laws, including:

I. Section 504 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. § 794, which prohibits discrimination based on disability in the administration of federally assisted Programs, Projects, or activities;

II. The Americans with Disabilities Act of 1990 (ADA), as amended, 42 U.S.C. § 12101 et seq., which requires that accessible facilities and services be made available to individuals with disabilities:

a. For FTA Recipients generally, Titles I, II, and III of the ADA apply; but

b. For Indian Tribes, Titles II and III of the ADA apply, but Title I of the ADA does not apply because it exempts Indian Tribes from the definition of "employer;"

III. The Architectural Barriers Act of 1968, as amended, 42 U.S.C. § 4151 et seq., which requires that buildings and public accommodations be accessible to individuals with disabilities;

IV. Federal transit law, specifically 49 U.S.C. § 5332, which now includes disability as a prohibited basis for discrimination; and

V. Other applicable federal laws, regulations, and requirements pertaining to access for seniors or individuals with disabilities.

B. Federal regulations and guidance, including:

I. U.S. DOT regulations, "Transportation Services for Individuals with Disabilities (ADA)," 49 C.F.R. part 37;

II. U.S. DOT regulations, "Nondiscrimination on the Basis of Disability in Programs and Activities Receiving or Benefiting from Federal Financial Assistance," 49 C.F.R. part 27;

III. Joint U.S. Architectural and Transportation Barriers Compliance Board (U.S. ATBCB) and U.S. DOT regulations, "Americans With Disabilities (ADA) Accessibility Specifications for Transportation Vehicles," 36 C.F.R. part 1192 and 49 C.F.R. part 38;

IV. U.S. DOT regulations, "Transportation for Individuals with Disabilities: Passenger Vessels," 49 C.F.R. part 39;

V. U.S. DOJ regulations, "Nondiscrimination on the Basis of Disability in State and Local Government Services," 28 C.F.R. part 35;

VI. U.S. DOJ regulations, "Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities," 28 C.F.R. part 36;

VII. U.S. EEOC, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 C.F.R. part 1630;

VIII. U.S. Federal Communications Commission regulations, "Telecommunications Relay Services and Related Customer Premises Equipment for Persons with Disabilities," 47 C.F.R. part 64, subpart F;

IX. U.S. ATBCB regulations, "Electronic and Information Technology Accessibility Standards," 36 C.F.R. part 1194;

X. FTA regulations, "Transportation for Elderly and Handicapped Persons," 49 C.F.R. part 609;

XI. FTA Circular 4710.1, "Americans with Disabilities Act: Guidance;" and

XII. Other applicable federal civil rights and nondiscrimination regulations and guidance.

12. Special Notification Requirements for States

A. Types of Information. To the extent required under federal law, the State, as the Recipient, agrees to provide the following information about federal assistance awarded for its State Program, Project, or related activities:

I. The Identification of FTA as the federal agency providing the federal assistance for a State Program or Project;

II. The Catalog of Federal Domestic Assistance Number of the program from which the federal assistance for a State Program or Project is authorized; and

III. The amount of federal assistance FTA has provided for a State Program or Project.

B. Documents. The State agrees to provide the information required under this provision in the following documents: (1) applications for federal assistance, (2) requests for proposals or solicitations, (3) forms, (4) notifications, (5) press releases, and (6) other publications.

Awards Exceeding $10,000

13. Termination

All contracts in excess of $10,000 must address termination for cause by the non-federal entity including the manner by which it will be effected and the basis for settlement.

Awards Exceeding $25,000

14. Debarment and Suspension

The Recipient agrees to the following:

A. It will comply with the following requirements of 2 C.F.R. part 180, subpart C, as adopted and supplemented by U.S. DOT regulations at 2 C.F.R. part 1200.

B. It will not enter into any "covered transaction" (as that phrase is defined at 2 C.F.R. §§ 180.220 and 1200.220) with any Third-Party Participant that is, or whose principal is, suspended, debarred, or otherwise excluded from participating in covered transactions, except as authorized by—

I. U.S. DOT regulations, "Nonprocurement Suspension and Debarment," 2 C.F.R. part 1200;

II. U.S. OMB regulatory guidance, "Guidelines to Agencies on Governmentwide Debarment and Suspension (Nonprocurement)," 2 C.F.R. part 180; and

III. Other applicable federal laws, regulations, or requirements regarding participation with debarred or suspended Recipients or Third-Party Participants.

C. It will review the U.S. GSA "System for Award Management – Lists of Parties Excluded from Federal Procurement and Nonprocurement Programs," if required by U.S. DOT regulations, 2 C.F.R. part 1200.

D. It will ensure that its Third-Party Agreements contain provisions necessary to flow down these suspension and debarment provisions to all lower tier covered transactions.

E. If the Recipient suspends, debars, or takes any similar action against a Third-Party Participant or individual, the Recipient will provide immediate written notice to the:

I. FTA Regional Counsel for the Region in which the Recipient is located or implements the Underlying Agreement;

II. FTA Headquarters Manager that administers the Grant or Cooperative Agreement; or

III. FTA Chief Counsel.

Awards Exceeding $50,000

15. Never Contract with the Enemy

The Recipient agrees to the regulations implementing Never Contract with the Enemy in 2 CFR part 183. The regulations in 2 CFR part 183 affect covered contracts, grants and cooperative agreements that are expected to exceed $50,000 within the period of performance, are performed outside the United States and its territories, and are in support of a contingency operation in which members of the Armed Forces are actively engaged in hostilities.

Awards Exceeding $100,000

16. Resolution of Disputes, Breaches, or Other Litigation

A. FTA Interest

FTA has a vested interest in the settlement of any violation of federal law, regulation, or requirement, or any disagreement involving the Award, the accompanying Underlying Agreement, and any Amendments thereto including, but not limited to, a default, breach, major dispute, or litigation, and FTA reserves the right to concur in any settlement or compromise.

B. Notification to FTA; Flow Down Requirement

If a current or prospective legal matter that may affect the Federal Government emerges, the Recipient must promptly notify the FTA Chief Counsel and FTA Regional Counsel for the Region in which the Recipient is located. The Recipient must include a similar notification requirement in its Third-Party Agreements and must require each Third-Party Participant to include an equivalent provision in its sub-agreements at every tier, for any agreement that is a "covered transaction" according to 2 C.F.R. §§ 180.220 and 1200.220.

I. The types of legal matters that require notification include, but are not limited to, a major dispute, breach, default, litigation, or naming the Federal Government as a party to litigation or a legal disagreement in any forum for any reason.

II. Matters that may affect the Federal Government include, but are not limited to, the Federal Government's interests in the Award, the accompanying Underlying Agreement, and any Amendments thereto, or the Federal Government's administration or enforcement of federal laws, regulations, and requirements.

III. Additional Notice to U.S. DOT Inspector General. The Recipient must promptly notify the U.S. DOT Inspector General in addition to the FTA Chief Counsel or Regional Counsel for the Region in which the Recipient is located, if the Recipient has knowledge of potential fraud, waste, or abuse occurring on a Project receiving assistance from FTA. The notification provision applies if a person has or may have submitted a false claim under the False Claims Act, 31 U.S.C. § 3729 et seq., or has or may have committed a criminal or civil violation of law pertaining to such matters as fraud, conflict of interest, bid rigging, misappropriation or embezzlement, bribery, gratuity, or similar misconduct involving federal assistance. This responsibility occurs whether the Project is subject to this Agreement or another agreement between the Recipient and FTA, or an agreement involving a principal, officer, employee, agent, or Third-Party Participant of the Recipient. It also applies to subcontractors at any tier. Knowledge, as used in this paragraph, includes, but is not limited to, knowledge of a criminal or civil investigation by a Federal, state, or local law enforcement or other investigative agency, a criminal indictment or civil complaint, or probable cause that could support a criminal indictment, or any other credible information in the possession of the Recipient. In this paragraph, "promptly" means to refer information without delay and without change. This notification provision applies to all divisions of the Recipient, including divisions tasked with law enforcement or investigatory functions.

C. Federal Interest in Recovery

The Federal Government retains the right to a proportionate share of any proceeds recovered from any third party, based on the percentage of the federal share for the Underlying Agreement. Notwithstanding the preceding sentence, the Recipient may return all liquidated damages it receives to its Award Budget for its Underlying Agreement rather than return the federal share of those liquidated damages to the Federal Government, provided that the Recipient receives FTA's prior written concurrence.

D. Enforcement

The Recipient must pursue its legal rights and remedies available under any Third-Party Agreement or any federal, state, or local law or regulation.

E. Agency Process

*Vendors may view the dispute resolution process here:

https://www.fortbendcountytx.gov/government/departments/financial-administration/purchasing-agent/fta-funded-procurements in the FTA Funded Procurements Guidelines document.

17. Lobbying Restrictions.

The Recipient agrees that neither it nor any Third-Party Participant will use federal assistance to influence any officer or employee of a federal agency, member of Congress or an employee of a member of Congress, or officer or employee of Congress on matters that involve the Underlying Agreement, including any extension or modification, according to the following:

A. Laws, Regulations, Requirements, and Guidance. This includes:

I. The Byrd Anti-Lobbying Amendment, 31 U.S.C. § 1352, as amended;

II. U.S. DOT regulations, "New Restrictions on Lobbying," 49 C.F.R. part 20, to the extent consistent with 31 U.S.C. § 1352, as amended; and

III. Other applicable federal laws, regulations, requirements, and guidance prohibiting the use of federal assistance for any activity concerning legislation or appropriations designed to influence the U.S. Congress or a state legislature; and

B. Exception. If permitted by applicable federal law, regulations, requirements, or guidance, such lobbying activities described above may be undertaken through the Recipient's or Subrecipient's proper official channels.

C. Political Activity. The Recipient agrees to comply with:

I. The Hatch Act, 5 U.S.C. chapter 15, which limits the political activities of state and local government agencies supported in whole or in part with federal assistance, including the political activities of state and local government officers and employees whose principal governmental employment activities are supported in whole or in part with federal assistance;

II. U.S. Office of Personnel Management regulations, "Political Activity of State or Local Officers or Employees," 5 C.F.R. part 151; and

III. 49 U.S.C. § 5323(l)(2) and 23 U.S.C. § 142(g), which limits the applicability of the Hatch Act, as follows:

a. The Hatch Act does not apply to nonsupervisory employees of a public transportation system, or any other agency or entity performing related functions, based upon the Award of federal assistance under 49 U.S.C. chapter 53 or 23 U.S.C. § 142(a)(2); but

b. Notwithstanding the preceding section 4(e)(3)(ii) of this Master Agreement, the Hatch Act does apply to a nonsupervisory employee if imposed for a reason other than the Award of federal assistance to its employer under 49 U.S.C. chapter 53 or 23 U.S.C. § 142(a)(2).

D. Lobbying and Disclosure Certification

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

The undersigned certifies or affirms the truthfulness and accuracy of the contents of the statements submitted on or with this certification and understands that the provisions of 31 U.S.C. Section 3801, et seq., are applicable thereto.

Name of Company	Printed Name of Person Completing Form
Date	Signature

Awards Exceeding $150,000

18. Environmental Protection (Clean Air and Clean Water)

The Recipient agrees to comply with the regulations within the Clean Air Act (42 U.S.C. §§ 7401 - 7671q.) and the Federal Water Pollution Control Act (33 U.S.C. §§ 1251 - 1388), as amended. Contracts and subgrants of amounts in excess of $150,000 must contain a provision that requires the non-federal award to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. §§ 7401 - 7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. §§ 1251 - 1388). Violations must be reported to the 64 Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

State of Texas Procurement Contract Clauses

State of Texas - Procurement Types Summary:

All Texas-Assisted Third-Party Contracts and Subcontracts

1. Debarment
2. Family Code Child Support Obligation Certification
3. Debts and Delinquencies Affirmations
4. Disaster Recovery Plan
5. Disclosure of Prior State Employment
6. Entities that Boycott Israel
7. Federal Executive Order 13224 Excluded Parties
8. False Statements
9. Financial Participation Prohibited Affirmation
10. Foreign Terrorist Organizations
11. Disaster Relief Contract Violation
12. Public Information Act
13. Signature Authority
14. State Auditor's Right to Audit
15. Suspension and Debarment
16. Assignment
17. Contracting Information Responsibilities
18. Human Trafficking Prohibition

1. 34 TAC §20.585 Debarment

The Recipient agrees that The State of Texas, in order to protect the interests of the state may:

A. Conduct an investigation upon a complaint regarding a contractor's acts and omissions in procurement or performance of that contract where the complaint may constitute cause for debarment;

B. Cancel one or more of the contractor's active or pending contracts upon a complaint regarding the contractor's acts and omissions in procurement or performance of that contract where the complaint may constitute cause for debarment;

C. Assess actual damages and costs incurred due to contractor's failure to perform as specified in the contract;

D. Debar a contractor for a specified period of time; and

E. Take any other action authorized by law.

2. §231.006 Family Code Child Support Obligation Certification

Under Section 231.006(d) of the Texas Family Code, the Sub-recipient certifies that the individual or business entity named in this Agreement is not ineligible to receive the specified GRANT and acknowledges that this Agreement may be terminated and payment or grant funds may be withheld if this certification is inaccurate.

3. §2252.903 Gov't Code Debts and Delinquencies Affirmations

Sub-recipient agrees that any payments due it under the Agreement shall be applied toward any debt or delinquency that is

owed to the State of Texas.

4. §444.190 Gov't Code Disaster Recovery Plan

In accordance with 13 TAC (Texas Administrative Code) §6.94(a)(9), Sub-recipient shall provide descriptions of its business continuity and disaster recovery plans

5. §2254.033 Gov't Code Disclosure of Prior State Employment

In accordance with Section 2254.033 of the Texas Government Code, relating to consulting services, RESPONDENT certifies that it does not employ an individual who has been employed by TxDOT or another agency at any time during the two years preceding the submission of the Response or, in the alternative, RESPONDENT has disclosed in its Response the following:

A. The nature of the previous employment with TxDOT or the other agency;

B. The date the employment was terminated; and

C. The annual rate of compensation for the employment at the time of its termination.

6. §2271.001 Gov't Code Entities that Boycott Israel

Pursuant to Section 2271.001 of the Texas Government Code, Sub-recipient certifies that either:

A. It meets an exception criterion under Section 2271.002, or

B. It does not boycott Israel and will not boycott Israel during the term of this Agreement.Sub-recipient shall in a writing to TxDOT state any fact(s) that make it exempt from the boycott certification.

7. Federal Executive Order 13224 Excluded Parties

Sub-recipient certifies that it is not listed on the prohibited vendors list authorized by Executive Order 13224, Blocking Property and Prohibiting Transactions with Persons Who Commit, Threaten to Commit, or Support Terrorism", published by the United States Department of the Treasury, Office of Foreign Assets Control.

8. §2155.077(a)(2) Gov't Code False Statements

Sub-recipient represents and warrants that all statements and information prepared and submitted in this document are current, complete, true and accurate. Submitting a false statement or material misrepresentation made during the performance of a contract is a material breach of contract and may void this agreement.

9. §2155.004 Gov't Code Financial Participation Prohibited Affirmation

Under Section 2155.004(b) of the Texas Government Code, Sub-recipient certifies that the individual or business entity named in this Agreement is not ineligible to receive the specified agreement/GRANT and acknowledges that this agreement may be terminated, and payment withheld if this certification is inaccurate.

10. §2252.152 Gov't Code Foreign Terrorist Organizations

Sub-recipient represents and warrants that is not engaged in business with Iran, Sudan, or a foreign terrorist organization as prohibited by Section 2252.152 of the Texas Government Code.

11. §2155.006 and 2261.053 Gov't Code Prior Disaster Relief Contract Violation

Under Sections 2155.006 and 2261.053 of the Texas Government Code, the Sub-recipient certifies that the individual or business entity named in this Agreement is not ineligible to receive the specified agreement/GRANT and acknowledges that this agreement may be terminated and payment withheld if this certification is inaccurate.

12. Chapter 552, Gov't Code and §2252.907 Gov't Code Public Information Act

Information, documentation, and other material in connection with this Agreement may be subject to public disclosure pursuant to Chapter 552 of the Texas Government Code (the "Public Information Act"). In accordance with Section 2252.907 of the Texas Government Code, the Sub-recipient is required to make any information created or exchanged with the State pursuant to the Agreement and not otherwise excepted from disclosure under the Texas Public Information Act, available in a format that is accessible by the public at no additional charge to the State.

13. §2252.0012 Gov't Code Signature Authority

The Sub-recipient represents and warrants that the individual executing this Agreement is authorized to sign this Agreement on behalf of the Sub-recipient and to bind the Sub-recipient.

14. §2262.154 Gov't Code State Auditor's Right to Audit

The state auditor may conduct an audit or investigation of any entity receiving funds from the state directly under the contract or indirectly through a subcontract under the contract. The acceptance of funds directly under the contract or indirectly through a subcontract under the contract acts as acceptance of the authority of the state auditor, under the direction of the legislative audit committee, to conduct an audit or investigation in connection with those funds. Under the direction of the legislative audit committee, an entity that is the subject of an audit or investigation by the state auditor must provide the state auditor with access to any information the state auditor considers relevant to the investigation or audit.

15. §2155.077 Gov't Code Suspension and Debarment

Sub-recipient certifies that it and its principals are not suspended of debarred from doing business with the State of Texas or federal government as listed on the State of Texas Debarred Vendor List as maintained by the Texas Comptroller of Public Accounts and the System for Award Management (SAM) maintained by the General Services Administration.

16. §2262.056 (b) Gov't Code Assignment

Sub-recipient shall not assign its rights under the Agreement or delegate the performance of its duties under the Agreement without prior written approval from the TxDOT. Any attempted assignment in violation of this provision is void and without effect.

17. §552.372 Gov't Code Contracting Information Responsibilities

In accordance with Section 552.372 of the Texas Government Code, Sub-recipient agrees to:

A. preserve all contracting information related to the Agreement as provided by the records retention requirements applicable to TxDOT for the duration of the Agreement,

B. promptly provide to TxDOT any contracting information related to the Agreement that is in the custody or possession of the Sub-recipient on request of TxDOT, and

C. on termination or expiration of the contract, either provide at no cost to TxDOT all contracting information related to the Agreement that is in the custody or possession of the Sub-recipient or preserve the contracting information related to the Agreement as provided by the records retention requirements applicable to TxDOT. Except as provided by Section 552.374(c) of the Texas Government Code, the requirements of Subchapter J, Chapter 552, Government Code, may apply to the Agreement and the Sub-recipient agrees that the Agreement can be terminated if the Sub-recipient knowingly or intentionally fails to comply with a requirement of that subchapter.

18. §2155.0061 Gov't Code Human Trafficking Prohibition

Under Section 2155.0061 of the Texas Government Code, the Sub-recipient certifies that the individual or business entity named in the Agreement is not ineligible to receive the specified Agreement/GRANT and acknowledges that this Agreement may be terminated and payment withheld if this certification is inaccurate.

Certification to Purchaser

1. The undersigned vendor certifies that the manufactured good(s) furnished will meet or exceed the specifications, and/or that services rendered will comply with the terms of the solicitation or contract.
2. The undersigned vendor certifies that it has read all of the bid, proposal, or contract documents and agrees to abide by the terms, certifications, and conditions thereof.

Name of Company:

Address:

Telephone:

SS# or Tax ID#:

Printed Name of Person Completing Form:

Signature

Date:

Description of Commodity Service:

Disadvantaged Business Enterprise Information

Type of Organization (check the application type of organization)

☐ Sole Proprietorship ☐ General Proprietorship ☐ Corporation ☐ Limited Partnership ☐ Limited Proprietorship

Is your firm a DBE? ☐ Yes ☐ No

If yes, what type?

Third Party Procurement Contract Provisions

Third Party Procurement Contracting Provisions

Select the additional third-party procurement contracting provisions based on the type of solicitation you're procuring:

**Procurements cannot be combined. Example: Construction procurement and Rolling Stock procurement, use separate PTN 130s for each.*

☒ 1. **Construction Related Clauses**
- ☒ Federal and State
- ☐ State Clauses

☐ 2. **Rolling Stock Related Clauses**
- ☐ Federal and State
- ☐ State Clauses

☐ 3. **Professional Services / Architectural Engineering**
- ☐ Federal and State
- ☐ State Clauses

☐ 4. **Materials & Supplies Related Clauses**
- ☐ Federal and State
- ☐ State Clauses

☐ 5. **Operations / Management Related Clauses**
- ☐ Federal and State
- ☐ State Clauses

1a. Federal Construction Related Clauses

A. Davis-Bacon Act

B. Copeland Anti-Kickback Act Section 1 and Section 2

C. Recycled Products

D. Bonding

E. Cargo Preference

F. Seismic Safety

G. Special DOL EEO Clauses

☐ **Awards Exceeding $100,000**

H. Contract Work Hours and Safety Standards Act

☒ **Awards Exceeding $150,000**

I. Buy America

A. Davis Bacon

All prime construction contracts in excess of $2,000 awarded by non-federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. §§ 3141 - 3144, and 3146 - 3148) as supplemented by Department of Labor regulations (29 C.F.R. part 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction"). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The non-federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-federal entity must report all suspected or reported violations to the federal awarding agency.

B. Copeland Anti-Kickback Act

The contracts must also include a provision for compliance with the Copeland "Anti-Kickback" Act (40 U.S.C. § 3145), as supplemented by Department of Labor regulations (29 C.F.R. part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of a public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-federal entity must report all suspected or reported violations to the federal awarding agency.

C. Recycled Products

The Contractor agrees to provide a preference for those products and services that conserve natural resources, protect the environment, and are energy efficient by complying with and facilitating compliance with Section 6002 of the Resource Conservation and Recovery Act, as amended, 42 U.S.C. § 6962, and U.S. Environmental Protection Agency (U.S. EPA), "Comprehensive Procurement Guideline for Products Containing Recovered Materials," 40 C.F.R. part 247.

D. Bonding

I. A bid guarantee from each bidder equivalent to five percent of the bid price. The "bid" guarantee" must consist of a firm commitment such as a bid bond, certified check, or other negotiable instrument accompanying a bid as assurance that the bidder will, upon acceptance of the bid, execute such contractual documents as may be required within the time specified.

II. A performance bond on the part of the contractor for 100 percent of the contract price. A "performance bond" is one executed in connection with a contract to secure fulfillment of all the contractor's obligations under such contract.

III. A payment bond on the part of the contractor for 100 percent of the contract price. A "payment bond" is one executed in connection with a contract to assure payment as required by law of all persons supplying labor and material in the execution of the work provided for in the contract.

E. Cargo Preference

The contractor agrees to comply with the shipping requirements of 46 U.S.C. § 55305, and U.S. Maritime Administration regulations, "Cargo Preference - U.S.-Flag Vessels," 46 C.F.R. part 381.

F. Seismic Safety

The contractor agrees that any new building or addition to an existing building will be designed and constructed in accordance with the standards for Seismic Safety required in Department of Transportation (DOT) Seismic Safety Regulations 49 C.F.R. part 41 and will certify to compliance to the extent required by the regulation. The contractor also agrees to ensure that all work performed under this contract, including work performed by a subcontractor, is in compliance with the standards required by the Seismic Safety regulations and the certification of compliance issued on the project.

G. Special DOL EEO Clauses

The contractor and subcontractor shall abide by the requirements of 41 CFR 60-1.4(a), 60-300.5(a) and 60- 741.5(a). These regulations prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities and prohibit discrimination against all individuals based on their race, color, religion, sex, sexual orientation, gender identity or national origin. Moreover, these regulations require that covered prime contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability or veteran status.

Awards Exceeding $100,000

H. Contract Work Hours and Safety Standards Act

All contracts awarded by the non-federal entity in excess of $100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. §§ 3702 and 3704, as supplemented by Department of Labor regulations (29 C.F.R. part 5). Under 40 U.S.C. § 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer based on a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. § 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

Awards Exceeding $150,000

I. Buy America

Except as the Federal Government determines otherwise in writing, the Recipient agrees to comply with FTA's U.S. domestic preference requirements and follow federal guidance of 49 U.S.C. § 5323(j), and FTA regulations, "Buy America Requirements," 49 C.F.R. part 661, to the extent consistent with 49 U.S.C. § 5323(j);

Buy America (Check where Applicable)

☐ The vendor or offeror hereby certifies it will comply with the requirements of 49 USC 5323(j) and the applicable regulations in 49 CFR 661, providing Buy America compliant manufactured goods or rolling stock.

☐ The vendor or offeror cannot comply with the requirements 49 USC 5323(j), but may qualify for an exception to the requirement pursuant to the regulations in 49 CFR 661.

Buy America Certification	
Name of Company	Printed Name of Person Completing Form
Date	Signature

Davis-Bacon Act, Copeland Anti-Kickback Act, and Seismic Safety Certification	
Name of Company	Printed Name of Person Completing Form
Date	Signature

Construction Certification

The undersigned vendor certifies to abide by these clauses and include the following clauses in each subcontract financed in whole or in part with Federal Transit Administration (FTA) funds. Vendors are certifying by reference the entire list FTA's current fiscal year Certifications and Assurances (for fiscal year _____), and shall download at:

https://www.transit.dot.gov/funding/grantee-resources/certifications-and-assurances/certifications-assurances.

Name of Company	Printed Name of Person Completing Form
Date	Signature

1b. State of Texas Required Clauses: Construction

Dispute Resolution

1. §2260.004 Gov't Code Dispute Resolution

The Recipient agrees to the dispute resolution process provided for in Chapter 2260 of the Texas Government Code must be used to attempt to resolve any dispute under this Agreement.

Construction Certification

The undersigned vendor certifies to abide by these clauses and include the following clauses in each subcontract financed in whole or in part with State of Texas funds.

Name of Company	Printed Name of Person Completing Form
Date	Signature

BUY AMERICA CERTIFICATION

Instructions:

Bidder to complete the Buy America Certification listed below. Bidder shall certify EITHER COMPLIANCE OR NON-COMPLIANCE (not both). This Certification MUST BE submitted with the Bidder's bid response. Bids or offers that are not accompanied by a completed Buy America certification will be rejected as nonresponsive.

Certification requirement for procurement of steel, iron, manufactured products, or construction materials (required for contracts over $150,000).

The contractor agrees to comply with 49 U.S.C. 5323(j), 49 C.F.R. part 661, and Public Law 117-58, div G 70914(a) which provide that Federal funds may not be obligated unless all steel, iron, and manufactured products used in FTA funded projects are produced in the United States, unless a waiver has been granted by FTA or the product is subject to a general waiver. General waivers are listed in 49 C.F.R. § 661.7. Separate requirements for rolling stock are set out at 49 U.S.C. 5323(j)(2)(C) and 49 C.F.R. § 661.11. The Contractor also agrees to comply with the BABA (Public Law 117-58, div. G § 70914(a)) regulations that requires that construction materials used in infrastructure projects are also produced in the United States.

Certificate of Compliance with 49 U.S.C. 5323(j)(1) and BABA (Public Law 117-58, div. G § 70914(a))

The bidder or offeror hereby certifies that it **will meet** the requirements of 49 U.S.C. 5323(j)(1) and the applicable regulations in 49 CFR Part 661, 2 CFR § 200.322, BABA (Public Law 117-58, div. G § 70914(a)), and any amendments thereto.

Signature _____

Company Name _____

Name and Title _____

Date _____

Certificate of Non-Compliance with 49 U.S.C. 5323(j)(1) and BABA (Public Law 117-58, div. G § 70914(a))

The bidder or offeror hereby certifies that it **cannot comply** with the requirements of 49 U.S.C. 5323(j)(1) and 49 C.F.R. 661.5, but it may qualify for an exception pursuant to 49 U.S.C. 5323(j)(2)(A), 5323(j)(2)(B), or 5323(j)(2)(D), 49 C.F.R. 661.7, and BABA (Public Law 117-58, div. G § 70914(a)).

Signature _____

Company Name _____

Name and Title _____

Date _____

Special Note: Make sure you have signed only one of the above statements -- either Compliance OR Non-Compliance (not both).

ATTACHMENT G

Fort Bend County Public Transportation

INTENT TO PERFORM AS A DBE CONTRACTOR OR DBE SUBCONTRACTOR/SUBVENDOR

A separate form should be completed for each DBE firm. (Offeror/Prime Contractor and/or Subcontractor/Subvendor)

Name of **Offeror/Prime Contractor**: _____

Name of Subcontractor/Subvendor: *(if applicable)* _____

Project Name: _____

IFB/RFP/RFQ Number: _____

1. The **DBE Offeror/Prime Contractor or DBE Subcontractor/Subvendor** *(whichever is applicable)* named above must be currently certified under the Texas Unified Certification Program (TUCP) as a DBE (or will be certified at the time this solicitation is due), and asserts that said qualification is met with the ethnic code: _____.

Ethnic Codes:			
A) Black American Male	B) Black American Female	C) Hispanic American Male	D) Hispanic American Female
E) Native American Male	F) Native American Female	G) Asian Pacific American Male	H) Asian Pacific American Female
I) SubContinent Asian American Male	J) SubContinent Asian American Female	K) Non Minority Female	

2. The **DBE Offeror/Prime Contractor or DBE Subcontractor/Subvendor** *(whichever is applicable)* named above is prepared to perform the following described work with their own workforce and/or supply the material listed in connection with the above project.

_____

This work will be performed at the following price $ _____ (and/or _____ % of the total prime contract amount).

(If this form is being completed relative to a Subcontractor/Subvendor, note that this amount should be the same $/% amount that is completed on the Subcontractor/Subvendor Participation Form.)

_____ _____ _____

Printed Name of Offeror/Prime Contractor Authorized Representative | Signature of Authorized Representative | Date Signed

---

Name of Firm that is DBE Certified (if different from Offeror/Prime Contractor): _____

(Subcontractor/Subvendor)

_____ _____ _____

Printed Name of Authorized Representative | Signature of Authorized Representative | Date Signed

ATTACHMENT H

Fort Bend County Public Transportation
Subcontractor/Subvendor Participation

Instructions: The Offeror/Prime Contractor shall complete this form by listing: Names of **all** subcontractors/subvendors proposed on this project, Status as a DBE or Non-DBE, $ or % amount of Total Prime Contract, Description of work to be performed/product to be provided, and Contact information. The subcontractors/subvendors listed on this form as DBEs must be currently certified under the Texas Unified Certification Program (TUCP) as a DBE (or will be at the time this solicitation is due). Additionally, for each DBE subcontractor/subvendor listed on this form, the Offeror/Prime Contractor must complete the Intent to Perform as a DBE Contractor or DBE Subcontractor/Subvendor Form agreeing to the information.

Name of Offeror/Prime Contractor: _____

Project Name: _____

IFB/RFP/RFQ Number: _____

1	**Name of Subcontractor/Subvendor**	**Phone Number**	**$/% Amt of Total Prime Contract**	**Work to be performed/product to be provided**
	Contact Person's Name	**Email Address**	**DBE or Non-DBE**	**Address**
2	**Name of Subcontractor/Subvendor**	**Phone Number**	**$/% Amt of Total Prime Contract**	**Work to be performed/product to be provided**
	Contact Person's Name	**Email Address**	**DBE or Non-DBE**	**Address**
3	**Name of Subcontractor/Subvendor**	**Phone Number**	**$/% Amt of Total Prime Contract**	**Work to be performed/product to be provided**
	Contact Person's Name	**Email Address**	**DBE or Non-DBE**	**Address**
4	**Name of Subcontractor/Subvendor**	**Phone Number**	**$/% Amt of Total Prime Contract**	**Work to be performed/product to be provided**
	Contact Person's Name	**Email Address**	**DBE or Non-DBE**	**Address**

Upon execution of a contract with Fort Bend County Public Transportation, the undersigned will enter into a formal agreement with DBE subcontractors/subvendors for work listed in this schedule. The undersigned agrees to the terms of this schedule by signing below and submitting the Intent to Perform as a DBE Contractor form (as completed by the DBE subcontractors/subvendors). If you are a DBE Offeror/Prime Contractor, you also certify that no more than 70% of the work for this project will be subcontracted.

_____ _____ _____

Printed Name of Authorized Representative of Offeror/Prime Contractor | Signature | Date Signed

ATTACHMENT H

Fort Bend County Public Transportation
Subcontractor/Subvendor Participation

Continuation of Page 1 -- For Use if Necessary

5	**Name of Subcontractor/Subvendor**	**Phone Number**	**$/% Amt of Total Prime Contract**	**Work to be performed/product to be provided**
	Contact Person's Name	**Email Address**	**DBE or Non-DBE**	**Address**
6	**Name of Subcontractor/Subvendor**	**Phone Number**	**$/% Amt of Total Prime Contract**	**Work to be performed/product to be provided**
	Contact Person's Name	**Email Address**	**DBE or Non-DBE**	**Address**
7	**Name of Subcontractor/Subvendor**	**Phone Number**	**$/% Amt of Total Prime Contract**	**Work to be performed/product to be provided**
	Contact Person's Name	**Email Address**	**DBE or Non-DBE**	**Address**
8	**Name of Subcontractor/Subvendor**	**Phone Number**	**$/% Amt of Total Prime Contract**	**Work to be performed/product to be provided**
	Contact Person's Name	**Email Address**	**DBE or Non-DBE**	**Address**
9	**Name of Subcontractor/Subvendor**	**Phone Number**	**$/% Amt of Total Prime Contract**	**Work to be performed/product to be provided**
	Contact Person's Name	**Email Address**	**DBE or Non-DBE**	**Address**
10	**Name of Subcontractor/Subvendor**	**Phone Number**	**$/% Amt of Total Prime Contract**	**Work to be performed/product to be provided**
	Contact Person's Name	**Email Address**	**DBE or Non-DBE**	**Address**
11	**Name of Subcontractor/Subvendor**	**Phone Number**	**$/% Amt of Total Prime Contract**	**Work to be performed/product to be provided**
	Contact Person's Name	**Email Address**	**DBE or Non-DBE**	**Address**
12	**Name of Subcontractor/Subvendor**	**Phone Number**	**$/% Amt of Total Prime Contract**	**Work to be performed/product to be provided**
	Contact Person's Name	**Email Address**	**DBE or Non-DBE**	**Address**

Fort Bend County Public Transportation
DISCLOSURE OF INTERESTS CERTIFICATION

FIRM NAME:_____

STREET:_____CITY:_____ZIP:_____

FIRM is: 1. Corporation _____ 2. Partnership_____ 3. Sole Owner _____
4. Association _____ 5. Other _____

DISCLOSURE QUESTIONS

If additional space is necessary, please use the reverse side of this page or attach separate sheets.

1. State the names of each "employee" of the Regional Transportation Authority having an "ownership interest" constituting 3% or more of the ownership in the above named "firm".

NAME	JOB TITLE AND DEPARTMENT (IF KNOWN)
_____	_____
_____	_____

2. State the names of each "official" of the Regional Transportation Authority having an "ownership interest" constituting 3% or more of the ownership in the above named "firm".

NAME	TITLE
_____	_____
_____	_____

3. State the names of each "board member" of the Regional Transportation Authority having an "ownership interest" constituting 3% or more of the ownership in the above named "firm".

NAME	BOARD, COMMISSION OR COMMITTEE
_____	_____
_____	_____

4. State the names of each employee or officer of a “consultant” for the Regional Transportation Authority who worked on any matter related to the subject of this contract and has an “ownership interest” constituting 3% or more of the ownership in the above named “firm”

NAME
CONSULTANT_____
_____

CERTIFICATE

I certify that all information provided is true and correct as of the date of this statement, that I have not knowingly withheld disclosure of any information requested; and that supplemental statements will be promptly submitted to the Regional Transportation Authority, Texas as changes occur.

Certifying Person: _____

Title: _____
(Type or Print)

Signature of Certifying Person: _____

Date:_____

CERTIFICATION AND STATEMENT OF QUALIFICATIONS

The undersigned BIDDER hereby further certifies that she/he has read all of the documents and agrees to abide by the terms, certifications, and conditions thereof.

Signature: _____

Printed Name: _____

Title: _____ Date: _____

Firm Name: _____

Business Address: _____

Telephone: Office: _____ Fax: _____

Firm Owner: _____ Firm CEO: _____

Taxpayer Identification Number:_____

Number of years in contracting business under present name: _____

Type of work performed by your company: _____

Have you ever failed to complete any work awarded to you? (Explain)

_____

Have you ever defaulted on a Contract? _____

Taxpayer ID#: _____ Date Organized: _____

Date Incorporated: _____

Is your firm considered a disadvantaged business enterprise (DBE)? _____

If you answered yes to the DBE question, explain type. _____

ADDENDA ACKNOWLEDGMENT

Receipt of the following addenda is acknowledged (list addenda number):

_____

DUNS # _____**(Required)** A DUNS number may be obtained from D & B by telephone (currently at 866-705-5711) or the internet (currently at http://fedgov.dnb.com/webform)

ATTACHMENT K

State of Texas Child Support Business Ownership Form

County: _____ Project Name: _____

TxDOT CSJ: _____ LG Project Number: _____

Business Entity Submitting Bid:_____

Section 231.006, Family Code, requires a bid for a contract paid from state funds to include the names and social security number of individuals owning 25% or more of the business entity submitting the bid.

1. In the spaces below please provide the names and social security number of individuals owning 25% or more of the business.

Name	Social Security Number
_____	_____
_____	_____
_____	_____
_____	_____

2. Please check the box below if no individual owns 25% or more of the business.

( ) No individual own 25% or more of the business.

Except as provided by Section 231.302(d), Family Code, a social security number is confidential and may be disclosed only for the purpose of responding to a request for information from an agency operating under the provisions of Part A and D to Title IV of the Federal Social Security Act (42 USC Section 601-617 and 651-699).

Under Section 231.006, Family Code, the vendor or applicant certifies that the individual or business entity named in this contract, bid, or application is not ineligible to receive the specified grant, loan, or payment and acknowledges that this contract may be terminated and payment may be withheld if this certification is inaccurate.

The information collected on this form will be maintained by Enter Local Government Name. With few exceptions, you are entitled on request to be informed about the information collected about you. Under Sections 552.021 and 552.023 of the Texas Government Code, you also are entitled to receive and review the information. Under Section 559.004 of the Government Code, you are also entitled to have information about you corrected that you believe is incorrect.

_____ _____

Signature Date

_____

Printed Name

IF THIS PROJECT IS A JOINT VENTURE,

ALL PARTIES TO THE JOINT VENTURE MUST PROVIDE A COMPLETED FORM.

ATTACHMENT L

U.S. Department of Labor
Wage and Hour Division

PAYROLL

(For Contractor's Optional Use; See Instructions at www.dol.gov/whd/forms/wh347instr.htm)

Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number.

U.S. Wage and Hour Division

Rev. Dec. 2008

OMB No.:1235-0008
Expires: 07/31/2024

NAME OF CONTRACTOR ☐ OR SUBCONTRACTOR ☐	ADDRESS	
PAYROLL NO.	FOR WEEK ENDING	PROJECT AND LOCATION / PROJECT OR CONTRACT NO.

(1) NAME AND INDIVIDUAL IDENTIFYING NUMBER (e.g., LAST FOUR DIGITS OF SOCIAL SECURITY NUMBER) OF WORKER	(2) NO. OF WITHHOLDING EXEMPTIONS	(3) WORK CLASSIFICATION	OT. OR ST.	(4) DAY AND DATE — HOURS WORKED EACH DAY	(5) TOTAL HOURS	(6) RATE OF PAY	(7) GROSS AMOUNT EARNED	(8) DEDUCTIONS: FICA	WITH-HOLDING TAX			OTHER	TOTAL DEDUCTIONS	(9) NET WAGES PAID FOR WEEK
			O											
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While completion of Form WH-347 is optional, it is mandatory for covered contractors and subcontractors performing work on Federally financed or assisted construction contracts to respond to the information collection contained in 29 C.F.R. §§ 3.3, 5.5(a). The Copeland Act (40 U.S.C. § 3145) contractors and subcontractors performing work on Federally financed or assisted construction contracts to "furnish weekly a statement with respect to the wages paid each employee during the preceding week." U.S. Department of Labor (DOL) regulations at 29 C.F.R. § 5.5(a)(3)(ii) require contractors to submit weekly a copy of all payrolls to the Federal agency contracting for or financing the construction project, accompanied by a signed "Statement of Compliance" indicating that the payrolls are correct and complete and that each laborer or mechanic has been paid not less than the proper Davis-Bacon prevailing wage rate for the work performed. DOL and federal contracting agencies receiving this information review the information to determine that employees have received legally required wages and fringe benefits.

Public Burden Statement

We estimate that is will take an average of 55 minutes to complete this collection, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments regarding these estimates or any other aspect of this collection, including suggestions for reducing this burden, send them to the Administrator, Wage and Hour Division, U.S. Department of Labor, Room S3502, 200 Constitution Avenue, N.W. Washington, D.C. 20210

(over)

ATTACHMENT L

Date _____

I, _____ _____
(Name of Signatory Party) (Title)

do hereby state:

(1) That I pay or supervise the payment of the persons employed by

_____ on the
(Contractor or Subcontractor)

_____; that during the payroll period commencing on the
(Building or Work)

_____ day of _____, _____, and ending the _____ day of _____, _____,

all persons employed on said project have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said

_____ from the full
(Contractor or Subcontractor)

weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part 3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948, 63 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. § 3145), and described below:

_____

_____

_____

_____

(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:

(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

☐ – in addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate programs for the benefit of such employees, except as noted in section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

☐ – Each laborer or mechanic listed in the above referenced payroll has been paid, as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the contract, except as noted in section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION

REMARKS:

NAME AND TITLE	SIGNATURE

THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 3729 OF TITLE 31 OF THE UNITED STATES CODE.

ATTACHMENT M

CONTRACTOR PAYMENT REPORT

Fort Bend County
Public Transportation
3737 Bamore Rd.
Rosenberg, TX 77471
Phone 281-633-7433
Fax 832-471-1843

1. Contract Number	2. Invoice Number
3. Reporting Period & Invoice Date	4. Invoice Amount $

R
C
I
Amber.Jefferson
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All prime contractors are required to complete and submit this report as specified in the contract, or as requested, until final payment of the contract. Failure to comply with Fort Bend County's Disadvantaged Business Enterprise (DBE) provisions may result in delayed payment by Fort Bend County Public Transportation in accordance with the procedures set forth in Fort Bend County's DBE Program. **This report must be submitted with each invoice.** Instructions for completing this report can be found on the following page.

5. Contractor's Name	6. Contact Person	7. Address	8. Phone Number
9. Date of Contract Award	**10.Scheduled Date of Completion**	**11. Original Contract Amount**	**12. Amended Contract Amount**
		$	$
13. Total Amount Received to Date	**14. Remaining Amount Owed**	**15. Committed DBE %**	**16. % Actual DBE Participation to Date**
$	$		

17. Name of each Subcontractor that this Invoice applies to	18. DBE or Non-DBE	19. Description of Work	20. Invoice Number	21. Invoice Date	22. $ Amount of Invoice	23. Subcontract Dollars $	24. $ Amount Paid to Date	25. % Paid to Date

By completing this form, the contractor acknowledges Fort Bend County's prompt payment policy which requires the contractor to pay all subcontractors within 30 days of receiving payment from Fort Bend County.

Authorized Signature	Date	Printed Name and Title

FORT BEND COUNTY PUBLIC TRANSPORTATION
INSTRUCTIONS FOR COMPLETING THE CONTRACTOR PAYMENT REPORT

The Contractor Payment Report is to be filled out by the contractor and submitted with each invoice that the contractor submits to Fort Bend County Public Transportation. Please follow the instructions below, which correspond to each item on the report.

1. **Contract Number**
   Fill in the Contract # assigned to your project by Fort Bend County.
2. **Invoice Number**
   Fill in the Invoice Number that corresponds with this report.
3. **Reporting Period & Invoice Date**
   Fill in the period of time your invoice covers (period of time for which you are invoicing), and the Invoice Date.
4. **Invoice Amount**
   Fill in the amount of the Invoice.
5. **Contractor's Name**
   Fill in your company's name.
6. **Contact Person**
   Fill in the first and last name of the person completing the report.
7. **Address**
   Fill in your company's address.
8. **Phone Number**
   Fill in your company's phone number.
9. **Date of Contract Award**
   Fill in the date the contract was executed by Fort Bend County.
10. **Scheduled Date of Completion**
    Fill in the scheduled completion date of the contract as written.
11. **Original Contract Amount**
    Fill in the dollar amount of the original contract agreed upon by your Company and Fort Bend County.
12. **Amended Contract Amount (if applicable)**
    Calculate: Dollar amount of the original contract plus/minus the dollar amount agreed upon for contract modifications (if applicable). Fill in the amended amount.
13. **Total Amount Received to Date**
    Fill in the dollar amount you have received to date from Fort Bend County.
14. **Remaining Amount Owed**
    Calculate: Dollar amount of the contract minus the amount paid to you to date by Fort Bend County. Enter the dollar amount.
15. **Committed DBE %**
    Enter the percentage of DBE participation you committed to obtain in the contract.
16. **% Actual DBE Participation to date**
    Calculate: Total combined dollar amount paid to the DBEs divided by the dollar amount received from Fort Bend County to date. Enter the percentage.
17. **Name of Each Subcontractor That This Invoice Applies To**
    List the name of each subcontractor that submitted an invoice to you in this period. (Ref #3) (Use additional sheets if necessary.)
18. **DBE or Non-DBE**
    Fill in accordingly.
19. **Description of Work**
    Brief description of the work performed by the subcontractor
20. **Invoice Number**
    Fill in the number of the invoice submitted to you by the subcontractor in this period.
21. **Invoice Date**
    Fill in the date of the invoice submitted to you by the subcontractor in this period.
22. **$ Amount of Invoice**
    Enter the amount of the invoice submitted to you by the subcontractor in this period.
23. **Subcontract Dollars $**
    Enter the total committed dollar amount to the subcontractor.
24. **$ Amount Paid to Date**
    Enter the total amount you have paid the subcontractor to date.
25. **% Paid to Date**
    Calculate: Dollar amount paid to the subcontractor to date divided by the amount committed to them. (Item 23 divided by Item 22). Enter the percentage.

17. Name of each Subcontractor that this Invoice applies to	18. DBE or Non-DBE	19. Description of Work	20. Invoice Number	21. Invoice Date	22. $ Amount of Invoice	23. Subcontract Dollars $	24. $ Amount Paid to Date	25. % Paid to Date

FORT BEND COUNTY - WESTPARK PARK AND RIDE PRELIMINARY CONSTRUCTION BID FORM

	SPEC CODE	DESCIPTION	UNITS	UNIT PRICE	QUANTITY	COST
SITE WORK						
1	TXDOT 100	PREPARING ROW	AC		11.0	$ -
2	TXDOT 104	REMOVING CONC (PAV)(INCLUDE SAWCUT AND REMOVE CURB)	SY		152	$ -
3	TXDOT 110	EXCAVATION (ROADWAY)(SITE)	CY		2320	$ -
4	TXDOT 132	EMBANKMENT (FINAL)(ORD COMP)(TY C)	CY		12565	$ -
5	TXDOT 162	BLOCK SODDING	SY		10143	$ -
6	TXDOT 164	DRILL SEEDING (TEMP)(WARM OR COOL)	AC		6.0	$ -
7	TXDOT 166	FERTILIZER	AC		6	$ -
8	TXDOT 168	VEGETATIVE WATERING	MG		720	$ -
9	TXDOT 7140	TRAFFIC CONTROL	MO		12	$ -
		SUBTOTAL				**$ -**

PAVEMENT MARKING & SIGNS						
10	TXDOT 644	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA		18	$ -
11	TXDOT 644	IN SM RD SN SUP&AM (INST SIGN ONLY)	EA		3	$ -
12	TXDOT 666	REFL PAV MRK TY I (W)4"(SLD)(100MIL)	LF		5626	$ -
13	TXDOT 666	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF		473	$ -
14	TXDOT 666	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF		50	$ -
15	TXDOT 666	REF PAV MRK TY I (W)(MED NOSE)(100MIL)	LF		82	$ -
16	TXDOT 666	REFL PAV MRK TY I (Y)4"(SLD)(100MIL)	LF		334	$ -
17	TXDOT 666	RE PM TY I (ACC PRK)(BLU)(SYMBOL ONLY)	EA		9	$ -
18	TXDOT 668	PREFAB PAV MRK TY C (W) (ARROW)	EA		6	$ -
19	TXDOT 668	PREFAB PAV MRK TY C (W) (WORD)	EA		2	$ -
20	TXDOT 672	REFL PAV MRKR TY II-A-A	EA		8	$ -
21	TXDOT 672	REFL PAV MRKR TY II-C-R	EA		17	$ -
		SUBTOTAL				**$ -**

CONCRETE ROADWAY,PARKING						
22	TXDOT 260	LIME (HYDRATED LIME (DRY))	TON		310	$ -
23	TXDOT 260	LIME TRT (SUBGRADE)(6")	SY		15100	$ -
24	TXDOT 360	CURB (TYPE II)	LF		3739	$ -
24	TXDOT 359	PLATFORM)	SY		500	$ -
25	TXDOT 360	CONC PAV (JOINT REINF) (6") (PARKING)	SY		9783	$ -
26	TXDOT 360	CONC PAV (JOINT REINF) (9") (BUS ROAD)	SY		3549	$ -
27	TXDOT 360	CONC PAV (JOINT REINF) (10")(FRTG RD)	SY		1048	$ -
28	TXDOT 531	CONC SIDEWALKS (5")	SY		347	$ -
29	02761A	STAMPED CONCRETE PVMT	SY		87	$ -
30	TXDOT 531	CURB RAMPS (TY 10)	EA		6	$ -
31	TXDOT 531	CURB RAMPS (TY 1)	EA		1	$ -
32	TXDOT 550	ORNAMENTAL FENCE (INSTALL) (6')	LF		1376	$ -
33	TXDOT 550	CHAIN LINK FENCE (INSTALL) (6')	LF		1016	$ -
34	323100	GATE (SPECIAL) CANTILEVER SLIDING GATE (22.5')(ORNAMENTAL)(MOTOR)(INSTALLED)	EA		2	$ -
35	323100	GATE (SPECIAL) CANTILEVER SLIDING GATE (25')(CHAIN LINK)(MOTOR)(INSTALLED)	EA		2	$ -
36	323100	GATE (SPECIAL) CANTILEVER SLIDING GATE (20')(CHAIN LINK)(INSTALLED)	EA		1	$ -
37	TXDOT 5008	WHEEL STOPS	EA		9	$ -
		SUBTOTAL				**$ -**

FORT BEND COUNTY - WESTPARK PARK AND RIDE PRELIMINARY CONSTRUCTION BID FORM

	SPEC CODE	DESCIPTION	UNITS	UNIT PRICE	QUANTITY	COST
DRAINAGE (INCLUDE DETENTION POND)						
38	HCFCD 02315	EXCAVATING AND BACKFILLING (DET POND)	CY		16728	$ -
39	TXDOT 110	EXCAVATION (CHANNEL)(PIPE)	CY		578	$ -
40	TXDOT 400	CEM STABIL BKFL	CY		430	$ -
41	TXDOT 402	TRENCH EXCAVATION PROTECTION	LF		1250	$ -
42	TXDOT 432	RIPRAP (CONC) (5IN)	CY		108	$ -
43	TXDOT 432	RIPRAP (STONE) (18IN)	CY		123	$ -
43	TXDOT 464	PIPE (PVC) (SCH 40) (8 IN)	LF		99	$ -
44	TXDOT 464	RC PIPE (CL III)(18 IN)	LF		186	$ -
45	TXDOT 464	RC PIPE (CL III)(24 IN)	LF		1427	$ -
46	TXDOT 464	RC PIPE (CL III)(30 IN)	LF		239	$ -
47	TXDOT 465	INLET (COMPL)(BACKSLOPE)	EA		3	$ -
48	TXDOT 465	INLET (COMPL)(CURB)(TY C)	EA		5	$ -
49	TXDOT 465	INLET (COMPL)(GRATE)(TY A)	EA		9	$ -
50	TXDOT 479	ADJUST INLET (CAP)	EA		3	$ -
		SUBTOTAL				**$ -**
LANDSCAPING						
51	329300	CEDAR ELM-65 GAL.	EA		26	$ -
52	329300	LIVE OAK-65 GAL.	EA		24	$ -
53	329300	INDIAN HAWTHORNE-3 GAL.	EA		588	$ -
54	329300	LINDHEIMER'S MUHLY -3GAL.	EA		292	$ -
55	329300	RUSSELLIA-3GAL.	EA		381	$ -
56	329300	WATER OAK - 65 GAL	EA		4	$ -
57	329300	DRUMMOND RED MAPLE - 45 GAL	EA		8	$ -
58	329300	CEDAR ELM - 15 GAL	EA		4	$ -
59	329300	WILLOW OAK - 15 GAL	EA		3	$ -
60	329300	WATER OAK - 15 GAL	EA		12	$ -
61	329300	SHUMARD OAK - 5 GAL	EA		10	$ -
62	329300	CEDAR ELM - 5 GAL	EA		8	$ -
63	329300	WILLOW OAK - 5 GAL	EA		8	$ -
64	329300	DAHOON HOLLY - 5 GAL	EA		8	$ -
65	329202	FINE GRADE AND SOLID SOD	SF		2,280	$ -
66	329201	FINE GRADE AND HYDROMULCH	SF		141,000	$ -
67	328400	IRRIGATION SYSTEM	SF		46,300	$ -
68		60 DAY LANDSCAPE MAINTENANCE	LS		1	$ -
		SUBTOTAL				**$ -**
ILLUMINATION						
69	CL1-A-60LU-4K-4-FINISH-BC	SL4-BC-60	EA		30	$ -
70	CL1-A-30LU-4K-4-FINISH-BC	SL4-BC-30	EA		10	$ -
71	CL1-A-30LU-4K-5M-FINISH-BC	SL4-BC-30	EA		2	$ -
72	101-5011-20 D1	20' POLE - SINGLE FIXTURE HEAD	EA		12	$ -
73	101-5011-20 D2	20' POLE - DOUBLE FIXTURE HEAD	EA		15	$ -
74	TXDOT 416	DRILL SHAFT (RDWY ILL POLE) (24 IN)	LF		265	$ -
75	TXDOT 618	CONDT (PVC) (SCH 80) (2")	LF		8115	$ -
76	TXDOT 620	ELEC CONDR (NO.8) INSULATED	LF		5410	$ -
77	TXDOT 620	ELEC CONDR (NO.8) BARE	LF		2705	$ -
78	TXDOT 624	GROUND BOX TY D (162922)W/APRON	EA		2	$ -
		SUBTOTAL				**$ -**

FORT BEND COUNTY - WESTPARK PARK AND RIDE PRELIMINARY CONSTRUCTION BID FORM

	SPEC CODE	DESCIPTION	UNITS	UNIT PRICE	QUANTITY	COST
WATER AND SANITARY SEWER						
79	COH 02082	5' DIAMETER SANITARY SEWER MANHOLE	EA		3	$ -
80	COH 02260	SAN SERVICE CONNECTION WITH STACK	EA		1	$ -
81	COH 02260	TRENCH SAFETY FOR WATER LINES	LF		600	$ -
82	COH 02260	TRENCH SAFETY FOR SANITARY SEWER LINES	LF		700	$ -
83	COH 02511	8" PVC WATER PIPE	LF		600	$ -
84	COH 02511	8'' WATER LINE W/ 12'' STEEL CASING	LF		110	$ -
85	COH 02516	6" PLUG & CLAMP	EA		1	$ -
86	COH 02516	12" PLUG & CLAMP	EA		1	$ -
87	COH 02520	FIRE HYDRANT ASSEMBLY	EA		1	$ -
88	COH 02521	6" GATE VALVE & BOX	EA		2	$ -
89	COH 02521	8" GATE VALVE & BOX	EA		2	$ -
90	COH 02521	12" GATE VALVE & BOX	EA		2	$ -
91	COH 02526	8" WATER METER	EA		1	$ -
92	COH 02531	8" PVC SANITARY SEWER	LF		700	$ -
		SUBTOTAL				**$ -**

ARCHITECTURAL						
93		OVER EXCAVATE / BACKFILL	CY		393	$ -
94		CONCRETE SLAB & GRADE BEAM	CY		117	$ -
95		AREA PAVING -FLAT WORK	CY		49	$ -
96		FOUNDATION 18/36 BELLED PIERS	LF		240	$ -
97	04 81 00	MASONRY BRICK VENEER	SF		2822	$ -
98	04 81 00	6" REINFORCED CMJ	SF		305	$ -
99	04 81 00	8" REINFORCED CMJ	SF		850	$ -
100	04 72 00	CAST STONE CAP	SF		288	$ -
101	07 55 29	ROOFING SYSTEM - PRE-ENGINEERSED	SF		300	$ -
102	10 50 30	BUS LOADING CANOPY SYSTEM	LS		1	$ -
103		WATERPROOFING/MISC. CAULKING/SEALANTS	SF		800	$ -
104	08 11 13	EXTERIOR DOOR/FRAME/HARDWARE-HM SINGLE	EA		3	$ -
105	10 28 13	FINISHES MIRRORS-FRAMED AT RESTROOMS	EA		2	$ -
106	09 90 00	FINISHES PAINTING-EPOXY PAINT	SF		800	$ -
107		POLISHED & SEALED CONCRETE	SF		400	$ -
108		SPECIALTIES-SIGNAGE-GRAPHICS ALLOWENCE	EA		8	$ -
109	10 28 13	SPECIALTIES-TOILET PAPER DISPENSER	EA		2	$ -
110	10 28 13	SPECIALTIES- GRAB BARS	EA		4	$ -
111	10 28 13	SOAP DISPENSER	EA		2	$ -
112	10 28 13	PAPER TOWEL DISPENSER/RECEPTACLE	EA		2	$ -
113	28 23 00	SECURITY CAMERA	EA		14	$ -
114	28 23 00	ALLOW FOR SITE COMMUNICATION AND SECURITY ROUGH-IN	EA		1	$ -
115		SECURITY CAMERA SERVER	EA		1	$ -
116		CARD READER ACCESS SYSTEM FOR IT ROOM & GATE	EA		1	$ -
117		LED MOUNUMENT SIGN & FOUNDATION	EA		1	$ -
117A		CAST STONE LOGO	EA		2	$ -
		SUBTOTAL				**$ -**

FORT BEND COUNTY - WESTPARK PARK AND RIDE PRELIMINARY CONSTRUCTION BID FORM

	SPEC CODE	DESCIPTION	UNITS	UNIT PRICE	QUANTITY	COST
MEP						
118	22 10 00	DOMESTIC WATER PIPE	LF		200	$ -
119	22 07 19	DOMESTIC WATER PIPE-INSTALLATION	LF		25	$ -
120	26 05 19	HEAT TRACE	LF		200	$ -
121	22 11 19	HOSE BIBS	EA		4	$ -
122	22 30 00	PLUMBING EQUIPMENT-INSTAHOT	EA		2	$ -
123	22 10 00	SANITARY WASTE AND VENT PIPING 4"	LF		100	$ -
124	22 40 00	PLUMBING FIXTURES	LS		1	$ -
125	22 11 19	FLOOR DRAINS	EA		2	$ -
126	23	THERMOSTAT	EA		1	$ -
127	23	MITSHUBISHI SPLIT-UNITS, ASSOCIATED PIPING	EA		1	$ -
128	23 34 00	TOILET EXHAUST FANS	LS		2	$ -
129	23 37 13	LOUVERS FOR EXHAUST FANS	EA		2	$ -
130	26 51 00 13	CANOPY LIGHT FIXTURES- TYPE A	EA		28	$ -
131	26 51 00 13	CANOPY LIGHT FIXTURES- TYPE FAE	EA		4	$ -
132	26 51 00 13	RESTROOM BUILDING LIGHTS - FBE, BE	EA		3	$ -
133	26 51 00 13	WATER PLANT LIGHTS - W	EA		2	$ -
133	26 27 26	LIGHTING CONTROL SYSTEMS	SF		3120	$ -
134	26 05 19	DEVICES & DISTRIBUTION- POWER OUTLETS	EA		4	$ -
135	26 24 13 & 26 24 16	PANELS AND TRANSFORMER	LS		1	$ -
136	26 05 19	FEEDERS AND MOTOR FEEDERS	SF		3120	$ -
137	26 28 16	DISCONNECT FOR MECHANICAL EQUIPMENT	EA		2	$ -
138	26 29 26	MISCELLANEOUS-GROUNDING/LIGHTING PROTECTION	SF		3120	$ -
139	12 93 00	SITE FURNISHINGS- BENCHES	EA		3	$ -
140	12 93 00	SITE FURNISHINGS-TRASH RECEPTACLES	EA		4	$ -
141	12 93 00	BIKE RACK	LS		1	$ -
142	22 10 00	SANITARY SYSTEM-4"	LF		20	$ -
143	22 10 00	SANITARY SYSTEM-CO-6"PVC	EA		1	$ -
		SUBTOTAL				**$ -**
IT EQUIPMENT						
144		CATALYST 9300 48-PORT POE+, NETWORK ADVANTAGE & 5 YR TERM LICENSES	EA		1	$ -
145		SNTC-8X5XNBD CATALYST 9300 48-PORT POE+, NETWORK ADVANTAGE	EA		1	$ -
146		CATALYST 9300 4 X 1GE NETWORK MODULE	EA		1	$ -
147		715W AC 80+ PLATINUM CONFIG 1 SECONDARY POWER SUPPLY	EA		1	$ -
148		APC SMART-UPS X 1500VA RACK/TOWER LCD 120V WITH SMARTCONNECT	EA		1	$ -
149		UPS NETWORK MANAGEMENT CARD 3 WITH POWERCHUTE NETWORK SHUTDOWN	EA		1	$ -
150		42U FLOOR SERVER RACK	EA		2	$ -
151		OUTDOOR WEATHER PROOF VOIP PHONE EMERGENCY CALL BOX	EA		1	$ -
		SUBTOTAL				**$ -**
POWER SERVICE						
152	26	*SERVICE POLE AND TRANFORMER	LS		1	$ -
		SUBTOTAL				**$ -**

FORT BEND COUNTY - WESTPARK PARK AND RIDE PRELIMINARY CONSTRUCTION BID FORM

	SPEC CODE	DESCIPTION	UNITS	UNIT PRICE	QUANTITY	COST
SW3P						
153	TXDOT 506	SANDBAGS FOR EROSION CONTROL	EA		42	$ -
154	TXDOT 506	TEMP SEDMT CONT FENCE (INSTALL)	LF		2187	$ -
155	TXDOT 506	TEMP SEDMT CONT FENCE (REMOVE)	LF		2187	$ -
156	TXDOT 506	CONSTRUCTION EXITS (INSTALL) (TY 4)	SY		140	$ -
157	TXDOT 506	CONSTRUCTION EXITS (REMOVE)	SY		140	$ -
		SUBTOTAL				**$ -**
WATER WELL & SEPTIC SYSTEM (PWS & OSSF)						
158		PVC CONDUIT & COPPER WIRING	LF		4,250	$ -
159		PVC COATED RIGID GALVANIZED STEEL CONDUIT	LF		50	$ -
160		RIGID GALVANIZED STEEL CONDUIT	LF		30	$ -
161		RED CONCRETE-ENCASED, STEEL-REINFORCED SERVICE LATERAL DUCTBANK	LF		450	$ -
162		POWER POLE W/ (3) 100KVA 480V/277/3PH, 4-WIRE POLE-MOUNTED TRANSFORMERS	EA		1	$ -
163		SERVICE METER, P/TS, AND C/T CABINET	EA		1	$ -
164		8-POLE, INTERMATIC #ET 9000 SERIES ASTRONOMICAL TIME CLOCK & PHOTOCELL	EA		1	$ -
165		480V/277/3PH, 4-WIRE, 400A MCB/400A BUS, NEMA 1, 42-CIRCUIT DISTRIBUTION PANELBOARD	EA		1	$ -
166		208V/120/3PH, 4-WIRE, 60A MCB/100A BUS, NEMA 1, 24-CIRCUIT PANELBOARD	EA		1	$ -
167		480V/277/3PH, 4-WIRE, 225A MCB/225A BUS, NEMA 3R, 24-CIRCUIT PANELBOARD	EA		1	$ -
168		240V/120/3PH, 4-WIRE, 150A MCB/225A BUS, NEMA 3R, 24-CIRCUIT PANELBOARD	EA		1	$ -
169		480V/3PH TO 208V/120/3PH, 15KVA, NEMA 1, TRANSFORMER	EA		1	$ -
170		480V/3PH TO 240V/120/3PH, 45KVA, NEMA 3R, TRANSFORMER	EA		1	$ -
171		480V/277/3PH,150/250KA SURGE PROTECTION DEVICE	EA		1	$ -
172		208V/120/3PH,100/200KA SURGE PROTECTION DEVICE	EA		1	$ -
173		DEVICE	EA		1	$ -
173		240V/120/3PH,100/200KA SURGE PROTECTION DEVICE	EA		1	$ -
174		GFCI RECEPTACLE WITH LOCK-ABLE WEATHERPROOF COVER FOR CONVENIENCE POWER	EA		1	$ -
175		400A/3P/400AF/NE3R HEAVY-DUTY DISCONNECT SWITCH	EA		1	$ -
176		100A/3P/NF/NE3R HEAVY-DUTY DISCONNECT SWITCH	EA		1	$ -
177		100A/2P/NF/NE3R HEAVY-DUTY DISCONNECT SWITCH	EA		1	$ -
178		WEATHERPROOF JUNCTION BOXES	EA		10	$ -
179		GALVANIZED STEEL UNISTRUT RACK W/ CONCRETE ENCASED, STEEL-REINFORCED BASE	EA		1	$ -

FORT BEND COUNTY - WESTPARK PARK AND RIDE PRELIMINARY CONSTRUCTION BID FORM

	SPEC CODE	DESCIPTION	UNITS	UNIT PRICE	QUANTITY	COST
180		EXTERIOR IN-GROUND CONCRETE PULL BOXES	EA		1	$ -
181		4" SCH 40 PVC SANITARY SEWER	LF		60	$ -
182		1338 GAL. PRETREATMENT TANK	EA		1	$ -
183		1383 GAL. HOLDING / DOSING TANK	EA		1	$ -
184		DUPLEX 1/3RD HP DOSING PUMPS & CONTROLS	EA		1	$ -
185		AEROBIC TREATMENT UNITS	EA		1	$ -
186		1383 GALLON EFFLUENT HOLDING/PUMP TANK	EA		1	$ -
187		1/2 HP EFFLUENT PUMPS & CONTROLS	EA		1	$ -
188		LIQUID CHLORINATOR	EA		1	$ -
189		2 INCH SCH 40 PVC (PURPLE) EFFLUENT SUPPLY LINES	LF		450	$ -
190		1.5 INCH SCH 40 PVC (PURPLE) EFFLUENT SUPPLY LINES	LF		183	$ -
191		1 INCH SCH 40 PVC (PURPLE) EFFLUENT SUPPLY LINES	LF		60	$ -
192		4 INCH SCH 40 PVC CASING	LF		80	$ -
193		32FT RADIUS SPRAY NOZZLES	EA		5	$ -
194		6-FOOT CHAIN LINK FENCING WITH 3-STRAND BARBED WIRE + SWING GATE	LF		132	$ -
195		3-INCH WELL DISCHARGE PIPING AND ACCESSORIES TO HPT AND GST	LS		1	$ -
196		*4-INCH GV AT GST SUCTION, BOOSTER DISCHARGE, AND HPT DISCHARGE	LS		1	$ -
197		4-INCH GST AND HPT PIPING TIE IN TO DISTRIBUTION	LS		1	$ -
198		4-INCH C900 PVC WATER LINE	LF		75	$ -
199		4-INCH GV & BOX	LS		3	$ -
200		1 1/2-INCH CL-200 PVC WATER LINE	LF		100	$ -
201		REINFORCED CONCRETE EQUIPMENT SLAB	CY		17	$ -
202		HYDROPNEUMATIC TANK SADDLE SUPPORTS	CY		1	$ -
203		6" WATER WELL, SUBMERSIBLE 20 HP PUMP	EA		1	$ -
204		10,152 GALLON FIBERGLASS GROUND STORAGE TANK WITH ACCESSORIES	EA		1	$ -
205		DUPLEX 7.5 HP TEFC MOTOR SKID MOUNTED BOOSTER PUMPS WITH DISCHARGE HEADER & CONTROL PANEL	LS		1	$ -
206		2,535 GALLON ASME CODE HYDROPNEUMATIC TANK AND ACCESSORIES	LS		1	$ -
207		CHEMICAL EQUIPMENT ENCLOSURE (SUNCAST)	LS		1	$ -
208		CHLORINATION EQUIPMENT AND BULK STORAGE CONTAINER	LS		1	$ -
209		CORROSION EQUIPMENT WITH BULK STORAGE CONTAINER AND SECONDARY CONTAINMENT	LS		1	$ -
210		PAINTING/COATINGS	LS		1	$ -
211		ELECTRICAL SERVICE RACK AND TIE IN	LS		1	$ -
212		WELL CONTROL PANEL AND TIE IN	LS		1	$ -
213		WELL AND BOOSTER MERCOIDS, CONDUIT AND TIE IN	LS		1	$ -
214		ELECTRICAL CONDUIT, WIRING & SWITCHES	LS		1	$ -
215		SECURITY CAMERAS	EA		24	$ -
215		SECURITY CAMERA & ACCESSORIES	LS		1	$ -
216		RAW WELL TESTING	LS		1	$ -
***SUBTOTAL without Alternate 1**						**$ -**
***204a**		**Alternate 1** - epoxy coated, bolted steel tank	EA		1	$ -
***SUBTOTAL including Alternate 1/item 204a without item 204**						**$ -**

FORT BEND COUNTY - WESTPARK PARK AND RIDE PRELIMINARY CONSTRUCTION BID FORM

	SPEC CODE	DESCIPTION	UNITS	UNIT PRICE	QUANTITY	COST
		WESTPARK P&R, WATER WELL & SEPTIC SYSTEM SUBTOTAL				**$ -**
		MATERIAL TESTING (2%)				$ -
		MOBILIZATION (10%)				$ -
		CONTINGENCY (10%)				$ -
		***TOTAL without Alternte 1**				**$ -**
		***WESTPARK P&R, WATER WELL & SEPTIC SYSTEM with Alternate 1 SUBTOTAL**				**$ -**
		MATERIAL TESTING (2%)				$ -
		MOBILIZATION (10%)				$ -
		CONTINGENCY (10%)				$ -
		***TOTAL including Alternate 1/item 204a without item 204**				**$ -**

EXHIBIT C

(Contractor's Understanding of Scope of Work
and Proposed Schedule Follows Behind)

UNDERSTANDING SCOPE OF WORK

> *Respondent shall demonstrate their ability to meet the required qualifications listed in this document.*

Please see below.

> *Respondent shall describe in detail, their understanding of this specific project and the federal requirements as they apply to this construction project.*

We understand the importance of this project for Fort Bend County as several of our employees live and play here. This project will require special attention to every detail during construction to ensure efficient and effective operations. It is of considerable importance that this completed project meets the needs and expectations of the Owner and community of Fort Bend County.

The Fort Bend County Public Transportation Department's main goal is to provide public transportation services to its residents with safe and efficient services, while maintaining service quality and customer satisfaction. SpawGlass plans on providing the same quality of service and customer satisfaction to Fort Bend County and its residents while building the Westpark Park & Ride Facility.

The proposed Park & Ride will be constructed at 19820 FM 1093 Road, Richmond, TX 77407 on ten acres of property with space for a future maintenance facility. The facility will have a 9,873 SY parking area, which will accommodate 262 parking spaces, with nine of those spaces being reserved as handicapped with the appropriate pavement markings. The 500 SY bus loading platform is covered by an Avadek Canopy System, which not only provides shelter to the waiting passengers, but also covers a 146 SF restroom and utility room. The Park & Ride will be accessible from FM 1093 by constructing a dedicated right turn lane. An OSSF tank and well water with a hydroneumatic storage tank will be installed just north of the bus loading area, in a secured water plant area. The water plant will be secured by fencing with access card points and security cameras to prevent unauthorized personnel from entering the area. Additionally, water, sanitary and storm utilities will be installed, as well as a 16,728 CY detention pond to help mitigate the storm water drainage. The parking lot illumination and LED monument sign will provide sight lighting and identification to residents and visitors. A landscaping package including a large variety of trees and shrubs, as well as an irrigation system, will give the Park & Ride an natural finish and aesthetic.

SpawGlass understands that the Westpark Park & Ride is a federally funded project, and we intend to follow the requirements as they are specified in the project documents and in accordance with the Federal Transit Administration. We acknowledge that this project requires the contractor, subcontractors, and suppliers to follow the Buy America requirements and that all steel, iron, and manufactured goods used in the project shall be produced in the United States.

Our understanding is that any subcontract over $150,000 must fully comply with the Buy America requirements and that waivers in accordance with 49 U.S.C. 5323(j)(2)(A), 5323(j)(2)(B), or 5323(j)(2)(D) may be submitted but should be noted on Exhibit F if the contractor intends to pursue these waivers. At the time of this proposal, SpawGlass has not been notified by any of the Subcontractors or Material Vendors that they are unable to meet the Buy America requirements based off the Architect's and Engineer's designed and specified materials and manufactured products.

If a subcontract is below the $150,000 threshold, and a manufactured product has foreign components, this product and subcontract are eligible for a Small Purchase Waiver. Our interpretation of Exhibit F is that the certification only applies for subcontracts over $150,000; therefore, any Small Purchase Waivers required would still fall in the "Compliance" section of Exhibit F.

Based off our experience, we have seen the below list of products contain components and subcomponents of foreign origin. We will work closely with our Subcontractors, the Architect, the Design Engineers, and Owner to ensure we are providing materials and manufactured goods that are produced in the United States and in accordance with the Buy America requirements.

- LED Single Faced Electronic Display Sign
- Water Well Equipment
- Septic Equipment
- Light Fixtures
- Electrical Panelboards
- Transformers
- Time Clock
- Irrigation Controllers and Valves
- HVAC Equipment
- Gate Operator
- Security Equipment

SpawGlass also acknowledges that Fort Bend County Public Transportation is a recipient of federal and state funding including, but not limited to, Section 5307, Section 5310, Section 5311, Section 5339, and Congestion Mitigation and Air Quality Improvement funds. While a DBE goal has not been established for this project, SpawGlass will strive to facilitate DBE participation.

It is common in our current economic conditions to have lead time issues (longer than traditionally seen in our industry) and supply chain challenges. This project will be no different and this will be a significant focus for our project team. There are many long lead items on this project. Our procurement process and submittal process will prioritize these items. We encourage a collaborative submittal approval process that occurs over a few days on these items where any concerns in the submittals by the design team can be openly discussed with SpawGlass and our subcontractors and changes to the submittal can be made on the spot. This will give the project the best opportunity to get these items on time versus the traditional submittal review process which can take several weeks. In addition to this, we will be tracking these items weekly with the suppliers and verifying the status in writing in order to keep pressure on the manufacturers and reduce the chance for surprises.

SpawGlass's management philosophy and approach is based upon teamwork, collaboration, trust and communication. We strongly believe that a team of expert professionals, constantly communicating with each other in open dialogue, will produce exceptional results. Project Manager Troy Thibodeaux and Superintendent Vicente Oranday are strong leaders with exceptional communication skills capable of building teams for flawless execution of projects. They will foster strong communication and teamwork with Fort Bend County.

Our ultimate goal is to provide our clients with the absolute best construction experience, resulting in long-term relationships with clients, architects and specialty contractors. To achieve this goal, SpawGlass has developed a corporate Proven Process, based on elements of the SpawGlass Way, our core values: Build Trust; Live Teamwork; Think Like an Owner; Be Professional; and Be Passionate.

The SpawGlass Proven Process is the proven way we deliver results for our clients. Centered on communication, the process begins with listening to our clients to better understand them and progresses to defining expectations, consulting to lay the groundwork, delivering on our guarantee to provide our clients with the absolute best construction experience and assessing our performance.

> *Describe the approach your firm will take to accomplish the collaboration, scheduling, and coordination required for this type of project.*

Primavera P6 Software

SpawGlass utilizes Primavera P6 for all levels of scheduling. Schedules are completed early in an effort to track the entire project as well as the completion of individual schedules for each phase of the project. The schedule is updated on a weekly basis, and three-week schedules are distributed to all specialty contractors at weekly meetings. The schedule includes key submittals, milestones and critical delivery items

Project Management Software

CMiC, Computer Methods international Corp., is the software provider SpawGlass uses for our project management and accounting system. CMiC supports the natural workflow of a construction project. It provides efficient document control by maintaining all versions of revised documents, including CAD documents, photos, meeting minutes, daily logs, submittal documents and RFIs. This program allows for ease of tracking bonding, lien waivers, RFI logs, Submittal logs, and any other user defined requirements. Through effective document management, CMiC makes it easier to manage project close out. CMiC's full integration approach bridges the divide between operations and accounting, creating a more efficient and more productive project.

Lean Scheduling

SpawGlass consistently achieves timely completion

We implement lean construction practices to enhance the efficiency of our projects. Lean scheduling is based on maximizing production to keep projects on track, emphasizes respect for all project team members and promotes true collaboration throughout the preconstruction and construction process.

Utilizing lean scheduling, our team breaks down the measurable components of the whole project into smaller parts, keeping the workflow smooth and continuous. The lean process also bolsters quality assurance when sequencing the workflow to prioritize installations properly. These practices allow SpawGlass to maximize seamless handoffs among project participants and promote reliable and predictable outcomes in every phase of the project. Our lean scheduling process includes:

P6 Baseline Schedule

We develop the project schedule utilizing Primavera P6 to plan and correlate all construction activities, including key submittals, milestones and critical delivery items.

Pull Planning

Working backwards from the completion date, pull planning breaks down the P6 master schedule into smaller batches that specialty contractors commit to and thus have more buy-in, producing a more detailed and reliable schedule.

Six-Week Look Ahead (SWLA)

Once the results of pull planning are documented and incorporated into the master schedule, our team hones in on the following six weeks of work. The SWLA schedule is refreshed every week and analyzed to seek out any constraints that would prevent scheduled construction activity from starting or continuing.

Weekly Work Plans (WWP)

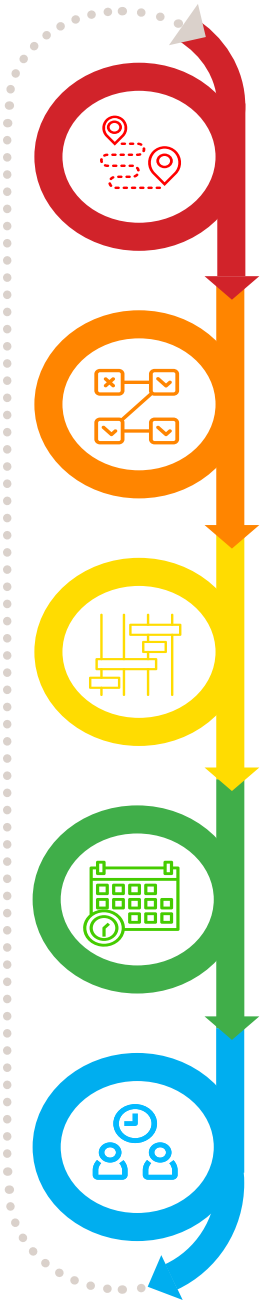
The project team compiles a detailed one-week list of all tasks and activities that support the SWLA and pull planning results. The WWP clearly identifies the handoff points within an activity as well as the manpower needed to accomplish each task. Once each specialty contractor submits their WWP to the superintendent, and the SpawGlass team verifies that the week's plan follows and advances the SWLA and pull planning schedule.

Daily Huddles

To support the WWP, all specialty contractor foremen meet with the superintendent for a brief check-in on the day's work activity, review the WWP to keep tasks on track and confirm handoffs to the next specialty contractors. If necessary, adjustments are made to resolve any immediate coordination issues and prevent impact to the WWP and the project's overall progress. With these issues resolved, everyone is prepared and ready for the next day's activities.

Together, these lean components ensures optimal efficiency and provide real-time updates to the status of the project. Ultimately, implementing lean practices enhances workflow and allows SpawGlass and our specialty contractors to address any issues before they impact the budget or schedule. This helps us provide our clients with a more pleasant overall construction experience.

Our Lean Scheduling Process



P6 Baseline Schedule

Documents the expected duration of a project, depicting the interrelationships and duration of all construction activities

Pull Planning Sessions

The P6 master schedule is broken down into smaller batches. These sessions are repeated as necessary every 10 to 12 weeks.

Six-Week Look Ahead

Provides a detailed breakdown of the work tasks by laying them out on weekly planning boards.

Weekly Work Plans

Clearly identifies the hand-off points within an activity and the manpower needed to accomplish each task.

Daily Huddles

The team reviews what was promised for the day, what is coming for everyone the following day, and uncovers any unforeseen issues that come to light.

Describe the approach your firm will take to keep FBC informed on the status of the project and ensure the quality of work.

Communication

In coordination with Fort Bend County, our team will develop a communication plan that will outline communication protocols, meeting dates and agendas, review processes and deliverables. This plan will outline team member roles so that everyone involved understands their responsibilities and expectations.

Our procedures and responsibilities reviewing all construction documents and for providing feedback for your Park & Ride Facility project are rooted within our proven delivery model. The benefits include:

- Enhanced communication and collaboration between Fort Bend County, SpawGlass and consultants
- Focused accountability of budget and schedule
- Reduced risk to Fort Bend County, increased transparency from the team and faster project delivery

One of our core competencies is based on the motto of "Seek first to understand." We believe the early identification of your expectations, necessary deliverables and how to most effectively work with your project team will be critical to meeting those expectations on this project. A few of the key objectives include:

- Identify programmatic stakeholder and Fort Bend County processes
- Take in all viewpoints including key user groups, inspectors and facilities.
- Once we understand your expectations, we will develop strategies and workflows for construction document review and providing the necessary feedback to the team.
- Our team will provide program evaluations, site logistics, cost, schedule and constructability input. The objective is to produce a set of clear and precise documents that plainly communicates Fort Bends' vision for the Park & Ride Facility project.

Owner Architect Contractor Meetings

Additionally, the SpawGlass project team will schedule regular Owner Architect Contractor (OAC) meetings with Fort Bend County to provide project updates. These meetings will occur weekly. During these sessions, the team will discuss progress, milestones achieved, upcoming activities, and any challenges or changes that may affect the project.

Please see below for a sample document utilized during OAC meetings.

SpawGlass

SpawGlass Contractors, Inc.
Owner Architect Contractor Meeting
3013078 - FROST BANK - Office Building & Garage
Thursday, March 31, 2016 09:00 AM

Meeting ID OAC001 *Subject* Team Collaboration & Work Session
Location 3838 Rogers Road, San Antonio, TX 78251

Attendees

Attendee Name	*Company*	*cc only*	*Attendee Name*	*Company*	*cc only*

Meeting Agenda

Item ID	*Description and Notes*	*Responsibility*	*Due Date*
OAC001-01 New Business	Review Plus/Delta From Frevious Meeting		
OAC001-02 New Business	Top Concerns		
OAC001-03 New Business	Hot Topics		
OAC001-04 New Business	Construction Update		
OAC001-05 New Business	Review of Constraint Log		
OAC001-06 New Business	Field Report Open Items		
OAC001-07 New Business	Cost Issues Log		
OAC001-08 New Business	RFIs		
OAC001-09 New Business	Parking Lot		
OAC001-10 New Business	Upcoming Meetings		
OAC001-11 New Business	Plus/Delta		

EXCEPTIONS TAKEN TO THE INFORMATION CONTAINED WITHIN THESE MINUTES SHALL BE ISSUED TO THE WRITER WITHIN THREE (3) DAYS AFTER RECEIPT, OTHERWISE THE MINUTES WILL STAND AS WRITTEN. ALL EXCEPTIONS SHALL BE IN WRITING.

Next Meeting Information

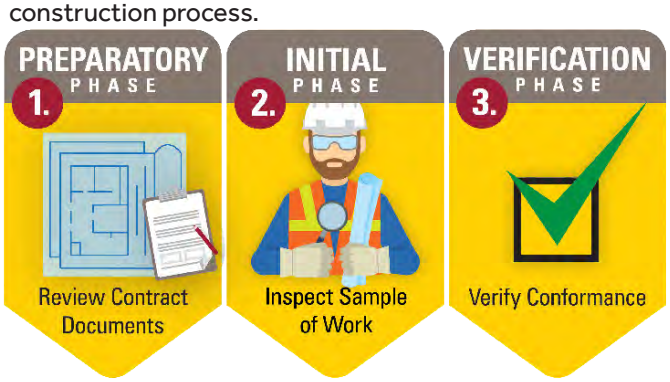
Date Thursday, April 7, 2016 09:00 AM *Subject* OAC Weekly Meeting
Location
Comments

09292016 Meeting Track Code OAC Page 1 of 1
Project Code 3013078 Printed on Thursday, March 31, 2016 10:17 pm

Lean Scheduling Pull Plan Meeting

Zero-Defect Process (ZDP)

As part of our commitment to provide the absolute best construction experience, SpawGlass will implement our Zero-Defect Process (ZDP), our multifaceted quality control program, to ensure delivery of high-quality workmanship throughout your project. This process focuses on planning and preparation. By taking a proactive approach to quality control, we are able to identify potential issues and take corrective action early in the construction process.



For each significant construction activity and measurable feature of work, the ZDP will be applied in three phases:

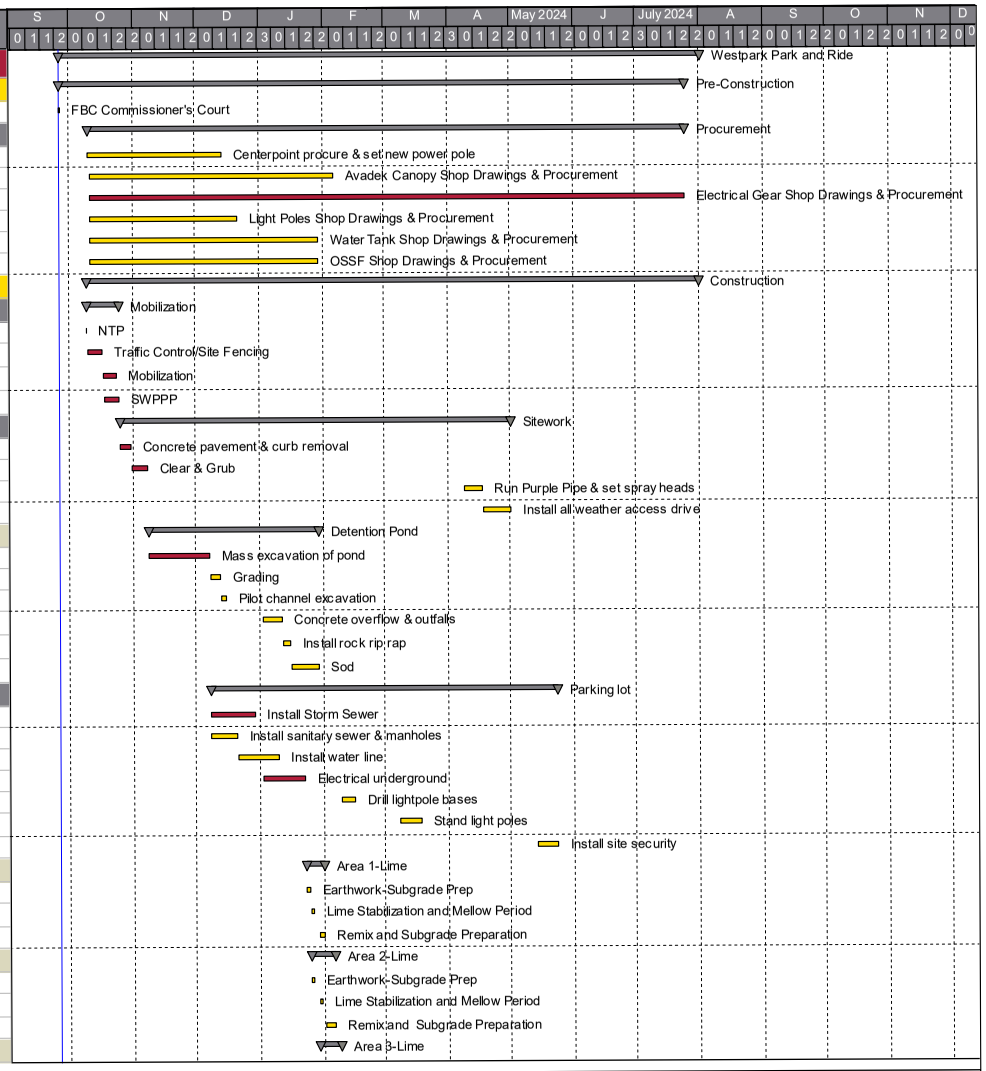
1. **Preparatory Phase –** Prior to beginning work, our project team will review contract specifications and drawings, manufacturers' installation instructions and required inspections, and arrangements for required tests and inspections. We also will review each subcontractor's site-specific quality management plan. At this stage, our goal is to focus our quality efforts on preventing deficiencies.
2. **Initial Phase –** Once a representative sample of the work has been done, we will examine and photograph the first work-in-place to ensure a superior level of workmanship and strict compliance with the construction documents, material samples, submittals and shop drawings. This phase will be repeated each time a new crew begins working onsite or whenever specified quality is not met.
3. **Verification Phase –** Once a construction activity or feature of work is complete, we will verify conformance to the construction documents, and required tests and inspections will be performed. Any identified deficiencies or nonconforming work will be corrected, re-inspected and documented before any subsequent construction activities proceed.

Utilizing the ZDP will allow SpawGlass to plan, schedule and install work in an orderly, consistent manner that will reduce rework and warranty issues, while helping keep the schedule on track and costs in check on your project.

COLOR CODING FOR QUALITY

For in-wall inspections, each subcontractor is given a color to mark the studs confirming they have performed a quality control check for a section of wall, and it is ready for final inspection. Once all subcontractors have completed their quality check, SpawGlass will perform a final verification. An additional inspection will be held with the design team and owner. Once the areas have been checked and confirmed through the ZDP with all deficiencies addressed, the project team will spray the final color on the studs showing that the wall section is ready for cover up.

Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish	%
Westpark Park and Ride		217	217	26-Sep-23	01-Aug-24	0%
Pre-Construction		211	211	26-Sep-23	24-Jul-24	0%
A3540	FBC Commissioner's Court	1	1	26-Sep-23	26-Sep-23	0%
Procurement		201	201	10-Oct-23	24-Jul-24	0%
A2990	Centerpoint procure & set new power pole	45	45	10-Oct-23	13-Dec-23	0%
A3550	Avadek Canopy Shop Drawings & Procurement	80	80	11-Oct-23	05-Feb-24	0%
A3560	Electrical Gear Shop Drawings & Procurement	200	200	11-Oct-23	24-Jul-24	0%
A4070	Light Poles Shop Drawings & Procurement	50	50	11-Oct-23	21-Dec-23	0%
A4080	Water Tank Shop Drawings & Procurement	75	75	11-Oct-23	29-Jan-24	0%
A4090	OSSF Shop Drawings & Procurement	75	75	11-Oct-23	29-Jan-24	0%
Construction		207	207	09-Oct-23	31-Jul-24	0%
Mobilization		12	12	09-Oct-23	24-Oct-23	0%
A3530	NTP	1	1	09-Oct-23	09-Oct-23	0%
A3580	Traffic Control/Site Fencing	5	5	10-Oct-23	16-Oct-23	0%
A3520	Mobilization	5	5	17-Oct-23	23-Oct-23	0%
A3570	SWPPP	5	5	18-Oct-23	24-Oct-23	0%
Sitework		132	132	25-Oct-23	01-May-24	0%
A1060	Concrete pavement & curb removal	4	4	25-Oct-23	30-Oct-23	0%
A1050	Clear & Grub	6	6	31-Oct-23	07-Nov-23	0%
A1070	Run Purple Pipe & set spray heads	7	7	09-Apr-24	17-Apr-24	0%
A1080	Install all weather access drive	10	10	18-Apr-24	01-May-24	0%
Detention Pond		55	55	08-Nov-23	29-Jan-24	0%
A1300	Mass excavation of pond	20	20	08-Nov-23	07-Dec-23	0%
A1280	Grading	3	3	08-Dec-23	12-Dec-23	0%
A1310	Pilot channel excavation	3	3	13-Dec-23	15-Dec-23	0%
A1330	Concrete overflow & outfalls	8	8	02-Jan-24	11-Jan-24	0%
A1320	Install rock rip rap	2	2	12-Jan-24	15-Jan-24	0%
A1340	Sod	10	10	16-Jan-24	29-Jan-24	0%
Parking lot		118	118	08-Dec-23	23-May-24	0%
A2790	Install Storm Sewer	15	15	08-Dec-23	29-Dec-23	0%
A2890	Install sanitary sewer & manholes	9	9	08-Dec-23	20-Dec-23	0%
A2800	Install water line	12	12	21-Dec-23	09-Jan-24	0%
A3000	Electrical underground	15	15	02-Jan-24	22-Jan-24	0%
A3010	Drill lightpole bases	5	5	09-Feb-24	15-Feb-24	0%
A3040	Stand light poles	7	7	08-Mar-24	18-Mar-24	0%
A3050	Install site security	8	8	14-May-24	23-May-24	0%
Area 1-Lime		7	7	23-Jan-24	31-Jan-24	0%
A2820	Earthwork-Subgrade Prep	2	2	23-Jan-24	24-Jan-24	0%
A2860	Lime Stabilization and Mellow Period	2	2	25-Jan-24	26-Jan-24	0%
A2920	Remix and Subgrade Preparation	3	3	29-Jan-24	31-Jan-24	0%
Area 2-Lime		8	8	25-Jan-24	05-Feb-24	0%
A2840	Earthwork-Subgrade Prep	2	2	25-Jan-24	26-Jan-24	0%
A2910	Lime Stabilization and Mellow Period	2	2	29-Jan-24	30-Jan-24	0%
A2940	Remix and Subgrade Preparation	3	3	01-Feb-24	05-Feb-24	0%
Area 3-Lime		9	9	29-Jan-24	08-Feb-24	0%



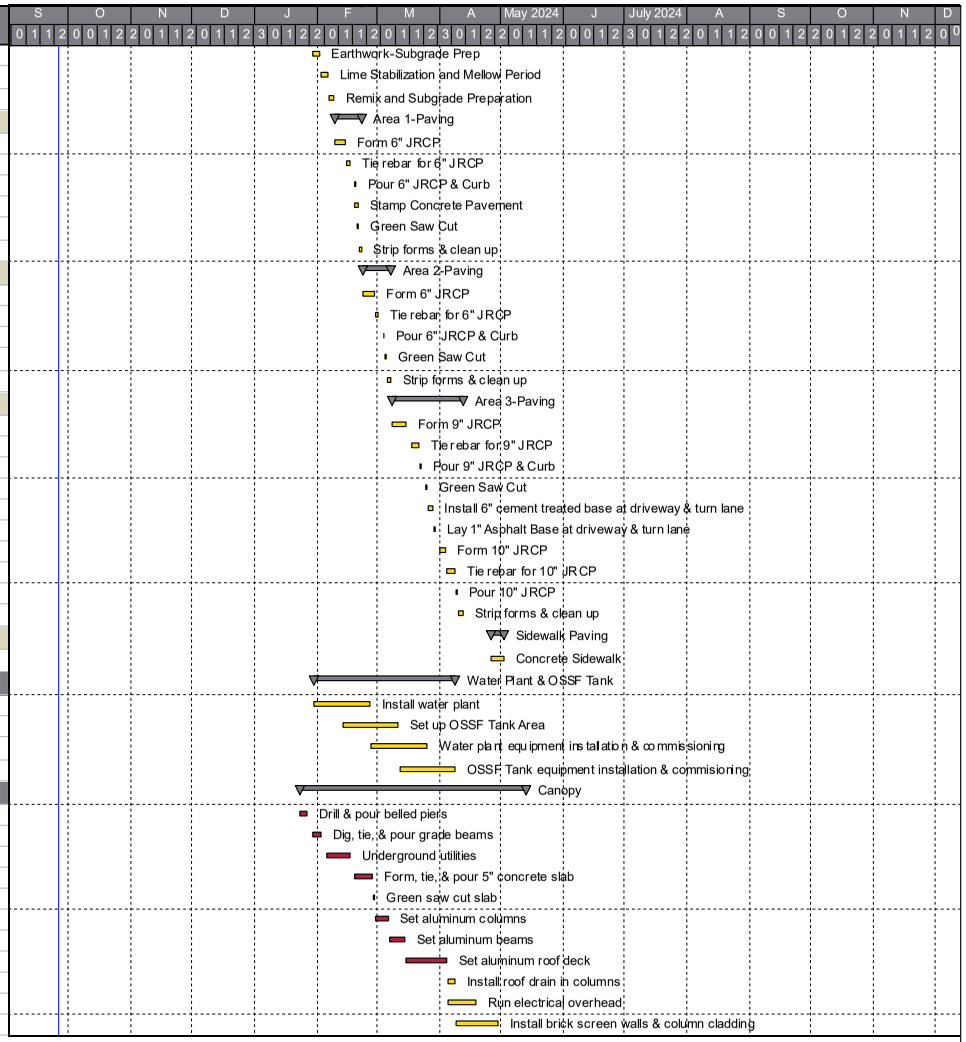
Start Date: 26-Sep-23
Finish Date: 01-Aug-24
Data Date: 26-Sep-23
Run Date: 12-Jul-23

Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary
Level of Effort
Actual Level of Effort

Westpark Park and Ride
WBS Layout - All Activities
Page 1 of 3

SpawGlass

Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish	%
A2870	Earthwork-Subgrade Prep	4	4	29-Jan-24	01-Feb-24	0%
A2950	Lime Stabilization and Mellow Period	2	2	02-Feb-24	05-Feb-24	0%
A2980	Remix and Subgrade Preparation	3	3	06-Feb-24	08-Feb-24	0%
Area 1-Paving		10	10	09-Feb-24	22-Feb-24	0%
A3060	Form 6" JRCP	4	4	09-Feb-24	14-Feb-24	0%
A3100	Tie rebar for 6" JRCP	2	2	15-Feb-24	16-Feb-24	0%
A3130	Pour 6" JRCP & Curb	1	1	19-Feb-24	19-Feb-24	0%
A3200	Stamp Concrete Pavement	2	2	19-Feb-24	20-Feb-24	0%
A3170	Green Saw Cut	1	1	20-Feb-24	20-Feb-24	0%
A3190	Strip forms & clean up	2	2	21-Feb-24	22-Feb-24	0%
Area 2-Paving		10	10	23-Feb-24	07-Mar-24	0%
A3110	Form 6" JRCP	4	4	23-Feb-24	28-Feb-24	0%
A3140	Tie rebar for 6" JRCP	2	2	29-Feb-24	01-Mar-24	0%
A3180	Pour 6" JRCP & Curb	1	1	04-Mar-24	04-Mar-24	0%
A3220	Green Saw Cut	1	1	05-Mar-24	05-Mar-24	0%
A3240	Strip forms & clean up	2	2	06-Mar-24	07-Mar-24	0%
Area 3-Paving		26	26	08-Mar-24	12-Apr-24	0%
A3020	Form 9" JRCP	6	6	08-Mar-24	15-Mar-24	0%
A3080	Tie rebar for 9" JRCP	4	4	18-Mar-24	21-Mar-24	0%
A3270	Pour 9" JRCP & Curb	1	1	22-Mar-24	22-Mar-24	0%
A3290	Green Saw Cut	1	1	25-Mar-24	25-Mar-24	0%
A3460	Install 6" cement treated base at driveway & turn lane	3	3	26-Mar-24	28-Mar-24	0%
A3470	Lay 1" Asphalt Base at driveway & turn lane	1	1	29-Mar-24	29-Mar-24	0%
A3480	Form 10" JRCP	3	3	01-Apr-24	03-Apr-24	0%
A3490	Tie rebar for 10" JRCP	3	3	04-Apr-24	08-Apr-24	0%
A3500	Pour 10" JRCP	1	1	09-Apr-24	09-Apr-24	0%
A3320	Strip forms & clean up	3	3	10-Apr-24	12-Apr-24	0%
Sidewalk Paving		5	5	26-Apr-24	02-May-24	0%
A3380	Concrete Sidewalk	5	5	26-Apr-24	02-May-24	0%
Water Plant & OSSF Tank		50	50	30-Jan-24	08-Apr-24	0%
A4030	Install water plant	20	20	30-Jan-24	26-Feb-24	0%
A4040	Set up OSSF Tank Area	20	20	13-Feb-24	11-Mar-24	0%
A4050	Water plant equipment installation & commissioning	20	20	27-Feb-24	25-Mar-24	0%
A4060	OSSF Tank equipment installation & commisioning	20	20	12-Mar-24	08-Apr-24	0%
Canopy		80	80	23-Jan-24	13-May-24	0%
A3600	Drill & pour belled piers	4	4	23-Jan-24	26-Jan-24	0%
A3610	Dig, tie, & pour grade beams	5	5	29-Jan-24	02-Feb-24	0%
A3720	Underground utilities	10	10	05-Feb-24	16-Feb-24	0%
A3620	Form, tie, & pour 5" concrete slab	7	7	19-Feb-24	27-Feb-24	0%
A3630	Green saw cut slab	1	1	28-Feb-24	28-Feb-24	0%
A3640	Set aluminum columns	5	5	29-Feb-24	06-Mar-24	0%
A3650	Set aluminum beams	6	6	07-Mar-24	14-Mar-24	0%
A3660	Set aluminum roof deck	15	15	15-Mar-24	04-Apr-24	0%
A3680	Install roof drain in columns	2	2	05-Apr-24	08-Apr-24	0%
A3780	Run electrical overhead	10	10	05-Apr-24	18-Apr-24	0%
A3690	Install brick screen walls & column cladding	15	15	09-Apr-24	29-Apr-24	0%



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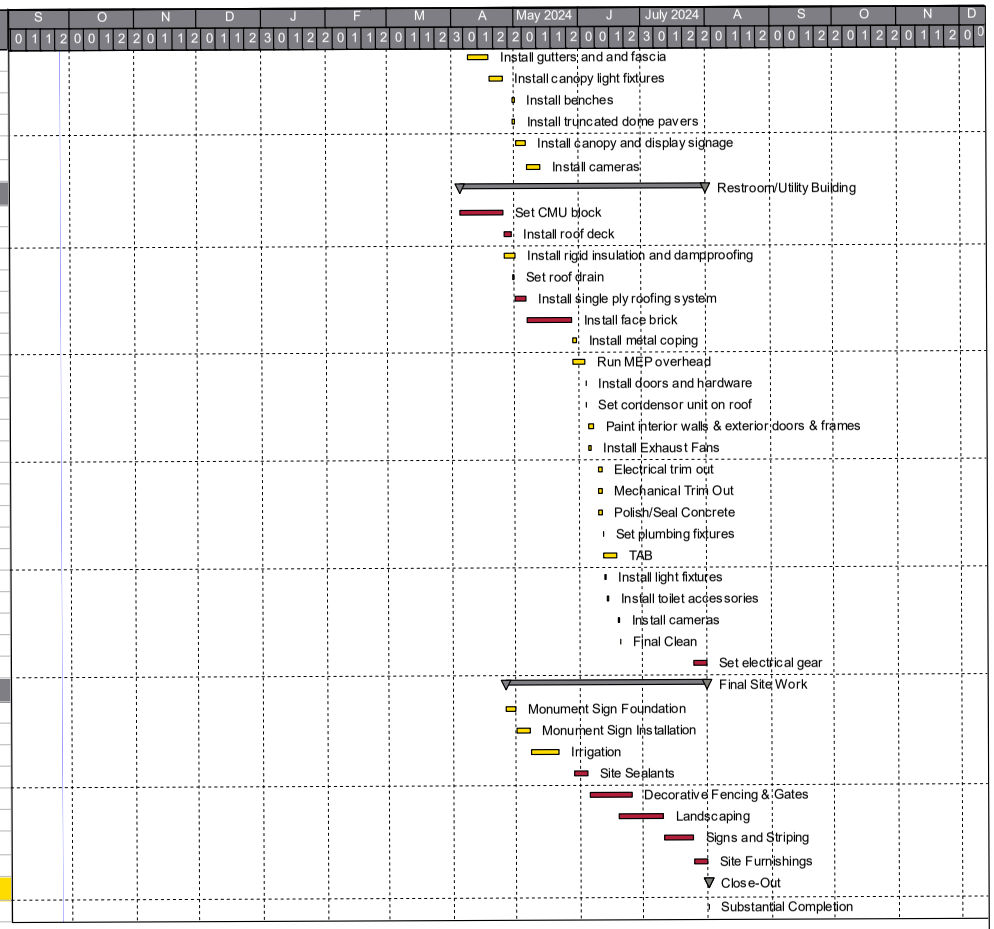
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary
Level of Effort
Actual Level of Effort

Westpark Park and Ride
.WBS Layout - All Activities
Page 2 of 3

Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish	%
A3730	Install gutters and and fascia	8	8	09-Apr-24	18-Apr-24	0%
A3670	Install canopy light fixtures	5	5	19-Apr-24	25-Apr-24	0%
A3700	Install benches	2	2	30-Apr-24	01-May-24	0%
A3710	Install truncated dome pavers	2	2	30-Apr-24	01-May-24	0%
A3830	Install canopy and display signage	3	3	02-May-24	06-May-24	0%
A3890	Install cameras	5	5	07-May-24	13-May-24	0%
Restroom/Utility Building		82	82	05-Apr-24	31-Jul-24	0%
A3740	Set CMU block	15	15	05-Apr-24	25-Apr-24	0%
A3750	Install roof deck	2	2	26-Apr-24	29-Apr-24	0%
A3770	Install rigid insulation and dampproofing	4	4	26-Apr-24	01-May-24	0%
A3840	Set roof drain	1	1	30-Apr-24	30-Apr-24	0%
A3760	Install single ply roofing system	4	4	01-May-24	06-May-24	0%
A3790	Install face brick	15	15	07-May-24	28-May-24	0%
A3800	Install metal coping	2	2	29-May-24	30-May-24	0%
A3870	Run MEP overhead	4	4	29-May-24	03-Jun-24	0%
A3850	Install doors and hardware	1	1	04-Jun-24	04-Jun-24	0%
A3930	Set condensor unit on roof	1	1	04-Jun-24	04-Jun-24	0%
A3820	Paint interior walls & exterior doors & frames	3	3	05-Jun-24	07-Jun-24	0%
A3950	Install Exhaust Fans	2	2	05-Jun-24	06-Jun-24	0%
A3920	Electrical trim out	2	2	10-Jun-24	11-Jun-24	0%
A3940	Mechanical Trim Out	2	2	10-Jun-24	11-Jun-24	0%
A4020	Polish/Seal Concrete	2	2	10-Jun-24	11-Jun-24	0%
A3810	Set plumbing fixtures	1	1	12-Jun-24	12-Jun-24	0%
A3960	TAB	5	5	12-Jun-24	18-Jun-24	0%
A3860	Install light fixtures	1	1	13-Jun-24	13-Jun-24	0%
A3910	Install toilet accessories	1	1	14-Jun-24	14-Jun-24	0%
A3900	Install cameras	1	1	19-Jun-24	19-Jun-24	0%
A3970	Final Clean	1	1	20-Jun-24	20-Jun-24	0%
A3880	Set electrical gear	5	5	25-Jul-24	31-Jul-24	0%
Final Site Work		67	67	26-Apr-24	31-Jul-24	0%
A3590	Monument Sign Foundation	3	3	26-Apr-24	30-Apr-24	0%
A3420	Monument Sign Installation	5	5	01-May-24	07-May-24	0%
A3990	Irrigation	10	10	08-May-24	21-May-24	0%
A3390	Site Sealants	5	5	29-May-24	04-Jun-24	0%
A3400	Decorative Fencing & Gates	15	15	05-Jun-24	25-Jun-24	0%
A3980	Landscaping	15	15	19-Jun-24	10-Jul-24	0%
A3410	Signs and Striping	10	10	11-Jul-24	24-Jul-24	0%
A3440	Site Furnishings	5	5	25-Jul-24	31-Jul-24	0%
Close-Out		1	1	01-Aug-24	01-Aug-24	0%
A4010	Substantial Completion	1	1	01-Aug-24	01-Aug-24	0%



Start Date: 26-Sep-23
Finish Date: 01-Aug-24
Data Date: 26-Sep-23
Run Date: 12-Jul-23

Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary
Level of Effort
Actual Level of Effort

Westpark Park and Ride
.WBS Layout - All Activities
Page 3 of 3

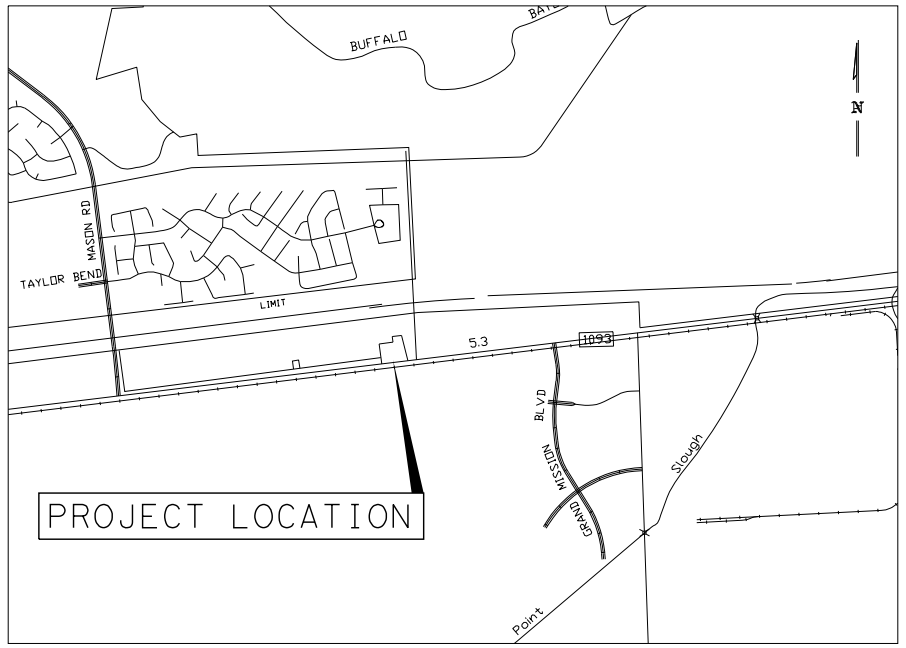
SpawGlass

EXHIBIT D

(Addendum 1 Follows Behind)

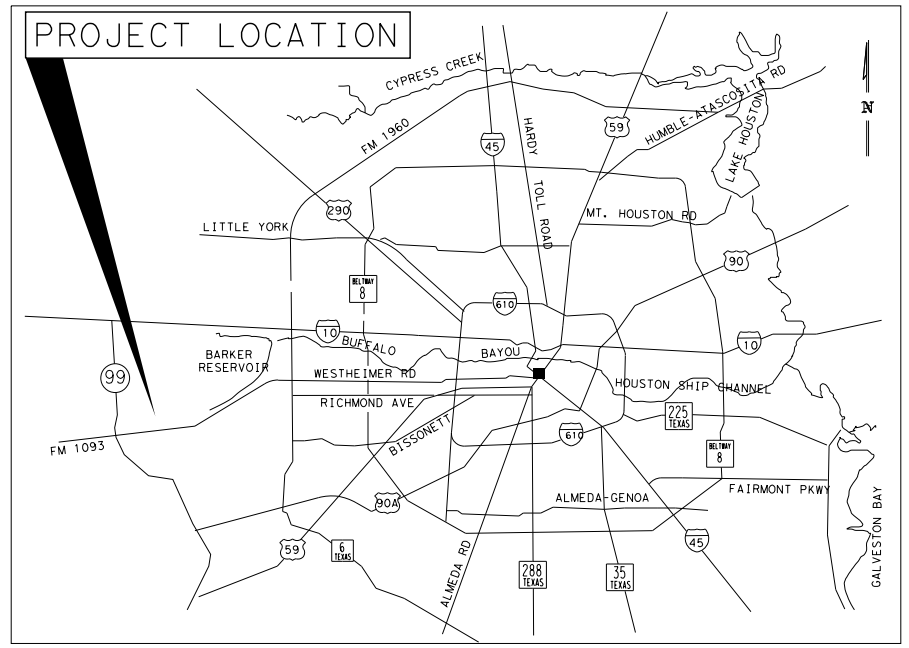
ADDENDUM 1, 6/20/23

FORT BEND COUNTY PARK & RIDE
ON WESTPARK TOLL ROAD FRONTAGE ROAD / FM 1093
FORT BEND COUNTY, TEXAS



VICINITY MAP

KEYMAP: 526F



LOCATION MAP

COUNTY JUDGE

KP GEORGE

COMMISSIONERS

VINCENT MORALES, JR - PRECINCT 1

GRADY PRESTAGE - PRECINCT 2

ANDY MEYERS - PRECINCT 3

KEN DeMERCHANT - PRECINCT 4

Approved:

FURTHER, I (or we) do hereby acknowledge the receipt of the "Developments along toll roads, as per the "Regualtions of Fort Bend County for the Placement of Signs Visible from the Main-Traveled way of a Toll Road," and do hereby covenant and agree and shall comply with this order as adopted by Fort Bend County Commissioners Court on XXXXXXX XX, 20XX

(Name) (Date)

IDCUS
Planners-Engineers-Program Managers
IDCUS, Inc.
15915 Katy Freeway, suite 300
Houston, Texas 77094
(713) 541-5591 Fax: (713) 541-3501
T.B.P.E.FIRM REGISTRATION NO. F-6825

FORT BEND COUNTY ENGINEER

ENGINEER:
Stacy Slawinski

DATE:

THESE SIGNATURES ARE VOID IF CONSTRUCTION HAS NOT COMMENCED IN (1) YEAR FROM DATE OF APPROVAL

APPROVAL IS IMPLIED FOR IMPROVEMENTS WITHIN FORT BEND COUNTY RIGHTS OF WAY ONLY. UTILITY LINES APPROVED AS TO LOCATION ONLY. AUTHORIZATION IS VALID FOR 1 YEAR.

APPROVED:
DEVELOPMENT COORDINATOR

DATE:

STATE OF TEXAS
HUNG H. NGUYEN
113148
LICENSED
PROFESSIONAL ENGINEER

5/12/2022

NO.	DATE	REVISION	APPROV.

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FORT BEND COUNTY
PRECINCT 3

SHEET NO.		DESCRIPTION
		GENERAL
1		COVER SHEET
2		INDEX OF SHEETS
3		GENERAL CONSTRUCTION NOTES (SHEET 1 OF 2)
4		GENERAL CONSTRUCTION NOTES (SHEET 2 OF 2)
5		TOPOGRAPHIC & SURVEY CONTROL MAP
6		FEMA FIRM MAP
7		SITE AND DETENTION POND CROSS SECTIONS
8		SITE COORDINATES LAYOUT
9		SITE COORDINATES & ELEVATIONS TABLE
		CIVIL PLANS
10		DEMO & SITE PREPARATION PLAN
11		SITE LAYOUT, PAVING AND UTILITY PLAN
12		JOINT LAYOUT PLAN
13		RIGHT TURN LANE PLAN AND PROFILE, BEGIN TO STATION 104+90
14		RIGHT TURN LANE PLAN AND PROFILE, STATION 104+90 TO END
15		2-YR STORM DRAINAGE AREA MAP
16		STORM SEWER AND CONTOUR LAYOUT
17		STORM SEWER PROFILE
18		STORM SEWER LATERALS
19		WINSTORM OUTPUT-2 YEAR (SHEET 1 OF 2)
20		WINSTORM OUTPUT-2 YEAR (SHEET 2 OF 2)
21		ENVIRONMENTAL PERMITS ISSUES AND COMMITMENT (EPIC) (SHEET 1 OF 2)
22		ENVIRONMENTAL PERMITS ISSUES AND COMMITMENT (EPIC) (SHEET 2 OF 2)
23		TxDOT SW3P
24		SW3P LAYOUT
25		TRAFFIC CONTROL PLAN
26		PAVEMENT MARKINGS & SIGNS
27		SUMMARY OF SMALL SIGNS
		PWS & OSSF
28	W1.00	SERVICE AREA
29	W1.10	SITE PLAN
30	W2.00	WATER PLANT PLAN
31	W2.10	WATER WELL PLAN & DETAILS
32	W2.20	GROUND STORAGE TANK PLAN & DETAILS
33	W2.30	BOOSTER PUMP PLAN & DETAILS
34	W2.40	HYDRONEUMATIC TANK PLAN & DETAILS
35	W3.00	CONTROL SCHEMATIC
36	W3.10	ELECTRICAL ONE LINE DIAGRAM
37	W4.00	WATER SYSTEM GENERAL NOTES
38	W5.00	OSSF DESIGN CRITERIA & GENERAL NOTES
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STATE OF TEXAS
HUNG H. NGUYEN
113148
LICENSED
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FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

INDEX OF SHEETS

SHEET 1 OF 1

SECTION NO.	
DRAWN:	DATE:
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. 02

5/12/2022
\\email\Transportation\FORT BEND COUNTY\WESTPARK P&R\CADD\GENERAL\WPK-GEN-IDX.dgn
bdv

GENERAL CONSTRUCTION NOTES

1. CONSTRUCT WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING IN ACCORDANCE WITH THE LATEST FORT BEND COUNTY DRAINAGE DESIGN CRITERIA MANUAL AND PAVEMENT DESIGN GUIDELINES.

2. UTILITIES PRESENTED ON THESE DRAWINGS ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS IN THE FIELD PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL NOTIFY TEXAS ONE CALL AT 713-223-4567/800-245-4545 AND LONE STAR ONE CALL AT 800-669-8344 AT LEAST 48 HOURS BEFORE PROCEEDING WITH ANY EXCAVATION.

3. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING WATER, WASTEWATER, STORM WATER LINES AND TRAFFIC CONTROL DEVICES. DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH FORT BEND COUNTY CRITERIA AND REQUIREMENTS, AT CONTRACTOR'S EXPENSE.

4. CONTRACTOR SHALL NOTIFY THE COUNTY FOR INSPECTION AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.

5. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO EXISTING CONDITIONS OR BETTER.

6. CONTRACTOR SHALL COMPLY WITH LATEST EDITION OF OSHA REGULATIONS AND THE STATE OF TEXAS LAWS CONCERNING EXCAVATION.

7. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO FENCES, CONCRETE, DRIVEWAYS, AND OTHER STRUCTURES IN OR ADJACENT TO THE RIGHT-OF-WAY.

8. CONTRACTOR SHALL MAINTAIN A SET OF REDLINE DRAWINGS AND RECORD AS-BUILT CONDITIONS DURING CONSTRUCTION.

9. TRAFFIC CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH TMUTCD.

10. DECELERATION LANE TO BE BUILT TO TXDOT STANDARDS.

GRADING NOTES

1. GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE STARTING CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.

2. BEFORE STARTING CONSTRUCTION, CONTRACTOR SHALL VERIFY BENCHMARK ELEVATION AND NOTIFY ENGINEER IF ANY DISCREPANCY AND/OR CONFLICT IS FOUND.

3. CONTRACTOR SHALL ENSURE THERE IS POSITIVE DRAINAGE FROM THE PROPOSED BUILDINGS AND NO PONDING IN PAVED AREAS, AND SHALL NOTIFY ENGINEER IF ANY GRADING DISCREPANCIES ARE FOUND IN THE EXISTING AND PROPOSED GRADES PRIOR TO PLACEMENT OF PAVEMENT OR UTILITIES.

4. CONTRACTOR SHALL PROTECT ALL MANHOLE COVERS, VALVE COVERS, VAULT LIDS, FIRE HYDRANTS, POWER POLES, GUY WIRES, AND TELEPHONE BOXES THAT ARE TO REMAIN IN PLACE AND UNDISTURBED DURING CONSTRUCTION.

5. ALL EXISTING CONCRETE PAVING, SIDEWALK, AND CURB DEMOLITION SHALL BE REMOVED AND DISPOSED OF BY CONTRACTOR. DISPOSAL SHALL BE AT AN APPROVED OFF-SITE, LAWFUL LOCATION, UNLESS DIRECTED OTHERWISE BY THE OWNER.

6. FILL AREAS ON PLANS SHALL BE FILLED IN LAYERS NOT EXCEEDING 8" IN DEPTH AND EACH COMPACTED TO NOT LESS THAN 95% STANDARD PROCTOR DENSITY PRIOR TO INSTALLATION OF UNDERGROUND UTILITIES.

7. CONTRACTOR SHALL PROVIDE SILT BARRIER FENCE ON ALL STAGE 1 CURB INLETS.

8. EXISTING PAVEMENTS, CURBS, DRIVEWAYS, AND SIDEWALKS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED TO TXDOT STANDARDS, AT CONTRACTOR'S EXPENSE.

9. CONDITION OF THE ROAD AND/OR RIGHT-OF-WAY UPON COMPLETION OF JOB SHALL BE AS GOOD AS OR BETTER THAN PRIOR TO STARTING WORK.

10. EXPOSED 15" OF REINFORCING STEEL AT PROPOSED SAWED JOINT IF NO REINFORCING STEEL EXISTS, USE HORIZONTAL DOWELS. HORIZONTAL DOWELS SHALL BE #6 BARS 24" LONG 24" C-C DRILLED AND EMBEDDED 8" INTO THE CENTER OF EXISTING SLAB WITH "PO ROC" OR EQUAL.

11. DRIVEWAYS AND RIGHT TURN LANE PAVEMENT SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH TXDOT CRITERIA AND STANDARDS.

STORM CONSTRUCTION NOTES

1. STORM SEWER SHALL BE REINFORCED CONCRETE PIPE (C-76, CLASS III), AND SHALL BE INSTALLED, BEDDED, AND BACK FILLED IN ACCORDANCE WITH COUNTY STANDARDS.

2. ALL SEWER UNDER PROPOSED OR FUTURE PAVEMENT AND TO A POINT ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL BE BACKFILLED WITH 1-1/2 SACK CEMENT/C.Y. STABILIZED SAND TO WITHIN ONE (1) FOOT OF SUBGRADE. THE REMAINING DEPTH OF TRENCH SHALL BE BACKFILLED WITH SUITABLE EARTH MATERIAL.

3. ALL TRENCH BACKFILL SHALL BE IN 8" LIFTS, WITH TESTS TAKEN AT 100 FOOT INTERVALS IN EACH LIFT, AND MECHANICALLY COMPACTED TO A DENSITY OF NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR COMPACTION TEST (ASTM D-698/AASHTO T99).

4. CONTRACTOR SHALL PROVIDE 12" MINIMUM VERTICAL CLEARANCE AT STORM SEWER AND WATER LINE CROSSINGS.

5. ADJUST MANHOLE COVERS TO GRADE CONFORMING TO THE FINAL FINISH GRADE.

6. ALL DITCHES SHALL BE GRADED TO PROPOSED ELEVATIONS TO ENSURE PROPER DRAINAGE. ALL OUTFALLS SHALL BE PROPERLY BACKFILLED AND COMPACTED. ALL DISTURBED AREA SHALL BE REGRADED, SEEDED, AND FERTILIZED.

7. ALL DRIVEWAYS SHALL BE LOCATED TO AVOID EXISTING CURB INLET STRUCTURE.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NOTES

1. THIS PROJECT IS SUBJECT TO ENVIRONMENTAL PROTECTION AGENCY (EPA) NATIONAL POLLUTION DISCHARGE REGULATIONS AND REQUIREMENTS. THE CONTRACTOR WILL BE REQUIRED TO EXECUTE A NOTICE OF INTENT AND IMPLEMENT THE POLLUTION PREVENTION PLANS INCLUDED IN THE CONTRACT DOCUMENTS AND COMPLY WITH ALL REPORTING AND INSPECTION REQUIREMENTS SET FORTH IN THE NPDES REGULATIONS.

2. ALL SILT FENCE AND INLET PROTECTION PROVIDED DURING CONSTRUCTION OF THIS PROJECT, SHALL BE REMOVED AS APPROPRIATE UPON CONSTRUCTION COMPLETION (SEE SPECS AND DETAILS).

3. PRIOR TO REMOVAL OF EROSION CONTROL DEVICES, ALL DISTURBED AREAS ARE TO BE PROPERLY STABILIZED USING HYDRO-MULCH SEED, OR SOLID SOD AS APPLICABLE.

4. ALL STORM SEWER RCB TRANSITIONS AND JUNCTION BOXES SHALL BE PRE-CAST.

AT&T TEXAS / SWBT FACILITIES

1. THE LOCATIONS OF AT&T/SWBT FACILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.

2. THE CONTRATOR SHALL CALL 1-800-344-8377 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UNDERGROUND LINES FIELD LOCATED.

3. WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF AT&T FACILITIES, ALL EXCAVATIONS MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES. WHEN BORING, THE CONTRACTOR SHALL EXPOSE THT AT&T TEXAS/SWBT FACILITIES.

4. WHEN AT&T TEXAS/SWBT FACILITIES ARE EXPOSED, THE CONTRACTOR WILL PROVIDE SUPPORT TO PREVENT DAMAGE TO THE CONDUIT DUCTS OR CABLES. WHEN EXCAVATING NEAR TELEPHONE POLES THE CONTRACTOR SHALL BRACE THE POLE FOR SUPPORT.

5. THE PRESENCE OR ABSENCE OF AT&T TEXAS/SWBT UNDERGROUND CONDUIT FACILITIES OR BURIED CABLE FACILITIES SHOWN ON THESE PLANS DOES NOT MEAN THAT THERE ARE NO DIRECT BURIED CABLES OR OTHER CABLES IN CONDUIT IN THE AREA.

6. PLEASE CONTACT THE AT&T TEXAS DAMAGE PREVENTION MANAGER MR. ROOSEVELT LEE JR. AT (713)567-4552 OR E-MAIL HIM AT RL7259@ATT.COM, IF THERE ARE ANY QUESTIONS ABOUT BORING OR EXCAVATING NEAR OUR AT&T TEXAS/SWBT FACILITIES.

CENTERPOINT ENERGY

CAUTION: UNDERGROUND GAS FACILITIES

LOCATIONS OF CENTERPOINT ENERGY MAIN LINES (TO INCLUDE CENTERPOINT ENERGY, INTRASTATE PIPELINE, LLC. WHERE APPLICABLE) ARE SHOWN IN AN APPROXIMATE LOCATION ONLY. SERVICE LINES ARE USUALLY NOT SHOWN. OUR SIGNATURE ON THESE PLANS ONLY INDICATES THAT OUR FACILITIES ARE SHOWN IN APPROXIMATE LOCATION. IT DOES NOT IMPLY THAT A CONFLICT ANALYSIS HAS BEEN MADE. THE CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT (713) 223-4567 OF 1-800-669-8344 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE MAIN AND SERVICE LINES FIELD LOCATED.

- WHEN CENTERPOINT ENERGY PIPE LINE MARKINGS ARE NOT VISIBLE, CALL (713) 967-8037 (7:00 a.m. TO 4:30 p.m.) FOR STATUS OF LINE LOCATION REQUEST BEFORE EXCAVATION BEGINS.
- WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18")"OF THE INDICATED LOCATION OF CENTERPOINT ENERGY FACILITIES, ALL EXCAVATION MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES.
- WHEN CENTERPOINT ENERGY FACILITIES ARE EXPOSED, SUFFICIENT SUPPORT MUST BE PROVIDED TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING.

THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.

WARNING: OVERHEAD ELECTRICAL LINES

OVERHEAD LINES MAY EXIST ON THE PROPERTY. THE LOCATION OF OVERHEAD LINES HAS NOT BEEN SHOWN ON THESE DRAWINGS AS THE LINES ARE CLEARLY VISIBLE, BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH & SAFETY CODE FORBIDS ACTIVITIES THAT OCCUR IN CLOSE PROXIMITY TO HIGH VOLTAGE LINES, SPECIFICALLY:

- ANY ACTIVITY WHERE PERSON OR THINGS MAY COME WITHIN 6'OF LIVE OVERHEAD HIGH VOLTAGE LINES; AND
- OPERATING A CRANE, DERRICK, POWER SHOVEL, DRILLING RIG, PILE DRIVER, HOISTING EQUIPMENT, OR SIMILAR APPARATUS WITHIN 10' OF LIVE OVERHEAD HIGH VOLTAGE LINES.

PARTIES RESPONSIBLE FOR THE WORK, INCLUDING CONTRACTORS, ARE LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY. TO ARRANGE FOR LINES TO BE TURNED OFF OR REMOVED CALL CENTERPOINT ENERGY AT (713) 207-2222.

ENVIRONMENTAL COMMITMENT NOTES

1. SEE ENVIROMENTAL PERMITS, ISSUES AND COMMITMENTS EPIC SHEET FOR NOTES.

2. TWPD RECOMMENDS TRANSPLANTING THE EXISTING TREES OR REPLACING THEM AT A RATIO OF 3 SAPLINGS FOR EVERY TREE LOST. WHETHER TRANSPLANTINGED OR REPLACED, A SURVIVAL RATE OF 85% SHOULD BE ACHIEVED. TPWD RECOMMENDS THAT NATIVE PLANT AND FORAGE SPECIES THAT ARE BENEFICIAL TO WILDLIFE ENDEMIC BE USED IN MITIGATION AND LANDSCAPED AREA. TPWD RECOMMENDS RESEEDING DISTRUBERED SOIL WITH A MIXTURE OF GRASSES AND FORBS NATIVE TO FORT BEND COUNTY.

3. TO COMPLY WITH THE MIGRATORY BIRD TREATY (MBTA), CONSTRUCTION ACTIVITIES SUCH AS, BUT NOT LIMITED TO TREE FELLING AS WELL AS VEGITATION CLEARING, TRAMPLING, OR MAINTENANCE SHOULD OCCURE OUTSIDE THE APRIL -JULY 15 MIRGRATORY BIRD NESTING SEASON FOR EACH YEAR THE PROJECT IS AUTHORIZED AND LASTING THE LIFE OF THE PROJECT. PROPOSED SITE SHOULD BE SURVEYED FOR MIGRATORY BIRD ACTIVITIES. ALL CONSTRUCTION ACTIVITIES AS IDENTIFIED ABOVE SHOULD BE EXCLUDED FROM A MINIMUM ZONE OF 100 METERS AROUND ANY REPTOR NEST DURING THE PERIOD OF FEBRUARY 1-JULY 15.

3. NO IMPACTS ON THREATENED OR ENDANGERED SPECIES OR THEIR POTENTIAL HABITAT SPECIES ARE LIKELY TO OCCURE AS A RESULT OF THE PROPOSED PROJECT.

4. THE US ARMY ENGINEER DISTRICT, GALVESTON FOUND NO JURISDICTIONAL WATERS OF THE US THAT WOULD BE IMPACTED BY THE PROPOSED PROJECT. NO SECTION 404 PERMIT OR SECTION 401 CERTIFICATION WOULD BE REQUIRED.

BUY AMERICA

UNDER BUY AMERICA REQUIREMENTS NO FUNDS MAY BE OBLIGATED BY FTA FOR A GRANTEE PROJECT UNLESS ALL IRON, STEEL, AND MANUFACTURED PRODUCTS USED IN THE PROJECT ARE PRODUCED IN THE UNITED STATES.

STATE OF TEXAS
HUNG H. NGUYEN
113148
LICENSED
PROFESSIONAL ENGINEER

5/12/2022

NO.	DATE	REVISION	APPROV.

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FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

GENERAL CONSTRUCTION NOTES

SHEET 1 OF 2

SECTION NO.	
DRAWN:	DATE:
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. 03

5/12/2022
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SANITARY CONSTRUCTION NOTES

1. ALL SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF HOUSTON "STANDARD CONSTRUCTION SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, STREET PAVING, AND TRAFFIC" AND ALL CURRENT AMENDMENTS THERETO AND BE SUBJECT TO A STANDARD EXFILTRATION TEST. TESTS ARE TO BE PERFORMED ON THE TOTAL FOOTAGE OF SEWER LINE INCLUDED IN THE PROJECT. REQUIREMENTS OF TEXAS ADMINISTRATIVE CODE, TITLE 30 CHAPTER 217, "DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEMS" SHALL GOVERN WHERE CONFLICTS EXIST EXCEPT WHERE CITY REQUIREMENTS ARE MORE STRINGENT.

2. ALL MANHOLES ARE TO BE PER CITY OF HOUSTON STANDARD DETAILS DRAWING NUMBERS 02082-01, 02082-02, 02082N-02, 02082-03, AND 02082N-03 UNLESS OTHERWISE NOTED. USE 2019 VERSION AS APPLICABLE.

3. SANITARY SEWER MANHOLES WILL HAVE BEDDING AND BACKFILL PER CITY OF HOUSTON STANDARD DETAILS DRAWING NO. 02317-08 UNLESS OTHERWISE NOTED.

4. THE SANITARY SEWER PVC PIPE SHALL BE ASTM D 3034 TYPE PSM SDR 26 GRAVITY SEWER PIPE, ASTM D2241 SDR 26 PRESSURE RATED SEWER PIPE OR AWWA C-900 DR-18 GREEN PVC PRESSURE RATED SEWER PIPE BASED ON CONSTRUCTION CONDITION REQUIREMENT AND CONFORMING TO ASTM D1784 AND CITY OF HOUSTON STANDARD SPECIFICATION SECTION 02506 POLYVINYL CHLORIDE PIPE.

5. WHEN SS PRESSURE RATED PVC PIPE IS USED ON WATERLINE (WL) CROSSING UNDER CONDITION 1 OF COH IDM TABLE 7.3, THE SAME TYPE OF D2241 SDR 26 PVC PIPE OR C-900 GREEN DR-18 PVC GREEN PRESSURED TO BE UTILIZING IN-BETWEEN TWO SS MH'S. OR TO UTILIZE A DI TRANSITION ADAPTER FOR THE CONNECTING OF ASTM D-3034 PVC GRAVITY PIPE TO DI-OD AWWA C-900 PVC PIPE CENTERED AT WL WHEN CONNECTING TWO DIFFERENT TYPES OF PVC PIPES FOR SEWER CONSTRUCTION.

6. AWWA C-900 DR-18 PVC PIPE USES EITHER AWWA C900 DR-18 PVC FITTINGS OR DIP FITTINGS.

7. ALL SANITARY SEWER LINES UNDER PROPOSED OR FUTURE PAVEMENT AND TO A POINT ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL HAVE BEDDING PER CITY OF HOUSTON STANDARD DETAILS DRAWING NUMBERS 02317-01, 02317-02, OR 02317-03 AS APPLICABLE, WITH 1½ SACK CEMENT/CY STABILIZED SAND BACKFILL UP TO THE BOTTOM OF THE PAVEMENT SUBGRADE. 100 PSI PERFORMANCE RESULTS ARE STILL REQUIRED.

8. ALL SANITARY SEWERS CROSSING WATER LINES WITH A CLEARANCE BETWEEN 12 INCHES AND 9 FEET SHALL HAVE A MINIMUM OF ONE 18' JOINT OF 150 PSI DUCTILE IRON OR (GREEN) C900 PVC PIPE MEETING ASTM SPECIFICATION D2241 CENTERED ON WATER LINE. WHEN WATER LINE IS BELOW SANITARY SEWER, PROVIDE MINIMUM 2 FOOT SEPARATION.

9. CONTRACTOR SHALL PROVIDE A MINIMUM HORIZONTAL CLEARANCE OF 9 FEET BETWEEN WATER LINES AND SANITARY SEWER MANHOLES AND LINES.

10. SANITARY SEWER MANHOLE RIMS OUTSIDE OF PROPOSED PAVING WILL BE SET 3" - 6" ABOVE THE SURROUNDING LEVEL FINISHED GRADE AFTER PAVING WITH SLOPED BACKFILL ADDED FOR STORM WATER TO DRAIN AWAY FROM MANHOLE RIM.

11. IN WET STABLE TRENCH AREAS USE BEDDING PER CITY OF HOUSTON STANDARD DETAILS DRAWING NUMBER 02317-02.

12. DEFLECTION TEST: DEFLECTION TESTS SHALL BE PERFORMED ON ALL FLEXIBLE AND SEMI-RIGID SEWER PIPE. THE TEST SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS. NO PIPE SHALL EXCEED A DEFLECTION OF 5% IF THE DEFLECTION TEST IS TO BE RUN USING A RIGID MANDREL, IT SHALL HAVE A DIAMETER EQUAL TO 95% OF THE INSIDE DIAMETER OF THE PIPE. THE TEST SHALL BE PERFORMED AS PER 30 TAC 217.57 LATEST AMENDMENT AND WITHOUT MECHANICAL PULLING DEVICES. NO BALL-TYPE MANDREL IS ALLOWED.

13. INFILTRATION, EXFILTRATION OR LOW-PRESSURE AIR TEST: EITHER OF THE FOLLOWING TESTS SHALL BE PERFORMED AS PER TAC, TITLE 30 217.57 WITHIN THE SPECIFIED TOLERANCES ON ALL GRAVITY SEWERS.

    A. INFILTRATION OR EXFILTRATION TEST: TOTAL LEAKAGE AS DETERMINED BY A HYDROSTATIC HEAD TEST SHALL NOT EXCEED 50 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF TWO (2) FEET.

    B. LOW-PRESSURE AIR TEST: PERFORM TEST ACCORDING TO UNI-B-6-90 OR OTHER APPROPRIATE PROCEDURES. FOR SECTIONS OF PIPE LESS THAN 36" (INCH) AVERAGE INSIDE DIAMETER, THE MINIMUM ALLOWABLE TIME FOR PRESSURE DROP FROM 3.5 P.S.I.G. TO 2.5 P.S.I.G. SHALL BE AS FOLLOWS:

    6" 340 SECONDS OR 0.855(L) FOR TEST LENGTHS GREATER THAN 398'
    8" 454 SECONDS OR 1.520(L) FOR TEST LENGTHS GREATER THAN 298'
    10" 567 SECONDS OR 2.374(L) FOR TEST LENGTHS GREATER THAN 239'
    12" 680 SECONDS OR 3.419(L) FOR TEST LENGTHS GREATER THAN 199'
    15" 850 SECONDS OR 5.342(L) FOR TEST LENGTHS GREATER THAN 159'
    18" 1020 SECONDS OR 7.693(L) FOR TEST LENGTHS GREATER THAN 133'

    WHERE L = LENGTH OF LINE OF SAME PIPE SIZE IN FEET.

14. CONTRACTOR SHALL MAINTAIN A MINIMUM TWELVE INCH (12") VERTICAL CLEARANCE BETWEEN UTILITY LINES AT CROSSINGS UNLESS OTHERWISE APPROVED BY ENGINEER.

15. FOR SANITARY MANHOLE (MH) RIMS SET INSIDE OF OR @ CURB & GUTTER PAVEMENT AND/OR BELOW T.C., MH RIMS WILL BE SET FLUSHED WITH AN ABUTTING PAVED SURFACE. THE (VALCUN, NEENAH OR EQUAL) HEAVY DUTY BOLTED SOLID MH COVER SHALL BE PROPERLY (AND SECURELY) ATTACHED AND SEALED TO ITS COMPATIBLE GASKETED FRAME BY USING BOTH A NEOPRENE GASKET AND (AT LEAST) 4 COUNTER-SUNK HEXHEAD COARSE THREADED ½"-13 UNC STAINLESS STEEL BOLTS. THE HEAVY DUTY FRAME MH COVER SHALL BE SOLID (NO AIR HOLES). SAID FRAME SHALL BE BOTH EMBEDDED INTO THE MH'S TOP ALSO SECURELY ANCHORED TO THE UNDERLYING MH STRUCTURE WITH EITHER SECURELY ATTACHED EMBEDDED ANCHOR BOLTS OR THE CONCRETE MH'S EXPOSED REBARS WELDED TO THE FRAME OR OTHER EQUALLY SECURED METHODS TO PREVENT MH COVER/FRAME BLOW-OFFS/EJECTIONS.

WATERLINE CONSTRUCTION NOTES

1. WATER LINES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST CITY OF HOUSTON INFRASTRUCTURE DESIGN MANUAL, STANDARD SPECIFICATION, AND CONSTRUCTION DETAILS.

2. ALL 4" THROUGH 12" WATER LINE TO BE AWWA C-900 PVC DR-18 BLUE PRESSURE RATED WATER MAIN WITH 2" AND SMALLER WATER SERVICE LINE TO BE CONTINUOUS TYPE K COPPER TUBING PER COH STANDARD SPECIFICATION SECTION 02503. ALL 4" THRU 54" DI PIPE WATER LINES SHALL BE AWWA C151 WITH INSIDE LINING WITH AWWA C104 AND DOUBLE WRAPPED WITH 8-MIL POLYETHYLENE SHEETS.

3. CONCRETE THRUST BLOCKS SHALL BE PROVIDED AS NECESSARY TO PREVENT PIPE MOVEMENT. USE RESTRAINED JOINTS WHERE PREVENTING MOVEMENT OF 16" OR GREATER PIPE IS NECESSARY DUE TO THRUST.

4. ALL WATER LINES UNDER PROPOSED OR FUTURE PAVING AND TO A POINT OF ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL BE ENCASED IN BANK SAND TO 12" OVER PIPE AND BACKFILLED WITH CEMENT STABILIZED SAND TO WITHIN ONE (1) FOOT OF SUBGRADE.

5. ALL WATER LINE AND SEWER LINE CROSSINGS SHALL BE CONSTRUCTED PER CITY OF HOUSTON AND TCEQ REGULATIONS.

6. ALL WATER VALVES SHALL BE SUPPLIED AND INS TALLED IN ACCORDANCE WITH THE LATEST EDITION OF AWWA C-500 AND SHALL BE OF THE RESILIENT SEAT TYPE.

7. ALL WATER LINES TO BE DISINFECTED IN CONFORMANCE WITH AWWA C-651 AND THE TEXAS STATE DEPARTMENT OF HEALTH. AT LEAST ONE BACTERIOLOGICAL SAMPLE SHALL BE COLLECTED FOR EVERY 1,000 LINEAR FEET OF WATER LINE AND SHALL BE REPEATED IF CONTMINATION PERSISTS.

8. ALL BELOW GRADE VALVES SHALL BE GASKETED, HUB-END GATE VALVES WITH A CAST IRON BOX, EXCEPT WHERE FLANGES ARE CALLED OUT ON THE PLANS.

9. 4" THRU 12" FITTINGS SHALL BE CEMENT MORTAR LINED COMPACT DUCTILE IRON PRESSURE FITTINGS PER ANSI A21.53, OR PUSH ON FITTINGS PER ANSI A21.10 PRESSURE RATED AT 250 PSIG.

10. HYDROSTATIC TESTING: ALL WATER PIPE SHALL BE TESTED FOR LEAKAGE IN ACCORDANCE WITH THE LATEST CITY OF HOUSTON STANDARD CONSTRUCTION SPECIFICATIONS. TESTS ARE TO BE PERFORMED ON THE ENTIRE FOOTAGE OF WATER PIPE LINE INCLUDED IN THE PROJECT.

11. ALL WATER LINES TO HAVE 4" MINIMUM COVER TO FINISHED GRADE AND MINIMUM 12" CLEARANCE TO OTHER UTILITIES AT CROSSING UNLESS OTHERWISE NOTED ON PLANS. ALL WATER LINE INSTALLED OVER 8' DEEP SHALL UTILIZE RESTRAINED JOINT FITTINGS.

12. CONTRACTOR SHALL KEEP WATER PIPE CLEAN AND CAPPED (OR OTHERWISE EFFECTIVELY COVERED) OPEN PIPE ENDS TO EXCLUDE INSECTS, ANIMALS OR OTHER SOURCES OF CONTAMINATION FROM UNFINISHED PIPE LINES AT TIMES WHEN CONSTRUCTION IS NOT IN PROGRESS.

13. 6" & LARGER WATER LINE FITTINGS SHALL BE MECHANICAL JOINT.

14. ALL MECHANICAL JOINT FITTINGS, BENDS, TEES, ELLS, VALVES SHALL BE INSTALLED WITH A "MEGA-LUG" RETENTION DEVICE.

ABOVEGROUND APPURTENANCES, STRUCTURES AND OBSTRUCTIONS

UNLESS OTHERWISE AGREED TO IN WRITING BY ETC, NO ABOVEGROUND APPURTENANCES, STRUCTURES, OR OBSTRUCTIONS OF A TEMPORARY OR PERMANENT NATURE SHALL BE LOCATED WITHIN ETC'S PIPELINE FACILITY THAT, IN ANY WAY, INTERFERE WITH OPERATING, MAINTAINING, ACCESSING, INSPECTING, REPAIRING, MODIFYING, REPLACING OR RELOCATING SUCH FACILITIES. THE APPURTENANCES, STRUCTURES, AND OBSTRUCTIONS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING: BUILDINGS, STRUCTURES, SIGNAGE, UTILITY POLES, STEEL TOWERS, GUY WIRES, OTHER STRUCTURES SUPPORTING AERIAL LINES, SATELLITE DISHES, MANHOLES, CATCH BASINS, UTILITY PEDESTALS, TRANSFORMERS, FIRE HYDRANT, LARGE SPOILS OF EARTHEN MATERIALS, DECKS, POOLS, BOATS, RV'S, TRAILERS, STORAGE OF HAZARDOUS OR NON-HAZARDOUS MATERIALS.

EXCAVATION, CUTS, OR FILL NEAR ETC'S PIPELINE FACILITY

1. UNLESS OTHERWISE AGREED TO BY ETC IN WRITING, AN ETC REPRESENTATIVE WILL BE ON LOCATION PRIOR TO AND DURING CONSTRUCTION ACTIVITY WITHIN ETC'S PIPELINE FACILITY.

2. NO HEAVY EQUIPMENT OF ANY TYPE WILL BE PERMITTED TO WORK DIRECTLY OVER ETC'S PIPELINES OR RELATED FACILITIES, UNLESS OTHERWISE AGREED TO IN WRITING BY ETC.

3. ALL EXCAVATION WITHIN EIGHTEEN INCHES (18") OF ANY PIPELINE WILL BE PERFORMED BY HAND. AT THE DISCRETION OF ETC'S ONSITE REPRESENTATIVE, EXCAVATORS MAY BE REQUIRED TO HAND DIG BEGINNING AT A DISTANCE GREATER THAN EIGHTEEN (18) INCHES.

4. ALL EXCAVATIONS WITHIN ETC'S PIPELINE FACILITY SHALL BE BACKFILLED WITH A MINIMUM OF EIGHT(8) INCH LIFTS OF BACKFILL MATERIAL, CLEAN AND FREE FROM ROCK, TRASH, CONCERETE, RUBBISH, OR HAZARDOUS MATERIAL AND COMPACTED TO A MINIMUM STANDARD PROCTOR DENSITY OF 95% USING MECHANICAL COMPACTION EQUIPMENT. SOIL BACKFILL MUST BE COMPACTED TO THE SATISFACTION OF THE ETC ONSITE INSPECTOR SO THAT SETTLING DOES NOT OCCUR.

5. NO GRADE CUTS WILL BE PERMITTED WITHIN ETC'S PIPELINE FACILITY UNLESS OTHERWISE AGREED TO IN WRITING BY ETC AND WITH ETC'S REPRESENTATIVE ON LOCATION. AN ENGINEERING STUDY MAY BE PERFORMED TO ENSURE THAT THE LATERAL STABILITY OF ETC'S PIPELINES OR RELATED FACILITIES ARE NOT AFFECTED.

6. WHEN BORING UNDER ETC'S PIPELINES OR RELATED FACILITIES, THE PARTY WITH THE APPROVED CROSSING PLANS AND DRAWINGS SHALL EXPOSE A MINIMUM OF TWENTY-FOUR (24) INCHES BELOW THE BOTTOM OF EACH PIPELINE TO ENSURE VERTICAL SEPARATION OF NOT LESS THAN TWENTY-FOUR (24) INCHES OF CLEARANCE. PLAN AND PROFILE DRAWINGS ARE REQUIRED FOR ALL PROPOSED BORINGS.

7. NO FILL SHALL BE PERMITTED WITHIN ETC'S PIPELINE FACILITY UNLESS OTHERWISE AGREED TO IN WRITING BY ETC. IN NO EVENT, SHALL MORE THAN TWENTY-FOUR INCHES (24") OF EARTHEN FILL MATERIAL, FREE FROM ANY ROCKS, TRASH, CONCRETE, RUBBISH, REBAR, HAZARDOUS MATERIALS, ETC., BE PERMITTED WITHIN ETC'S PIPELINE FACILITY, UNLESS OTHERWISE AGREED TO IN WRITING BY ETC.

8. EARTHEN COVER OVER ETC'S PIPELINES SHALL BE THIRTY-SIX (36) INCHES OR NO LESS THAN WHAT WAS ORIGINALLY THERE PRIOR TO ANY CONSTRUCTION. IN THE EVENT THAT ETC DETERMINES THAT A LESSER COVER WILL NOT INCREASE THE RISK TO THE PUBLIC OR INCREASE THE RISK OF A BREAK, LEAK, RUPTURE OR OTHER DAMAGE TO ETC'S PIPELINES OR RELATED FACILITIES, ETC MAY ALLOW A LESSER EARTHEN COVER, IN A MINIMUM AMOUNT AS DETERMINED SOLELY WITHIN THE DISCRETION OF ETC.

9. NO TRASH OR DEBRIS SHALL BE PLACED IN ANY EXCAVATION OR LEFT IN OR ON ETC'S PIPELINE FACILITY.

STATE OF TEXAS
HUNG H. NGUYEN
113148
LICENSED
PROFESSIONAL ENGINEER

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FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

GENERAL CONSTRUCTION NOTES

SHEET 2 OF 2

SECTION NO.	
DRAWN:	DATE:
CHECKED:	DATE:
DESIGN:	DATE:
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CONTRACT NO.	
	SHEET NO. 04

5/12/2022
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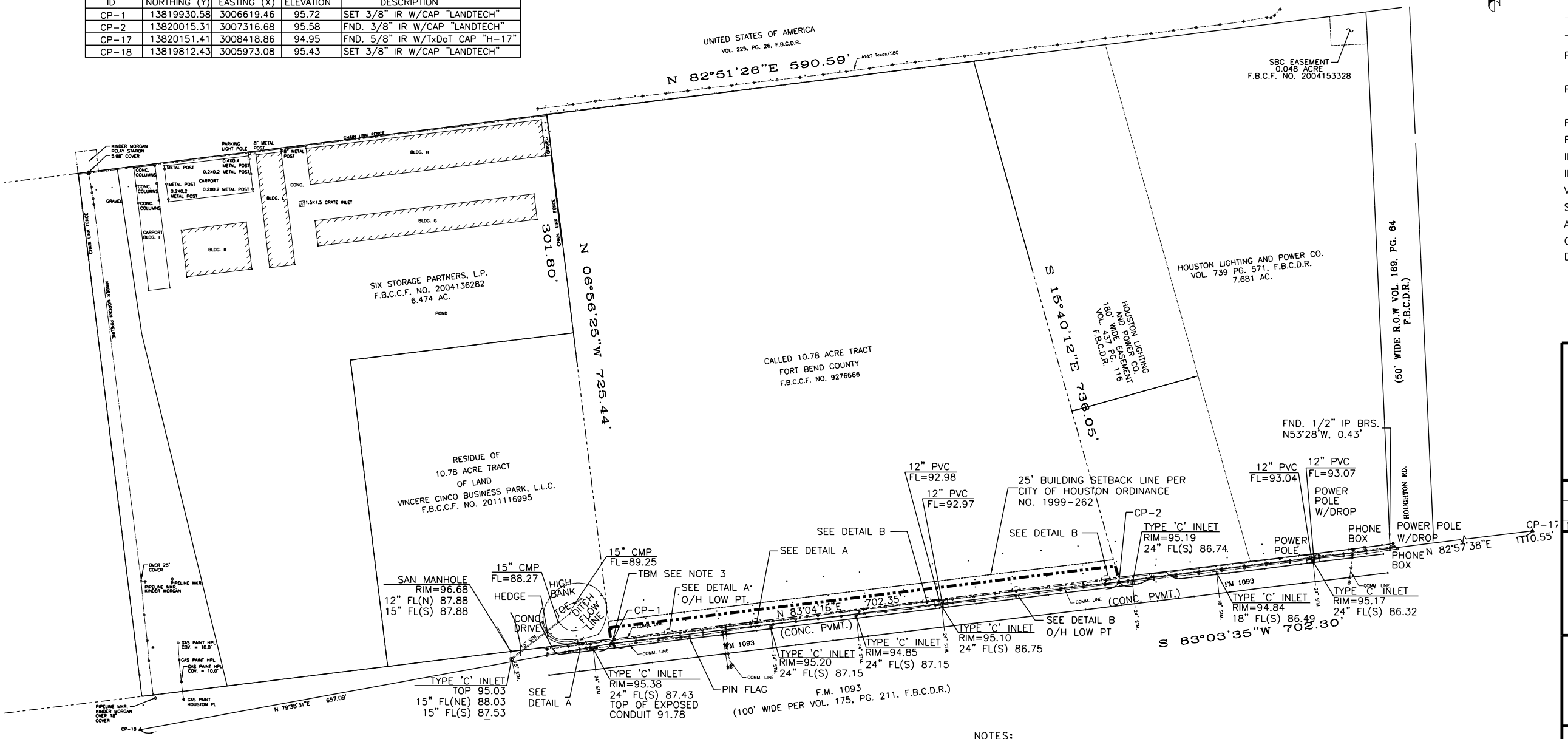
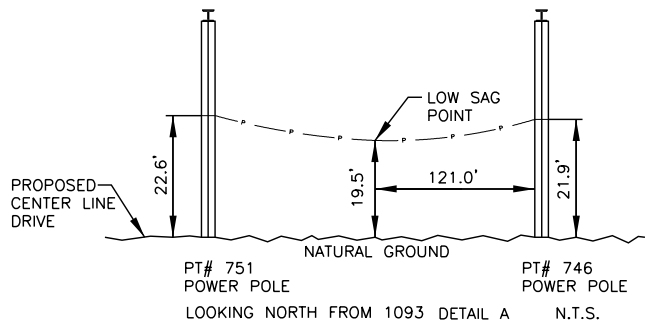
bobv

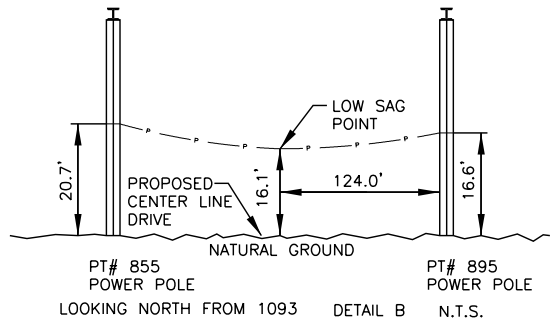
H. D. BROWN SURVEY, A-406

SURVEY CONTROL POINTS (CP)				
ID	NORTHING (Y)	EASTING (X)	ELEVATION	DESCRIPTION
CP-1	13819930.58	3006619.46	95.72	SET 3/8" IR W/CAP "LANDTECH"
CP-2	13820015.31	3007316.68	95.58	FND. 3/8" IR W/CAP "LANDTECH"
CP-17	13820151.41	3008418.86	94.95	FND. 5/8" IR W/TxDoT CAP "H-17"
CP-18	13819812.43	3005973.08	95.43	SET 3/8" IR W/CAP "LANDTECH"





LOOKING NORTH FROM 1093 DETAIL A N.T.S.



LOOKING NORTH FROM 1093 DETAIL B N.T.S.

NOTES:

1. All bearings and distances shown hereon are referenced to the Texas Coordinate System, South Central Zone, North American Datum of 1983, (1993) (1996 ADJ)
2. Benchmark: Texas Department of Transportation F.M.1093 Monument H-17 5/8" IR w/Aluminum Cap Stamped H-17, Elevation 94.951 (NAVD 88 1991 ADJ)
3. Temporary Benchmark: Set 3/8" iron rod with cap 6.0 feet South of the southwest corner of 10.782 acre tract, Elevation 95.72 (1991 adjustment)

FLOOD STATEMENT:

THIS TRACT IS IN FLOOD ZONE X (UNSHADED) AND IS NOT WITHIN THE 100-YEAR FLOOD PLAIN ACCORDING TO FEMA MAP # 48157C0130L REVISED DATE APRIL 2, 2014. THE UNSHADED ZONE X IS OUTSIDE OF 0.2% ANNUAL CHANCE FLOOD HAZARD. NORTH SIDE OF SITE IS PROTECTED BY BARKER DAM. THE SOUTH SIDE OF SITE HAS AN APPROXIMATE BASE FLOOD ELEVATION OF 92. ALL EXISTING ELEVATIONS ON SITE ARE ABOVE THESE BASE FLOOD ELEVATIONS.

LEGEND

▣	INLET
⬚	PHONE PED
○	GAS PAINT
●—	POWER POLE
◇	S.W.B.T. MKR.
△	TBM TEMPORARY BENCHMARK
—P—	POWER LINE
—//—	CHAIN LINK FENCE
F.B.C.C.F.	FORT BEND COUNTY CLERK'S FILE
F.B.C.D.R.	FORT BEND COUNTY DEED RECORD
F.I.R.M.	FEMA INSURENCE RATE MAP
FND.	FOUND
IP	IRON PIPE
IR	IRON ROD
VOL.	VOLUME
SQ. FT.	SQUARE FEET
AC.	ACRE
CONC.	CONCRETE
DROP	UNDERGROUND DROP LEAD

HORIZ. 0 80 160

SCALE IN FEET

STATE OF TEXAS
HUNG H. NGUYEN
113148
LICENSED PROFESSIONAL ENGINEER

5/12/2022

NO.	DATE	REVISION	APPROV.

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FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

TOPOGRAPHIC & SURVEY CONTROL MAP

SHEET 1 OF 1

SECTION NO.	
DRAWN:	DATE:
CHECKED:	DATE:
DESIGN:	DATE:
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CONTRACT NO.	
	SHEET NO. 05

5/12/2022
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bdv

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures.** Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Texas State Plane south central zone (FIPSZONE 4204). The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum.** For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC–3, #9202
1315 East–West Highway
Silver Spring, MD 20910–3282

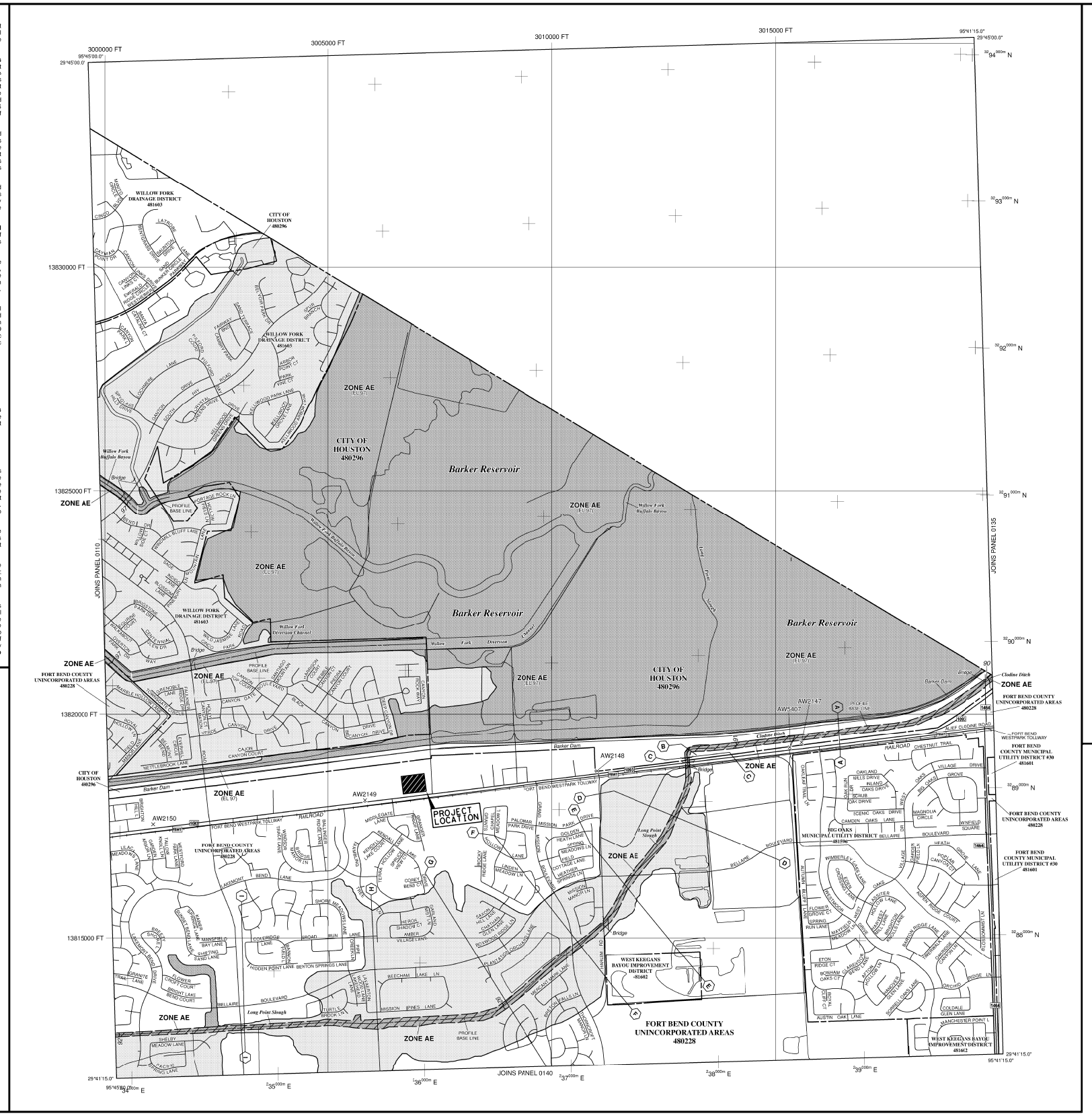
To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713–3242,** or visit its website at http://www.ngs.noaa.gov/.

Base map information was obtained from the Texas Natural Resources Information System, Fort Bend County Department of Engineering, the National Geodetic Survey, U.S. Geological Survey, Houston-Galveston Area Council, FEMA, and from local communities and districts.
This map may reflect more detailed or up to date stream channel configurations than those shown on the previous FIRM. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations and improved topographic data. The profile baselines depicted on this map represent the hydraulic modeling baselines that match the flood profiles and Floodway Data Tables if applicable, in the FIS report. As a result, the profile baselines may deviate significantly from the new base map channel representation and may appear outside of the floodplain.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de–annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the **FEMA Map Service Center** website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the **FEMA Map Service Center** website or by calling the FEMA Map Information eXchange.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.
ZONE AE Base Flood Elevations determined.
ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

Floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513 Base Flood Elevation line and value; elevation in feet*
(EL 987) Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

A — A Cross section line
23 — 23 Transect line
97°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4276000mN 1000-meter Universal Transverse Mercator grid ticks, zone 15
6000000 FT 5000-foot grid values: Texas State Plane coordinate system, south central zone (FIPSZONE 4204), Lambert Conformal Conic
DX5510 × Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
September 26, 1990
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
January 3, 1997
April 2, 2014 - to update corporate limits, to change base flood elevations, to change special Flood Hazard Areas, to add roads and road names, to incorporate previously issued Letters of Map Revision, and to reflect updated topographic information.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

NORTH

MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0130L

FIRM
FLOOD INSURANCE RATE MAP
FORT BEND COUNTY, TEXAS AND INCORPORATED AREAS

PANEL 130 OF 575
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
FORT BEND COUNTY	480228	0130	L
FORT BEND COUNTY MUNICIPAL UTILITY DISTRICT #30	481601	0130	L
BIG OAKS MUNICIPAL UTILITY DISTRICT	481195	0130	L
HOUSTON, CITY OF	480296	0130	L
WEST KEEGANS BAYOU IMPROVEMENT DISTRICT	481602	0130	L
WILLOW FORK DRAINAGE DISTRICT	481603	0130	L

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER 48157C0130L
MAP REVISED APRIL 2, 2014

Federal Emergency Management Agency

STATE OF TEXAS
HUNG H. NGUYEN
113148
LICENSED
PROFESSIONAL ENGINEER

5/12/2022

NO.	DATE	REVISION	APPROV.

IDCUS
Planners | Engineers | Construction Managers
IDCUS, Inc.
15915 Katy Freeway, Suite 300
Houston, Texas 77094
(713) 541-5591 Fax (713) 541-3501
T.B.P.E.FIRM REGISTRATION NO. F-6825

STATE OF TEXAS
FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE
FEMA FIRM MAP

SHEET 1 OF 1

SECTION NO.	
DRAWN:	DATE:
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. 06

5/12/2022
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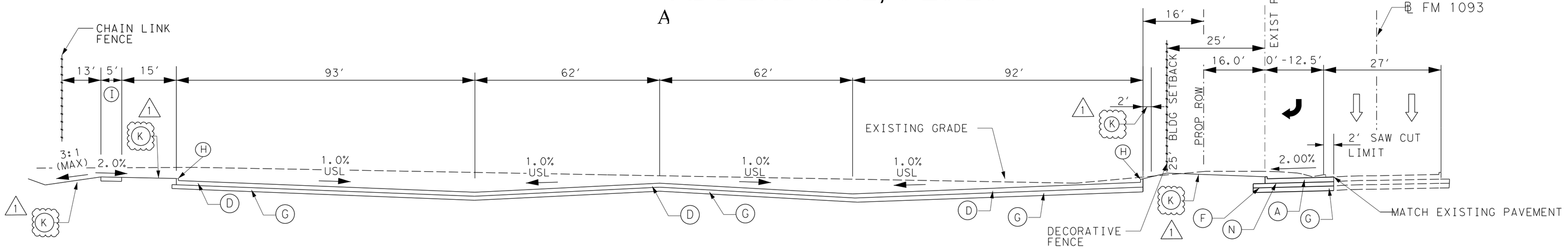
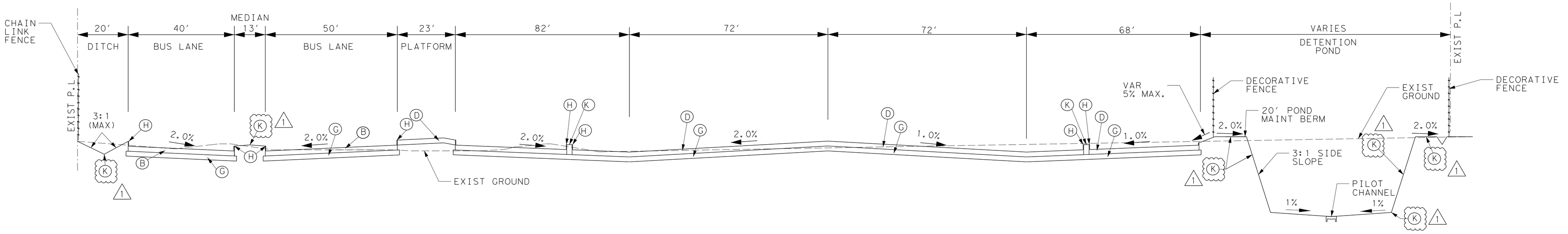
bobv

ADDENDUM 1, 6/20/23



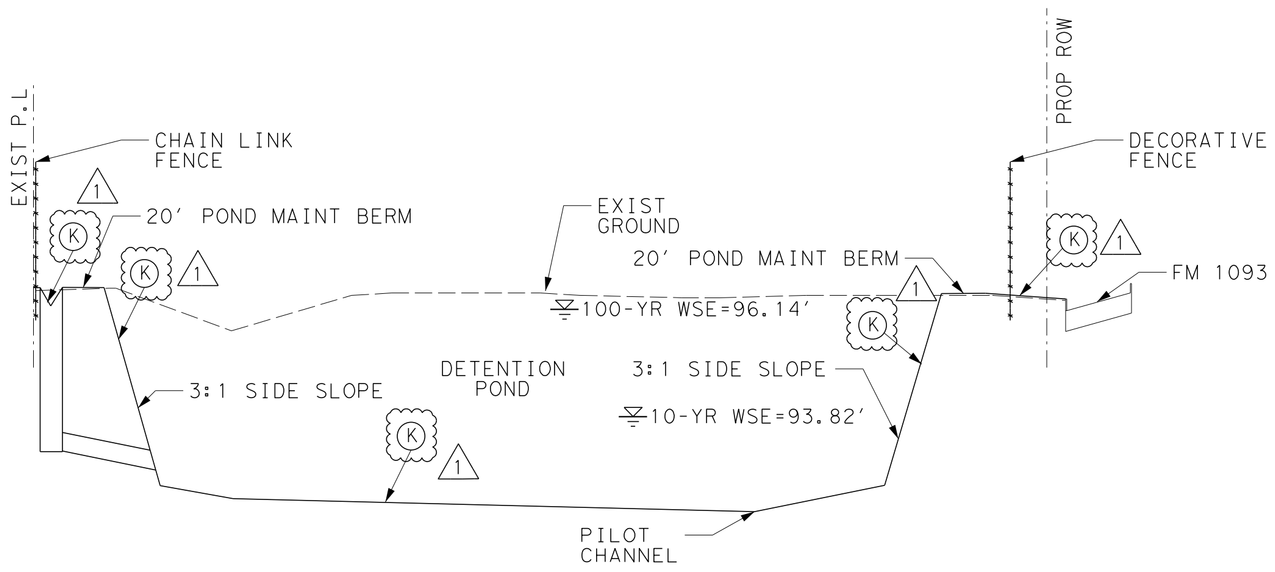
SECTION B-B

NTS



SECTION A-A

NTS



SECTION C-C

NTS

LEGEND

- (A) 9" CRCP CONCRETE PVMT
- (B) 9" JOINT REINF CONCRETE PVMT
- (D) 6" JOINT REINF CONCRETE PVMT
- (E) 1" ASPH BOND BREAKER
- (F) 6" CEMT TRT BASE
- (G) 6" LIME TRT SUBGRADE
- (H) 6" CONC CURB (TYPE II) (MONO)
- (I) 5" SIDEWALK
- (J) PEDESTRIAN RAMP
- (K) SEE LANDSCAPE DRAWINGS
- (M) BLOCK SODDING
- (N) 1" ASPH STAB BASE

NOTES:

1. SEE TXDOT STD CPJ SHEETS SHOWN IN THIS SET FOR CONCRETE PAVEMENTJUNCTURES.
2. SEE SITE LAYOUT FOR CROSS SECTION LOCATIONS.
3. SEE TXDOT STD DD FOR DRIVEWAY DETAILS.

STATE OF TEXAS
HUNG H. NGUYEN
113148
LICENSED
PROFESSIONAL ENGINEER

6/14/2023

NO.	DATE	REVISION	APPROV.
1	06/14/23	ADDENDUM 1	

IDCUS
Planners | Engineers | Construction Managers
IDCUS, Inc.
15915 Katy Freeway, suite 300
Houston, Texas 77094
(713) 541-5591 Fax: (713) 541-3501
T.B.P.E.FIRM REGISTRATION NO. F-6825

THE STATE OF TEXAS
FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

SITE AND DETENTION POND CROSS SECTIONS

SHEET 1 OF 1

SECTION NO.	
DRAWN:	DATE:
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. 07

6/14/2023
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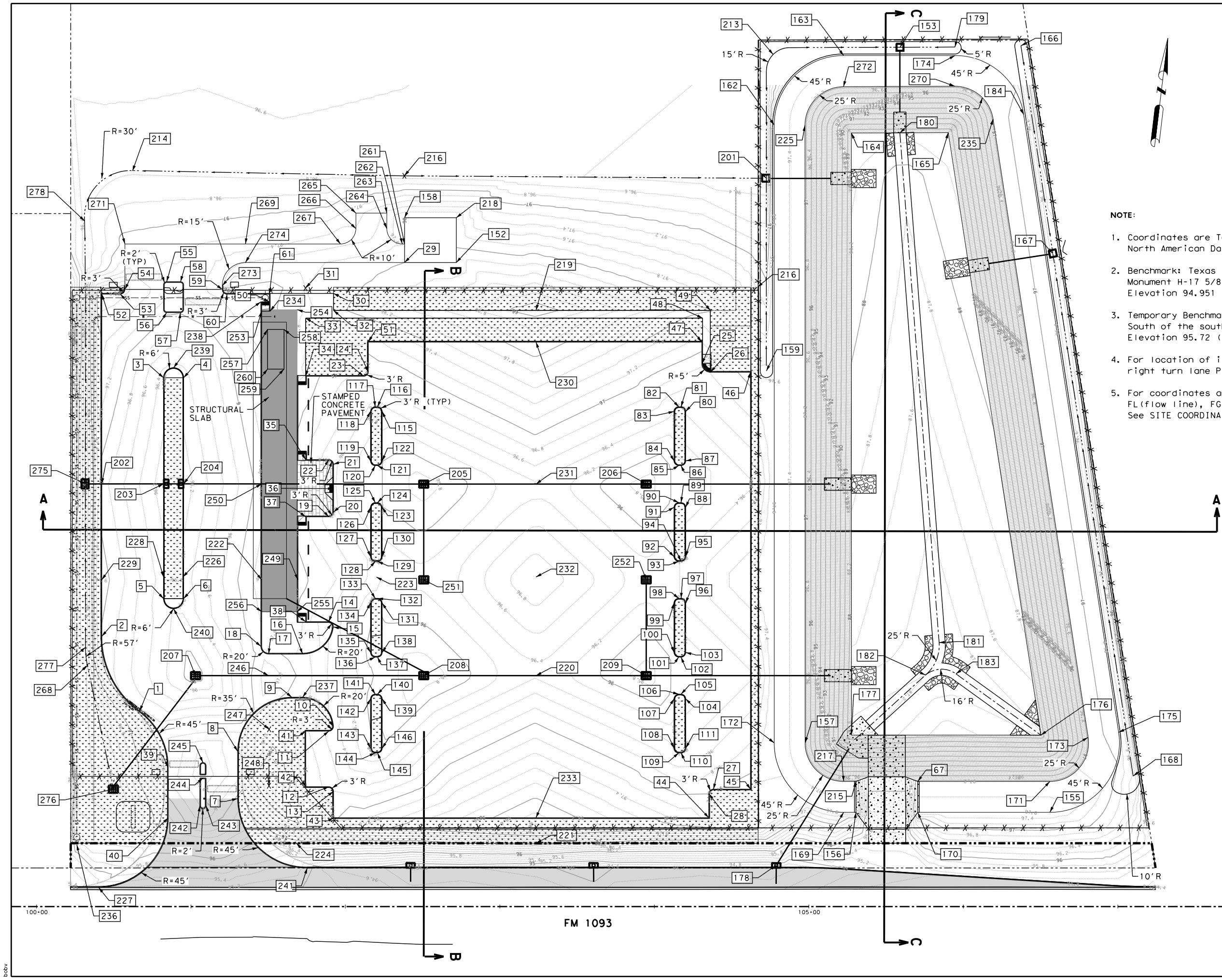

NOTE:

1. Coordinates are Texas Coordinate System, South Central Zone, North American Datum of 1983, (1993) (1996 ADJ)
2. Benchmark: Texas Department of Transportation F.M.1093 Monument H-17 5/8" IR w/Aluminum Cap Stamped H-17, Elevation 94.951 (NAVD 88 1991 ADJ)
3. Temporary Benchmark: Set 3/8" iron rod with cap 6.0 feet South of the southwest corner of 10.782 acre tract, Elevation 95.72 (1991 adjustment)
4. For location of items related to FM 1093 improvements see right turn lane Plan and Profile sheets 1 and 2.
5. For coordinates and elevations of TOC (top of curb), FL(flow line), FG (finished grade), and TG (top of grate). See SITE COORDINATES & ELEVATIONS TABLE sheet.

HORIZ. 0 30 60

SCALE IN FEET

STATE OF TEXAS
HUNG H. NGUYEN
113148
LICENSED
PROFESSIONAL ENGINEER

5/12/2022

NO.	DATE	REVISION	APPROV.

IDCUS
Planners | Engineers | Construction Managers
IDCUS, Inc.
15915 Katy Freeway, suite 300
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(713) 541-5591 Fax (713) 541-3501
T.B.P.E.FIRM REGISTRATION NO. F-6825

STATE OF TEXAS
FORT BEND COUNTY

FORT BEND COUNTY

PRECINCT 3

WESTPARK PARK & RIDE

SITE COORDINATES LAYOUT

SHEET 1 OF 1

SECTION NO.	
DRAWN:	DATE:
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. 08

5/12/2022
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bobv

Point No.	COORDINATES	ELEVATION	ELEV OF TOC
1	X=3006650.94 Y=13820042.80	TOG=96.84	TOC=97.34
2	X=3006620.71 Y=13820087.89	TOG=96.97	TOC=97.47
3	X=3006640.19 Y=13820258.87	TOP=96.32	TOC=96.82
4	X=3006653.10 Y=13820260.44	TOP=96.32	TOC=96.86
5	X=3006657.47 Y=13820116.91	TOP=96.26	TOC=96.76
6	X=3006670.38 Y=13820118.49	TOG=96.26	TOC=96.76
7	X=3006720.73 Y=13819994.28	TOG=96.96	TOC=97.46
8	X=3006717.05 Y=13820024.57	TOG=97.22	TOC=97.72
9	X=3006747.56 Y=13820063.54	TOG=96.93	TOC=97.43
10	X=3006776.58 Y=13820048.23	TOG=96.47	TOC=96.97
11	X=3006773.99 Y=13820044.70	TOG=96.54	TOC=97.04
12	X=3006778.40 Y=13820008.97	TOG=96.71	TOC=97.22
13	X=3006781.74 Y=13820006.35	TOG=96.80	TOC=97.30
14	X=3006765.39 Y=13820115.00	TOG=96.56	TOC=97.06
15	X=3006768.75 Y=13820112.01	TOG=96.48	TOC=96.98
16	X=3006751.17 Y=13820092.19	TOG=96.86	TOC=97.36
17	X=3006729.31 Y=13820089.53	TOG=97.08	TOC=97.58
18	X=3006723.74 Y=13820093.89	TOG=97.15	TOC=97.65
19	X=3006757.28 Y=13820182.51	TOG=96.51	TOC=97.01
20	X=3006759.89 Y=13820185.85	TOG=96.45	TOC=96.95
21	X=3006756.15 Y=13820216.57	TOG=96.44	TOC=96.94
22	X=3006752.81 Y=13820219.18	TOG=96.51	TOC=97.01
23	X=3006768.63 Y=13820275.51	TOG=96.71	TOC=97.20
24	X=3006771.26 Y=13820278.66	TOG=96.83	TOC=97.33
25	X=3006985.03 Y=13820310.07	TOG=96.84	
26	X=3006991.16 Y=13820305.27	TOG=96.81	TOC=97.31
27	X=3007025.77;Y=13820037.49	TOG=96.98	TOC=97.48
28	X=3007023.15 Y=13820034.15	TOG=96.99	TOC=97.49
29	X=3006786.03 Y=13820351.81	FF=98.00	
30	X=3006742.78;Y=13820326.42	FG=97.42	
31	X=3006724.49;Y=13820327.72	FG=97.44	
32	X=3006744.11;Y=13820315.50	FG=97.82	
33	X=3006726.85 Y=13820308.36	FG=97.66	
34	X=3006731.40 Y=13820270.98	TOG=97.09	
35	X=3006737.92 Y=13820217.37	TOG=96.81	
36	X=3006758.06;Y=13820200.87	TOP=96.43	
37	X=3006742.39 Y=13820180.70	TOG=96.85	
38	X=3006750.60 Y=13820113.20	TOG=96.86	
39	X=3006673.61 Y=13820008.97	TOG=97.24	TOC=97.74
40	X=3006677.58 Y=13819976.37	TOG=96.76	TOC=97.26
41	X=3006759.16 Y=13820042.89	TOG=96.84	TOC=97.34
42	X=3006763.51 Y=13820007.16	TOG=97.01	TOC=97.51
43	X=3006783.81 Y=13819989.40	TOG=96.97	TOC=97.47
44	X=3007025.02 Y=13820018.77	TOG=97.15	TOC=97.65
45	X=3007049.59 Y=13820040.39	TOG=97.10	TOC=97.60
46	X=3007016.97 Y=13820308.41	TOG=97.09	TOC=97.59
47	X=3006983.34 Y=13820323.96	TOG=97.12	TOC=97.62
48	X=3006981.96 Y=13820339.41	FG=97.88	
49	X=3006986.32 Y=13820344.98	FG=98.02	
50	X=3006702.25 Y=13820315.95	TOP=97.56	TOC=98.07
51	X=3006768.92 Y=13820297.86	TOG=97.11	TOC=97.62
52	X=3006593.93 Y=13820307.86	TOG=97.67	TOC=98.17
53	X=3006605.84 Y=13820309.30	TOG=97.63	TOC=98.13
54	X=3006608.46 Y=13820312.64	TOG=97.65	TOC=98.15
55	X=3006634.66;Y=13820320.85	TOP=97.26	
56	X=3006637.07;Y=13820301.00	TOP=97.03	
57	X=3006646.00;Y=13820302.09	TOP=97.01	
58	X=3006643.60;Y=13820321.95	TOP=97.24	
59	X=3006671.00 Y=13820320.22	TOP=97.50	TOC=98.00
60	X=3006674.34 Y=13820317.60	TOG=97.48	TOC=97.98
61	X=3006701.65 Y=13820320.91	TOP=97.58	TOC=98.08
67	X=3007241.33;Y=13820068.77	FL=97.00	
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81	X=3006975.01 Y=13820280.68	TOG=96.40	TOC=96.90
82	X=3006973.52 Y=13820280.50	TOG=96.40	TOC=96.90
83	X=3006970.91 Y=13820277.16	TOG=96.38	OC=96.88
84	X=3006974.77 Y=13820245.39	TOG=96.06	TOC=96.56
85	X=3006978.11 Y=13820242.78	TOG=96.08	TOC=96.58

Point No.	COORDINATES	ELEVATION	ELEV OF TOC
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87	X=3006982.22 Y=13820246.30	TOG=96.10	TOC=96.60
88	X=3006985.84 Y=13820216.52	TOG=96.10	TOC=96.60
89	X=3006982.50 Y=13820219.14	TOG=96.08	TOC=96.58
90	X=3006981.01 Y=13820218.96	TOG=96.08	TOC=96.58
91	X=3006978.40 Y=13820215.61	TOG=96.06	TOC=96.56
92	X=3006982.26 Y=13820183.85	TOG=96.38	TOC=96.88
93	X=3006985.60 Y=13820181.23	TOG=96.40	TOC=96.90
94	X=3006987.09 Y=13820181.41	TOG=96.40	TOC=96.90
95	X=3006989.71 Y=13820184.76	TOG=96.42	TOC=96.92
96	X=3006993.33 Y=13820154.98	TOG=96.42	TOC=96.92
97	X=3006989.99 Y=13820157.59	TOG=96.40	TOC=96.90
98	X=3006988.50 Y=13820157.41	TOG=96.40	TOC=96.90
99	X=3006985.89 Y=13820154.07	TOG=96.38	TOC=96.88
100	X=3006989.76 Y=13820122.30	TOG=96.06	TOC=96.56
101	X=3006993.10 Y=13820119.69	TOG=96.08	TOC=96.58
102	X=3006994.58 Y=13820119.87	TOG=96.08	TOC=96.58
103	X=3006997.20 Y=13820123.21	TOG=96.10	TOC=96.60
104	X=3007000.83 Y=13820093.43	TOG=96.10	TOC=96.60
105	X=3006997.49 Y=13820096.00	TOG=96.08	TOC=96.58
106	X=3006996.00 Y=13820095.83	TOG=96.08	TOC=96.58
107	X=3006993.38 Y=13820092.52	TOG=96.06	TOC=96.56
108	X=3006997.25 Y=13820060.78	TOG=96.38	TOC=96.88
109	X=3007000.59 Y=13820058.10	TOG=96.40	TOC=96.90
110	X=3007002.08;Y=13820058.28	TOG=96.40	TOC=96.90
111	X=3007004.69;Y=13820061.66	TOG=96.42	TOC=96.92
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116	X=3006779.95 Y=13820256.90	TOG=96.34	TOC=96.84
117	X=3006778.47 Y=13820256.72	TOG=96.34	TOC=96.84
118	X=3006775.85 Y=13820253.38	TOG=96.36	TOC=96.86
119	X=3006779.72 Y=13820221.61	TOG=96.04	TOC=96.54
120	X=3006783.06 Y=13820218.99	TOG=96.02	TOC=96.52
121	X=3006784.55 Y=13820219.18	TOG=96.02	TOC=96.52
122	X=3006787.16 Y=13820222.52	TOG=96.00	TOC=96.50
123	X=3006790.79 Y=13820192.74	TOG=96.00	TOC=96.50
124	X=3006787.45 Y=13820195.35	TOG=96.02	TOC=96.52
125	X=3006785.96 Y=13820195.17	TOG=96.02	TOC=96.52
126	X=3006783.34 Y=13820191.83	TOG=96.04	TOC=96.54
127	X=3006787.21 Y=13820160.06	TOG=96.36	TOC=96.86
128	X=3006790.55 Y=13820157.45	TOG=96.34	TOC=96.84
129	X=3006792.04 Y=13820157.63	TOG=96.34	TOC=96.84
130	X=3006794.65 Y=13820160.97	TOG=96.32	TOC=96.82
131	X=3006798.28 Y=13820131.19	TOG=96.07	TOC=96.57
132	X=3006794.94 Y=13820133.81	TOG=96.09	TOC=96.59
133	X=3006793.45 Y=13820133.62	TOG=96.09	TOC=96.59
134	X=3006790.83 Y=13820130.28	TOG=96.07	TOC=96.57
135	X=3006794.70 Y=13820098.52	TOG=95.93	TOC=96.43
136	X=3006798.04 Y=13820095.90	TOG=95.91	TOC=96.41
137	X=3006799.53 Y=13820096.08	TOG=95.90	TOC=96.40
138	X=3006802.15 Y=13820099.42	TOG=95.92	TOC=96.42
139	X=3006805.77 Y=13820069.64	TOG=95.94	TOC=96.44
140	X=3006802.43 Y=13820072.26	TOG=95.92	TOC=96.42
141	X=3006800.94 Y=13820072.08	TOG=95.92	TOC=96.43
142	X=3006798.33 Y=13820068.74	TOG=95.94	TOC=96.43
143	X=3006802.19 Y=13820036.97	TOG=96.04	TOC=96.54
144	X=3006805.53 Y=13820034.36	TOG=96.05	TOC=96.55
145	X=3006807.02 Y=13820034.54	TOG=96.05	TOC=96.55
146	X=3006809.64 Y=13820037.88	TOG=96.04	TOC=96.54
152	X=3006819.28 Y=13820355.88	FF=98.00	
153	X=3007087.59;Y=13820528.90	TOG=95.55	
155	X=3007243.75;Y=13820048.92	FG=96.60	
156	X=3007119.14;Y=13820033.75	FL=96.23	
157	X=3007080.99;Y=13820074.44	FL=96.91	
158	X=3006782.53 Y=13820380.59	FF=98.00	
159	X=3007027.05;Y=13820310.45	FL=95.37	
162	X=3007012.78;Y=13820469.09	EL=96.60	
163	X=3007052.01;Y=13820519.20	EL=96.60	
164	X=3007063.04;Y=13820469.97	EL=88.31	

Point No.	COORDINATES	ELEVATION	ELEV OF TOC
167	X=3007201.80;Y=13820408.33	FL=94.71	
168	X=3007294.41;Y=13820078.72	FL=94.68	
169	X=3007111.25;Y=13820032.79	FL=96.60	
170	X=3007158.85;Y=13820038.59	FL=96.23	
171	X=3007241.33;Y=13820068.77	TOG=94.60	
172	X=3007061.14 Y=13820072.02	FG=96.60	
173	X=3007262.45;Y=13820100.05	FG=97.00	
174	X=3007123.53;Y=13820527.90	FG=96.60	
175	X=3007281.65;Y=13820105.71	FG=96.60	
176	X=3007231.92;Y=13820097.85	FG=87.38	
177	X=3007110.17;Y=13820083.03	FG=87.10	
178	X=3007072.02 Y=13819993.46	FG=94.82	
179	X=3007122.87 Y=13820533.32	FL=95.58	
180	X=3007094.17;Y=13820473.87	FL=88.29	
181	X=3007159.26 Y=13820149.34	FL=87.25	
182	X=3007153.09;Y=13820127.44	FL=87.20	
183	X=3007172.55 Y=13820130.57	FL=87.24	
184	X=3007172.29;Y=13820495.39	FG=96.60	
201	X=3007011.94;Y=13820434.26	TOG=96.28	
202	X=3006608.78;Y=13820185.91	TOG=96.89	TOC=97.39
203	X=3006648.49;Y=13820190.70	TOG=96.08	TOC=96.58
204	X=3006661.42 Y=13820192.26	TOP=96.08	TOC=96.58
205	X=3006815.78 Y=13820210.89	TGR=95.69	
206	X=3006958.72 Y=13820228.29	TGR=95.69	
207	X=3006684.01;Y=13820069.93	TGR=95.87	
208	X=3006830.76 Y=13820087.80	TGR=95.65	
209	X=3006973.70 Y=13820105.20	TGR=95.69	
213	X=3007006.64;Y=13820514.34	FL=95.96	
214	X=3006604.19;Y=13820389.63	FL=96.10	
215	X=3007116.72;Y=13820053.61	FL=96.53	
216	X=3007014.71;Y=13820363.55	FG=96.89	
217	X=3007108.83;Y=13820052.64	TOG=96.91	
218	X=3006815.78 Y=13820384.64	FF=98.00	
219	X=3006874.23 Y=13820331.33	TOG=99.15	
220	X=3006902.81;Y=13820096.57	FG=96.36	
221	X=3006915.91;Y=13819988.87	FG=97.25	
222	X=3006719.05;Y=13820136.63	TOG=97.80	
223	X=3006792.51;Y=13820147.48	FG=96.29	
224	X=3006761.99 Y=13819970.13	FG=96.87	
225	X=3007032.65;Y=13820471.37	FG=97.20	
226	X=3006668.68;Y=13820132.40	TOP=96.29	TOC=96.79
227	X=3006638.35;Y=13819926.26	TOP=95.11	
228	X=3006655.78;Y=13820130.84	TOP=96.29	TOC=96.79
229	X=3006616.29;Y=13820124.19	TOG=97.10	TOC=97.60
230	X=3006876.70 Y=13820310.98	TOG=98.19	
231	X=3006887.82 Y=13820219.66	FG=96.36	
232	X=3006895.09 Y=13820159.97	FG=96.96	
233	X=3006913.92 Y=13820005.24	TOG=98.27	TOC=98.77
234	X=3006703.47;Y=13820310.05	FG=98.06	
235	X=3007153.03;Y=13820490.03	FG=97.00	
236	X=3006620.96 Y=13819951.96	FG=95.85	
237	X=3006754.50;Y=13820064.39	TOG=96.86	TOC=97.36
238	X=3006696.79 Y=13820315.28	TOG=97.54	
239	X=3006645.86 Y=13820266.10	TOG=96.36	TOC=96.86
240	X=3006664.71 Y=13820111.25	TOP=96.22	TOC=96.72
241	X=3006770.84 Y=13819955.04	FG=95.23	
242	X=3006696.98;Y=13819986.64	FG=97.39	
243	X=3006700.95;Y=13819987.12	FG=97.39	
244	X=3006696.79;Y=13820004.75	FG=97.71	
245	X=3006695.58;Y=13820014.68	TOG=97.68	
246	X=3006731.00;Y=13820075.65	FG=97.36	
247	X=3006735.49;Y=13820041.24	FG=97.79	
248	X=3006739.88;Y=13820004.89	FG=98.37	
249	X=3006742.36;Y=13820139.51	FG=97.07	
250	X=3006711.53;Y=13820198.31	TOG=97.58	
251	X=3006823.29 Y=13820149.37	TGR=96.27	
252	X=3006966.23 Y=13820166.77	TGR=96.31	
253	X=3006698.01;Y=13820309.38	TOG=98.01	

Point No.	COORDINATES	ELEVATION	ELEV OF TOC
254	X=3006720.72 Y=13820313.16	TOG=97.73	
255	X=3006744.36 Y=13820118.97	FG=97.00	
256	X=3006721.53 Y=13820116.19	FG=97.73	
257	X=3006703.21 Y=13820298.06	FF=98.14	
258	X=3006713.81 Y=13820299.35	FF=98.14	
259	X=3006716.91 Y=13820273.87	FF=98.14	
260	X=3006706.31 Y=13820272.58	FF=98.14	
261	X=3006784.58 Y=13820363.72	FG=98.00	
262	X=3006783.09 Y=13820363.54	FG=97.76	
263	X=3006770.75 Y=13820382.18	FG=95.72	
264	X=3006771.96 Y=13820372.26	FG=96.71	
265	X=3006750.90 Y=13820379.77	FG=95.74	
266	X=3006752.10 Y=13820369.84	FG=96.68	
267	X=3006743.39 Y=13820358.70	FG=97.56	
268	X=3006613.76;Y=13820068.05	FG=96.42	
269	X=3006682.34 Y=13820351.27	FG=97.28	
270	X=3007125.84;Y=13820508.08	FG=97.00	
271	X=3006604.91 Y=13820341.85	FG=97.08	
272	X=3007054.37;Y=13820499.12	FG=97.00	
273	X=3006670.71 Y=13820322.66	FG=97.51	
274	X=3006683.79 Y=13820339.36	FG=97.60	
275	X=3006598.34 Y=13820184.64	TGR=96.39	
276	X=3006640.37 Y=13819990.58	TGR=95.02	
277	X=3006611.13 Y=13820079.52	FG=96.46	
278	X=3006577.24;Y=13820353.45	FL=97.00	

LEGEND

TOC	TOP OF CURB
TOG	TOP OF GUTTER
TOP	TOP OF PAVEMENT
TGR	TOP OF GRATE
FF	FINISH FLOOR
FL	FLOW LINE
FG	FINISH GRADE

STATE OF TEXAS
HUNG H. NGUYEN
113148
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5/12/2022

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FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

SITE COORDINATES & ELEVATIONS TABLE

SHEET 1 OF 1

SECTION NO.	
DRAWN:	DATE:
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. 09

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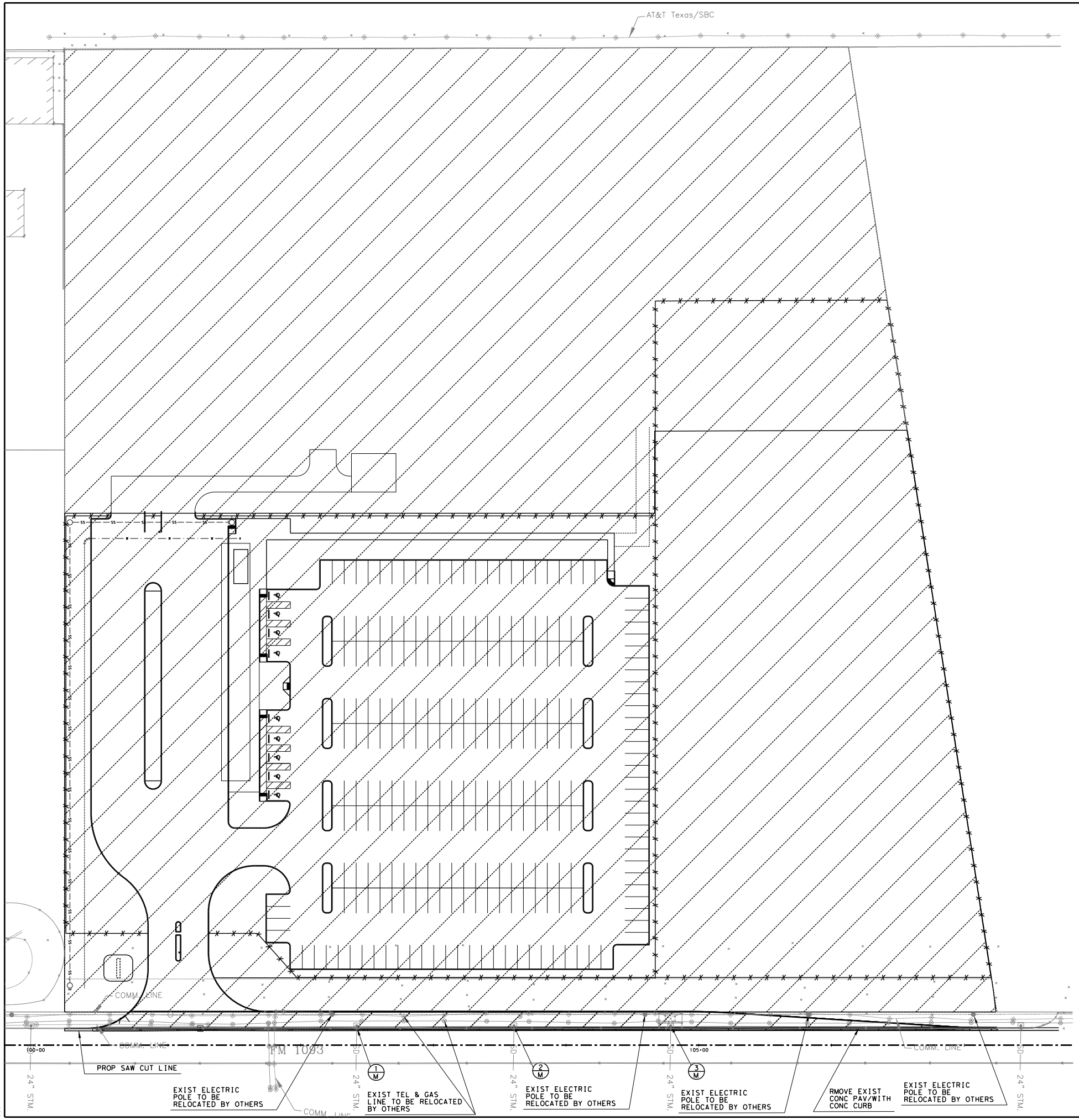

NOTE:

REFER TO PLAN & PROFILE SHEETS FOR PAVEMENT REMOVAL LIMITS

REMOVAL LEGEND

SITE PREPARATION

(M) CAP & CONVERT EXIST INLET TO JUNCTION BOX

HORIZ. 0 40 80

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WESTPARK PARK & RIDE
DEMO & SITE PREPARATION PLAN

SHEET 1 OF 1

SECTION NO.	
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CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. 10

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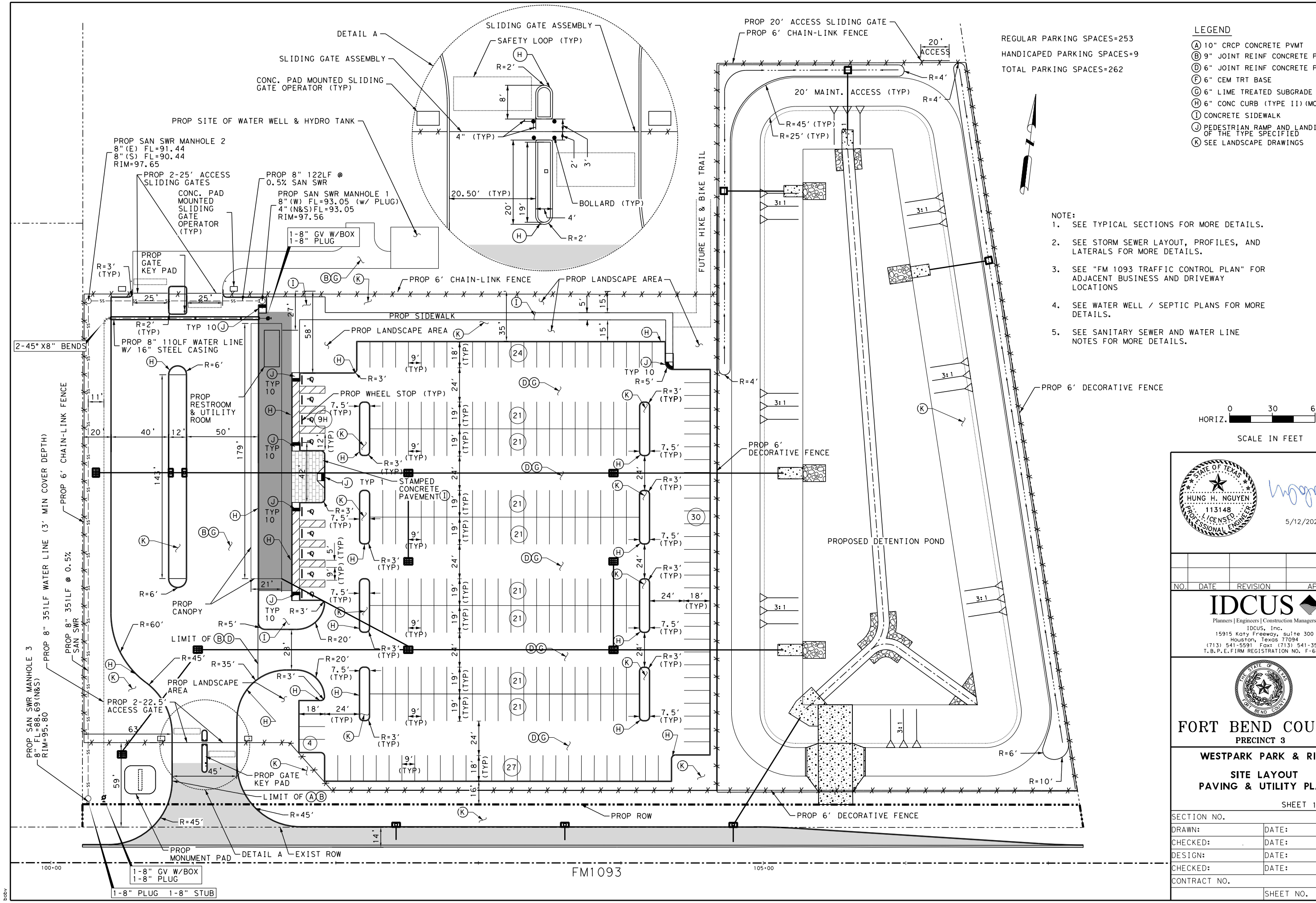

REGULAR PARKING SPACES=253

HANDICAPED PARKING SPACES=9

TOTAL PARKING SPACES=262

LEGEND

- (A) 10" CRCP CONCRETE PVMT
- (B) 9" JOINT REINF CONCRETE PVMT
- (D) 6" JOINT REINF CONCRETE PVMT
- (F) 6" CEM TRT BASE
- (G) 6" LIME TREATED SUBGRADE
- (H) 6" CONC CURB (TYPE II) (MONO)
- (I) CONCRETE SIDEWALK
- (J) PEDESTRIAN RAMP AND LANDING OF THE TYPE SPECIFIED
- (K) SEE LANDSCAPE DRAWINGS

NOTE:

1. SEE TYPICAL SECTIONS FOR MORE DETAILS.
2. SEE STORM SEWER LAYOUT, PROFILES, AND LATERALS FOR MORE DETAILS.
3. SEE "FM 1093 TRAFFIC CONTROL PLAN" FOR ADJACENT BUSINESS AND DRIVEWAY LOCATIONS
4. SEE WATER WELL / SEPTIC PLANS FOR MORE DETAILS.
5. SEE SANITARY SEWER AND WATER LINE NOTES FOR MORE DETAILS.

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WESTPARK PARK & RIDE

SITE LAYOUT PAVING & UTILITY PLAN

SHEET 1 OF 1

SECTION NO.	
DRAWN:	DATE:
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. 11

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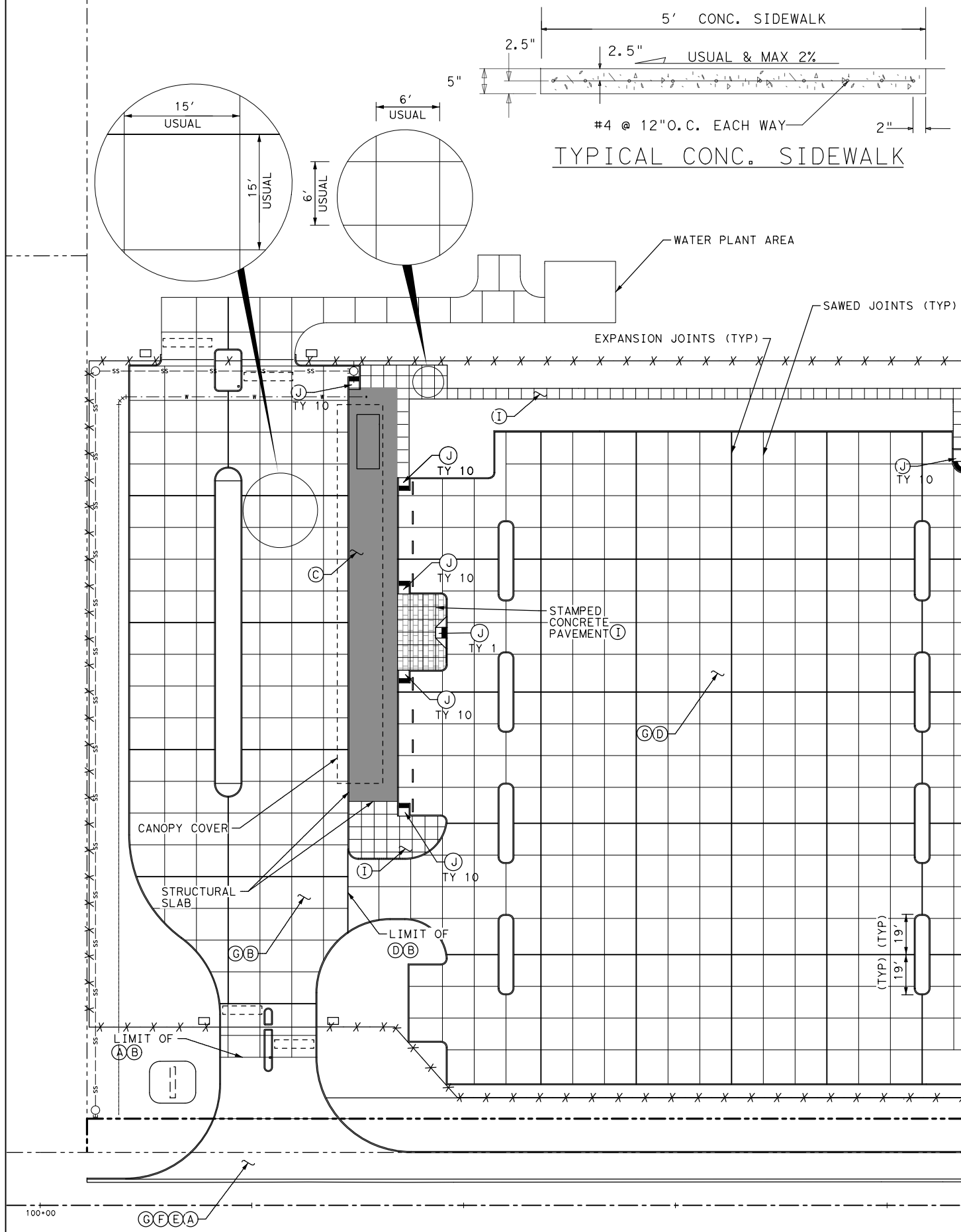

LEGEND

- (A) 10" CONT REINF CONCRETE PVMT
- (B) 9" JOINT REINF CONCRETE PVMT
- (C) 5" JOINT REINF CONCRETE PVMT
- (D) 6" JOINT REINF CONCRETE PVMT
- (E) 1" ASPH STAB BASE
- (F) 6" CEM TRT BASE
- (G) 6" LIME TREATED SUBGRADE
- (H) 6" CONC CURB (TYPE II) (MONO)
- (I) CONCRETE SIDEWALK
- (J) PEDESTRIAN RAMP AND LANDING OF THE TYPE SPECIFIED
- (K) BLOCK SOD
- STAMPED CONRETE PVMT
- STRUCTURAL SLAB

NOTES:

1. FOR DETAILS OF STRUCTURAL SLAB & PAVING CONNECTING TO STRUCTURAL SLAB, SEE SLAB TYPICAL DETAILS SHEETS.
2. FOR OTHER PAVEMENT DETAILS, SEE TxDOT STANDARD PAVEMENT DETAILS SHEETS.
3. SEE WATER PLAN DETAILS FOR FOUNDATION/ PAVEMENT DETAILS AT WATER PLANT AREA.
3. STAMPED CONCRETE PAVEMENT PATTERN AND COLOR TO BE DETERMINED BY OWNER.

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WESTPARK PARK & RIDE

JOINT LAYOUT PLAN

SHEET 1 OF 1

SECTION NO.	
DRAWN:	DATE:
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. 12

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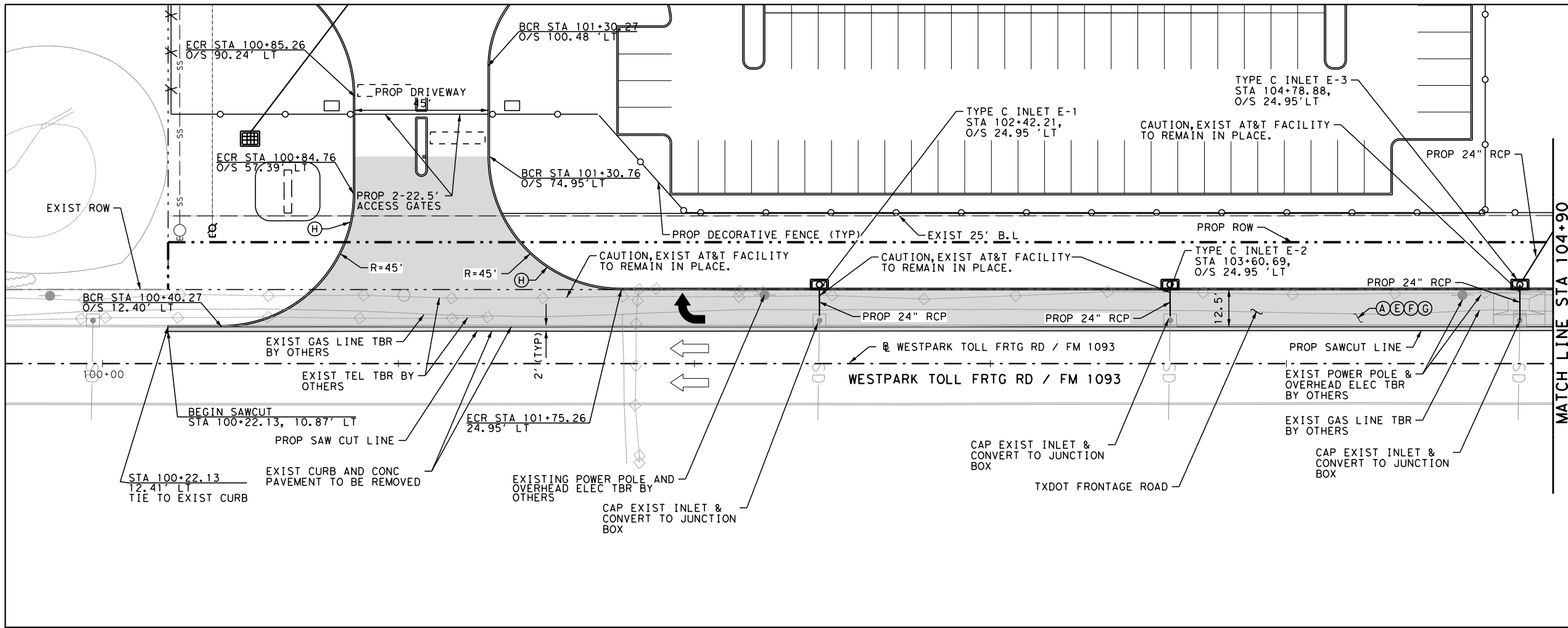

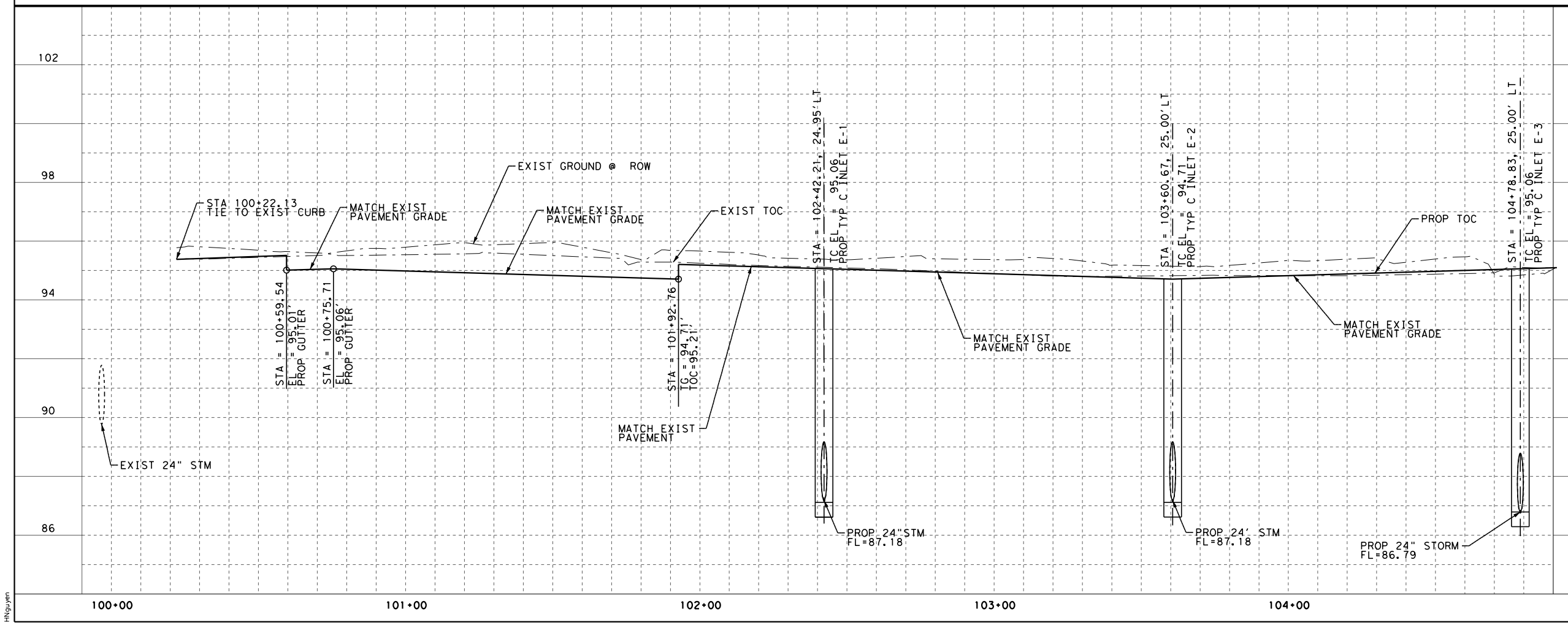

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FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE
FRTG RD RIGHT TURN LANE
PLAN & PROFILE
BEGIN TO STA 104+90

SHEET 1 OF 2

SECTION NO.	
DRAWN:	DATE:
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. 13

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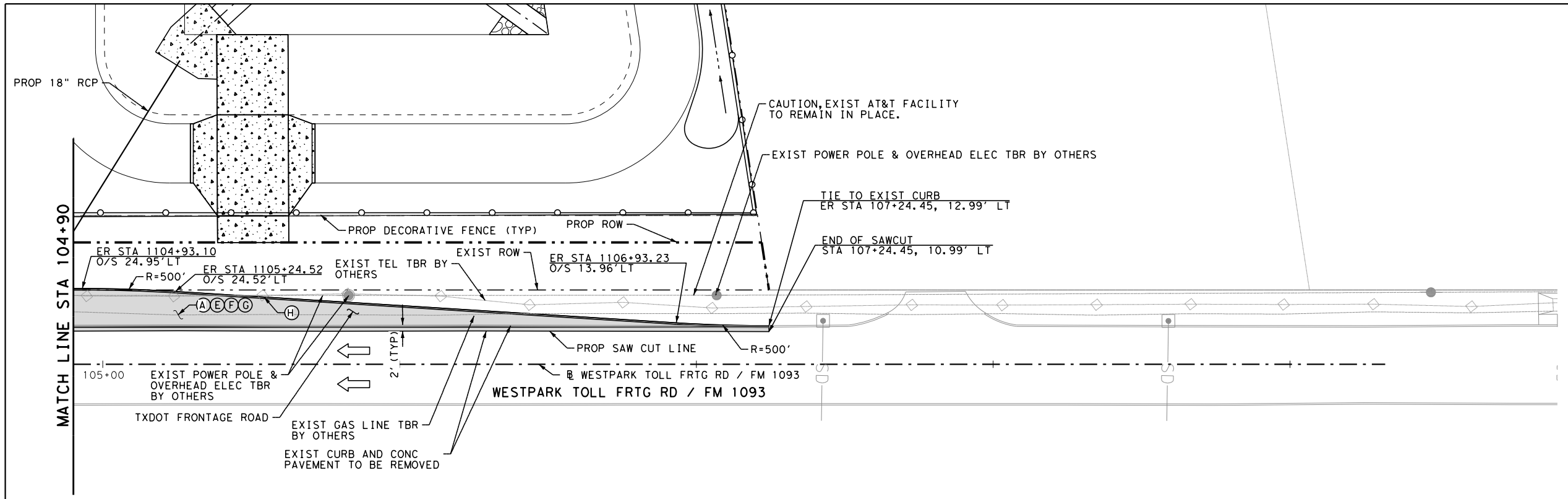

LEGEND

- (A) 10" CONT REINF CONCRETE PVMT
- (B) 9" JOINT REINF CONCRETE PVMT
- (C) 7" JOINT REINF CONCRETE PVMT
- (D) 6" JOINT REINF CONCRETE PVMT
- (E) 1" ASPH STAB BASE
- (F) 6" CEM TRT BASE
- (G) 6" LIME TREATED SUBGRADE
- (H) 6" CONC CURB (TYPE II) (MONO)
- (I) CONCRETE SIDEWALK
- (J) PEDESTRIAN RAMP AND LANDING OF THE TYPE SPECIFIED
- (K) BLOCK SOD

TBR TO BE RELOCATED

- G — EXIST GAS LINE
- OE — EXIST OVERHEAD ELEC
- T — EXIST TEL LINE
- SD — EXIST STORM SEWER
- CHAINLINK FENCE
- DECORATIVE FENCE
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- PROP CONC PAV (RIGHT TURN LANE)

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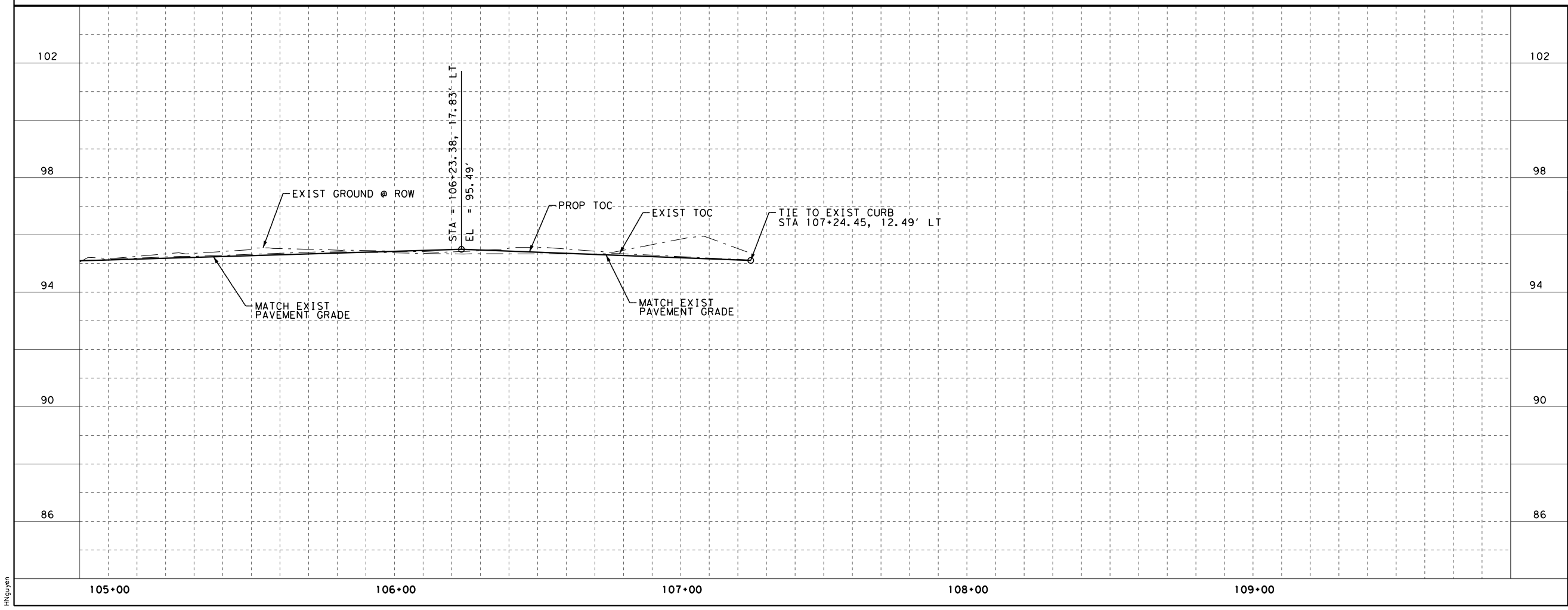

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WESTPARK PARK & RIDE
FRTG RD RIGHT TURN LANE
PLAN & PROFILE
STA 104+90 TO END

SHEET 2 OF 2

SECTION NO.	
DRAWN:	DATE:
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DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. 14

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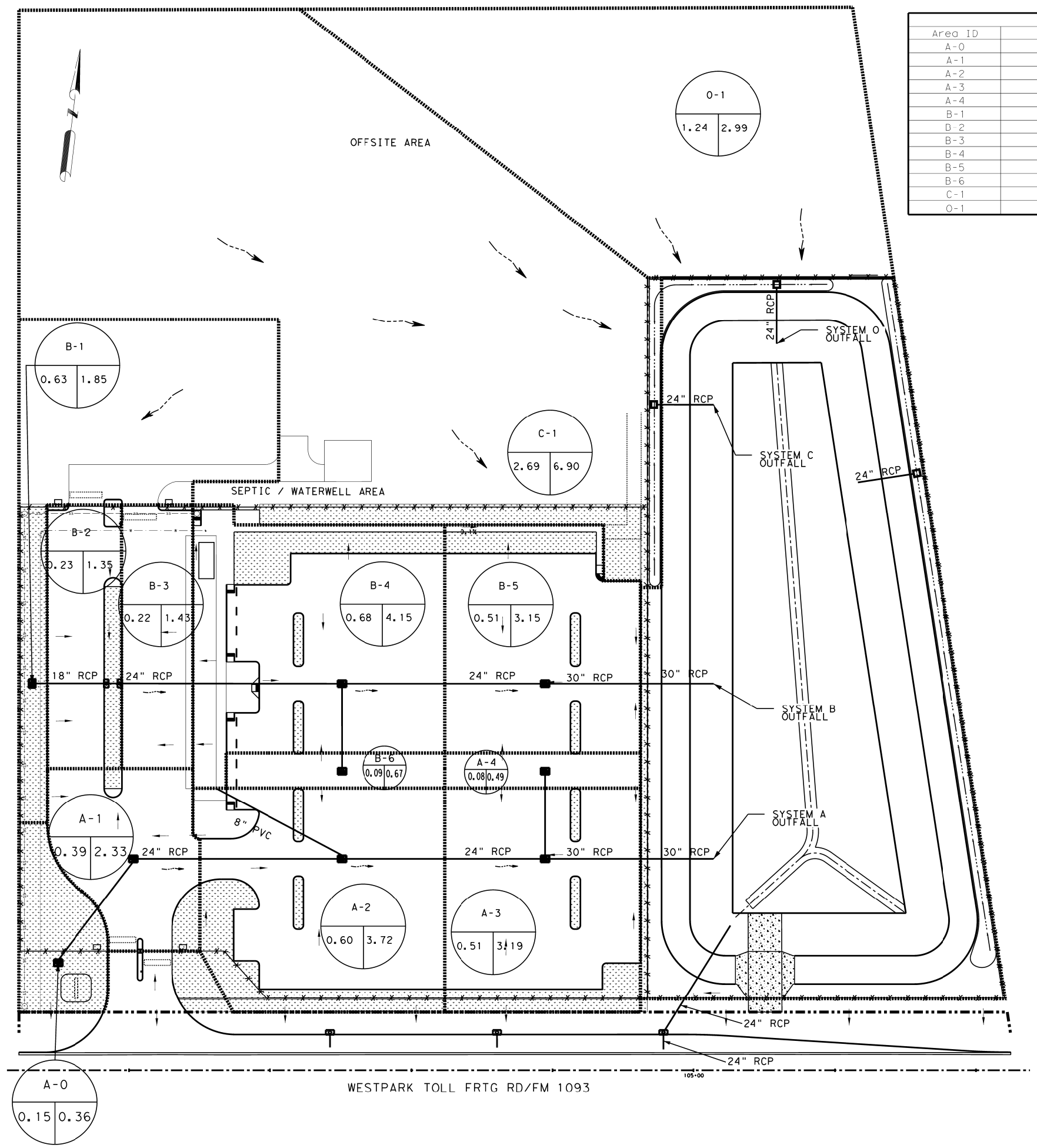

2 YEAR STORM DRAINAGE AREA TABLE

Area ID	Area	Grass Area	Conc Area	C	Tc	I	Q
A-0	0.15	0.15	0.00	0.35	10.00	6.88	0.36
A-1	0.39	0.06	0.33	0.86	10.00	6.88	2.33
A-2	0.60	0.06	0.54	0.90	10.00	6.88	3.72
A-3	0.51	0.04	0.47	0.91	10.00	6.88	3.19
A-4	0.08	0.00	0.08	0.96	12.00	6.32	0.49
B-1	0.63	0.56	0.08	0.42	10.00	6.88	1.85
B-2	0.23	0.04	0.19	0.86	10.00	6.88	1.35
B-3	0.22	0.00	0.22	0.96	10.00	6.88	1.43
B-4	0.68	0.07	0.60	0.89	10.00	6.88	4.15
B-5	0.51	0.05	0.46	0.91	10.00	6.88	3.15
B-6	0.09	0.00	0.09	0.96	11.00	6.59	0.57
C-1	2.69	2.59	0.10	0.37	10.00	6.88	6.90
O-1	1.24	1.24	0.00	0.35	10.00	6.88	2.99

LEGEND

- DRAINAGE AREA BOUNDARY
- GRATE INLET
- CURB INLET
- BACKSLOPE INTERCEPTOR
- FLOW DIRECTION
- GRASSY AREA
- STORM SEWER
- 100-YR FLOW ARROW
- DRAINAGE AREA ID (A-1)
- DRAINAGE AREA (AC) (DA)
- STORM RUNOFF (CFS) (CFS)

HORIZ. 0 40 80

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WESTPARK PARK & RIDE

2-YEAR STORM DRAINAGE AREA MAP

SHEET 1 OF 1

SECTION NO.	
DRAWN:	DATE:
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. 15

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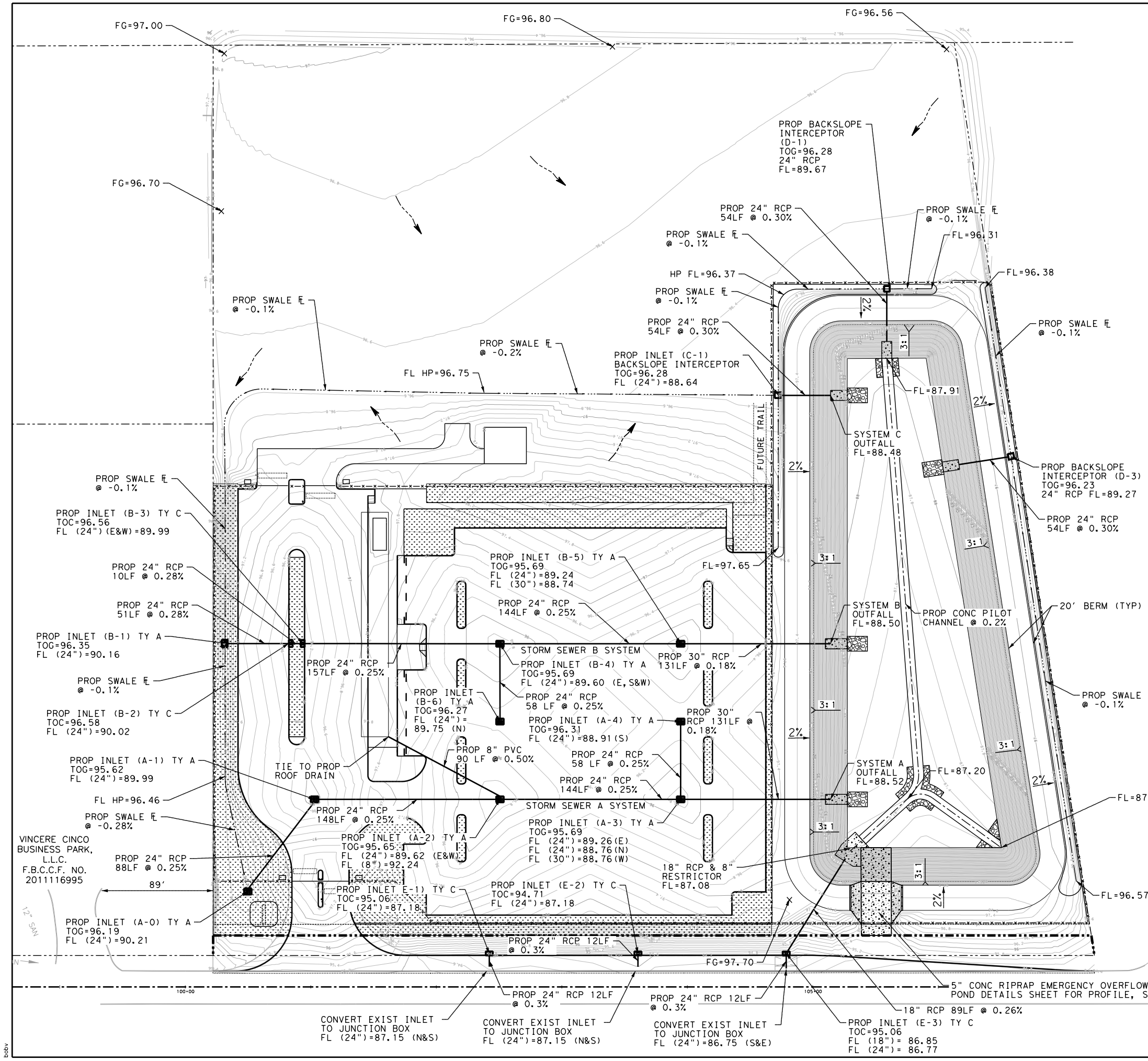

LEGEND

- GRATE INLET
- CURB INLET
- BACKSLOPE INTERCEPTOR
- SHEET FLOW DIRECTION
- GRASSY AREA
- STONE RIP RAP (18")
- CONCRETE RIP RAP (5")
- STORM SEWER
- TC — TOP OF CURB
- TG — TOP OF GRATE
- FL — FLOW LINE

NOTE:

1. SEE TxDOT DRAINAGE TABLE & CALCULATIONS SHEET FOR DETENTION POND SIZING.
2. SEE DETENTION POND DETAILS SHEET FOR DETENTION POND DRAINAGE DETAILS.
3. SEE STORM SEWER LATERALS SHEET FOR RESTRICTOR DETAILS.

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WESTPARK PARK & RIDE

STORM SEWER AND CONTOUR LAYOUT

SHEET 1 OF 1

SECTION NO.	
DRAWN: SKY	DATE:
CHECKED:	DATE:
DESIGN: SKY	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. 16

5/12/2022
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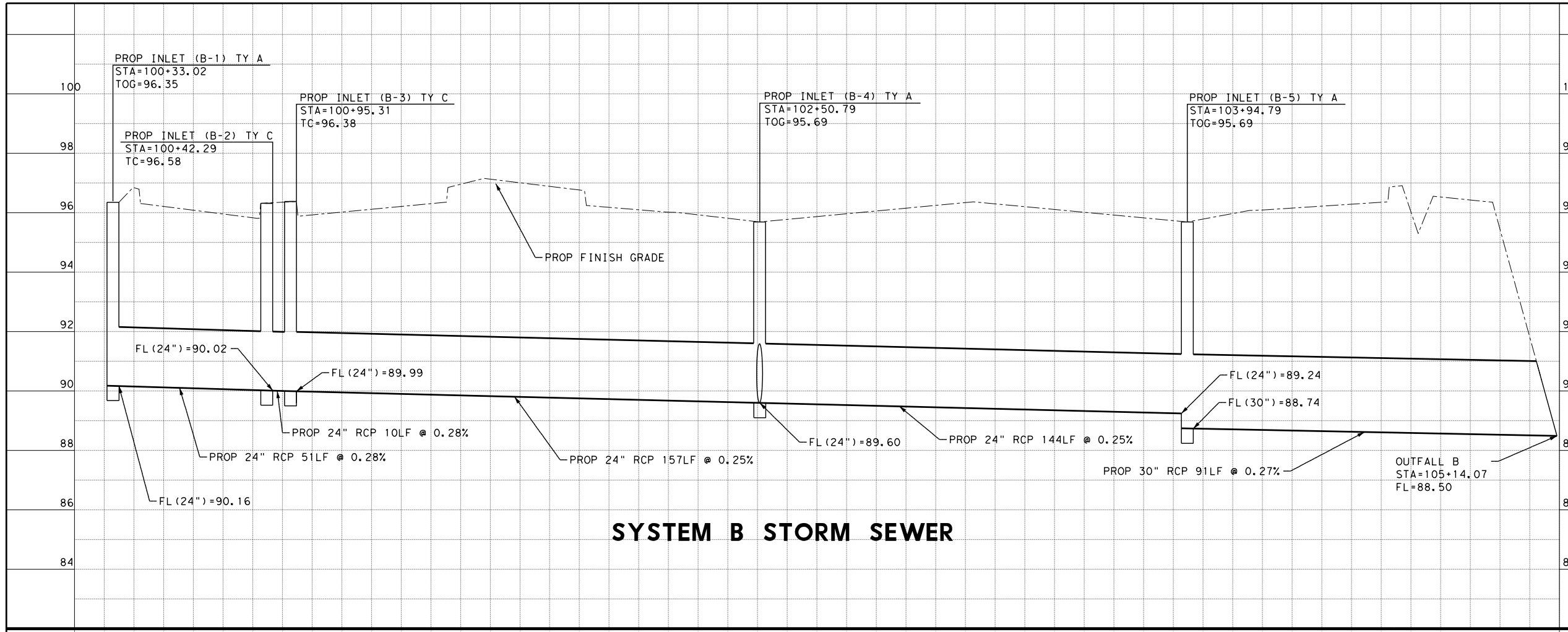
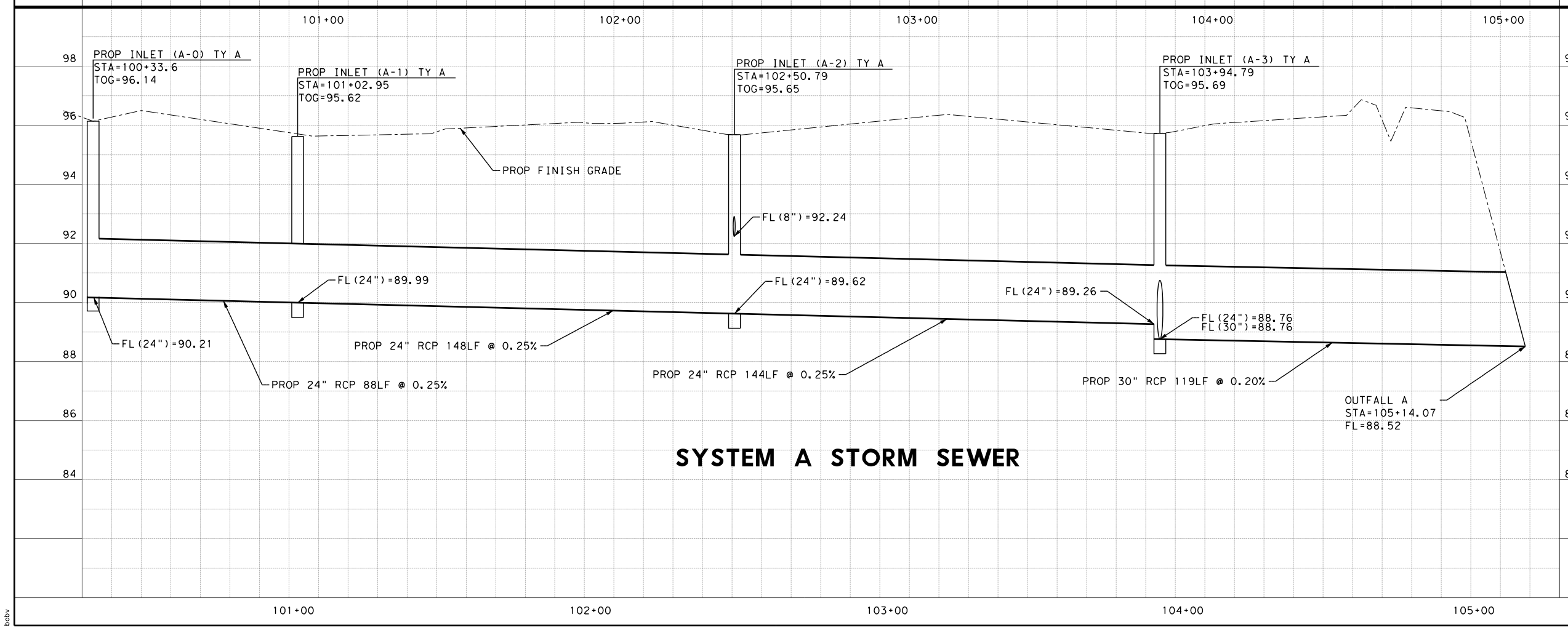
bdv



SYSTEM B STORM SEWER



SYSTEM A STORM SEWER

PROP TRAFFIC FLOW

PROP CONC PAV (RIGHT TURN LANE)

HORIZ. 0 20 40
VERT. 0 2 4
SCALE IN FEET

STATE OF TEXAS
HUNG H. NGUYEN
113148
LICENSED
PROFESSIONAL ENGINEER

5/12/2022

NO.	DATE	REVISION	APPROV.

IDCUS
Planners | Engineers | Construction Managers
IDCUS, Inc.
15915 Katy Freeway, Suite 300
Houston, Texas 77094
(713) 541-5591 Fax: (713) 541-3501
T.B.P.E.FIRM REGISTRATION NO. F-6825

STATE OF TEXAS FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

STORM SEWER PROFILES

SHEET 1 OF 1

SECTION NO.	
DRAWN:	DATE:
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. 17

5/12/2022
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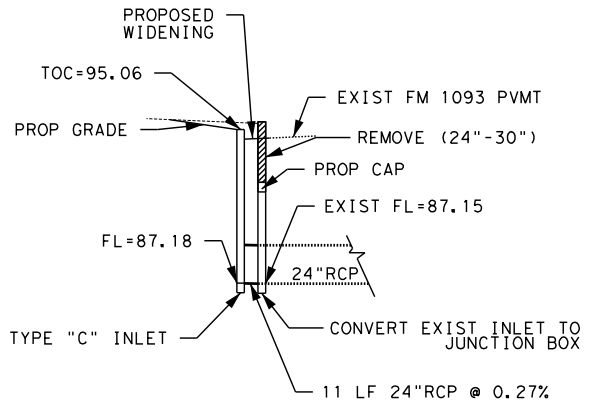
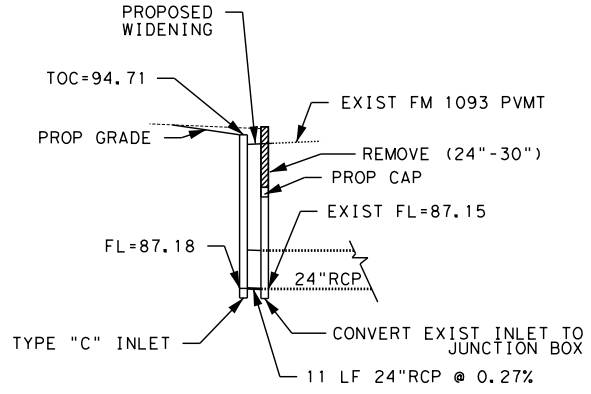
bdev



PROP INLET (E-1) AT STA 102+42.21

NTS



PROP INLET (E-2) AT STA 103+60.67

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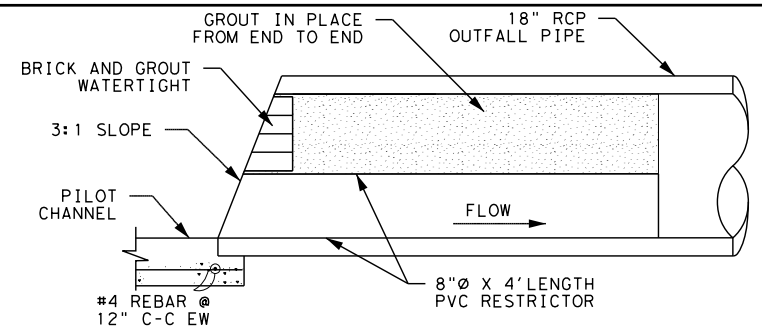

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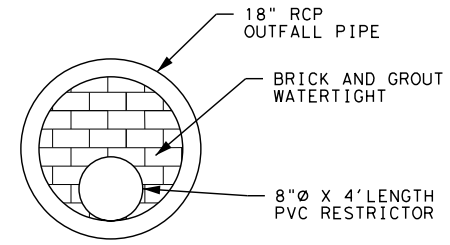
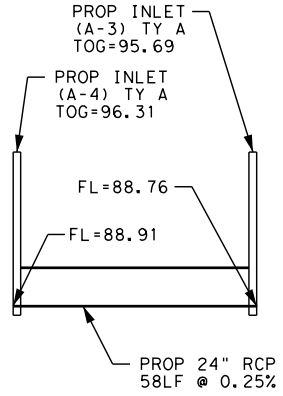


SECTION

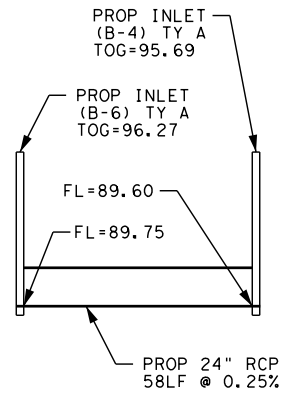
RESTRICTOR PIPE DETAIL



PROP INLET (A-4)TO (A-3)

SYSTEM A STORM SEWER

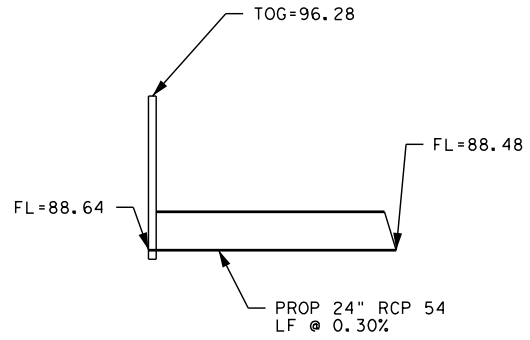
NTS



PROP INLET (B-6)TO (B-4)

SYSTEM B STORM SEWER

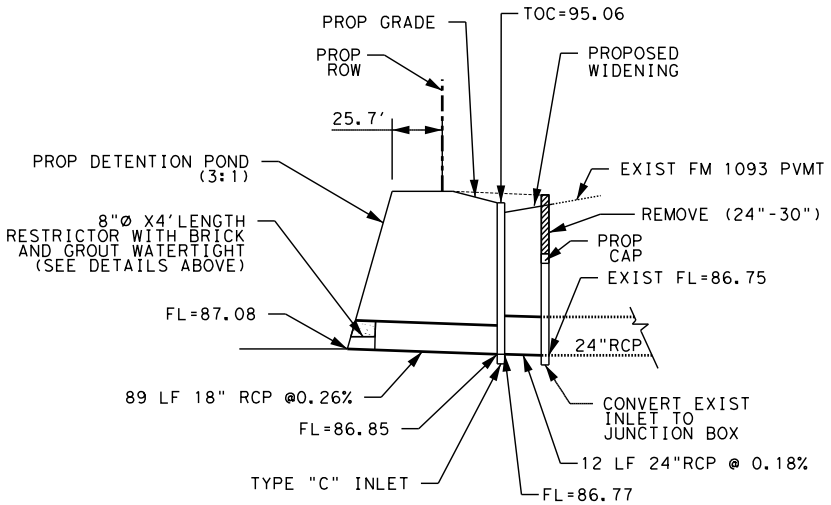
NTS



PROP INLET (C-1) AT STA 104+37.66

SYSTEM C STORM SEWER

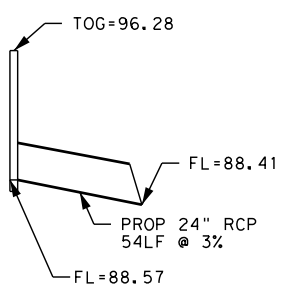
NTS



PROP INLET (E-3) AT STA 104+78.83

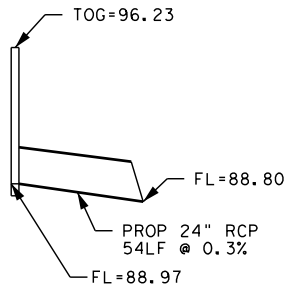
DETENTION POND OUTFALL DETAIL

NTS



PROP BACKSLOPE INTERCEPTOR (D-1)

NTS



PROP BACKSLOPE INTERCEPTOR (D-2)

NTS

LEGEND

CAP & CONVERT EXIST INLET TO JUNCTION BOX. SEE TxDOT MISCELLANEOUS SEWER DETAILS FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
HUNG H. NGUYEN
113148
LICENSED
PROFESSIONAL ENGINEER

5/12/2022

NO.	DATE	REVISION	APPROV.

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FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

STORM SEWER LATERALS

SHEET 1 OF 1

SECTION NO.	
DRAWN: SKY	DATE:
CHECKED:	DATE:
DESIGN: SKY	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. 18

5/12/2022
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bdv

WINSTORM OUTPUT-2 YR
SYSTEM A

inStorm (STORM DRAIN DESIGN) Version 3.05, Jan. 25, 2002
Run @ 7/23/2021 6:04:46 PM

PROJECT NAME : Westpark P&R
JOB NUMBER :
PROJECT DESCRIPTION : System A
DESIGN FREQUENCY : 2 Years
MEASUREMENT UNITS: ENGLISH

OUTPUT FOR DESIGN FREQUENCY of: 2 Years

Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
A-1	0.86	0.39	10.00	0.00	0.00	2.330	2.330
A-2	0.9	0.60	10.00	0.00	0.00	3.980	3.980
A-3	0.91	0.51	10.00	0.00	0.00	3.450	3.450
A-4	0.96	0.08	10.00	10.00	6.88	0.000	0.529
A-0	0.35	0.15	10.00	10.00	6.88	0.000	0.361

Sag Inlets Configuration Data.

Inlet ID	Inlet Type	Length/ Perim. (ft)	Grate Area (sf)	Left-Slope Long (%)	Left-Slope Trans (%)	Right-Slope Long (%)	Right-Slope Trans (%)	Gutter n	Gutter DeprW (ft)	Depth Allowed (ft)	Critic Elev. (ft)
A-1	Grate	20.00	25.00	0.50	2.00	0.50	2.00	0.014	n/a	0.50	95.62
A-2	Grate	20.00	25.00	0.50	2.00	0.50	2.00	0.014	n/a	0.50	95.65
A-3	Grate	20.00	25.00	0.50	2.00	0.50	2.00	0.014	n/a	0.50	95.69
A-4	Grate	20.00	25.00	0.50	2.00	0.50	2.00	0.014	n/a	0.50	96.31
A-0	Grate	20.00	25.00	0.50	2.00	0.50	2.00	0.014	n/a	0.50	96.00

Sag Inlets Computation Data.

Inlet ID	Inlet Type	Length (ft)	Grate Perim (ft)	Grate Area (sf)	Total Q (cfs)	Inlet Capacity (cfs)	Total Head (ft)	Ponded Width Left (ft)	Ponded Width Right (ft)
A-1	Grate	n/a	20.00	25.00	2.330	21.828	0.113	8.25	8.25
A-2	Grate	n/a	20.00	25.00	3.980	21.828	0.161	10.10	10.10
A-3	Grate	n/a	20.00	25.00	3.450	21.828	0.146	9.60	9.60
A-4	Grate	n/a	20.00	25.00	0.529	21.828	0.042	4.75	4.75
A-0	Grate	n/a	20.00	25.00	0.361	21.828	0.032	4.10	4.10

Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr.Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
A-1	Grate	0.350	0.15	10.90	6.62	2.330	0.00	2.677
A-2	Grate	0.350	0.15	11.73	6.39	6.310	0.00	6.646
A-3	Grate	0.562	0.23	12.36	6.23	9.760	0.00	10.566
A-4	Grate	0.960	0.08	10.00	6.88	0.000	0.00	0.529
A-0	Grate	0.350	0.15	10.00	6.88	0.000	0.00	0.361
OUT	Outlt	0.562	0.23	12.36	6.23	9.760	0.00	10.566

Conveyance Configuration Data

Run#	Node I.D. US	Node I.D. DS	Flowline Elev. US (ft)	Flowline Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	A-1	A-2	87.99	87.62	Circ 1	0.00	2.00	148.00	0.25	0.013
2	A-2	A-3	87.62	87.26	Circ 1	0.00	2.00	144.00	0.25	0.013
3	A-3	OUT	86.26	86.02	Circ 1	0.00	2.50	119.00	0.20	0.013
4	A-4	A-3	86.91	86.76	Circ 1	0.00	2.00	58.00	0.26	0.013
5	A-0	A-1	88.21	87.99	Circ 1	0.00	2.00	88.00	0.25	0.013

Conveyance Hydraulic Computations. Tailwater = 0.000 (ft)

Run#	Hydraulic Gradeline US Elev (ft)	Hydraulic Gradeline DS Elev (ft)	Depth Fr.Slope (%)	Depth Unif. (ft)	Depth Actual (ft)	Velocity Unif. (f/s)	Velocity Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	88.78	88.71	0.014	0.66	1.09	2.98	1.52	2.68	11.31	0.000
2	88.71	88.17	0.086	1.09	1.09	3.78	3.78	6.65	11.31	0.000
3	87.63	87.39	0.066	1.37	1.37	3.85	3.85	10.57	18.42	0.000
4	87.63	87.63	0.001	0.29	0.87	1.85	0.40	0.53	11.51	0.000
5	88.78	88.78	0.000	0.25	0.79	1.63	0.31	0.36	11.31	0.000

=END=

NORMAL TERMINATION OF WINSTORM.

Warning Messages for current project:

Runoff Frequency of: 2 Years
Tailwater set to uniform depth elevation = 87.39(ft)

WINSTORM OUTPUT-2 YR
SYSTEM B

WinStorm (STORM DRAIN DESIGN) Version 3.05, Jan. 25, 2002
Run @ 2/14/2022 8:07:13 PM

PROJECT NAME : Westpark P&R
JOB NUMBER :
PROJECT DESCRIPTION : System B
DESIGN FREQUENCY : 2 Years
MEASUREMENT UNITS: ENGLISH

OUTPUT FOR DESIGN FREQUENCY of: 2 Years

Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
B-1	0.42	0.63	10.00	10.00	0.00	1.850	1.850
B-2	0.86	0.23	10.00	0.00	0.00	1.350	1.350
B-3	0.96	0.22	10.00	0.00	0.00	1.430	1.430
B-4	0.89	0.68	10.00	0.00	0.00	4.150	4.150
B-5	0.91	0.51	10.00	0.00	0.00	3.150	3.150
B-6	0.96	0.09	10.00	10.00	0.00	0.570	0.570

Sag Inlets Configuration Data.

Inlet ID	Inlet Type	Length/ Perim. (ft)	Grate Area (sf)	Left-Slope Long (%)	Left-Slope Trans (%)	Right-Slope Long (%)	Right-Slope Trans (%)	Gutter n	Gutter DeprW (ft)	Depth Allowed (ft)	Critic Elev. (ft)
B-1	Grate	20.00	25.00	0.50	2.00	0.50	2.00	0.014	n/a	0.50	93.45
B-2	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	96.58
B-3	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	96.56
B-4	Grate	20.00	25.00	0.50	2.00	0.50	2.00	0.014	n/a	0.50	95.69
B-5	Grate	20.00	25.00	0.50	2.00	0.50	2.00	0.014	n/a	0.50	95.69
B-6	Grate	5.00	25.00	0.50	2.00	0.50	2.00	0.014	n/a	0.50	96.27

Sag Inlets Computation Data.

Inlet ID	Inlet Type	Length (ft)	Grate Perim (ft)	Grate Area (sf)	Total Q (cfs)	Inlet Capacity (cfs)	Total Head (ft)	Ponded Width Left (ft)	Ponded Width Right (ft)
B-1	Grate	n/a	20.00	25.00	1.850	21.828	0.096	7.60	7.60
B-2	Curb	5.00	n/a	n/a	1.350	6.261	0.180	6.75	6.75
B-3	Curb	5.00	n/a	n/a	1.430	6.261	0.187	6.90	6.90
B-4	Grate	n/a	20.00	25.00	4.150	21.828	0.165	10.25	10.25
B-5	Grate	n/a	20.00	25.00	3.150	21.828	0.138	9.25	9.25
B-6	Grate	n/a	5.00	25.00	0.570	5.457	0.111	4.85	4.85

Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr.Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
B-1	Grate	0.000	0.00	0.00	0.00	1.850	0.00	1.850
B-2	Curb	0.000	0.00	10.00	6.88	3.200	0.00	3.200
B-3	Curb	0.000	0.00	10.00	6.88	4.630	0.00	4.630
B-4	Grate	0.000	0.00	10.00	6.88	9.350	0.00	9.350
B-5	Grate	0.000	0.00	10.00	6.88	12.500	0.00	12.500
B-6	Grate	0.000	0.00	0.00	0.00	0.570	0.00	0.570
OUT	Outlt	0.000	0.00	10.00	6.88	12.500	0.00	12.500

Conveyance Configuration Data

Run#	Node I.D. US	Node I.D. DS	Flowline Elev. US (ft)	Flowline Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	B-1	B-2	89.16	89.03	Circ 1	0.00	1.50	48.00	0.27	0.013
2	B-2	B-3	89.03	88.99	Circ 1	0.00	1.50	10.00	0.40	0.013
3	B-3	B-4	87.99	87.60	Circ 1	0.00	2.00	157.00	0.25	0.013
4	B-4	B-5	87.60	87.24	Circ 1	0.00	2.00	144.00	0.25	0.013
5	B-5	OUT	86.24	86.00	Circ 1	0.00	2.50	91.00	0.26	0.013
6	B-6	B-4	87.75	87.60	Circ 1	0.00	2.00	58.00	0.26	0.013

Conveyance Hydraulic Computations. Tailwater = 0.000 (ft)

Run#	Hydraulic Gradeline US Elev (ft)	Hydraulic Gradeline DS Elev (ft)	Depth Fr.Slope (%)	Depth Unif. (ft)	Depth Actual (ft)	Velocity Unif. (f/s)	Velocity Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	89.82	89.77	0.031	0.60	0.74	2.82	2.14	1.85	5.47	0.000
2	89.77	89.67	0.093	0.74	0.74	3.70	3.70	3.20	6.64	0.000
3	89.07	88.98	0.042	0.89	1.38	3.42	2.01	4.63	11.28	0.000
4	88.98	88.33	0.171	1.38	1.38	4.06	4.06	9.35	11.31	0.000
5	87.63	87.39	0.093	1.39	1.39	4.47	4.47	12.50	21.07	0.000
6	88.98	88.98	0.001	0.30	1.38	1.89	0.25	0.57	11.51	0.000

=END=

NORMAL TERMINATION OF WINSTORM.

Warning Messages for current project:

Runoff Frequency of: 2 Years
Tailwater set to uniform depth elevation = 87.39(ft)

STATE OF TEXAS
HUNG H. NGUYEN
113148
LICENSED
PROFESSIONAL ENGINEER
5/12/2022

NO.	DATE	REVISION	APPROV.

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T.B.P.E.FIRM REGISTRATION NO. F-6825

STATE OF TEXAS
FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

WINSTORM OUTPUT
2 YEAR

SHEET 1 OF 2

SECTION NO.	
DRAWN: SKY	DATE:
CHECKED:	DATE:
DESIGN: SKY	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. 19

5/12/2022
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bdby

WINSTORM OUTPUT-2 YR
SYSTEM C

WinStorm (STORM DRAIN DESIGN) Version 3.05, Jan. 25, 2002
Run @ 2/14/2022 8:12:02 PM

PROJECT NAME : Untitled
JOB NUMBER :
PROJECT DESCRIPTION : Westpark P&R System C
DESIGN FREQUENCY : 2 Years
MEASUREMENT UNITS: ENGLISH

OUTPUT FOR DESIGN FREQUENCY of: 2 Years

Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
C-1	0.37	2.69	10.00	10.00	0.00	6.900	6.900

Sag Inlets Configuration Data.

Inlet ID	Inlet Type	Length/ Perim. (ft)	Grate Area (sf)	Left-Slope Long (%)	Left-Slope Trans (%)	Right-Slope Long (%)	Right-Slope Trans (%)	Gutter n	Gutter DeprW (ft)	Depth Allowed (ft)	Critic Elev. (ft)
C-1	Grate	20.00	25.00	50.00	100.0	0.50	1.00	0.015	n/a	0.50	95.24

Sag Inlets Computation Data.

Inlet ID	Inlet Type	Length (ft)	Grate Perim (ft)	Grate Area (sf)	Total Q (cfs)	Inlet Capacity (cfs)	Total Head (ft)	Ponded Width Left (ft)	Ponded Width Right (ft)
C-1	Grate	n/a	20.00	25.00	6.900	21.828	0.232	0.47	19.70

Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr.Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
C-1	Grate	0.000	0.00	0.00	0.00	6.900	0.00	6.900
OUT	Outlt	0.000	0.00	0.00	0.00	6.900	0.00	6.900

Conveyance Configuration Data

Run#	Node I.D. US	Node I.D. DS	Flowline Elev. US (ft)	Flowline Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	C-1	OUT	86.64	86.48	Circ 1	0.00	2.00	79.00	0.20	0.013

Conveyance Hydraulic Computations. Tailwater = 0.000 (ft)

Run#	Hydraulic Gradeline US Elev (ft)	Hydraulic Gradeline DS Elev (ft)	Fr.Slope (%)	Depth Unif. (ft)	Depth Actual (ft)	Velocity Unif. (f/s)	Velocity Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	87.86	87.70	0.093	1.22	1.22	3.44	3.44	6.90	10.18	0.000
				END						

NORMAL TERMINATION OF WINSTORM.

Warning Messages for current project:

Runoff Frequency of: 2 Years
Computed right ponded width exceeds allowable width at inlet Id= C-1
Computed left ponded width exceeds allowable width at inlet Id= C-1
Tailwater set to uniform depth elevation = 87.70(ft)

WINSTORM OUTPUT-2 YR
SYSTEM O

WinStorm (STORM DRAIN DESIGN) Version 3.05, Jan. 25, 2002
Run @ 2/14/2022 8:32:05 PM

PROJECT NAME : Westpark P&R
JOB NUMBER : 05
PROJECT DESCRIPTION : System O
DESIGN FREQUENCY : 2 Years
MEASUREMENT UNITS: ENGLISH

OUTPUT FOR DESIGN FREQUENCY of: 2 Years

Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
O-1	0.35	1.24	10.00	10.00	0.00	2.990	2.990

Sag Inlets Configuration Data.

Inlet ID	Inlet Type	Length/ Perim. (ft)	Grate Area (sf)	Left-Slope Long (%)	Left-Slope Trans (%)	Right-Slope Long (%)	Right-Slope Trans (%)	Gutter n	Gutter DeprW (ft)	Depth Allowed (ft)	Critic Elev. (ft)
O-1	Grate	20.00	25.00	0.50	2.00	0.50	2.00	0.014	n/a	0.50	94.17

Sag Inlets Computation Data.

Inlet ID	Inlet Type	Length (ft)	Grate Perim (ft)	Grate Area (sf)	Total Q (cfs)	Inlet Capacity (cfs)	Total Head (ft)	Ponded Width Left (ft)	Ponded Width Right (ft)
O-1	Grate	n/a	20.00	25.00	2.990	21.828	0.133	9.10	9.10

Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr.Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
O-1	Grate	0.000	0.00	0.00	0.00	2.990	0.00	2.990
OUT	Outlt	0.000	0.00	0.00	0.00	2.990	0.00	2.990

Conveyance Configuration Data

Run#	Node I.D. US	Node I.D. DS	Flowline Elev. US (ft)	Flowline Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	O-1	OUT	87.67	86.48	Circ 1	0.00	2.00	39.00	3.05	0.013

Conveyance Hydraulic Computations. Tailwater = 0.000 (ft)

Run#	Hydraulic Gradeline US Elev (ft)	Hydraulic Gradeline DS Elev (ft)	Fr.Slope (%)	Depth Unif. (ft)	Depth Actual (ft)	Velocity Unif. (f/s)	Velocity Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1*	88.04	86.85	0.017	0.37	0.37	7.42	7.42	2.99	39.53	0.000
				END						

* Super critical flow.

NORMAL TERMINATION OF WINSTORM.

Warning Messages for current project:

Runoff Frequency of: 2 Years
Tailwater set to uniform depth elevation = 86.85(ft)

STATE OF TEXAS
HUNG H. NGUYEN
113148
LICENSED
PROFESSIONAL ENGINEER

5/12/2022

NO.	DATE	REVISION	APPROV.

IDCUS
Planners | Engineers | Construction Managers
IDCUS, Inc.
15915 Katy Freeway, suite 300
Houston, Texas 77094
(713) 541-5591 Fax (713) 541-3501
T.B.P.E.FIRM REGISTRATION NO. F-6825

FORT BEND COUNTY
PRECINCT 3

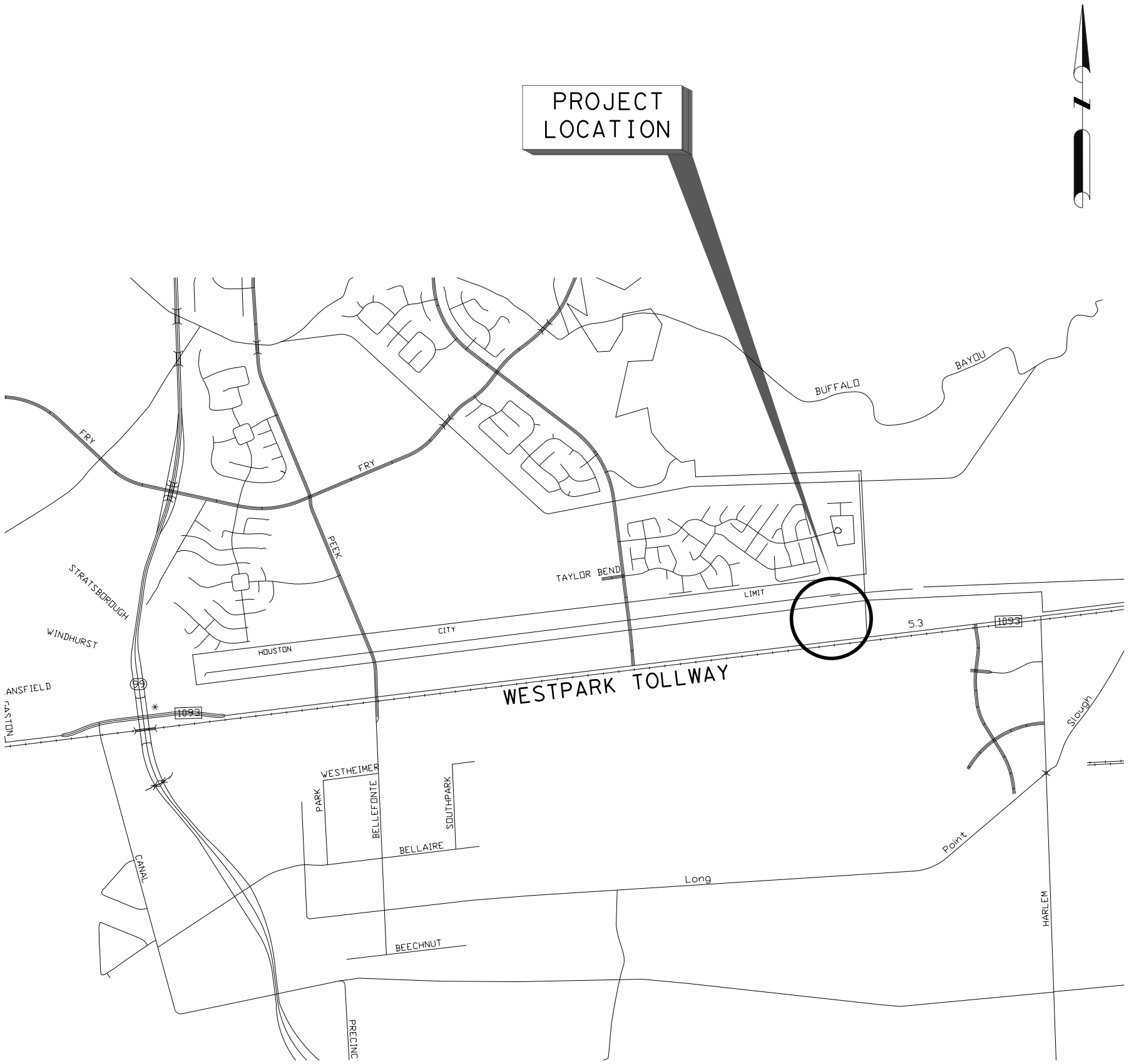
WESTPARK PARK & RIDE

WINSTORM OUTPUT
2 YEAR

SHEET 2 OF 2

SECTION NO.	
DRAWN: SKY	DATE:
CHECKED:	DATE:
DESIGN: SKY	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. 20

5/12/2022
\\email\Transportation\FORT BEND COUNTY\WESTPARK P&R\CADD\DRAINAGE\WPK-CIV-WINO2.dgn
bdbv



SCOPE OF WORK

CONSTRUCTION OF A NEW PARK & RIDE FACILITY CONSISTING OF GRADING, INLETS, STORM SEWER, DETENTION PONDS, STRUCTURES, ILLUMINATION, CRCP PVMT, CEMENT TREATED BASE, PAVEMENT MARKINGS, LANDSCAPING, ETC

CONSTRUCTION METHODS:

____ FIELD CHECK SOUND WALL AS PANELS ARE PLACED
____ MONITOR NOISE LEVELS DURING EVENING HOURS
____ FLAGGING
_X_ FENCING
____ BERM
_X_ STAKING
____ MATS
____ COFFERDAMS
____ OTHER

SPECIAL WORK ZONES:

N/A WILDLIFE MANAGEMENT ZONE
N/A SEASONAL CONSTRUCTION WINDOW

DATES:_____

ADDRESSES:

U.S. FISH & WILDLIFE SERVICE
17629 EL CAMINO REAL SUITE 211
HOUSTON, TX. 77058
(281)286-8282

COMMANDER (OB)
EIGHTH COAST GUARD DISTRICT
HALE BOGGS FEDERAL BUILDINGS
500 POYDRAS
NEW ORLEANS. LA 70130

MR. FRED ANTHAMATTEN
U.S. ARMY CORPS OF ENGINEERS
GALVESTON DISTRICT, REGULATORY BRANCH
COMPLIANCE AND SPECIAL ACTIONS SECTION
PO BOX 1229
GALVESTON, TX 77553-1229

CHRISTINE BERGREN
TEXAS DEPARTMENT OF TRANSPORTATION
HOUSTON DISTRICT PROJECT DEVELOPMENT
P.O. BOX 1386
HOUSTON , TEXAS 77251-1386
TELEPHONE 713-802-5249
FAX 713-802-5350

Reviewed by:_____,2014

Project Environmental Coordinator

Reviewed by:_____,2014

Environmental Supervisor

Texas Department of Transportation
Houston District

ENVIRONMENTAL PERMITS ISSUES AND COMMITMENTS

(EPIC)

FILE:	DN:	CK:	DW:	CK:
© TxDOT 2010	DIST	FED REG	PROJECT NO.	SHEET
REVISIONS: 9/13 Edit text 12/13 remve name 7/14 Add name	HOU	6		21
	COUNTY	CONTROL	SECT	JOB	HIGHWAY

ENVIRONMENTAL ISSUES

ENDANGERED SPECIES/WILDLIFE:

DO NOT DISTURB OR HARM ENDANGERED SPECIES AND/OR THEIR HABITAT IF LISTED BELOW. VERIFY EXISTENCE OF HABITAT WITH AREA ENGINEER BEFORE CLEARING TREES. MINIMIZE DISTURBANCE TO AREA WILDLIFE

☐ BRIDGE/CULVERT WORK REQUIRES INSPECTION FOR NESTING BIRDS BY ENV PERSONNEL PRIOR TO WORK

SPECIES IN PROJECT AREA	HABITAT	SPECIAL NOTES

COMMENTS
NOT APPLICABLE

CULTURAL RESOURCES (HISTORICAL/ARCHEOLOGICAL):

KNOWN ITEMS OF HIST/ARCHEOLOGICAL INTEREST IN PROJECT AREA :

____ BUILDINGS
____ BRIDGES
____ CEMETERIES
____ ARCHEOLOGICAL SITES
____ HISTORIC MARKERS/PLAQUES
____ OTHER

IF ADDITIONAL HISTORICAL OR ARCHEOLOGICAL SITES ARE DISCOVERED DURING CONSTRUCTION IMMEDIATELY NOTIFY AREA ENGINEER AND THE DISTRICT ENVIRONMENTAL SECTION.

CULTURAL RESOURCE AREAS OF CONCERN

Station Number - Lt./Rt. (C/L or B/L)	Commitment/Avoidance

COMMENTS
NOT APPLICABLE

NOISE:

NOISE LEVELS IN RESIDENTIAL AREAS AND OTHER SENSITIVE AREAS SHOULD NOT EXCEED THE MAXIMUM ALLOWABLE FOR DAY/NIGHT AS SHOWN IN THE GENERAL NOTES OR AS DIRECTED BY THE ENGINEER, AVOID ROUTING OF CONSTRUCTION EQUIPMENT THROUGH RESIDENTIAL OR SENSITIVE AREAS IF LISTED BELOW.

COMMENTS
NOT APPLICABLE

SOUNDWALLS:

DO NOT LEAVE GAPS BETWEEN PANELS OR POSTS IN NOISE WALLS. IF NEOPRENE PADS ARE REQUIRED, ENSURE THAT THEY ARE PLACED BETWEEN PANELS. DO NOT DAMAGE OR CAUSE EROSION TO ADJACENT PROPERTIES. ENSURE COLOR CONTINUITY FOR CONCRETE MIX THROUGHOUT CONSTRUCTION.

(IF APPLICABLE: If the project has proposed noise walls, leave in.)

COMMENTS
NOT APPLICABLE

WATER QUALITY:

__X__ REFER TO STORMWATER POLLUTION PREVENTION PLAN SHEET
__X__ MINIMIZE SEDIMENT RUNOFF
__X__ MINIMIZE POLLUTION
__X__ CONTAIN & PROPERLY DISPOSE OF POTENTIALLY HAZARDOUS SUBSTANCES.
__X__ ALL WORK SHOULD BE PERFORMED ACCORDING TO ALL APPLICABLE STATUTES.

COMMENTS
If special water quality issues have been addressed in the environmental document, the conditions should be entered here

WETLANDS/WATERS OF U.S.:

NO FILLING, DREDGING OR EXCAVATING IN ANY WATERBODIES, RIVERS, CREEKS, STREAMS OR WET AREAS UNLESS SPECIFICALLY ALLOWED IN UNITED STATES CORPS OF ENGINEERS PERMIT OR APPROVED BY AREA ENGINEER. CONTRACTOR MUST OBTAIN ANY PERMIT FOR TEMPORARY FILL DUE TO CONSTRUCTION METHODS OTHER THAN THOSE SPECIFIED IN PLANS. CONTRACTOR MUST COORDINATE ANY PERMITS WITH THE TXDOT DISTRICT ENVIRONMENTAL SECTION. DO NOT REMOVE AND PLACE ANY FILL MATERIAL, CONSTRUCTION DEBRIS, ETC. ON ADJACENT OR OTHER PROPERTIES WITHOUT PRIOR PERMISSION OF AREA ENGINEER.

___ U.S. CORPS OF ENGINEERS PERMIT
___ U.S. COAST GUARD PERMIT
___ BRIDGE/WATERWAY LOCATION
___ KEEP BRIDGE CLEARANCE SAME AS EXISTING

CONTRACTOR MUST NOTIFY:

____Must notify MS4 Operator(s) of discharges from this project
____U.S. COAST GUARD 30 DAYS PRIOR TO BEGINNING CONSTRUCTION
__X__DISTRICT ENVIRONMENTAL SECTION PRIOR TO BEGINNING CONSTRUCTION
____U.S. COAST GUARD 2 WEEKS PRIOR TO CHANNEL CLOSURES
____U.S. COAST GUARD 1 WEEK PRIOR TO CHANNEL CLOSURES
____U.S. COAST GUARD 48 HRS PRIOR TO CHANNEL CLOSURES

COMMENTS
NOT APPLICABLE

VEGETATION:

LIMIT REMOVAL OF NATIVE VEGETATION WHEN POSSIBLE. NOTIFY TXDOT DISTRICT ENVIRONMENTAL SECTION 72 HOURS BEFORE REMOVAL OF TREES GREATER THAN 5"/120 mm DIAMETER THAT ARE NOT DESIGNATED ON PLANS. DO NOT REMOVE TREES NEXT TO RIVERS, CREEKS, OR STREAMS UNLESS APPROVED BY THE TXDOT DISTRICT ENVIRONMENTAL SECTION. FLAGGING SHALL BE USED BY CONTRACTOR TO DESIGNATE TREES TO BE REMOVED. APPROVAL FOR REMOVAL OF TREES SHALL BE OBTAINED BY DISTRICT ENVIRONMENTAL SECTION.

WOODY VEGETATION MUST BE INSPECTED FOR BIRD NESTS BY ENV PERSONNEL PRIOR TO REMOVAL BETWEEN MARCH 1 AND AUGUST 31.

VEGETATIVE AREAS OF CONCERN

Station Number - Lt./Rt. (C/L or B/L)	Commitment/Avoidance

COMMENTS
NOT APPLICABLE

BENEFICIAL LANDSCAPING/INVASIVE SPECIES/VEGETATION MANAGEMENT

__X__ MINIMIZE DISTURBANCE TO NATURAL AREAS
__X__ RECYCLE TRIMMINGS W/LOCAL MUNICIPALITY RECYCLING PROGRAM
____ REPLANT WITH NATIVE TREES/SHRUBS/VEGETATION
__X__ MINIMIZE THE USE OF HERBICIDES, PESTICIDES AND FERTILIZERS
__X__ MAINTAIN SWP3 STRUCTURES
____ FIND LOCAL RECIPIENT FOR NATIVE PLANTS THAT CAN NOT BE REPLANTED ON-SITE

COMMENTS
NOT APPLICABLE

HAZARDOUS MATERIAL:

☒ APPLICABLE TO PROPERTY
☐ NOT APPLICABLE TO PROPERTY
☐ INSPECT BRIDGE/STRUCTURE FOR ASBESTOS PRIOR TO WORK/DEMOLITION

CONDUCT AND DOCUMENT ALL OF THE FOLLOWING:

CONDUCT SAFETY MEETING PRIOR TO CONSTRUCTION (MAKING WORKERS AWARE OF THE POTENTIAL HAZARDS THEY MAY ENCOUNTER);

READ AND FOLLOW THE HEALTH AND SAFETY PLAN AS SHOWN IN THE SPECIFICATIONS PRIOR TO CONSTRUCTION; AND

CONTACT/COORDINATE WITH THE APPROPRIATE AGENCY 7 TO 10 DAYS PRIOR TO CONSTRUCTION.

CONTACT AREA ENGINEER IF YOU DETECT:

DEAD OR DISTRESSED VEGETATION
TRASH PILES, DRUMS, CANISTERS, BARRELS, ETC.
UNDESIRABLE SMELLS OR ODORS
LEACHING OR SEEPAGE OF SUBSTANCES

HAZARDOUS MATERIAL AREAS OF CONCERN

Station Number - Lt./Rt. (C/L or B/L)	Commitment/Avoidance

COMMENTS
Check appropriate box.

TRAFFIC CONTROL:

☐ CONSTRAINTS ON TRAFFIC CONTROL, SEE COMMENTS BELOW

The environmental document and the summary of environmental permits, issues and commitments have been reviewed for this project.

Reviewed by:_____, 2014

Project Engineer

Reviewed by:_____, 2014

Project Environmental Coordinator

Texas Department of Transportation
Houston District

ENVIRONMENTAL PERMITS ISSUES AND COMMITMENTS

(EPIC)

FILE:	DN:	CK:	DW:	CK:	
© TxDOT 2010	DIST	FED REG	PROJECT NO.		SHEET
REVISIONS: 4/08 Bird nests & asbestos 9/13 edit txt 7/14 add "invasive"	HOU	6			22
	COUNTY		CONTROL	SECT	JOB	HIGHWAY

SITE DESCRIPTION

PROJECT LIMITS: The project locates on the Westprk Tollway westbound frontage road between Mason Road and Grand Mission Blvd.

PROJECT DESCRIPTION: CONSTRUCTION OF A NEW PARK & RIDE FACILITY CONSISTING OF GRADING, INLETS, STORM SEWER, DETENTION PONDS, STRUCTURES, ILLUMINATION, CRCP PVMT, CEMENT TREATED BASE, PAVEMENT MARKINGS, LANDSCAPING, ETC

MAJOR SOIL DISTURBING ACTIVITIES:

- DETENTION POND
- GRADING PARKING AREA

TOTAL PROJECT AREA: 10.782 ACRES

TOTAL AREA TO BE DISTURBED: 10.782 ACRES

WEIGHTED RUNOFF COEFFICIENT:
(AFTER CONSTRUCTION): 0.7

EXISTING CONDITION OF SOIL & VEGETATIVE COVER AND % OF EXISTING VEGETATIVE COVER:

CURRENTLY, THE MAJORITY OF THE HERBACEOUS VEGETATION ON THE SITE IS BAHIA GRASS (Paspalum notatum); WHILE THE MAJORITY OF THE SHRUB AND TREE VEGETATION IS YAUPON HOLLY (Ilex vomitoria) AND CHINESE TALLOW (Triadica sebiferia) RESPECTIVELY.

NAME OF RECEIVING WATERS:

OUTFALL TO CLODINE DITCH THEN TO BUFFALO BAYOU, SEE FLOOD INSURANCE RATE MAP NUMBER 48157C0105 J

EROSION AND SEDIMENT CONTROLS

SOIL STABILIZATION PRACTICES:

- ____ TEMPORARY SEEDING
- X PERMANENT PLANTING, SODDING, OR SEEDING
- X MULCHING
- ____ SOIL RETENTION BLANKET
- ____ BUFFER ZONES
- ____ PRESERVATION OF NATURAL RESOURCES

OTHER:

STRUCTURAL PRACTICES:

- X SILT FENCES
- ____ HAY BALES
- ____ ROCK BERMS
- ____ DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
- ____ DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
- ____ DIVERSION DIKE AND SWALE COMBINATIONS
- ____ PIPE SLOPE DRAINS
- ____ PAVED FLUMES
- ____ ROCK BEDDING AT CONSTRUCTION EXIT
- ____ TIMBER MATTING AT CONSTRUCTION EXIT
- ____ CHANNEL LINERS
- ____ SEDIMENT TRAPS
- ____ SEDIMENT BASINS
- ____ STORM INLET SEDIMENT TRAP
- X STONE OUTLET STRUCTURES
- X CURBS AND GUTTERS
- X STORM SEWERS
- ____ VELOCITY CONTROL DEVICES
- ____ EROSION CONTROL LOGS

OTHER:

NARRATIVE - SEQUENCE OF CONSTRUCTION (STORM WATER MANAGEMENT) ACTIVITIES:

1. INSTALL SEDIMENT CONTROL FENCES AND CONSTRUCTION EXISTS, AS SHOWN ON THE PLANS.

2. BEGIN GRADING OPERATIONS, TEMPORARILY SOD DISTURBED AREAS AS NEEDED.

3. CONSTRUCT EMBANKMENTS, SUBGRADE, BASE AND PAVEMENT SECTIONS, PERMENANTLY SOD DISTRUBED AREAS AS REQUIRED.

4. REPEAT STEPS 1-3, AS REQUIRED, AS CONSTRUCTION PROGRESSES.

5. WHEN ALL CONSTRUCTION ACTIVITY IS COMPLETE AND SITE IS STABILIZED AND APPROVED BY THE ENGINEER, REMOVE ALL TEMPORARY STRUCTURAL CONTROLS AND RESOD ANY AREAS DISTRURBED BY THEIR REMOVAL.

STORM WATER MANAGEMENT:

STORM DRAINAGE WILL BE PROVIDED BY GRASS "V" DITCHES, OR SWALES, INLETS OR STORM DRAINS. THIS SYSTEM WILL CARRY DRAINAGE WITHIN THE RIGHT OF WAY TO DETENTION PONDS. SOIL STABLIZATION AND VARIOUS STRUCTURAL PRACTICES WILL BE APPLIED TO ALL PROJECT AREA RUNOFF ENTERING THE CROSS DRAINAGE SYSTEM.

OTHER EROSION AND SEDIMENT CONTROLS:

MAINTENANCE: All erosion and sediment controls will be maintained in good working order. If a repair is necessary it will be done at the earliest date possible, but no later than 7 calender days after the surrounding exposed ground has dried sufficiently to prevent further damage from heavy equipment. The area adjacent to creeks and drainageways shall have priority followed by devices protecting storm sewer inlets.

INSPECTION: All inspections will be performed by a TxDOT inspector per one of the options below as directed by the Area Engineer
1. At least every 7 calendar days
2. At least every 14 days or after 0.5 inches or more of rainfall
An inspection and maintenance report should be made for each inspection. Based on the inspection results, the controls shall be revised according to the inspection report.

WASTE MATERIALS: The dumpster used to store all waste material will meet all state and local city solid waste management regulations. All trash and construction debris will be deposited in the dumpster. The dumpster will be emptied as necessary or as required by local regulation and the trash will be hauled to a local dump. No construction waste material will be buried on site.

HAZARDOUS WASTE (INCLUDING SPILL REPORTING): In the event of a spill which may be considered hazardous, the Houston District Safety Office shall be contacted immediately at 713-802-5962.

SANITARY WASTE:

OFFSITE VEHICLE TRACKING:

- X HAUL ROADS DAMPENED FOR DUST CONTROL
- X LOADED HAUL TRUCKS TO BE COVERED WITH TARPAULIN
- X EXCESS DIRT ON ROAD REMOVED DAILY
- X STABILIZED CONSTRUCTION ENTRANCE

OTHER:

REMARKS: Disposal areas, stockpiles, and haul roads shall be constructed in a manner that will minimize and control the sediment that may enter receiving waterways. Disposal areas shall not be located in any waterway, waterbody or streambed. Construction staging areas and vehicle maintenance areas shall be constructed by the contractor in a manner which minimizes the runoff of all pollutants. All waterways shall be cleared as soon as practical of temporary embankments, temporary bridges, matting, falsework, piling, debris, and other obstructions placed during construction operations that are not part of the finished work.

PRELIMINARY ENGINEERING
NOT INTENDED FOR CONSTRUCTION

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES. WHEN ISSUED IN FINAL FORM THEY WILL BE SEALED, SIGNED, AND DATED BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
HUNG NGUYEN, P.E.

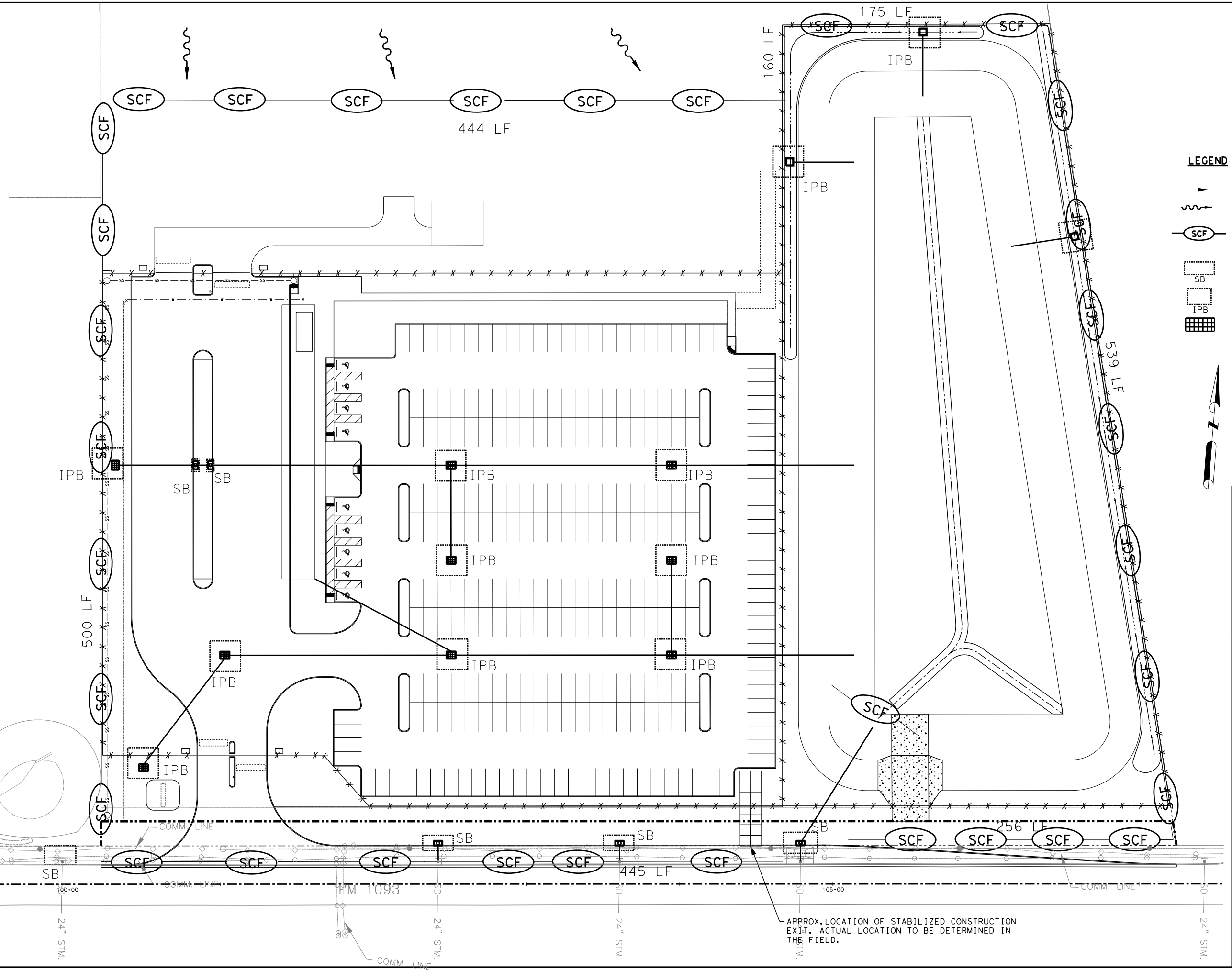
Texas Department of Transportation
Houston District

TxDOT STORM WATER POLLUTION PREVENTION PLAN

SW3P

FILE: STDG1.DGN	DN: TxDot	CK: TxDot	DW: TxDot	CK: TxDot
©TxDOT JANUARY 2007	DIST	FED REG	PROJECT NO.	SHEET
REVISIONS REV. 9/2010 INSPECTION NOTE REV. 9/2013 INSPECTION NOTE REV. 11/2013 SW3P TO SWP3	HOUSTON	6		23
	COUNTY	CONTROL	SECT	JOB	HIGHWAY

STD G-1



LEGEND

- DIRECTION OF FLOW
- DIRECTION OF OVERLAND FLOW
- SCF — SEDIMENT CONTROL FENCE
- SB — SAND BAG (6 PER INLET)
- IPB — INLET PROTECTION BARRIER (20 LF FILTER FABRIC PER INLET)
- STABILIZED CONSTRUCTION EXIT (TY I) (14' X 50')

HORIZ. 0 30 60

SCALE IN FEET

STATE OF TEXAS
HUNG H. NGUYEN
113148
LICENSED
PROFESSIONAL ENGINEER

5/12/2022

NO.	DATE	REVISION	APPROV.

IDCUS
Planners | Engineers | Construction Managers
IDCUS, Inc.
15915 Katy Freeway, suite 300
Houston, Texas 77094
(713) 541-5591 Fax (713) 541-3501
T.B.P.E.FIRM REGISTRATION NO. F-6825

THE STATE OF TEXAS
FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

STORM WATER POLLUTION PREVENTION PLAN - LAYOUT

SHEET 1 OF 1

SECTION NO.	
DRAWN:	DATE:
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. 24

5/12/2022
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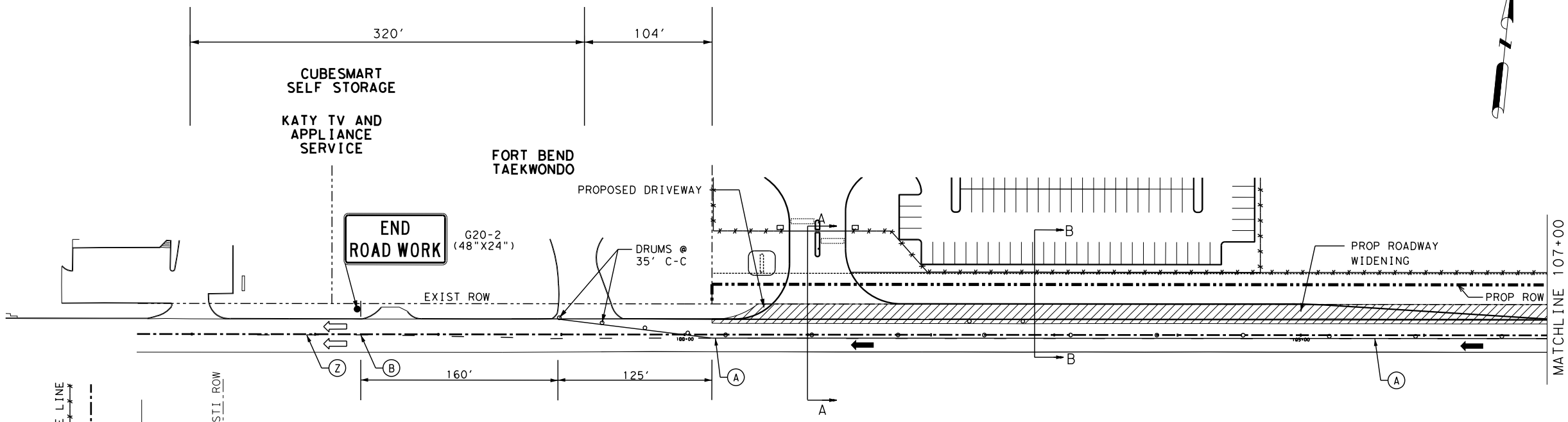
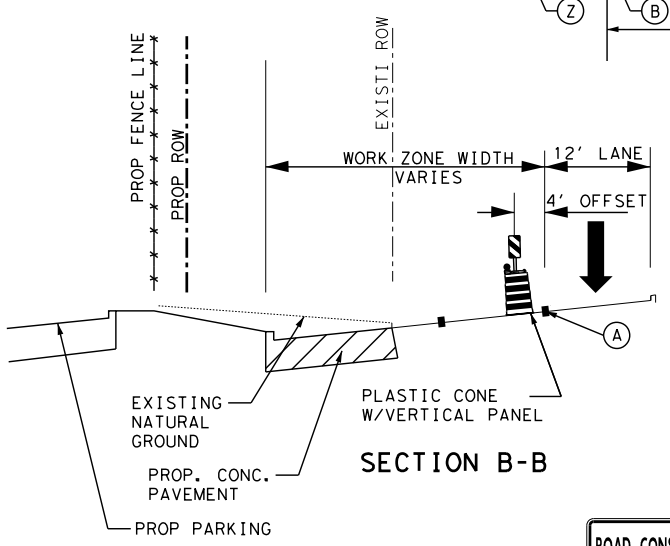
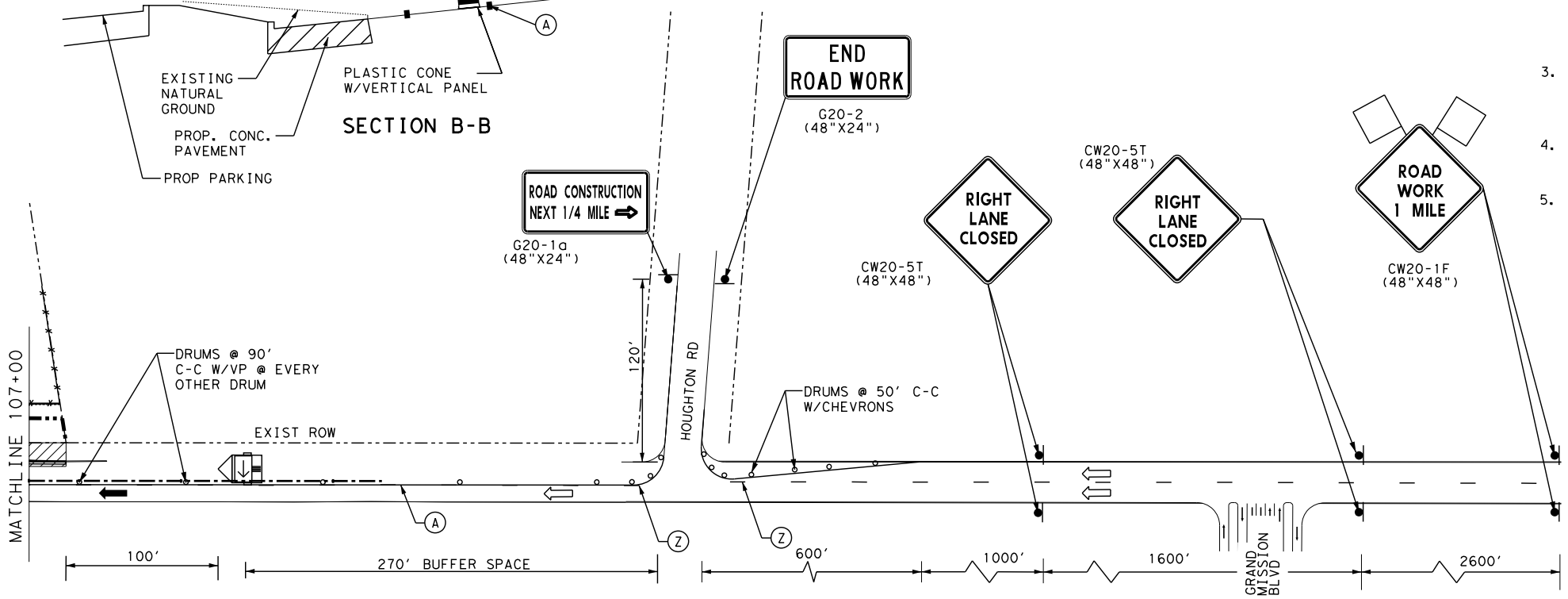
bobv



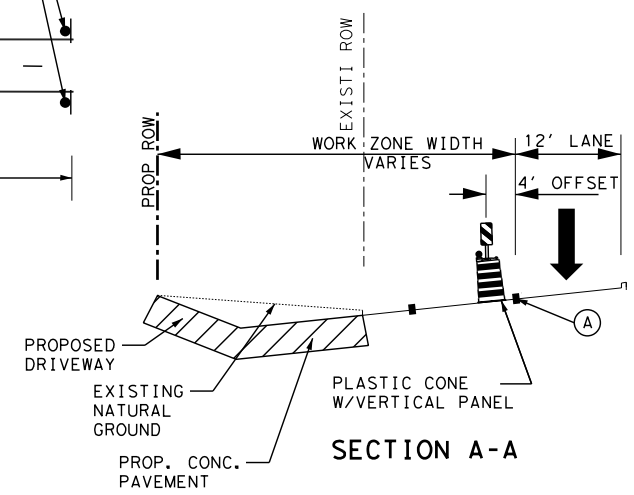


SECTION B-B



NOTE:

1. CONTRACTOR SHALL MAINTAIN PEDESTRIAN ACCESS THROUGH AND AROUND WORK ZONE, IF ANY, DURING CONSTRUCTION.
2. CONTRACTOR SHALL PROVIDE ACCESS TO ALL BUSINESSES AND RESIDENCES ALONG THIS PROJECT AT ALL TIMES DURING CONSTRUCTION UNLESS OTHERWISE AUTHORIZED SPECIFICALLY BY THE ENGINEER.
3. CONTRACTOR TO COVER SIGNS THAT ARE NOT APPLICABLE OR IN CONFLICT DURING CONSTRUCTION ACTIVITIES.
4. LANE CLOSURE DURING CONSTRUCTION AT RIGHT LANE ONLY.
5. CONTRACTOR TO PERFORM CONSTRUCTION DURING OFF PEAK HOURS ONLY.
   THE PEAK HOUR LANES ARE OPEN WEEKDAYS FROM 6:00 AM TO 9:00 AM AND FROM 3:00 PM TO 7:00 PM.



SECTION A-A

LEGEND

- CONCRETE PAVEMENT (CONSTRUCTION ZONE)
- EXIST TRAFFIC FLOW
- PROP TRAFFIC FLOW
- PLASTIC DRUM
- TEMPORARY GROUND MOUNTED SIGN.
- TRAILER MOUNTED FLASHING ARROW BOARD
- (A) WRK ZN PAV MRK REMOV (W) (4") (SLD)
- (B) WRK ZN PAV MRK REMOV (W) (4") (BRK)
- (Z) EXIST PAVEMENT MARKINGS

HORIZ. 0 50 100
SCALE IN FEET

STATE OF TEXAS
HUNG H. NGUYEN
113148
LICENSED
PROFESSIONAL ENGINEER
5/12/2022

NO.	DATE	REVISION	APPROV.

IDCUS
Planners | Engineers | Construction Managers
IDCUS, Inc.
15915 Katy Freeway, Suite 300
Houston, Texas 77094
(713) 541-5591 Fax: (713) 541-3501
T.B.P.E.FIRM REGISTRATION NO. F-6825

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE
FM 1093
TRAFFIC CONTROL PLAN

SHEET 1 OF 1

SECTION NO.	
DRAWN: SKY	DATE:
CHECKED:	DATE:
DESIGN: SKY	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. 25

5/12/2022
\\emai\Transportation\FORT BEND COUNTY\WESTPARK P&R\CADD\TRAFFIC\TCP\WPK-CIV-TCP01.dgn
bdv

REGULAR PARKING SPACES=253
HANDICAPED PARKING SPACES=9
TOTAL PARKING SPACES=262

AUTHORIZED PERSONNEL ONLY (12) 18"X24"

AUTHORIZED PERSONNEL ONLY (11) 18"X24"

(I)

TYP. (J)

(13) (14) (15) (16)

TYP. (A)

(B) (H) TYP.

DO NOT ENTER BUSES ONLY 30"X36" (2) (3)

VAN ACCESSIBLE RESERVED HANDICAP PARKING SIGNS ASSEMBLY (TYP.) SEE DETAIL

(A) TYP. (A) TYP.

(17) (18) (19) (20) (21)

BLUE COLOR HANDICAP LOGO (TYP.)

(A) TYP.

R1-1 30"x30" STOP (1)

ONLY R3-5L 30"X36"

(G) (K) (E) @30'C-C

(C) DBL (C) DBL

(A) TYP.

@30'C-C (E)

(A) TYP.

(A) TYP.

(G)

(K)

100+00

(B) (F) @20'C-C

ONLY

ONLY

105+00

(H) TYP.

(G) TYP.

STOP (4) R1-1 36"x36"

(5) R6-1R 36"X12" ONE WAY

(9) (10) WARNING VIDEO SURVEILLANCE 24 HOURS A DAY 18"X24"

(6) BUSES ONLY ALL OTHERS 48"X30"

RIGHT LANE MUST TURN RIGHT (7) R3-7R 30" X 30"

RIGHT LANE MUST TURN RIGHT (8) R3-7R 30" X 30"

LEGEND

- (A) REFL PAV MRK TY I (W) (4") (SLD)
- (B) REFL PAV MRK TY I (W) (8") (SLD)
- (C) REFL PAV MRK TY I (Y) (4") (SLD)
- (D) REFL PAV MRK TY I (Y) (8") (SLD)
- (E) RAIS PAV MRKR CL B (REFL) TY II-A-A
- (F) RAIS PAV MRKR CL B (REFL) TY II-C-R
- (G) PREFAB PAV MRK TY C (W) (ARROW)
- (H) PREFAB PAV MRK TY C (W) (WORD)
- (I) REFL PAV MRK (Y) (MEDIAN NOSE)
- (J) HANDICAP SIGN (BLUE)
- (K) REFL PAV MRK TY I (W)(24")(SLD)
- ● SMALL TRAFFIC SIGN

(9)

FORT BEND TRANSIT

Patron Parking Only

No Solicitation of Patrons or distribution of literature is permitted

Fort Bend Transit will not be responsible for theft, damage or loss to automobiles parked in this lot or articles left therein

No Trespassing

Please Park Properly and Lock Your Car

24"X36"

HORIZ. 0 30 60

SCALE IN FEET

STATE OF TEXAS
HUNG H. NGUYEN
113148
LICENSED PROFESSIONAL ENGINEER

5/12/2022

NO.	DATE	REVISION	APPROV.

IDCUS
Planners | Engineers | Construction Managers
IDCUS, Inc.
15915 Katy Freeway, Suite 300
Houston, Texas 77094
(713) 541-5591 Fax: (713) 541-3501
T.B.P.E.FIRM REGISTRATION NO. F-6825

STATE OF TEXAS FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

PAVEMENT MARKINGS & SIGNS

SHEET 1 OF 1

SECTION NO.	
DRAWN: SKY	DATE:
CHECKED:	DATE:
DESIGN: SKY	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. 26

5/12/2022
\\emoi\Transportation\FORT BEND COUNTY\WESTPARK P&R\CADD\TRAFFIC\SGN_PMARK\MPK-CIV-PMK&SGN.dgn
bobv

SUMMARY OF SMALL SIGNS

SIGN NUMBER	SIGN NOMENCLATURE	SIGN TEXT	SIGN DIMENSIONS	REFLECTIVE SHEETING	PLYWOOD TYPE A	ALUMINUM TYPE A	ALUMINUM TYPE G	POST TYPE FRP=Fiberglass TWT=Thin-Wall 10BWG=10BWG S80=Sch80	POSTS (1 OR 2)	Anchor Type UA=Univer-Conc UB=Univer-Bolt WA=Wedge-Conc SA=Slip-Conc SB=Slip-Bolt	Mounting Designation P=Prefab. "Plain" T=Prefab. "T" U=Prefab. "U"
1	R3-5L	LEFT TURN ONLY	30"X36"	C		X		10BWG	1	SA	P
	R1-1	STOP	30"X30"	C		X		10BWG	1	SA	P
2		DO NOT ENTER / BUSES ONLY	30"X36"	C		X		10BWG	1	SA	P
3		DO NOT ENTER / BUSES ONLY	30"X36"	C		X		10BWG	1	SA	P
4	R1-1	STOP	30"X30"	C		X		10BWG	1	SA	P
5	R6-1R	ONE WAY	36"X12"	C		X		10BWG	1	SA	P
6		BUSES ONLY (FORWARD) / ALL OTHERS (TURN RIGHT)	48"X30"	C		X		10BWG	1	SA	P
7	R3-7R	RIGHT LANE MUST TURN RIGHT	30"X30"	C		X		10BWG	1	SA	P
8	R3-7R	RIGHT LANE MUST TURN RIGHT	30"X30"	C		X		10BWG	1	SA	P
9		PATRON PARKING	24"X36"	C		X		N/A	N/A	MOUNT ON FENCE	P
10		VIDEO SURVEILLANCE	18"X24"	C		X		N/A	N/A	MOUNT ON FENCE	P
11		AUTHORIZED PERSONNEL ONLY	18"X24"	C		X		N/A	N/A	MOUNT ON GATE	P
12		AUTHORIZED PERSONNEL ONLY	18"X24"	C		X		10BWG	1	SA	P
13	R7-8T	HANDICAPPED PARKING	12"X18"	C		X		10BWG	1	SA	P
14	R7-8T	HANDICAPPED PARKING	12"X18"	C		X		10BWG	1	SA	P
15	R7-8T	HANDICAPPED PARKING	12"X18"	C		X		10BWG	1	SA	P
16	R7-8T	HANDICAPPED PARKING	12"X18"	C		X		10BWG	1	SA	P
17	R7-8T	HANDICAPPED PARKING	12"X18"	C		X		10BWG	1	SA	P
18	R7-8T	HANDICAPPED PARKING	12"X18"	C		X		10BWG	1	SA	P
19	R7-8T	HANDICAPPED PARKING	12"X18"	C		X		10BWG	1	SA	P
20	R7-8T	HANDICAPPED PARKING	12"X18"	C		X		10BWG	1	SA	P
21	R7-8T	HANDICAPPED PARKING	12"X18"	C		X		10BWG	1	SA	P

STATE OF TEXAS
HUNG H. NGUYEN
113148
LICENSED
PROFESSIONAL ENGINEER

5/12/2022

NO.	DATE	REVISION	APPROV.

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15915 Katy Freeway, suite 300
Houston, Texas 77094
(713) 541-5591 Fax: (713) 541-3501
T.B.P.E.FIRM REGISTRATION NO. F-6825

THE STATE OF TEXAS
FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

SUMMARY OF SMALL SIGNS

SHEET 1 OF 1

SECTION NO.	
DRAWN:	DATE:
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. 27

5/12/2022
\\Email\Transportation\FORT BEND COUNTY\WESTPARK P&R\CADD\TRAFFIC\SGN_PMARK\WPK-CIV-SIGNSUM.dgn
bdbv

42 60 60 60 60

N 82°51'26" E - 590.55'

30'

10' BUFFER ZONE

10 BUFFER ZONE

PROP. 1-1/2" SCH 40 PVC
(PURPLE PIPE)

PROP. OSSF SPRAY IRRIGATION
EFFLUENT DISPOSAL AREA
(5) 30' RADIUS SPRAYHEADS
TOTAL AREA = 14,135 SQ. FT.

PROP. 1" SCH 40 PVC
(PURPLE PIPE)

PROP. 2" SCH 40 PVC
(PURPLE PIPE)

CALLED 10.78 ACRE TRACT
FORT BEND COUNTY
F.B.C.C.F. No. 9276666

PROP. 150' RADIUS
SANITARY CONTROL EASEMENT

PROP. 10' RADIUS
BUFFER ZONE

PROP. 50' RADIUS
BUFFER ZONE

PROP. OSSF
TANK AREA

PROP. ALL WEATHER
ACCESS DRIVE

PROP. WATER WELL
LAT: 29° 42' 19.37" N
LONG: 95° 43' 48.21" W

N 06°56'25" W - 725.44'

PROP. 4" C-900 PVC WATER LINE

PROP. RESTROOM BUILDING

PROP. 50 L.F. OF 2"
CL-200 PVC WATER LINE

PROP. 2" RPZ BACKFLOW PREVETER
(IRRIGATION)

PROP. CANOPY

PROP. STM. SEWER INLET, TYP.

PROP. STM. SEWER, TYP.

WELL LOCATION: N 22°20'16" E - 456.26'

3:1

S 15°40'12" E - 736.05'

PROP. DETENTION POND

S 83°03'35" W - 702.30'

FM 1093
(100' WIDE PER VOL. 175, PG. 211, F.B.C.D.R.)

N

0 40 80

SCALE:1" = 40'-0" (24"x36")
1" = 80'-0" (11"x17" 8.5"x11")

STATE OF TEXAS
NATHANIEL C. LAIL
130720
LICENSED
PROFESSIONAL ENGINEER
03-11-2022

NO.	DATE	REVISION	APPROV.

PGAL

3131 BRIARPARK
SUITE 200
HOUSTON, TX 77042
[T] 713 622 1444
[F] 713 968 9333

PGAL TBPE REG. NO: F-2742

WATERENGINEERS, INC.
Water & Wastewater Treatment Consultants
TEXAS BOARD OF PROFESSIONAL ENGINEERS FIRM No. 2066
17230 HUFFMEISTER ROAD
CYPRESS, TEXAS 77429
TEL: 281-373-0500
FAX: 281-373-1113

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

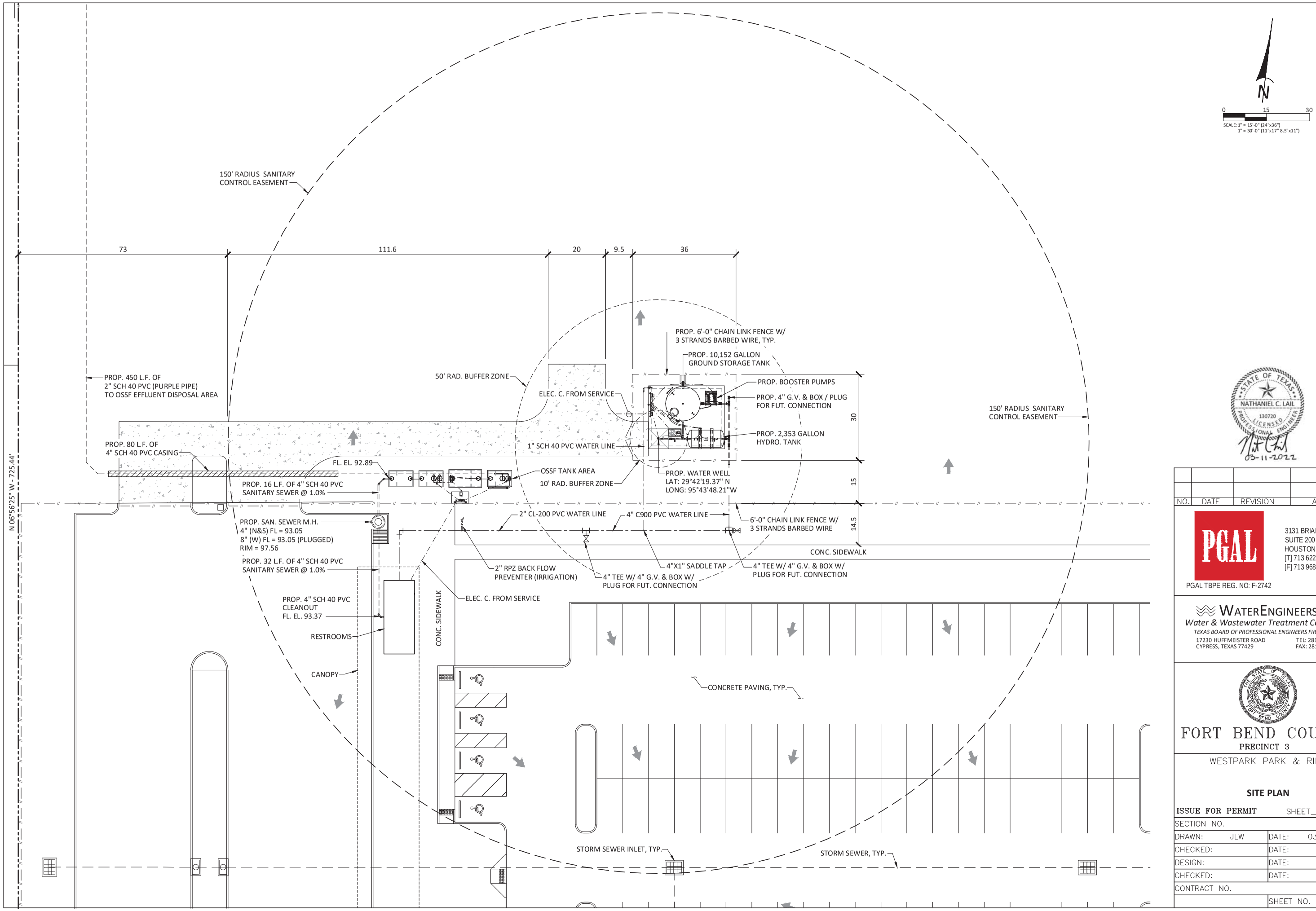
SERVICE AREA

ISSUE FOR PERMIT SHEET___OF ___

SECTION NO.			
DRAWN:	JLW	DATE:	03/11/2022
CHECKED:		DATE:	
DESIGN:		DATE:	
CHECKED:		DATE:	
CONTRACT NO.			
		SHEET NO.	**W1.00**

PLOT BY: JLW
PLOT DEVICE: ----
LAST PLOTTED: 3/10/2022 10:42 PM

LAYOUT NAME: W1.00 SERVICE AREA
FILE NAME: W1.00 SITE PLANS
FILE LOCATION: \\Server\wei-staff\Current Jobs\5772 FBC Park & Ride\+WD Current



STATE OF TEXAS
NATHANIEL C. LAIL
130720
LICENSED
PROFESSIONAL ENGINEER
03-11-2022

NO.	DATE	REVISION	APPROV.

PGAL
3131 BRIARPARK
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HOUSTON, TX 77042
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[F] 713 968 9333
PGAL TBPE REG. NO: F-2742

WATERENGINEERS, INC.
Water & Wastewater Treatment Consultants
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FAX: 281-373-1113

THE STATE OF TEXAS
FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

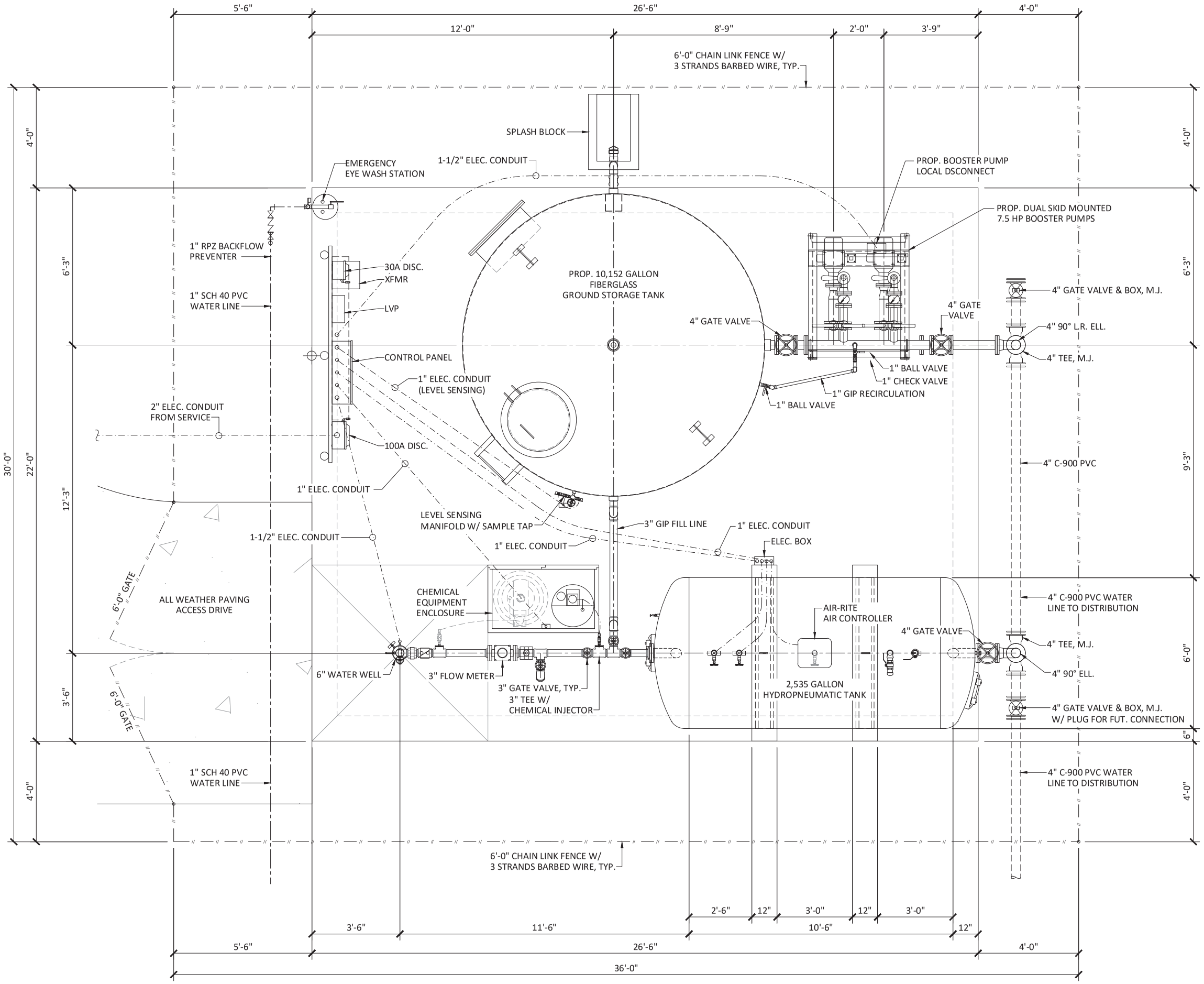
SITE PLAN

ISSUE FOR PERMIT SHEET___OF___

SECTION NO.	
DRAWN: JLW	DATE: 03/11/2022
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. **W1.10**

PLOT BY JLW
PLOT DEVICE ---
LAST PLOTTED 3/9/2022 10:19 PM

LAYOUT NAME W1.10 SITE PLAN
FILE NAME W1.10 SITE PLANNING
FILE LOCATION \\Server\we cad\Current Jobs\5772 FBC Park & Ride\+WE\ Current



N

0 2 4

SCALE:1/2" = 1'-0" (24"x36")
1/4" = 1'-0" (11"x17" 8.5" X 11")

STATE OF TEXAS
NATHANIEL C. LAIL
130720
LICENSED
PROFESSIONAL ENGINEER
03-11-2022

NO.	DATE	REVISION	APPROV.

PGAL

3131 BRIARPARK
SUITE 200
HOUSTON, TX 77042
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[F] 713 968 9333

PGAL TBPE REG. NO: F-2742

WATERENGINEERS,INC.
Water & Wastewater Treatment Consultants
TEXAS BOARD OF PROFESSIONAL ENGINEERS FIRM No. 2066
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CYPRESS, TEXAS 77429
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STATE OF TEXAS
FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

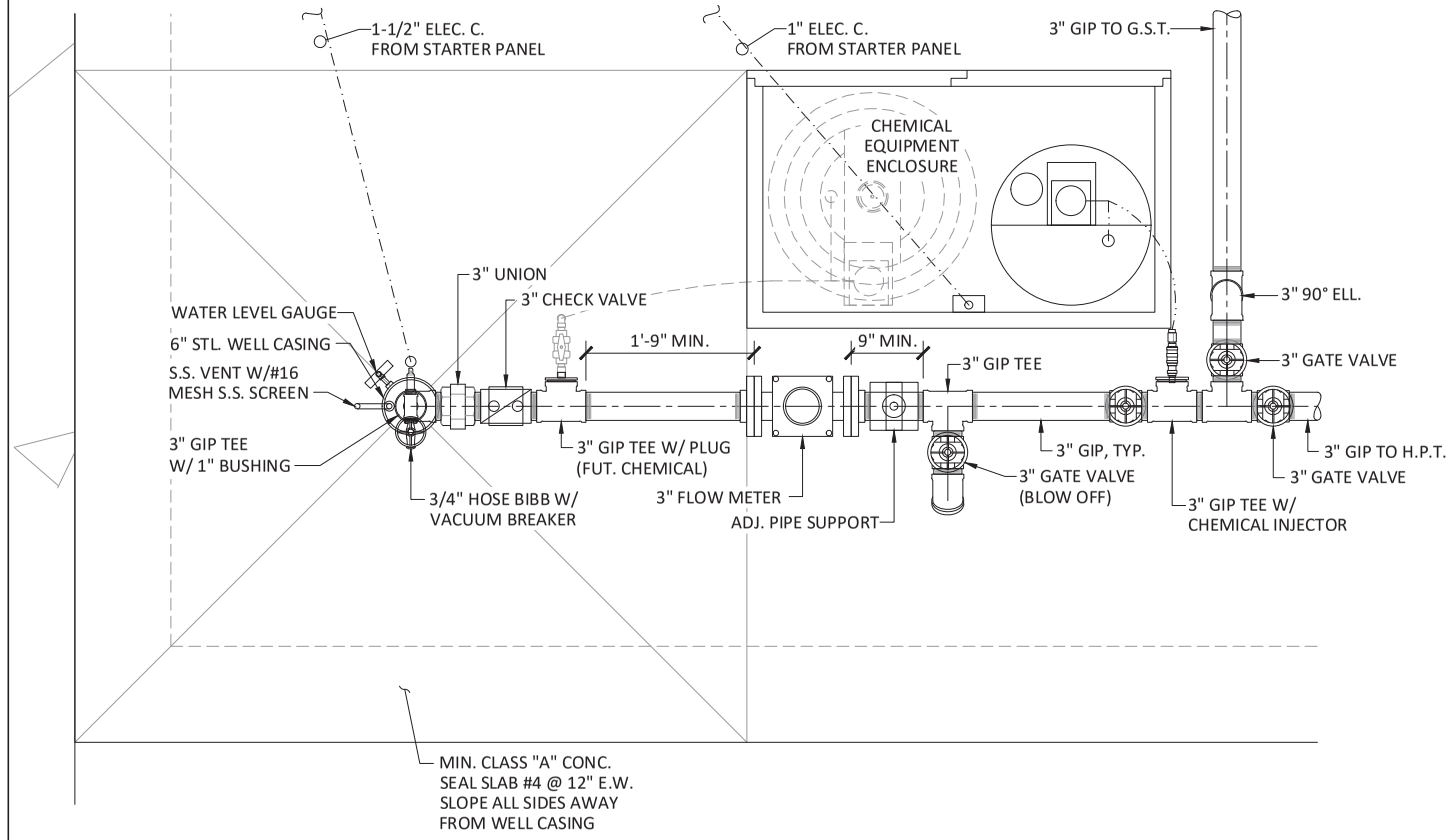
WESTPARK PARK & RIDE

WATER PLANT PLAN

ISSUE FOR PERMIT SHEET___OF___

SECTION NO.			
DRAWN: JLW		DATE: 03/11/2022	
CHECKED:		DATE:	
DESIGN:		DATE:	
CHECKED:		DATE:	
CONTRACT NO.			
		SHEET NO. **W2.00**	

LAYOUT NAME: W2.00 WATER PLANT PLAN
PLOT BY: JLW
PLOT DEVICE: ----
LAST PLOTTED: 3/9/2022 10:05:38 PM
FILE NAME: W2.00 WATER PLANT PLANNING
FILE LOCATION: \\Server\wet cad\Current Jobs\5772 FBC Park & Ride\+MEP Current

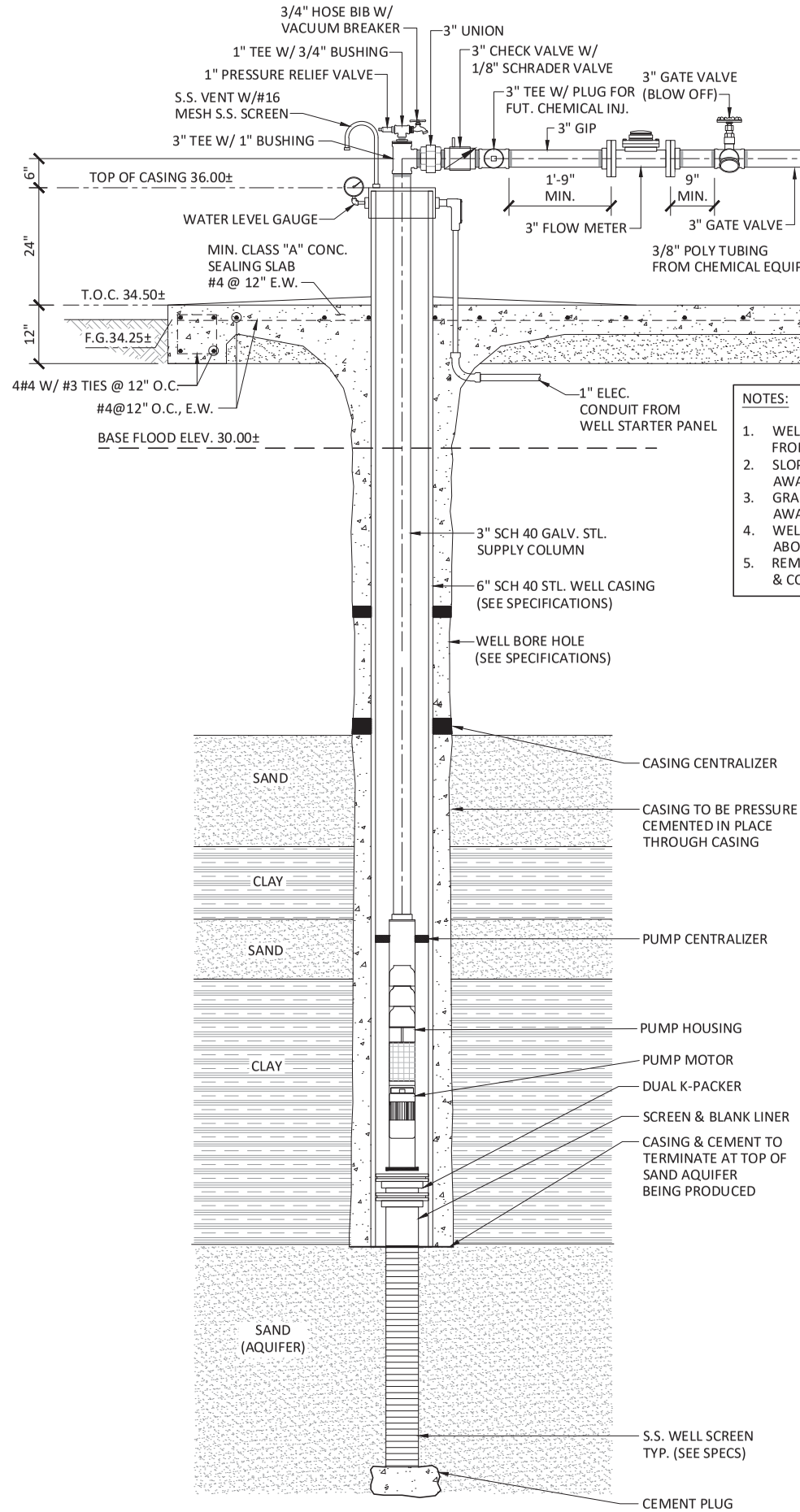


WATER WELL PLAN

0 1 2

SCALE:1" = 1'-0" (24"x36")
2" = 1'-0" (11"x17" 8.5" X 11")

N



WELL PROFILE
TWO STRING CONSTRUCTION
NTS

NOTES:

1. WELL CASING IS TO BE A MINIMUM OF 3'-0" FROM ANY EDGE OF SEAL SLAB.
2. SLOPE SEAL SLAB CONCRETE 1/4" PER FOOT AWAY FROM WELL CASING.
3. GRADE SITE TO DRAIN STORM WATER AWAY FROM CONCRETE SEAL SLAB.
4. WELL CASING TO EXTEND MIN. OF 18" ABOVE FINISHED SEAL SLAB.
5. REMOVE SOIL UNDER SLAB, LIME STABILIZE & COMPACT TO 95% PROCTOR DENSITY.

STATE OF TEXAS
NATHANIEL C. LAIL
130720
LICENSED
PROFESSIONAL ENGINEER
03-11-2022

NO.	DATE	REVISION	APPROV.

PGAL
3131 BRIARPARK
SUITE 200
HOUSTON, TX 77042
[T] 713 622 1444
[F] 713 968 9333
PGAL TBPE REG. NO: F-2742

WATERENGINEERS, INC.
Water & Wastewater Treatment Consultants
TEXAS BOARD OF PROFESSIONAL ENGINEERS FIRM No. 2066
17230 HUFFMEISTER ROAD
CYPRESS, TEXAS 77429
TEL: 281-373-0500
FAX: 281-373-1113

FORT BEND COUNTY
PRECINCT 3
WESTPARK PARK & RIDE

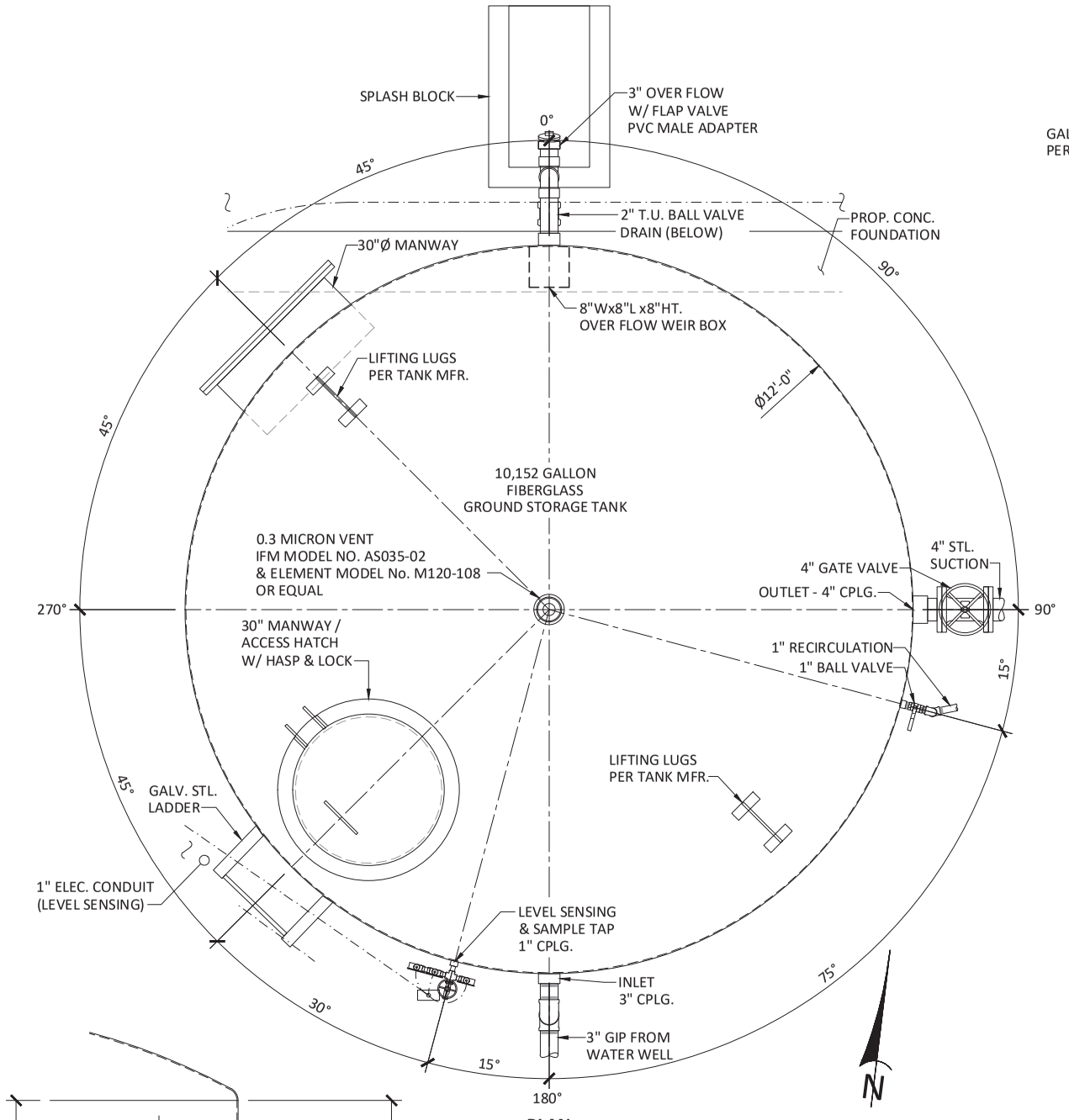
WATER WELL PLAN & DETAILS

ISSUE FOR PERMIT SHEET___OF ___

SECTION NO.			
DRAWN:	JLW	DATE:	03/11/2022
CHECKED:		DATE:	
DESIGN:		DATE:	
CHECKED:		DATE:	
CONTRACT NO.			
		SHEET NO.	**W2.10**

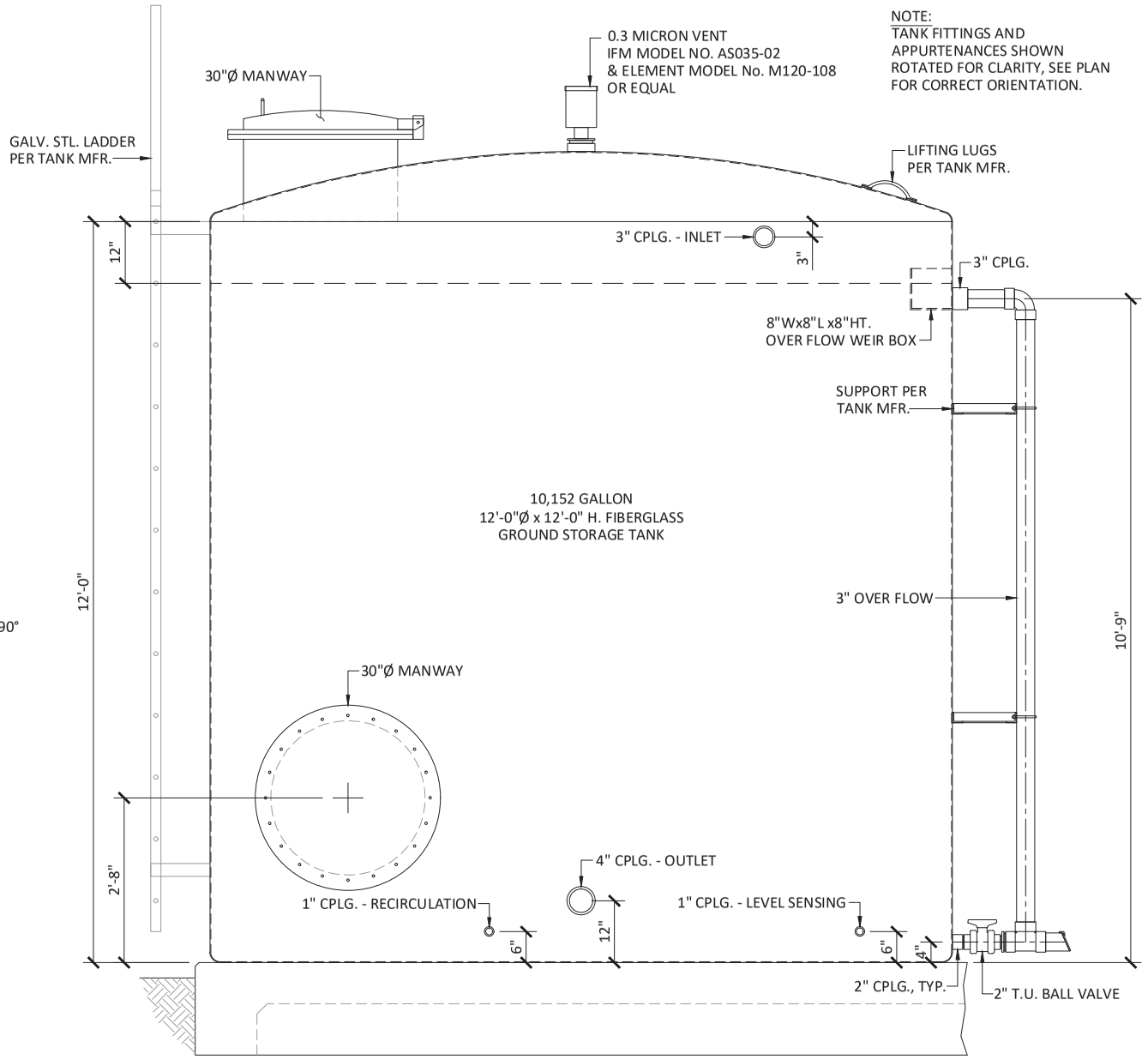
PLOT BY JLW
PLOT DEVICE ----
LAST PLOTTED 3/10/2022 1:06:15 PM

LAYOUT NAME W2.10 WATER WELL PLAN & DETAILS
FILE NAME W2.10 WATER WELL PLAN & DETAILS.DWG
FILE LOCATION \\Server\we-staff\Current Jobs\1772 FBC Park & Ride\+WE\ Current



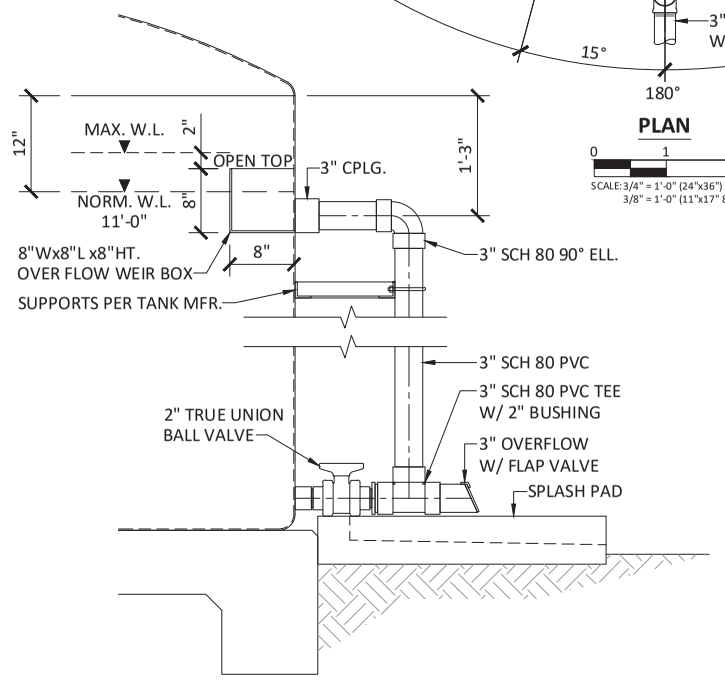
PLAN

SCALE: 3/4" = 1'-0" (24"x36")
3/8" = 1'-0" (11"x17" 8.5"x11")



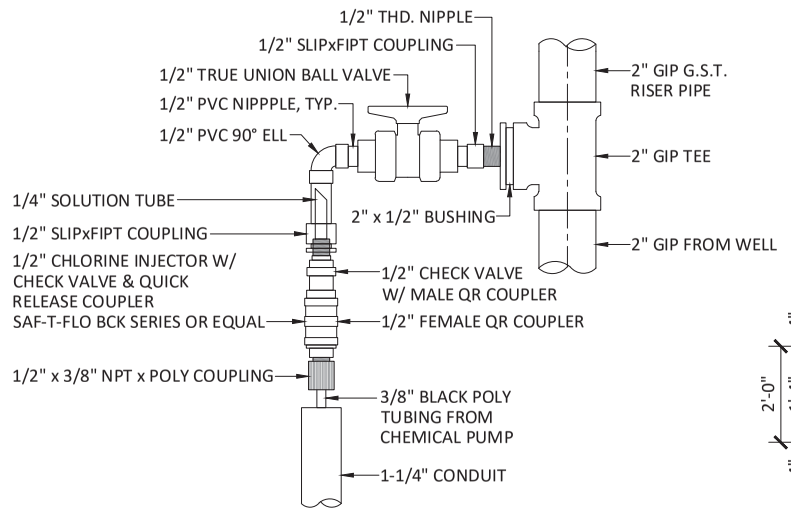
ELEVATION

SCALE: 1/2" = 1'-0" (24"x36")
1/4" = 1'-0" (11"x17" 8.5" X 11")



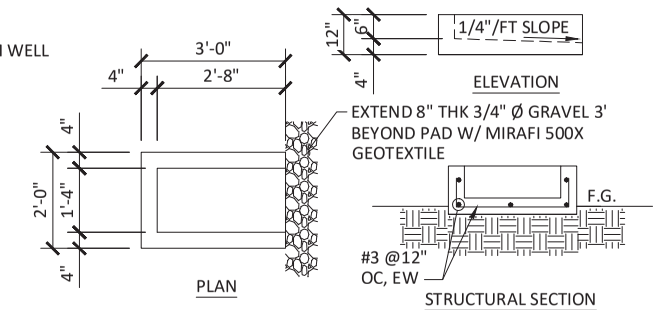
OVERFLOW WEIR BOX DETAILS

NTS PER TANK MANUFACTURER



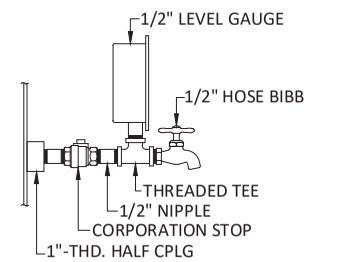
CHLORINATION INJECTOR DETAIL

NTS



SPLASH PAD DETAIL

NTS



SAMPLE TAP & LEVEL GAUGE DETAIL

NTS PER TANK MANUFACTURER

STATE OF TEXAS
NATHANIEL C. LAIL
130720
LICENSED
PROFESSIONAL ENGINEER
03-11-2022

NO.	DATE	REVISION	APPROV.

PGAL
3131 BRIARPARK
SUITE 200
HOUSTON, TX 77042
[T] 713 622 1444
[F] 713 968 9333
PGAL TBPE REG. NO: F-2742

WATERENGINEERS, INC.
Water & Wastewater Treatment Consultants
TEXAS BOARD OF PROFESSIONAL ENGINEERS FIRM No. 2066
17230 HUFFMEISTER ROAD
CYPRESS, TEXAS 77429
TEL: 281-373-0500
FAX: 281-373-1113

FORT BEND COUNTY
PRECINCT 3

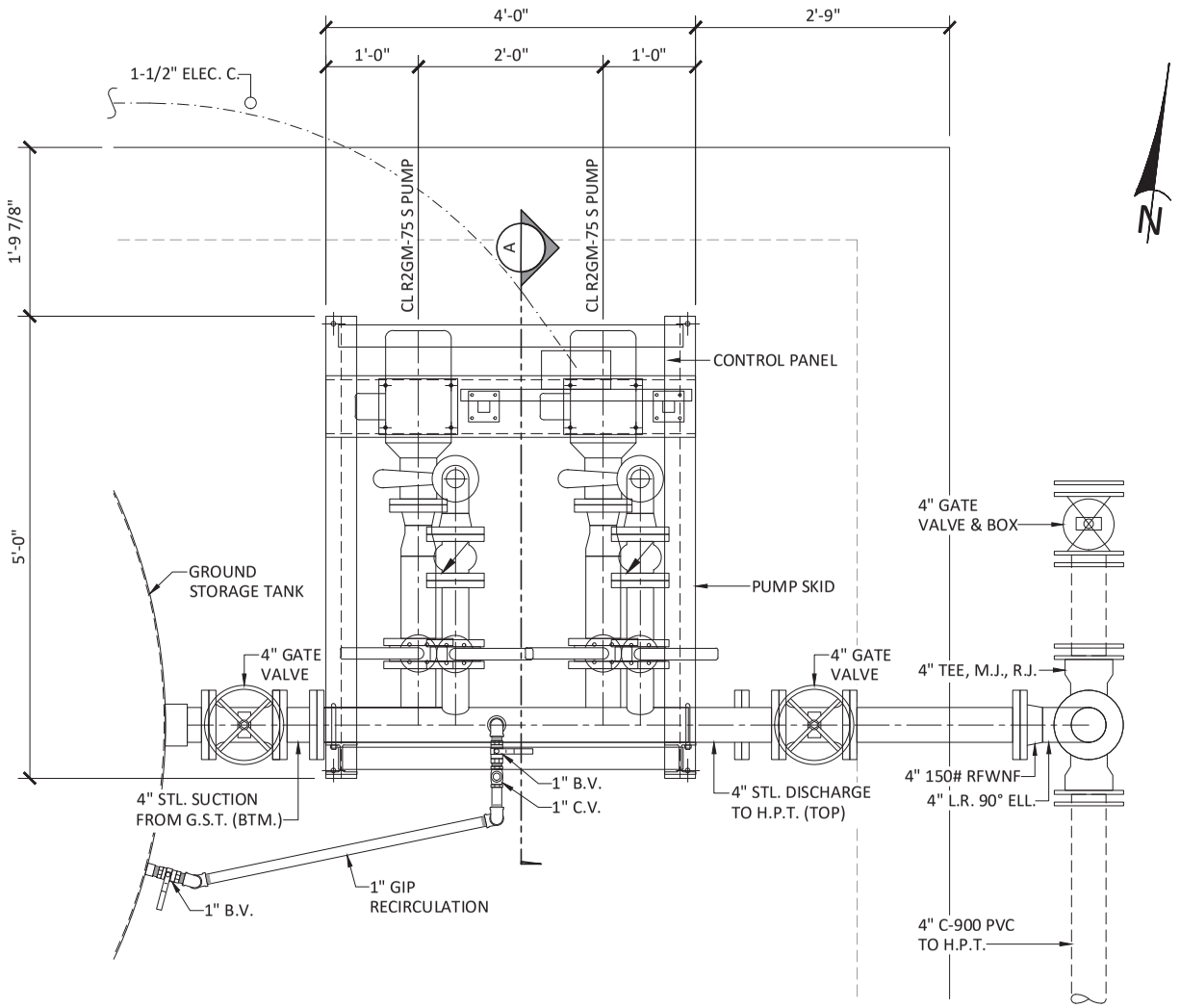
WESTPARK PARK & RIDE

GROUND STORAGE TANK PLAN & DETAILS

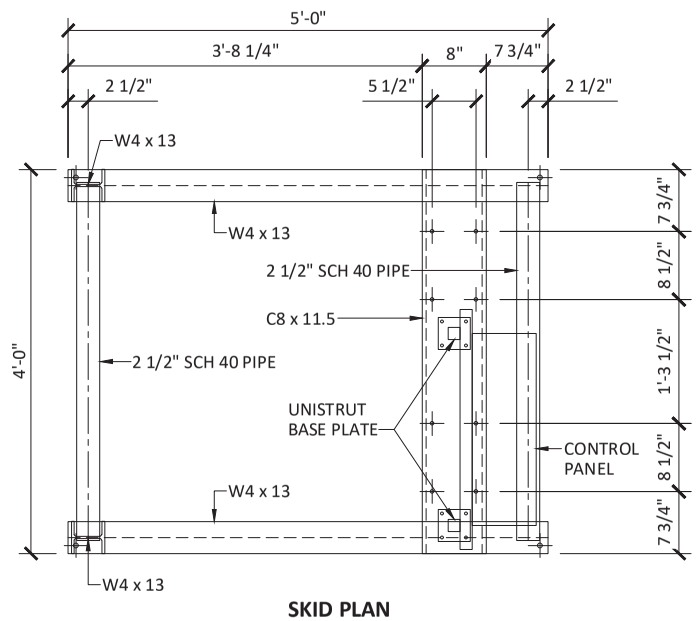
ISSUE FOR PERMIT SHEET___OF___

SECTION NO.			
DRAWN: JLW	DATE: 03/11/2022		
CHECKED:	DATE:		
DESIGN:	DATE:		
CHECKED:	DATE:		
CONTRACT NO.			
	SHEET NO. **W2.20**		

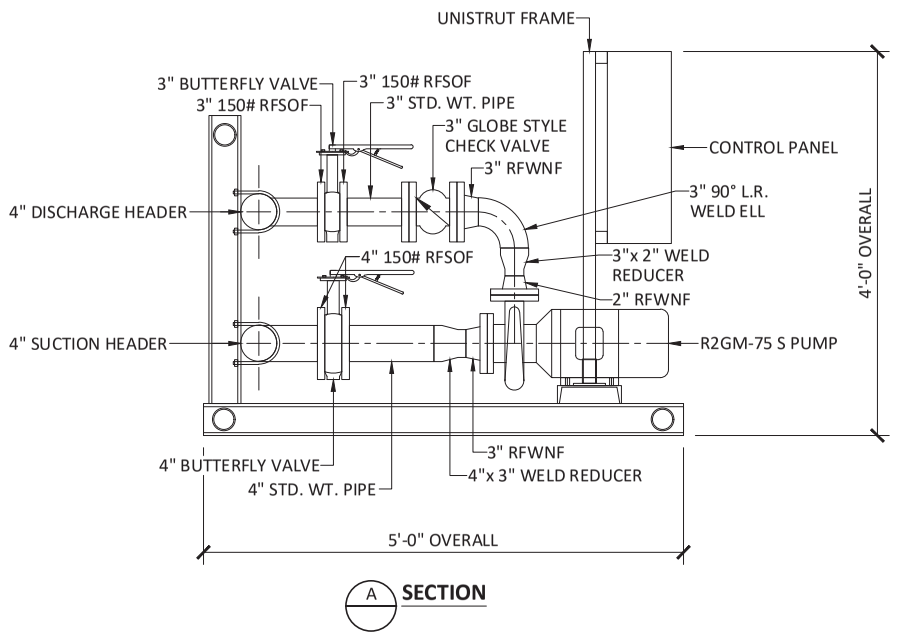
USER NAME: WEJO GROUND STORAGE TANK PLAN & DETAILS
FILE NAME: WEJO GROUND STORAGE TANK PLAN & DETAILS.DWG
FILE LOCATION: \\CorneYwe-staff\Current Jobs\5772 FBC Park & Ride\+WD Current
PLOT BY: JLW
PLOT DATE: ----
LAST PLOTTED: 3/18/2022 10:00 PM



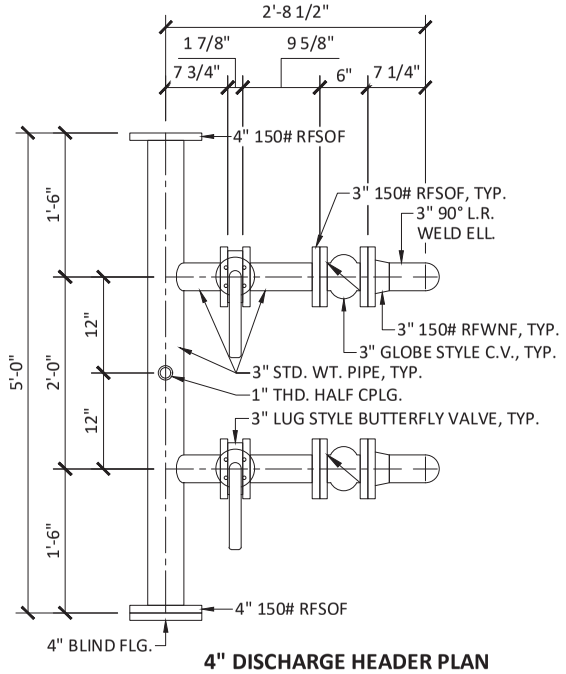
PLAN



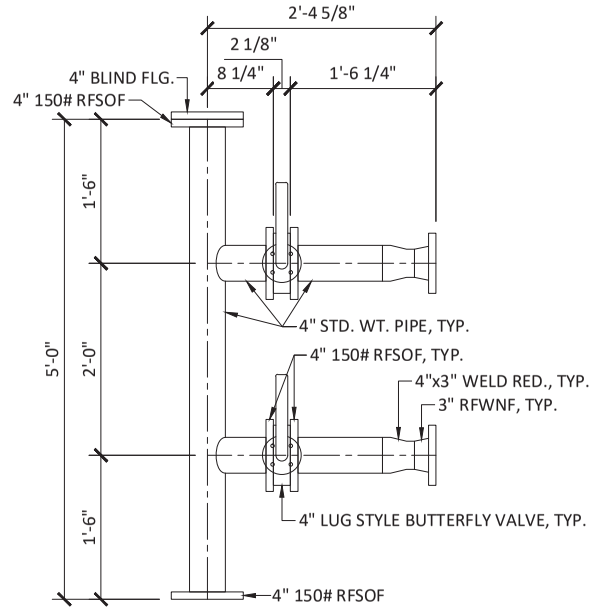
SKID PLAN



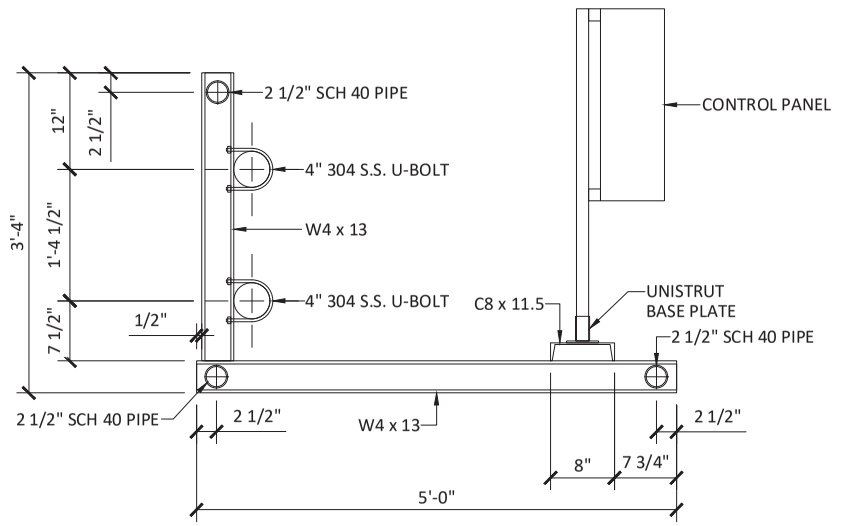
A **SECTION**



4" DISCHARGE HEADER PLAN



4" SUCTION HEADER PLAN



SKID ELEVATION

0 1 2
SCALE:1" = 1'-0" (24"x36")
2" = 1'-0" (11"x17" 8.5" X 11")

STATE OF TEXAS
NATHANIEL C. LAIL
130720
LICENSED PROFESSIONAL ENGINEER
03-11-2022

NO.	DATE	REVISION	APPROV.

PGAL
3131 BRIARPARK
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HOUSTON, TX 77042
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[F] 713 968 9333
PGAL TBPE REG. NO: F-2742

WATERENGINEERS, INC.
Water & Wastewater Treatment Consultants
TEXAS BOARD OF PROFESSIONAL ENGINEERS FIRM No. 2066
17230 HUFFMEISTER ROAD
CYPRESS, TEXAS 77429
TEL: 281-373-0500
FAX: 281-373-1113

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

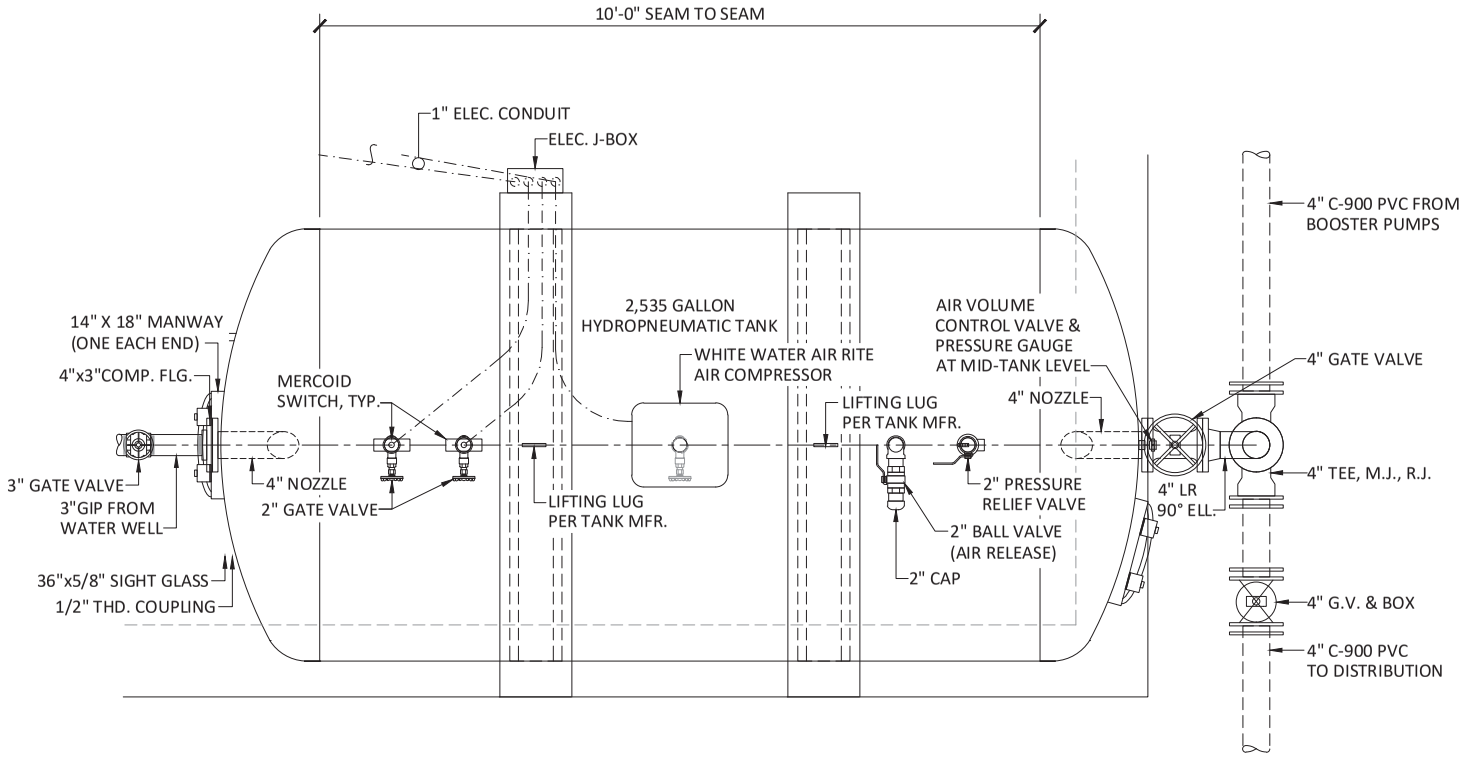
BOOSTER PUMP PLAN & DETAILS

ISSUE FOR PERMIT SHEET___OF___

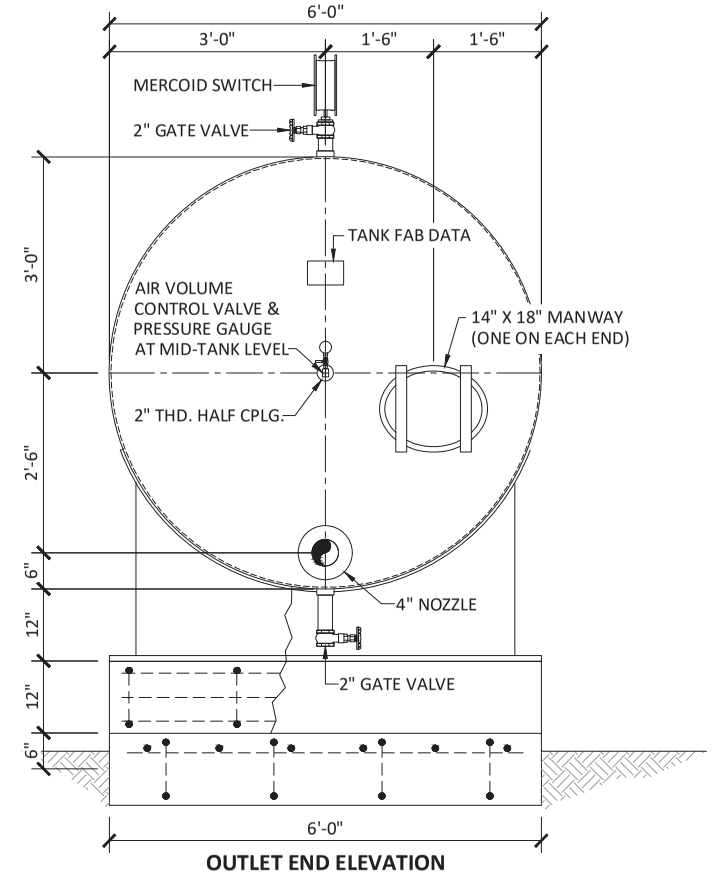
SECTION NO.			
DRAWN: JLW		DATE: 03/11/2022	
CHECKED:		DATE:	
DESIGN:		DATE:	
CHECKED:		DATE:	
CONTRACT NO.			
		SHEET NO. **W2.30**	

LAYOUT NAME: W130 BOOSTER PUMP PLAN & DETAILS
FILE NAME: W130 BOOSTER PUMP FACILITY PLAN & DETAILS.DWG
FILE LOCATION: \\Server\pw\ root\Current Jobs\3272 TIC Park & Ride\+WD Current

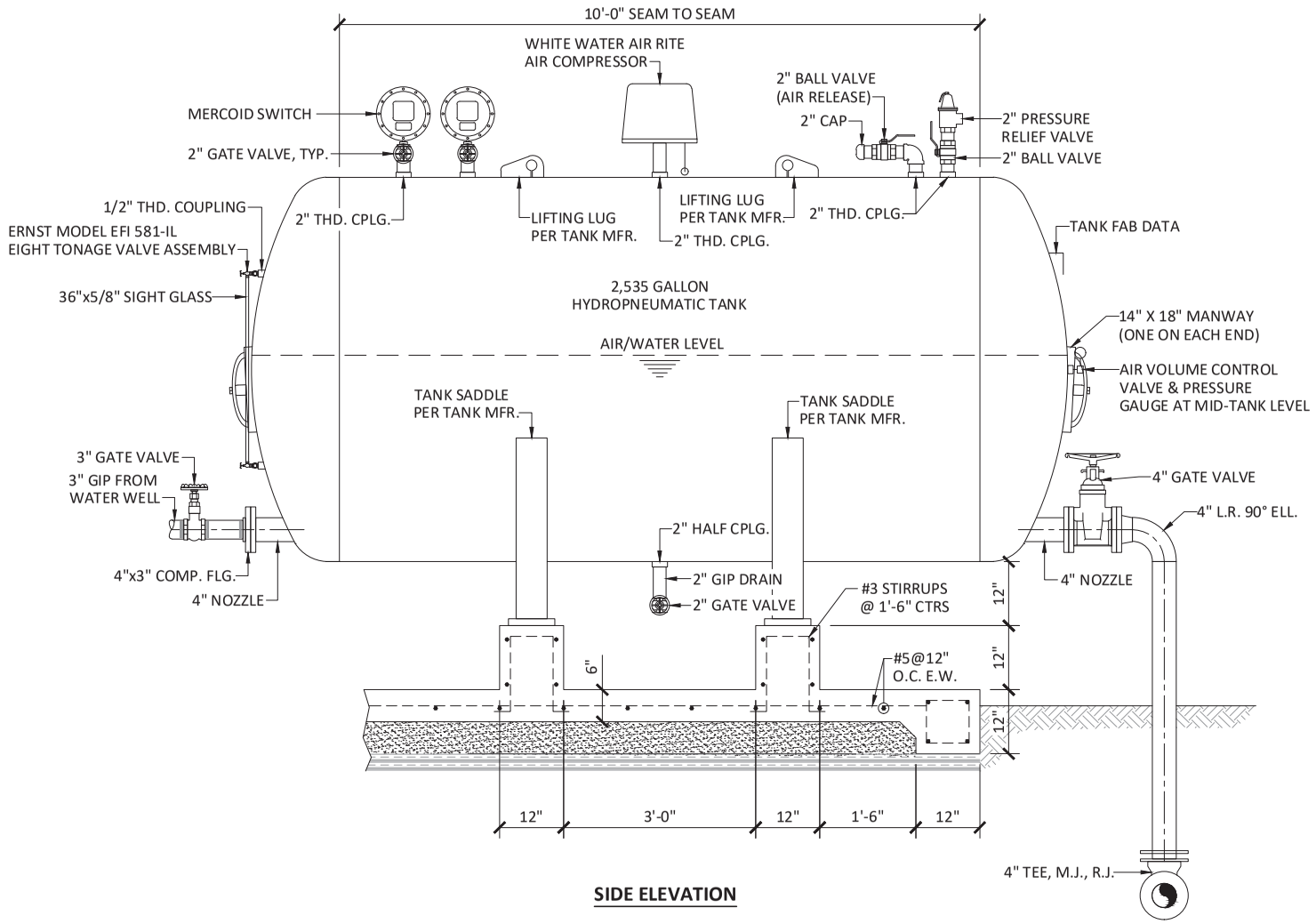
PLOT BY: JLW
PLOT DEVICE: ----
LAST PLOTTED: 3/14/2022 10:53:13 PM



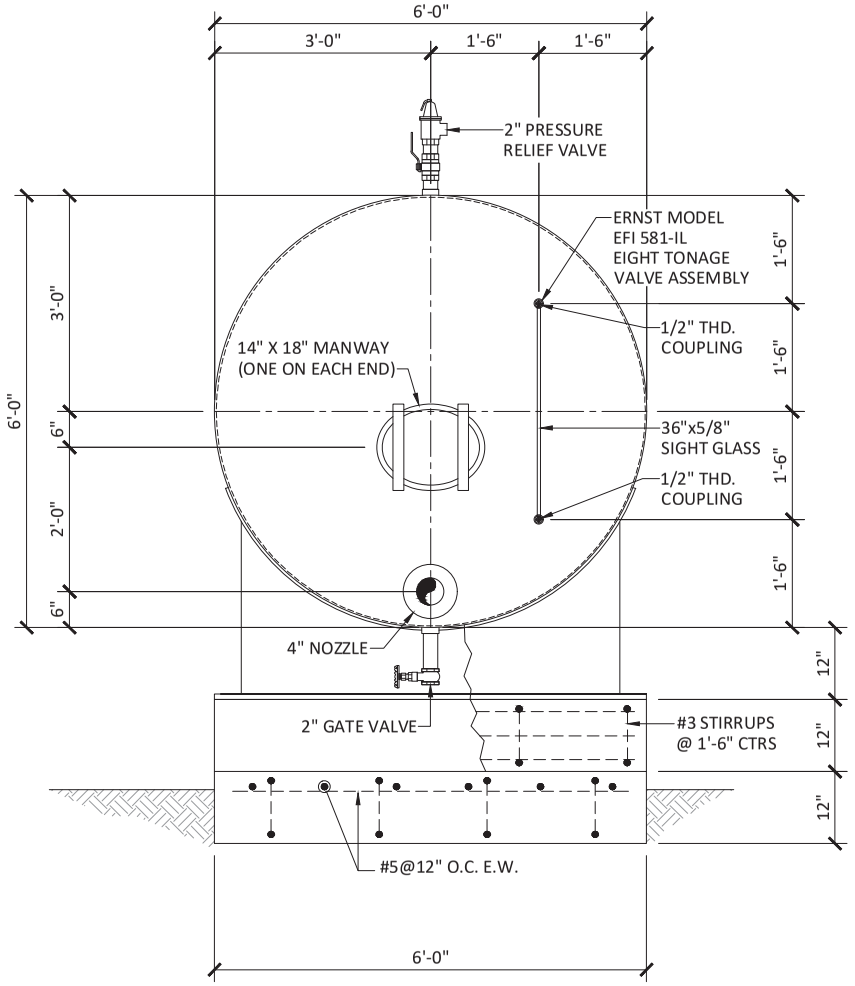
PLAN



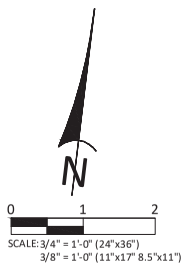
OUTLET END ELEVATION



SIDE ELEVATION



INLET END ELEVATION



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FORT BEND COUNTY
PRECINCT 3

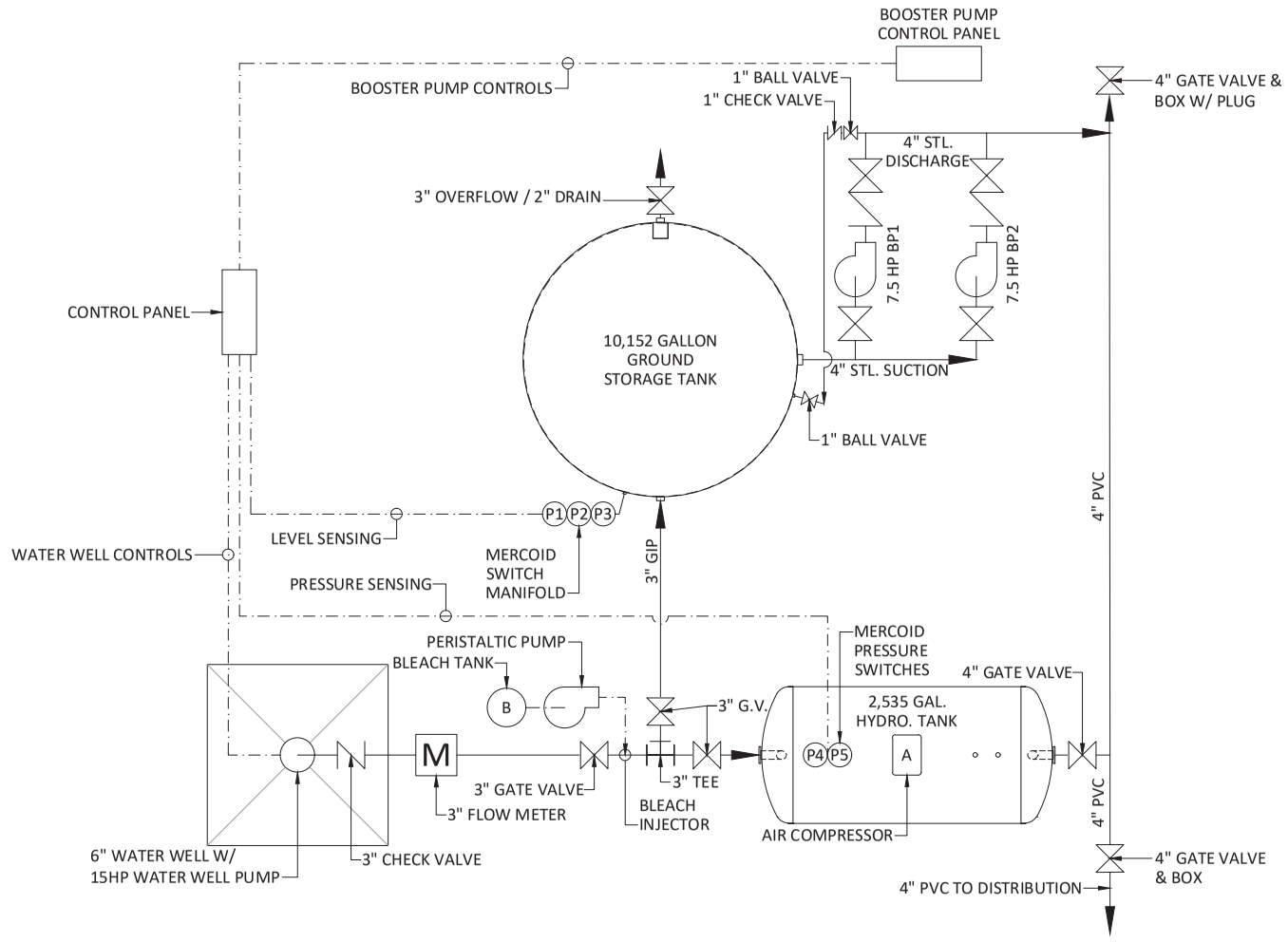
WESTPARK PARK & RIDE

HYDROPNEUMATIC TANK PLAN & DETAILS

ISSUE FOR PERMIT	SHEET___OF___
SECTION NO.	
DRAWN: JLW	DATE: 03/11/2022
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. **W2.40**

LAYOUT NAME: W2.40 HYDROPNEUMATIC TANK PLAN & DETAILS
FILE NAME: W2.40 HPT PLAN & DETAILS.DWG
FILE LOCATION: \\Server\wet cad\Current Jobs\5272 FBC Park & Ride\+WD Current
PLOT BY: JLW
PLOT DEVICE: ----
LAST PLOTTED: 3/10/2022 10:06:06 PM

CONTROL SCHEMATIC					
PRESSURE SWITCH No.	MODEL No.	OPERATING RANGE	CONTACT "ON"	CONTACT "OFF"	CONTROL ALARM / SIGNAL
P1	MERCOID #DPG-203	1-30 FT	9 FT	11 FT	STARTS/STOPS WELL PUMP
P2	MERCOID #DPG-203	1-30 FT	7 FT	9 FT	LOW LEVEL ALARM
P3	MERCOID #DPG-203	1-30 FT	2.5 FT	5 FT	BOOSTER PUMP CUT OFF
P4	MERCOID #DPG-205	5-100 PSI	60 PSI	65 PSI	STARTS / STOPS LEAD BOOSTER PUMP
P5	MERCOID #DPG-205	5-100 PSI	45 PSI	55 PSI	STARTS / STOPS LAG BOOSTER PUMP



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FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

CONTROL SCHEMATIC

ISSUE FOR PERMIT SHEET___OF___

SECTION NO.			
DRAWN: JLW		DATE: 03/11/2022	
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CONTRACT NO.			
		SHEET NO. **W3.00**	

PLOT BY: JLW
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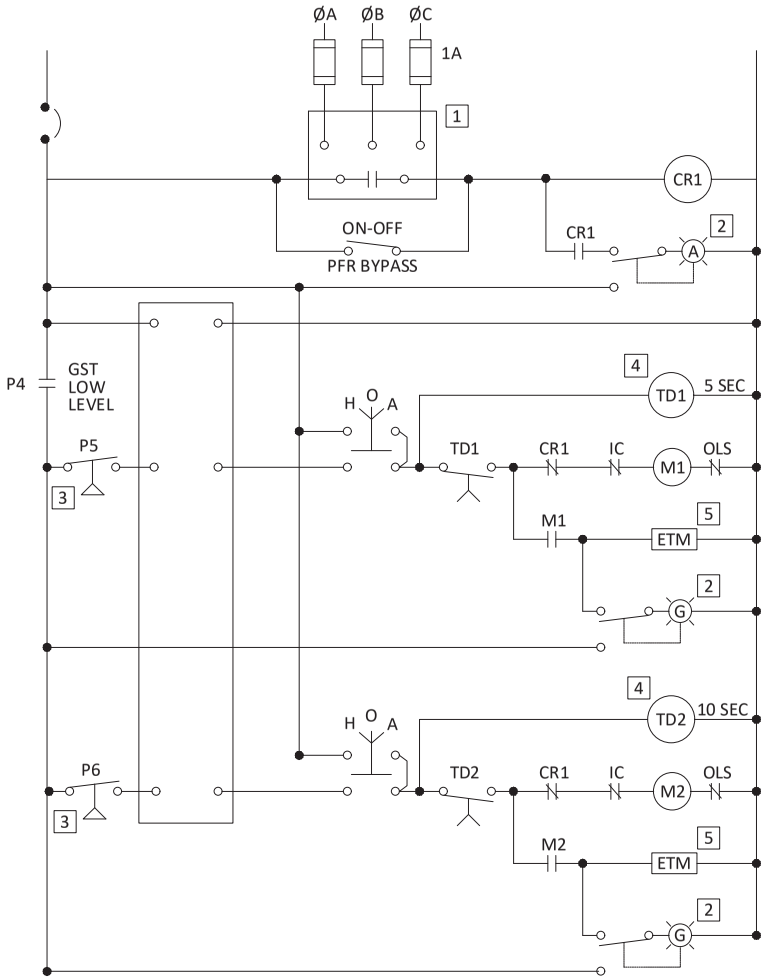
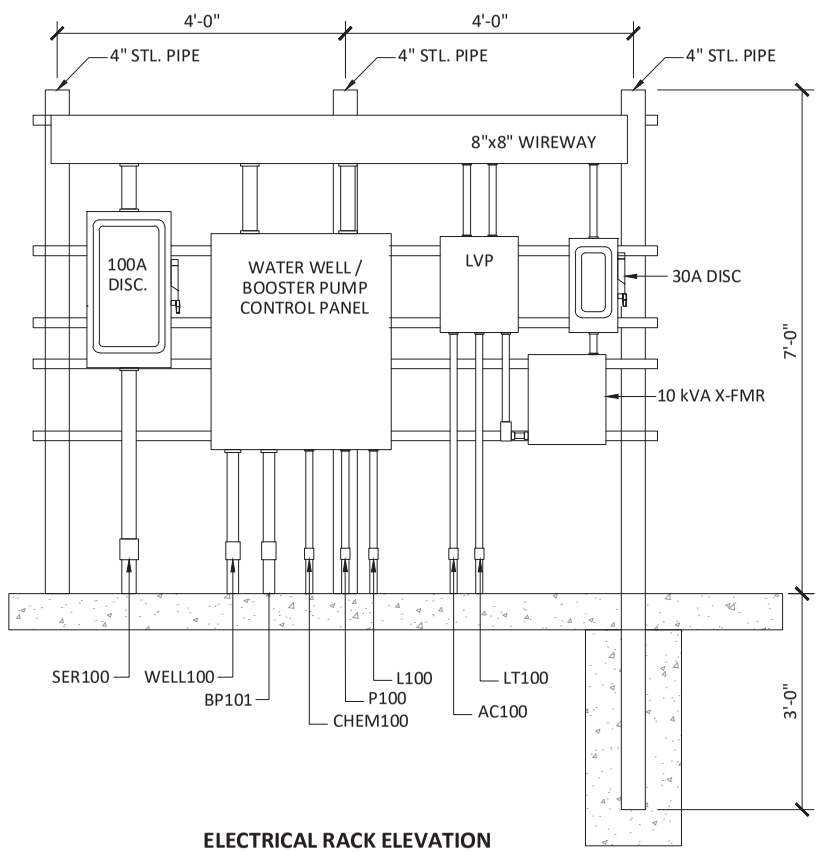
FILE NAME: W3.00 CONTROL SCHEMATIC.DWG
FILE LOCATION: \\Server\wet cad\Current Jobs\1772 FBC Park & Ride\+MEP\ Current

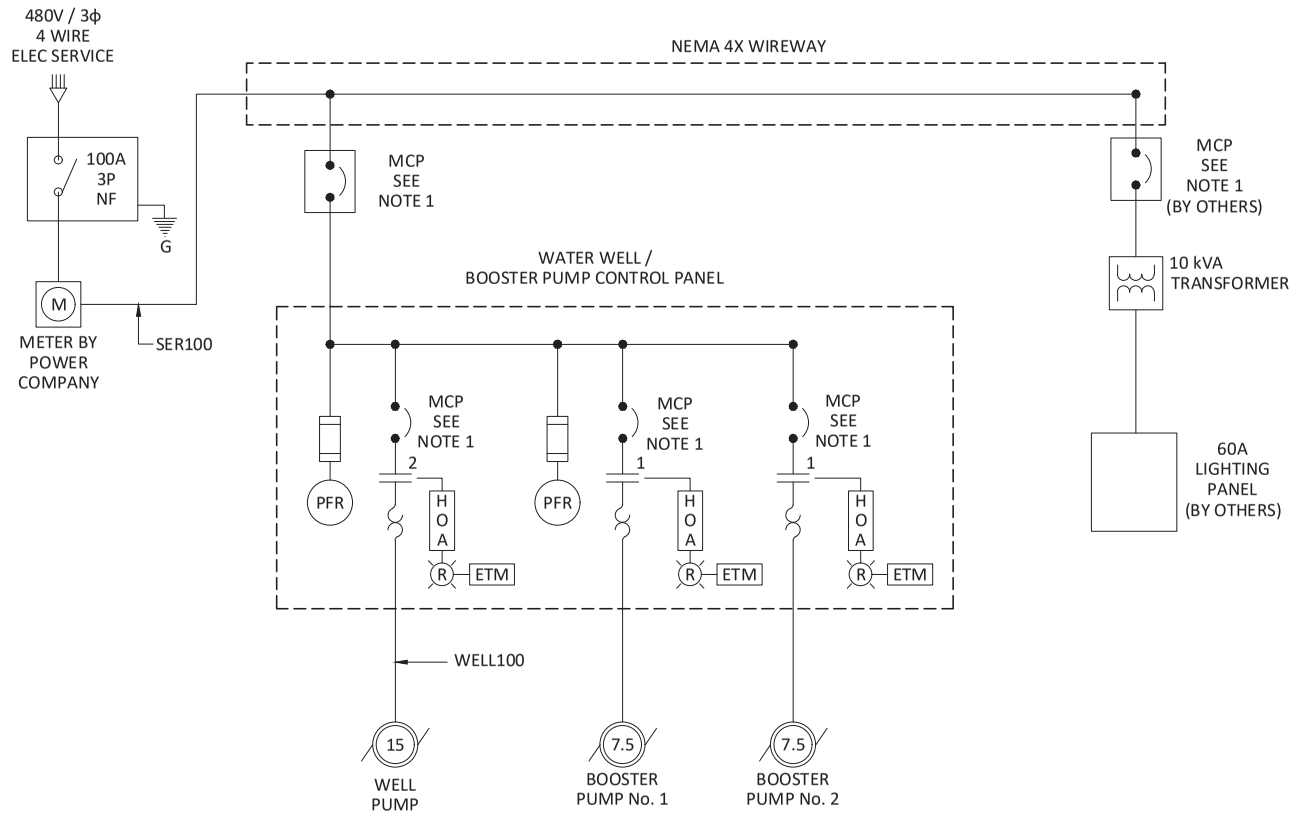


BOOSTER PUMP CONTROL PANEL SCHEMATIC



ELECTRICAL RACK ELEVATION

NTS



ELECTRICAL ONE-LINE DIAGRAM

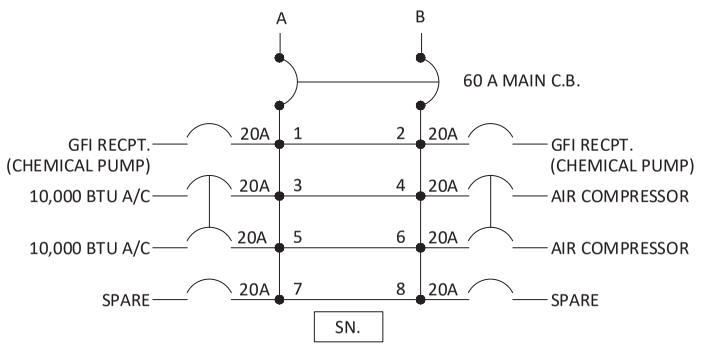
NOTES:

1. ADJUST MCP FOR MOTOR LOAD, SETTING MUST COMPLY W/ NEC. COORDINATE MOTOR MCP SIZE W/ MOTOR SUPPLIED FOR THIS PROJECT ADJUST SIZES ACCORDINGLY, ESPECIALLY FOR HIGH EFFICIENCY MOTORS.
2. ALL HOA'S, ETM'S AND RUN LIGHTS TO BE ON PANEL DOOR
3. ALL CONDUITS, CONDUCTORS AND DEVICES MAY NOT BE SHOWN ON THIS SHEET
4. ALL OUTDOOR ENCLOSURES TO BE NEMA 4X FIBERGLASS W/ LOCKABLE OUTER DOOR, U.N.O. ALL INDOOR SWITCHES & ENCLOSURES TO BE NEMA 12, U.N.O.
5. ALL MOTORS ARE TO BE EQUIPPED WITH POWER FAILURE RELAYS (ON DELAY). THESE TIMERS WILL BE USED TO SEQUENTIALLY START THE EQUIPMENT FOLLOWING A POWER FAILURE.
6. ALL WIRING TO BE THWN/THHN COPPER UNLESS OTHERWISE NOTED.
7. ALL CONDUIT ABOVE GRADE TO BE ALUMINUM, SCH 80 PVC IN CORROSIVE ENVIRONMENTS.
8. ALL CONDUIT BELOW GRADE TO BE SCH 40 PVC ENCASED IN CONCRETE
9. ALL MOTOR STARTERS FOR 25 HP AND GREATER SHALL BE ELECTRONIC SOFT START.

ELECTRICAL LOAD ANALYSIS

	MOTOR HP	LINE "A" AMPS *	LINE "B" AMPS*	LINE "C" AMPS*
WATER WELL	20	27	27	27
BOOSTER PUMP NO. 1	7.5	11	11	11
BOOSTER PUMP NO. 2	7.5	11	11	11
10 KVA TRANSFORMER		6		6
25 % OF LARGEST MOTOR	2	3	3	3
TOTALS	**37**	**58**	**52**	**58**

* BASED ON 480/277 VOLT, 4 WIRE SERVICE



LOAD CENTER SCHEMATIC

8 SPACE CAPACITY

WELL SITE CONDUIT SCHEDULE

CONDUIT TAG	CONDUIT QUANTITY	CONDUIT SIZE	FROM	TO	CONDUCTOR	NOTES
SER100	1	SEE ELEC. (BY OTHERS)	SERVICE	RACK	SEE ELEC. (BY OTHERS)	ELEC SERVICE
WELL100	1	1-1/2"	CONTROL PANEL	WELL	3-#12 + 1-#10 GND	WELL POWER
BP100	1	1-1/2"	CONTROL PANEL	BOOSTER PUMP DISC.	3-#12 + 1#10 GND	BOOSTER PUMP CONTROLS
L100	1	1"	CONTROL PANEL	GST	3/8" POLY	LEVEL SENSING
P100	1	1"	CONTROL PANEL	PRESSURE TANK	3/8" POLY	PRESSURE SENSING
CHEM100	1	1"	CONTROL PANEL	CHEMICAL PUMP	2-#12 + 1-#12 GND	CHEMICAL PUMP
AC100	1	1"	LVP	AIR COMPRESSOR	2-#12 + 1-#12 GND	AIR COMPRESSOR
LT100	1	1/2"	LVP	LIGHTING	2-#12 + 1-#12 GND	SITE LIGHTING

STATE OF TEXAS
NATHANIEL C. LAIL
130720
LICENSED
PROFESSIONAL ENGINEER
03-11-2022

NO.	DATE	REVISION	APPROV.

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FORT BEND COUNTY
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ELECTRICAL ONE LINE DIAGRAM

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SECTION NO.	
DRAWN: JLW	DATE: 03/11/2022
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CONTRACT NO.	
	SHEET NO. **W3.10**

PLOT BY JLW
PLOT DATE ---
LAST PLOTTED 3/18/2022 10:06:59 PM
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FILE NAME W3.10 ELECTRICAL ONE LINE.DWG
FILE LOCATION \\Server\wet con\Current Jobs\5772 FBC Park & Ride\+WD Current

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
PROPOSED WATER WELL GENERAL CONSTRUCTION NOTES

1. These water well facilities must be constructed in accordance with the current Texas Commission on Environmental Quality (TCEQ) Rules and Regulations for Public Water Systems 30 Texas Administrative Code (TAC) Chapter 290 Subchapter D. When conflicts are noted with local standards, the more stringent requirement shall be applied. At a minimum, construction for public water systems must always meet TCEQ's "Rules and Regulations for Public Water Systems."
2. The premises, materials, tools, and drilling equipment shall be maintained so as to minimize contamination of the groundwater during drilling operation.
3. Water used in any drilling operation shall be of safe sanitary quality. Water used in the mixing of drilling fluids or mud shall contain a chlorine residual of at least 0.5 milligrams per liter (mg/l).
4. The slush pit shall be constructed and maintained so as to minimize contamination of the drilling mud.
5. No temporary toilet facilities shall be maintained within 150 feet of the well being constructed unless they are of a sealed, leakproof type.
6. The construction, disinfection, protection, and testing of a well to be used as a public water supply source must meet the following conditions.

a. The casing material used in the construction of wells for public use shall be new carbon steel, high strength low alloy steel, stainless steel or plastic. The material shall conform to the most recent American Water Works Association (AWWA) standards. The casing shall extend a minimum of 18 inches above the elevation of the finished floor of the pump room or natural ground surface and a minimum of one inch above the sealing block or pump motor foundation block when provided. The casing shall extend at least to the depth of the shallowest water formation to be developed and deeper, if necessary, in order to eliminate all undesirable water bearing strata. Well construction materials containing more than 0.25 percent lead are prohibited.

b. The space between the casing and drill hole shall be sealed by using enough cement under pressure to completely fill and seal the annular space between the casing and the drill hole. The well casing shall be cemented in this manner from the top of the shallowest formation to be developed to the earth's surface. The driller shall utilize a pressure cementation method in accordance with the AWWA standard for water wells (A100-15) or most recent, Appendix C: Section C.2 (Positive Displacement Exterior Method); Section C.3 (Interior Method Without Plug); Section C.4 (Positive Placement, Interior Method, Drillable Plug); and Section C.5 (Placement Through Float Shoe Attached To Bottom Of Casing).

c. The grouting mixture used to pressure cement the annular space shall be neat cement as specified in the most recent AWWA Standard for Water Wells and to which a maximum of 6%, by dry weight, bentonite and 2%, by dry weight, calcium chloride may be added. The minimum annular space between the outside diameter of the casing pipe and the borehole shall be no less than 1 1/2 inches in radial thickness or three inches in net diametrical difference and the pressure grouting shall be from the bottom upward utilizing one of the methods listed in this subparagraph for all public water system groundwater well construction.

d. All gravel shall be of selected and graded quality and shall be thoroughly disinfected with a 50 mg/l chlorine solution as it is added to the well cavity.

e. Safeguards shall be taken to prevent possible contamination of the water or damage by trespassers following the completion of the well and prior to installation of permanent pumping equipment.

f. Upon well completion, or after an existing well has been reworked, the well shall be disinfected in accordance with recentAWWA Standard C654-13 or most recent for well disinfection except that the disinfectant shall remain in the well for at least 12-hours.

7. Dechlorination of disinfecting water shall be in strict accordance with current AWWA Standard C655-09 or most recent.
8. The well site shall be fine graded so that the site is free from depressions, reverse grades, or areas too rough for proper ground maintenance so as to ensure that surface water will drain away from the well. In all cases, arrangements shall be made to convey well pump drainage, packing gland leakage, and floor drainage away from the wellhead. Suitable drain pipes located at the outer edge of the concrete floor shall be provided to collect this water and prevent its ponding or collecting around the wellhead. This wastewater shall be disposed of in a manner that will not cause any nuisance from mosquito breeding or stagnation. Drains shall not be directly connected to storm or sanitary sewers.
9. A concrete sealing block extending at least three feet from the well casing in all directions, with a minimum thickness of six inches and sloped to drain away at not less than 0.25 inches per foot shall be provided around the wellhead.
10. Wellheads and pump bases shall be sealed by a gasket or sealing compound and properly vented to prevent the possibility of contaminating the well water. A well casing vent shall be provided with an opening that is covered with 16-mesh or finer corrosion resistant screen, facing downward, elevated and located so as to minimize the drawing of contaminants into the well. Wellheads and well vents shall be at least two feet above the highest known watermark or 100 year flood elevation, if available or adequately protected from possible flood damage by levees.
11. If a well blow off line is provided, its discharge shall terminate in a downward direction and at a point which will not be submerged by flood waters.
12. A suitable sampling cock shall be provided on the discharge pipe of each well pump prior to any treatment.
13. Flow measuring devices shall be provided for each well to measure production yields and provide for the accumulation of water production data. These devices shall be located to facilitate daily reading.
14. All completed well units shall be protected by intruder resistant fences, the gates of which are provided with locks or shall be enclosed in locked, ventilated well houses to exclude possible contamination or damage to the facilities by trespassers. The gates or well houses shall be locked during periods of darkness and when the plant is unattended.
15. An all-weather access shall be provided to each well site.
16. An air release device shall be installed in such a manner as to preclude the possibility of submergence or possible entrance of contaminants. In this respect, all openings to the atmosphere shall be covered with 16-mesh or finer, corrosion resistant screening material or an acceptable equivalent.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
GROUND STORAGE TANK GENERAL CONSTRUCTION NOTES

1. The water storage tank must be constructed in accordance with the current Texas Commission on Environmental Quality (TCEQ) Rules and Regulations for Public Water Systems 30 Texas Administrative Code (TAC) Chapter 290 Subchapter D. When conflicts are noted with local standards, the more stringent requirement shall be applied. At a minimum, construction for public water systems must always meet TCEQ's "Rules and Regulations for Public Water Systems."
2. All facilities for potable water storage shall be covered and designed, fabricated, erected, tested and disinfected in strict accordance with current American Water Works Association (AWWA) standards and shall be provided with the minimum number, size and type of roof vents, man ways, drains, sample connections, access ladders, overflows, liquid level indicators on-site, and other appurtenances as specified in these rules.
3. Disinfection of water storage facilities shall be in strict accordance with current AWWA Standard C652-11 or most recent.
4. Dechlorination of disinfecting water shall be in strict accordance with current AWWA Standard C655-09 or most recent.
5. Bolted tanks shall be designed, fabricated, erected and tested in strict accordance with current AWWA Standard D103. Welded tanks shall be designed, fabricated, erected and tested in strict accordance with current AWWA Standard D100. The roof of all metal tanks shall be designed and erected so that no water ponds at any point on the roof and, in addition, no area of the roof shall have a slope of less than 0.75 inch per foot. Concrete tank roofs shall be constructed in strict compliance with their respective AWWA Standard.
6. Roof vents shall be installed in strict accordance with current AWWA standards and shall be equipped with approved screens to prevent entry of animals, birds, insects and heavy air contaminants. Screens shall be fabricated of corrosion resistant material and shall be 16 mesh or finer. Screens shall be securely clamped in place with stainless or galvanized bands or wires and shall be designed to withstand winds of not less than tank design criteria (unless specified otherwise by the engineer).
7. All roof openings shall be designed in accordance with current AWWA standards. If an alternate 30 inch diameter access opening is not provided in a storage tank, the primary roof access opening shall not be less than 30 inches in diameter. Other roof openings required only for ventilating purposes during cleaning, repairing or painting operations shall be not less than 24 inches in diameter or as specified by the licensed professional engineer. An existing tank without a 30-inch in diameter access opening must be modified to meet this requirement when major repair or maintenance is performed on the tank. Each access opening shall have a raised curbing at least four inches in height with a lockable cover that overlaps the curbing at least two inches in a downward direction. Where necessary, a gasket shall be used to make a positive seal when the hatch is closed. All hatches shall remain locked except during inspections and maintenance.
8. Overflows shall be designed in strict accordance with current AWWA standards and shall terminate with a gravity-hinged and weighted cover, an elastomeric duckbill valve, or other approved device to prevent the entrance of insects and other nuisances. The cover shall fit tightly with no gap over 1/16 inches. If the overflow terminates at any point other than the ground level, it shall be located near enough and at a position accessible from a ladder or the balcony for inspection purposes. The overflow(s) shall be sized to handle the maximum possible fill rate without exceeding the capacity of the overflow(s). The discharge opening of the overflow(s) shall be above the surface of the ground and shall not be subject to submergence.
9. All clearwells and water storage tanks shall have a liquid level indicator located at the tank site. The indicator can be a float with a moving target, an ultrasonic level indicator, or a pressure gauge calibrated in feet of water. If an elevated tank or standpipe has a float with moving target indicator, it must also have a pressure indicator located at ground level. Pressure gauges must not be less than three inches in diameter and calibrated at not more than two-foot intervals. Remote reading gauges at the owner's treatment plant or pumping station will not eliminate the requirement for a gauge at the tank site unless the tank is located at the plant or station.
10. Inlet and outlet connections shall be located so as to prevent short circuiting or stagnation of water. Clearwells used for disinfectant contact time shall be appropriately baffled.
11. Clearwells and potable water storage tanks shall be thoroughly tight against leakage, shall be located above the ground water table and shall have no walls in common with any other plant units containing water in the process of treatment. All associated appurtenances including valves, pipes and fittings shall be tight against leakage.
12. Each clearwell or potable water storage tank shall be provided with a means of removing accumulated silt and deposits at all low points in the bottom of the tank. Drains shall not be connected to any waste or sewage disposal system and shall be constructed so that they are not a potential agent in the contamination of the stored water.
13. All clear wells, ground storage tanks, standpipes, and elevated tanks shall be painted, disinfected, and maintained in strict accordance with current AWWA standards. However, no temporary coatings, wax grease coatings, or coating materials containing lead will be allowed. No other coatings will be allowed which are not approved for use (as a contact surface with potable water) by the United States Environmental Protection Agency (EPA), NSF International, or the United States Food and Drug Administration (FDA). All newly installed coatings must conform to ANSI/NSF International Standard 61 and must be certified by an organization accredited by ANSI.
14. No tanks or containers shall be used to store potable water that has previously been used for any non-potable purpose. Where a used tank is proposed for use, a letter from the previous owner or owners must be submitted to the Commission which states the use of the tank.
15. Access manways in the riser pipe, shell area, access tube, bowl area or any other location opening directly into the water compartment shall be located in strict accordance with current AWWA standards. These openings shall not be less than 24 inches in diameter. However, in the case of a riser pipe or access tube of 36 inches in diameter or smaller, the access manway may be 18 inches times 24 inches with the vertical dimension not less than 24 inches. The primary access manway in the lower ring or section of a ground storage tank shall be not less than 30 inches in diameter. Where necessary, for any access manway which allows direct access to the water compartment, a gasket shall be used to make a positive seal when the access manway is closed.
16. Service pump installation taking suction from storage tanks shall provide automatic low water level cutoff devices to prevent damage to the pumps. The service pump circuitry shall also resume pumping automatically once the minimum water level is reached in the tank.
17. Pursuant to 30 TAC §290.44(b)(1), the maximum allowable lead content of pipes, pipe fittings, plumbing fittings, and fixtures is 0.25 percent.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
WATER DISTRIBUTION SYSTEM GENERAL CONSTRUCTION NOTES

1. This water distribution system must be constructed in accordance with the current Texas Commission on Environmental Quality (TCEQ) Rules and Regulations for Public Water Systems 30 Texas Administrative Code (TAC) Chapter 290 Subchapter D.When conflicts are noted with local standards, the more stringent requirement shall be applied. At a minimum, construction for public water systems must always meet TCEQ's "Rules and Regulations for Public Water Systems."
2. All newly installed pipes and related products must conform to American National Standards Institute (ANSI)/NSF International Standard 61 and must be certified by an organization accredited by ANSI [§290.44(a)(1)].
3. Plastic pipe for use in public water systems must bear the NSF International Seal of Approval (NSF-pw) and have an ASTM design pressure rating of at least 150 psi or a standard dimension ratio of 26 or less [§290.44(a)(2)].
4. No pipe which has been used for any purpose other than the conveyance of drinking water shall be accepted or relocated for use in any public drinking water supply [§290.44(a)(3)].
5. All water line crossings of wastewater mains shall be perpendicular [§290.44(e)(4)(B)].
6. Water transmission and distribution lines shall be installed in accordance with the manufacturer's instructions. However, the top of the water line must be located below the frost line and in no case shall the top of the water line be less than 24 inches below ground surface [§290.44(a)(4)].
7. The maximum allowable lead content of pipes, pipe fittings, plumbing fittings, and fixtures is 0.25 percent [§290.44(b)].
8. The contractor shall install appropriate air release devices with vent openings to the atmosphere covered with 16-mesh or finer, corrosion resistant screening material or an acceptable equivalent [§290.44(d)(1)].
9. The contractor shall not place the pipe in water or where it can be flooded with water or sewage during its storage or installation [§290.44(f)(1)].
10. When waterlines are laid under any flowing or intermittent stream or semi-permanent body of water the waterline shall be installed in a separate watertight pipe encasement. Valves must be provided on each side of the crossing with facilities to allow the underwater portion of the system to be isolated and tested [§290.44(f)(2)].
11. Pursuant to 30 TAC §290.44(a)(5), the hydrostatic leakage rate shall not exceed the amount allowed or recommended by the most current AWWA formulas for PVC pipe, cast iron and ductile iron pipe. Include the formulas in the notes on the plans.

    The hydrostatic leakage rate for polyvinyl chloride (PVC) pipe and appurtenances shall not exceed the amount allowed or recommended by formulas in America Water Works Association (AWWA) C-605 as required in 30 TAC §290.44(a)(5). Please ensure that the formula for this calculation is correct and most current formula is in use;
    Q=(LD √ P)/148,000
    Where:
    Q = the quantity of makeup water in gallons per hour,
    L = the length of the pipe section being tested, in feet,
    D = the nominal diameter of the pipe in inches, and
    P = the average test pressure during the hydrostatic test in pounds per square inch

    The hydrostatic leakage rate for ductile iron (DI) pipe and appurtenances shall not exceed the amount allowed or recommended by formulas in America Water Works Association (AWWA) C-600 as required in 30 TAC §290.44(a)(5). Please ensure that the formula for this calculation is correct and most current formula is in use;
    L=(SD √ P)/148,000
    Where:
    L = the quantity of makeup water in gallons per hour,
    S = the length of the pipe section being tested, in feet,
    D = the nominal diameter of the pipe in inches, and
    P = the average test pressure during the hydrostatic test in pounds per square inch

12. The contractor shall maintain a minimum separation distance in all directions of nine feet between the proposed waterline and wastewater collection facilities including manholes. If this distance cannot be maintained, the contractor must immediately notify the project engineer for further direction. Separation distances, installation methods, and materials utilized must meet §290.44(e)(1)-(4).
13. The separation distance from a potable waterline to a wastewater main or lateral manhole or cleanout shall be a minimum of nine feet. Where the nine-foot separation distance cannot be achieved, the potable waterline shall be encased in a joint of at least 150 psi pressure class pipe at least 18 feet long and two nominal sizes larger than the new conveyance. The space around the carrier pipe shall be supported at five-foot intervals with spacers or be filled to the springline with washed sand. The encasement pipe shall be centered on the crossing and both ends sealed with cement grout or manufactured sealant [§290.44(e)(5)].
14. Fire hydrants shall not be installed within nine feet vertically or horizontally of any wastewater line, wastewater lateral, or wastewater service line regardless of construction [§290.44(e)(6)].
15. Suction mains to pumping equipment shall not cross wastewater mains, wastewater laterals, or wastewater service lines. Raw water supply lines shall not be installed within five feet of any tile or concrete wastewater main, wastewater lateral, or wastewater service line [§290.44(e)(7)].
16. Waterlines shall not be installed closer than ten feet to septic tank drainfields [§290.44(e)(8)].
17. The contractor shall disinfect the new waterlines in accordance with AWWA Standard C-651-14 or most recent, then flush and sample the lines before being placed into service. Samples shall be collected for microbiological analysis to check the effectiveness of the disinfection procedure which shall be repeated if contamination persists. A minimum of one sample for each 1,000 feet of completed waterline will be required or at the next available sampling point beyond 1,000 feet as designated by the design engineer [§290.44(f)(3)].
18. 18. Dechlorination of disinfecting water shall be in strict accordance with current AWWA Standard C655-09 or most recent. lines shall not be installed within five feet of any tile or concrete wastewater main, wastewater lateral, or wastewater service line

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
HYDROPNEUMATIC PRESSURE TANK GENERAL CONSTRUCTION NOTES

1. These hydropneumatic pressure facilities must be constructed in accordance with the Texas Commission on Environmental Quality (TCEQ) Rules and Regulations for Public Water Systems 30 Texas Administrative Code (TAC) Chapter 290 Subchapter D. When conflicts are noted with local standards, the more stringent requirement shall be applied. At a minimum, construction for public water systems must always meet TCEQ's "Rules and Regulations for Public Water Systems."
2. All hydropneumatic tanks must be located wholly above grade and must be of steel construction with welded seams except as providing in note № 12 of these construction notes.
3. Metal thickness for pressure tanks shall be sufficient to withstand the highest expected working pressures with a four to one factor of safety. Tanks for 1000 gallon capacity or larger must meet the standards of the American Society of Mechanical Engineers (ASME) Section VIII, Division 1 Codes and Construction Regulations and must have an access port of periodic inspections. An ASME name plate must be permanently attached to those tanks. Tanks installed before July 1, 1988, are exempt from the ASME coding requirement, but all new installations must meet this regulation. Exempt tanks can be relocated within a system, but cannot be relocated to another system.
4. All pressure tanks shall be provided with a pressure release device and an easily readable pressure gauge.
5. Facilities shall be provided for maintaining the air-water-volume at the design water level and working pressure. Air injection lines must be equipped with filters or other devices to prevent compressor lubricant and other contaminants from entering the pressure tank. A device to readily determine air-water-volume must be provided for all tanks greater than 1000 gallon capacity. Galvanized tanks which are not provided with the necessary fittings and were installed before July 1, 1988, shall be exempt from this requirement.
6. Hydropneumatic pressure tanks shall be painted, disinfected and maintained in strict accordance with current American Water Works Association (AWWA) standards. Protective paint or coating shall be applied to the inside portion of any pressure tank. However, no temporary coating, wax, grease coating or coating materials containing lead will be allowed. No other coating will be allowed which are not approved for use (as a contact surface with potable water by the United Sates Environmental Protection Agency (EPA), NSF International, The United States Food and Drug Administration (FDA). All newly installed coatings must conform to ANSI/NSF International Standard 61 and must be certified by an organization accredited by ANSI.
7. No pressure tank that has been used to store any material other than potable water may be used in a public water system. A letter from the previous owner or owners must be provided.
8. Pressure tank installations should be equipped with slow closing valves and time delay pump controls to eliminate water hammer to reduce the chance of tank failure.
9. Associated appurtenances including valves pipes and fittings connected to pressure tanks must conform to ANSI/NSF International Standard 61 and shall be thoroughly tight against leakage. Pursuant to 30 TAC §290.44(b)(1), the maximum allowable lead content of pipes, pipe fittings, plumbing fittings, and fixtures is 0.25 percent.
10. Disinfection of water storage facilities shall be in strict accordance with current AWWA Standard C652-11 or most recent.
11. Dechlorination of disinfecting water shall be in strict accordance with current AWWA Standard C655-09 or most recent.
12. Where seamless fiberglass tanks are utilized, they shall not exceed 300 gallons in capacity.
13. No more than three pressure tanks shall be installed at any one site without the prior approval of the executive director.
14. All potable water storage tanks and pressure maintenance facilities must be enclosed by an intruder resistant fence with lockable gates. Pedestal type elevated storage tanks with lockable doors and without external ladders are exempt from this requirement. The gates and doors must be kept locked whenever the facility is unattended.

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FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

WATER SYSTEM GENERAL NOTES

ISSUE FOR PERMIT SHEET___OF ___

SECTION NO.			
DRAWN: JLW		DATE: 03/11/2022	
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		SHEET NO. **W4.00**	

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PLOT BOXED -----
LAST PLOTTED 3/10/2022 1:06:44 PM
LAYOUT NAME W4.00 WATER SYSTEM GENERAL NOTES
FILE NAME 11 GENERAL NOTES.DWG
FILE LOCATION \\Server\wet cad\Current Jobs\5773 TBC Park & Ride\+WD Current

Fort Bend County
Westpark Park & Ride
On-Site Sewage Facility
Projected Sewage Flows

Daily Flows	TCEQ Chapter 285 (Modified)				**NOTES**
Bus Drivers	4	gal. / day	375	mg/l BOD	See Note 1
Park & Ride Guests (292 Parking Spaces)	2	gal. / day	375	mg/l BOD	

Notes:
(1) Chapter 285, Table III for store washrooms (200 gpd/160 gpd * 300 mg/l = 375 mg/l)

Population ~ Number of Persons	**SUN**	**MON**	**TUES**	**WEDS**	**THURS**	**FRI**	**SAT**
Bus Drivers	12	12	12	12	12	12	12
Park & Ride Guests (292 Parking Spaces)	292	292	292	292	292	292	292

Flow ~ gallons per day	**SUN**	**MON**	**TUES**	**WEDS**	**THURS**	**FRI**	**SAT**	**Total**
Bus Drivers	48	48	48	48	48	48	48	336
Park & Ride Guests (292 Parking Spaces)	584	584	584	584	584	584	584	4,088
Total Flow Generated (gallons)	**632**	**632**	**632**	**632**	**632**	**632**	**632**	**4,424**
Plant Throughput	(632)	(632)	(632)	(632)	(632)	(632)	(632)	(4424)
Hydraulic Carryover To Be Stored	0	0	0	0	0	0	0	
Volume in Storage, gallons	0	0	0	0	0	0	0	

DESIGN FLOW			
Average Daily Flow	**632**	**gallons per day**	**Based on TCEQ Ch 285 low flow fixtures**
Max. Daily Flow	632	gallons per day	
Raw Wastewater BOD	1.98	lb BOD per day	Based on Assumed BOD's & Avg Flow
Average Wastewater BOD Conc.	375	mg/l	
PRETREATMENT TANK			
Required Pretreatment Tank Volume	**632**	**gallons**	**Minimum 1 Max Day Flow**
Proposed Pretreatment Tank Volume	**1,338**	**gallons**	**Provide (1) Gatco Model DZ-1250 SEP (1383 gal.)**
Pretreatment Tank Detention	51	hours	
BOD Reduction in Pretreatment Tanks, % Removal	0%	removal	
BOD Remaining for Treatment	2.0	lb BOD per day	
Duration of Flow into Pretreatment Tanks	24	hours per day	Based on 24 Hours of operation during an event per day
Duration of Flow into ATU" from Dosing Tanks	24	hours per day	Based on 24 Hours of operation, 7 days a week
HOLDING / DOSING TANK			
Required Holding / Dosing Tank Volume	**967**	**gallons**	**1.33 times max. Daily Flow + 20% Storage Volume Required**
Proposed Holding / Dosing Tank Volume	**1,383**	**gallons**	**Provide (1) Gatco DZ-1250 Pump Tank (1383 gal.)**
Flow Dosed to ATU's	6.58	gal. / dose	Provide (2) Hydromatic SHEF 30 - 0.33 hp Dosing Pumps
Dosing Duration	2.00	min. every 15 min.	
Feed Rate to each ATU	3.29	gpm	Adjust Ball Valve in ATU & Dosing Pump Recycle Valve accordingly
BOD Fed to ATU's	0.08	lb BOD per hour	Based on 24 Hours of operation per day
AEROBIC TREATMENT UNIT			
Hydraulic Capacity of ATU's (Each)	1,500	gallons per day	
BOD Capacity of ATU's (Each)	3.75	lb BOD per day	
Aerobic Treatment Units Proposed	**1**	**ea**	**Provide (1) Pro-Flo Model 1500 GPD Aerobic Treatment Units**
Total ATC Hydraulic Capacity of ATU's	1,500	gallons per day	
Total BOD Treatment Capacity of ATU's (daily)	3.75	lb BOD per day	
Total BOD Treatment Capacity of ATU's (hourly)	0.16	lb BOD/hour	> 0.08 # BOD/hour = OK
EFFLUENT PUMP TANK			
Effluent Holding Tank Volume Required	**841**	**gallons**	**Based on 1.33 times Average Daily Flow**
Effluent Holding Tank Volume Provided	**1,383**	**gallons**	**Provide (1) Gatco DZ-1250 Pump Tank (1383 gal.)**
EFFLUENT DISPOSAL AREA			
Spray Irrigation Application Rate	0.045	gallons/day/sq ft	Based on Class II Soil
Disposal Area Required	**14,044**	**square feet**	
Disposal Area Provided	**14,138**	**square feet**	
Diameter of Spray Heads	60	feet	32 foot radius
Area of Coverage for each spray Head	**2,828**	square feet	Non-overlapping areas
Minimum No of Spray Heads Req'd	5.0	ea	
Proposed No. of Sprayheads	**5.0**	ea	**Install 32 foot radius Sprayheads**
Flow Per Spray Head	3.1	gpm	
No. of Proposed Zones	1	ea	
No. of Spray Heads Per Zone	5	ea	
Flow Per Zone	15.50	gpm	**Provide Sta-Rite Model HS - 1/2 hp 15 gpm @ 120' TDH**
Pumping Duration Per Zone	40.8	minutes/day	Start pump at 1:00 am, run for 40.8 Minutes per zone

GENERAL ON-SITE SEWAGE FACILITY NOTES:

1. AN ON-SITE SEWERAGE FACILITY LICENSE MUST BE OBTAINED FROM THE LOCAL REGULATORY AUTHORITY PRIOR TO CONSTRUCTION OF THIS SYSTEM.
2. ALL CONSTRUCTION METHODS AND MATERIALS SHALL BE IN ACCORDANCE WITH MUNICIPAL, COUNTY AND STATE RULES AND POLICIES UNLESS SPECIFICALLY NOTED ON THIS DRAWING AND APPROVED BY THE LOCAL LICENSING AUTHORITY.
3. SYSTEM INSTALLATION SHALL BE BY A REGISTERED INSTALLER II OF ON-SITE SEWAGE FACILITIES, AS REQUIRED BY ARTICLE 4477-7E, VERNON'S TEXAS CIVIL STATUTES, OR BY THE OWNER OF THE PROPERTY UNDER LICENSE.
4. THIS SYSTEM, IF INSTALLED AND OPERATED IN ACCORDANCE WITH THIS PLAN AND STATE, COUNTY OR LOCAL RULES AND REGULATIONS, SHOULD NOT PRESENT A HAZARD TO PUBLIC HEALTH, OR THREATEN ADJACENT WATER WELLS.
5. IT IS THE INSTALLER'S RESPONSIBILITY TO INSURE THAT SAFE DISTANCES FROM ANY WATER WELLS MEET OR EXCEED STATE AND LOCAL CRITERIA, AND ARE IN ACCORDANCE WITH THE LICENSE ISSUED.
6. IT IS THE INSTALLER'S RESPONSIBILITY TO REVIEW THE DESIGN CRITERIA WHICH ACCOMPANIES OR IS SHOWN ON THIS DRAWING. THE CRITERIA IS AN IMPORTANT PART OF THE CONSTRUCTION DOCUMENTATION PACKAGE.
7. STORM OR SITE DRAINAGE IMPROVEMENTS SHOWN ON THIS PLAN SHALL BE CONSTRUCTED PRIOR TO COMMENCEMENT OF CONSTRUCTION OF THE ON-SITE SEWAGE FACILITY.
8. SITE SHALL BE CAREFULLY FINISH GRADED AFTER COMPLETION OF SYSTEM INSTALLATION TO PROVIDE POSITIVE STORM WATER RUNOFF. ABSORPTION AREAS SHALL BE CROWNED. DRAINAGE SWALES SHALL BE CONSTRUCTED TO ADEQUATELY CONVEY STORM WATER AWAY FROM THE ABSORPTION AREA.
9. IF PROPERTY IS LOCATED WITHIN THE 100-YEAR FLOOD PLAIN, ALL MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE ELEVATED AT LEAST 18 INCHES ABOVE THE 100 YEAR FLOOD ELEVATION, OR WATERPROOFED.
10. IF ANY DISCREPANCIES EXIST BETWEEN THIS PLAN AND ACTUAL SITE CONDITIONS, IT IS THE RESPONSIBILITY OF THE INSTALLER TO NOTIFY THE ENGINEER AND LICENSING AUTHORITY PRIOR TO CONSTRUCTION.
11. ELECTRICAL WORK SHALL BE IN CONFORMANCE WITH THE NATIONAL ELECTRICAL CODE, CURRENT EDITION.
12. CONDENSATE FROM AIR CONDITIONING, ICE MACHINES OR OTHER REFRIGERATION EQUIPMENT SHALL NOT BE DISCHARGED INTO THE ON-SITE SEWAGE SYSTEM UNLESS SYSTEM HAS BEEN OVERSIZED TO ACCOMMODATE SUCH DISCHARGE. WATER SOFTENER BACKWASH SHALL NOT BE INTRODUCED INTO THE ON-SITE SEWAGE SYSTEM. POOL/SPA DRAINS OR BACKWASH SHALL NOT BE INTRODUCED INTO SEWERAGE SYSTEM.
13. PLUMBING STUBOUTS SHALL BE CONSTRUCTED AS SHALLOW AS POSSIBLE. MAXIMUM DEPTH BELOW NATURAL GROUND TO FLOWLINE: 12 INCHES.
14. THE LICENSING AUTHORITY SHALL BE NOTIFIED FOR INSPECTION PRIOR TO COVERING OF ANY SYSTEM COMPONENTS.
15. CONTRACTOR SHALL NOTIFY UTILITY COORDINATING COMMITTEE, 800-669-8344 AND/OR TEXAS ONE CALL SYSTEM, 800-245-4545, WELL IN ADVANCE OF CONSTRUCTION FOR THE PURPOSE OF LOCATING UNDERGROUND LINES. AUTHORITY: OSHA RULE 1926.651.
16. WHERE A NEW POTABLE WATERLINE CROSSES A NEW PRESSURE RATED WASTEWATER MAIN OR LATERAL, ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER THE WASTEWATER LINE SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTER LINE OF THE WASTEWATER LINE OR LATERAL. THE POTABLE WATER LINE SHALL BE AT LEAST SIX INCHES ABOVE THE WASTEWATER LINE OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL. THE WASTEWATER PIPE SHALL HAVE A MINIMUM RATING OF AT LEAST 150 psi. THE WASTEWATER MAIN OR LATERAL SHALL BE EMBEDDED IN CEMENT STABILIZED SAND FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT ON EACH END.
17. IT IS THE INSTALLER'S RESPONSIBILITY TO BE FAMILIAR WITH AND COMPLY WITH OSHA TRENCH SAFETY PROVISIONS.
18. ALL WASTEWATER CLEAN OUTS AND RISER COVERS SHALL BE A MINIMUM OF 12" BELOW FINISHED FLOOR ELEVATION, INCLUDING ANY SUNKEN SLAB AREAS THAT HAVE PLUMBING FIXTURES. PURPOSE: TO PROVIDE OVERFLOW RELIEF IN CASE OF PUMP FAILURE OR WASTEWATER SYSTEM LINE CLOGGING.
19. DISTRIBUTION PIPING FOR TREATED EFFLUENT FOR SURFACE APPLICATION OR EMITTER SYSTEMS SHALL BE SCH 40 PVC, MADE OF PURPLE COLOR MATERIAL. ALL IRRIGATION SPRAY HEADS SHALL HAVE PURPLE COLORED COVERS OR TOPS. CONVENTIONAL WHITE COLOR PVC FITTINGS MAY BE USED.
20. UNLESS OTHERWISE SPECIFIED, THE MINIMUM DEPTH OF COVER OVER PIPELINES AND CONDUITS SHALL BE AS FOLLOWS:
    A. ELECTRICAL CONDUIT - 24 INCHES (36 INCHED UNDER ROADWAYS)
    B. SANITARY SEWER FORCE MAINS - 24 INCHES (35 INCHES UNDER ROADWAYS)
    C. LATERAL SPRINKLER LINES - 12 INCHES
20. LOW VOLTAGE CONTROL CONDUCTORS SHALL BE UL APPROVED, DIRECT BURIAL TYPE UF, NO. 12 AWG, SOLID COPPER, UNLESS OTHERWISE REQUIRED, IN ACCORDANCE WITH THE CONTROL EQUIPMENT MANUFACTURERS RECOMMENDATION.

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FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

OSSF DESIGN CRITERIA & GENERAL NOTES

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		SHEET NO. **W5.00**	

PLOT BY: JLW
PLOT DATE: ----
LAST PLOTTED: 3/10/2022 10:50:59 PM

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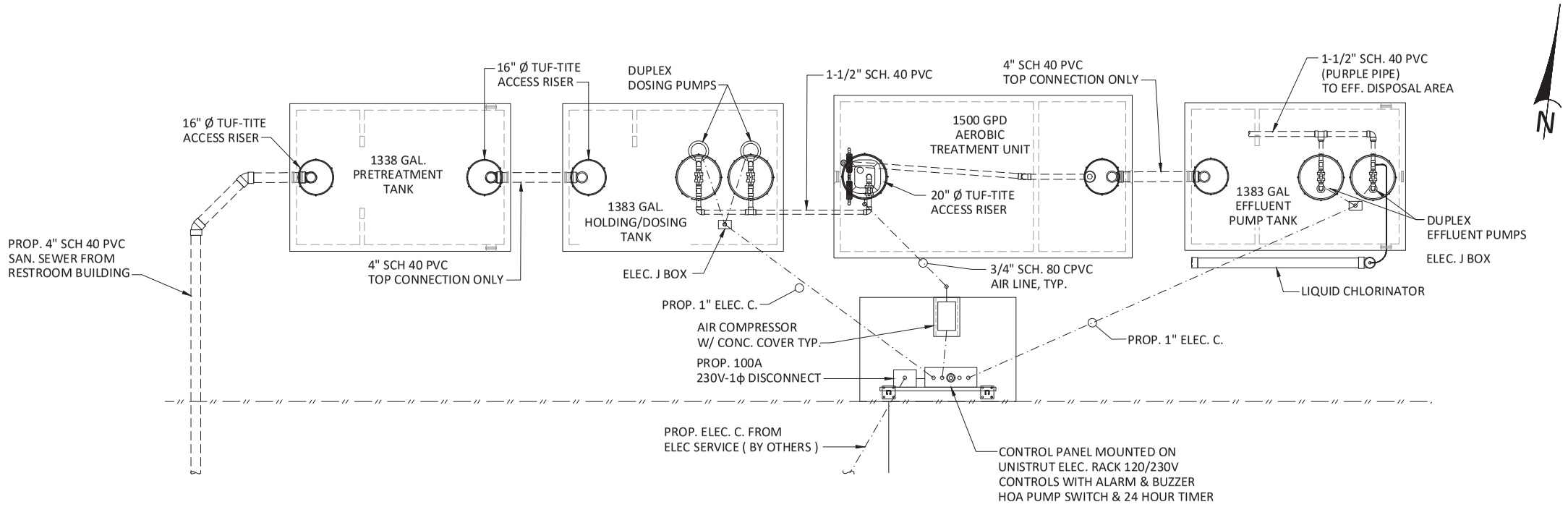
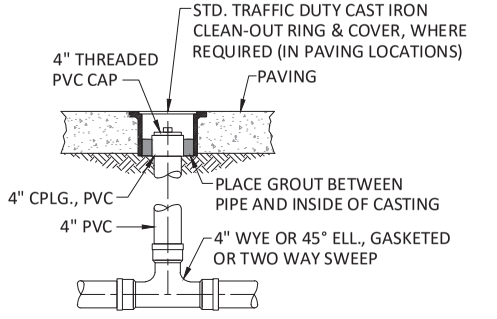


OSSF TANK AREA PLAN

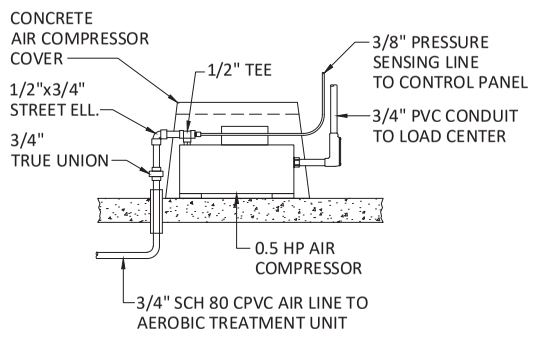
0 2 4

SCALE:1/2" = 1'-0" (24"x36")
1/4" = 1'-0" (11"x17" 8.5" X 11")



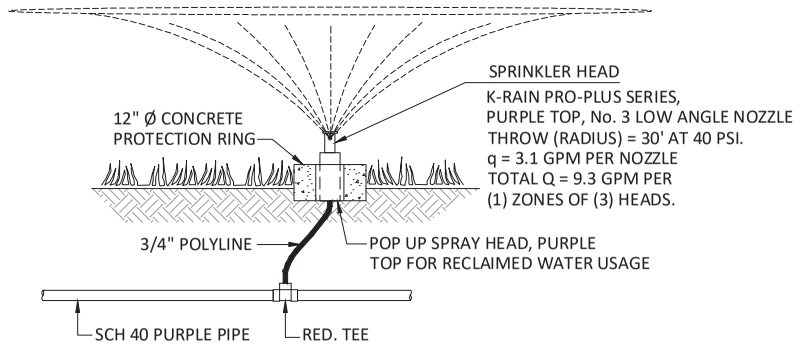
SANITARY SEWER TWO WAY CLEAN-OUT DETAIL

NTS



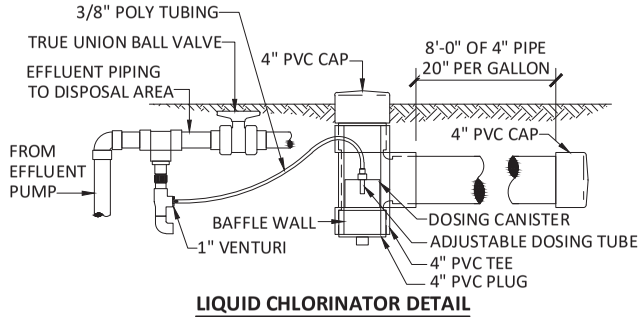
AIR COMPRESSOR DETAIL

NTS



POP-UP SPRAY HEAD DETAIL

NTS



LIQUID CHLORINATOR DETAIL

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LAYOUT NAME W5.10 OSSF TANK AREA PLAN & DETAILS
FILE NAME 04 TANK PLAN & DETAILS.DWG
FILE LOCATION \\CorneyNet-staff\Current Jobs\3772 TDC Park & Ride\OSSF

PLOT BY JLW
PLOT DEVICE ----
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FORT BEND COUNTY
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WESTPARK PARK & RIDE

OSSF TANK AREA PLAN & DETAILS

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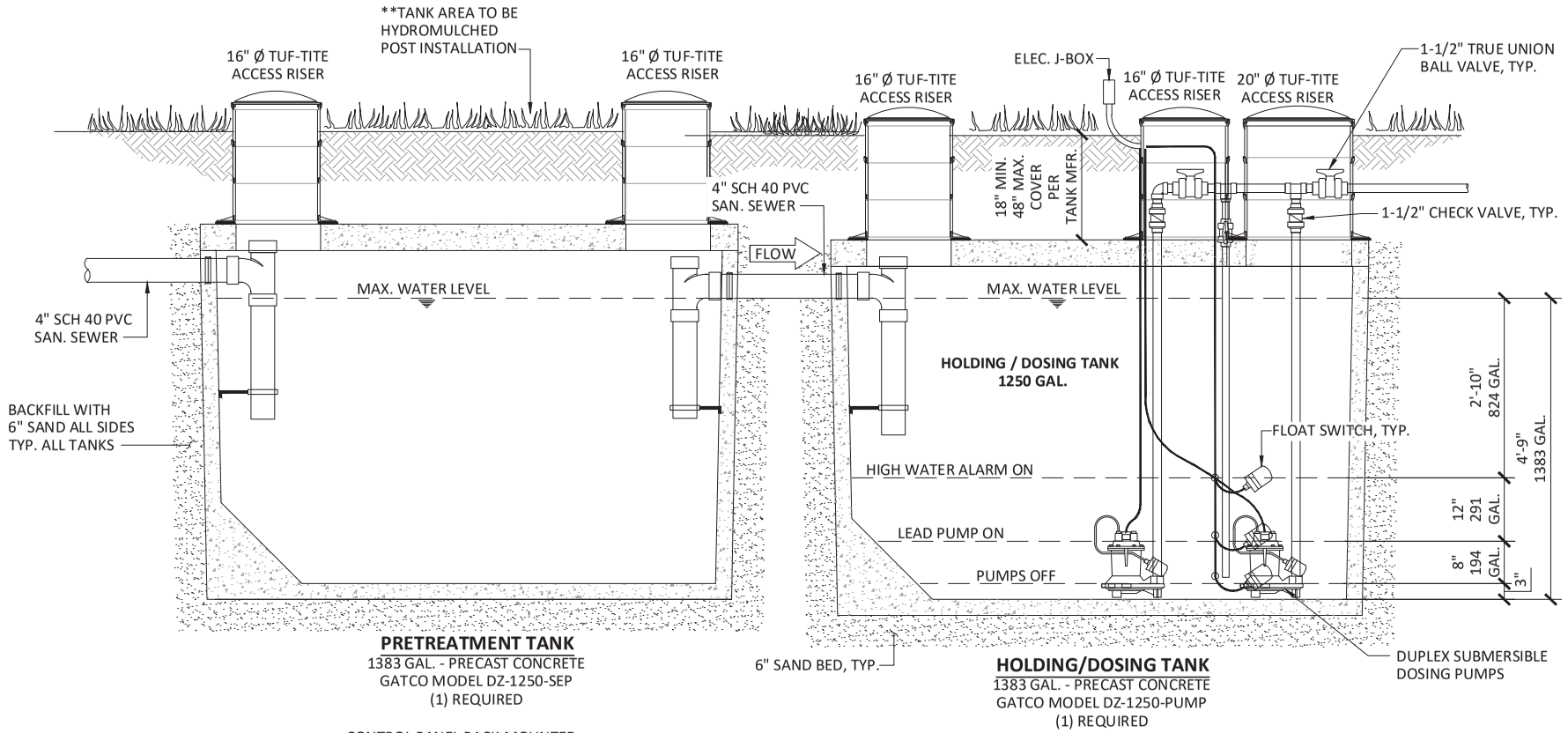
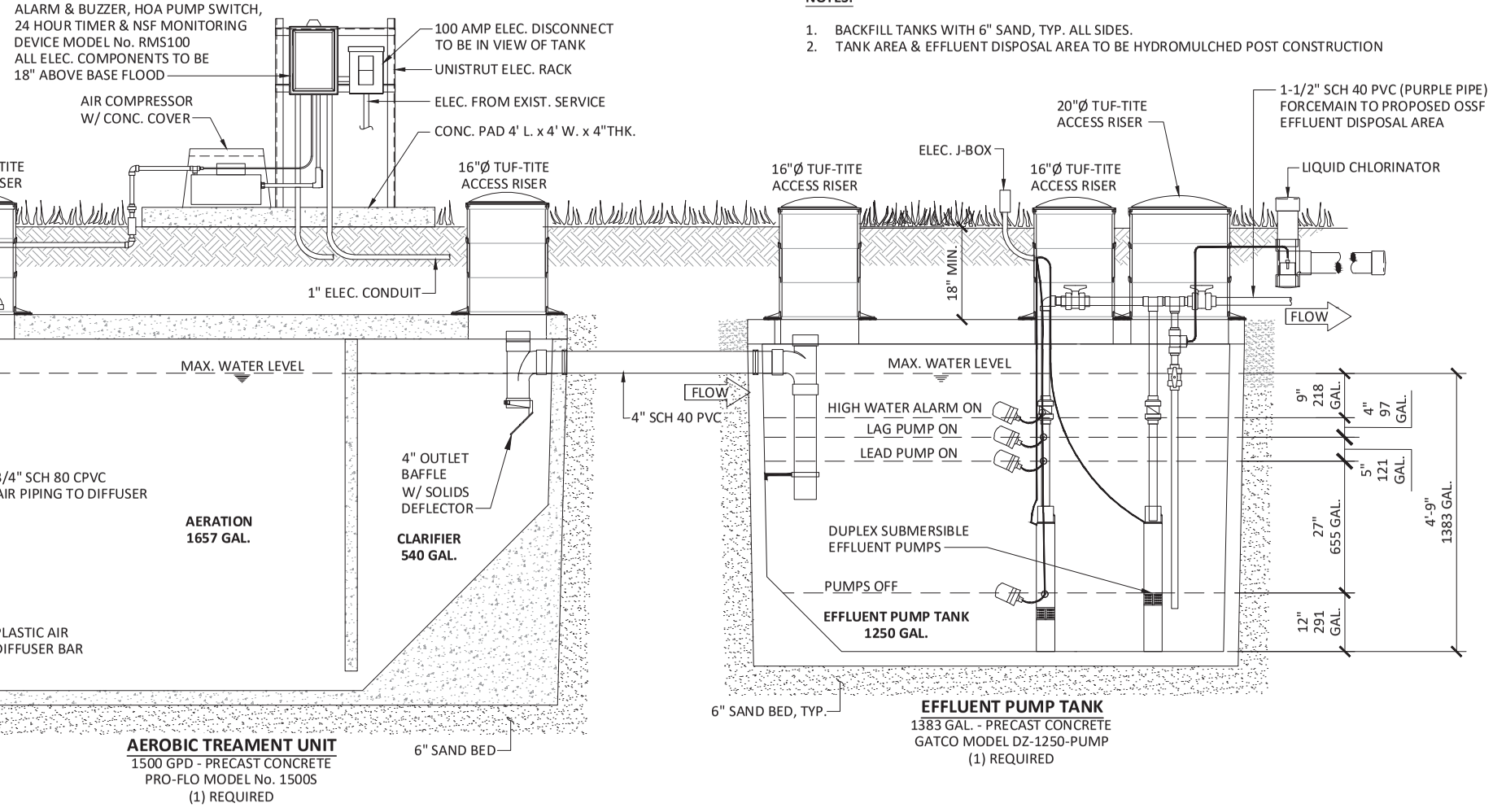


ATU Dosing Table	
Total Flow	632 gpd
Total ATU's	1 ea
Flow per ATU	632 gpd
Total Doses per day	96 ea
Dose per interval	6.58 gal.
Dosing Rate	3.29 gpm
Dosing Duration	2.00 min.

ON-SITE SEWAGE FACILITY
ELECTRICAL LOAD ANALYSIS

UNIT	HP	VOLT.	PHASE	FLA
DOSING PUMP 1	0.33	115	1	7.2
DOSING PUMP 2	0.33	115	1	7.2
AIR COMPRESSOR 1	0.50	115	1	9.8
EFFLUENT PUMP 1	0.50	230	1	4.9
EFFLUENT PUMP 2	0.50	230	1	4.9
25 % OF LARGEST MOTOR				2.40
			TOTAL AMPS	36.40



NOTES:

1. BACKFILL TANKS WITH 6" SAND, TYP. ALL SIDES.
2. TANK AREA & EFFLUENT DISPOSAL AREA TO BE HYDROMULCHED POST CONSTRUCTION

SCALE: 3/4" = 1'-0" (24"x36")
3/8" = 1'-0" (11"x17" 8.5"x11")

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FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

OSSF TANK SCHEMATIC

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PLOT BY JLB
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LAST PLOTTED 3/14/2022 10:03:13 PM
LAYOUT NAME W5.20 OSSF TANK SCHEMATIC
FILE NAME 04 TANK FARM & DETAILS.DWG
FILE LOCATION \\Sonarlwe-staff\Current Jobs\5772 TDC Park & Ride\OSSF

&	AND
L	ANGLE
[	CHANNEL
@	AT
℄	CENTER LINE
ø	DIAMETER OR ROUND
⊥	PERPENDICULAR
#	POUND OR NUMBER
(E)	EXISTING
A.B.S.	ACRYLONITRILE BUTADIENE STYRENE
ABV.	ABOVE
A/C	AIR CONDITIONING
ACOUS.	ACOUSTICAL
A.D.	AREA DRAIN
ADD.	ADDENDUM
A.F.F.	ABOVE FINISH FLOOR
AGG.	AGGREGATE
A.H.U.	AIR HANDLING UNIT
ALLOW.	ALLOWANCE
ALT.	ALTERNATE
ALUM.	ALUMINUM
ANOD.	ANODIZED
APX.	APPROXIMATE
ARCH.	ARCHITECT(URAL)
AUTO.	AUTOMATIC
AUX.	AUXILIARY
AVG.	AVERAGE
BD.	BOARD
BLDG.	BUILDING
BLK.	BLOCK
BLKG.	BLOCKING
BOT.	BOTTOM
BR&S	BACKER ROD & SEALANT
CAB.	CABINET
C.B.	CATCH BASIN
CC.TV.	CLOSED-CIRCUIT TELEVISION
CER.	CERAMIC
C.G.	CORNER GUARD
C.H.	COAT HOOK
C.I.	CAST IRON
C.J.	CONTROL JOINT
CLG.	CEILING
CLO.	CLOSET
CLR.	CLEAR
C.M.U.	CONCRETE MASONRY UNIT
COL.	COLUMN
COMP.	COMPONENT
CONC.	CONCRETE
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
CPT.	CARPET
C.R.	CURTAIN ROD
CS.	COUNTERSINK
C.T.	CERAMIC TILE
CU.FT.	CUBIC FEET (FOOT)
CU.IN.	CUBIC INCH
CU.YD.	CUBIC YARD
CX.	CONNECTION
DBL.	DOUBLE
DEPT.	DEPARTMENT
DET.	DETAIL
D.F.	DRINKING FOUNTAIN
D.H.	DOUBLE HUNG
DIAG.	DIAGONAL
DIA.	DIAMETER
DIM.	DIMENSION
DIV.	DIVISION
DN.	DOWN
D.O.	DOOR OPENING
DR.	DOOR
DWG.	DRAWING
DWR.	DRAWER
E.	EAST
EA.	EACH
E/A	EXHAUST AIR
E.D.F.	ELECTRICAL DRINKING FOUNTAIN
E.H.D.	ELECTRICAL HAND DRYER
E.J.	EXPANSION JOINT
EL.	ELEVATION
ELEC.	ELECTRIC
ELEV.	ELEVATOR
EMER.	EMERGENCY
ENCL.	ENCLOSURE
EQ.	EQUAL
EQPT.	EQUIPMENT
EXH.	EXHAUST
EXP.	EXPANSION
EXPO.	EXPOSED
EXIST'G	EXISTING
EXT.	EXTERIOR

F.A.	FIRE ALARM
F.D.	FLOOR DRAIN
F.D.C.	FIRE DEPARTMENT CONNECTION
F.D.C.C.	FIRE DEPARTMENT CONNECTION CABINET
FDN.	FOUNDATION
F.E.	FIRE EXTINGUISHER
F.E.C.	FIRE EXTINGUISHER CABINET
FEM.	FEMALE
F.H.C.	FIRE HOSE CABINET
F.H.M.S.	FLAT HEAD MACHINE SCREW
F.H.R.	FIRE HOSE RACK
F.H.W.S.	FLAT HEAD WOOD SCREW
F.HY.	FIRE HYDRANT
FIN.	FINISH
FLASH.	FLASHING
FLEX.	FLEXIBLE
FLR.	FLOOR
FLUOR.	FLUORESCENT
F.MIR.	FRAMED MIRROR
F.MIR.SH.	FRAMED MIRROR AND SHELF
F.O.F.	FACE OF FINISH
F.O.S.	FACE OF STUDS
F.S.	FULL SIZE
FT.	FOOT (FEET)
FURR.	FURRED
FUT.	FUTURE
F.W.C.	FABRIC WALL COVERING
GA.	GAUGE
GALV.	GALVANIZED
G.B.	GRAB BAR
G.I.	GALVANIZED IRON
GL.	GLASS
GYP.	GYPSUM
H.	HIGH
H.B.	HOSE BIB
H.C.	HOLLOW CORE
HDWD.	HARDWOOD
HDWE.	HARDWARE
H.M.	HOLLOW METAL
HORIZ.	HORIZONTAL
H.PT.	HIGH POINT
HR.	HOUR
HT.	HEIGHT
I.D.	INSIDE DIAMETER
IN.	INCH
INCL.	INCLUDE
INSUL.	INSULATION
INT.	INTERIOR
INTM.	INTERMEDIATE
INV.	INVERT
JAN.	JANITOR
JT.	JOINT
KIT.	KITCHEN
K.O.	KNOCK OUT
LAB.	LABORATORY
LAM.	LAMINATE
LAV.	LAVATORY
LB.	POUND
LKR.	LOCKER
L.L.H.	LONG LEG HORIZONTAL
L.L.V.	LONG LEG VERTICAL
L.PT.	LOW POINT
LT.	LIGHT
LTL.	LINTEL
LVL.	LEVEL
LVR.	LOUVER
MAT'L	MATERIAL
MAX.	MAXIMUM
M.B.	MOP BASIN
M.B.H.	MOP-BROOM HOLDER
M.C.	MEDICINE CABINET
MECH.	MECHANICAL
MED.	MEDIUM
MEMB.	MEMBRANE
MET.	METAL
MEZZ.	MEZZANINE
MFR.	MANUFACTURE
MIN.	MINIMUM
MIR.	MIRROR
MISC.	MISCELLANEOUS
MLDG.	MOULDING
MTD.	MOUNTED
MTG.	MOUNTING
MULL.	MULLION
N.	NORTH
N.I.C.	NOT IN CONTRACT
NO.	NUMBER
NOM.	NOMINAL
N.T.S.	NOT TO SCALE

O.A.	OVER ALL
O/A	OUTSIDE AIR
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
OFF.	OFFICE
OPNG	OPENING
OPP.	OPPOSITE
OPH.	OPPOSITE HAND
OZ.	OUNCE
PBD.	PARTICLE BOARD
PL.	PLATE
P.LAM.	PLASTIC LAMINATE
PLAS.	PLASTER
PLYWD.	PLYWOOD
PNL.	PANEL(ING)
POL.	POLISH
PR.	PAIR
P.S.F.	POUNDS PER SQUARE FOOT
P.SH.	PURSE SHELF
P.S.I.	POUNDS PER SQUARE INCH
PT.	POINT
PTN.	PARTITION
Q.T.	QUARRY TILE
QTR.	QUARTER
R.	RISER
R/A	RETURN AIR
RAD.	RADIUS
REF.	REFERENCE
REFR.	REFRIGERATOR
REINF.	REINFORCED
REQ.	REQUIRE(D)
RESIL.	RESILIENT
REV.	REVISE
RM.	ROOM
R.O.	ROUGH OPENING
S.	SOUTH
S/A	SUPPLY AIR
SAM.	SANITARY
S.C.	SOLID CORE
SCHED.	SCHEDULE
S.D.	SOAP DISPENSER
SECT.	SECTION
SH.	SHELF
SHR.	SHOWER
SHT.	SHEET
SIM.	SIMILAR
S.N.D.	SANITARY NAPKIN DISPENSER
S.N.R.	SANITARY NAPKIN RECEPTACLE
S.M.R.	SANITARY NAPKIN-TAMPON DISPENSER
SQ.	SQUARE
S.SK.	SERVICE SINK
S.ST.	STAINLESS STEEL
ST.	STEEL
STA.	STATION
STD.	STANDARD
STOR.	STORAGE
STR.	STRUCTURE
SUR.	SURFACE
SUSP.	SUSPENDED
SYM.	SYMMETRICAL
SYS.	SYSTEM
T.	TREAD
T.B.	TOWEL BAR
T.D.	TOWEL DISPENSER
T.D.R.	TOWEL DISPENSER-RECEPTACLE
TEL.	TELEPHONE
TEMP.	TEMPERED
TERR.	TERRAZZO
T&G	TONGUE AND GROOVE
THER.	THERMAL
THK.	THICK(NESS)
THRES.	THRESHOLD
T.T.D.	TOILET TISSUE DISPENSER
TV.	TELEVISION
T.W.	TOP OF WALL
TYP.	TYPICAL
UR.	URINAL
U.N.O.	UNLESS NOTED OTHERWISE
V.C.T.	VINYL COMPOSITION TILE
VERT.	VERTICAL
VEST.	VESTIBULE
V.I.F.	VERIFY IN FIELD
VNR.	VENEER
V.M.C.	VINYL WALL COVERING
W.	WEST
W/	WITH
W.A.U.	WALL ASH URN
W.C.	WATER CLOSET
WD.	WOOD
WIN.	WINDOW
W/O	WITHOUT
WP.	WATERPROOF
W.R.	WASTE RECEPTACLE
W/R	WATER RESISTANT
WSCT.	WAINSCOT
WT.	WEIGHT

GRANULAR FILL

CONCRETE

BRICK

STONE

METAL LARGE SCALE

METAL SMALL SCALE

METAL LATH

PLASTER, SAND, MORTAR, GROUT

PARTIAL BUILDING OR WALL SECTION REFERENCE

DETAIL REFERENCE
DETAIL NUMBER
DIRECTION OF VIEW
SHEET NUMBER

EXISTING CONTOUR LINE

NEW OR FINISH CONTOUR LINE

TEST BORING

PLAN NORTH NORTH ARROW

TRUE NORTH NORTH ARROW

EXISTING POINT ELEVATION

NEW OR FINISH POINT ELEVATION

LEVEL POINT DATUM POINT

PARTITION TYPE (RE: PARTITION SCHEDULE)

DOOR NUMBER
LEVEL
(RE: DOOR SCHEDULE)

DOOR NUMBER
"XX" INDICATES MULTIPLE TYPICAL LEVELS,
LEVELS 5 THRU 15
(RE: DOOR SCHEDULE)

ROOM NUMBER
LEVEL

ROOM NUMBER
"XX" INDICATES MULTIPLE TYPICAL LEVELS,
LEVELS 5 THRU 15
(RE: DOOR SCHEDULE)

WOOD

PLYWOOD LARGE SCALE

FINISH WOOD

CONTINUOUS

BLOCKING

GLASS ELEVATION

GLASS

INSULATION OR SOUND ATTENUATION

SLOT DIFFUSER

RECESSED DOWN LIGHT

RECESSED WALL WASHER

SMOKE DETECTOR

NEW OR RELOCATED 2 X 2 RECESSED FLUORESCENT FIXTURE

NEW OR RELOCATED 1 X 4 RECESSED FLUORESCENT FIXTURE

NEW OR RELOCATED 2 X 4 RECESSED FLUORESCENT FIXTURE

NEW OR RELOCATED 2 X 4 RECESSED FLUORESCENT FIXTURE

FLOURESCENT COVE/ UNDERCOUNTER LIGHT

AMBIENT FLUORESCENT FIXTURE

COLUMN LINE REFERENCE

WINDOW NUMBER

GLAZING TYPE

REVISION NUMBER

KEY NOTE REFERENCE

ELEVATION NUMBER
SHEET NUMBER

BUILDING SECTION REFERENCE

EARTH

PLYWOOD SMALL SCALE

MASONRY

CERAMIC TILE

GYP. BD./ PLASTER

RIGID INSULATION

ACOUSTICAL TILE OR BOARD

LOUVER IN WALL

DIMMING LIGHT SWITCH

3 WAY LIGHT SWITCH

LIGHT SWITCH

EXIT LIGHT W/ DIRECTION ARROWS

SPRINKLER HEAD

FIRE HORN

DETAIL NUMBER
LARGE SCALE REFERENCE
SHEET NUMBER

DETAIL NUMBER
SMALL SCALE REFERENCE
SHEET NUMBER

PROPERTY LINE

CENTER LINE

ABOVE OR BEYOND LINE

BREAK LINE

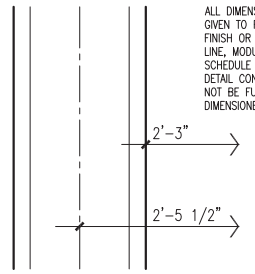
WALL FINISH
BASE FINISH

FLOOR FINISH

FLOOR FINISH TRANSITION

24	20	16	12	8	4
23	19	15	11	7	3
22	18	14	10	6	2
21	17	13	9	5	1

THE NO'S 1 THRU 24 ARE AVAILABLE FOR EACH SHEET AND IF USED ALWAYS APPEAR IN THE LOCATIONS SHOWN. DETAILS MAY BE DRAWN ON ONE OR MULTIPLE MODULES.



ALL DIMENSIONS ARE GIVEN TO FACE OF FINISH OR CENTER-LINE, MODULE, OR SCHEDULE OR TYPICAL DETAIL CONDITION MAY NOT BE FURTHER DIMENSIONED.

REGISTERED ARCHITECT
DAVID BONNETT
16373
STATE OF TEXAS
5-2-2022

NO.	DATE	REVISION	APPROV.

PGAL
3131 BRIARPARK
SUITE 200
HOUSTON, TX 77042
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[F] 713 968 9333
PGAL TBPE REG. NO: F-2742

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Planners-Engineers-Program Managers
IDC, Inc.
11111 Wilcrest Green, Suite 250
Houston, Texas 77042
(713) 541-5591 Fax: (713) 541-3501
T.B.P.E.FIRM REGISTRATION NO. F-6825

THE STATE OF TEXAS
FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

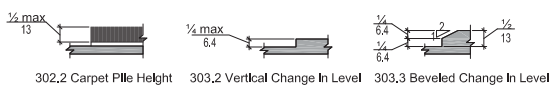
WESTPARK PARK & RIDE

ARCHITECTURAL GENERAL INFORMATION

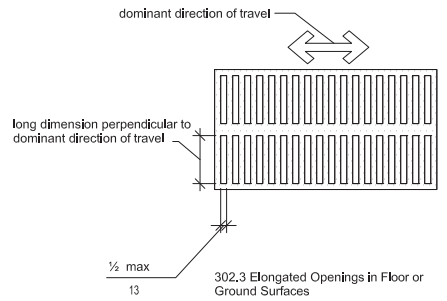
ISSUE FOR PERMIT SHEET ___ OF ___

SECTION NO.	
DRAWN: **SH**	DATE: **5-2-2022**
CHECKED:	DATE:
DESIGN: **SH**	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. **A0.01**

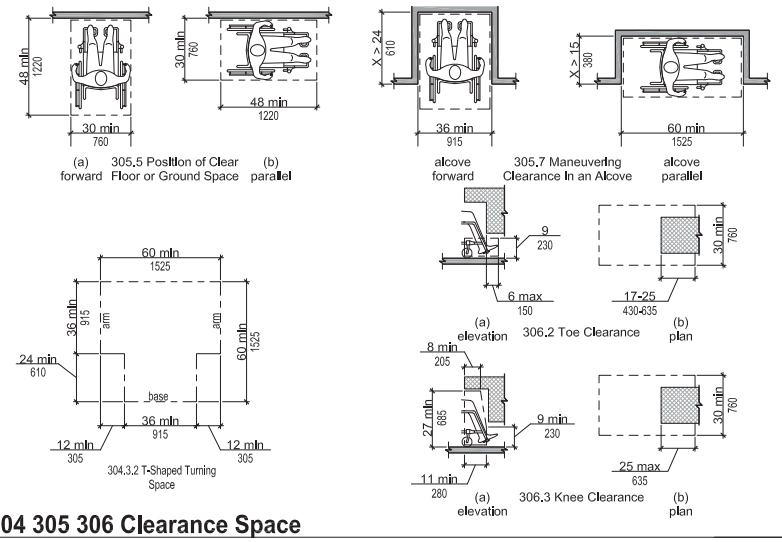
PLOT BY: CDau
PLOT DATE: 5/3/2022 10:30:00 AM
LAST PLOTTED: 5/3/2022 10:30:00 AM
LAYOUT NAME: A0.01
FILE NAME: 0073A001-GENERAL INFO.DWG
FILE LOCATION: R:\2020\-100199\WORKING\-CAD\510 CAD Files\Sheets



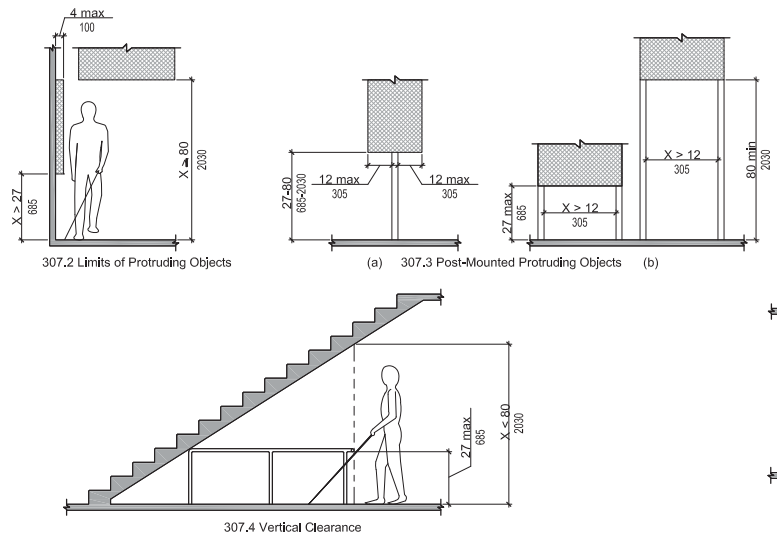
302 - Floor or Ground Surfaces1



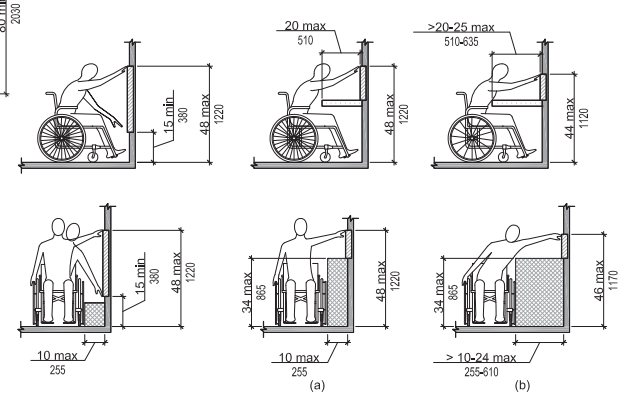
302 Floor or Ground Surfaces



304 305 306 Clearance Space

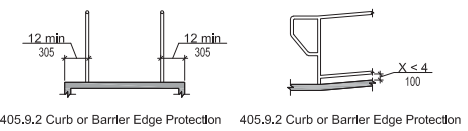


307 Limits of Protruding Objects1

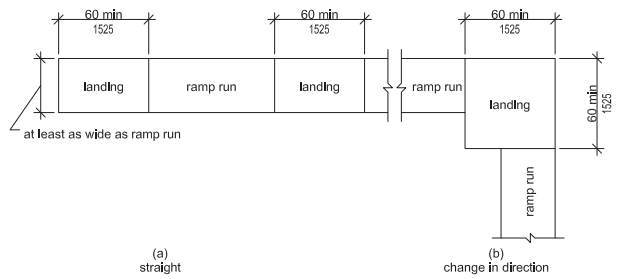


308 Reach Ranges1

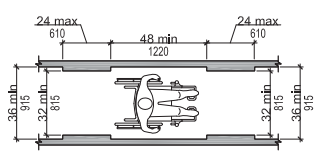
CHAPTER 3: BUILDING BLOCKS



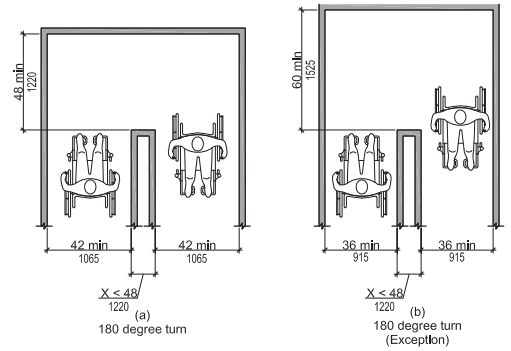
405.9 Extended Floor or Ground Surface



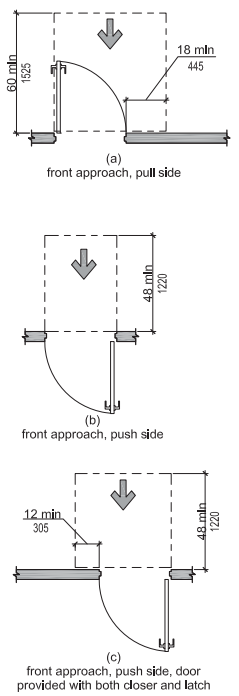
405.7 Ramp Landings1

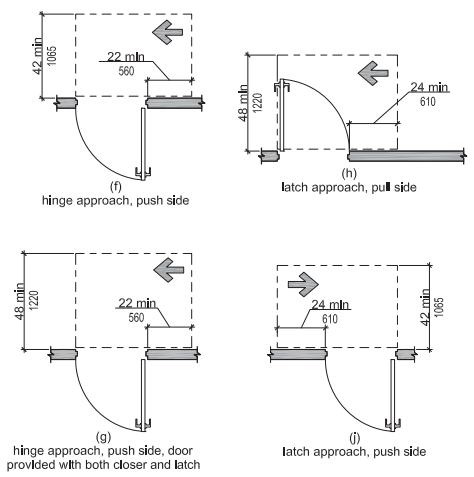


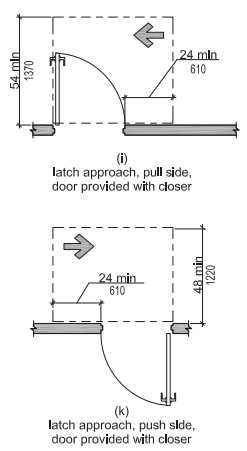
403.5.1 Clear Width of an Accessible Route1

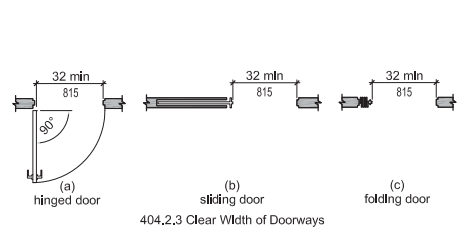


403.5.2 Clear Width at Turn1

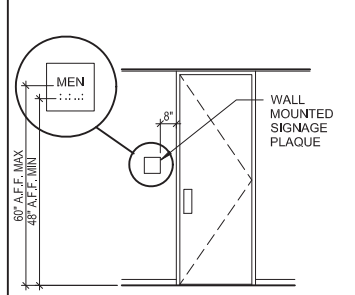




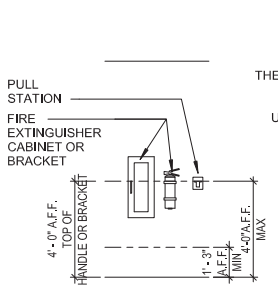




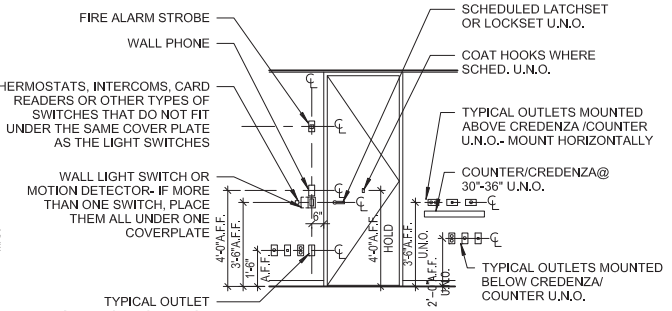
CHAPTER 4: ACCESSIBLE ROUTES



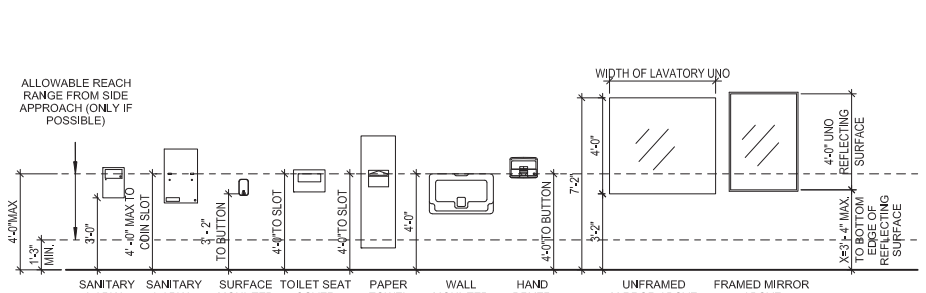
ADA SIGNAGE



FIRE PROTECTION



TYPICAL



Graphic Convention for Figures

Convention	Description
36 / 915	dimension showing English units (in inches unless otherwise specified) above the line and SI units (in millimeters unless otherwise specified) below the line
6 / 150	dimension for small measurements
33-36 / 840-915	dimension showing a range with minimum - maximum
min	minimum
max	maximum
>	greater than
≥	greater than or equal to
<	less than
≤	less than or equal to
	boundary of clear floor space or maneuvering clearance
℄	centerline
	a permitted element or its extension
	direction of travel or approach
	a wall, floor, ceiling or other element cut in section or plan
	a highlighted element in elevation or plan
	location zone of element, control or feature

TYPICAL INSTALLATION HEIGHTS

REGISTERED ARCHITECT DANIEL S. BONNETTE 18373 STATE OF TEXAS
5-2-2022

NO.	DATE	REVISION	APPROV.

PGAL
3131 BRIARPARK
SUITE 200
HOUSTON, TX 77042
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PGAL TBPE REG. NO: F-2742

IDC
Planners-Engineers-Program Managers
IDC, Inc.
11111 Wilcrest Green, Suite 250
Houston, Texas 77042
(713) 541-5591 Fax: (713) 541-3501
T.B.P.E.FIRM REGISTRATION NO. F-6825

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

ADA STANDARDS

ISSUE FOR PERMIT SHEET ___ OF ___

SECTION NO.		
DRAWN:	DATE:	5-2-2022
CHECKED:	DATE:	
DESIGN:	DATE:	
CHECKED:	DATE:	
CONTRACT NO.		
	SHEET NO.	A0.05

LAYOUT NAME: LAYOUT1
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FILE LOCATION: R:\606000-609999\607300\315-ADA\607306 CAD Files\Sheets
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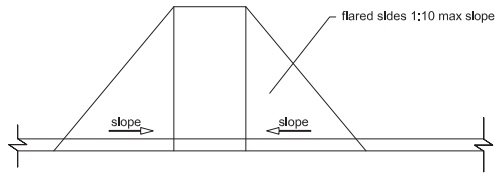
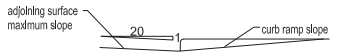
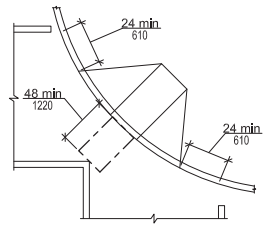
PLOT DEVICE: BLUEBEAM.PDF
LAST PLOTTED: 5/3/2022 10:29:04 AM



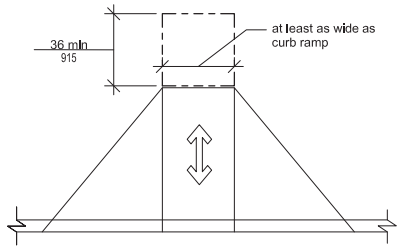
Sides of Curb Ramps



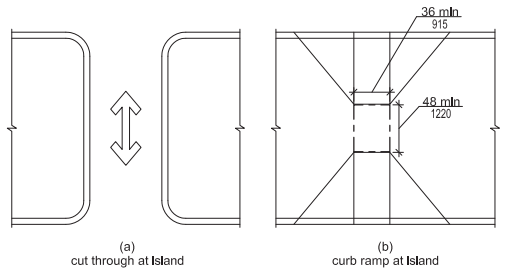
Counter Slope of Surfaces Adjacent to Curb Ramps



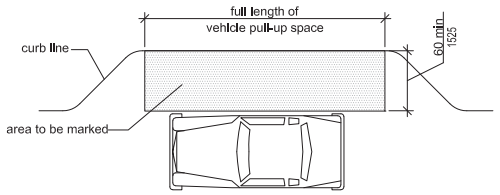
Diagonal or Corner Type Curb Ramps



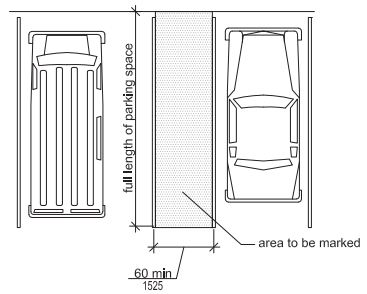
Landings at the Top of Curb Ramps



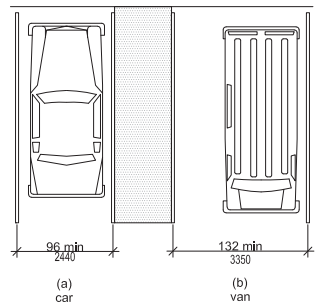
Islands in Crossings



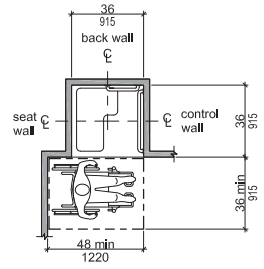
Passenger Loading Zone Access Aisle



Parking Space Access Aisle

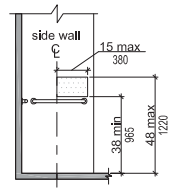


Vehicle Parking Spaces

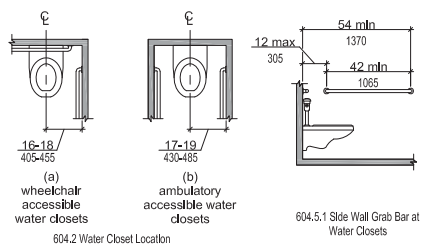


Note: Inside finished dimensions measured at the center points of opposing sides.

608.2.1 Transfer Type Shower Compartment Size and Clearance.

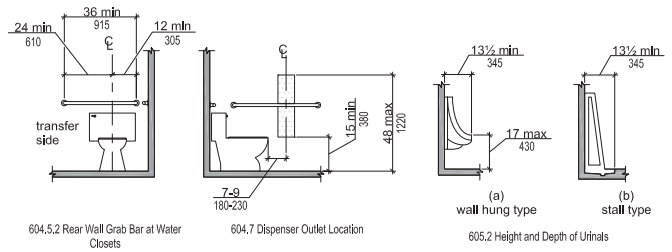


608.5.1 Transfer Type Shower Compartment Control Location



604.2 Water Closet Location

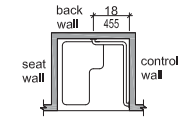
604.5.1 Side Wall Grab Bar at Water Closets



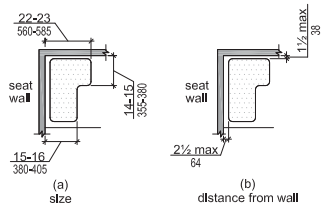
604.5.2 Rear Wall Grab Bar at Water Closets

604.7 Dispenser Outlet Location

605.2 Height and Depth of Urinals

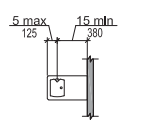


608.3.1 Grab Bars for Transfer Type Showers

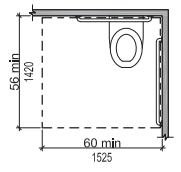


610.3.2 L-Shaped Shower Seat

608 Showers1

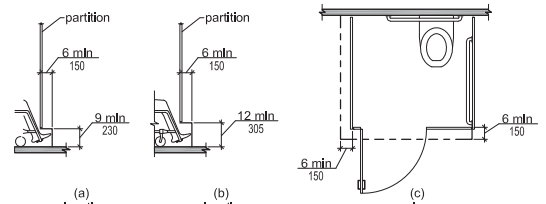


602.5 Drinking Fountain Spout Location

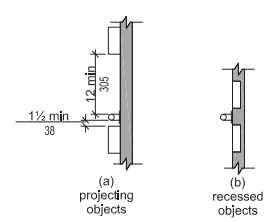


604.3.1 Size of Clearance at Water Closets

603 Toilet and Bathing Rooms1



604.8.1.4 Wheelchair Accessible Toilet Compartment Toe Clearance



609.3 Spacing of Grab Bars

Spacing of Grab Bars

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PLOT DEVICE: BLUEBEAM PDF
LAST PLOTTED: 5/5/2022 10:27:33 AM
LAYOUT: 0073XXXX-XXLWNG
FILE NAME: R:\2020--\0019\PA\100\0073\5-CAD\510 CAD Files\Sheets
FILE LOCATION:

REGISTERED ARCHITECT
PRAVIN D. BONNAPPA
STATE OF TEXAS
16373
5-2-2022

NO.	DATE	REVISION	APPROV.

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T.B.P.E.FIRM REGISTRATION NO. F-6825

THE STATE OF TEXAS
FORT BEND COUNTY

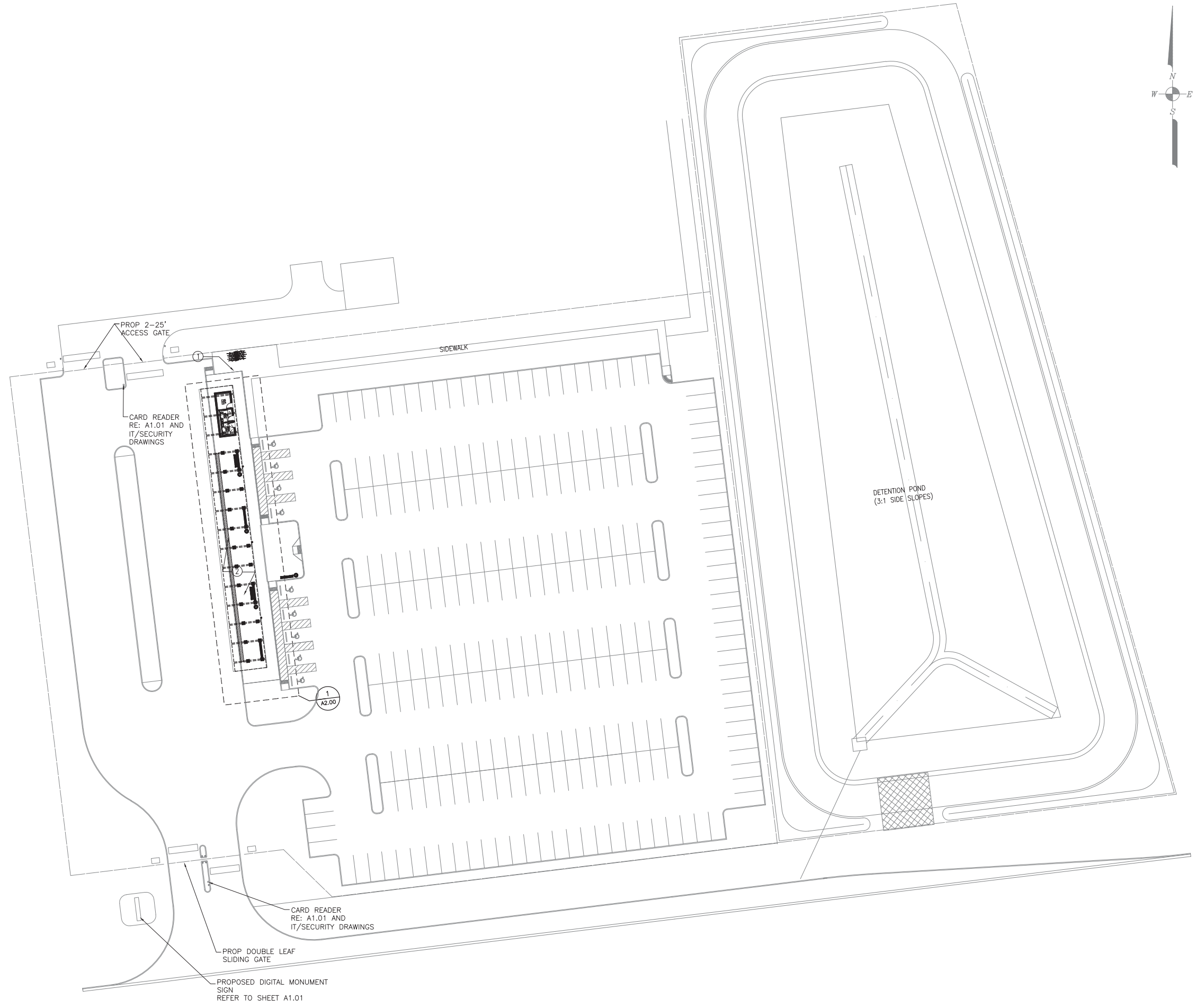
FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

ADA STANDARDS

ISSUE FOR PERMIT SHEET ___ OF ___

SECTION NO.	
DRAWN:	DATE: 5-2-2022
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. A0.06



BUS LOADING SITE PLAN 1/32"-1'-0" (1)

N
W E
S

1. BELSON OUTDOORS GENESIS POWDER COATED BIKE RACKS. G8-P-SF WITH GROUT COVERS. COLOR TO BE SELECTED.
2. BUS LOADING CANOPY. RE: 1/A2.00

KEY NOTES NTS (2)

REGISTERED ARCHITECT · WADE D. BONNAFFE · 16373 · STATE OF TEXAS
5-2-2022

NO.	DATE	REVISION	APPROV.

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THE STATE OF TEXAS · FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

BUS LOADING SITE PLAN

ISSUE FOR PERMIT SHEET ___ OF ___

SECTION NO.	
DRAWN: **SH**	DATE: **5-2-2022**
CHECKED:	DATE:
DESIGN: **SH**	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. **A1.00**

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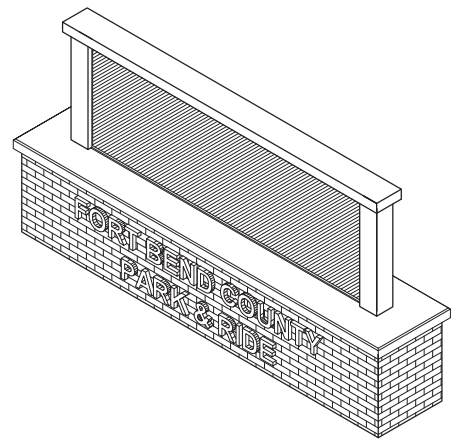
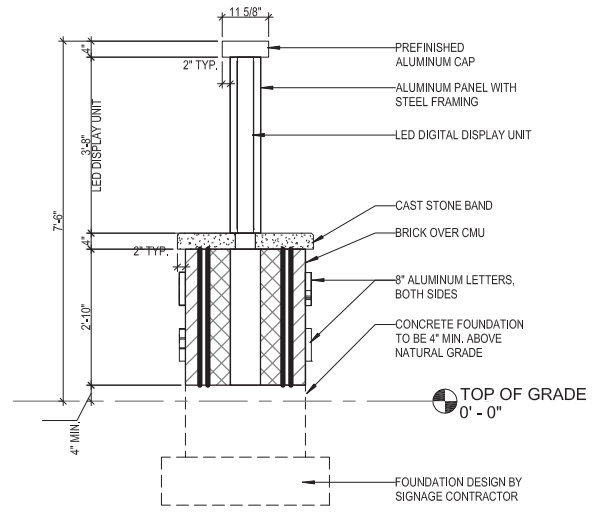


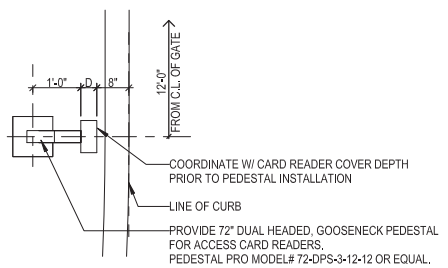
3D VIEW

N.T.S. 5



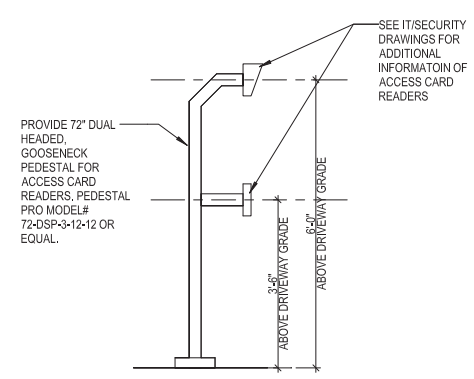
SECTION VIEW

1/2" = 1'-0" 4



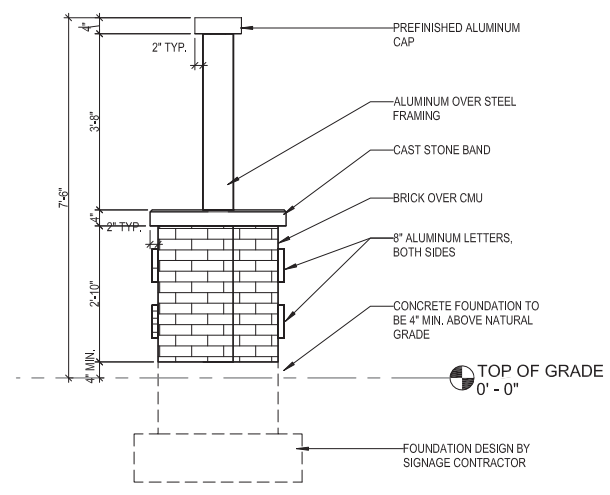
CARD READER PLAN

1/2" = 1'-0" 7



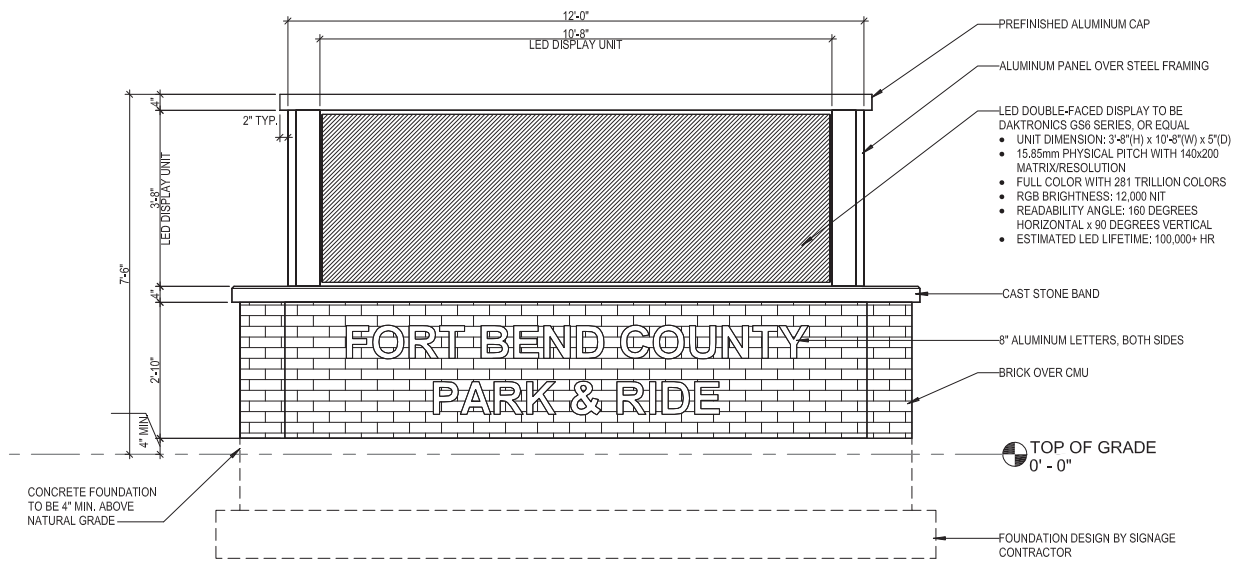
CARD READER ELEVATION

1/2" = 1'-0" 6



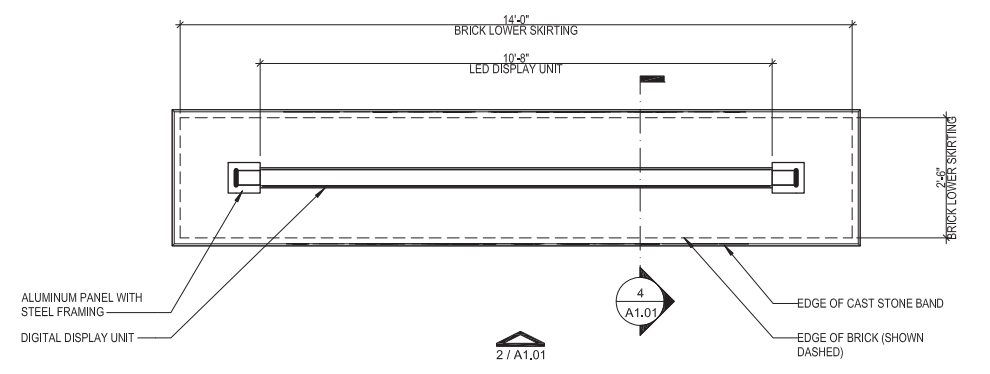
SIDE ELEVATION

1/2" = 1'-0" 3



FRONT ELEVATION

1/2" = 1'-0" 2



PLAN VIEW

1/2" = 1'-0" 1

1. PROVIDE ADEQUATE SPACE IN POLE SKIRTING TO HOUSE TWO (2) WIRED BOOSTERS AND THEIR ELECTRICAL CONNECTIONS
2. ALUMINUM PANEL TO BE 3/16" MINIMUM. PRIME AND PAINT WITH POLYURETHANE ENAMEL AUTOMOTIVE PAINT. COLOR TO BE SELECTED BY COUNTY PERSONNEL
3. PROVIDE AND INSTALL VENTS AS NEEDED FOR LED DISPLAY VENTILATION
4. INTERNAL STEEL FRAMING SHALL BE DESIGNED BY SIGNAGE CONTRACTOR.
5. PROVIDE AND INSTALL 8" PRECISION INJECTION MOLDED LETTERS MADE FROM CELLULOSE ACETATE BUTYRATE (CAB) WITH LIFETIME GUARANTEE NOT TO CRACK, CHIP, FADE, PEEL, OR BREAK, OR VENDOR MAY PROVIDE ACRYLIC OR ALUMINUM LETTERS ROUTED AND PAINTED WITH ACRYLIC POLYURETHANE PAINT.
6. FABRICATOR TO SUBMIT DETAILS, SHOP DRAWINGS AND SCALED COPY LAYOUTS TO OWNER AND ARCHITECT FOR FINAL APPROVAL PRIOR TO FABRICATION. SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF TEXAS FOR ANY AND ALL COMPONENTS OF THIS GRAPHIC SYSTEM FOUNDATION TO MEET WIND LOAD REQUIREMENTS.

GENERAL NOTES

REGISTERED ARCHITECT
SHANE D. HARRIS BONNETT
16372
STATE OF TEXAS
5-2-2022

NO.	DATE	REVISION	APPROV.

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FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

MONUMENT SIGN AND SITE DETAIL

ISSUE FOR PERMIT SHEET ___ OF ___

SECTION NO.			
DRAWN: SH	DATE: 5-2-2022		
CHECKED:	DATE:		
DESIGN: SH	DATE:		
CHECKED:	DATE:		
CONTRACT NO.			
	SHEET NO. A1.01		

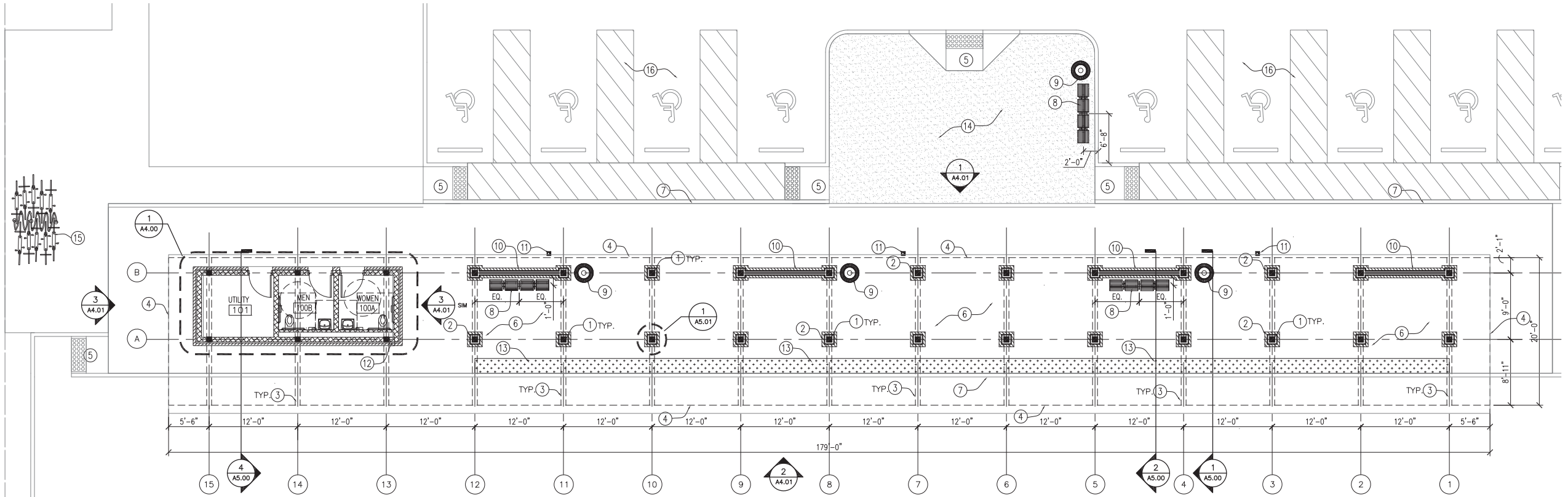
PLOT BY: CDow
PLOT DEVICE: BLUEBEAM PDF
LAST PLOTTED: 5/1/2022 10:25:11 AM
LAYOUT NAME: A1.01
FILE NAME: 007304101-MONUMENT SIGNAGE
FILE LOCATION: R:\PROJECTS\2019\19019999\100730\15-CAD\2019 CAD Files\Sheets

1. PREFINISHED ALUM. 8"X8" CANOPY COLUMN, TYPICAL.
2. MODULAR FACE BRICK COLUMN CLADDING 8'-0" A.F.F..
3. PREFINISHED 6" X 10" ALUM. BEAM ABOVE, TYPICAL.
4. LINE OF CANOPY ABOVE.
5. ACCESSIBLE CURB RAMP. RE: CIVIL DRAWINGS
6. CONCRETE PLATFORM WITH LIGHT BROOM FINISH.
7. 6" CONCRETE CURB. RE: CIVIL DRAWINGS
8. UPBEAT #P096 8'-0" POWDER COATED METRO STEEL FLAT BENCH WITH SEGMENTED SEATS.
   (BENCH LOCATIONS ON PLAN ARE FOR REFERENCE ONLY. GENERAL CONTRACTOR TO COORDINATE # OF BENCH AND LOCATIONS WITH OWNER)
9. POWDER COATED WASTE RECEPTACLE AND CIGARETTE ASH URN BY PETERSON MFG. CO. MODEL BRKT32.
   (RECEPTACLE LOCATIONS ON PLAN ARE FOR REFERENCE ONLY. GENERAL CONTRACTOR TO COORDINATE # OF RECEPTACLE AND LOCATIONS WITH OWNER)
10. MODULAR FACE BRICK SCREEN WALL 8'-0" A.F.F.
11. FLUSH MOUNTED GROUND HYDRANT, RE: PLUMB. & STRUCT. DRAWINGS
12. RECESSED WALL HYDRANT, RE: PLUMBING DRAWINGS
13. 2'-0" WIDE PAVESTONE CONCRETE PAVERS WITH TRUNCATED DOME TOP SURFACE. CONCRETE PAVER UNITS SHALL MEET ALL REQUIREMENTS OF ASTM C-936, C-33, AND SHALL BE LAID IN TWO BY TWO UNIT BASKET WEAVE PATTERN.
14. STAMP CONCRETE PAVEMENT
15. BELSON OUTDOORS GENESIS POWDER COATED BIKE RACKS. G8-P-SF WITH GROUT COVERS. COLOR TO BE SELECTED.
16. ADA PARKING SPACES, REFER TO CIVIL

KEY NOTES N.T.S. 7

1. REFER TO SHEET A0.05 & A0.06 FOR ADA STANDARDS.
2. REFER TO SHEET A3.00 FOR REFLECTED CEILING PLAN.
3. REFER TO SHEET A2.01 FOR ROOF PLAN.
4. GENERAL CONTRACTOR TO PROVIDE AND COORDINATE BLOCKING REQUIREMENTS FOR ALL MILLWORK AND FF&E ITEMS.
5. REFER TO MEP AND CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.

GENERAL NOTES N.T.S. 4



BUS LOADING FLOOR PLAN 1/8" = 1'-0" 1

REGISTERED ARCHITECT · DAVID D. BONNETT · 16373 · STATE OF TEXAS · 5-2-2022

NO.	DATE	REVISION	APPROV.

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THE STATE OF TEXAS · FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

BUS LOADING FLOOR PLAN

ISSUE FOR PERMIT SHEET ___ OF ___

SECTION NO.	
DRAWN: SH	DATE: 5-2-2022
CHECKED:	DATE:
DESIGN: SH	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. A2.00

PLOT BY: CDow
PLOT DEVICE: BLUEBEAM.PDF
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LAYOUT NAME: A1.00
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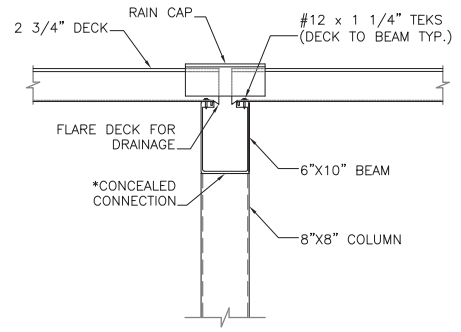
FILE LOCATION: P:\2022\-100199\100730\5-CAD\5010 CAD Files\Sheets

1. PREFINISHED ALUMINUM BUS LOADING CANOPY
2. SINGLE PLY ROOFING MEMBRANE OVER TAPER INSULATION OVER METAL ROOF DECK.
3. ROOF DECK GUTTER–DRAIN INTERNALLY INTO PIPE AT COLUMN. RE: PLUMB.
4. PREFINISHED ALUM. FASCIA.
5. ROOF DRAIN. CONNECT ROOF LEADER INTO MAIN DRAIN PIPE IN THE COLUMN.
6. PREFINISHED METAL COPING CAP

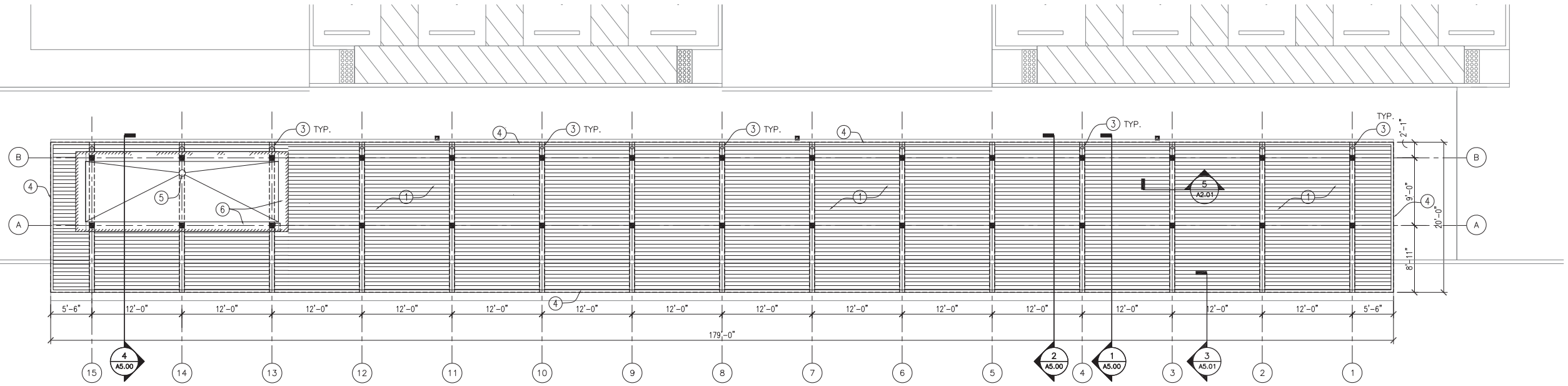
KEY NOTES — N.T.S. 7

1. ROOF ELEVATION BASED ON ARCHITECTURAL REFERENCE ELEVATION OF 0'–0" AT PLATFORM FINISH FLOOR.
2. REFER TO MEP AND STRUCTURAL DRAWINGS FOR ADDITIONAL ROOF PENETRATIONS.

GENERAL NOTES — N.T.S. 4



SECTION AT DECK — 1-1/2" = 1'-0" 5



BUS LOADING ROOF PLAN — 1/8" = 1'-0" 1

REGISTERED ARCHITECT — RANDALL D. BONNETTE — 16373 — STATE OF TEXAS — 5-2-2022

NO.	DATE	REVISION	APPROV.

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THE STATE OF TEXAS — FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

BUS LOADING ROOF PLAN

ISSUE FOR PERMIT — SHEET ___ OF ___

SECTION NO.	
DRAWN: **SH**	DATE: **5-2-2022**
CHECKED:	DATE:
DESIGN: **SH**	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. **A2.01**

PLOT BY: CDay
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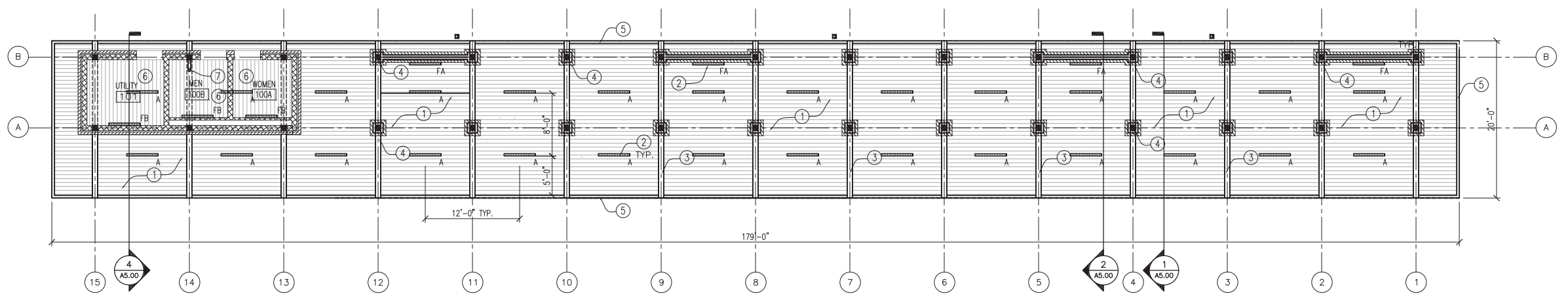
LAYOUT NAME: A2.01
FILE NAME: 00726201-ROOF PLANLINE
FILE LOCATION: R:\25025-10019991\10007315-CAD\3010 CAD Files\Sheets

1. PREFINISHED ALUM. BUS LOADING CURVED CANOPY.
2. SCHEDULED LIGHT FIXTURE. RE: ELECTRICAL DRWGS.
3. PREFINISHED ALUM. BEAMS, TYPICAL.
4. PREFINISHED ALUM. COLUMNS, TYPICAL.
5. PREFINISHED ALUM. FASCIA
6. PREFINISHED STRUCTURAL METAL ROOF DECK. RE: STRUCT. DRAWINGS.
7. DRAIN LEADER. CONNECT LINE INTO MAIN DRAIN LINE FROM BUS LOADING CANOPY.

KEY NOTES N.T.S. (3)

1. REFER TO MEP DRAWINGS FOR LIGHTING SCHEDULES.
2. MAINTAIN EXITS, EXIT LIGHTS, FIRE PROTECTIVE DEVICES, AND ALARMS IN CONFORMANCE WITH CODES AND ORDINANCES.

GENERAL NOTES N.T.S. (2)



BUS LOADING REFLECTED CEILING PLAN 1/8" = 1'-0" (1)

REGISTERED ARCHITECT
WADE D. BONNETT
16372
STATE OF TEXAS
5-2-2022

NO.	DATE	REVISION	APPROV.

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[F] 713 968 9333
PGAL TBPE REG. NO: F-2742

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FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

BUS LOADING REFLECTED CEILING PLAN

ISSUE FOR PERMIT SHEET___ OF ___

SECTION NO.	
DRAWN: SH	DATE: 5-2-2022
CHECKED:	DATE:
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CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. A3.00

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PT1	LOCATION:	GENERAL CMU BLOCK, DOOR & FRAME
	MANUFACTURER:	SHERWIN WILLIAMS
	COLOR:	BARCELONA BEIGE SW 7530
	FINISH:	EPOXY PAINT-SEMI GLOSS FINISH
	REMARKS:	--
PT2	LOCATION:	CANOPY COLUMNS/BEAMS/DECK
PT3	MANUFACTURER:	AVADEK
	COLOR:	TO BE SELECTED
	FINISH:	KYNAR 500 FINISH
	REMARKS:	--

FINISH LEGEND N.T.S. (5)

TA-1 STAINLESS STEEL TRIM SURFACE MOUNTED MIRROR. BOBRICK B-165-1836

TA-2 1 1/2" DIAMETER STAINLESS STEEL GRAB BAR. 36" LONG CONCEALED MOUNTING WITH SNAP FLANGE. BOBRICK SERIES B-6806

TA-3 1 1/2" DIAMETER STAINLESS STEEL GRAB BAR. 42" LONG CONCEALED MOUNTING WITH SNAP FLANGE. BOBRICK SERIES B-6806

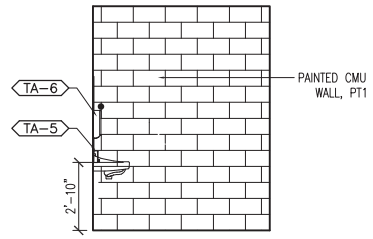
TA-4 SURFACE MOUNTED TOILET TISSUE DISPENSER. BOBRICK B-2890 (OWNER PROVIDE, CONTRACTOR INSTALL)

TA-5 SURFACE MOUNTED SOAP DISPENSER. BOBRICK B-4112 (OWNER PROVIDE, CONTRACTOR INSTALL)

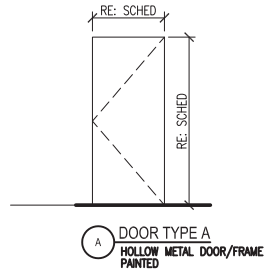
TA-6 SURFACE MOUNTED PAPER TOWEL DISPENSER. GEORGIA PACIFIC #59498A; enMOTION IMPULSE 8 (OWNER PROVIDE, CONTRACTOR INSTALL)

TA-7 COVER DISPENSER."HOSPECO" #HG-1-2; HEALTH GARDS HALF-FOLD TOILET SEAT COVER DISPENSER

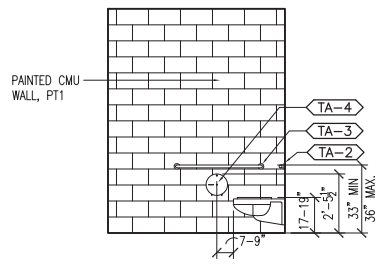
TOILET ACCESSORIES NO SCALE (3)



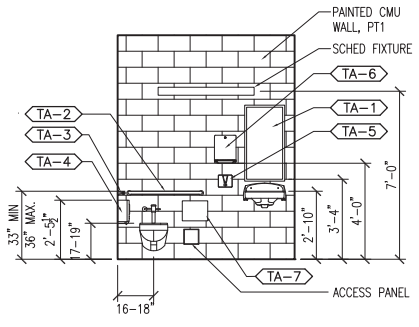
INTERIOR ELEVATION 1/4" = 1'-0" (10)



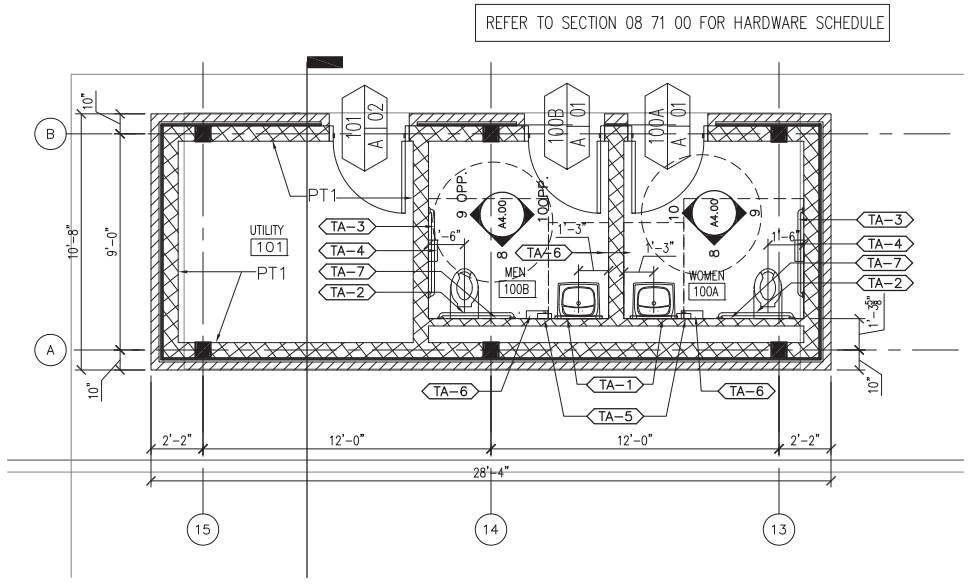
DOOR TYPE N.T.S. (6)



INTERIOR ELEVATION 1/4" = 1'-0" (9)



INTERIOR ELEVATION 1/4" = 1'-0" (8)



ENLARGED RESTROOM/UTILITY FLOOR PLAN 1/4" = 1'-0" (1)

REGISTERED ARCHITECT SHANE D. BONNETT 16372 STATE OF TEXAS
5-2-2022

NO.	DATE	REVISION	APPROV.

PGAL
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THE STATE OF TEXAS FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

ENLARGED PLAN AND INTERIOR ELEVATIONS

ISSUE FOR PERMIT SHEET ___ OF ___

SECTION NO.	
DRAWN: SH	DATE: 5-2-2022
CHECKED:	DATE:
DESIGN: SH	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. A4.00

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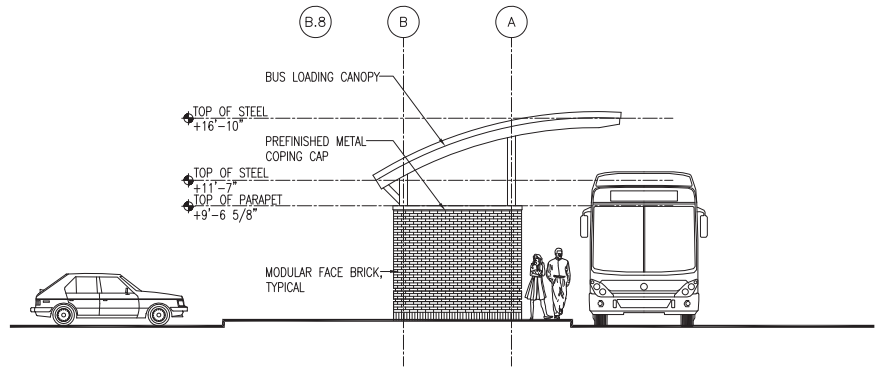
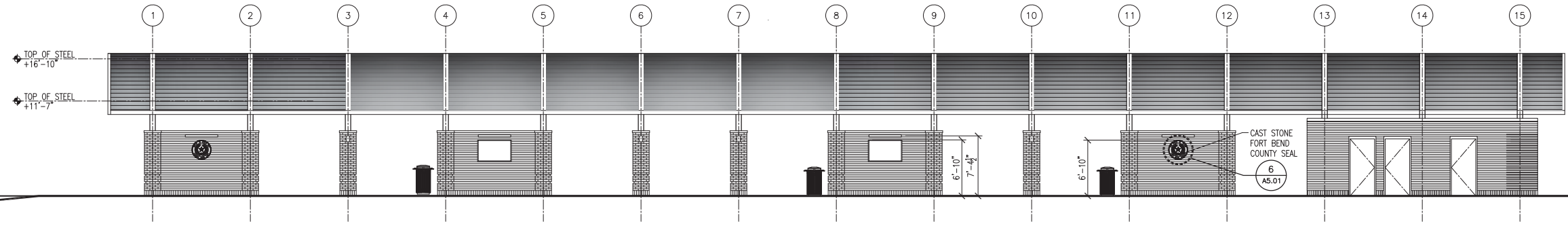
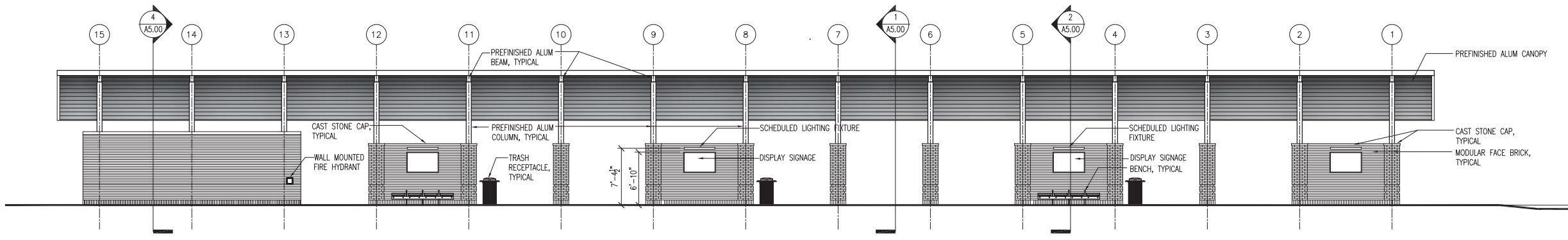


NORTH ELEVATION/SOUTH SIMILAR 1/8" = 1'-0" (3)



EAST ELEVATION 1/8" = 1'-0" (2)



WEST ELEVATION 1/8" = 1'-0" (1)

REGISTERED ARCHITECT
WAYNE D. BONNETTE
16372
STATE OF TEXAS
5-2-2022

NO.	DATE	REVISION	APPROV.

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FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

EXTERIOR ELEVATIONS

ISSUE FOR PERMIT SHEET ___ OF ___

SECTION NO.	
DRAWN: **SH**	DATE: **5-2-2022**
CHECKED:	DATE:
DESIGN: **SH**	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. **A4.01**

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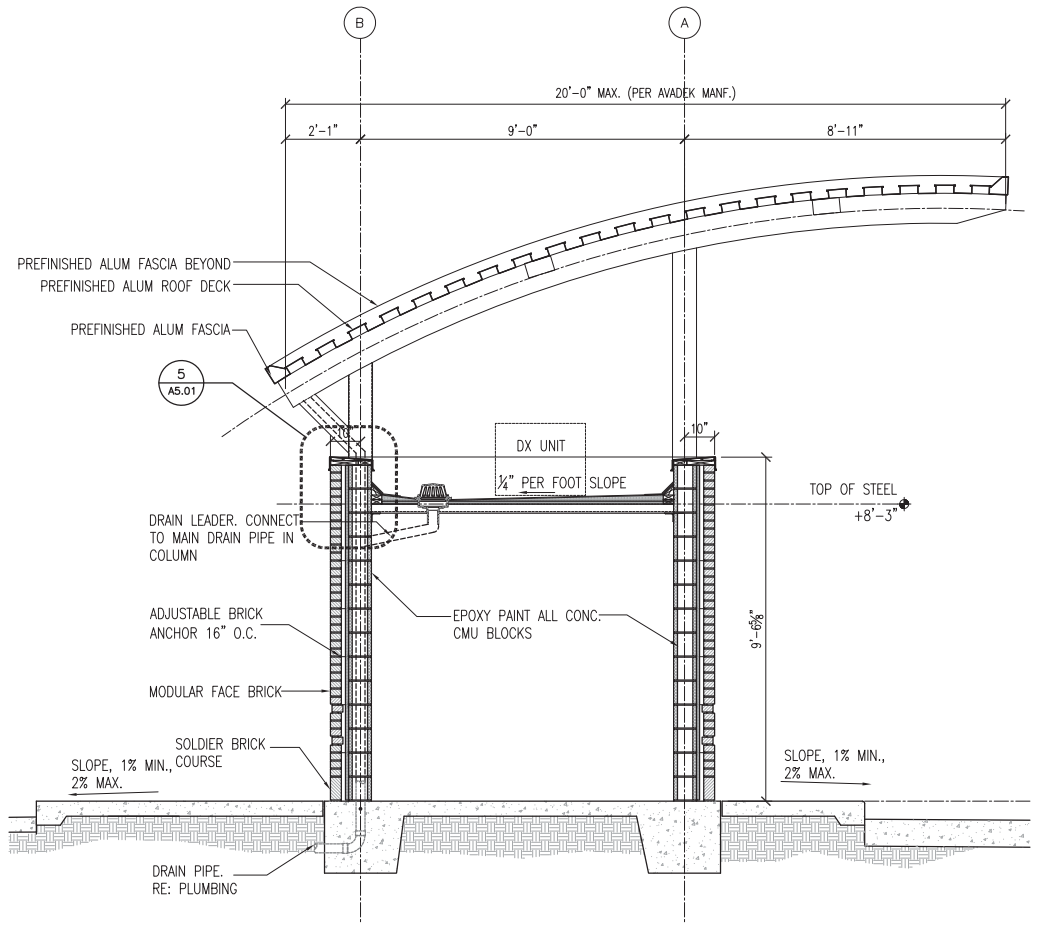
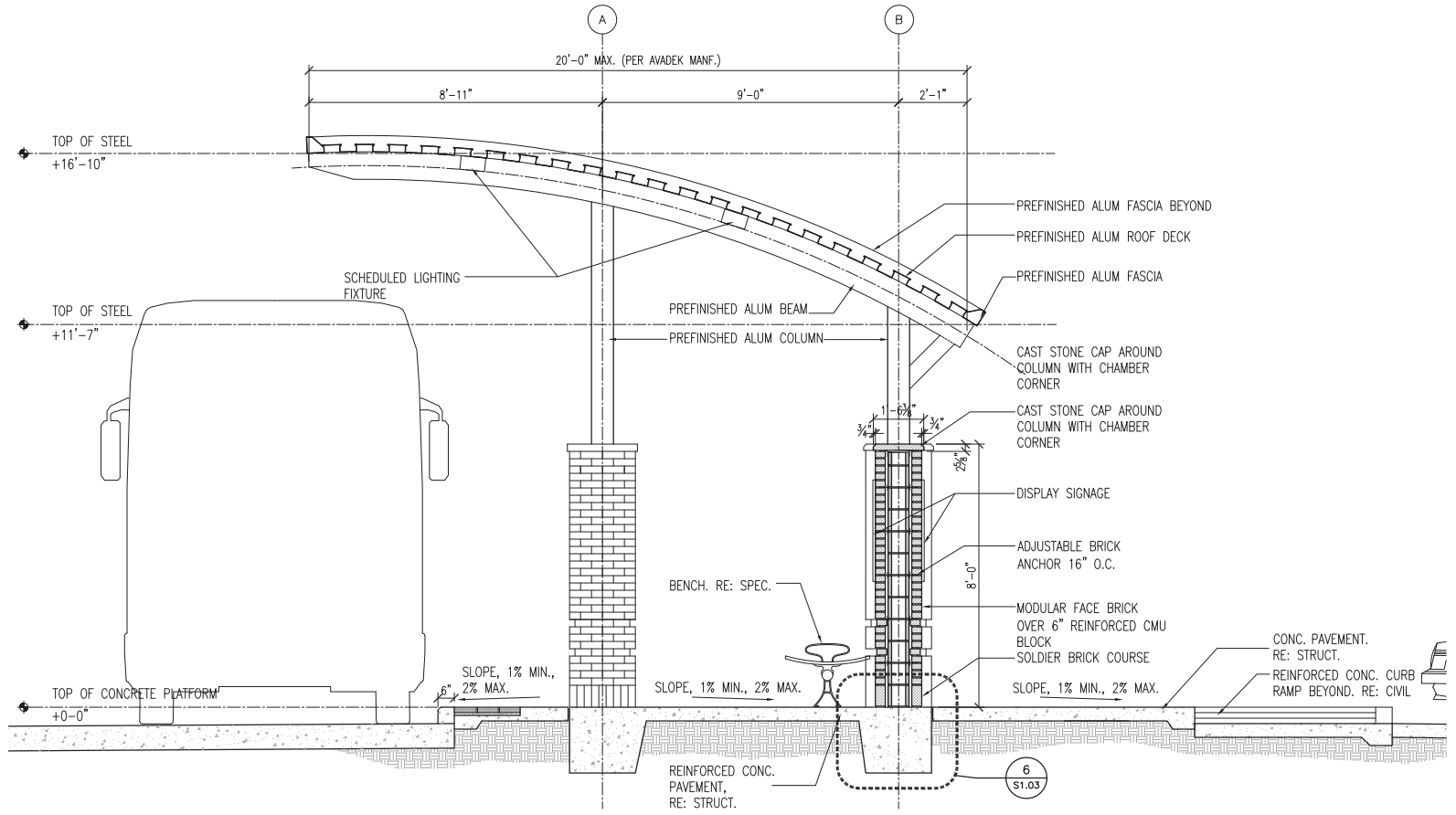
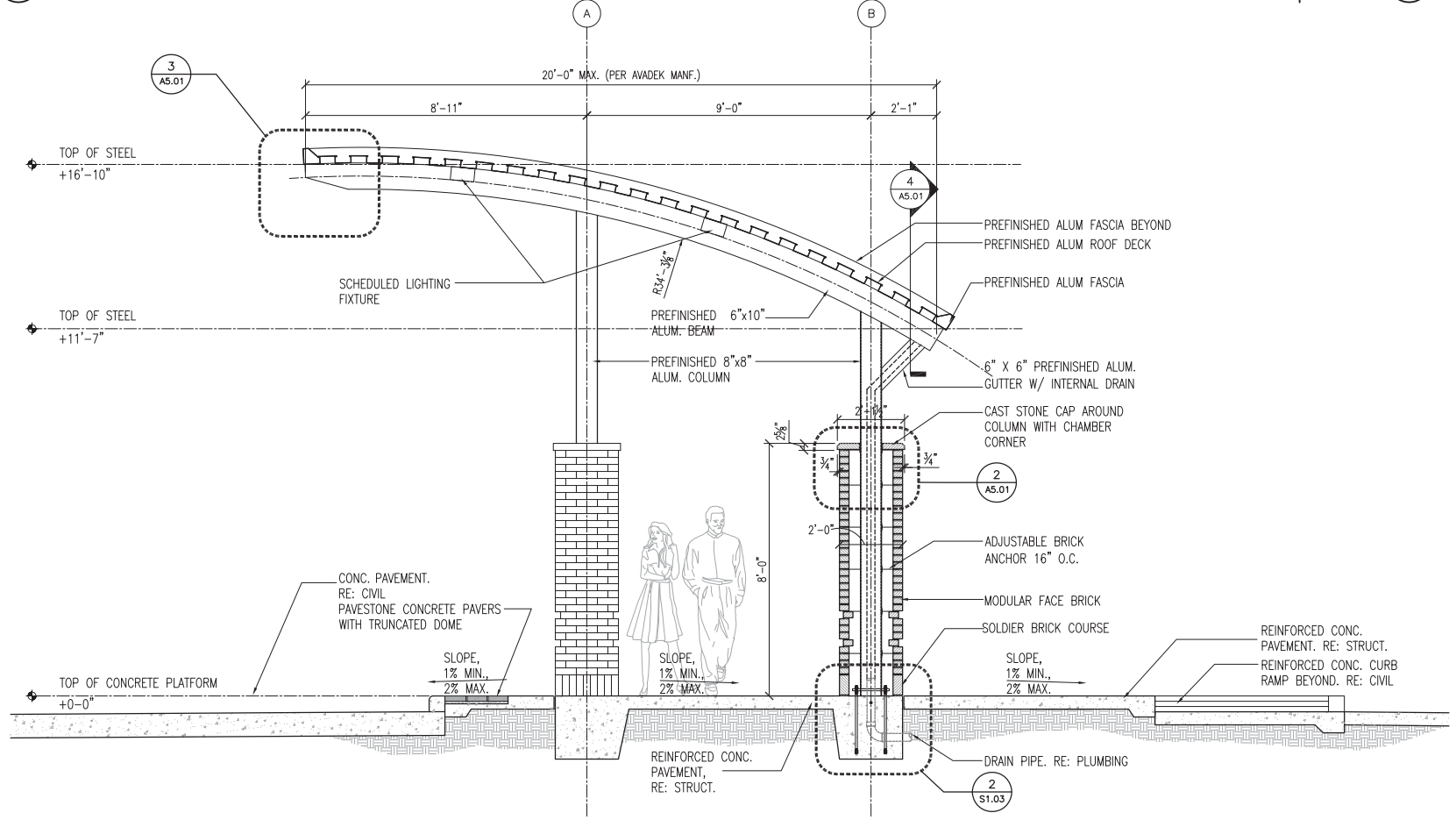


WALL SECTION 3/8" = 1'-0" **4**



WALL SECTION 3/8" = 1'-0" **2**



WALL SECTION 3/8" = 1'-0" **1**

REGISTERED ARCHITECT SHANE D. BONNETT STATE OF TEXAS 16373
5-2-2022

NO.	DATE	REVISION	APPROV.

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THE STATE OF TEXAS FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

WALL SECTIONS

ISSUE FOR PERMIT SHEET ___ OF ___

SECTION NO.	
DRAWN: **SH**	DATE: **5-2-2022**
CHECKED:	DATE:
DESIGN: **SH**	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. **A5.00**

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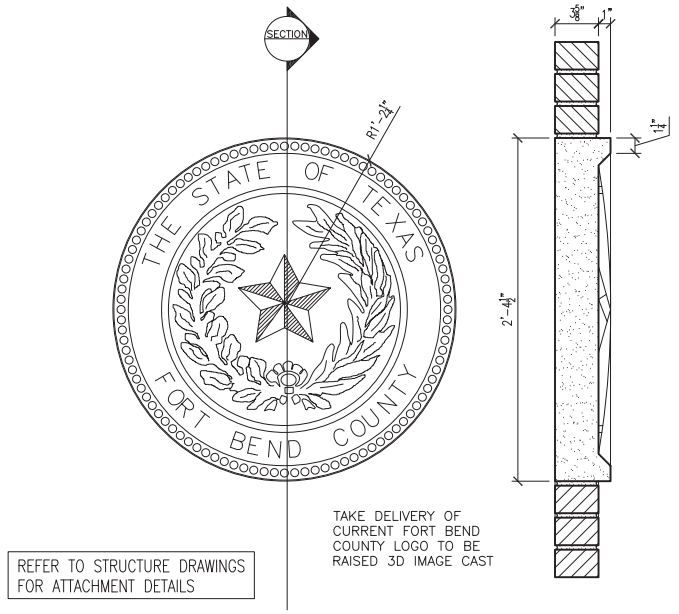
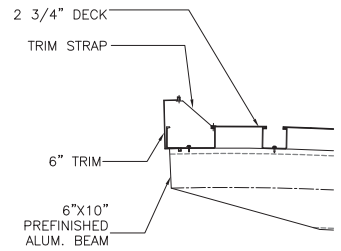
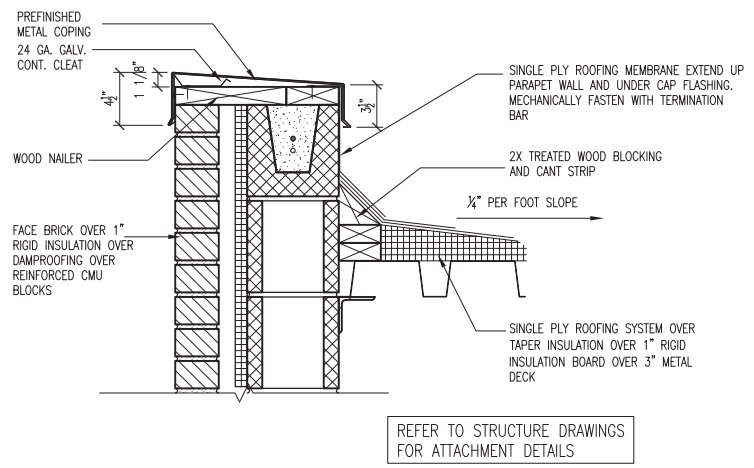


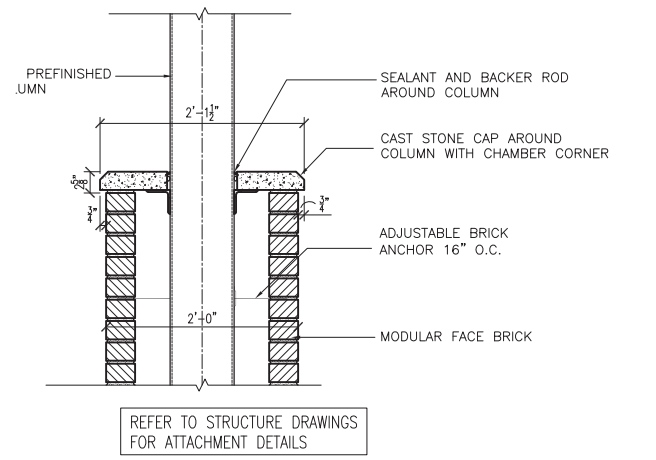
CAST STONE LOGO | 1" = 1'-0" | **6**



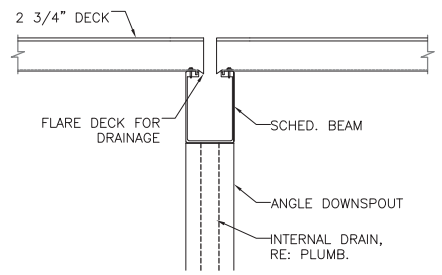
SECTION DETAIL | 1" = 1'-0" | **3**



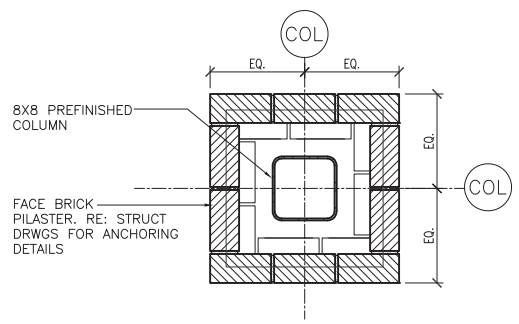
METAL COPING | 1 1/2" = 1'-0" | **5**



SECTION DETAIL | 1" = 1'-0" | **2**



SECTION DETAIL | 1 1/2" = 1'-0" | **4**



SECTION DETAIL | 1" = 1'-0" | **1**

REGISTERED ARCHITECT
PAUL D. BONNETT
16373
STATE OF TEXAS
5-2-2022

NO.	DATE	REVISION	APPROV.

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THE STATE OF TEXAS
FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

SECTION DETAILS

ISSUE FOR PERMIT SHEET ___ OF ___

SECTION NO.	
DRAWN: **SH**	DATE: **5-2-2022**
CHECKED:	DATE:
DESIGN: **SH**	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. **A5.01**

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LAST PLOTTED: 5/3/2022 10:31:01 AM
LAYOUT NAME: A5.01
FILE NAME: 0373A001-SECTION DETAILS.DWG
FILE LOCATION: R:\2020\--1001999\1000730\5--CAD\2010 CAD Files\Sheets

GENERAL NOTES:

1. THE CONTRACT DOCUMENTS ARE BASED ON THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE, 2015 EDITION.

2. WIND LOADS: WIND PRESSURES ARE BASED ON THE CITY OF HOUSTON AMENDMENTS TO THE 2012 INTERNATIONAL BUILDING CODE:
   - 2.1. WIND SPEED = 139 MPH (3 SEC. GUST)
   - 2.2. WIND EXPOSURE CATEGORY B
   - 2.3. WIND IMPORTANCE FACTOR 1.0
   - 2.4. BUILDING CATEGORY II

3. A WIND PRESSURE OF 42.8 PSF (ULTIMATE) WAS APPLIED TO THE ROOF PER ASCE 7-10, SECTION 27.7.3 TO DETERMINE THE CANOPY REACTIONS ON THE FOUNDATIONS. MEAN ROOF HEIGHT USED 16.2-FT. CANOPY ENGINEER SHALL PROVIDE BOTTOM OF COLUMN REACTIONS AND CALCULATIONS.

4. CANOPY SHALL BE PREMANUFACTURED AND CONSIDERED A DEFERRED SUBMITTAL TO BE APPROVED BY THE OWNER AND THE ENGINEER. TO AVOID DAMAGING THE BRICK FACADE, MAX ALLOWABLE DRIFT FOR THE CANOPY COLUMNS IS L/600. CANOPY COLUMNS SHALL BE ATTACHED TO THE MASONRY AS SHOWN IN THE PLANS AND AS APPROVED BY THE CANOPY ENGINEER.

5. ROOF DECK
   1. VULCRAFT 3N-24 (20 ga; GRADE 40) WITH G60 FINISH OR EQUIVALENT AS APPROVED B BY THE ENGINEER.
   2. PLUG WELD DECK TO SUPPORTING STEEL AND ADJOINING DECK SHEET SEEMS IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY D1.3. WELDS SHALL BE ⅝" PUDDLE WELDS SPACED AT 8-IN (24/4) MAX SPACING WITH 8-#10 TEK SCREWS SIDELAP FASTENERS PER DECK SPAN.

6. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 psi. MAX AGGREGATE SIZE IS 1-IN. CONCRETE SHALL BE BROOM FINISHED. CONCRETE SHALL BE WET CURED WITH BURLAP SACKS FOR 7 DAYS OR AS APPROVED BY THE ENGINEER, A RESIN BASED, VOC COMPLIANT, CURING COMPOUND MAY BE USED. ALL REINFORCING STEEL SHALL BE ASTM 615 GRADE 60 U.N.O. USE CLASS B LAP SPLICES U.N.O.

7. AT THE BATHROOMS THE SLAB SHALL BE GRADED TOWARDS THE DRAINS AT ⅛" PER FOOT. REFER TO PLUMBING DRAWINGS FOR DRAIN LOCATIONS.

8. CONTROL/CONSTRUCTION JOINTS:
   - 8.1. THE STRUCTURAL SLAB HAS PERIMETER AND INTERIOR GRADE BEAMS SUPPORTED ON BELLED PIERS. STRUCTURAL SLAB SHALL BE ONE POUR. TO REDUCE TEMPERATURE CRACKING, CONTROL JOINTS SHALL BE INSTALLED PER PLANS. CONSTRUCTION JOINTS ARE NOT ALLOWED UNLESS APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL SUBMIT A WORK PLAN AND MATERIALS TO BE USED AT THE CONSTRUCTION JOINT LOCATIONS. BONDING AGENTS MAY BE REQUIRED AT THE EXPENSE OF THE CONTRACTOR.

9. REINFORCING STEEL SHALL HAVE A MINIMUM YIELD STRENGTH OF 60 ksi. DIMENSIONS ARE TO THE CENTERLINE OF BAR UNLESS OTHERWISE NOTED. REBAR SHALL BE SUPPORTED WITH PREFABRICATED CHAIRS SPACED AT 24" EACH WAY ON CENTER OR APPROVED EQUAL.

10. OVER-EXCAVATE AND BACKFILL AS FOLLOWS: REMOVE TOP 2-FT OF NATIVE MATERIAL AND BACKFILL WITH SELECT FILL. BOTTOM OF EXCAVATION LIMITS EXTEND 2-FT BEYOND LIMITS OF AREA PAVING. SLOPE UP AT A 1:1 SLOPE. EXCAVATE ANY SOFT OR PUMPING AREAS TO FIRM GROUND AND BACKFILL. SELECT FILL MATERIAL SHALL BE NON-ACTIVE INORGANIC SILTY OR SANDY CLAY MATERIAL WITH A PLASTICITY INDEX BETWEEN 10 AND 20 AND A LIQUID LIMIT OF 28 OR MORE. PLACE IN 6" LOOSE LIFTS AND COMPACT TO A MINIMUM OF 95% OF THE MAXIMUM DENSITY PER ASTM D698 AT THE OPTIMUM MOISTURE CONTENT. WATER SHOULD NOT BE ALLOWED TO ACCUMULATE IN THE EXCAVATION AREA.

11. MASONRY SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH F'm = 2500 psi WITH TYPE S (PC-L) MORTAR.

12. MASONRY WALLS SHALL BE FILLED WITH ASTM C476 2500 psi FINE GROUT.

13. MASONRY HORIZONTAL JOINT REINFORCING IN WALLS SHALL BE HOHMANN AND BARNARD MODEL 220, LADDER TYPE REINFORCEMENT, SUPER HEAVY WEIGHT, HOT DIP GALVANIZED.

14. CANOPY COLUMNS SHALL BE ATTACHED TO MODULAR FACE BRICK AND CMU BLOCK USING WIRE-BOND #1001 TYPE II ANCHORS (STAINLESS STEEL) AND #1100 TRIANGLE TIES (STAINLESS STEEL) SPACED 16" VERTICALLY. THE WIRE-BOND #1001 SHALL BE SECURED TO THE ALUMINUM COLUMN USING ALUMINUM HEX HEAD DRILLING SCREWS (#10 ALUMINUM). MODULAR FACE BRICK SHALL BE ATTACHED TO MASONRY SCREEN WALLS USING WIRE-BOND #2000 CORRUGATED WALL TIES SPACED 16" VERTICALLY AND 32" HORIZONTALLY.

15. DOWEL BARS MAY BE DRILLED & BONDED AT THE CONTRACTORS OPTION.

16. JOINT SEALANT SHALL COMPLY WITH ASTM C920, TYPE S, GRADE P, CLASS 50 (MIN), FOR USE NT.

17. PROVIDE 15 MIL POLYETHYLENE VAPOR RETARDER. PROVIDE LAP SEAMS IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. THE VAPOR BARRIER SHALL WRAP TO THE OUTSIDE FACE OF THE GRADE BEAM.

18. ALL LINTELS AND METAL DECK SUPPORT ANGLES SHALL CONFORM TO ASTM A36.

19. UNLESS NOTED OTHERWISE, ELECTRODES FOR WELDING SHALL CONFORM TO E70XX (SMAW)

20. ALL STEEL SHALL BE HOT DIP GALVANIZED AND PAINTED. DAMAGE TO GALVANIZING FROM SHIPPING AND INSTALLATION SHALL BE REPAIRED WITH ZINC RICH PAINT.

21. THE CONTRACTOR SHALL SUBMIT THE FOLLOWING PRIOR TO COMMENCING ANY RELATED WORK:
   - 21.1. CONCRETE MIX DESIGN WITH TESTING HISTORY
   - 21.2. CONCRETE CURING METHOD
   - 21.3. VAPOR RETARDER PRODUCT DATA
   - 21.4. CMU BLOCK TESTING DATA
   - 21.5. REBAR SHOP DRAWINGS
   - 21.6. REBAR CHAIR CUT SHEETS OR SHOP DRAWINGS
   - 21.7. SELECT FILL AND SUB-GRADE COMPACTION RECORDS
   - 21.8. CONCRETE, GROUT AND MORTAR TEST REPORTS
   - 21.9. STEEL SHOP DRAWINGS FOR BUILDING ROOF
   - 21.10. ROOF DECK SHOP DRAWINGS

22. ALL SUBMITTALS MUST BE REVIEWED AND STAMPED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTAL.

23. THE OMISSION OF SHOP DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF FURNISHING AND INSTALLING SUCH MATERIALS, REGARDLESS OF WHETHER THE SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED.
24. AS PER GEOTECHNICAL REPORT (3 HG 1117140; DATED MARCH 2014), TEMPORARY STEEL CASING OR DRILLING MUD MAYBE REQUIRED DURING UNDER REAM INSTALLATION.
25. AS PER GEOECHNICAL REPORT (# HG 1117140; DATED MARCH 2014), 2-FT OF NATURAL SOILS IS TO BE REPLACED WITH SELECT FILL. REFER TO GEO REPORT BY HVJ INC. FOR MORE INFORMATION.

THE STATE OF TEXAS
MOHAMAD MANSOUR
110096
LICENSED PROFESSIONAL ENGINEER
5-2-2022

NO.	DATE	REVISION	APPROV.

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THE STATE OF TEXAS
FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

GENERAL NOTES

ISSUE FOR PERMIT SHEET ___ OF ___

SECTION NO.	
DRAWN:	DATE: 5-2-2022
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DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. S1.00

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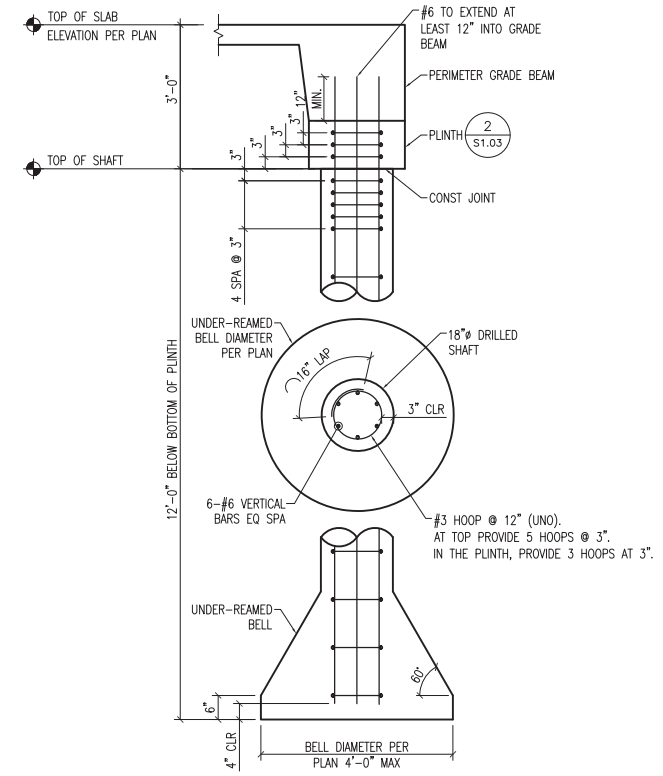
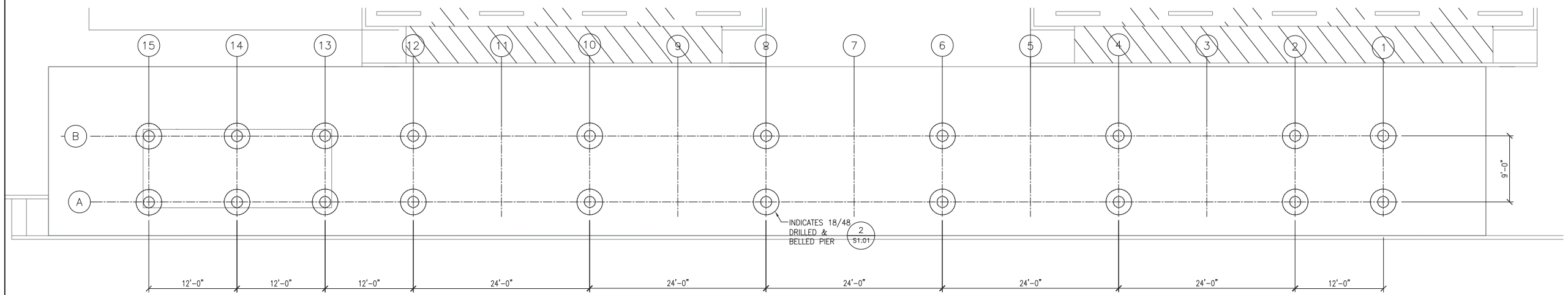


BELLED PIER 1/2"=1'-0" (2)



BUILDING AND CANOPY FOUNDATION PLAN 1/8"=1'-0" (1)

MOHAMAD MANSOUR
110096
LICENSED PROFESSIONAL ENGINEER
THE STATE OF TEXAS
5-2-2022

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FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

FOUNDATION LAYOUT

ISSUE FOR PERMIT SHEET ___ OF ___

SECTION NO.	
DRAWN:	DATE: 5-2-2022
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. S1.01

PLOT BY: rZhou
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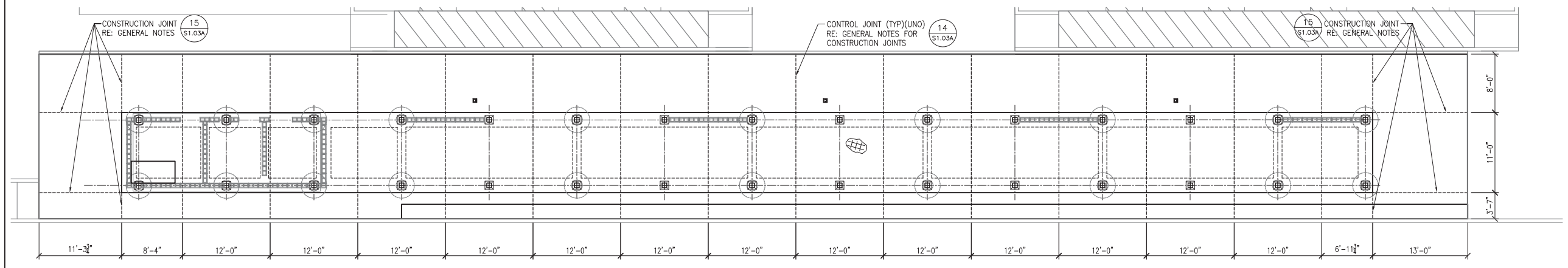
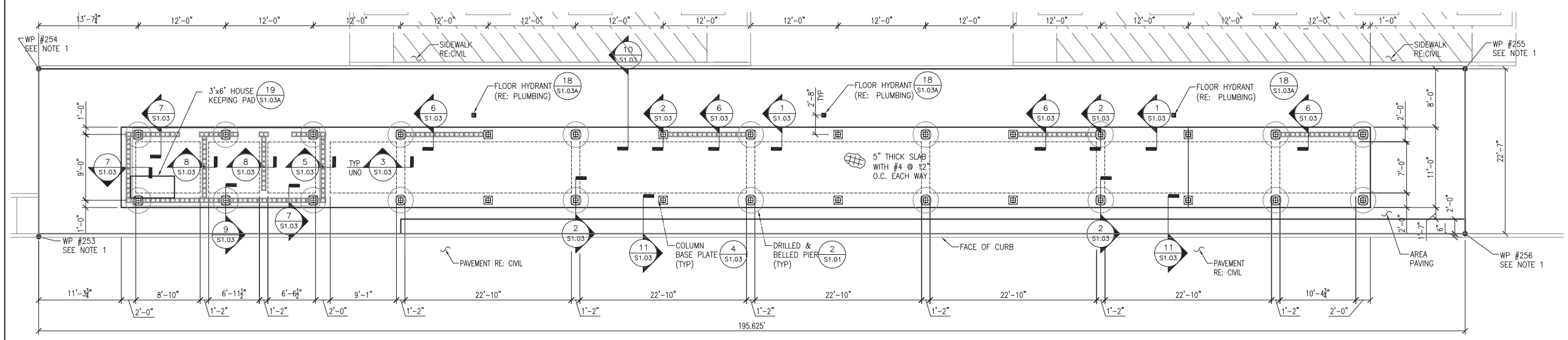
NOTE:
1. FOR TOP OF CONCRETE ELEVATION, REFER TO SHEET "SITE COORDINATES & ELEVATIONS TABLE".



CONTROL JOINT LAYOUT 1/8"=1'-0" (2)



STRUCTURAL SLAB PLAN 1/8"=1'-0" (1)

MOHAMAD MANSOUR
110096
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
5-2-2022

NO.	DATE	REVISION	APPROV.

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FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

STRUCTURAL SLAB PLAN

ISSUE FOR PERMIT SHEET ___ OF ___

SECTION NO.	
DRAWN:	DATE: 5-2-2022
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DESIGN:	DATE:
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CONTRACT NO.	
	SHEET NO. S1.02

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LAST PLOTTED: 5/3/2022 9:51:07 AM
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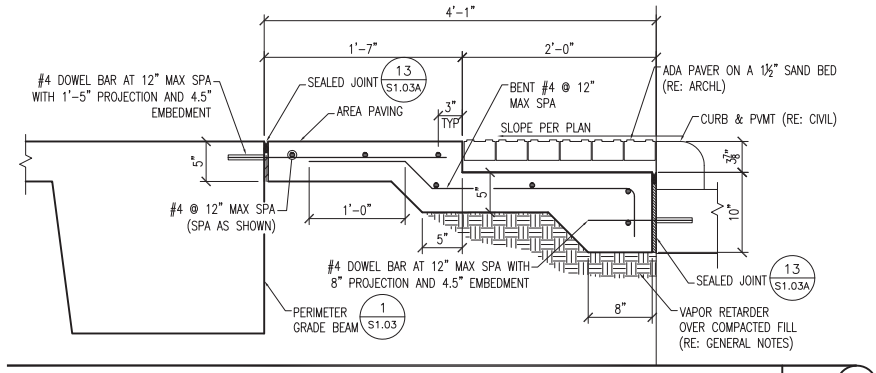
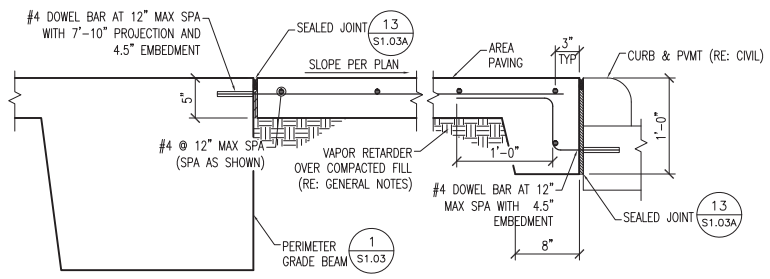
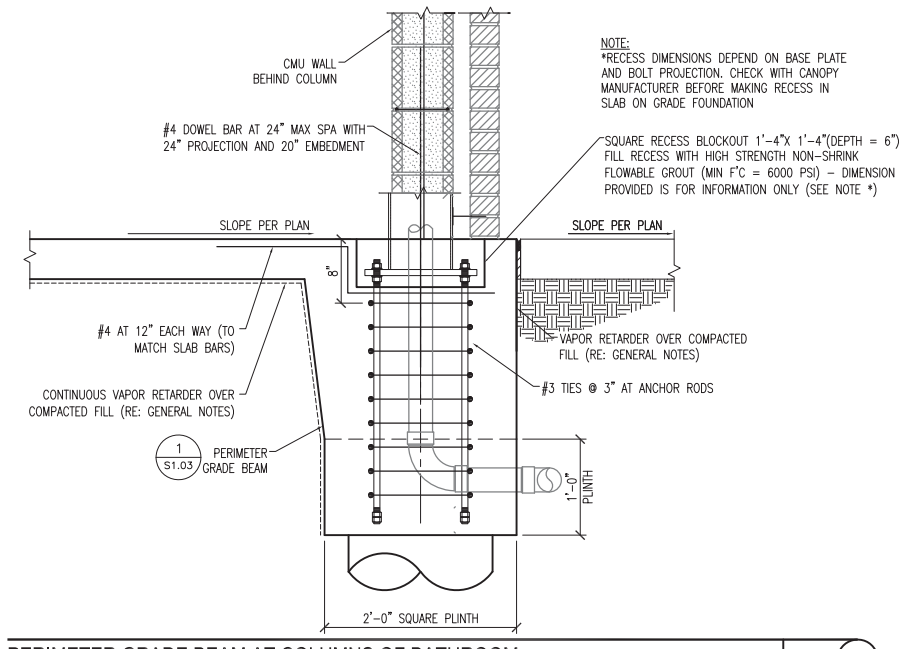


TYPICAL AREA PAVING DETAIL AT ADA PAVERS 1"=1'-0" 11



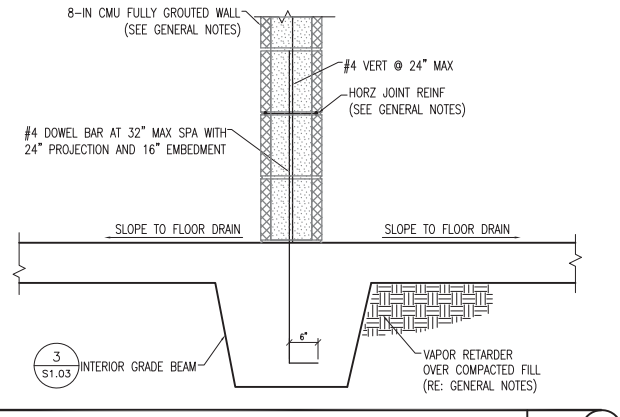
TYPICAL AREA PAVING DETAIL AT PARKING LOT 1"=1'-0" 10



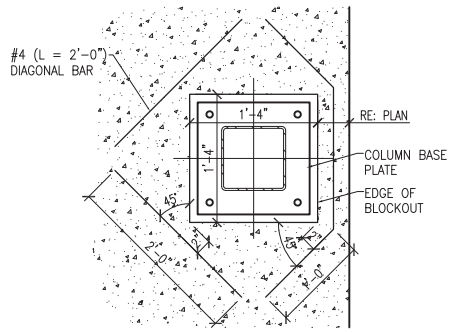
NOTE:
*RECESS DIMENSIONS DEPEND ON BASE PLATE AND BOLT PROJECTION. CHECK WITH CANOPY MANUFACTURER BEFORE MAKING RECESS IN SLAB ON GRADE FOUNDATION

SQUARE RECESS BLOCKOUT 1'-4"X 1'-4"(DEPTH = 6") FILL RECESS WITH HIGH STRENGTH NON-SHRINK FLOWABLE GROUT (MIN F'C = 6000 PSI) – DIMENSION PROVIDED IS FOR INFORMATION ONLY (SEE NOTE *)

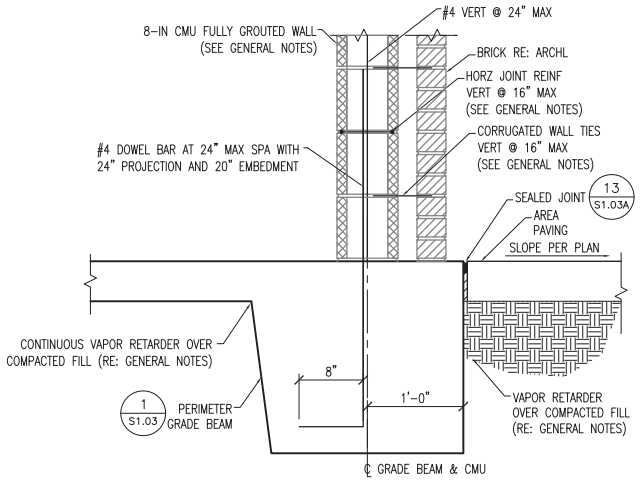
PERIMETER GRADE BEAM AT COLUMNS OF BATHROOM 1"=1'-0" 9



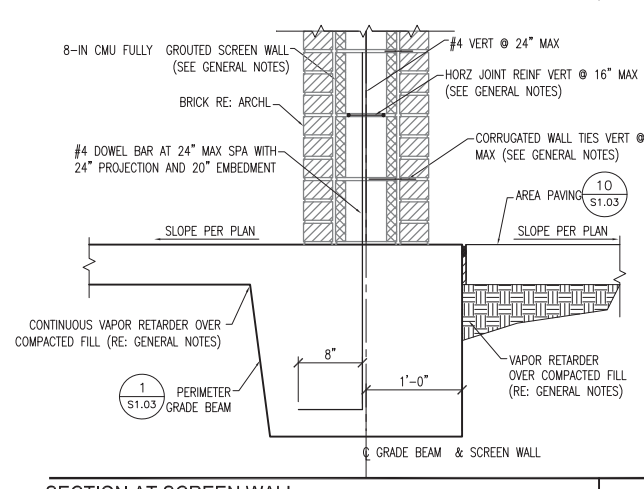
INTERIOR GRADE BEAM AT BATHROOM 1"=1'-0" 8



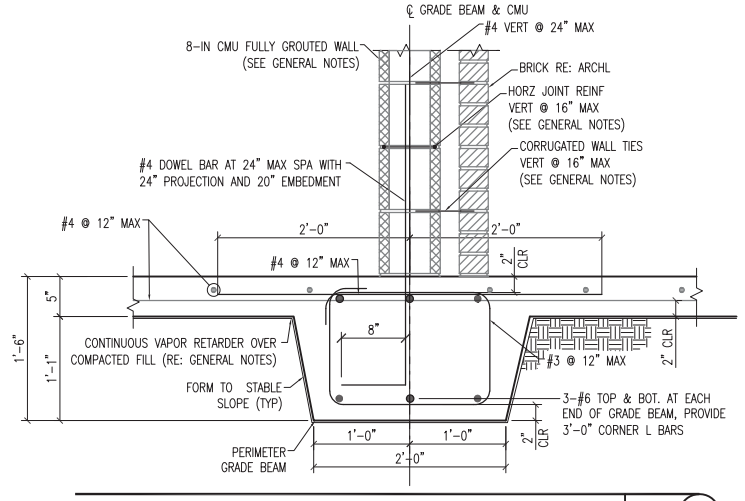
TYP. REINFORCEMENT AROUND BLOCKING IN SLAB 1"=1'-0" 12



PERIMETER GRADE BEAM AT BATHROOM 1"=1'-0" 7

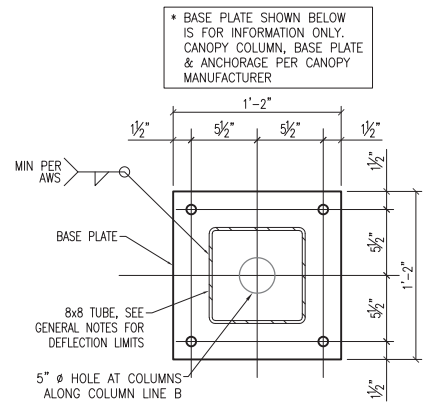


SECTION AT SCREEN WALL 1"=1'-0" 6

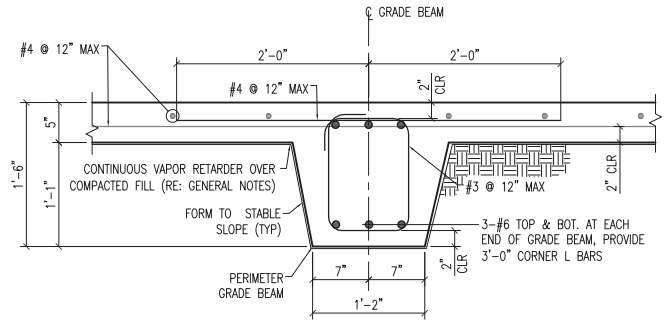


SPECIAL INTERIOR GRADE BEAM AT BATHROOM 1"=1'-0" 5

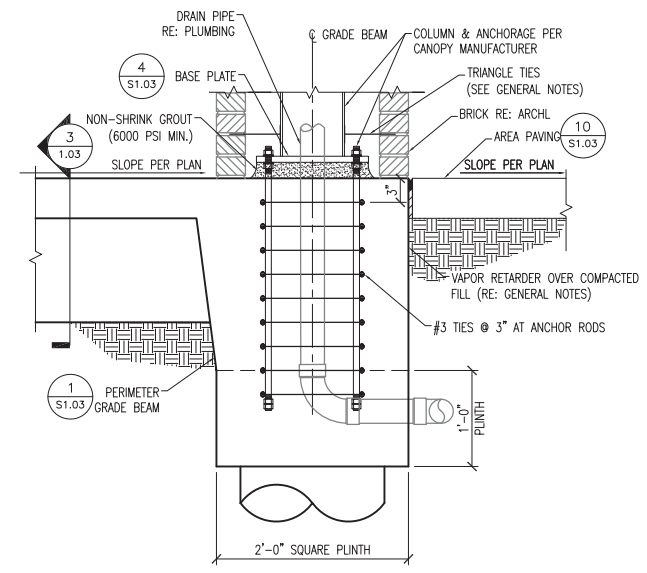
* BASE PLATE SHOWN BELOW IS FOR INFORMATION ONLY. CANOPY COLUMN, BASE PLATE & ANCHORAGE PER CANOPY MANUFACTURER



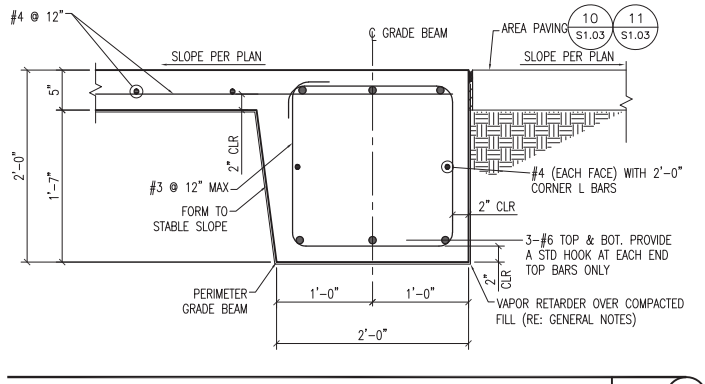
BASE PLATE DETAIL 1 1/2"=1'-0" 4



TYPICAL INTERIOR GRADE BEAM SECTION 1"=1'-0" 3



SECTION AT THE CANOPY COLUMN 1"=1'-0" 2



TYPICAL PERIMETER GRADE BEAM SECTION 1"=1'-0" 1

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THE STATE OF TEXAS FORT BEND COUNTY

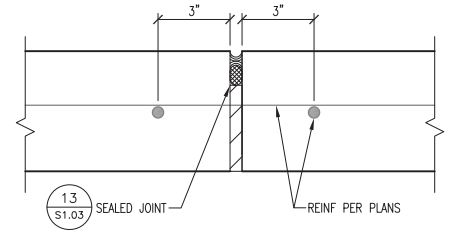
FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

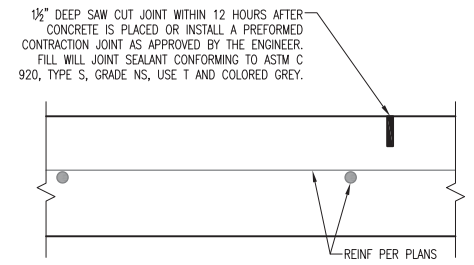
SLAB TYPICAL DETAILS

ISSUE FOR PERMIT	SHEET ___ OF ___
SECTION NO.	
DRAWN:	DATE: 5-2-2022
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. S1.03

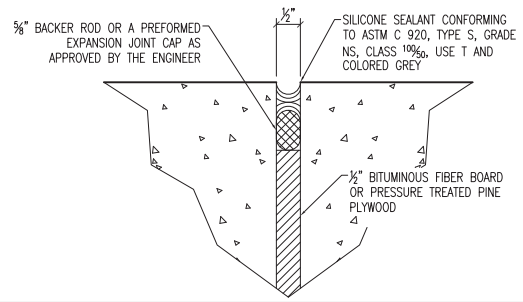
LAYOUT NAME: S1.03 SLAB TYPICAL DETAILS.DWG
FILE NAME:
FILE LOCATION: R:\05020-1\01999\1000\3\5-CAD\S010 CAD Files\STRUCTURAL - PGAL
PLOT BY: CDay
PLOT DEVICE: BLUEBEAM.PDF
LAST PLOTTED: 5/2/2022 8:49:14 AM



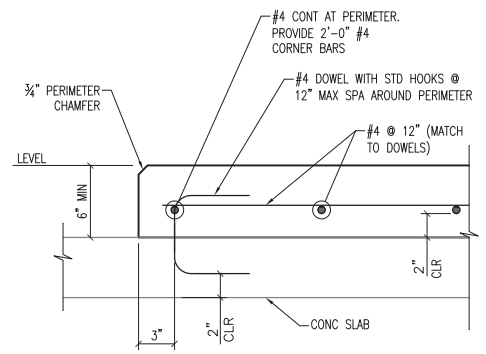
CONSTRUCTION JOINT DETAIL 3"=1'-0" (15)



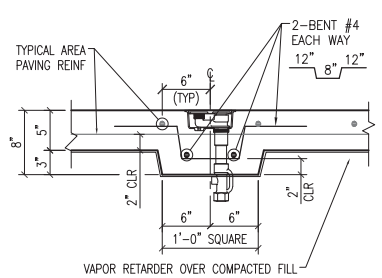
CONTROL JOINT DETAIL 3"=1'-0" (14)



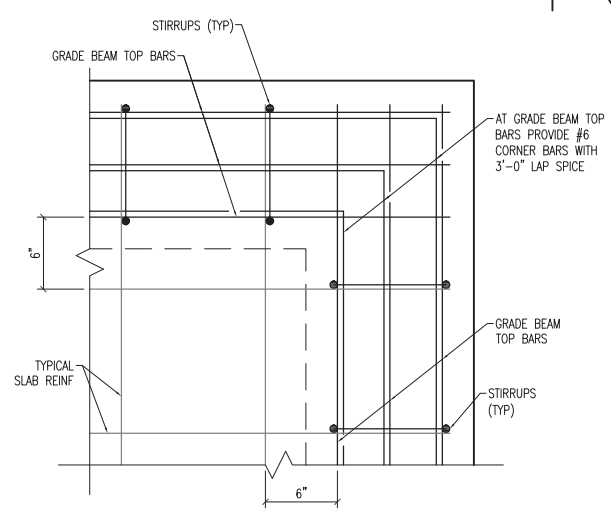
SEALED JOINT DETAIL 3"=1'-0" (13)



HOUSE KEEPING PAD DETAIL 1 1/2"=1'-0" (19)



FLOOR HYDRANT 1"=1'-0" (18)



CORNER REINFORCING DETAIL 1 1/2"=1'-0" (12)

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FORT BEND COUNTY
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WESTPARK PARK & RIDE

SLAB TYPICAL DETAILS

ISSUE FOR PERMIT SHEET ___ OF ___

SECTION NO.	
DRAWN:	DATE: 5-2-2022
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. S1.03A

LAYOUT NAME: SHEET
FILE NAME: S103A SLAB TYPICAL DETAILS.DWG
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PLOT DEVICE: BLUEBEAM.PDF
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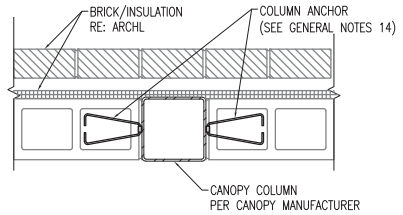
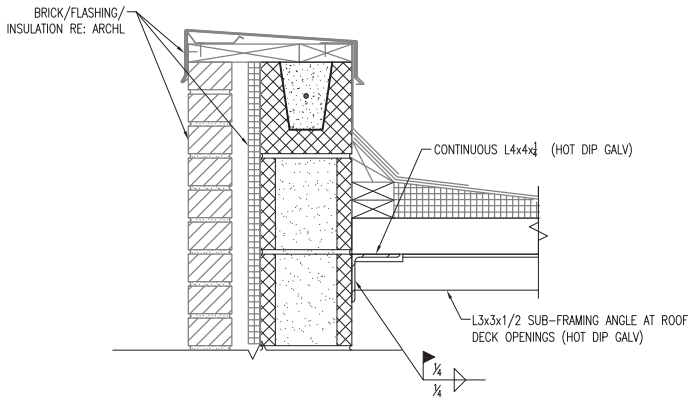
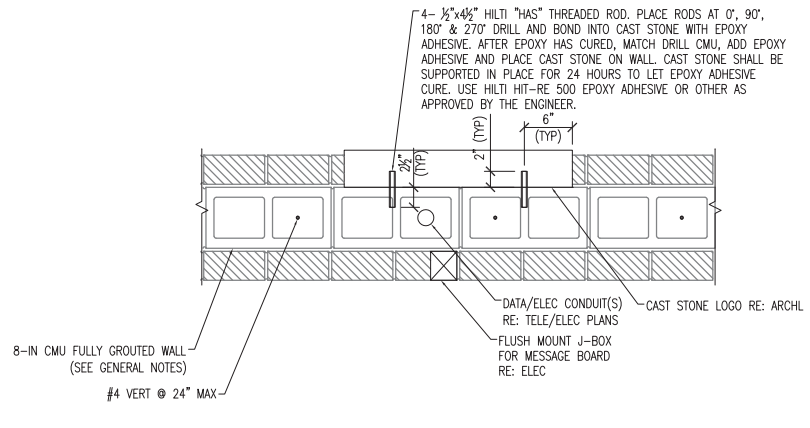


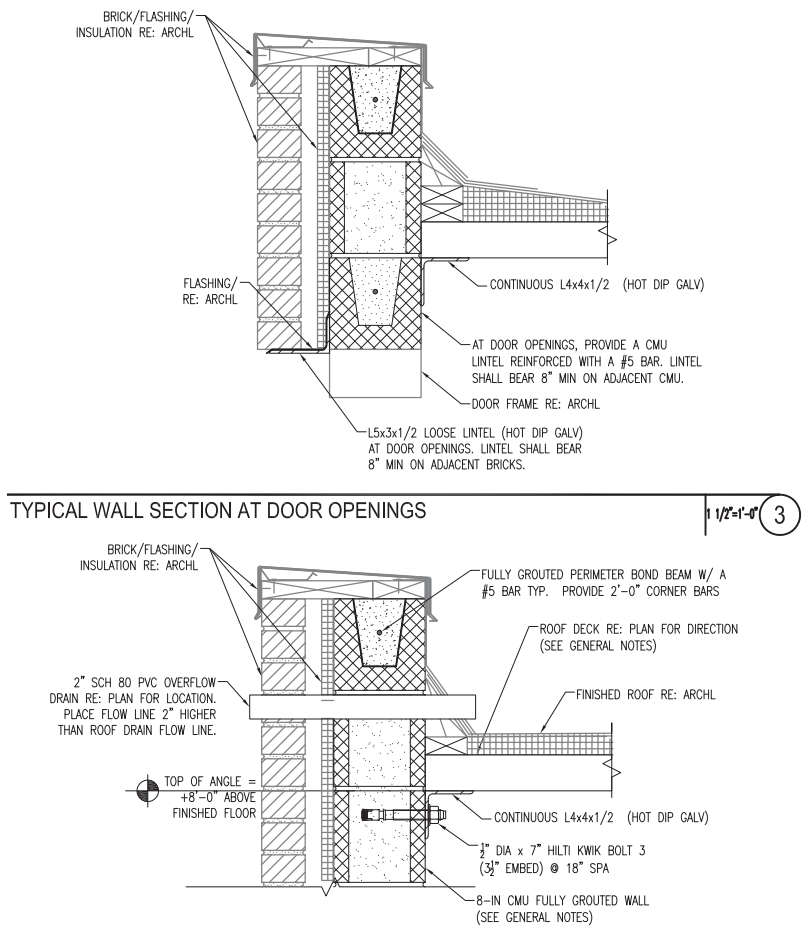
INTERFACE BUILDING COLUMN AT MASONRY 1"=1'-0" (11)



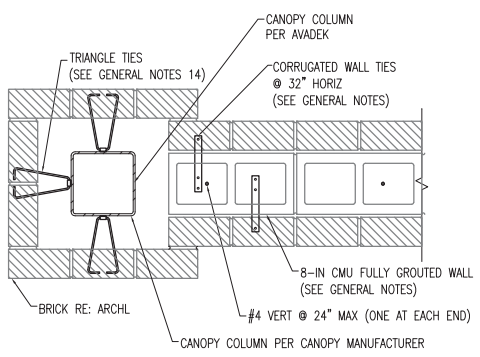
TYPICAL WALL SECTION AT SECONDARY ROOF FRAMING 1 1/2"=1'-0" (4)



CAST STONE ATTACHMENT DETIALS 1"=1'-0" (10)

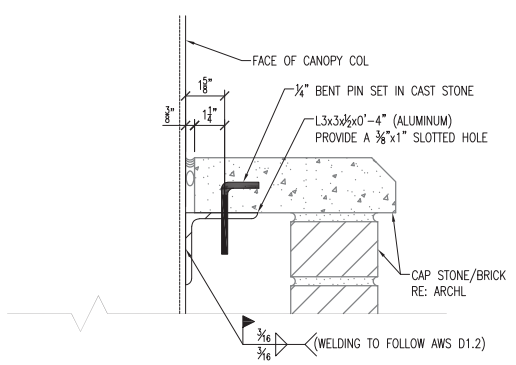


TYPICAL WALL SECTION AT DOOR OPENINGS 1 1/2"=1'-0" (3)

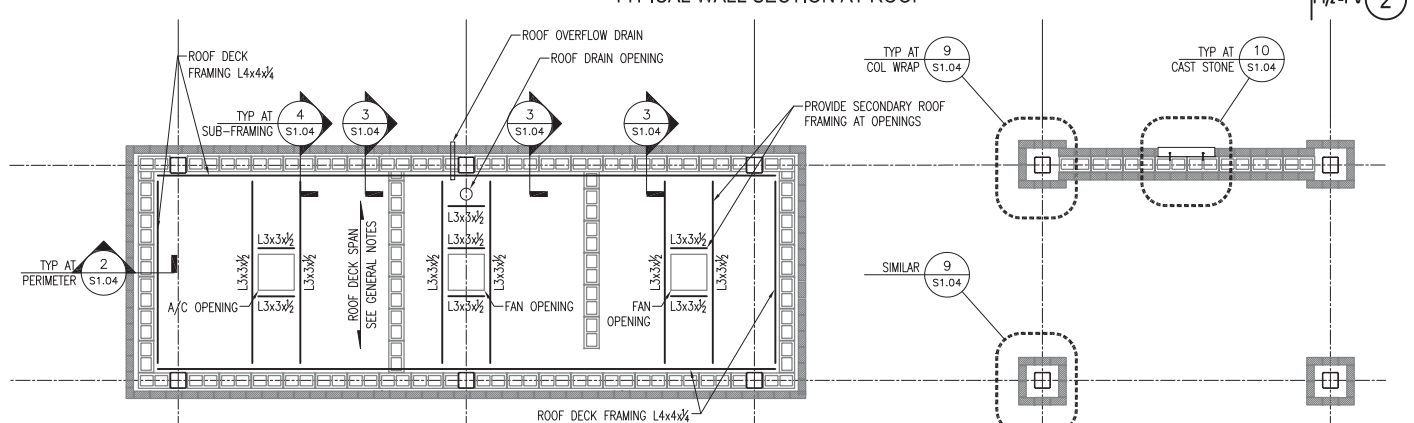


SCREEN WALL MASONRY REINFORCEMENT 1"=1'-0" (9)

TYPICAL WALL SECTION AT ROOF 1 1/2"=1'-0" (2)



CAP STONE CAP ANCHORAGE DETAIL 3"=1'-0" (12)



BUILDING ROOF AND SCREEN WALL ENLARGE PLAN 1/4"=1'-0" (1)

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STATE OF TEXAS
5-2-2022

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BUILDING ROOF AND SCREEN WALL DETAILS

ISSUE FOR PERMIT SHEET ___ OF ___

SECTION NO.	
DRAWN:	DATE: 5-2-2022
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DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. S1.04

PLOT BY: CDau
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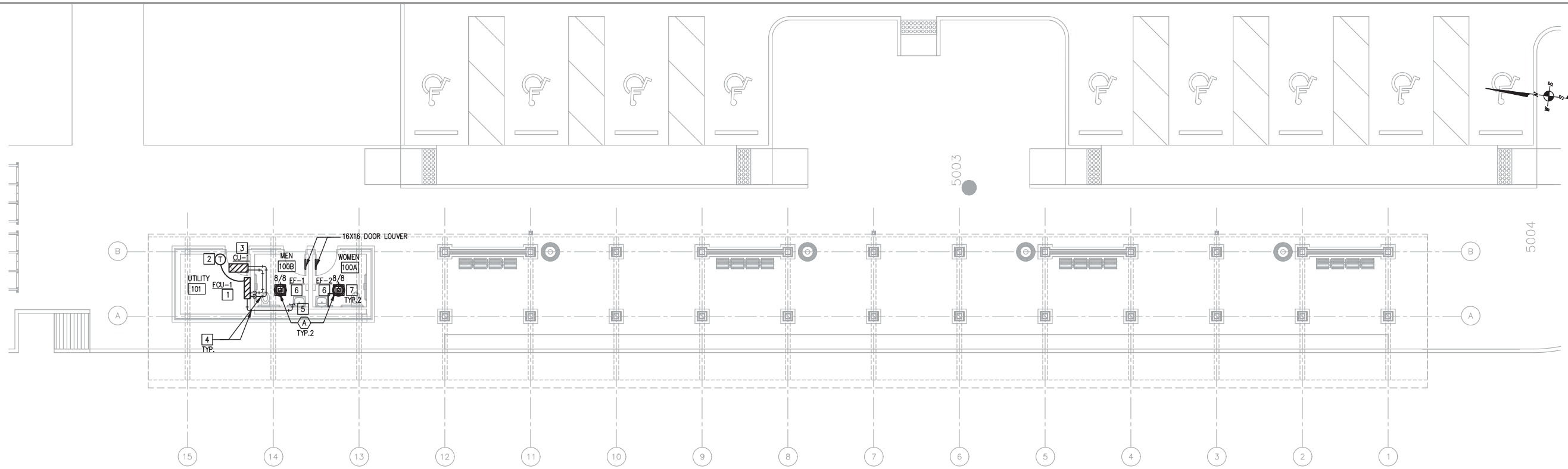
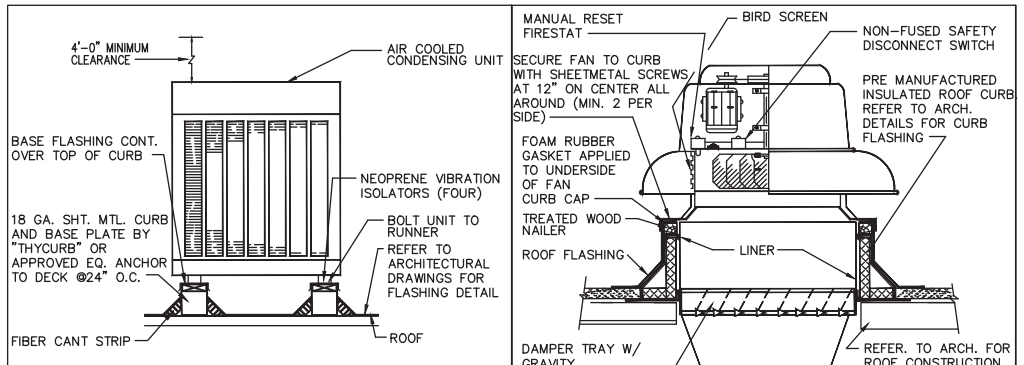


1 BUS LOADING MECHANICAL PLAN

M2.01 — 1/8"=1'-0"

DBR
9990 Richmond Avenue
South Building, Suite 300
Houston, Texas 77042
713.914.0888 p 713.914.0886 f
TBPE Firm Registration No. 2234

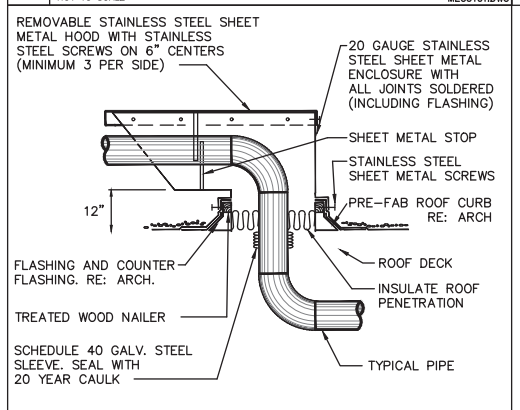
DBR Project Number	180168.000			
WM	–	DT	–	–



NOTE: 1. PROVIDE CLEARANCE AROUND UNIT FOR AIRFLOW AND SERVICE PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

1 CONDENSING UNIT ROOF MOUNTED
NOT TO SCALE — MECU101.DWG

2 CENTRIFUGAL ROOF EXHAUST FAN
NOT TO SCALE — MEFA100.DWG



NOTES: REFER TO ARCHITECTURAL DRAWINGS FOR ROOF CONSTRUCTION AND FLASHING DETAILS.
PROVIDE WATER TIGHT SEAL ON EXTERIOR SIDE OF INSULATION.

3 PIPING ROOF PENETRATION
NOT TO SCALE — MPPE200.DWG

1 MECHANICAL DETAILS AND SCHEDULES

M2.01

AIR DEVICE SCHEDULE

MARK	MFR. & MODEL	TYPE	REMARKS
A	TITUS - OMNI	12"x12" SQUARE FACE RETURN AIR GRILLE	12"x12" FACE, STEEL CONSTRUCTION WITH FRAME FOR LAY-IN CEILING OR HARD CEILING. REFER TO ARCHITECTURAL FOR CEILING TYPE. PROVIDE O.B.D. FOR DUCTED EXHAUST.

NOTES:

1. INSULATE BACK-PAN OF ALL DEVICES
2. PROVIDE FRAME TO MATCH CEILING TYPE INDICATED ON ARCHITECTS REFLECTED CEILING PLAN.
3. PAINT INTERIOR SURFACES OF DUCTWORK VISIBLE FROM FACE OF RETURN AIR GRILLES FLAT BLACK.

MECHANICAL GENERAL NOTES

1. CONTRACTOR SHALL COORDINATE WITH STRUCTURAL CONDITIONS AT THE SITE AND PROVIDE ALL CLEARANCES AS REQUIRED.
2. CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL POWER REQUIREMENTS.
3. TAB CONTRACTOR SHALL COORDINATE WITH CONTROLS VENDOR DURING TESTING AND BALANCING PERIOD.
4. PROVIDE INSULATION FOR ALL PIPING AND DUCTWORK THAT MEETS THE 2015 IECC ENERGY CODE AS SPECIFIED.

MECHANICAL KEYED NOTES:

1. INSTALL MINI SPLIT A/C UNIT APPROXIMATELY THIS LOCATION. SUPPORT UNIT FROM WALL. ROUTE REFRIGERANT PIPING TO CONDENSING UNIT SHOWN ON ROOF. PROVIDE TRANSITIONS AS REQUIRED.
2. PROVIDE WALL MOUNTED THERMOSTAT AT APPROXIMATE LOCATION SHOWN. MOUNT AT SAME ELEVATION AS LIGHT SWITCHES. COORDINATE FINAL LOCATION WITH ARCHITECT.
3. PROVIDE AIR COOLED CONDENSING UNIT MOUNTED ON THE ROOF AT APPROXIMATE LOCATION SHOWN. CONTRACTOR SHALL PROVIDE ALL CLEARANCES AROUND CONDENSING UNIT AS REQUIRED BY EQUIPMENT MANUFACTURER SET ON EQUIPMENT CURB. RE: DETAIL 1/M2.01.
4. REFRIGERANT PIPING SHALL BE SIZED PER MANUFACTURER'S RECOMMENDATIONS.
5. ROUTE 3/4" CONDENSATE PIPING TO Y-TAIL PIECE.
6. PROVIDE ROOF MOUNTED EXHAUST FAN AT APPROXIMATE LOCATION SHOWN. CONTRACTOR SHALL PROVIDE ALL CLEARANCES AS REQUIRED BY THE EQUIPMENT MANUFACTURER. ROUTE DUCT, SIZED AS SHOWN DOWN TO THE CEILING MOUNTED DIFFUSER. DE: DETAIL 2/M2.01.
7. INTERLOCK FAN OPERATION WITH THE OCCUPANCY SENSOR WITHIN THE ASSOCIATED RESTROOM. ALSO INTERLOCK FAN OPERATION WITH THE OPERATION OF THE BUILDING TIME CLOCK.

DX DUCT FREE SPLIT

MARK	FCU-1/CU-1
SERVES	I.T. ROOM
CFM (LO-MED-HI)	152-229-307-338
COOLING CAPACITY (BTUH)	9,000
S.E.E.R. (MIN. = 12.0)	17.0
REFRIGERANT	R410A
MCA/MOCP (AMPS)	12/15
VOLTS/PHASE/HERTZ	208/1/60
INDOOR UNIT WEIGHT (LBS)	23.0
OUTDOOR UNIT WEIGHT (LBS)	75.0
MANUFACTURER	MITSUBISHI
INDOOR UNIT MODEL	MSZ-FE09NA-8
OUTDOOR UNIT MODEL	MSZ-A09NA
NOTES	1,2,3,4,5

NOTES:
1. PROVIDE UNIT WITH WALL MOUNTING KIT.
2. PROVIDE SINGLE POINT OF CONNECTION.
3. PROVIDE CONDENSATE PUMP.
4. PROVIDE HARD-WIRED THERMOSTAT.
5. REFRIGERANT PIPING SHALL BE SIZED PER MANUFACTURER'S SPECIFICATIONS.

FAN SCHEDULE

MARK	EF-1	EF-2
SERVES	MEN RM. 101B	WOMEN RM. 101A
TYPE/DRIVE	ROOF/DIRECT	ROOF/DIRECT
CFM	75	75
EXT. S.P. (IN. W.G.)	0.20	0.20
HORSEPOWER	1/100	1/100
RPM (MAX.)	1,300	1,300
SONES (MAX.)	2.6	2.6
VOLTS/PHASE/HERTZ	115/1/60	115/1/60
MANUFACTURER	GREENHECK	GREENHECK
MODEL NUMBER	G-060-G	G-060-G
NOTES	1, 2, 3, 4, 5	1, 2, 3, 4, 5

NOTES:
1. INTERLOCK FAN OPERATION WITH OCCUPANCY SENSOR WITHIN ASSOCIATED RESTROOM. REFER TO ELECTRICAL DRAWINGS FOR MORE DETAILS.
2. PROVIDE FAN WITH BACKDRAFT DAMPER, WEATHERPROOF DISCONNECT SWITCH, AND FAN MOUNTED SPEED CONTROLLER.
3. PROVIDE FAN WITH PROTECTIVE FAN HOUSING AND WIRE MESH COVER OVER FAN INLET.
4. PROVIDE FAN WITH PRE-FABRICATED ROOF CURB.
5. INTERLOCK FAN OPERATION WITH TIME CLOCK. FAN SHALL OPERATE WHEN OCCUPANCY FROM SENSOR. IF A THERE IS A PERIOD OF THREE HOURS OF CONSECUTIVE UNOCCUPANCY, THE FAN SHALL USE THE TIME CLOCK TO OPERATE FOR 15 MINUTES CONTINUOUSLY.

STATE OF TEXAS
WILLIAM MEISTER
101184
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PROFESSIONAL ENGINEER
3/15/22

NO.	DATE	REVISION	APPROV.

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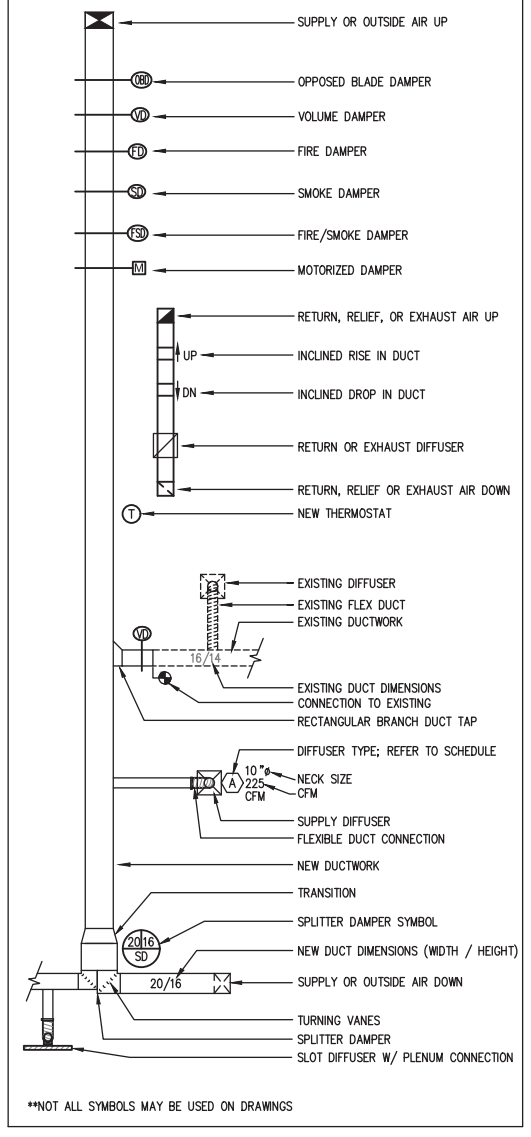
FORT BEND COUNTY
PRECINCT 3

BUS LOADING MECHANICAL PLAN, DETAILS AND SCHEDULES

ISSUE FOR PERMIT	SHEET OF	
SECTION NO.		
DRAWN:	DATE: 3-15-2022	
CHECKED:	DATE:	
DESIGN:	DATE:	
CHECKED:	DATE:	
CONTRACT NO.		
	SHEET NO. M2.01	

DUCTWORK



**NOT ALL SYMBOLS MAY BE USED ON DRAWINGS

1 M3.01 MECHANICAL SYMBOLS AND SPECIFICATIONS

SECTION 23 00 00 – MECHANICAL SPECIFICATIONS

PART I - GENERAL–MECHANICAL

1–1 DESCRIPTION

All work on these Drawings shall be done in strict accordance with these Specifications. The Work included under this Contract shall consist of the furnishing and installation of all equipment and material necessary and required to form the complete and functioning system in all of its various phases, all as shown on the accompanying drawings and/or described in these Specifications.

1–2 WARRANTY

The Contractor shall guarantee the work for a period of one year beyond date of final acceptance. During that period, the Contractor shall repair or replace, at his own expense, any faults or imperfections that may arise due to defects in material and workmanship, including the loss of refrigerant and/or oil due to leaks. Defects shall include but not be limited to noisy operation, loose or missing parts, or noticeable deterioration of finish. During the period, the Contractor shall actually perform all service work required, including the servicing of air filters. All air conditioning compressors shall have parts and labor guarantees for a period of not less than 5 years beyond the date of final acceptance.

1–3 PROJECT CONDITIONS

The Contractor shall visit the Site of the Work and fully understand the conditions that affect the work, or the cost thereof, understand the existing utilities from which services will be supplied, verify locations of utility services, determine requirements for connections, and determine in advance that equipment and materials proposed for installation fit into the confines indicated.

1–4 PERMITS AND FEES

The Contractor shall arrange and pay for all permits, fees, test, and all inspections as required by Governmental Authorities.

1–5 COORDINATION WITH FIELD CONDITIONS

The Contract Documents are schematic in nature in that they are only to establish "Scope" and a minimum level of quality. All duct or pipe or equipment locations as indicated on the Documents do not indicate every transition, offset, or exact location. All transitions, offsets, and exact locations shall be established by actual field measurements, coordination with the structural, architectural and reflected ceiling plans. All transitions, offsets, and relocations as required by actual field conditions shall be performed by the Contractor at no additional cost to the Owner.

1–6 SUBMITTALS

Contractor shall provide six sets of Shop Drawings and Submittals on all Mechanical equipment, insulation, air devices, ductwork (flexible and rigid), and thermostats. Any deviations from the specified items shall be listed on the cover sheet and clearly itemized for all deviations. The Contractor shall provide two copies of Owner's Manual to the Architect upon completion of the Work.

1–7 QUALITY ASSURANCE

All Work shall be performed in accordance with all State, Local, and Federal Codes and all Authorities and Jurisdiction.

1–8 EQUIPMENT IDENTIFICATION

All Mechanical equipment shall be identified by means of nameplates permanently attached to the equipment. Nameplates shall be engraved laminated plastic or etched metal.

1–9 TESTING AND BALANCING

Testing and balance shall be provided by the Mechanical Sub–Contractor, with the services of an Independent Test and Balance Agency. The Test and Balance Company shall specialize in such work, and be a member of Associated Air Balance Council (AABC). The forms used shall be based on recommendations of AABC. Upon completion of the Balancing and Testing, the Balancing Contractor shall compile the test data in report forms, and forward five copies to the Architect for evaluation. The final report shall contain logged results of all tests, including such data as:

Tabulation of air volume at each outlet. (Balanced to within 5% design).

Outside dry bulb and wet bulb temperature.

Inside dry bulb and wet bulb temperatures in each conditioned space room or area.

Actual fan capacities, RPM's and static pressures. Motor current and voltage readings at each fan.

Entering and leaving air temperatures, DB and WB.

PART II - DUCTWORK–MECHANICAL

2–1 METAL DUCTWORK

All ductwork shall be properly suspended or supported from the building structure. Hangers shall be galvanized steel straps or hot–dipped galvanized rod with thread pointed after installation. Strap hanger shall be attached to the bottom of the ductwork. The spacing, size and installation hangers shall be in accordance with the recommendations of latest edition of SMACNA space hangers as required to support ducts without sagging.

Ventlock No. 699 "Test Plugs" shall be provided in ductwork at all openings in ductwork required for testing and balancing.

2–2 DUCTWORK MATERIALS

Exposed Ductwork Materials: Where ductwork is indicated to be exposed to view in occupied spaces, provide materials which are free from visual imperfections including pitting, seam marks, roller marks, stains and discolorations, and other imperfections, including those which would impair painting.

Sheet Metal: Except as otherwise indicated, fabricate ductwork from galvanized sheet, sheet complying with ASTM A527, lockforming quality, with G90 zinc coating in accordance with ASTM A 525; and mill phoshatized for exposed locations.

Stainless Steel Sheet: Where indicated, provided stainless steel complying with ASTM A167; Type 316; with No. 4 finish where exposed to view in occupied spaces, No. 1 finish elsewhere. Protect finished surfaces with mill–applied adhesive protective paper, maintained through fabrication and installation.

Aluminum Sheet: Where indicated, provide aluminum sheet complying with ASTM B209, Alloy 3003, Temper H14.

A. Non combustible and conforming to UL 181, Class 1 air duct materials.

B. Flexible ducts: Flexmaster U.S.A. Inc. Type 3M or approved equal, corrosive resistance galvanized steel formed and Mechanically locked to inner fabric with R–5 insulation when flexible ducts are located inside the thermal envelope and with R–8 insulation when located outdoors or outside of the building envelope. Flexible duct shall have reinforced metalized outer jacket comply with UL 181, Class 1 air duct.

C. Sealants: Hard–Cast "Iron Grip: or approved equal, non–hardening, water resistant, fire resistive and shall not be a solvent curing product. Sealants shall be compatible with mating materials, liquid used alone or with tape or heavy mastic.

D. Ductwork Support Materials: Except as otherwise indicated, provide hot–dipped galvanized steel fasteners, anchors, rods, straps, trim and angles for support of ductwork.

1. For exposed stainless steel ductwork, provide matching stainless steel support materials.
2. For aluminum ductwork, provide aluminum support materials.

2–1–2 LOW PRESSURE DUCTWORK

A. Fabricate and support in accordance with latest SMACNA low pressure duct construction standards and ASHRAE handbooks, except as indicated. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.

B. Size round ducts installed in place of rectangular ducts in accordance with ASHRAE table of equivalent rectangular and round ducts. No variation of duct configuration or sizes permitted except by approved shop drawings. Obtain engineer's approval prior to using round duct in lieu of rectangular duct.

C. Construct T's, bends, and elbows with radius of not less than 1–1/2 times width of duct on centerline. Where not possible and where rectangular elbows are used, provide airfoil–turning vanes. Where acoustical lining is indicate, provide turning vanes of perforated metal with glass fiber insulation.

D. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible. Divergence upstream of equipment shall not exceed 30 degrees; convergence downstream shall not exceed 45 degrees.

E. Use crimp joints with bead for joining round duct sizes 6 inch smaller with crimp in direction of airflow.

F. Use double nuts and lock washers on threaded rod supports.

2–1–3 EXECUTION

A. Obtain Manufacturer's Inspection and acceptance of fabrication and installation of ductwork at beginning of installation.

B. Provide openings in ductwork where required to accommodate thermometers and controllers. Provide Pitot tube openings where required for testing of systems, complete with metal can with spring device or screw to ensure against air leakage where openings are provided in insulated ductwork, install insulation material inside a metal ring.

C. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.

D. Connect terminal units to medium or high pressure ducts with four feet maximum length of flexible duct. Do not use flexible duct to change direction.

E. Connect diffusers or troffer boots to low pressure ducts with 6 feet maximum, 4 feet minimum, length of flexible duct. Hold in place with strap or clamp.

F. During construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.

G. The interior surface of all ductwork shall be smooth. No sheet metal parts, tabs, angles, or anything else may project into the ducts for any reason, except as specified to be so. All seams and joints shall be external.

H. All ductwork located exposed on roof shall be "Crowned" to prevent water from ponding. Reference insulation for additional requirements.

I. Where ducts pass through floors, provide structural angles for duct support. Where ducts pass through walls in exposed areas, install suitable sheet metal escutcheons as closers.

J. All angles shall be carried around all four sides of the duct or group of ducts. Angles shall overlap corners and be welded or riveted.

K. All ductwork shall be fabricated in a manner to prevent the seams or joints being cut for the installation of grilles, registers, or ceiling outlets.

2–2 DUCT INSULATION

All insulation shall be installed in accordance with the Manufacturer's recommendations and printed installation instructions.

All items required for a complete and proper installation are not necessarily indicated on the Plans or in the Specifications. Provide all items required as per manufacturer's requirements.

All toilet exhaust ductwork shall be unlined sheet metal with all joints sealed. Duct dimensions shown on Plans are clear inside dimensions.

PART III: EQUIPMENT - MECHANICAL

3–1 AIR DISTRIBUTION

A. Air distribution devices shall be selected at a maximum of 30 noise criteria and at a maximum of 0.06" W.G. total pressure drop. Approved Manufacturers are Metalaire, Titus, and Krueger.

B. The backside of all supply air devices not located in a return air plenum shall be insulated with taped and sealed 1–½" thick one lb. density fiberglass insulation with vapor barrier.

3–2 FANS

A. The following Manufacturers are approved subject to Specification Compliance: Greenheck, Cook, Breidert, ACME, Penn, Twin City.

B. All fans shall be tested in accordance with latest AMCA Fan Test Code shall bear AMCA certified rating seal.

C. All fans with V–belt drives shall have statically and dynamically balanced adjustable sheaves with drive capacity not less than 150% of the nominal motor horsepower. Adjustable drives as Manufactures by Browning, Gates, or Goodrich will be acceptable.

D. All motors shall be selected so that they will not overload if the static pressure drops one–half inch. Motor Controller will be furnished by this division, unless noted otherwise on the plans. Refer to drawings fro 2–speed fan motor requirements. Provide fan guard for all wall mounted fans.

E. Fans shall be installed as detailed on drawings and in accordance with Manufacturer's recommendations. Fans moving 2,000 CFM and more shall have smoke detector installed in ductwork or other suitable location to detect products of combustion and shut–off fan.

F. Provide vibration isolation supports for equipment, piping, and ductwork to prevent transmission of vibration and noise to the building structure that may cause discomfort to the occupants.

G. All items required for a complete and proper installation are not necessarily indicated on the plans or in the Specification. Provide all items required as per Manufacturers requirements and install as per Manufacturers recommendations and instructions.

H. All vibration isolators shall be designed and treated for resistance to corrosion.

3–3 AIR FILTERS

A. The following Manufacturers are approved subject to Specification Compliance; American Air Filter, Air Guard Industries Inc., and Cambridge.

B. The filters shall be Farr 30/30 2 inch thick or approved equal.

3–4 PIPING

A. All condensate drains shall be galvanized steel or copper with ½" thick armaflex insulation.

B. Refrigerant piping shall be copper ACR tubing, fittings shall be wrought copper steamlined sweat fitting.

C. All condenser water piping shall be Type L hard drawn copper tubing, fittings shall be ANSI/ASME B16.23 cast brass, or ANSI/ASME B16.29 solder wrought copper, joints shall be ANSI/AWS A5.9, BCUP silver braze.

3–5 SOUND AND VIBRATION CONTROL

A. Provide vibration isolation supports for equipment, piping, and ductwork to prevent transmission of vibration and noise to the building structure that may cause discomfort to the occupants.

B. All items required for a complete and proper installation are not necessarily indicated on the plans or in the Specification. Provide all items required as per Manufacturers requirements and install as per Manufacturers recommendations and instructions.

C. All vibration isolators shall be designed and treated for resistance to corrosion.

END OF SECTION

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DBR Project Number 180168.000

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WILLIAM MEISTER
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3/15/22

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THE STATE OF TEXAS
FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

MECHANICAL SPECIFICATIONS

ISSUE FOR PERMIT SHEET OF

SECTION NO.	
DRAWN:	DATE: 3–15–2022
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. M3.01

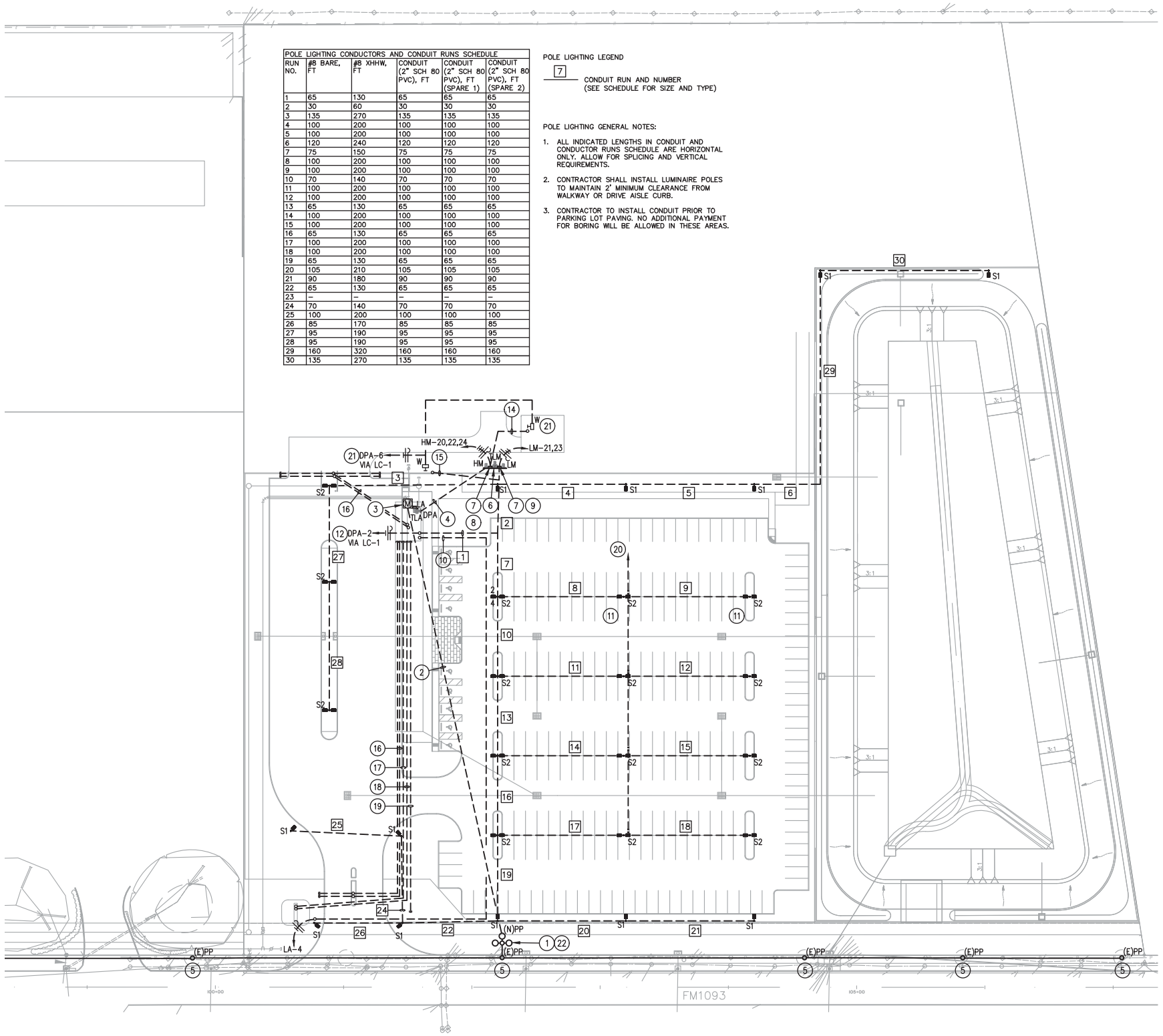
POLE LIGHTING CONDUCTORS AND CONDUIT RUNS SCHEDULE					
RUN NO.	#8 BARE, FT	#8 XHHW, FT	CONDUIT (2" SCH 80 PVC), FT	CONDUIT (2" SCH 80 PVC), FT (SPARE 1)	CONDUIT (2" SCH 80 PVC), FT (SPARE 2)
1	65	130	65	65	65
2	30	60	30	30	30
3	135	270	135	135	135
4	100	200	100	100	100
5	100	200	100	100	100
6	120	240	120	120	120
7	75	150	75	75	75
8	100	200	100	100	100
9	100	200	100	100	100
10	70	140	70	70	70
11	100	200	100	100	100
12	100	200	100	100	100
13	65	130	65	65	65
14	100	200	100	100	100
15	100	200	100	100	100
16	65	130	65	65	65
17	100	200	100	100	100
18	100	200	100	100	100
19	65	130	65	65	65
20	105	210	105	105	105
21	90	180	90	90	90
22	65	130	65	65	65
23	–	–	–	–	–
24	70	140	70	70	70
25	100	200	100	100	100
26	85	170	85	85	85
27	95	190	95	95	95
28	95	190	95	95	95
29	160	320	160	160	160
30	135	270	135	135	135

POLE LIGHTING LEGEND

7 — CONDUIT RUN AND NUMBER (SEE SCHEDULE FOR SIZE AND TYPE)

POLE LIGHTING GENERAL NOTES:

1. ALL INDICATED LENGTHS IN CONDUIT AND CONDUCTOR RUNS SCHEDULE ARE HORIZONTAL ONLY. ALLOW FOR SPLICING AND VERTICAL REQUIREMENTS.
2. CONTRACTOR SHALL INSTALL LUMINAIRE POLES TO MAINTAIN 2' MINIMUM CLEARANCE FROM WALKWAY OR DRIVE AISLE CURB.
3. CONTRACTOR TO INSTALL CONDUIT PRIOR TO PARKING LOT PAVING. NO ADDITIONAL PAYMENT FOR BORING WILL BE ALLOWED IN THESE AREAS.



1 MEP1.01 MEP SITE PLAN
1"=50'–0"

ELECTRICAL GENERAL NOTES:

A. CONTRACTOR SHALL BE RESPONSIBLE WHEN EXCAVATING TO AVOID DAMAGE TO EXISTING POWER, COMMUNICATIONS, WATER AND/OR GAS LINES, THAT MAY BE BURIED IN AREA OF NEW CONSTRUCTION OR WHEN DIGGING NEW TRENCH FOR NEW FEEDERS/BRANCH CIRCUITS. LOCATE ALL EXISTING UTILITIES BEFORE DIGGING. CONTACT EACH UTILITY COMPANY SO THEY CAN MARK THEIR LINES. ALL TRENCHES SHALL BE DUG BY HAND AS REQUIRED TO PREVENT DAMAGE TO EXISTING UTILITIES.

B. COORDINATE ALL WORK WITH ARCHITECTURAL AND CIVIL PLANS PRIOR TO ANY CONSTRUCTION WORK.

C. CONTRACTOR SHALL PROVIDE FLUSH WITH GRADE PULL–BOXES EVERY 500' AS REQUIRED. REFER TO PULL BOX DETAIL.

D. REFER TO ELECTRICAL ONE–LINE DIAGRAM AND PANEL SCHEDULE FOR ADDITIONAL INFORMATION.

E. CONTRACTOR SHALL BORE UNDERNEATH EXISTING PAVEMENT, STREETS, SIDEWALKS, PARKING LOTS, ETC. TO INSTALL CONDUITS. (DO NOT SAW CUT).

F. UNLESS OTHERWISE NOTED PROVIDE A MINIMUM OF 2" SCHEDULE 40 PVC CONDUIT SIZE FOR BELOW GRADE CONDUITS. PROVIDE SCHEDULE 80 PVC BELOW ALL STREETS AND WALKWAYS.

G. ALL RECEPTACLES SHALL BE GFCI TYPE WITHIN WEATHERPROOF WHILE IN USE ENCLOSURES.

H. ALL CONDUCTORS SHALL BE COPPER UNLESS NOTED OTHERWISE.

I. FEEDERS ARE SIZED BASED ON 2% VOLTAGE DROP FOR CALCULATED DISTANCES. CONTRACTOR SHALL VERIFY VOLTAGE DROP OF 2% OR LESS IS MET FOR FEEDERS BASED ON ACTUAL CONDUIT ROUTING.

J. CONTRACTOR TO INSTALL CONDUIT PRIOR TO PARKING LOT PAVING. NO ADDITIONAL PAYMENT FOR BORING WILL BE ALLOWED IN THESE AREAS.

K. REFER TO SHEET T2.00 FOR ADDITIONAL SITE CONDUITS. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL CONDUIT AND PULL STRINGS.

ELECTRICAL KEYED NOTES:

1. PROPOSED LOCATION FOR NEW CENTERPOINT POWER POLE WITH POLE–MOUNTED TRANSFORMERS.
2. ELECTRICAL CONCRETE–ENCASED SERVICE LATERAL. REFER TO ELECTRICAL ONE–LINE DIAGRAM FOR MORE INFORMATION.
3. PROPOSED LOCATION FOR METERING EQUIPMENT AND MAIN DISCONNECT SWITCH OUTSIDE OF RESTROOM BUILDING. REFER TO ELECTRICAL ONE–LINE DIAGRAM FOR MORE INFORMATION.
4. PROPOSED NEW FEEDER AS SHOWN ON ELECTRICAL ONE–LINE DIAGRAM. ROUTE CONDUIT BELOW GRADE. COORDINATE ROUTING WITH EXISTING EQUIPMENT AND UNDERGROUND UTILITIES. REFER TO CONDUIT STUB–UP DETAIL.
5. APPROXIMATE LOCATION OF EXISTING POWER POLE AND OVERHEAD ELECTRICAL LINES.
6. PROPOSED LOCATION FOR NEW UNISTRUT RACK AND NEW ELECTRICAL EQUIPMENT AS SHOWN ON ELECTRICAL ONE–LINE DIAGRAM.
7. ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUIT AND WIRING FROM DISCONNECT SHOWN TO DISCONNECT AT WATER PLANT AND OSSF PLANT PUMP RACK. PUMP INSTALLER SHALL PROVIDE CONDUIT AND WIRING FROM DISCONNECT AT PUMP RACK TO PUMP CONTROLLER PANEL AND MAKE FINAL CONNECTIONS TO CIRCUIT BREAKERS WITHIN PUMP CONTROLLER AND FROM PUMP CONTROLLER TO PUMPS. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT REQUIREMENTS WITH PUMP INSTALLER PRIOR TO CONSTRUCTION WORK. REFER TO E4.01 AND CIVIL "W" SERIES DRAWINGS FOR MORE INFORMATION.
8. PROVIDE 100A/3P/NF/NE3R HEAVY–DUTY DISCONNECT SWITCH FOR WATER PLANT. COORDINATE LOCATION WITH LIFT STATION INSTALLER.
9. PROVIDE 100A/2P/NF/NE3R DISCONNECT SWITCH FOR OSSF (SEPTIC) PUMP. COORDINATE LOCATION WITH PUMP INSTALLER.
10. (1) 1"C. WITH 2#8, #10G FOR IRRIGATION CONTROLLER. STUB–UP AT CONTROLLER. REFER TO CONDUIT STUB–UP DETAIL. COORDINATE EXACT LOCATION WITH IRRIGATION SYSTEM SUPPLIER PRIOR TO ROUGH–IN.
11. NEW SITE LIGHTING POLE TO BE MOUNTED ATOP 2'–6" CONCRETE BASE. REFER TO POLE BASE DETAIL FOR ADDITIONAL INFORMATION. WHERE SHOWN NUMBER NEXT TO FIXTURE HEAD INDICATES CIRCUIT SERVING HEAD. (TYPICAL)
12. 2#8 & 1#8 GND IN 2" SCHEDULE 80 PVC CONDUIT. ROUTE HOMERUN THROUGH TIME CLOCK. FIELD VERIFY EXACT ROUTING, COORDINATING WITH EXISTING UNDERGROUND UTILITIES. REFER TO ADDITIONAL POLE LIGHTING NOTES AND SCHEDULE ON THIS SHEET.
13. NOT USED.
14. 3#3 & 1#8 GND IN 2" SCHEDULE 40 PVC CONDUIT ROUTED 24" BELOW GRADE. REFER TO W2.00 AND FIELD COORDINATE WITH PUMP INSTALLER FOR EXACT STUB–UP LOCATION.
15. 2#3 & 1#8 GND IN 2" SCHEDULE 40 PVC CONDUIT ROUTED 24" BELOW GRADE. REFER TO W5.10 AND FIELD COORDINATE WITH PUMP INSTALLER FOR EXACT STUB–UP LOCATION.
16. (1) 1–1/4" C. FOR GATE MOTOR POWER AS NOTED ON E2.01. ROUTE CONDUIT TO EACH GATE MOTOR. FIELD COORDINATE EXACT ROUTING.
17. (1) 1–1/4"C. FOR MONUMENT SIGN POWER AS NOTED ON E2.01. FIELD COORDINATE EXACT ROUTING.
18. (1) 1"C. FOR MONUMENT SIGN ETHERNET BOOSTER POWER AS NOTED ON E2.01. FIELD COORDINATE EXACT ROUTING.
19. PROVIDE (1) 2" SPARE CONDUIT. CAP AND TAG PER CONDUIT STUB–UP DETAIL.
20. PROVIDE (1) 1" EMPTY CONDUIT FOR FUTURE POE CONVERTER POWER. ROUTE CONDUIT BACK TO UTILITY 101. PROVIDE JUNCTION BOX MOUNTED TO UNISTRUT RACK AT BASE OF EACH POLE SHOWN. REFER TO JUNCTION BOX MOUNTING DETAIL.
21. PROVIDE LIGHT FIXTURE AS SCHEDULE MOUNTED ADJACENT TO PUMP CONTROL PANEL AND DISCONNECT ON PUMP PROVIDER'S UNISTRUT RACK. FIELD COORDINATE LOCATION WITH PUMP PROVIDER PRIOR TO ROUGH–IN.
22. TELECOMMUNICATIONS SERVICE SHALL BE PROVIDED. REFER TO TECHNOLOGY "T–" SERIES DRAWINGS FOR ADDITIONAL INFORMATION.

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DBR Project Number 180168.000

WM	–	DT	–	–

STATE OF TEXAS
WILLIAM MEISTER
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LICENSED
PROFESSIONAL ENGINEER
4/5/22

NO.	DATE	REVISION	APPROV.

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FORT BEND COUNTY
PRECINCT 3

ELECTRICAL SITE PLAN

ISSUE FOR PERMIT SHEET OF

SECTION NO.	
DRAWN:	DATE: 4–05–2022
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
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	SHEET NO. MEP1.01

ABBREVIATIONS

A

A	AMPERES
ABV	ABOVE
A/C	AIR CONDITIONING
AC	ALTERNATING CURRENT, AIR COMPRESSOR, ABOVE COUNTER
ACC	AIR COOLED CHILLER
ACCU	AIR COOLED CONDENSING UNIT
AD	ACCESS DOOR
ADA	AMERICANS WITH DISABILITIES ACT
AF	AMPERE FUSE, AMPERE FRAME
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPT CAPACITY
AL	ALUMINUM
AM	AMMETER
AMP	AMPLIFIER
ANN	ANNUNICATOR
AP	ACCESS PANEL, ALARM PANEL
ARCH	ARCHITECT, ARCHITECTURAL
ASC	AMPERES SHORT CIRCUIT
AT	AMPERE TRIP RATING
ATS	AUTOMATIC TRANSFER SWITCH
AVG.	AVERAGE
AUX.	AUXILIARY
AWG.	AMERICAN WIRE GAUGE

B

BAS	BUILDING AUTOMATION SYSTEM
BC	BELOW COUNTER
BKR	BREAKER
BLDG.	BUILDING

C

C	CONDUIT, CELSIUS
CATV	CABLE TELEVISION SYSTEM
CCTV	CLOSED CIRCUIT TELEVISION
CWP	CONDENSER WATER PUMP
CH	CHILLER
CHP	CHILLED WATER PUMP
CIRC	CIRCULATING
CKT	CIRCUIT
CL	CENTERLINE
CLG.	CEILING
CMU	CONCRETE MASONRY UNIT
COL.	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONT.	CONTINUOUS,CONTINUATION
CONTR.	CONTROLLER, CONTRACTOR
CP.	CIRCULATING PUMP
CPUC	CPU CHILLER
CR	CARD READER, CORD REEL
CRU	CONDENSATE RETURN UNIT
CT	CURRENT TRANSFORMER, COOLING TOWER
CTR	CENTER
CU	COPPER

D

dB	DECIBEL
DC	DIRECT CURRENT
DDC	DIRECT DIGITAL CONTROL
DTL	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DISC	DISCONNECT
DN	DOWN
DP	DISTRIBUTION PANEL
DPDT	DOUBLE-POLE, DOUBLE-THROW
DPST	DOUBLE-POLE, SINGLE-THROW
DR	DROPPED RECEPTACLE
DS	DAYLIGHT SENSOR
DW	DISHWASHER
DWG	DRAWING
DWH	DOMESTIC WATER HEATER
DWP	DOMESTIC WATER PUMP
DZ	DAYLIGHT ZONE

E

(E)	EXISTING
EA	EACH
EC	ELECTRICAL CONTRACTOR
E.C.	EMPTY CONDUIT
EDF	ELECTRIC DRINKING FOUNTAIN
EF	EXHAUST FAN
EFF	EFFICIENCY
EHC	ELECTRIC HEATING COIL
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC.	ELECTRICAL
ELEV.	ELEVATOR
EMCS	ENERGY MANAGEMENT AND CONTROLS SYSTEM
EMERG	EMERGENCY
EMS	ENERGY MANAGEMENT SYSTEM
ENCL.	ENCLOSURE
ENGR.	ENGINEER
EPO	EMERGENCY POWER OFF
EQUIP	EQUIPMENT
(ER)	EXISTING TO REMAIN
EUH	ELECTRIC UNIT HEATER
EWH	ELECTRIC WATER HEATER
EXH	EXHAUST

F

F	FAHRENHEIT, FAN, FIRE
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FCU	FAN COIL UNIT
FF	FURNITURE FEED
FIXT	FIXTURE
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FLR	FLOOR
FLUOR	FLUORESCENT
FP	FIRE PUMP, FAN POWERED
FPTB	FAN POWERED TERMINAL BOX
FRZR	FREEZER
FS	FUSED SWITCH, FLOW SWITCH
FSD	MOTORIZED FIRE SMOKE DAMPER

F

FT	FOOT, FEET
FTL	FEED-THRU LUGS
FUT	FUTURE
FVNR	FULL-VOLTAGE, NON-REVERSING

G

GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
GTD	GENERATOR TRANSFER DEVICE
GUH	GAS UNIT HEATER

H

HACR	HEATING, AIR CONDITIONING RATED CIRCUIT BREAKER
HD	ELECTRIC HAND DRYER
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTOMATIC
HORIZ	HORIZONTAL
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HS	HAND SET
HSC	HAND SCANNER
HTG	HEATING
HTR	HEATER
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING
HVU	HEATING/ VENTILATING UNIT
HWB	HOT WATER BOILER
HWC	HOT WATER CIRCULATOR
HWP	HEATING WATER PUMP
HZ	HERTZ

I

ID	INSIDE DIAMETER
IG	ISOLATED GROUND
IN	INCH
INCAND	INCANDESCENT
INT	INTERNAL, INTERIOR

J

JB	JUNCTION BOX
JP	JOCKEY PUMP

K

KEC	KITCHEN EQUIPMENT CONTRACTOR
KO	KNOCKOUT
kVA	KILOVOLT- AMPS
kW	KILOWATT
kWH	KILOWATT-HOUR

L

LED	LIGHT EMITTING DIODE
LF	LINEAR FEET
LRA	LOCKED ROTOR AMPS
LTG	LIGHTING
LV	LOW VOLTAGE TRANSFORMER
LVL	LEVEL

M

M	METER
MAP	MASTER ALARM PANEL
MATV	MASTER ANTENNA TELEVISION SYSTEM
MAX.	MAXIMUM
MC	METAL CLAD CABLE
MCA	MINIMUM CIRCUIT AMPS
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MD	MOTORIZED DAMPER
MDP	MAIN DISTRIBUTION PANEL
MECH.	MECHANICAL
MFR	MANUFACTURER
MH	METAL HALIDE
MIC	MICROPHONE
MIN.	MINIMUM
MLO	MAIN LUGS ONLY
MOCP	MAXIMUM OVER-CURRENT PROTECTION
MSB	MAIN SWITCHBOARD
MTD	MOUNTED
MV	MERCURY VAPOR

N

N3R	NEMA 3R ENCLOSURE
N4X	NEMA 4X ENCLOSURE
N.C.	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
NF	NON-FUSED
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NFS	NON-FUSED SWITCH
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
N.O.	NORMALLY OPEN
NO.	NUMBER
NTS	NOT TO SCALE

O

OAF	OUTSIDE AIR FAN
OAHU	OUTSIDE AIR HANDLING UNIT
OC	ON CENTER
OD	OUTSIDE DIAMETER
OHE	OVERHEAD ELECTRICAL
OPG	OPENING

P

P	POLE, PUMP
PB	PUSHBUTTON
PC	PHOTOCELL
PH	PHASE
PL	PILOT LIGHT
PLBG	PLUMBING
PNEU	PNEUMATIC
PNL	PANEL
POS	POINT OF SALE
PP	POWER POLE
PR	PAIR
PRI	PRIMARY
PS	PHOTOSENSOR
PVC	POLYVINYL CHLORIDE
PWR	POWER

Q

QTY	QUANTITY

R

R	EXISTING TO BE REMOVED
RA	RETURN AIR
RAD	REFRIGERATED AIR DRYER
RAF	RETURN AIR FAN
RC	RECONNECT EXISTING DEVICE TO CIRCUIT INDICATED
RCP	REFLECTED CEILING PLAN
RCPT	RECEPTACLE
RE	REFERENCE, REFER
REC	RECEPTACLE
REFR	REFRIGERATOR
REINF	REINFORCING
REL	EXISTING TO BE RELOCATED
REL/EX	NEW LOCATION OF RELOCATED EQUIPMENT
REQD	REQUIRED
REV	REVISION, REVISE
RGS	RIGID GALVANIZED STEEL
RLA	RUNNING LOAD AMPS
RPM	REVOLUTIONS PER MINUTE
RR	REMOVE AND REPLACE
RTU	ROOFTOP UNIT

S

SA	SUPPLY AIR
SAF	SUPPLY AIR FAN
SCHED	SCHEDULE
SE	SEWAGE EJECTOR
SEC	SECONDARY
SECT	SECTION
SF	SQUARE FEET
SHT	SHEET
SIM	SIMILAR
SKVA	STARTING KILOVOLT-AMPS
SKW	STARTING KILOWATTS
SP	SUMP PUMP
SPEC	SPECIFICATION
SPF	STAIR PRESSURIZATION FAN
SPKR	SPEAKER
SPD	SURGE PROTECTION DEVICE
SPDT	SINGLE-POLE, DOUBLE-THROW
SPST	SINGLE-POLE, SINGLE-THROW
SQ.	SQUARE
SRF	SMOKE REMOVAL FAN
SS	START-STOP PUSH BUTTON
SSSC	SOLID STATE SPEED CONTROL
ST	SHUNT TRIP
STB	STEAM BOILER
STD	STANDARD
STL	STEEL
SURF	SURFACE
SW	SWITCH
SWBD	SWITCHBOARD

T

TC	TEMPERATURE CONTROL
TEL	TELEPHONE
TF	TRANSFER FAN
TL	TWIST-LOCK
TOC	TOP OF CURB
TOS	TOP OF STEEL
TP	CHILD TAMPER PROOF DEVICE
TSTAT	THERMOSTAT
TTB	TELEPHONE TERMINAL BOARD
TTC	TELEPHONE TERMINAL CABINET
TU	TERMINAL UNIT
TV	TELEVISION
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYP	TYPICAL

U

UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES, INC.
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTABLE POWER SYSTEM

V

V	VOLT
VA	VOLT-AMPERE
VAV	VARIABLE AIR VOLUME
VC	VOLUME CONTROL
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VP	VACUUM PUMP
VM	VOLT METER

W

W	WATT, WIRE, WIDTH
WG	WIREGUARD
W/	WITH
W/O	WITHOUT
WP	WEATHERPROOF
WS	WATER SOFTENER
WT	WATERTIGHT, WEIGHT
WWF	WELDED WIRE FABRIC
W/FT²	WATTS PER SQUARE FOOT

X

XFMR	TRANSFORMER

Z

Z	ZONE

DAYLIGHT ZONE/PRIMARY DAYLIGHT ZONE

SECONDARY DAYLIGHT ZONE

ELECTRICAL SYMBOLS

MOTORS AND CONTROLS

- MOTOR RATED SWITCH WITH THERMAL OVERLOADS
- SINGLE OR THREE PHASE MOTOR NUMBER INDICATES HORSE POWER
- ELECTRIC DUCT HEATER
- DISCONNECT (SAFETY) SWITCH "200/3/150" DENOTES AMPERES/POLE/FUSE, "NF" DENOTES NON-FUSED "N3R" DENOTES NEMA 3R
- ENCLOSED CIRCUIT BREAKER- "200/3/150" DENOTES AMPERES/POLE/TRIP.
- MOTOR STARTER FURNISHED BY DIVISION 23 AND INSTALLED BY DIVISION 26.
- COMBINATION DISCONNECT (SAFETY) SWITCH AND MOTOR STARTER, "30/3/15/#0" DENOTES AMPERES/POLES/FUSE/ STARTER SIZE, "NF" DENOTES NON-FUSED. FURNISHED BY DIVISION 23 AND INSTALLED BY DIVISION 26.
- VFD — VARIABLE FREQUENCY DRIVE PROVIDED BY DIVISION 23 AND INSTALLED BY DIVISION 26.
- EPO — EMERGENCY POWER OFF BUTTON.

RECEPTACLES AND OUTLETS

ALL RECEPTACLES SHALL BE MOUNTED 18" ABOVE FINISHED FLOOR TO CENTER OF DEVICE UNLESS NOTED OTHERWISE.

- SIMPLEX WALL RECEPTACLE, NEMA 5-20R, 20A, 125V.
- DUPLEX WALL RECEPTACLE, NEMA 5-20R, 20A, 125V.
  - "GFCI" DENOTES GROUND FAULT INTERRUPTER,
  - "WP" DENOTES WEATHERPROOF,
  - "IG" DENOTES ISOLATED GROUND,
  - "TP" DENOTES SAFETY TYPE, (TAMPER PROOF)
  - "DR" DENOTES DROPPED RECEPTACLE,
  - "USB" DENOTES RECEPTACLE WITH UNIVERSAL SERIAL BUS,
  - "AC" DENOTES ABOVE COUNTER MOUNTING, SEE
  - "UC" DENOTES UNDER COUNTER MOUNTING, SEE
  - "H" DENOTES HORIZONTALLY ORIENTED RECEPTACLE, SEE ARCHITECTURAL PLANS FOR EXACT MOUNTING HEIGHT.
- R — DUPLEX WALL RECEPTACLE ON EMERGENCY CIRCUIT, RED COLOR.
- DUPLEX WALL RECEPTACLE ON A CIRCUIT DEDICATED TO DATA PROCESSING, GRAY COLOR. PROVIDE ISOLATED GROUND TYPE RECEPTACLES WHERE NOTED.
- SPLIT WIRED RECEPTACLE. TOP RECEPTACLE SHALL BE SWITCHED ACCORDING TO PLANS, AND BOTTOM SHALL REMAIN UNSWITCHED.
- SP — CONTROLLED DUPLEX WALL RECEPTACLE, NEMA 5-20R, 20A, 125V. "SP" DENOTES SPLIT WIRED
- FOURPLEX (DOUBLE DUPLEX) WALL RECEPTACLE. NEMA 5-20R, 20A, 125V.
- R — FOURPLEX WALL RECEPTACLE ON EMERGENCY CIRCUIT, RED COLOR.
- CONTROLLED FOURPLEX (DOUBLE DUPLEX) WALL RECEPTACLE. NEMA 5-20R, 20A, 125V.
- SPECIAL RECEPTACLE, NEMA CONFIGURATION AS NOTED.
- TWO-GANG FLOOR OUTLET
- THREE-GANG FLOOR OUTLET
- MULTI-OUTLET SURFACE RACEWAY. SEE ARCHITECTURAL DRAWINGS FOR EXACT MOUNTING HEIGHTS.
- J — JUNCTION BOX
  - "MD" DENOTES MOTOR DAMPER,
  - "CR" DENOTES CORD REEL,
  - "D" DENOTES DROP CORD RECEPTACLE,
- DUPLEX RECEPTACLE WITH HOMERUN
- DUPLEX RECEPTACLE (PEDESTAL MOUNTED)
- TWO-GANG CEILING OUTLET
- D R P — FLUSH ELECTRICAL FLOOR OUTLET, "P" DENOTES POKE-THRU. "D" INDICATES DUPLEX RECEPTACLE, "R" INDICATES RED RECEPTACLE ON EMERGENCY POWER. REFER TO FLOOR BOX SCHEDULE, FIRE RATED POKE- THROUGH SCHEDULE AND KEYED NOTES.
- PP — POWER POLE
- DIRECT CONNECTION TO EQUIPMENT
- P — PULL BOX (OVER 4" SQUARE)
- C (2) — CLOCK RECEPTACLE SHALL BE MOUNTED 12" BELOW FINISHED CEILING. (2) DENOTES DOUBLE SIDED CLOCK.

LIGHTING

LETTER(S) DENOTE TYPE- SEE LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION.

- 2' X 4' LIGHTING FIXTURE.
- 2' X 2' LIGHTING FIXTURE.
- 1' X 4' LIGHTING FIXTURE.
- 1' X 2' LIGHTING FIXTURE.
- 1' X 1' LIGHTING FIXTURE.

ALL LIGHT FIXTURES SHALL BE LED UNLESS NOTED OTHERWISE

- STRIP LIGHTING FIXTURES.
- STAGGERED STRIP LIGHTING FIXTURE.
- ROUND DOWNLIGHT FIXTURE.
- SQUARE DOWNLIGHT FIXTURE.
- WALL MOUNTED LIGHTING FIXTURE.
- TRACK LIGHTING FIXTURE, MOUNTED AS SHOWN ON LIGHTING FIXTURE SCHEDULE.
- CEILING MOUNTED EXIT SIGN; ARROWS AS INDICATED. SHADED AREA DENOTES FACE.
- WALL MOUNTED EXIT SIGN; ARROWS AS INDICATED. SHADED AREA DENOTES FACE.
- EMERGENCY WALL MOUNTED LIGHTING FIXTURE. BATTERY OPERATED UNLESS NOTED OTHERWISE.
- SECURITY WALL PACK
- SITE LIGHTING FIXTURE.
- POST-TOP FIXTURE/ACORN FIXTURE BRACKET ARM INDICATES WALL MOUNT WITH ARM
- EMERGENCY LIGHT FIXTURE WITH BATTERY PACK. PROVIDE WITH UNSWITCHED HOT FOR LOSS OF VOLTAGE AND CHARGING (SAME CIRCUIT AS NORMAL POWER LIGHTING). FIXTURES SHALL BE WIRED IN A MANNER AS TO ALLOW SWITCHING OF FIXTURES WITHOUT DISCHARGING THE EMERGENCY BATTERY. BATTERY PACK IS TO ONLY OPERATE IN THE EVENT OF A POWER OUTAGE.
- EM CIRCUIT — LIGHT FIXTURE ON EMERGENCY BRANCH CIRCUIT, CIRCUIT NUMBER ADJACENT TO FIXTURE INDICATES EMERGENCY CIRCUIT CONNECTED TO FIXTURE. PROVIDE UNSWITCHED HOT, NEUTRAL AND GROUND FOR ALL EMERGENCY LIGHTING ORIGINATING FROM THE EMERGENCY CIRCUIT SHOWN.
- NL — EMERGENCY "NIGHT LIGHT" LIGHT FIXTURE. LIGHT FIXTURE IS UNSWITCHED AND INTENDED FOR 24 HOUR OPERATION. FEED VIA UNSWITCHED HOT.

RACEWAYS AND WIRING

- CAP AND STAKE
- CONDUIT CONCEALED IN WALL OR CEILING
- CONDUIT UNDERSLAB OR UNDERGROUND
- EM — EMERGENCY CONDUIT
- EXPOSED CONDUIT
- DB — UNDERGROUND CONDUIT, "DB" DENOTES DUCTBANK ENCASED IN CONCRETE
- OHE — OVERHEAD ELECTRIC PRIMARY UTILITY POWER LINE
- CONDUIT TURNED UP
- CONDUIT TURNED DOWN
- HASH MARKS INDICATE NUMBER OF CONDUCTORS. LEFT TO RIGHT: PHASE/NEUTRAL/SWITCH LEG/GROUND/ISOLATED GROUND. NO HASH MARKS INDICATES 2# 12, PLUS GROUND, UNLESS NOTED OTHERWISE.
- 1LA-2,4 — HOMERUN TO PANEL WITH CIRCUIT NUMBER(S) AS INDICATED.
- PARTIAL CIRCUIT HOMERUN TO PANEL.
- (ON)1LA-6
- T — COMMUNICATIONS CONDUIT OR CABLE:
  - "CL" DENOTES MASTER CLOCK,
  - "CR" DENOTES CASH REGISTER
  - "D" DENOTES DATA,
  - "FA" DENOTES FIRE ALARM,
  - "I" DENOTES INTERCOM,
  - "OHE" DENOTES OVERHEAD ELECTRICAL LINE.
  - "PA" DENOTES PAGING,
  - "S" DENOTES SECURITY,
  - "T" DENOTES TELEPHONE,
  - "V" DENOTES VIDEO,
- TELECOMMUNICATIONS CABLE TRAY TO BE CONCEALED ABOVE ACCESSABLE CEILING.

ELECTRICAL EQUIPMENT

- DISTRIBUTION PANEL
- MSB — SWITCHBOARD, MAIN DISTRIBUTION PANEL OR MOTOR CONTROL CENTER
- PANELBOARD (FLUSH/SURFACE MOUNT)
- FLOOR MOUNTED DRY-TYPE TRANSFORMER
- SUSPENDED OR WALL MOUNTED TRANSFORMER
- ATS — AUTOMATIC TRANSFER SWITCH
- FIRE RATED PLYWOOD TERMINAL BOARD, TYPE AS NOTED, 4' X 8' X 3/4" UNLESS NOTED OTHERWISE
- TERMINAL CABINET (FLUSH/SURFACE MOUNT), TYPE AS NOTED, 24" X 48" X 3-1/2" UNLESS NOTED OTHERWISE.
- BAT — BATTERY/INVERTER UNIT
- LV — LOW VOLTAGE TRANSFORMER.

COMMUNICATIONS

ALL OUTLET BOXES SHALL BE MOUNTED 18" ABOVE FINISHED FLOOR TO CENTER OF DEVICE UNLESS NOTED OTHERWISE.

THE FOLLOWING NOTATIONS REFER TO ALL COMMUNICATIONS OUTLETS:
"FAX" DENOTES OUTLET DEDICATED FOR A FAX,
"W" DENOTES WALL PHONE SHALL BE MOUNTED AT 42" A.F.F.
"PAY" DENOTES PAY PHONE SHALL BE MOUNTED 42" A.F.F.

- HS — SCHOOL INTERCOMMUNICATION SYSTEM HANDSET.
- TV — TV ROUGH-IN: 3-GANG RECESSED TV BOX, CONTAINING 1 DUPLEX RECEPTACLE, 1 GANG FOR AV, 1 GANG FOR DATA
- INDICATES THE LOCATION OF A NEW TECHNOLOGY WALL OUTLET, PROVIDE DUAL GANG BACK BOX. REFERENCE TECHNOLOGY SHEET FOR CONTENT.
- M W — MICROPHONE FLOOR OUTLET, "W" INDICATES WALL MOUNTED "F" INDICATES FLOOR MOUNTED "H" INDICATES HANGING MOUNTED
- S VC — CEILING MOUNTED SPEAKER. "VC" INDICATES VOLUME CONTROL ON SPEAKER.
- S L — WALL MOUNTED SPEAKER. "L" INDICATED LOCAL SOUND REINFORCEMENT
- CB — SCHOOL INTERCOMMUNICATION SYSTEM CALL-IN. PUSH BUTTON
- BELL, BUZZER OR CHIME AT 80+ A.F.F.
- VC — VOLUME CONTROL - WALL MOUNTED
- AUXILIARY INPUT JACK. "W" INDICATES WALL MOUNTED "F" INDICATES FLOOR MOUNTED "H" INDICATES HANGING MOUNTED
- AVO — "HIGH" PORTION OF "HIGH/LOW" OUTLETS, REFER TO OUTLET DETAIL.
- AVI — "LOW" PORTION OF "HIGH/LOW" OUTLETS, REFER TO OUTLET DETAIL.
- C (2) LV — LOW VOLTAGE CLOCK SHALL BE MOUNTED 12" BELOW FINISHED CEILING. (2) DENOTES DOUBLE SIDED CLOCK.

REFERENCE TECHNOLOGY/SECURITY SHEET FOR ADDITIONAL INFORMATION.

ONE LINE AND RISER DIAGRAMS

- TRANSFORMER, TYPE AND RATINGS AS NOTED
- 800A/3P — SWITCH, RATING AS SHOWN
- 400A — FUSE, RATING AS SHOWN
- CL — CIRCUIT BREAKER, RATING AS SHOWN, 3 POLE UNLESS NOTED OTHERWISE. "CL" DENOTES CURRENT LIMITING
- DRAWOUT CIRCUIT BREAKER, RATINGS AS SHOWN, 3 POLE UNLESS NOTED OTHERWISE
- ST — SHUNT TRIP
- GFI — GROUND FAULT RELAY
- K — KIRK-KEY INTERLOCK
- M — DIGITAL METER
- A 0-2000 — AMMETER, RANGE AS SHOWN
- AS — AMMETER SWITCH
- V 0-600 — VOLTMETER, RANGE AS SHOWN
- VS — VOLTMETER SWITCH
- WH 0-15 — WATT-HOUR METER, "D" DENOTES DEMAND REGISTER "15" DENOTES MINUTES OF DEMAND INTERVAL
- 1200/5 — CURRENT TRANSFORMER, RATED AS SHOWN
- 12.47KV/120V — POTENTIAL TRANSFORMER, RATING AS SHOWN
- GROUND CONNECTION
- LIGHTING ARRESTOR
- G — GENERATOR SET
- AUTOMATIC TRANSFER SWITCH
- BUS DUCT PLUG
- TVSS — TRANSIENT VOLTAGE SURGE SUPPRESSOR
- M — ELECTRICAL METER
- SPD — SURGE PROTECTION DEVICE

GENERAL NOTES:

A. NOT ALL SYMBOLS SHOWN ON THIS SYMBOL LIST ARE USED IN THE CONTRACT DOCUMENTS.

MISCELLANEOUS

- F — SHADED SYMBOLS INDICATE EXISTING DEVICES TO REMAIN, UNLESS OTHERWISE NOTED.
- INDICATES WALL-MOUNTED WHEN ATTACHED TO ANY SYMBOL
- 1 — DRAWING NOTE REFERENCE
- 1 — STARTER/DISCONNECT SCHEDULE REFERENCE
- 1 — FEEDER SCHEDULE REFERENCE
- LC — LIGHTING CONTACTOR
- TS — TIME SWITCH
- PC — PHOTOCELL
- PUSH BUTTON/DOOR BELL
- TC — TIMECLOCK
- R — RELAY
- SOS — AREA OF RESCUE ASSISTANCE
- B — BELL

FIRE ALARM

- W — WATER FLOW SWITCH
- SP — SUPERVISORY SWITCH
- S — SMOKE DETECTOR - MULTI CRITERIA DETECTOR
- S # — SMOKE DETECTOR - "SB" INDICATES IN INTEGRAL SOUNDER BASE, "D" INDICATES DUCT TYPE, "R" INDICATES 120 VOLT RESIDENTIAL TYPE
- H — HEAT DETECTOR
- S BT — BEAM DETECTOR TRANSMITTER, HIGH IN CEILING WALL DIRECT LINE OF SIGHT.
- S BR — BEAM DETECTOR RECEIVER, HIGH IN CEILING WALL DIRECT LINE OF SIGHT.
- S — FIRE ALARM SPEAKER STROBE / CEILING MOUNTED
- S — FIRE ALARM SPEAKER STROBE / WALL MOUNTED
- S — FIRE ALARM SPEAKER / CEILING MOUNT.
- S — FIRE ALARM SPEAKER / WALL MOUNTED
- DH — MAGNETIC DOOR HOLDER
- R — AUXILIARY CONTROL RELAY
- FH — FIRE FIGHTER HANDSET
- F — FIRE ALARM PULL STATION +42" AFF
- F — FIREMAN'S TELEPHONE JACK +42" AFF
- AUDIO VISUAL FIRE ALARM HORN STROBE +80" AFF- 15/75cd U.N.O.
- VISUAL FIRE ALARM (STROBE) CEILING MOUNT - 15/75cd U.N.O.
- VISUAL FIRE ALARM (STROBE) WALL MOUNT +80" AFF- 15/75cd U.N.O.
- AUDIO FIRE ALARM HORN +80" AFF
- FACP — FIRE ALARM CONTROL PANEL
- ANN — REMOTE FIRE ALARM ANNUNCIATOR PANEL
- RPS — REMOTE POWER SUPPLY FOR AUDIO/VISUAL FIRE ALARM DEVICES.
- FSD — FIRE SMOKE DAMPER
- REMOTE LED INDICATOR LIGHT

SECURITY

- KP — KEYPAD
- GB — GLASS BREAK SENSOR
- H — HOLD UP BUTTON
- DS — INTERCOM DOOR STATION
- MS — INTERCOM MASTER STATION
- M — LONG RANGE MOTION DETECTOR
- M — WALL MOUNTED MOTION DETECTOR
- M — CEILING MOUNTED MOTION DETECTOR
- IDP — INTRUSION DETECTION PANEL
- DC — DOOR CONTACT
- PB — ADA AUTO DOOR OPEN BUTTON
- DR — DOOR RELEASE BUTTON
- CR — CARD READER
- MCR — WALL MOUNTED CARD READER

REFERENCE TECHNOLOGY/SECURITY SHEET FOR ADDITIONAL INFORMATION.

SWITCHES AND LIGHTING CONTROL DEVICES

ALL SWITCH TYPES AND SENSORS TYPES FOUND ON "LIGHTING CONTROL DEVICE SCHEDULE" LOCATED ON ELECTRICAL SCHEDULE SHEETS

SWITCH ANNOTATION AS FOLLOWS:

- X — TYPE, PER SCHEDULE; NO TYPE INDICATES SINGLE POLE TOGGLE SWITCH
- a,b,c — SWITCH LEGS, PER PLAN, SHOWN HERE AS 3 (a,b,c)

OCCUPANCY SENSOR ANNOTATION, AS FOLLOWS:

- OCx — OCCUPANCY / VACANCE SENSOR 'x' INDICATES TYPE, PER SCHEDULE
- CEILING SENSOR
- WITH BRACKET INDICATES WALL / CORNER MOUNT

LIGHT SENSOR ANNOTATION, AS FOLLOWS:

- PC — DIGITAL PHOTOSENSOR
- DS — DAYLIGHT HARVESTING SENSOR
- $ OC — LINE VOLTAGE OCCUPANCY SENSOR SWITCH

DRAWING/DETAIL REFERENCE KEY

RE: 1 /E3-2 — REFER TO DRAWING/DETAIL NUMBER; 1 E3-2 — SHEET NUMBER

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TBPE Firm Registration No. 2234

DBR Project Number 180168.000

WM	–	DT	–	–

STATE OF TEXAS — WILLIAM MEISTER — 101184 — LICENSED PROFESSIONAL ENGINEER — 4/15/22

NO.	DATE	REVISION	APPROV.

IDCUS
Planners | Engineers | Construction Managers
IDCUS, Inc.
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T.B.P.E.FIRM REGISTRATION NO. F-6825

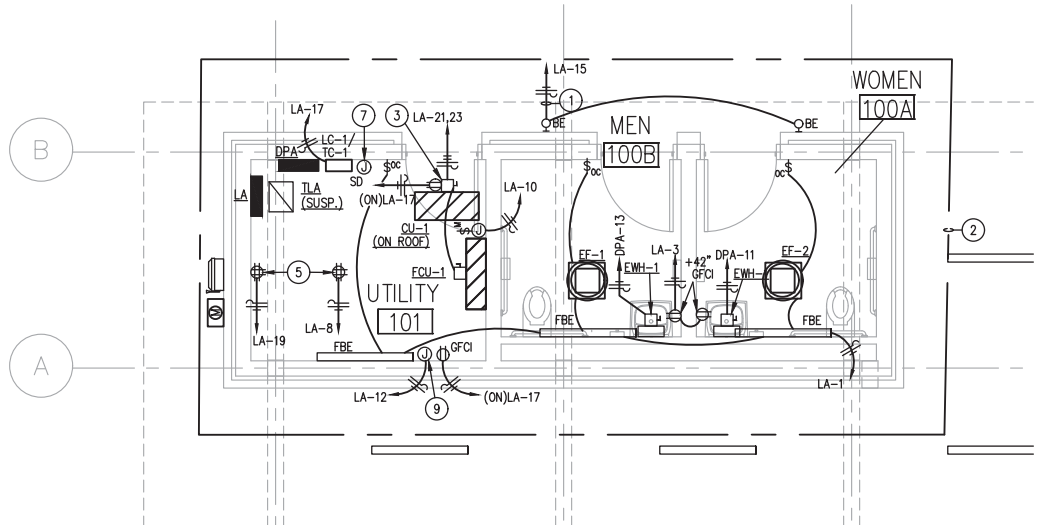
THE STATE OF TEXAS — COUNTY OF FORT BEND

FORT BEND COUNTY
PRECINCT 3

ELECTRICAL SYMBOL LEGEND

ISSUE FOR PERMIT SHEET OF

SECTION NO.	
DRAWN:	DATE: 4-05-2022
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. E0.01



3 E2.01 ENLARGED INTERIOR PLAN

1/8"=1'-0"

GENERAL ELECTRICAL NOTES:

A. ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUIT, OUTLET BOXES, JUNCTION BOXES, AND WIRING/CABLING FOR ALL TELEPHONE, DATA, CATV, SECURITY, AND CAMERA OUTLETS. REFER TO DIVISION 26 SPECIFICATIONS FOR ALL WORK REQUIRED.

B. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH MECHANICAL CONTRACTOR FOR ALL EXHAUST FAN CONTROLS. PROVIDE A FAN SWITCH IF INDICATED BY MECHANICAL. ALL EXHAUST FANS SHALL BE PROVIDED WITH BUILT-IN DISCONNECT SWITCH.

C. HVAC AND PLUMBING EQUIPMENT MAY DIFFER FROM LOCATIONS AS SHOWN ON ELECTRICAL DRAWINGS. COORDINATE EXACT LOCATIONS WITH MECHANICAL AND PLUMBING CONTRACTOR.

D. ELECTRICAL DEVICES SHOWN ARE NOT EXACT. REFER TO DETAIL 7/E6.03. ALL DEVICE LOCATIONS SHALL BE VERIFIED WITH ARCHITECTURAL MILLWORK, CASEWORK, SECTIONS AND GENERAL ELEVATION VIEWS PRIOR TO ROUGH-IN.

E. ALL RECEPTACLES LOCATED IN RESTROOMS, JANITOR CLOSETS, MECHANICAL ROOMS, SERVING ELECTRIC DRINKING FOUNTAINS OR VENDING MACHINES, LOCATED WITHIN 6' OF A SINK, LOCATED ABOVE A WET COUNTERTOP SHALL BE GFCI. FEED-THRU GFCI/GFI IS PROHIBITED, ALL GFCI/GFI DEVICES SHALL BE PROVIDED WITH INDIVIDUAL TEST/RESET FEATURES.

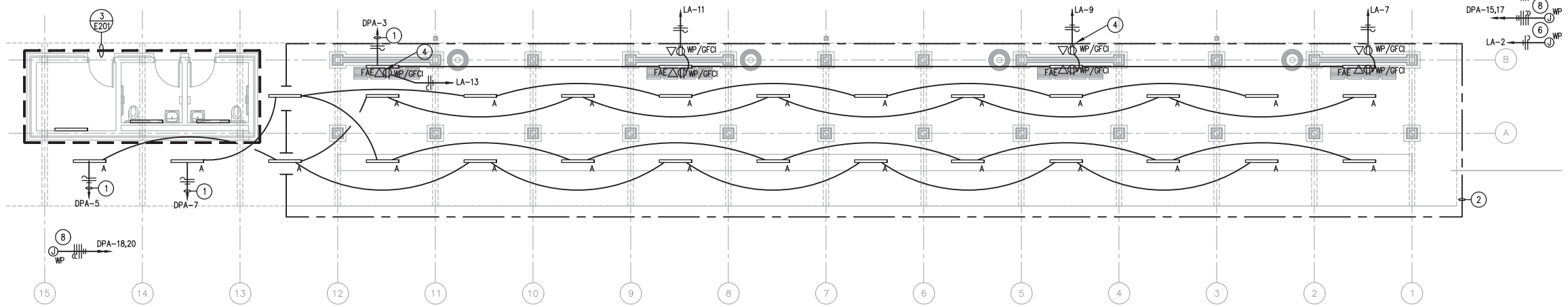
F. ALL RECEPTACLES SHALL BE TAMPER RESISTANT TYPE. CONTRACTOR MAY PROVIDE NON-TAMPER-RESISTANT RECEPTACLES WHERE NOT REQUIRED PER CURRENT NEC ARTICLE 406.

G. CONTRACTOR SHALL COORDINATE ALL LIGHT FIXTURE MOUNTING HEIGHTS WITH ARCHITECT.

H. CONTRACTOR SHALL INSTALL WIRE SIZES BASED ON THE OVERCURRENT DEVICE RATING UNLESS OTHERWISE NOTED. CONTRACTOR SHALL REFER TO THE FEEDER SCHEDULE TO OBTAIN AND INSTALL THE FEEDERS REQUIRED.

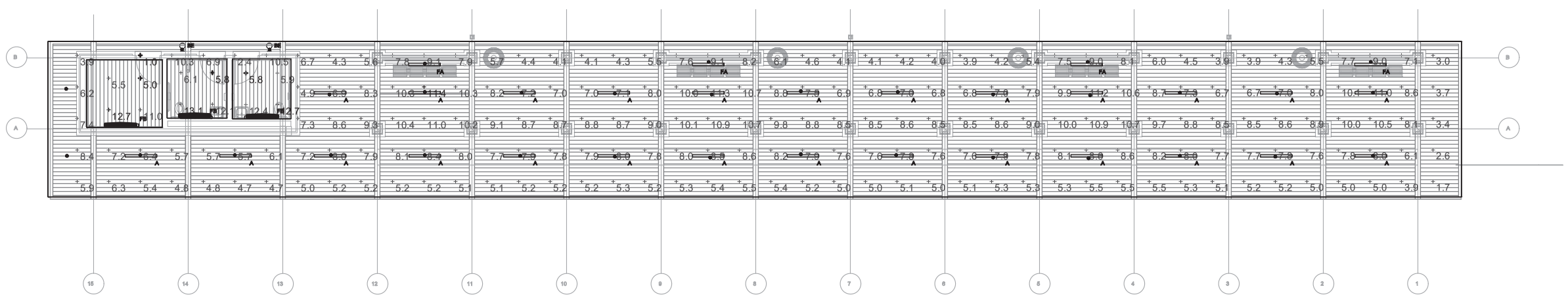
ELECTRICAL KEYED NOTES:

1. ROUTE VIA LIGHTING CONTACTOR LC-1.
2. CANOPY GROUND LOOP. LOOP SHALL EXTEND 2'-0" BEYOND CANOPY/BUILDING FOOTPRINT.
3. INDOOR UNIT SHALL BE POWERED BY OUTDOOR UNIT. PROVIDE 30A/2P/NF/NE3R DISCONNECT FOR EACH UNIT. ROUTE 3/4"C. DOWN TO INDOOR UNIT FOR POWER AND 1"C. FOR CONTROLS. PROVIDE GFCI RECEPTACLE WITH WEATHERPROOF ENCLOSURE MOUNTED TO DISCONNECT.
4. PROVIDE RECEPTACLE AND DATA DROP TO SERVE DISPLAY SIGNAGE. COORDINATE EXACT LOCATION AND ROUGH-IN REQUIREMENTS WITH ARCHITECT. REFER TO ARCHITECTURAL SHEET A5.00 DETAIL 2 FOR MORE INFORMATION. (TYPICAL)
5. PROVIDE RECEPTACLE FOR AV/SECURITY RACK. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT WITH SECURITY CONTRACTOR PRIOR TO ROUGH-IN.
6. PROVIDE POWER FOR MONUMENT SIGN. PROVIDE (2) DEDICATED 277 VOLT, 20 AMP CIRCUITS, ONE CIRCUIT FOR EACH FACE. ROUTE EACH CIRCUIT THROUGH 20A/1P BREAKER ON PANEL DPA. ROUTE EACH CIRCUIT TO MONUMENT SIGN USING (2) #8 AWG CONDUCTORS AND (1) #10 GND. REFER TO ARCHITECTURAL SITE PLAN FOR LOCATION OF MONUMENT SIGN. PROVIDE 277V:240V BUCK-BOOST TRANSFORMER FOR EACH CIRCUIT. PROVIDE 30A/1P/NF/NE3R DISCONNECT ON THE PRIMARY OF EACH BUCK-BOOST TRANSFORMER. TRANSFORMERS AND DISCONNECTS SHALL BE PROVIDED WITH NEMA 3R ENCLOSURE. PROVIDE (1) 120 VOLT CIRCUIT FOR ETHERNET BOOSTERS AT MONUMENT SIGN. PROVIDE WEATHERPROOF ENCLOSURE FOR ETHERNET BOOSTERS. ROUTE TO PANEL LA USING (2)#10 WIRE AND (1)#10 GND. COORDINATE EXACT ELECTRICAL REQUIREMENTS WITH APPROVED MONUMENT SIGN SHOP DRAWINGS PRIOR TO INSTALLATION. COORDINATE ALL DEVICE LOCATIONS WITH ARCHITECT AND SIGN INSTALLER.
7. PROVIDE LOCAL SMOKE DETECTOR/AUDIBLE FIRE ALARM DEVICE. CONNECT SD TO CIRCUIT LA-6.
8. PROVIDE POWER FOR SLIDING GATE. PROVIDE (2) DEDICATED 277 VOLT, 20 AMP CIRCUITS, ONE CIRCUIT FOR EACH MOTOR. ROUTE EACH CIRCUIT THROUGH 20A/1P BREAKER ON PANEL DPA. ROUTE EACH CIRCUIT TO GATE MOTORS USING (2) #8 AWG CONDUCTORS AND (1) #10 GND. REFER TO ARCHITECTURAL SITE PLAN FOR LOCATION OF GATE. PROVIDE 277V:240V BUCK-BOOST TRANSFORMER FOR EACH CIRCUIT. PROVIDE 30A/1P/NF DISCONNECT ON THE PRIMARY OF EACH BUCK-BOOST TRANSFORMER. TRANSFORMERS AND DISCONNECTS SHALL BE PROVIDED WITH NEMA 3R ENCLOSURE. PROVIDE (1) 2"C. TO GATE FOR CONTROLS. COORDINATE WITH TECHNOLOGY CONTRACTOR.
9. JUNCTION BOX MOUNTED 48" AFF FOR CONNECTION TO NEW ACCESS CONTROLS PANEL. COORDINATE EXACT LOCATION WITH SECURITY CONTRACTOR PRIOR TO ROUGH-IN.



1 E2.01 BUS LOADING ELECTRICAL PLAN

1/8"=1'-0"



2 E2.01 CANOPY LIGHTING PHOTOMETRIC PLAN

1/8"=1'-0"

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DBR Project Number	180168.000

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STATE OF TEXAS
WILLIAM MEISTER
101184
LICENSED PROFESSIONAL ENGINEER
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BUS LOADING ELECTRICAL PLAN

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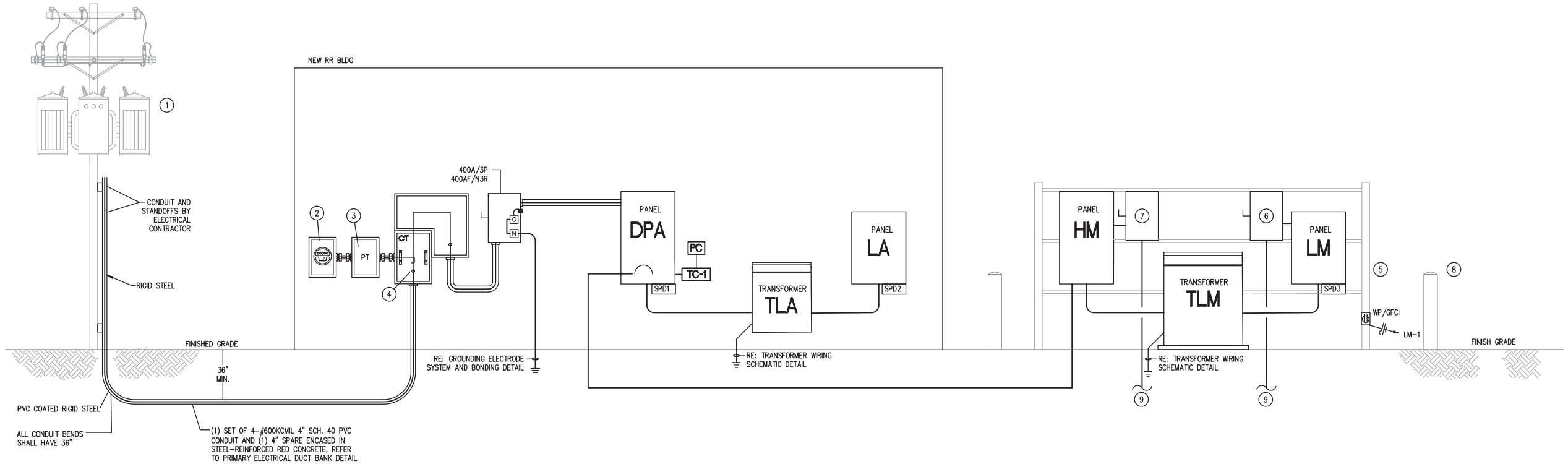

Load Analysis - Westpark P&R PWS & OSSF

480`/ 277`, 3`-PHASE 4 -WIRE — Date: 7/22/2021

DESCRIPTION			NEC	KVA
RESTROOM BUILDING & PARKING LOT:				
INTERIOR LIGHTING:	1.0 kVA	X 125%	210.20(a)	1.3
EXTERIOR LIGHTING:	16.0 kVA	X 125%	210.20(a)	20.0
ELECTRIC WATER HEATER:	11.0 kVA			11.0
RECEPTACLES	1.7 kVA			1.7
HVAC	2.5 kVA			2.5
MISCELLANEOUS	1.5 kVA			1.5
OSSF (SEPTIC):				
(2) 1/3HP DOSING PUMPS:	1.6 kVA			1.6
(2) 1/2HP EFFLUENT PUMPS:	2.3 kVA			2.3
(1) 1/2HP AIR COMPRESSOR:	2.3 kVA			2.3
RECEPTACLES:	0.5 kVA			0.5
MISCELLANEOUS	1.0 kVA			1.0
WATER PLANT:				
(1) 20HP SUBMERS. PUMP:	22.5 kVA	X 125% LARGEST MOTOR	220.5	28.1
(2) 7-1/2HP BOOSTER PUMPS:	18.4 kVA			18.4
(1) 10kVA TRANSFORMER:	6.2 kVA			6.2
RECEPTACLES:	0.5 kVA			0.5
MISCELLANEOUS	1.0 kVA			1.0
			TOTAL =	99.7
			TOTAL AMPS:	120.0
			SERVICE AMPS:	400.0
			SPARE AMPACITY:	280.0

1 / E4.01 ELECTRICAL ONE-LINE DIAGRAM

NOT TO SCALE

ONE-LINE GENERAL NOTES:

A. MANUFACTURER OF ELECTRICAL GEAR SHALL PROVIDE A COORDINATION STUDY FOR THE ENTIRE ELECTRICAL SYSTEM IN ORDER TO SET BREAKERS. MANUFACTURER SHALL ALSO PROVIDE A FAULT CIRCUIT STUDY FOR THE ENTIRE ELECTRICAL SYSTEM IN ORDER TO SELECT INTERRUPTING RATINGS OF ALL CIRCUIT BREAKERS, DISTRIBUTION PANELBOARDS, PANELBOARDS, ETC. A SERIES RATED SYSTEM SHALL BE USED. SUBMIT INTERRUPTING RATING FOR ALL ELECTRICAL GEAR IN SUBMITTALS. CONTRACTOR SHALL SUPPLY WITH THEIR SUBMITTALS ON ALL NEW EQUIPMENT THE MANUFACTURERS UL DATA LISTING THE SERIES RATING OF ALL EQUIPMENT. THIS SWITCHBOARD AND ALL NEW EQUIPMENT CONNECTED DOWNSTREAM SHALL BEAR LABELS INDICATING "SERIES RATED EQUIPMENT" ON THEIR EXTERIOR AS SPECIFIED IN THE SPECIFICATIONS. CONTRACTOR SHALL INSTRUCT MANUFACTURER TO INCLUDE IN THEIR SUBMITTALS ALL TRIP CURVES AND ALL LITERATURE INDICATING THE INTERRUPTING RATING CHARACTERISTICS OF EQUIPMENT BEING SUPPLIED. CONTRACTOR SHALL SUBMIT STUDIES FOR REVIEW BEFORE SUBMITTING ELECTRICAL DISTRIBUTION EQUIPMENT FOR REVIEW.

B. METERING EQUIPMENT ENCLOSURE PROVIDED BY POWER CO., INSTALLED BY ELECTRICAL CONTRACTOR PER POWER COMPANY SPECIFICATIONS. METERS INSTALLED BY POWER COMPANY.

C. ALL CONDUCTORS SHALL BE COPPER.

D. CONTRACTOR SHALL INSTALL FEEDERS BASED ON THE OVERCURRENT DEVICE RATING UNLESS OTHERWISE NOTED. CONTRACTOR SHALL REFER TO THE FEEDER SCHEDULE TO OBTAIN AND INSTALL THE FEEDERS REQUIRED.

E. SERVICE EQUIPMENT IN OTHER THAN DWELLING UNITS SHALL BE LEGIBLY MARKED IN THE FIELD WITH THE MAXIMUM AVAILABLE FAULT CURRENT AT THE TIME OF INSTALLATION AND 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 THE CALCULATION.

F. PRIOR TO INSTALLATION OF UNDERGROUND FEEDERS, THE ELECTRICAL CONTRACTOR SHALL SUBMIT AN UNDERGROUND ROUTING PLAN TO THE ENGINEER OF RECORD., INDICATING THE EXACT ROUTING PATH FOR ALL UNDERGROUND CONDUIT. INDICATE STUB-UP LOCATIONS, SIZE AND QUANTITY OF CONDUIT. ALL ELECTRICAL PANELS AND EQUIPMENT SHALL BE SHOWN ON THIS PLAN FOR REFERENCE OF CONDUIT TERMINATION.

G. DIVISION 26 INSTALLER SHALL COORDINATE NEW ELECTRICAL SERVICE WITH UTILITY COMPANY. PROVIDE CONDUIT, TRANSFORMER PAD, AND TAP BOX, WHERE REQUIRED. ALL NEW UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY SPECIFICATIONS.

H. A PERMANENTLY AFFIXED LABEL SHALL BE APPLIED WITH THE AVAILABLE FAULT CURRENT AT THE TIME OF INSTALLATION AND 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 THE CALCULATION.

I. FEEDERS ARE SIZED BASED ON 2% VOLTAGE DROP FOR CALCULATED DISTANCES. CONTRACTOR SHALL VERIFY VOLTAGE DROP OF 2% OR LESS IS MET FOR FEEDERS BASED ON ACTUAL CONDUIT ROUTING

ONE-LINE KEYED NOTES:

1. CENTERPOINT POWER POLE WITH POLE-MOUNTED TRANSFORMERS.
2. METER PER CENTERPOINT POWER CO. STANDARDS.
3. P/T'S PER CENTERPOINT POWER CO. STANDARDS.
4. C/T CABINET PER CENTERPOINT POWER CO. STANDARDS.
5. FREE-STANDING GALVANIZED STEEL UNISTRUT RACK WITH STEEL-REINFORCED CONCRETE BASE.
6. DISCONNECT SWITCH FOR OSSF SEPTIC PUMPS. REFER TO ELECTRICAL SITE PLAN MEP1.01 AND CIVIL "W" SERIES DRAWINGS FOR MORE INFORMATION.
7. DISCONNECT SWITCH FOR WATER PLANT PUMPS. REFER TO ELECTRICAL SITE PLAN MEP1.01 AND CIVIL, "W" SERIES DRAWINGS FOR MORE INFORMATION.
8. CONCRETE FILLED PROTECTIVE, LOCKABLE-REMOVABLE BOLLARD (TYP).
9. REFER TO ELECTRICAL SITE PLAN MEP1.01 FOR PROPOSED ROUTING AND MORE INFORMATION. STUB-UP AND CAP AT PUMP CONTROLLER PANEL. COORDINATE EXACT REQUIREMENTS WITH PUMP PROVIDER PRIOR TO ROUGH-IN.

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THE STATE OF TEXAS
COUNTY OF FORT BEND

FORT BEND COUNTY
PRECINCT 3

ELECTRICAL ONE-LINE DIAGRAM

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FEEDER SCHEDULE

COPPER				ALUMINUM			
RATING	SETS	CONDUCTOR SIZE	CONDUIT	RATING	SETS	CONDUCTOR SIZE	CONDUIT
30A	1	4#10, 1#10 G.	3/4"	30A	N/A	N/A	N/A
40A	1	4#8, 1#10 G.	1"	40A	N/A	N/A	N/A
50A	1	4#8, 1#10 G.	1"	50A	N/A	N/A	N/A
60A	1	4#6, 1#10 G.	1"	60A	N/A	N/A	N/A
70A	1	4#4, 1#8 G.	1 1/4"	70A	N/A	N/A	N/A
80A	1	4#4, 1#8 G.	1 1/4"	80A	N/A	N/A	N/A
90A	1	4#3, 1#8 G.	1 1/4"	90A	N/A	N/A	N/A
100A	1	4#3, 1#8 G.	1 1/4"	100A	N/A	N/A	N/A
125A	1	4#1, 1#6 G.	1 1/2"	125A	N/A	N/A	N/A
150A	1	4#1/0, 1#6 G.	1 1/2"	150A	N/A	N/A	N/A
175A	1	4#2/0, 1#6 G.	2"	175A	N/A	N/A	N/A
200A	1	4#3/0, 1#6 G.	2"	200A	1	4#250, 1#4 G.	2 1/2"
225A	1	4#4/0, 1#4 G.	2 1/2"	225A	1	4#300, 1#2 G.	3"
250A	1	4#250, 1#4 G.	2 1/2"	250A	1	4#350, 1#2 G.	3"
300A	1	4#350, 1#4 G.	3"	300A	1	4#500, 1#2 G.	4"
350A	1	4#500, 1#3 G.	3 1/2"	350A	2	4#4/0, 1#1 G.	2 1/2"
400A	1	4#600, 1#3 G.	4"	400A	2	4#250, 1#1 G.	2 1/2"
450A	2	4#4/0, 1#2 G.	2 1/2"	450A	2	4#300, 1#1/0 G.	3"
500A	2	4#250, 1#2G.	2 1/2"	500A	2	4#350, 1#1/0 G.	3"
600A	2	4#350, 1#1G.	3"	600A	2	4#500, 1#2/0 G.	3"
700A	2	4#500, 1#1/0G.	4"	700A	3	4#350, 1#3/0 G.	3"
800A	2	4#600, 1#1/0G.	4"	800A	3	4#400, 1#3/0 G.	3"
1000A	3	4#500, 1#2/0G.	4"	1000A	4	4#350, 1#4/0 G.	4"
1200A	4	4#350, 1#3/0G.	3"	1200A	4	4#500, 1#250 G.	4"
1600A	4	4#600, 1#4/0G.	4"	1600A	5	4#750, 1#350 G.	4"
	5	4#500, 1#4/0G.	4"				
2000A	5	4#600, 1#250G.	4"	2000A	6	4#750, 1#400 G.	4"
	6	4#500, 1#250G.	4"				
2500A	6	4#600, 1#350G.	4"	2500A	7	4#750, 1#600 G.	4"
	7	4#500, 1#350G.	4"				
3000A	7	4#600, 1#400G.	4"	3000A	8	4#750, 1#600 G.	4"
	8	4#500, 1#400G.	4"				
3500A	9	4#600, 1#500G.	4"	3500A	10	4#750, 1#750 G.	4"
	10	4#500, 1#500G.	4"				
4000A	10	4#600, 1#500G.	4"	4000A	11	4#750, 1#750 G.	4"
	11	4#500, 1#500G.	4"				
5000A	12	4#600, 1#750G.	4"	5000A	13	4#750, 2#600 G.	5"
	14	4#500, 1#750G.	4"				

1. ALUMINUM CONDUCTORS SHALL BE COMPRESSION TYPE CONDUCTORS AND SHALL USE PENETROX WITH COMPRESSION TERMINATION FITTINGS.
2. ALUMINUM FEEDERS ARE NOT APPROVED FOR USE ON THE FOLLOWING:
   - CHILLERS
   - TRANSFORMER SECONDARY
   - ELEVATORS
   - VARIABLE FREQUENCY DRIVE
3. ELECTRICAL CONTRACTOR SHALL PROVIDE THE NUMBER OF LUGS AND PROPER LUG SIZES TO ACCEPT CONDUCTOR SIZES SHOWN.
4. GROUND NOT REQUIRED AT SERVICE LATERAL.

TRANSFORMER FEEDER SCHEDULE - GENERAL PURPOSE - 3 PHASE

PRIMARY VOLTAGE				SECONDARY VOLTAGE			
480V, THREE PHASE				120/208V, THREE PHASE, FOUR WIRE			
KVA	FEEDER	CONDUIT	BREAKER	FEEDER	CONDUIT	BREAKER	GND. ELEC. SIZE
3	3#12, 1#12G.	3/4"	15A/3P	4#12, 1#8G.	3/4"	15A/3P	#8
6	3#12, 1#12G.	3/4"	15A/3P	4#10, 1#8G.	3/4"	25A/3P	#8
9	3#12, 1#12G.	3/4"	15A/3P	4#10, 1#8G.	3/4"	30A/3P	#8
15	3#10, 1#10G.	3/4"	25A/3	4#6, 1#8G.	1"	60A/3P	#8
30	3#8, 1#10G.	1"	45A/3P	4#3, 1#8G.	1 1/4"	100A/3P	#8
45	3#4, 1#8G.	1"	70A/3P	4#1/0, 1#6G.	1 1/2"	150A/3P	#6
75	3#1, 1#6G.	1 1/4"	125A/3P	4#250, 1#2G.	2 1/2"	250A/3P	#2
75	3#3, 1#8G.	1"	100A/3P	4#4/0, 1#2G.	2 1/2"	225A/3P	#2
112.5	3#2/0, 1#6G.	1 1/2"	175A/3P	4#600, 1#1/0G.	4"	400A/3P	#1/0
150	3#4/0, 1#4G.	2"	225A/3P	(2) SETS OF 4#250, 1#1/0G.	2 1/2"	500A/3P	#1/0
225	3#500, 1#3G.	3"	350A/3P	(2) SETS OF 4#600, 1#3/0G.	4"	800A/3P	#3/0
300	(2) SETS OF 3#4/0, 1#2G.	2 1/2"	450A/3P	(3) SETS OF 4#500, 1#3/0G.	3 1/2"	1000A/3P	#3/0
400	(2) SETS OF 3#350, 1#1G.	2 1/2"	600A/3P	(4) SETS OF 4#500, 1#250G.	4"	1600AF/1400AT/3P	#3/0
500	(2) SETS OF 3#500, 1#1/0G.	3"	800A/3P	(5) SETS OF 4#500, 1#350G.	4"	2000AF/1800AT/3P	#3/0

NOTE:
-ALL CONDUCTORS SHALL BE COPPER

TRANSFORMER SCHEDULE

MARK	KVA	PRI. VOLTAGE	SECONDARY VOLTAGE	MOUNTING	ENCLOSURE	REMARKS
TLA	15	480V, 3ø	120/208V, 3ø, 4 W	SUSPENDED	NEMA 1	PQI EY SERIES (GENERAL PURPOSE)
TLM	45	480V, 3ø	120/240V, 1ø, 4 W	PAD	NEMA 3R	PQI EY SERIES (GENERAL PURPOSE)

NOTE:
1. TRANSFORMERS SHALL HAVE ALUMINMUM WINDINGS.

SPD SCHEDULE

MARK	MANUFACTURER	MODEL	VOLTAGE	PHASE	SURGE RATING PER MODE	BREAKER SIZE	ACCUGUIDE CABLE SIZE
SPD-1	SOUTHERN TIER TECHNOLOGIES	T45277Y125ALAM1C	480/277	3	125/250KA	60A/3P	5 #6, 1 1/2" C.
SPD-2	SOUTHERN TIER TECHNOLOGIES	T45120Y100AWAJ2S	208/120	3	100/200KA	30A/3P	5 #10, 3/4" C.
SPD-3	SOUTHERN TIER TECHNOLOGIES	T45240H100AWAJ1S	240/120	3	100/200KA	30A/3P	5 #10, 3/4" C.

CONTACTOR SCHEDULE

NAME	AMPS PER POLE	POLES	COIL VOLTAGE	CONTROL	REMARKS	LOCATION
LC-1	40A	12	120V	TIME CLOCK ON/OFF	MECHANICALLY HELD COIL, NEMA 1, PROVIDE HOA SELECTOR SWITCH	UTILITY 101

TIME CLOCK SCHEDULE

MARK	AMPS PER POLE	POLES	VOLTAGE	REMARKS
TC-1	20	4	120-277	INTERMATIC #ET 90000 SERIES ASTRONOMICAL TIME CLOCK WITH DAY LIGHT SAVINGS UPDATE, HOLIDAY PROGRAMMING AND 7 YEAR LI BATTERY BACKUP.

LIGHT FIXTURE SCHEDULE

TYPE	MANUFACTURER	MOUNTING	LAMPS	VOLTS	REMARKS	NOTES
A	Selux #L125-1B20-40-SD-F-04-XX-UNV	SUSPENDED	21W LED (INCLUDED)	UNV	277V LED SURFACE MOUNTED LIGHT FIXTURE. WET-LISTED, 4000K CCT	
BE	SPECTRUM #C0310UDXT-10L-MD-10LMD-XXX-EX-WL-SO-WM3-MW-EMRM	WALL	18W LED (INCLUDED)	UNV	WALL MOUNTED DIRECT/INDIRECT LED SCONCE WITH REMOTE BATTERY PACK. WET-LISTED, 4000K CCT	
FAE	a-LIGHT #N1-4'-LH-40-U-B-G-A12-FINISH-D-E1	WALL	38W LED (INCLUDED)	UNV	48" LINEAR WALL MOUNTED LED UPLIGHT WITH BATTERY PACK. WET-LISTED, 4000K CCT	
FBE	LUMINAIRE LED #VCM8 4FT NODIM 50W 40K M/OLT CLP FINISH EMB20R IP65	SURFACE	35W LED (INCLUDED)	UNV	LED DIRECT/INDIRECT LINEAR FIXTURE WITH REMOTE BATTERY PACK. WET-LISTED, 4000K CCT	
W	GARDCO #101L 32L 530 NW-G1 3 UNV PCB	WALL	50W LED (INCLUDED)	UNV	LED EXTERIOR WALL PACK WITH INTEGRAL PHOTOCELL. WET LISTED. 4000K CCT.	
S1	LITHONIA #DSX1 LED P5 40K T3M MVOLT SPA FINISH WJM#SS5000720-FINISH-DM10-BC-XHH	20FT POLE	138W LED (INCLUDED)	UNV	SINGLE HEAD, FULL CUT-OFF SITE LIGHTING MOUNTED ON 20' POLE WITH 2'-6" CONCRETE BASE. CONFIRM FINISH WITH ARCHITECT PRIOR TO ORDERING.	
S2	LITHONIA (2) #DSX1 LED P5 40K T3M MVOLT SPA FINISH WJM#SS6000720-FINISH-DM2S-BC-XHH	20FT POLE	276W LED (INCLUDED)	UNV	DOUBLE HEAD, FULL CUT-OFF SITE LIGHTING MOUNTED ON 20' POLE WITH 2'-6" CONCRETE BASE. CONFIRM FINISH WITH ARCHITECT PRIOR TO ORDERING.	
NOTES:	All lighting fixture colors/patterns must be selected by Architect from manufacturer's full range. The GC is to confirm all colors and finishes with Architect prior to ordering. All fixture colors not confirmed shall be replaced at the GC's expense. Mounting heights of all wall mounted fixtures, suspended and pendant mounted fixtures are to be confirmed with the Architect prior to ordering. Refer to Architect's reflected ceiling plans for exact location of all light fixtures. The light fixtures scheduled are the basis of design. It is not intended to limit competition from equal manufacturers. All bidders shall submit their proposed light fixtures in submittal form a minimum of 10 businuess days prior to bid date for review. Approved light fixtures will be issued as an addendum.					

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THE STATE OF TEXAS
COUNTY OF FORT BEND
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PRECINCT 3

ELECTRICAL SCHEDULES

ISSUE FOR PERMIT SHEET OF

SECTION NO.	
DRAWN:	DATE: 4-05-2022
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Lighting Class Panelboard HM

65,000 AIC Rating
Existing
X New

277/480 Volt,3-Phase,4-Wire
1 Section
3R -Nema Rating

X MCB 225 AMP MCB
MLO 225 AMP BUS (Copper)
ISO. GRND. BUS

X Single
Double
Feed - Thru

Mounting
X Surface
Flush

Notes	Load (VA)	Description	Type	Wire	CB	CKT #	PH	CKT #	CB	Wire	Type	Description	Load (VA)	Notes
		SPARE			20/1	1	A	2	20/1			SPARE		
		SPACE				3	B	4				SPACE		
		SPACE				5	C	6				SPACE		
		SPACE				7	A	8				SPACE		
		SPACE				9	B	10				SPACE		
		SPACE				11	C	12				SPACE		
		SPACE				13	A	14				SPACE		
		SPACE				15	B	16				SPACE		
		SPACE				17	C	18				SPACE		
	6195	TLM	SP	4	70/3	19	A	20	100/3	3	M	WATER PLANT	19400	2
	6195	-	SP	4	-	21	B	22	-	3	M	-	19400	2
	6195	-	SP	4	-	23	C	24	-	3	M	-	19400	2
	18,585	Subtotal										Subtotal	58,200	

N.E.C.	Load Type	Conn.	Fct.	Diversity	N.E.C.		Conn.	Fct.	Diversity
220.44	(R) Recept.	0		0	210.20(a)	(L) Lighting	0	125%	0
220.56	(K) Kitchen	0	100%	0		(EL) Ext. Ltg.	0	125%	0
220.60	(C) Cooling	0	0%	0	620.14	(E) Elevators	0	100%	0
220.60	(H) Heating	0	0%	0		(WH) Water Ht.	0	100%	0
220.60	(F) Fans	0	100%	0	220.5	(MT) Lrg. Mot.	0	125%	0
	(M) Misc.	58,200	100%	58,200		(SP) Sub Panel	18,585	100%	18,585

Total Connected Load 76,785 VA = 92.4 AMPS
Total Load (Diversified 76,785 VA = 92.4 AMPS

Location of Panel:

Panelboard DPA

65,000 AIC Rating
Existing
X New

277/480 Volt,3-Phase,4-Wire
1 Section
1 -Nema Rating

X MCB 400 AMP MCB
MLO 400 AMP BUS (Copper)

X Single
Double
Feed - Thru

Mounting
X Surface
Flush

Notes	Load (VA)	Description	Type	Wire	CB	CKT #	PH	CKT #	CB	Wire	Type	Description	Load (VA)	Notes
		SPARE			20/1	1	A	2	40/1	8	EL	PARKING LOT LTG	5796	1
1	192	CANOPY LTG	EL	10	20/1	3	B	4	20/1			SPARE		
1	550	CANOPY LTG	EL	10	20/1	5	C	6	20/1	12	EL	OSSF & PLANT LTG	104	1
1	550	CANOPY LTG	EL	10	20/1	7	A	8	20/1			SPARE		
		SPARE			20/1	9	B	10	20/1			SPARE		
	5500	EWH-1	WH	10	25/1	11	C	12	20/1			SPARE		
	5500	EWH-1	WH	10	25/1	13	A	14	20/1			SPARE		
1	3000	MONUMENT SIGN	L	8	20/1	15	B	16	20/1			SPARE		
1	3000	MONUMENT SIGN	L	8	20/1	17	C	18	20/1	8	MT	MOTORIZED GATE	1500	
		SPACE				19	A	20	20/1	8	MT	MOTORIZED GATE	1500	
		SPACE				21	B	22				SPACE		
		SPACE				23	C	24				SPACE		
		SPACE				25	A	26				SPACE		
		SPACE				27	B	28				SPACE		
		SPACE				29	C	30				SPACE		
		SPACE				31	A	32	25/3	10	SP	XFMR TLA	1800	
		SPACE				33	B	34	-	10	SP	-	1800	
		SPACE				35	C	36	-	10	SP	-	1800	
	25595	PANEL HM	SP	4/0	225/3	37	A	38	25/3	10	SP	SPD1	0	
	25595	-	SP	4/0	-	39	B	40	-	10	SP	-	0	
	25595	-	SP	4/0	-	41	C	42	-	10	SP	-	0	
	95,077	Subtotal										Subtotal	14,300	

N.E.C.	Load Type	Conn.	Fct.	Diversity	N.E.C.		Conn.	Fct.	Diversity
220.44	(R) Recept.	0		0	210.20(a)	(L) Lighting	6,000	125%	7,500
220.56	(K) Kitchen	0	100%	0		(EL) Ext. Ltg.	7,192	125%	8,990
220.60	(C) Cooling	0	0%	0	620.14	(E) Elevators	0	100%	0
220.60	(H) Heating	0	0%	0		(WH) Water Ht.	11,000	100%	11,000
220.60	(F) Fans	0	100%	0	220.50	(MT) Lrg. Mot.	3,000	125%	3,750
	(M) Misc.	0	100%	0		(SP) Sub Panel	82,185	100%	82,185

Total Connected Load 109,377 VA = 131.6 AMPS
Total Load (Diversified 113,425 VA = 136.5 AMPS

Location of Panel:

Lighting Class Panelboard LM

10,000 AIC Rating
Existing
X New

120/240 Volt,3-Phase,4-Wire
1 Section
3R -Nema Rating

X MCB 150 AMP MCB
MLO 225 AMP BUS (Copper)
ISO. GRND. BUS

X Single
Double
Feed - Thru

Mounting
X Surface
Flush

Notes	Load (VA)	Description	Type	Wire	CB	CKT #	PH	CKT #	CB	Wire	Type	Description	Load (VA)	Notes
	180	RCPT	R	12	20/1	1	A	2	20/1			SPARE		
		SPARE			20/1	3	B	4	20/1			SPARE		
		SPARE			20/1	5	C	6	20/1			SPARE		
		SPACE				7	A	8				SPACE		
		SPACE				9	B	10				SPACE		
		SPACE				11	C	12				SPACE		
		SPACE				13	A	14				SPACE		
		SPACE				15	B	16				SPACE		
		SPACE				17	C	18				SPACE		
		SPACE				19	A	20	30/3	10	SP	SPD3		
3	9200	OSSF (SEPTIC)	M	3	100/2	21	B	22	-	10				
3	9200	-	M	3	-	23	C	24	-	10				
	18,580	Subtotal										Subtotal	0	

N.E.C.	Load Type	Conn.	Fct.	Diversity	N.E.C.		Conn.	Fct.	Diversity
220.44	(R) Recept.	180		180	210.20(a)	(L) Lighting	0	125%	0
220.56	(K) Kitchen	0	100%	0		(EL) Ext. Ltg.	0	125%	0
220.60	(C) Cooling	0	0%	0	620.14	(E) Elevators	0	100%	0
220.60	(H) Heating	0	0%	0		(WH) Water Ht.	0	100%	0
220.60	(F) Fans	0	100%	0	220.5	(MT) Lrg. Mot.	0	125%	0
	(M) Misc.	18,400	100%	18,400		(SP) Sub Panel	0	100%	0

Total Connected Load 18,580 VA = 44.8 AMPS
Total Load (Diversified 18,580 VA = 44.8 AMPS

Location of Panel:

Panelboard LA

10,000 AIC Rating
Existing
X New

120/208 Volt,3-Phase,4-Wire
1 Section
1 -Nema Rating

X MCB 60 AMP MCB
MLO 100 AMP BUS (Copper)

X Single
Double
Feed - Thru

Mounting
X Surface
Flush

Notes	Load (VA)	Description	Type	Wire	CB	CKT #	PH	CKT #	CB	Wire	Type	Description	Load (VA)	Notes
	200	RR LIGHTING/FANS	L	12	20/1	1	A	2	20/1	10	M	SIGN DATA BOOSTER	200	
	360	RR RCPT	R	12	20/1	3	B	4	20/1	8	M	IRRIGATION	500	
	200	TIME CLOCK	M	12	20/1	5	C	6	20/1	12	M	FIRE ALARM	100	
	360	RCPT DISPLAY	R	10	20/1	7	A	8	20/1	12	M	IT RACK	1000	
	360	RCPT DISPLAY	R	10	20/1	9	B	10	20/1	12	M	CONDENSATE PUMP	750	
	360	RCPT DISPLAY	R	12	20/1	11	C	12	20/1	12	M	ACCESS CTRLS.	250	
	180	RCPT DISPLAY	R	12	20/1	13	A	14	20/1			SPARE		
1	100	EGRESS LTG	EL	12	20/1	15	B	16	20/1			SPARE		
	180	RCPT	R	12	20/1	17	C	18	20/1			SPARE		
	1000	IT RACK	M	12	20/1	19	A	20	20/1			SPARE		
	2000	CU-1/FCU-1	C	12	15/2	21	B	22	20/1			SPARE		
		-	-	12	-	23	C	24	20/1			SPARE		
		SPARE			20/1	25	A	26	20/1			SPARE		
		SPARE			20/1	27	B	28	20/1			SPACE		
		SPACE				29	C	30				SPACE		
		SPACE				31	A	32				SPACE		
		SPACE				33	B	34				SPACE		
		SPACE				35	C	36				SPACE		
		SPACE				37	A	38	30/3	10	SP	SPD2		
		SPACE				39	B	40	-	10				
		SPACE				41	C	42	-	10				
	5,300	Subtotal										Subtotal	2,800	

N.E.C.	Load Type	Conn.	Fct.	Diversity	N.E.C.		Conn.	Fct.	Diversity
220.44	(R) Recept.	1,800		1,800	210.20(a)	(L) Lighting	200	125%	250
220.56	(K) Kitchen	0	100%	0		(EL) Ext. Ltg.	100	125%	125
220.60	(C) Cooling	2,000	100%	2,000	620.14	(E) Elevators	0	100%	0
220.60	(H) Heating	0	0%	0		(WH) Water Ht.	0	100%	0
220.60	(F) Fans	0	100%	0	220.50	(MT) Lrg. Mot.	0	125%	0
	(M) Misc.	4,000	100%	4,000		(SP) Sub Panel	0	100%	0

Total Connected Load 8,100 VA = 22.5 AMPS
Total Load (Diversified 8,175 VA = 22.7 AMPS

Location of Panel:

PANEL SCHEDULE KEYED NOTES:

1. ROUTE CIRCUIT VIA LIGHTING CONTACTOR LC-1.
2. CIRCUIT BREAKER FEEDS LOADS FROM CIVIL, "W" SERIES DRAWING SHEET W2.00.
3. CIRCUIT BREAKER FEEDS LOADS FROM CIVIL, "W" SERIES DRAWING SHEET W5.20.

STATE OF TEXAS
WILLIAM MEISTER
101184
LICENSED
PROFESSIONAL ENGINEER
4/5/22

NO.	DATE	REVISION	APPROV.

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FORT BEND COUNTY
PRECINCT 3

ELECTRICAL PANEL SCHEDULES

ISSUE FOR PERMIT SHEET OF

SECTION NO.	
DRAWN:	DATE: 4-05-2022
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	SHEET NO. E5.02

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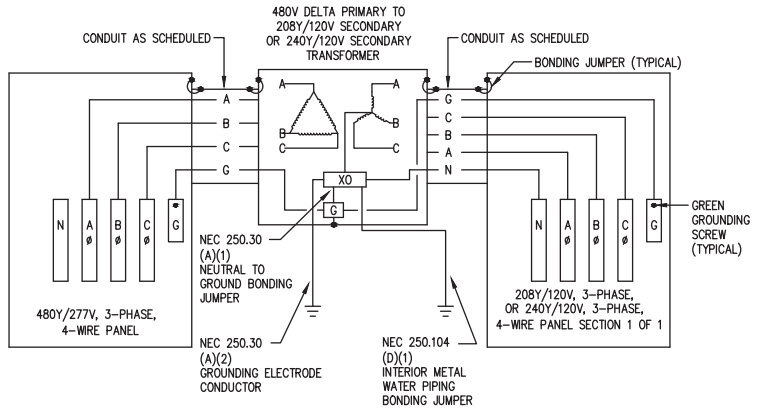
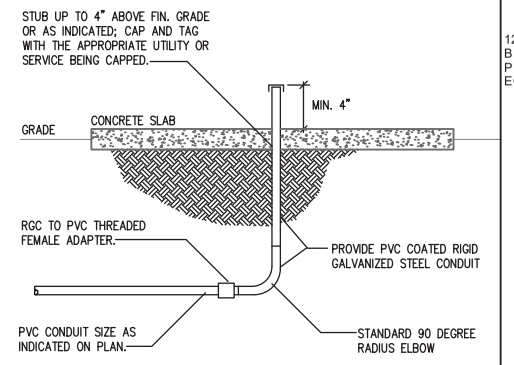
713.914.0888 p 713.914.0886 f
TBPE Firm Registration No. 2234

DBR Project Number 180168.000

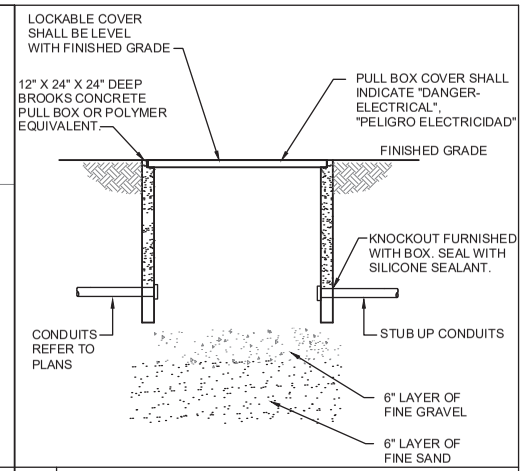
WM	–	DT	–	–



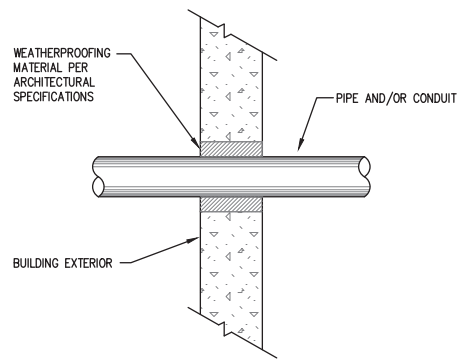
1 **3-PHASE TRANSFORMER WIRING SCHEMATIC** E18005
NOT TO SCALE



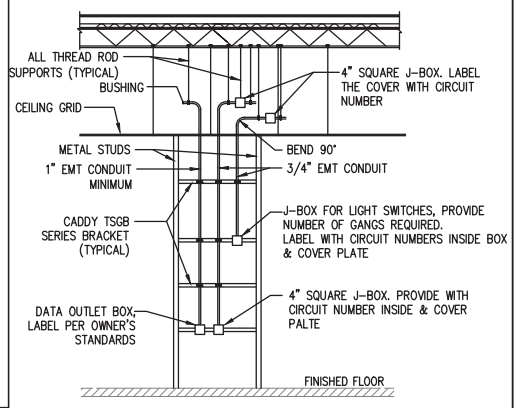
2 **CONDUIT STUB-UP DETAIL** E10010
NOT TO SCALE



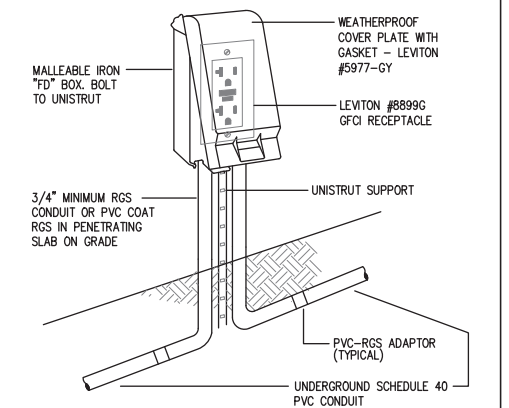
3 **PULL BOX DETAIL** E24007
NOT TO SCALE



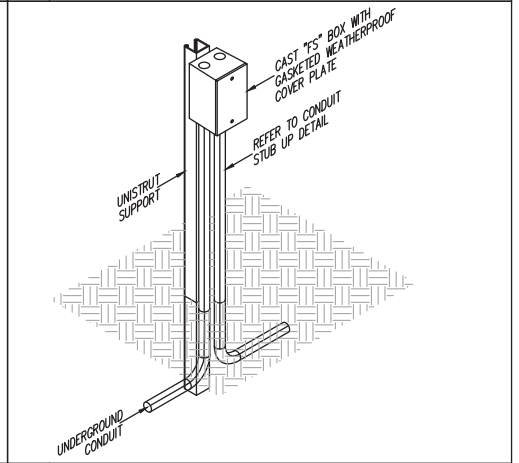
4 **PIPE AND/OR CONDUIT PENETRATION** E10018
NOT TO SCALE



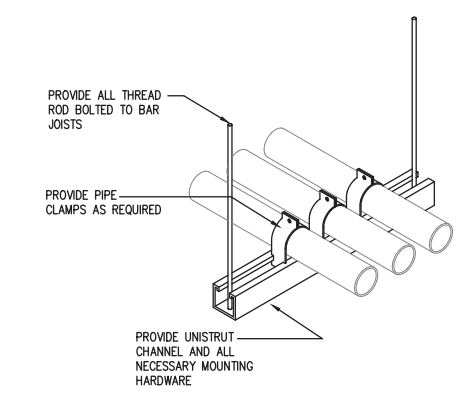
5 **CONDUIT ROUGH-IN DETAIL 1** E24002
NOT TO SCALE



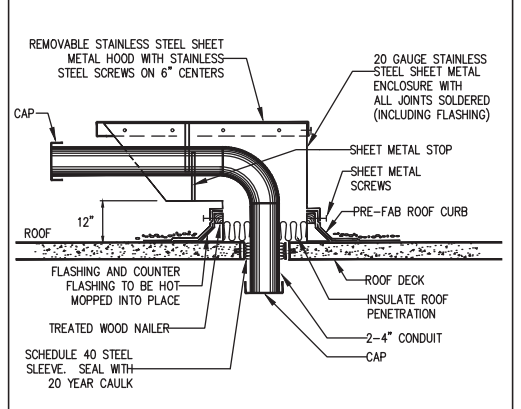
6 **RECEPTACLE MOUNTING DETAIL** E13027
NOT TO SCALE



7 **JUNCTION BOX MOUNTING** E10002
NOT TO SCALE

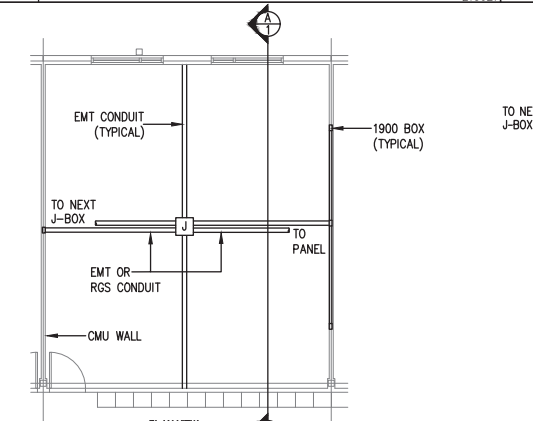


8 **UNISTRUT CONDUIT DETAIL** E10003
NOT TO SCALE



NOTE: REFER TO ARCHITECTURAL DRAWINGS FOR ROOF DETAILS.

9 **ROOF CONDUIT PENETRATION DETAIL** E10001
NOT TO SCALE



10 **TYP. RACEWAY CONFIGURATION** E18001
NOT TO SCALE

STATE OF TEXAS
WILLIAM MEISTER
101184
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4/5/22

NO.	DATE	REVISION	APPROV.

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THE STATE OF TEXAS
FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

ELECTRICAL DETAILS

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SECTION NO.	
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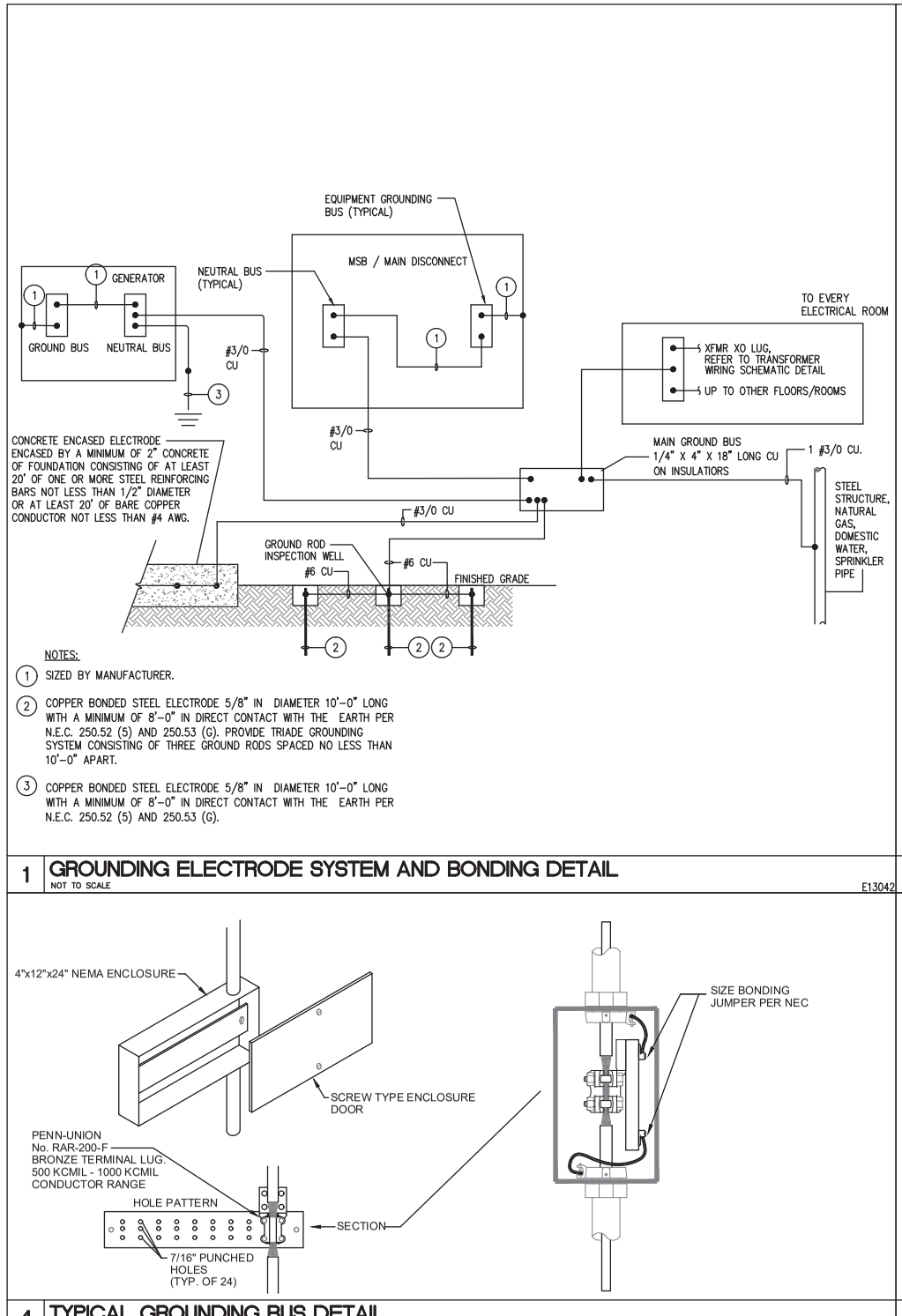
TBPE Firm Registration No. 2234

DBR Project Number 180168.000

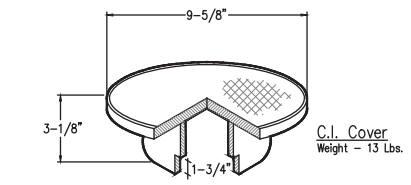
WM	–	DT	–	–

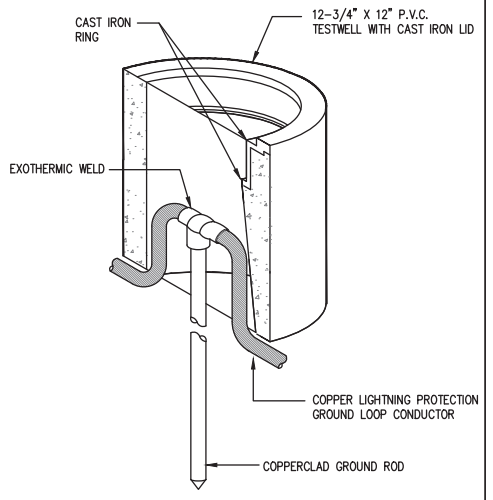


NOTES:

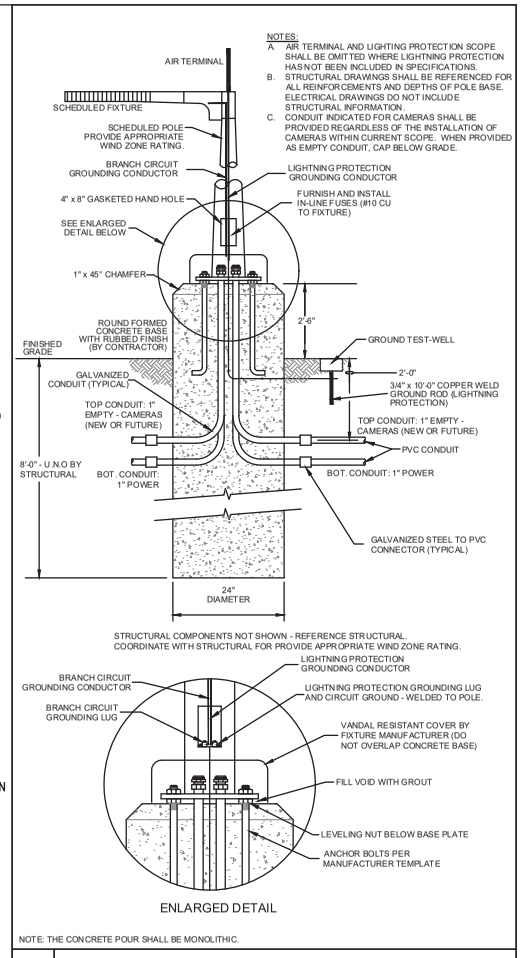
1. SIZED BY MANUFACTURER.
2. COPPER BONDED STEEL ELECTRODE 5/8" IN DIAMETER 10'–0" LONG WITH A MINIMUM OF 8'–0" IN DIRECT CONTACT WITH THE EARTH PER N.E.C. 250.52 (5) AND 250.53 (G). PROVIDE TRIADE GROUNDING SYSTEM CONSISTING OF THREE GROUND RODS SPACED NO LESS THAN 10'–0" APART.
3. COPPER BONDED STEEL ELECTRODE 5/8" IN DIAMETER 10'–0" LONG WITH A MINIMUM OF 8'–0" IN DIRECT CONTACT WITH THE EARTH PER N.E.C. 250.52 (5) AND 250.53 (G).

1 GROUNDING ELECTRODE SYSTEM AND BONDING DETAIL
NOT TO SCALE E13042



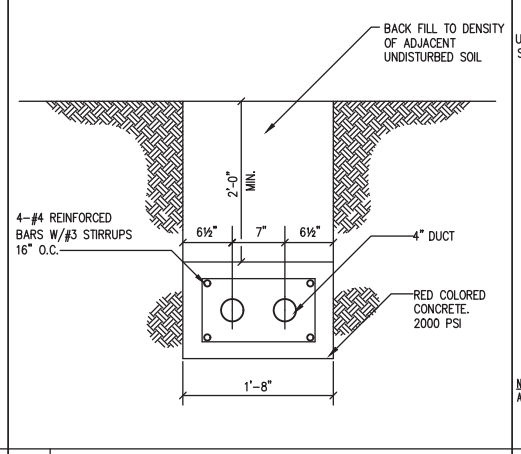


2 GROUND TESTWELL ENCLOSURE
NOT TO SCALE E13051

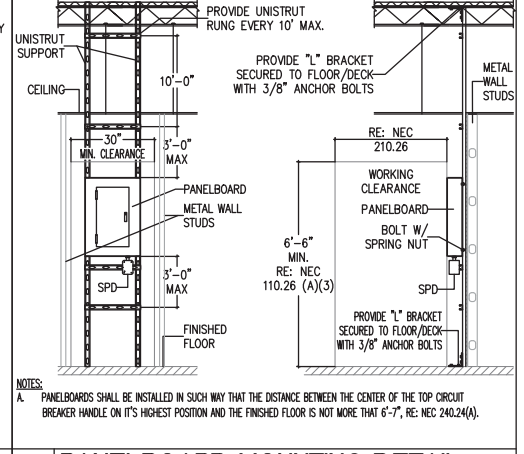


3 CONCRETE POLE BASE DETAIL 1
NOT TO SCALE E14009

4 TYPICAL GROUNDING BUS DETAIL
NOT TO SCALE E16002



5 PRIMARY ELECTRICAL DUCTBANK
NOT TO SCALE E23011



NOTES:
A. PANELBOARDS SHALL BE INSTALLED IN SUCH WAY THAT THE DISTANCE BETWEEN THE CENTER OF THE TOP CIRCUIT BREAKER HANDLE ON IT'S HIGHEST POSITION AND THE FINISHED FLOOR IS NOT MORE THAT 6'-7", RE: NEC 240.24(A).

6 PANELBOARD MOUNTING DETAIL
NOT TO SCALE

STATE OF TEXAS
WILLIAM MEISTER
101184
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PROFESSIONAL ENGINEER
4/5/22

NO.	DATE	REVISION	APPROV.

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THE STATE OF TEXAS
FORT BEND COUNTY

FORT BEND COUNTY
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ELECTRICAL DETAILS

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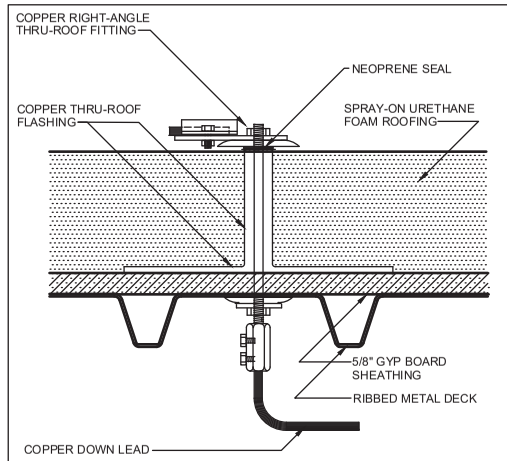
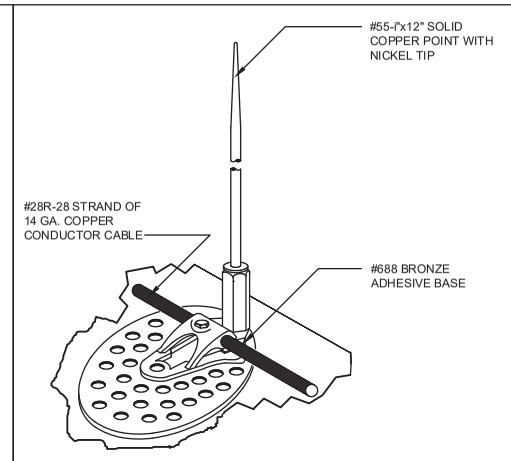
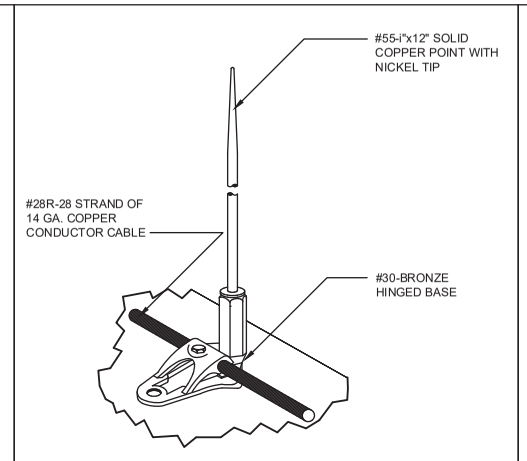
CONTRACT NO.	
	SHEET NO. E6.02



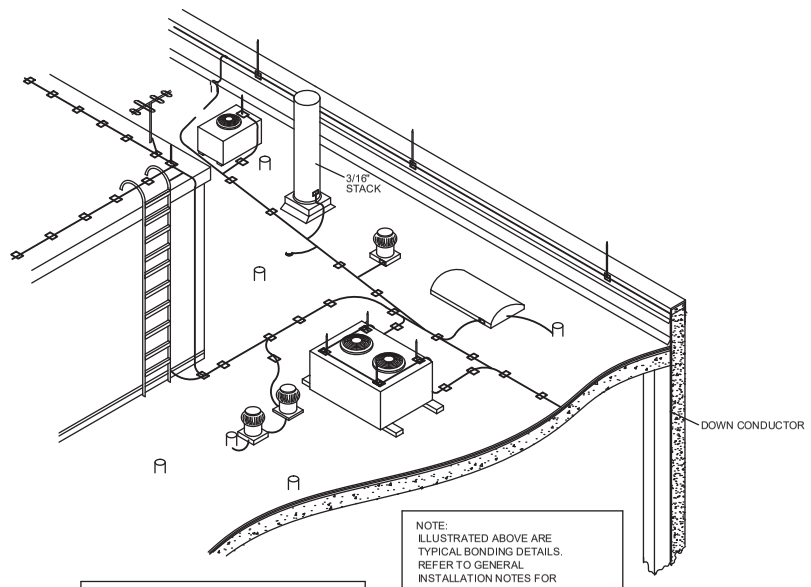
1 TYPICAL PENETRATION DETAIL E13038
NOT TO SCALE



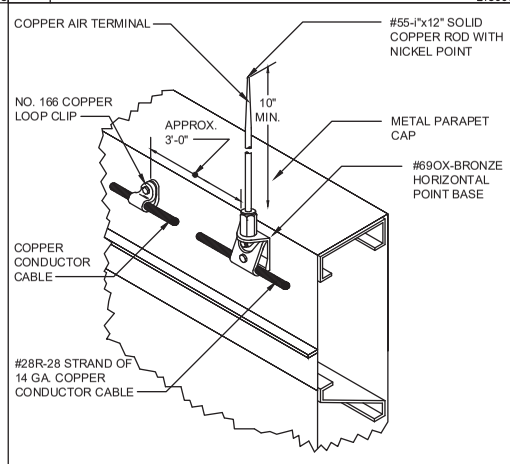
2 TYPICAL ADHESIVE BASE DETAIL E15001
NOT TO SCALE



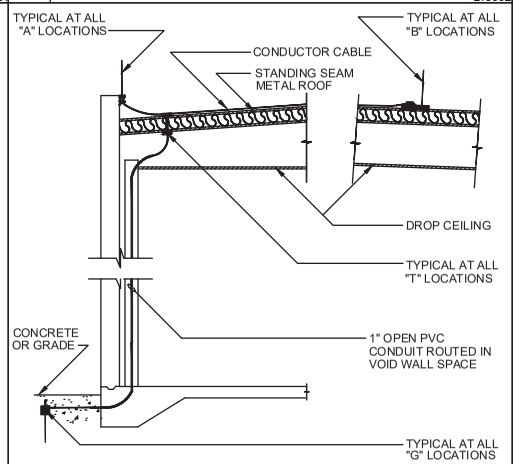
3 SLOPED ROOF HINGED BASE DET. E15002
NOT TO SCALE



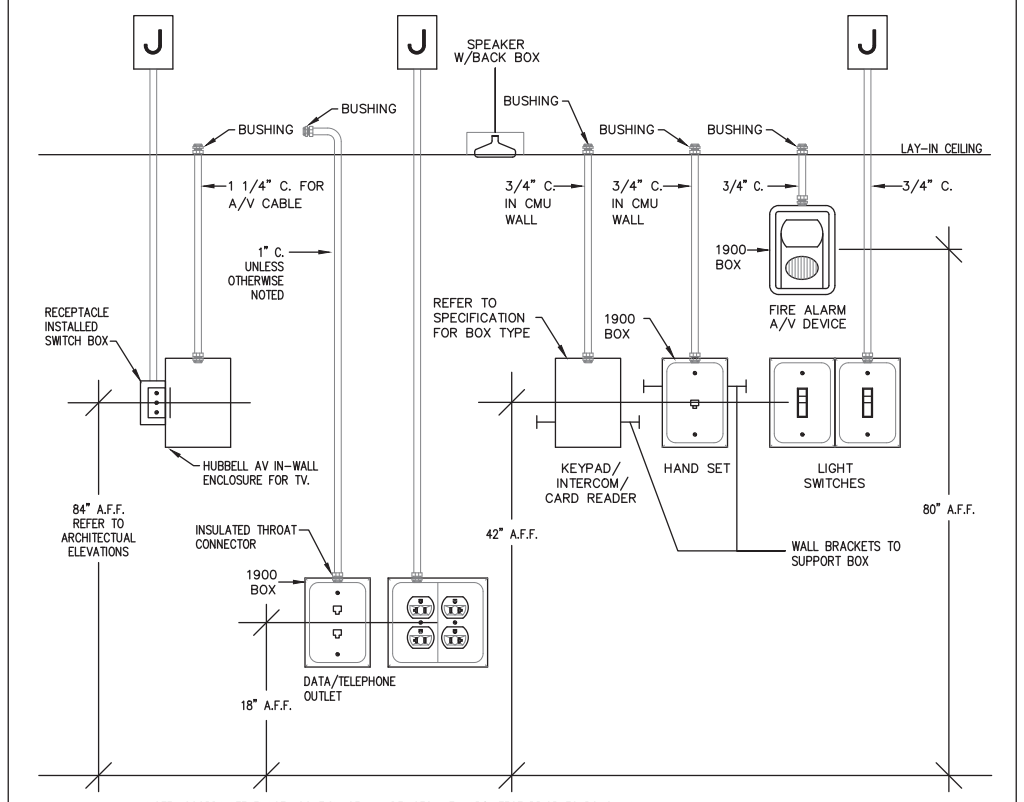
4 TYPICAL LIGHTING PROTECTION DETAIL E13053
NOT TO SCALE



5 TYP. SIDE MOUNT PARAPET BASE E16004
NOT TO SCALE



6 TYPICAL DOWN LEAD DETAIL E13050
NOT TO SCALE



7 TYPICAL DEVICE ELEVATIONS E11001
NOT TO SCALE

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DBR Project Number	180168.000

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STATE OF TEXAS
WILLIAM MEISTER
101184
LICENSED PROFESSIONAL ENGINEER
4/5/22

NO.	DATE	REVISION	APPROV.

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THE STATE OF TEXAS COUNTY OF FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

ELECTRICAL DETAILS

ISSUE FOR PERMIT SHEET OF

SECTION NO.		
DRAWN:	DATE: 4-05-2022	
CHECKED:	DATE:	
DESIGN:	DATE:	
CHECKED:	DATE:	
CONTRACT NO.		
	SHEET NO. E6.03	

SECTION 26 00 00
ELECTRICAL SPECIFICATIONS

PART 1: GENERAL – ELECTRICAL

1–1 DESCRIPTION:

All work on these drawings shall be done in strict accordance with these specifications. All work fairly implied as essential to the complete functioning of the electrical systems shown on the Drawings and Specifications shall be completed as part of the work of this Division unless specifically stated otherwise. It is the intention of the Drawings and Specifications to establish the types of the systems, but not set forth each item essential to the functioning of the system. In case of doubt as to the work intended, or in the event of amplification of clarification thereof, the Contractor shall call upon the Architect for supplementary instructions, Drawings, etc. Refer to landlord's criteria for additional requirements and include in bid.

1–2 WARRANTY:

The undertaking of the work described in this Division shall be considered equivalent to the issuance, as part of this work, of a specific guarantee extending one year beyond the date of completion of work and acceptance by Owner, against defects in materials and workmanship. Materials, appliances and labor necessary to effect repairs and replacement so as to maintain said work in good functioning order shall be provided as required. Replacements necessitated by normal wear in use or by Owner's abuse are not included under this guarantee.

1–3 PROJECT CONDITIONS:

Visit the site of the proposed construction in order to fully understand the facilities, difficulties and restriction attending the execution of the work. No additional compensation will be allowed this Contractor for work or items omitted from his original Proposal due to his failure to inform himself regarding such matters affecting the performance of the work in this Contract or necessary for the installation and completion of the work included herein.

1–4 PERMITS AND FEES:

The contractor shall arrange and pay for all permits, fees, tests, and all inspections as required by governmental authorities.

1–5 COORDINATION WITH FIELD CONDITIONS:

Contractor shall review all pertinent Drawings and adjust his work to all conditions shown there on. Discrepancies between Plans, Specifications, and actual field conditions shall be brought to the prompt attention of the Architect.

Approximate location of transformers, feeders, branch circuits, lighting and power outlets panels, outlets for special systems, etc., are indicated on the Drawings. However, the Drawings, do not give complete and accurate detailed locations of such outlets, conduit runs, etc., and exact locations must be determined by actual field measurement. Such locations will, at all times, be subject to the approval of the Architect.

Communicate with the Architect and secure his approval of any outlet (light fixture, receptacle, switch, etc.) location about which there may be the least question. Outlets obviously placed in a location not suitable to the finished room or without specific approval, shall be removed and relocated when so directed by the Architect. Location of light fixtures shall be coordinated with reflected ceiling plans.

1–6 SUBMITTALS:

Contractor shall provide six sets of submittals, shop drawings, descriptive literature, physical data and a specification critique for the following items:

Panelboards
Wiring Gutters
Heavy Duty Disconnect Switches
Lighting Fixtures and Lamps
Lighting Contactors
Time Clocks
Photocells
Wiring Devices and Plates
Conduit and Fittings
Wire
Fire Alarm System
Transformers
Lighting Controls
Generator
Automatic Transfer Switch

Any deviations from the specified items shall be listed on the cover sheet and clearly itemized for all deviations. The contractor shall provide two copies of owner's manuals to the architect upon completion of the work.

1–7 SUBSTITUTIONS

A. The names, manufacturers, and model numbers have been used in the Contract documents to establish types of equipment and standards of quality. Where more than one manufacturer is named for a specific item of equipment, only one of the specified manufacturers will be considered for approval. Where only one manufacturer is mentioned with the phrase "or approved equal", Contractor may submit an alternate manufacturer for consideration, provided the following conditions are met:

1. Submit alternate equipment with complete descriptive data in shop drawing form. Provide sample of equipment upon request for review by Architect. Samples will be returned if requested in writing.
2. Alternate equipment must be equal from the standpoint of materials, construction and performance.
3. Alternate submittal must be presented to the Engineer/Architect ten (10) days prior to bid date for approval.

B. The Architect and Engineer shall be the sole judge of quality and equivalence of equipment, materials and methods.

1–8 QUALITY ASSURANCE:

All work shall be performed in accordance with all state, local & federal codes and all authorities having jurisdiction, including but not limited to:

National Electrical Code (NEC)
American Society for Testing and Materials (ASTM)
Underwriter's Laboratories, Inc. (UL)
Insulated Power Cable Engineer's Association (IPCEA).
National Electrical Manufacturer's Association (NEMA).
Institute of Electrical and Electronic's Association (IEEE).
American National Standards Institute (ANSI).
National Fire Protection Association (NFPA).

1–9 SLEEVES, CUTTING AND PATCHING:

This Section shall be responsible for the placing of sleeves for all conduit passing through walls, partitions, beams, floors, roof, etc. Sleeves through below–grade walls shall be as specified and detailed on the plans.

All cutting and patching will be done under another Division, but this Section will be responsible for timely performance of this work and layout of holes and setting sleeves.

1–10 EXCAVATION AND BACKFILL:

Trenching and backfilling and other earthwork operations required to install the facilities specified herein shall conform to the applicable requirements of Division 2 (95% of maximum standard density). Where trenching or excavation is required in improved areas, the backfill shall be compacted to a condition equal to that of adjacent undisturbed earth and the surface of the area restored to the condition existing prior to trenching or excavating operations. The plans indicate information pertaining to surface and sub–surface obstructions; however, this information is not guaranteed. Should obstructions be encountered whether or not shown, the Contractor shall alter routing of new work, reroute existing lines, remove obstructions where permitted, or otherwise perform whatever work is necessary to satisfy the purpose of new work and leave existing surfaces and structures in a satisfactory and serviceable condition.

1–11 CLEANING:

Clean lighting fixtures and equipment.

Touch–up and refinish scratches and marred surfaces on panels, switches, starters, and transformers.

1–12 TESTS AND INSPECTIONS

Tests and inspection requirements shall be coordinated Architect.

Date for final acceptance test shall be sufficiently in advance of completion date of contract to permit alterations or adjustments necessary to achieve proper functioning of equipment prior to contract completion date.

Conduct re–tests as directed by Architect on portions of work or equipment altered or adjusted as determined to be necessary by final acceptance test. No resultant delay or consumption of time as a result of such necessary re–test beyond contract completion date shall relieve Contractor of his responsibility under contract.

Put circuits and equipment into service under normal conditions, collectively and separately, as may be required to determine satisfactory operation. Demonstrate equipment to operate in accordance with requirements of these specifications. Perform tests in the presence of Architect. Furnish instruments and personnel required for tests.

At the time designated by the Architect, the entire system shall be inspected by the Architect and Engineer. The contractor or his representative shall be present at this inspection.

Panelboards, switches, fixtures, etc., shall be cleaned and in operating condition. Certificates and documents required hereinbefore shall be in order and presented to the Architect prior to inspection.

Panel covers, junction box covers, etc., shall be removed for visual inspection of the wire, bus bars, etc.

After the inspection, any items that are noted as needing to be changed or corrected in order to comply with these specifications and the drawings shall be accomplished without delay.

PART 2: PRODUCTS – ELECTRICAL

2–1 ALL PRODUCTS:

All products shall be listed by Underwriter's Laboratories and have the U.L. label affixed.

2–2 RACEWAYS AND FITTINGS:

Except as noted or otherwise specified, all wiring shall be installed in galvanized rigid steel conduit or electrical steel tube (EMT) of the proper size to contain the number of conductors required in accordance with the latest edition of the N.E.C. Where conduit sizes are shown on the drawings, those shall take preference.

Provide EMT in sizes up to 4 inches when concealed or not exposed to damage; Rigid steel, galvanized for underground use, where exposed to damage, or in exterior applications; Rigid galvanized steel where embedded in concrete or masonry construction.

Minimum size shall be 3/4 inch except for fixture whips not exceeding 6'–0" long. Branch circuits run underground shall be run in Carlon Schedule 40 PVC conduit. Install ground wire in accordance with NEC table 250–95. Electrical metallic tubing systems shall utilize watertight compression type fittings where exposed to moisture and set screw type fittings elsewhere.

Conduit shall be run concealed in finished areas. Conduit may be exposed in mechanical rooms and where otherwise indicated.

Concealed conduit shall run in as direct manner with as long bends as possible. Exposed conduit shall be run parallel with, or at right angles to the lines of the building; and all bends shall be made with standard conduit ells or conduit bent to not less than same radius. Not more than equivalent of four quarter bends shall be used in any run between terminals and cabinet, of between outlet or junction boxes. Approved conduits shall be used in lieu of conduit ells where ease of installation and appearance warrants their use. Conduit joints shall be made with approved couplings and unions.

Provide #30 nylon pulling line in all conduits in which permanent wiring is not installed.

Branch circuit conduits installed in concrete slabs on fill or grade shall be positioned in a manner to ensure complete concrete cover. In no case shall such conduits be exposed below or above the slab surfaces, or penetrate the waterproof membrane.

At locations where feeder, or other large conduits, must pass through slabs on fill or grade, the conduit shall be PVC coated rigid galvanized steel, extended 6 inches into the earth, and 2 inches above exposed surface of slab.

All conduit shall be securely fastened and supported using hot galvanized malleable iron one–hole pipe straps, clamps, hangers or other means approved by the engineer. Supports shall be as required by NEC. Tie wire shall not be used as support or securing means. Support conduit independently of ceiling hanger wire.

2–3 OUTLET AND JUNCTION BOXES:

Provide an approved galvanized outlet box with adequate volume for number of conductors concerned.

Provide standard galvanized switch boxes of the required number of gangs. Switch boxes for exposed wiring shall be handy boxes or approved equal.

Outlet boxes for receptacles shall be similar to Universal 52151 with suitable raised cover. Receptacle boxes on exposed wiring shall be handy boxes or approved equal.

Weatherproof boxes where necessary shall be FS or FD.

Outdoor boxes shall be NEMA 3R, with conduit connections made by Myers Hubs.

See notes and details on Drawings for special box requirements.

Provide junction boxes required to facilitate installation of the various conduit systems. Provide support boxes required for risers, each complete with approved cable supports as described elsewhere in this Division.

Outlet boxes for drywall shall be standard galvanized 4" square boxes with the appropriate device cover. Secure all outlet boxes with a backing brace connected to two adjacent studs. Mounting brackets with a single ear to rest against the backing sheet rock are not acceptable.

Provide coverplates for all outlet boxes.

Provide junction boxes and conduit system for all electrical systems and low voltage systems: (i.e. electrical, sound, security, fire alarm, CCTV, cameras, CATV, intercom).

2–4 PULL BOXES:

Pull boxes shall be provided for conduit systems as required and shall be constructed of galvanized steel of not less than gauge and size specified by National Electrical Code.

Where two or more feeders pass through a common pull box, they shall be tagged to indicate clearly their electrical characteristics, circuit number, and panel designation.

2–5 WIRE AND CABLE:

All wire shall be new and continuous without weld, splice, or joints throughout its length. It must be uniform in cross–section, free from flaws, scales and other imperfections.

Wire shall be soft drawn, annealed, 98% pure copper, with tin coating. Aluminum wiring is not acceptable.

Acceptable manufacturers for 600 volt wire and cable shall be Southwire, Encore, and Cerro.

Acceptable manufacturers for 300 volt wire and cable shall be Westpenn, Beldon, Alpha and Tappan.

Acceptable manufacturers for connectors shall be AMP, Burndy, Ideal, 3M, O.Z. Gedney, and Thomas & Betts.

A. TYPES:

1. Provide code gauge type "THHN/THWN–2" insulation.
2. All wiring shall be stranded. Minimum wire shall be No. 12, unless otherwise shown on Drawings.
3. Fire alarm device wiring shall be 300 volt, PVC jacket UL–listed when routed in a raceway. The jacket shall be UL listed for use in air plenums when a raceway is not used.
4. Control wiring shall be No. 14 AWG copper conductor unless otherwise shown; 600 volt rated insulation.
5. Open low voltage wiring in return air plenums shall be plenum rated or run in conduit. All wiring in mechanical rooms electrical rooms and other areas subject to physical damage shall be run in conduit.

B. COLOR CODING: Conductors shall be color coded in accordance with the governing authority requirements or as follows:

120/208V	277/480V	120/240V
NEUTRAL: White	Neutral: Gray	Neutral: White
PHASE A: Black	Phase A: Brown	Phase A: Black
PHASE B: Red	Phase B: Purple	Phase B: Orange
PHASE C: Blue	Phase C: Yellow	Phase C: Blue
GROUND: Green	Ground: Green	Ground: Green

C. SPLICES:

Splices, where required, shall be fully made up in outlet boxes with compression crimp–on type splice connectors and at least 12 inches tagged end left for the fixture hanger. Where local requirements specify certain colors for phases and neutral, etc., these shall become the standard for this project.

Joints and splices will not be permitted in mains or feeder. Joints in branch circuits will be permitted where branch circuits divide, and then shall consist of one through–circuit to which the branch shall be spliced. Joints shall not be left for the fixture hanger to make. Fit joints and splices with Buchanan Series "2000" solderless connectors complete with insulating caps or properly sized wire nuts. 'Wago' push–in connectors are not acceptable.

D. Terminations: Provide STA–CON devices to terminate stranded conductors on device not rated to accept stranded conductors. All wiring shall be torqued per manufacturers specifications.

2–6 WIRING DEVICES:

Provide decora devices except in remodeled areas where existing devices not being replaced are toggle switches and standard receptacles.

Acceptable manufacturer is Hubbell.

A. SWITCHES

Furnish and install generally where indicated on the Drawings. Coordinate final color and exact locations with architect.

Wall switches shall be 20 amp, 120–277 volt and shall be as follows:
1. SINGLE POLE SWITCHES: DS–120W, White. Decora,(HBL 1221 TOGGLE)
3. THREE WAY SWITCHES: DS–320W, White. Decora,(HBL 1223 TOGGLE)

B. RECEPTACLES:

Furnish and install generally where indicated on the Drawings. Coordinate final color and exact location with architect. Provide tamper resistant when required. All devices shall be 20AMP unless otherwise noted.

Receptacles shall be Hubbell as follows:

1. Duplex 20A–125V–self grounding: DR20WH decora (Nema configuration 5–20R) (5362 standard).
2. Ground fault circuit interrupter (GFCI) receptacle 20A–125V; GFRST20. (White with indicator light Nema Configuration 5–20R, with "Feed through" connectors capable of protecting connected downstream receptacles on a single circuit, and of being installed in a 2–3/4" deep outlet box without adapter).
3. Equipment receptacles shall be coordinated with owner/manufacturer requirements and the correct and appropriate receptacle and cover plate then installed.

D. PLATES:

1. Furnish and install plates on all outlet boxes.
2. Plates in offices and break rooms and similar finished areas shall be HUBBELL white smooth thermo–plastic.
3. Wet Locations: Provide Taymac or Carlon Nema 3R, impact resistant polycarbonate enclosure. Enclosure shall be suitable for wet locations when in use.

4. Indoor Exposed Raceway Systems: Stamped sheet metal, sized to match box without overlapping sharp edges.

Unless noted to the contrary on plans, or directed otherwise during the progress of the Work, wiring devices shall be set as follows:

1. Switches 42 inches above finished floor.
2. Duplex and single receptacles 18 inches above finish floor to the center of the device except where located above counters or interferes with shelving or as required by local codes.
3. Wall telephone outlets, except where counters or shelving interferes 18 inches above finished floor to the center of the outlet box..
4. At locations above counters, set devices 1 foot–0 inches above counter tops, verify exact mounting height with the architect.

2–7 GROUNDING AND BONDING:

Provide electrical service, equipment and wiring device grounding as shown, scheduled and as specified.

The types of grounding include, but are not limited to, the grounding bonding of all equipment devices, building steel piping, and as required by the National Electrical Code, Local Inspection Department and Power Company. A grounding conductor is required for all feeders and circuits.

Provide grounding products manufactured by Copperweld and Cadweld.

Ground rods shall be 3/4" inch diameter by 10 feet long construction with copper jacket and a steel core. Ground clamps shall be copper except for steel or iron pipes in which the clamps shall be galvanized iron. Conductors shall be connected by means of an approved pressure connector or clamp.

Perform a ground resistance test using a biddle megger. The system resistance shall not exceed 5 OHMS. Provide additional electrodes as required (refer to 250–84 of the NEC). Test shall not be conducted following wet weather. Provide personnel and instruments to conduct these tests and submit certified test for review.

A. BUILDING STEEL AND PIPING SYSTEM: Install a bonding jumper between building steel and metallic piping systems to bond them to the electrical grounding system.

B. NEUTRAL: The neutral shall be grounded only at the service entrance and other separately derived systems. The neutral shall be kept separate from the grounding system and shall not be used as a ground.

C. GROUNDING CONDUCTOR: A grounding conductor and metallic conduit system shall bond all equipment served by the electrical system. Provide a flexible bonding jumper for isolated metallic piping and ductwork and around expansion fittings and joints.

D. MOTORS: The frame of all motors shall grounded.

E. SPECIAL GROUNDING: Provide a #6 AWG copper grounding conductor for each telephone board, television system, MDF rooms, IDF rooms etc. Terminate the grounding conductor on ground bus and to the building electrical grounding system. Refer to article 800 and 820 of the NEC.

F. LIGHTING FIXTURES: Provide grounding conductor in all flexible whips, whips shall not exceed 6 feet.

G. RECEPTACLES: All receptacle shall be grounded. Receptacles shall use an approved grounding yoke.

H. REMOTE PANELBOARDS: Provide a grounding electrode conductor at all remote panels as required by the NEC.

2–8 DRY–TYPE GENERAL PURPOSE TRANSFORMERS:

Provide dry type, two–winding transformers with primary and secondary voltages and KVA ratings as shown on plans. Transformers shall operate at 60 Hertz. All transformers shall be manufacture with standard materials and components. Provide harmonic mitigating transformers for non–linear loads. Acceptable manufacturers are General Electric Company or Square D Company.

Products shall be designed, manufactured, tested and installed in compliance with applicable ANSI/IEEE and NEMA standards.

All low voltage transformers shall be UL listed and labeled.

All low voltage transformers 15kva and larger shall meet or exceed post–January 1, 2016 U.S. DOE efficiency requirements [Energy, 10 C.F.R.§431.196(a)(2) (2015)] regardless of whether transformer data of manufacture is pre or post January 1, 2016.

All low voltage transformers 15kVa and larger shall be tested for efficiency in accordance with U.S. DOE test methods [Energy, 10 C.F.R.§431, Subpart K, Appendix A (2015)]

All cores shall be constructed of high grade, non–aging silicon steel with high magnetic permeability, and low hysteresis and eddy current losses. Magnetic flux densities are to be kept well below the saturation point. The core laminations shall be clamped together with structural steel angles. The completed core and coil shall be isolated from the base by means of rubber, vibration–absorbing mounts. There shall be no metal–to–metal contact between the core and coil and the enclosure. The vibration isolating system shall be designed to provide a permanent fastening of the core and coil to the enclosure. Sound isolating system requiring the complete removal of all fastening devices will not be accepted. Windings shall be copper or electrical grade aluminum terminated on tin plated or copper bars. Foil windings are not acceptable.

The transformer core shall be visibly grounded to the enclosure by means of a flexible grounding conductor sized in accordance with NEMA, IEEE and ANSI standards.

Transformer coils shall be of continuous–wound type construction and shall be impregnated with non–hygroscopic, thermo–setting varnish.

Transformers shall be enclosed in drip–proof, metallic enclosures designed to provide for air cooling and prevent accidental contact with live conductors. Wiring compartment shall be located below the core and coil and cooled by air circulation or insulated from the core and coil by means of a suitable thermal insulation barrier. Transformer exposed to weather or installed in a sprinkled area shall have rain shields on all openings. Entire transformer enclosure shall be cleaned, phosphatized, primed and painted with a Grey, baked enamel.

Transformers shall operate at 100% nameplate KVA rating continuously while in a 40 degree C ambient without exceeding the rated average winding temperature rise of the ANSI insulation system as described below.

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THE STATE OF TEXAS
FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

ELECTRICAL SPECIFICATIONS

ISSUE FOR PERMIT SHEET OF

SECTION NO.	
DRAWN:	DATE: 4–05–2022
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	SHEET NO. E7.01

Temperature rating shall be as follows:

RATING PHASE INSULATION–TEMP. RISE

0.025 through 3 KVA Single Type B – 80° C
5 through 25 KVA Single Type F – 115° C
3 through 15 KVA Three Type F – 115° C
37–1/2 KVA and larger Single Type H – 150° C
30 KVA and larger Three Type H – 150° C

Transformers shall have minimum full load rated taps in high voltage winding as follows:

3 through 25 KVA 2 – 5% FCBN
15 through 300 KVA 6 – 2–1/2% TAPS, 2 above and 4 below normal

Maximum sound ratings shall be as follows:

KVA	DB
0 – 9	40
10 – 50	45
51 – 150	50
151 – 300	55

Provide a nominal 3–1/2" high, 2500 PSI (28 Day) concrete reinforced pad with number 6 welded wire mesh. The pad shall conform to the shape of the transformer and extend at least 3 inches beyond the length and width of the transformer. All corners of the pad shall be rounded.

Install floor mounted transformers on properly sized rubber–in–shear vibration isolators. Trapeze mounted transformers shall use rubber–in–shear hangers. Wall mounted transformers shall not be mounted directly to the wall without vibration isolation.

Route conductors in a minimum of 2 feet of flexible steel conduit to transformer enclosure. Provide grounding conductor sized per NEC, connected to the building grounding electrode system.

2–9 IDENTIFICATION OF ELECTRICAL EQUIPMENT

A. Identification of Equipment:

1. All major equipment shall have a manufacturer's label identifying the manufacturer's address, equipment model and serial numbers, equipment size, and other pertinent data. Care shall be taken not to obliterate this nameplate in any way. Provide black back plate with white letters and numbers for normal equipment. Provide red back plate with white letters and numbers for optional emergency equipment. Provide yellow back plate with white letters and numbers for Life safety equipment.
2. A black–white–black laminated plastic engraved identifying nameplate shall be secured by stainless steel screws to each automatic transfer switch, switchboard, distribution panel, motor control center, motor starter panels and panelboards.
   a. Identifying nameplates shall have ¼ inch high engraved letters and shall contain the following information:
      1) Name
      2) Voltage
      3) Phase
      4) "3" or "4" wire, and
      5) Where it is fed from.
   b. An example of a panelboard nameplate is:

1. Center Panel – 1HB
1. 480/277 volt, 3 phase, 4 wire
1. Center Fed from DP2

   c. An example of an automatic transfer switch nameplate is:

1. Center ATS #2
1. 480/277 volt, 3 phase, 4 wire, 4 pole
1. Center Fed from MSB and DPE

3. Each feeder device in a switchboard, distribution panel, and motor control center device shall have a nameplate showing the load served in ½ inch high engraved letters.
4. A black–white–black laminated plastic engraved identifying nameplate shall be secured by screws to each safety switch, disconnect switch, individual motor starter, enclosed circuit breaker, wireway, and terminal cabinet.
   a. Identifying nameplates shall have 1/4 inch high engraved letters and shall indicate the equipment served.
   b. An example if a disconnect switch is: AHU–1.
5. Prohibited Markings: Markings which are intended to identify the manufacturer, vendor, or other source from which the material has been obtained are prohibited for installation within public, tenant, or common areas within the project. Also, prohibited are materials or devices which bear evidence that markings or insignias have been removed. Certification, testing (example, Underwriters' Laboratories, Inc.), and approval labels are exceptions to this requirement.
6. Warning Signs: Provide warning signs where there is hazardous exposure associated with access to or operation of electrical facilities. Provide text of sufficient clarity and lettering of sufficient size to convey adequate information at each location; mount permanently in an appropriate and effective location. Comply with recognized industry standards for color and design.
7. Operational Tags: Where needed for proper and adequate information on operation and maintenance of electrical system, provide tags of plasticized card stock, either preprinted or hand printed. Tags shall convey the message, example: "DO NOT OPEN THIS SWITCH WHEN BURNER IS OPERATING."

2–10 PANELBOARDS:

Furnish and install power distribution, lighting and appliance panelboards as indicated in the panelboard schedule and as shown on the plans. Power distribution panelboards shall be equipped with fusible switches or circuit breakers as shown on the schedule. Panelboards shall be equipped with thermal–magnetic, molded case circuit breakers of frame and trip ratings as shown on the schedule. Acceptable manufactures are General Electric Company or Square D Company. Load centers are not acceptable.

Panelboard bus structure and main lugs or main breaker shall have current ratings as shown on the panelboard schedule. Such ratings shall be established by heat rise tests with maximum hot spot temperature on any connector or bus bar not to exceed 50°C. rise above 40°C ambient. Heat rise test shall be conducted in accordance with Underwriters Laboratories Standard UL 67. The use of conductor dimensions will not be accepted in lieu of actual heat tests. All current carrying parts of the bus shall be tin plated copper.

Bus structure shall be insulated. Bus bar connections to the branch circuit breakers shall be distributed phase or phase sequence type and shall accept bolt–on circuit breakers for lighting and appliance panelboards.

Provide a bare uninsulated and/or insulated ground bus and full or double size neutral bus as required and indicated in each panelboard schedule.

Each panelboard shall have an engraved bakelite nameplate. Nameplates shall be white with black letters and show panel designation. Nameplates shall be attached with stainless steel screws.

Place a neat, carefully typewritten directory card identifying the load served by each branch circuit in the frame on the panel door, under a clear plastic cover. Spares and spaces shall be written with erasable pencil for future use.

Where circuit breakers or fuses are applied in compliance with the series combination ratings marked on the equipment by the manufacturers, the equipment enclosure(s) shall be legibly marked in the field to indicate the equipment has been applied with a series combination rating. The marking shall be readily visible and state "caution – Series Rated System." (NEC 110–22). Nameplate shall identify replacement components.

A. Circuit Breakers

Where circuit breakers or fuses are applied in compliance with the series combination ratings marked on the equipment by the manufacturers, the equipment enclosure(s) shall be legibly marked in the field to indicate the equipment has been applied with a series combination rating. The marking shall be readily visible and state "caution – Series Rated System." (NEC 110–22).

1. Distribution Panelboards:
Circuit breakers shall be equipped with individually insulated, braced and protected connectors. The front faces of all circuit breakers shall be flush with each other. Large, permanent, individual circuit numbers shall be affixed to each breaker in a uniform position. Tripped indication shall be clearly shown by the breaker handle taking a position between "ON and "OFF". Provisions for additional breakers shall be such that no additional connectors will be required to add breakers. Circuit breakers shall be of the frame size, trip setting and interrupting capacity as indicated on the drawings.

Current limiting circuit breakers shall be equal to Square D Company "I–Limiter" Series.

Circuit breakers shall be conventional interrupting capacity but in no case be less than the following symmetrical amperes RMS.

FRAME SIZE/ VOLTAGE	CONVENTIONAL INTERRUPTING CAPACITY	HIGH INTERRUPTING CAPACITY	CURRENT LIMITING
100AF/240V	10,000 AIC	65,000 AIC	200,000 AIC
225AF/240V	10,000 AIC	65,000 AIC	200,000 AIC
400AF/240V	42,000 AIC	65,000 AIC	200,000 AIC
600AF/240V	42,000 AIC	65,000 AIC	200,000 AIC
800AF/240V	42,000 AIC	65,000 AIC	200,000 AIC
1000AF/240V	42,000 AIC	65,000 AIC	200,000 AIC
1200AF/240V	42,000 AIC	65,000 AIC	200,000 AIC
100AF/480V	14,000 AIC	25,000 AIC	200,000 AIC
225AF/480V	22,000 AIC	65,000 AIC	200,000 AIC
400AF/480V	30,000 AIC	35,000 AIC	200,000 AIC
600AF/480V	30,000 AIC	65,000 AIC	200,000 AIC
800AF/480V	30,000 AIC	65,000 AIC	200,000 AIC
1000AF/480V	30,000 AIC	65,000 AIC	200,000 AIC
1200AF/480V	50,000 AIC	65,000 AIC	200,000 AIC

2. 480/277 Volt Lighting Panelboards:

All main circuit breakers shall be vertically mounted and shall not be installed in branch breaker spaces. Circuit breakers shall be bolt–on thermal–magnetic, molded case circuit breakers. Breakers shall be 1, 2 or 3 pole with an integral crossbar to assure simultaneous opening of all poles in multiple circuit. breakers. Breakers shall have an over–center, tri–free, toggle–type operating machinist with quick–make, quick–break action and positive handle indication. Handles shall have "ON", "OFF" and "TRIPPED" positions. Circuit breakers shall be UL listed in accordance with UL Standard 489 and shall be rated 277 volts ac (single pole, 15–30 amperes) or 480Y/277 volts ac (2 and 3 pole) with continuous current ratings as noted on the plans. Interrupting ratings shall be 14,000 rms symmetrical amperes at 277 volts ac (single pole) or 480Y/277 volts ac (2 and 3 pole). Single pole, 15 and 20 ampere circuit breakers intended to switch fluorescent lighting loads on a regular basis shall carry the SWD marking. The lugs for terminating conductors shall be rated at 75°C.

3. 240 Volt Lighting and Appliance Panelboard:

All main circuit breakers shall be vertically mounted and shall not be installed in branch breaker spaces. Circuit breakers shall be bolt–on thermal–magnetic, molded case circuit breakers. Breakers shall be 1, 2, or 3 pole with an integral crossbar to assure simultaneous opening of all poles in multiple circuit breakers. Breakers shall have an over–center, tri–free, toggle–type operating machinist with quick–make, quick–break action and positive handle indication. Handles shall have "ON", "OFF" and "TRIPPED" positions.

Circuit breakers shall be UL listed in accordance with UL standard 489 and shall be rated 240 volts ac maximum with continuous current rating as noted on the plans. The lugs for terminating conductors shall be rated at 75°C.

Single pole 15 and 20 ampere circuit breakers shall be UL listed as "Switching Breakers" at 120V ac and carry the SWD marking.

UL Class A ground fault circuit protection shall be provided on all receptacle circuits serving wet areas and on all 120V ac branch circuits as specified on the plans or panelboard schedule. This protection shall be an integral part of the branch circuit breaker, which also provides overload, and short circuit protection for branch circuit wiring. Tripping of a branch circuit breaker containing ground fault circuit interruption shall not disturb the feeder circuit to the panelboard. A single pole circuit breaker with integral ground fault circuit interruption shall require no more panelboard branch circuit space than a conventional circuit breaker. Circuit breakers shall be rated 10,000 AIC at 240V unless otherwise noted on plans.

B. Fusible Switches

All fusible switches shall be quick–make, quick–break with visible blades and dual horsepower ratings. Switch handles shall physically indicate "ON" and "OFF" positions. Switches shall be lockable only in the "OFF" position and accept three industrial type heavy duty padlocks. Switch covers and handles shall be interlocked to prevent opening in the "ON" position. A means shall be provided to permit authorized personnel to release the interlock for inspection purposes. Switches shall include positive pressure rejection type fuse clips for use with UL class R fuses and be UL labeled for 200,000 AIC. Class "J"

fuses shall be UL labeled for 200,000 AIC. The lugs for terminating conductors shall be rated at 75°C.

C. Cabinets and Fronts

The panelboard bus assembly shall be enclosed in a steel cabinet with multiple knockouts. The rigidity and gauge of steel to be as specified in UL Standard 50 for cabinets. Wiring gutter space shall be in accordance with UL Standard 67 for panelboards. The box shall be fabricated from galvanized steel or equivalent rust resistant steel. Provide stainless steel front cover for all panels located in all Pool Equipment rooms, Food Labs, Snack Bars, Culinary Arts, Kitchens and Life Skills rooms.All NEMA–1 lighting and receptacle panels shall have hinged front covers. The front cover shall have a door with hinges, latch and a lock. The hinged front covers shall allow full access to the circuit breaker gutter area without having to remove the entire front cover. All panelboard lock shall be keyed alike. Fronts shall have adjustable indicating trim clamps, which shall be completely concealed when the doors are closed. Doors shall be mounted with completely concealed steel hinges. A circuit directory frame and card with a clear plastic covering shall be provided on the inside of the door. Where required by local code, provide Nema 3R enclosure where installed in a sprinkled area.

D. Safety Barrier

The distribution panelboard interior assembly shall be dead front with panelboard front removed. Main lugs or main breakers shall have barriers on five sides. The barrier in front of the main lugs shall be hinged to a fixed part of the interior. The end of the bus structure opposite the mains shall have barriers.

E. Integrated Equipment Short Circuit Rating

Each panelboard, as a complete unit, shall have a short circuit current rating equal to or greater than the integrated equipment rating shown on the panelboard schedule or on the plans. This rating shall be established by testing with the over–current devices mounted in the panelboard. The short circuit tests on the over–current devices and on the panelboard structure shall be made simultaneously by connecting the fault to each over–current device with the panelboard connected to its rated voltage source. Method of testing shall be per Underwriters Laboratories Standard UL 67. The source shall be capable of supplying the specified panelboard short circuit current or greater. Testing of panelboard over–current devices for short circuit rating only while individually mounted is not acceptable. Also, testing of the bus structure alone is not acceptable. Panelboards shall be marked with their maximum short circuit current rating at the supply voltage and shall be UL listed.

2–10 MANUAL MOTOR STARTERS:

Manual starters shall consist of a manually operated toggle switch equipped with melting alloy type thermal overload relay. Thermal unit shall be of one–piece construction and interchangeable. Starter shall be inoperative if thermal unit is removed. Contacts shall be double break, silver alloy, visible from both sides of starter. Manual starters shall be Square "D" class 2510 or 2512 or approved equal. Provide the size and number of poles shall be as shown and required by equipment served. Furnish red pilot light as indicated.

All manual motor starter enclosures shall be NEMA 1, general purpose enclosures, unless shown otherwise. Provide Nema 3R enclosure where installed outside or in a sprinklered area when required by local code.

MOTOR CONNECTIONS: Provide electrical and grounding connections to motors as indicated. Connections as follows:

1. Not less than 18 inch length of Sealtite, extending from motor connection box to motor branch circuit conduit on outdoor and wet locations. Provide Greenfield for inside dry locations.
2. Install connections mechanically secure, assuring electrical continuity, proper and effective grounding.

INSTALLATION OF MOTOR STARTER

Install motor starters in accordance with the manufacturer's written instructions, the applicable requirements of the NEC and the NECA's "Standard of Installation", and recognized industry practices to ensure that products serve the intended function.

2–11 CURRENT – LIMITING FUSES:

Provide 200,000 amp interrupting capacity current limiting fuses of the ampacity and voltage indicated and scheduled.

Upon completion of the building the contractor shall provide the owner with spare fuses as shown below.

A. 10% (minimum of 3) of each type and rating of installed fuses shall be supplied as spares.

B. BUSSMAN spare fuse cabinets – Catalog No. SFC – shall be provided to store the above spares.

Mains, Feeders and Branch Circuits

1. Circuits 0 to 600 ampere shall be protected by current limiting BUSSMAN LOW–PEAK Dual Element Fuses LPN–RK (250 volts) or LPS–RK (600 volts). All dual–element fuses shall have separate overload and short–circuit elements. Fuse shall incorporate a spring activated thermal overload element having a 284 degree Fahrenheit melting point alloy and shall be independent of the short–circuited clearing chamber. The fuse must hold 500% of rated current for a minimum of 10 seconds and listed by Underwriters' Laboratories Inc., with an interrupting rating of 200,000 amperes r.m.s. symmetrical. The fuses shall be UL Class RK1.

2. Motor Circuits – All individual motor circuits rated 600 amperes or less shall be protected by BUSSMAN LOW–PEAK Dual Element Fuses LPN–RK (250 volts) or LPS–RK (600 volts). The fuses for 1.15 service factor motors shall be installed in ratings approximately 125% of motor full current except where high ambient temperatures prevail, or where the motor drives a heavy revolving part which cannot be brought up to full speed quickly, such as large fans. Under such conditions the fuse should be 150% to 200% of the motor full load current. Larger H.P. Motor shall be protected by BUSSMAN Type KRP–C HI–CAP Time–Delay Fuses of the rating shown on the drawings. 1.0 service factor motors shall be protected by BUSSMAN LOW–PEAK Dual–Element Fuses LPN–RK (250 volts) or LPS–RK (600 volts) installed in ratings approximately 115% of the motor full load current except as noted above. The fuses shall be UL Class RK1 or L.

2–12 SAFETY AND DISCONNECT SWITCH:

A. Products shall be designed, manufactured, tested and installed in compliance with applicable standards.

1. NEMA KS1 – Enclosed switches
2. Federal specification W–S–865C–Heavy duty switches

Products shall conform all applicable UL standards, including UL98 (standard for safety, enclosed and dead front switches) and shall be UL–labeled.

Acceptable manufacturers are:

General Electric Company, Square D Company, or Eaton.

Furnish and install heavy–duty type safety switches with the number of switched poles as indicated on the plans and specifications. All safety switches shall be NEMA Heavy Duty Type HD, and Underwriters Laboratories listed.

B. Switch Interior

All switches shall have switchblades, which are fully visible in the "OFF" position when the door is open. Switches shall have removable arc suppressor where necessary, to permit easy access to line side lugs. Lugs shall be front removable and UL listed for 60°C and 75°C copper aluminum cables. All switches blades and contacts shall be plated copper.

C. Switch Mechanism

Switches shall have a quick–make and quick–break operating handle and mechanism, which shall be an integral part of the box, not the cover. Padlocking provisions shall be provided for locking in the "OFF" position with at least three padlocks. Switches shall have a dual cover interlock to prevent unauthorized opening of the switch door when the handle is in the "ON" position, and to prevent closing of the switch mechanism with the door open. A means shall be provided to permit authorized personnel to release the interlock for inspection purposes. Handle position shall indicate if switch is "ON" or "OFF".

D. Neutral

Provide a solid neutral with the safety switch where a neutral is present in the circuit.

E. Ratings

Switches shall be horsepower rated for ac and/or dc as indicated by the plans. The fused switches shall have Class R rejection fuse clips when required. Adjust load side terminal block as required to accept Class J fuses. UL listed short circuit ratings of the switches, when equipped with Class R or Class J fuses, shall be 200,000 symmetrical amperes.

2–12 LIGHTING FIXTURES:

All fixtures shall conform to all applicable UL standards and shall be UL label including damp and wet location ratings. "ETL" is an acceptable listing.

All fluorescent ballasts shall comply with certified ballast manufacture (CBM) standard and CBM labeled.

Acceptable manufacturers for ballasts are Advance Transformer Company or Magnetek Universal Manufacturing.

Acceptable manufacturers for lamps are Osram–Sylvania or Philips.

Provide the size, type and rating of each light fixture shown and scheduled. All light fixtures shall be complete with reflectors, lens, trim rings, flanges, lamps, lamp holders, ballast, starters, fuses wiring, earthquake clips, etc. to provide a complete functioning light fixture.

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STATE OF TEXAS
WILLIAM MEISTER
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LICENSED
PROFESSIONAL ENGINEER
4/5/22

NO.	DATE	REVISION	APPROV.

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THE STATE OF TEXAS FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

ELECTRICAL SPECIFICATIONS

ISSUE FOR PERMIT SHEET OF

SECTION NO.	
DRAWN:	DATE: 4–05–2022
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. E7.02

STANDARDS
A. All fixtures shall conform to all applicable UL standards and shall be UL label including damp and wet location ratings. 'ETL listed' is an acceptable listing.
B. All flourescent ballast shall comply with certified ballast manufacture (CBM) standard and CBM labeled.
C. NFPA 101
D. ANSI C82.1
E. NEMA-LE
F. IEEE Publication 587 Category "A" (Electronic Ballast)
G. All LED drivers shall be UL recognized Class 2 per UL1310 or non-class 2 per UI 1012 as applicable.
H. All LED drivers shall comply with applicable requirements of the Federal Communications Commission (FCC) rules and regulations, Title 47 CFR part 15, for Non-Consumer Equipment.
I. All LED drivers shall be RoHS compliant.
J. TM-21
K. LM-80
L. LM-79
M. L70
N. DLC

A. Lighting Fixture Types:

1. LED Fixtures
a. Fixture ballast, lamp holders and drivers shall be pre-wired and installed. Fixture shall be equipped with a top access plate with knockouts for conduit entry. Fixture shall also include knockouts at each end plate for conduit entry.
b. Provide battery packs for emergency operation when specified.
4. LED Fixtures
a. Fixtures shall be pre-wired with frame-in kit and integral thermal protection required by UL for recessed fixtures. Driver shall be encased in metal-can construction for optimal thermal performance.
b. Total fixture lumen output is dependent on the chip, thermal management, driver current and optical system. LED fixtures shall be tested as a complete unit or system. Only DOE recognized CALIPER testing laboratory results shall be utilized.
c. LED fixtures shall have integral common mode and differential mode surge protection of 3kV (1.2/50µs, 2ohm combination wave.)
5. Exit signs
a. Exit signs shall meet all federal, state and local codes.
b. Provide battery backup when not connected to a life safety generator.
6. Provide Bodine battery pack to provide 1 foot candle averages in the path of egress. These are not required when a life safety generator is used for emergency lighting.

2. LED Drivers
a. Driver manufacturer shall have a 10-year history producing electronic drivers for the North American market.
b. Driver shall carry a five year limited warranty from date of manufacture against defects in material or workmanship (including replacement) for operation at a maximum case temperature of 80 degrees Celsius.
c. Drivers shall not contain any Polychlorinated Biphenyl (PCB).
d. Provide driver with integral color-coded leads.
e. Driver shall operate from 50/60 Hz input source of 120 Volt through 277 Volt or 347 Volt though 480 Volt with sustained Variation of +/- 10% (voltage) with no damage to the driver.
f. Driver output shall be regulated to +/- 5% across published load range. And shall have a power factor greater than .90 from primary application to 50% of full loadrating with an input current Total Harmonic Distortion (THD) of less than 20% to 50% of full load rating.
g. Provide drivers with a Class A sound rating.
h. Provide LED drivers for outdoor fixtures with a minimum operating temperature of -40 degrees Celsius (-40F). Provide LED drivers for indoor fixtures with a minimum operating temperature of -20 degrees Celsius (-2F).
i. Drivers shall tolerate sustained open circuit and short circuit output conditions without fail and auto-resetting without need for external fuses or trip devices.
j. Driver output ripple current shall be less than 15% measured peak-to-average, with ripple frequency being greater than 100Hz.
k. Driver performance requirements shall be met when operated to 50% of full load rating.
l. Driver shall have integral thermal foldback to reduce driver power above rated case temperature to protect the driver if temperature reach unacceptable levels.
m. Drivers shall comply with NEMA 410 for in-rush current limits.
n. Dimmable drivers shall be controlled by a class 2 low voltage 0-10VDC controller with dimming range controlled between 1 and 8VDC with source current 150µA.

D. Coordination

1. The contractor shall verify the type of fixtures with the ceiling types as indicated on the drawings. Any discrepancies shall immediately be brought to the architect's attention before the contractor places his order and accepts delivery. Fixtures shall fit exact in the type of ceiling scheduled. Provide plaster frames, trim rings and other accessories required for a correct fit.
2. Provide supports attached to structural member to support fixtures when the ceiling system cannot maintain support. Provide separate supports for all recessed ceiling mounted HID fixtures.
3. Refer to architectural reflected ceiling plan for the exact location of all light fixtures. Notify the architect for any discrepancies or conflicts with structural architectural, mechanical piping or ductwork before installation.

E. Mounting

1. Pendant or surface mounted fixture shall be provided with required mounting devices and accessories, including hickeys and stud-extensions, ball-aligners, canopies and stems. Locations of fixtures in mechanical areas shall be coordinated with mechanical contractor. Mounting stems of pendant fixtures shall be of the correct length to uniformly maintain the fixture heights shown on the drawings or established in the field. The allowable variation tolerance in mounting individual fixtures shall not exceed 1/4 inch and shall not vary more than 1/2 inch from the floor mounting height shown on the Drawings. Fixtures hung in continuous runs shall be installed absolutely level and in line with each other. Hanging devices shall comply with Code requirements. Fixtures shall employ single - not twin - stem hangers unless otherwise noted.
2. All structure mounted fixtures (i.e. bracket mounted, pipe mounted and surface mounted) shall be provided with cables of suitable size and weight to support the weight of the fixture. Cables shall be fastened around or fastened to the housing of the fixture. On pendant fixtures, one safety cable of suitable size and weight to support the weight of the fixture assembly shall connect the top of the pendant to the supporting structure by means of welding or bolting, and one safety cable shall connect the housing of the fixture to the bottom of the pendant. Where more than one pendant per fixture occurs, only one pendant must be cabled. Track fixtures for pendant mounted track shall also be supplied with clip-on safety cables of suitable size and weight to support the weight of the fixture.

F. Electrical Connection

1. All light fixtures installed in an accessible suspended ceiling shall be connected from a branch circuit junction box using 1/2" flexible metal conduit fixture pigtails not exceeding 6'- 0". All fixtures must be grounded by using a grounding conductor or the conduit system. Fixture to fixture wiring of fixtures installed in an accessible ceiling is not permitted.

G. Fire Rated Ceiling

1. Provide fire rated canopy or enclosure for all fixtures recessed in a fire rated ceiling. The fire rated canopy or enclosure shall be as required by the UL design number listed in the UL fire resistance directory. Refer to architectural drawing for the UL design number. Coordinate with ceiling installer and manufacturer.

H. Air Handling Fixtures

1. Install all air handling light fixtures with return air slot in the open position, if it is to be as an air handling fixture. Coordinate with mechanical contractor.

I. Final Inspection:

1. Remove all plastic and protective coating from all fixtures. Fixtures shall be thoroughly cleaned. Replace any damaged fixture or fixture parts including reflectors, louvers, lens and metal parts that show signs of corrosion.
2. All final incandescent lamps used during construction shall be replaced with new lamps. Replace all other defective ballast, lamps or discolored lamps, showing signs of excessive usage.
3. Demonstrate proper operation of all fixtures and controls.

2-13 TELEPHONE RACEWAY SYSTEM

A. Provide pullboxes in telephone conduit runs spaced not greater than 100 ft. apart, and on backboard side of runs with more than two right angle bends. Place telephone label on pull and junction boxes. Provide pullwire in each telephone run. Provide plywood backboards and duplex receptacle in the telephone equipment room. Confirm location on jobsite prior to installation. All terminal cabinets/backboards and conduit shall be sized per the recommendations of the telephone system installer.

B. Provide telephone service conduit. Field coordinate exact requirements and include in bid.

2-14 MISCELLANEOUS ELECTRICAL CONTROLS AND WIRING

A. The types of miscellaneous control devices and wiring include but not limited to the following.

1. Contactors
2. Relays
3. Photocells
4. Time switches
5. Additional control wiring and safety devices as shown and specified.

Various control devices, of an electrical nature, for the safe operation and temperature control of the heating, ventilating, air conditioning and plumbing systems are provided under Division 23.

All control wiring and conduit shall be furnished under Division 23 00 00. All power wiring 120 volt or larger shall be provided by Division 26 00 00.

B. CONTACTORS AND RELAYS: Provide contactors and relays with the number of poles, ampere-rating, control wiring as required, is shown and specified for a complete function system. Acceptable manufacturers are General Electric Company, Square D Company, and Automatic Switch Company. Provide 2-wire or 3-wire control modules as required to operate lighting contactors. Contactors shall be mechanically held. Contactor shall contain H-O-A control.

C. Photocells provide a specification grade self-contained, weatherproof, photoelectric control that shall be mounted on an FS type weatherproof junction box. The photocell shall:

1. Switch "ON" at dusk and "OFF" at dawn.
2. Adjustable from 2 to 50 foot candles.
3. Rated at 2000 watts.
4. Use 1" diameter cadmium sulfide cell.
5. Have a 2 minute delay to prevent false switching.

Acceptable manufacturers are Tork, Inc., Intermatic time Controls, and AMF Paragon

Install photocells on the roof unless otherwise directed by Architect. Coordinate any roof penetrations with all other trades and shield from other light sources.

D. TIME SWITCHES: Provide electronic, 365 day time clock with power fail memory feature installed in a NEMA 1 enclosure. Acceptable manufacturers is Intermatic time Controls.

E. Control wiring shall be not less than #14 AWG type TW, and shall be color coded and labeled with Brady markers throughout. Bundle multiple conductors with Ty-Raps.

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NO.	DATE	REVISION	APPROV.

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THE STATE OF TEXAS
COUNTY OF FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

ELECTRICAL SPECIFICATIONS

ISSUE FOR PERMIT SHEET OF

SECTION NO.	
DRAWN:	DATE: 4-05-2022
CHECKED:	DATE:
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CONTRACT NO.	
	SHEET NO. E7.03

2-14 ELECTRICAL SYSTEM IDENTIFICATION

A. Conduit Systems: Provide adequate marking of major conduit which is exposed or concealed in accessible spaces to distinguish each run as either a power or signal/communication conduit. Except as otherwise indicated, use orange banding with black lettering. Provide self-adhesive or snap-on type plastic markers. Indicate voltage for that raceway. Locate markers at ends of conduit runs, on pull boxes, on junction boxes, near switches and other control devices, near items of equipment served by the conductors, at points where conduit passes through walls or floors, or enters non-accessible construction and at spacings of not more than 50 feet along each run of conduit. Switch-leg conduit and short branches for power connections do not have to be marked, except where conduit is larger than ¾inch. Branch circuit conduits, junction boxes and pull boxes shall be marked with a permanent marker indicating panel name and branch circuit numbers.

B. Underground Cable Identification: Bury a continuous, preprinted, bright colored plastic ribbon cable marker with each underground cable (or group of cables), regardless of whether conductors are in conduit, duct bank, or direct buried. Locate each directly over cables, 6 to 8 inches below finished grade.

C. Identification of Equipment:
1. All major equipment shall have a manufacturer's label identifying the manufacturer's address, equipment model and serial numbers, equipment size, and other pertinent data. Care shall be taken not to obliterate this nameplate in any way. Provide black back plate with white letters and numbers for normal equipment. Provide red back plate with white letters and numbers for optional emergency equipment. Provide yellow back plate with white letters and numbers for Life safety equipment.
2. A black-white-black laminated plastic engraved identifying nameplate shall be secured by stainless steel screws to each automatic transfer switch, switchboard, distribution panel, motor control center, motor starter panels and panelboards.
3. Identifying nameplates shall have ¼ inch high engraved letters and shall contain the following information:
   - Name
   - Voltage
   - Phase
   - "3" or "4" wire, and
   - Where it is fed from.
4. An example of a panelboard nameplate is:
   - Center Panel –1HB
   - 480/277 volt, 3 phase, 4 wire
   - Center Fed from DP2
5. An example of a panelboard nameplate is:
   - Center Panel –1HB
   - 480/277 volt, 3 phase, 4 wire
   - Center Fed from DP2

6. Each feeder device in a switchboard, distribution panel, and motor control center device shall have a nameplate showing the load served in ½ inch high engraved letters.

7. A black-white-black laminated plastic engraved identifying nameplate shall be secured by screws to each safety switch, disconnect switch, individual motor starter, enclosed circuit breaker, wireway, and terminal cabinet.
   - Identifying nameplates shall have 1/4 inch high engraved letters and shall indicate the equipment served.
   - An example if a disconnect switch is: AHU-1.

8. Prohibited Markings: Markings which are intended to identify the manufacturer, vendor, or other source from which the material has been obtained are prohibited for installation within public, tenant, or common areas within the project. Also, prohibited are materials or devices which bear evidence that markings or insignias have been removed. Certification, testing (example, Underwriters Laboratories, Inc.), and approval labels are exceptions to this requirement.

9. Warning Signs: Provide warning signs where there is hazardous exposure associated with access to or operation of electrical facilities. Provide text of sufficient clarity and lettering of sufficient size to convey adequate information at each location; mount permanently in an appropriate and effective location. Comply with recognized industry standards for color and design.

10. Operational Tags: Where needed for proper and adequate information on operation and maintenance of electrical system, provide tags of plasticized card stock, either preprinted or hand printed. Tags shall convey the message, example: "DO NOT OPEN THIS SWITCH WHEN BURNER IS OPERATING."

2-15 SHORT CIRCUIT COORDINATION STUDY ARC FLASH HAZARD ANALYSIS:

SHORT CIRCUIT, COORDINATION STUDY, ARC FLASH HAZARD ANALYSIS
26 05 73 - 1

PART 1 – GENERAL

1.1 SCOPE

A. The Contractor shall furnish short-circuit and protective device coordination studies as prepared by the equipment manufacturer.

B. The Contractor shall furnish short-circuit and protective device coordination studies for the electrical power system, including all existing and newly installed electrical equipment. The analysis and study shall include all distribution branches, and begin at the main building disconnect switch, or main 12KV feeder breaker, whichever is the higher main disconnect device for the structure to be studied.

C. Provide a complete short circuit study, equipment interrupting or withstand evaluation, and protective device coordination study for the power distribution system. Normal operating method, alternate operation, and operations which could result in maximum fault conditions shall be thoroughly addressed in the study. The study shall assume all motors operating at rated voltage and speed. Electrical equipment bus impedance shall be assumed as zero. Short circuit momentary duties and interrupting duties shall be calculated on the basis of maximum available fault current at the switchboard busses and motor control centers (where installed)

D. A protective device coordination study shall be performed to determine appropriate relay settings. The study shall include all distribution switchboards, motor control centers (where installed, and panel board main circuit breakers. Panel board branch circuit devices need not be considered. The phase over current and ground fault protection shall be included as well as setting for all other adjustable protective devices.

E. An equipment evaluation study shall be performed to determine the adequacy of circuit breakers, controllers, surge arresters, busways, switches, and fuses by tabulating and comparing the short circuit ratings of these devices with the available fault currents.

F. Any problem areas or inadequacies shall be promptly brought to the ENGINEERS attention.

G. The Contractor shall furnish an Arc Flash Hazard Analysis Study per NFPA 70E – Standard for Electrical Safety in the Workplace, reference Article 130.3 and Annex D.

1.2 REFERENCES

A. Institute of Electrical and Electronics Engineers, Inc. (IEEE):

1. IEEE 141 – Recommended Practice for Electric Power Distribution and Coordination of Industrial and Commercial Power Systems
2. IEEE 242 – Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems
3. IEEE 399 – Recommended Practice for Industrial and Commercial Power System Analysis
4. IEEE 241 – Recommended Practice for Electric Power Systems in Commercial Buildings
5. IEEE 1015 – Recommended Practice for Applying Low-Voltage Circuit Breakers Used in Industrial and Commercial Power Systems.
6. IEEE 1584 – Guide for Performing Arc-Flash Hazard Calculations

B. American National Standards Institute (ANSI):

1. ANSI C57.12.00 – Standard General Requirements for Liquid-Immersed Distribution, Power, and Regulating Transformers
2. ANSI C37.13 – Standard for Low Voltage AC Power Circuit Breakers Used in Enclosures
3. ANSI C37.010 – Standard Application Guide for AC High Voltage Circuit Breakers Rated on a Symmetrical Current Basis
4. ANSI C 37.41 – Standard Design Tests for High Voltage Fuses, Distribution Enclosed Single-Pole Air Switches, Fuse Disconnecting Switches and Accessories.

C. The National Fire Protection Association (NFPA)

1. NFPA 70 – National Electrical Code, latest edition
2. NFPA 70E – Standard for Electrical Safety in the Workplace

1.3 SUBMITTALS FOR REVIEW/APPROVAL

A. The short-circuit and protective device coordination studies shall be submitted to the design Engineer prior to receiving final approval of the distribution equipment shop drawings and/or prior to release of equipment drawings for manufacturing. If formal completion of the studies may cause delay in equipment manufacturing, approval from the Engineer may be obtained for preliminary submittal of sufficient study data to ensure that the selection of device and characteristics will be satisfactory.

1.4 SUBMITTALS FOR CONSTRUCTION

A. The results of the short-circuit, protective device coordination and arc flash hazard analysis studies shall be summarized in a final report. No more than five (5) bound copies of the complete final report shall be submitted. For large system studies, submittals requiring more than five (5) copies of the report will be provided without the section containing the computer printout of the short-circuit input and output data. Additional copies, where required, shall be provided on CD in PDF format.

B. The report shall include the following sections:

1. One-line diagram
2. Descriptions, purpose, basis and scope of the study
3. Tabulations of circuit breaker, fuse and other protective device ratings versus calculated short circuit duties
4. Protective device time versus current coordination curves, tabulations of relay and circuit breaker trip unit settings, fuse selection
5. Fault current calculations including a definition of terms and guide for interpretation of the computer printout
6. Incident energy and flash protection boundary calculations
7. Recommendations for system improvements, where needed
8. Executive Summary.
9. Equipment manufacturer's information used to prepare study
10. Assumptions made during study.

1.5 QUALIFICATIONS

A. The short-circuit, protective device coordination and arc flash hazard analysis studies shall be conducted under the supervision and approval of a Registered Professional Electrical Engineer skilled in performing and interpreting the power system studies. The Registered Professional Electrical Engineer shall be a full-time employee of the Engineering Services Organization.

PART 2 – PRODUCT

2.1 STUDIES

A. The Contractor shall furnish short-circuit and protective device coordination studies as prepared by the equipment manufacturer.

B. The Contractor shall furnish an Arc Flash Hazard Analysis Study per NFPA 70E – Standard for Electrical Safety in the Workplace, reference Article 130.3 and Annex D.

2.2 DATA COLLECTION

A. The Contractor shall furnish all data as required by the power system studies. The Engineer performing the short-circuit, protective device coordination and arc flash hazard analysis studies shall furnish the Contractor with a listing of required data immediately after award of the contract. The Contractor shall expedite collection of the data to assure completion of the studies as required for final approval of the distribution equipment shop drawings and/or prior to the release of the equipment for manufacturing.

B. Source combination may include present and future motors and generators.

C. Load data utilized may include existing and proposed loads obtained from Contract Documents provided by Owner or Contractor.

D. Include fault contribution of existing motors in the study, with motors <100 hp grouped together. The Contractor shall obtain required existing equipment data, if necessary, to satisfy the study requirements.

2.3 SHORT-CIRCUIT AND PROTECTIVE DEVICE EVALUATION STUDY

A. Use actual conductor impedances if known. If unknown, use typical conductor impedances based on IEEE Standards 141-1993.

B. Transformer design impedances shall be used when test impedances are not available.

C. Provide the following:

1. Calculation methods and assumptions
2. Selected base per unit quantities
3. One-line diagram of the system being evaluated
4. Source impedance data, including electric utility system and motor fault contribution characteristics
5. Typical calculations
6. Tabulations of calculated quantities
7. Results, conclusions, and recommendations.

D. Calculate short-circuit momentary and interrupting duties for a three-phase bolted fault at each:

1. Electric utility's supply termination point
2. Incoming switchgear
3. Low voltage switchgear
4. Motor control centers
5. Branch circuit panelboards
6. Other significant locations throughout the system.

E. For grounded systems, provide a bolted line-to-ground fault current study for areas as defined for the three-phase bolted fault short-circuit study.

F. Protective Device Evaluation:

1. Evaluate equipment and protective devices and compare to short circuit ratings
2. Adequacy of switchgear, motor control centers, and panelboard bus bars to withstand short-circuit stresses
3. Adequacy of transformer windings to withstand short-circuit stresses
4. Cable and busway sizes for ability to withstand short-circuit heating
5. Notify Owner in writing of any new or existing circuit protective devices improperly rated for the calculated available fault current.

2.4 PROTECTIVE DEVICE COORDINATION STUDY

A. Proposed protective device coordination time-current curves shall be graphically displayed on log-log scale paper.

B. Include on each curve sheet a complete title and one-line diagram with legend identifying the specific portion of the system covered.

C. Terminate device characteristic curves at a point reflecting maximum symmetrical or asymmetrical fault current to which device is exposed.

D. Identify device associated with each curve by manufacturer type, function, and, if applicable, tap, time delay, and instantaneous settings recommended.

E. Plot the following characteristics on the curve sheets, where applicable for this project:

1. Electric utility's protective device
2. Medium and low voltage fuses including manufacturer's minimum melt, total clearing, tolerance, and damage bands
3. Low voltage equipment circuit breaker trip devices, including manufacturer's tolerance bands
4. Transformer full-load current, magnetizing inrush current, and ANSI transformer withstand parameters
5. Conductor damage curves
6. Ground fault protective devices, as applicable
7. Pertinent motor starting characteristics and motor damage points
8. Other system load protective devices for the largest branch circuit and the largest feeder circuit breaker in each motor control center.

F. Provide adequate time margins between device characteristics such that selective operation is provided, while providing proper protection.

2.5 ARC FLASH HAZARD ANALYSIS

A. The arc flash hazard analysis shall be performed according to the IEEE 1584 equations that are presented in NFPA70E-2004, Annex D.

B. When appropriate, the short circuit calculations and the clearing times of the phase overcurrent devices will be retrieved from the short-circuit and coordination study model. Alternative methods shall be presented in the proposal.

C. The flash protection boundary and the incident energy shall be calculated at all significant locations in the electrical distribution system (switchboards, switchgear, motor-control centers, panelboards, busway and splitters) where work could be performed on energized parts.

D. The Arc-Flash Hazard Analysis shall include all significant locations in 240 volt and 208 volt systems fed from transformers equal to or greater than 75 kVA.

E. Safe working distances shall be specified for calculated fault locations based upon the calculated arc flash boundary considering an incident energy of 1.2 cal/cm^2.

F. The Arc Flash Hazard analysis shall include calculations for maximum and minimum contributions of fault current magnitude. The minimum calculation shall assume that the utility contribution is at a minimum and shall assume a minimum motor load. Conversely, the maximum calculation shall assume a maximum contribution from the utility and shall assume motors to be operating under full-load conditions.

G. Arc flash computation shall include both line and load side of main breaker calculations, where necessary.

H. Arc Flash calculations shall be based on actual overcurrent protective device clearing time. Maximum clearing time will be capped at 2 seconds based on IEEE 1584-2002 section B.1.2.

2.6 REPORT SECTIONS

A. Input Data:

1. Short-circuit reactance of rotating machines
2. Cable and conduit materials
3. Transformers
4. Circuit resistance and reactive values.

B. Short-Circuit Data:

1. Source fault impedance and generator contributions
2. X to R ratios
3. Asymmetry factors
4. Motor contributions
5. Short circuit kVA
6. Symmetrical and asymmetrical fault currents.

C. Recommended Protective Device Settings:

1. Phase and Ground Relays:
   a. Current transformer ratio
   b. Current setting
   c. Time setting
   d. Instantaneous setting
   e. Specialty non-overcurrent device settings
   f. Recommendations on improved relaying systems, if applicable
2. Circuit Breakers:
   a. Adjustable pickups and time delays (long time, short time, ground)
   b. Adjustable time-current characteristic
   c. Adjustable instantaneous pickup
   d. Recommendations on improved trip systems, if applicable.

D. Incident energy and flash protection boundary calculations

1. Arcing fault magnitude
2. Device clearing time
3. Duration of arc
4. Arc flash boundary
5. Working distance
6. Incident energy
7. Hazard Risk Category
8. Recommendations for arc flash energy reduction

PART 3 – EXECUTION

3.1 FIELD ADJUSTMENT

A. The Contractor shall adjust relay and protective device settings according to the recommended settings table provided by the coordination study. Field adjustments shall be completed by the engineering service division of the equipment manufacturer under the Startup and Acceptance Testing contract portion.

B. Make minor modifications to equipment as required to accomplish conformance with short circuit and protective device coordination studies.

C. Notify Owner in writing of any required major equipment modifications.

D. Following completion of all studies, acceptance testing and startup by the field engineering service division of the equipment manufacturer, a 2-year warranty shall be provided on all components manufactured by the engineering service parent manufacturing company.

3.2 ARC FLASH WARNING LABELS

A. The vendor shall provide a 3.5 in. x 5 in. thermal transfer type label of high adhesion polyester for each work location analyzed.

B. The label shall have an orange header with the wording, "WARNING, ARC FLASH HAZARD", and shall include the following information:

1. Location designation
2. Nominal voltage
3. Flash protection boundary
4. Hazard risk category
5. Incident energy
6. Working distance
7. Engineering report number, revision number and issue date.

C. Labels shall be machine printed, with no field markings.

D. Arc flash labels shall be provided in the following manner and all labels shall be based on recommended overcurrent device settings.

1. For each 600, 480 and applicable 208 volt panelboards, one arc flash label shall be provided.
2. For each motor control center, one arc flash label shall be provided.
3. For each low voltage switchboard, one arc flash label shall be provided.

E. Labels shall be field installed by the engineering service division of the equipment manufacturer under the Startup and Acceptance Testing contract portion.

3.3 ARC FLASH TRAINING

A. The equipment vendor shall train personnel of the potential arc flash hazards associated with working on energized equipment (minimum of 4 hours). Maintenance procedures in accordance with the requirements of NFPA 70E, Standard for Electrical Safety Requirements for Employee Workplaces, shall be provided in the equipment manuals. The training shall be certified for continuing education units (CEUs) by the International Association for Continuing Education Training (IACET).

END OF SECTION

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DBR Project Number 180168.000

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STATE OF TEXAS
WILLIAM MEISTER
101184
LICENSED
PROFESSIONAL ENGINEER
4/5/22

NO.	DATE	REVISION	APPROV.

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THE STATE OF TEXAS FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

ELECTRICAL SPECIFICATIONS

ISSUE FOR PERMIT SHEET OF

SECTION NO.	
DRAWN:	DATE: 4-05-2022
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. E7.04

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TBPE Firm Registration No. 2234

DBR Project Number 180168.000

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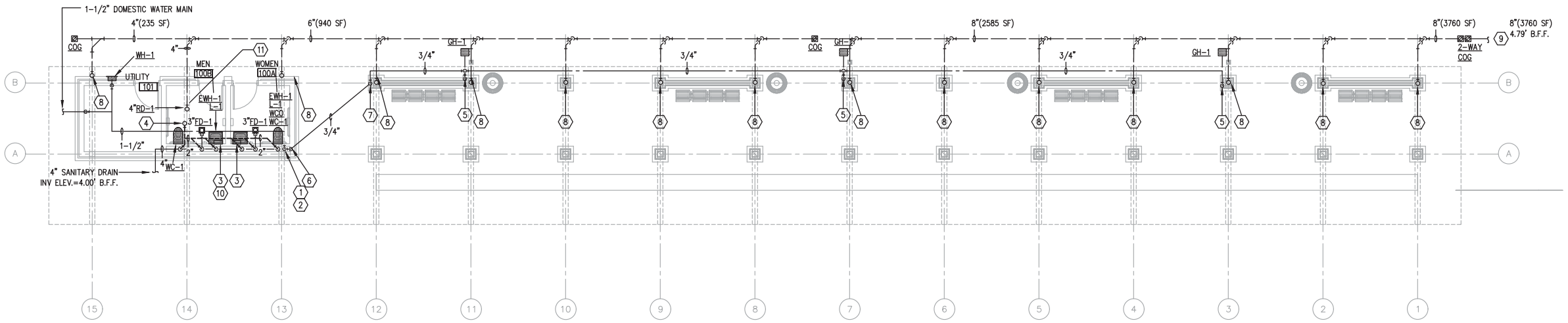

PLUMBING GENERAL NOTES:

1. WATER HEATERS SHALL BE INSTALLED WITHIN A STAINLESS STEEL VANDAL PROOF ENCLOSURE
2. ALL DOMESTIC WATER PIPING SHALL BE HEAT TRACED WITH RAYCHEM "XL" CABLING TO MAINTAIN PIPING ABOVE 35° F. PIPING SHALL ALSO BE PROVIDED WITH 1-1/2" PREFORMED INSULATION AND METAL ALUMINUM JACKET.
3. CONTRACTOR SHALL COORDINATE AND CONFIRM EXACT ROUTING OF WATER PIPING WITHIN BUS LOADING CANOPY PRIOR TO INSTALLATION.
4. ALL UNDERGROUND WATER PIPING SHALL BE HARD DRAWN COPPER TYPE "L" CONTAINING NO JOINTS AND INSTALLED WITHIN A 2" SCHEDULE 40 PVC SLEEVE; SLEEVE SHALL SHALL TURN UP TO ABOVE GRADE PRIOR TO TERMINATION. .

PLUMBING KEYED NOTES:

(1) DOMESTIC WATER ENTRY RISER; RE: DETAIL 1/P3.01.

(2) EXTEND COLD WATER TO ALL FIXTURES AND EQUIPMENT. REFER TO PLUMBING RISER DIAGRAM FOR CONTINUATION IN CHASE AND TO ARCHITECTURAL DRAWINGS FOR FIXTURE ROUGH-IN REQUIREMENTS.

(3) ELECTRIC WATER HEATER INSTALLED BELOW FIXTURE; COORDINATE POWER REQUIREMENTS WITH ELECTRICAL CONTRACTOR.

(4) 4" SANITARY VENT THRU ROOF; RE: DETAIL 2/P3.01.

(5) 3/4" COLD WATER LINE DROP DOWN WITHIN ARCHITECTURAL COLUMN ENCLOSURE TO BELOW GRADE FOR GROUND HYDRANT.

(6) 3/4" COLD WATER DROP DOWN TO BELOW GRADE; PROVIDE SHUT-OFF BALL VALVE ON VERTICAL DROP AND EXTEND TO BUS LOADING CANOPY.

(7) 3/4" COLD WATER UP FROM BELOW GRADE WITHIN ARCHITECTURAL COLUMN ENCLOSURE; PROVIDE SHUT-OFF BALL VALVE AND EXTEND PIPING UP AND ROUTE THROUGH STRUCTURE AS SHOWN.

(8) ARCHITECTURAL DOWNSPOUT FROM GUTTER SYSTEM (235 SF); PLUMBING CONTRACTOR SHALL COORDINATE POINT OF CONNECTION AT BASE OF COLUMN; REFER TO ARCHITECTURAL SECTIONS AND DETAILS FOR DOWNSPOUT DIMENSIONS. ALL CONNECTION POINTS ARE LOCATED AT AN INVERTED ELEVATION OF 2.55' BELOW FINISH GRADE.

(9) 8" STORM MAIN (3760 SF). RE: CIVIL FOR CONTINUATION. INVERT ELEVATION AS NOTED.

(10) PROVIDE J.R. SMITH FIGURE 9200 CONDENSATE P-TRAP IN THIS LAVATORY.

(11) 4" STORM LEADER DOWN FROM ROOF DRAIN ROUTE INTO ARCHITECTURAL BUILT-IN COLUMN.

1 P2.01 BUS LOADING PLUMBING PLAN

1/8"=1'-0"

STATE OF TEXAS
WILLIAM MEISTER
101184
LICENSED
PROFESSIONAL ENGINEER
3/15/22

NO.	DATE	REVISION	APPROV.

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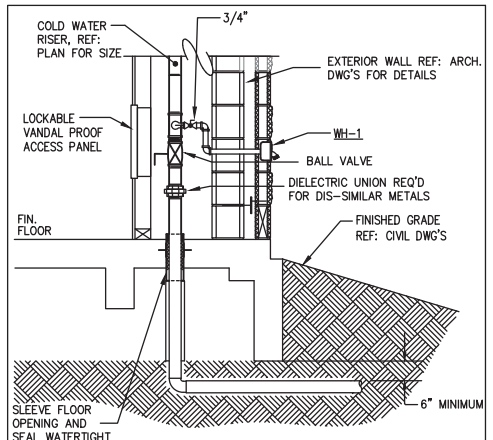
FORT BEND COUNTY
PRECINCT 3

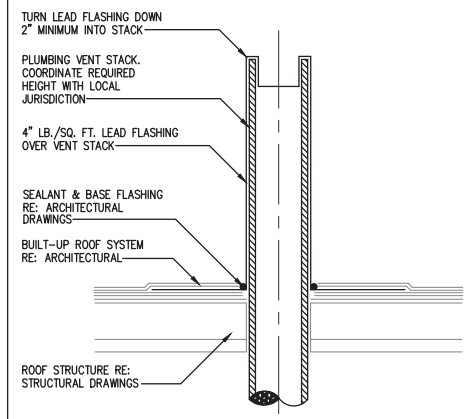
BUS LOADING PLUMBING PLAN

ISSUE FOR PERMIT SHEET OF

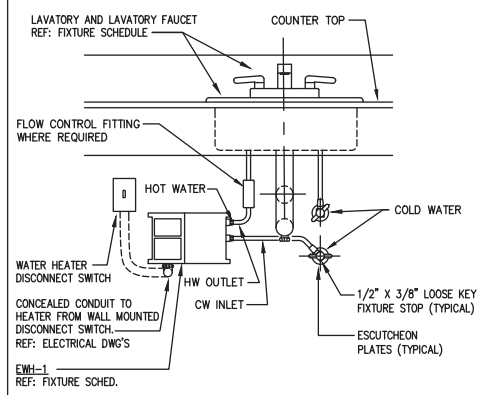
SECTION NO.	
DRAWN:	DATE: 3-15-2022
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. P2.01



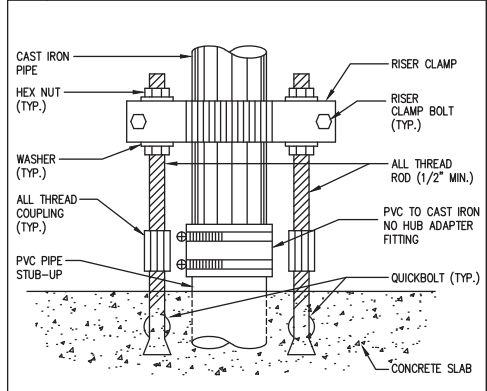
1 **DOMESTIC WATER ENTRY DETAIL**
NOT TO SCALE



1 **VENT THRU ROOF**
NOT TO SCALE



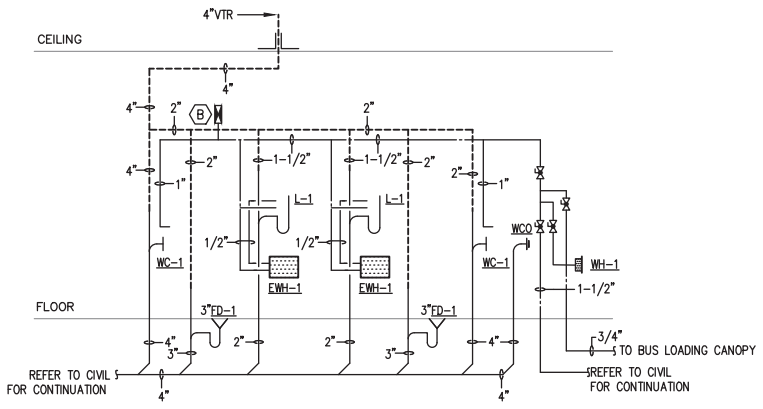
3 **WATER HEATER DETAIL**
NOT TO SCALE

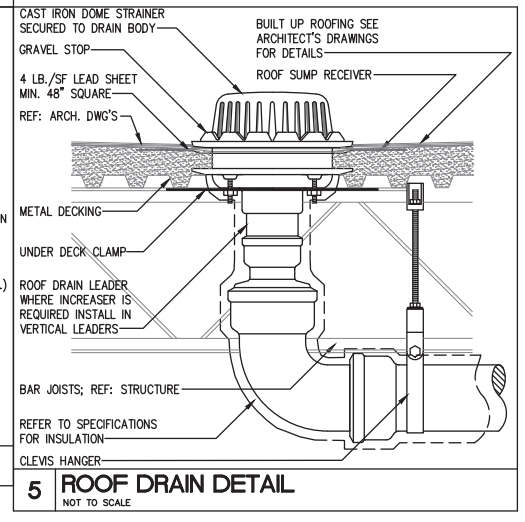


4 **PVC TO CAST IRON SUPPORT**
NOT TO SCALE

PLUMBING FIXTURE SCHEDULE

PLAN MARK	MINIMUM ROUGH-IN SIZES WST & VENT	DRAIN	CW	HW	DESCRIPTION
WATER CLOSET WC-1	4"	2"	4"	1"	--- AMERICAN STANDARD No. 2257.001 "AFWALL" WHITE V.C. ELONGATED SIPHON JET WALL HUNG (1.28 GPF) BOWL WITH TOP SPUD, OLSONITE No. 95-SS WHITE OPEN FRONT SEAT WITH SUSTAINING HINGE, LESS COVER AND SLOAN ROYAL No. 811-1.28 FLUSH VALVE. PROVIDE ZURN OR EQUAL FLOOR MOUNTED CARRIER WITH TRIM AND MOUNTING HEIGHTS AS REQUIRED FOR HANDICAP USE. REFER TO ARCHITECTS PLANS FOR MOUNTING HEIGHT.
LAVATORY L-1	2"	1-1/2"	1-1/4"	1/2"	1/2" AMERICAN STANDARD No. 0355.012 "LUCERNE" WHITE V.C. LAVATORY WITH FRONT OVERFLOW, DRILLED FOR CONCEALED ARM AND WITH 4" HOLES PUNCHED FOR CHICAGO No. 802-VE2805-317ABCP CENTERSET FAUCET WITH VANDAL PROOF WRISTBLADE HANDLES, FIXED GRID PERFORATED DRAIN STRAINER, OFFSET TAILPIECE, CAST BRASS P-TRAP WITH CO, STOPS, AND S.S. SUPPLIES PROVIDE ZURN OR EQUAL FLOOR MOUNTED CONCEALED ARM CARRIER, TRUEBOR OR EQUAL INSULATION KIT AND TRIM AS REQUIRED FOR HANDICAP USE. REFER TO ARCHITECTS PLANS FOR MOUNTING HEIGHT.
ELECT. WATER HEATER EWH-1	---	---	---	1/2"	1/2" CHRONOMITE No.M-20L/277 POINT-OF-USE, TANKLESS UNIT WITH 5.5 KW OPERATION AT 277V/1PH POWER AND 38°F TEMPERATURE RISE. UNIT SHALL BE SET TO DELIVER A MAXIMUM OF 110°F TEMPERATURE AND BE INSTALLED BELOW COUNTER BEHIND REMOVABLE ADA ACCESS PANEL.
FLOOR DRAIN FD-1	3"	2"	3"	---	--- ZURN No. ZN-415 CAST IRON DRAIN WITH 6" DIAMETER TYPE 'B' STRAINER AND PROSET TRAP GUARD.
WALL CLEANOUT WCO	---	---	---	---	--- ZURN No. ZN-1443 DURO-COATED CAST IRON CLEANOUT TEE WITH COUNTER-SUNK GASKET, WATERTIGHT THREADED PLUG AND SQUARE SMOOTH ACCESS COVER WITH VANDAL PROOF SCREWS.
WALL HYDRANT WH-1	---	---	---	3/4"	--- ZURN No. Z-1300 RECESSED NON-FREEZE BRONZE WALL BOX, ANTI-SIPHON HYDRANT, WITH LOOSE KEY OPERATOR AND POLISHED NICKEL BRONZE LOCKING COVER. INSTALL WITH FACE FLUSH AND SQUARE TO FINISHED WALL. SECURE WITH WALL CLAMP AND SETSCREW. PROVIDE EXTENSION AS REQUIRED TO PLACE VALVE SEAT IN HEATED ROOM SPACE.
GROUND HYDRANT GH-1	---	---	---	3/4"	--- ZURN No. Z-1360 NON-FREEZE ANTI-SIPHON HYDRANT WITH EPOXY COATED GROUND BOX, LOCKING COVER AND LOOSE KEY OPERATION. INSTALL WITH FACE FLUSH AND SQUARE TO FINISH GROUND.
ROOF DRAIN RD-1	---	---	SEE PLAN	---	--- J.R. SMITH No. 1010 CAST IRON DRAIN AND DOME STRAINER WITH FLASHING CLAMPING COLLAR, UNDERDECK CLAMP, EPOXY COATING AND ROOF SUMP RECEIVER. PROVIDE CALKED OR NO HUB OUTLET.





5 **ROOF DRAIN DETAIL**
NOT TO SCALE

GENERAL NOTES - PLUMBING FIXTURES

1. CONTRACTOR TO FIELD VERIFY ELEVATIONS AND DIMENSIONS OF FINISHED FLOORS AND WALLS. TRUE ALL DRAINS, ROUGH-INS AND CARRIERS IN ACCORDANCE WITH WITH PROPOSED ELEVATIONS AND FINISHED SURFACES.
2. MOUNTING HEIGHT ELEVATION OF ALL WALL HUNG OR COUNTER MOUNTED FIXTURES SHALL BE COORDINATED WITH THE ARCHITECT PRIOR TO INSTALLATION OF ROUGH-IN WORK.
3. FOR ALL FIXTURES AND EQUIPMENT WITH ASSOCIATED TRIM OR COMPONENT ACCESSORIES PROVIDED UNDER SEPARATE DIVISIONS AND REQUIRING PLUMBING CONNECTIONS; THIS CONTRACTOR SHALL FIELD COORDINATE EXACT REQUIREMENTS OF, MAKE PROVISIONS FOR, AND SUPPLY ALL MATERIALS AND LABOR FOR MAKING FINAL CONNECTIONS.
4. CONTRACTOR SHALL REFER TO SHOP DRAWINGS OF EQUIPMENT TO BE SUPPLIED FOR FINAL COORDINATION OF ALL ROUGH-IN OPENINGS BEFORE BEGINNING WORK.
5. ALL FIXTURE AND EQUIPMENT STUB-OUTS SHALL BE PROVIDED WITH A STOP VALVE. ALL FIXTURE STOPS SHALL BE SOLID BRASS, LOOSE KEY OPERATED, CHROME PLATED (WHERE EXPOSED), AND FITTED TIGHT TO CHROME PLATED BRASS WALL ESCUTCHEON PLATES.
6. ALL ROUGH IN OPENINGS SHALL BE FITTED WITH CHROME PLATED, HEAVY GAGE BRASS ESCUTCHEON PLATES FITTED TIGHT TO THE PIPE.
7. ALL EXPOSED BRASS SHALL BE CHROME PLATED.
8. PROVIDE DEEP SEAL P-TRAP FOR ALL DRAINS.
9. ALL HANDICAPPED ACCESSIBLE FIXTURES INDICATED WITH ♿ SHALL BE PROVIDED OF APPROVED TYPES AND WITH REQUIRED CONTROLS AND INSTALLED TO HEIGHTS AND CLEARANCES, AS PRESCRIBED BY AMERICAN WITH DISABILITIES ACT (ADA). FIXTURES SHALL COMPLY WITH ALL FEDERAL, STATE, AND LOCAL ADA CODE REQUIREMENTS. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONED ADA MOUNTING HEIGHTS AND SPECIFIED CLEARANCES.

PLUMBING GENERAL PLAN NOTES:

PLUMBER SHALL FIELD VERIFY EXACT BUILDING FINISHED FLOOR ELEVATION AND THE INVERT ELEVATION OF ALL DRAIN LINES AT PROPOSED CONNECTING POINTS WITH EXISTING UTILITIES PRIOR TO INSTALLATION OF BUILDING PIPING.

ALL PIPE PASSING THROUGH FIRE RATED WALLS OR FLOOR SLABS SHALL BE SUPPORTED AT PENETRATION AND OPENINGS SHALL BE SEALED WITH APPROVED, NON-HARDENING, FIRE STOP MATERIALS AS SPECIFIED OR REQUIRED.

CONTRACTOR SHALL COORDINATE WITH THE STRUCTURAL CONDITIONS AT THE SITE AND PROVIDE PROPER ROUGH-IN CONNECTIONS REQUIRED WITHOUT DAMAGE TO STRUCTURE. WHERE STRUCTURAL MODIFICATIONS ARE NECESSARY, CONTRACTOR SHALL FIRST RECEIVE WRITTEN APPROVAL OF THE ARCHITECT AND STRUCTURAL ENGINEER.

THIS CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD COORDINATING LOCATIONS AND ELEVATIONS OF ALL PLUMBING PIPING WITH OTHER TRADES PRIOR TO INSTALLATION. CORRECTIONS OR RELOCATIONS DUE TO MISALIGNED PIPE SHALL BE PERFORMED IN A TIMELY MANNER AT NO ADDITIONAL COST TO OWNER.

DO NOT SCALE THE PLUMBING DRAWINGS FOR ROUGH-IN WORK. CONTRACTOR SHALL REFER TO THE DIMENSIONED ARCHITECTURAL AND STRUCTURAL DRAWINGS TO FIELD DETERMINE EXACT LOCATIONS OF PLUMBING ROUGH-IN WORK.

SANITARY DRAINAGE PIPING 3" AND SMALLER SHALL HAVE A UNIFORM MINIMUM CONTINUOUS SLOPE OF 1/4 INCH PER FOOT OF RUN. DRAINAGE PIPING OF 4" SIZE AND LARGER SHALL SLOPE MINIMUM 1/8 INCH PER FOOT OF RUN. SLOPE ALL VENT PIPING MINIMUM 6" PER 100 FEET OF RUN BACK TO DRAIN.

PROVIDE BRACING TO PREVENT AXIAL MOVEMENT FOR ALL DRAINAGE PIPING ABOVE GROUND. PROVIDE RESTRAINTS FOR ALL DRAINAGE PIPING AT ALL CHANGES IN DIRECTION AND AT ALL DIAMETER CHANGES GREATER THAN TWO PIPE SIZES. BRACES, BLOCKS, RODDING AND OTHER PERMANENT METHODS AS PRESCRIBED BY PIPE AND COUPLING MANUFACTURER SHALL BE ACCEPTABLE.

PROVIDE FITTINGS FOR SANITARY DRAIN WASTE AND VENT PIPING SYSTEMS IN COMPLIANCE WITH CURRENT ADOPTED CODES. NO CROSS TEES ALLOWED IN PLUMBING CHASE FOR HORIZ. TO VERT. DRAIN.

PROVIDE INSULATION FOR ALL DOMESTIC WATER PIPE WITHIN 8 FT. OF BUILDING EXTERIOR WALL.

INSTALL EACH WATER HEATER AND ALL PLUMBING EQUIPMENT WITH ADEQUATE CLEARANCES FOR ACCESS BY SERVICE PERSONNEL AND WITH PROPER ORIENTATION FOR ELEMENT REMOVALS/REPLACEMENTS.

PROVIDE ISOLATING BALL VALVES FOR ALL BRANCHES OFF DOMESTIC WATER MAINS. ALL PLUMBING SYSTEM VALVES SHALL BE INSTALLED IN ACCESSIBLE CEILING SPACES. WHERE CEILING IS NOT ACCESSIBLE, OR SPACE IS CONFLICTING, VALVES SHALL BE INSTALLED IN PARTITIONS OR PIPE CHASES. PROVIDE APPROVED PAINTED STEEL HINGED ACCESS PANELS IN LOCATIONS PRE-APPROVED BY THE ARCHITECT. PROVIDE WHITE ACCESS DOORS FOR TOILET ROOM PANELS.

CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL CODES AND AUTHORITIES HAVING JURISDICTION AND SHALL MAKE ALL FINAL CONNECTIONS TO FIXTURES AND EQUIPMENT.

ALL HOT WATER PIPING SHALL HAVE 1" THICK FIBERGLASS INSULATION WITH ALL SERVICE JACKET AND SELF SEALING LAP JOINT.

SHOCK ARRESTORS:
SHOCK ARRESTORS SHALL CONFORM WITH THE REQUIREMENTS OF ASSE 1010 AND SHALL BE SIZED AND LOCATED PER PLUMBING AND DRAINAGE INSTITUTE STANDARD WH-201. ACCESS PANELS REQUIRED FOR FIXTURE GROUPS SHALL BE SIZED TO ALLOW SERVICE TO SHOCK ARRESTORS. LOCATIONS AND SIZES OF REQUIRED ACCESS PANELS SHALL BE REVIEWED FOR APPROVAL BY THE ARCHITECT PRIOR TO INSTALLATION.

PLUMBING PIPE MATERIALS SCHEDULE

PIPING SYSTEM	PIPING MATERIAL
SANITARY DRAIN AND VENTS INSIDE BUILDING BELOW GRADE	SCHEDULE 40 PVC
SANITARY DRAIN AND VENTS INSIDE BUILDING ABOVE GRADE	CAST IRON NO-HUB
STORM DRAIN BELOW GRADE	SCHEDULE 40 PVC
DOMESTIC HOT & COLD WATER ABOVE GRADE	COPPER, TYPE "K" HARD DRAWN
DOMESTIC HOT & COLD WATER BELOW GRADE	COPPER, TYPE "L" HARD DRAWN

PLUMBING LEGEND

DISREGARD LEGEND ITEMS NOT INDICATED ON DRAWINGS

SYMBOL	DESCRIPTION	ABBR.
	SOIL OR WASTE PIPING B.G.	WST
	SOIL OR WASTE PIPING A.G.	WST
GW	GREASE WASTE PIPING	GW
	VENT PIPING	V
SD	STORM DRAIN PIPING	SD
OD	OVERFLOW STORM DRAIN PIPING	OD
G	GAS LINE	G
F	FIRE OR SPRINKLER LINE	F
	DOMESTIC COLD WATER	CW
	DOMESTIC HOT WATER	HW
	DOMESTIC HOT WATER RETURN	HWR
SW	SOFT DOMESTIC COLD WATER	SW
	GATE VALVE	GV
	GLOBE VALVE	GLV
	BALL VALVE	BV
	CHECK VALVE	CKV
	BALANCING VALVE	BAV
	BUTTERFLY VALVE	BTV
	PLUG VALVE	PLV
	PRESSURE REDUCING VALVE	PRV
	PRESSURE RELIEF VALVE	T&P
	STRAINER	STR
	UNION	UN
	THERMOMETER WELL	TW
	PRESSURE GAUGE	PG
	THERMOMETER	THRM
D	CONDENSATE OR INDIRECT DRAIN	D
	BRANCH CONNECTION, TOP	--
OW	OILY WASTE	OW
	BRANCH CONNECTION, BOTTOM	--
	ELBOW UP	--
	ELBOW DOWN	--
	FLOOR CLEANOUT (INTERIOR)	FCO
	CLEANOUT AT GRADE (EXTERIOR)	COG
	WALL CLEANOUT	WCO
	FLOOR DRAIN	FD
	FLOOR SINK	FS
	HOSE BIBB	HB
	WALL HYDRANT	WH
	GAS PRESSURE REGULATOR	GPR
P/X	PLUMBING RISER IDENTIFICATION	P/X
DS/X	DOWNSPOUT RISER IDENTIFICATION	DS/X
F/X	FIRE RISER IDENTIFICATION	F/X
	ABBREVIATIONS	ABBR.
--	ABOVE FINISHED FLOOR	AFF
--	ACCESS PANEL	AP
--	BELOW FINISHED FLOOR	BFF
--	BOTTOM OF PIPE	BOP
--	INDIRECT DRAIN	D
--	FINISHED	FIN
--	FLOOR	FLR
--	INVERT ELEVATION	INV. EL.
--	NORMALLY CLOSED	NC
--	SOFT WATER	SW
--	TRAP PRIMER	TP
--	TYPICAL	TYP
--	VENT THRU ROOF	VTR
5G	GAS (5 LB PRESSURE)	5G

SHOCK ARRESTER SCHEDULE

P.D.I. SYMBOL	FIXTURE UNITS	SIZE
A	1-11	1/2" NPT
B	12-32	3/4" NPT
C	33-60	1" NPT
D	61-113	1 1/4" NPT
E	114-154	1 1/2" NPT
F	155-330	2" NPT

SHOCK ARRESTORS SHALL HAVE LIFETIME WARRANTY AND SHALL BE CERTIFIED BY THE MANUFACTURER TO BE SUITABLE FOR INSTALLATION WITHOUT REQUIREMENT FOR ACCESS DOORS.

1 P3.01 **PLUMBING DETAILS AND SCHEDULES**
NOT TO SCALE

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DBR Project Number 180168.000

WM | – | DT | – | –

WILLIAM MEISTER 101184 LICENSED PROFESSIONAL ENGINEER 3/15/22

NO.	DATE	REVISION	APPROV.

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T.B.P.E.FIRM REGISTRATION NO. F-6825

FORT BEND COUNTY
PRECINCT 3

PLUMBING DETAILS AND SCHEDULES

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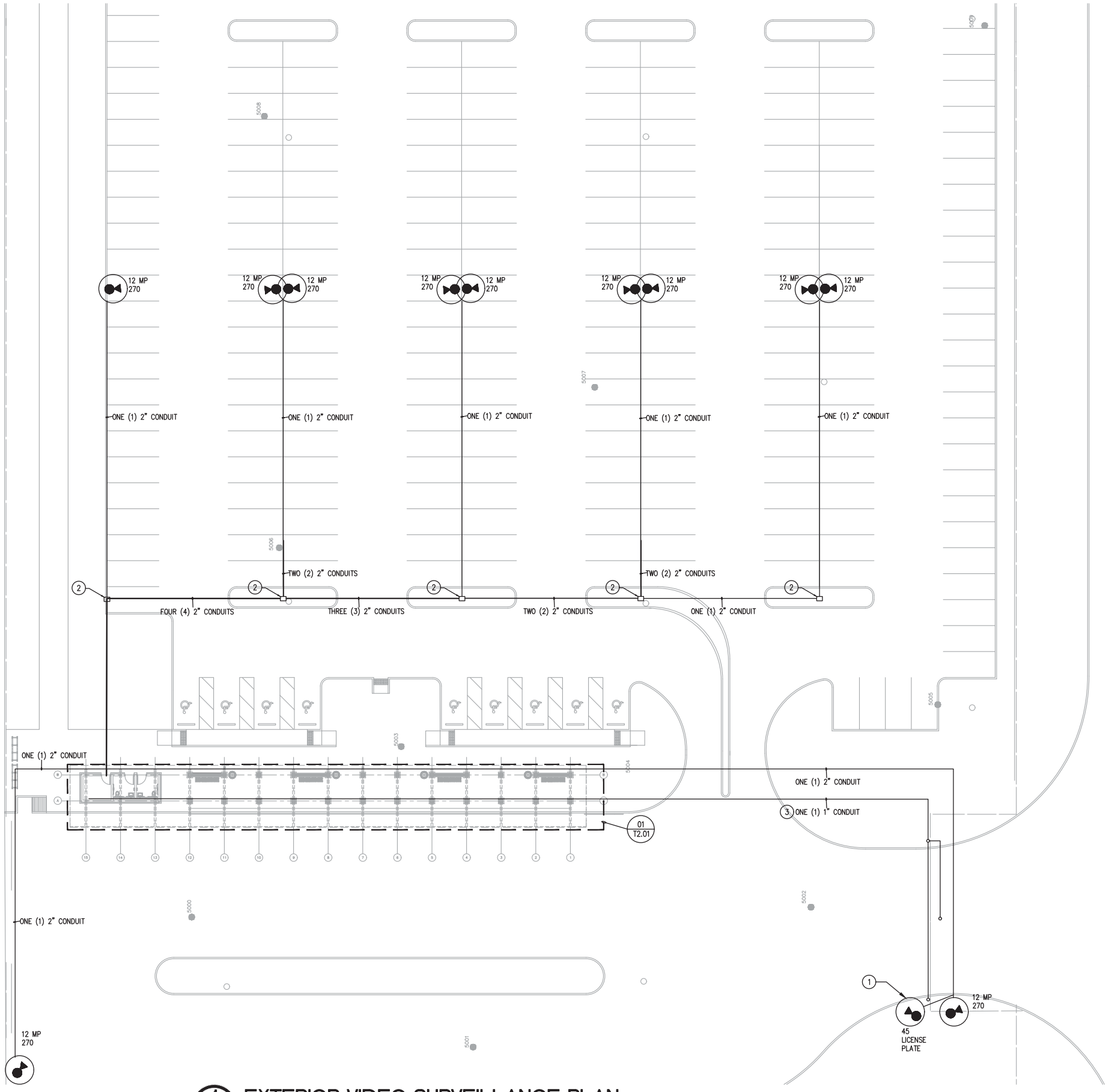

1 T2.00 EXTERIOR VIDEO SURVEILLANCE PLAN
1"=20'-0"

SECURITY SYMBOL LEGEND

GROUP	SYMBOL	DESCRIPTION
		WEATHER PROOF, EXTERIOR SECURITY CAMERA IN DOMED HOUSING. NO SUBSCRIPT INDICATES STANDARD, FIXED POSITION CEILING MOUNTED, "WM" INDICATES WALL MOUNTED, AND "PTZ" INDICATES A MOTORIZED PAN/TILT/ZOOM CAMERA. ANALOG OR IP BASED DESIGNATED BY SPECIFICATIONS, UNLESS NOTED OTHERWISE. "IP" INDICATES THAT THE CAMERA IS TO BE A STANDARD RESOLUTION CAMERA, 360° INDICATES THAT THE CAMERA IS TO BE A 360° CAMERA, "#MP" INDICATES THAT THE RESOLUTION OF THE CAMERA (# TO BE REPLACES WITH NUMERIC VALUE), AND "WDC" INDICATES THAT THE CAMERA SHALL HAVE WIDE DYNAMIC CAPTURE TECHNOLOGY.

SECURITY GENERAL NOTES

1. THE SECURITY CAMERA SYSTEM INSTALLER SHALL BE RESPONSIBLE FOR CONNECTING ALL APPLICABLE SYSTEM EQUIPMENT TO THE OWNER'S NETWORK.
2. THE SYSTEM INSTALLER SHALL PROPERLY SUPPORT ALL INSTALLED SYSTEM CABLING FROM AN APPROVED CABLE SUPPORT SYSTEM AS DETAILED IN SPECIFICATIONS. NO CABLING SHALL BE ROUTED AND TIED DIRECTLY TO BUILDING STEEL, CEILING GRID SUPPORT, CONDUIT, PIPING, OR DUCTWORK. THE CABLE SUPPORT SYSTEM SHALL BE DIRECTLY CONNECTED TO THE BUILDING'S STEEL JOIST. AT LOCATIONS WHERE THE BOTTOM OF THE JOIST IS MORE THAN 5' ABOVE THE CEILING, THE SYSTEM INSTALLER SHALL PROVIDE AND INSTALL THREADED ROD AND ALL REQUIRED MATERIALS TO CONNECT THE THREADED ROD TO THE BUILDING STEEL AND THE CABLE SUPPORT SYSTEM TO THE THREADED ROD. CABLE PATHWAY SHALL NOT BE HIGHER THAN 5' ABOVE THE CEILING AT ANY LOCATIONS.
3. SECURITY CAMERA SYSTEM INSTALLER SHALL PROVIDE A CEILING MOUNTED INSTALLATION KIT RECOMMENDED BY THE MANUFACTURER OF THE CAMERA. EACH CEILING MOUNTED CAMERA KIT SHALL HAVE A SUPPORT WIRE ATTACHED TO THE BUILDING'S STRUCTURE TO PREVENT THE CAMERA FROM DROPPING TO THE FLOOR AT ANY TIME. AT NO POINT SHALL THE WEIGHT OF THE CEILING MOUNTED SECURITY CAMERA BE SUPPORTED BY THE CEILING GRID SYSTEM OR CEILING TILES. ALL CEILING MOUNTED CAMERAS SHALL BE FLUSH MOUNTED.
4. ALL EXTERIOR AND WALL MOUNTED CAMERA LOCATIONS AND MOUNTING HEIGHTS MUST BE COORDINATED WITH THE OWNER PRIOR TO ROUGH-IN. COORDINATION MEETINGS SHALL BE SCHEDULED THROUGH THE ARCHITECT'S PROJECT MANAGER.

KEYED NOTES

1. INDICATES THAT THE DESIGNATED DEVICE SHALL BE MOUNTED ON A STANCHION AT 4'-0" A.F.G. ADJUST VIEW TO CAPTURE LICENSE PLATE INFORMATION FROM PASSING VEHICLES. PROVIDE STANCHION AND INSTALL AT APPROXIMATE LOCATION, COORDINATE WITH OWNER, ARCHITECT, AND CONSULTANT PRIOR TO ROUGH-IN
2. COMMUNICATIONS PULLBOX
3. PROVIDE (1) 1" EMPTY CONDUIT WITH PULL STRING FROM UTILITY 101. ROUTE TO EACH GATE MOTOR AND TO KEYPAD.

TECHNOLOGY GENERAL NOTES

1. CONTRACTOR SHALL COORDINATING WITH DBR ENGINEERING PRIOR TO THE INSTALLATION OF RACKS AND RACK EQUIPMENT. NO RACKS SHALL BE PERMANENTLY INSTALLED WITHOUT WRITTEN APPROVAL OF THE PROPOSED LOCATIONS.
2. THE SELECTED, INSTALLING CONTRACTOR MUST BE A CERTIFIED INTEGRATOR/INSTALLER AUTHORIZED BY THE SPECIFIED SYSTEM MANUFACTURER TO INSTALL THE CABLE PLANT AND CONNECTIVITY PRODUCTS. REFER TO SPECIFICATIONS FOR PRODUCT TYPE AND DESCRIPTION.
3. SYSTEM WIRING AND EQUIPMENT INSTALLATION SHALL BE IN ACCORDANCE WITH GOOD ENGINEERING PRACTICES AS ESTABLISHED BY ANSI/EIA/TIA, BICSI, AND THE NEC.
4. ALL WIRING SHALL MEET ALL STATE AND LOCAL ELECTRICAL CODES.
5. ALL TELECOMMUNICATIONS SYSTEMS EQUIPMENT AND MOUNTING LOCATIONS SHALL BE IN COMPLIANCE WITH ADA ACCESSIBILITY STANDARDS.
6. ALL INDUSTRY STANDARD CATEGORY 6 CABLING PRACTICES MUST BE FOLLOWED FOR ALL DATA CABLING.
7. ALL DATA CABLES ARE TO BE INSTALLED WITH A MINIMUM OF 12 INCHES OF SEPARATION FROM AC POWER CABLES, INTERCOM, FIRE ALARM, SECURITY CABLES IN ANY PARALLEL OPEN WIRE RUN.
8. ALWAYS CROSS OTHER SYSTEM CABLES AT A 90 DEGREE ANGLE.
9. ALL CABLES AND TERMINATION COMPONENTS SHALL BE MACHINE LABELED AT BOTH ENDS. LABEL ALL CABLES PER T DRAWINGS AND/OR SPECIFICATIONS. FINAL CABLE/OUTLET IDENTIFICATION LABELS SHALL BE COORDINATED WITH THE OWNER AND DBR.
10. CONTRACTOR TO PROVIDE LIGHTNING PROTECTION ON ALL COMMUNICATION CABLE BETWEEN BUILDINGS.
11. ALL EXPOSED CABLING ROUTED IN PLENUM SHALL BE PLENUM-RATED. ALL NON PLENUM-RATED CABLING INSTALLED IN PLENUM SPACES SHALL BE INSTALLED IN CONDUIT.
12. NO TERMINATION OR SPLICES SHALL BE INSTALLED IN OR ABOVE CEILINGS UNLESS NOTED NOTED OTHERWISE.
13. CONTRACTOR SHALL MAINTAIN WALL RATING WITH PROPER FIRE BLOCKING METHODS.
14. THE SYSTEM INSTALLER SHALL PROPERLY SUPPORT ALL INSTALLED SYSTEM CABLING FROM A PANDUIT J-MOD CABLE SUPPORT SYSTEMS AS DETAILED IN SPECIFICATIONS. NO CABLING SHALL BE ROUTED AND TIED DIRECTLY TO BUILDING STEEL, CEILING GRID SUPPORT, CONDUIT, PIPING, OR DUCTWORK. PANDUIT J-MOD SUPPORT SYSTEM SHALL BE DIRECTLY CONNECTED TO THE BUILDING'S STEEL JOIST. IN LOCATION WHERE THE BOTTOM OF THE JOIST IS MORE THAN 5' ABOVE THE CEILING, THE SYSTEM INSTALLER SHALL PROVIDE AND INSTALL THREADED ROD AND ALL REQUIRED MATERIALS TO CONNECT THE THREADED ROD TO THE BUILDING STEEL AND THE CABLE SUPPORT SYSTEM TO THE THREADED ROD. CABLE PATHWAY SHALL NOT BE HIGHER THAN 5' ABOVE THE CEILING AT ANY LOCATIONS.

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THE STATE OF TEXAS
FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

EXTERIOR VIDEO
SURVEILLANCE PLAN

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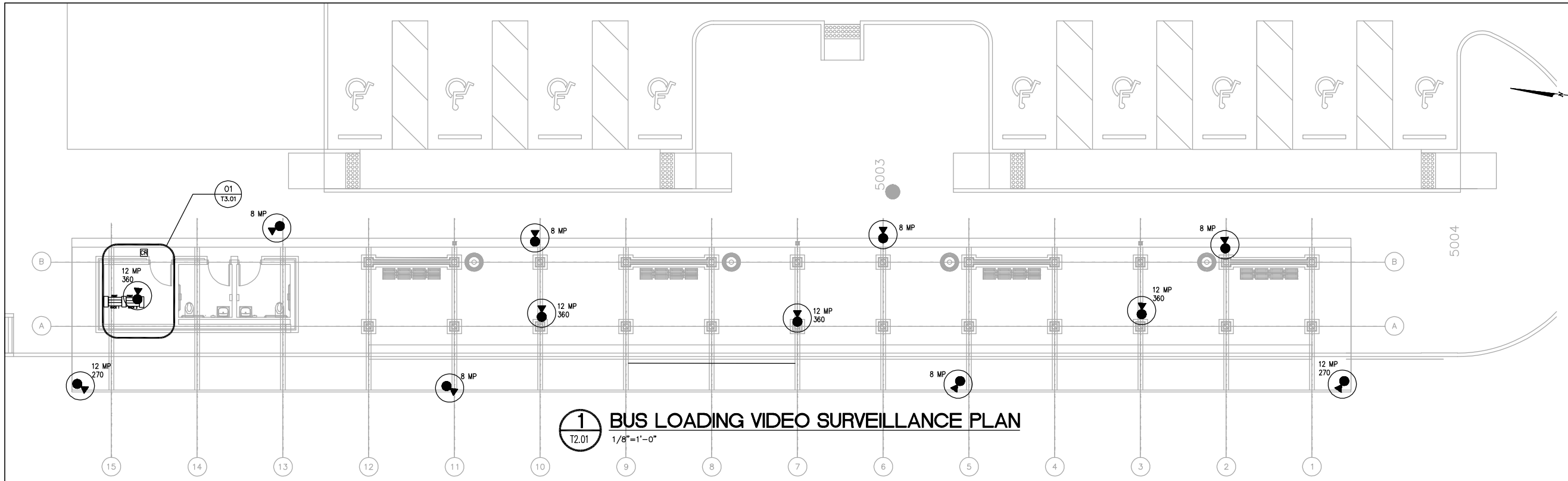

1 T2.01 BUS LOADING VIDEO SURVEILLANCE PLAN

1/8"=1'-0"

SECURITY SYMBOL LEGEND

GROUP	SYMBOL	DESCRIPTION
		WEATHER PROOF, EXTERIOR SECURITY CAMERA IN DOMED HOUSING. NO SUBSCRIPT INDICATES STANDARD, FIXED POSITION CEILING MOUNTED, 'WM' INDICATES WALL MOUNTED, AND "PTZ" INDICATES A MOTORIZED PAN/TILT/ZOOM CAMERA. ANALOG OR IP BASED DESIGNATED BY SPECIFICATIONS, UNLESS NOTED OTHERWISE. 'IP' INDICATES THAT THE CAMERA IS TO BE A STANDARD RESOLUTION CAMERA, 360' INDICATES THAT THE CAMERA IS TO BE A 360' CAMERA, '#MP' INDICATES THAT THE RESOLUTION OF THE CAMERA (# TO BE REPLACES WITH NUMERIC VALUE), AND 'WDC" INDICATES THAT THE CAMERA SHALL HAVE WIDE DYNAMIC CAPTURE TECHNOLOGY.
	VRS	VIDEO RECORDING SERVER. REFERENCE SPECIFICATIONS FOR INFORMATION CONCERNING ANALOG OR IP BASED TYPE SYSTEM.
	CR	WALL OR MULLION MOUNTED ACCESS CONTROL PROXIMITY CARD READER.
	DC	DPDT MAGNETIC DOOR CONTACT/DOOR POSITION SENSOR. FLUSH MOUNTED IN DOOR FRAME, UNLESS NOTED OTHERWISE

SECURITY GENERAL NOTES

1. CABLING SHALL BE INCIDENTAL TO BID ITEMS.CABLING SHALL BE PER MANUFACTURERS RECOMMENDATIONS AND IN COMPLIANCE WITH ALL APPLICABLE INDUSTRY AND OWNER STANDARDS.
2. THE SECURITY CAMERA SYSTEM INSTALLER SHALL BE RESPONSIBLE FOR CONNECTING ALL APPLICABLE SYSTEM EQUIPMENT TO THE OWNER'S NETWORK.
3. ACCESS CONTROL SYSTEM SHALL BE BY 3XLOGIC. CONTROLLER ELDC32- NO SUBSTITUTIONS
4. THE SYSTEM INSTALLER SHALL PROPERLY SUPPORT ALL INSTALLED SYSTEM CABLING FROM AN APPROVED CABLE SUPPORT SYSTEM AS DETAILED IN SPECIFICATIONS. NO CABLING SHALL BE ROUTED AND TIED DIRECTLY TO BUILDING STEEL, CEILING GRID SUPPORT, CONDUIT, PIPING, OR DUCTWORK. THE CABLE SUPPORT SYSTEM SHALL BE DIRECTLY CONNECTED TO THE BUILDING'S STEEL JOIST. AT LOCATIONS WHERE THE BOTTOM OF THE JOIST IS MORE THAN 5' ABOVE THE CEILING, THE SYSTEM INSTALLER SHALL PROVIDE AND INSTALL THREADED ROD AND ALL REQUIRED MATERIALS TO CONNECT THE THREADED ROD TO THE BUILDING STEEL AND THE CABLE SUPPORT SYSTEM TO THE THREADED ROD. CABLE PATHWAY SHALL NOT BE HIGHER THAN 5' ABOVE THE CEILING AT ANY LOCATIONS.
5. SECURITY CAMERA SYSTEM INSTALLER SHALL PROVIDE A CEILING MOUNTED INSTALLATION KIT RECOMMENDED BY THE MANUFACTURER OF THE CAMERA. EACH CEILING MOUNTED CAMERA KIT SHALL HAVE A SUPPORT WIRE ATTACHED TO THE BUILDING'S STRUCTURE TO PREVENT THE CAMERA FROM DROPPING TO THE FLOOR AT ANY TIME. AT NO POINT SHALL THE WEIGHT OF THE CEILING MOUNTED SECURITY CAMERA BE SUPPORTED BY THE CEILING GRID SYSTEM OR CEILING TILES. ALL CEILING MOUNTED CAMERAS SHALL BE FLUSH MOUNTED.
6. ALL EXTERIOR AND WALL MOUNTED CAMERA LOCATIONS AND MOUNTING HEIGHTS MUST BE COORDINATED WITH THE OWNER PRIOR TO ROUGH-IN. COORDINATION MEETINGS SHALL BE SCHEDULED THROUGH THE ARCHITECT'S PROJECT MANAGER.

TECHNOLOGY GENERAL NOTES

1. CABLING SHALL BE INCIDENTAL TO BID ITEMS.CABLING SHALL BE PER MANUFACTURERS RECOMMENDATIONS AND IN COMPLIANCE WITH ALL APPLICABLE INDUSTRY AND OWNER STANDARDS.
2. CONTRACTOR SHALL COORDINATE WITH THE OWNER PRIOR TO THE INSTALLATION OF RACKS AND RACK EQUIPMENT. NO RACKS SHALL BE PERMANENTLY INSTALLED WITHOUT WRITTEN APPROVAL OF THE PROPOSED LOCATIONS.
3. THE SELECTED, INSTALLING CONTRACTOR MUST BE A CERTIFIED INTEGRATOR/INSTALLER AUTHORIZED BY THE SPECIFIED SYSTEM MANUFACTURER TO INSTALL THE CABLE PLANT AND CONNECTIVITY PRODUCTS. REFER TO SPECIFICATIONS FOR PRODUCT TYPE AND DESCRIPTION.
4. SYSTEM WIRING AND EQUIPMENT INSTALLATION SHALL BE IN ACCORDANCE WITH GOOD ENGINEERING PRACTICES AS ESTABLISHED BY ANSI/EIA/TIA, BICSI, AND THE NEC.
5. ALL WIRING SHALL MEET ALL STATE AND LOCAL ELECTRICAL CODES.
6. ALL TELECOMMUNICATIONS SYSTEMS EQUIPMENT AND MOUNTING LOCATIONS SHALL BE IN COMPLIANCE WITH ADA ACCESSIBILITY STANDARDS.
7. ALL INDUSTRY STANDARD CATEGORY 6 CABLING PRACTICES MUST BE FOLLOWED FOR ALL DATA CABLING.
8. ALL DATA CABLES ARE TO BE INSTALLED WITH A MINIMUM OF 12 INCHES OF SEPARATION FROM AC POWER CABLES, INTERCOM, FIRE ALARM, SECURITY CABLES IN ANY PARALLEL OPEN WIRE RUN.
9. ALWAYS CROSS OTHER SYSTEM CABLES AT A 90 DEGREE ANGLE.
10. ALL CABLES AND TERMINATION COMPONENTS SHALL BE MACHINE LABELED AT BOTH ENDS. LABEL ALL CABLES PER TS DRAWINGS AND/OR SPECIFICATIONS. FINAL CABLE/OUTLET IDENTIFICATION LABELS SHALL BE COORDINATED WITH THE OWNER AND DBR.
11. CONTRACTOR TO PROVIDE LIGHTNING PROTECTION ON ALL COMMUNICATION CABLE BETWEEN BUILDINGS.
12. ALL EXPOSED CABLING ROUTED IN PLENUM SHALL BE PLENUM-RATED. ALL NON PLENUM-RATED CABLING INSTALLED IN PLENUM SPACES SHALL BE INSTALLED IN CONDUIT.
13. NO TERMINATION OR SPLICES SHALL BE INSTALLED IN OR ABOVE CEILINGS UNLESS NOTED NOTED OTHERWISE.
14. CONTRACTOR SHALL MAINTAIN WALL RATING WITH PROPER FIRE BLOCKING METHODS.
15. ALL CABLE INSTALLED SHALL ROUTE TO THE CENTER OF THE ROOM IN WHICH IT SERVES AND THEN TO THE OUTLET LOCATION IT IS INTENDED FOR. EACH CABLE SHALL HAVE A 10' SERVICE LOOP AT THE CENTER OF EACH ROOM AND A 3' SERVICE LOOP ABOVE EACH OUTLET LOCATION.
16. THE SYSTEM INSTALLER SHALL PROPERLY SUPPORT ALL INSTALLED SYSTEM CABLING FROM A PANDUIT J-MOD CABLE SUPPORT SYSTEMS AS DETAILED IN SPECIFICATIONS. NO CABLING SHALL BE ROUTED AND TIED DIRECTLY TO BUILDING STEEL, CEILING GRID SUPPORT, CONDUIT, PIPING, OR DUCTWORK. PANDUIT J-MOD SUPPORT SYSTEM SHALL BE DIRECTLY CONNECTED TO THE BUILDING'S STEEL JOIST. IN LOCATION WHERE THE BOTTOM OF THE JOIST IS MORE THAN 5' ABOVE THE CEILING, THE SYSTEM INSTALLER SHALL PROVIDE AND INSTALL THREADED ROD AND ALL REQUIRED MATERIALS TO CONNECT THE THREADED ROD TO THE BUILDING STEEL AND THE CABLE SUPPORT SYSTEM TO THE THREADED ROD. CABLE PATHWAY SHALL NOT BE HIGHER THAN 5' ABOVE THE CEILING AT ANY LOCATIONS.
17. NOT USED
18. CONTRACTOR TO PROVIDE AND INSTALL ALL REQUIRED CABLING AND COMPONENTS TO FURNISH ONE (1) ANALOG TELEPHONE CABLES TO EACH ELEVATOR MACHINE ROOM ON THE PROJECT. CONTRACTOR TO COORDINATE WITH SYSTEM INSTALLERS FOR EXACT LOCATIONS AND TERMINATION INSTRUCTIONS PRIOR TO INSTALLATION.
19. CONTRACTOR TO PROVIDE AND INSTALL ALL REQUIRED CABLING AND COMPONENTS TO FURNISH TWO (2) CATEGORY 6 CABLES TO BUILDING AUTOMATION SYSTEM. (1) CABLE SHALL BE INSTALLED AT +18" AFF FOR TECHNICIAN NETWORK CONNECTIVITY AND THE OTHER SHALL PROVIDE CONNECTIVITY TO THE SYSTEM. CONTRACTOR TO COORDINATE WITH SYSTEM INSTALLERS FOR EXACT LOCATIONS AND TERMINATION INSTRUCTIONS PRIOR TO INSTALLATION.
20. CONTRACTOR TO PROVIDE AND INSTALL (1) CATEGORY 6 CABLE TO THE BUILDING'S ACCESS CONTROL HEAD END PANEL. TERMINATION OF THIS CABLE SHALL BE COORDINATED WITH THE SYSTEM INSTALLER.

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STATE OF TEXAS
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THE STATE OF TEXAS
FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

BUS LOADING VIDEO SURVEILLANCE PLAN

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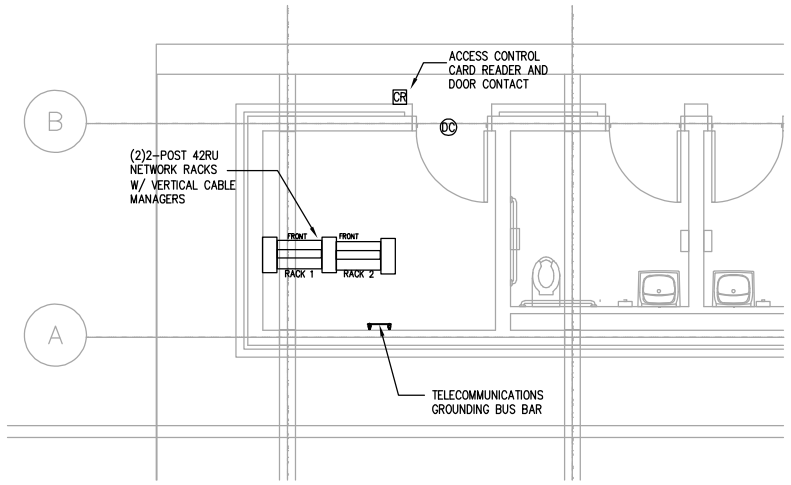
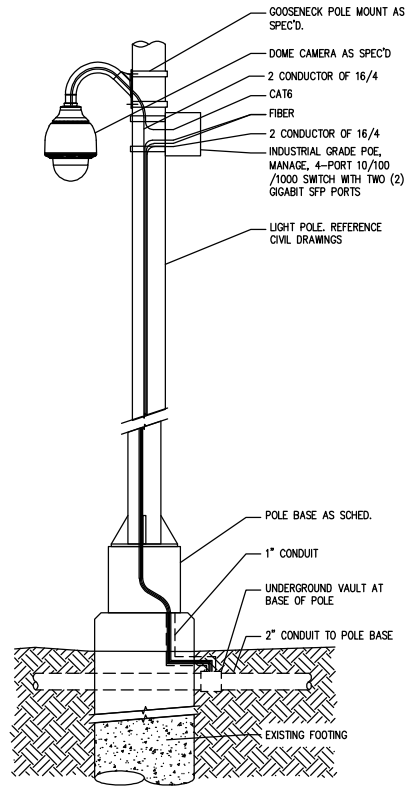


1 T3.01 UTILITY ROOM ENLARGED PLAN

1/4"=1'-0"

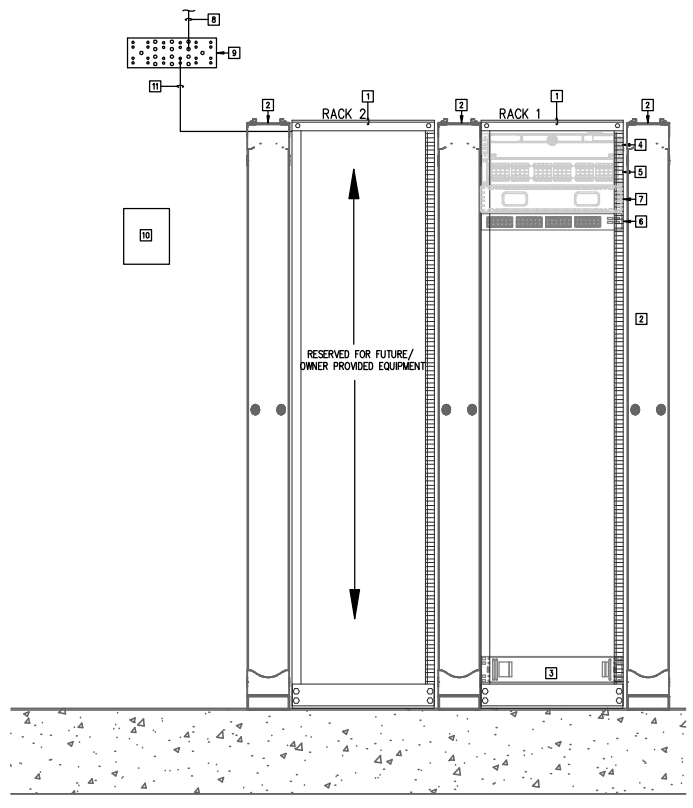
NOTES:

1. CABLE TO BE A CAT6 FOR VIDEO SURVEILLANCE WITH A 25 FEET SERVICE LOOP.
2. IF CONDUIT IS REQUIRED 3/4" SHALL BE INSTALLED BY OTHERS.
3. WIRING AND TERMINATION PROVIDED BY OTHERS. ALL OTHER EQUIPMENT PROVIDED BY KNIGHT SECURITY.



3 TG01 PARKING LOT LIGHT POLE CAMERA MOUNTING DETAIL

NOT TO SCALE



2 NETWORK / SURVEILLANCE RACK ELEVATION

1"=1'-0" T3.01

GENERAL NOTES

A. CONTRACTOR SHALL COORDINATE WITH THE OWNER PRIOR TO THE INSTALLATION OF RACKS AND RACK EQUIPMENT. NO RACKS OR EQUIPMENT SHALL BE PERMANENTLY INSTALLED WITHOUT WRITTEN APPROVAL OF THE PROPOSED LOCATIONS.

B. CABLING SHALL BE INCIDENTAL TO BID ITEMS.CABLING SHALL BE PER MANUFACTURERS RECOMMENDATIONS AND IN COMPLIANCE WITH ALL APPLICABLE INDUSTRY AND OWNER STANDARDS.

IDF RISER DETAIL KEYED NOTES

1. PROVIDE AND INSTALL CPI #55053-703 45U FLOOR MOUNT TWO POST- RACK W/ 6" VERTICAL CABLE MANAGERS
2. PROVIDE VERTICAL CABLE MANAGERS CPI CCS, #30162-703 OR OWNER APPROVED EQUIVALENT
3. APC 1500VA UNINTERRUPTIBLE POWER SUPPLY. SMX1500RM2UCNC.
4. PROVIDE AND INSTALL A RACK MOUNTED, 2RU FIBER ENCLOSURE.
5. PROVIDE AND INSTALL A 48-PORT, PATCH PANEL WITH ALL REQUIRED MOUNTING HARDWARE AND TERMINATION COMPONENTS, FOR THE TERMINATION OF ALL VIDEO SURVEILLANCE CAMERA SYSTEM, CATEGORY 6 OUTLET CABLES (CABLES SHALL BE GREEN IN COLOR) ORIGINATING IN THIS COMMUNICATIONS CLOSET. PANELS SHOWN ARE ESTIMATED. CONTRACTOR TO PROVIDE THE REQUIRED AMOUNT TO TERMINATE 125% OF THE TOTAL NUMBER OF CABLES IN EACH TELECOMMUNICATION ROOM. ALL TERMINATIONS SHALL COMPLY WITH THE 568B PIN-OUT CONFIGURATION.
6. CISCO CATALYST 9300 48-PORT POE+ NETWORK SWITCH(C9300-48P-A).EXACT LOCATION TO BE COORDINATED WITH THE OWNER.
7. 2RU HORIZONTAL WIRE MANAGER CPI #30130-719 OR OWNER APPROVED EQUIVALENT.
8. GROUNDING CABLE TO BUILDINGS MAIN GROUNDING ELECTRODE
9. PROVIDE AND INSTALL A 12"X4" WALL MOUNTED, TELECOMMUNICATIONS GROUND BUS BAR (TGBB) AT INDICATED.
10. PROVIDE AND INSTALL A CIRCA 100-PAIR 110/110 BUILDING ENTRANCE TERMINAL (BET), WITH COVER AND SPLICE CHAMBER, AT THIS LOCATION. 50-PAIR COPPER TIE CABLE ROUTING INTO THE BUILDING SHALL TERMINATE AT THIS TERMINAL AND THEN CONTINUE TO A RACK MOUNTED PATCH PANEL. CIRCA PRODUCT NUMBER 1880EC A1-100. PROVIDE 5-PIN PROTECTION MODULES #486S-240e AND/OR 486S-75e FOR ALL PORTS. COORDINATE EXACT DESIRED PROTECTION MODULES WITH THE OWNER PRIOR TO PROCUREMENT AND INSTALLATION.
11. PROVIDE AND INSTALL A #6AWG, STRANDED COPPER GROUND WIRE FROM THE TGBB TO THE COMMUNICATION RACK CONNECTION AT BOTH ENDS SHALL BE MADE UTILIZING A 2-HOLE, #6AWG GROUND COMPRESSION LUG. SCREW TYPE BLOCKS WILL NOT BE ACCEPTED.

NETWORK EQUIPMENT AND ACCESSORIES:

QTY (1) CISCO CATALYST 9300 48-PORT POE+, NETWORK ADVANTAGE MANAGED SWITCH

QTY (1) CISCO CON-SNT-C93004PA SMARTNET EXTENDED SERVICE AGREEMENT

QTY (1) CISCO C9300-NW-A-48 C9300 NETWORK ADVANTAGE, 48-PORT LICENSE.

QTY (1) CISCO SC9300UK9-176 CISCO CATALYST 9300 XE 17.6 UNIVERSAL UN.

QTY (1) CISCO PWR-C1-715WAC-P REDUNDANT POWER SUPPLY.

QTY (1) CISCO CAB-TA-NA NORTH AMERICA AC TYPE A POWER CABLE

QTY (1) CISCO PWR-C1-BLANK CONFIG 1 POWER SUPPLY BLANK

QTY (1) CISCO TE-C9K-SW TE AGENT FOR IOSXE ON C9K.

QTY (1) CISCO PI-LFAS-T CISCO PRIME INFRASTRUCTURE LIFECYCLE AND ASSURANCE - TERM LICENSE

QTY (1) PI-LFAS-AP-T-5Y CISCO PRIME INFRASTRUCTURE LIFECYCLE AND ASSURANCE - TERM LICENSE (5 YEARS)

QTY (1) D-DNAS-EXT-S-T CISCO DNA SPACES EXTEND TERM LICENSE FOR CATALYST SWITCHES

QTY (1) CISCO C9300-DNA-A-48-5 C9300 DNA ADVANTAGE, 48-PORT, 5 YEAR TERM LICENSE.

QTY (1) CISCO C9300-NM-4G CATALYST 9300 4 X 1GE NETWORK MODULE

QTY (1) TE-EMBEDDED-T CISCO THOUSANDEYES ENTERPRISE AGENT IBN EMBEDDED

QTY (1) TE-EMBEDDED-T-5Y THOUSANDEYES - ENTERPRISE AGENTS

QTY (1) NETWORK-PNP-LIC NETWORK PLUG-N-PLAY LICENSE FOR ZERO-TOUCH DEVICE DEPLOYMENT

QTY (1) CISCO PWR-C1-715WAC-P/2 715W AC 80+ PLATINUM CONFIG 1 SECONDARY POWER SUPPLY

QTY (1) APC SMX1500RM2UCNC 1500VA UNINTERRUPTIBLE POWER SUPPLY

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THE STATE OF TEXAS FORT BEND COUNTY

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PRECINCT 3

SECURITY DETAILS

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LUMINAIRE SCHEDULE – ALL POLES 20 FT				
LUMI–NAIRE NO.	# OF FIXTURE HEADS	FIXTURE TYPE	DISTRIBUTION PATTERN	FIXTURE LUMENS
1	2	CL1–60L–BC	4	30308
2	2	CL1–60L–BC	4	30308
3	1	CL1–60L–BC	4	15154
4	1	CL1–60L–BC	4	15154
5	1	CL1–60L–BC	4	15154
6	1	CL1–60L–BC	4	15154
7	2	CL1–60L–BC	4	30308
8	2	CL1–30L–BC	4	15452
9	2	CL1–60L–BC	4	30308
10	2	CL1–60L–BC	4	30308
11	2	CL1–30L–BC	4	15452
12	2	CL1–60L–BC	4	30308
13	2	CL1–60L–BC	4	30308
14	2	CL1–30L–BC	4	15452
15	2	CL1–60L–BC	4	30308
16	2	CL1–60L–BC	4	30308
17	2	CL1–30L–BC	4	15452
18	2	CL1–60L–BC	4	30308
19	1	CL1–60L–BC	4	15154
20	1	CL1–60L–BC	4	15154
21	1	CL1–60L–BC	4	15154
22	1	CL1–30L–BC	5M	7862
23	1	CL1–60L–BC	4	15154
24	2	CL1–30L–BC	4	15452
25	1	CL1–30L–BC	5M	7862
26	1	CL1–30L–BC	4	7726
27	1	CL1–30L–BC	4	7726

NOTES:

1. ALL INDICATED LENGTHS IN CONDUIT AND CONDUCTOR RUNS SCHEDULE ARE HORIZONTAL ONLY. ALLOW FOR SPLICING AND VERTICAL REQUIREMENTS.

2. CONTRACTOR SHALL INSTALL LUMINAIRE POLES TO MAINTAIN 2' MINIMUM CLEARANCE FROM WALKWAY OR DRIVE AISLE CURB.

3. CONTRACTOR TO INSTALL CONDUIT PRIOR TO PARKING LOT PAVING. NO ADDITIONAL PAYMENT FOR BORING WILL BE ALLOWED IN THESE AREAS.

4.FIXTURE TYPES LISTED ARE CIMARRON LED SERIES BY SPAULDING LIGHTING. CONTRACTOR MAY PROVIDE APPROVED EQUAL.

5.POLES SHALL BE LYTE POLES ITEM 101–5011–020 OR APPROVED EQUAL.

6. FOUNDATIONS FOR POLES IN PAVEMENT TO EXTEND 2.5 FT ABOVE FINISHED GRADE.

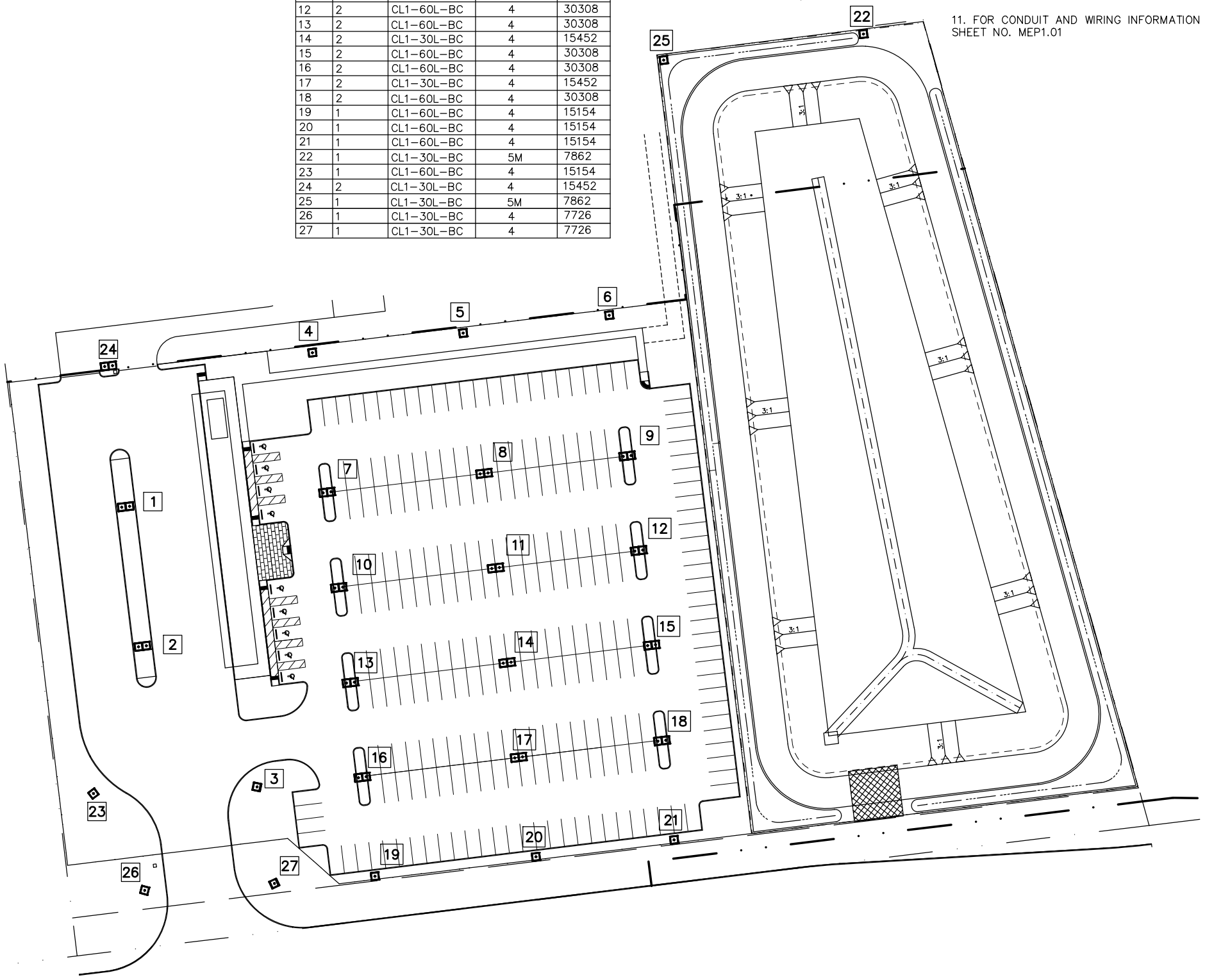
7. CONDUIT RUN 23 IS FOR IRRIGATION CONTROL. SEE IRRIGATION PLANS.

8. A GROUND ROD SHALL BE INSTALLED IN EACH POLE AS SHOWN IN POLE FOUNDATION DETAILS. (SUBSIDARY TO FOUNDATION)

9. ALL LUMINAIRES TO HAVE 4K COLOR.

10. LUMINAIRE FIXTURES COMPLY WITH FULL CUT–OFF REQUIREMENT.

11. FOR CONDUIT AND WIRING INFORMATION SEE SHEET NO. MEP1.01



LEGEND

⑦ CONDUIT RUN AND NUMBER (SEE SCHEDULE FOR SIZE AND TYPE)

7 LUMINAIRE AND NUMBER

N

HORIZ. 0 40 80

SCALE IN FEET

STATE OF TEXAS
BRADLEY G. EAVES
91759
LICENSED
PROFESSIONAL ENGINEER

05/23/2022

Bradley G Eaves PE PTOE PTP

NO.	DATE	REVISION	APPROV.

TRAFFIC ENGINEERS, INC.

INNOVATIVE TRANSPORTATION SOLUTIONS

TEXAS REGISTRATION #: F–3158

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FORT BEND COUNTY

PRECINCT 3

WESTPARK PARK & RIDE ILLUMINATION LAYOUT

SHEET 1 OF 1

SECTION NO.	
DRAWN: TEI	DATE: 05/23/2022
CHECKED: TEI	DATE: 05/23/2022
DESIGN: TEI	DATE: 05/23/2022
CHECKED: TEI	DATE: 05/23/2022
CONTRACT NO.	
	SHEET NO. IL–01

5/23/2022
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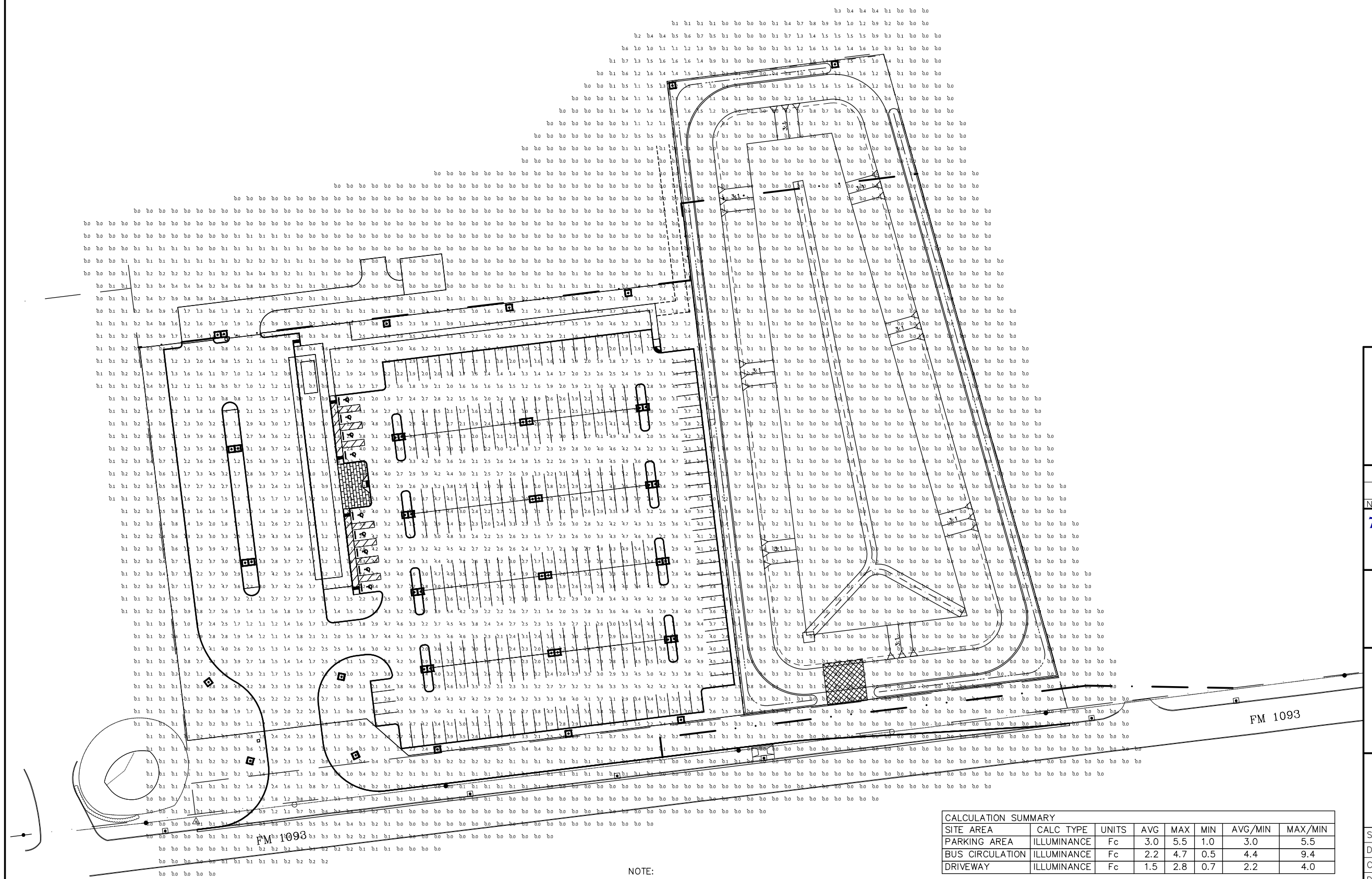
LEGEND

LUMINAIRE

$^{+}3.1$ POINT AND LUMINANCE (IN FOOT CANDLES)



HORIZ. 0 40 80

SCALE IN FEET

CALCULATION SUMMARY							
SITE AREA	CALC TYPE	UNITS	AVG	MAX	MIN	AVG/MIN	MAX/MIN
PARKING AREA	ILLUMINANCE	Fc	3.0	5.5	1.0	3.0	5.5
BUS CIRCULATION	ILLUMINANCE	Fc	2.2	4.7	0.5	4.4	9.4
DRIVEWAY	ILLUMINANCE	Fc	1.5	2.8	0.7	2.2	4.0

NOTE:

PARKING LOT ILLUMINATION CALCULATIONS COVER PARKING LOT LIGHT SYSTEM ONLY. WESTPARK ROAD / FM 1093 ILLUMINATION IS PROVIDED BY EXISTING COBRAHEADS IN MEDIAN, NOT SHOWN.

STATE OF TEXAS
BRADLEY G. EAVES
91759
LICENSED
PROFESSIONAL ENGINEER

05/23/2022

Bradley G Eaves PE RPOE PTP

NO.	DATE	REVISION	APPROV.

TRAFFIC ENGINEERS, INC.

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THE STATE OF TEXAS
FORT BEND COUNTY

FORT BEND COUNTY

PRECINCT 3

WESTPARK PARK & RIDE PHOTOMETRIC LAYOUT

SHEET 1 OF 1

SECTION NO.	
DRAWN: TEI	DATE: 05/23/2022
CHECKED: TEI	DATE: 05/23/2022
DESIGN: TEI	DATE: 05/23/2022
CHECKED: TEI	DATE: 05/23/2022
CONTRACT NO.	
	SHEET NO. IL-02

5/23/2022
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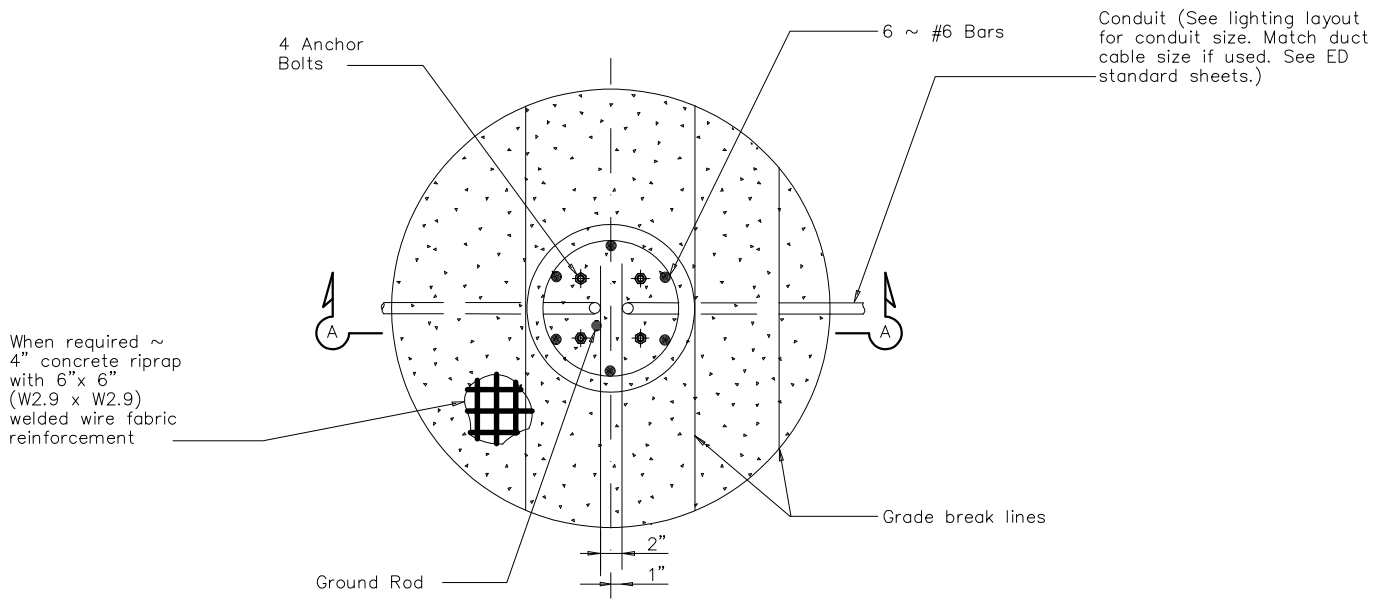
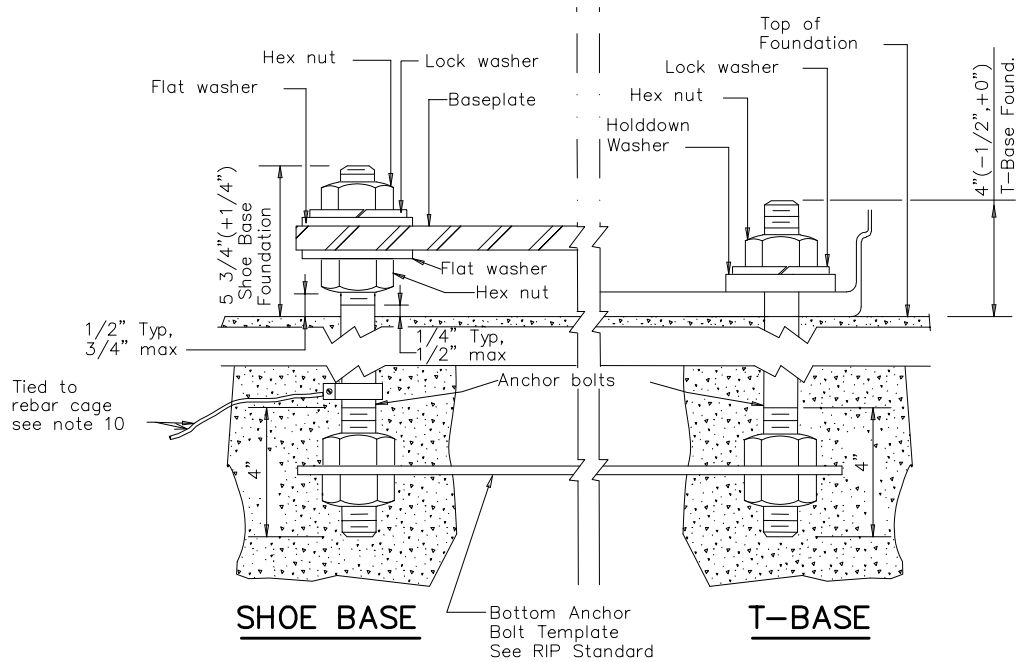
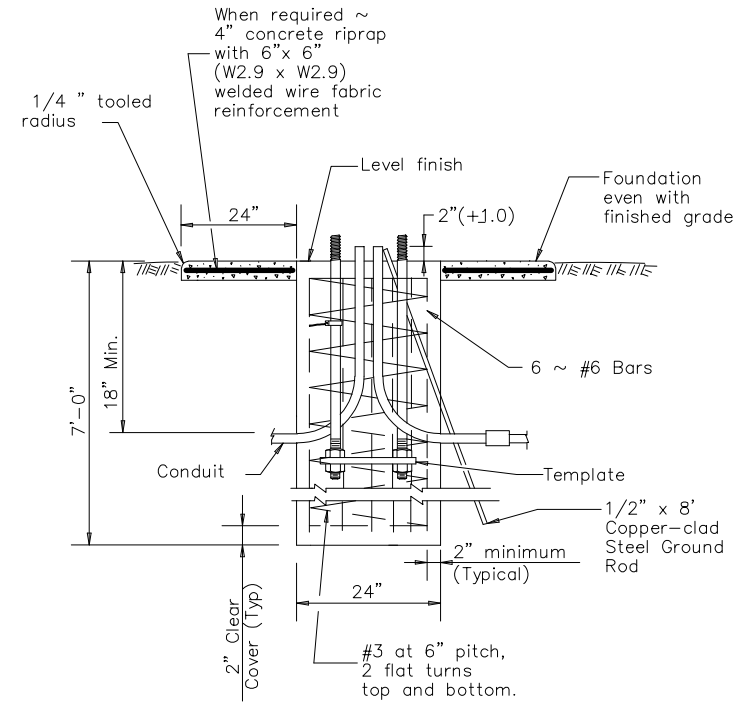


FOUNDATION DETAIL



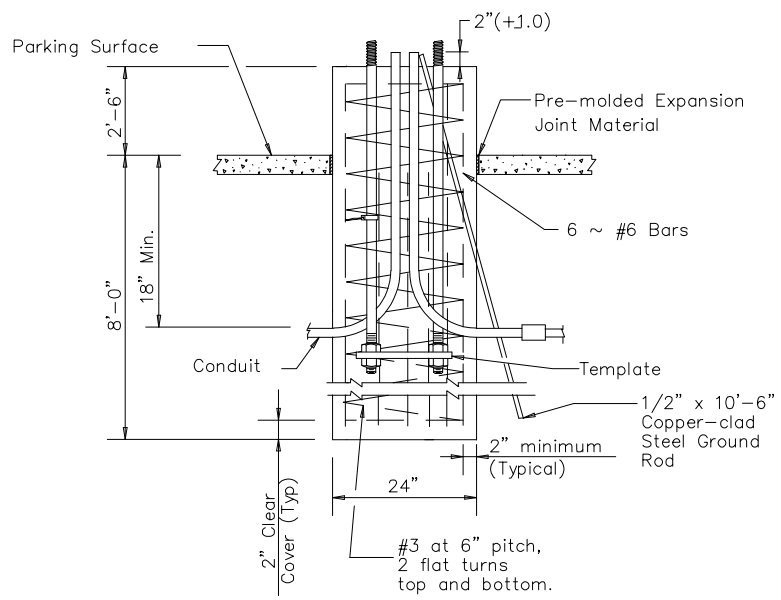
ANCHOR BOLT DETAIL

1. The light fixture foundations have been designed to resist a wind speed of 105 mph per AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals", 2009 edition.
2. Use Class C concrete (f'c = 3600 psi) and Grade 60 reinforcing steel. Foundations will be paid for under Item 416, "Drilled Shaft Foundations," unless otherwise shown on the plans.
3. Erect roadway illumination assembly poles plumb and true. Form and level the top 6" of the foundation so the pole will be plumb. Use leveling nuts to plumb shoe base poles. Do not use shims or leveling nuts under transformer bases. Do not grout between baseplate and the foundation.
4. Ensure Class 2A and 2B fit for anchor bolts and nuts. Tap and chase nuts after galvanizing. Anchor bolt body with rolled threads need not be full size.
5. Place riprap around the foundation when called for elsewhere in the plans. Riprap will be paid for under Item 432.
6. Locate breakaway roadway illumination assemblies as shown in the placement table, unless otherwise dimensioned on the plans. Protect non-breakaway illumination assemblies from vehicular impact (i.e. 2 ft. behind guard rail or mounted on traffic barrier), or located outside the clear zone, except that 2.5 ft. from curb face is minimum desired for light poles on city streets, 45 mph or less, see design guidelines for further information.
7. Use 8 hold down washers on transformer base poles as recommended by the manufacturer and supplied with base.
8. Install a minimum of 2 conduits in each foundation. See lighting layout sheets for locations of foundations with more than 2 conduits. Cap unused conduits in foundations on both ends.
9. Conduit location in foundations is critical for breakaway devices. Place conduits 2 in. apart on centerline as shown.
10. Bond anchor bolt to rebar cage with #6 bare stranded copper conductor. Use listed mechanical connectors rated for embedment in concrete.
11. Use rip rap on T-base foundations that are located on a sloped grades.



SECTION A-A

SHOWING FOUNDATION IN NON-PAVED AREA



SECTION A-A

SHOWING FOUNDATION IN PAVED AREA

STATE OF TEXAS
OSCAR R. AGUIRRE
80138
REGISTERED
PROFESSIONAL ENGINEER
3/18/2021

AGUIRRE & FIELDS
TEXAS REGISTRATION NO. F-739

NO.	DATE	REVISION	APPROV.

TRAFFIC ENGINEERS, INC.
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T.B.P.E.FIRM REGISTRATION NO. F-6825

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE
FOUNDATION DETAILS

SHEET 1 OF 1

SECTION NO.	
DRAWN: AW	DATE: 08/22/18
CHECKED: BGE	DATE: 08/22/18
DESIGN: AW	DATE: 08/22/18
CHECKED: BGE	DATE: 08/22/18
CONTRACT NO.	
	SHEET NO. IL- 03

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GENERAL NOTES FOR ALL ELECTRICAL WORK

1. The location of all conduits, junction boxes, ground boxes, and electrical services is diagrammatic and may be shifted to accommodate field conditions.

2. Provide new and unused materials. Ensure that all materials and installations comply with the applicable articles of the National Electrical Code (NEC), TxDOT standards and specifications, National Electrical Manufacturers Association (NEMA), and are listed by Underwriters Laboratories (UL) or a Nationally Recognized Testing Lab (NRTL). NRTLs such as Canadian Standard Association (CSA), Intertek Testing Services NA Inc., or FM Approvals LLC can be considered equivalent to UL. Where reference is made to NEMA listed devices, International Electrotechnical Commission (IEC) listed devices will not be considered an acceptable equal to a NEMA listed device. Acceptable devices may have both a NEMA and IEC listing. Faulty fabrication or poor workmanship in any material, equipment, or installation is justification for rejection. Replace or reinstall rejected material or equipment at no additional cost to the Department.

3. Miscellaneous nuts, bolts and hardware, except for high strength bolts, may be stainless steel when plans specify galvanized, provided the bolt size is ? in. or less in diameter.

4. Provide the following test equipment as required by the Engineer to confirm compliance with the contract and the NEC: voltmeter, ammeter, megohm meter (1000 volt DC), ground resistance tester, torque wrenches, and torque screwdrivers. Ensure all equipment has been properly calibrated within the last year. Provide calibration certification to the Engineer upon request. Operate test equipment during inspection as requested by the Engineer.

5. Install grounding as shown on the plans and in accordance with the NEC. Ensure all metallic conduits; metal poles; luminaires; and metal enclosures are bonded to the equipment grounding conductor. Provide stranded bare copper or green insulated grounding conductors. Ground rods, connectors, and bonding jumpers are subsidiary to the various bid items.

6. When required by the Engineer, notify the Department in writing of materials from the Material Producers List (MPL) intended for use on each project. Prequalified materials are listed on the MPL on TxDOT's website under "Roadway Illumination and Electrical Supplies." No substitutions will be allowed for materials on this list.

CONDUIT

A. MATERIALS

1. Provide conduit, junction boxes, fittings, and hardware as per TxDOT Departmental Material Specification (DMS) 11030 "Conduit" and Item 618 "Conduit" of TxDOT's "Standard Specifications For Construction And Maintenance Of Highways, Streets, And Bridges," latest edition. Provide conduits listed under Item 618 on the MPL under "Roadway Illumination and Electrical Supplies." Provide conduit types according to the descriptive code or as shown on the plans. Do not substitute other types of conduits for those shown. Provide liquidtight flexible metal conduit (LFMC) when flexible conduit is called for on galvanized steel rigid metallic conduit (RMC) systems. Provide liquidtight flexible nonmetallic conduit (LFNC) when flexible conduit is called for on polyvinyl chloride (PVC) systems.

2. Provide galvanized steel RMC for all exposed conduits, unless otherwise shown on the plans. Properly bond all metal conduits.

3. Unless otherwise shown on the plans, provide junction boxes with a minimum size as shown in the following table, which applies to the greatest number of conductors entering the box through one conduit with no more than four conduits per box. When a mixture of conductor sizes is present, count the conductors as if all are of the larger size. For situations not applicable to the table, size junction boxes in accordance with NEC.

AWG	3 CONDUCTORS	5 CONDUCTORS	7 CONDUCTORS
#1	10" x 10" x 4"	12" x 12" x 4"	16" x 16" x 4"
#2	8" x 8" x 4"	10" x 10" x 4"	12" x 12" x 4"
#4	8" x 8" x 4"	10" x 10" x 4"	10" x 10" x 4"
#6	8" x 8" x 4"	8" x 8" x 4"	10" x 10" x 4"
#8	8" x 8" x 4"	8" x 8" x 4"	8" x 8" x 4"

4. Junction boxes with an internal volume of less than 100 cu. in. and supported by entering raceways must have threaded entries or hubs identified for the intended purpose and supported by connection of two or more rigid metal conduits. Secure conduit within 3 ft. of the enclosure or within 18 in. of the enclosure if all conduit entries are on the same side. Mechanically secure all junction boxes with an internal volume greater than 100 cu. inches.

5. Provide hot dipped galvanized cast iron or sand cast aluminum outlet boxes for junction boxes containing only 10 AWG or 12 AWG conductors. Do not use die cast aluminum boxes. Size outlet boxes according to the NEC.

6. Do not use intermediate metal conduit (IMC) or electrical metallic tubing (EMT) unless specifically required by the plan sheets. When EMT is called for, provide junction boxes made from galvanized steel sheeting, listed and approved for outdoor use, unless otherwise noted on the plans. Size all galvanized steel junction boxes in accordance with the NEC. Provide junction boxes for IMC conduit systems that meet the same requirements for junction boxes used with RMC systems.

7. Provide PVC junction boxes intended for outdoor use on PVC conduit systems, unless otherwise noted on the plans.

8. Provide PVC elbows in PVC conduit systems, unless otherwise shown on the plans. Use only a flat, high tensile strength polyester fiber pull tape for pulling conductors through the PVC conduit system. When galvanized steel RMC elbows are specifically called for in the plans and any portion of the RMC elbow is buried less than 18 in., ground the RMC elbow by means of a grounding bushing on a rigid metal extension. Grounding of the rigid metal elbow is not required if the entire RMC elbow is encased in a minimum of 2 in. of concrete. PVC extensions are allowed on these concrete encased rigid metal elbows. RMC or PVC elbows are subsidiary to various bid items.

9. When required, provide High-Density Polyethylene (HDPE) conduit with factory installed internal conductors according to Item 622 "Duct Cable." At the Contractor's request and with approval by the Engineer, substitute HDPE conduit with no conductors for bored schedule 40 or schedule 80 PVC conduit bid under Item 618. Ensure bored HDPE substituted for PVC is schedule 40 and of the same size PVC called for in the plans. Ensure the substituted HDPE meets the requirements of Item 622, except that the conduit is supplied without factory-installed conductors. Make the transition of the HDPE conduit to PVC (or RMC elbow when required) at the bore pit. Provide conduit of the size and schedule as shown on the plans. Do not extend substituted conduit into ground boxes or foundations. Provide PVC or galvanized steel RMC elbows as called for at all ground boxes and foundations.

10. Use two-hole straps when supporting 2 in. and larger conduits. On electrical service poles, properly sized stainless steel or hot dipped galvanized one-hole standoff straps are allowed on the service riser conduit.

B. CONSTRUCTION METHODS

1. Provide and install expansion joint conduit fittings on all structure-mounted conduits at the structure's expansion joints to allow for movement of the conduit. In addition, provide and install expansion joint fittings on all continuous runs of galvanized steel RMC conduit externally exposed on structures such as bridges at maximum intervals of 150 ft. When requested by the project Engineer, supply manufacturer's specification sheet for expansion joint conduit fittings. Repair or replace expansion joint fittings that do not allow for movement at no additional cost to the Department. Provide the method of determining the amount of expansion to the Engineer upon request. Do not use LFMC or LFNC as a substitute for the required expansion conduit fittings.

2. Space all conduit supports at maximum intervals of 5 ft. Install conduit spacers when attaching metal conduit to surface of concrete structures. See "Conduit Mounting Options" on ED(2). Install conduit support within 3 ft. of all enclosures and conduit terminations.

3. Do not attach conduit supports directly to pre-stressed concrete beams except as shown specifically in the plans or as approved by the Engineer.

4. Unless otherwise shown on the plans, jack or bore conduit placed beneath existing roadways, driveways, sidewalks, or after the base or surfacing operation has begun. Backfill and compact the bore pits below the conduit per Item 476 "Jacking, Boring, or Tunneling Pipe or Box" prior to installing conduit or duct cable to prevent bending of the connections.

5. When placing conduit in the sub-grade of new roadways, backfill all trenches with excavated material unless otherwise noted on the plans. When placing conduit in the sub-base of new roadways, backfill all trenches with cement-stabilized base as per requirements of Items 110 "Excavation", 400 "Excavation and Backfill for Structures", 401 "Flowable Backfill", 402 "Trench Excavation Protection", and 403 "Temporary Special Shoring."

6. Provide and place warning tape approximately 10 in. above all trenched conduit as per Item 618.

7. During construction, temporarily cap or plug open ends of all conduit and raceways immediately after installation to prevent entry of dirt, debris and animals. Temporary caps constructed of durable duct tape are allowed. Tightly fix the tape to the conduit opening. Clean out the conduit and prove it clear in accordance with Item 618 prior to installing any conductors.

8. Ensure conduit entry into the top of any enclosure is waterproof by installing conduit sealing hubs or using boxes with threaded bosses. This includes surface mounted safety switches, meter cans, service enclosures, auxiliary enclosures and junction boxes. Grounding bushings on water tight sealing hubs are not required.

9. Fit the ends of all PVC conduit terminations with bushings or bell end fittings. Provide and install a grounding type bushing on all metal conduit terminations.

10. Install a bonding jumper from each grounding bushing to the nearest ground rod, grounding lug, or equipment grounding conductor. Ensure all bonding jumpers are the same size as the equipment grounding conductor. Bonding of conduit used as a casing under roadways for duct cable is not required, if the duct extends the full length through the casing.

11. At all electrical services, install a 6 AWG solid copper grounding electrode conductor.

12. Place conduits entering ground boxes so that the conduit openings are between 3 in. and 6 in. from the bottom of the box. See the ground box detail on sheet ED(4).

13. Seal ends of all conduits with duct seal, expandable foam, or by other methods approved by the Engineer. Seal conduit immediately after completion of conductor installation and pull tests. Do not use duct tape as a permanent conduit sealant. Do not use silicone caulk as a conduit sealant.

14. File smooth the cut ends of all mounting strut and conduit. Before installing, paint the field cut ends of all mounting strut and RMC (threaded or non-threaded) with zinc rich paint (94% or more zinc content) to alleviate overspray. Use zinc rich paint to touch up galvanized material as allowed under Item 445 "Galvanizing." Do not paint non-galvanized material with a zinc rich paint as an alternative for materials required to be galvanized.

STATE OF TEXAS
BRADLEY G. EAVES
91759
LICENSED
PROFESSIONAL ENGINEER

05/23/2022

Bradley G Eaves PE PTOE PTP

NO.	DATE	REVISION	APPROV.

TRAFFIC ENGINEERS, INC.
INNOVATIVE TRANSPORTATION SOLUTIONS
TEXAS REGISTRATION #: F-3158

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THE STATE OF TEXAS
FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE
ELECTRICAL DETAILS
CONDUIT & NOTES

SHEET 1 OF 1

SECTION NO.	
DRAWN: TEI	DATE: 05/23/2022
CHECKED: TEI	DATE: 05/23/2022
DESIGN: TEI	DATE: 05/23/2022
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ELECTRICAL CONDUCTORS

A. MATERIAL INFORMATION

1. Provide Type XHHW insulated conductors in accordance with Departmental Material Specification (DMS)11040 "Conductors" and Item 620 "Electrical Conductors." Provide conductors as listed on the Material Producers List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies" Item 620. Color code insulated conductors in conformance with the NEC. Identify grounded (neutral) conductors with white insulation. Identify grounding conductors (ground wires) with green insulation or bare conductors. Identify ungrounded (hot) conductors with any color insulation except green, white, or gray. Keep color scheme consistent throughout the wiring system. Identify conductors 6 American Wire Gauge (AWG) and smaller by continuous color jacket. Identify electrical conductors 4 AWG and larger by continuous color jacket or by colored tape. When identifying conductors with colored tape, mark at least 6 in. of the conductor's insulation with half laps of tape.

2. Provide a solid copper 6 AWG grounding electrode conductor to bond the electrical service equipment to the concrete encased grounding electrode or the ground rod at the service location. Connect the grounding electrode conductor to the ground rod with a UL listed connector in accordance with DMS 11040. Connect the grounding electrode conductor to the concrete encased grounding electrode as shown in the plans.

3. Where two or more circuits are present in one conduit or enclosure, permanently identify the conductors of each branch circuit by attaching a non-metallic tag around both circuit conductors at each accessible location. Provide tags with two straps, large enough to indicate circuit number, letter, or other identification as shown in the plans. Print circuit identification on the tag with a permanent marker.

4. Use listed compression or screw type pressure connectors, terminal blocks, or split bolt connectors for splicing as specified in DMS 11040. Use hot melt adhesive tape to fill the gap and seal the ends of heat shrink tubing. Provide UL listed gel-filled insulating splice covers. Splicing materials, insulating materials, breakaway disconnects, splice covers, and fuse holders are subsidiary to various bid items.

B. CONSTRUCTION METHODS

1. Use only a flat, high tensile strength polyester fiber pull tape for pulling conductors through the conduit system. After installing conductors in conduit, perform conductor pull test. If a conductor cannot be freely pulled, make any needed alterations or repairs at no additional cost to the department. Perform insulation resistance tests in accordance with Item 620. Coordinate with the Engineer to witness the tests.

2. Leave 2 ft. minimum, 3 ft. maximum length for each conductor up to the splice in ground boxes. Leave 3 ft. minimum, 4 ft. maximum length of conductor in ground boxes when pulled through with no splice. Leave 1 ft. minimum, 1.5 ft. maximum length of conductor at enclosures, weatherheads and pole bases.

3. Make splices only in junction boxes, ground boxes, pole bases, or electrical enclosures and use only listed compression or screw type pressure connectors, terminal blocks, or split bolt connectors. Insulate splices with heavy wall heat shrink tubing or gel-filled insulating splice covers to provide a watertight splice. Overlap conductor insulation with heat shrink tubing a minimum of 2 in. past both sides of the splice. Where heat shrink tubing may not shrink sufficiently to provide a watertight seal around the individual conductors, prior to heating the tubing, increase the diameter of the conductor insulation using hot melt adhesive tape to provide a watertight seal between the individual conductors and the heat shrink tubing. Ensure the tape extends past the heat shrink tubing. Use hot melt adhesive tape to fill the gap and seal the ends of heat shrink tubing. Heat shrink tubing that appears to have been burned, or overheated, is considered defective and must be replaced.

4. Size and install gel-filled insulating splice covers according to manufacturer's specifications when used in place of heat shrink tubing.

5. Wire nuts with factory applied waterproof sealant may be used for 8 AWG or smaller conductors in above ground junction boxes, but not in pole bases or ground boxes. Install wire nuts in an upright position to prevent the accumulation of water.

6. Support conductors in illumination poles with a J-hook at the top of the pole.

7. When terminating conductors, remove the insulation and jacketing material without nicking the individual strands of the conductor. Conductors with nicked individual conductor strands or removed strands will be considered damaged.

8. Replace conductors and cables that are damaged beyond repair or that fail an insulation resistance test at no additional cost to the department.

9. Do not repair damaged conductors with duct tape, electrical tape, or wire nuts. Use only approved splicing methods.

10. Do not terminate more than one conductor under a single connector, unless the connector is rated for multiple conductors. Do not exceed the pressure connector's listing for maximum number and size of conductors allowed.

11. Install breakaway connectors on conductors bid under Item 620 whenever those conductors pass through a breakaway support device. Follow manufacturer's instructions when terminating conductors to breakaway connectors. Properly torque threaded connections. Proper terminations are critical to the safe operation of breakaway devices. Trim waterproofing boots on breakaway connectors to fit snugly around the conductor to ensure waterproof connection. Only one conductor may enter a single opening in a boot. Provide waterproof boots with the correct number of openings. Leave unused openings factory sealed. Use prequalified breakaway connectors as shown on the MPL.

12. Provide and install a separate stranded equipment grounding conductor (EGC) in all conduits that contain circuit wiring of 50 volts or more. Unless shown elsewhere, size the EGC to be the same size as the largest current carrying conductor contained in the conduit. Ensure all EGCs are bonded together at every accessible location. For traffic signal installations, provide a minimum size 8 AWG EGC. The EGC is paid for under Item 620.

C. TEMPORARY WIRING

1. Install temporary conductors and electrical equipment in accordance with the NEC article "Temporary Installations" and Department standard sheets.

2. Provide a ground fault circuit interrupter (GFCI) for power outlets for portable electrical equipment, power tools, ice machines, ice storage bins and refrigerators located outdoors at grade. GFCI may be any one of the following: molded cord and plug set, receptacle, or circuit breaker type.

3. Use listed wire nuts with factory applied sealant for temporary wiring where approved.

4. Enclose conductor splices within a listed enclosure or ground box, or ensure the splices are more than 10 ft. above grade vertically and more than 5 ft. horizontally from any metal structure. Where installing temporary conductors in areas subject to vehicle traffic or mobile construction equipment, ensure the vertical clearance to ground is at least 18 ft. when measured at the lowest point. Ground messenger wires that support power conductors in conformance with the NEC.

5. Protect and when necessary repair any existing electrical conduits uncovered during the construction process in a timely manner and in conformance with the NEC.

GROUND RODS & GROUNDING ELECTRODES

A. MATERIAL INFORMATION

1. Provide and install a grounding electrode at electrical services. Provide ground rods according to DMS 11040 and the plans. Larger diameter or longer length rods may be called for in some specific locations, see the individual plans sheets. Concrete encased grounding electrodes may be called for in specific locations including electrical service, see individual plan sheets.

B. CONSTRUCTION METHODS

1. Furnish auxiliary ground rods for lightning protection and install in soil, concrete, or both, as called for in the plans. For ground rods installed in concrete, ensure the connection of the conductor to the ground rod is readily accessible for inspection or repairs. For ground rods installed in soil, ensure that the upper end is between 2 to 4 in. below finished grade.

2. Do not place ground rods in the same drilled hole as a timber pole.

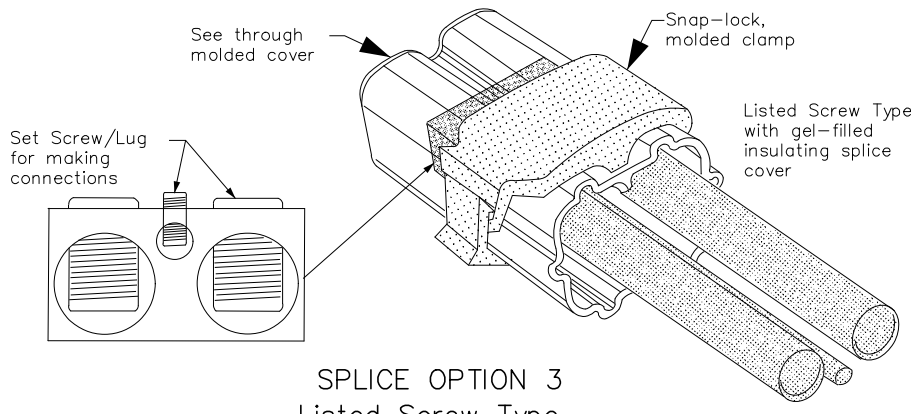
3. Install ground rods so the imprinted part number is at the upper end of the rod.

4. Remove all non-conductive coatings such as concrete splatter from the rod at the clamp location.

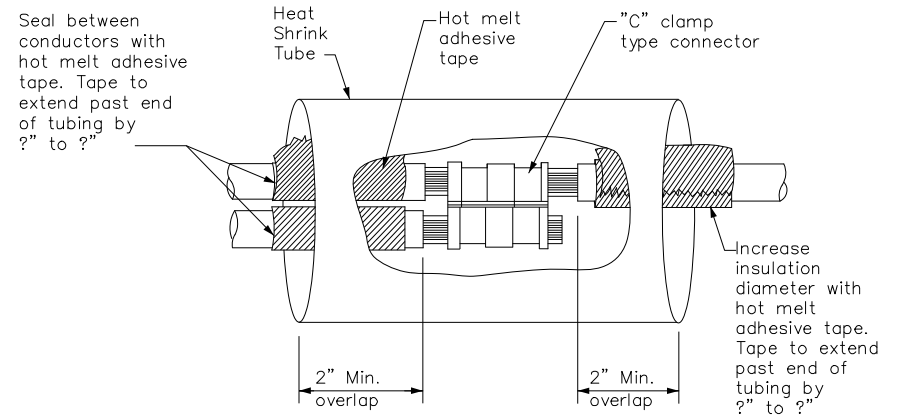
5. Route all conductors as short and straight as possible for connection to lightning protection ground rods. When a bend is required, ensure a minimum radius bend of four inches for these conductors.

6. Unless otherwise called for in the plans, protect grounding electrode conductors with non-metallic conduit. When protecting grounding electrode conductors with metal conduit, provide and install a grounding type bushing and properly sized bonding jumper on each end of the metal conduit.

7. Written authorization is required before installing a ground rod in a horizontal trench for rocky soil or a solid rock bottom.



SPLICE OPTION 3
Listed Screw Type



SPLICE OPTION 1
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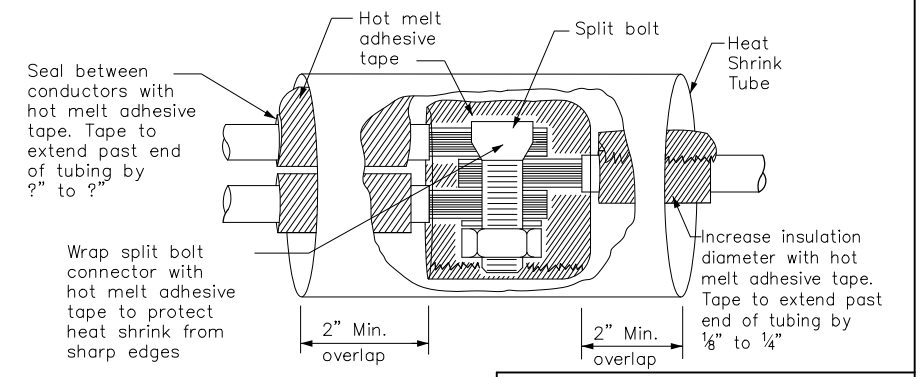

SPLICE OPTION 2
Split Bolt Type

STATE OF TEXAS
BRADLEY G. EAVES
91759
LICENSED
PROFESSIONAL ENGINEER

05/23/2022

Bradley G Eaves PE PTOE PTP

NO.	DATE	REVISION	APPROV.

TRAFFIC ENGINEERS, INC.
INNOVATIVE TRANSPORTATION SOLUTIONS
TEXAS REGISTRATION #: F-3158

IDC
Planners-Engineers-Program Managers
IDC, Inc.
11111 Wilcrest Green, Suite 250
Houston, Texas 77042
(713) 541-5591 Fax: (713) 541-3501
T.B.P.E.FIRM REGISTRATION NO. F-6825

STATE OF TEXAS
FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE
ELECTRICAL DETAILS
CONDUCTORS

SHEET 1 OF 1

SECTION NO.	
DRAWN: TEI	DATE: 05/23/2022
CHECKED: TEI	DATE: 05/23/2022
DESIGN: TEI	DATE: 05/23/2022
CHECKED: TEI	DATE: 05/23/2022
CONTRACT NO.	
	SHEET NO. IL-05

6/22/2022
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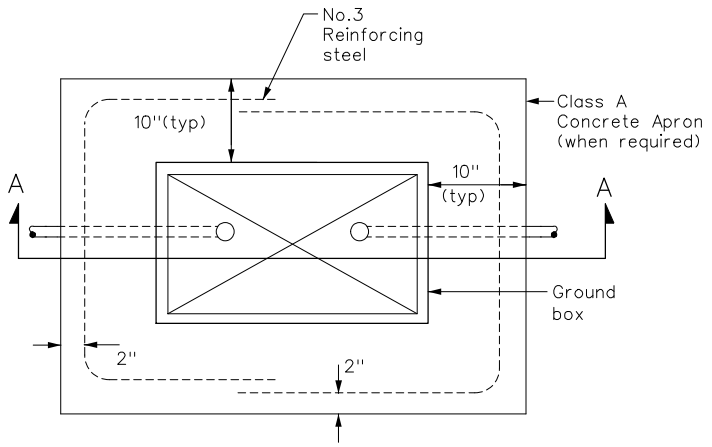
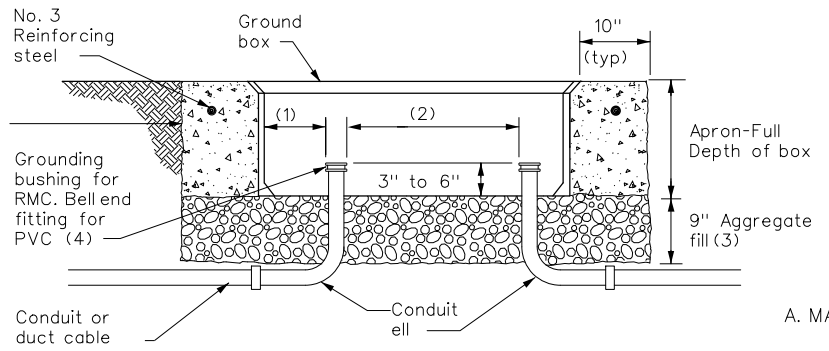


PLAN VIEW



SECTION A - A

APRON FOR GROUND BOX

(1) Uniformly space ends of conduits within the ground box. Position ends of conduits so that ground box walls do not interfere with the installation of grounding bushings or bell end fittings.

(2) Maintain sufficient space between conduits to allow for proper installation of bushing.

(3) Place aggregate under the box, not in the box. Aggregate should not encroach on the interior volume of the box.

(4) Install a grounding bushing on the upper end of all RMC terminating in a ground box. Ground RMC elbows when any part of the elbow is less than 18 in. below the bottom of the ground box. Install a PVC bushing or bell end fitting on the upper end of all PVC conduits terminating in a ground box.

GROUND BOX DIMENSIONS	
TYPE	OUTSIDE DIMENSIONS (INCHES) (Width x Length X Depth)
A	12 X 23 X 11
B	12 X 23 X 22
C	16 X 29 X 11
D	16 X 29 X 22
E	12 X 23 X 17

GROUND BOX COVER DIMENSIONS								
TYPE	DIMENSIONS (INCHES)							
	H	I	J	K	L	M	N	P
A, B & E	23 1/4	23	13 3/4	13 1/2	9 7/8	5 1/8	1 3/8	2
C & D	30 1/2	30 1/4	17 1/2	17 1/4	13 1/4	6 3/4	1 3/8	2

GROUND BOXES

A. MATERIALS

1. Provide polymer concrete ground boxes measuring 16x30x24 in. (WxLxD) or smaller in accordance with TxDOT Material Specification (DMS) 11070 "Ground Boxes" and Item 624 "Ground Boxes."

2. Provide Type A, B, C, D, and E ground boxes as shown in the plans, and as listed on the Material Producers List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies," Item 624.

3. Ensure ground box cover is correctly labeled in accordance with TxDOT DMS 11070.

4. Provide larger ground boxes in accordance with TxDOT Specification Item 624 and as shown in the plans.

B. CONSTRUCTION METHODS

1. Remove all gravel and dirt from conduit. Cap all conduits prior to placing aggregate and setting ground box. Provide Grade 3 or 4 coarse aggregate as shown on Table 2 of Item 302 "Aggregates for Surface Treatments." Ensure aggregate bed is in place and at least 9 inches deep, prior to setting the ground box. Install ground box on top of aggregate.

2. Cast ground box aprons in place. Reinforcing steel may be field bent. Ensure the depth of concrete for the apron extends from finished grade to the top of the aggregate bed under the box. Ground box aprons, including concrete and reinforcing steel, are subsidiary to ground boxes when called for by descriptive code.

3. Keep bolt holes in the box clear of dirt. Bolt covers down when not working in ground boxes.

4. Install all conduits and ells in a neat and workmanlike manner. Uniformly space conduits so grounding bushings and bell end fittings can easily be installed.

5. Temporarily seal all conduits in the ground box until conductors are installed.

6. Permanently seal conduits immediately after the completion of conductor installation and pull tests. Permanently seal the ends of all conduits with duct seal, expandable foam, or other method as approved. Do not use duct tape as a permanent conduit sealant. Do not use silicone caulk as a sealant.

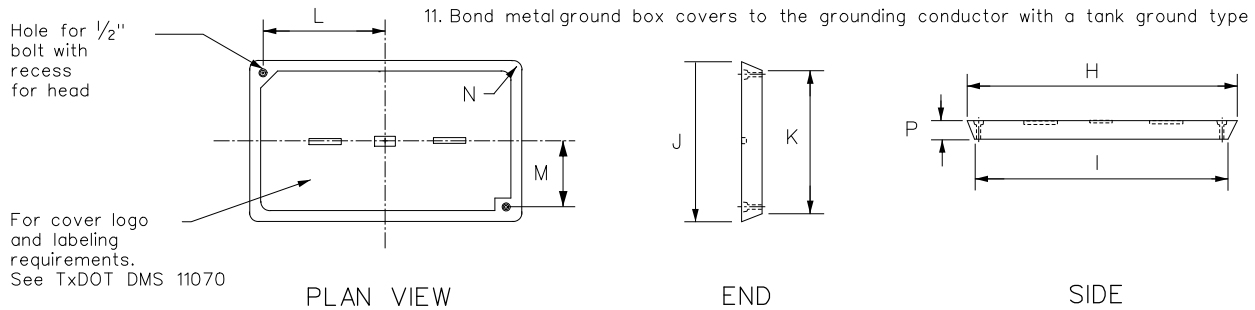
7. When a ground rod is present in a ground box, bond all equipment grounding conductors together and to the ground rod with listed connectors.

8. When a type B or D ground box is stacked to meet volume requirements, it is allowable to cut an appropriately sized hole for conduit entry in the side wall at least 18 inches below grade.

9. If an existing ground box in the contract has a metal cover, bond the cover to the equipment grounding conductor with a 3 ft. long stranded bonding jumper the same size as the grounding conductor. The bonding jumper is subsidiary to various bid items. Verify existing ground boxes with metal covers are shown on the plans, with notes fully describing the work required.

10. If other ground boxes with metal covers are within the project limits but are not part of the contract, the Engineer may direct the Contractor to bond the metal covers, identifying the specific boxes in writing. This work will be paid for separately.

11. Bond metal ground box covers to the grounding conductor with a tank ground type lug.



PLAN VIEW END SIDE

GROUND BOX COVER

STATE OF TEXAS
BRADLEY G. EAVES
91759
LICENSED
PROFESSIONAL ENGINEER

05/23/2022

Bradley G Eaves PE PTOE PTP

NO.	DATE	REVISION	APPROV.

TRAFFIC ENGINEERS, INC.

INNOVATIVE TRANSPORTATION SOLUTIONS

TEXAS REGISTRATION #: F-3158

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STATE OF TEXAS
FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE
GROUND BOX DETAILS

SHEET 1 OF 1

SECTION NO.	
DRAWN: TEI	DATE: 05/23/2022
CHECKED: TEI	DATE: 05/23/2022
DESIGN: TEI	DATE: 05/23/2022
CHECKED: TEI	DATE: 05/23/2022
CONTRACT NO.	
	SHEET NO. IL-06

6/22/2022
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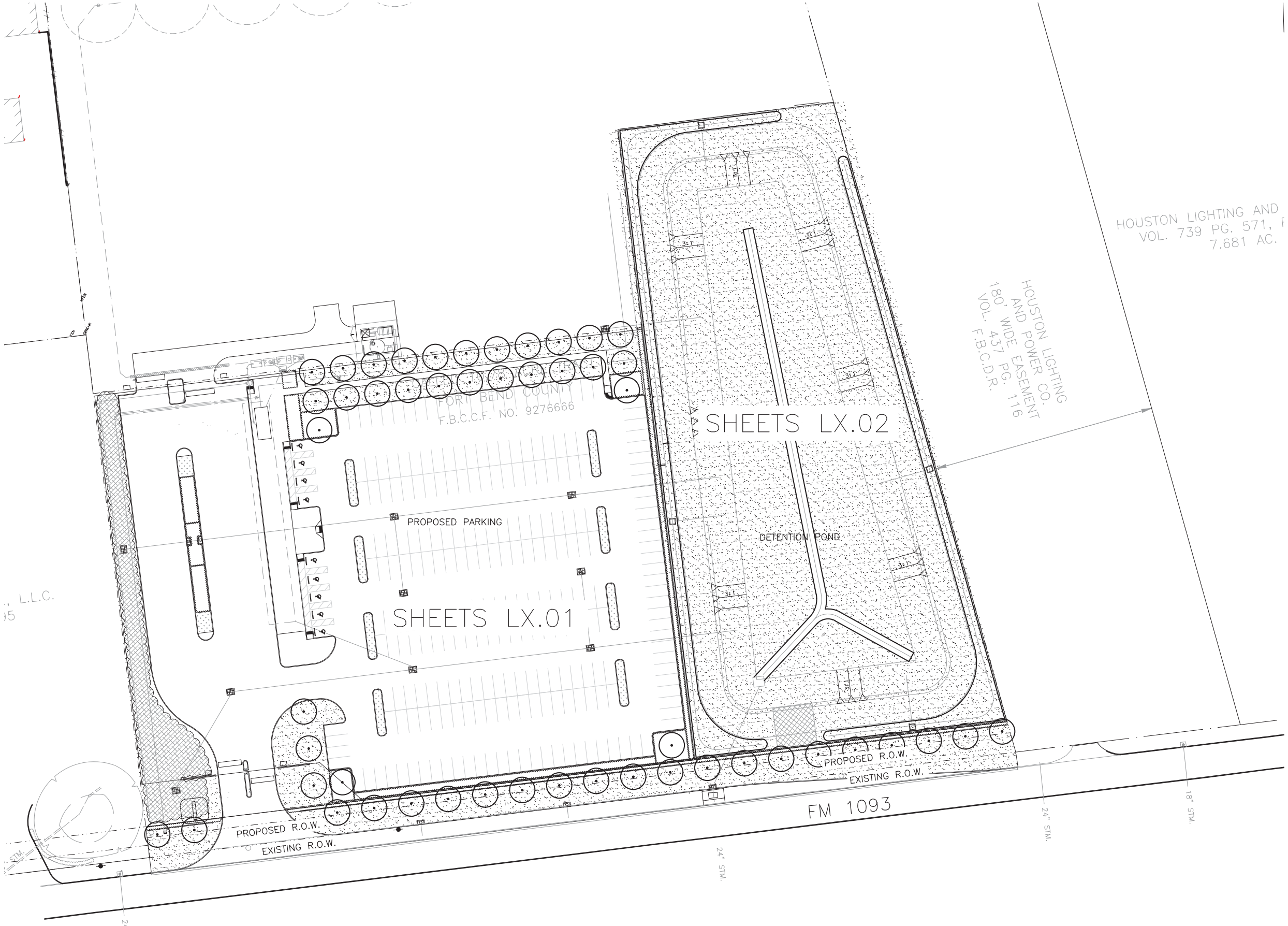

LEGEND	
	TREES AT BUS DRIVE
	FINE GRADE & HYDROMULCH, BERMUDA
	FIND GRADE & SOLID SOD, BERMUDA
	PROPOSED SHRUBS
	PROPOSED TREE

N

HORIZ. 0 40 80

SCALE IN FEET

REGISTERED LANDSCAPE ARCHITECT
ANDREW KONYHA
2852
STATE OF TEXAS
2/08/2022

NO.	DATE	REVISION	APPROV.
	02.08.2022	ISSUE FOR BID AND CONSTRUCTION	

IDCUS
Planners | Engineers | Construction Managers
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15915 Katy Freeway, suite 300
Houston, Texas 77094
(713) 541-5591 Fax: (713) 541-3501
T.B.P.E.FIRM REGISTRATION NO. F-6825

THE STATE OF TEXAS
FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE
OVERALL PLAN

SHEET 1 OF 1

SECTION NO.	
DRAWN:	DATE: 02/08/2022
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO.

LIMIT OF WORK PROPERTY LINE

INSTALL 2" P.V.C BALL VALVE AT MAINLINE POINT OF CONNECTION.

MATCHLINE A/L1.02

CONTROLLER STATION — VALVE SIZE / FLOW IN G.P.M. / APPROX. LINEAR FOOTAGE OF DRIP TUBE

HORIZ. 0 20 40

SCALE IN FEET

COORDINATION WITH EXISTING WATER SOURCE

L.I.C. SHALL COORDINATE WITH THE OWNER'S REPRESENTATIVE AND CONNECT THE PROPOSED 2" IRRIGATION MAINLINE PIPE TO A 2" IRRIGATION STUB-OUT FROM THE PROPOSED WELL / PUMP. PROVIDE A 2" PVC BALL VALVE AT THE POINT OF CONNECTION. CONFIRM 60 PSI PRESSURE AT 40 GPM., ALONG WITH ANY BACKFLOW PREVENTION DEVICE REQUIRED.

BEFORE WORK BEGINS, THE L.I.C. SHALL CONFIRM THE CAPACITY OF THE EXISTING WATER SOURCE TO INCLUDE:

1. AVAILABLE FLOW RATE, MIN. 40 GPM.
2. AVAILABLE STATIC PRESSURE, MIN. 60 PSI AT POINT OF CONNECTION.
3. ALLOWABLE TOTAL WATERING TIME FOR ALL ZONES.
4. PUMP START / STOP COORDINATION. RELAY OR PRESSURE START.

CONTROLLER

LIMIT OF WORK BACK OF CURB

IRRIGATION IN TEXAS IS REGULATED BY THE TEXAS COMMISION ON ENVIRONMENTAL QUALITY (TCEQ) (MC-178) P.O. BOX 13087 T.C.E.Q.'S WEB SITE IS: WWW.TCEQ.STATE.TX.US

STATE OF TEXAS — JAMES POLE — 658 — LICENSED IRRIGATOR

2 / 11/ 2022

NO.	DATE	REVISION	APPROV.

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Planners | Engineers | Construction Managers
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T.B.P.E.FIRM REGISTRATION NO. F-6825

STATE OF TEXAS — FORT BEND COUNTY

FORT BEND COUNTY

PRECINCT 3

WESTPARK PARK & RIDE

IRRIGATION PLAN

SHEET 1 OF 3

SECTION NO.	
DRAWN:	DATE: 02/08/2022
CHECKED:	DATE:
DESIGN:	DATE:
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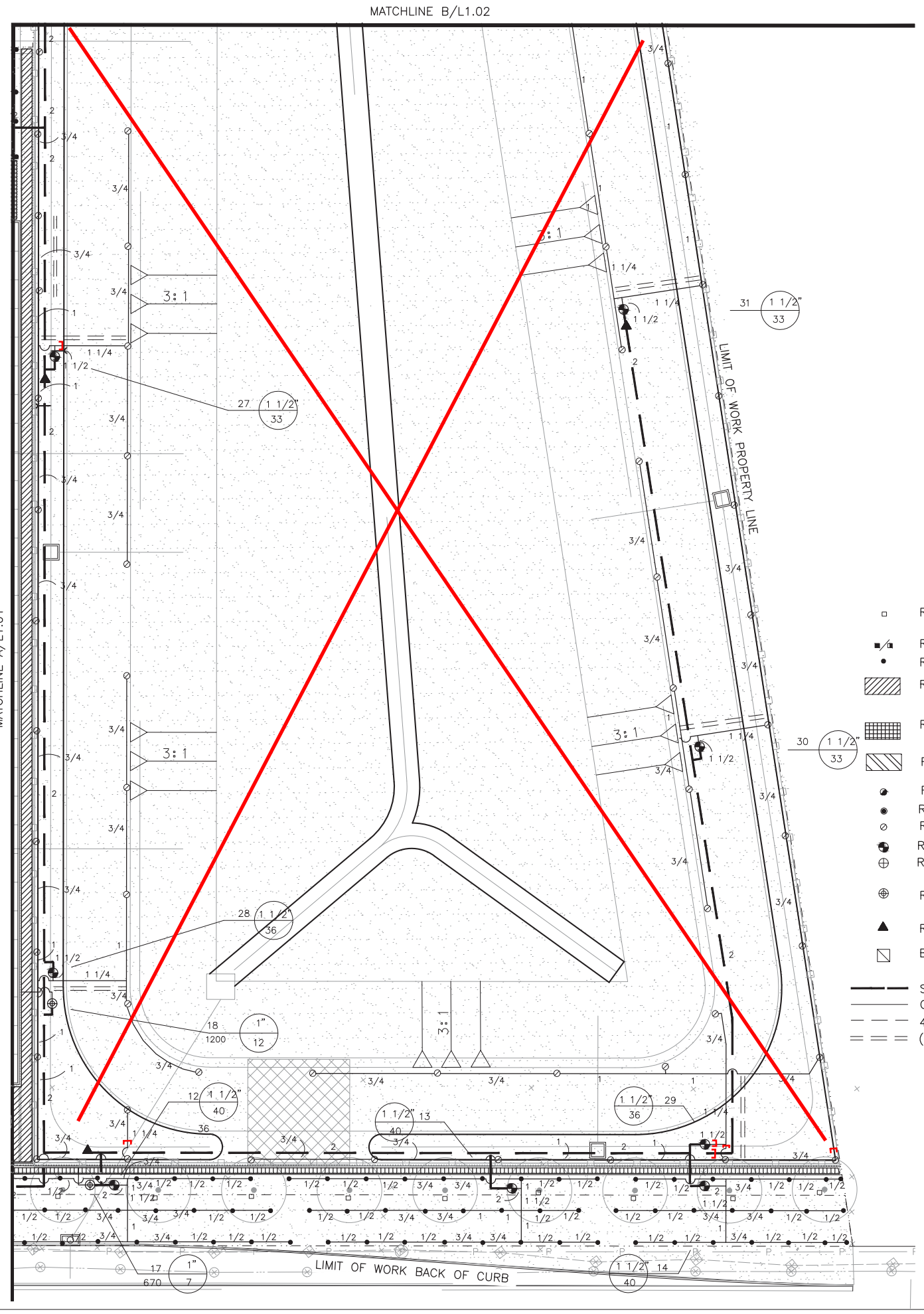
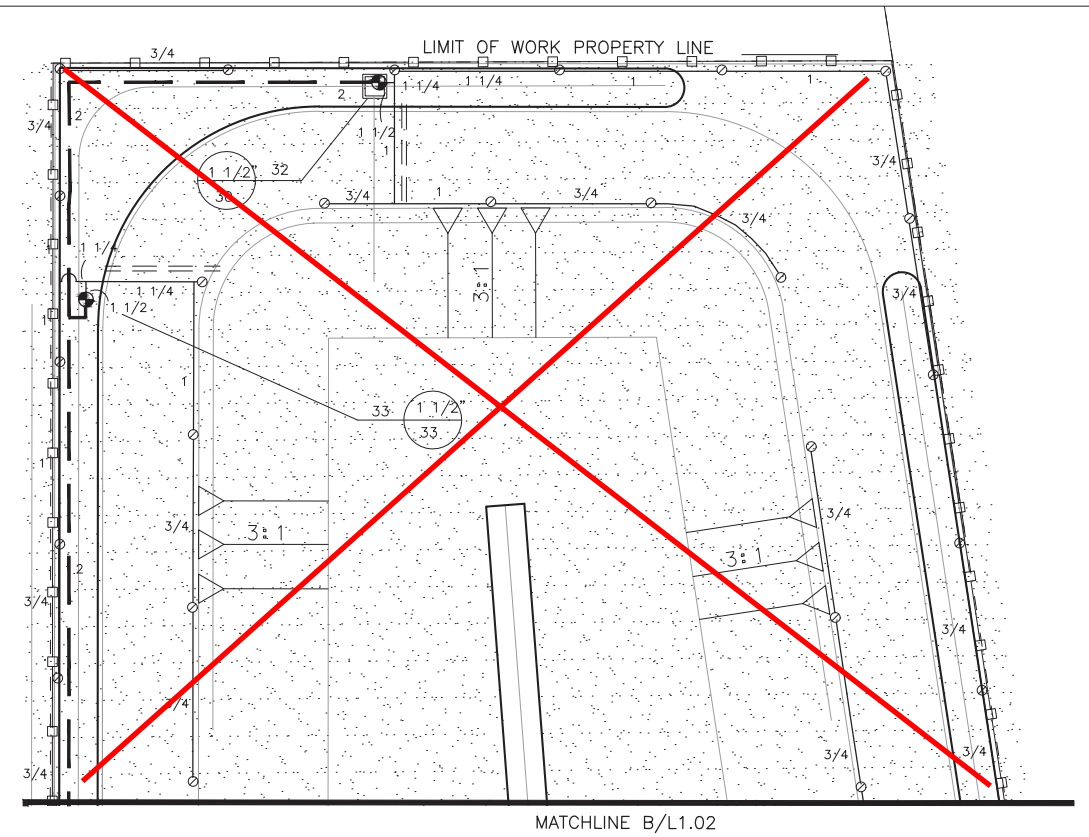
CONTRACT NO.	
	SHEET NO.





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0 20 40
HORIZ.
SCALE IN FEET

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LEGEND

- RAINBIRD #1806 SERIES POP UP SPRAY HEADS WITH RAINBIRD 5Q-B STREAM BUBBLER NOZZLE (TWO PER NEW TREE) SEE INSTALLATION NOTE #13 REGARDING TREE BUBBLER LATERAL PIPE
- RAINBIRD #1804-PRS SERIES POP UP SPRAY HEAD WITH SS / ES SERIES STRIP NOZZLE UNLESS NOTED OTHERWISE.
- RAINBIRD #1804-PRS SERIES POP UP SPRAY HEAD WITH MPR SERIES NOZZLE AS NOTED BELOW
- RAINBIRD XF-SDI SERIES (XFS-06-12) DRIP TUBE IN SHRUB BED INSTALLED AT 2" DEPTH SEE INSTALLATION NOTE #16 REGARDING DRIP TUBE LAYOUT IN SHRUB / PRAIRIE GRASS BEDS.
- RAINBIRD XFS SERIES (XFS-06-12) DRIP TUBE IN NARROW TURF AREAS INSTALLED AT 4" DEPTH SEE INSTALLATION NOTE #18 REGARDING DRIP TUBE LAYOUT IN TURF.
- RAINBIRD XF-SDI SERIES TREE DRIP TUBE RINGS AT REFORESTATION AREAS. COORDINATE WITH PLANTING PLANS AND SEE INSTALLATION NOTE #17 REGARDING DRIP TREE RING PIPE LAYOUT IN REFORESTATION AREAS.
- RAINBIRD 5000-SAM SERIES PLUS 35 PSI, 4" POP UP ROTARY HEAD, PART CIRCLE #3 NOZZLE
- RAINBIRD 5000-SAM SERIES PLUS 35 PSI, 4" POP UP ROTARY HEAD, PART CIRCLE #6 NOZZLE
- RAINBIRD 5000-SAM SERIES PLUS 45 PSI, 4" POP UP ROTARY HEAD, PART CIRCLE #4 NOZZLE
- RAINBIRD PEB SERIES ELECTRIC REMOTE CONTROL VALVE
- RAINBIRD PEB SERIES ELECTRIC REMOTE CONTROL VALVE WITH FOR TREE BUBBLER ZONES SEE INSTALLATION NOTE #13 REGARDING TREE BUBBLER LATERAL PIPE
- RAINBIRD XCZ-100-PRB-COM / 150-PRB-COM SERIES AUTOMATIC DRIP VALVE ASSEMBLY WITH 40 PSI PRESSURE REGULATOR AND COMMERCIAL BASKET FILTER WITH STAINLESS STEEL SCREEN
- RAINBIRD 33-DNP QUICK COUPLING VALVE WITH LOCKING PURPLE COVER AND 3/4" PVC BALL VALVE
- BASELINE 3200 SERIES SERIES AUTOMATIC CONTROLLER WITH WIRELESS RAIN / FREEZE SENSOR. LOCATE SENSOR AS FIELD DIRECTED BY THE LANDSCAPE ARCHITECT
- SCH. 40 PVC MAINLINE PIPE, COLOR PURPLE FOR NON-POTABLE USE.
- CLASS 200 (EXCEPT 1/2 INCH #315) PVC LATERAL PIPE, COLOR PURPLE FOR NON-POTABLE USE.
- 4" SCH. 40 PVC SLEEVE PIPE.
- (2) 4" SCH. 40 PVC SLEEVE PIPES.

L.I.C. SHALL SELECT MPR SERIES SPRAY NOZZLES FOR "HEAD-TO-HEAD" COVERAGE, ADJUSTED FOR NO OVERSPRAY ONTO WALLS AND WALKS. NO OVERSPRAY INTO STREETS IS PERMITTED.

ALL PVC PIPE, HEAD TOPS, AND VALVE BOX LIDS SHALL BE COLOR PURPLE.

Irrigation inside detention pond is no longer required. Contractor to omit the area from bidding.

STATE OF TEXAS
Jason Pike
658
LICENSED IRRIGATOR
2 /11 / 2022

NO.	DATE	REVISION	APPROV.

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T.B.P.E.FIRM REGISTRATION NO. F-6825

STATE OF TEXAS FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

IRRIGATION PLAN

SHEET 2 OF 3

SECTION NO.	
DRAWN:	DATE: 02/08/2022
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DESIGN:	DATE:
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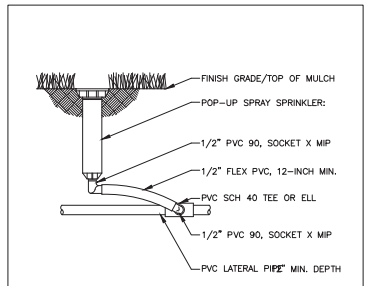
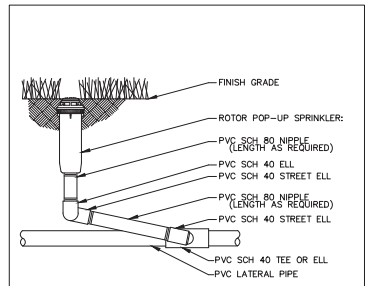
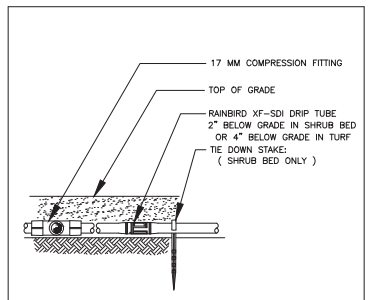
	SHEET NO.



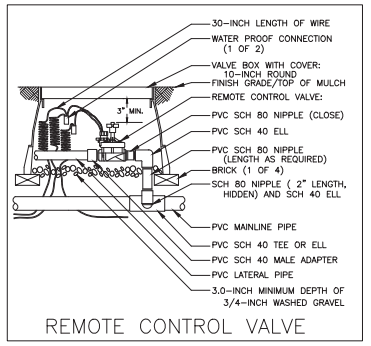
POP-UP SPRAY HEAD



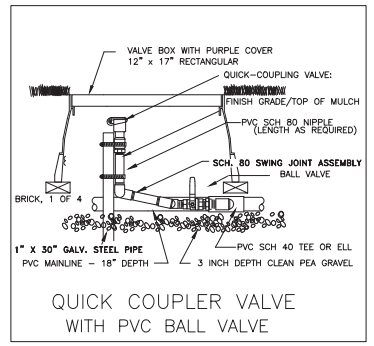
ROTOR POP-UP SPRINKLER



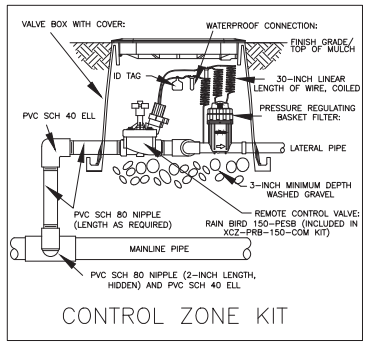
DRIP TUBE



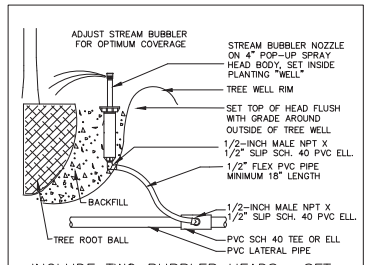
REMOTE CONTROL VALVE



QUICK COUPLER VALVE WITH PVC BALL VALVE

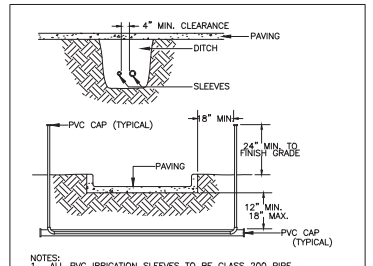


CONTROL ZONE KIT

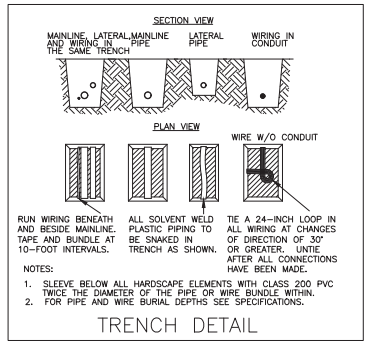


INCLUDE TWO BUBBLER HEADS, SET ON OPPOSITE SIDES OF ROOT BALL

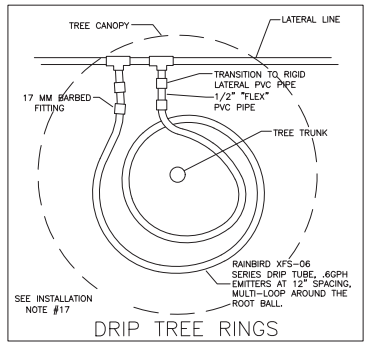
TREE BUBBLER



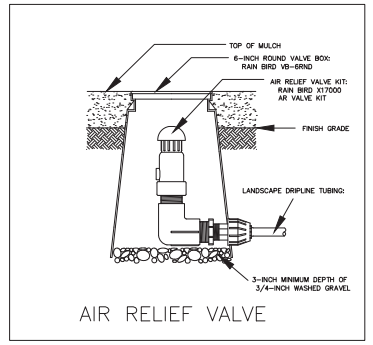
SLEEVING



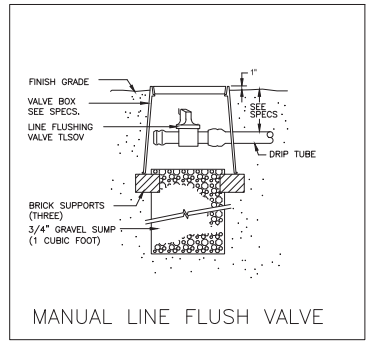
TRENCH DETAIL



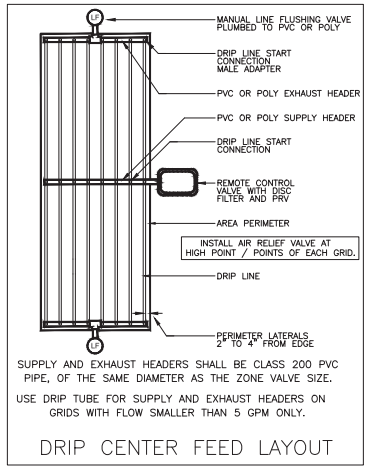
DRIP TREE RINGS



AIR RELIEF VALVE



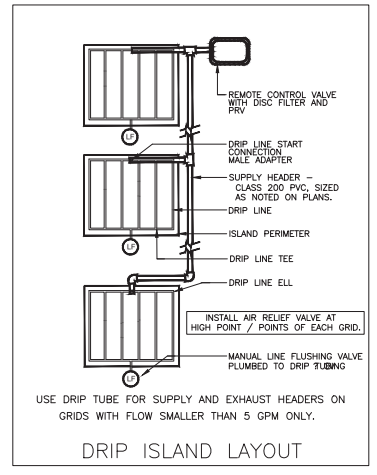
MANUAL LINE FLUSH VALVE



SUPPLY AND EXHAUST HEADERS SHALL BE CLASS 200 PVC PIPE, OF THE SAME DIAMETER AS THE ZONE VALVE SIZE.

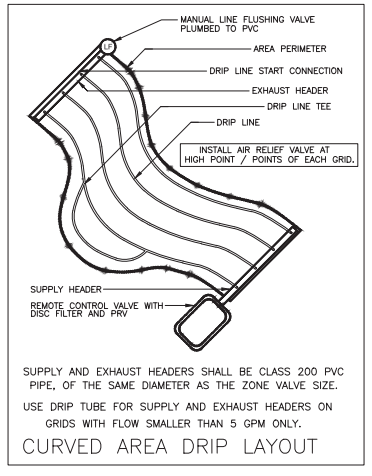
USE DRIP TUBE FOR SUPPLY AND EXHAUST HEADERS ON GRIDS WITH FLOW SMALLER THAN 5 GPM ONLY.

DRIP CENTER FEED LAYOUT



USE DRIP TUBE FOR SUPPLY AND EXHAUST HEADERS ON GRIDS WITH FLOW SMALLER THAN 5 GPM ONLY.

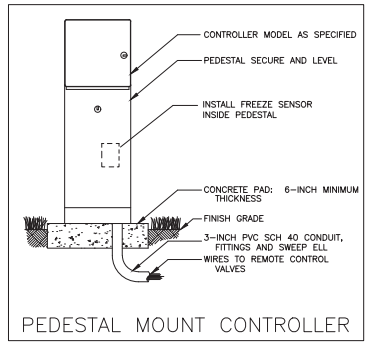
DRIP ISLAND LAYOUT



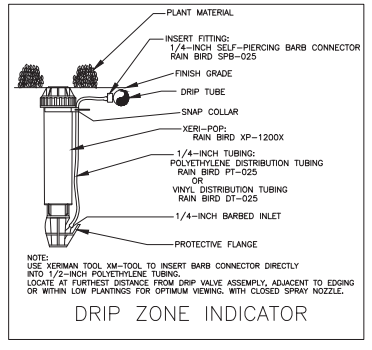
SUPPLY AND EXHAUST HEADERS SHALL BE CLASS 200 PVC PIPE, OF THE SAME DIAMETER AS THE ZONE VALVE SIZE.

USE DRIP TUBE FOR SUPPLY AND EXHAUST HEADERS ON GRIDS WITH FLOW SMALLER THAN 5 GPM ONLY.

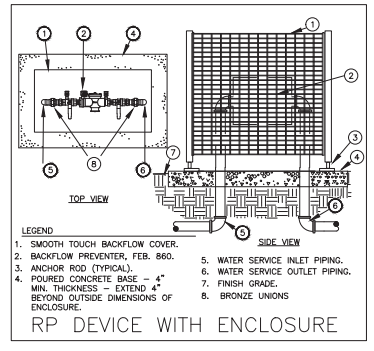
CURVED AREA DRIP LAYOUT



PEDESTAL MOUNT CONTROLLER



DRIP ZONE INDICATOR



RP DEVICE WITH ENCLOSURE

CONTROLLER STATION

VALVE SIZE

FLOW IN G.P.M.

APPROX. LINEAR FOOTAGE OF DRIP TUBE

INSTALLATION NOTES

1. COORDINATE IRRIGATION INSTALLATION WITH PLANTING PLAN AND SITE CONDITIONS TO PROVIDE COMPLETE COVERAGE WITH MINIMUM OVERSPRAY. THE IRRIGATION CONTRACTOR SHALL MAKE MINOR ADJUSTMENTS TO ENSURE PROPER COVERAGE AT NO ADDITIONAL COST TO THE OWNER.
2. 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.
3. 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 THE LANDSCAPE ARCHITECT.
4. LATERAL PIPE SHALL BE INSTALLED AT A MINIMUM DEPTH OF 12 INCHES. 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.
5. UNSLEEVED PIPE MAY BE SHOWN UNDER PAVEMENT FOR GRAPHIC CLARITY ONLY. INSTALL THESE PIPES IN ADJACENT LANDSCAPED AREAS.
6. ELECTRIC POWER IS EXISTING AT EACH CONTROLLER LOCATION. EXISTING CONTROLLERS SHALL BE REMOVED AND RETURNED TO THE OWNER. EXISTING CONTROL WIRES SERVING EXISTING VALVES WHICH ARE TO REMAIN, SHALL BE CONNECTED TO UN-USED STATIONS ON THE NEW CONTROLLERS.
7. 24 VOLT VALVE WIRE SHALL BE A MINIMUM OF #14 GAUGE, U.F. APPROVED FOR DIRECT BURIAL, SINGLE CONDUCTOR "IRRIGATION WIRE". WIRE SPLICES SHALL INCLUDE DBY CONNECTORS AS MANUFACTURED BY 3M COMPANY. ALL FIELD SPLICES SHALL BE LOCATED IN A ROUND VALVE BOX OF SUFFICIENT SIZE TO ALLOW INSPECTION.
8. VALVE BOXES SHALL BE INSTALLED FLUSH WITH GRADE, SUPPORTED BY BRICKS IF NEEDED, WITH 3 INCHES OF CLEAN PEA GRAVEL LOCATED BELOW THE VALVE. USE 12" x 17" RECTANGULAR VALVE BOXES WITH PURPLE LID FOR QUICK COUPLING VALVES, AND 10" ROUND BOXES FOR ELECTRIC VALVES UNLESS NOTED OTHERWISE.
9. USE RIGID SCH. 80 PVC SWING JOINT ASSEMBLIES TO CONNECT ALL ROTARY HEADS AND QUICK COUPLERS.
10. ALL SPRAY HEADS SHALL BE CONNECTED WITH A 12" MINIMUM LENGTH OF 1/2" FLEX PVC. THE FLEX PVC SHALL BE SOLVENT WELDED TO SCHEDULE 40 PVC FITTINGS WITH WELD-ON #795 SOLVENT AND #P-70 PRIMER.
11. PROVIDE ONE QUICK COUPLER KEY WITH SWIVEL HOSE ELL FOR EVERY SIX Q.C. VALVES. (MINIMUM ONE SET).
12. CONTRACTOR IS TO CONTACT APPROPRIATE AUTHORITIES AND LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION.
13. LATERAL PIPE TO TREE STREAM BUBBLER HEADS IS OMITTED FOR GRAPHIC CLARITY. CONNECT TREE BUBBLER HEADS TO VALVES AS SHOWN WITH CLASS 200 PVC PIPE SIZED TO ALLOW A MAXIMUM FLOW VELOCITY OF 5 FEET PER SECOND
14. THE PROPOSED LOCATIONS OF ALL ABOVE- GROUND EQUIPMENT INCLUDING BACKFLOW PREVENTORS, CONTROLLERS AND WEATHER SENSORS SHALL BE STAKED BY THE CONTRACTOR FOR APPROVAL BY THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE BEFORE THESE ITEMS ARE INSTALLED.
15. 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.
16. WHERE SHOWN ON THE PLANS, MASS SHRUB / GROUNDCOVER / PRAIRIE GRASS BEDS SHALL INCLUDE RAINBIRD XF-SDI SERIES DRIP TUBE WITH PRE-INSTALLED .6 GPH DRIP EMITTERS EVERY 12", INSTALLED IN CENTER-FED GRIDS WITH ROWS SPACED 18" APART. INDIVIDUAL DRIP TUBE RUNS SHALL NOT EXCEED 200 L.F. SEE DRIP GRID DETAILS FOR HEADER AND EXHAUST PIPE SIZES. WHERE REQUIRED, PVC LATERAL "TRUNK" LINES SHALL BE INSTALLED 10" DEEP. DRIP TUBE SHALL BE SET 2" BELOW FINISHED SOIL GRADE (NOT INCLUDING MULCH LAYER), SECURED WITH RAINBIRD #LD16STK STAKES EVERY 18". MANUAL FLUSH VALVES (1/2" PVC BALL VALVE) SHALL BE INSTALLED AT THE FARTHEST POINTS FROM THE ZONE VALVE. USE 17 MM BARBED FITTINGS FOR DRIP LINE CONNECTIONS, PRESSURE TESTING ALL CONNECTIONS BEFORE BACKFILLING. XF-SDI DRIP TUBING SHALL BE INSTALLED PERPENDICULAR TO SLOPE FACE. EACH DRIP ZONE SHALL INCLUDE ONE "MAINTENANCE FLAG" WHICH SHALL CONSIST OF A 12" POP-UP SPRAY HEAD AND COMPLETELY CLOSED SPRAY NOZZLE. THE POP-UP HEAD SHALL BE CONNECTED TO THE DRIP ZONE PIPE, SET FLUSH WITH GRADE, AND LOCATED AT THE FARTHERST DISTANCE FROM THE DRIP VALVE ASSEMBLY. INSTALL THE "FLAG" HEAD ADJACENT TO EDGING OR IN LOW PLANTINGS FOR EASE OF VIEWING. INSTALL RAINBIRD AIR/VACUUM RELIEF VALVES (AR VALVE KIT) IN 6" ROUND VALVE BOX, AT THE HIGHEST ELEVATIONS OF EACH DRIP ZONE.
17. WHERE SHOWN ON THE PLANS, REFORESTATION AREAS SHALL INCLUDE RAINBIRD XF-SDI SERIES DRIP TUBE TREE RINGS AT EACH PROPOSED NEW TREE. TREE RINGS SHALL INCLUDE PRE-INSTALLED .6 GPH DRIP EMITTERS EVERY 12", PLACED IN EVEN SPIRALS AROUND THE ROOT BALL OF EACH TREE. EACH 5 GALLON SIZE TREE DRIP RING SHALL INCLUDE APPROX. 10 LINEAR FEET OF DRIP TUBE. EACH 15 GALLON SIZE TREE DRIP RING SHAL INCLUDE APPROX. 25 LINEAR FEET OF DRIP TUBE. EACH 45 GALLON SIZE TREE DRIP RING SHALL SHALL INCLUDE APPROX. 30 LINEAR FEET OF DRIP TUBE. EACH 60 GALLON SIZE TREE DRIP RING SHALL INCLUDE APPROX. 45 LINEAR FEET OF DRIP TUBE. TREE RINGS SHALL BE CONNECTED WITH POLYETHYLENE LATERAL PIPE, SIZED TO ALLOW A MAXIMUM FLOW VELOCITY OF FIVE FEET PER SECOND. POLY. LATERAL PIPE AND TREE DRIP RINGS SHALL BE INSTALLED AT GRADE, STAKED BELOW MULCH LAYER AT 24" INTERVALS.
18. WHERE SHOWN ON THE PLANS, SELECTED TURF AREAS SHALL INCLUDE RAINBIRD XFS SERIES DRIP TUBE WITH PRE-INSTALLED .6 GPH DRIP EMITTERS EVERY 12", INSTALLED IN CENTER-FED GRIDS WITH ROWS SPACED 12" APART. INDIVIDUAL DRIP TUBE RUNS SHALL NOT EXCEED 200 L.F. SEE DRIP GRID DETAILS FOR HEADER AND EXHAUST PIPE SIZES. WHERE REQUIRED, PVC LATERAL "TRUNK" LINES SHALL BE INSTALLED 10" DEEP. DRIP TUBE SHALL BE SET 4" BELOW FINISHED SOIL GRADE. MANUAL FLUSH VALVES (1/2" PVC BALL VALVE) SHALL BE INSTALLED AT THE FARTHEST POINTS FROM THE ZONE VALVE. USE 17 MM BARBED FITTINGS FOR DRIP LINE CONNECTIONS, PRESSURE TESTING ALL CONNECTIONS BEFORE BACKFILLING. XF-SDI DRIP TUBING SHALL BE INSTALLED PERPENDICULAR TO SLOPE FACE. EACH DRIP ZONE SHALL INCLUDE ONE MAINTENANCE FLAG" WHICH SHALL CONSIST OF A 12" POP-UP SPRAY HEAD AND COMPLETELY CLOSED SPRAY NOZZLE. THE POP-UP HEAD SHALL BE CONNECTED TO THE DRIP ZONE PIPE, SET FLUSH WITH GRADE, AND LOCATED AT THE FARTHEST DISTANCE FROM THE DRIP VALVE ASSEMBLY. INSTALL THE "FLAG" HEAD ADJACENT TO EDGING OR IN LOW PLANTINGS FOR EASE OF VIEWING. INSTALL RAINBIRD AIR/VACUUM RELIEF VALVES (AR VALVE KIT) IN 6" ROUND VALVE BOX, AT THE HIGHEST ELEVATIONS OF EACH DRIP ZONE. TEMPORARY SUPPLEMENTAL OVERHEAD WATERING MAY BE REQUIRED FOR SOD ESTABLISHMENT.

IRRIGATION IN TEXAS IS REGULATED BY THE TEXAS COMMISION ON ENVIRONMENTAL QUALITY (TCEQ) (MC-178) P.O. BOX 13087 T.C.E.Q.'S WEB SITE IS: WWW.TCEQ.STATE.TX.US

STATE OF TEXAS — JAMES POLE — 658 — LICENSED IRRIGATOR

2/11/2022

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THE STATE OF TEXAS — FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

IRRIGATION NOTES & DETAILS

SHEET 3 OF 3

SECTION NO.	
DRAWN:	DATE: 02/08/2022
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO.

LIMIT OF WORK PROPERTY LINE

42–RE
111–RE
FINE GRADE & HYDROMULCH, TYP.
70–ML
1–UC
FINE GRADE & SOLID SOD
114–RE
40–ML
114–RE
FINE GRADE & SOLID SOD
CONCRETE EDGE

22–UC
55–ML
1–UC
FINE GRADE & SOLID SOD

LIMIT OF WORK PROPERTY LINE

TREES AT BUS DRIVE, RE: A/L2.02
COORDINATE LAYOUT OF TREES TO ALLOW FOR PROPER FUNCTION OF SLIDE GATE WHEN OPENING.

3–QV
PROPOSED SLIDE GATE RE: CIVIL/ARCH
FINE GRADE & HYDROMULCH, TYP.
1–UC
52–ML
22–RI
2–QV
EASEMENT
PROPOSED ROW
EXISTING ROW
FINE GRADE & HYDROMULCH, TYP.
LIMIT OF WORK BACK OF CURB

FINE GRADE & HYDROMULCH, TYP.
1–UC
75–ML
10–QV
196–RI
230–RI
PROPOSED ROW
EXISTING ROW

MATCHLINE A/L2.02

PLANT KEY	
KEY	COMMON NAME
TREES	
UC	CEDAR ELM
QV	LIVE OAK
SHRUBS	
ML	LINDHEIMER'S MUHLY
RE	FIRECRACKER PLANT
RI	'CLARA' INDIAN HAWTHORN

LEGEND	
	TREES AT BUS DRIVE
	FINE GRADE & HYDROMULCH, BERMUDA
	FIND GRADE & SOLID SOD, BERMUDA
	PROPOSED SHRUBS
	PROPOSED TREE

N

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SCALE IN FEET

REGISTERED LANDSCAPE ARCHITECT ANDREW KONYHA 2858 STATE OF TEXAS
2/08/2022

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THE STATE OF TEXAS FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE
PLANTING PLAN

SHEET 1 OF 3

SECTION NO.	
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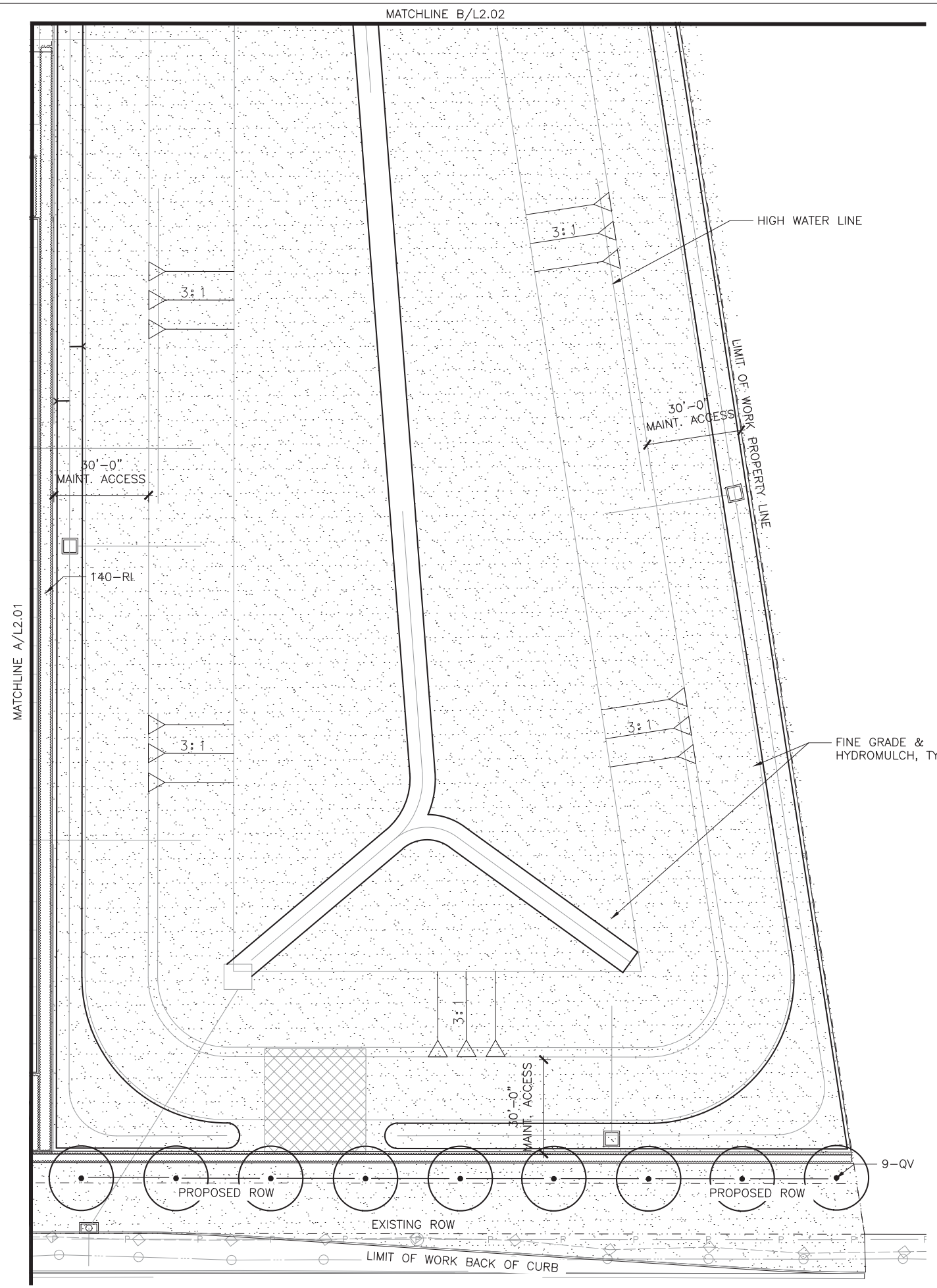
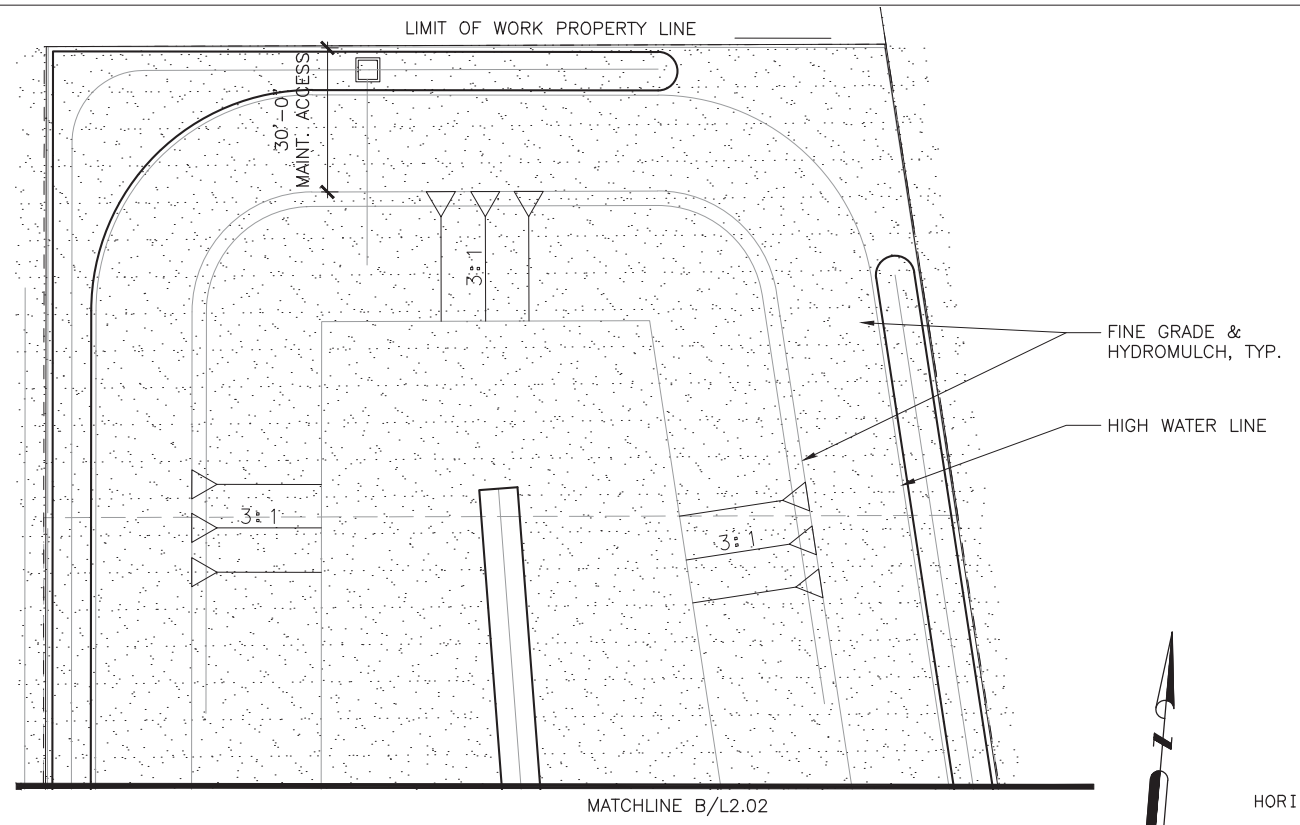




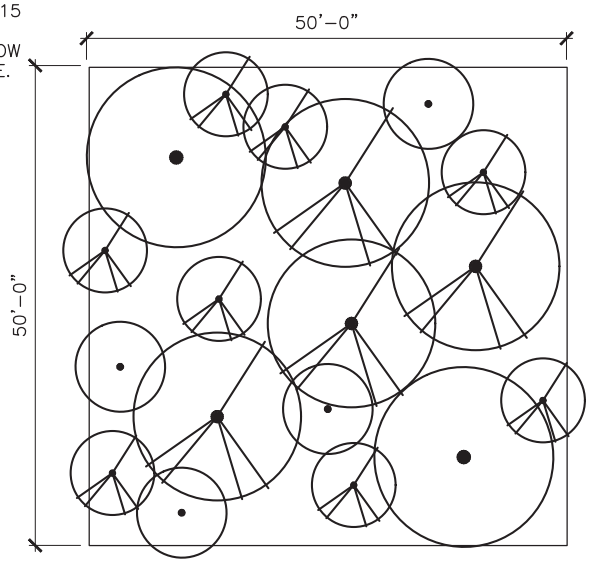
PLANT KEY	
KEY	COMMON NAME
TREES	
UC	CEDAR ELM
QV	LIVE OAK
SHRUBS	
ML	LINDHEIMER'S MUHLY
RE	FIRECRACKER PLANT
RI	'CLARA' INDIAN HAWTHORN

LEGEND	
	TREES AT BUS DRIVE
	FINE GRADE & HYDROMULCH, BERMUDA
	FIND GRADE & SOLID SOD, BERMUDA
	PROPOSED SHRUBS
•	PROPOSED TREE

TREES AT BUS DRIVE NOTES:
1. CONTRACTOR SHALL FIELD VERIFY REFORESTATION PLANTING LOCATIONS PRIOR TO INSTALLATION. TREE PLANTINGS SHALL NOT INTERFERE WITH BUS DRIVE.
2. CONTRACTOR SHALL PIT PLANT ALL REFORESTATION PLANTINGS.
3. CONTRACTOR SHALL STAKE ALL TREES 15 GAL. AND LARGER FOR APPROVAL.
4. COORDINATE LAYOUT OF TREES TO ALLOW FOR PROPER OPERATION OF THE SLIDE GATE. TREES SHALL NOT INTERFERE WITH SLIDE GATE.
5. AREA SHALL HAVE PINE STRAW MULCH.

SITE TREES AT BUS DRIVE (2500 SF)

PLANT LIST:
1 – WATER OAK (65 GAL.)
2 – DRUMMOND RED MAPLE (45 GAL.)
1 – CEDAR ELM (15 GAL.)
1 – WILLOW OAK (15 GAL.)
4 – WATER OAK (15 GAL.)
3 – SHUMARD OAK (5 GAL.)
2 – CEDAR ELM (5 GAL.)
2 – WILLOW OAK (5 GAL.)
2 – DAHOON HOLLY (TREE FORM– 5 GAL.)



A TREES AT BUS DRIVE (2,500 SF) PLAN 1"=1'-0"

REGISTERED LANDSCAPE ARCHITECT ANDREW KONTHA 2855 STATE OF TEXAS
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THE STATE OF TEXAS FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

PLANTING PLAN

SHEET 2 OF 3

SECTION NO.	
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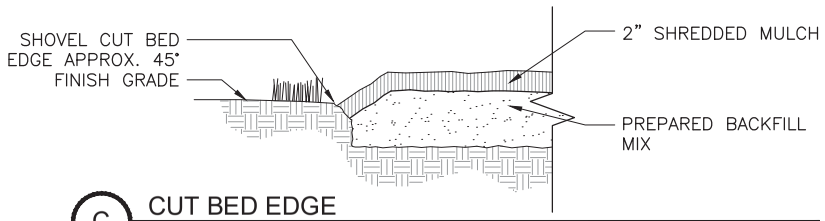
	SHEET NO.

PLANT SCHEDULE					
QTY.	KEY	SCIENTIFIC NAME	COMMON NAME	SIZE	REMARKS
TREES					
26	UC	ULMUS CRASSIFOLIA	CEDAR ELM	65 GAL.	2½"–3" CAL., 11'–13' HT, 5'–6' SPR, STRAIGHT TRUNK, FULL ROUNDED SYMMETRICAL HEAD
24	QV	QUERCUS VIRGINIANA	LIVE OAK	65 GAL.	3"–3 ½" CAL., 12'–14' HT., 5'TO 5'–6"' SPR., UPRIGHT GROWTH, SYMMETRICAL HEAD, EVENLY BRANCHED
SHRUBS & PERENNIALS					
292	ML	MUHLENBERGIA LINDHEIMERI	LINDHEIMER'S MUHLY	3 GAL.	24" HT, 24" SPR, FULL POT, WELL ROOTED, 36" O.C.
381	RE	RUSSELIA EQUISETIFORMIS	FIRECRACKER PLANT	3 GAL	10" HT, 10" SPR, 24" O.C.
588	RI	RAPHIOLEPIS INDICA 'CLARA'	'CLARA' INDIAN HAWTHORN	3 GAL	18" HT., 18" SPR., FULL ROUNDED FORM, 30" O.C.
TREES AT BUS DRIVE					
4		QUERCUS NIGRA	WATER OAK	65 GAL	13'–15' HT., 6'–7' SPR., 3"–3½" CAL., FULL AND EVEN BRANCHING, STRAIGHT TRUNK, BRANCHED AT EYE LEVEL
8		ACER RUBRUM 'DRUMMOND RED'	DRUMMOND RED MAPLE	45 GAL.	11'–13' HT., 5'–6' SPR., 3–3.5" CAL., STRAIGHT TRUNK, FULL BRANCHING
4		ULMUS CRASSIFOLIA	CEDAR ELM	15 GAL	8'–10' HT., 3'–4' SPR., 1½"–2" CAL., FULL AND EVEN BRANCHING, STRAIGHT TRUNK
3		QUERCUS PHELLOS	WILLOW OAK	15 GAL	8'–10' HT., 3'–4' SPR., 1½"–2" CAL., FULL AND EVEN BRANCHING
12		QUERCUS NIGRA	WATER OAK	15 GAL	8'–10' HT., 3'–4' SPR., 1½"–2" CAL., FULL AND EVEN BRANCHING
10		QUERCUS SHUMARDII	SHUMARD OAK	5 GAL	6'–8' HT., 2'–3' SPR., 1"–1½"" CAL., FULL AND EVEN BRANCHING, STRAIGHT TRUNK
8		ULMUS CRASSIFOLIA	CEDAR ELM	5 GAL	6'–8' HT., 2'–3' SPR., 1"–1½"" CAL., FULL AND EVEN BRANCHING, STRAIGHT TRUNK
8		QUERCUS PHELLOS	WILLOW OAK	5 GAL	6'–8' HT., 2'–3' SPR., 1"–1½"" CAL., FULL AND EVEN BRANCHING, STRAIGHT TRUNK
8		ILEX CASSINE	DAHOON HOLLY	5 GAL	24"–30" HT. AND SPR., FULL POT, WELL ROOTED
SOD & HYDROMULCH					
138,752 SF		FINE GRADE & HYDROMULCH			
2,280 SF		FINE GRADE & SOLID SOD			

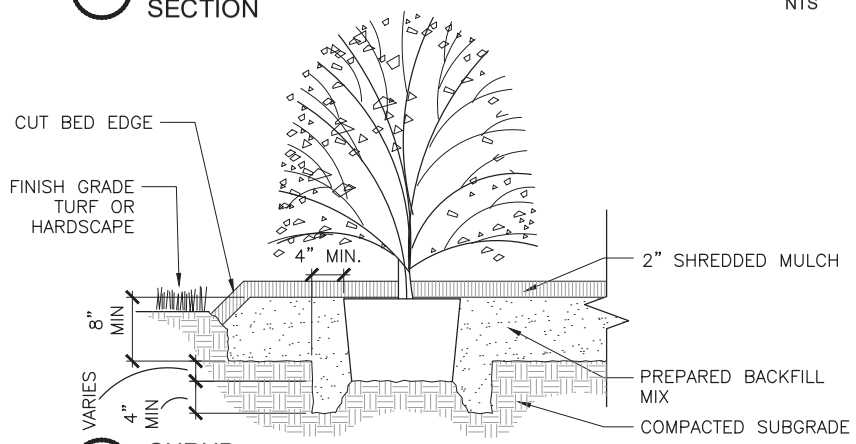
MITIGATION CHART										
EXISTING TREES TO BE MITIGATED		3"–10"				10"–15"				
SCIENTIFIC NAME	COMMON NAME	A	B	C	F	A	B	C	F	TOTALS
FRAXINUS PENNSYLVANICA	GREEN ASH		1	2	1			1		5
ILEX VOMITORIA	YAUPON HOLLY	3	12	7	6					28
ULMUS AMERICANA	AMERICAN ELM		2							2
CELTIS OCCIDENTALIS	HACKBERRY	1								1
CRATAEGUS OPACA	MAYHAW			1						1
TOTALS PER AREA		4	15	10	7			1		37
TOTAL MITIGATION X3										111
TOTAL TREES PLANTED										111

PLANTING NOTES

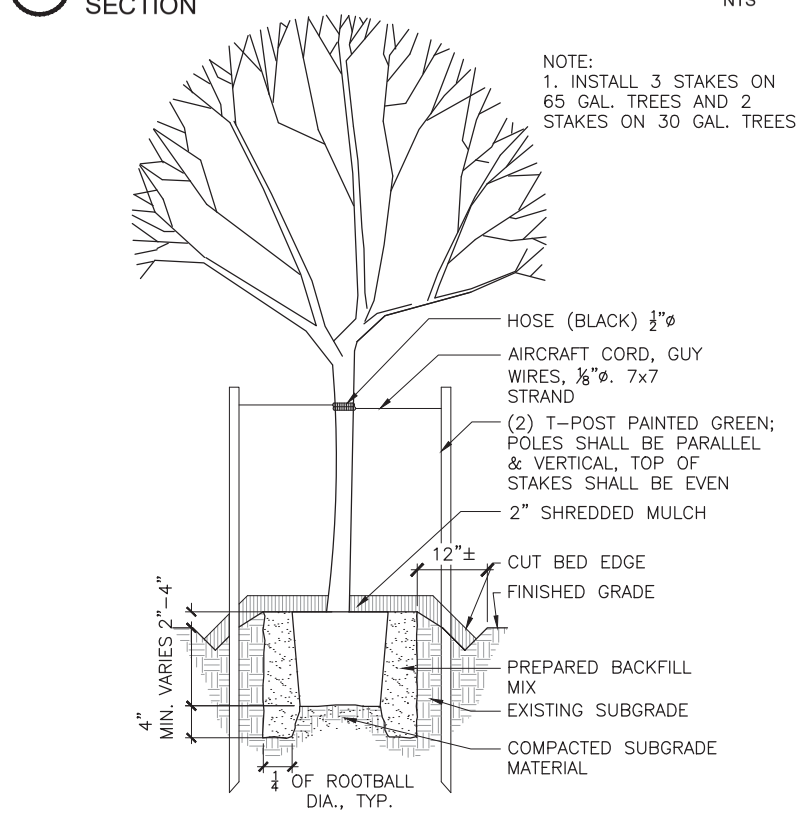
1. LOCATE ALL UTILITIES ON SITE PRIOR TO COMMENCING WORK. ANY DAMAGE DONE TO EXISTING OR NEW UTILITIES SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO OWNER.
2. STAKE OUT ALL TREE LOCATIONS AND PLANTING BED EDGE CONFIGURATIONS FOR APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. BED EDGES SHALL HAVE SMOOTH, EVEN LINES AS SHOWN ON THE DRAWINGS. LOCATE AS DIMENSIONED ON PLANS.
3. COORDINATE WORK WITH THE WORK OF OTHER TRADES ON THE SITE.
4. ENTIRE SITE SHALL BE GRADED TO FINISH GRADE PRIOR TO SCHEDULING PLANTING INSTALLATION.
5. COORDINATE WITH APPLICABLE UTILITY COMPANIES AS REQUIRED DURING THE COURSE OF THE INSTALLATION.
6. APPLY FOR AND PROCURE REQUIRED PERMITS PRIOR TO COMMENCING WORK.
7. PLANTS SHALL BE SPECIMEN QUALITY, FULL POT AND HEAD, SYMMETRICAL FOLIAGE AND BRANCHING STRUCTURE. SHRUBS SHALL BE FULL TO GROUND.
8. PROVIDE SAMPLES OF EACH SHRUB AND GROUNDCOVER SPECIES FOR APPROVAL BY THE OWNER PRIOR TO DELIVERY TO THE SITE. PROVIDE PHOTOGRAPHS WITH SCALE FIGURES FOR TREES OR SAMPLE TREES FROM LOCAL NURSERY (60 MILE RAD. FROM HOUSTON) FOR APPROVAL BY THE OWNER PRIOR TO DELIVERY TO THE SITE.
9. PLANT MATERIAL OF THE SAME SPECIES SHALL BE MATCHING IN CHARACTER AND SIZE, OBTAINED FROM THE SAME SOURCE.
10. ALTERNATE SPACING OF PLANT MATERIAL WHEN PLANTING IN LARGE MASSES, UNLESS OTHERWISE NOTED.
11. REFER CLOSELY TO SPECIFICATIONS FOR PLANTING WORK REQUIREMENTS.
12. WHERE AREAS ARE MARKED AS HYDROMULCH, IT SHALL MEAN BERMUDA GRASS HYDROMULCH UNLESS OTHERWISE NOTED. HYDROMULCH AS NOTED TO EDGE OF TREE BALL OR CUT BED EDGE, TYPICAL. WHERE AREAS ARE MARKED SOLID SOD, IT SHALL MEAN BERMUDA SOD.
13. HAND GRADE ENTIRE SITE PRIOR TO SEEDING.



C CUT BED EDGE SECTION — NTS



B SHRUB SECTION — NTS



A TREE STAKING/PLANTING SECTION — NTS

REGISTERED LANDSCAPE ARCHITECT ANDREW KONTHA 2858 STATE OF TEXAS
2/08/2022

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THE STATE OF TEXAS COUNTY OF FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

PLANTING DETAILS

SHEET 3 OF 3

SECTION NO.	
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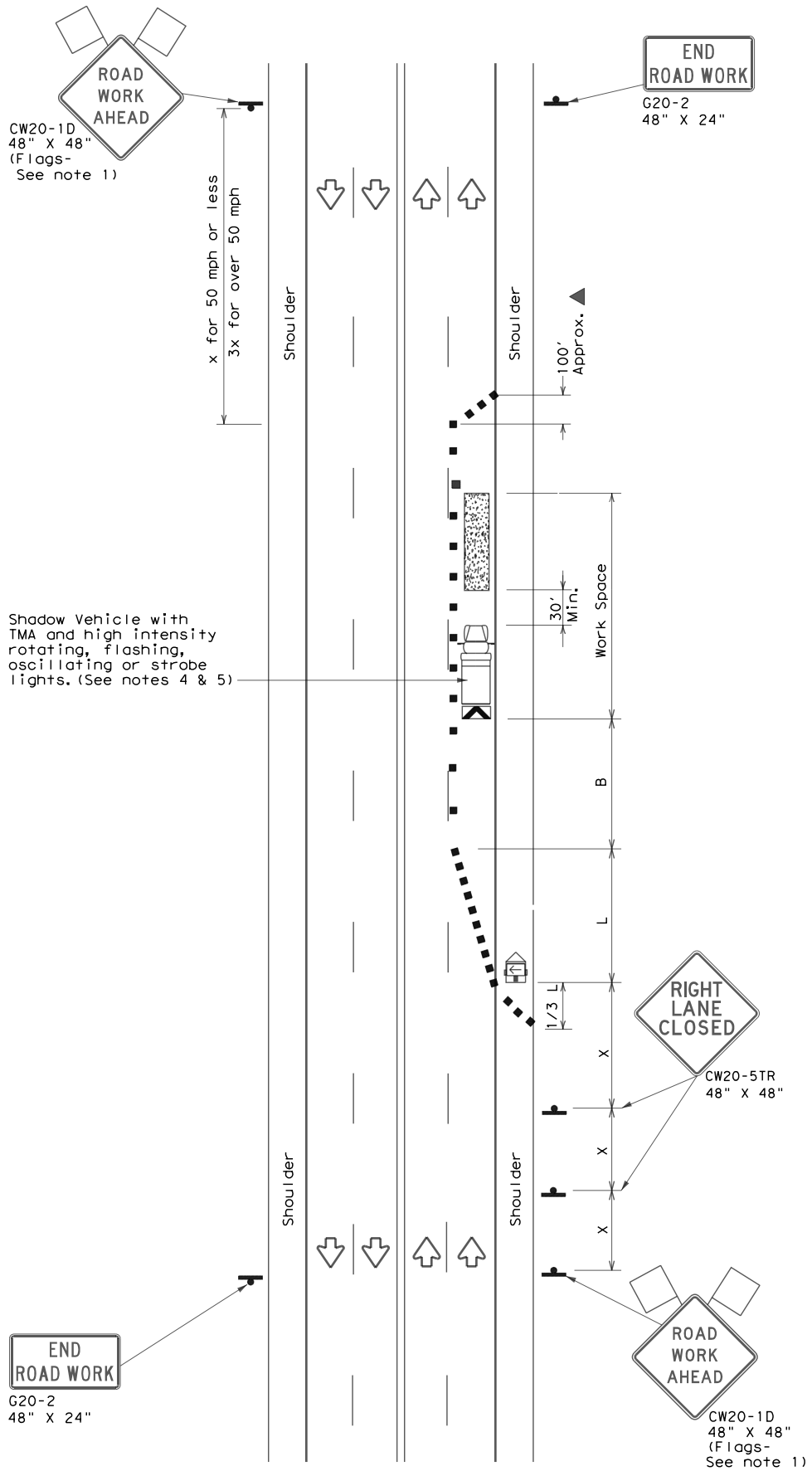
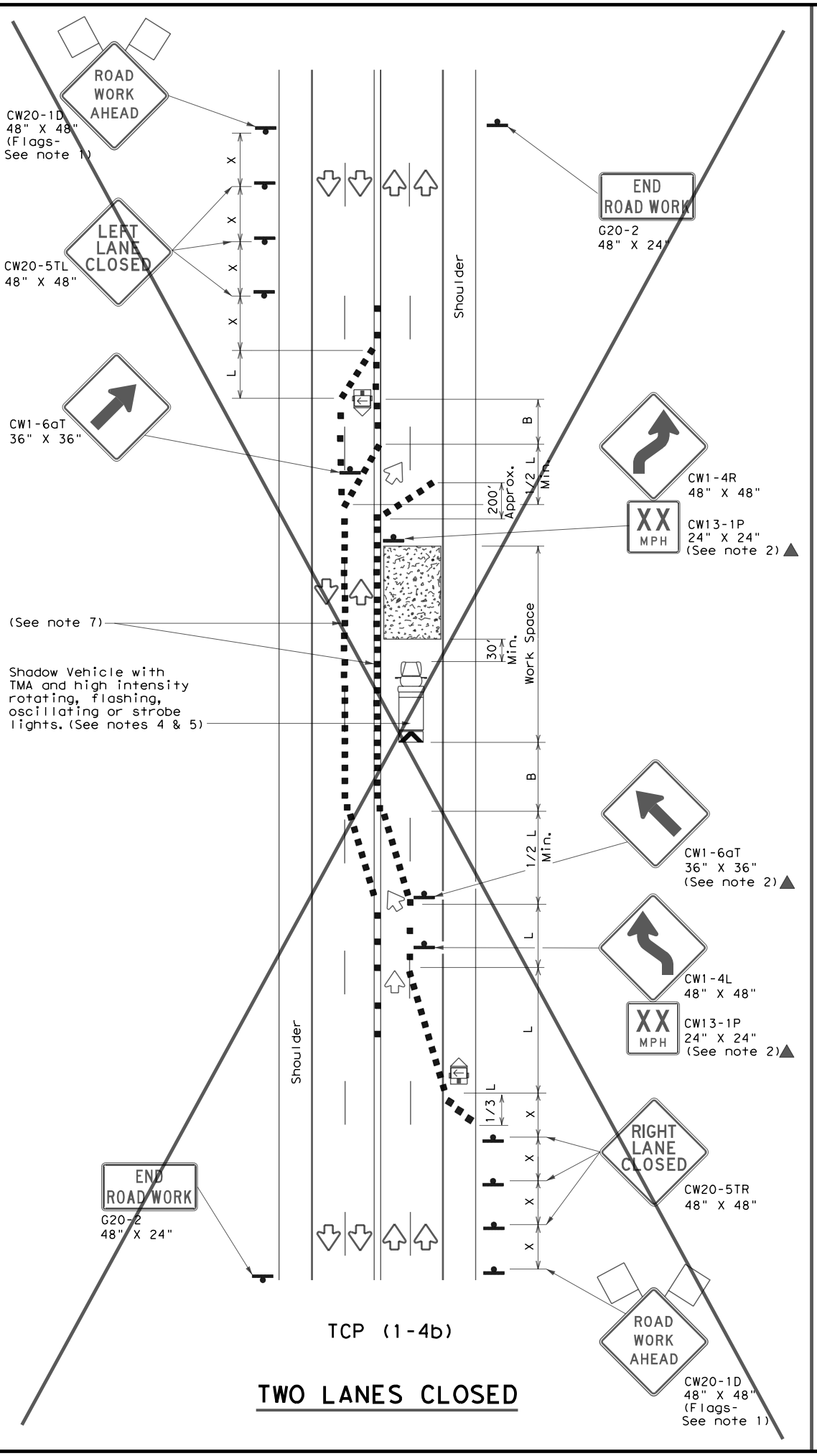
DATE:
FILE:



TCP (1-4a)

ONE LANE CLOSED



TCP (1-4b)

TWO LANES CLOSED

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices: On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L=WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* Conventional Roads Only
** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓		

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. The CW20-1D "ROAD WORK AHEAD" sign may be repeated if the visibility of the work zone is less than 1500 feet.
4. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.

TCP (1-4a)

6. If this TCP is used for a left lane closure , CW20-5TL "LEFT LANE CLOSED" signs shall be used and channelizing devices shall be placed on the centerline where needed to protect the work space from opposing traffic with the arrow panel placed in the closed lane near the end of the merging taper.

TCP (1-4b)

7. Where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20' or 15' if posted speeds are 35 mph or slower, and for tangent sections, at 1/2S where S is the speed in mph. This tighter device spacing is intended for the areas of conflicting markings, not the entire work zone.

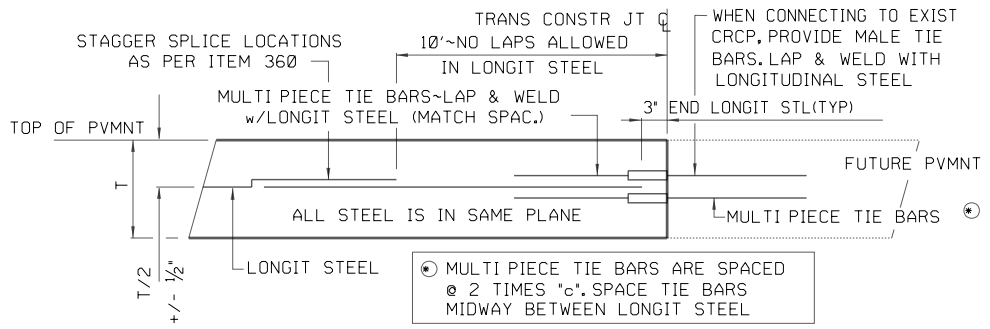
Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN LANE CLOSURES ON MULTILANE CONVENTIONAL ROADS

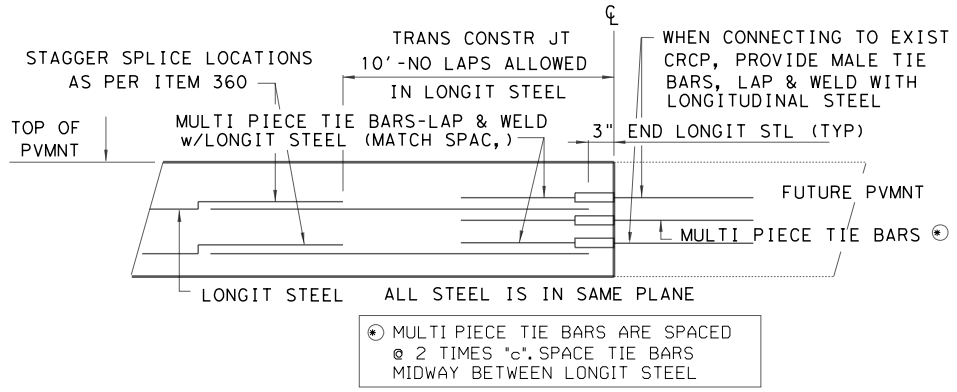
TCP(1-4)-18

FILE: tcp1-4-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS				
2-94 4-98	DIST	COUNTY		SHEET NO.
8-95 2-12				92
1-97 2-18				



SECTION - SINGLE STEEL MAT

AT END OF PROJECT OR TEMPORARY END OF PAVEMENT



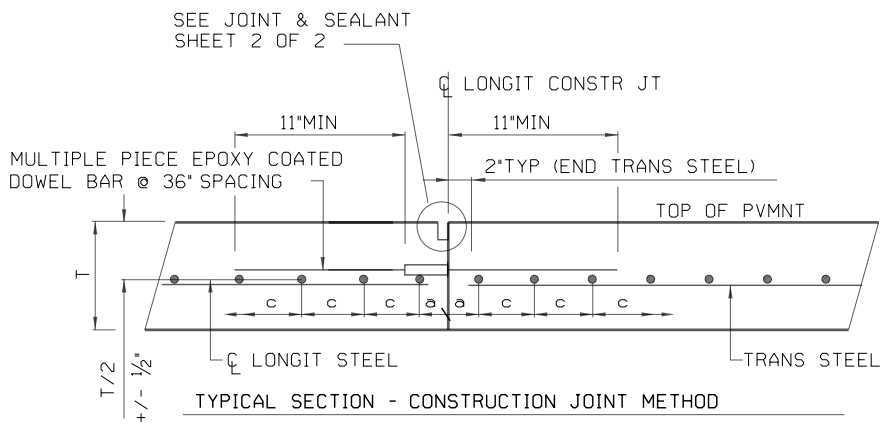
SECTION - DOUBLE STEEL MAT

AT END OF PROJECT OR TEMPORARY END OF PAVEMENT

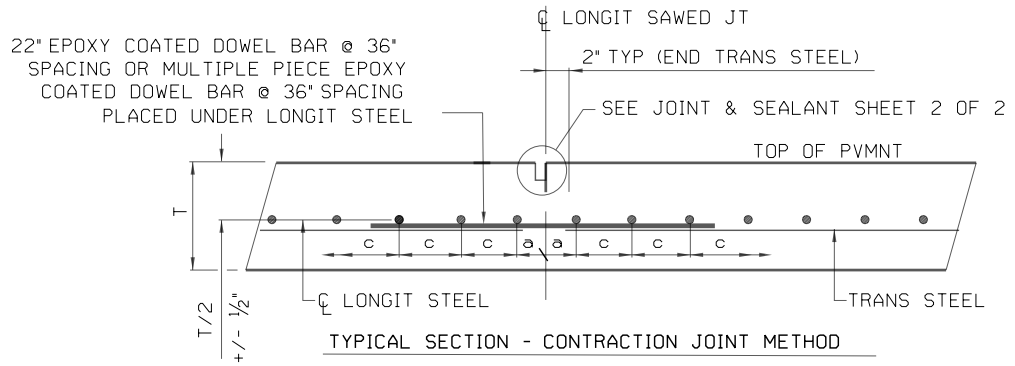
LONGITUDINAL DOWEL JOINT DETAILS

LOCATE WHERE SHOWN IN THE PLANS OR AS APPROVED. CONTRACTOR MAY USE EITHER METHOD

SINGLE STEEL MAT

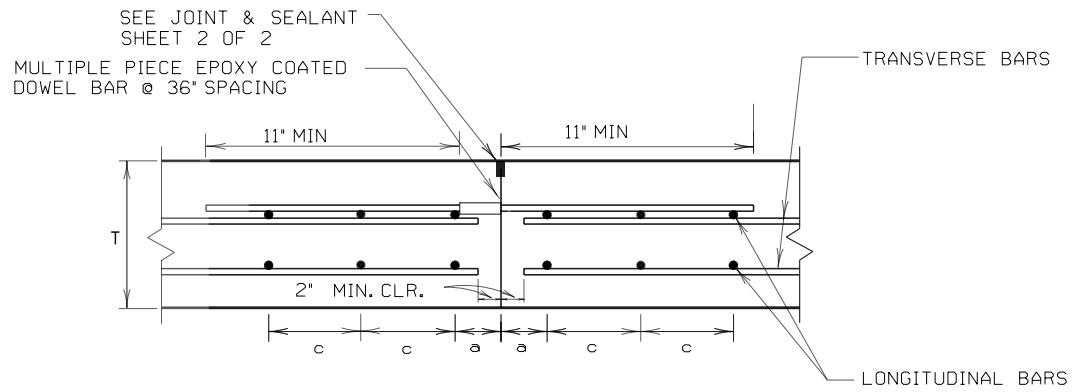


TYPICAL SECTION - CONSTRUCTION JOINT METHOD

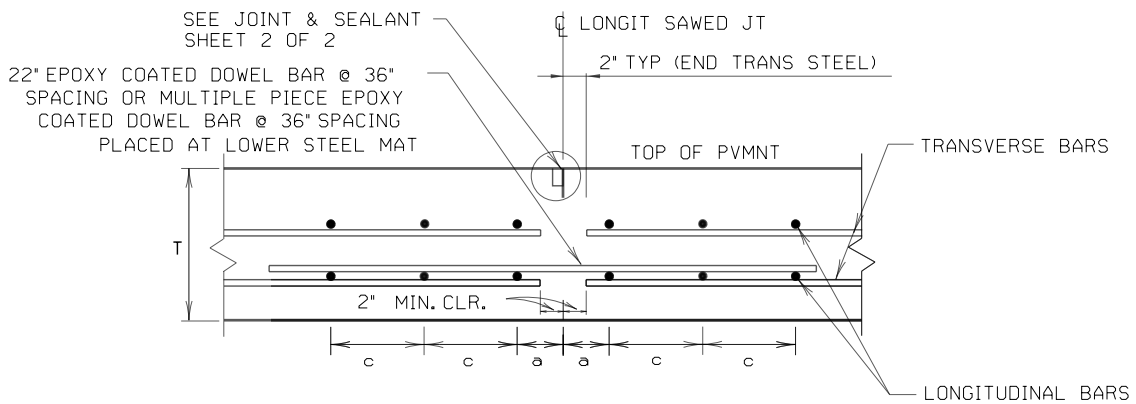


TYPICAL SECTION - CONTRACTION JOINT METHOD

DOUBLE STEEL MAT



TYPICAL SECTION - CONSTRUCTION JOINT METHOD



TYPICAL SECTION - CONTRACTION JOINT METHOD

GENERAL NOTES

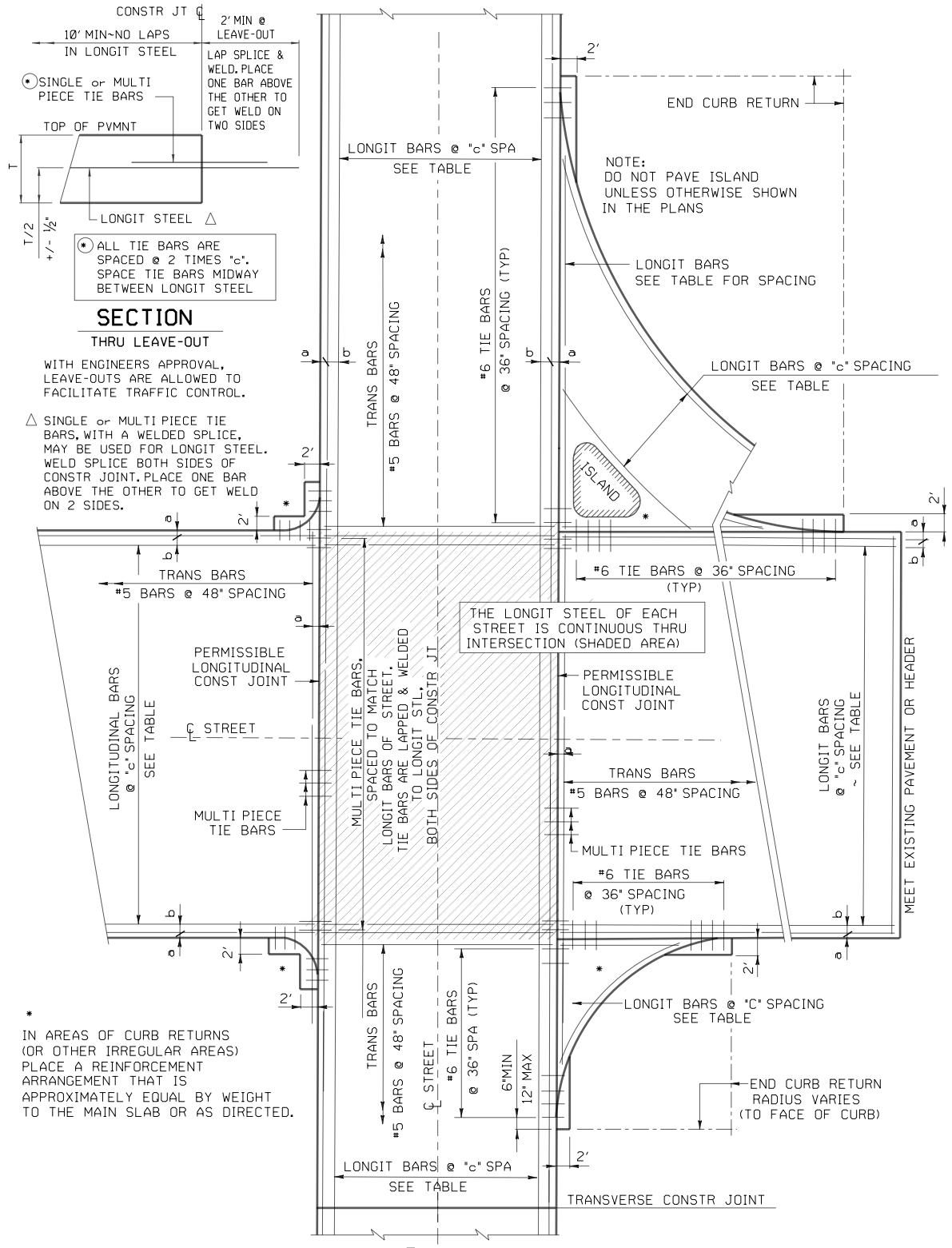
1. DETAILS FOR 7.0 IN. TO 13.0 IN. THICK CONCRETE PAVEMENT ARE SHOWN ON STANDARD CRCP(1)-13. DETAILS FOR 14 IN. TO 15 IN. THICK CONCRETE PAVEMENT ARE SHOWN ON STANDARD CRCP(2)-13.
2. USE COARSE AGGREGATE TO PRODUCE CONCRETE WITH A COEFFICIENT OF THERMAL EXPANSION (CTE) LESS THAN 5.0×10^{-6} in/in/°F. PRIOR TO CONSTRUCTION SUBMIT TEST SPECIMENS TO TxDOT, CONSTRUCTION DIVISION, FOR AGGREGATE ACCEPTANCE. PROVIDE SAMPLES OR TEST SPECIMENS AS DIRECTED. TxDOT CONSTRUCTION DIVISION WILL PERFORM THE TESTING. TEST RESULTS ARE FINAL. TESTING IS REQUIRED FOR NATURALLY OCCURING AGGREGATES.
3. DOWELS AND TIE BARS - DOWELS ARE ONE INCH MINIMUM DIAMETER. ENSURE DOWELS ARE FREE OF GREASE AND ARE EPOXY COATED. DO NOT SHEAR CUT DOWELS DURING FABRICATION. PROVIDE TIE BARS PER ITEM 360. FURNISH MULTI PIECE TIE BARS AND DOWELS WITH STOP COUPLINGS AND WITH THREADS ON THE BARS.
4. USE CHAIRS OF SUFFICIENT STRUCTURAL QUALITY AND NUMBER TO SUPPORT THE MAT TO THE VERTICAL TOLERANCES. CHAIRS WILL BE APPROVED BY THE ENGINEER AND DO NOT REQUIRE GALVANIZING. MAXIMUM CHAIR SPACING IS 30" TRANSVERSELY AND 48" LONGITUDINALLY. WHEN USING THE HARDIE CHAIR-LOK SYSTEM, THE CHAIR SPACING MAY BE EVENLY SPACED INTO A DIAMOND OR SQUARE PATTERN - DO NOT EXCEED 1.67 SY PER CHAIR NOR 60" LONGITUDINAL SPACING.
5. MECHANICALLY PLACING REINFORCING STEEL IS NOT ALLOWED. NO BARS, DOWELS OR TIE BARS MAY BE VIBRATED INTO POSITION.
6. WHERE DIFFERENT THICKNESS PAVEMENTS MEET, TRANSITION THE THINNER SECTION TO THE THICKER SECTION OVER A DISTANCE OF 20 FT. PLACE REINFORCING STEEL WITHIN THE TRANSITION THE SAME AS IN THE THICKER PAVEMENT.
7. PERFORM WELDING PER ITEM 448. FURNISH WELDABLE REBAR PER ITEM 440.

Texas Department of Transportation
Houston District

CONTINUOUSLY REINFORCED CONCRETE PAVEMENT HOUSTON SUPPLEMENT CRCP-HS

© TxDOT APR. 2012

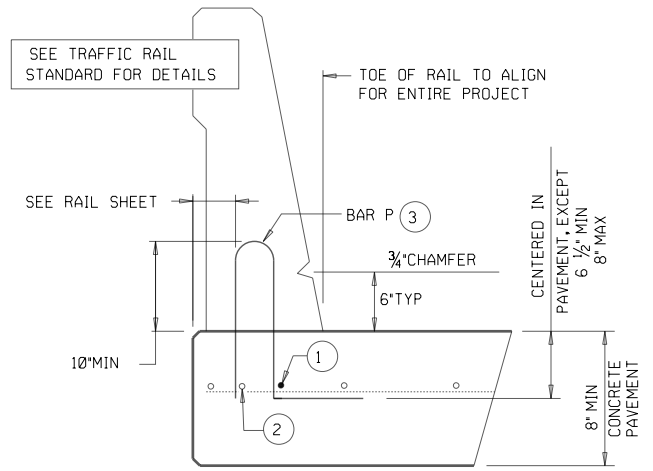
DN: -	CK: -	DW: -	CK: -	
REVISIONS 4/12 CHANGED CTE FROM 6.0 TO 5.0 8/14 UPDATE TO REFERNCE LATEST CRCP-13 STND.	DISTRICT	PROJECT NO.		SHEET 93
	COUNTY	CONTROL	SECTION	JOB / HIGHWAY



PLAN

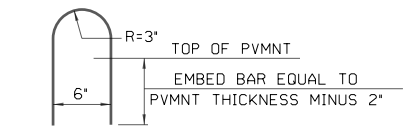
SHOWING TYPICAL CONCRETE PAVEMENT INTERSECTION

1. AS AN AID IN SUPPORTING REINFORCEMENT, ADDITIONAL LONGITUDINAL BARS MAY BE USED IN THE SLAB WITH THE APPROVAL OF THE ENGINEER. FURNISH SUCH BARS AT NO EXPENSE TO THE DEPARTMENT.
2. LONGITUDINAL SLAB BAR MAY BE ADJUSTED LATERALLY 3" +/- TO TIE REINFORCING.
3. ANCHORAGE BAR SHOWN IS FOR AN SSTR OR T501 RAIL. SEE RAILING DETAIL SHEET FOR SPACING OF BAR P. FOR OTHER RAIL TYPES SEE RAILING DETAIL SHEET.

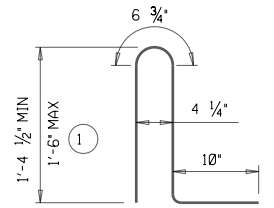


RAIL DETAIL

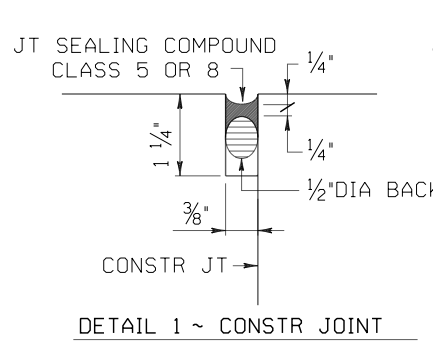
FOR ADDITIONAL DETAILS, SEE RAIL STANDARD SHEET.
THE MINIMUM LENGTH OF A CONCRETE RAILING PANEL IS FIVE FEET.



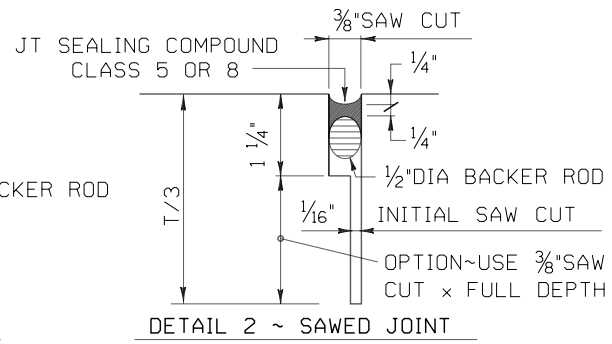
BAR A (#3)



BAR P (#5)
RAIL ANCHOR INSTALLED IN PAVEMENT (3)



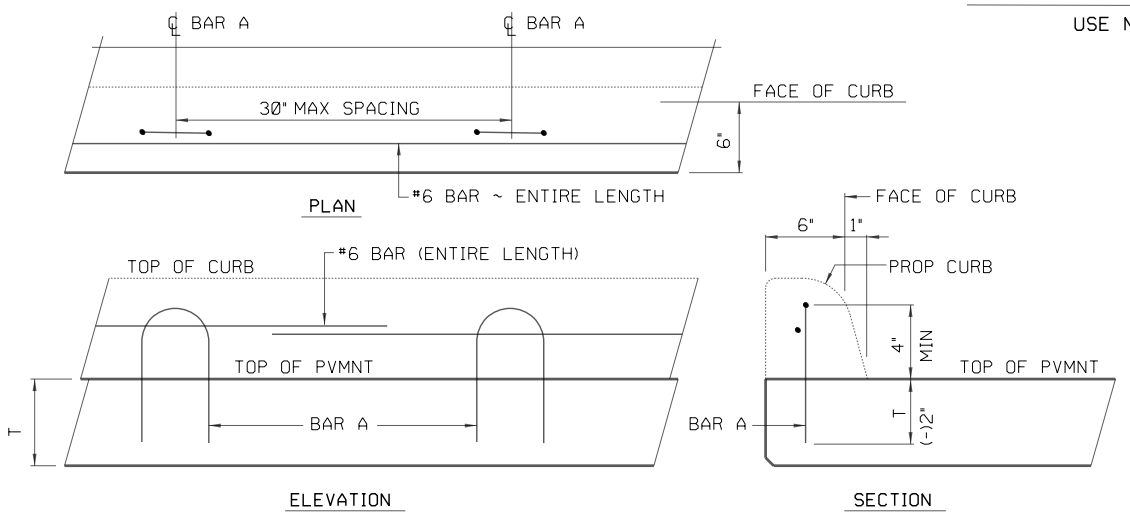
DETAIL 1 ~ CONSTR JOINT



DETAIL 2 ~ SAWED JOINT

JOINT AND SEALANT DETAILS

USE METHOD B ONLY



CURB DETAIL

SHEET 2 OF 2

Texas Department of Transportation
Houston District

CONTINUOUSLY REINFORCED CONCRETE PAVEMENT HOUSTON SUPPLEMENT CRCP-HS

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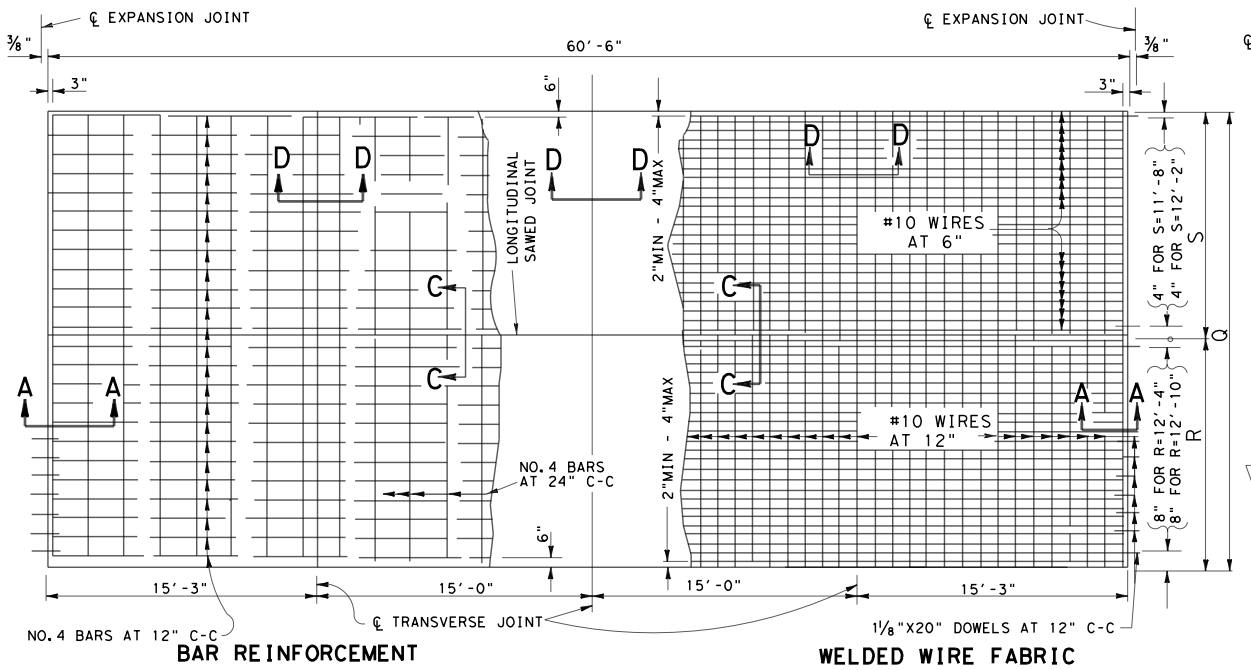
DN: -	CK: -	DW: -	CK: -	
REVISIONS 4/12 CHANGED CTE FROM 6.0 TO 5.0 (ON SHEET 1)	DISTRICT	PROJECT NO.		SHEET 94
	COUNTY	CONTROL	SECTION	JOB / HIGHWAY

STD-B1B

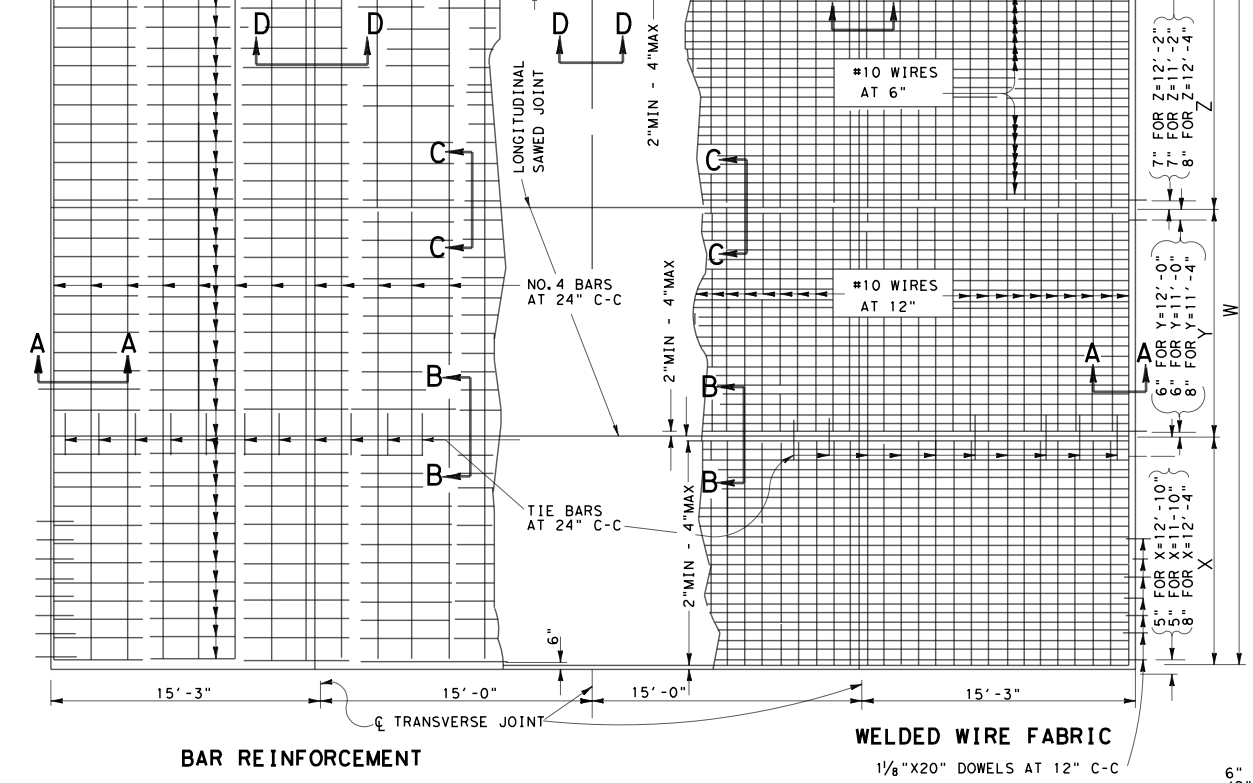


BAR REINFORCEMENT

WELDED WIRE FABRIC

TWO LANE PAVEMENT PLAN

	WIDTH - Q		
	24'-0"	24'-6"	25'-0"
R	12'-4"	12'-4"	12'-10"
S	11'-8"	12'-2"	12'-2"



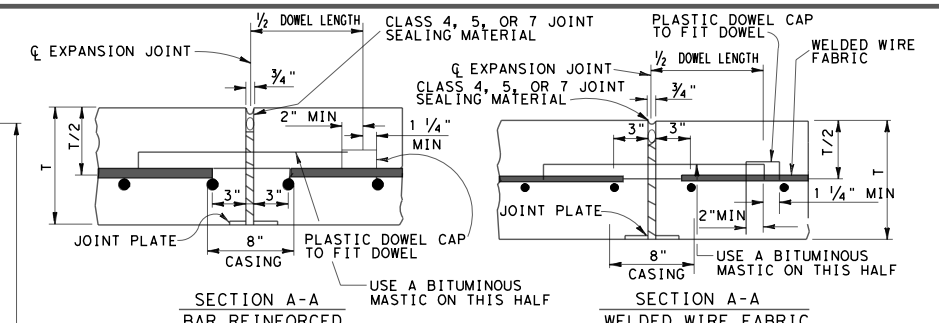
BAR REINFORCEMENT

WELDED WIRE FABRIC

THREE LANE PAVEMENT PLAN

	WIDTH - W		
	37'-0"	36'-0"	34-0"
X	12'-10"	12'-4"	11'-10"
Y	12'-0"	11'-4"	11'-0"
Z	12'-2"	12'-4"	11'-2"

D = DIAMETER
R = RADIUS
T = THICKNESS

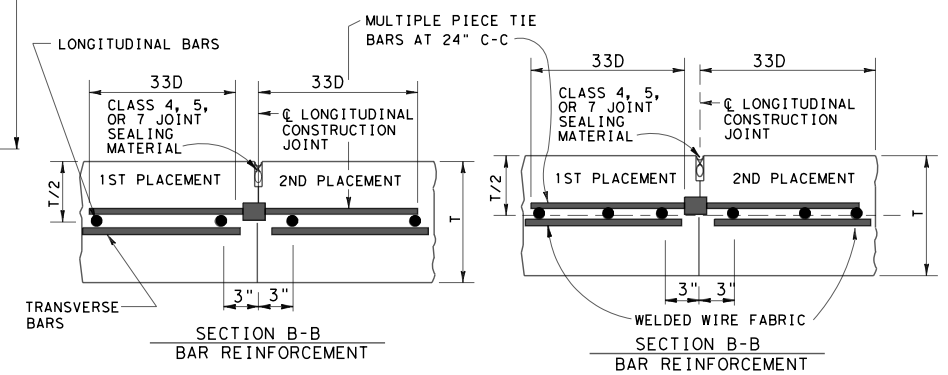


SECTION A-A
BAR REINFORCED

SECTION A-A
WELDED WIRE FABRIC

TRANSVERSE EXPANSION JOINTS

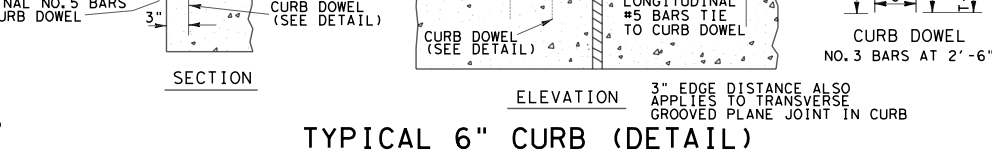
NOTE: DOWEL BARS CONFORMING TO ASTM A615 OR A616 GRADE 60 ARE ACCEPTABLE



SECTION B-B
BAR REINFORCEMENT

SECTION B-B
BAR REINFORCEMENT

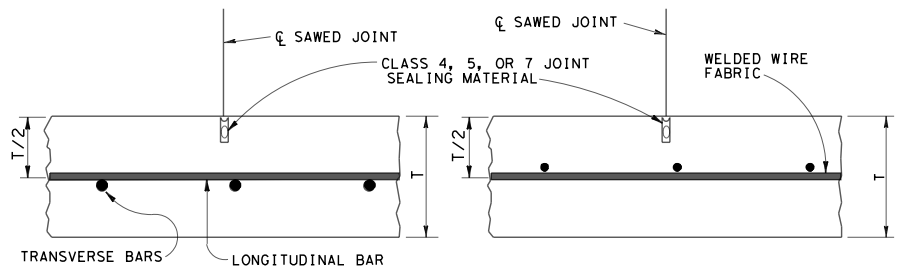
LONGITUDINAL CONSTRUCTION JOINTS



SECTION C-C
BAR REINFORCEMENT

SECTION C-C
WELDED WIRE FABRIC

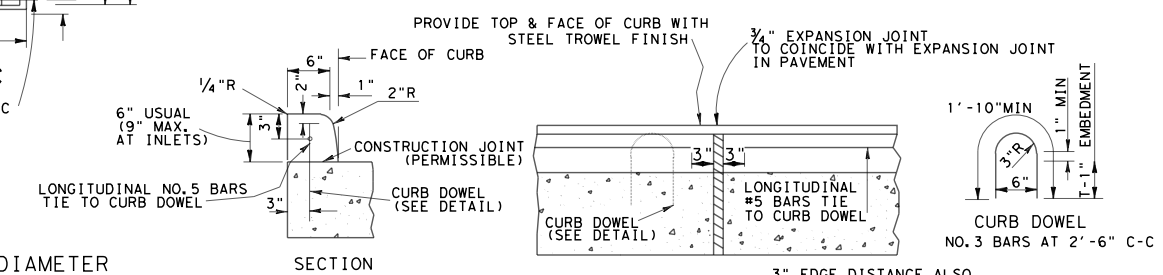
LONGITUDINAL SAWED JOINTS



SECTION D-D
BAR REINFORCEMENT

SECTION D-D
BAR REINFORCEMENT

TRANSVERSE SAWED JOINTS



SECTION

ELEVATION

3" EDGE DISTANCE ALSO APPLIES TO TRANSVERSE GROOVED PLANE JOINT IN CURB

TYPICAL 6" CURB (DETAIL)

GENERAL NOTES

1. MULTIPLE PIECE TIE BARS ARE REQUIRED AT LONGITUDINAL CONSTRUCTION JOINTS. USE MULTIPLE PIECE TIE BAR ASSEMBLIES WITH STOP TYPE COUPLINGS AND WITH THREADS ON THE BARS. ENSURE THE MULTIPLE PIECE TIE BAR ASSEMBLIES DEVELOP A MINIMUM ULTIMATE TENSILE STRENGTH EQUAL TO 1.25 TIMES THE YIELD STRENGTH OF THE TRANSVERSE BARS BEING JOINED. USE DEFORMED REINFORCING BARS FOR TIE BARS. TIE BAR ASSEMBLIES MADE FROM STEELS OTHER THAN ASTM GRADE 60 AND WITH DEFORMATIONS OTHER THAN ASTM STANDARD MAY BE USED IF IT CAN BE PROVEN TO THE ENGINEER THAT THEY ARE IN EVERY RESPECT THE EQUAL OF THE ASSEMBLIES SPECIFIED. LABORATORY TESTING OF THE PROPOSED ASSEMBLIES, AT THE CONTRACTOR'S EXPENSE, MAY BE REQUIRED.
2. FORM CONSTRUCTION JOINTS WITH METAL OR WOOD FORMS EQUAL IN DEPTH TO THE NOMINAL DEPTH OF THE PAVEMENT OR BY OTHER MEANS APPROVED PRIOR TO THEIR USE.
3. SAW LONGITUDINAL AND TRANSVERSE JOINTS AS SOON AS SAWING CAN BE ACCOMPLISHED WITHOUT DAMAGE TO THE PAVEMENT AND BEFORE 24 HOURS AFTER PLACING THE CONCRETE, THE EXACT TIME WILL BE APPROVED BY THE ENGINEER. PREFORMED JOINT WITH ASPHALT STRIP IS NOT ACCEPTABLE.
4. LONGITUDINAL JOINTS ARE SHOWN OFFSET FOUR INCHES FROM THE THEORETICAL LANE LINE AND MAY BE OFFSET TO EITHER SIDE IF THE WIDTH OF THE WIRE FABRIC IS PROPERLY ADJUSTED.
5. ONE OF THE LONGITUDINAL JOINTS OF PAVEMENT SLABS WIDER THAN TWO LANES MAY BE A CONSTRUCTION JOINT. FOR PAVEMENT SLABS WIDER THAN 15 FT. PROVIDE A LOGITUDINAL SAWED JOINT UNLESS OTHERWISE DIRECTED.
6. FORM THE JOINT SEAL SPACE AT TRANSVERSE EXPANSION JOINTS BY USING A STRAIGHT FORM PLACED BEHIND THE LONGITUDINAL FLOAT. LOOSEN THE FORM AS SOON AS THE CONCRETE WILL RETAIN ITS SHAPE AND EDGE WITH AN APPROVED EDGING TOOL. TOOL BOTH EDGES OF LONGITUDINAL CONSTRUCTION JOINTS TO A ⅛ IN. RADIUS AT THE PAVEMENT SURFACE.
7. DO NOT DISCHARGE CONCRETE FROM THE MIXER DIRECTLY ON TOP OF OR ON THE SIDES OF THE EXPANSION JOINT ASSEMBLIES.
8. LAP TRANSVERSE EDGES OF SHEETS OF WELDED WIRE FABRIC 12 INCHES EXCEPT AT TRANSVERSE EXPANSION JOINTS. LAP LONGITUDINAL EDGES 6 INCHES EXCEPT AT LONGITUDINAL CONSTRUCTION JOINTS.
9. DOWEL BARS MAY BE COATED WITH STAINLESS STEEL, MONEL METAL, OR IN ACCORDANCE WITH THE ITEM "REINFORCING STEEL" SECTION ON EPOXY COATING; WITH A WELDED DOWEL ASSEMBLY SUPPORT, AS APPROVED. ENSURE THE CASING CONFORMS TO THE REQUIREMENTS OF ONE OF THE GRADES OF ASTM A167-70 OR A176-71 AND IS NOT LESS THAN 0.010 INCH THICK. PROVIDE A CASING AT LEAST 8 INCHES LONG AND THAT COVERS THE MIDDLE 8 INCHES OF THE DOWEL.
10. SECURE DOWELS PARALLEL TO THE PAVEMENT SURFACE AND PERPENDICULAR TO THE JOINT WITH THE AID OF APPROVED WELDED WIRE BASKET ARRANGEMENTS. ENSURE WELDED WIRE BASKET ARRANGEMENTS DO NOT CROSS THE EXPANSION JOINT. UNIFORMLY COAT DOWELS WITH A BITUMINOUS MASTIC ON THE END WITH THE DOWEL CAP.
11. DO NOT BEND TIE BARS AND DOWEL BARS. TO PREVENT DISPLACEMENT OF WIRE FABRIC BY CONCRETE PLACEMENT, TIE THE FABRIC PANEL TOGETHER AND TIE THE INITIAL FABRIC PANELS OF EACH SLAB TO THE DOWEL BASKET OR AS DIRECTED.
12. TOOL PAVEMENT EDGES TO A RADIUS OF ⅛ IN. WITH AN APPROVED EDGING TOOL.
13. DETAILS FOR PAVEMENT WIDTH, PAVEMENT THICKNESS, AND CROWN-SLOPE ARE ELSEWHERE SHOWN ON THE PLANS.
14. THE CONTRACTOR HAS THE OPTION OF USING WELDED WIRE FABRIC OR BAR REINFORCEMENT. LOCATE THE LONGITUDINAL STEEL AT THE CENTER OF THE SLAB. TAKE NECESSARY PRECAUTIONS TO INSURE THAT THE FINAL POSITION OF STEEL IS WITHIN ½ IN. OF THE SLAB CENTER. ENSURE THE LONGITUDINAL AND TRANSVERSE STEEL SPACING DOES NOT VARY MORE THAN ONE-TWELFTH OF SPACING SHOWN.
15. LONGITUDINAL STEEL MAY BE SPLICED WITH 33 TIMES BAR DIAMETER LAPS.
16. FOR LANE WIDTHS NOT SHOWN OR FOR VARIABLE PANEL LENGTHS AND WIDTHS, SPACE REINFORCING STEEL AND DOWELS AS DIRECTED.
17. USE APPROVED BAR MAT CHAIRS. DO NOT EXCEED CHAIR SPACING OF 30 IN. C-C (TRANSVERSE) AND 48 IN. C-C (LONGITUDINAL). GALVANIZING THE CHAIRS IS NOT REQUIRED.
18. OBTAIN BOARDS FOR EXPANSION JOINT FILLER FROM REDWOOD TIMBER.
19. PROVIDE AND CONSTRUCT THE JOINT PLATE AS APPROVED.
20. WHEN CURB IS PLACED SEPARATELY FROM THE CONCRETE PAVEMENT, PROVIDE THE REINFORCING STEEL AS SHOWN IN THE CURB DETAIL. THE CURB REINFORCING STEEL MAY BE OMITTED WHEN THE CURB IS PLACED MONOLITHICALLY.

(GENERAL NOTES CONTINUED ON SHEET 2 OF 2)

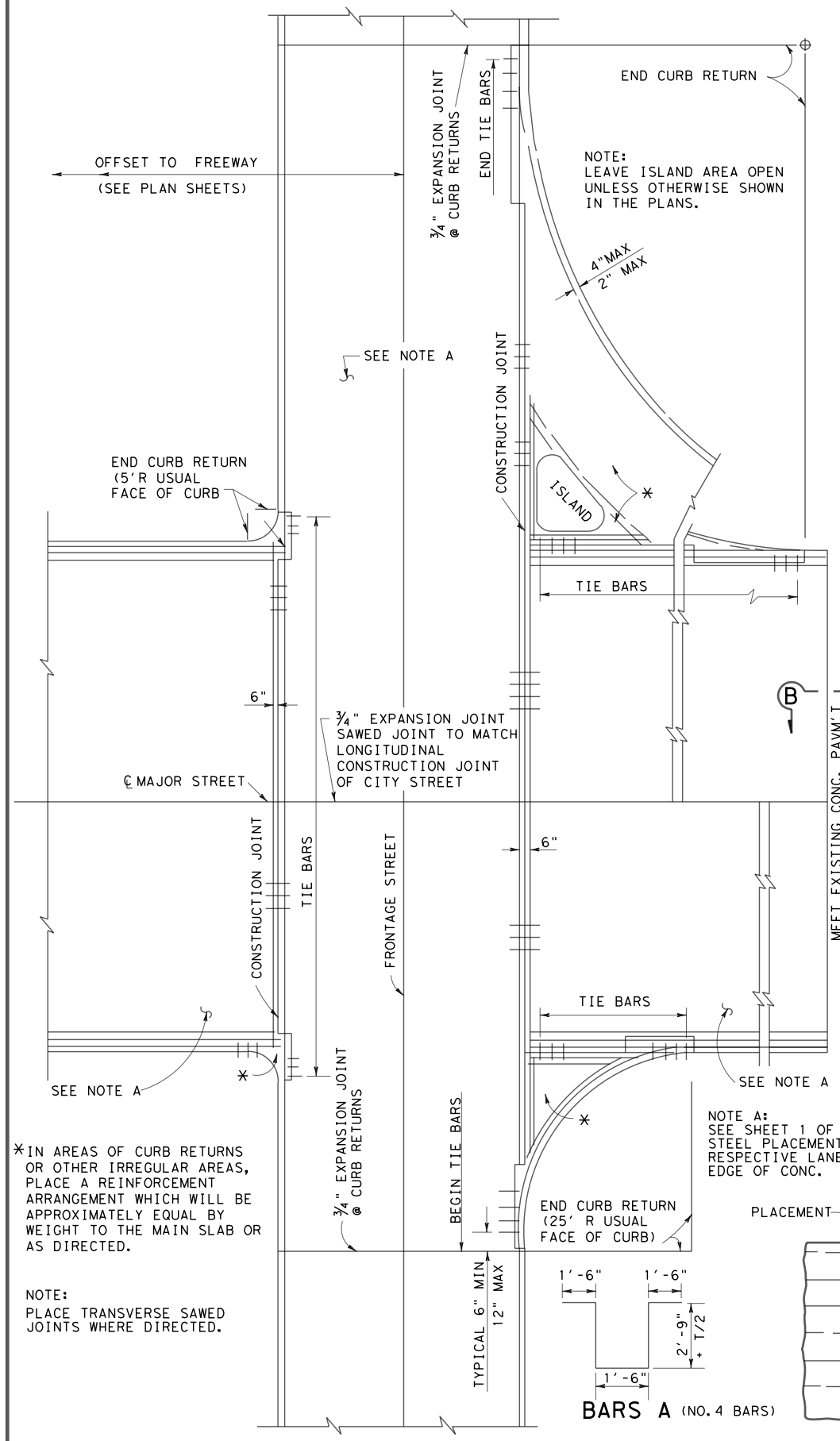
Texas Department of Transportation
Houston District

JOINTED REINFORCED CONCRETE PAVEMENT DETAILS

(FOR PAVEMENT THICKNESS 10 INCHES OR LESS)

JRCP SHEET 1 OF 2

FILE: STDB-2.dgn	DN:	CK:	DW:	CK:
© TxDOT MAR. 2004	DIST	FED REG	PROJECT NO.	SHEET
REVISIONS 5/05 2004 SPECS 7/2010 ADDED NOTE	HOU	6		95
	COUNTY	CONTROL	SECT JOB	HIGHWAY

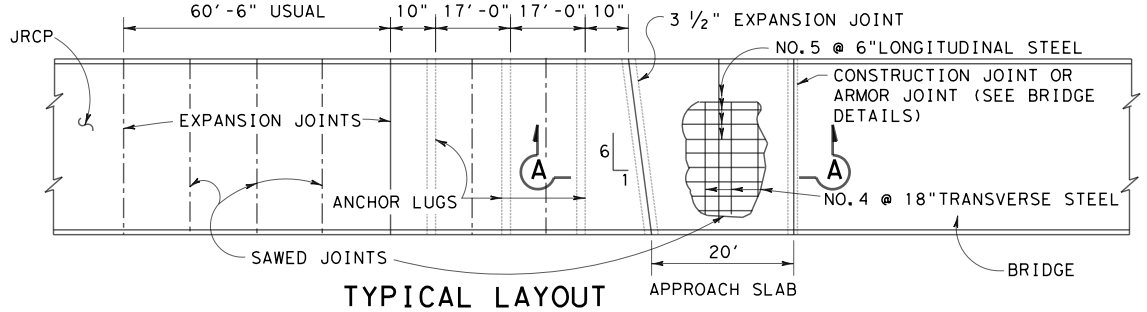


*IN AREAS OF CURB RETURNS OR OTHER IRREGULAR AREAS, PLACE A REINFORCEMENT ARRANGEMENT WHICH WILL BE APPROXIMATELY EQUAL BY WEIGHT TO THE MAIN SLAB OR AS DIRECTED.

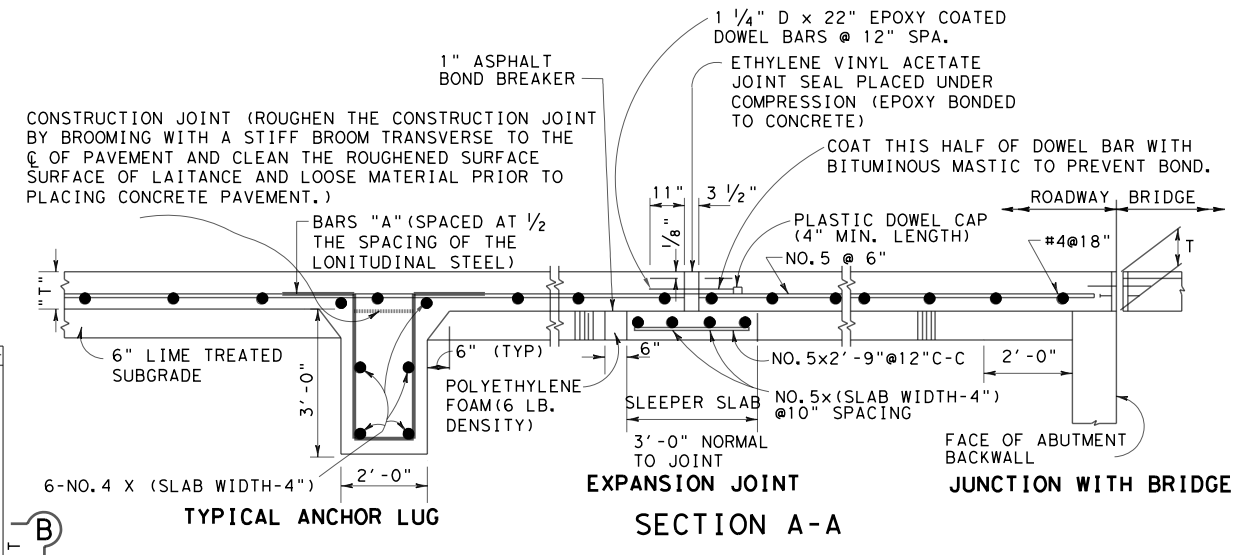
NOTE:
PLACE TRANSVERSE SAWED JOINTS WHERE DIRECTED.

NOTE A:
SEE SHEET 1 OF 2 FOR STEEL PLACEMENT FOR THE RESPECTIVE LANE WIDTHS. EDGE OF CONC.

INTERSECTION OF MAJOR STREET WITH FRONTAGE STREET TYPICAL REINFORCING PLAN

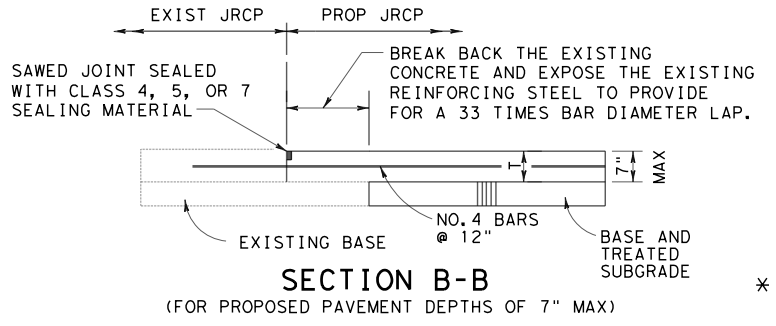


TYPICAL LAYOUT
(TERMINAL ANCHORAGE AT BRIDGES)



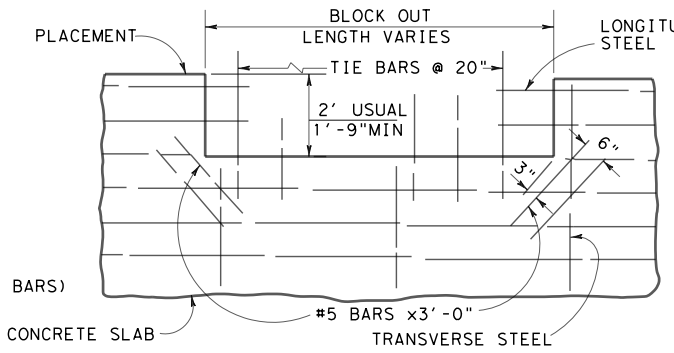
TYPICAL ANCHOR LUG | **EXPANSION JOINT** | **JUNCTION WITH BRIDGE**

SECTION A-A



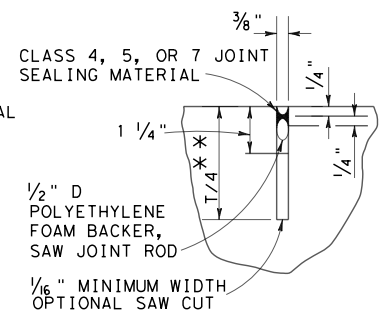
SECTION B-B
(FOR PROPOSED PAVEMENT DEPTHS OF 7" MAX)

REPLACE ANY BENT LONGITUDNIAL REINFORCING. IF THERE IS NOT SUFFICIENT EXPOSED REINFORCING TO PROVIDE A MINIMUM OF A 33 TIMES BAR DIAMETER LAP, REMOVE THE EXISTING PAVEMENT AND SUFFICIENTLY EXPOSE THE EXISTING REINFORCING TO PROVIDE A 33 TIMES BAR DIAMETER LAP. REPLACE ANY SHEAR BARS THAT ARE DISTURBED, BY DRILLING AND GROUTING AS REQUIRED BY NOTE #29. PERFORM THIS CORRECTIVE ACTION AT NO EXPENSE TO THE DEPARTMENT.

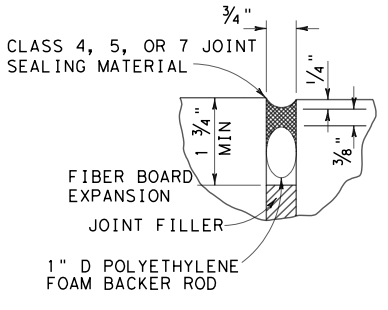


DETAIL OF BLOCKOUT

*OMIT TIE BARS @ INLET BLOCK-OUT



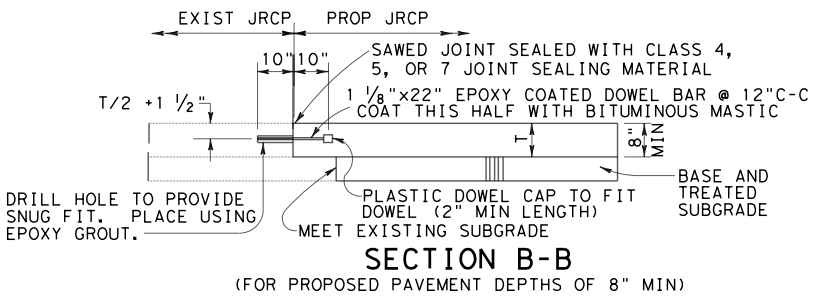
SAWED JOINT



EXPANSION JOINTS

** IF SILICEOUS RIVER GRAVEL IS USED AS THE COARSE AGGREGATE, THIS DEPTH IS T/3.

JOINT SEALING DETAILS



SECTION B-B
(FOR PROPOSED PAVEMENT DEPTHS OF 8" MIN)

GENERAL NOTES (CONTINUED FROM SHEET 1 OF 2)

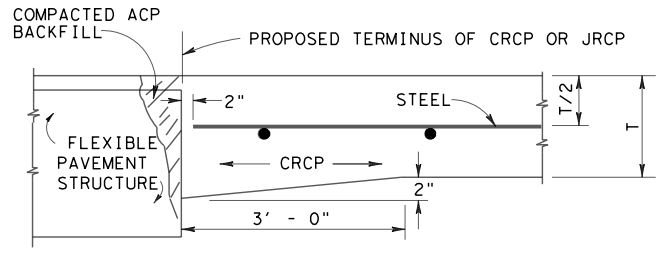
21. CONSTRUCT ANCHOR LUGS, EXPANSION JOINTS, AND SLEEPER SLABS AS DETAILED IN SECTION A-A. THESE WILL BE PAID FOR IN ACCORDANCE WITH ITEM, "CONCRETE PAVEMENT TERMINALS."
22. REINFORCING STEEL FOR TERMINAL ANCHOR SYSTEMS MAY BE GRADE 40 OR GRADE 60.
23. PLACE CONCRETE FOR ANCHOR LUGS AS SOON AS POSSIBLE AFTER COMPLETING EXCAVATION, TO PRESERVE THE INHERENT SOIL CHARACTERISTICS. EXCAVATING FOR AND PLACING CONCRETE FOR ANCHOR SYSTEM MAY BE IN PERFORMED SECTIONS CORRESPONDING TO THE WIDTH OF PAVING PLACEMENT.
24. APPLY A STEEL TROWEL FINISH TO SLEEPER SLABS AND AND COAT WITH AN ASPHALT BOND BREAKER.
25. THE DETAILS FOR ANCHORS, LUGS, EXPANSION JOINTS, AND SLEEPER SLABS ARE NOT APPLICABLE UNLESS SHOWN ELSEWHERE IN THE PLANS.
26. APPROACH SLAB WILL BE PAID FOR IN ACCORDANCE WITH THE ITEM "CONCRETE STRUCTURES."
27. WITHIN 5 MINUTES OF SAWING, COMPLETELY REMOVE THE RESULTING SLURRY FROM THE JOINT BY FLUSHING WITH HIGH PRESSURE WATER. THEN ALLOW THE JOINT TO DRY FOR A MINIMUM OF 48 HOURS BEFORE SANDBLASTING THE JOINT.
28. DO NOT SHEAR CUT DOWEL BARS.
29. SIZE ADDITIONAL SHEAR BARS AS LONGITUDIAL BARS AND SPACE THEM MIDWAY BETWEEN ALTERNATE LONGITUDINAL BARS ALONG THE TRANSVERSE CONSTRUCTION JOINT FORMED AT THE LEAVE-OUT. AT THE LEAVE-OUT.
30. IF THE CONCRETE DESIGN REQUIRES GREATER THAN 5.5 SACKS OF CEMENTITIOUS MATERIAL PER CUBIC YARD, WRITTEN APPROVAL BY THE AREA ENGINEER WILL BE REQUIRED. ENSURE CONCRETE PAVEMENT MIXES PLACED FROM APRIL 1 TO OCTOBER 31 CONTAIN A MINIMUM OF 25 PERCENT BY WEIGHT OF CLASS "F" FLY ASH.
31. IN LOCATIONS WHERE THE PLANS CALL FOR FAST TRACK CONCRETE PAVEMENT IN LIEU OF JRCP (LAID ON COMPACTED OR STABILIZED SUBGRADE), USE DETAILS IN THIS STANDARD IN CONJUNCTION WITH THE APPROPRIATE FAST TRACK CONCRETE SPECIFICATION. IF THE JRCP IS LAID UPON A BASE STRUCTURE, ADD 3" TO THE FAST TRACK PAVEMENT THICKNESS TO COMPENSATE FOR THE BASE.

Texas Department of Transportation
Houston District

JOINTED REINFORCED CONCRETE PAVEMENT DETAILS
EXPANSION JOINT DESIGN
(FOR PAVEMENT THICKNESS 10 INCHES OR LESS)

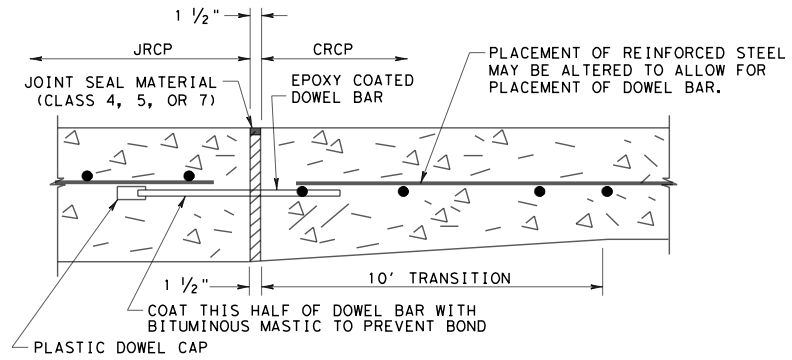
JRCP SHEET 2 OF 2

FILE: STDB-2.dgn	DN:	CK:	DW:	CK:	
© TxDOT MAR. 2004	DIST	FED REG	PROJECT NO.		SHEET
REVISIONS 5/05 2004 SPECS 7/2010 ADDED NOTE 9/2013 ADDED NOTE	HOU	6			96
	COUNTY		CONTROL	SECT	JOB	HIGHWAY



NOTE:
ADDITIONAL CONCRETE FOR THICKENED EDGE IS INCINDENTAL TO VARIOUS BID ITEMS. BACKFILL DISTURBED MATERIAL IN THE FLEXIBLE PAVEMENT WITH ACP. THIS ACP IS INCIDENTAL TO VARIOUS BID ITEMS.

JUNCTURE A & B - CRCP OR JRCP WITH FLEXIBLE TYPE PAVEMENT STRUCTURE

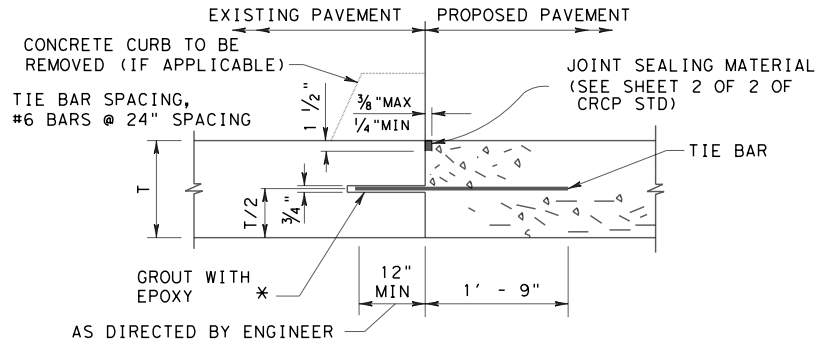


FOR DETAILS NOT SHOWN, SEE TRANSVERSE EXPANSION JOINT DETAILS ELSEWHERE IN PLANS.

DETAIL "B" - DOWEL ASSEMBLY AT EXPANSION JOINT

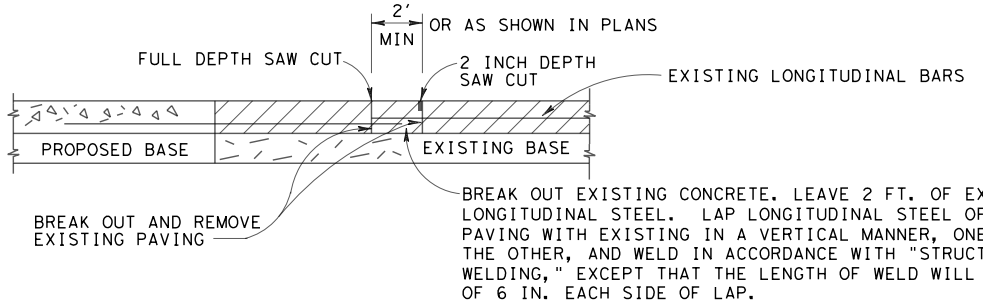
DOWEL BAR DATA			
SLAB THICKNESS(T)	6"-7.5"	8"-10"	10.5"-15"
DOWEL SIZE	1"	1 ¼"	1 ½"
DOWEL LENGTH	18"	20"	22"
DOWEL BAR SPACING	12"	12"	12"

TABLE A - DOWEL BAR DATA



JUNCTURE D - TYPICAL CONNECTION TO EXISTING CONCRETE

*FOR EPOXY TYPE SEE ITEM 361.



JUNCTURE F - "BREAK BACK" CONCRETE CRCP WITH CRCP OR JRCP WITH JRCP

GENERAL NOTES

1. FOR FURTHER INFORMATION REGARDING PLACING CONCRETE AND REINFORCEMENT, REFER TO THE GOVERNING SPECIFICATION FOR CONCRETE PAVEMENT.
2. THE DESIGN REQUIREMENTS FOR THE PAVEMENT STRUCTURE, I.E. BAR SPACING, BAR SIZE LAP REQUIREMENTS, ETC., ARE SHOWN ON THE APPROPRIATE PAVEMENT DESIGN DETAIL.
3. SLEEPER SLAB AND ADDITIONAL REINFORCING REQUIRED ON THIS DRAWING ARE INCIDENTAL TO THE VARIOUS BID ITEMS.
4. USE THE SIZE, SPACING, AND LENGTH OF DOWEL BARS SHOWN IN TABLE "A".
5. WHERE THERE WILL BE A JUNCTURE AND ADDITIONAL JRCP PAVING WILL BE PLACED AT A FUTURE DATE, MULTIPLE PIECE DOWEL BARS WILL BE PERMITTED AT THE JUNCTURE. PROVIDE MULTIPLE PIECE DOWEL BAR ASSEMBLIES WITH A MINIMUM ULTIMATE TENSILE STRENGTH OF 60.0 KIPS AND THAT HAVE SMOOTH EPOXY COATED BARS. ENSURE THE MULTIPLE PIECE DOWEL BAR ASSEMBLIES HAVE STOP TYPE COUPLINGS AND HAVE HAVE ROLLED THREADS ON THE BARS. DISMANTLE THE BAR AND FIT THE COUPLING PORTION USED IN CONSTRUCTION, WITH A PLASTIC CAP. FURNISH THE REMAINING PORTION OF THE BAR TO THE ENGINEER.
6. WHERE THE PAVING IS CRCP AND A RAMP COMPOSED OF A FLEXIBLE PAVEMENT WILL BE USED AT THE JUNCTURE UNTIL FUTURE PAVING IS CONSTRUCTED, MULTIPLE PIECE TIE BARS MAY BE USED IF PERMITTED BY THE ENGINEER. IF USED, ENSURE THE MULTIPLE PIECE TIE BAR ASSEMBLIES HAVE STOP TYPE COUPLINGS AND ROLLED THREADS ON THE BARS. FURNISH MULTIPLE PIECE TIE BAR ASSEMBLIES THAT DEVELOP A MINIMUM ULTIMATE TENSILE STRENGTH EQUAL TO 1.25 TIMES THE YIELD STRENGTH OF THE TRANSVERSE BARS BEING JOINED. FOR TIE BARS, USE DEFORMED REINFORCING BARS. TIE BAR ASSEMBLIES MADE FROM STEELS OTHER THAN ASTM GRADE 60 AND WITH DEFORMATIONS OTHER THAN ASTM STD. MAY BE USED PROVIDED THEY PROVE SATISFACTORY TO THE ENGINEER AND ARE IN EVERY RESPECT THE EQUAL TO THE ASSEMBLIES SPECIFIED. LABORATORY TESTING OF THE PROPOSED ASSEMBLIES, AT THE CONTRACTOR'S EXPENSE, MAY BE REQUIRED. LAP AND WELD ONE PORTION OF THE TIE BAR ASSEMBLY TO EACH LOGITUDINAL BAR IN ACCORDANCE WITH THE ITEM "STRUCTURAL FIELD WELDING "AND THE OTHER PORTION INTO THE COUPLING PRIOR TO PAVING. ENSURE MULTIPLE PIECE TIE BAR LENTHS CONFORM TO THE TIE BAR LENGTHS SHOWN ELSEWHERE IN THE PLANS. ADDITIONAL "SHEAR STEEL" WILL ALSO BE REQUIRED AND MAY BE USED WITH MULTIPLE PIECE ASSEMBLIES AS PREVIOUSLY DESCRIBED. USE ADDITIONAL STEEL BARS OF EQUAL DIAMETER AT A SPACING DOUBLE THAT OF THE LOGITUDINAL STEEL AND ENSURE THE LENGTH IS 66 TIMES THE TIE BAR DIAMETER.
7. DO NOT SHEAR CUT DOWEL BARS.
8. ENSURE DOWEL BAR EPOXY COATING CONFORMS TO ARTICLE 440.2.F., "EPOXY COATING".
9. REPLACE ANY BENT LONGITUDINAL REINFORCING. IF THERE IS NOT SUFFICIENT EXPOSED REINFORCING TO PROVIDE A MINIMUM OF A 33 TIMES BAR DIAMETER LAP, REMOVE THE EXISTING PAVEMENT AND SUFFICIENTLY EXPOSE THE EXISTING REINFORCING TO PROVIDE A 33 TIMES BAR DIAMETER LAP. REPLACE ANY SHEAR BARS THAT ARE DISTURBED, BY DRILLING AND GROUTING AS REQUIRED BY NOTE 12 BELOW. PERFORM THIS CORRECTIVE ACTION AT NO EXPENSE TO THE DEPARTMENT.
10. TIE BARS AND DOWEL BARS OMITTED, LOST, OR DAMAGED SHALL BE REPAIRED BY DRILLING AND EPOXY GROUTING AT NO EXPENSE TO THE DEPARTMENT.
11. JUNCTURES A & B ARE ONLY SUITABLE FOR MINOR STREETS WITH LOW TRAFFIC VOLUMES.
12. FURNISH ADDITIONAL SHEAR BARS (DIAMETER "D") OF THE SAME SIZE AS LONGITUDINAL BARS AND SPACE THEM MIDWAY BETWEEN ALTERNATE LONGITUDINAL BARS ALONG THE TRANSVERSE CONSTRUCTION JOINT FORMED AT THE LEAVE-OUT.

LEGEND

ACP - ASPHALT CONCRETE PAVEMENT
CRCP - CONTINUOUSLY REINFORCED CONCRETE PAVEMENT
JRCP - JOINTED REINFORCED CONCRETE PAVEMENT
T - THICKNESS

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Houston District

CONCRETE PAVEMENT JUNCTURES

CPJ

FILE: STDB-5.dgn	DN:	CK:	DW:	CK:	
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REVISIONS 5/05 2004 SPECS REVISED 4/2008	HOU	6			97
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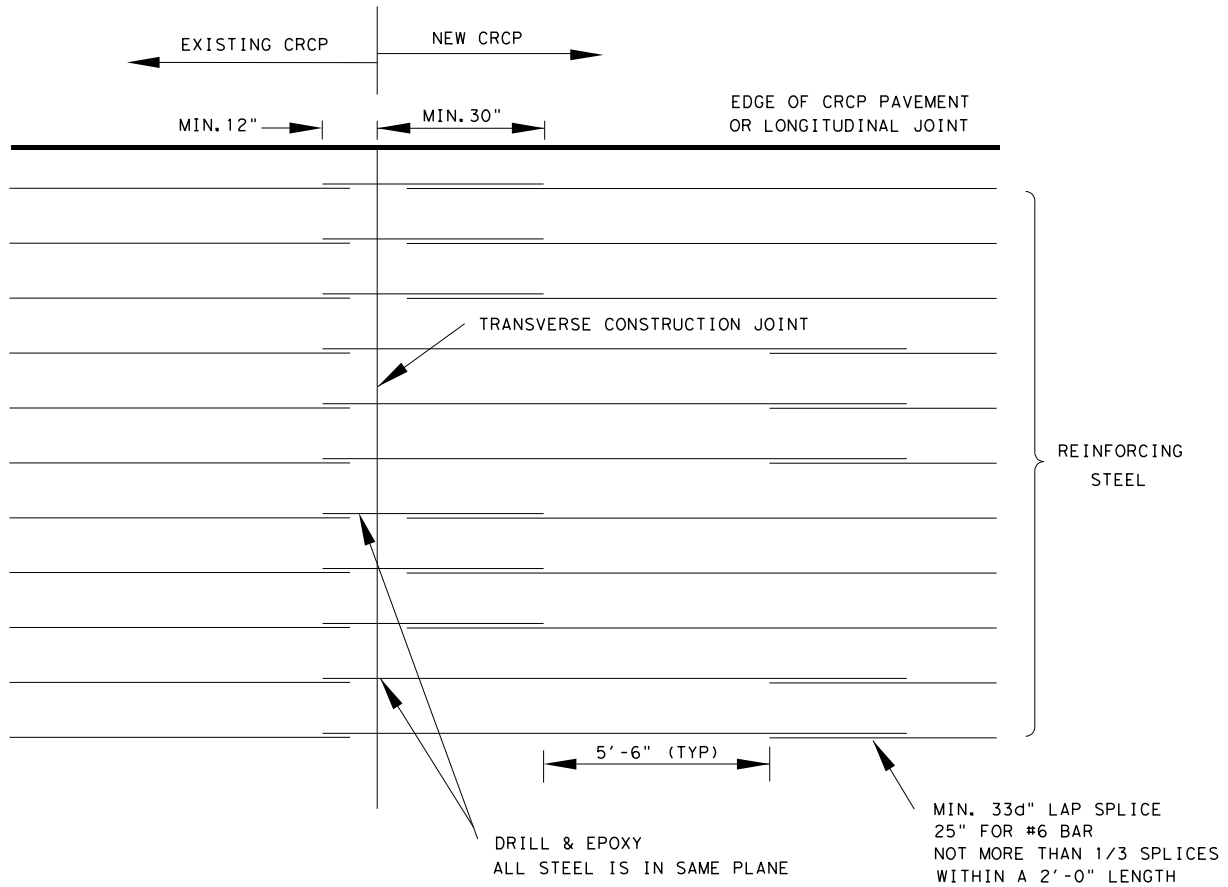
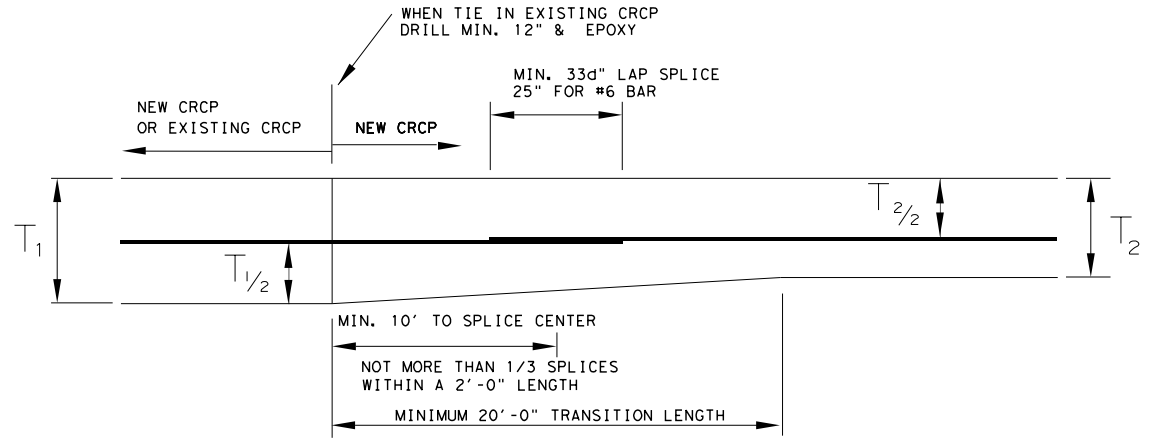
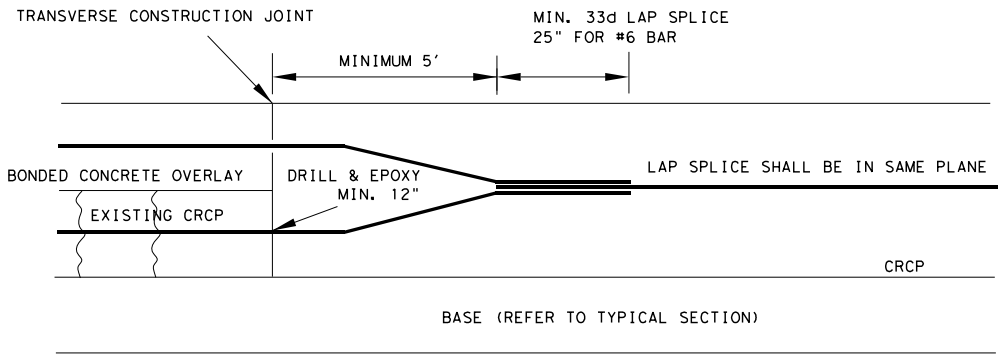


EXISTING CRCP TO NEW CRCP

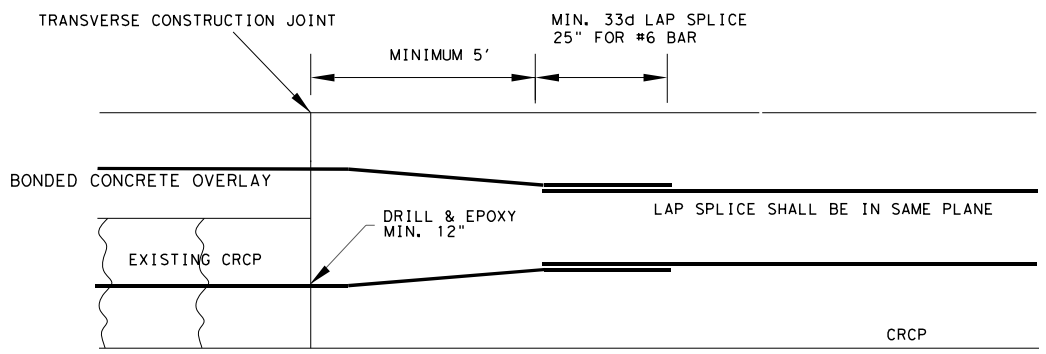


CRCP THICKNESS TRANSITION



CRCP BONDED OVERLAY TO CRCP TRANSITION

(ONE LAYER STEEL)



CRCP BONDED OVERLAY TO CRCP TRANSITION

(TWO LAYER STEEL)

Texas Department of Transportation
Houston District

CONCRETE PAVEMENT JUNCTURES

CPJ

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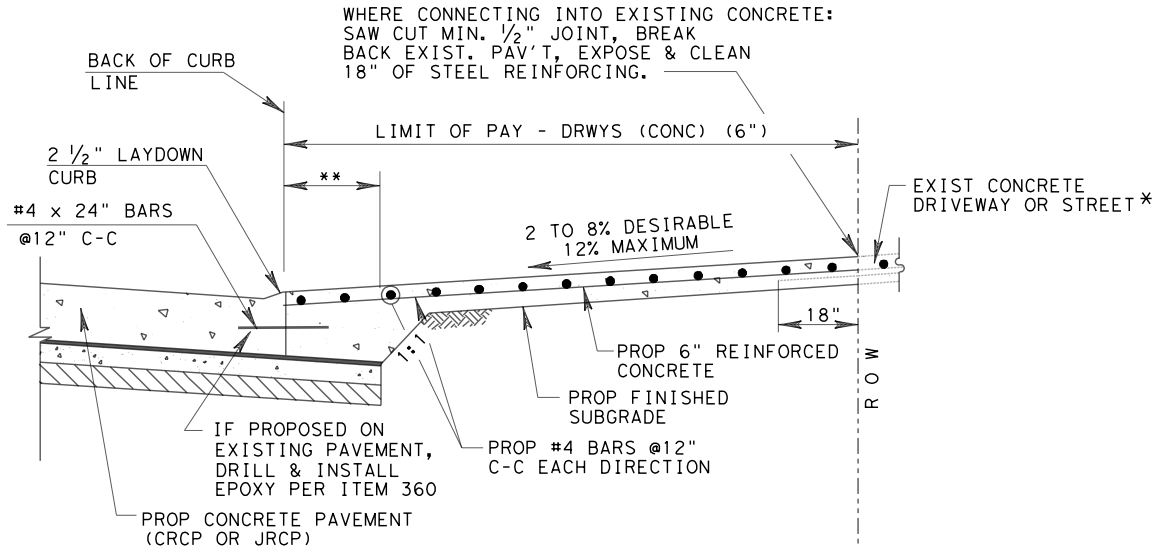
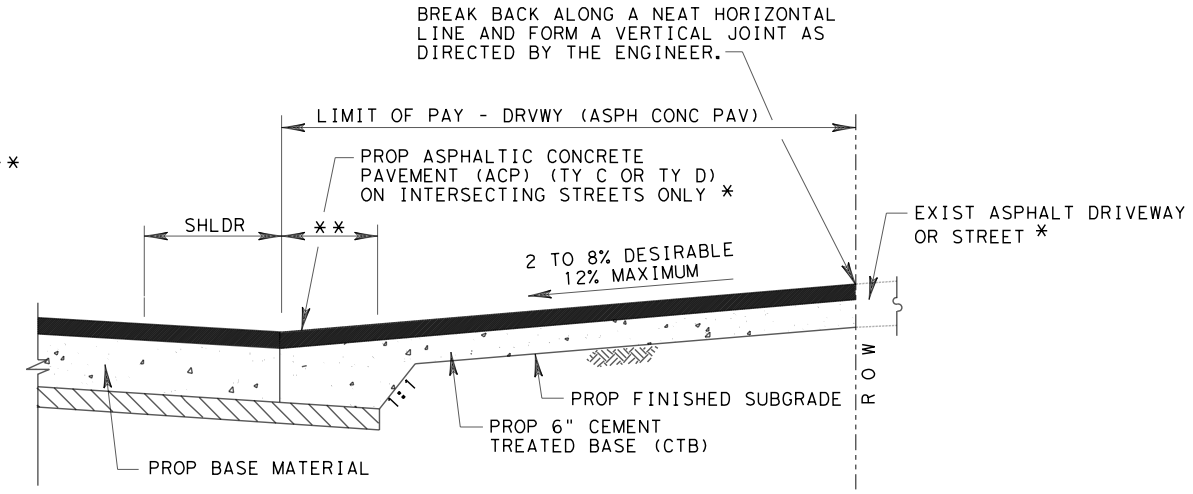


PROPOSED DRIVEWAY DETAIL
REINFORCED CONCRETE AT CONCRETE
CURB AND GUTTER ROADWAY



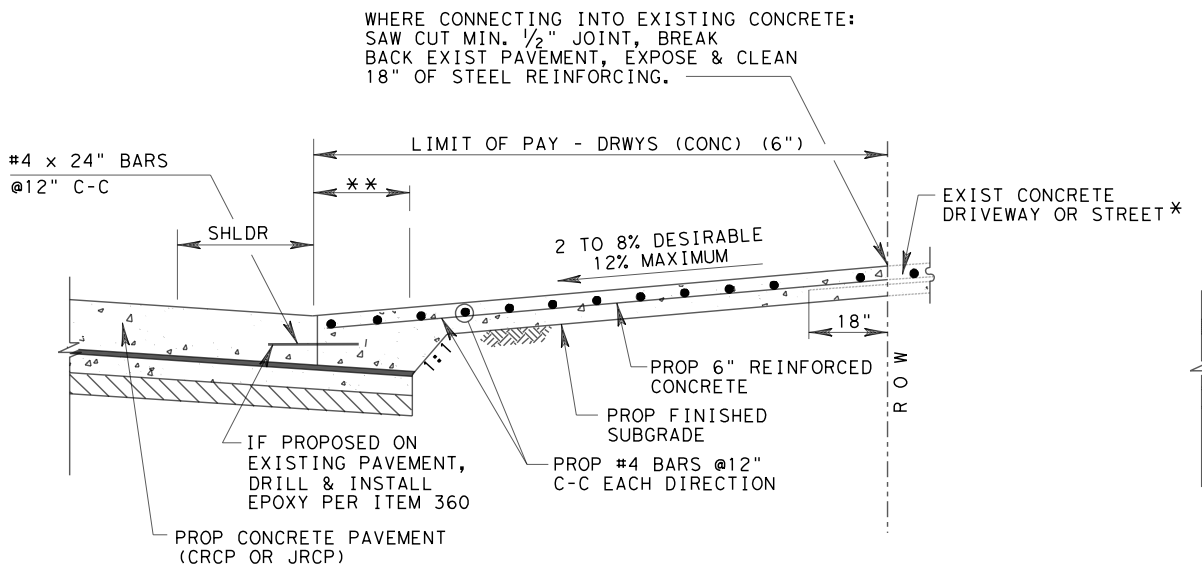
PROPOSED DRIVEWAY DETAIL
ASPHALT W/ PCTB AT ASPHALT ROADWAY

NOTES:

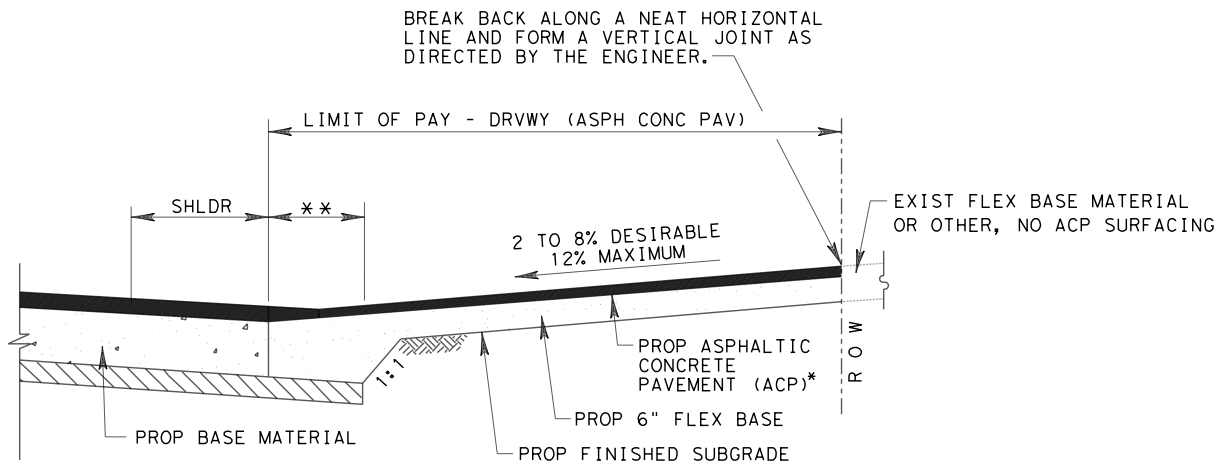
1. SEE SHEET 2 OF 2 FOR DRIVEWAY SLOPES WITH PROPOSED SIDEWALKS.
2. FOR INTERSECTIONS BUILT WITH CRCP PAVEMENT SEE CRCP DETAIL.

* FOR STREET INTERSECTIONS REFER TO PAVING DETAILS AND INTERSECTION DETAILS FOR REINFORCING STEEL AND SECTION REQUIREMENTS.

** PROPOSED LIMIT OF ROADWAY BASE AND/OR SUBGRADE



PROPOSED DRIVEWAY DETAIL
REINFORCED CONCRETE AT CONCRETE ROADWAY



PROPOSED DRIVEWAY DETAIL
ASPHALT W/ FLEX BASE AT ASPHALT ROADWAY

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Houston District

DRIVEWAY DETAILS

DD

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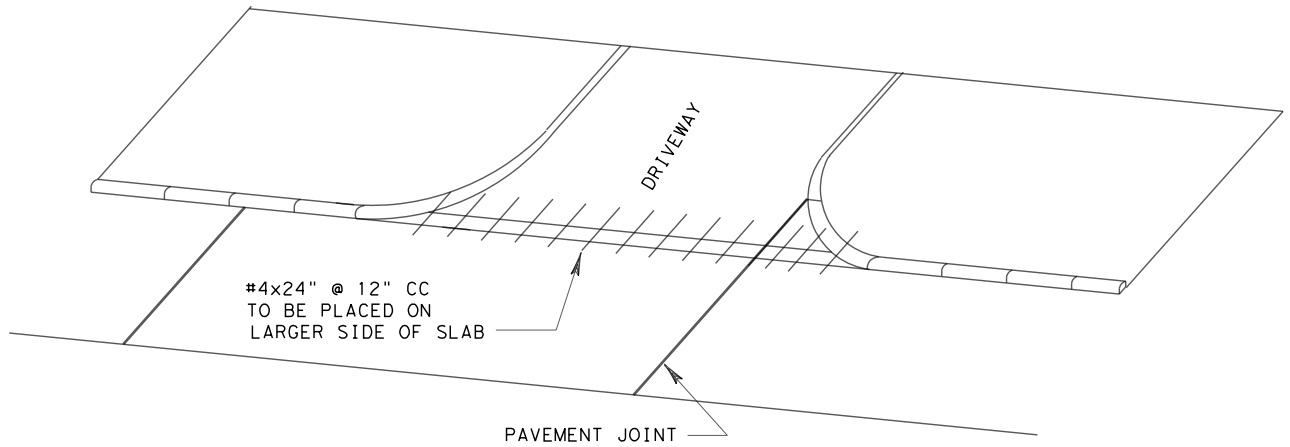
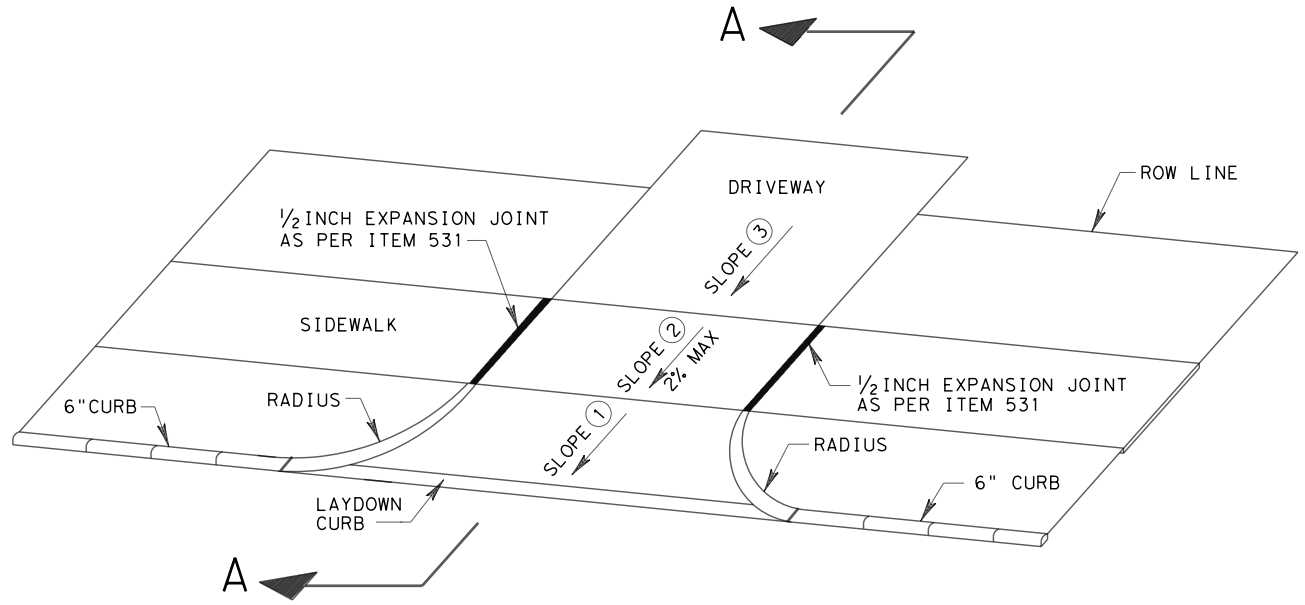
REVISIONS	HOU	6			99
1/2008 ADDED TIE-BAR INFORMATION	COUNTY		CONTROL	SECT	JOB	HIGHWAY
9/09 ADDED NOTE FOR ITEM 360.						

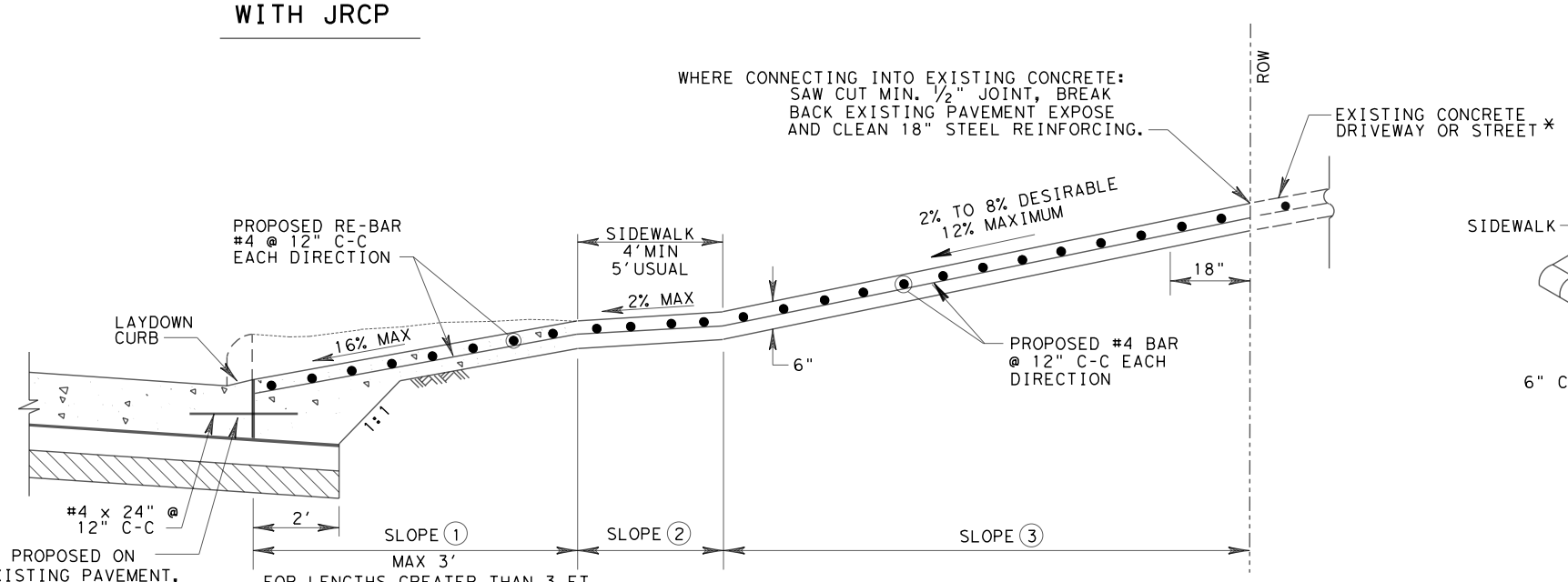
STDB8A



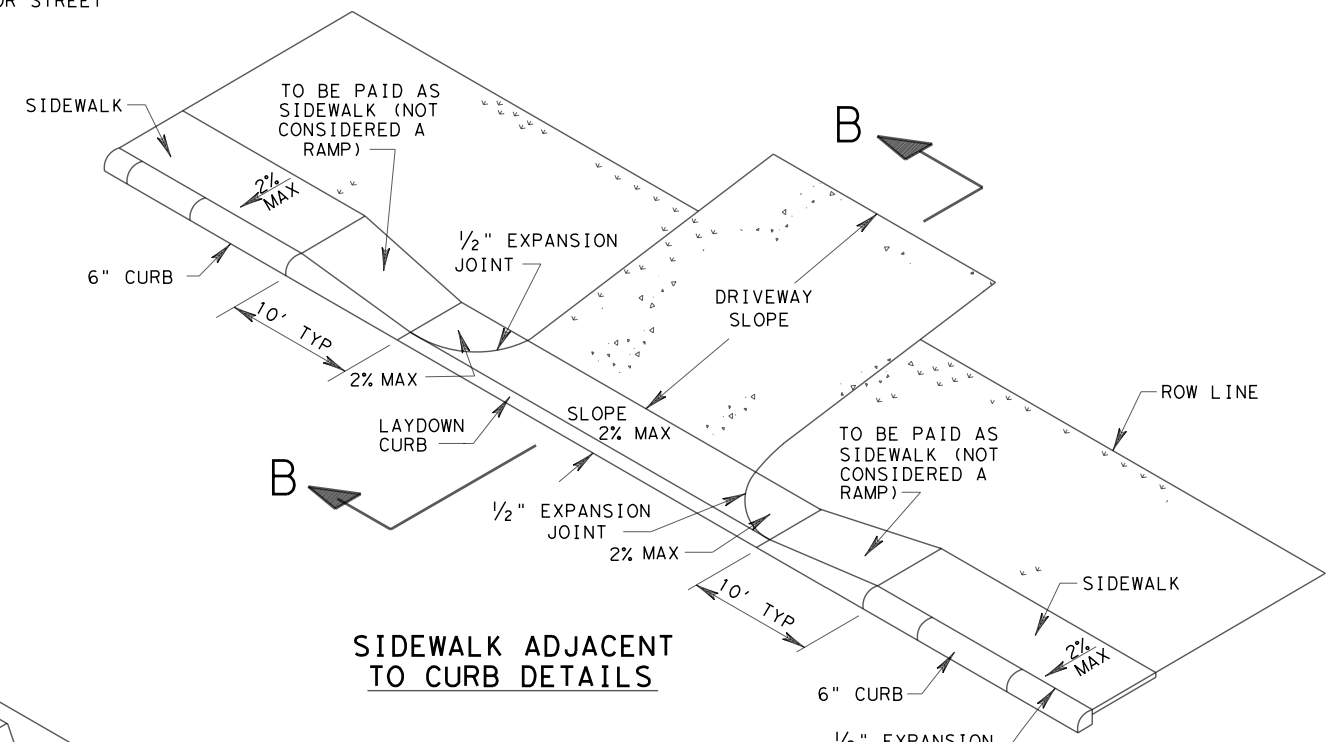
TIE BAR PLACEMENT WITH JRCP



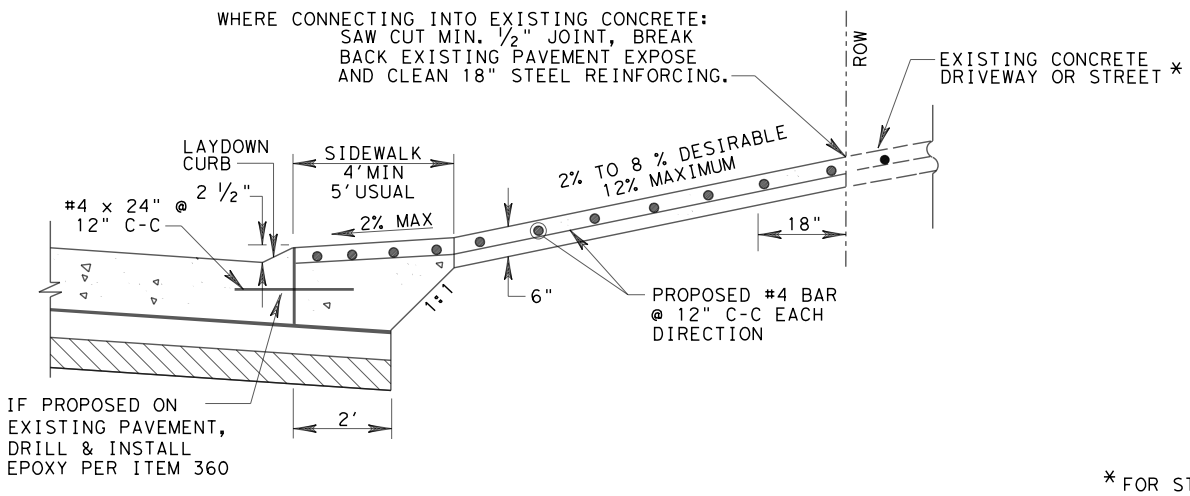
SIDEWALK OFFSET FROM CURB DETAILS



SLOPES W/ SIDEWALKS OFFSET FROM CURB (SECTION A-A)

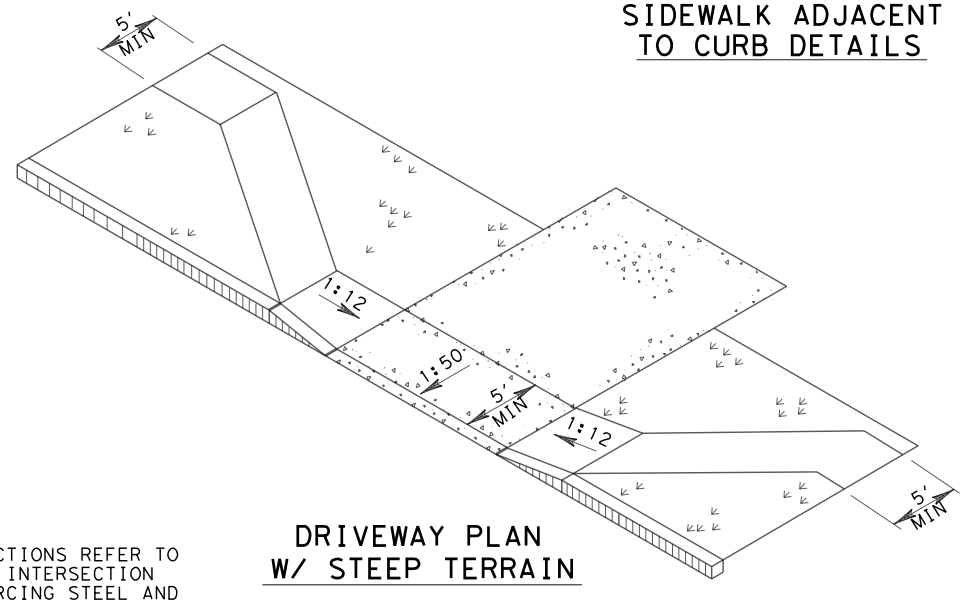


SIDEWALK ADJACENT TO CURB DETAILS



DRIVEWAY SLOPES W/ SIDEWALKS ADJACENT TO CURB (SECTION B-B)

* FOR STREET INTERSECTIONS REFER TO PAVING DETAILS AND INTERSECTION DETAILS FOR REINFORCING STEEL AND SECTION REQUIREMENTS.



DRIVEWAY PLAN W/ STEEP TERRAIN

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DRIVEWAY DETAILS

DD

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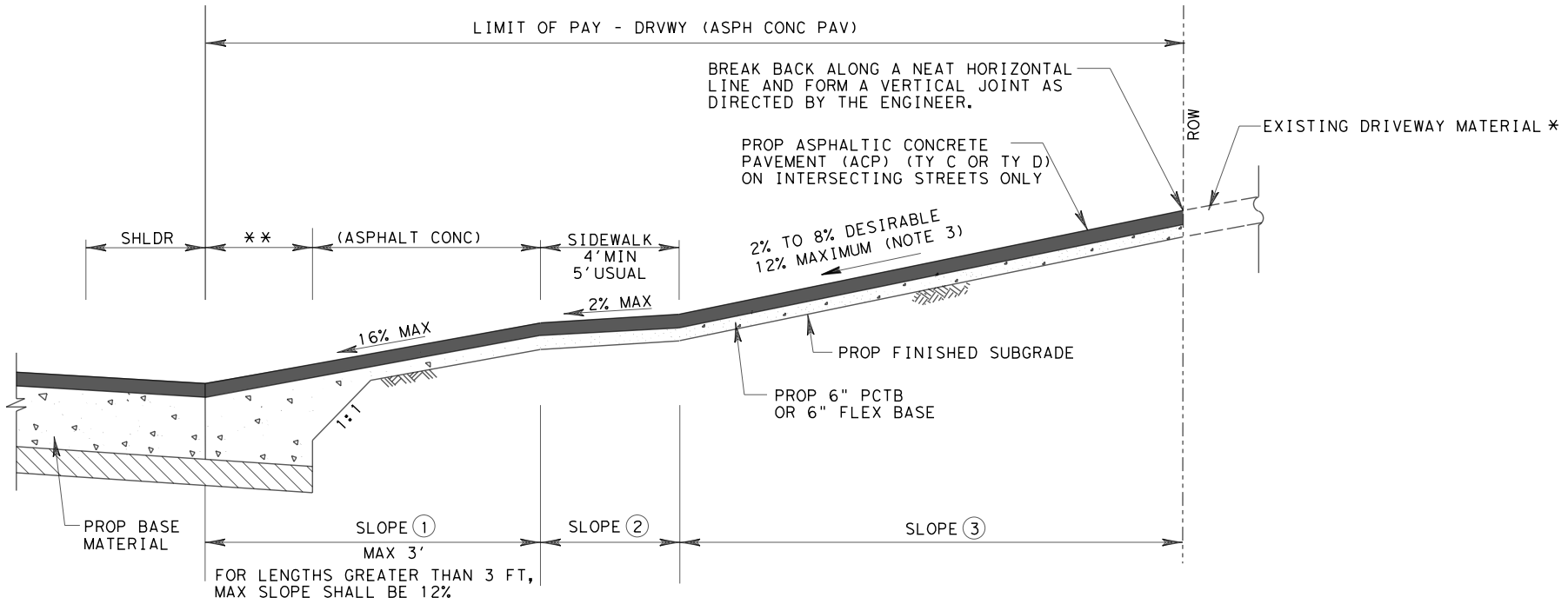
REVISIONS 1/2008 ADDED TIE-BAR INFORMATION 9/09 ADDED NOTE FOR ITEM 360.	HOU	6			100
	COUNTY		CONTROL	SECT	JOB	HIGHWAY

STDB8B



PROPOSED DRIVEWAY SLOPES
WITH SIDEWALKS OFFSET

NOTES:

1. ALSO SEE SHEET 2 OF 3 FOR DRIVEWAY SLOPES WITH PROPOSED SIDEWALKS.
2. FOR INTERSECTIONS BUILT WITH CRCP PAVEMENT SEE CRCP DETAIL.
3. MAXIMUM SLOPE IS: 12% RESIDENTIAL 8% OTHERS

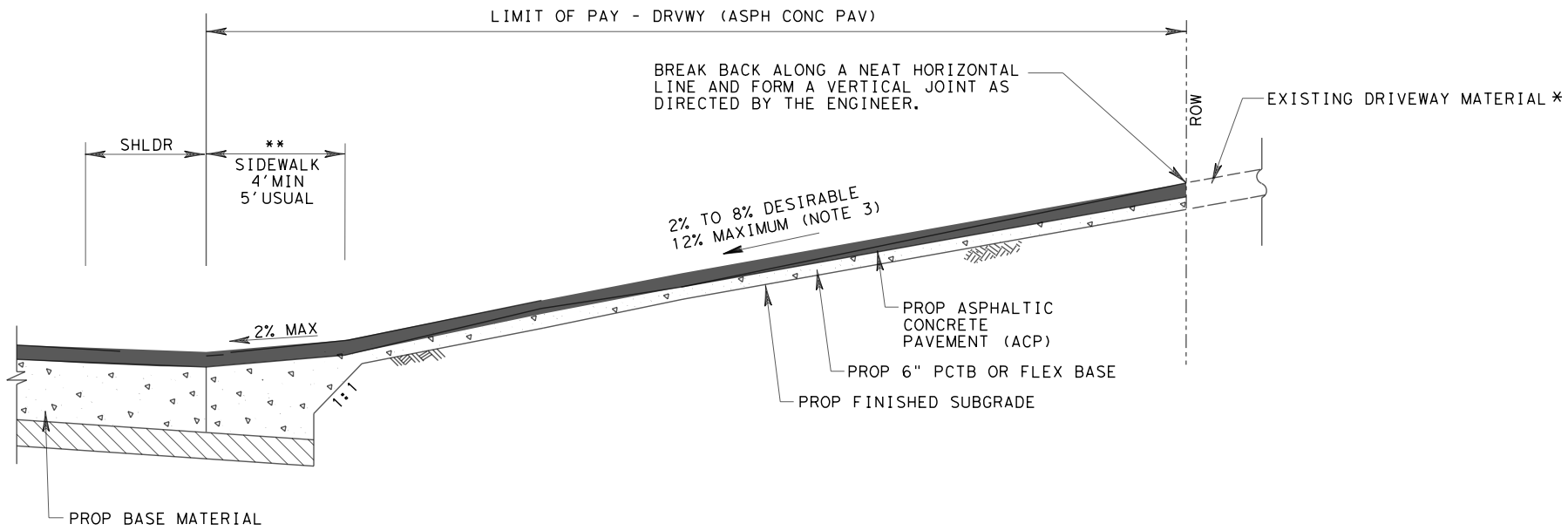
LEGEND:

PCTB- PORTLAND CEMENT TREATED BASE

ACP- ASPHALTIC CONCRETE PAVEMENT

* FOR STREET INTERSECTIONS REFER TO PAVING DETAILS AND INTERSECTION DETAILS.

** PROPOSED LIMIT OF ROADWAY BASE AND/OR SUBGRADE



PROPOSED DRIVEWAY SLOPES
WITH SIDEWALKS ADJACENT

SHEET 3 OF 3

Texas Department of Transportation
Houston District

DRIVEWAY DETAILS

DD

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REVISIONS 11/15 ADDED NOTE FOR PCTB 3/17 MODIFIED PAVEMENT SLOPES	HOU	6				101
	COUNTY		CONTROL	SECT	JOB	HIGHWAY

STDB8C

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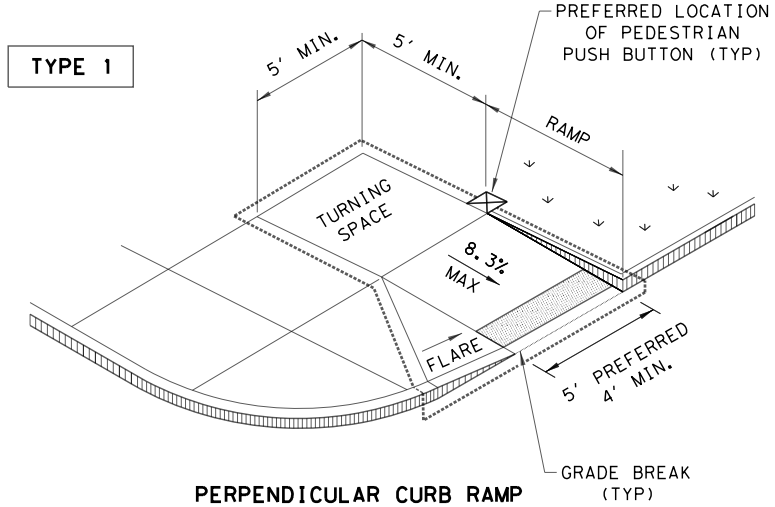
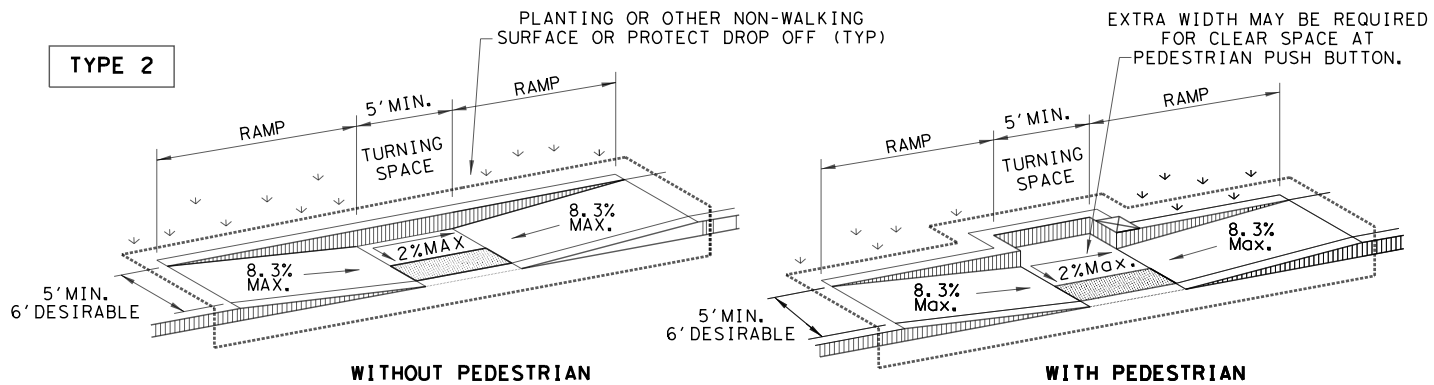


PERPENDICULAR CURB RAMP

TYPE 2

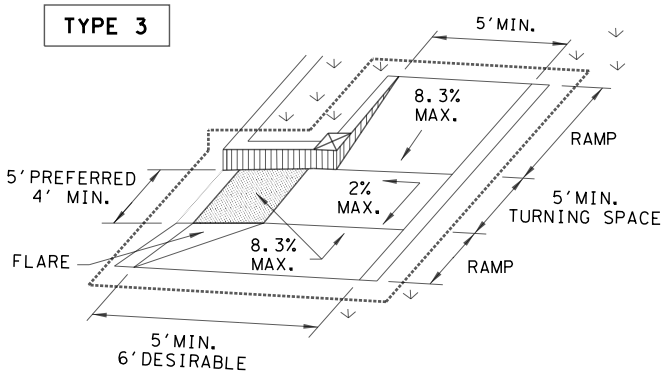


WITHOUT PEDESTRIAN PUSH BUTTON

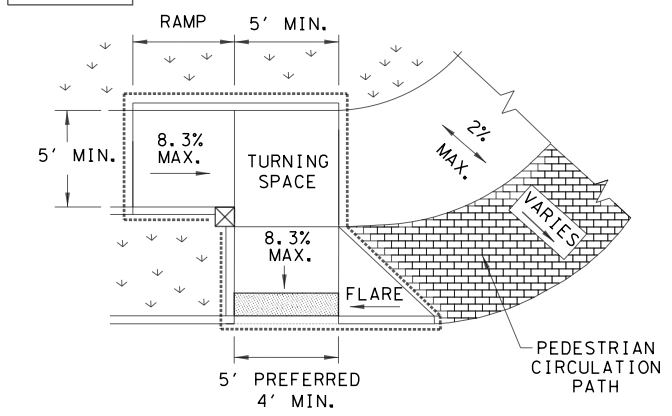
WITH PEDESTRIAN PUSH BUTTON

PARALLEL CURB RAMP

TYPE 3

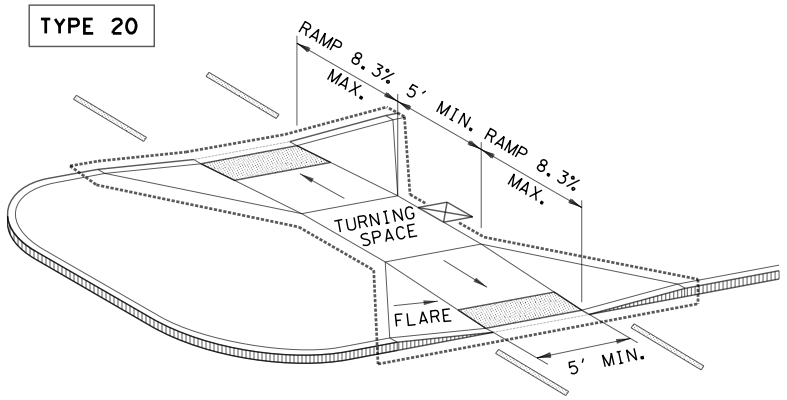


TYPE 6



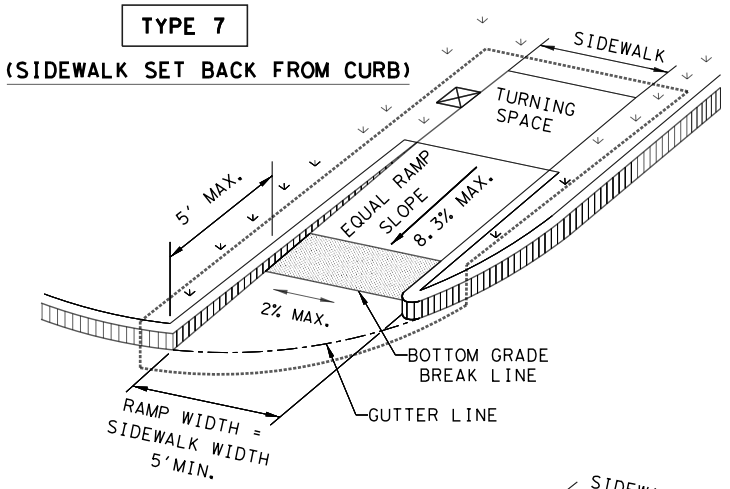
COMBINATION CURB RAMPS

TYPE 20

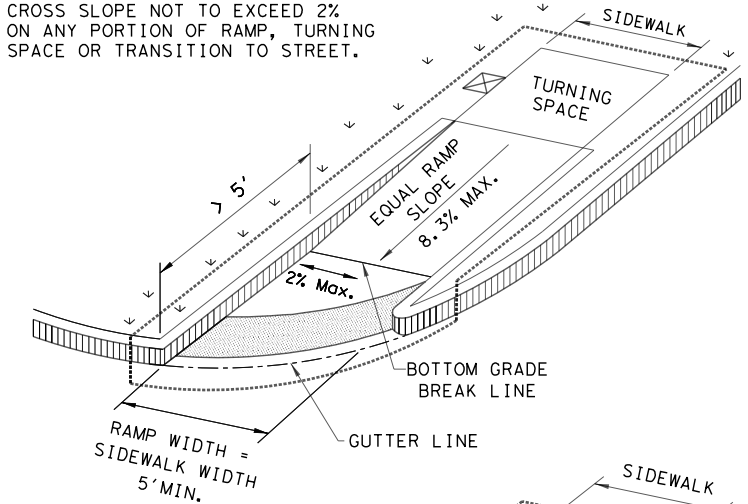


CURB RAMPS AT MEDIAN ISLANDS

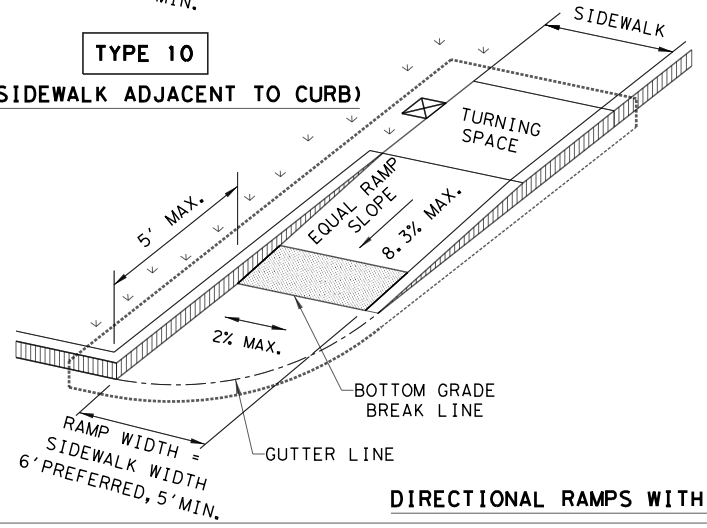
TYPE 7
(SIDEWALK SET BACK FROM CURB)



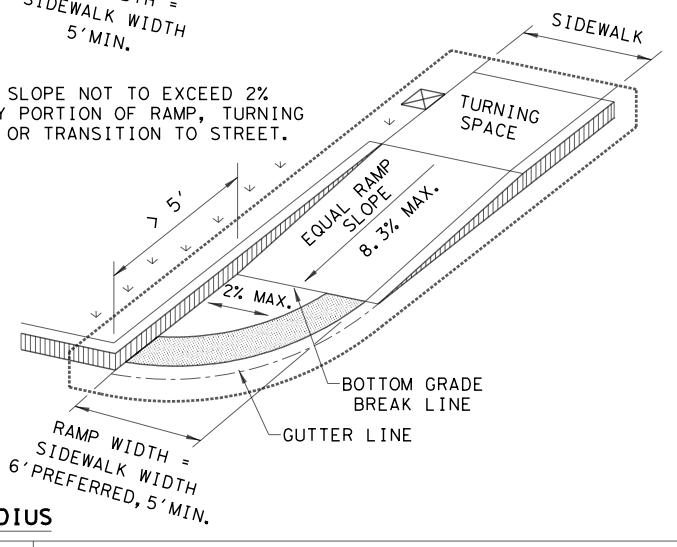
CROSS SLOPE NOT TO EXCEED 2% ON ANY PORTION OF RAMP, TURNING SPACE OR TRANSITION TO STREET.



TYPE 10
(SIDEWALK ADJACENT TO CURB)

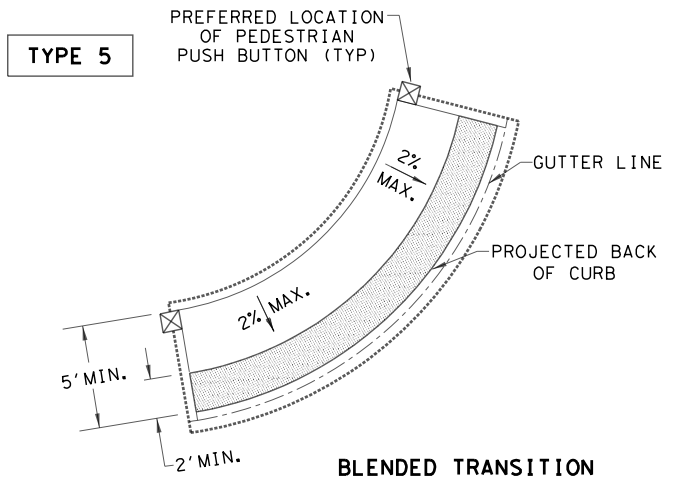


CROSS SLOPE NOT TO EXCEED 2% ON ANY PORTION OF RAMP, TURNING SPACE OR TRANSITION TO STREET.



DIRECTIONAL RAMPS WITHIN RADIUS

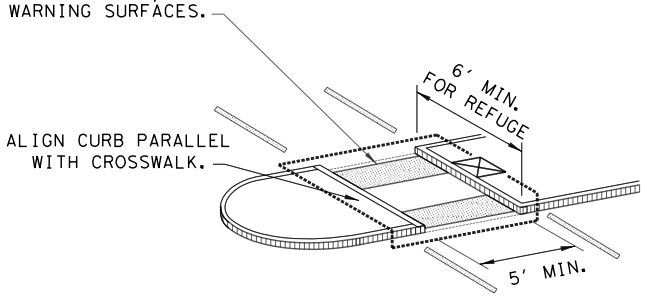
TYPE 5



BLENDED TRANSITION
(FLUSH LANDING)

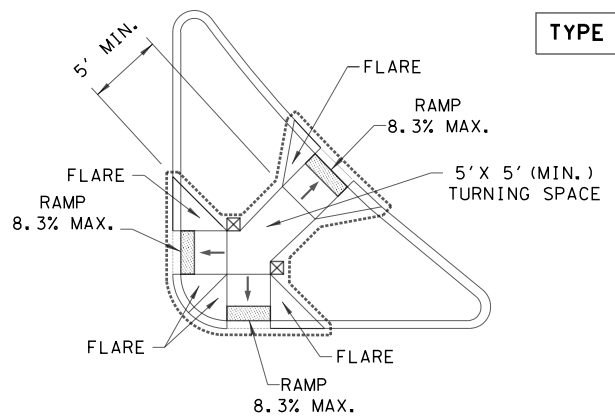
INSTALL DETECTABLE WARNING SURFACE AT EACH END OF THE CUT-THROUGH RAMP WITH A MINIMUM 2' USUAL SIDEWALK SURFACE BETWEEN. IF MEDIAN IS LESS THAN 6' WIDE, ELIMINATE DETECTABLE WARNING SURFACES.

TYPE 21



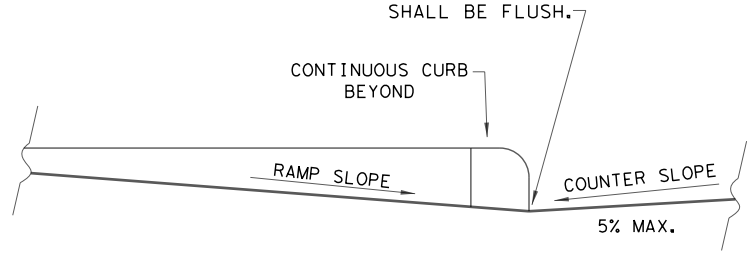
NOTE: CURB DETAILS ARE SHOWN ELSEWHERE IN THE PLANS.

TYPE 22



COMBINATION ISLAND RAMPS

BOTTOM GRADE BREAK OF CURB RAMP WILL NORMALLY BE AT GUTTER LINE. SURFACE SLOPES AT GRADE BREAKS SHALL BE FLUSH.



TYPICAL SECTION OF PERPENDICULAR CURB RAMP AT CONNECTION TO ROADWAY

NOTES / LEGEND:

SEE GENERAL NOTES ON SHEET 2 OF 4 FOR MORE INFORMATION.

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.

DETECTABLE WARNING SURFACE

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON IF APPLICABLE.

GUTTER LINE

GRADE BREAK

RAMP LIMITS OF PAYMENT

Texas Department of Transportation

Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS REVISED 08,2005 REVISED 06,2012 REVISED 01,2018				
	DIST	COUNTY		SHEET NO.
	HOU	FT BEND		102

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DATE: 5/12/2022
FILE: \\email\Transportation\FORT BEND COUNTY\WESTPARK P&R\CADD\STANDARDS\ped18.dgn

GENERAL NOTES

CURB RAMPS

1. Install a curb ramp or blended transition at each pedestrian street crossing.
2. All slopes shown are maximum allowable. Cross slopes of 1.5% and lesser running should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
3. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
4. The minimum sidewalk width is 5'. Where the sidewalk is adjacent to the back of curb, a 6' sidewalk width is desirable. Where a 5' sidewalk cannot be provided due to site constraints, sidewalk width may be reduced to 4' for short distances. 5'x 5' passing areas at intervals not to exceed 200' are required.
5. Turning Spaces shall be 5'x 5' minimum. Cross slope shall be maximum 2%.
6. Clear space at the bottom of curb ramps shall be a minimum of 4'x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
7. Provide flared sides where the pedestrian circulation path crosses the curb ramp. Flared sides shall be sloped at 10% maximum, measured parallel to the curb. Returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planted, substantially obstructed, or otherwise protected.
8. Additional information on curb ramp location, design, light reflective value and texture may be found in the latest draft of the Proposed Guidelines for Pedestrian Facilities in the Public Right of Way (PROWAG) as published by the U.S. Architectural and Transportation Barriers Compliance Board (Access Board).
9. To serve as a pedestrian refuge area, the median should be a minimum of 6' wide, measured from back of curbs. Medians should be designed to provide accessible passage over or through them.
10. Small channelization islands, which do not provide a minimum 5'x 5' landing at the top of curb ramps, shall be cut through level with the surface of the street.
11. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps shall align with theoretical crosswalks unless otherwise directed.
12. Provide curb ramps to connect the pedestrian access route at each pedestrian street crossing. Handrails are not required on curb ramps.
13. Curb ramps and landings shall be constructed and paid for in accordance with Item 531 "Sidewalks".
14. Place concrete at a minimum depth of 5" for ramps, flares and landings, unless otherwise directed.
15. Furnish and install No. 3 reinforcing steel bars at 18" o.c. both ways, unless otherwise directed.
16. Provide a smooth transition where the curb ramps connect to the street.
17. Curbs shown on sheet 1 within the limits of payment are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.
18. Existing features that comply with applicable standards may remain in place unless otherwise shown on the plans.

DETECTABLE WARNING MATERIAL

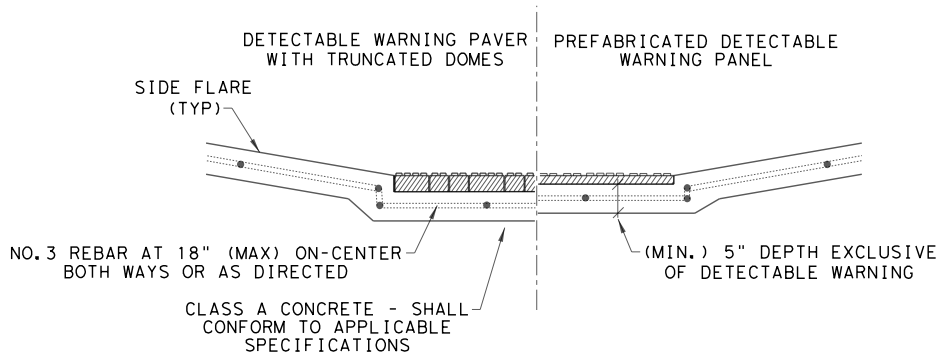
19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
20. Detectable Warning Materials must meet TxDOT Departmental Materials Specification DMS 4350 and be listed on the Material Producer List. Install products in accordance with manufacturer's specifications.
21. Detectable warning surfaces must be firm, stable and slip resistant.
22. Detectable warning surfaces shall be a minimum of 24 inches in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
23. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb and neither end of that edge is greater than 5 feet from the back of curb. Detectable warning surfaces may be curved along the corner radius.
24. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.

DETECTABLE WARNING PAVERS (IF USED)

25. Furnish detectable warning paver units meeting all requirements of ASTM C-936, C-33. Lay in a two by two unit basket weave pattern or as directed.
26. Lay full-size units first followed by closure units consisting of at least 25 percent (25%) of a full unit. Cut detectable warning paver units using a power saw.

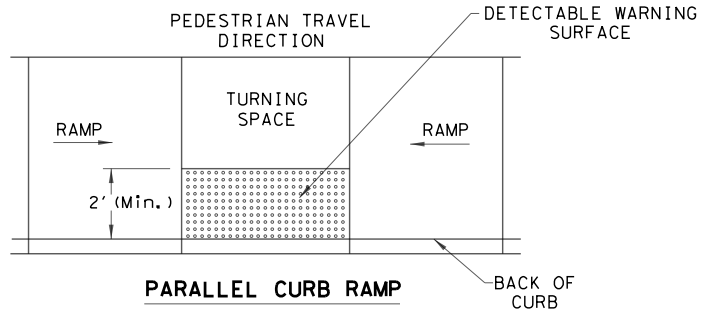
SIDEWALKS

27. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within unobstructed reach range specified in PROWAG section R406.
28. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items so as not to obstruct the pedestrian access route or clear ground space.
29. Street grades and cross slopes shall be as shown elsewhere in the plans.
30. Changes in level greater than 1/4 inch are not permitted.
31. The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway. Where a continuous grade greater than five percent (5%) must be provided, handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with PROWAG R409.
32. Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.
33. Driveways and turnouts shall be constructed and paid for in accordance with Item "Intersections, Driveways and Turnouts". Sidewalks shall be constructed and paid for in accordance with Item, "Sidewalks".
34. Sidewalk details are shown elsewhere in the plans.



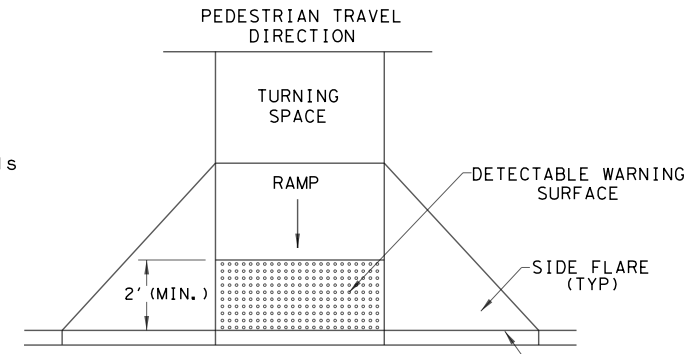
SECTION VIEW DETAIL
CURB RAMP AT DETECTIBLE WARNINGS

DETECTABLE WARNING SURFACE DETAILS



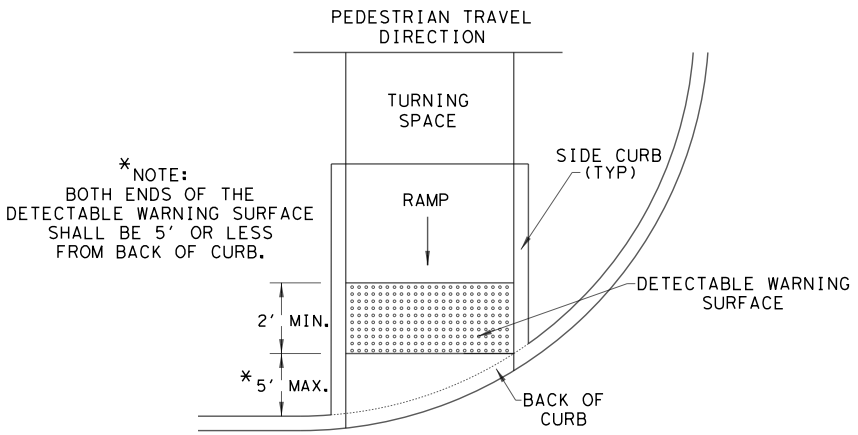
PARALLEL CURB RAMP

TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING AT STREET EDGE.



PERPENDICULAR CURB RAMP

TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.



DIRECTIONAL CURB RAMP

TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.

Texas Department of Transportation | Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
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REVISIONS				
REVISED 08,2005	DIST	COUNTY		SHEET NO.
REVISED 06,2012	HOU	FT BEND		103
REVISED 01,2018				

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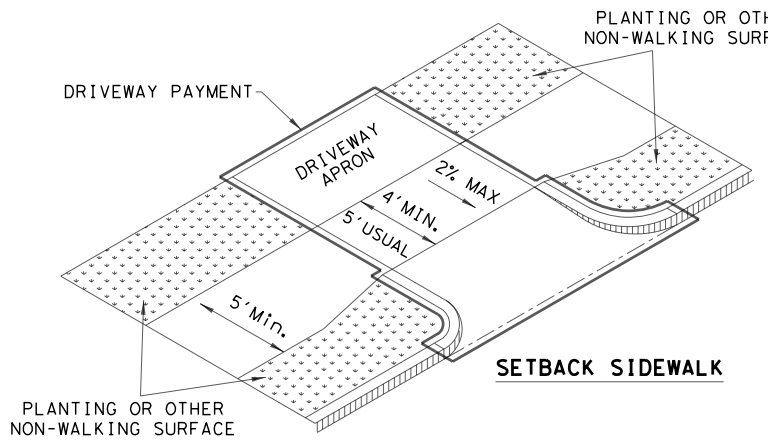
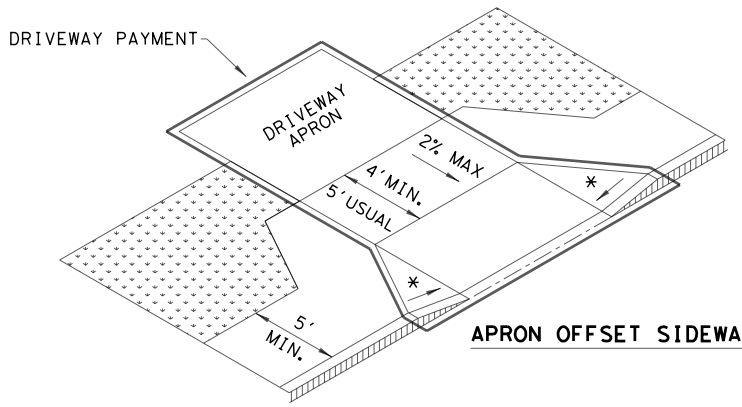
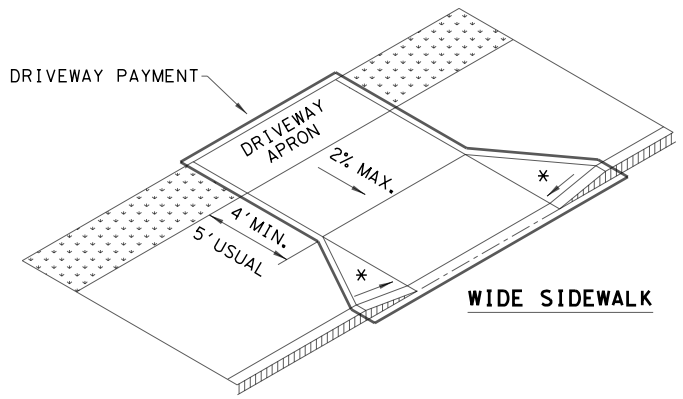
SIDEWALK TREATMENT AT DRIVEWAYS



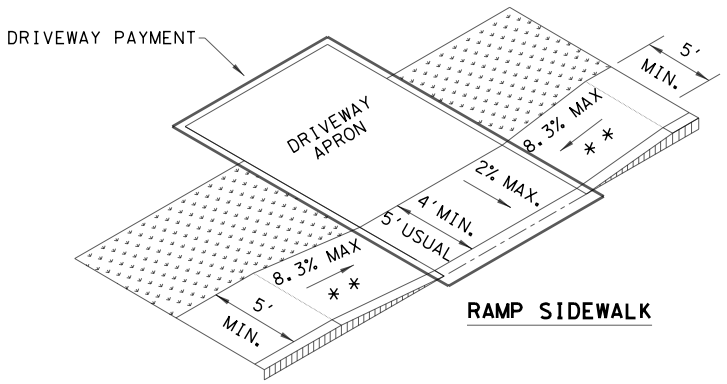
SETBACK SIDEWALK



APRON OFFSET SIDEWALK



WIDE SIDEWALK

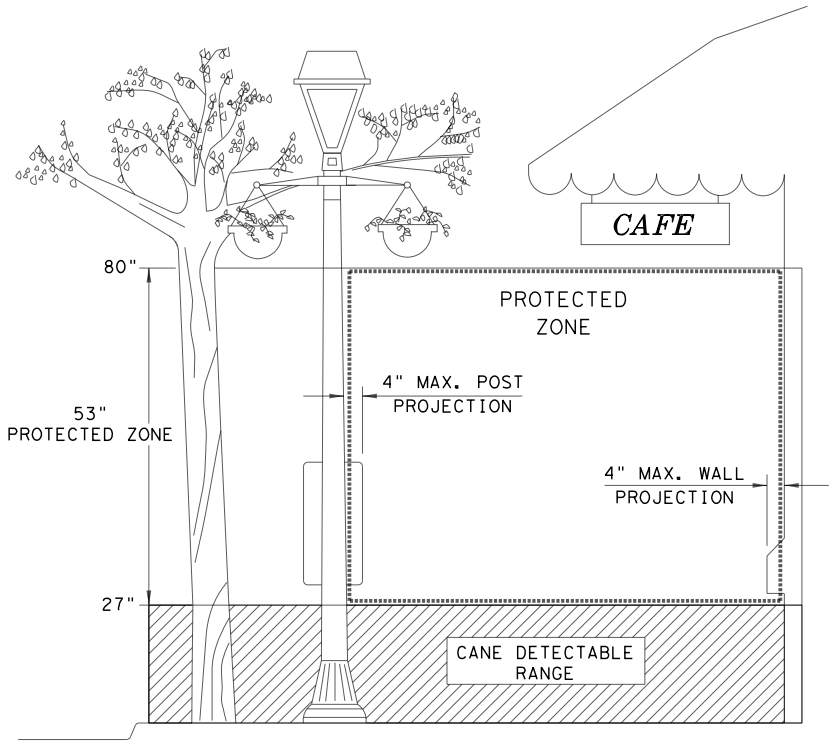


RAMP SIDEWALK

NOTES:

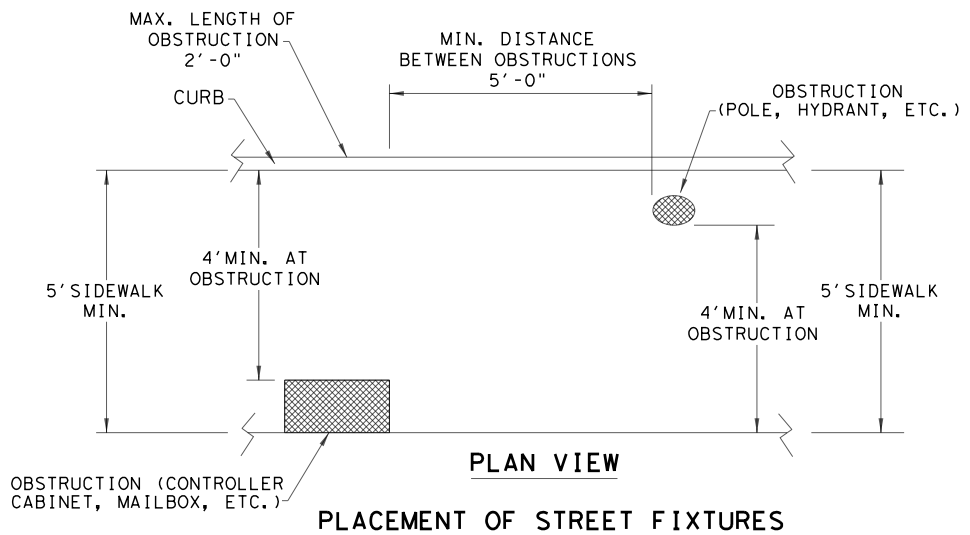
* WHERE DRIVEWAYS CROSS THE PEDESTRIAN ROUTE, SIDES SHALL BE FLARED AT 10% MAX SLOPE.

* * 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

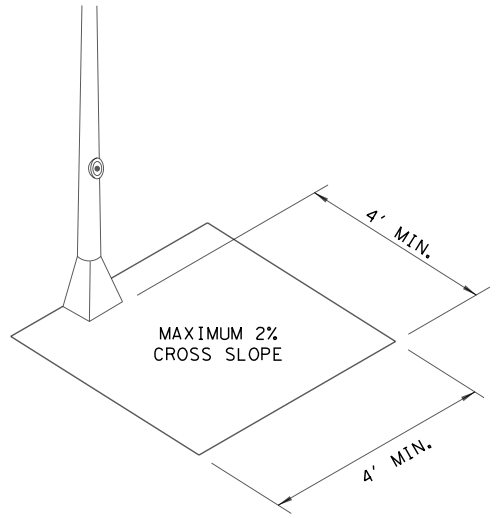
NOTE: IN PEDESTRIAN CIRCULATION AREA, MAXIMUM 4" PROJECTION FOR POST OR WALL MOUNTED OBJECTS BETWEEN 27" AND 80" ABOVE THE SURFACE.



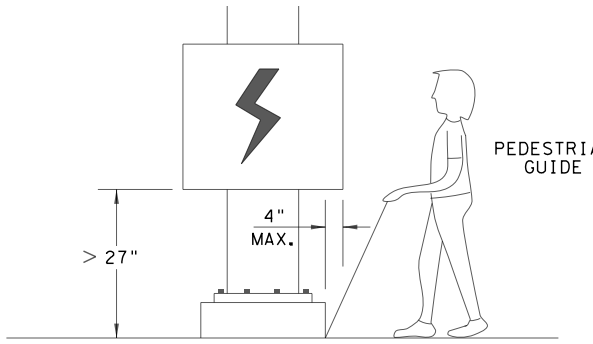
PLAN VIEW

PLACEMENT OF STREET FIXTURES

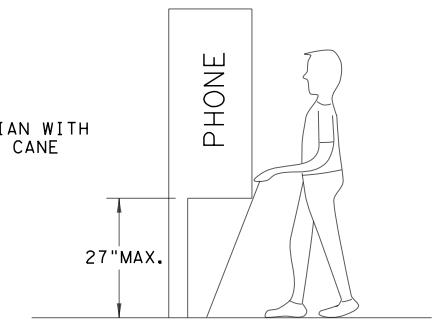
NOTE: ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' X 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.



CLEAR SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON



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"

Texas Department of Transportation

Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

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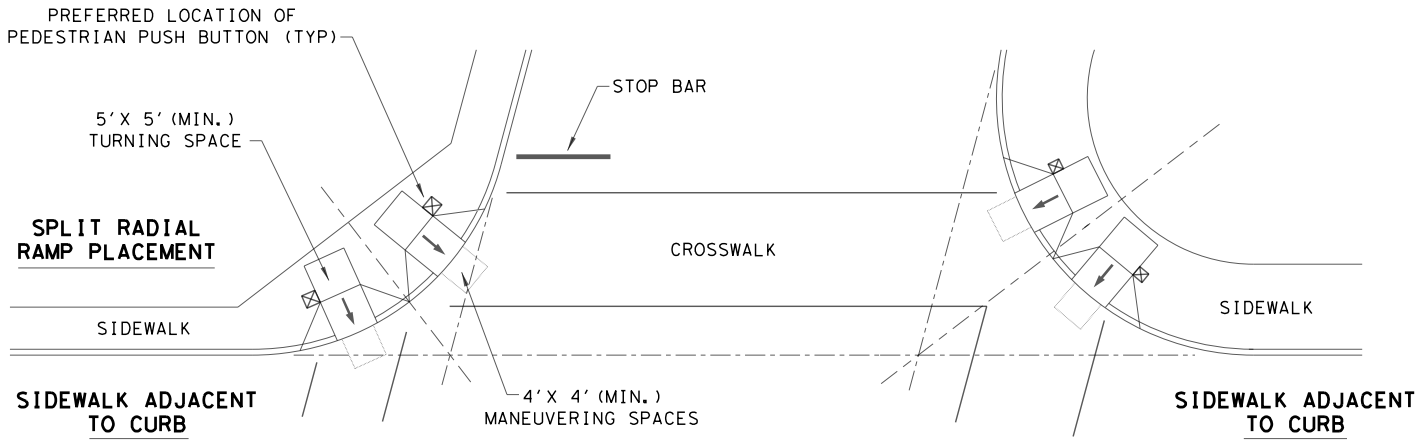
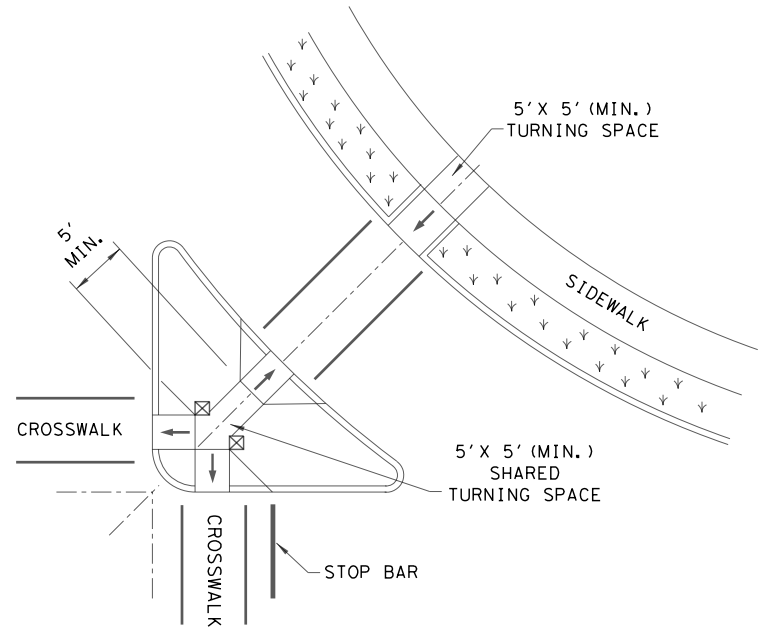
TYPICAL CROSSING LAYOUTS

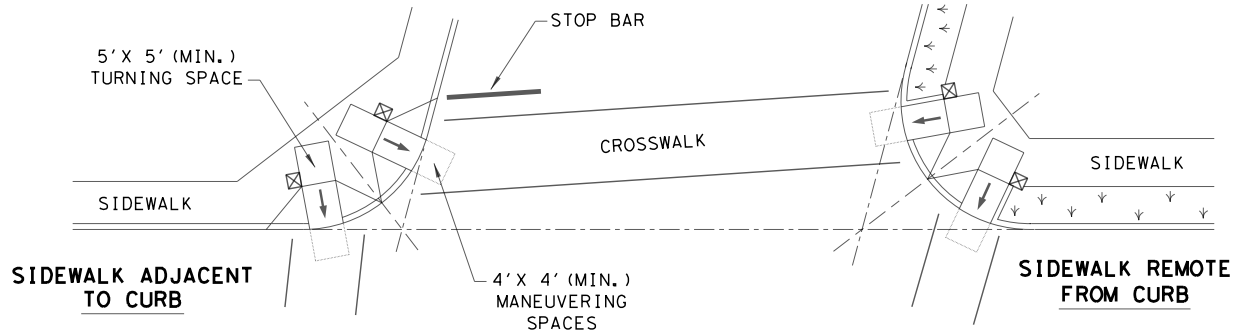
SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS



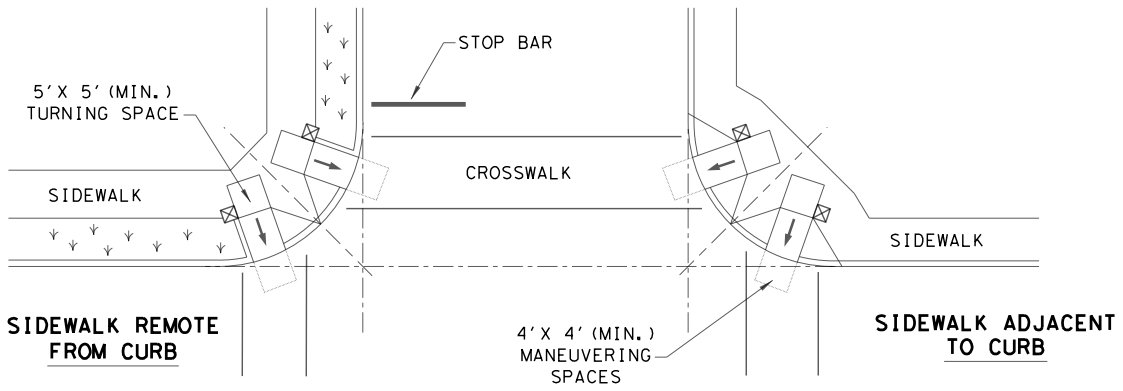
SKEWED INTERSECTION WITH "LARGE" RADIUS



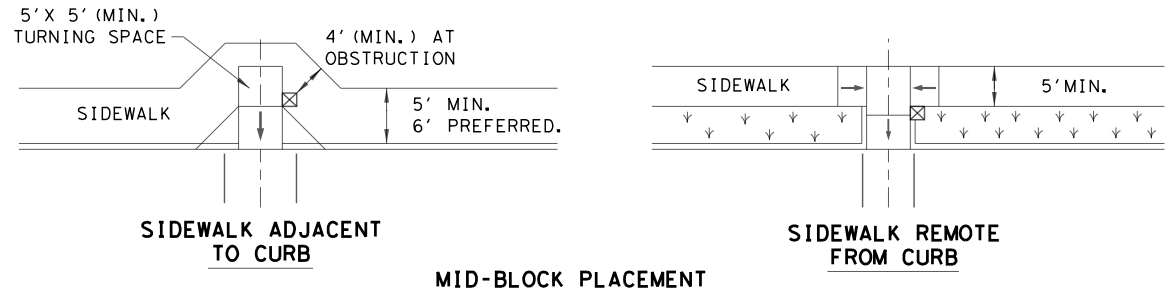
AT INTERSECTION
W/FREE RIGHT TURN & ISLAND



SKEWED INTERSECTION WITH "SMALL" RADIUS



NORMAL INTERSECTION WITH "SMALL" RADIUS



MID-BLOCK PLACEMENT
PERPENDICULAR RAMPS

LEGEND:

SHOWS DOWNWARD SLOPE. →

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON (IF APPLICABLE). ☒

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.

Texas Department of Transportation | Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

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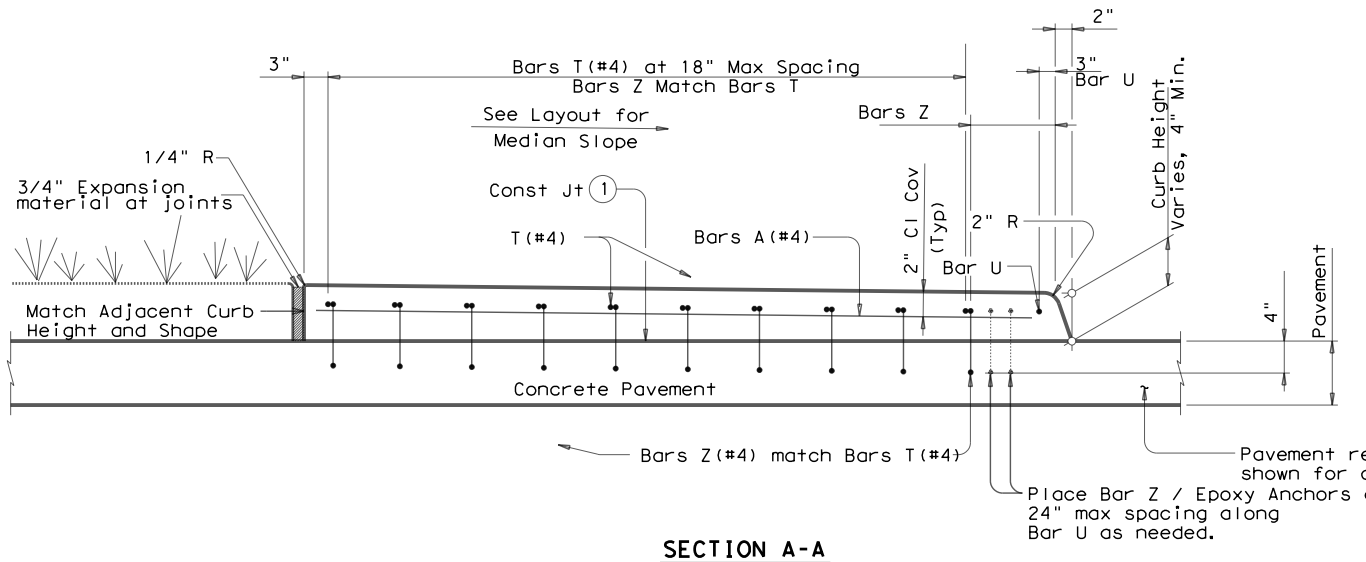
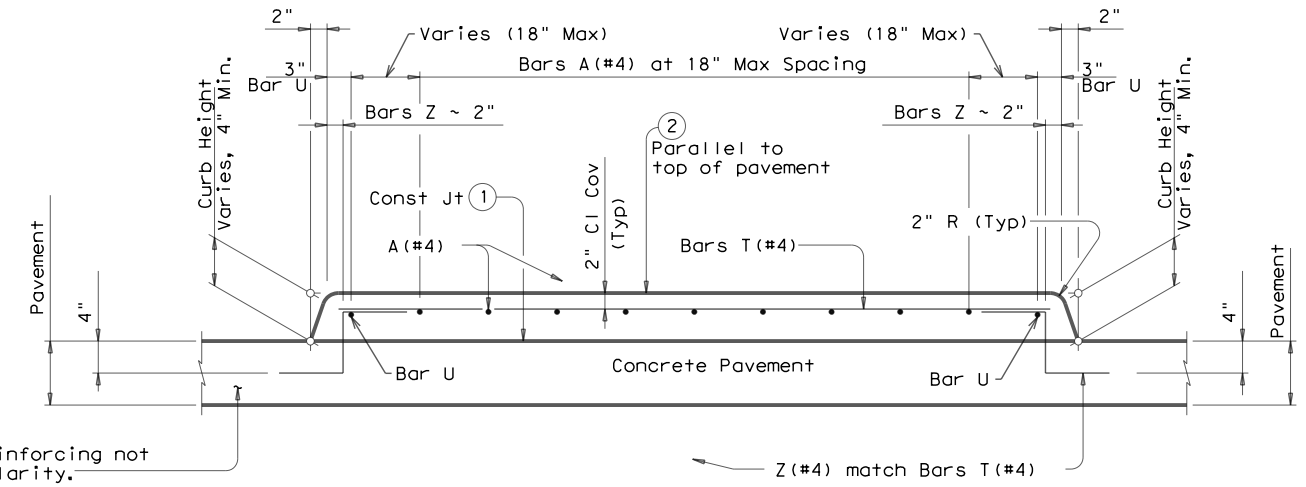


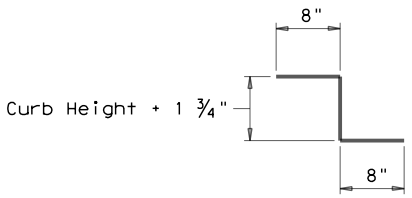
SECTION A-A



SECTION B-B

(1) Provide broom finish to top of pavement where raised median area is defined.

(2) Unless noted otherwise on the pavement details.

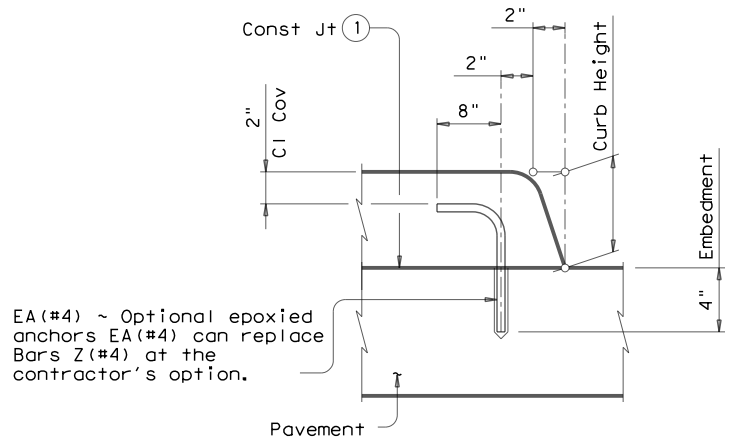


BARS Z(#4)

MATERIAL NOTES:
Provide Grade 60 reinforcement. Welded wire reinforcement (WWR) meeting ASTM A497 of equivalent size and spacing may be substituted for Bars A and Bars T.

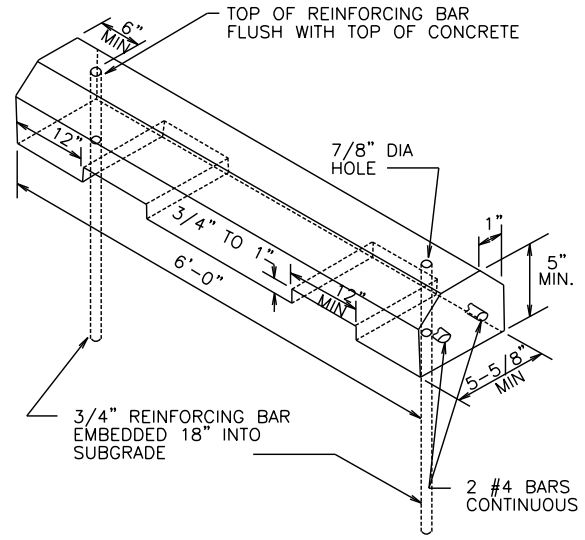
Epoxy coat reinforcement if pavement reinforcement is required to be epoxy coated.

DESIGNER NOTES:
Provide Median Slope in Design Layouts.

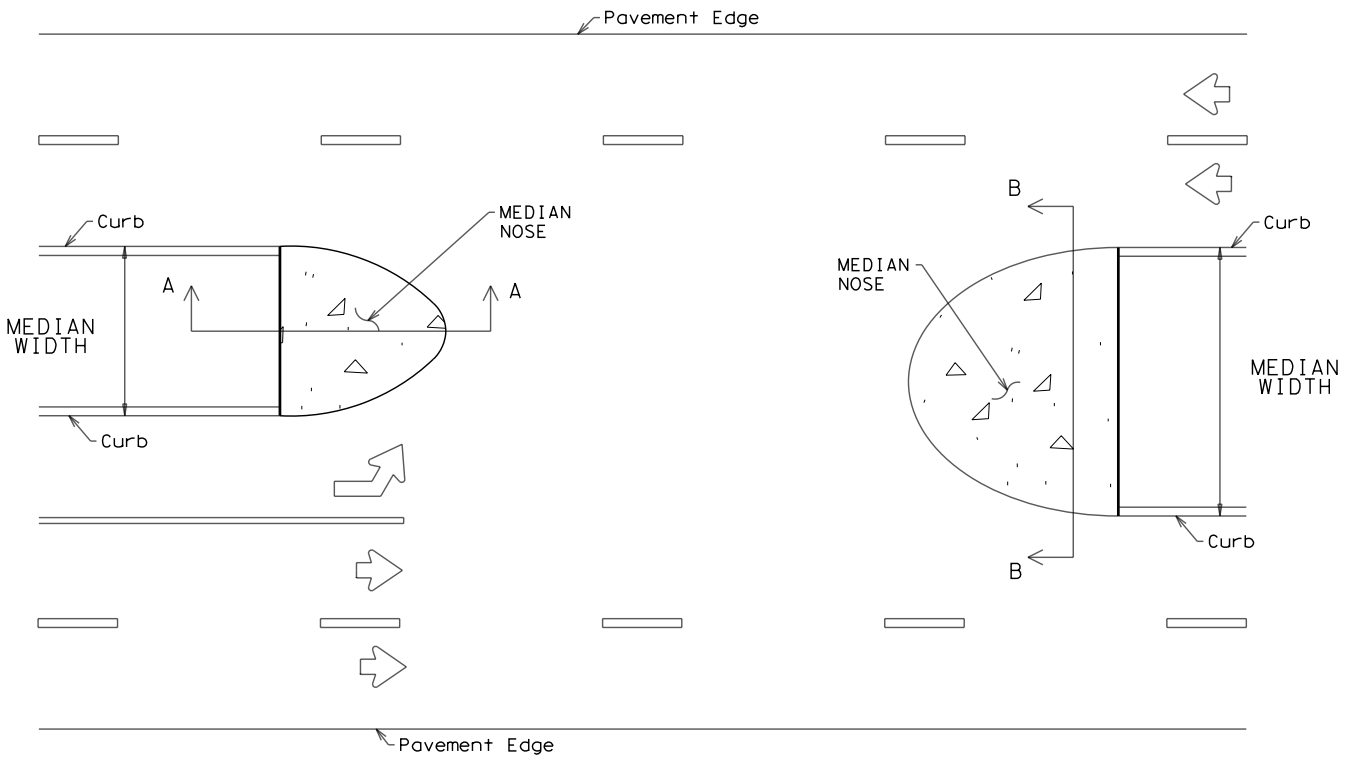


OPTIONAL EPOXY ANCHORS

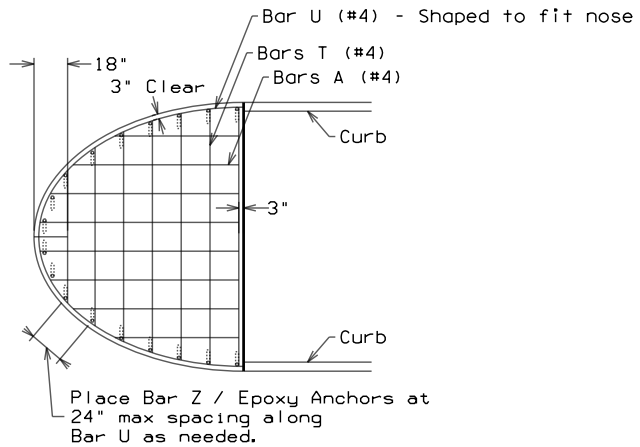
Embed EA(#4) bar into concrete with a Type III (Class C) epoxy meeting the requirements of DMS-6100, "Epoxies and Adhesives". Follow manufacturer's directions for installing the epoxied anchor bars.



PARKING BUMPER
(PRECAST CONCRETE)
NTS



PLAN



REINFORCING

SHEET 1 OF 1

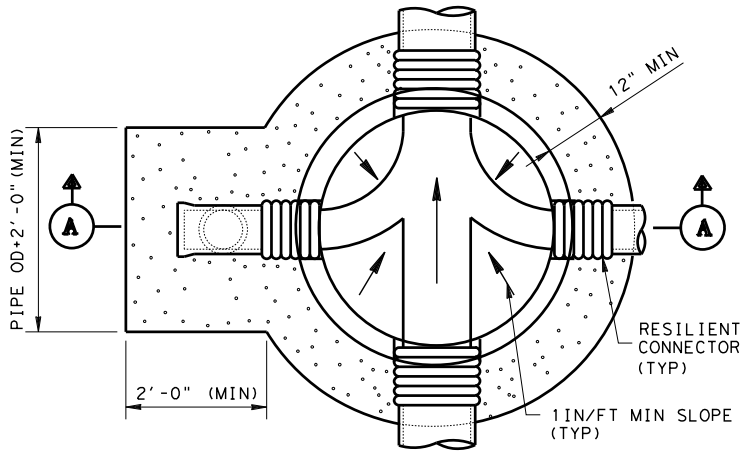
Texas Department of Transportation
Houston District

MEDIAN NOSE AND PARKING BUMPER DETAILS

HOU-MEDNS

FILE: stdB13.dgn	DN: NHEB	CK: TxDOT	DW: NHEB	CK: TxDOT
© TxDOT September 2014	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	HOU			106
	COUNTY	CONTROL	SECT	JOB	HIGHWAY

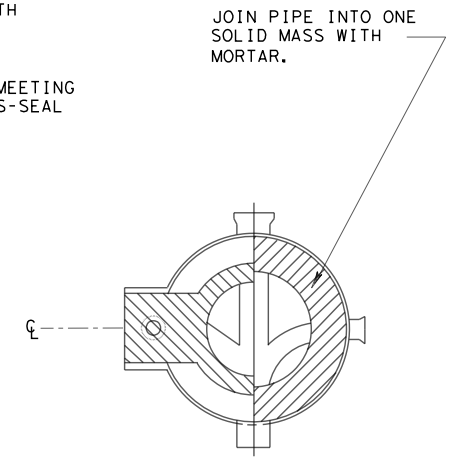
PATH:
LEVELS DISPLAYED
60
1



FOUNDATION PLAN (PRECAST MANHOLE)

GENERAL NOTES:

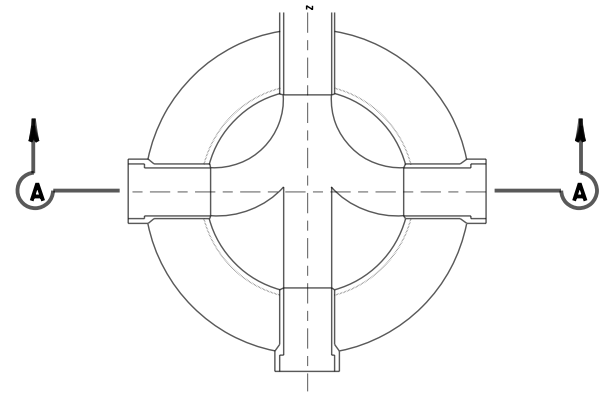
1. DEPTH OF MANHOLE DETERMINES SECTIONS REQUIRED.
2. THE MAXIMUM TOTAL HEIGHT OF THE ADJUSTMENT RINGS IS 1.5 FT.
3. INSTALL MANHOLE DROP AND INTERSECTING PIPES ONLY WHEN CALLED FOR IN THE PLAN AND PROFILE DRAWING.
4. ECCENTRIC PRECAST CONCRETE MANHOLE MAY BE USED.
5. FOR PRECAST SECTIONS, PROVIDE JOINTS BETWEEN SECTIONS, WITH O-RING GASKETS CONFORMING TO ASTM C 443.
6. WHERE RIGID JOINTS BETWEEN PIPE AND CAST-IN-PLACE MANHOLE BASE ARE USED, PROVIDE A POLYETHYLENE-ISOPRENE WATERSTOP MEETING PHYSICAL PROPERTY REQUIREMENTS OF ASTM C 923, SUCH AS PRES-SEAL WS SERIES, OR APPROVED EQUAL.



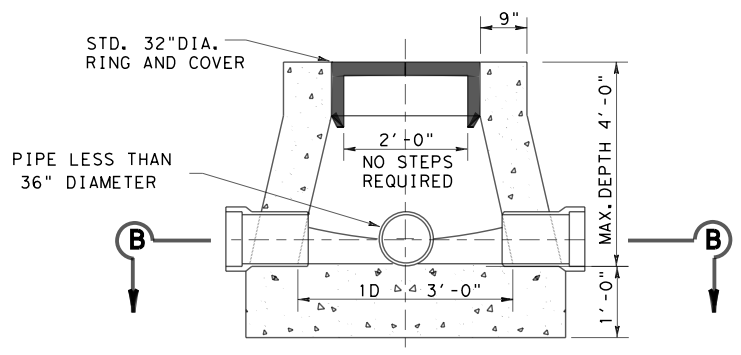
SECTION A-B

GENERAL NOTES:

7. MANHOLE STEPS ARE REQUIRED FOR MANHOLES GREATER THAN 5 FT. IN DEPTH. CONSTRUCT 10 IN. WIDE CORROSION RESISTANT STEPS CONSISTING OF DEFORMED STEEL BARS COATED WITH A POLYESTER RESIN FIBERGLASS MIXTURE PREMOLDED AROUND THE STEEL BAR. STEPS TO BE EQUIVALENT TO SAFETY STEPS AS MANUFACTURED BY UTILITY PRODUCTS, INC. OF SAN ANTONIO, TEXAS OR AMETEK-PLYMOUTH PLASTICS OF SHEBOYGAN, WISCONSIN, OR APPROVED EQUAL.
8. MAXIMUM STEP SPACING IS 16 IN. VERTICALLY. OFFSET ALTERNATE STEPS BY 12 IN. LOCATE THE TOP STEP 24 IN. BELOW TOP OF CASTING AND LOCATE BOTTOM STEP 24 IN. ABOVE BOTTOM OF MANHOLE.
9. CONSTRUCT MANHOLES IN GRADED AREAS TO STAGE I AND FINISHED AFTER GRADING OPERATIONS ARE SUBSTANTIALLY COMPLETE.
10. WHERE THE FLOWLINE OF A PIPE ENTERING A MANHOLE IS GREATER THAN 2 FT. ABOVE THE FLOWLINE OF THE MANHOLE, A STANDARD DROP AS DETAILED ON THIS SHEET IS REQUIRED. USE THE SAME DIAMETER FOR THE DROP PIPE AS THE CONNECTING INFLOW PIPE.
11. JOIN PIPES INTO SOLID MASS WITH MORTAR.

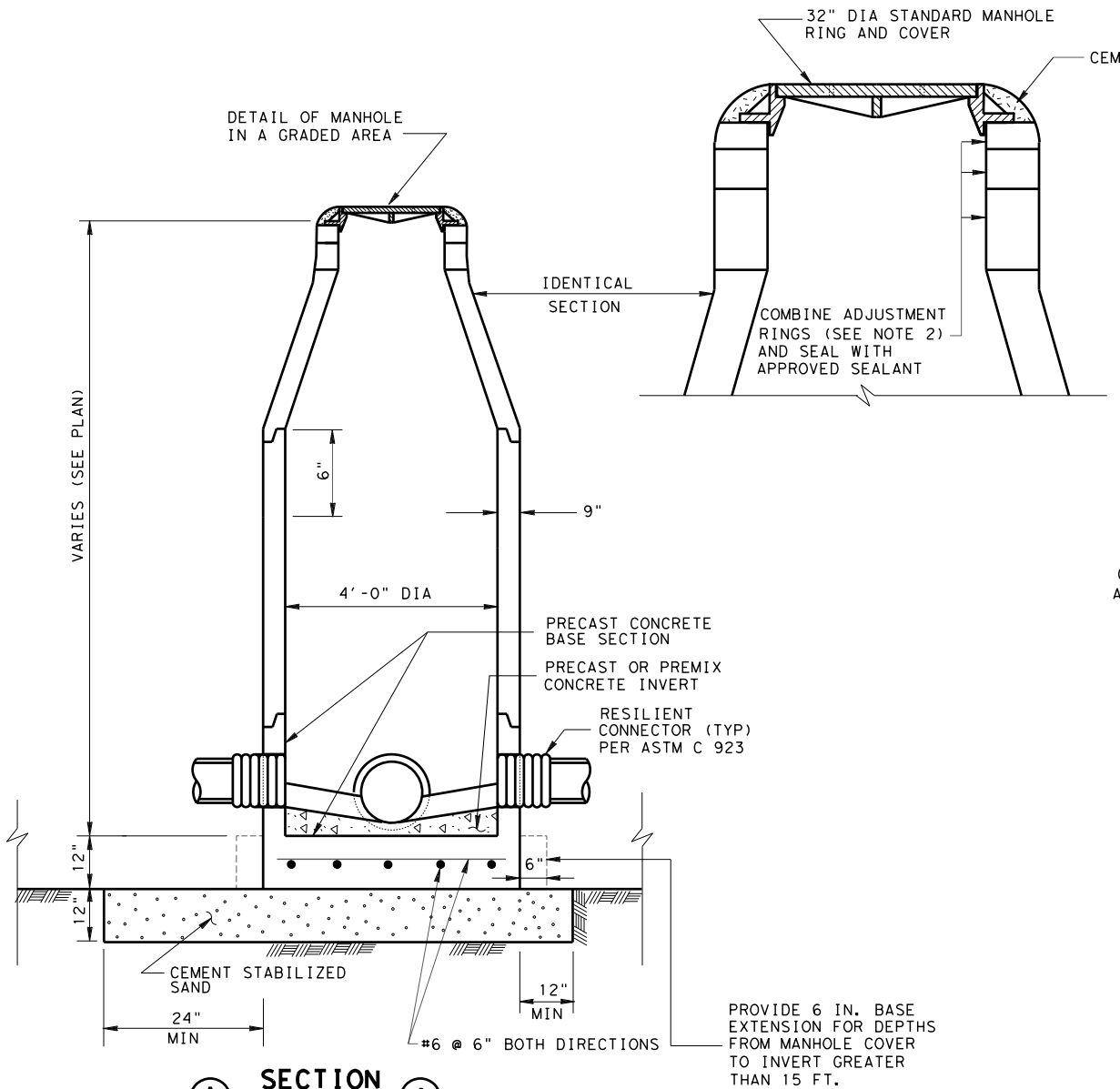


SECTION B-B



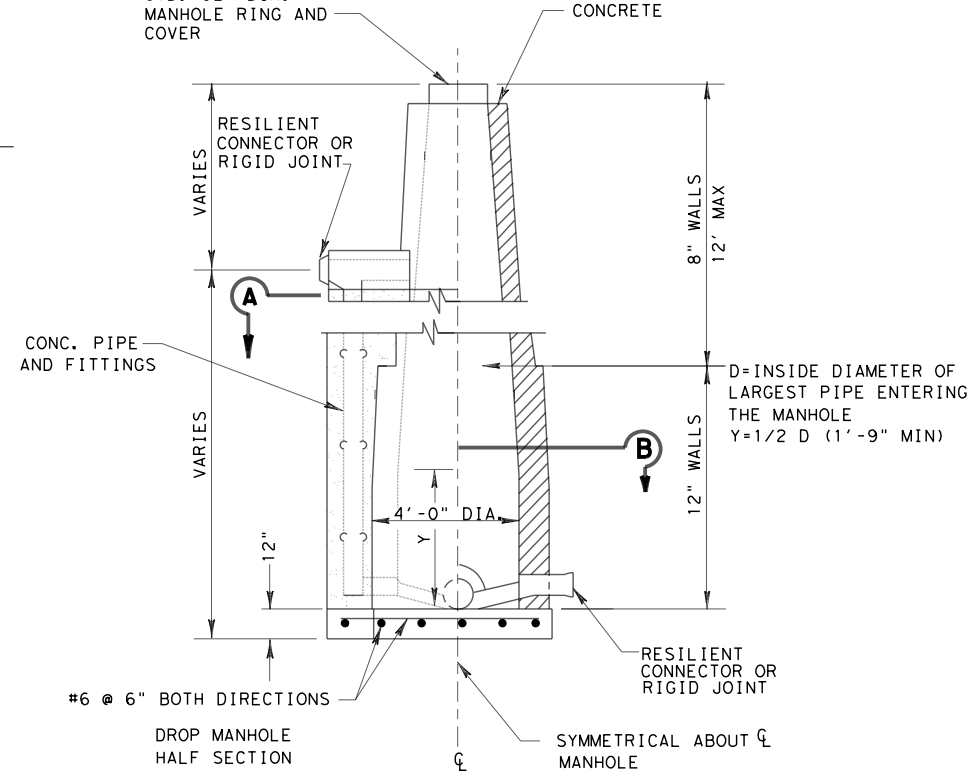
SECTION A-A

STANDARD SANITARY SEWER (MONOLITHIC OR CAST IN PLACE) MANHOLE TYPE 2



SECTION A A

MANHOLE TYPE I (PRECAST)



DROP MANHOLE INCLUDES ITEMS SHOWN EXCEPT SEWER MAIN, WHICH IS PAID FOR AS PIPE SEWER

MANHOLE TYPE I (CAST-IN-PLACE)

Texas Department of Transportation
Houston District (Roadway)

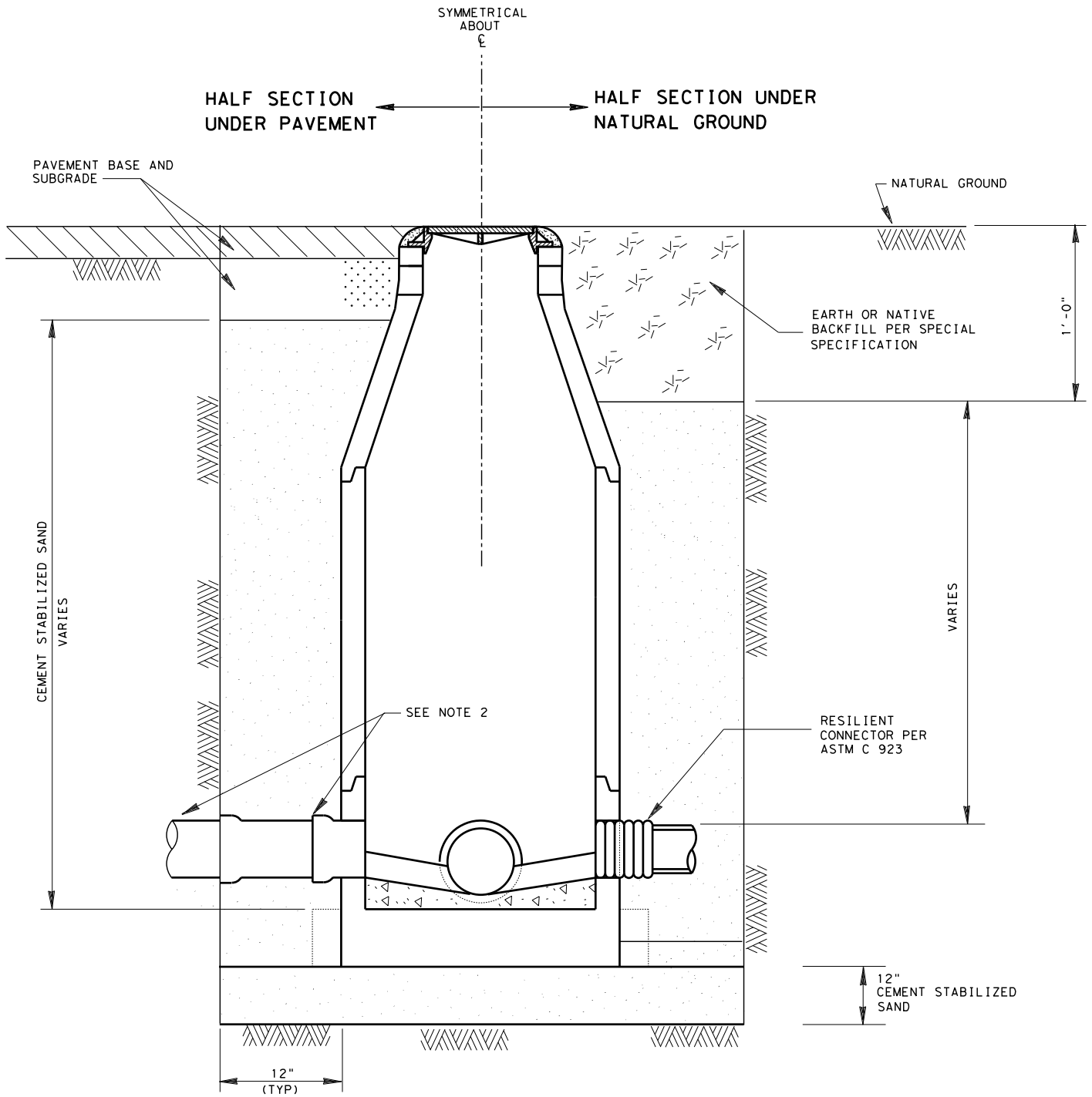
SANITARY SEWER DETAILS

SSD-1

FILE: STDF1.DGN	DN: TxDot	CK: TxDot	DW: TxDot	CK: TxDot
© TxDOT MAY 2006	DIST	FED REG	PROJECT NO.	SHEET
REVISIONS	HOUSTON	6		107
12/2004 REVISED 6/2006	COUNTY		CONTROL SECT JOB	HIGHWAY

NOTES:

1. GROUTING THE MANHOLE STRUCTURE ANNULAR SPACE IS PERMITTED IN CASES WHERE INSUFFICIENT WORK SPACE EXISTS FOR PLACING AND COMPACTING CEMENT STABILIZED SAND.
2. ARRANGE PIPE JOINTS AS SHOWN WHEN USING RIGID CONNECTION TO CAST IN PLACE MANHOLE BASE.



TYPICAL CROSS-SECTION

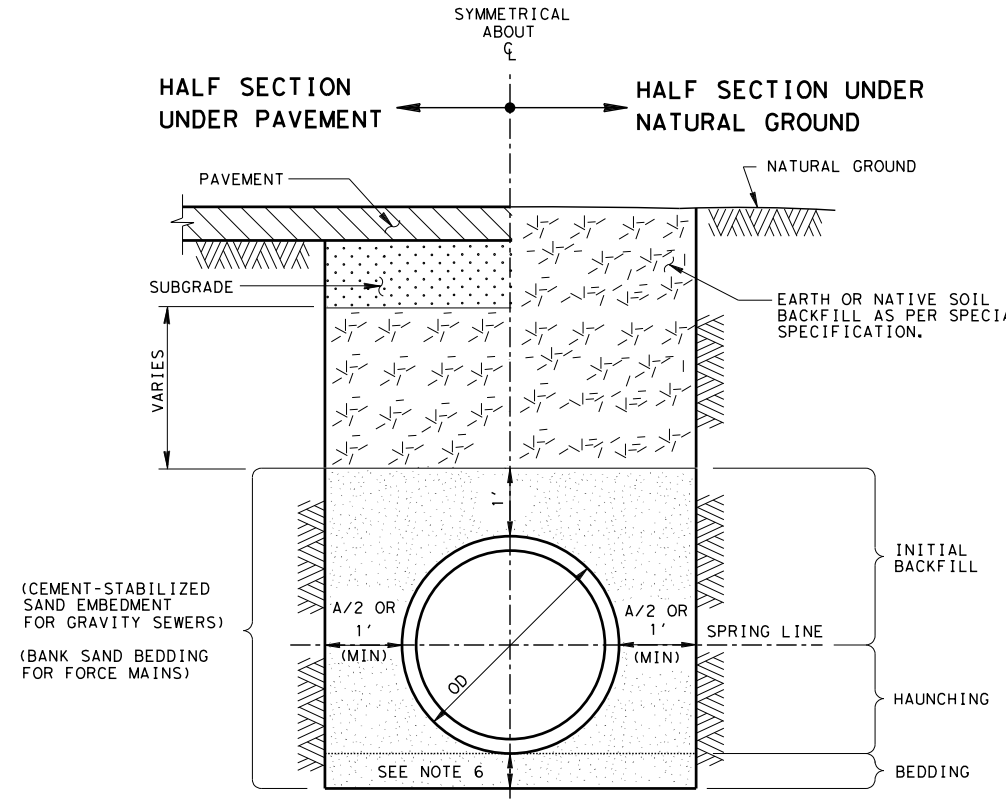
SANITARY SEWER
BACKFILL OF MANHOLES
(PRECAST AND CAST-IN-PLACE)

NOTES:

3. USE THIS DETAIL ONLY FOR DRY STABLE TRENCH CONDITIONS.
4. MIN. TRENCH WIDTH IS PIPE OD PLUS AN ALLOWANCE "A" FOR THE NOMINAL PIPE SIZE:

NOMINAL PIPE SIZE	"A"
LESS THAN 18 IN.	18 IN.
18 IN. TO 30 IN.	24 IN.
OVER 30 IN.	36 IN.

5. MAX TRENCH WIDTH IS THE MIN TRENCH WIDTH PLUS 24 IN. UNLESS OTHERWISE NOTED.
6. MINIMUM CEMENT STABILIZED SAND BEDDING IS THE GREATER OF 1/8 OD OR 6 IN.



TYPICAL CROSS-SECTION

SANITARY SEWER
EXCAVATION AND BACKFILL DIAGRAM
DRY STABLE TRENCH

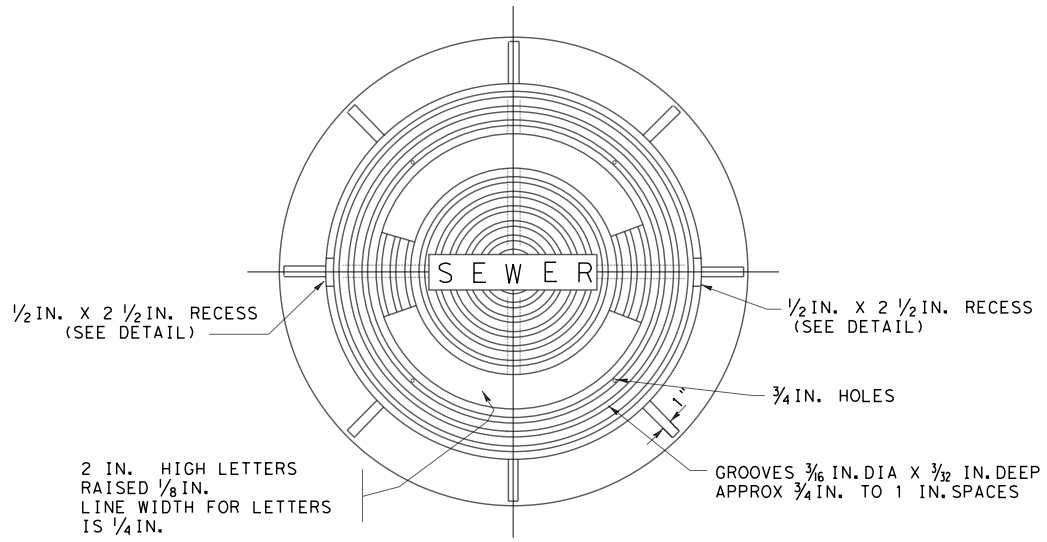
NOT TO SCALE

Texas Department of Transportation
Houston District

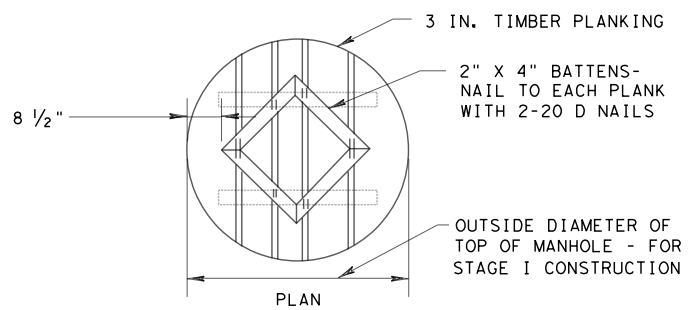
SANITARY SEWER DETAILS

SSD-2

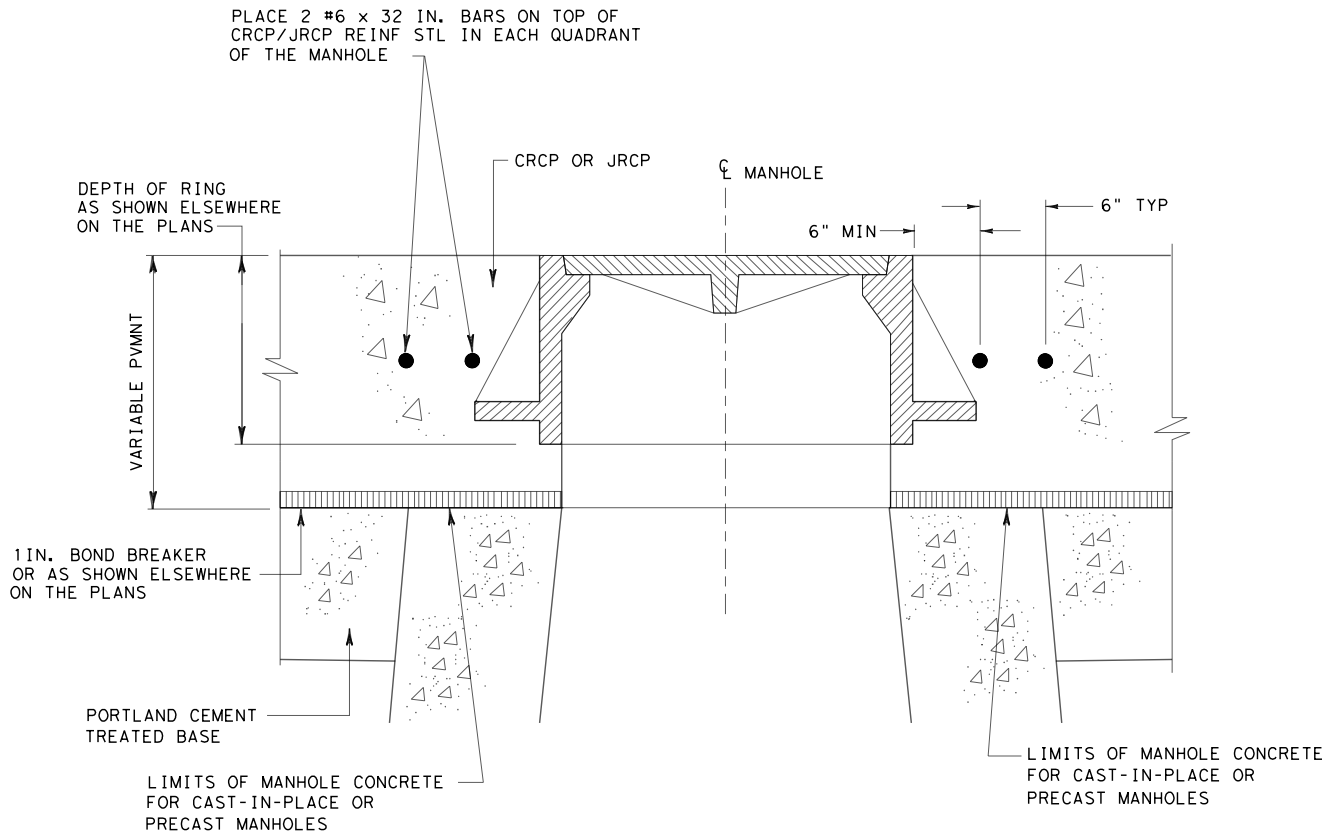
FILE: STDF2.DGN	DN: TxDot	CK: TxDot	DW: TxDot	CK: TxDot
© TxDOT MAY 2006	DIST	FED REG	PROJECT NO.	SHEET
REVISIONS REVISED 6/2006	HOUSTON	6		108
	COUNTY	CONTROL	SECT	JOB	HIGHWAY



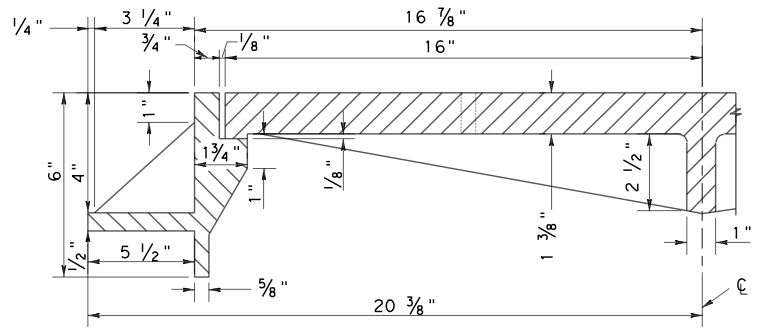
PLAN-MANHOLE RING AND COVER



TEMPORARY TIMBER COVER FOR MANHOLES

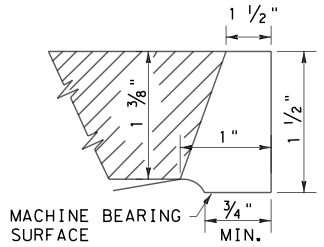


RING AND COVER CAST MONOLITHICALLY WITH PAVEMENT



HALF SECTION
32 IN. MANHOLE RING AND COVER

STANDARD MANHOLE RING AND COVER



RECESS DETAIL

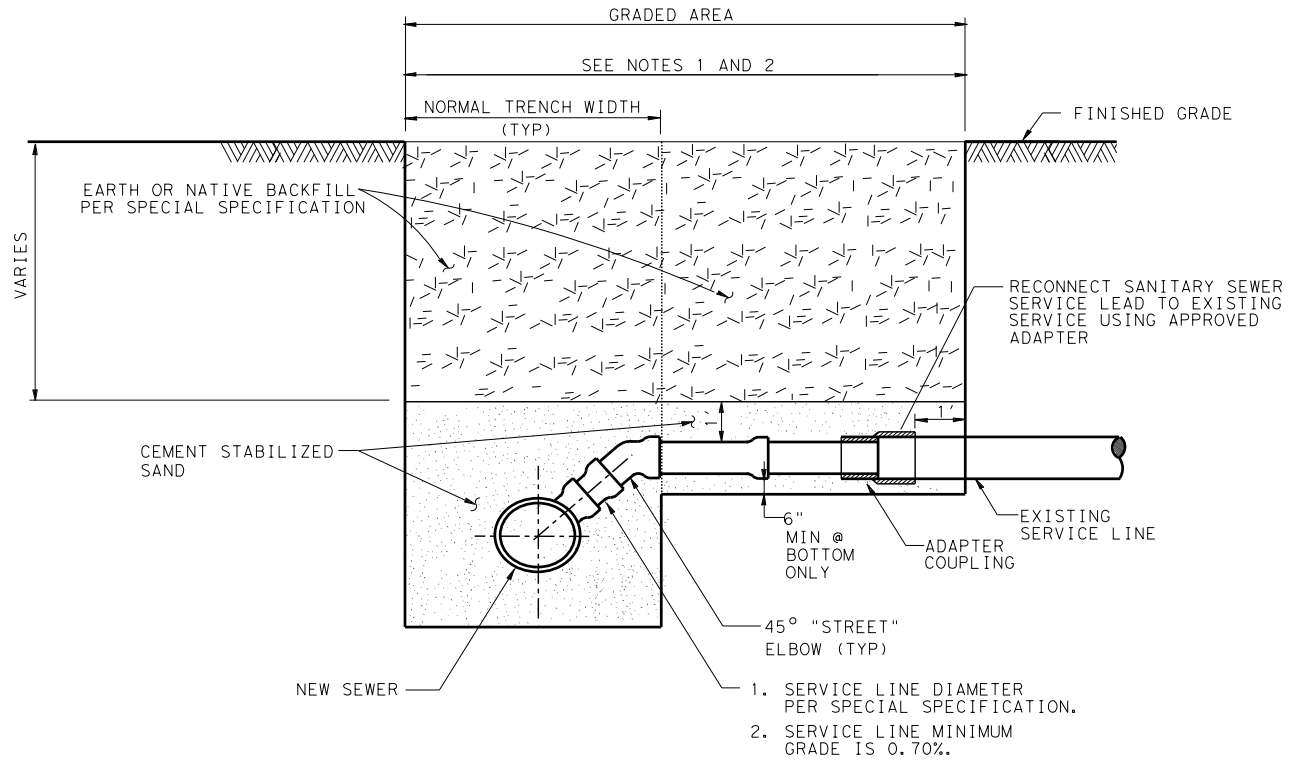
NOTE: JRCP = JOINTED REINFORCED CONCRETE PAVAVEMENT
CRCP = CONTINUOUSLY REINFORCED CONCRETE PAVEMENT

Texas Department of Transportation
Houston District (Roadway)

SANITARY SEWER DETAILS

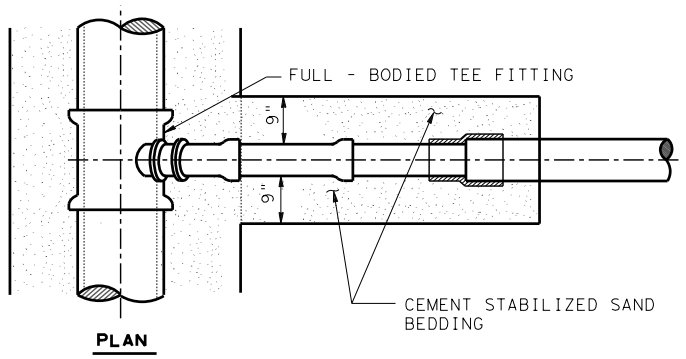
SSD-3

FILE: STDF3.DGN	DN: TxDot	CK: TxDot	DW: TxDot	CK: TxDot
© TxDOT MAY 2006	DIST	FED REG	PROJECT NO.	SHEET
REVISIONS REVISED 6/2006	HOUSTON	6		109
	COUNTY	CONTROL	SECT	JOB HIGHWAY



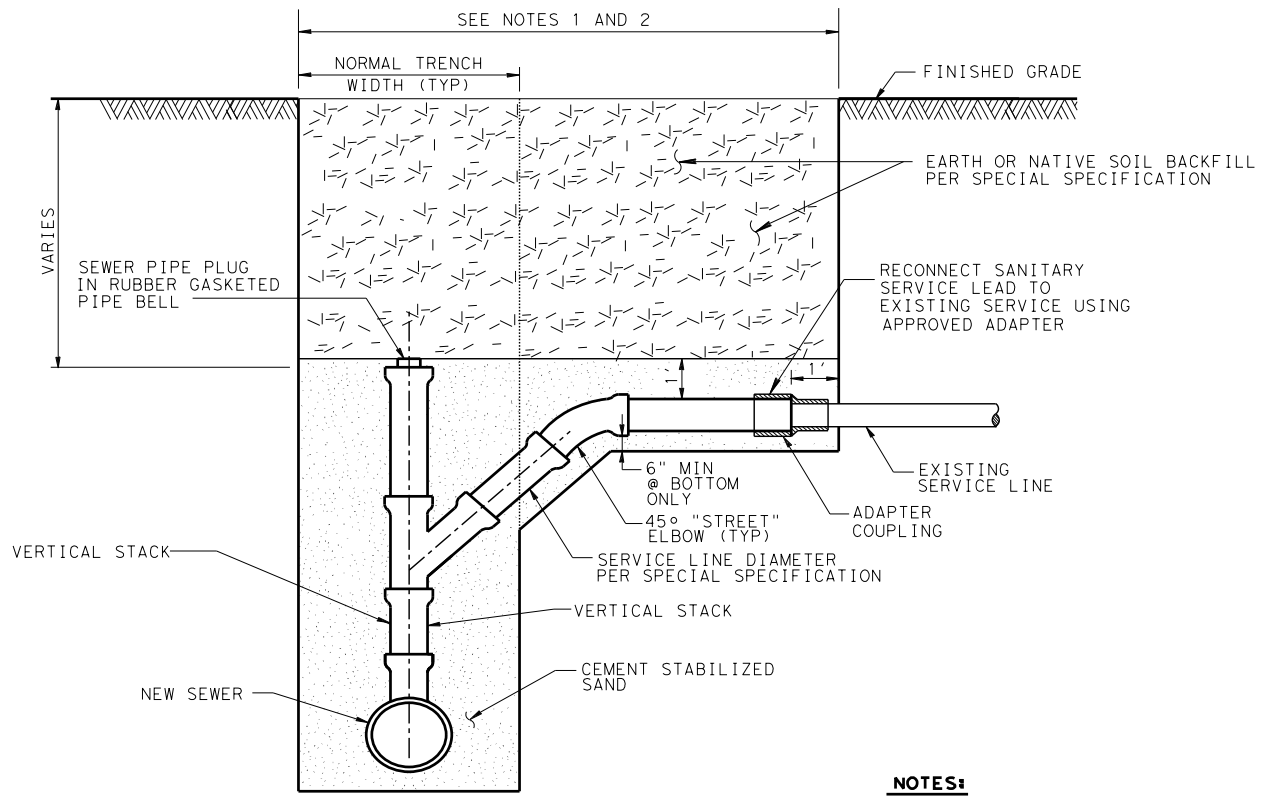
CROSS-SECTION OF SEWERS AT SERVICE CONNECTION

(NOT TO SCALE)



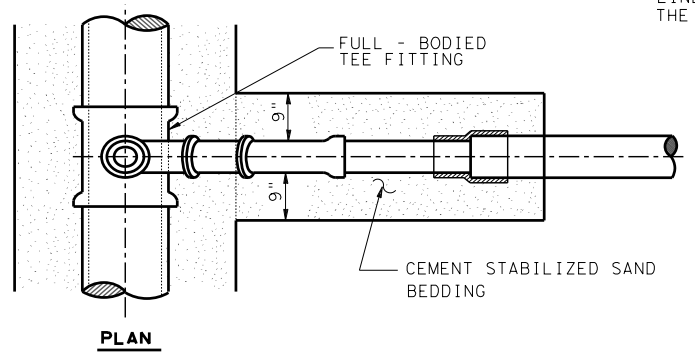
SERVICE RECONNECTION ON NEW OR REPLACEMENT SEWER

(NOT TO SCALE)



CROSS-SECTION OF SEWERS AT SERVICE CONNECTION

(NOT TO SCALE)



SERVICE RECONNECTION WITH STACK

(NOT TO SCALE)

NOTES:

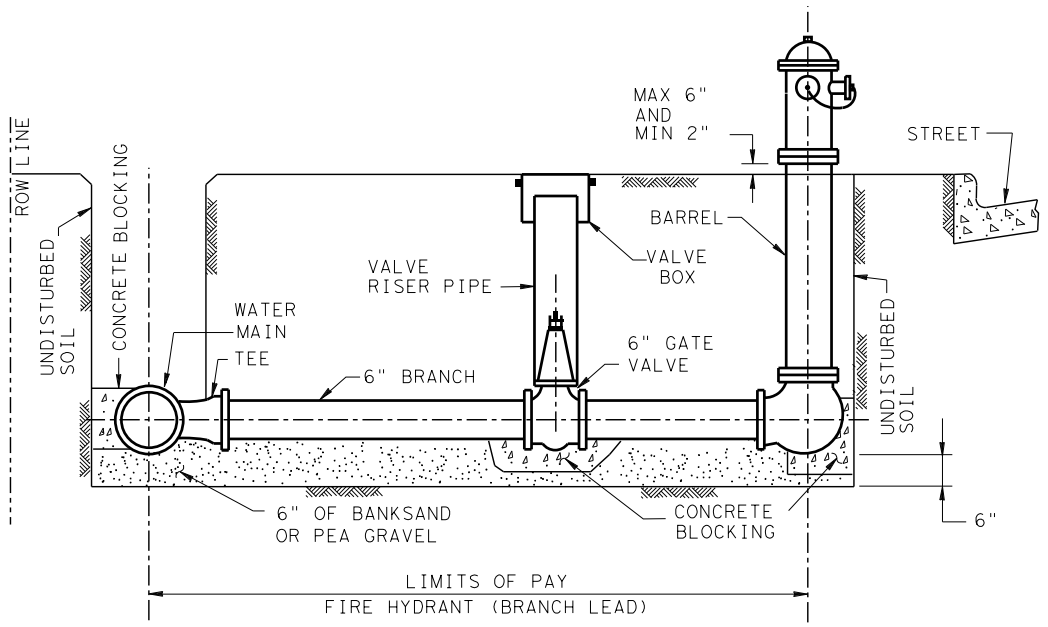
1. REPLACE EXISTING SERVICE LINE TO THE EXTENT SHOWN ON PLAN AND PROFILE DRAWINGS, OR WITHIN RIGHT OF WAY LIMITS.
2. EXCAVATE AND REMOVE EXISTING SEWER LATERALS AS REQUIRED TO ALLOW RECONSTRUCTION.
3. EMBEDMENT AND BACKFILL FOR SERVICE LINE IS INCLUDED IN THE PRICE FOR THE SERVICE CONNECTION.

Texas Department of Transportation
Houston District (Roadway)

SANITARY SEWER DETAILS

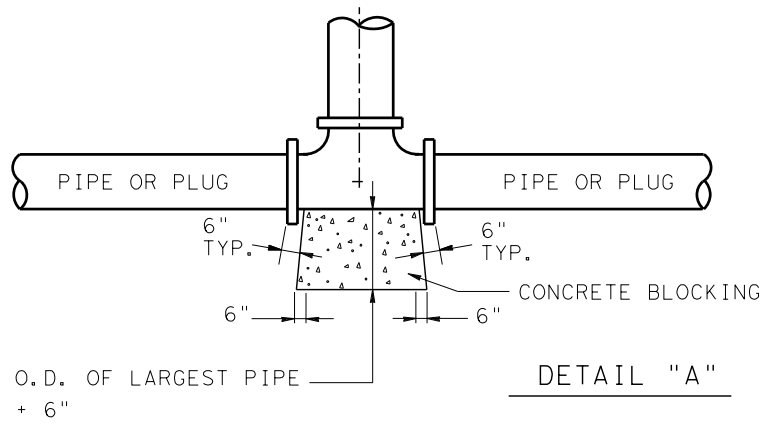
SSD-4

FILE: STDF4.DGN	DN: TxDot	CK: TxDot	DW: TxDot	CK: TxDot
© TxDOT MAY 2006	DIST	FED REG	PROJECT NO.	SHEET
REVISIONS REVISED 6/2006	HOUSTON	6		110
	COUNTY	CONTROL	SECT	JOB	HIGHWAY

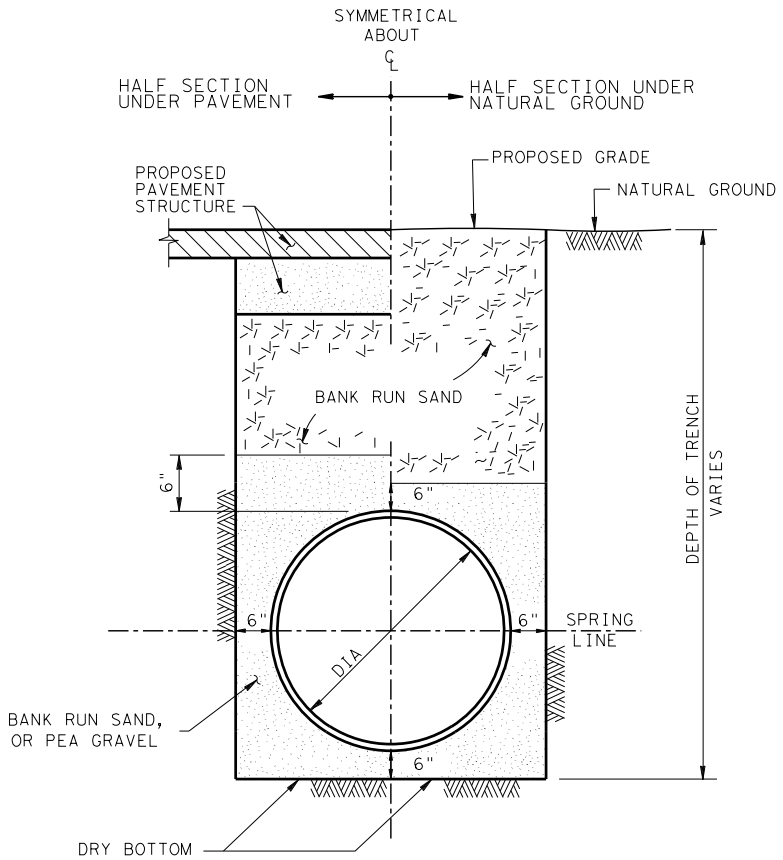


SECTION

NOTE: MINIMUM THICKNESS OF THRUST IS THE O.D. OF LARGEST PIPE + 6 IN.

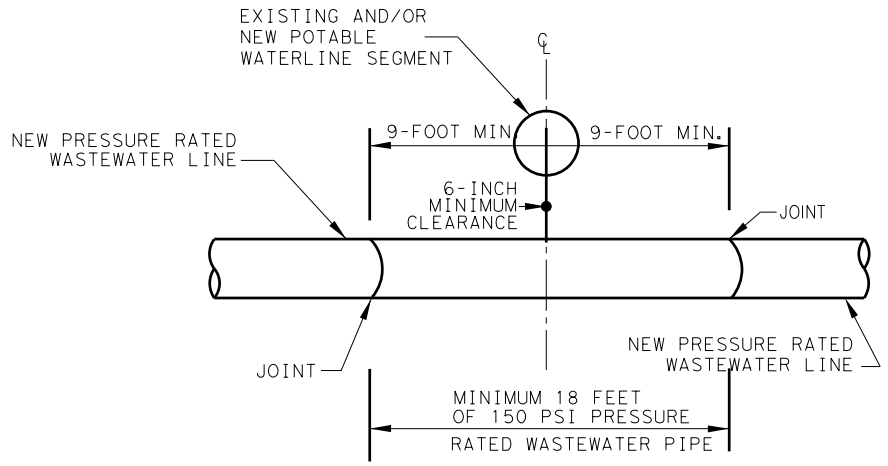


DETAIL "A"



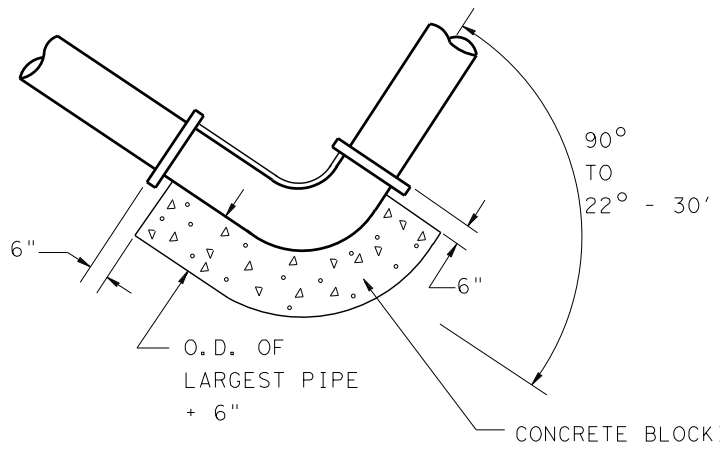
WATER DISTRIBUTION MAIN BEDDING AND BACKFILL FOR OPEN CUT TRENCHES

(NOT TO SCALE)



WATER LINE CROSSING DETAILS

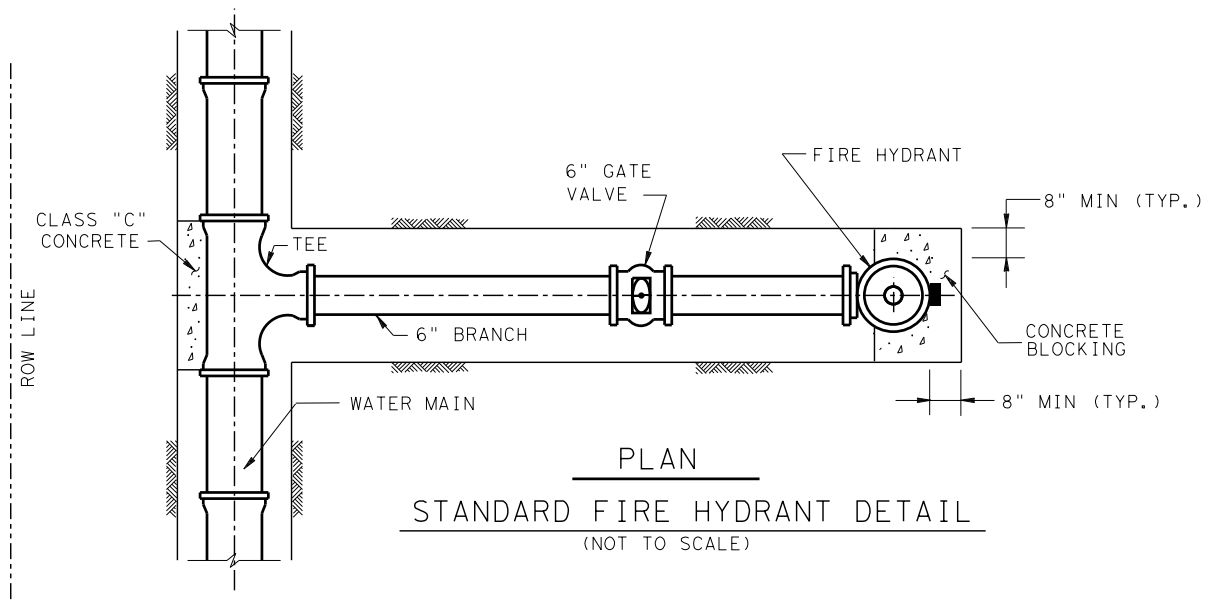
(NOT TO SCALE)



DETAIL "B"

CONCRETE BLOCKING DETAILS

(NOT TO SCALE)



PLAN

STANDARD FIRE HYDRANT DETAIL

(NOT TO SCALE)

NOTES:

1. FIRE HYDRANT ASSEMBLY INCLUDES HYDRANT, BARREL, GATE VALVE w/ BOX, AND RISER PIPE.
2. ON CURB AND GUTTER ROADWAYS, LOCATE FIRE HYDRANTS AT PC's OF INTERSECTION CURB RADIUS, 3 FT. BEHIND CURB OR PROJECTED FUTURE CURB.
3. ON OPEN-DITCH ROADWAYS, LOCATE HYDRANTS WITHIN 5 FT. OF THE RIGHT-OF-WAY LINES.
4. ENSURE FIRE HYDRANT NOZZLE FACES THE STREET.
5. LOCATE HYDRANT VALVE IMMEDIATELY ADJACENT TO WATER LINE.

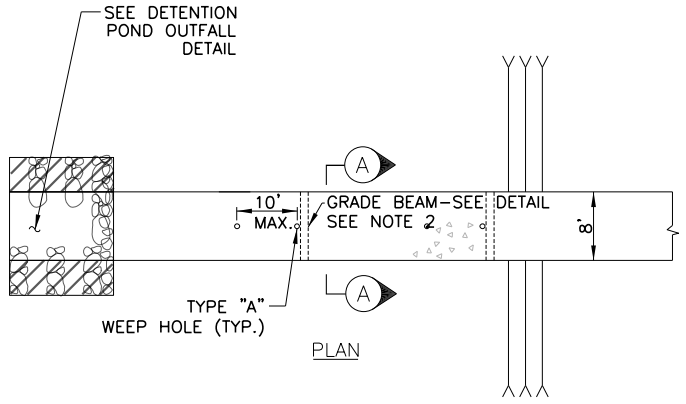
Texas Department of Transportation
Houston District

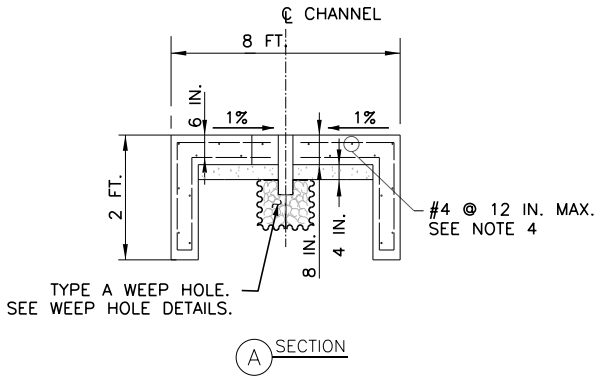
WATER LINE STANDARD

WLS-11

FILE: STDF5.DGN	DN: TxDot	CK: TxDot	DW: TxDot	CK: TxDot			
©TxDOT FEBRUARY 2011	DIST	FED REG	PROJECT NO.				SHEET
REVISIONS	HOUSTON	6					111
	COUNTY			CONTROL	SECT	JOB	HIGHWAY

STD F5



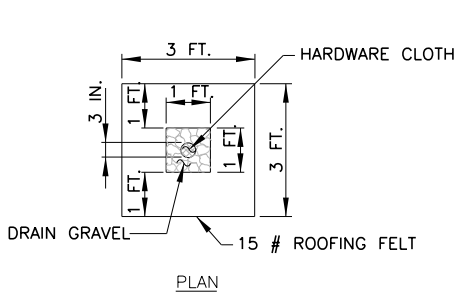


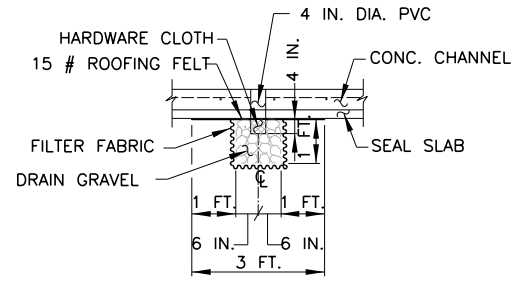
PILOT CHANNEL LINING

NTS

DETENTION POND OUTFALL

NTS





WEEP HOLE NOTES:

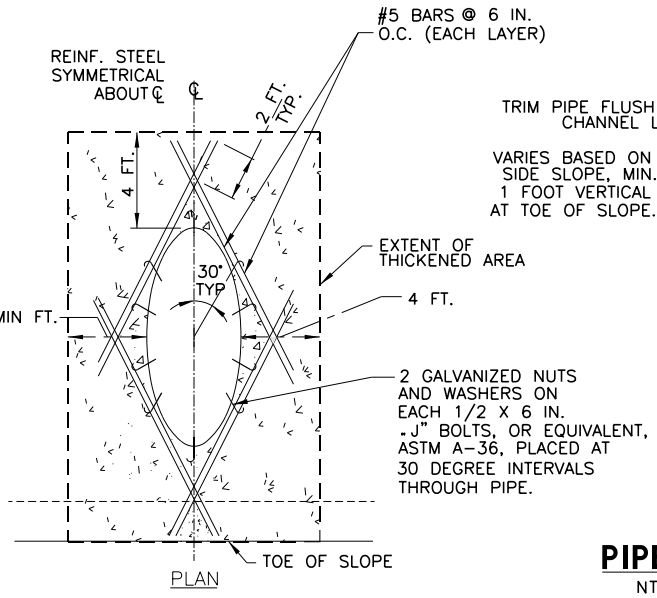
1. MATERIALS:
   a. PIPE: 4 INCH DIA. SCH. 40 PVC
   b. DRAIN GRAVEL:

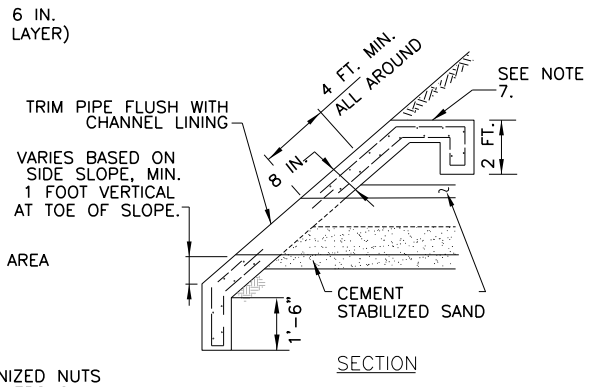
SIEVE SIZE	% FINER
1 IN	100
3/4 IN	70 – 100
3/8 IN	20 – 90
NO. 4	0 – 60
NO. 8	0

   c. FILTER FABRIC – (TYPE 1 PER ITEM 556)
2. CUT WEEP HOLE PIPE FLUSH WITH CONCRETE SURFACE.
3. HARDWARE CLOTH — MIN. OPEN 1/8 IN — MAX. OPEN 1/4 IN

TYPE "A" WEEP HOLE

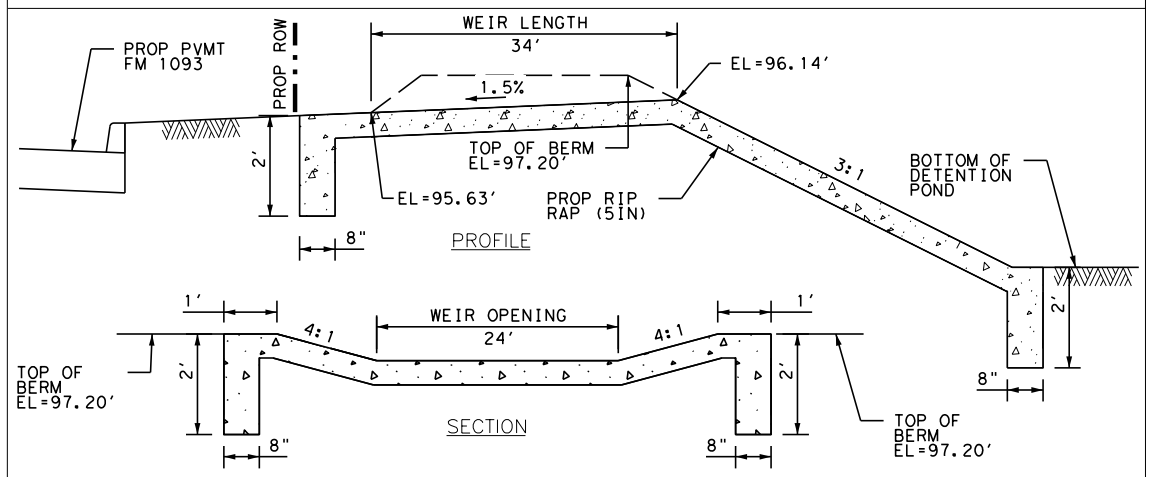
NTS





PIPE OUTFALL DETAILS

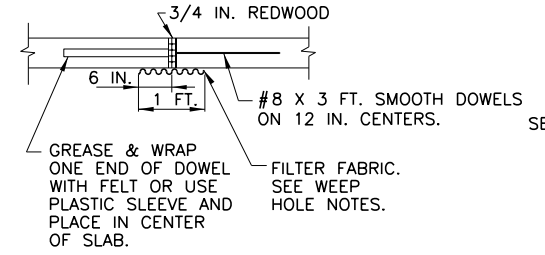
NTS (FOR OUTFALLS 18–42 INCH DIA)



NOTE:
A. PROVIDE A 2 FT. DEEP X8 IN. WIDE TOE WALL AROUND THE STRUCTURE.
B. STEEL REINFORCEMENT - #4 BARS (GRADE 40) AT 12 IN. ON CENTER EACH WAY.

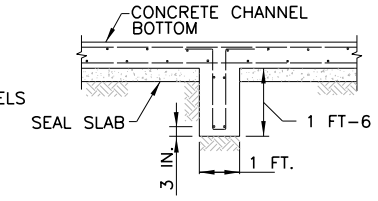
DETENTION POND - EMERGENCY OVERFLOW WEIR DETAIL

NTS



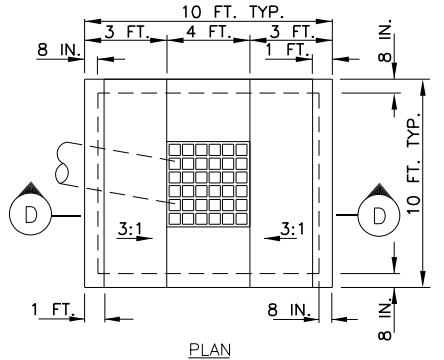
EXPANSION JOINT

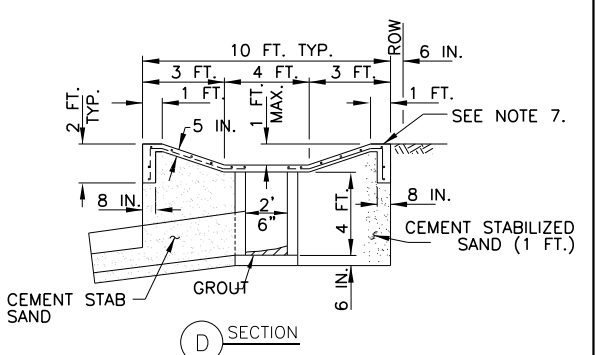
NTS



GRADE BEAM DETAIL

NTS





NOTE:
INLET TO BE CONSTRUCTED IN ACCORDANCE WITH TXDOT TYPE A INLET STANDARD

BACKSLOPE INTERCEPTOR STRUCTURE

NTS

GENERAL NOTES

1. THESE ARE GENERAL DETAILS AND NOTES. IF THERE ARE ANY DISCREPANCIES BETWEEN THIS STANDARD AND THEDETAILED SEALED DRAINAGE PLANS, CONTACT THE ENGINEER.
2. INSTALL STRUCTURAL CONCRETE GRADE BEAMS TRANSVERSLY AT 20 FOOT MAXIMUM CENTERS ON CONCRETE LINED CHANNELS.
3. JOINT
   A. PLACE CONSTRUCTION JOINTS IN CONCRETE LOW-FLOW AT 20 FEET MINIMUM, 60 FEET MAXIMUM, SPACING CONTINUOUSLY THROUGH CHANNEL LINING.
   B. PLACE EXPANSION JOINTS IN CONCRETE LOW-FLOW AT 60 FEET MAXIMUM SPACING CONTINUOUSLY THROUGH CHANNEL LINING.
4. #4 AT 12 IN. O.C. BOTH DIRECTIONS MIN. OR EQUIVALENT WELDED WIRE FABRIC.
5. PROVIDE AND PLACE CEMENT STABILIZED BACKFILL AND STRUCTURAL EXCAVATION IN ACCODANCE WITH ITEM 400, EXCAVATION AND BAKFILL FOR STRUCTURES.
6. PROVIDE AND PLACE CONCRETE IN ACCORDANCE WITH ITEM 420-2060 "CL B CONCRETE. (DITCH INTERCEPTOR STRUCTURE)" (EA)
7. INTERCEPTOR STRUCTURES:
   A. ADJUST LENGTH AND WIDTH IN FIELD AS NECESSARY.
   B. PROVIDE A 2 FT. DEEP X8 IN. WIDE TOE WALL AROUND THE STRUCTURE.
   C. STEEL REINFORCEMENT - #4 BARS (GRADE 40) AT 12 IN. ON CENTER EACH WAY.
   D. ANY INTERCEPTOR OUTFALL PIPE LARGER THAN MAXIMUM SIZE INDICATED REQUIRES A SEPARATE DETAIL.
   E. MATCH TOP OF CONCRETE WITH NATURAL GROUND.
8. SET THE FLOWLINE OF OUTFALL PIPES 1 FOOT ABOVE THE CHANNEL FLOWLINE OR 1 FOOT ABOVE THE ORDINARY HIGH WATER ELEVATION, WHICHEVER IS HIGHEST, UNLESS OTHERWISE SHOW IN PLANS.
9. BACKFILL ANY VOIDS BEYOND THE LIMITS OF THE CONCRETE INTERCEPTOR PAD WITH CEMENT STABILIZED BACKFILL PER ITEM 400.

STATE OF TEXAS
HUNG H. NGUYEN
113148
LICENSED
PROFESSIONAL ENGINEER

11/3/2022

NO.	DATE	REVISION	APPROV.

IDCUS
Planners | Engineers | Construction Managers
IDCUS, Inc.
15915 Katy Freeway, suite 300
Houston, Texas 77094
(713) 541-5591 Fax: (713) 541-3501
T.B.P.E.FIRM REGISTRATION NO. F-6825

FORT BEND COUNTY
PRECINCT 3

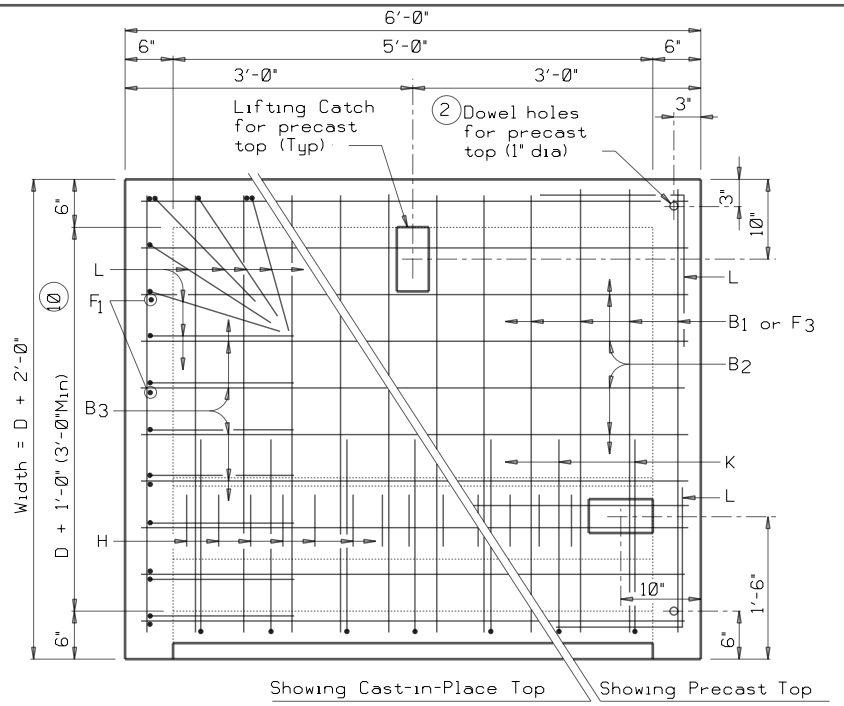
WESTPARK PARK & RIDE

DETENTION POND DETAILS

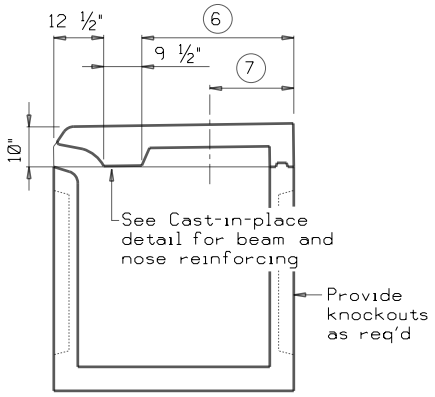
SHEET 1 OF 1

SECTION NO.	
DRAWN:	DATE:
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. 112

11/3/2022
\\emal\Transportation\FORT BEND COUNTY\WESTPARK P&R\CADD\STANDARDS\WPK-STD-POND.dgn
HNguyen

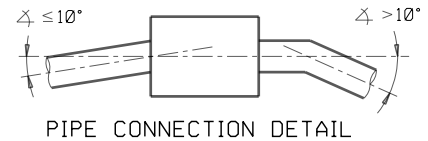


PLAN



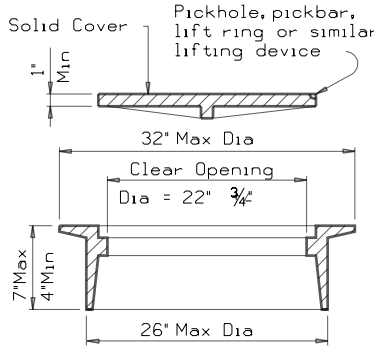
PREFABRICATED INLET

(6) For reinforcing steel and dimensions not shown, see fabricators shop drawings. Structure shall be of the size required to accommodate size of pipe shown elsewhere in the plans. Length of inlet = 6'-0"



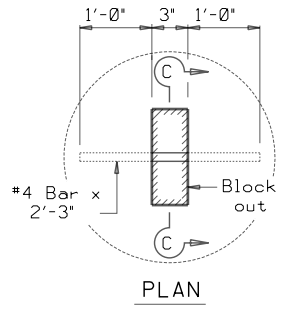
PIPE CONNECTION DETAIL

Connecting pipes should enter within 10° of normal to inlet wall. If necessary, pipe elbow or curved approach alignment should be used to stay within this limit.

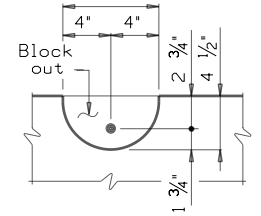


RING AND COVER DETAILS

EJIW No V-1814 or Neenah No R5900-FTX

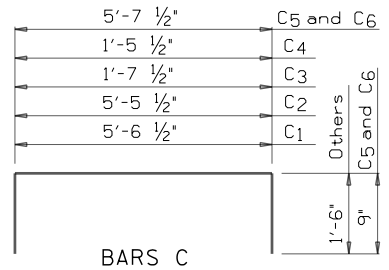


PLAN

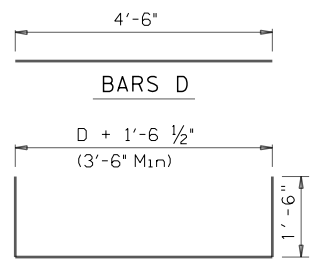


SECTION C-C

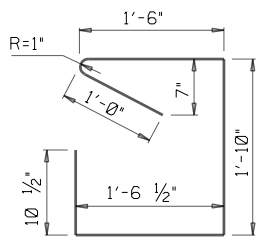
LIFTING CATCH



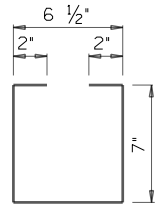
BARS C



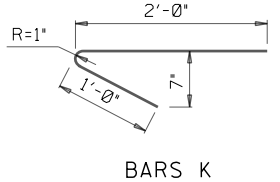
BARS E



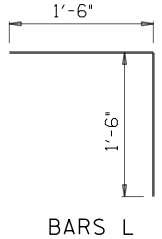
BARS G



BARS H



BARS K

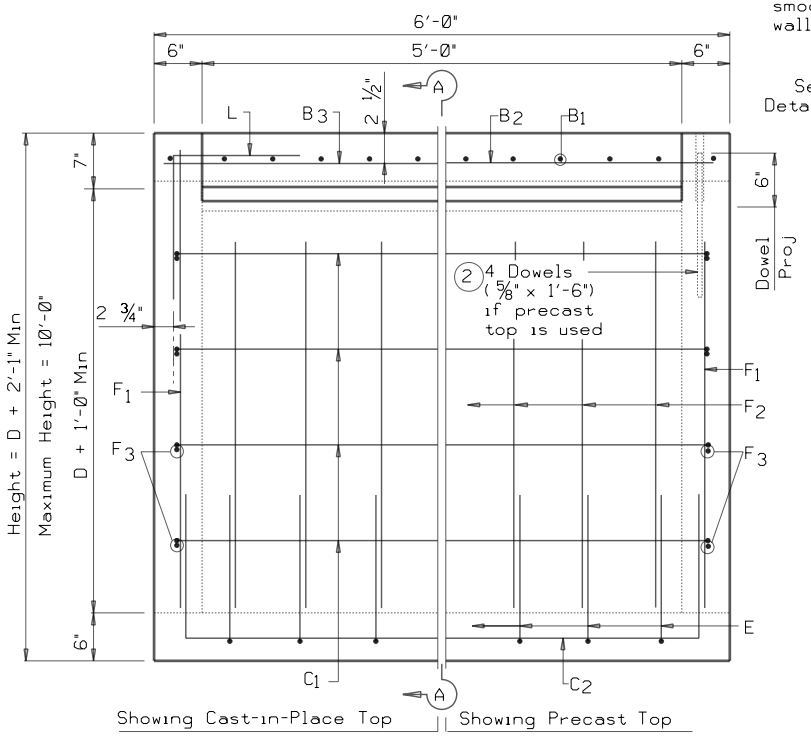


BARS L

REINF STEEL

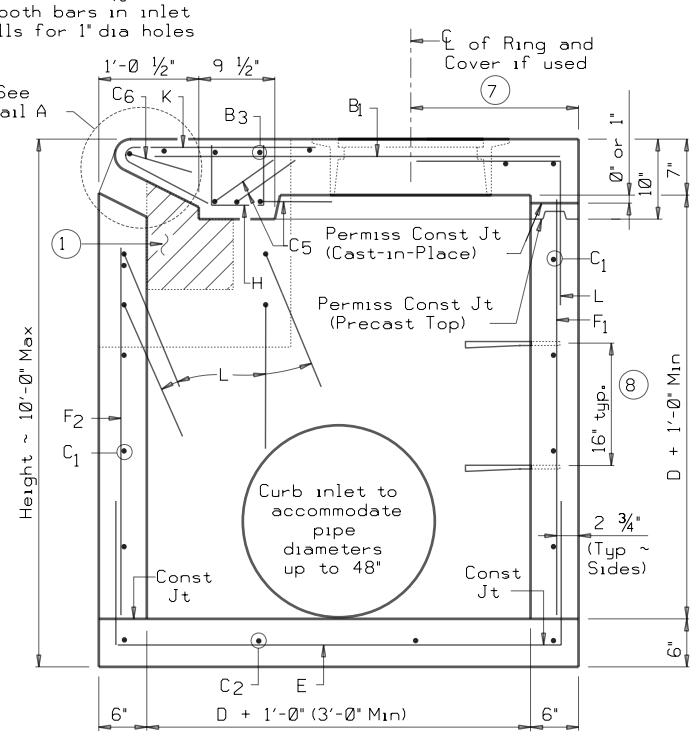
Bar	Size	Spacing
B1	#4	6"
B2	#5	6"
B3	#4	6"
C1-2	#4	12"
C3-4	#4	(9)
C5	#6	(9)
C6	#4	(9)
D	#4	(9)
E	#4	12"
F1-3	#4	12"
G	#4	6"
H	#3	4"
K	#4	9"
L	#4	6"

(9) As shown



ELEVATION

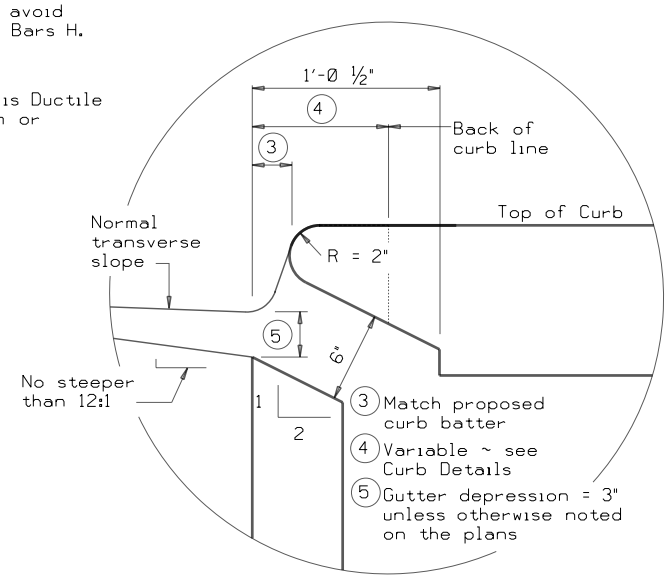
(2) If precast top is used, provide 4 ~ ⅝" dia x 1'-6" smooth bars in inlet walls for 1" dia holes



SECTION A-A

(7) 1'-6" Min, 1'-9" Max Adjust placement of Ring and Cover as necessary to avoid conflict with Bars H.

(8) Ladder rung is Ductile Iron, Aluminum or Cast Iron.



DETAIL A

GENERAL NOTES:

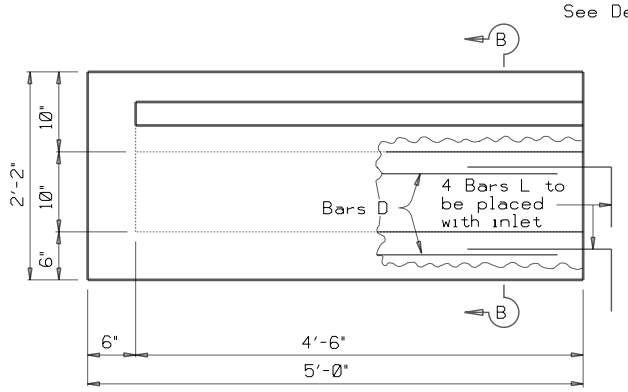
No alternate designs nor alternate details shall be permitted for precast or cast in place inlets.

Quantities shown herein are for Contractor's information only. Unless otherwise shown in the plans, payment will be made for each inlet of the type specified and for each extension. Each five foot curb opening of extension is considered "one extension" regardless of whether placed monolithically or precast. Extension length shall be in multiples of 5 feet.

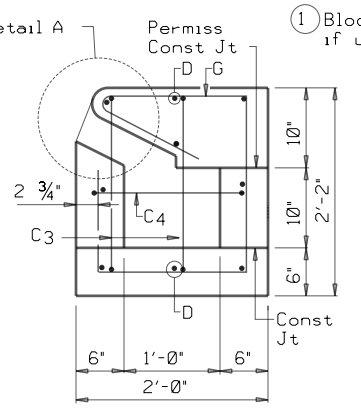
Engineer has the option of specifying cast-in-place top with ring and cover or removable precast top as specified elsewhere in plans. Shop drawings are required for Precast Inlets.

In areas of conflict between reinforcing steel, blockouts, pipes, anchor bolts or other reinforcing steel, the reinforcement shall be bent or adjusted to clear as directed by the Engineer.

Ring and cover shall conform to the requirements of AASHTO M306, "Standard Specification for Drainage Structure Castings". Materials shall conform to ASTM A48, Class 35B for gray iron castings or ASTM A536, Grade 65-45-12 for ductile iron castings. Aluminum alloy castings shall not be permitted.

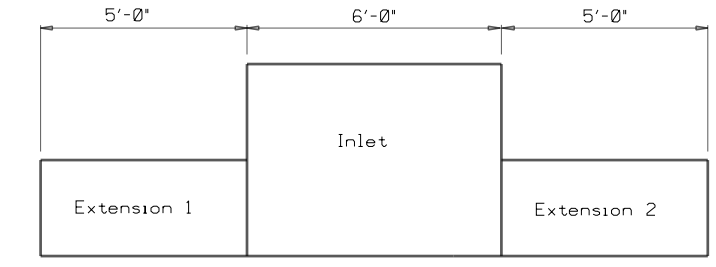


EXTENSION ELEVATION



SECTION B-B

(1) Block out to accommodate extension if used and to place 4 Bars L



Note: If more than one extension is required, they should be located as indicated above. No slope is required in flowline of extension.

EXTENSION PLACEMENT

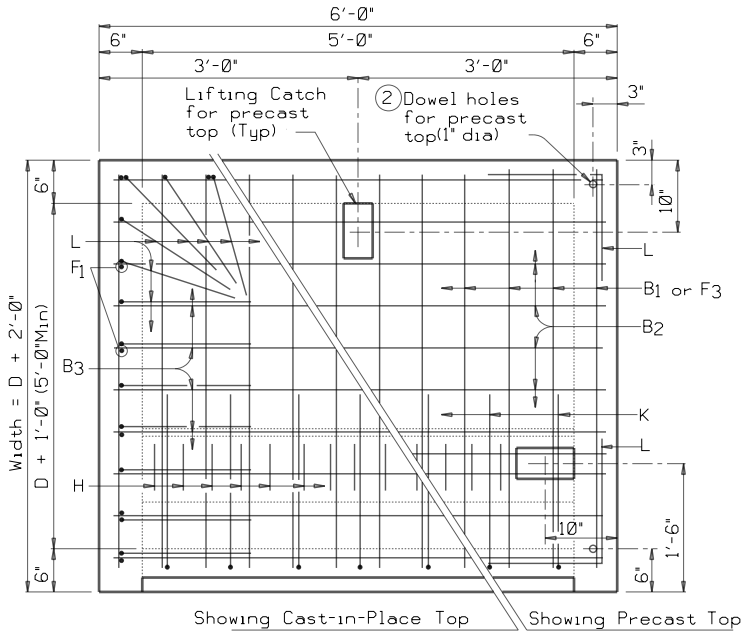
D = Diameter
R = Radius

Texas Department of Transportation
Houston District

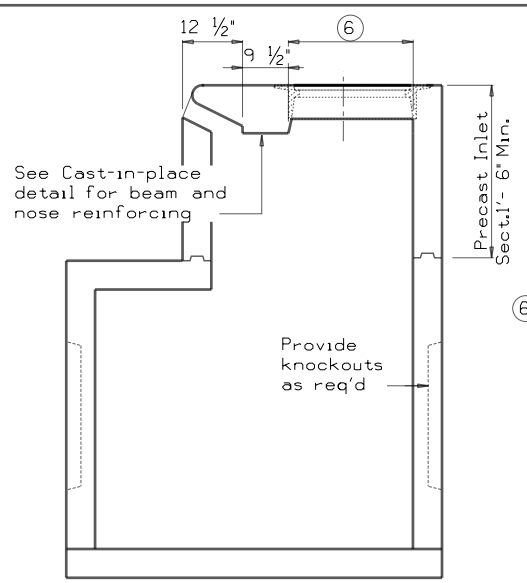
CURB INLET TYPE C
(WITH OR WITHOUT EXTENSION)

HIL-C

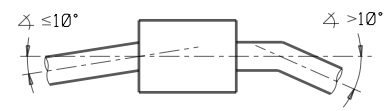
FILE: STDD1.DGN	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT	STD:	
© TxDOT Feb 2010	DIST	FED REG	PROJECT NO.			SHEET
REVISIONS	HOUS	6				113
2/2010 Added note concerning opening on the back of inlet.	COUNTY		CONTROL	SECT	JOB	HIGHWAY
10/2014 Removed Note 10						



PLAN



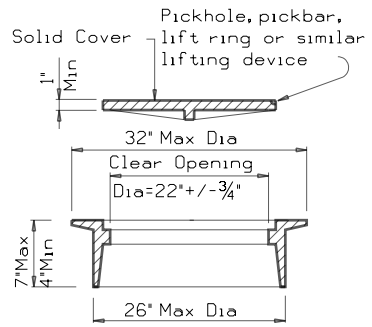
PREFABRICATED INLET



PIPE CONNECTION DETAIL

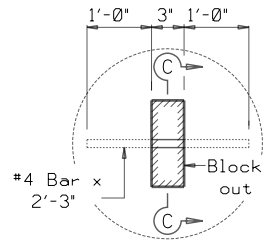
Connecting pipes should enter within 10° of normal to inlet wall. If necessary, pipe elbow or curved approach alignment should be used to stay within this limit.

⑥ For reinforcing steel and dimensions not shown, see fabricator's shop drawings. Structure shall be of the size required to accommodate size of pipe shown elsewhere in the plans. Length of inlet = 5'-0"

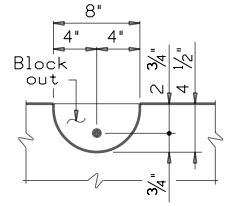


RING AND COVER DETAILS

EJIW No V-1814 or Neenah No R5900 FTX



PLAN

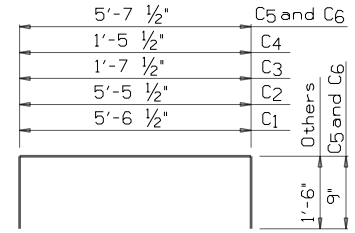


SECTION C-C

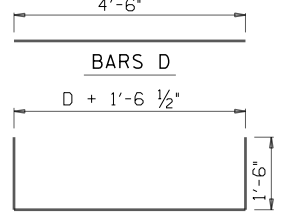
LIFTING CATCH

REINF STEEL		
Bar	Size	Spacing
B_1	#4	6"
B_2	#5	6"
B_3	#4	6"
C_{1-2}	#4	12"
C_{3-4}	#4	⑨
C_5	#6	⑨
C_6	#4	⑨
D	#4	⑨
E	#4	12"
F_{1-5}	#4	12"
G	#4	6"
H	#3	4"
K	#4	9"
L	#4	6"

⑨ As shown

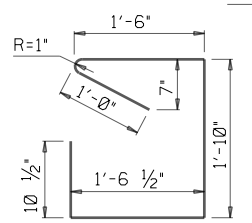


BARS C

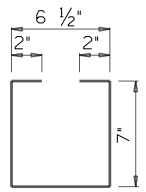


BARS D

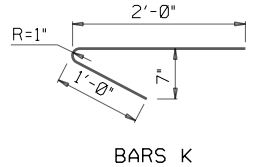
BARS E



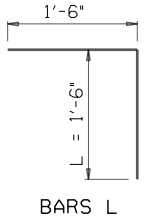
BARS G



BARS H



BARS K



BARS L

GENERAL NOTES:

No alternate designs nor alternate details shall be permitted for precast or cast in place inlets.

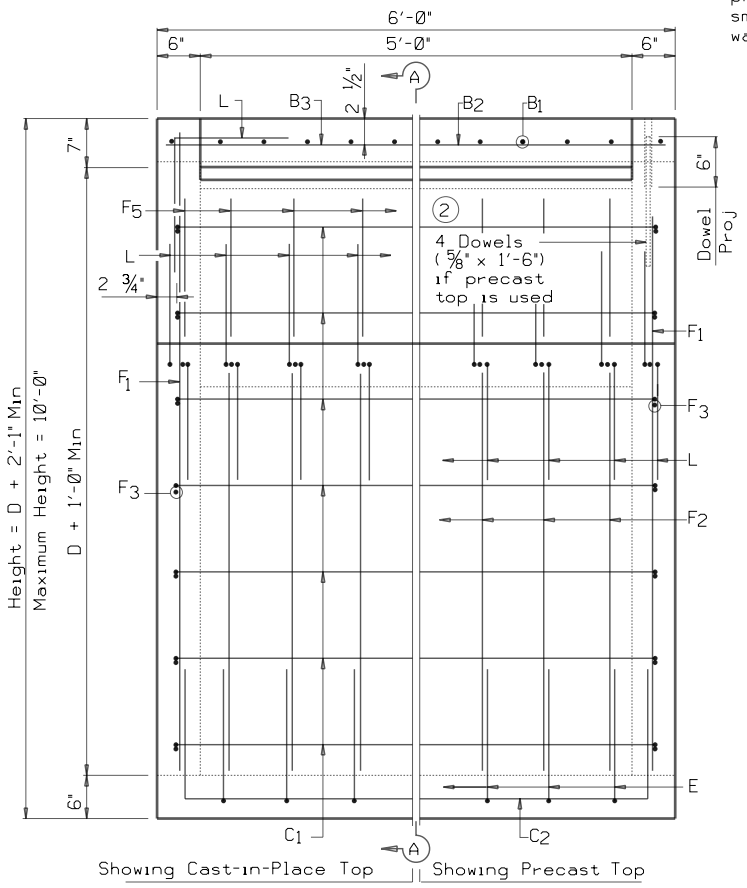
Quantities shown herein are for Contractor's information only. Unless otherwise shown in the plans, payment will be made for each inlet of the type specified and for each extension. Each five foot curb opening of extension is considered "one extension" regardless of whether placed monolithically or precast. Extension length shall be in multiples of 5 feet.

Engineer has the option of specifying cast-in-place top with ring and cover or removable precast top as specified elsewhere in plans.

Shop drawings will be required for precast construction of inlets.

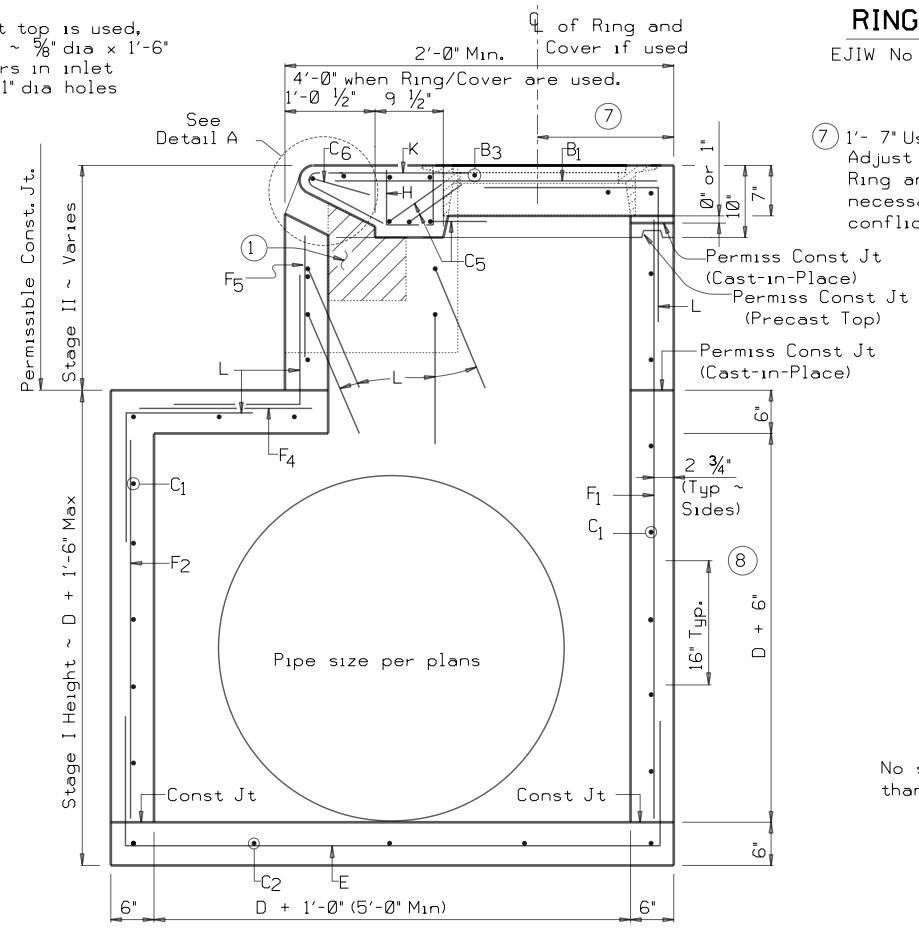
In areas of conflict between reinforcing steel, blockouts, pipes, anchor bolts or other reinforcing steel, the reinforcement shall be bent or adjusted to clear as directed by the Engineer.

Ring and cover shall conform to the requirements of AASHTO M306, "Standard Specification for Drainage Structure Castings". Materials shall conform to ASTM A48, Class 35B for gray iron castings or ASTM A536, Grade 65-45-12 for ductile iron castings. Aluminum alloy castings shall not be permitted.



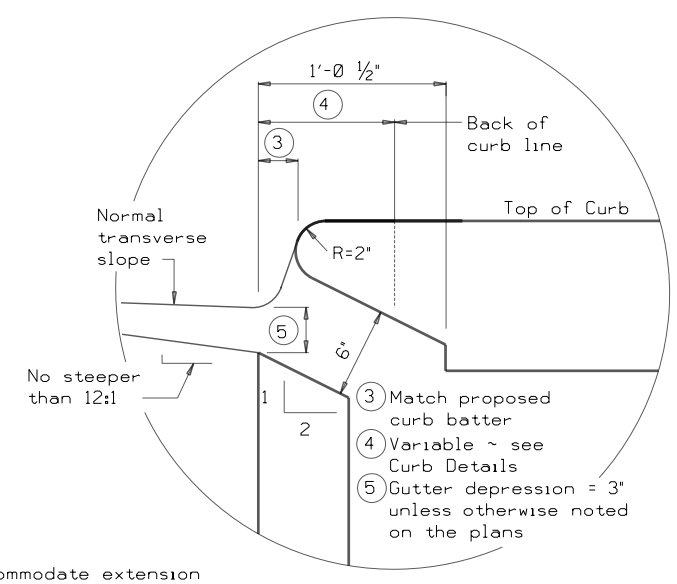
ELEVATION

② If precast top is used, provide 4 ~ ⅝" dia x 1'-6" smooth bars in inlet walls for 1" dia holes

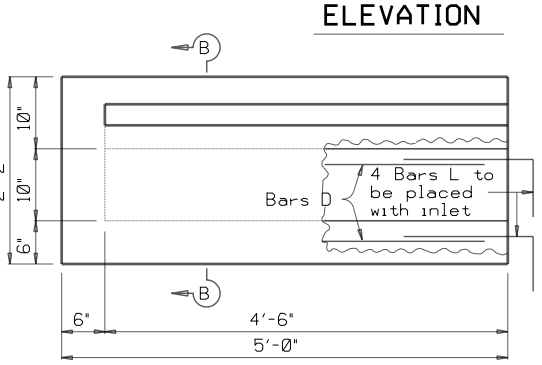


⑦ 1'- 7" Usual, Adjust placement of Ring and Cover as necessary to avoid conflict with Bars H.

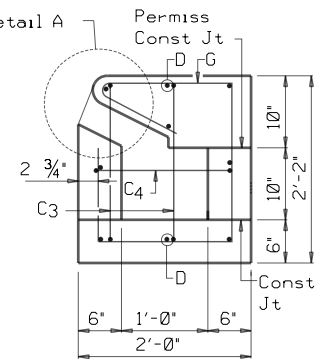
SECTION A-A



DETAIL A

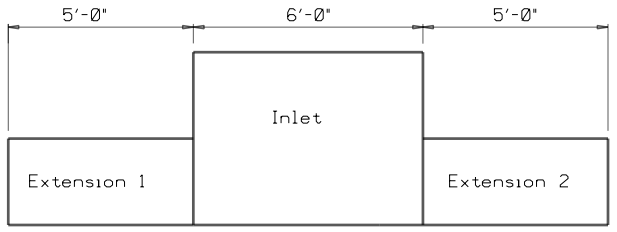


EXTENSION ELEVATION



SECTION B-B

① Block out to accommodate extension if used and to place 4 Bars L



Note: If more than one extension is required, they should be located as indicated above. No slope is required in flowline of extension.

EXTENSION PLACEMENT

D = Diameter
R = Radius

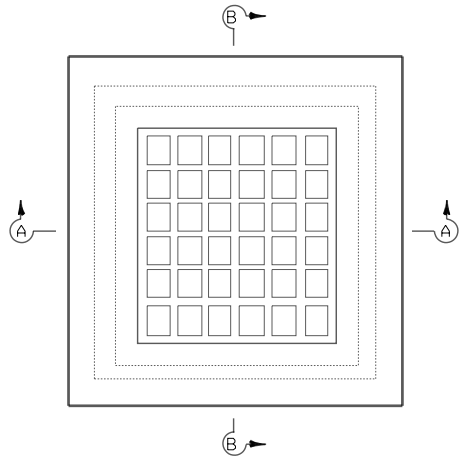
Texas Department of Transportation
Houston District

CURB INLET TYPE C1
(WITH OR WITHOUT EXTENSION)

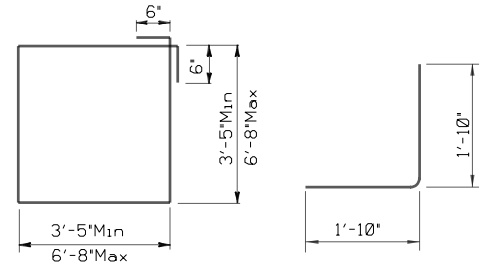
HIL-C1

FILE: STDD2.DGN	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT	STD:	
© TxDOT Feb 2010	DIST	FED REG	PROJECT NO.			SHEET
REVISIONS 2/2010 Note for alternate design and opening on the back of inlet. 10/2016 Removed ladder rung and wordings.	HOUS	6				114
	COUNTY		CONTROL	SECT	JOB	HIGHWAY

STDD2.DGN



PLAN



BAR A (#4)

BAR L (#4)

GENERAL NOTES:

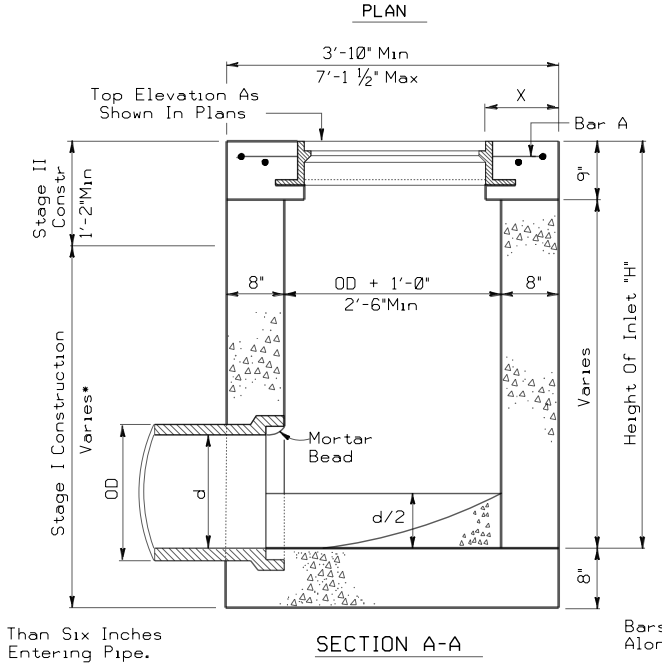
Where Size Of Pipes Passing Thru Inlet Exceeds 30" Increase Inside Width To Outside Diameter Of Pipe Plus 1'-0" (OD + 1'-0").

See Standard or Detail Sheet For Excavation and Backfill Diagrams.

Inlets Shall Be Built To Stage I And Finished After All Grading Operations Are Substantially Completed.

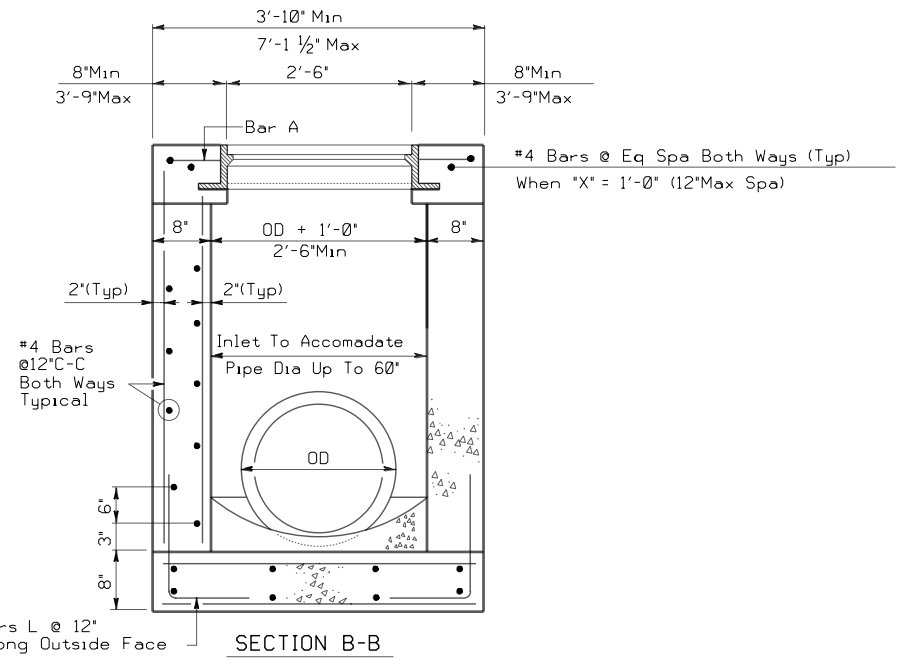
Frames And Grates May Be Gray Cast Iron.

Shop Drawings Will Be Required For Precast Construction Of Inlets.



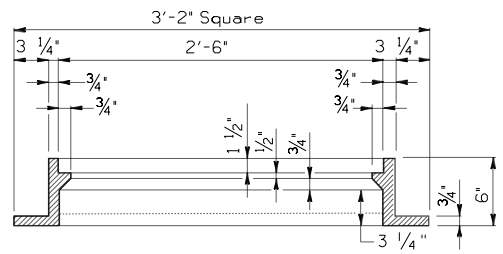
* But Not Less Than Six Inches Over Highest Entering Pipe.

SECTION A-A

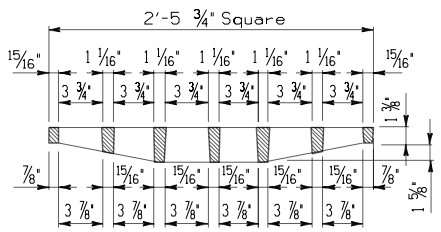


SECTION B-B

TYPE A INLET



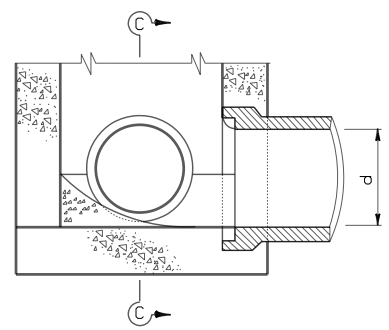
SECTION THRU FRAME



SECTION THRU GRATE

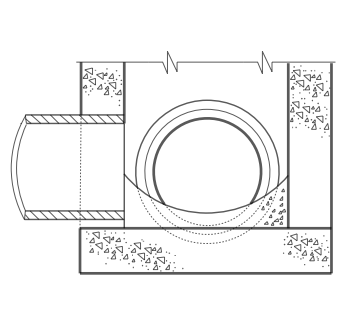
FRAME AND GRATE

Neenah No.R3418-A
EJIW No.V-4880-1

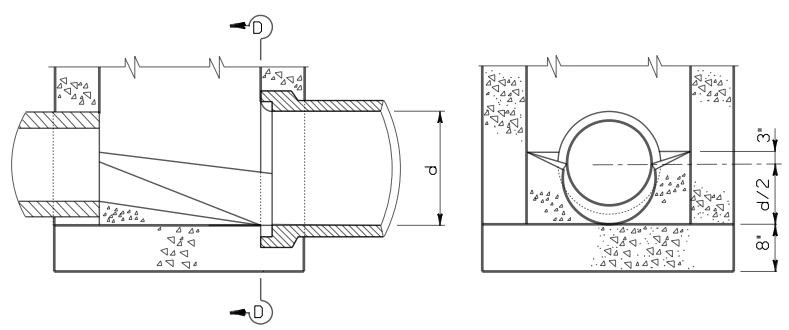


PART SECTION AT INVERT

Showing Shaping Of Invert, Pipe Entering From Adjacent Sides



SECTION C-C



PART SECTION AT INVERT

Showing Shaping Of Invert, Pipe Entering From Opposite Sides

SECTION D-D

d = Diameter

NOT FOR TRAFFIC LOADS

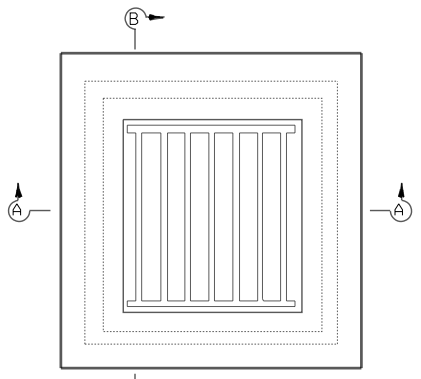
Texas Department of Transportation
Houston District

INLET TYPE A

HIL-A

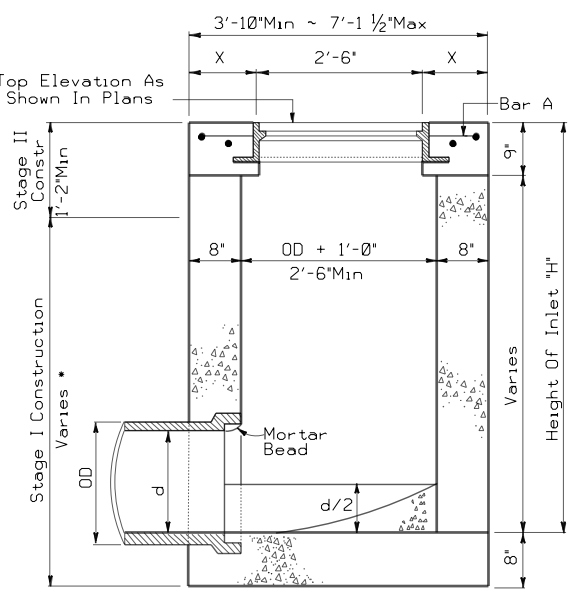
FILE: STDD4.DGN	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT	STD:	
© TxDOT 2014	DIST	FED REG	PROJECT NO.			SHEET
REVISIONS	HOUS	6				115
9/30/2016: Removed Manhole Steps	COUNTY			CONTROL	SECT	JOB	HIGHWAY

STDD4.DGN

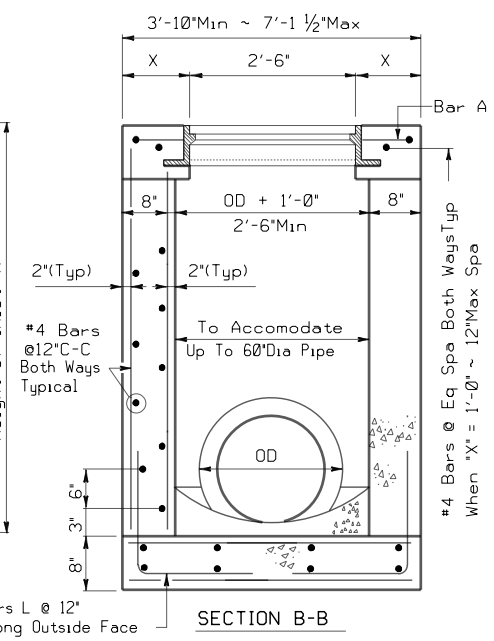


• But Not Less Than Six Inches Over Highest Entering Pipe.

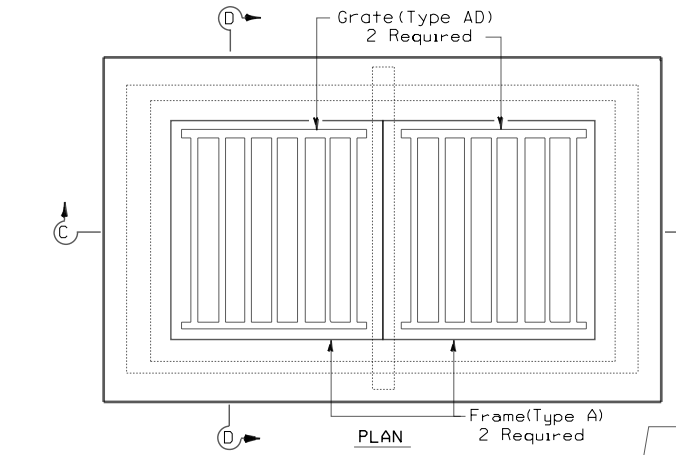
X = 8" Min to 3'-9" Max



SECTION A-A

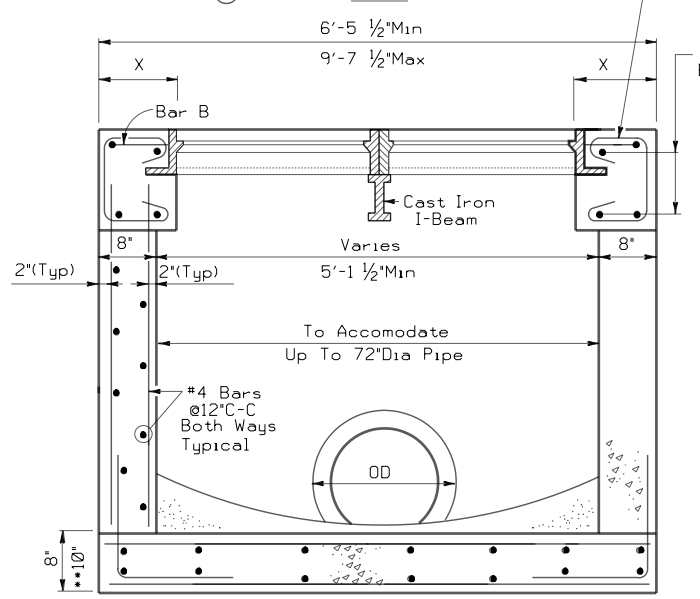


SECTION B-B

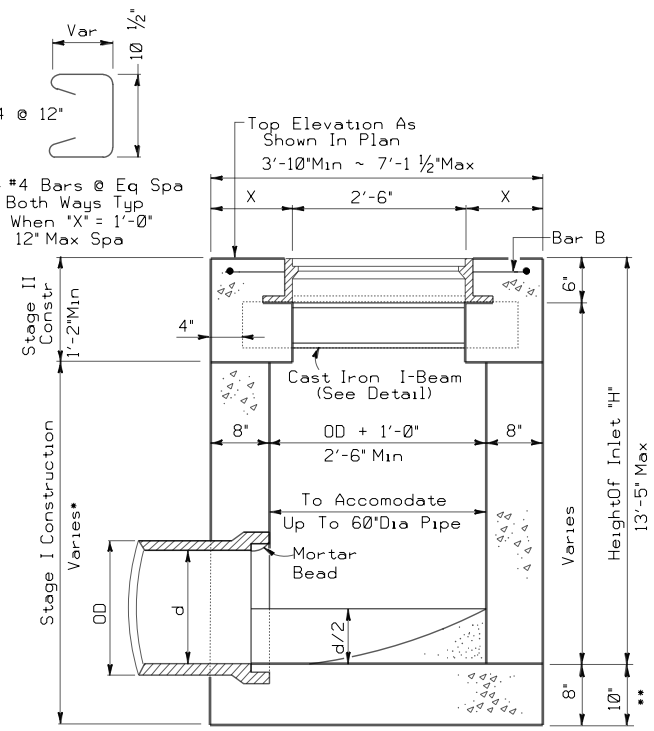


• But Not Less Than Six Inches Over Highest Entering Pipe.

•• For Pipe Diameters 66" And Greater



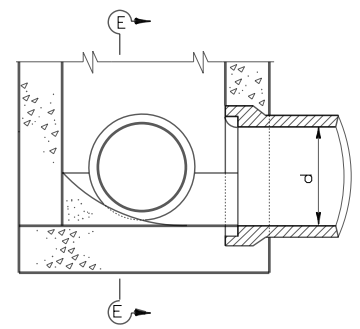
SECTION C-C



SECTION D-D

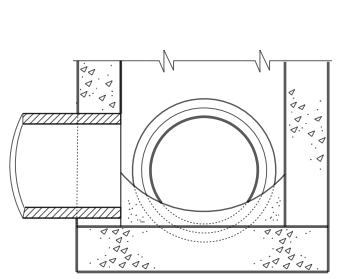
INLET TYPE AD

INLET TYPE AAD

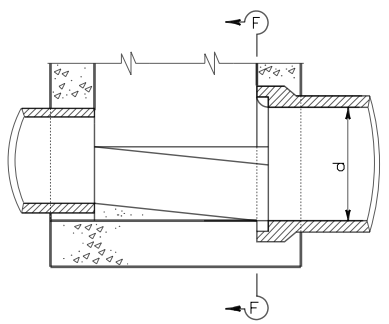


PART SECTION AT INVERT

Showing Shaping Of Invert, Pipe Entering From Adjacent Sides

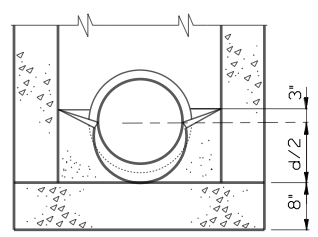


SECTION E-E

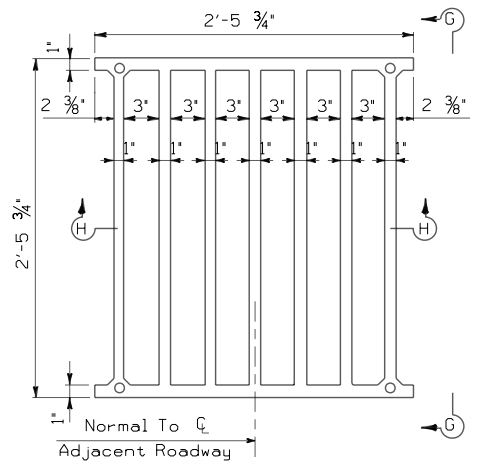


PART SECTION AT INVERT

Showing Shaping Of Invert, Pipe Entering From Opposite Sides

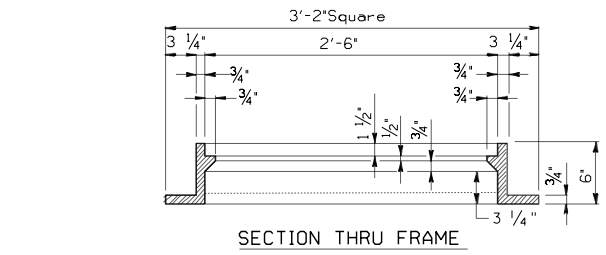


SECTION F-F

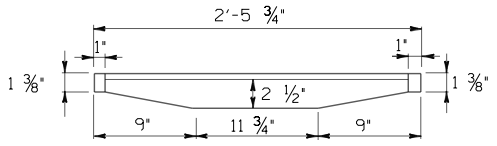


PLAN

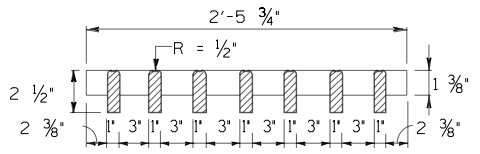
Provide 4 ~ Stainless Steel Hex Head Bolts per Grate



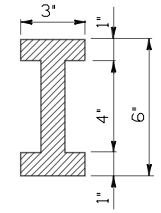
SECTION THRU FRAME



ELEVATION G-G



SECTION H-H



SECTION OF CAST IRON I-BEAM

FRAME AND GRATE

Type AD ~ Neenah No.3418 or EJIW No.V-4880-2
Type AAD ~ Neenah No.3418-2 or EJIW No.V-4881-2

d = Diameter
R = Radius

GENERAL NOTES:

Type AD Inlet contains a single frame with grate. Type AAD Inlet contains a double frame and double grate with an I-beam.

Frame and Grates may be gray cast iron.

The Furnishing And Installation Of Cast Iron I-Beams Shall Be Considered Incidental To Inlet (Compl) (Ty AAD) Or Inlet (Stage II) (Ty AAD) As The Case May Be.

Where Size Of Pipes Passing Thru Inlet Exceeds 30", Increase Inside Width To Diameter Of Pipe Plus 1'-0" (OD + 1'-0")

Cast Iron Manhole Steps (See Manhole Details) Spaced At 16" Centers And Located On Wall Specified By The Engineer Shall Be Provided And Installed Where "D" Exceeds 5'-0".

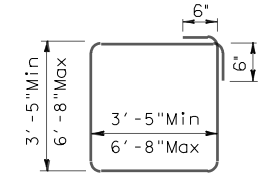
See Standard or Detail Sheet For Excavation and Backfill Diagrams.

Type AD & AAD Inlets Shall Be Built To Stage I And Finished After All Grading Operations Are Substantially Completed.

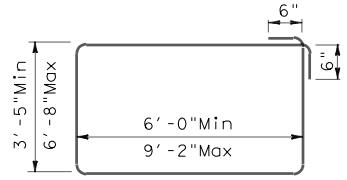
Shop Drawings Will Be Required For Precast Construction Of Inlets.

Upon installation of the grates the threads of the bolts shall be coated with thread lock type adhesive (Lockite or equal). Reapply thread lock adhesive each time grates are removed.

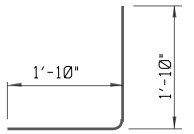
Bolted grates and frames are a matched set, do not unbolt without "Match Marking" so that grates and frames are re-installed as originally built.



BAR A (#4)



BAR B (#4)



BAR L (#4)

NOT FOR TRAFFIC LOADS

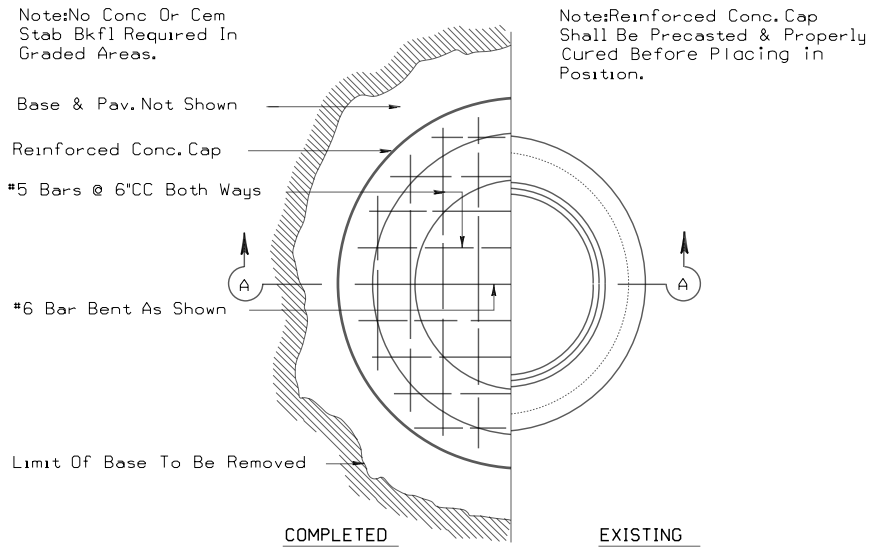
Texas Department of Transportation
Houston District

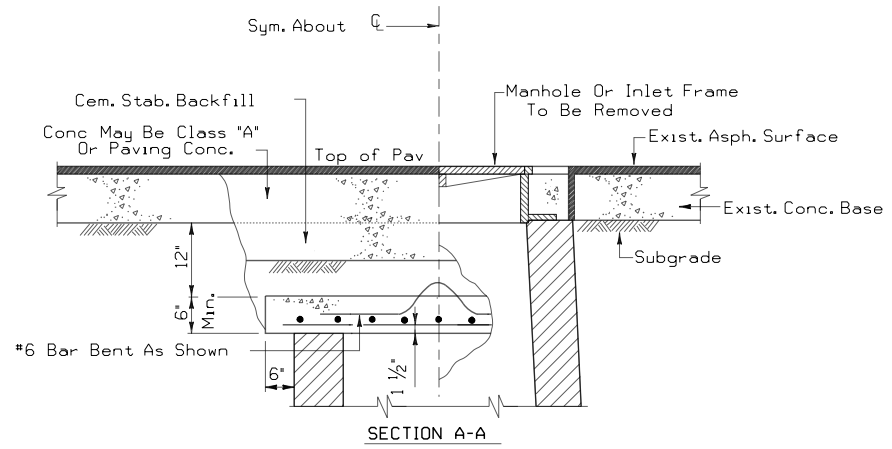
INLETS TYPE AD & AAD

HIL-AD/AAD

FILE: STDD5.DGN	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT	STD:	
© TxDOT 2014	DIST	FED REG	PROJECT NO.			SHEET
REVISIONS	HOUS	6				116
	COUNTY		CONTROL	SECT	JOB	HIGHWAY

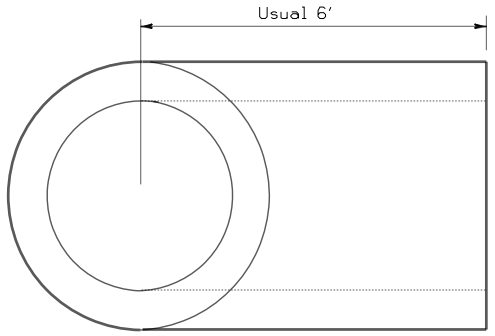
STDD5.DGN





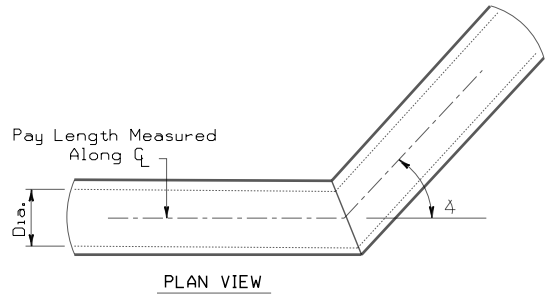
SECTION A-A

DETAIL SHOWING METHOD OF CAPPING ABANDONED MANHOLES OR INLETS (GRADED OR PAVED AREAS)



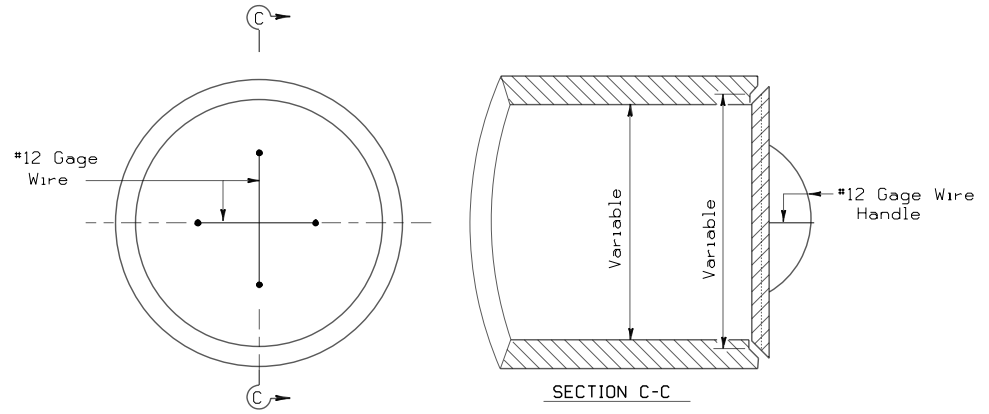
Note: Jointing Material Shall Conform To Requirements Of Item "Reinforced Concrete Pipe." Material For Tees Shall Conform To Requirements Of Item "Reinforced Concrete Pipe." Payment For Tee To Be In Accordance With Item "Reinforced Concrete Pipe."

PRECAST STORM SEWER TEE



BENDING DETAIL

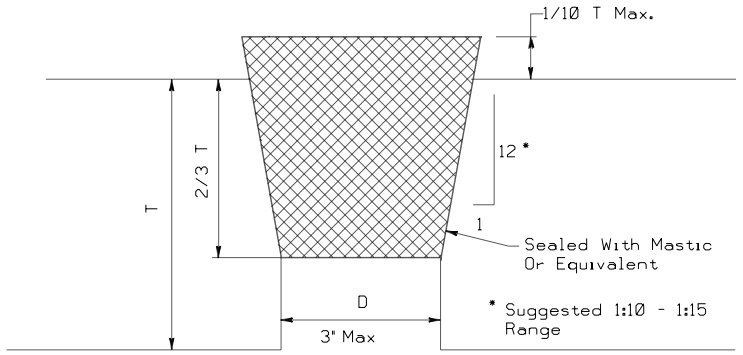
Note: Bending Of Proposed Pipe Sewer Or RCP In A Vertical & /Or Horizontal Plane Shall Be Accomplished By The Use Of A "Pipe Collar" Or A "Precast Elbow", As Approved By The Engineer.
Price Of "Pipe Collar" Or, "Precast Elbow" Shall Be Subsidiary To The Unit Prices Bid For Item Reinforced Concrete Pipe.
Pay Length Measurement To Be Along Horizontal ℄ & Horizontal Plane Of Pipes.



Note: The Price Of Plug Shall Be Subsidiary To The Unit Bid Price For Pipe Sewer Or RCP. Mortar Joints To Be Used As Directed By The Engineer. Removal Of The Existing Plugs For Storm Sewer Or RCP Conns. Shall Be Considered Incidental To Item "Excavation And Backfill For Structures."

Concrete Plug For End Of Pipe Culvert Or Sewer

CONCRETE PLUG FOR PIPE

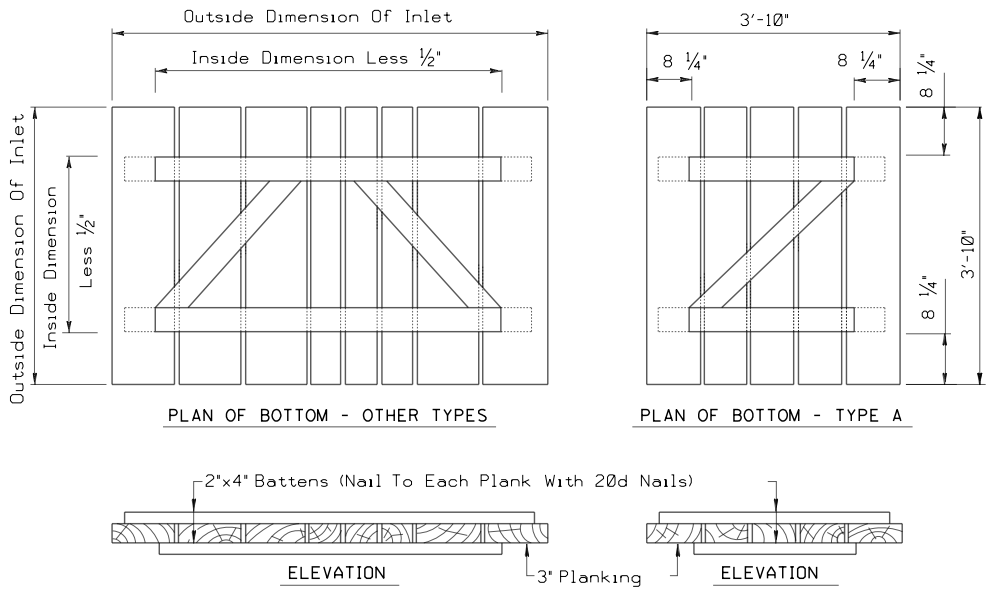


T = Wall Thickness On Top Of Box Or Pipe
D = Diameter Of Lifting Hole

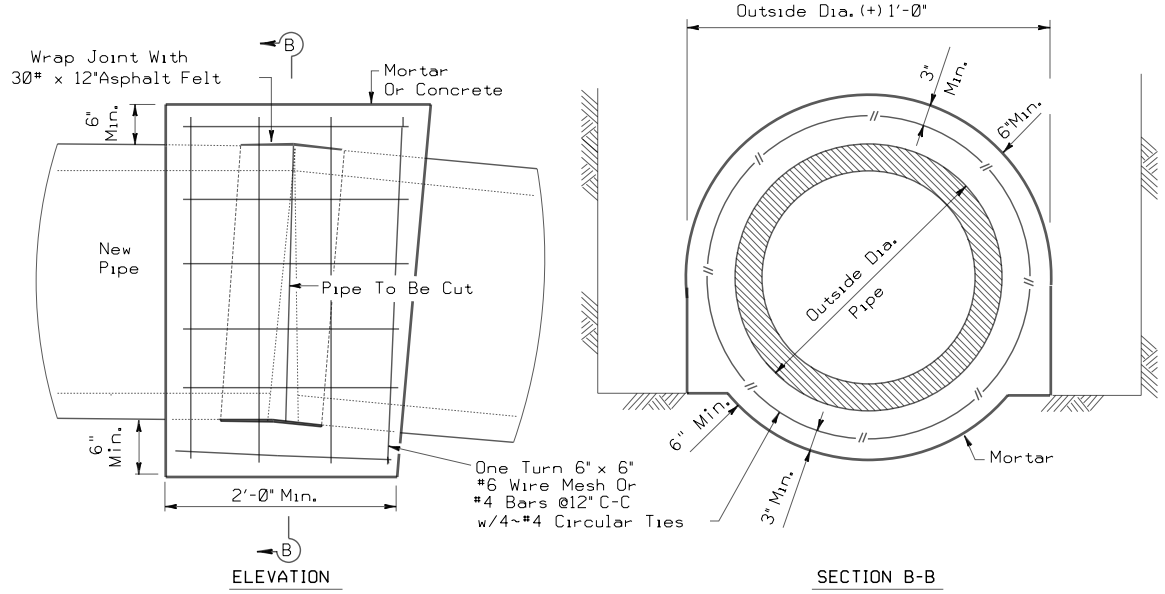
Minimum Length Of Plug Is 2/3 T +/-
Minimum Diameter At Bottom Of Plug = D - ⅛"
Maximum 1/10 T Of Plug Not Seated In Lifting Hole

Note: The Plug Shall Be Cast With The Same Taper As The Lifting Hole.

DETAIL OF PLUG FOR LIFTING HOLES IN RCB AND RCP



TEMPORARY COVERS FOR ALL TYPES OF INLETS



PIPE COLLAR DETAIL

For Horizontal Or Vertical Placement

d = Diameter
R = Radius

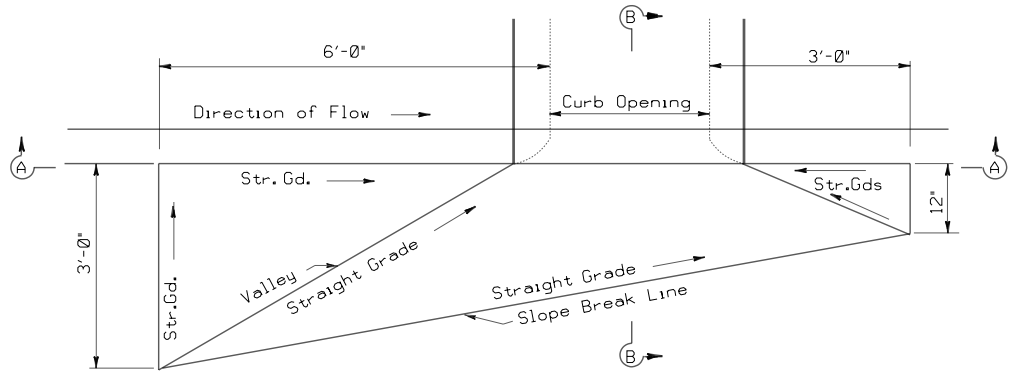
Texas Department of Transportation
Houston District (Bridge)

MISCELLANEOUS SEWER DETAILS

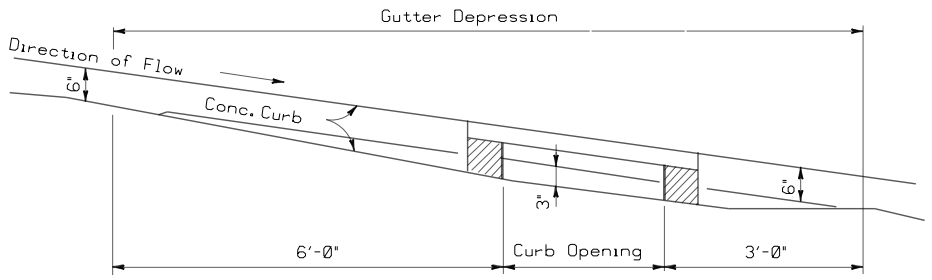
MSD

FILE: STDD11.DGN	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK:
© TxDOT Mar 2004	DISTRICT	FED REG	PROJECT NO.	SHEET
REVISIONS 3/2015 2014 Specs	HOU	6		117
	COUNTY	CONTROL	SECT	JOB	HIGHWAY

STDD11.DGN

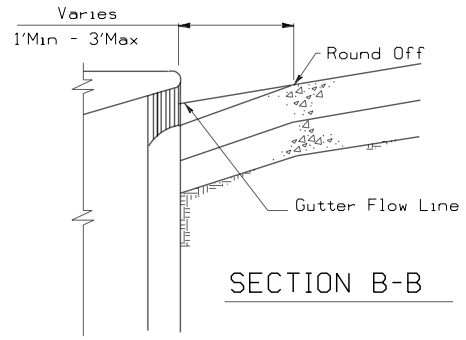


PLAN

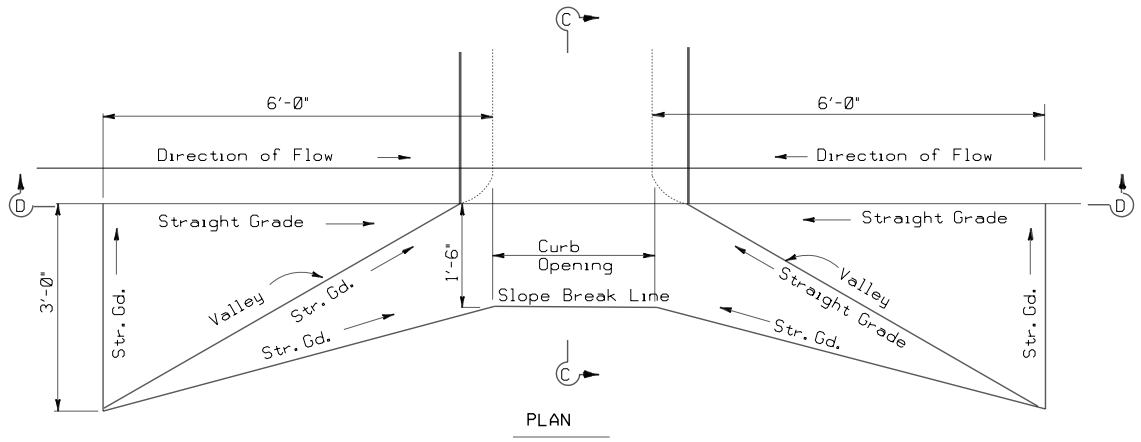


SECTION A-A

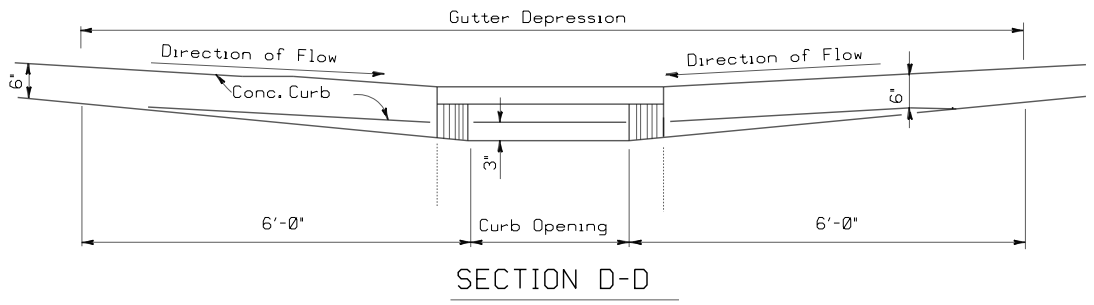
CURB INLET ON GRADE



SECTION B-B

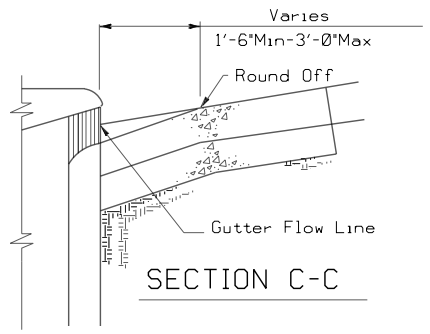


PLAN



SECTION D-D

CURB INLET AT SAG



SECTION C-C

GENERAL NOTES:

Base Course under Concrete Pavement shall be full depth and shall conform to surface depression details.

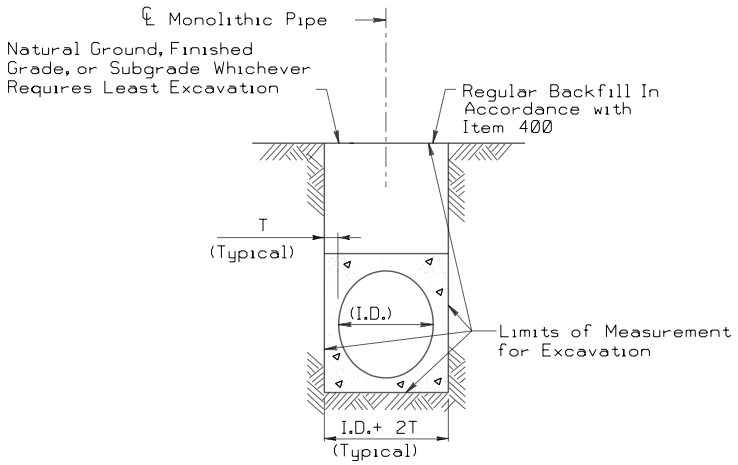
Texas Department of Transportation
Houston District

GUTTER DEPRESSION DETAILS FOR CURB INLETS

GD

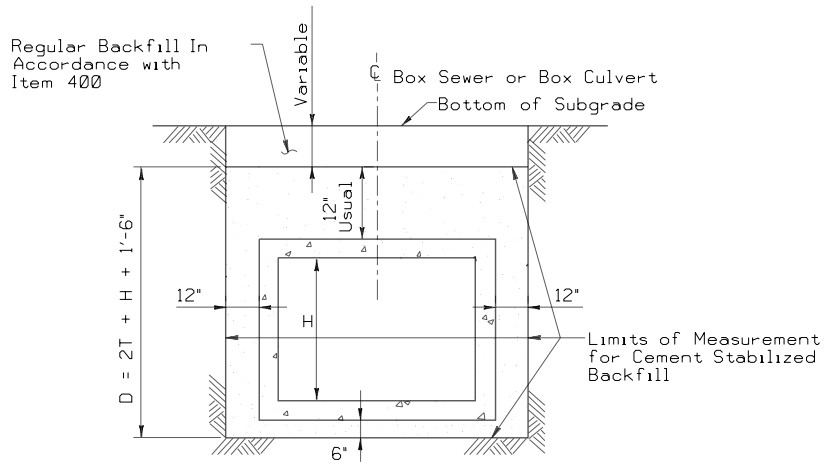
FILE: STDD12.DGN	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT	STD:	
© TxDOT Mar 2004	DIST	FED REG	PROJECT NO.			SHEET
REVISIONS	HOUS	6				118
	COUNTY			CONTROL	SECT	JOB	HIGHWAY

STDD12.DGN



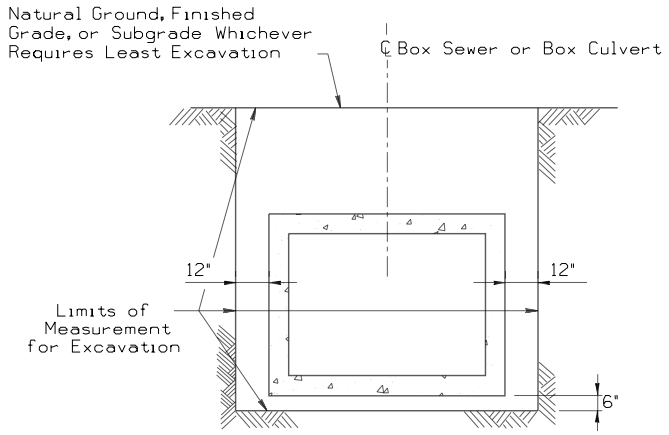
EXCAVATION DETAIL

MONOLITHIC PIPE
IN A PAVED OR GRADED AREA



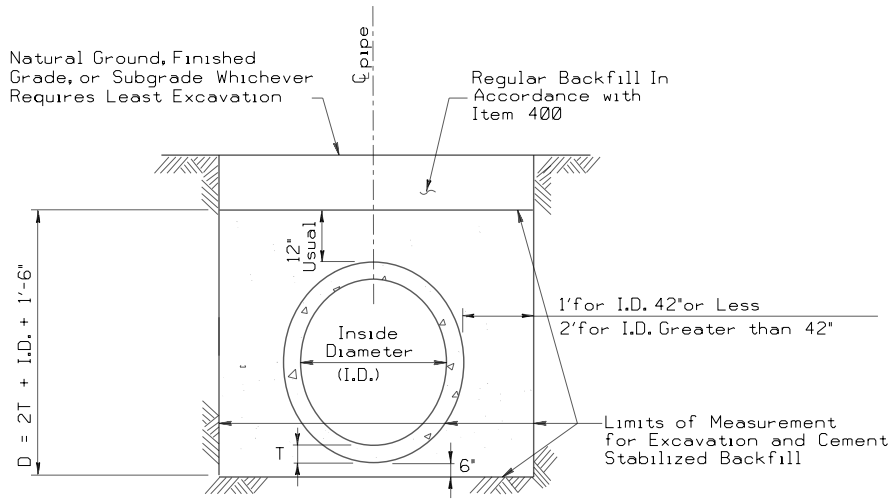
BACKFILL DETAIL

BOX CULVERTS
IN A GRADED OR PAVED AREA
INCLUDING DETOURS *



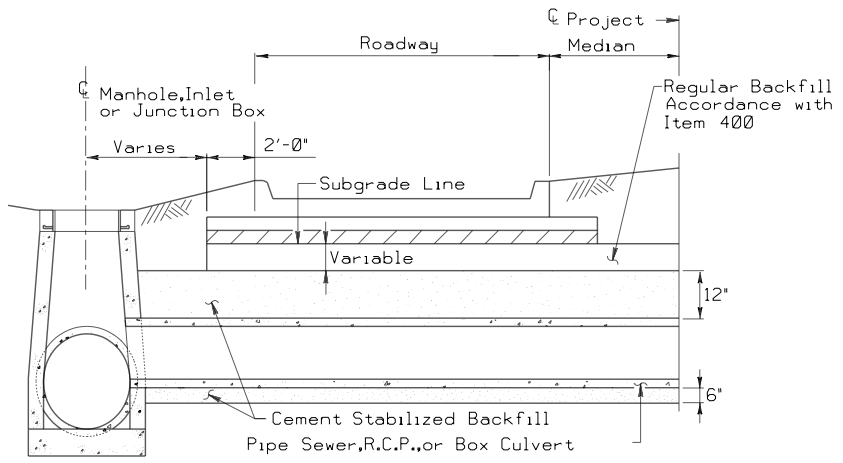
EXCAVATION DETAIL

BOX CULVERTS
IN A GRADED AREA



EXCAVATION & BACKFILL DETAIL

REINFORCED CONCRETE PIPE
IN A GRADED OR PAVED AREA
INCLUDING DETOURS



BACKFILL DETAIL

AT MANHOLE, INLET OR JUNCTION BOX

D = Depth
H = Height
T = Thickness
R = Radius
Dia = Diameter

REINFORCED CONCRETE PIPE

EXCAVATION AND BACKFILL QUANTITIES

PIPE DIA. IN.	T FT.	CULVERT OR SEWER EXCAVATION IN A PAVED OR GRADED AREA C.Y.PER L.F.PER FT.OF DEPTH	CEMENT STABILIZED BACKFILL IN A PAVED OR GRADED AREA C.Y.PER L.F. OF PIPE
18	0.19	0.144	0.383
24	0.23	0.165	0.478
30	0.29	0.188	0.586
36	0.33	0.210	0.692
42	0.38	0.231	0.808
48	0.42	0.327	1.394
54	0.46	0.349	1.560
60	0.50	0.370	1.731
66	0.54	0.392	1.907
72	0.58	0.414	2.088
78	0.62	0.435	2.275
84	0.67	0.457	2.474

MONOLITHIC PIPE

EXCAVATION QUANTITIES

PIPE DIA. IN.	T FT.	EXCAVATION C.Y.PER L.F.PER FT.OF DEPTH
36	0.417	0.142
42	0.458	0.164
48	0.458	0.182
54	0.500	0.204
60	0.583	0.228
66	0.583	0.247
72	0.625	0.269
78	0.625	0.287
84	0.625	0.306

NOTE:

Cement stabilized backfill may be omitted in private driveways as indicated elsewhere in the plans.

Rubber gaskets shall be required for all joints on proposed cross drainage, pipe culverts and proposed storm sewer systems, unless otherwise shown in the plans.

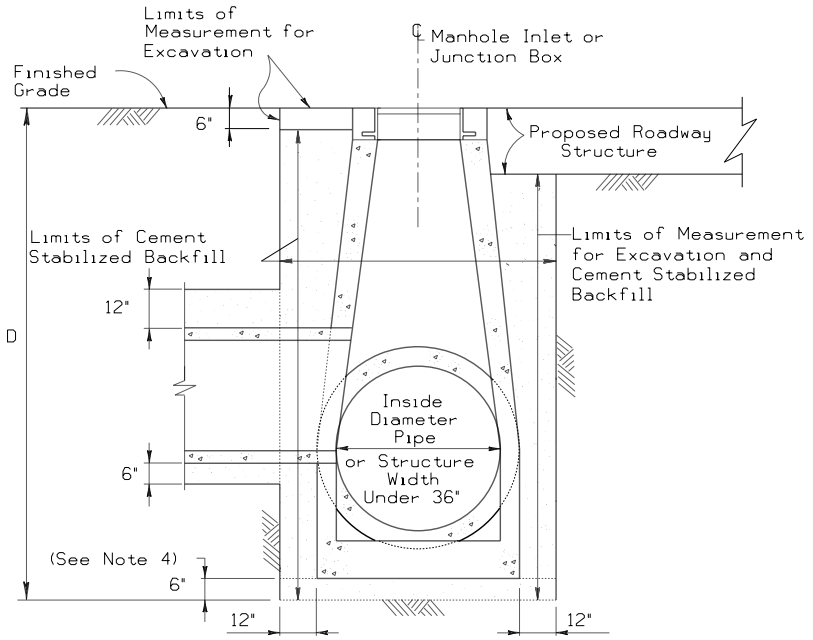
* Backfill with cement stabilized material will be required for all structures under detours unless noted otherwise in the General Notes.

Texas Department of Transportation
Houston District

EXCAVATION AND BACKFILL DIAGRAMS

E&BD

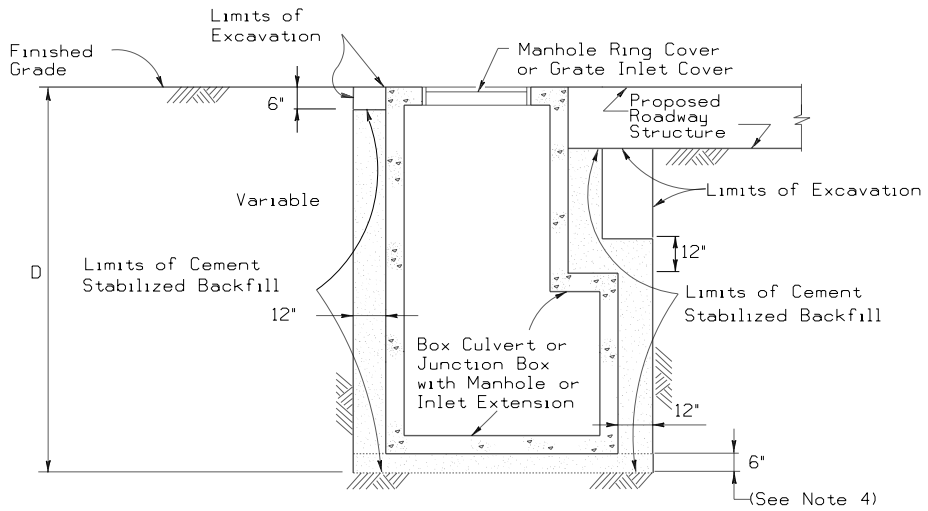
FILE: STDE1.DGN	DN: TxDot	CK: TxDot	DW: TxDot	CK: TxDot
© TxDOT FEB 2010	DIST	FED REG	PROJECT NO.	SHEET
REVISIONS REVISED 11/05 REVISED 2/2010 Added note to Table 1,Sht 2 of 2. REVISED 6/12	HOUSTON	6		119
	COUNTY		CONTROL SECT	JOB HIGHWAY



EXCAVATION AND BACKFILL DETAIL

MANHOLES SMALLER THAN 36 IN.
IN A PAVED OR GRADED AREAS

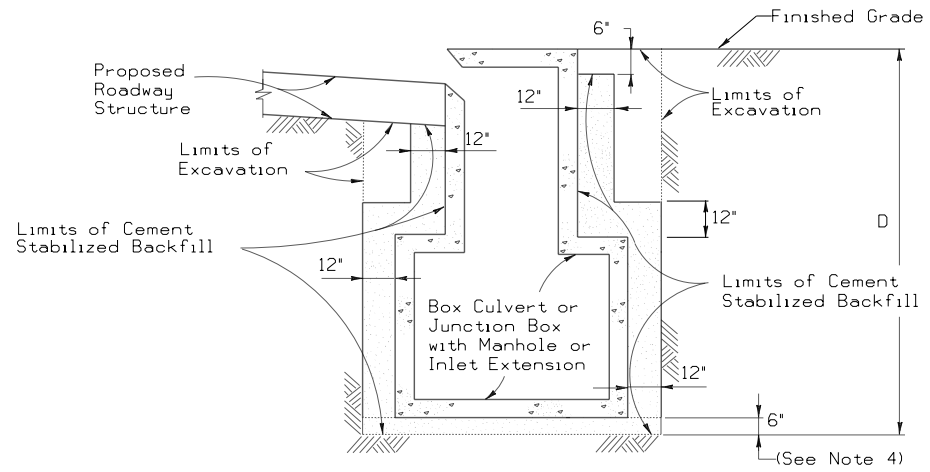
N.T.S.



EXCAVATION AND BACKFILL DETAIL

JUNCTION BOXES IN A
PAVED OR GRADED AREA

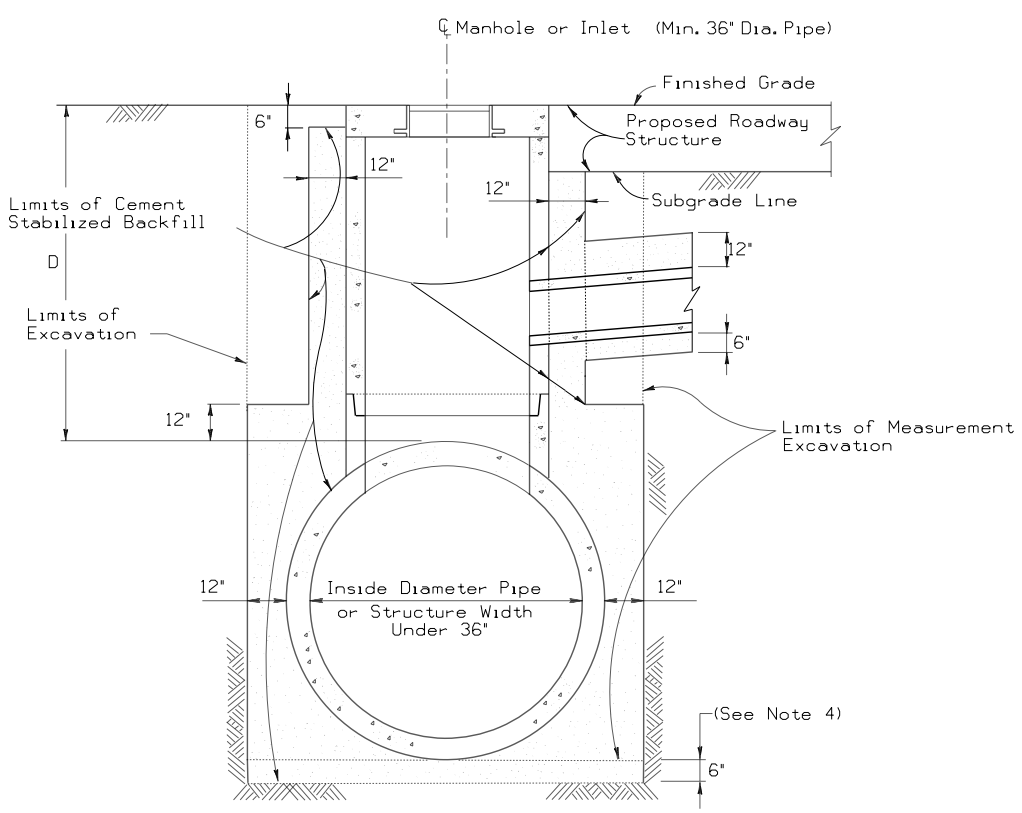
N.T.S.



EXCAVATION AND BACKFILL DETAIL

INLET EXTENSIONS ON A BOX CULVERT
IN A PAVED OR GRADED AREA

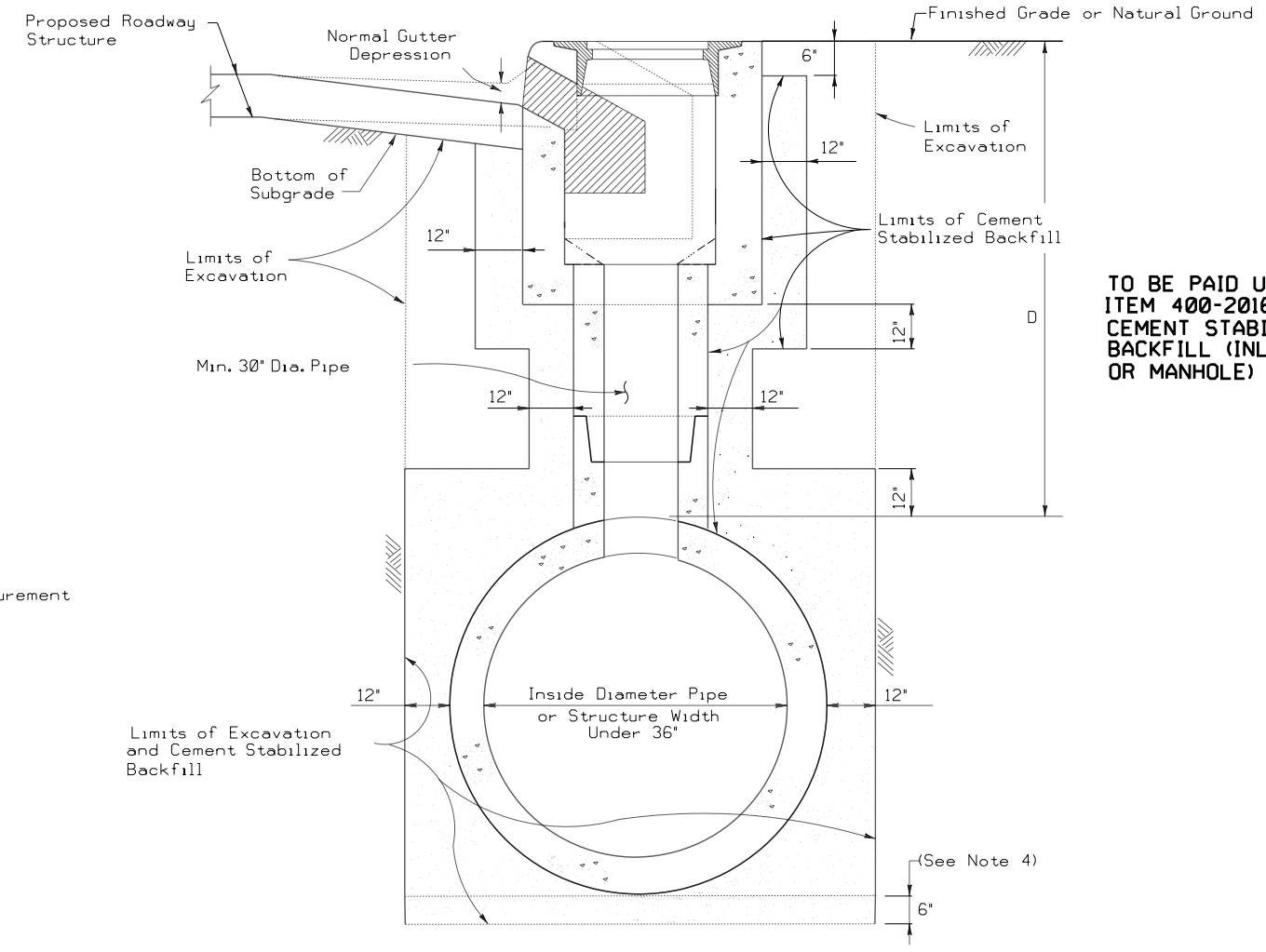
N.T.S.



EXCAVATION AND BACKFILL DETAIL

MANHOLES 36 IN. AND GREATER
IN A PAVED OR GRADED AREA

N.T.S.



EXCAVATION AND BACKFILL DETAIL

CURB INLETS IN A PAVED OR GRADED AREA

N.T.S.

D = Depth
H = Height
T = Thickness
R = Radius
Dia = Diameter

TABLE I

SCHEDULE FOR PAY QUANTITIES OF CEMENT STABILIZED BACKFILL (SEE NOTE 1)

MANHOLE OR INLET DEPTH (D) IN FEET	CEMENT STABILIZED BACKFILL IN CUBIC YARDS
0 through 5	5.75
> 5 through 10	8.25
greater than 10	12.75

TO BE PAID UNDER ITEM 400-2016 CEMENT STABILIZED BACKFILL (INLET OR MANHOLE)

NOTES:

1. The Contractor is paid a fixed estimated amount for cement stabilized backfill based on depth (D) and Table. 1.
2. Proposed roadway structure includes pavement, base and any subgrade.
3. For backfill of intersecting pipes and box culverts, see "Excavation and Backfill Diagram for Pipes and Box Culverts."
4. 6" cement stabilized backfill will be required only for precast units.

Texas Department of Transportation
Houston District

EXCAVATION AND BACKFILL DIAGRAMS

E&BD

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REVISIONS REVISED 11/05 REVISED 2/2010 Added note to Table 1. REVISED 6/12	HOUSTON	6		120
	COUNTY		CONTROL	SECT	JOB	HIGHWAY

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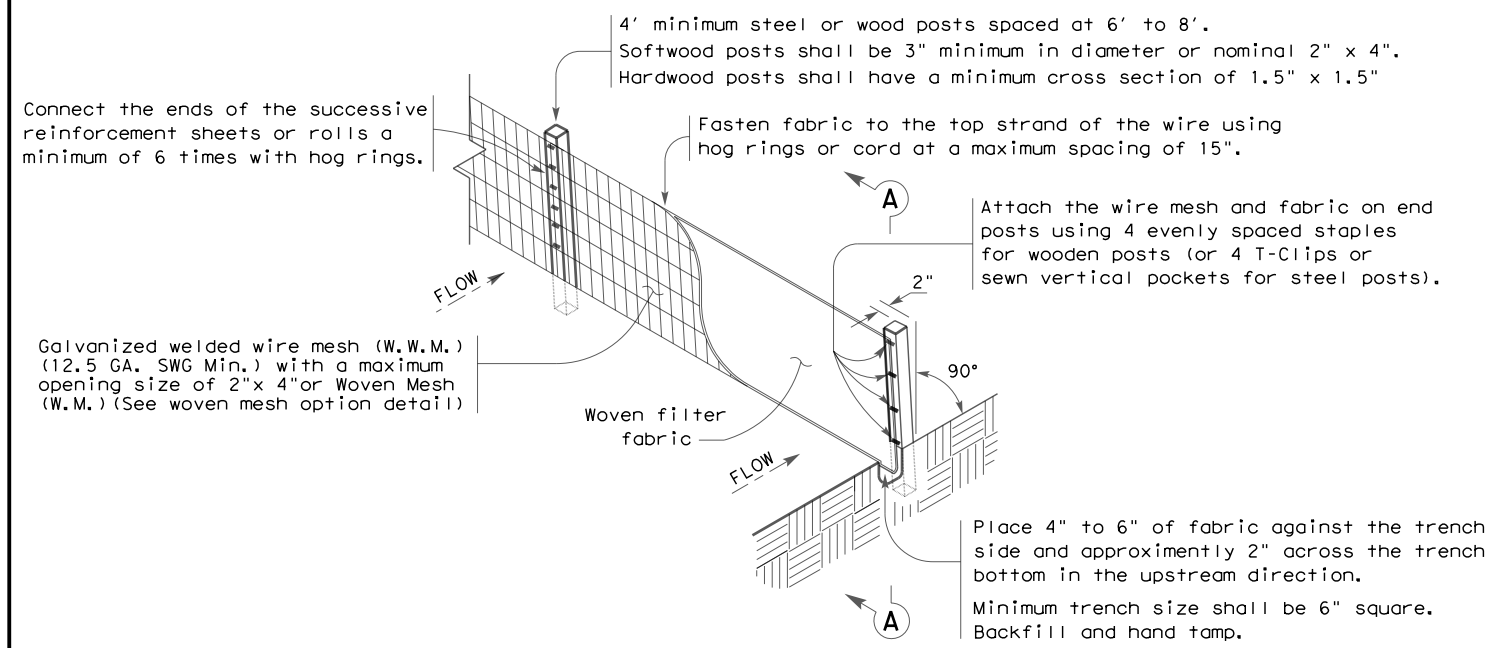
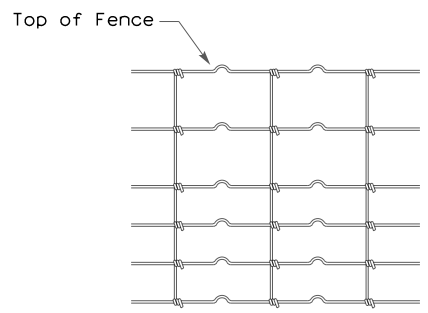
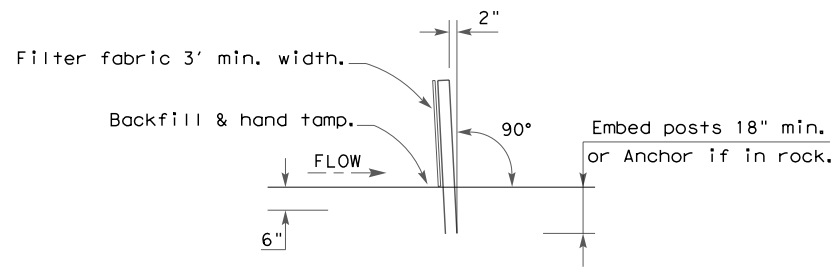


TEMPORARY SEDIMENT CONTROL FENCE

SCF





SECTION A-A

HINGE JOINT KNOT WOVEN MESH (OPTION) DETAIL

Galvanized hinge joint knot woven mesh (12.5 GA.SWG Min.) requires a minimum of five horizontal wires spaced at a maximum of 12 inches apart and all vertical wires spaced at a maximum of 12 inches apart.

SEDIMENT CONTROL FENCE USAGE GUIDELINES

A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

Sediment control fence should be sized to filter a maximum flow through rate of 100 GPM/FT^2. Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

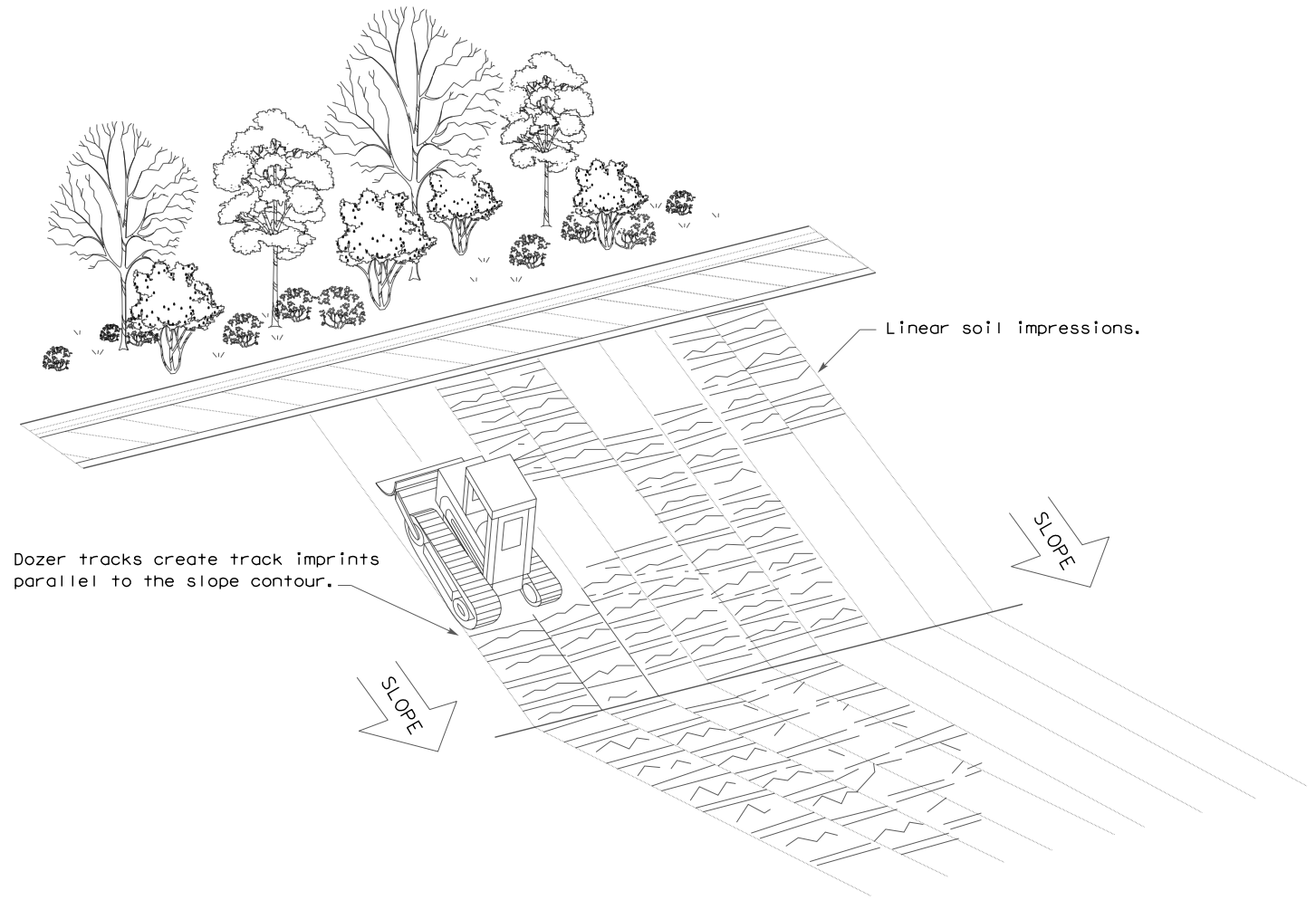
LEGEND

Sediment Control Fence

SCF

GENERAL NOTES

1. Vertical tracking is required on projects where soil distributing activities have occurred unless otherwise approved.
2. Perform vertical tracking on slopes to temporarily stabilize soil.
3. Provide equipment with a track undercarriage capable of producing linear soil impressions measuring a minimum of 12" in length by 2" to 4" in width by 1/2" to 2" in depth.
4. Do not exceed 12" between track impressions.
5. Install continous linear track impressions where the minimum 12" length impressions are perpendicular to the slope or direction of water flow.



VERTICAL TRACKING

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

FENCE & VERTICAL TRACKING

EC(1)-16

FILE: ec116	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS
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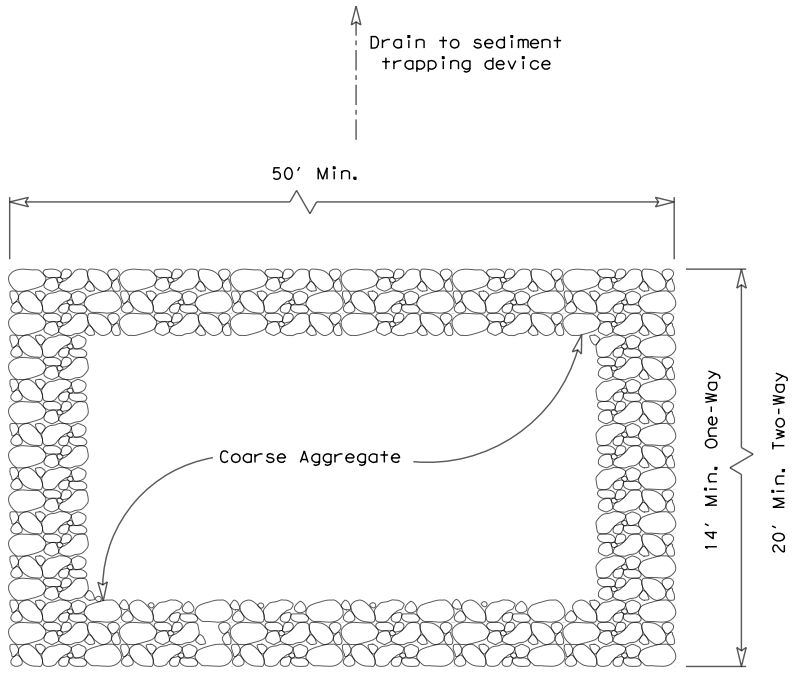
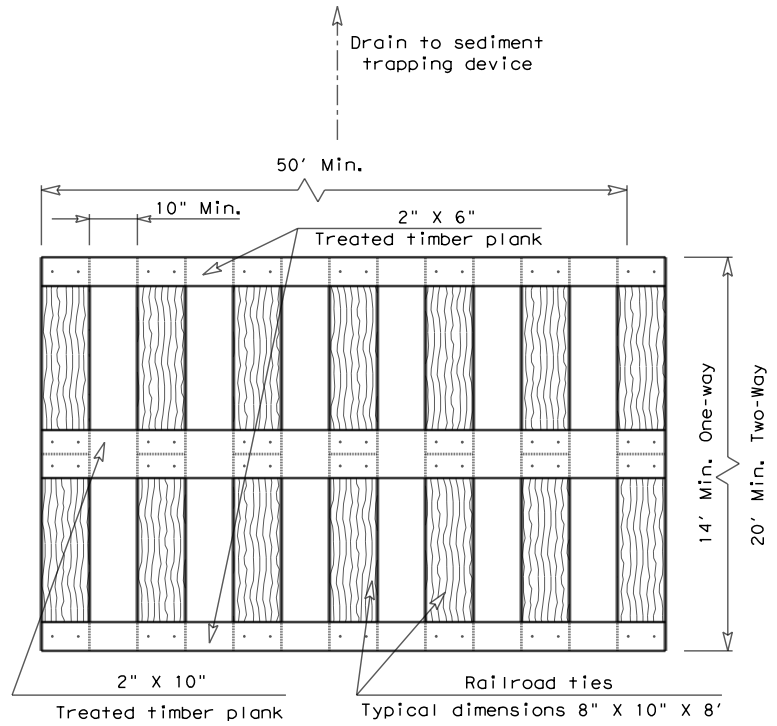
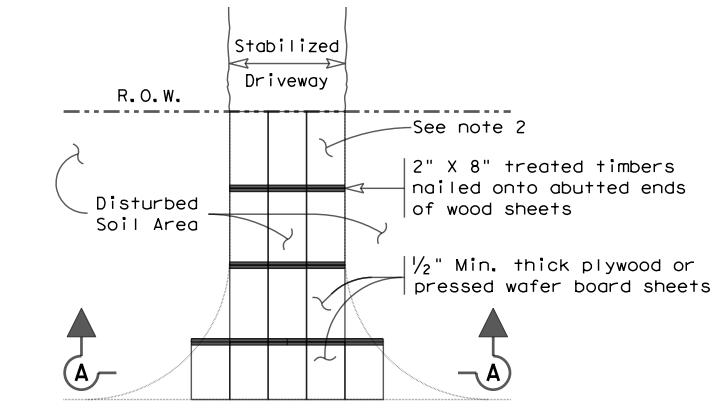


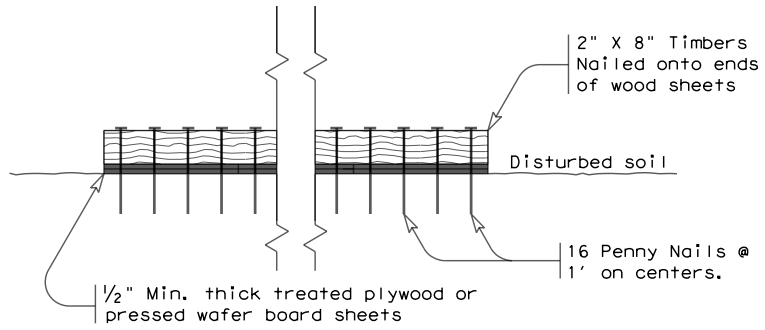
PLAN VIEW



PLAN VIEW



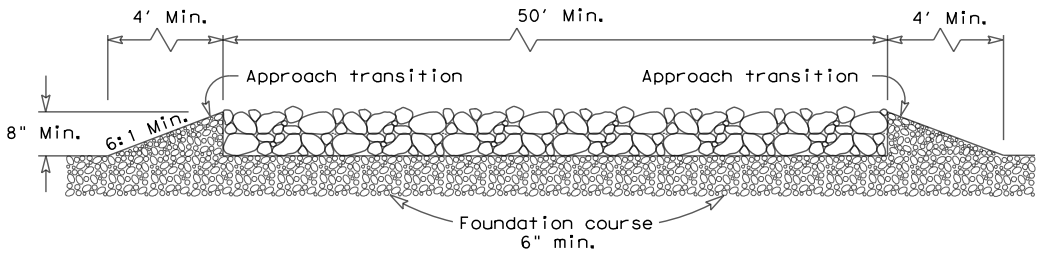
PLAN VIEW



SECTION A-A

CONSTRUCTION EXIT (TYPE 3)

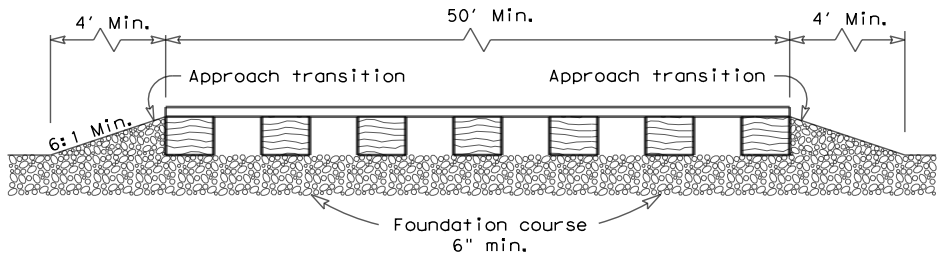
SHORT TERM



ELEVATION VIEW

CONSTRUCTION EXIT (TYPE 1)

ROCK CONSTRUCTION (LONG TERM)



ELEVATION VIEW

CONSTRUCTION EXIT (TYPE 2)

TIMBER CONSTRUCTION (LONG TERM)

GENERAL NOTES (TYPE 1)

1. The length of the type 1 construction exit shall be as indicated on the plans, but not less than 50′.
2. The coarse aggregate should be open graded with a size of 4" to 8".
3. The approach transitions should be no steeper than 6:1 and constructed as directed by the Engineer.
4. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other materialas approved by the Engineer.
5. The construction exit shall be graded to allow drainage to a sediment trapping device.
6. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
7. Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.

GENERAL NOTES (TYPE 2)

1. The length of the type 2 construction exit shall be as indicated on the plans, but not less than 50′.
2. The treated timber planks shall be attached to the railroad ties with ½"x 6" min. lag bolts. Other fasteners may be used as approved by the Engineer.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The approach transitions shall be no steeper than 6:1 and constructed as directed by the Engineer.
5. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other material as approved by the Engineer.
6. The construction exit should be graded to allow drainage to a sediment trapping device.
7. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
8. Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.

GENERAL NOTES (TYPE 3)

1. The length of the type 3 construction exit shall be as shown on the plans, or as directed by the Engineer.
2. The type 3 construction exit may be constructed from open graded crushed stone with a size of two to four inches spread a min. of 4" thick to the limits shown on the plans.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

CONSTRUCTION EXITS

EC(3)-16

FILE: ec316	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS
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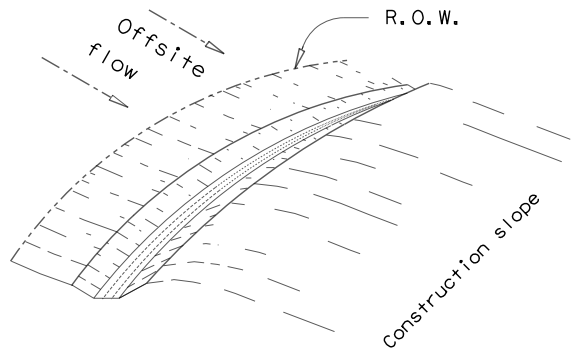
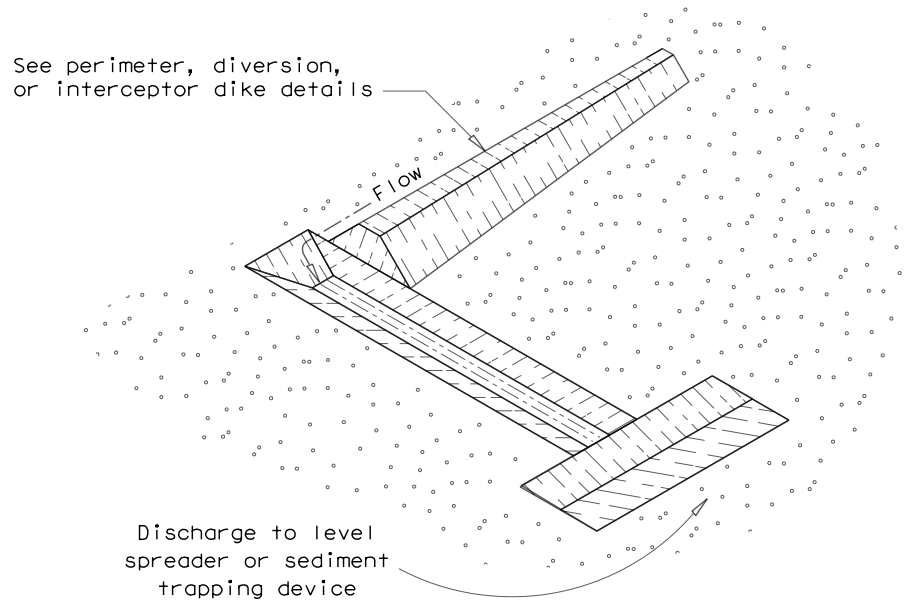


PERIMETER SWALE



DIVERSION SWALE

GENERAL NOTE

1. Dimensions of swale may be modified with prior approval of the Engineer.
2. Side slopes within the safety clear zone of a roadway shall be 6:1 or flatter.
3. Grading shall be shown elsewhere on the plans or as directed by the Engineer.
4. The Engineer reserves the right to modify the dimensions shown for the swale dependent on runoff volume characteristics.
5. Swales that are in place for more than 14 calender days should be stabilized through seeding or other measures to control sediment runoff.
6. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
7. Remove sediment and debris when accumulation affects the performance of the devices, after a rain and when directed by the Engineer.

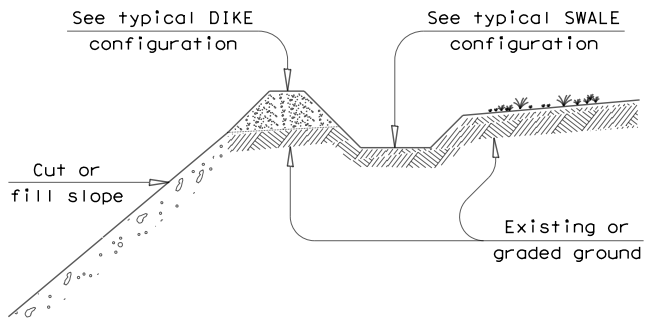
SWALE AND DIKE/SWALE USAGE GUIDELINES

A swale or dike/swale may be used to intercept runoff and divert it around unstabilized areas or to divert sediment laden runoff to an erosion control device (sediment basin or trap, rock filter dam, etc.).

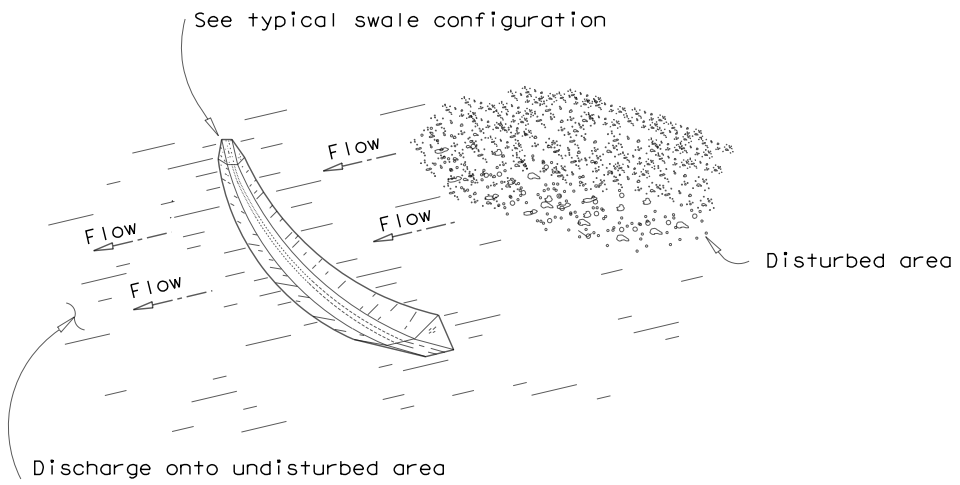
The drainage area contributing runoff to a swale or dike/swale should not exceed 5 acres. The spacing of swales and dike/swales should be as follows:

Slope of disturbed areas above dike	greater than 10%	5 - 10%	less than 5%
Maximum distance between dikes	100′	200′	300′

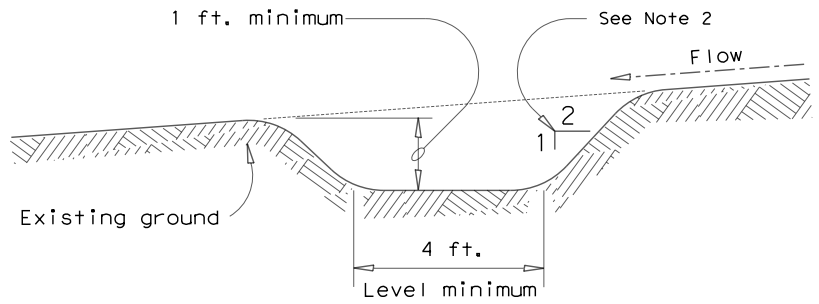
Intercepted runoff flowing in a swale or dike/swale should outlet to a stabilized area (vegetation, rock, etc.).



DIVERSION DIKE WITH SWALE



INTERCEPTOR SWALE



TYPICAL SWALE CONFIGURATION

PLAN SHEET LEGEND

SWALE → (S) →

DIKE → (D) →

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES
SWALES
(EARTHWORK FOR EROSION CONTROL)

EC(5)-16

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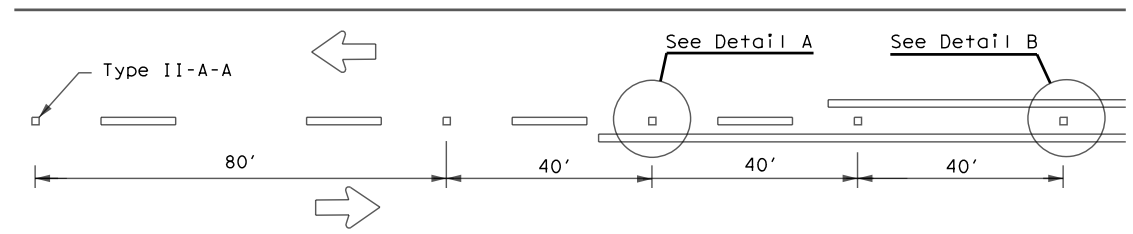
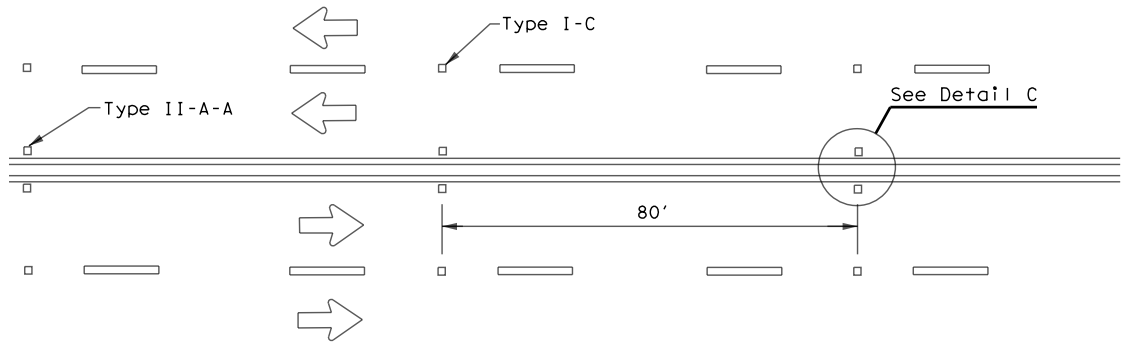
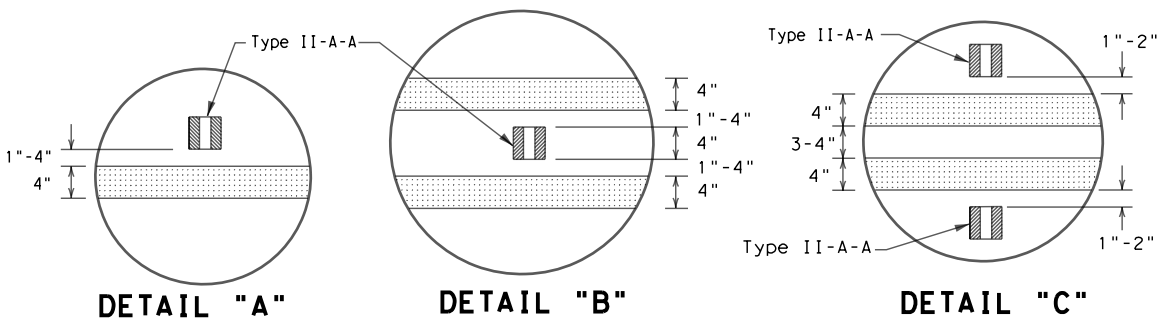
REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE



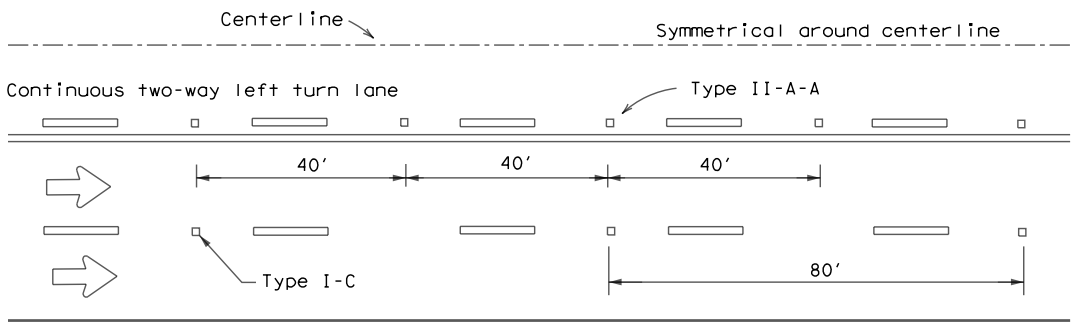
CENTERLINE FOR ALL TWO LANE ROADWAYS



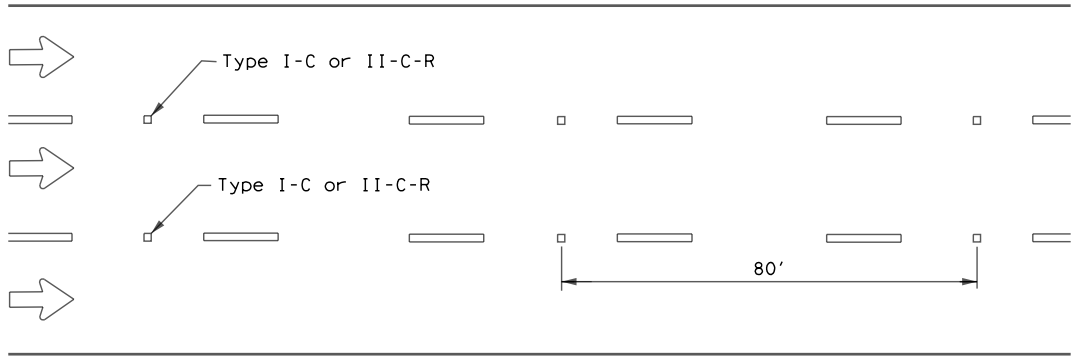
CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY HIGHWAYS



DETAIL "A" **DETAIL "B"** **DETAIL "C"**

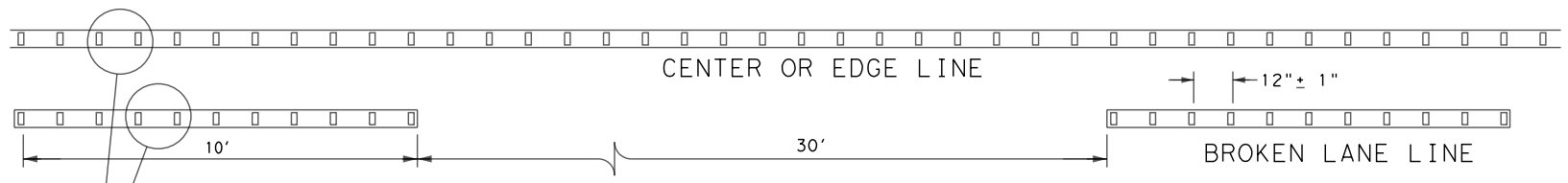


CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE



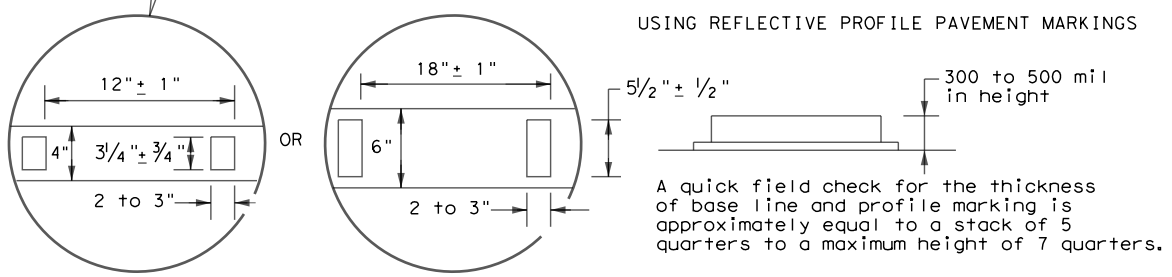
LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)

Raised pavement markers Type II-C-R shall have clear face toward normal traffic and red face toward wrong-way traffic.



REFLECTORIZED PROFILE PATTERN DETAIL

USING REFLECTIVE PROFILE PAVEMENT MARKINGS



4" EDGE LINE, CENTER LINE OR LANE LINE

OPTIONAL 6" EDGE LINE, CENTER LINE OR LANE LINE

A quick field check for the thickness of base line and profile marking is approximately equal to a stack of 5 quarters to a maximum height of 7 quarters.

NOTE

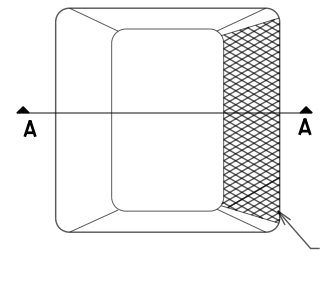
Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.

GENERAL NOTES

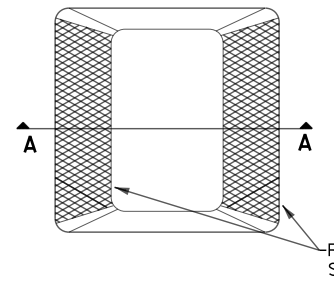
1. All raised pavement markers placed in broken lines shall be placed in line with and midway between the stripes.
2. On concrete pavements the raised pavement markers should be placed to one side of the longitudinal joints.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



Type I (Top View)



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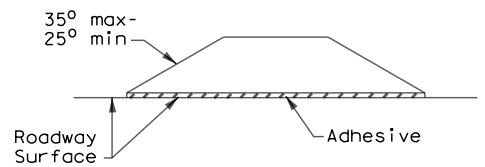

SECTION A

RAISED PAVEMENT MARKERS

Texas Department of Transportation

Traffic Safety Division Standard

POSITION GUIDANCE USING RAISED MARKERS RELECTORIZED PROFILE MARKINGS PM(2)-20

FILE: pm2-20.dgn	DN:	CK:	DW:	CK:
©TxDOT April 1977	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-92 2-10				
5-00 2-12	DIST	COUNTY		SHEET NO.
8-00 6-20				124

22B

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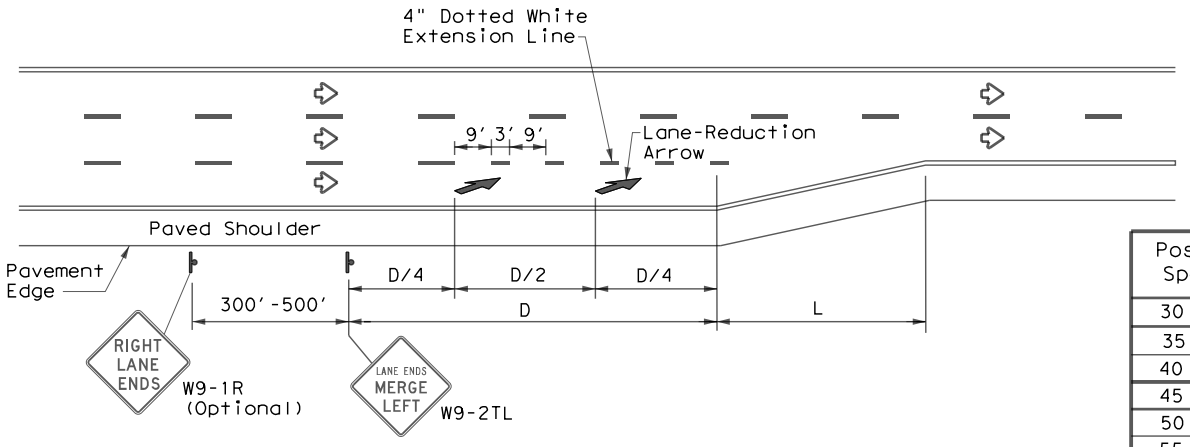
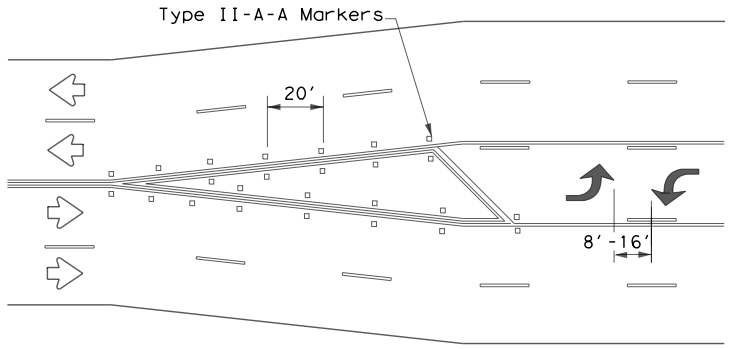


LANE REDUCTION

Posted Speed	D (ft)	L (ft)
30 MPH	460	$L=\frac{WS^2}{60}$
35 MPH	565	
40 MPH	670	
45 MPH	775	L=WS
50 MPH	885	
55 MPH	990	
60 MPH	1,100	
65 MPH	1,200	
70 MPH	1,250	
75 MPH	1,350	

NOTES

1. Lane reduction pavement markings are used where the number of through lanes is reduced because of narrowing of the roadway or because of a section of on-street parking in what would otherwise be a through lane. For Texas Super 2 Passing Lanes, see TS2(PL) standard sheets.
2. On divided highways, an additional W9-1R "RIGHT LANE ENDS" sign may be installed in the median aligned with the W9-1R sign on the right side of the highway.
3. Lane reduction arrows are required for speeds of 45 mph or greater. An optional third lane reduction arrow may be added based on engineering judgement. If used, the optional third lane reduction arrow should be centered between the first and last lane reduction arrows.
4. For lane reductions on Freeways and Expressways, signing shall conform to the TxDOT Freeway Signing Handbook.



A two-way left-turn (TWLT) lane-use arrow pavement marking should be used at or just downstream from the beginning of a two-way left-turn lane within a corridor. Repeating the marking after each intersection or dedicated turn bay is not required unless stated elsewhere in the plans.

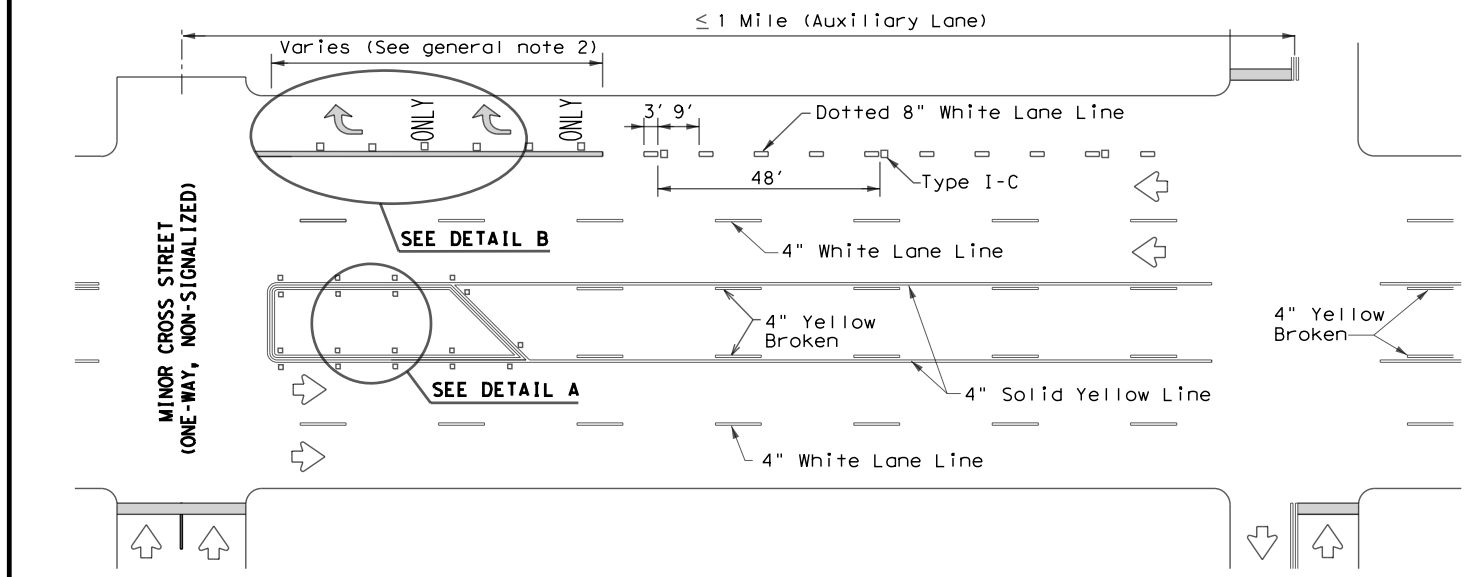
TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY

GENERAL NOTES

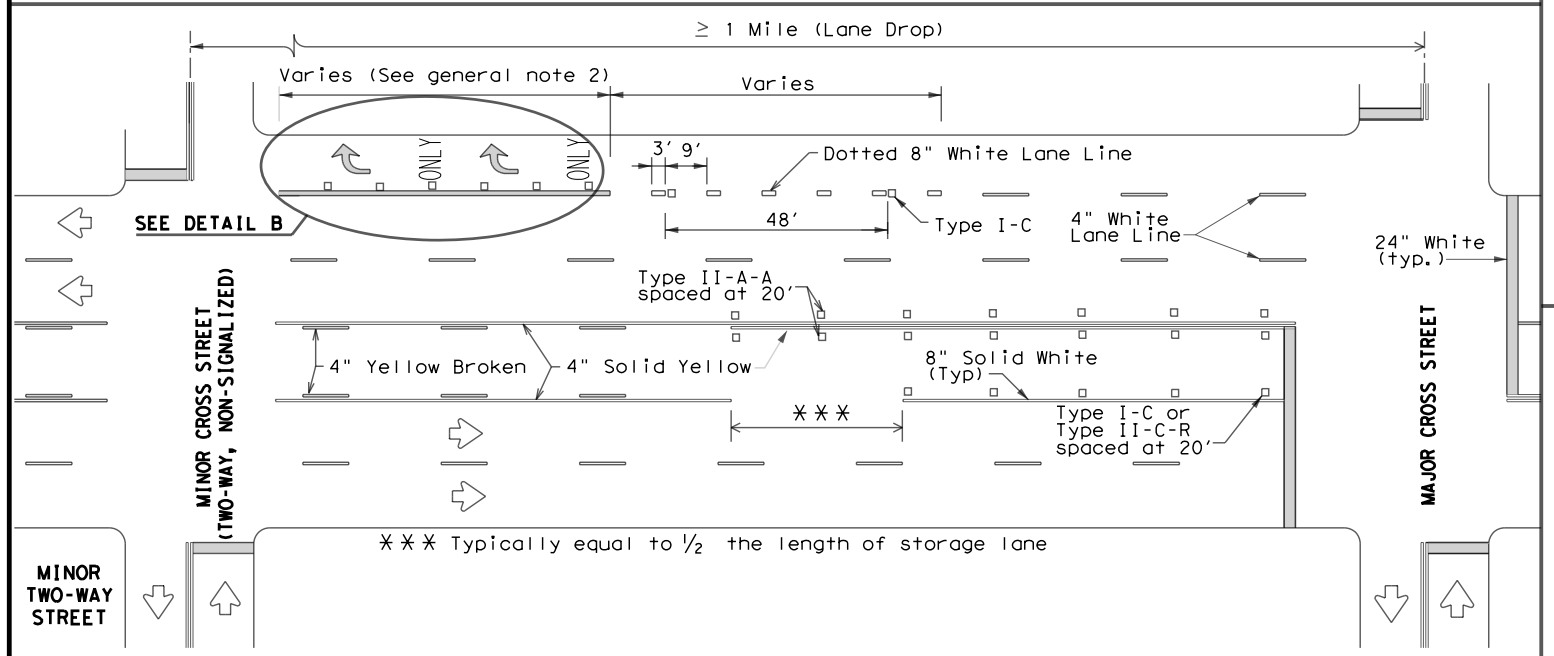
1. Lane use word and arrow markings shall be used where through lanes approaching an intersection become mandatory turn lanes. Lane use word and arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings or word and arrow markings may be used in other lanes and turn bays for emphasis. Details for words and arrows are as shown in the Standard Highway Sign Designs for Texas.
2. When lane-use words and arrow markings are used, two sets of arrows should be used if the length of the bay is greater than 180 feet. When a single lane use arrow or word and arrow marking is used for a short turn lane, it should be located at or near the upstream end of the full-width turn lane.
3. Use raised pavement marker Type I-C with undivided highways, flush medians and two way left turn lanes. Use raised pavement marker Type II-C-R with divided highways and raised medians.
4. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

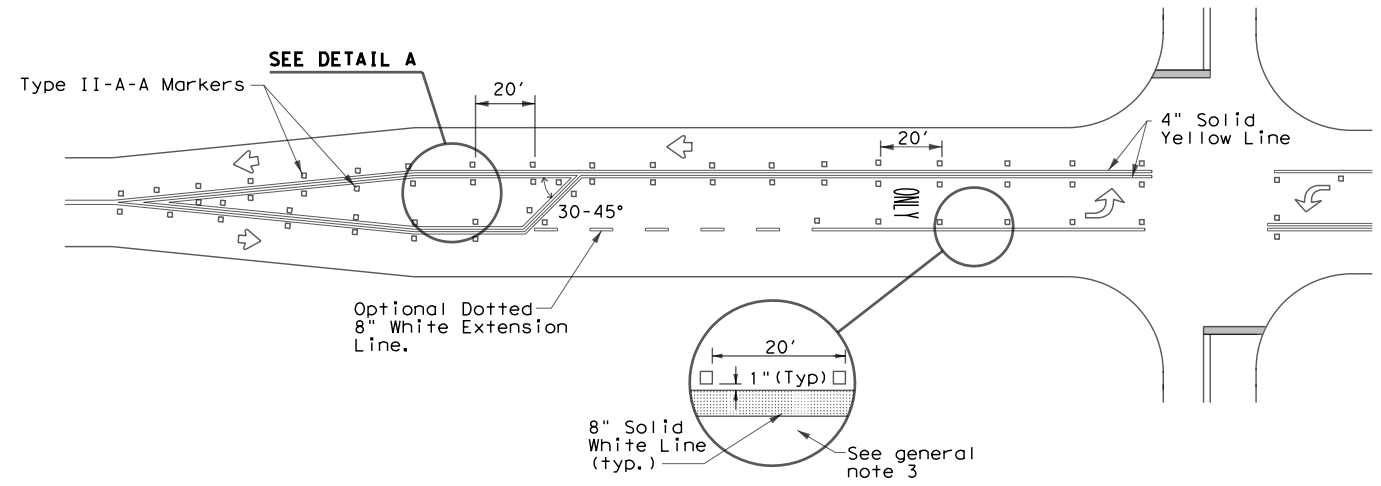
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



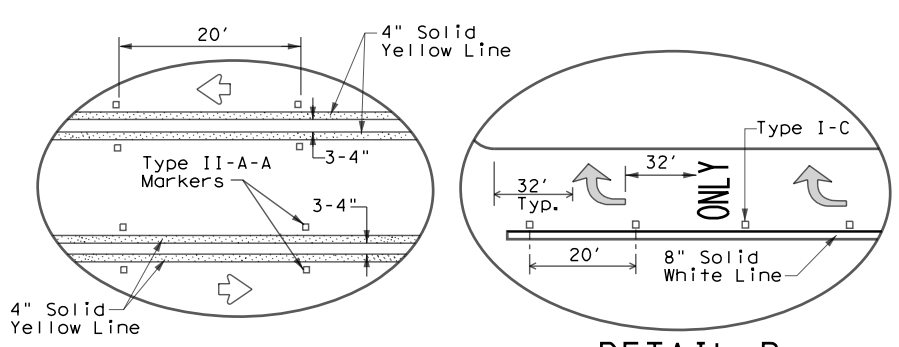
TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE



TYPICAL TWLTL AT TWO-WAY CROSS STREET AND RIGHT TURN LANE DROP



TYPICAL TWO-LANE HIGHWAY INTERSECTION WITH LEFT TURN BAYS



Texas Department of Transportation

Traffic Safety Division Standard

TWO-WAY LEFT TURN LANES, RURAL LEFT TURN BAYS, AND LANE REDUCTION PAVEMENT MARKINGS

PM(3)-20

FILE: pm3-20.dgn	DN:	CK:	DW:	CK:
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REVISIONS 5-00 2-10, 8-00 2-12, 3-03 6-20	DIST	COUNTY		SHEET NO. 125

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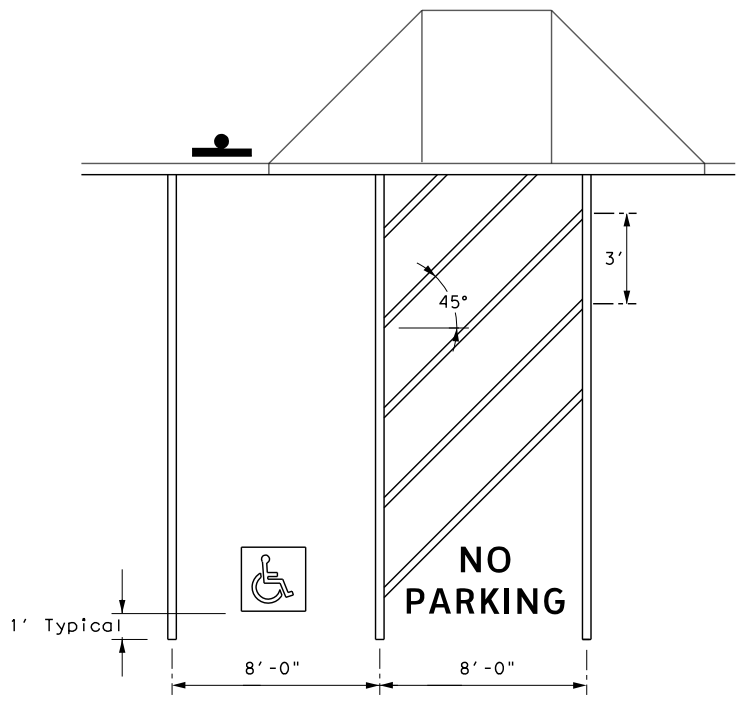
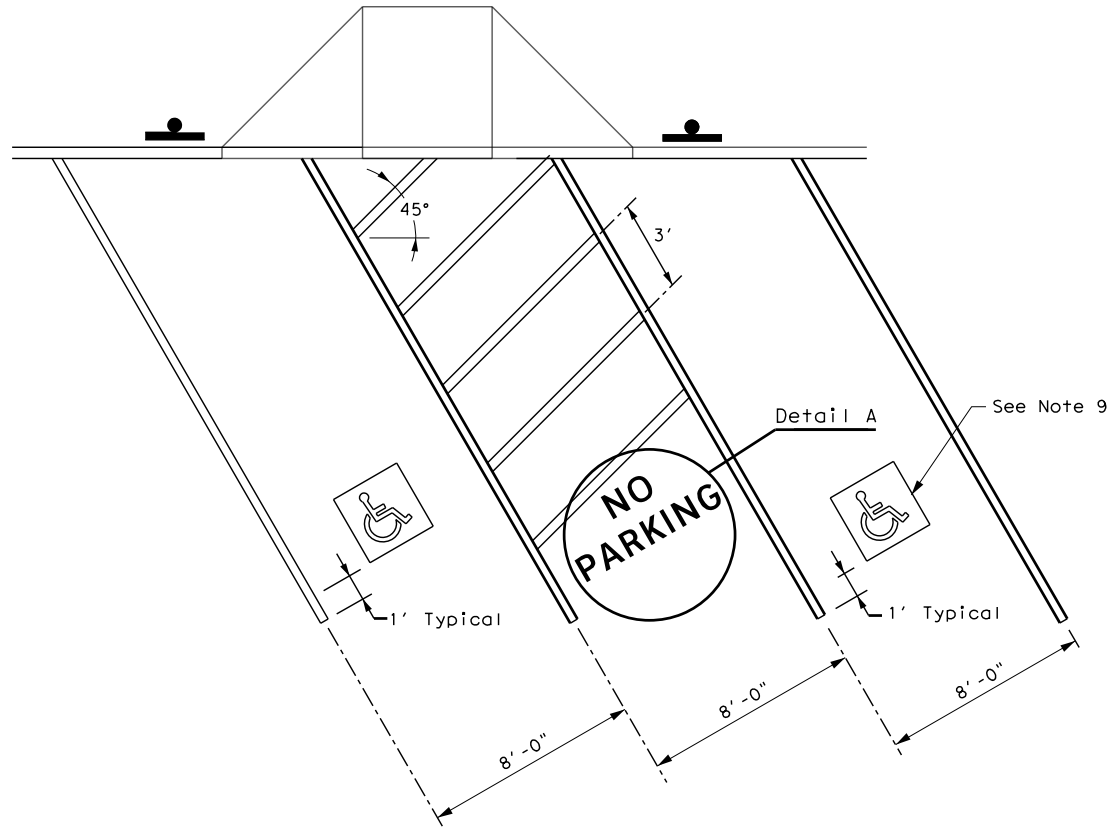




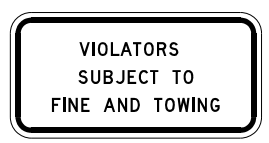
PERPENDICULAR OR ANGLED ACCESSIBLE PARKING SPACE DIMENSIONS

GENERAL NOTES:

1. All paved accessible parking space limit lines shall be 4" solid white lines.
2. Paved accessible parking spaces must include a white International Symbol of Accessibility applied conspicuously on the surface in a color that contrasts the pavement. A blue background with white border may supplement the symbol for additional contrast.
3. The words "NO PARKING" must be applied on any access aisle adjacent to the parking space. The words must be white, applied:
   a) in all capital letters.
   b) centered within each access aisle adjacent to the parking space.
4. RESERVED PARKING (R7-8T) sign including the International Symbol of Accessibility.
   a) shall be REQUIRED for each accessible parking space.
   b) shall NOT be placed between two accessible parking spaces.
   c) shall NOT be placed in a location that restricts movement of wheelchairs within the adjacent sidewalk.
   d) shall have a mounting height of 7 feet to the bottom of the sign.
5. A sign identifying the consequences of parking illegally in a paved accessible parking space. Must:
   a) at a minimum state "VIOLATORS SUBJECT TO FINE AND TOWING" (Plaque)(R7-8aPT).
   b) be mounted on a pole, post, wall or freestanding board.
   c) be no more than eight inches (8") below sign R7-8T a sign required by the Texas Accessibility Standards, 502.6.
   d) be installed so that the bottom edge of the sign is no lower than 48 inches and no higher than 80 inches above the ground level.
6. Signs identifying van parking spaces shall contain the designation "VAN ACCESSIBLE" (R7-8P) Signs shall be 60 inches minimum above the ground level measured to the bottom of the sign.
7. Perpendicular or angled parking spaces shall be 8 feet wide minimum with an access aisle 8 feet minimum wide (van accessible). Two parking spaces are permitted to share a common access aisle.
8. Access aisles shall be at street level, extend the full length of the parking space they serve, follow ADA surface requirements, and marked to discourage parking in the access aisle. Curb ramps shall connect the access aisle to the adjacent pedestrian access route. Curb ramps shall not be located within the access aisle.
9. International Symbol of Accessibility Parking Space Marking and sign details can be found in The Standard Highway Sign Designs for Texas (SHSD) at the following website. http://www.txdot.gov/

R7-8T

R7-8P



R7-8aPT

Detail A

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080
7.5 to 15	0.100
Greater than 15	0.125

DEPARTMENTAL MATERIAL SPECIFICATIONS	
ALUMINUM SIGN BLANKS	DMS-7110
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240
SIGN FACE MATERIALS	DMS-8300

ACCESSIBLE
PARKING SIGNS

DATE:
FILE:

Texas Department of Transportation

Traffic Safety Division Standard

PAVEMENT MARKINGS AND SIGNING FOR ACCESSIBLE PARKING

PM(AP)-21

FILE: pm(ap)-21	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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	DIST	COUNTY		SHEET NO.
				126

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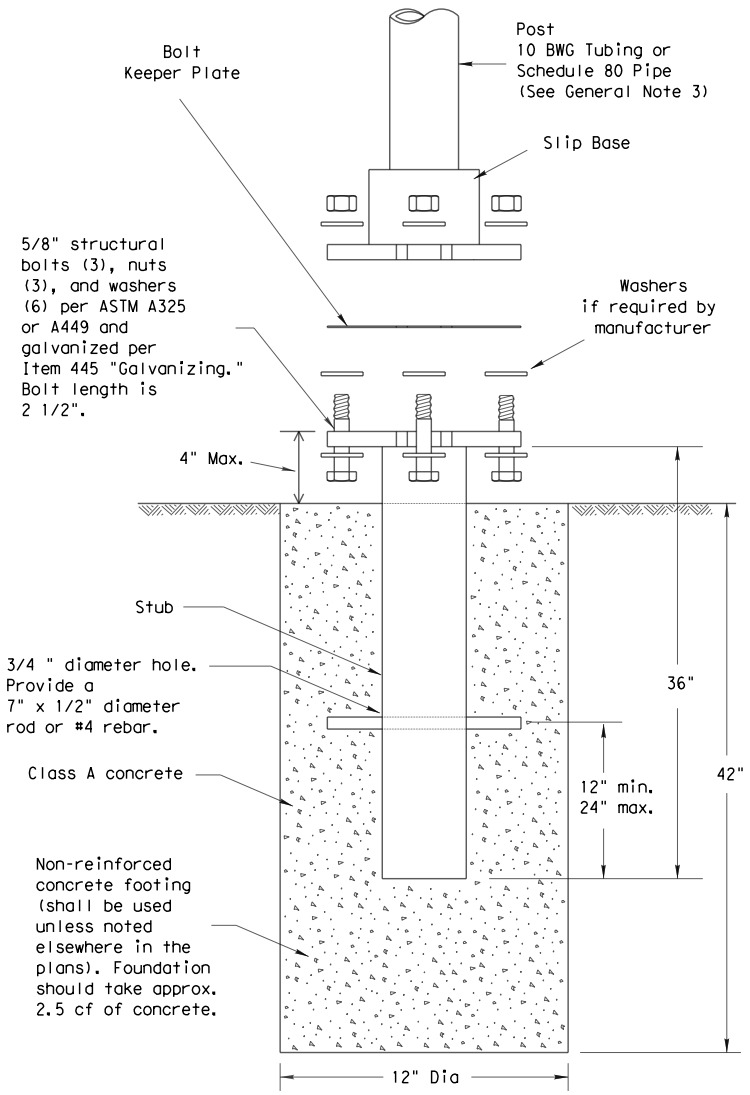
TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



SM RD SGN ASSM TY XXXXX(X)SA(X-XXXX)

NOTE

There are various devices approved for the Triangular Slipbase System. Please reference the Material Producer List for approved slip base systems. http://www.txdot.gov/business/producer_list.htm The devices shall be installed per manufacturers' recommendations. Installation procedures shall be provided to the Engineer by Contractor.

GENERAL NOTES:

1. Slip base shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to approval of the TxDOT Traffic Standards Engineer.
2. Material used as post with this system shall conform to the following specifications:
   10 BWG Tubing (2.875" outside diameter)
   - 0.134" nominal wall thickness
   - Seamless or electric-resistance welded steel tubing or pipe
   - Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
   - Other steels may be used if they meet the following:
     - 55,000 PSI minimum yield strength
     - 70,000 PSI minimum tensile strength
     - 20% minimum elongation in 2"
   - Wall thickness (uncoated) shall be within the range of 0.122" to 0.138"
   - Outside diameter (uncoated) shall be within the range of 2.867" to 2.883"
   - Galvanization per ASTM A123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.

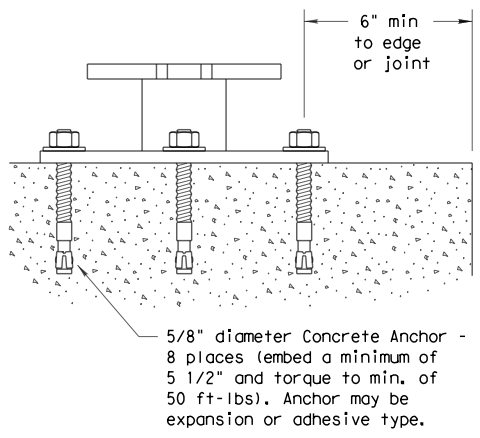
   Schedule 80 Pipe (2.875" outside diameter)
   - 0.276" nominal wall thickness
   - Steel tubing per ASTM A500 Gr C
   - Other seamless or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the following:
     - 46,000 PSI minimum yield strength
     - 62,000 PSI minimum tensile strength
     - 21% minimum elongation in 2"
   - Wall thickness (uncoated) shall be within the range of 0.248" to 0.304"
   - Outside diameter (uncoated) shall be within the range of 2.855" to 2.895"
   - Galvanization per ASTM A123
3. See the Traffic Operations Division website for detailed drawings of sign clamps and Texas Universal Triangular Slipbase System components. The website address is: http://www.txdot.gov/publications/traffic.htm
4. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.

ASSEMBLY PROCEDURE

Foundation
1. Prepare 12-inch diameter by 42-inch deep hole. If solid rock is encountered, the depth of the foundation may be reduced such that it is embedded a minimum of 18 inches into the solid rock.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor-driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
3. Push the pipe end of the slip base stub into the center of the concrete. Rotate the stub back and forth while pushing it down into the concrete to assure good contact between the concrete and stub. Continue to work the stub into the concrete until it is between 2 to 4 inches above the ground.
4. Plumb the stub. Allow a minimum of 4 days to set, unless otherwise directed by the Engineer.
5. The triangular slipbase system is multidirectional and is designed to release when struck from any direction.

Support
1. Cut support so that the bottom of the sign will be 7 to 7.5 feet above the edge of the travelway (i.e., edge of the closest lane) when slip plate is below the edge of pavement or 7 to 7.5 feet above slip plate when the slip plate is above the edge of the travelway. The cut shall be plumb and straight.
2. Attach sign to support using connections shown. When multiple signs are installed on the same support, ensure the minimum clearance between each sign is maintained. See SMD(SLIP-2) for clearances based on sign types.

CONCRETE ANCHOR



SM RD SGN ASSM TY XXXXX(X)SB(X-XXXX)

Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. Heavy hex nut per ASTM A563, and hardened washer per ASTM F436. The stud bolt shall have a minimum yield and ultimate tensile strength of 50 and 75 KSI, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations. Top of bolt shall extend at least flush with top of the nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 5 1/2" minimum embedment, shall have a minimum allowable tension and shear of 3900 and 3100 psi, respectively.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-1)-08

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REVISIONS	CONT	SECT	JOB	HIGHWAY
9-08				

DIST	COUNTY	SHEET NO.
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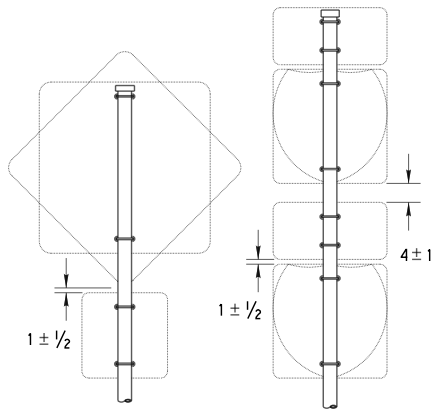

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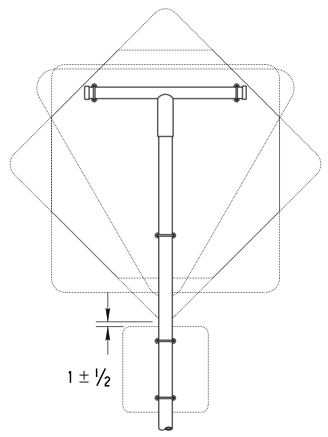

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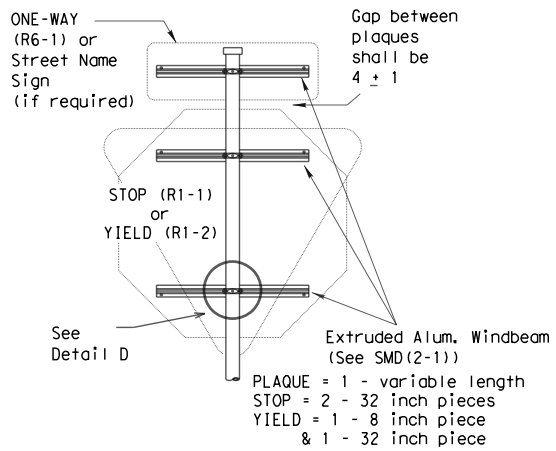

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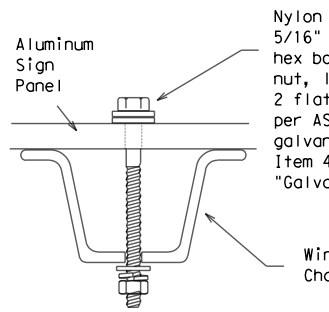
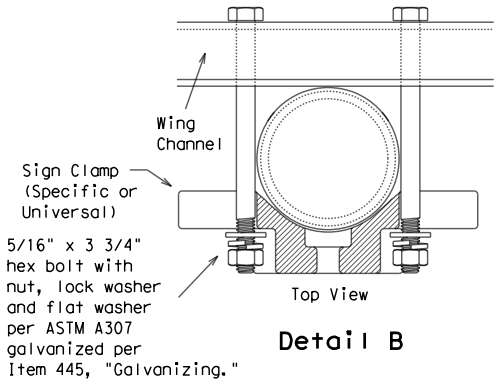
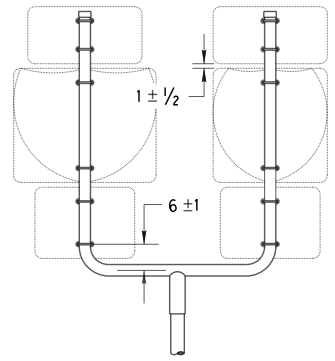


Detail A



Detail B



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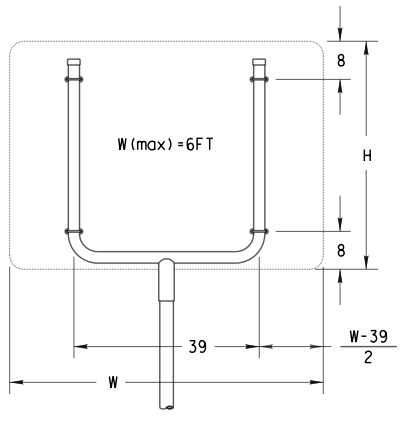

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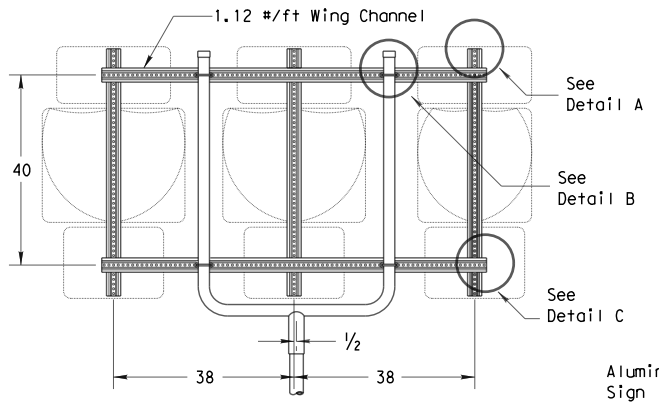

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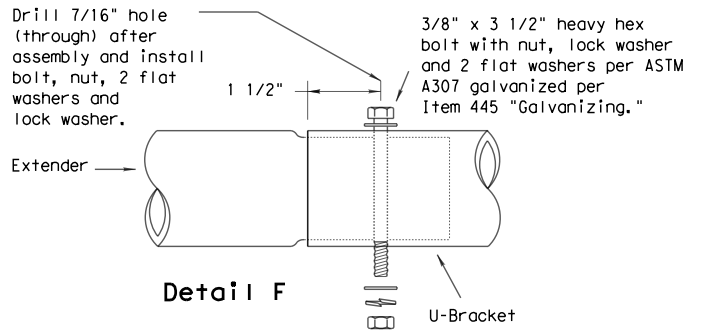
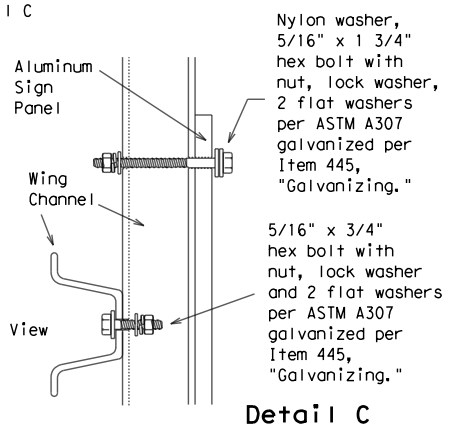
(See Note 11)



Detail F

Splices shall only be allowed behind the sign substrate.



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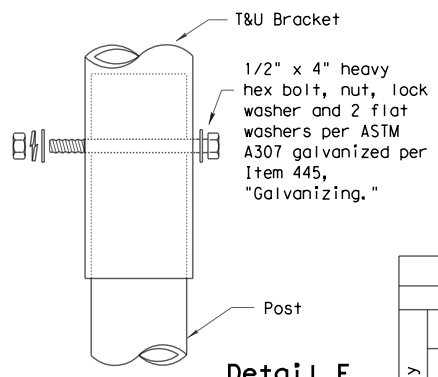

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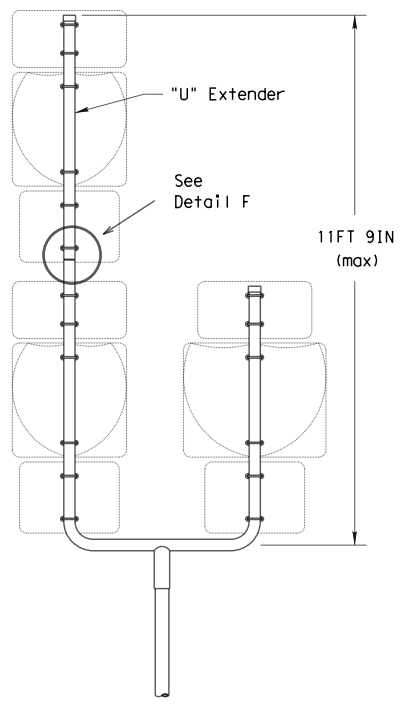

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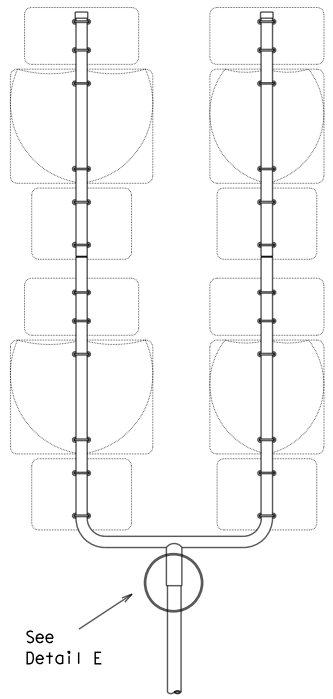
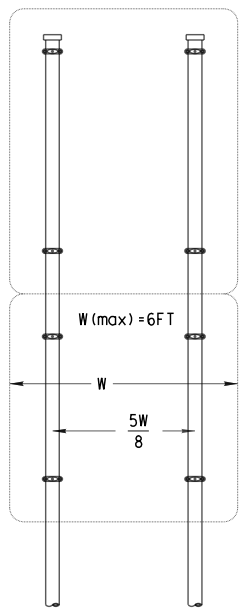


SM RD SGN ASSM TY S80(1)XX(U-2EXT)



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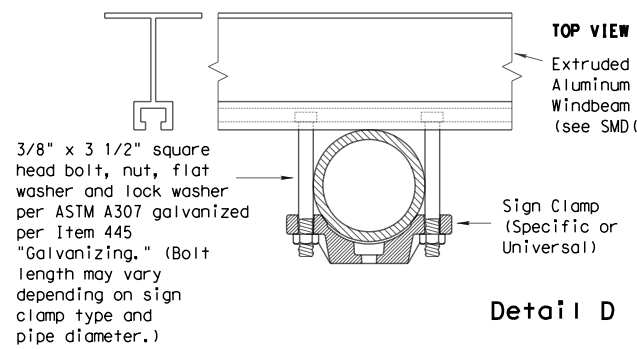
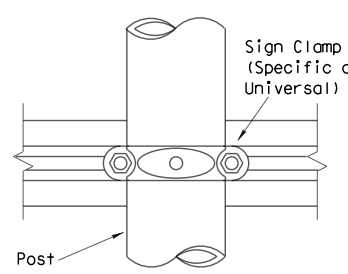
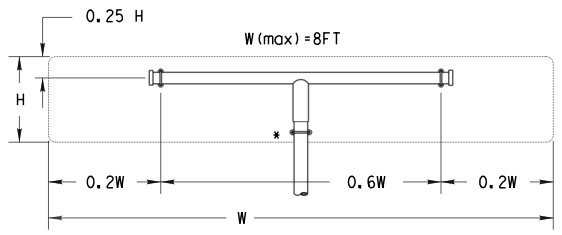
SIDE VIEW



Detail D

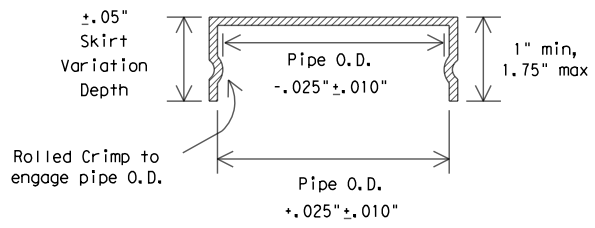




SM RD SGN ASSM TY XXXXX(1)XX(T)
(* - See Note 12)

All dimensions are in english unless detailed otherwise.

FRICTION CAP DETAIL



Friction caps may be manufactured from hot rolled or cold rolled steel sheets. The minimum sheet metal thickness shall be 24 gauge for all cap sizes.

The rim edges shall be reasonably straight and smooth. Caps shall be sized and formed in such a manner as to produce a drive-on friction fit and have no tendency to rock when seated on the pipe. The depth shall be sufficient to give positive protection against entrance of rainwater. They shall be free of sharp creases or indentations and show no evidence of metal fracture.

Caps shall have an electrodeposited coating of zinc in accordance with the requirements of ASTM B633 Class FE/ZN 8.

GENERAL NOTES:

1.

SIGN SUPPORT	# OF POSTS	MAX. SIGN AREA
10 BWG	1	16 SF
10 BWG	2	32 SF
Sch 80	1	32 SF
Sch 80	2	64 SF

2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
5. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
6. For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
7. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
8. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
9. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
10. Additional route markers may be added vertically, provided the total sign area does not exceed the maximum allowable amount per Note 1.
11. Additional sign clamp required on the "T-bracket" post for 24 inch height signs. Place the clamp 3 inches above bottom of sign when possible.
12. Post open ends shall be fitted with Friction Caps.
13. Sign blanks shall be the sizes and shapes shown on the plans.

REQUIRED SUPPORT

	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
Warning	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-2)-08

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DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
CONT	SECT	JOB	HIGHWAY
DIST	COUNTY		SHEET NO.
			128

9-08 REVISIONS

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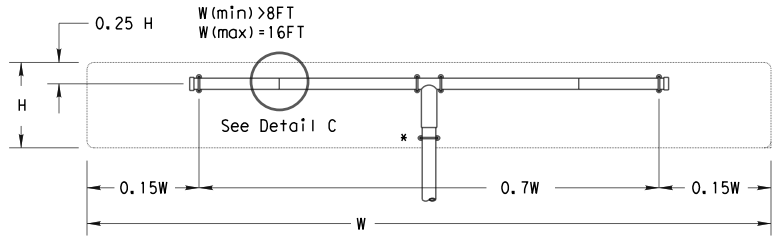
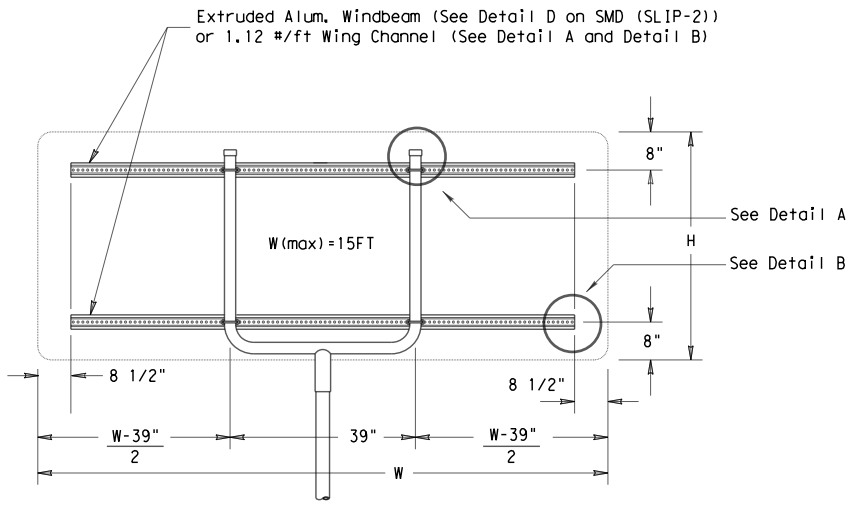
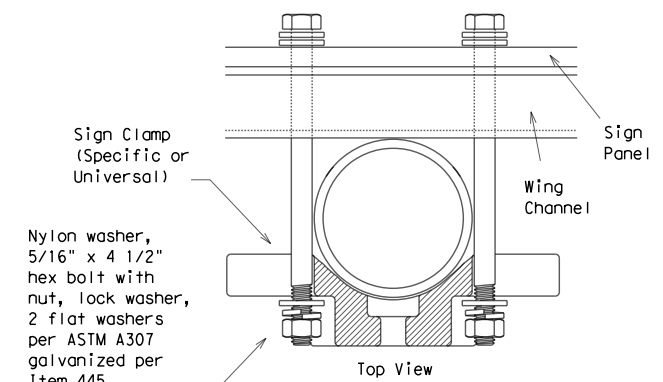


SM RD SGN ASSM TY XXXXX(1)XX(T-2EXT)

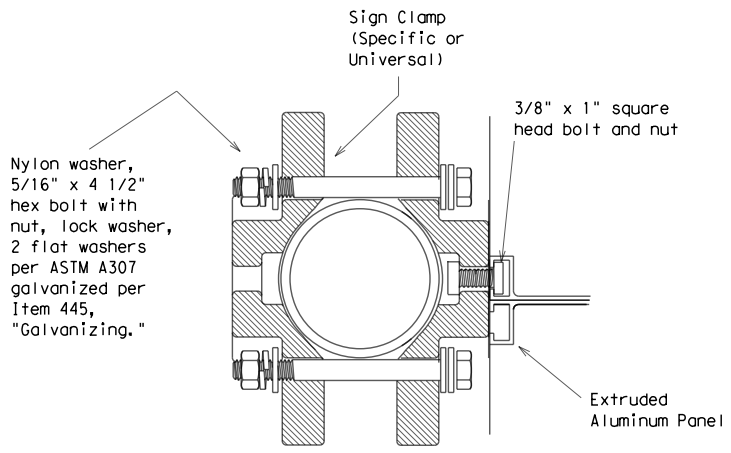
(* - See Note 12)



SM RD SGN ASSM TY XXXXX(1)XX(U-XX)

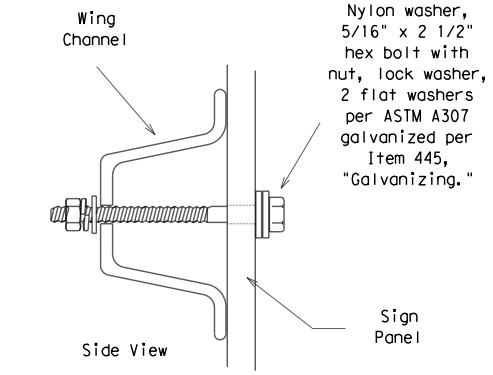


Detail A

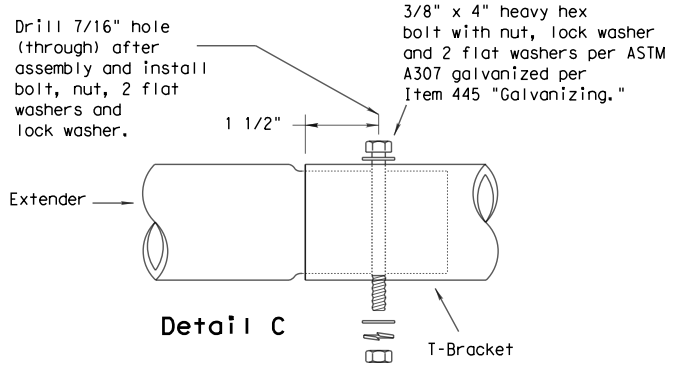


Detail D

EXTRUDED ALUMINUM SIGN WITH T BRACKET

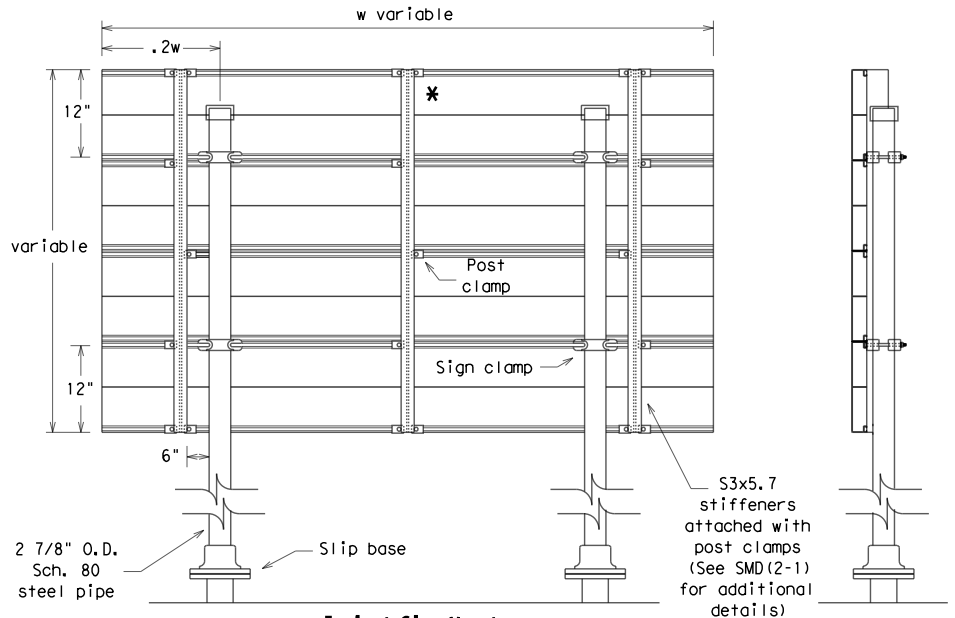


Detail B



Detail C

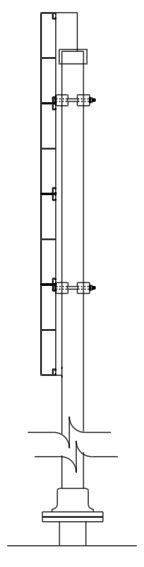
Splices shall only be allowed behind the sign substrate.



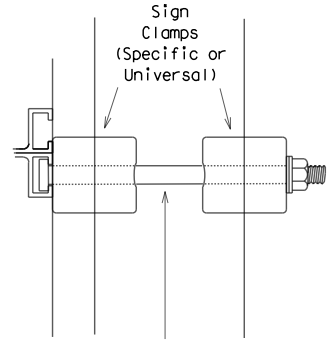
Typical Sign Mount

SM RD SGN ASSM TY S80(2)XX(P-EXAL)

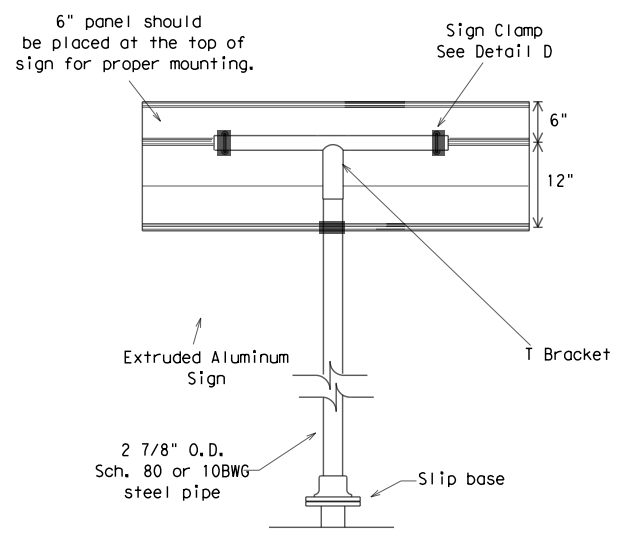
* Additional stiffener placed at approximate center of signs when sign width is greater than 10'.



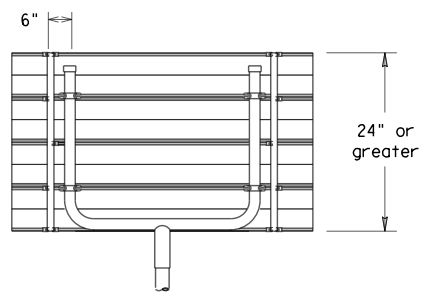
See Detail E
for clamp installation



Detail E



Extruded Aluminum Sign
With T Bracket



Use Extruded Alum. Windbeam as stiffeners
See SMD (2-1) for additional details

See Detail E
for clamp installation

GENERAL NOTES:

SIGN SUPPORT	# OF POSTS	MAX. SIGN AREA
10 BWG	1	16 SF
10 BWG	2	32 SF
Sch 80	1	32 SF
Sch 80	2	64 SF

1. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
2. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
3. Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
4. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
5. For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
6. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
7. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
8. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
9. Sign blanks shall be the sizes and shapes shown on the plans.
10. Additional sign clamp required on the "T-bracket" post for 24 inch high signs. Place the clamp 3 inches above bottom of sign when possible.
11. Post open ends shall be fitted with Friction Caps.

REQUIRED SUPPORT		
	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
Warning	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
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	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-3)-08

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CONT	SECT	JOB	HIGHWAY

DIST	COUNTY	SHEET NO.
		129

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BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

1. The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).

2. The development and design of the Traffic Control Plan (TCP)is the responsibility of the Engineer.

3. The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.

4. The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.

5. Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets", the TxDOT "Roadway Design Manual" or engineering judgment.

6. When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.

7. The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.

8. All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.

9. The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.

10. As shown on BC(2), the OBEY WARNING SIGNS STATE LAW sign and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. However, the TRAFFIC FINES DOUBLE sign will not be required on projects consisting solely of mobile operation work, such as striping or milling edgeline rumble strips. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits.

11. Except for devices required by Note 10, traffic control devices should be in place only while work is actually in progress or a definite need exists.

12. The Engineer has the final decision on the location of all traffic control devices.

13. Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

WORKER SAFETY APPAREL NOTES:

1. Workers on foot who are exposed to traffic or to construction equipment within the right-of-way shall wear high-visibility safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel" labeled as ANSI 107-2004 standard performance for Class 2 or 3 risk exposure. Class 3 garments should be considered for high traffic volume work areas or night time work.

Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be found on-line at the web address given below or by contacting:

Texas Department of Transportation
Traffic Operations Division - TE
Phone (512) 416-3118

THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT http://www.txdot.gov
COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD)
DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS)
MATERIAL PRODUCER LIST (MPL)
ROADWAY DESIGN MANUAL - SEE "MANUALS (ONLINE MANUALS)"
STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD)
TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD)
TRAFFIC ENGINEERING STANDARD SHEETS

Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-13

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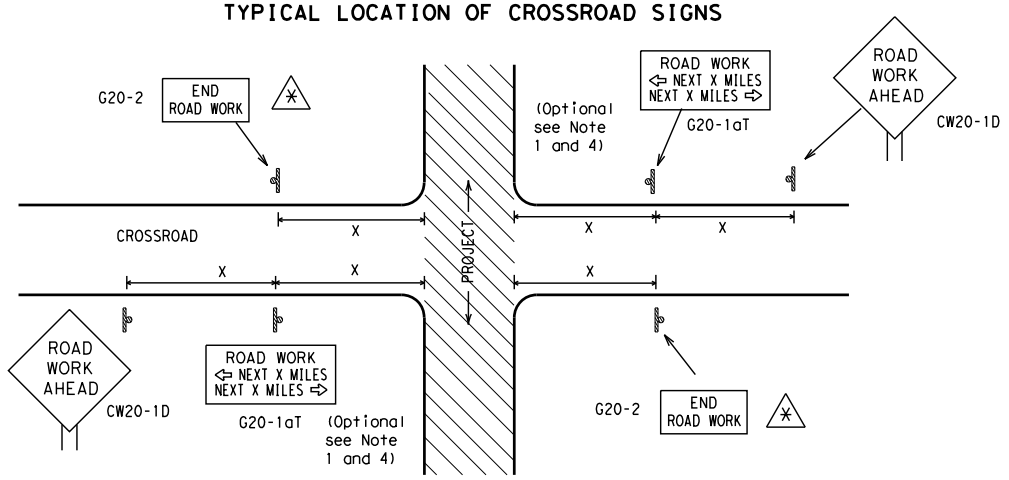
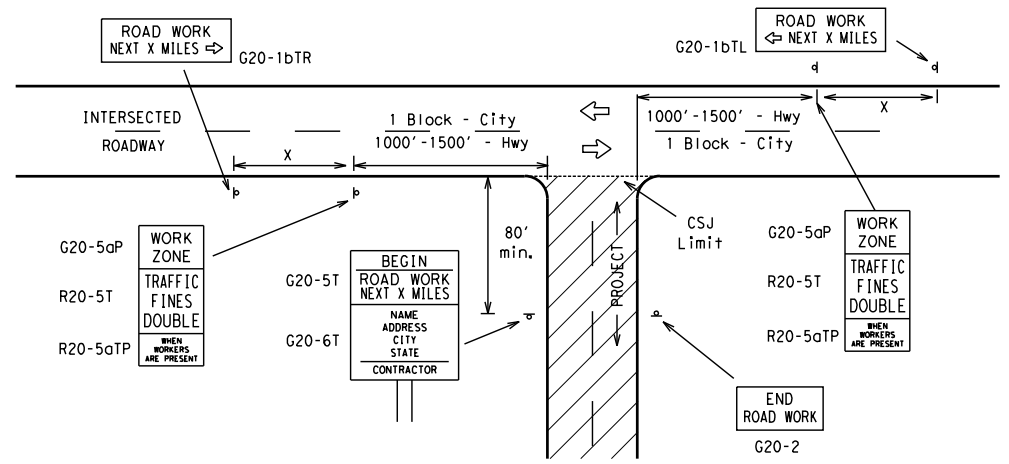
TYPICAL LOCATION OF CROSSROAD SIGNS



✱ May be mounted on back of "ROAD WORK AHEAD"(CW20-1D) sign with approval of engineer. (See note 2 below)

1. The typical minimum signing on a crossroad approach should be a "ROAD WORK AHEAD" (CW20-1D)sign and a (G20-2) "END ROAD WORK" sign, unless noted otherwise in plans.
2. The Engineer may use the reduced size 36" x 36" ROAD WORK AHEAD (CW20-1D) sign mounted back to back with the reduced size 36" x 18" "END ROAD WORK"(G20-2) sign on low volume crossroads (see Note 4 under "Typical Construction Warning Sign Size and Spacing"). See the "Standard Highway Sign Designs for Texas" manual for sign details. The Engineer may omit the advance warning signs on low volume crossroads. The Engineer will determine whether a road is low volume. This information shall be shown in the plans.
3. Based on existing field conditions, the Engineer/Inspector may require additional signs such as FLAGGER AHEAD, LOOSE GRAVEL, or other appropriate signs. When additional signs are required, these signs will be considered part of the minimum requirements. The Engineer/Inspector will determine the proper location and spacing of any sign not shown on the BC sheets, Traffic Control Plan sheets or the Work Zone Standard Sheets.
4. The "ROAD WORK NEXT X MILES"(G20-1aT)sign shall be required at high volume crossroads to advise motorists of the length of construction in either direction from the intersection. The Engineer will determine whether a roadway is considered high volume.
5. Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
6. When work occurs in the intersection area, appropriate traffic control devices, as shown elsewhere in the plans or as determined by the Engineer/Inspector, shall be in place.

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

1. The Engineer will determine the types and location of any additional traffic control devices, such as a flagger and accompanying signs, or other signs, that should be used when work is being performed at or near an intersection.
2. If construction closes the road at a T-intersection the Contractor shall place the "CONTRACTOR NAME"(G20-6T) sign behind the Type 3 Barricades for the road closure (see BC(10) also). The "ROAD WORK NEXT X MILES" left arrow(G20-1bTL) and "ROAD WORK NEXT X MILES" right arrow (G20-1bTR)" signs shall be replaced by the detour signing called for in the plans.

TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING [1,5,6]

SIZE

Sign Number or Series	Conventional Road	Expressway/ Freeway
CW20[4] CW21 CW22 CW23 CW25	48" x 48"	48" x 48"
CW1, CW2, CW7, CW8, CW9, CW11, CW14	36" x 36"	48" x 48"
CW3, CW4, CW5, CW6, CW8-3, CW10, CW12	48" x 48"	48" x 48"

SPACING

Posted Speed	Sign Spacing "X" Δ
MPH	Feet (Apprx.)
30	120
35	160
40	240
45	320
50	400
55	500[2]
60	600[2]
65	700[2]
70	800[2]
75	900[2]
80	1000[2]
✱	✱ [3]

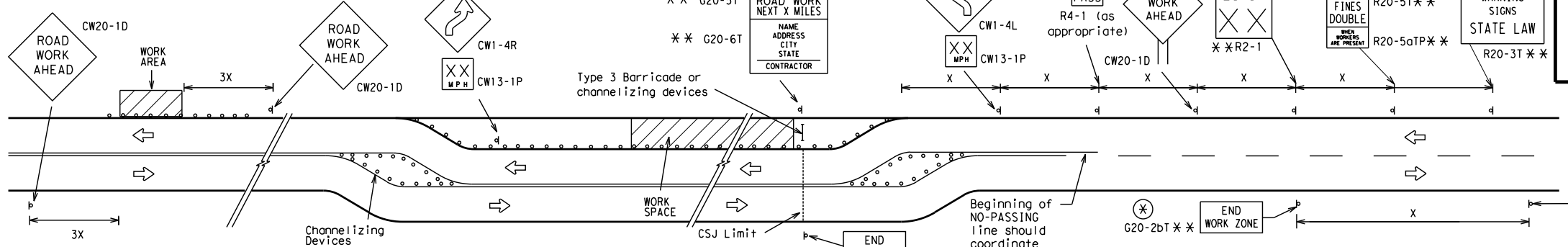
✱ For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

Δ Minimum distance from work area to first Advance Warning sign nearest the work area and/or distance between each additional sign.

GENERAL NOTES

1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D)signs may be used on low volume crossroads at the discretion of the Engineer. See Note 2 under "Typical Location of Crossroad Signs".
5. Only diamond shaped warning sign sizes are indicated.
6. See sign size listing in "TMUTCD", Sign Appendix or the "Standard Highway Sign Designs for Texas" manual for complete list of available sign design sizes.

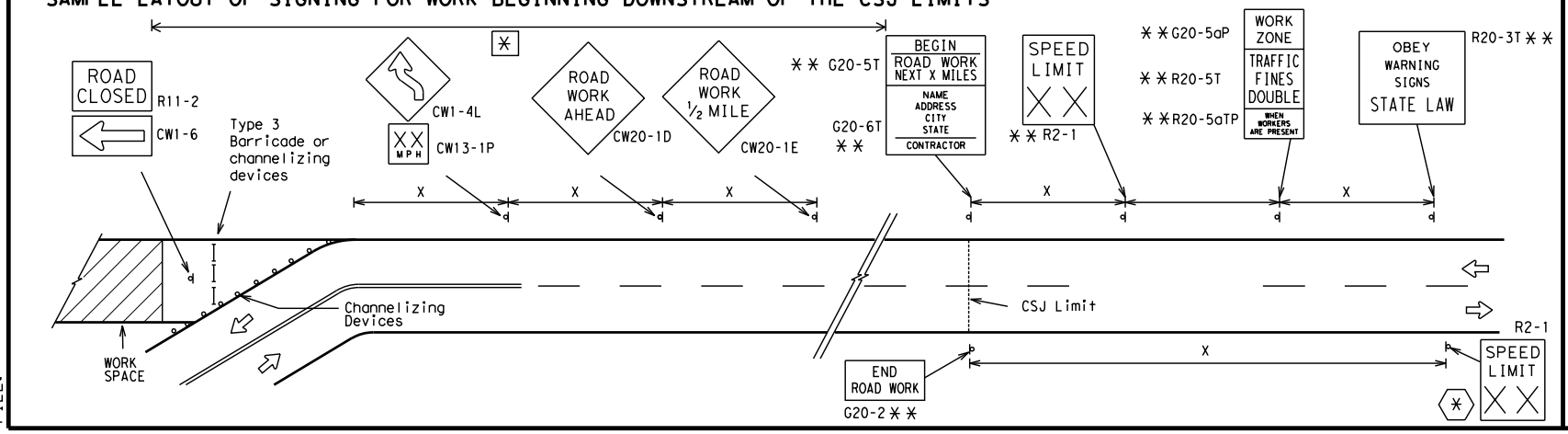
WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS



When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD"(CW20-1D)signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing of signs and channelizing devices.

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING DOWNSTREAM OF THE CSJ LIMITS



NOTES

The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and "BEGIN ROAD WORK NEXT X MILES"(G20-5T)sign for each specific project. This distance shall replace the "X" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.

(✱) The "BEGIN WORK ZONE"(G20-9TP) and "END WORK ZONE" (G20-2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.

✱✱ Required CSJ Limit signing. See Note 10 on BC(1). TRAFFIC FINES DOUBLE signs will not be required on projects consisting solely of mobile operations work.

[✱] Area for placement of "ROAD WORK AHEAD" (CW20-1D)sign and other signs or devices as called for on the Traffic Control Plan.

(✱) Contractor will install a regulatory speed limit sign at the end of the work zone.

LEGEND

⊢	Type 3 Barricade
○ ○ ○	Channelizing Devices
▬	Sign
X	See Typical Construction Warning Sign Size and Spacing chart or the TMUTCD for sign spacing requirements.

Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-13

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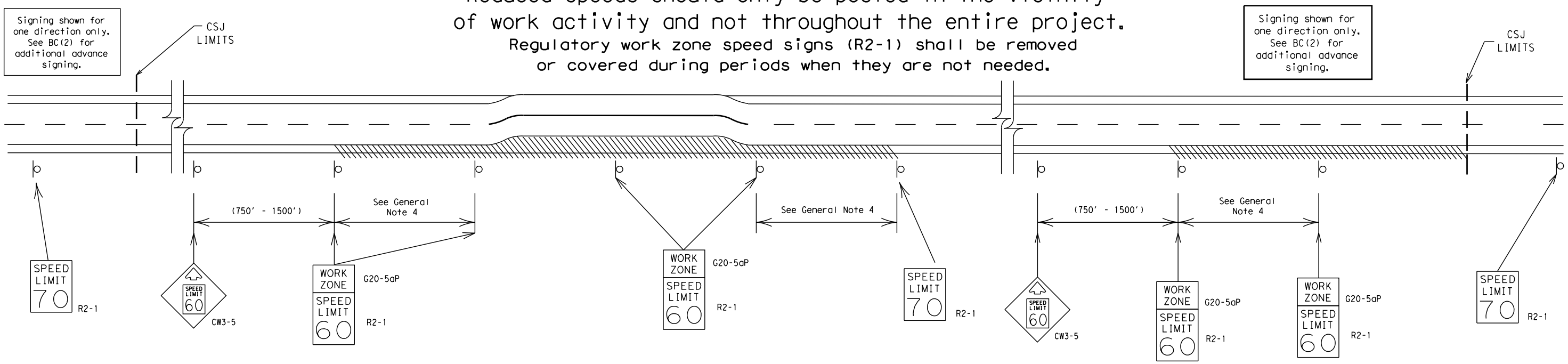
TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

Work zone speed limits shall be regulatory, established in accordance with the "Procedures for Establishing Speed Zones," and approved by the Texas Transportation Commission, or by City Ordinance when within Incorporated City Limits.

Reduced speeds should only be posted in the vicinity of work activity and not throughout the entire project.

Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit should be included on the design of the traffic control plans when restricted geometrics with a lower design speed are present in the work zone and modification of the geometrics to a higher design speed is not feasible.

Long/Intermediate Term Work Zone Speed Limit signs, when approved as described above, should be posted and visible to the motorist when work activity is present. Work activity may also be defined as a change in the roadway that requires a reduced speed for motorists to safely negotiate the work area, including:

a) rough road or damaged pavement surface
b) substantial alteration of roadway geometrics (diversions)
c) construction detours
d) grade
e) width
f) other conditions readily apparent to the driver

As long as any of these conditions exist, the work zone speed limit signs should remain in place.

SHORT TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit may be included on the design of the traffic control plans when workers or equipment are not behind concrete barrier, when work activity is within 10 feet of the traveled way or actually in the travelled way.

Short Term Work Zone Speed Limit signs should be posted and visible to the motorists only when work activity is present. When work activity is not present, signs shall be removed or covered.
(See Removing or Covering on BC(4)).

GENERAL NOTES

1. Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
2. Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
3. Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
4. Frequency of work zone speed limit signs should be:
   40 mph and greater 0.2 to 2 miles
   35 mph and less 0.2 to 1 mile
5. Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
6. Fabrication, erection and maintenance of the"ADVANCE SPEED LIMIT"(CW3-5)sign, "WORK ZONE"(G20-5aP) plaque and the "SPEED LIMIT"(R2-1)signs shall not be paid for directly, but shall be considered subsidiary to Item 502.
7. Turning signs from view, laying signs over or down will not be allowed, unless as otherwise noted under "REMOVING OR COVERING" on BC(4).
8. Techniques that may help reduce traffic speeds include but are not limited to:
   A. Law enforcement.
   B. Flagger stationed next to sign.
   C. Portable changeable message sign (PCMS).
   D. Low-power (drone) radar transmitter.
   E. Speed monitor trailers or signs.
9. Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.
10. For more specific guidance concerning the type of work, work zone conditions and factors impacting allowable regulatory construction speed zone reduction see TxDOT form #1204 in the TxDOT e-form system.

Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-13

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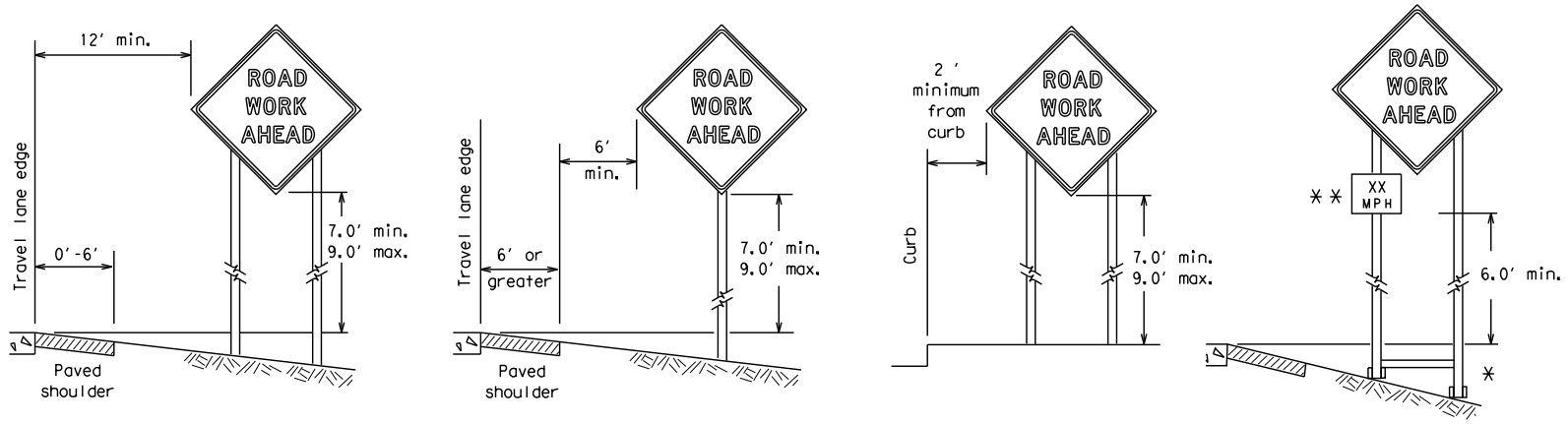
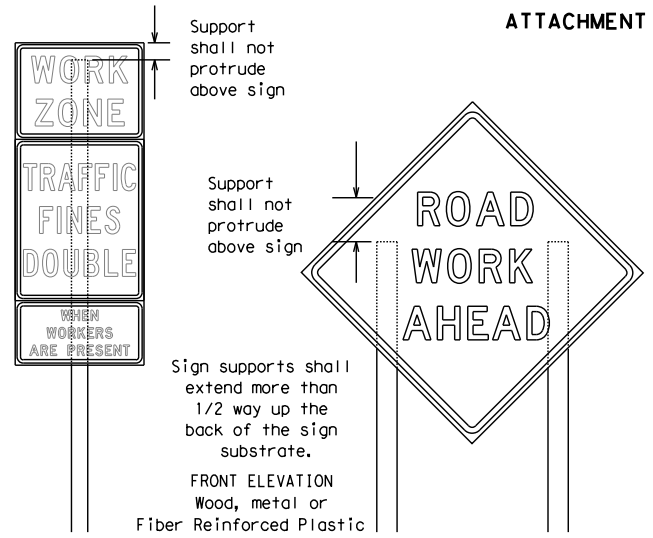
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



⁎ When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

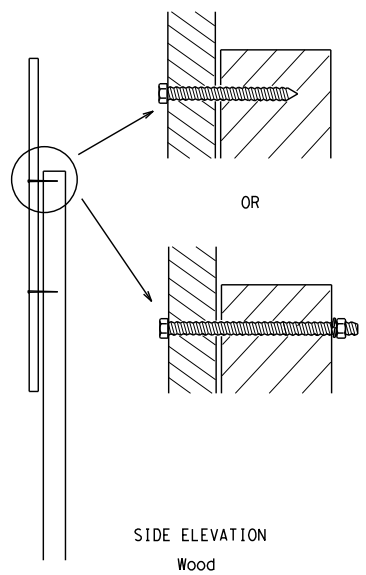
⁎⁎ When plaques are placed on dual-leg supports, they should be attached to the upright nearest the travel lane. Supplemental plaques (advisory or distance) should not cover the surface of the parent sign.

ATTACHMENT FOR SIGN SUPPORTS



FRONT ELEVATION
Wood, metal or Fiber Reinforced Plastic

Splicing embedded perforated square metal tubing in order to extend post height will only be allowed when the splice is made using four bolts, two above and two below the spice point. Splice must be located entirely behind the sign substrate, not near the base of the support. Splice insert lengths should be at least 5 times nominal post size, centered on the splice and of at least the same gauge material.



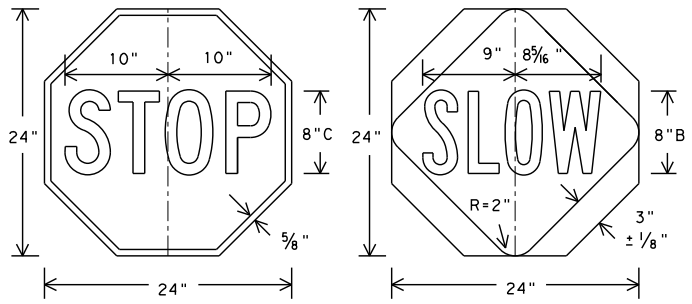
SIDE ELEVATION
Wood

Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

Nails shall NOT be allowed. Each sign shall be attached directly to the sign support. Multiple signs shall not be joined or spliced by any means. Wood supports shall not be extended or repaired by splicing or other means.

STOP/SLOW PADDLES

1. STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24" as detailed below.
2. When used at night, the STOP/SLOW paddle shall be retroreflectorized.
3. STOP/SLOW paddles may be attached to a staff with a minimum length of 6′ to the bottom of the sign.
4. Any lights incorporated into the STOP or SLOW paddle faces shall only be as specifically described in Section 6E.03 Hand Signaling Devices in the TMUTCD.



Background - Red
Legend & Border - White

Background - Orange
Legend & Border - Black

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

1. Permanent signs are used to give notice of traffic laws or regulations, call attention to conditions that are potentially hazardous to traffic operations, show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, or cultural information. Drivers proceeding through a work zone need the same, if not better route guidance as normally installed on a roadway without construction.
2. When permanent regulatory or warning signs conflict with work zone conditions, remove or cover the permanent signs until the permanent sign message matches the roadway condition.
3. When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
4. If existing signs are to be relocated on their original supports, they shall be installed on crashworthy bases as shown on the SMD Standard sheets. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards. This work should be paid for under the appropriate pay item for relocating existing signs.
5. If permanent signs are to be removed and relocated using temporary supports, the Contractor shall use crashworthy supports as shown on the BC sheets or the CWZTCD. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
6. Any sign or traffic control device that is struck or damaged by the Contractor or his/her construction equipment shall be replaced as soon as possible by the Contractor to ensure proper guidance for the motorists. This will be subsidiary to Item 502.

GENERAL NOTES FOR WORK ZONE SIGNS

1. Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
2. Wooden sign posts shall be painted white.
3. Barricades shall NOT be used as sign supports.
4. All signs shall be installed in accordance with the plans or as directed by the Engineer. Signs shall be used to regulate, warn, and guide the traveling public safely through the work zone.
5. The Contractor may furnish either the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the TMUTCD but may have been omitted from the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the Contractor's Responsible Person. All changes must be documented in writing before being implemented. This can include documenting the changes in the Inspector's TxDOT diary and having both the Inspector and Contractor initial and date the agreed upon changes.
6. The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD). The Contractor shall install the sign support in accordance with the manufacturer's recommendations. If there is a question regarding installation procedures, the Contractor shall furnish the Engineer a copy of the manufacturer's installation recommendations so the Engineer can verify the correct procedures are being followed.
7. The Contractor is responsible for installing signs on approved supports and replacing signs with damaged or cracked substrates and/or damaged or marred reflective sheeting as directed by the Engineer/Inspector.
8. Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1 inch.
9. The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.

DURATION OF WORK (as defined by the "Texas Manual on Uniform Traffic Control Devices" Part 6)

1. The types of sign supports, sign mounting height, the size of signs, and the type of sign substrates can vary based on the type of work being performed. The Engineer is responsible for selecting the appropriate size sign for the type of work being performed. The Contractor is responsible for ensuring the sign support, sign mounting height and substrate meets manufacturer's recommendations in regard to crashworthiness and duration of work requirements.
   a. Long-term stationary - work that occupies a location more than 3 days.
   b. Intermediate-term stationary - work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than one hour.
   c. Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
   d. Short, duration - work that occupies a location up to 1 hour.
   e. Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

SIGN MOUNTING HEIGHT

1. The bottom of Long-term/Intermediate-term signs shall be at least 7 feet, but not more than 9 feet, above the paved surface, except as shown for supplemental plaques mounted below other signs.
2. The bottom of Short-term/Short Duration signs shall be a minimum of 1 foot above the pavement surface but no more than 2 feet above the ground.
3. Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
4. Short-term/Short Duration signs shall be used only during daylight and shall be removed at the end of the workday or raised to appropriate Long-term/Intermediate sign height.
5. Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

SIZE OF SIGNS

1. The Contractor shall furnish the sign sizes shown on BC (2) unless otherwise shown in the plans or as directed by the Engineer.

SIGN SUBSTRATES

1. The Contractor shall ensure the sign substrate is installed in accordance with the manufacturer's recommendations for the type of sign support that is being used. The CWZTCD lists each substrate that can be used on the different types and models of sign supports.
2. "Mesh" type materials are NOT an approved sign substrate, regardless of the tightness of the weave.
3. All wooden individual sign panels fabricated from 2 or more pieces shall have one or more plywood cleat, 1/2" thick by 6" wide, fastened to the back of the sign and extending fully across the sign. The cleat shall be attached to the back of the sign using wood screws that do not penetrate the face of the sign panel. The screws shall be placed on both sides of the splice and spaced at 6" centers. The Engineer may approve other methods of splicing the sign face.

REFLECTIVE SHEETING

1. All signs shall be retroreflective and constructed of sheeting meeting the color and retro-reflectivity requirements of DMS-8300 for rigid signs or DMS-8310 for roll-up signs. The web address for DMS specifications is shown on BC(1).
2. White sheeting, meeting the requirements of DMS-8300 Type A, shall be used for signs with a white background.
3. Orange sheeting, meeting the requirements of DMS-8300 Type B_{FL} or Type C_{FL}, shall be used for rigid signs with orange backgrounds.

SIGN LETTERS

1. All sign letters and numbers shall be clear, and open rounded type uppercase alphabet letters as approved by the Federal Highway Administration (FHWA) and as published in the "Standard Highway Sign Design for Texas" manual. Signs, letters and numbers shall be of first class workmanship in accordance with Department Standards and Specifications.

REMOVING OR COVERING

1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
2. Long-term stationary or intermediate stationary signs installed on square metal tubing may be turned away from traffic 90 degrees when the sign message is not applicable. This technique may not be used for signs installed in the median of divided highways or near any intersections where the sign may be seen from approaching traffic.
3. Signs installed on wooden skids shall not be turned at 90 degree angles to the roadway. These signs should be removed or completely covered when not required.
4. When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night, without damaging the sign sheeting.
5. Burlap shall NOT be used to cover signs.
6. Duct tape or other adhesive material shall NOT be affixed to a sign face.
7. Signs and anchor stubs shall be removed and holes backfilled upon completion of work.

SIGN SUPPORT WEIGHTS

1. Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
4. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
5. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall NOT be used.
6. Rubber ballasts designed for channelizing devices should not be used for ballast on portable sign supports. Sign supports designed and manufactured with rubber bases may be used when shown on the CWZTCD list.
7. Sandbags shall only be placed along or laid over the base supports of the traffic control device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners. Sandbags shall be placed along the length of the skids to weigh down the sign support.
8. Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

FLAGS ON SIGNS

1. Flags may be used to draw attention to warning signs. When used the flag shall be 16 inches square or larger and shall be orange or fluorescent red-orange in color. Flags shall not be allowed to cover any portion of the sign face.

Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-13

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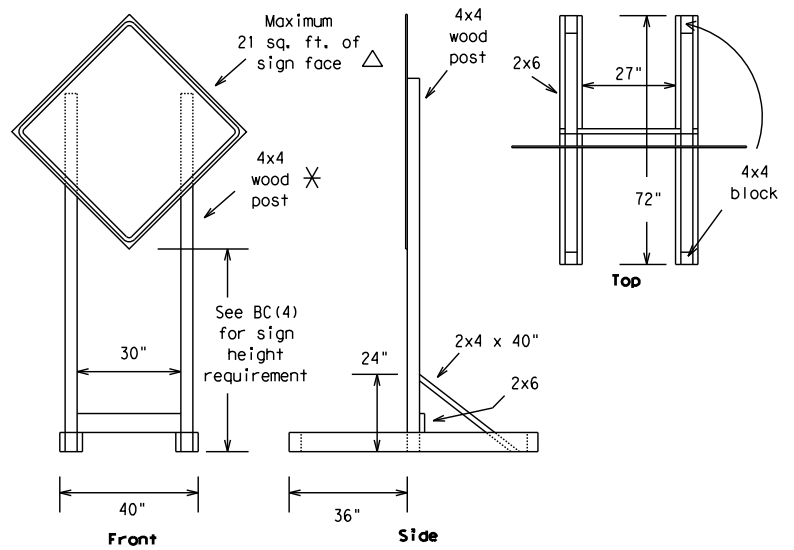
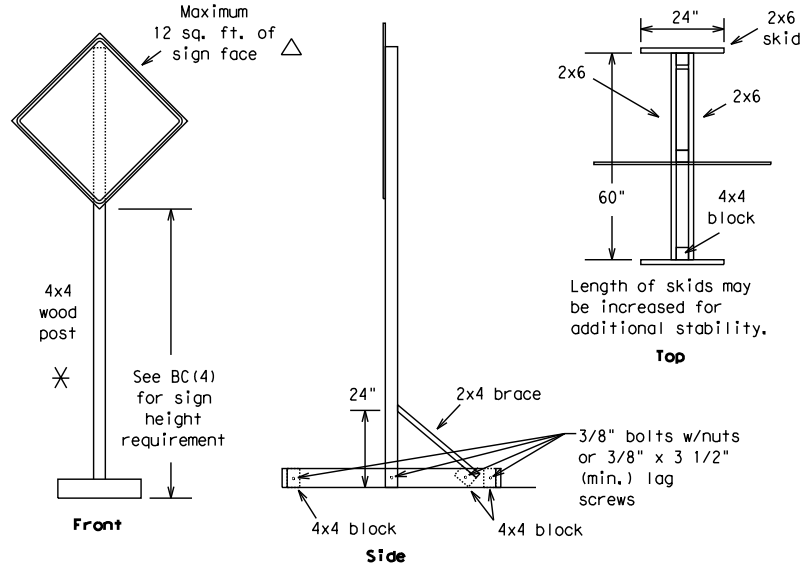
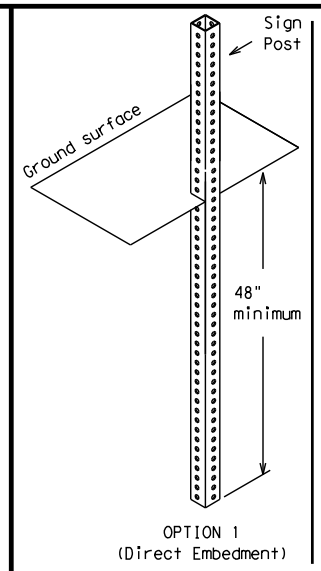
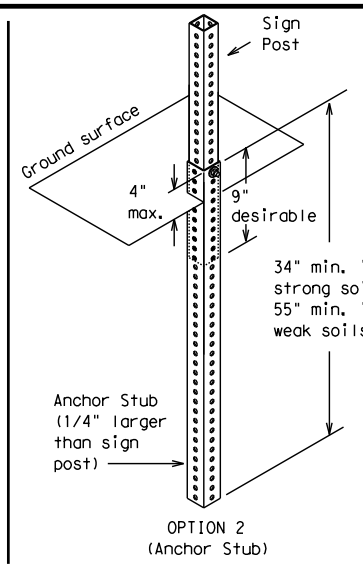


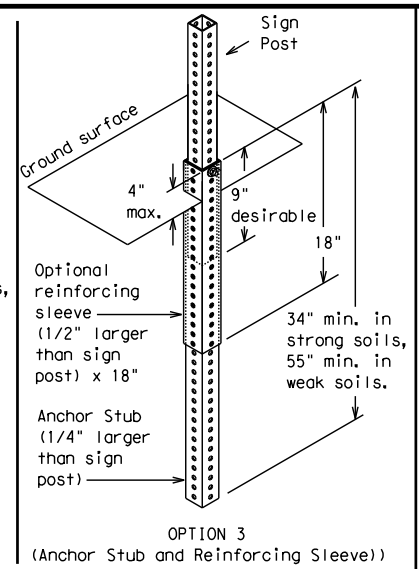


SKID MOUNTED WOOD SIGN SUPPORTS

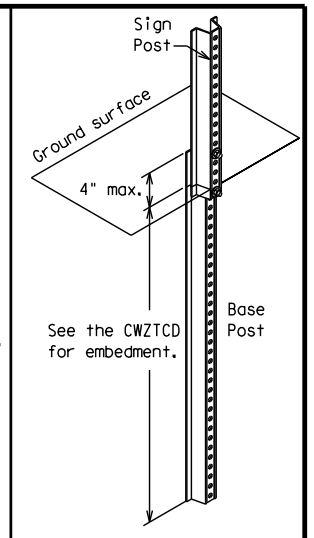
LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS □







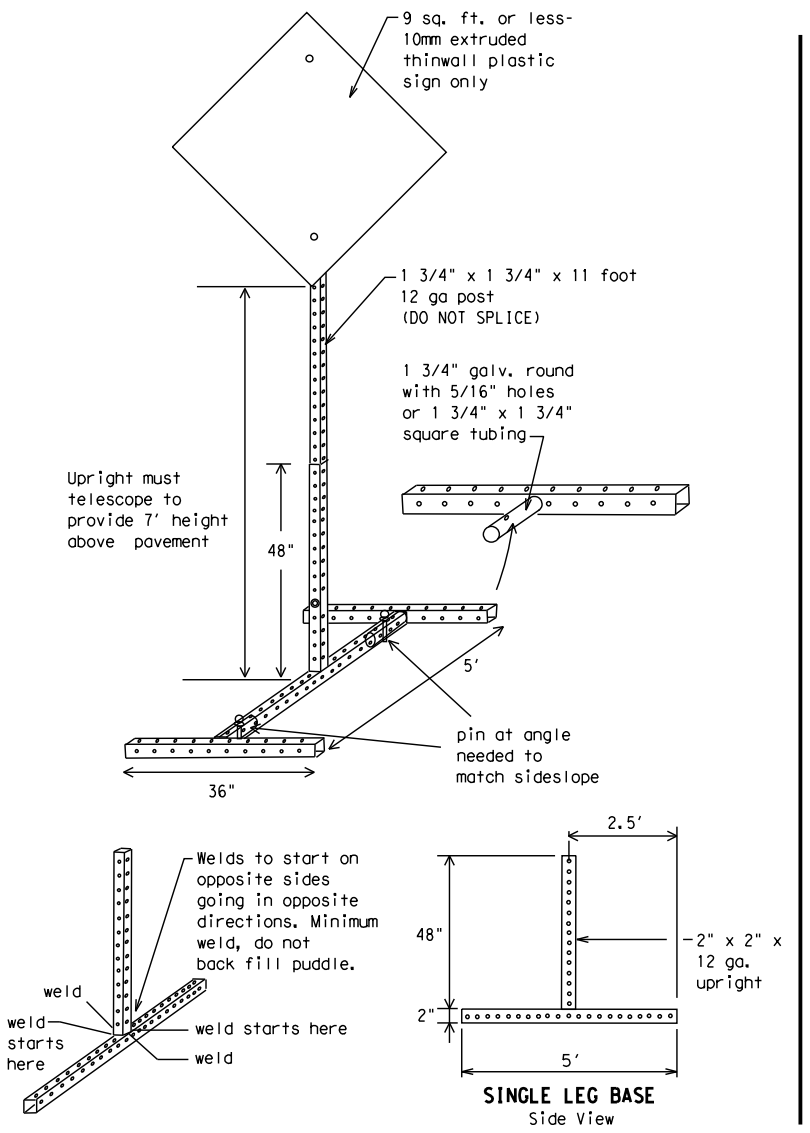
PERFORATED SQUARE METAL TUBING

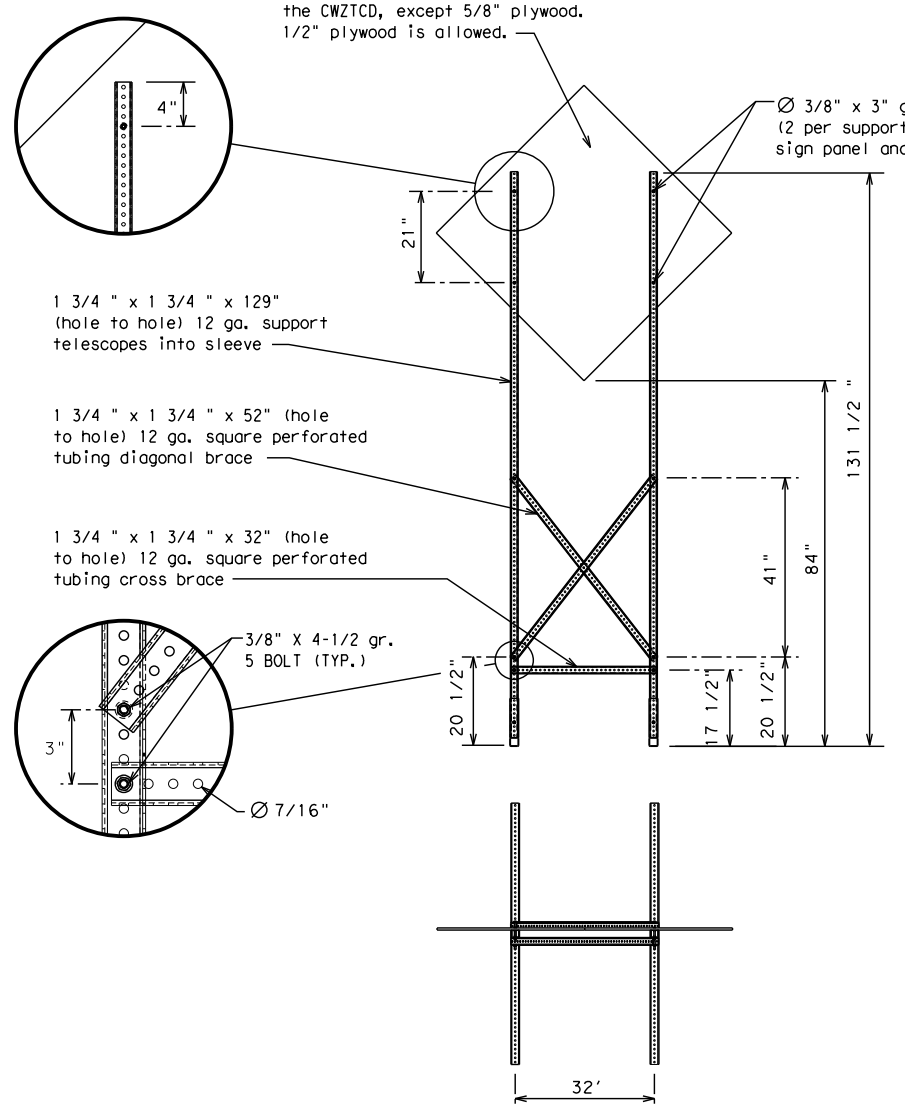


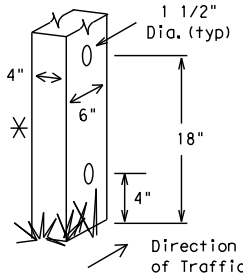
WING CHANNEL
Lap-splice/base bolted anchor

GROUND MOUNTED SIGN SUPPORTS

Refer to the CWZTCD and the manufacturer's installation procedure for each type sign support.
The maximum sign square footage shall adhere to the manufacturer's recommendation.
Two post installations can be used for larger signs.

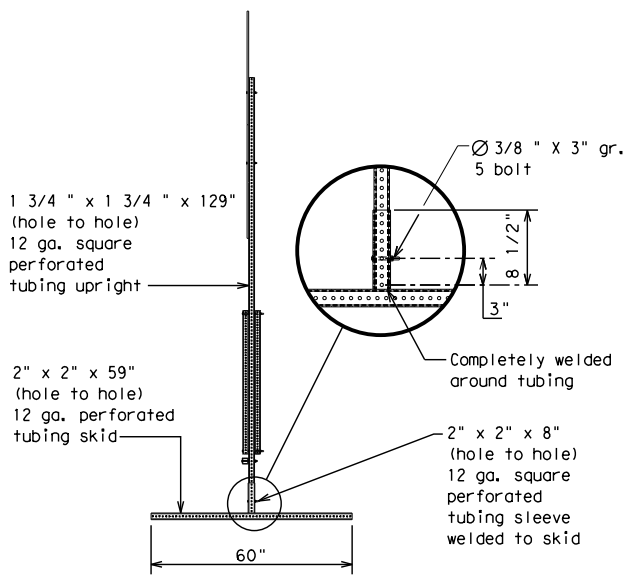






Nominal Post Size	Number of Posts	Maximum Sq. feet of Sign Face	Minimum Soil Embedment	Drilled Hole(s) Required
4 x 4	1	12	36"	NO
4 x 4	2	21	36"	NO
4 x 6	1	21	36"	YES
4 x 6	2	36	36"	YES

WOOD POST SYSTEM FOR GROUND MOUNTED SIGN SUPPORTS



WEDGE ANCHORS

Both steel and plastic Wedge Anchor Systems as shown on the SMD Standard Sheets may be used as temporary sign supports for signs up to 10 square feet of sign face. They may be set in concrete or in sturdy soils if approved by the Engineer. (See web address for "Traffic Engineering Standard Sheets" on BC(1)).

OTHER DESIGNS

MORE DETAILS OF APPROVED LONG/INTERMEDIATE AND SHORT TERM SUPPORTS CAN BE FOUND ON THE CWZTCD LIST. SEE BC(1) FOR WEBSITE LOCATION.

GENERAL NOTES

1. Nails may be used in the assembly of wooden sign supports, but 3/8" bolts with nuts or 3/8" x 3 1/2" lag screws must be used on every joint for final connection.
2. No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
3. When project is completed, all sign supports and foundations shall be removed from the project site. This will be considered subsidiary to Item 502.

□ See BC(4) for definition of "Work Duration."

✳ Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.

△ See the CWZTCD for the type of sign substrate that can be used for each approved sign support.

Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-13

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SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

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GENERAL NOTES

1. For long term stationary work zones on freeways, drums shall be used as the primary channelizing device.
2. For intermediate term stationary work zones on freeways, drums should be used as the primary channelizing device but may be replaced in tangent sections by vertical panels, or 42" two-piece cones. In tangent sections one-piece cones may be used with the approval of the Engineer but only if personnel are present on the project at all times to maintain the cones in proper position and location.
3. For short term stationary work zones on freeways, drums are the preferred channelizing device but may be replaced in tapers, transitions and tangent sections by vertical panels, two-piece cones or one-piece cones as approved by the Engineer.
4. Drums and all related items shall comply with the requirements of the current version of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
5. Drums, bases, and related materials shall exhibit good workmanship and shall be free from objectionable marks or defects that would adversely affect their appearance or serviceability.
6. The Contractor shall have a maximum of 24 hours to replace any plastic drums identified for replacement by the Engineer/Inspector. The replacement device must be an approved device.

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

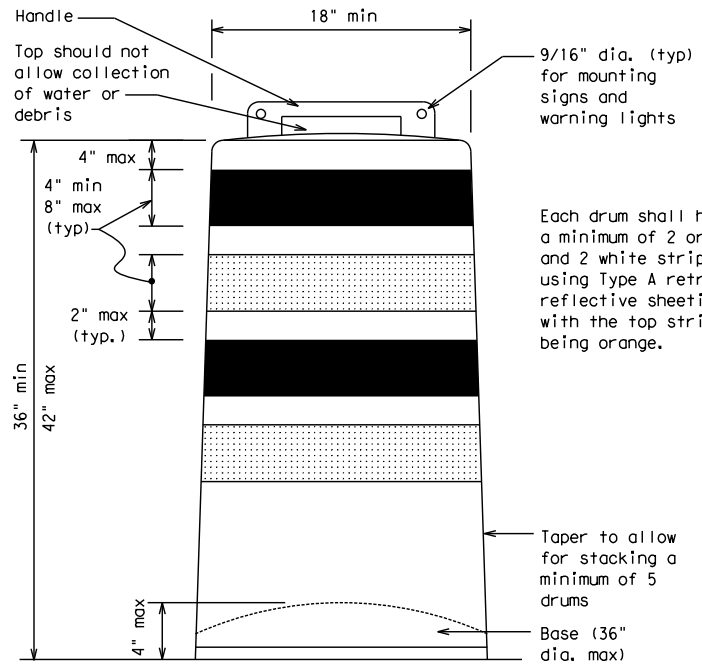
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
3. Plastic drums shall be constructed of lightweight flexible, and deformable materials. The Contractor shall NOT use metal drums or single piece plastic drums as channelization devices or sign supports.
4. Drums shall present a profile that is a minimum of 18 inches in width at the 36 inch height when viewed from any direction. The height of drum unit (body installed on base) shall be a minimum of 36 inches and a maximum of 42 inches.
5. The top of the drum shall have a built-in handle for easy pickup and shall be designed to drain water and not collect debris. The handle shall have a minimum of two widely spaced 9/16 inch diameter holes to allow attachment of a warning light, warning reflector unit or approved compliant sign.
6. The exterior of the drum body shall have a minimum of four alternating orange and white retroreflective circumferential stripes not less than 4 inches nor greater than 8 inches in width. Any non-reflectorized space between any two adjacent stripes shall not exceed 2 inches in width.
7. Bases shall have a maximum width of 36 inches, a maximum height of 4 inches, and a minimum of two footholds of sufficient size to allow base to be held down while separating the drum body from the base.
8. Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
9. Drum body shall have a maximum unballasted weight of 11 lbs.
10. Drum and base shall be marked with manufacturer's name and model number.

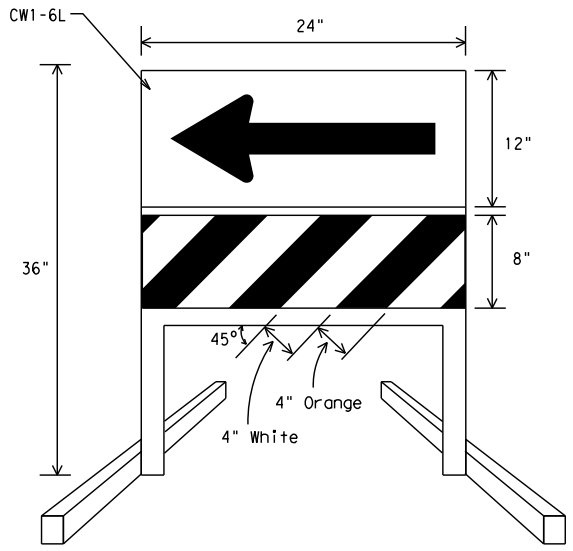
RETROREFLECTIVE SHEETING

1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall be suitable for use on and shall adhere to the drum surface such that, upon vehicular impact, the sheeting shall remain adhered in-place and exhibit no delaminating, cracking, or loss of retroreflectivity other than that loss due to abrasion of the sheeting surface.

BALLAST

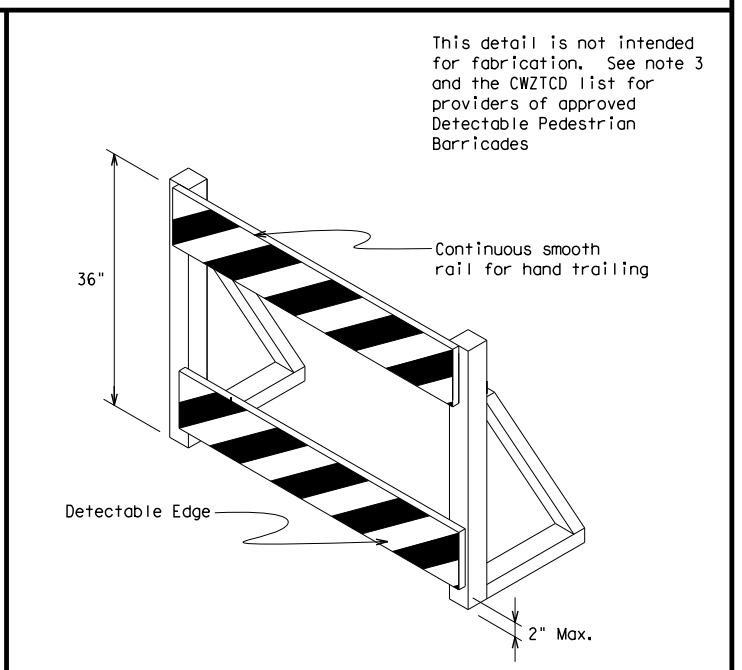
1. Unballasted bases shall be large enough to hold up to 50 lbs. of sand. This base, when filled with the ballast material, should weigh between 35 lbs (minimum) and 50 lbs (maximum). The ballast may be sand in one to three sandbags separate from the base, sand in a sand-filled plastic base, or other ballasting devices as approved by the Engineer. Stacking of sandbags will be allowed, however height of sandbags above pavement surface may not exceed 12 inches.
2. Bases with built-in ballast shall weigh between 40 lbs. and 50 lbs. Built-in ballast can be constructed of an integral crumb rubber base or a solid rubber base.
3. Recycled truck tire sidewalls may be used for ballast on drums approved for this type of ballast on the CWZTCD list.
4. The ballast shall not be heavy objects, water, or any material that would become hazardous to motorists, pedestrians, or workers when the drum is struck by a vehicle.
5. When used in regions susceptible to freezing, drums shall have drainage holes in the bottoms so that water will not collect and freeze becoming a hazard when struck by a vehicle.
6. Ballast shall not be placed on top of drums.
7. Adhesives may be used to secure base of drums to pavement.





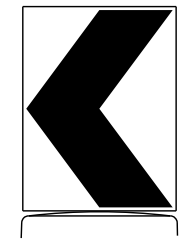
DIRECTION INDICATOR BARRICADE

1. The Direction Indicator Barricade may be used in tapers, transitions, and other areas where specific directional guidance to drivers is necessary.
2. If used, the Direction Indicator Barricade should be used in series to direct the driver through the transition and into the intended travel lane.
3. The Direction Indicator Barricade shall consist of One-Direction Large Arrow (CW1-6) sign in the size shown with a black arrow on a background of Type B_{FL} or Type C_{FL} Orange retroreflective sheeting above a rail with Type A retroreflective sheeting in alternating 4" white and orange stripes sloping downward at an angle of 45 degrees in the direction road users are to pass. Sheeting types shall be as per DMS 8300.
4. Double arrows on the Direction Indicator Barricade will not be allowed.
5. Approved manufacturers are shown on the CWZTCD List. Ballast shall be as approved by the manufacturers instructions.

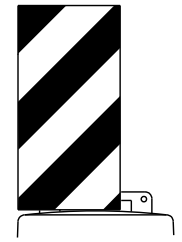


DETECTABLE PEDESTRIAN BARRICADES

1. When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility.
2. Where pedestrians with visual disabilities normally use the closed sidewalk, a device that is detectable by a person with a visual disability traveling with the aid of a long cane shall be placed across the full width of the closed sidewalk.
3. Detectable pedestrian barricades similar to the one pictured above, longitudinal channelizing devices, some concrete barriers, and wood or chain link fencing with a continuous detectable edging can satisfactorily delineate a pedestrian path.
4. Tape, rope, or plastic chain strung between devices are not detectable, do not comply with the design standards in the "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)" and should not be used as a control for pedestrian movements.
5. Warning lights shall not be attached to detectable pedestrian barricades.
6. Detectable pedestrian barricades may use 8" nominal barricade rails as shown on BC(10) provided that the top rail provides a smooth continuous rail suitable for hand trailing with no splinters, burrs, or sharp edges.



18" x 24" Sign
(Maximum Sign Dimension)
Chevron CW1-8, Opposing Traffic Lane Divider, Driveway sign D70a, Keep Right R4 series or other signs as approved by Engineer



12" x 24"
Vertical Panel
mount with diagonals sloping down towards travel way

Plywood, Aluminum or Metal sign substrates shall NOT be used on plastic drums

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

1. Signs used on plastic drums shall be manufactured using substrates listed on the CWZTCD.
2. Chevrons and other work zone signs with an orange background shall be manufactured with Type B_{FL} or Type C_{FL} Orange sheeting meeting the color and retroreflectivity requirements of DMS-8300, "Sign Face Material," unless otherwise specified in the plans.
3. Vertical Panels shall be manufactured with orange and white sheeting meeting the requirements of DMS-8300 Type A Diagonal stripes on Vertical Panels shall slope down toward the intended traveled lane.
4. Other sign messages (text or symbolic) may be used as approved by the Engineer. Sign dimensions shall not exceed 18 inches in width or 24 inches in height, except for the R9 series signs discussed in note 8 below.
5. Signs shall be installed using a 1/2 inch bolt (nominal) and nut, two washers, and one locking washer for each connection.
6. Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
7. Chevrons may be placed on drums on the outside of curves, on merging tapers or on shifting tapers. When used in these locations they may be placed on every drum or spaced not more than on every third drum. A minimum of three (3) should be used at each location called for in the plans.
8. R9-9, R9-10, R9-11 and R9-11a Sidewalk Closed signs which are 24 inches wide may be mounted on plastic drums, with approval of the Engineer.

Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-13

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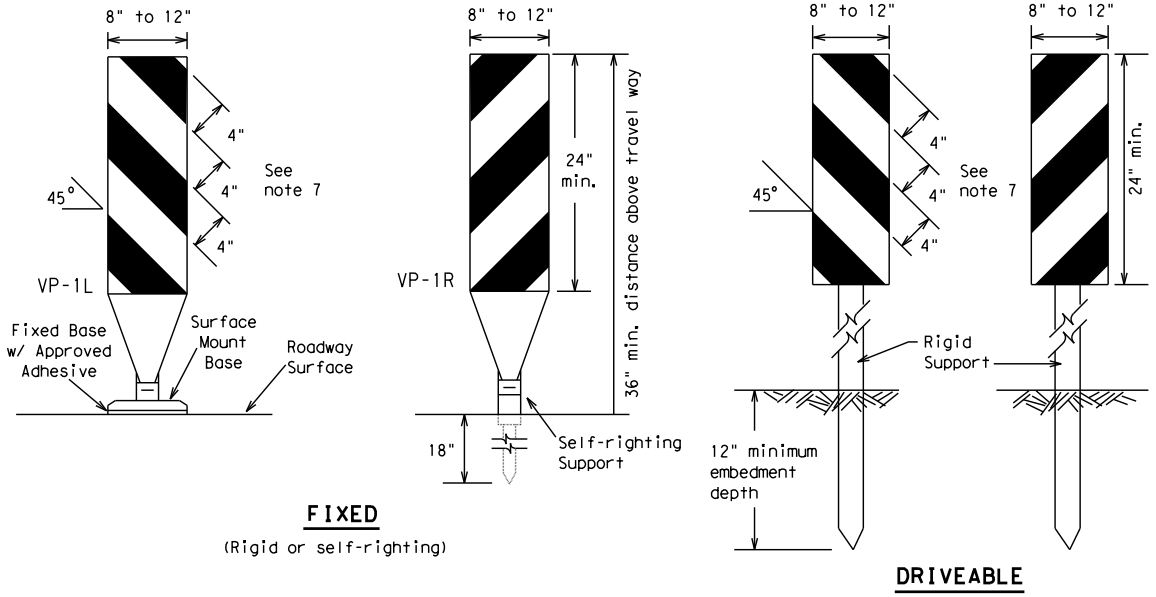
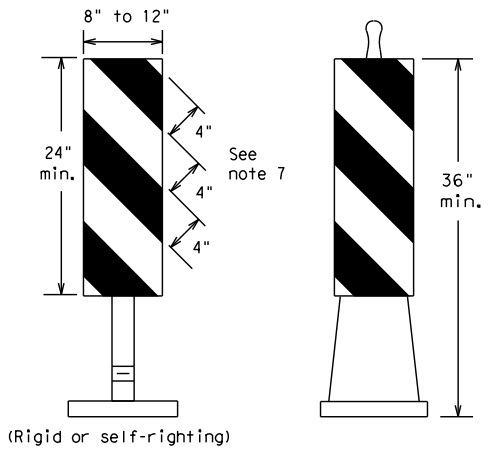


FIXED
(Rigid or self-righting)

DRIVEABLE

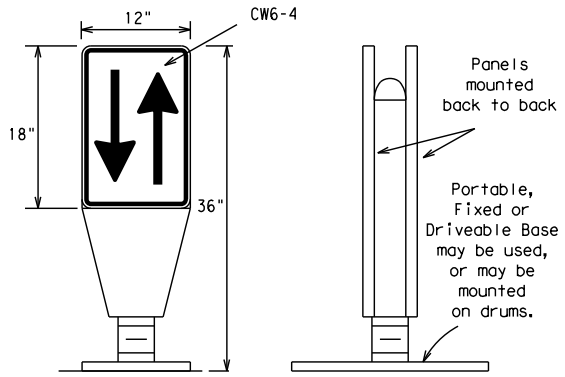


(Rigid or self-righting)

PORTABLE

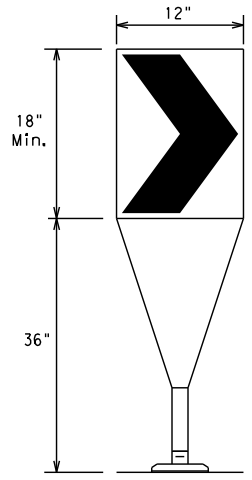
1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is required. The Engineer/Inspector shall refer to the Roadway Design Manual Appendix B "Treatment of Pavement Drop-offs in Work Zones" for additional guidelines on the use of VP's for drop-offs.
3. VP's should be mounted back to back if used at the edge of cuts adjacent to two-way two lane roadways. Stripes are to be reflective orange and reflective white and should always slope downward toward the travel lane.
4. VP's used on expressways and freeways or other high speed roadways, may have more than 270 square inches of retroreflective area facing traffic.
5. Self-righting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
6. Sheeting for the VP's shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
7. Where the height of reflective material on the vertical panel is 36 inches or greater, a panel stripe of 6 inches shall be used.

VERTICAL PANELS (VPs)



1. Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upward and downward arrows on the sign's face indicate the direction of traffic on either side of the divider. The base is secured to the pavement with an adhesive or rubber weight to minimize movement caused by a vehicle impact or wind gust.
2. The OTLD may be used in combination with 42" cones or VPs.
3. Spacing between the OTLD shall not exceed 500 feet. 42" cones or VPs placed between the OTLD's should not exceed 100 foot spacing.
4. The OTLD shall be orange with a black non-reflective legend. Sheeting for the OTLD shall be retroreflective Type B_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



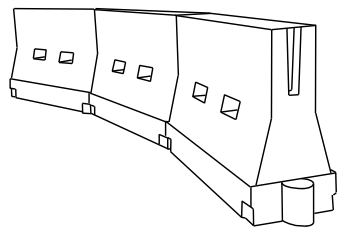
Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

1. The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
2. Chevrons are intended to give notice of a sharp change of alignment with the direction of travel and provide additional emphasis and guidance for vehicle operators with regard to changes in horizontal alignment of the roadway.
3. Chevrons, when used, shall be erected on the outside of a sharp curve or turn, or on the far side of an intersection. They shall be in line with and at right angles to approaching traffic. Spacing should be such that the motorist always has three in view, until the change in alignment eliminates its need.
4. To be effective, the chevron should be visible for at least 500 feet.
5. Chevrons shall be orange with a black nonreflective legend. Sheeting for the chevron shall be retroreflective Type B_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.
6. For Long Term Stationary use on tapers or transitions on freeways and divided highways self-righting chevrons may be used to supplement plastic drums but not to replace plastic drums.

CHEVRONS

GENERAL NOTES

1. Work Zone channelizing devices illustrated on this sheet may be installed in close proximity to traffic and are suitable for use on high or low speed roadways. The Engineer/Inspector shall ensure that spacing and placement is uniform and in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
2. Channelizing devices shown on this sheet may have a driveable, fixed or portable base. The requirement for self-righting channelizing devices must be specified in the General Notes or other plan sheets.
3. Channelizing devices on self-righting supports should be used in work zone areas where channelizing devices are frequently impacted by errant vehicles or vehicle related wind gusts making alignment of the channelizing devices difficult to maintain. Locations of these devices shall be detailed elsewhere in the plans. These devices shall conform to the TMUTCD and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
4. The Contractor shall maintain devices in a clean condition and replace damaged, nonreflective, faded, or broken devices and bases as required by the Engineer/Inspector. The Contractor shall be required to maintain proper device spacing and alignment.
5. Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh a minimum of 30 lbs.
6. Pavement surfaces shall be prepared in a manner that ensures proper bonding between the adhesives, the fixed mount bases and the pavement surface. Adhesives shall be prepared and applied according to the manufacturer's recommendations.
7. The installation and removal of channelizing devices shall not cause detrimental effects to the final pavement surfaces, including pavement surface discoloration or surface integrity. Driveable bases shall not be permitted on final pavement surfaces. The Engineer/Inspector shall approve all application and removal procedures of fixed bases.



LONGITUDINAL CHANNELIZING DEVICES (LCD)

1. LCDs are crashworthy, lightweight, deformable devices that are highly visible, have good target value and can be connected together. They are not designed to contain or redirect a vehicle on impact.
2. LCDs may be used instead of a line of cones or drums.
3. LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
5. LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
6. LCDs used as barricades placed perpendicular to traffic should have at least one row of reflective sheeting meeting the requirements for barricade rails as shown on BC(10) placed near the top of the LCD along the full length of the device.

WATER BALLASTED SYSTEMS USED AS BARRIERS

1. Water ballasted systems used as barriers shall not be used solely to channelize road users, but also to protect the work space per the appropriate NCHRP 350 crashworthiness requirements based on roadway speed and barrier application.
2. Water ballasted systems used to channelize vehicular traffic shall be supplemented with retroreflective delineation or channelizing devices to improve daytime/nighttime visibility. They may also be supplemented with pavement markings.
3. Water ballasted systems used as barriers shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. Water ballasted systems used as barriers should not be used for a merging taper except in low speed (less than 45 MPH) urban areas. When used on a taper in a low speed urban area, the taper shall be delineated and the taper length should be designed to optimize road user operations considering the available geometric conditions.
5. When water ballasted systems used as barriers have blunt ends exposed to traffic, they should be attenuated as per manufacturer recommendations or flared to a point outside the clear zone.

If used to channelize pedestrians, longitudinal channelizing devices or water ballasted systems must have a continuous detectable bottom for users of long canes and the top of the unit shall not be less than 32 inches in height.

HOLLOW OR WATER BALLASTED SYSTEMS USED AS LONGITUDINAL CHANNELIZING DEVICES OR BARRIERS

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'
35		205'	225'	245'	35'	70'
40		265'	295'	320'	40'	80'
45	L = WS	450'	495'	540'	45'	90'
50		500'	550'	600'	50'	100'
55		550'	605'	660'	55'	110'
60		600'	660'	720'	60'	120'
65		650'	715'	780'	65'	130'
70		700'	770'	840'	70'	140'
75		750'	825'	900'	75'	150'
80		800'	880'	960'	80'	160'

** Taper lengths have been rounded off.
L=Length of Taper (FT.) W=Width of Offset (FT.)
S=Posted Speed (MPH)

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(9)-13

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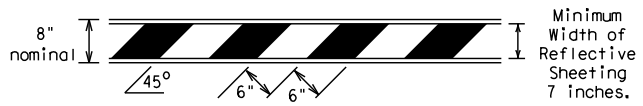
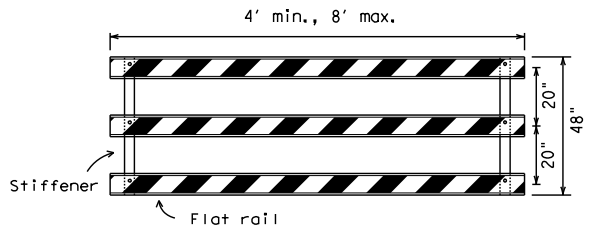
TYPE 3 BARRICADES

1. Refer to the Compliant Work Zone Traffic Control Devices List (CWZTCD) for details of the Type 3 Barricades and a list of all materials used in the construction of Type 3 Barricades.
2. Type 3 Barricades shall be used at each end of construction projects closed to all traffic.
3. Barricades extending across a roadway should have stripes that slope downward in the direction toward which traffic must turn in detouring. When both right and left turns are provided, the chevron striping may slope downward in both directions from the center of the barricade. Where no turns are provided at a closed road striping should slope downward in both directions toward the center of roadway.
4. Striping of rails, for the right side of the roadway, should slope downward to the left. For the left side of the roadway, striping should slope downward to the right.
5. Identification markings may be shown only on the back of the barricade rails. The maximum height of letters and/or company logos used for identification shall be 1".
6. Barricades shall not be placed parallel to traffic unless an adequate clear zone is provided.
7. Warning lights shall NOT be installed on barricades.
8. Where barricades require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand is recommended. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight. Sand bags shall not be stacked in a manner that covers any portion of a barricade rails reflective sheeting. Rock, concrete, iron, steel or other solid objects will NOT be permitted. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall not be used for sandbags. Sandbags shall only be placed along or upon the base supports of the device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners.
9. Sheeting for barricades shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

Barricades shall NOT be used as a sign support.



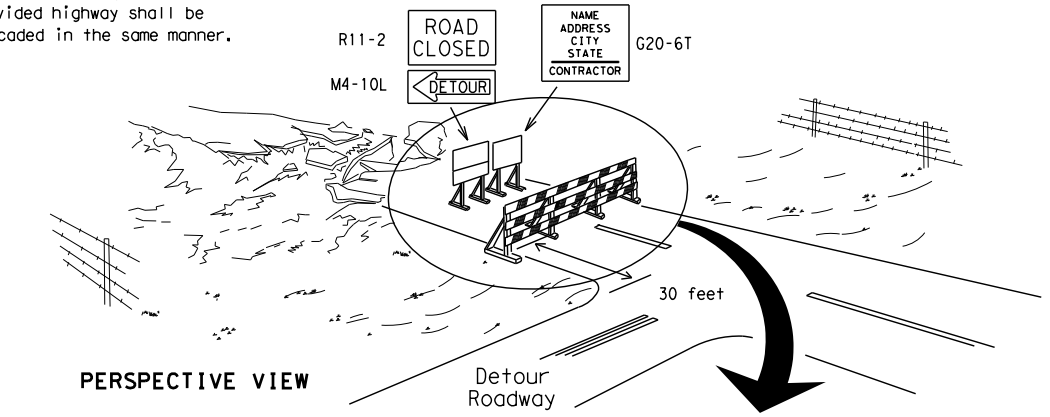
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



Stiffener may be inside or outside of support, but no more than 2 stiffeners shall be allowed on one barricade.

TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

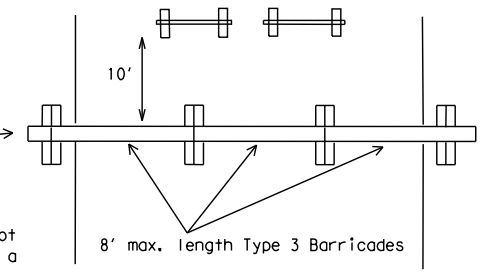
Each roadway of a divided highway shall be barricaded in the same manner.



PERSPECTIVE VIEW

The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.

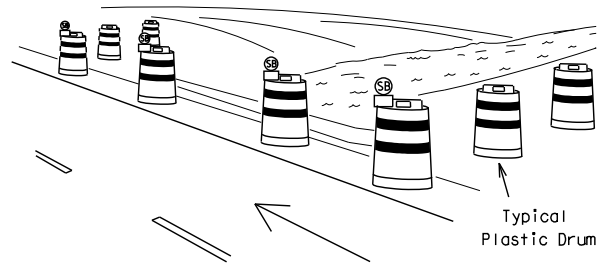
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

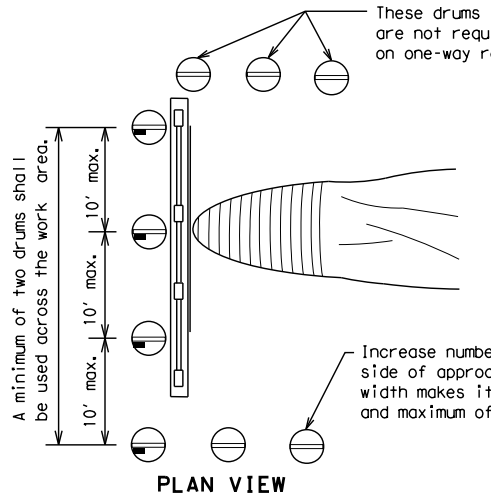
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

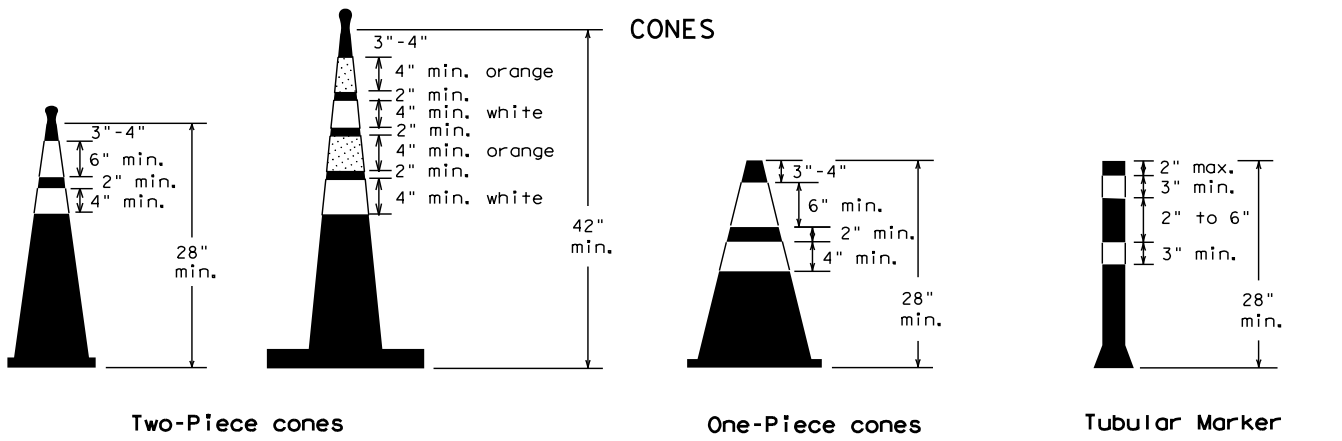
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder width is greater than 12 feet, steady-burn lights may be omitted if drums are used.
5. Drums must extend the length of the culvert widening.



PLAN VIEW

LEGEND	
	Plastic drum
	Plastic drum with steady burn light or yellow warning reflector
SB	Steady burn warning light or yellow warning reflector

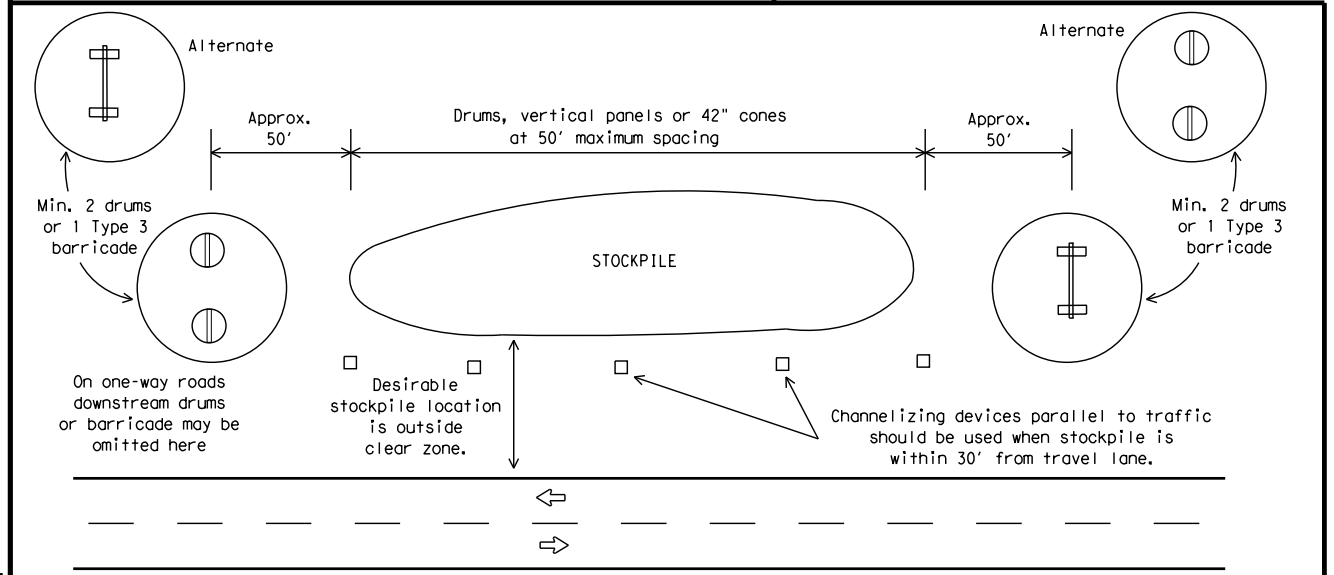
CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



Two-Piece cones | One-Piece cones | Tubular Marker

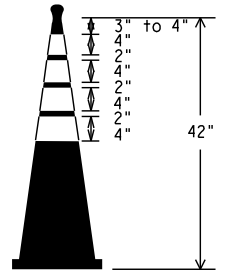
28" Cones shall have a minimum weight of 9 1/2 lbs.
42" 2-piece cones shall have a minimum weight of 30 lbs. including base.

1. Traffic cones and tubular markers shall be predominantly orange, and meet the height and weight requirements shown above.
2. One-piece cones have the body and base of the cone molded in one consolidated unit. Two-piece cones have a cone shaped body and a separate rubber base, or ballast, that is added to keep the device upright and in place.
3. Two-piece cones may have a handle or loop extending up to 8" above the minimum height shown, in order to aid in retrieving the device.
4. Cones or tubular markers used at night shall have white or white and orange reflective bands as shown above. The reflective bands shall have a smooth, sealed outer surface and meet the requirements of Departmental Material Specification DMS-8300 Type A.
5. 28" cones and tubular markers are generally suitable for short duration and short-term stationary work as defined on BC(4). These should not be used for intermediate-term or long-term stationary work unless personnel is on-site to maintain them in their proper upright position.
6. 42" two-piece cones, vertical panels or drums are suitable for all work zone durations.
7. Cones or tubular markers used on each project should be of the same size and shape.



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

THIS DEVICE SHALL NOT BE USED ON PROJECTS LET AFTER MARCH 2014.



EDGELINE CHANNELIZER

1. This device is intended only for use in place of a vertical panel to channelize traffic by indicating the edge of the travel lane. It is not intended to be used in transitions or tapers.
2. This device shall not be used to separate lanes of traffic (opposing or otherwise) or warn of objects.
3. This device is based on a 42 inch, two-piece cone with an alternate striping pattern: four 4 inch retroreflective bands, with an approximate 2 inch gap between bands. The color of the band should correspond to the color of the edgeline (yellow for left edgeline, white for right edgeline) for which the device is substituted or for which it supplements. The reflectorized bands shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300, unless otherwise noted.
4. The base must weigh a minimum of 30 lbs.

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BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-13

FILE: bc-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS				
9-07	DIST	COUNTY		SHEET NO.
7-13				137

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WORK ZONE PAVEMENT MARKINGS

GENERAL

1. The Contractor shall be responsible for maintaining work zone and existing pavement markings, in accordance with the standard specifications and special provisions, on all roadways open to traffic within the CSJ limits unless otherwise stated in the plans.
2. Color, patterns and dimensions shall be in conformance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
3. Additional supplemental pavement marking details may be found in the plans or specifications.
4. Pavement markings shall be installed in accordance with the TMUTCD and as shown on the plans.
5. When short term markings are required on the plans, short term markings shall conform with the TMUTCD, the plans and details as shown on the Standard Plan Sheet WZ(STPM).
6. When standard pavement markings are not in place and the roadway is opened to traffic, DO NOT PASS signs shall be erected to mark the beginning of the sections where passing is prohibited and PASS WITH CARE signs at the beginning of sections where passing is permitted.
7. All work zone pavement markings shall be installed in accordance with Item 662, "Work Zone Pavement Markings."

RAISED PAVEMENT MARKERS

1. Raised pavement markers are to be placed according to the patterns on BC(12).
2. All raised pavement markers used for work zone markings shall meet the requirements of Item 672, "RAISED PAVEMENT MARKERS" and Departmental Material Specification DMS-4200 or DMS-4300.

PREFABRICATED PAVEMENT MARKINGS

1. Removable prefabricated pavement markings shall meet the requirements of DMS-8241.
2. Non-removable prefabricated pavement markings (foil back) shall meet the requirements of DMS-8240.

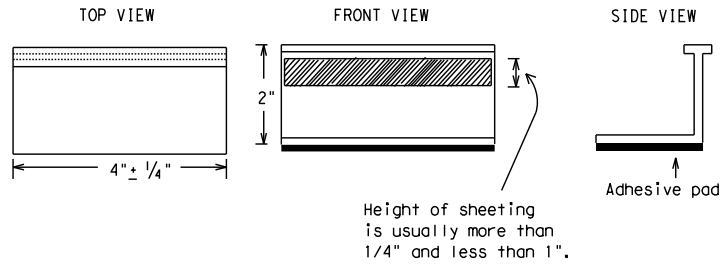
MAINTAINING WORK ZONE PAVEMENT MARKINGS

1. The Contractor will be responsible for maintaining work zone pavement markings within the work limits.
2. Work zone pavement markings shall be inspected in accordance with the frequency and reporting requirements of work zone traffic control device inspections as required by Form 599.
3. The markings should provide a visible reference for a minimum distance of 300 feet during normal daylight hours and 160 feet when illuminated by automobile low-beam headlights at night, unless sight distance is restricted by roadway geometrics.
4. Markings failing to meet this criteria within the first 30 days after placement shall be replaced at the expense of the Contractor as per Specification Item 662.

REMOVAL OF PAVEMENT MARKINGS

1. Pavement markings that are no longer applicable, could create confusion or direct a motorist toward or into the closed portion of the roadway shall be removed or obliterated before the roadway is opened to traffic.
2. The above shall not apply to detours in place for less than three days, where flaggers and/or sufficient channelizing devices are used in lieu of markings to outline the detour route.
3. Pavement markings shall be removed to the fullest extent possible, so as not to leave a discernable marking. This shall be by any method approved by TxDOT Specification Item 677 for "Eliminating Existing Pavement Markings and Markers".
4. The removal of pavement markings may require resurfacing or seal coating portions of the roadway as described in Item 677.
5. Subject to the approval of the Engineer, any method that proves to be successful on a particular type pavement may be used.
6. Blast cleaning may be used but will not be required unless specifically shown in the plans.
7. Over-painting of the markings SHALL NOT BE permitted.
8. Removal of raised pavement markers shall be as directed by the Engineer.
9. Removal of existing pavement markings and markers will be paid for directly in accordance with Item 677, "ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS," unless otherwise stated in the plans.
10. Black-out marking tape may be used to cover conflicting existing markings for periods less than two weeks when approved by the Engineer.

Temporary Flexible-Reflective Roadway Marker Tabs



STAPLES OR NAILS SHALL NOT BE USED TO SECURE TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER TABS TO THE PAVEMENT SURFACE

1. Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of DMS-8242.
2. Tabs detailed on this sheet are to be inspected and accepted by the Engineer or designated representative. Sampling and testing is not normally required, however at the option of the Engineer, either "A" or "B" below may be imposed to assure quality before placement on the roadway.
   A. Select five (5) or more tabs at random from each lot or shipment and submit to the Construction Division, Materials and Pavement Section to determine specification compliance.
   B. Select five (5) tabs and perform the following test. Affix five (5) tabs at 24 inch intervals on an asphaltic pavement in a straight line. Using a medium size passenger vehicle or pickup, run over the markers with the front and rear tires at a speed of 35 to 40 miles per hour, four (4) times in each direction. No more than one (1) out of the five (5) reflective surfaces shall be lost or displaced as a result of this test.
3. Small design variances may be noted between tab manufacturers.
4. See Standard Sheet WZ(STPM) for tab placement on new pavements. See Standard Sheet TCP(7-1) for tab placement on seal coat work.

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

1. Raised pavement markers used as guidemarks shall be from the approved product list, and meet the requirements of DMS-4200.
2. All temporary construction raised pavement markers provided on a project shall be of the same manufacturer.
3. Adhesive for guidemarks shall be bituminous material hot applied or butyl rubber pad for all surfaces, or thermoplastic for concrete surfaces.

Guidemarks shall be designated as:
YELLOW - (two amber reflective surfaces with yellow body).
WHITE - (one silver reflective surface with white body).

DEPARTMENTAL MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
TRAFFIC BUTTONS	DMS-4300
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240
TEMPORARY REMOVABLE, PREFABRICATED PAVEMENT MARKINGS	DMS-8241
TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS	DMS-8242

A list of prequalified reflective raised pavement markers, non-reflective traffic buttons, roadway marker tabs and other pavement markings can be found at the Material Producer List web address shown on BC(1).

Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-13

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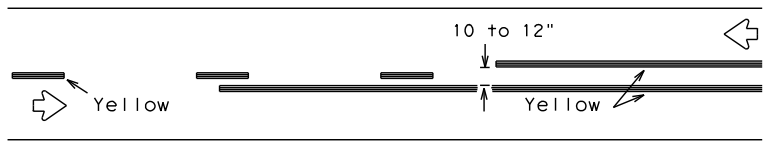
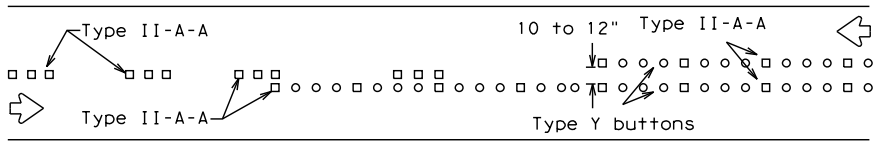
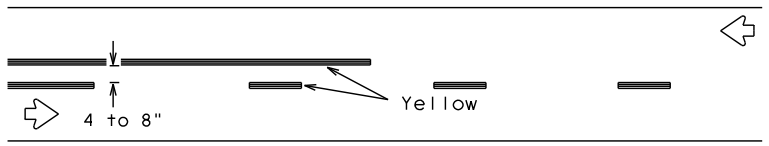
PAVEMENT MARKING PATTERNS



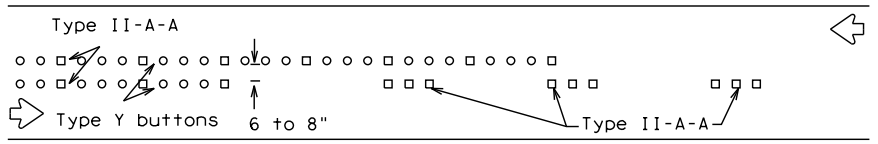
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



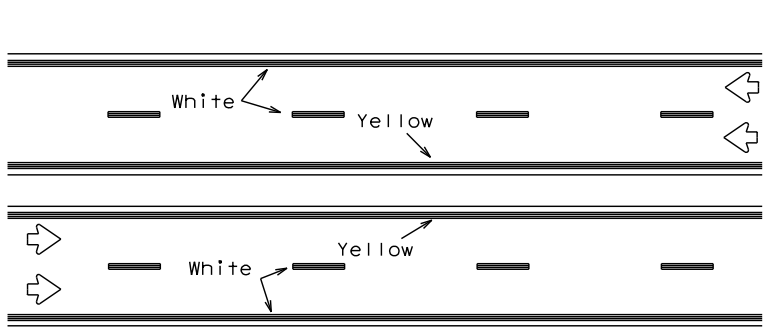
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



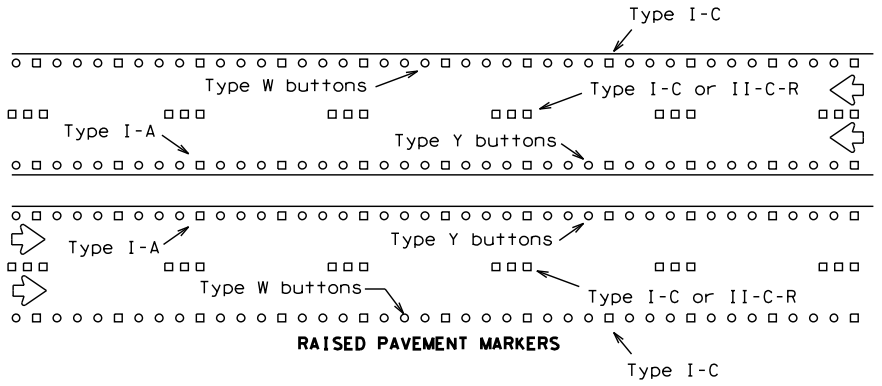
RAISED PAVEMENT MARKERS - PATTERN B

Pattern A is the TXDOT Standard, however Pattern B may be used if approved by the Engineer.
Prefabricated markings may be substituted for reflectorized pavement markings.

CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO-LANE, TWO-WAY HIGHWAYS



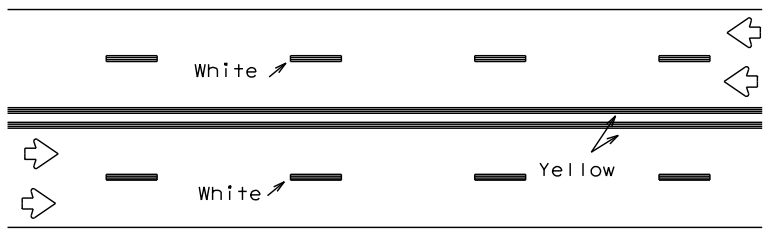
REFLECTORIZED PAVEMENT MARKINGS



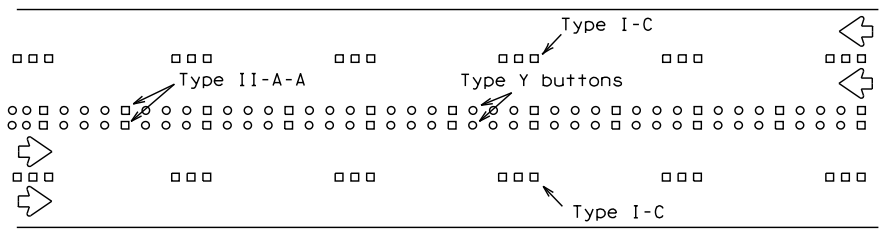
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



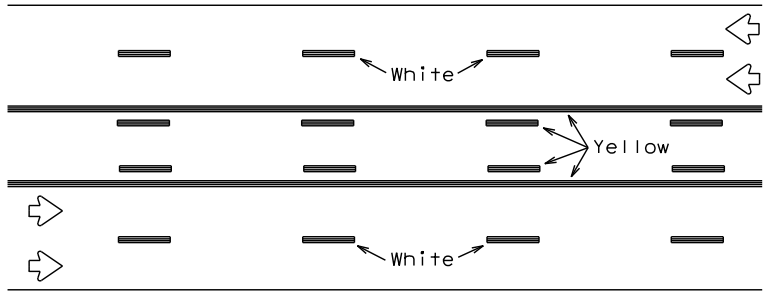
REFLECTORIZED PAVEMENT MARKINGS



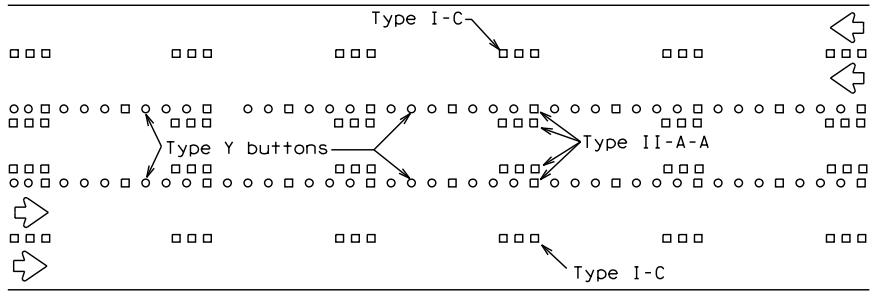
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

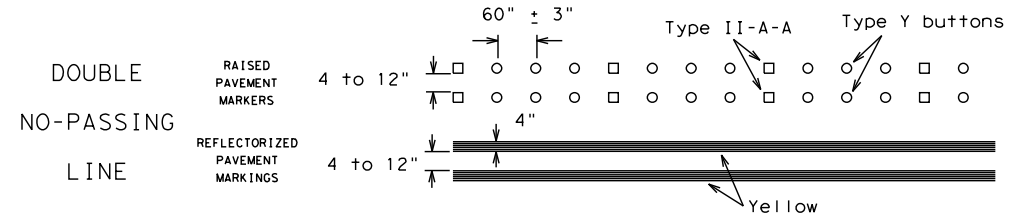
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

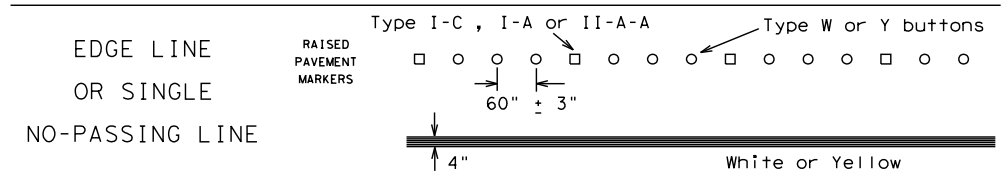
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

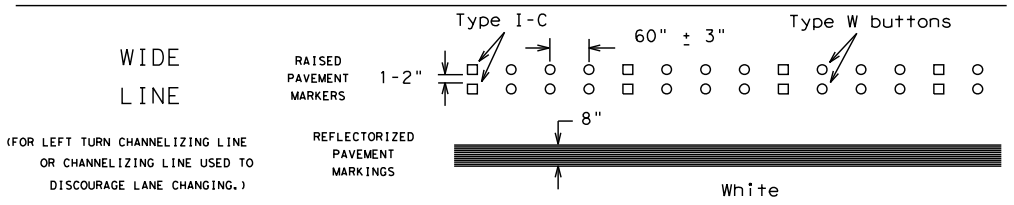


EDGE LINE OR SINGLE NO-PASSING LINE



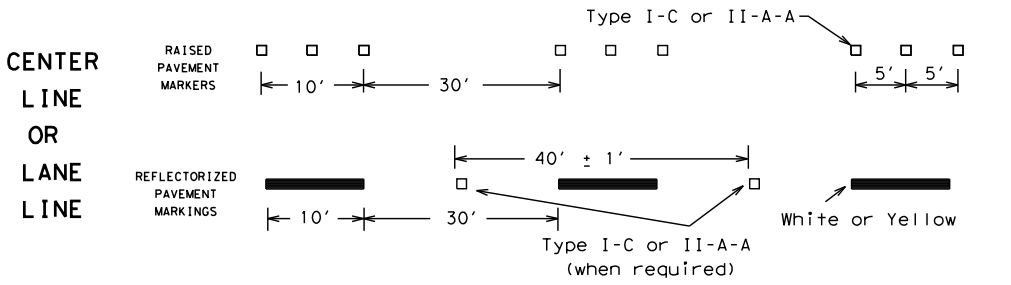
WIDE LINE

(FOR LEFT TURN CHANNELIZING LINE OR CHANNELIZING LINE USED TO DISCOURAGE LANE CHANGING.)

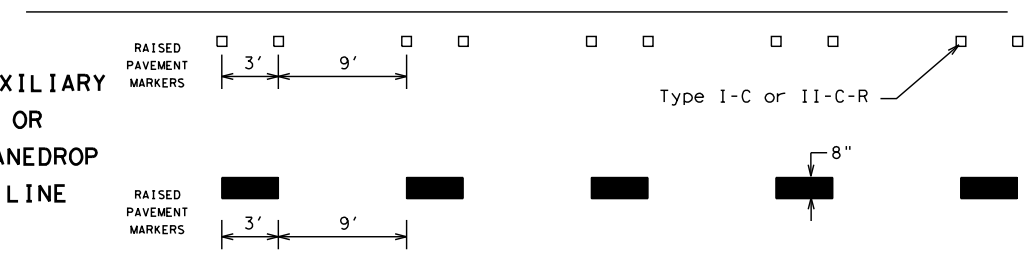


BROKEN LINES

CENTER LINE OR LANE LINE

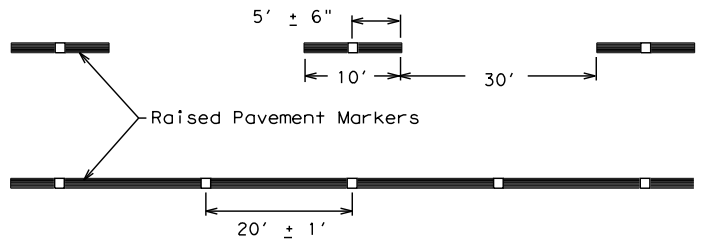


AUXILIARY OR LANEDROP LINE



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

If raised pavement markers are used to supplement REMOVABLE markings, the markers shall be applied to the top of the tape at the approximate mid length of tape used for broken lines or at 20 foot spacing for solid lines. This allows an easier removal of raised pavement markers and tape.



Centerline only - not to be used on edge lines

Raised pavement markers used as standard pavement markings shall be from the approved products list and meet the requirements of Item 672 "RAISED PAVEMENT MARKERS."

Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-13

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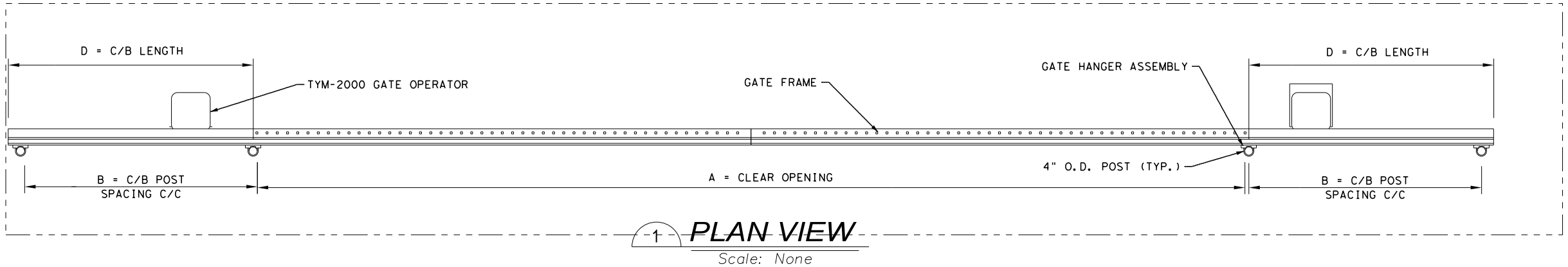
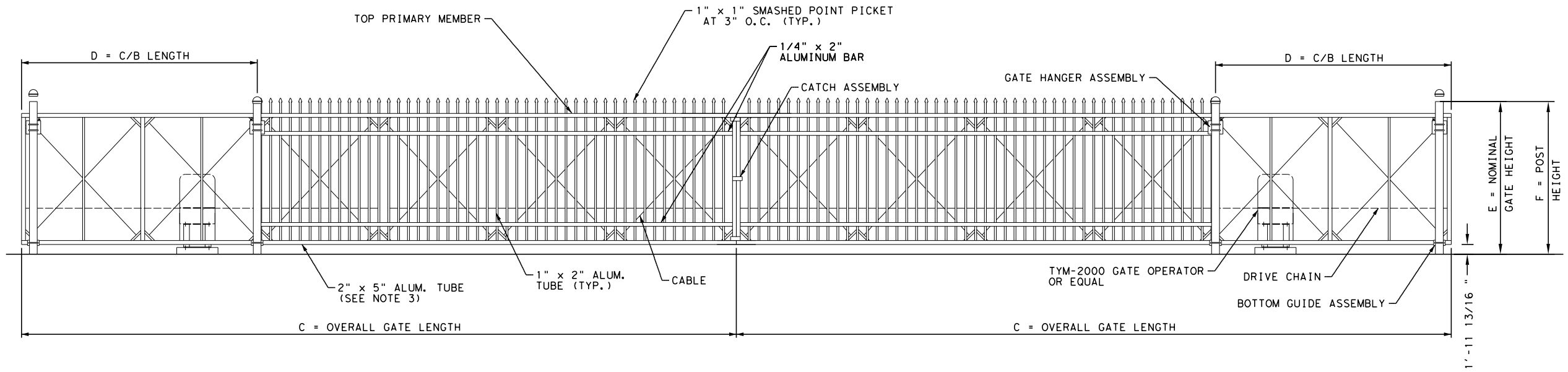


1 PLAN VIEW

Scale: None

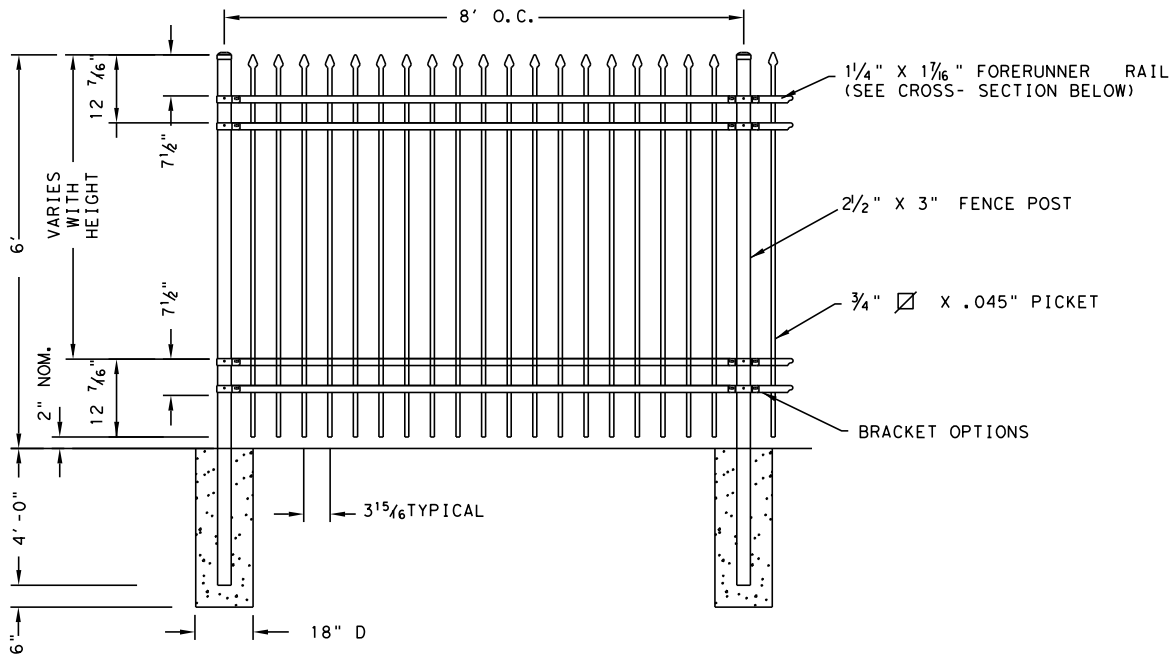


2 ELEVATION

Scale: None

CRITICAL DIMENSION CHART		
A	CLEAR OPENING	45' 0"
B	COUNTERBALANCE POST SPACING C/C	10' 4"
C	OVERALL GATE LENGTH	33' 9"
D	COUNTERBALANCE LENGTH	11' 3"
E	NOMINAL GATE HEIGHT	6' 0"
F	POST HEIGHT	6' 0"
G	PICKET HEIGHT	5' 10"

NOTES:
1. ALL FITTINGS PROVIDED FOR 4" O.D. POSTS. OTHER SIZES AVAILABLE UPON REQUEST.
2. GATE ELEVATION IS VIEWED FROM THE OUTSIDE OF THE SECURE AREA LOOKING IN.
3. FOR GATES REQUIRING TWO PIECE FABRICATION A 5" CHANNEL AND VERTICAL SPLICE WILL BE USED.



3 DECORATIVE FENCE PANEL

Scale: None

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HUNG H. NGUYEN
113148
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PROFESSIONAL ENGINEER

11/3/2022

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T.B.P.E.FIRM REGISTRATION NO. F-6825

STATE OF TEXAS
FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

GATE AND DECORATIVE FENCE DETAILS

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CHECKED:	DATE:
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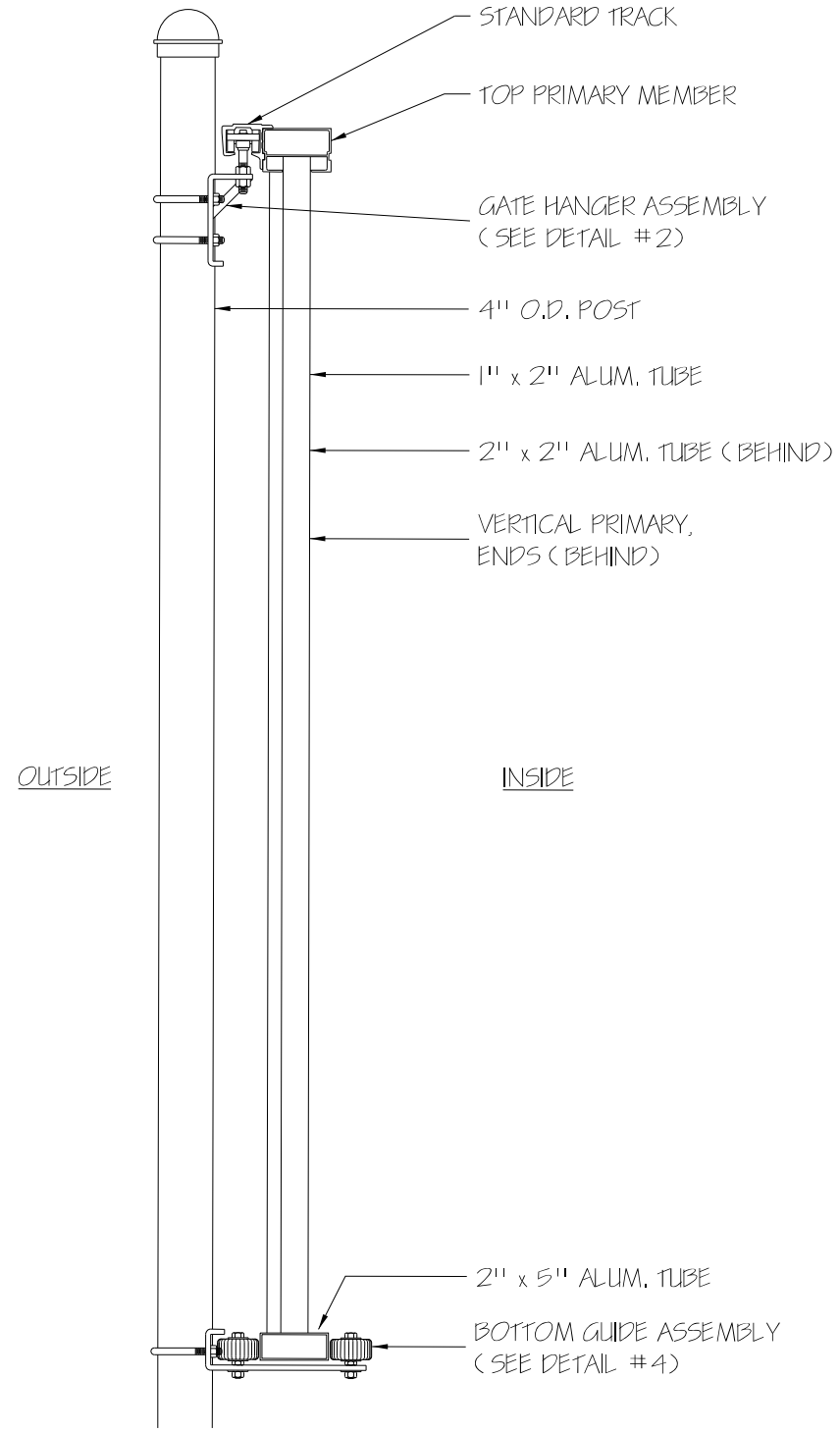

1 GS1004-2 **ASSEMBLY SECTION**
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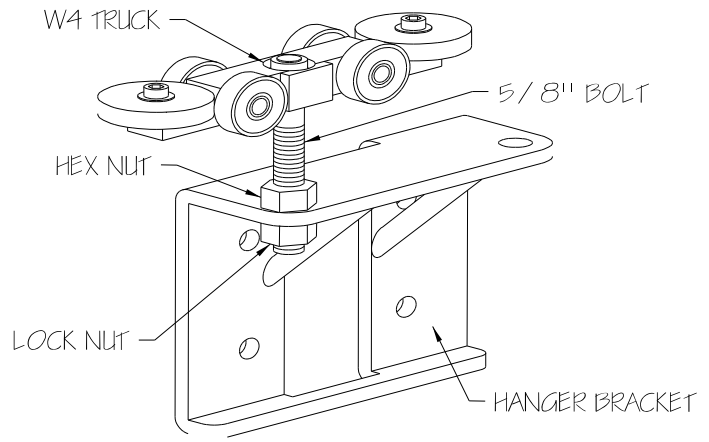

2 GS1004-2 **GATE HANGER**
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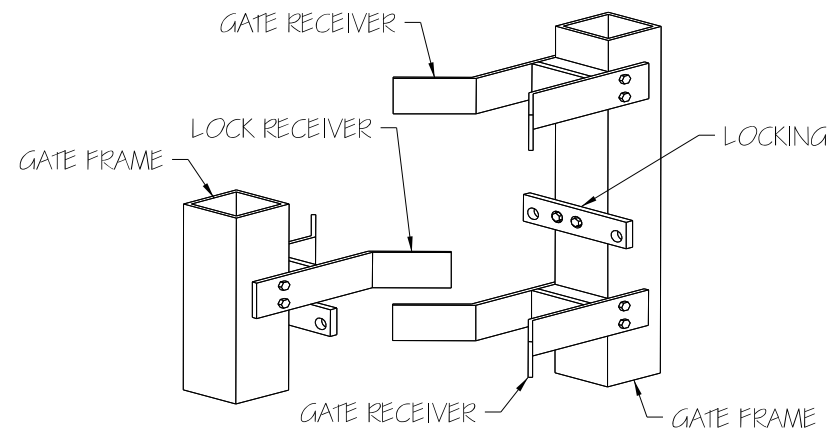

3 GS1004-2 **CATCH ASSEMBLY**
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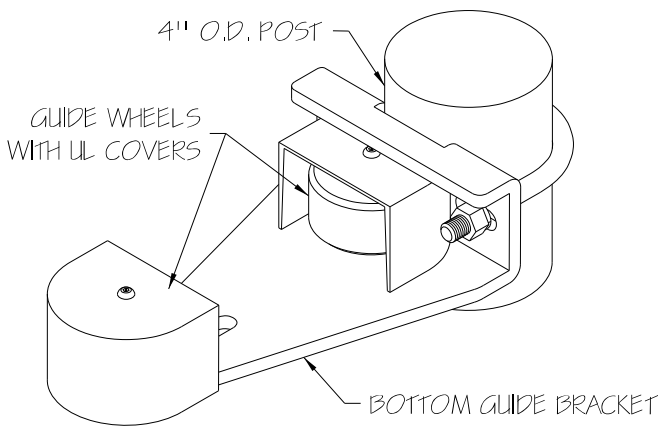

4 GS1004-2 **BOTTOM GUIDE**
Scale: None

NOTE:

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FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

GATE AND DECORATIVE FENCE DETAILS

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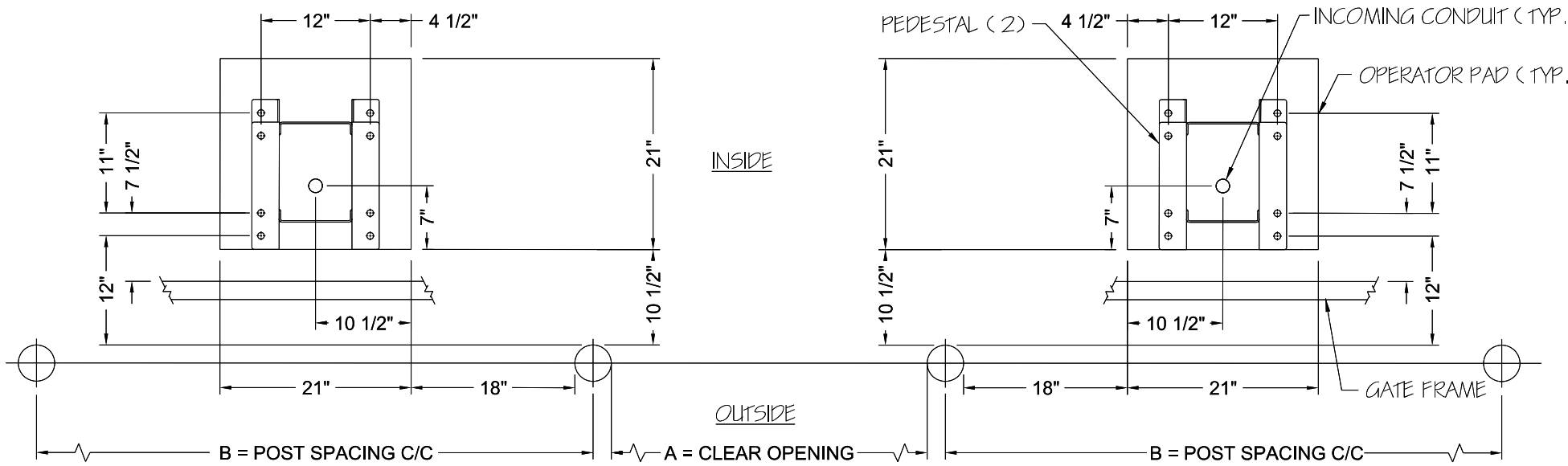
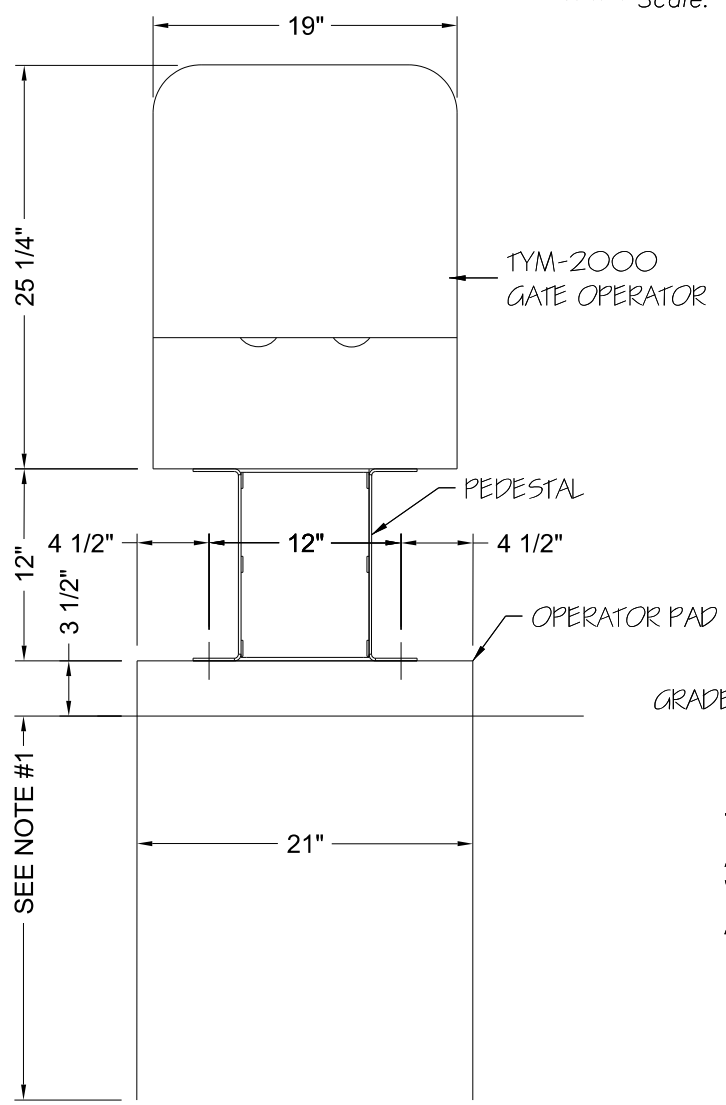


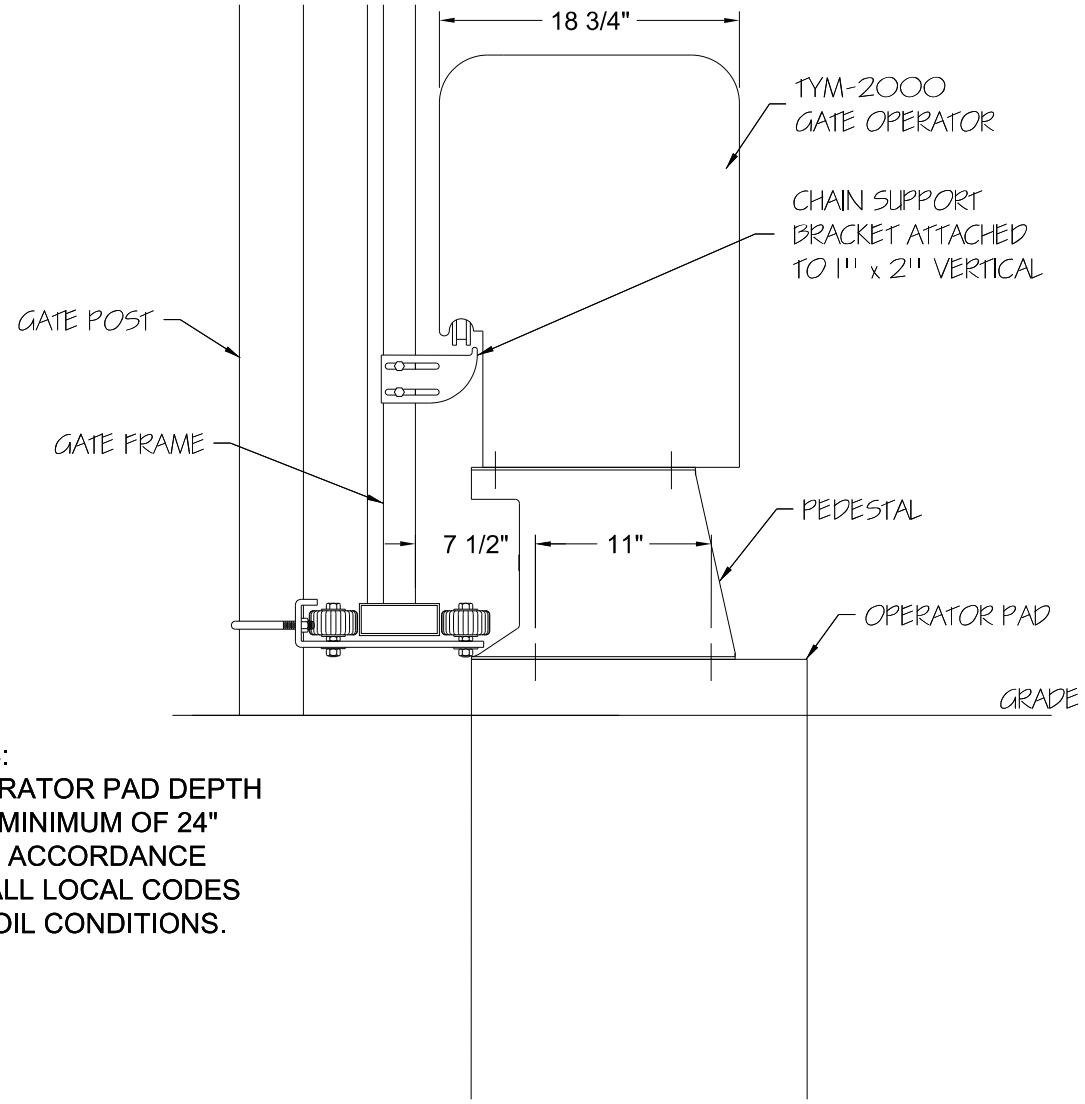
1 GS1004-3 OPERATOR PAD LAYOUT PLAN

Scale: None



2 GS1004-3 OPERATOR FRONT ELEVATION

Scale: None



3 GS1004-3 OPERATOR SIDE ELEVATION

Scale: None

NOTES:
1) OPERATOR PAD DEPTH TO BE MINIMUM OF 24" AND IN ACCORDANCE WITH ALL LOCAL CODES AND SOIL CONDITIONS.

NOTE:

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5/12/2022

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T.B.P.E.FIRM REGISTRATION NO. F-6825

THE STATE OF TEXAS
FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

GATE AND DECORATIVE FENCE DETAILS

SHEET 3 OF 3

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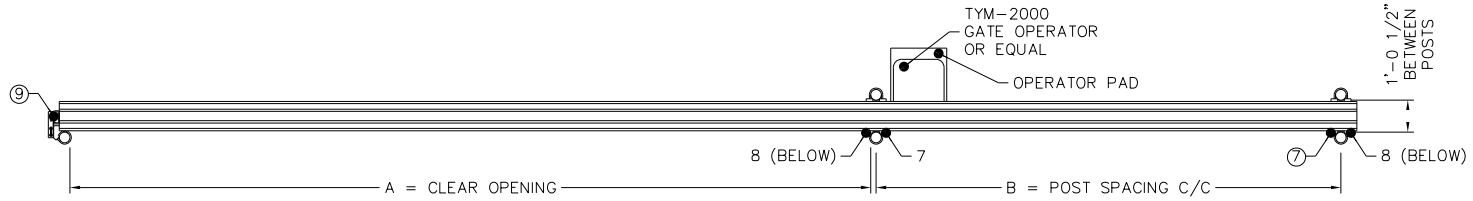
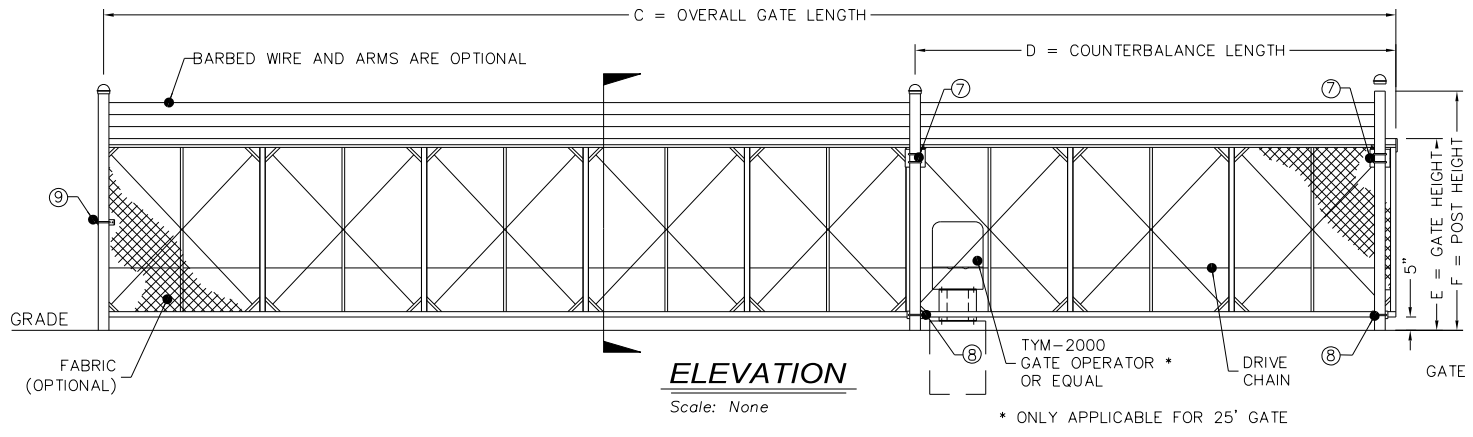


PLAN VIEW

Scale: None

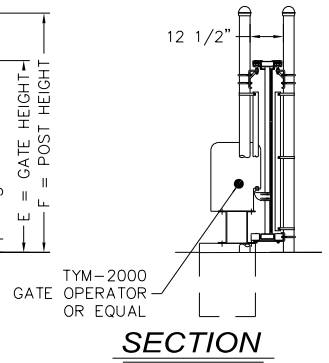
CRITICAL DIMENSION CHART FOR 25' GATE			
MARK	DESCRIPTION	FORMULA	DIM.
A	CLEAR OPENING	A	25'
B	COUNTERBALANCE POST SPACING C/C	(A/2)-11"	11'-7"
C	OVERALL GATE LENGTH	A x 1.5	37'-6"
D	COUNTERBALANCE LENGTH	A x 0.5	12'-6"
E	NOMINAL GATE HEIGHT	E	6'
F	POST HEIGHT (W BARB ARMS)	E + 1'-6"	7'-6"
G	FABRIC HEIGHT	E - 1'-0"	5'



ELEVATION

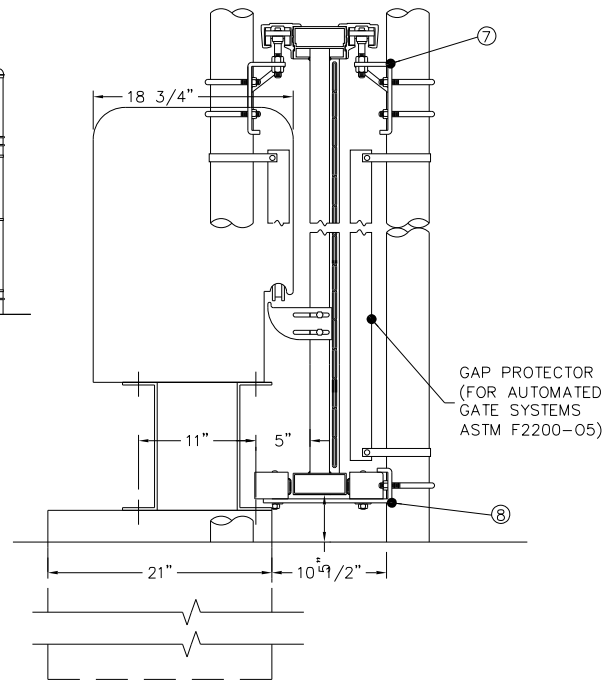
Scale: None

* ONLY APPLICABLE FOR 25' GATE



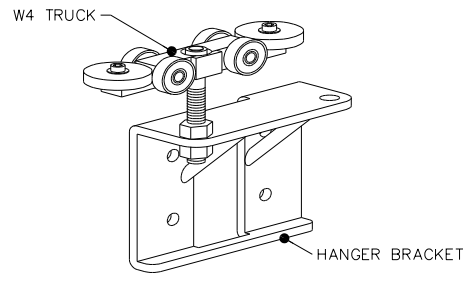
SECTION

Scale: None



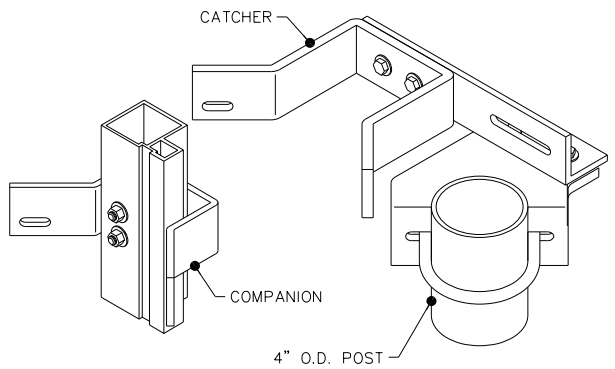
OPERATOR SIDE ELEVATION

Scale: None



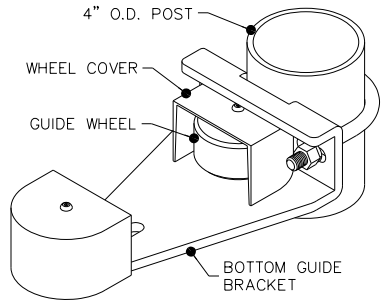
7 GATE HANGER ASSEMBLY

Scale: None



9 CATCH ASSEMBLY

Scale: None



8 BOTTOM GUIDE

Scale: None

NOTES:
1. FOR COMPLETE INFORMATION ON THE TYM-2000 OPERATOR VISIT THE "GATE OPERATORS" SECTION OF THE WEB SITE.
2. ALL FITTINGS STANDARDLY PROVIDED FOR 4" O.D. POSTS. OTHER SIZES AVAILABLE UPON REQUEST.
3. BARB ARMS (FOR BARBED WIRE)
4. THIS IS GENERAL DETAILS FOR CONTRACTOR INFORMATION ONLY. CONTRACTOR CAN CHOOSE TO USE OTHER SIMILAR PRODUCT THAT ARE EQUIVALENT OR BETTER.

CRITICAL DIMENSION CHART FOR 20' GATE			
MARK	DESCRIPTION	FORMULA	DIM.
A	CLEAR OPENING	A	20'
B	COUNTERBALANCE POST SPACING C/C	(A/2)-11"	9'-1"
C	OVERALL GATE LENGTH	A x 1.5	30'
D	COUNTERBALANCE LENGTH	A x 0.5	10'
E	NOMINAL GATE HEIGHT	E	6'
F	POST HEIGHT (W BARB ARMS)	E + 1'-6"	7'-6"
G	FABRIC HEIGHT	E - 1'-0"	5'

STATE OF TEXAS
HUNG H. NGUYEN
113148
LICENSED
PROFESSIONAL ENGINEER

5/12/2022

NO.	DATE	REVISION	APPROV.

IDCUS
Planners | Engineers | Construction Managers
IDCUS, Inc.
15915 Katy Freeway, Suite 300
Houston, Texas 77094
(713) 541-5591 Fax (713) 541-3501
T.B.P.E.FIRM REGISTRATION NO. F-6825

STATE OF TEXAS
FORT BEND COUNTY

FORT BEND COUNTY
PRECINCT 3

WESTPARK PARK & RIDE

CANTILEVER CHAIN LINK FENCE SLIDING GATE DETAILS

SHEET 1 OF 1

SECTION NO.	
DRAWN:	DATE:
CHECKED:	DATE:
DESIGN:	DATE:
CHECKED:	DATE:
CONTRACT NO.	
	SHEET NO. 143

5/12/2022
\\emai\Transportation\FORT BEND COUNTY\WESTPARK P&R\CADD\STANDARDS\WPK-GATE-04.dgn
bobv

EXHIBIT E

(Prevailing Wage Rates Follow Behind)

"General Decision Number: TX20230247 05/05/2023

Superseded General Decision Number: TX20220247

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)(2)-(60).

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 $16.20 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 2023.
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 $12.15 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 2023.

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	01/06/2023
1	01/13/2023
2	05/05/2023

ASBE0022-009 06/01/2022

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR (Duct, Pipe and Mechanical System Insulation)	$ 26.88	15.41

BOIL0074-003 01/01/2021

	Rates	Fringes
BOILERMAKER	$ 29.47	24.10

CARP0551-008 04/01/2021

	Rates	Fringes
CARPENTER (Excludes Acoustical Ceiling Installation,Drywall Hanging, Form Work and Metal Stud Installation)	$ 25.86	9.08

ELEC0716-005 08/30/2021

	Rates	Fringes
ELECTRICIAN (Excludes Low Voltage Wiring and Installation of Alarms)	$ 33.20	10.37

ELEV0031-003 01/01/2023

	Rates	Fringes
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

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
Cranes	$ 34.85	9.85

IRON0084-002 06/01/2022

	Rates	Fringes
IRONWORKER (ORNAMENTAL AND STRUCTURAL)	$ 26.76	7.88

PLAS0783-001 04/01/2021

	Rates	Fringes
PLASTERER	$ 26.04	9.02

PLUM0068-002 10/01/2022

	Rates	Fringes
PLUMBER	$ 37.83	11.71

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* PLUM0211-010 10/01/2022

	Rates	Fringes
PIPEFITTER (Including HVAC Pipe Installation)	$ 38.03	12.66

SHEE0054-003 04/01/2020

	Rates	Fringes

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

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* SUTX2014-023 07/21/2014

	Rates		Fringes
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: 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

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

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** Workers in this classification may be entitled to a higher
minimum wage under Executive Order 14026 ($16.20) or 13658
($12.15). Please see the Note at the top of the wage
determination for more information.

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) (ii)).

The body of each wage determination lists the classification

and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour 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

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator

(See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISIO"

EXHIBIT F

(FTA Contract Provisions Follow Behind)

(FTA) FEDERAL TERMS AND CONDITIONS:

Contractor understands and acknowledges that this Agreement may be totally or partially funded with federal and or state funds. As a condition of receiving these funds, Contractor represents that it is and will remain in compliance with all federal terms as stated below. These terms flow down to all third party contractors and their subcontracts at every tier, unless a particular award term or condition specifically indicates otherwise. The Contractor shall require that these clauses shall be included in each covered transaction at any tier, unless a particular award term or condition specifically indicates otherwise.

1. Access for Individuals with Disabilities (ADA Access)

The Contractor agrees to comply with 49 U.S.C. § 5301(d), which states the Federal policy that elderly individuals and individuals with disabilities have the same right as other individuals to use public transportation services and facilities, and that special efforts shall be made in planning and designing those services and facilities to implement transportation accessibility rights for elderly individuals and individuals with disabilities. The Contractor also agrees to comply with all applicable provisions of section 504 of the Rehabilitation Act of 1973, as amended, with 29 U.S.C. § 794, which prohibits discrimination on the basis of disability; with the Americans with Disabilities Act of 1990 (ADA), as amended, 42 U.S.C. §§ 12101 et seq., which requires that accessible facilities and services be made available to individuals with disabilities; and with the Architectural Barriers Act of 1968, as amended, 42 U.S.C. §§ 4151 et seq., which requires that buildings and public accommodations be accessible to individuals with disabilities, and any subsequent amendments to these laws. In addition, the Contractor agrees to comply with applicable implementing Federal regulations and directives and any subsequent amendments thereto, as follows:

(1) U.S. DOT regulations, “Transportation Services for Individuals with Disabilities (ADA), 49 C.F.R. Part 37;
(2) U.S. DOT regulations, "Nondiscrimination on the Basis of Handicap in programs and Activities Receiving or Benefiting from Federal Financial Assistance, 49 C.F.R. Part 27;
(3) Joint U.S. Architectural and Transportation Barriers Compliance board (U.S. ATBCB)/U.S. DOT regulations, “Americans With Disabilities (ADA) Accessibility Specifications for Transportation Vehicles," 36 C.F.R. Part 1192 and 49 C.F.R. Part 38;
(4) U.S. DOJ regulations, "Nondiscrimination on the Basis of Disability in State and Local Government Services," 28 C.F.R. Part 35;
(5) U.S. DOJ regulations, "Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities," 28 C.F.R. Part 36;
(6) U.S. General Services Administration (U.S. GSA) regulations, "Accommodations for the Physically Handicapped," 41 C.F.R. Subpart 101-19;
(7) U.S. EEOC, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 C.F.R. Part 1630;

(8) U.S. Federal Communications Commission regulations, "Telecommunications Relay Services and Related Customer Premises Equipment for the Hearing and Speech Disabled," 47 C.F.R. Part 64, Subpart F; and

(9) U.S. ATBCB regulations, "Electronic and Information Technology Accessibility Standards," 36 C.F.R. Part 1194; FTA regulations, "Transportation for Elderly and Handicapped Persons", 49 C.F.R. Part 609; and

(10) U.S. DOT regulations, "Transportation for Individuals with Disabilities: Passenger Vessels," 49 C.F.R. Part 39;

(11) FTA Circular 4710.1, "Americans with Disabilities Act: Guidance"; and

(12) Federal civil rights and nondiscrimination directives implementing the foregoing regulations, except to the extent the Federal Government determines otherwise in writing.

2. Access to Records and Reports

The Contractor agrees to provide County, the FTA Administrator, the Comptroller General of the United States or any of their authorized representatives access to any books, documents, papers and records of the Contractor which are directly pertinent to the Agreement for the purposes of making audits, examinations, excerpts and transcriptions. Contractor also agrees, pursuant to 49 C.F.R. 633.17 to provide the FTA Administrator or his authorized representatives including any PMO Contractor access to Contractor's records and construction sites pertaining to a major capital project, defined at 49 U.S.C. 5302(a)1, which is receiving federal financial assistance through the programs described at 49 U.S.C. 5307, 5309 or 5311. The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

The Contractor agrees to comply and will require all subcontractors of any tier to comply with the record retention requirements in accordance with 2 C.F.R. 200.333. The Contractor agrees to retain, and will require its subcontractors of all tiers to retain, complete and readily accessible records related in whole or in part to the contract, including, but not limited to, all books, records, accounts, statistics, leases, subcontracts, arrangements other third party arrangements of any type, reports, and supporting materials related to those records required under the Agreement for a period of not less than three years after the date of termination or expiration of the Agreement, except in the event of litigation or settlement of claims arising from the performance of the Agreement, in which case Contractor agrees to maintain same until County, the FTA Administrator, the Comptroller General, or any of their duly authorized representatives, have disposed of all such litigation, appeals, claims or exceptions related thereto.

3. Bonding

The following clause only applies to construction contracts or subcontracts of

$100,000 or more.

As provided in federal regulations and modified by FTA guidance for construction related contracts, Contractor, for each Project or related activities implementing the Agreement that involve construction, will provide bid guarantee bonds, contract performance bonds, and payment bonds.

4. Breaches and Disputes

The following clause only applies to contracts or subcontracts of $50,000 or more.

The parties shall attempt in good faith to resolve promptly any dispute arising out of or relating to the Agreement by negotiation between the parties. Disputes arising in the performance of this Agreement that are not resolved by agreement of the parties shall be decided in writing by the authorized representative of the County. This decision shall be final and conclusive unless within ten [10] days from the date of receipt of its copy, the Contractor mails or otherwise furnishes a written appeal to the County. In connection with any such appeal, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its position. The decision of the County shall be binding upon the Contractor and the Contractor shall abide by the decision.

Performance During Dispute - Unless otherwise directed by County, Contractor shall continue performance under the Agreement while matters in dispute are being resolved.

The requirement to seek mediation may be a condition required before filing an action at law or in equity, unless to do so would prevent either party from seeking relief in a court of law or equity under any applicable statute of limitations.

Claims for Damages - Should either party to the Agreement suffer injury or damage to person or property because of any act or omission of the party or of any of his employees, agents or others for whose acts he is legally liable, a claim for damages therefor shall be made in writing to such other party within a reasonable time after the first observance of such injury of damage.

Rights and Remedies - The duties and obligations imposed by the Agreement and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by the County or Contractor shall constitute a waiver of any right or duty afforded any of them under the Agreement, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

Contractor shall place this clause in all subcontracts for more than the small purchase threshold currently set at $50,000 by the County, to address

administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.

5. Buy America

The following contract clause only applies to contracts or subcontracts of $150,000 or more involving rolling stock, construction, materials and supplies.

The Contractor agrees to comply with 49 U.S.C. 5323(j) and 49 C.F.R. Part 661, which provide that Federal funds may not be obligated unless steel, iron, and manufactured products used in FTA-funded projects are produced in the United States, unless a waiver has been granted by FTA or the product is subject to a general waiver. General waivers are listed in 49 C.F.R. 661.7, and include final assembly in the United States for 15 passenger vans and 15 passenger wagons produced by Chrysler Corporation, and microcomputer equipment and software. Separate requirements for rolling stock are set out at 49 U.S.C. 5323(j)(2)(C) and 49 C.F.R. 661.11.

Rolling stock must be assembled in the United States and have a 60 percent domestic content, subject to the Amendment below.

The FAST Act, effective October 1, 2015 amended the Buy America waiver for rolling stock to provide for a phased increase in the domestic content requirement for rolling stock to more than 65 percent for FY2018 and FY2019 and to more than 70 percent in FY2020 and beyond. The new provisions apply based on the date of delivery of the rolling stock. Domestic content requirement over the phase of the contract period shall be the provision applicable to the year of delivery of rolling stock procured under this contract.

Unlike rolling stock, manufactured goods must be 100-percent produced in the U.S. A manufactured good is considered produced in the United States if: (1) All of the manufacturing processes for the product take place in the United States; and (2) All of the components of the product are of U.S. origin. A component is considered of U.S. origin if it is manufactured in the United States, regardless of the origin of its subcomponents. 49 CFR 661.5(d). FTA has issued a number of Buy America guidance letters discussing manufactured goods.

A bidder or offeror must submit to the FTA recipient the appropriate Buy America certification with all bids or offers on FTA-funded contracts, except those subject to a general waiver. Bids or offers that are not accompanied by a completed Buy America certification must be rejected as nonresponsive. This requirement does not apply to lower tier subcontractors.

In addition to FTA's Buy America requirements that require the steel, iron, and manufactured goods used in an FTA-funded project are produced in the Unites States (49 U.S.C. 5223(j)(1)), the Build America, Buy America Act (BABA)

(Public Law 117-58, div. G70914(a)) now requires that construction materials used in infrastructure projects are also produced in the United States. Refer to terms and conditions in FTAs Master Agreement Section 15. The BABA requirement applies to this grant, in addition to the Buy America requirements, except to the extent a waiver of either requirements may apply.

6. Cargo Preference-Use of United States-Flag Vessels

The following contract clause only applies to contracts or subcontracts that involve transit by ocean for rolling stock, construction projects or materials and supplies.

The Contractor agrees: (a) to use privately owned US -Flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material or commodities pursuant to the Agreement to the extent such vessels are available at fair and reasonable rates for US-Flag commercial vessels; and (b) to furnish within 20 working days following the date of loading for shipments originating within the US or within 30 working days following the date of loading for shipments originating outside the US, a legible copy of a rated, "on-board" commercial ocean bill-of-lading in English for each shipment of cargo to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590 and to the FTA recipient (through the contractor in the case of a subcontractor's bill-of-lading).

7. Civil Rights Requirements

Nondiscrimination in Federal Public Transportation Programs - In accordance with Title VI of the Civil Rights Act, as amended, 42 U.S.C. § 2000d, section 303 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 6102, section 202 of the Americans with Disabilities Act of 1990, 42 U.S.C. § 12132, and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, religion, national origin, sex, sexual orientation, gender identity, age, status as a parent or disability. In addition, the Contractor agrees to comply with applicable Federal implementing regulations and other implementing requirements FTA may issue.

Equal Employment Opportunity - The following equal employment opportunity requirements apply to the Agreement:

Race, Color, Creed, National Origin, Sex In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. § 2000e, and Federal transit laws at 49 U.S.C. §5332, the Contractor agrees to comply with all applicable equal employment opportunity requirements of U.S. Department of Labor (U.S. DOL) regulations, “Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor,” 41 C.F.R. Parts 60 et seq., (which implement Executive Order No. 11246, “Equal Employment Opportunity,” as amended by Executive Order No. 11375, “Amending Executive Order 11246 Relating to Equal

Employment Opportunity," 42 U.S.C. § 2000e note), and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect construction activities undertaken in the course of the Project. The Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, creed, national origin, disability, age, sexual orientation, gender identity, or status as a parent. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

Age - In accordance with section 4 of the Age Discrimination in Employment Act of 1967, as amended, 29 U.S.C. §§ 623 and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees to refrain from discrimination against present and prospective employees for reason of age. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

Disabilities - In accordance with section 102 of the Americans with Disabilities Act, as amended, 42 U.S.C. § 12112, the Contractor agrees that it will comply with the requirements of U.S. Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 C.F.R. Part 1630, pertaining to employment of persons with disabilities. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

The Contractor also agrees to include these requirements in each subcontract financed in whole or in part with Federal assistance provided by FTA, modified only if necessary to identify the affected parties.

8. Clean Air

The Contractor agrees to include the following clause in each contract or subcontract exceeding $150,000 financed in whole or in part with Federal assistance provided by FTA.

The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §§ 7401 et seq . The Contractor agrees to report each violation to the County and understands and agrees that the County will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office. The Contractor agrees it will not use any violating facilities. It will report the use of facilities placed on or likely to be placed on the U.S. EPA "List of Violating Facilities". It will report violations of use of prohibited facilities to FTA.

9. Clean Water

The Contractor agrees to include the following clause in each contract or subcontract exceeding $150,000 financed in whole or in part with Federal assistance provided by FTA.

The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. The Contractor agrees to report each violation to the County and understands and agrees that the County will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office. The Contractor agrees it will not use any violating facilities. It will report the use of facilities placed on or likely to be placed on the U.S. EPA "List of Violating Facilities". It will report violations of use of prohibited facilities to FTA.

10. Contract Work Hours and Safety Standards Act (Construction Contracts)

The Contractor agrees to include the following clause in each contract or subcontract exceeding $100,000 financed in whole or in part with Federal assistance provided by FTA.

The Contractor shall comply with the Contract Work Hours and Safety Standards Act (40 U.S.C. §§ 3701-3708), as supplemented by the DOL regulations at 29 C.F.R. part 5. Where applicable, all contracts awarded by the non-Federal entity in excess of $100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. §§ 3702 and 3704, as supplemented by Department of Labor regulations (29 C.F.R. part 5).

(1) Overtime requirements - No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages - In the event of any violation of the clause set forth in paragraph (1) of this section the Contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of $10 or the maximum allowed by law for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this

section.

(3) Withholding for unpaid wages and liquidated damages – County shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

(4) Subcontracts - The Contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.

(5) Payrolls and basic records - Payrolls and related basic records shall be maintained by the Contractor during the course of the work and preserved for three years thereafter for all laborers and mechanics working at the worksite (or under the United States Housing Act of 1937 or the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address and social security number of each worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 C.F.R. 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records showing that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and records of the costs anticipated or actual costs incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of registration of apprenticeship programs, certification of trainee programs, registration of the apprentices and trainees, and ratios & wage rates prescribed in applicable programs.

(6) The requirements of 40 U.S.C. § 3704 are applicable to construction work

and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence. A federally assisted construction contract must exceed $150,000 before these construction safety requirements apply to that contract.

11. Disadvantaged Business Enterprise (DBE)

The Agreement is subject to the requirements of Title 49, Code of Federal Regulations, Part 26, Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs including 49 C.F.R. Part 26, Section 1101(b) of the FAST Act (23 U.S.C. § 101 note). The national goal for participation of Disadvantaged Business Enterprises (DBE) is 10%. A separate contract goal has not been established for this procurement. Contractor will facilitate, participation by small business concerns owned and controlled by socially and economically disadvantaged individuals, also referred to as "Disadvantaged Business Enterprises" (DBEs).

The Contractor, and each Third Party Subcontractor must not discriminate on the basis of race, color, national origin, or sex in the award and performance of any FTA or U.S. DOT-assisted subagreement, third party contract, and third party subcontract, as applicable, and the administration of its DBE program or the requirements of 49 C.F.R. part 26.

The Contractor and each Third Party Subcontractor must take all necessary and reasonable steps under 49 C.F.R. part 26 to ensure nondiscrimination in the award and administration of U.S.FTA-assisted sub agreements, third party contracts, and third party subcontracts, as applicable.

Failure by the Subrecipient and any of its Third Party Contractors or Third Party Subcontractors to carry out the requirements of this subparagraph 12.e(4)(b) is a material breach of this subagreement, third party contract, or third party subcontract, as applicable which may result in the termination of the Agreement or such other remedy as County deems appropriate, which may include, but is not limited to: (1) withholding monthly progress payments; (2) assessing sanctions; (3) liquidated damages; and/or (4) disqualifying the Contractor from future bidding as non-responsible. Each subcontract the Contractor signs with a subcontractor must include the assurance in this paragraph (see 49 C.F.R. 26.13(b)).

The successful bidder/offeror will be required to report its DBE participation obtained through race-neutral means throughout the period of performance.

The Contractor is required to pay its subcontractors performing work related to the Agreement for satisfactory performance of that work no later than 30 days after the Contractor's receipt of payment for that work from County. In addition, the

Contractor is required to return any retainage payments to those subcontractors within 30 days after the subcontractor's work related to the Agreement is satisfactorily completed.

The Contractor must promptly notify County whenever a DBE subcontractor performing work related to the Agreement is terminated or fails to complete its work, and must make good faith efforts to engage another DBE subcontractor to perform at least the same amount of work. The Contractor may not terminate any DBE subcontractor and perform that work through its own forces or those of an affiliate without the prior written consent of County.

12. Distracted Driving

The Contractor agrees to adopt and enforce workplace safety policies to decrease crashes caused by distracted drivers, including policies to ban text messaging while using an electronic device supplied by an employer, and driving a vehicle the driver owns or rents, a vehicle Contractor owns, leases, or rents, or a privately-owned vehicle when on official business in connection with the Award, or when performing any work for or behalf of the County.

13. Domestic Preferences for Procurements

As appropriate and to the extent consistent with law, Contractor shall to the greatest extent practicable, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subawards including all contracts and purchase orders for work or products procured with federal funds. For purposes of this clause, (1) "Produced in the United States" means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States. (2) "Manufactured products" means items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

14. Drug and Alcohol Testing

The Contractor agrees to include the following clause in each contract or subcontract that may involve transit operations.

Contractor certifies that it is compliant with FTA's regulation for the Prevention of Alcohol Misuse and Prohibited Drug Use in Transit Operations, 49 CFR Part 655. Contractor shall establish and maintain a comprehensive anti-drug use and alcohol abuse program that meets or exceeds all Federal regulation as contained in 49 CFR Part 665, 49 CFR Part 29, and the requirements of the Fort Bend County drug and alcohol program. The program shall include provisions for pre-employment, post-

accident, random, reasonable suspicion and other drug and alcohol testing for all safety sensitive employees and subcontractors performing work or service under this agreement. Contractor will be required to furnish records for all employees providing service under this agreement.

15. Duty to Report False Claims

If the County has credible evidence that Contractor or other person has submitted a false claim under the False Claims Act, 31 U.S.C. § 3729 et seq., or has committed a criminal or civil violation of law pertaining to such matters as fraud, conflict of interest, bribery, gratuity, or similar misconduct involving federal assistance, the County must promptly notify the U.S. FTA Inspector General, in addition to the FTA Chief Counsel or Regional Counsel for the Region in which the County is located.

16. Energy Conservation

The Contractor agrees to comply with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act. The State of Texas does not have an energy conservation plan.

17. Environmental Justice

The Contractor agrees to, and assures that it will, promote environmental justice by following: (1) Executive Order No. 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," February 11, 1994, 42 U.S.C. § 4321 note, as well as facilitating compliance with that Executive Order, (2) U.S. DOT Order 5610.2, "Department of Transportation Actions To Address Environmental Justice in Minority Populations and Low-Income Populations," 62 Fed. Reg. 18377, April 15, 1997, and (3) the most recent edition of FTA Circular 4703.1, "Environmental Justice Policy Guidance for Federal Transit Administration Recipients," August 15, 2012, to the extent consistent with applicable federal laws, regulations, requirements, and guidance.

18. Environmental Protections

The Contractor agrees to, and assures that it will, comply with all applicable environmental and resource use laws, regulations, and requirements, and follow applicable guidance, now in effect or that may become effective in the future, including state and local laws, ordinances, regulations, and requirements and follow applicable guidance.

19. Federal Tax Liability

Contractor certifies that they do not have any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been

exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability; and was not convicted of the felony criminal violation under any Federal law within the preceding 24 months.

20. Fly America

The Contractor agrees to include the following clause in each contract or subcontract that involves foreign air transportation or travel.

The Contractor agrees to comply with 49 U.S.C. 40118 (the "Fly America" Act) in accordance with the General Services Administration's regulations at 41 C.F.R. Part 301-10, which provide that recipients and sub-recipients of Federal funds and their contractors are required to use U.S. Flag air carriers for U.S Government-financed international air travel and transportation of their personal effects or property, to the extent such service is available, unless travel by foreign air carrier is a matter of necessity, as defined by the Fly America Act. The Contractor shall submit, if a foreign air carrier was used, an appropriate certification or memorandum adequately explaining why service by a U.S. flag air carrier was not available or why it was necessary to use a foreign air carrier and shall, in any event, provide a certificate of compliance with the Fly America requirements. The Contractor agrees to include the requirements of this section in all subcontracts that may involve international air transportation.

21. FTA Interest

This clause does not flow down to subcontractors.

Contractor understands and agrees that FTA has a vested interest in the settlement of any violation of federal law, regulation, or disagreement involving federal funds used towards this Agreement, including, but not limited to, a default, breach, major dispute, or litigation, and FTA reserves the right to concur in any settlement or compromise."

22. Government-wide Debarment and Suspension

The Contractor agrees to include this clause in each contract or subcontract that is at or exceeds $25,000.

The Contractor shall comply and facilitate compliance with U.S. FTA regulations, Nonprocurement Suspension and Debarment," 2 C.F.R. part 1200, which adopts and supplements the U.S. Office of Management and Budget (U.S. OMB) "Guidelines to Agencies on Governmentwide Debarment and Suspension (Nonprocurement)," 2 C.F.R. part 180. These provisions apply to each contract at any tier of $25,000 or more, and to each contract at any tier for a federally required audit (irrespective of the contract amount), and to each contract at any tier that must be approved by an FTA official irrespective of the contract amount. As such, the

Contractor shall verify that its principals, affiliates, and subcontractors are eligible to participate in this federally funded contract and are not presently declared by any Federal department or agency to be:

(1) Debarred from participation in any federally assisted Award;
(2) Suspended from participation in any federally assisted Award;
(3) Proposed for debarment from participation in any federally assisted Award;
(4) Declared ineligible to participate in any federally assisted Award;
(5) Voluntarily excluded from participation in any federally assisted Award; or
(6) Disqualified from participation in ay federally assisted Award.

By signing and submitting its bid or proposal, the bidder or proposer certifies as follows:

"The Certification in this clause is a material representation of fact relied upon by the County. If it is later determined by the County that the bidder or proposer knowingly rendered an erroneous certification, in addition to remedies available to County, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment. The bidder or proposer agrees to comply with the requirements of 2 C.F.R. part 180, subpart C, as supplemented by 2 C.F.R. part 1200, while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions."

23. Incorporation of FTA Terms

The provisions in this Section include, in part, certain Standard Terms and Conditions required by FTA, whether or not expressly set forth in the preceding contract provisions. All contractual provisions required by FTA, as set forth in FTA Circular 4220.1E, are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in the Agreement. The Contractor shall not perform any act, fail to perform any act, or refuse to comply with any County requests which would cause County to be in violation of the FTA terms and conditions.

24. Lobbying

The Contractor agrees to include the following clause in each contract or subcontract for $100,000 or more.

Contractors who apply or bid for an award of $100,000 or more shall file the certification required by 49 C.F.R. Part 20, "New Restrictions on Lobbying." Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence

an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose the name of any registrant under the Lobbying Disclosure Act of 1995 who has made lobbying contacts on its behalf with non-Federal funds with respect to that Federal contract, grant or award covered by 31 U.S.C. 1352. Such disclosures are forwarded from tier to tier up to the County.

25. No Government Obligation to Third Parties

County and Contractor acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the contract, absent the express written consent by the Federal Government, the Federal Government is not a party to the Agreement and shall not be subject to any obligations or liabilities to County, the Contractor, or any other party (whether or not a party to that contract) pertaining to any matter resulting from the contract. The Contractor agrees to include this clause in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

26. Notice to Third Party Participants

Federal requirements that apply to the County or the Award, the accompanying Award Agreement or any Amendments thereto may change due to changes in federal law, regulation, other requirements, or guidance, or changes in the Recipient's Award Agreement including any information incorporated by reference and made part of that Award Agreement will apply to the Contractor and any other Third-Party Agreements.

27. Notification to FTA

Contractor understands that if a current or prospective legal matter that may affect the Federal Government emerges, the County must promptly notify the FTA Chief Counsel, or FTA Regional Counsel for the Region in which the County is located. (1) The types of legal matters that require notification include, but are not limited to, a major dispute, breach, default, litigation, or naming the Federal Government as a party to litigation or a legal disagreement in any forum for any reason. (2) Matters that may affect the Federal Government include, but are not limited to, the Federal Government's interests in the federal funds used towards this Agreement, or the Federal Government's administration or enforcement of federal laws, regulations, and requirements.

28. Prevailing Wage (Davis-Bacon) and Copeland Anti-Kickback Acts

For all prime construction, alteration or repair contracts in excess of $2,000 funded with awards from FTA, the Contractor shall comply with the Davis-Bacon Act, as

amended (40 U.S.C. §§ 3141 – 3148) as supplemented by Department of Labor regulations (29 C.F.R. part 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction"). Under 49 U.S.C. §5333(a), prevailing wage protections apply to laborers and mechanics employed in FTA assisted construction, alteration, or repair projects. In accordance with the statute, contractors shall pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, Contractor agrees to pay wages not less than once a week. Contractor also agrees to comply with the Copeland "Anti-Kickback" Act (40 U.S.C. § 3145), as supplemented by Department of Labor regulations (29 C.F.R. part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). Contractor is prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. County shall report all suspected or reported violations to the FTA. The Contractor also agrees to include these requirements in each subcontract or third-party contract at any tier.

29. Program Fraud and False or Fraudulent Statements and Related Acts

The Contractor acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. § 3801 et seq. and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 C.F.R. Part 31, apply to its actions pertaining to this Project. Upon execution of the contract, the Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to the Agreement or the FTA assisted project for which the Agreement work is being performed. In addition to other penalties that may be applicable, the Contractor further acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on the Contractor to the extent the Federal Government deems appropriate.

The Contractor also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under a contract connected with a project that is financed in whole or in part with Federal assistance originally awarded by FTA under the authority of 49 U.S.C. § 5307, the Government reserves the right to impose the penalties of 18 U.S.C. § 1001 and 49 U.S.C. § 5307(n)(1) on the Contractor, to the extent the Federal Government deems appropriate. The Contractor agrees to include the above two clauses in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clauses shall not be modified, except to identify the subcontractor who will be subject to the provisions.

30. Prohibited Telecommunications and Video Surveillance Services and Equipment

Contractor understands and acknowledges that under 2 CFR 200.216, the County is prohibited from using federal funds to procure, obtain, extend or renew a contract to procure or obtain covered telecommunications equipment or services, including telecom equipment produced by Huawei Technologies Company or ZTE Corp. (or subsidiaries or affiliates of such entities). Contractor, therefore, certifies that they are in compliance with the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (FY 2019 NDAA), Pub. L. No. 115-232 (2018), and that in the performance of this agreement, it will not provide equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. As described in Public Law 115-232, section 889, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities). (i) For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities). (ii) Telecommunications or video surveillance services provided by such entities or using such equipment. (iii) Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

31. Prompt Payment

Under this contract, the prime contractor agrees to pay each subcontractor for satisfactory performance of its contract within 30 days from the receipt of each payment the prime contractor receives from the County. The prime contractor further agrees to full payment of retainage to each subcontractor within 30 days after the subcontractor's work is satisfactorily completed. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the County. This clause applies to both DBE and non-DBE subcontracts.

32. Resource Recovery

This Contractor agrees to include the following clause in all contracts and subcontracts for procurements of $10,000 or more.

The Contractor agrees to comply with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The

requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 C.F.R. part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds $10,000 or the value of the quantity acquired during the preceding fiscal year exceeded $10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

33. Safe Operation of Motor Vehicles (Seat Belt)

Contractor shall encourage their employees and other personnel that operate company-owned vehicles, company rented-vehicles, or personally operated vehicles to adopt on-the-job seat belt policies and programs.

The Contractor agrees to adopt and enforce workplace safety policies to decrease crashes caused by distracted drivers, including policies to ban text messaging while using an electronic device supplied by an employer, and driving a vehicle the driver owns or rents, a vehicle Contractor owns, leases, or rents, or a privately-owned vehicle when performing any work for this Agreement.

34. Seismic Safety

This Contractor agrees to include the following clause in all contracts and subcontracts for construction contracts for new buildings or additions to existing building.

The Contractor agrees to comply with the Earthquake Hazards Reduction Act of 1977, as amended, 42 U.S.C. § 7701 et seq., and U.S. DOT regulations, "Seismic Safety," 49 C.F.R. part 41, specifically, 49 C.F.R. § 41.117, and agrees that any new building or addition to an existing building will be designed and constructed in accordance with the standards for Seismic Safety required in Department of Transportation Seismic Safety Regulations 49 C.F.R. Part 41 and will certify to compliance to the extent required by the regulation. The Contractor also agrees to ensure that all work performed under the Agreement including work performed by a subcontractor is in compliance with the standards required by the Seismic Safety Regulations and the certification of compliance issued on the project.

35. Sensitive Security Information

Each third party contractor must protect, and take measures to ensure that its subcontractors at each tier protect, "sensitive security information" made available during the administration of a third party contract or subcontract to ensure compliance with 49 U.S.C. Section 40119(b) and implementing FTA regulations, "Protection of Sensitive Security Information," 49 CFR Part 15, and with 49 U.S.C. Section 114(r) and implementing Department of Homeland Security regulations,

"Protection of Sensitive Security Information," 49 CFR Part 1520.

36. Termination

Contractor understands that all contracts in excess of $10,000, including subcontracts, must address termination for cause and for convenience by the Contractor including the manner by which it will be effected and the basis for settlement.

37. Veterans Preference

The Contractor shall give a hiring preference, to the extent practicable, to veterans (as defined in 5 USC Section 2108) who have the requisite skills and abilities to perform the construction work required under the contract. This subsection shall not be understood, construed or enforced in any manner that would require an employer to give preference to any veteran over any equally qualified applicant who is a member of any racial or ethnic minority, female, an individual with a disability, or former employee.

38. Change Orders

Verbal change orders to the Agreement are not permitted. No changes in the scope, specifications, character, or complexity of work shall be made by the Contractor without first receiving written approval by the Fort Bend County Public Transportation Director or their designee properly defining and limiting any such change. Contractor shall be liable for all costs resulting from and/or for satisfactorily correcting any specification change not properly ordered by written modification to the Contract and signed by the County.

Within 14 calendar days after Contractor's receipt of the written change order request for modification of the Contract, Contractor shall submit to County a detailed price schedule proposal for the work to be performed. This proposal shall be accepted or modified by negotiation between Contractor and the County. At the time both parties shall execute a detailed Contract modification in writing. Disagreements that cannot be resolved within negotiations shall be resolved in accordance with the contract disputes clause.

It is distinctly understood and agreed that no claim for payment for work done or materials furnished by the Contractor outside of these parameters shall be paid by County. Any such services or materials furnished by Contractor without such written order shall be at the risk, cost and expense of the Contractor, and no claim for compensation for any such services or materials shall be made.

All such changes, which are mutually agreed upon by and between all parties, shall be incorporated in written amendments to the Contract. All such amendments shall state any increase or decrease in the amount of the compensation due to County for the change in scope.